

刺绣机电脑

Computerized Control System for Embroidery
Machine

BECS-C16

(General Unit)

Version: 2015-04

操作手册

OWNER'S MANUAL



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Chapter 1 General Descriptions

















Thanks for using the Computerized Embroidery Control System produced by Beijing Dahao Technology Corp., Ltd. User are recommended to read this manual carefully, so as to operate the machine correctly and effectively. Besides, user should keep this manual for future use.

1-1 Warnings and Cautions

In order to reduce the occurrence of the fire, electronic shock and personal injury at using this product, user shall strictly follow the basic security prevention measures at below:

Matters for Attention at Usage	
 Danger	During the operation, do not try to open the machine box. The high voltage contained in some parts can be deadliness. Rotating parts may cause serious injury.
 Forbidden	Don't expose the machine to humidity gas, poisonous gas, water, and dust.
 Forbidden	Don't store or operate the machine in vibrating area, which may cause trouble to the machine.
 Caution	Please abide all the warnings and safety requirements to ensure the security of person and property
 Caution	LCD is fragile item. Do not use hard materials to click on the screen.
 Caution	Before plugging in, user has to pay attention to the direction of the floppy disk and the U disk. Don't attach force when the inserting direction is wrong, or it may cause the damage of the floppy driver, disk, U disk and USB port. When the indicator on floppy driver is on, please don't insert or pull out the disk.
 Caution	We will add appendix if necessary, if there is any difference between the manual and appendix, please the appendix will take precedence.
In Transportation	
 Caution	Don't hold the cable when moving..
 Caution	Please abide all the warnings and safety requirements to ensure the security of person and property
 Compulsory	Overloading may cause serious loss. Please load according to the instruction on the box..
Installation	
 Caution	Don't jam the vent on the device. Don't plug up the machine, or it may cause fire or electronic shock.
 Caution	Make sure the installation direction is correct..
 Caution	Don't expose the machine to humidity gas, poisonous gas, water, and dust.



Cable Connection	
 Forbidden	Don't test the insulation of the circuit loop.
 Forbidden	Never try to connect overloading electronic device on the connector or the power socket.
 Caution	Make sure the insulation cover of each cable is fine.
 Caution	Communication cable and power cable should be separated.
 Caution	All the cables should be well fixed. Don't put any strength on cables. Make sure the turning point of cable is well protected. Add pipes to increase insulating capability.
 Caution	Machine should be grounded. The resistance should be no larger than 10 Ω .
Operating Direction	
 Danger	Don't operate the machine when there is any damage on the protection shell.
 Forbidden	When machine is running, do not touch any running part.
 Caution	Make sure the configuration of power supply in normal. Use stabilized voltage power supply when the voltage rebound is between -10%~10%.
 Caution	In case of warning, please check out the problem. Operation can only be carried out again when problem is solved.
 Caution	The power supply has over-current protection function. There is a 3 mins time lag before the function can be used again.
Maintenance	
 Warning	If you need to open the machine cover, cut out the power supply first. Due to the capacitance after power off, operator must wait for one minute before opening the machine cover.
 Caution	Circuit boards can be damaged by static. Non-professional technician can not disassemble circuit boards.
 Caution	If machine is inactive for a while, users must power on the machine regularly (once in 2 or 3 days, more than an hour for each time).
 Caution	If machine is inactive for a long time, users should have the machine checked before power on.
Rejection	
 Caution	Rejection should obey the rules and regulations set by national industrial electronic standards.

1-2 Main Features

1. LCD Displayer

It offers delightful operation and easy learning. The beautiful screen display turns everyday work into joyful experiences.



2. Timing Turn-off of LCD Displayer

Following measures were taken to extend the LCD life: LCD will turn off automatically in case of no operation in 15 minutes (the time can be changed in parameter setting). A touch of the screen or any key will reboot the LCD.

3. Super-Large Memory Capacity

The memory capacity reaches 100 million stitches, in which 800 designs can be stored. Its super-large memory capacity can meet demands of different customers.

4. Maximum One Million Stitches for Single Design

At present a single design in the system has the maximum of 1,000,000 stitches and 500 times of automatic color changing.

5. Multi-Task Parallel and Free Shift among Tasks

During embroidering, actions like design input & output, preparation for the following designs and modification of parameters can be carried out. Flexible shift among tasks can be realized by using the task-shifting key.

6. Storage of Frequently Used Parameters and Color-Changing Order for Each Design

Design will be saved along with its parameters, color-changing orders and needle bar colors. System can memorize the operational details for each design. Users can set parameters for a design during the embroidery process of the previous design, which will save time and improve the efficiency. More importantly, it is one basis to realize network management.



7. Group Management of Parameters

Parameters can be divided into groups based on their functions and embroidery types. The system can also save and recover the parameters used by technician at end-user and the parameters used by the manufacturer of machine. And for the machine with password-setting function, user can set password on the machine.

8. Design Input & Output with USB

Except for DOS, FDR and ZSK format floppy disk, users can use USB disk for data transfer. USB disk supports DIR operation, which is easy for design management. For each directory, system supports the storage of 800 designs or the sub-directory operation. There is no limitation on directory levels. Design formats like DSB, DST, ZSK and FDR can be loaded.

9. Input of Several Design Files at One Time

Both floppy and USB disks support multi-design input under one directory.

10. Input design through network, color-changing order, etc.

Network connector is available, which help user input design, color-changing order, applique, etc.

11. Network Function

A surveillance LAN can be built with connectors and linked to the factory LAN, which realizes network management, improves production efficiency and reduces possible mistakes. It's the best choice of embroidery equipment for enterprises to take the modern enterprise management. For details, please refer to appendix V.



12.Patch Embroidery (Applique)

This function can set a patch code after the color code or stop code, and when the machine embroiders to the patch code, it will halt and move frame out for patching. After sticking a patch, user would pull the operation bar to let the frame move back and continue embroidering.

13.Brake Adjustment

According to the different characters of their machines, user can adjust the brake parameter to have the main shaft to stop at the right position.

14.Starting Point Saving

This function can save the start point of each design and waive the work of user to repeat moving frame manually to find the design origin when user selects the same design.

15.Maintenance and Test of Machine

This function is to easily judge the malfunctions at maintenance and test, which consists of encoder testing, main shaft speed testing, machine parts testing and the main shaft stopping at any position, etc.

16.Multi-Language Support

The system supports Chinese / English /Spanish/Turkish and other languages.

17.Design Output

Design can be output and saved into floppy disk or USB disk. Adoption of TAJIMA's binary system enables user to enjoy the advantage of data transmitting through the World Wide Web (other formats may not be transmitted directly).



18.Repetition Embroidery

The machine can increase embroidery productivity by repetition embroidery, which can also be used with cyclic embroidery.

19.Cyclic Embroidery

The user also can increase embroidery productivity by using cyclic embroidery function, by which the machine automatically returns to the origin point and starts the same embroidery design again when finishing the design one time.

20.Design Compiling

(1) Compile the Data of Selected Design to Generate New Design

Users can compile any design according to zoom ratio, rotate angle, normal repetition or partial repetition to generate a new design and save it in the memory card. The newly generated design can be used for embroidery, output or other operations.

(2) Compile the Combined Design

System can compile the pre-set combined design to generate a new one and save it to the memory card. The newly generated design can be used for embroidery, output or other operations.

21.Letter Design

There are altogether 28 letter-bases. Users can make groups and change the letter order according to different tasks. This operation is simple and easy managing.

22.Design Editing

By using this function, users may insert, modify or delete certain stitch at the selected point. New designs can be created by this function too.



23.Speed Adjusting

The highest speed for embroidering can be set. During the process of embroidering, speed changes automatically when the needle interval changes.

24.Thread Trimming

Thread trimming can be manually controlled. Trimming acts automatically at the end of embroidery process or color changing.

25.Thread Breakage Detection

In case of thread breakage or run-out of bottom thread, machine stops and warning lights start to blink.

26.Color Changing

At the color changing point, user can either act color changing manually or let the system do according to the preset order automatically.

27.Special Embroidery

BECS-C16 computerized embroidery has special embroidery functions (coiling, taping and Zigzag embroidery).

1-3 Technical Specifications

1. Maximum design saving quantity: 800 designs
2. Memory capability: 100 million stitches
3. Screen resolution: 640*480
4. Network transfer speed: 10Mbps
5. Data transfer mode supported: floppy disk, USB disk and network
6. Stepping Precision: minimum stepping precision is 0.1mm
7. Stitch range: 0.1mm to 12.7mm

Chapter 2 Operation Instruction

2-1 Configuration and Direction of the Control Panel

A. Configuration of the Control Panel



1. LCD Screen

C16 adopts high-luminance LCD display.

2. Main USB Interface

USB disk can be plugged in for data input/output. The external floppy driver is also connected by USB interface.

3. Serial Port to Link PC

Its serial port can be connected with PC for design transmission.

B. Direction in Using the Floppy Disk

This external floppy driver uses USB port. Make sure the plug-in direction is correct. Try to avoid using force with incorrect plug-in direction, or it may destroy the floppy driver and disk.

C. Direction in Using the USB Disk

Please pay close attention to electrostatic phenomenon. Don't forget to discharge before plugging in/out the USB disk.

USB disk features plug-in direction. Users should avoid plugging out during writing or loading data, because it may result in loss of data. We highly recommend users to check the data integrity in case of data missing.

Note: During the process of USB format, sudden loss of electricity or plugging out the disk may break down the USB.

D. Direction of Network Connection

Preset the network parameters before the connecting. Otherwise other machines in the network maybe can't communicate.

2-2 Instruction of Control Panel

The key on the keyboard can be used along with LCD. If you want to operate function in any menu on the LCD, just press relative shortcut key on the keyboard.

The status of that key will be shown on the screen.

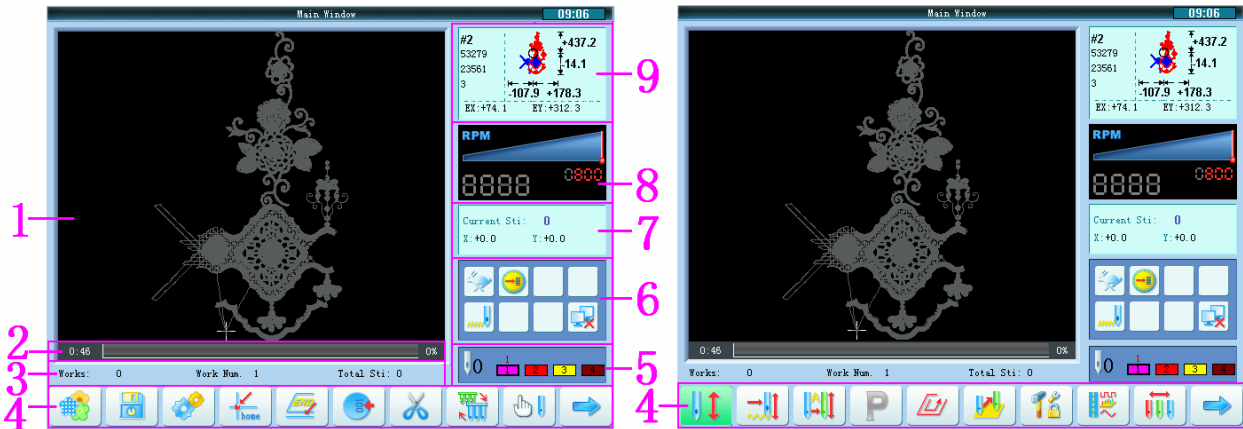


Number	Name	Description
1	LCD	Displays the operation interface.
2	Function select	Press the function keys within this area to select functions. (Note: If you press the key (these keys are displayed in the main screen area) twice without the interruption of any other operations, the system will enter or to exit the corresponding function.)

















Number	Name	Description
3	Exit	To exit certain operations.
4	Confirm	To confirm certain operations.
5	Speed adjust	Press the button or to reduce or increase the embroidery speed.
6	Manual Frame Moving	In operation, the direction of frame-moving is the same as the direction key. The combination of directions is supported, namely pressing the nearby 2 direction keys will move the frame in the 45 degree between the two directions.
7	Speed Shift of Manual Frame-moving	Press this key to switch the frame-moving speed between (high speed) and (low speed).
8	Task Shift	If the user opens several screens, he can shift among the screens by this key.
9	$\frac{+/-}{10}$ + shift	To show plus & minus of inputted number.
10	Digital Keys	Used to select Menu item or set parameter.

2-3 Instruction of the Main Screen














Note: Press the button can shift between the following two pages.
















No.	Display	Name	Description	Reference Section
1		Real time tracking	Stitch forms or designs are displayed in this area.	
2		Display of Processing Bar	Display of Processing Bar: This button will display the Time for Finishing Pattern and the Embroidery Percent.	
3		Number of Pieces, Total Number of Pieces and Calculated Stitch Number	Display of Number of Pieces, Total Number of Pieces and Calculated Stitch Number.	

















No.	Display	Name	Description	Reference Section
4		Design management	Press this key to enter into design management interface, including embroider design selection, input design to memory, display design, generate design, letter design operation, etc.	Chapter 4
		Disk management	Press this key to enter disk management, including operations of floppy disk and USB.	Chapter 3
		Machine parameter management	Press this key to enter into machine parameter setting and operations.	Chapter 5
		Go to start point	When the machine stops, press it to have the frame automatically return to the start point of the current design.	
		Go to stop point	When the machine stops, press the key “Manual Frame-moving” to move the frame (e.g. in case of patching). Then press this key and the frame will automatically return to the stop point of the current design.	
		Turn main shaft to 100° manually	After stop, if the main shaft is not at the right position, the figure will sparkle.  ; Press the key and then the main shaft will arrive to this position  .	
		trimming	After machine stops, user can press this key to select to trim upper or lower thread.	
		Hook/Flat needle	Press this key to shift between the flat needle and hook needle.	
		Assistant embroidery operation	Design origin, needle stops down, offset point, sequin, special embroidery, etc.	
		Next group of function key	Press this button to shift among different function groups	
	Embroidery preparation status 	In embroidery preparation status, you can select design, set parameter and etc. Press this key and confirm, then machine status is changed from preparation status  to confirmation status  .		








No.	Display	Name	Description	Reference Section
4		Embroidery confirmation status (Embroidery can be cancelled) 	In embroidery confirmation status, you can pull bar to embroider. When machine stops, press this key to confirm to cancel confirmation status  and back to preparation status  .	
		Normal embroidery 	System is now in normal embroidery status. When you pull bar, the main shaft rotates and frame moves along the design trace. Pull bar to go back, machine idles back in low speed. When machine stops, press this key to shift to low speed idling  .	
		Low-speed Idling 	The machine is currently in low-speed idling status. When user pulls the bar for normal embroidery, the main shaft remains inactive and the frame advances along the stitch trace. When pulling the bar for returning, the main shaft remains inactive and the frame returns along the stitch trace. When the machine stops, click this key to switch to high-speed idling status  .	
		High speed idling 	System is now in high speed idling status. Pull bar but main shaft and frame don't move and stitch number increases; pull bar to stop, the frame goes to the real position of the current stitch. Pull bar to back, main shaft and frame don't move. Stitch number decreases as well. Pull bar to stop, the frame goes back to the real position of current stitch. When machine stops, press this key to change to Embroidery Status  .	
		Manual color-changing manual start 	In this status, press related needle position key to select a position. Pull bar to start embroidering. When meeting the color-changing code, system stops the machine automatically and displays  . Then you should act manual color-changing. Input the position you need, pull bar to start embroidering (manual start) .	



No.	Display	Name	Description	Reference Section
4		Auto color-changing manual start 	If you set machine to auto-color-changing, you should first set needle color-changing order (press the key  in the main screen) . During embroidery, no matter where the current needle locates, system will act color-changing according to this order. When you meet color-changing code, machine will stop automatically and change to the needle position that already has been set. If you set auto start, machine will start automatically; if you set to manual start, pull bar to start.	
		Auto color-changing auto start 		
		Change design direction	Press this key to shift the design direction.	
		Design border operation	Press this key to enter design border operation window	Section 7.2
		Positioning idling	In embroidery confirmation status, press this key to do the operations of positioning idling.	Section 7.3
		Other assistant management	Press this key to enter other assistant management interfaces, like clock setting and help.	Section 6.2
		Special embroidery mode	Press this key to enter interface for manually shifting special embroidery.	
		Set color changing order	When main shaft stops at 100°  , press this key; after that, system goes to the color-changing order menu, press relative number to act color-changing. Set the color-change order. Then the machine will change color according to the corresponding stitch number.	Section 7.1
5		Color changing and current stitch position		
6		Machine status information (In the order of left to right, top to bottom)	Frame moving speed(use  to shift between low speed  and high speed )	




No.	Display	Name	Description	Reference Section
			Main shaft status(running  , stop in position  , not stop in position )	
			Embroidery status (thread break  , finish  , color changing  , jump  , pull bar to stop )	
			Cyclic embroidery  , none cyclic embroidery	
			Assistant embroidery status/lockstitch/special embroidery (lockstitch  , sequin  , etc.)	
			Off-set point 	
			Assistant embroidery mode 	
			Network status (disconnected  , connected  , successful register )	
7		Current stitch form information	The current stitch form information is displayed here.	
8		Main shaft speed	The set and actual speed can be viewed in this area.	
9		Design information	Related design information is displayed in this area.	





2-4 Notes on Menu Status

If one menu is labeled with the mark “” or “”, this indicates that this menu can not be accessed and modified. While if one menu is labeled with “” or “”, it indicates that this menu can be accessed and modified. If there is a “”, then this parameter can be modified only if the user relieves the password at first.







2-5 How to Input Numerals, Letters and Symbols

For some menu, press the key “” to enter setting interface (optional), press “” to shift options, press “” to confirm.

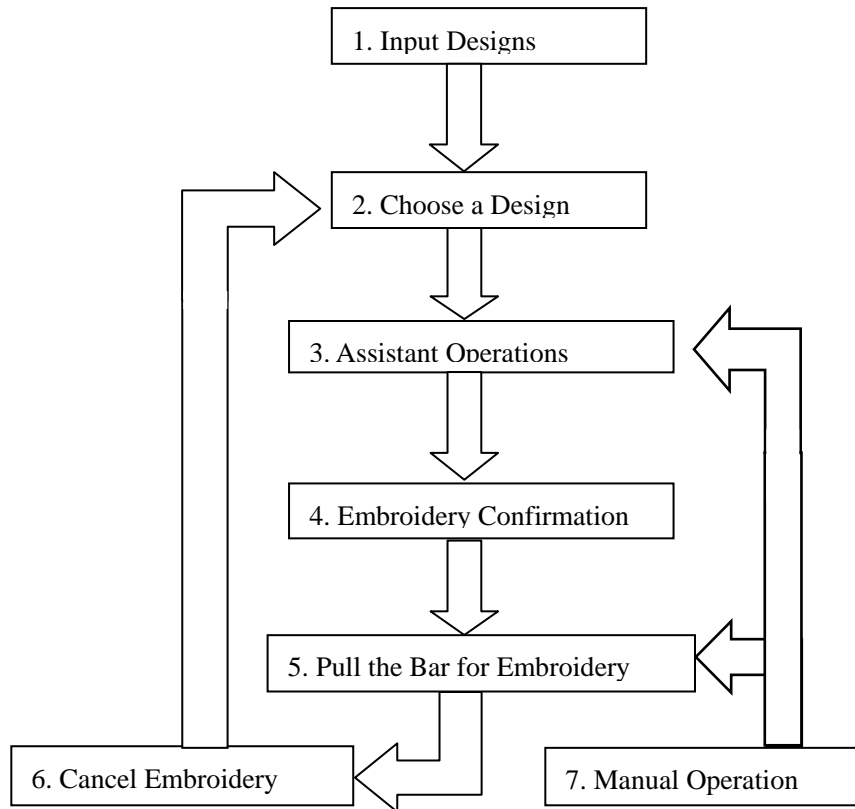
At inputting number, you can press “” to enter radix point, press “+/-” to enter negative number. if there are several digits or letters on one key, you can press the key continuously until you get the number or letter you want. For example, press  trice, then you can get “T”. “” is used for shifting capital letters and small letters. “” is used for deleting the last letter you typed in.

2-6 Moving of the cursor




The cursor of this computer is displayed as “”. You can press “” or relative digit number to move the cursor to the option. Press “” or “” for a while, the cursor will move consecutively among each option.

2-7 Procedure of Embroidery



The machine embroiders based on the designs in its memory. The following is the basic Procedure of Embroidery.


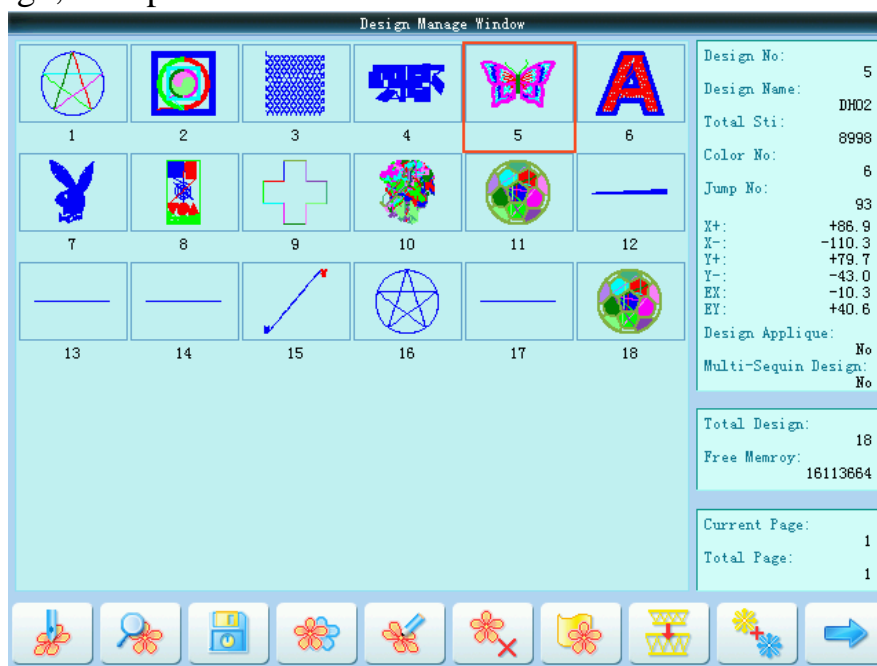



A. Input Designs

The user can import designs through network, floppy disk or USB disk. Only in  status, can user transmit designs by PC network. For USB operation (disk operation), click  in the main screen to enter the “disk management” interface. You can also input designs by using “” in the design management interface.

B. Choose a Design

If the design management interface is not opened, click  in the main interface to enter it. If the screen is opened but the current interface stays at another function screen, press the blue task switch key on the panel to enter the design management screen. Only in the status of “”, can user choose design for embroidery.


- a. After entering design management, user needs press “










- b. After entering the interface for changing relating parameter of pattern and changing the parameters, user needs press “

C. Assistant Operation





After selecting the design, the user will enter the main screen, and he can do the needed assistant operations before embroidery.

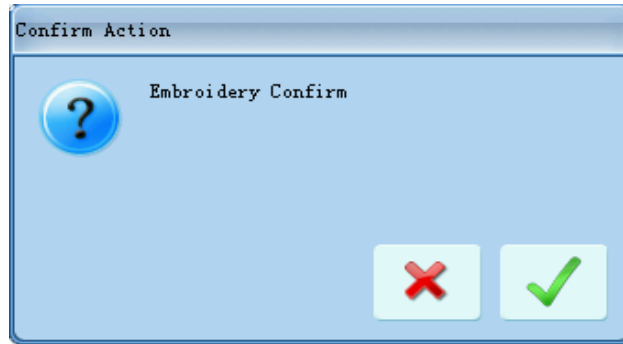
- a. Set repetition, rotation and magnification and color-changing order——click


“BECS-C16 computerized embroidery machine owner’s manual

- b. Set applique embroidery——click “” to enter the design management screen. And click “” to set applique according to prompts.
- c. Show the range of embroidery design, move frame along the boundary of design, embroider along the design range, embroider one cross, embroider one line, embroider the design outline——press “” to enter the assistant operation screen
- d. Auto search start position——press “” to enter into assistant embroidery operation menu. Attention: this function is to locate the design in the center of the frame area as preset in soft limit. If you want set soft limit area, press “” to enter assistant management menu.
- e. Save design start point——click “” to enter the assistant operation screen in embroidery confirmation status. Attention: The origin point has to be set before saving the start point. If you want to set the origin point, click “” and enter the “assistant management Operations”.
- f. Set cyclic embroidery——click “” to enter the parameter management screen. Move cursor to “Embroidery assistant parameter”. Then select Sewing Para B02 and set according to prompts.


D. Embroidery Confirmation

- 1) The user can click  after finishing assistant operations. Press **ENTER** “” in the followed prompt and  (embroidery preparation, The background of figure is red) will change into  (embroidery confirmation, The background of figure is green), which means that the machine has entered the embroidery confirmation status.









If “” is chosen, the machine will remain in the preparation status. Even user pulls the bar at this moment, the machine will not run and a prompt will appear to ask the user to confirm embroidery.







2) Setting offset start point

After embroidery confirmation, if needed, click “” to set offset start point according to the prompts. Note: It’s of no effect to set offset start point after starting embroidery.

3) Setting the Way for Color-Changing and Starting

In the main screen, click “” (or “”, “”), the status will switch among  (auto color-change, auto start),  (auto color-change, manual start) and  (manual color-change, manual start).

4) Setting Normal Embroidery and Idling

Click “” (or , ) in the main picture and the status will switch among  (normal embroidery),  (low-speed idling) and  (high-speed idling).

E. Pull the Bar for Embroidery

Operation bar(or embroidery bar) is installed under the table



1) Stop Status:

Pulling the bar to right is to begin embroidery (including low and high speed idling)

Pulling the bar to left is to return (including low and high speed idling)




2) Running status:

At normal embroidery, pulling the bar to the right end is to embroider slowly and releasing the bar will resume the normal speed.









Pulling the bar to left is to stop embroidery (including low and high speed idling).

F. Manual Operation


1) Manual Trimming

When the machine stops, click  in the main screen. Follow the prompt and select a trimming mode (“trim top & bot.” or “trim bottom”). Then click “” to trim, or click “” to exit trimming operation.

2) Manual Frame-Moving

When the machine stops, press the keys (“”) to move the frame in the corresponding direction. Press the next two keys at the same time to move the frame in the direction of the angle bisector. “” is the speed key for manual frame-moving. Press “” to switch between  (high speed) and  (low speed).

3) Clearing the Frame Coordinates



When the machine stops, click “**C**” then click “” to clear the XY displacements displayed in the main screen. The function can be used with manual frame-moving.





4) Manual Color-Changing



When the machine stops, you may type in needle position number in the main screen. Then the head will move to the corresponding needle position automatically.

5) Turn the Main Shaft to 100° Manually



Usually the main shaft is needed to stop at 100° at color-changing, frame-moving and beginning embroidery. The user can manually turn the main shaft to 100° when it doesn't reach there. Click “” in the main screen and then choose “” in the followed prompt to carry out the function.

After the operation, the icon  (main shaft not in the right position, Figure sparkling) will be replaced by  (main shaft in the right position).


6) Go to Start Point

In the main screen click  and choose “” in the followed prompt. Then the frame will return to the start point.





7) Go to Stop Point

Click  in the main screen and choose “” in the followed prompt. Then the frame will return to the stop point.


8) Positioning Idling

Use this function after embroidery confirmation. Positioning idling enables the machine to move to the designated position according to the user's requests without embroidery. Click  in the main screen then the user can set the positioning idling of needle number, color-changing code, idling direction and stop code.





9) Let Needle Down (The Needle Stops at the Designated Low Position)

This function is intended to quilt embroidering at replacing the fabric. Click  in the main screen and then the option “Let needles down”. When clicking “”, the needle will prick into the embroidery cloth and a prompt will appear. After releasing the cloth (cloth has to be separated from the frame), move the frame to the designated position and click “”. After this operation, the needle is still down. When the cloth is placed on the frame again, click  to turn the main shaft to 100° manually.


10) Manual Operations of Automatic Frame Changer (AFC), Sequin and Special Embroidery

This function is functional for the machines that are equipped with devices for AFC, sequin and special embroidery. For such machines, click  and then select this option to enter the concerned menu. Click the corresponding keys according to the prompts.

G. Embroidery Release

When the machine stops, click . Choose “” in the followed prompt and  (embroidery confirmation) will change into  (embroidery release).

2-8 Normal Embroidery, Returning and mending

In embroidery confirmation status (the icon  appears), push the switch of machine head (that needs perform normal embroidery) to the normal embroidery mode, and push the switch of machine head that needn't embroider to the mending mode, and then pull the operation bar to right and release it to let the









machine start normal embroidery. (When you pull the bar right and don't release it, the machine will embroider in lower speed.) During the embroidery, pull the bar left, the machine will stop.


After the machine stops, pull the operation bar to left and the frame will return to its last position along original path. Pull the bar one time, the frame returns one needle step. Pull the bar continuously and the frame will return one needle step after another continuously. After the frame returns 10 needle steps continuously, the frame can return continuously even when you release the bar. (This may be different for different machine types). When the frame return continuously, release the bar and pull it left again, the frame will stop returning.


The aim for returning is usually to perform mending embroidery. After the returning stops, push the switch on machine head that needs perform mending embroidery to go to the mending mode, and then pull the operation bar to right and the machine head will start mending embroidery while other heads remain inactive. When the frame goes to the point where the frame begins to return, other heads whose mending switches are in normal embroidering mode will start to embroider.


2-9 Relations between Normal Embroidery, Idling and Position Idling Functions as idling, returning, etc. are intended for the convenience of patching. Low-speed idling, high-speed idling or positioning idling can be used as needed in embroidery. In the status of idling, the returning also has low-speed idling returning, high-speed idling returning or positioning idling returning.



In the main screen, you may press “”, (“” or “”) to switch among “” (normal embroidery), “” (low speed idling) and “” (high speed idling).

After user sets low-speed idling , the main shaft remains inactive when user pulls bar for normal embroidery, but the frame runs forward along the stitch trace. When user pulls bar for returning, the main shaft keeps inactive, but the frame returns along the stitch trace.

After user sets high-speed idling , the main shaft and frame remain inactive, the stitch number increases based on a unit of 100 stitches. After user pulls the bar for halting, the frame moves directly to the actual position of the current stitch number. When user pulls bar for returning, the main shaft and frame keep inactive, but the stitch number decreases. After user pulls the bar for halting, the frame returns directly to the actual position of the current stitch number.

The positioning idling can move the frame directly forwards (or backwards) to a designated position, or to the latest color-change position, or even to the latest stop-code position. In the main screen press  and the user can select forward/backward positioning idling by stitches, color change code or stop code. After the system returns to the main screen, user can pull the bar forward /backward to complete the positioning idling.

2-10 Operation Bar and Turn Shaft Button

1. Operation Bar (Embroidery Bar under the Table)

Stop status: pull the bar to right to begin embroidery (including idling in high or



low speed) and pull the bar to left to return (including idling in high or low speed)

Running status: pull the bar to the right end to embroider slowly and release to normal speed and pull the bar to left to stop embroidery.

2. Turn Shaft Button (on the operation bar case, under the table at right side)

Press the button to make the main shaft rotate one cycle and stop at $100\pm 2.5^\circ$.

2-11 Thread-breakage detection and mending switch

Based on different working principles, thread-breakage detection devices are divided into three types: thread take-up spring type, thread winding wheel (chopper wheel) type and mixed type.

For thread take-up spring type, it warns thread-breakage by detecting connection of take-up spring and contact point. When thread breaks, the spring will close to the contact point. In normal condition, this detection device reacts sensitively to face thread breakage, but can hardly detect bobbin thread run-out. In case you change the embroidery thread, or thread tension changes, you need to adjust spring pressure between the take-up spring and contact point. When the spring pressure is too large, there will be False Positive; when the spring pressure is too small, there will be False Negative.



For thread winding wheel type, it judges thread-breakage by checking the winding wheel angle. It reacts very sensitively in case of face thread breakage; in most cases of bobbin thread run-out, the consumption of face thread will reduce, as a result, system will judge by statistic method and send out warning. Though it can almost avoid False Positive, it is not as sensitive as the spring-type.

For the mixed type method, these two detection methods can complement each other with their advantages, which results in sensitive and stabilized detecting effect.






No matter which method you use, there is one switch and one status light on each machine head. There are three positions to switch but only two positions can be locked. When you switch to the down side, status light does not shine, which means the head stops. When you switch to the middle, status light is green, which means the head is now in normal embroidery. In case of thread-breakage, machine stops and status light on that particular head turns to red. System automatically changes to mending mode on that head. If you want to set a single head to mending mode manually, you can switch to the upper side, which can not be locked. When you release the switch, it returns to the middle. Meanwhile, status light on this head will turn to red to indicate that mending mode available on this head.

2-12 System's Working Status


The machine has three working statuses:





1. Preparation status —— preset parameters; choose embroidery designs and perform other preparation works
2. Embroidery confirmation status —— confirm the parameter settings to enter the quasi-running status
3. Embroidery running status—— embroider the design

How to switch among the above work statuses?

In preparation status ( is displayed), after selecting pre-embroidery design and setting the parameters, user needs press "" key, and then press ""key. Now the machine is in embroidery confirmation status ( is displayed). User should pull the embroidery bar to right to embroider, which means the machine is in embroidery running status ( is displayed).



In embroidery running status ( is displayed), pull the bar to left to stop, now the machine is in embroidery confirmation status (Again, pull the bar right, the machine goes into embroidery running status).




In embroidery confirmation status ( is displayed), first press "  " key. And then press "  " key to release embroidery confirmation status. Now the machine enters preparation status ( is displayed).

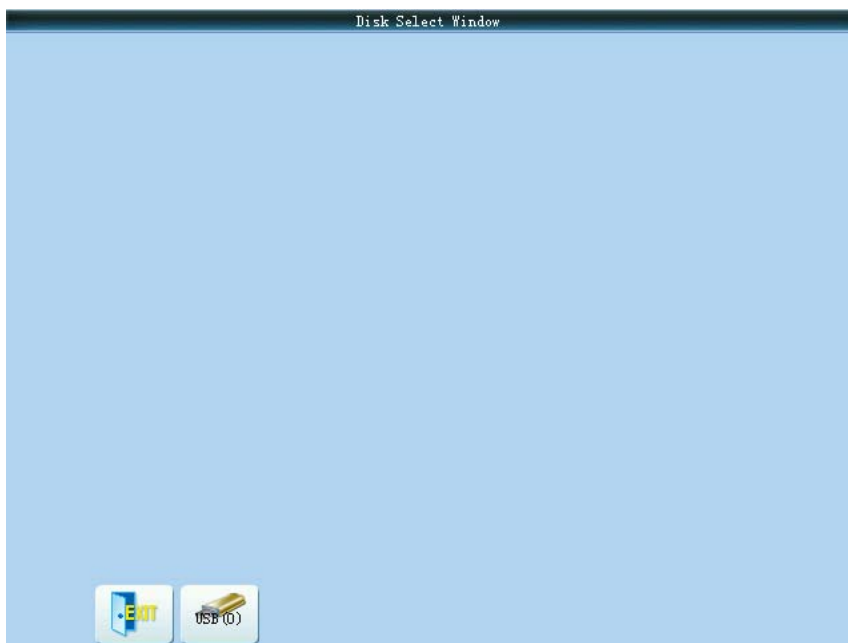
Chapter 3 Disk Management

In disk management, users can input the designs in the disk to machine, and vice versa; meanwhile, users can enjoy some common disk managing actions, like erasing file or catalogue, formatting disk, etc. Floppy disk (external device) and USB disk are both supported. Users can save design data based on different types. The system recognizes formats like DOS, FDR and ZSK. However, FDR and ZSK files are read only. Design formats like DSB, DST and DSZ can be read. For data output, design will be saved as DSB format.


3-1 Disk Selection

Since the system supports more than one storage device, please choose the target disk.

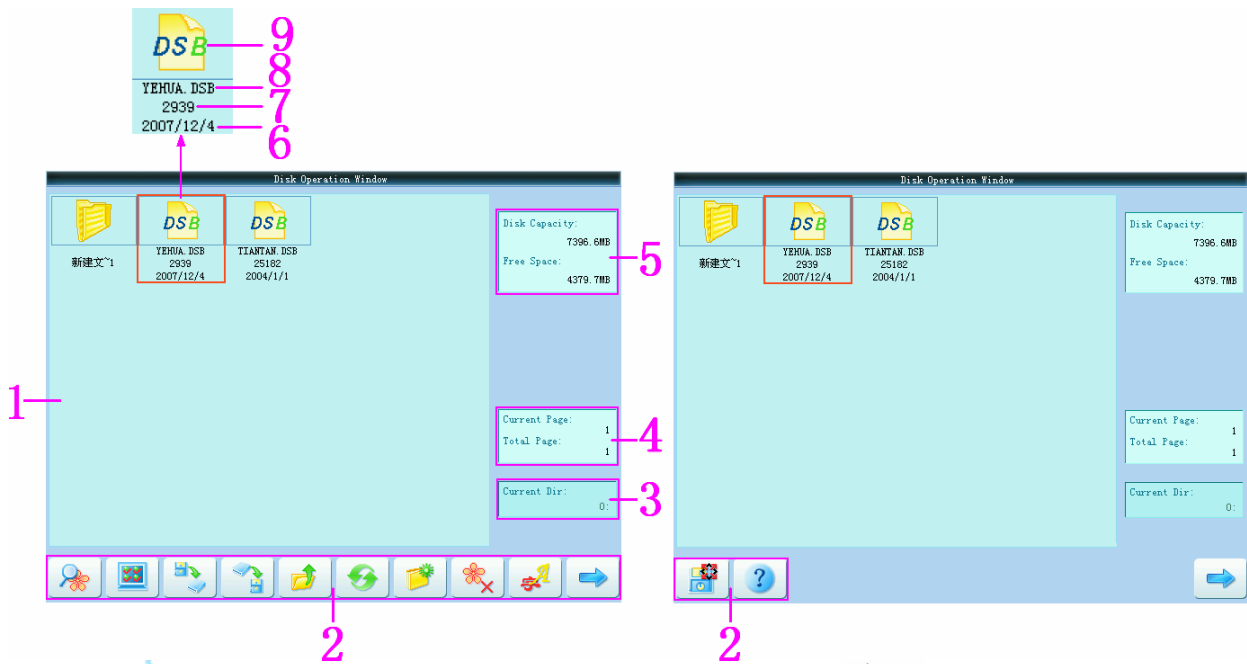
1. Click  in the main screen
2. The system shows the current disk. Select the disk intended for further operation. Press “” or “” to exit.















In this window, all the storage devices will be displayed. Their information includes the icons, words and numbers. The icon is the device type.  Means USB disk

3. Enter the Disk Management Screen.



Press  to switch between the two pages; press  to show designs in next page; press ,  to change to other design pages.

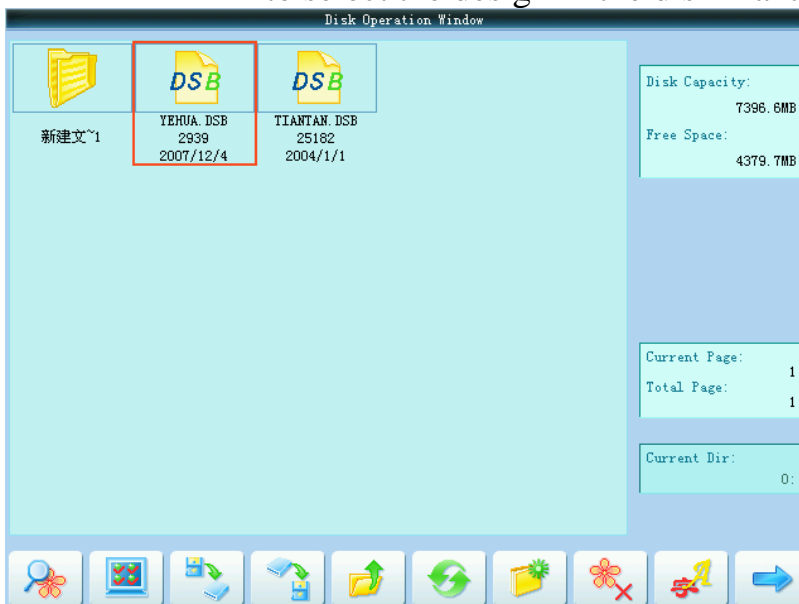
Number	Icon	Name	Description
1		File List	Display the design files and folders of the disk in icons. It's used to select files
2		Preview of designs	Display the shape of selected design and its information.
		Select all	Select all the items in the current folder.
		Design input	Input design from disk to memory
		Design output	Output design from memory to disk
		Previous directory	Go to previous directory
		Refresh the disk	Refresh current disk directory





Number	Icon	Name	Description
		Create new directory	Create a new directory on current disk
		Delete document	Delete the selected documents
		Monogramming	Operations relating to monogramming
		Format disk	Format the current disk
		Help	Display the help menu.
3		Current route	
4		Page information	The current page and the total page number
5		Disk space information	Show the total space and remaining space information
6		Design file date	It will be empty if it's not a design file.
7		Design stitch number	It displays the stitch number of the design. (it will be empty if it's not a design file.)
8		Names of the objects	Names of the files or folders
9		Icons of the objects	for folder for files of DSB form for files of DST form

3-2 Design Preview

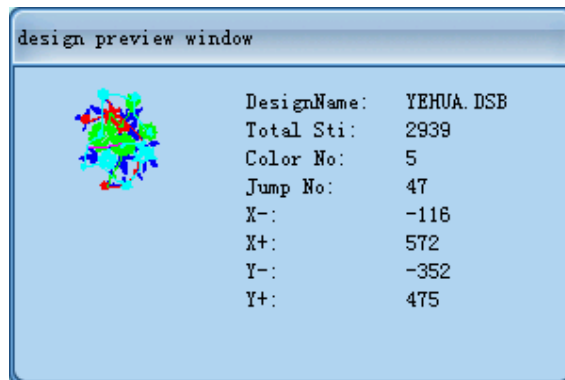
1. Use “” to select the design in the disk management screen.





Design files and folders are shown by icon in the list. Each page contains 20 objects. If the objects are more than 20 in current directory, please turn to another page to look for other designs. You can also use  PD 、  PU to find design in other pages. The selected object has a blue frame.

2. Press Design Preview Key



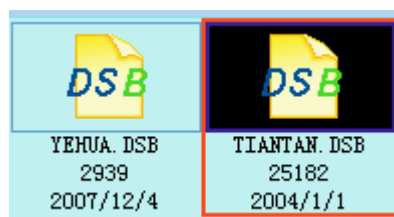
The system reads the data from the disk and displays the design's image according to a certain ratio. At the same time the design's peripheral information and color-changing number will be displayed.



Note: User can more than one design for preview. For selecting more than one design, please refer to chapter 3.3.

3-3 Select One or Several Designs




Before preview, input and deletion of files, the objective design has to be selected firstly. The user can select one object at one time, or select several objects at one time to improve efficiency.

1. Select one object




Press “” to move icon to the object and then press “” to select it, and then the icon and word information of the selected design will be showed in the blue square.

2. Select Several Objects for Operation in Order

At selecting several objects, you may press “” to move icon to the object and then press “” to select it. Repeat this operation to select more than one object. And you can press “” again at the selected object to cancel the selection.



3. Press  to select all the objects in the current folder

Pressing this key will have all the objects within the directory become selected.

3-4 Design import

To input the design data in the disk to the machine's memory, the user has to select files from one or more disks first, and then input the design number and name for the file to be saved.

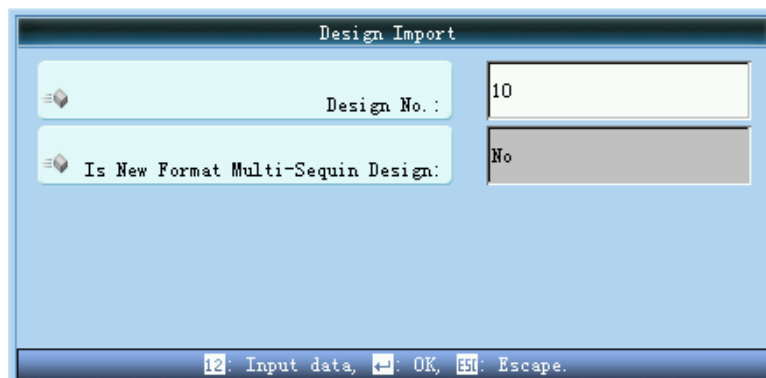
1. Select one or more files in the disk

2. Click the design input key




The system asks the customer to input design number and name for saving.

3. The user inputs the design number and name.



The system provides the minimum available design number as the default value, when user enter the interface for inputting the memory design number and design name. The customer can use the small panel on the right to change the value. When several designs are input at one time, the user can only input the number of the first design.

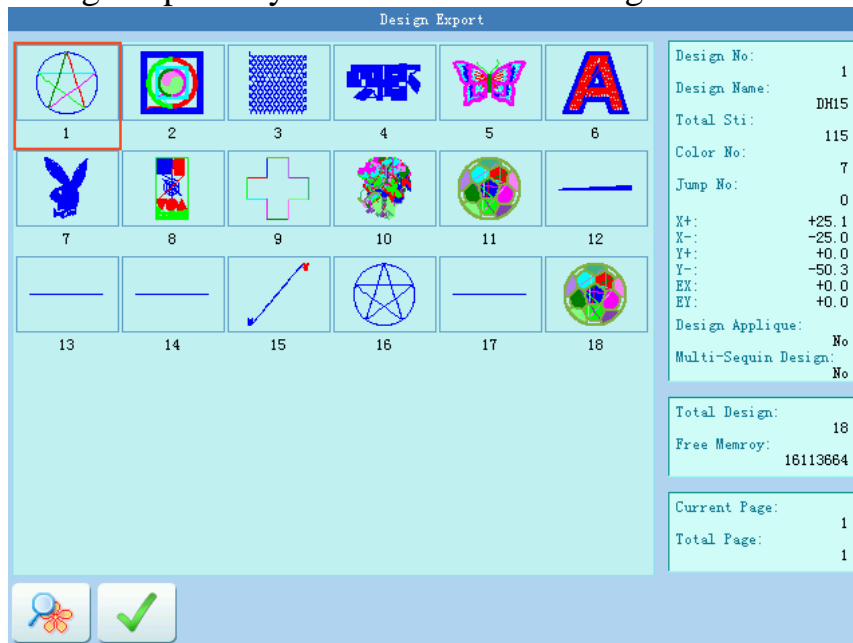
At modifying the design number and name, the system will firstly change the design number at default. After the modification, please press “” to have system to have access to the item for changing design name. Please input the name according to the hints.


4. Click the confirmation key “” to input the design on disk to memory.

3-5 Design Export

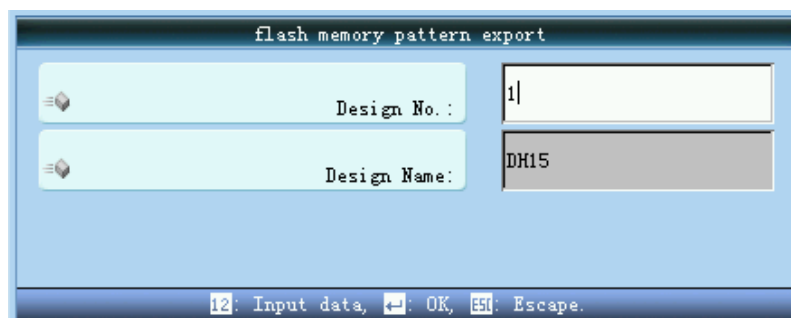
The user can output the design data in the system memory to the current disk.

1. Click the design export key . Select the design in the memory for output



The system displays the list of designs in system memory. The user selects the designs for output, and then click “”.

2. Input the design name & number for disk saving






The system uses the design name in memory as the default design name in disk.

User can use the keyboard to change the corresponding value

The method of modification is as same as that in “Design Import”. After the


changing, press “” to save the result.

3. The system returns to the disk management screen and refresh the list in current directory.


During the above operation, you can press “” to exit.

3-6 Directory Operation



1. Enter the directory

Select the directory and press “”. The system reads the item list of the directory and refreshes the screen.

2. Return to previous level

Press the key “” to return to the previous directory and the screen will be refreshed.

3. Make a new directory

Press the key “” and the system will ask user to input the name of new directory, press the key “” to build a new directory. System refreshes the current directory list.

3-7 Deleting Objects in Disk (Including Design Files and Folders)

1. Select one or more objects (See 3.3)

2. Click the deleting key “”

3. The system asks the user to confirm the deletion




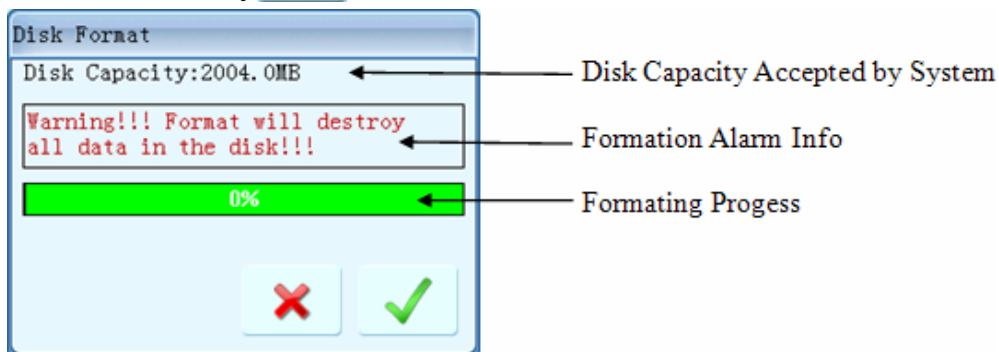
4. Press the key “” to delete; press “” to exit.

Note: If the user chooses to select the directory, the system will delete all the files and sub-directory in this directory. If a file has the property of “only read” or “disk write protection”, the file will not be deleted.

3-8 Formatting a Disk

1. Select the disk device for formatting (read 3.1 for reference)

2. Click the function key 



The system will change to the Format Disk screen, which will display the storage information of the current disk, warning information for disk formatting and formatting process bar as well as Start and Return button.

3. Click the Key “”

The system will begin to format the disk and show the speed with a process bar.

After formatting, the system will display the prompt to show formatting success.

Click the Return key to return to the disk management screen.


Note: the system will format the disk in DOS format.



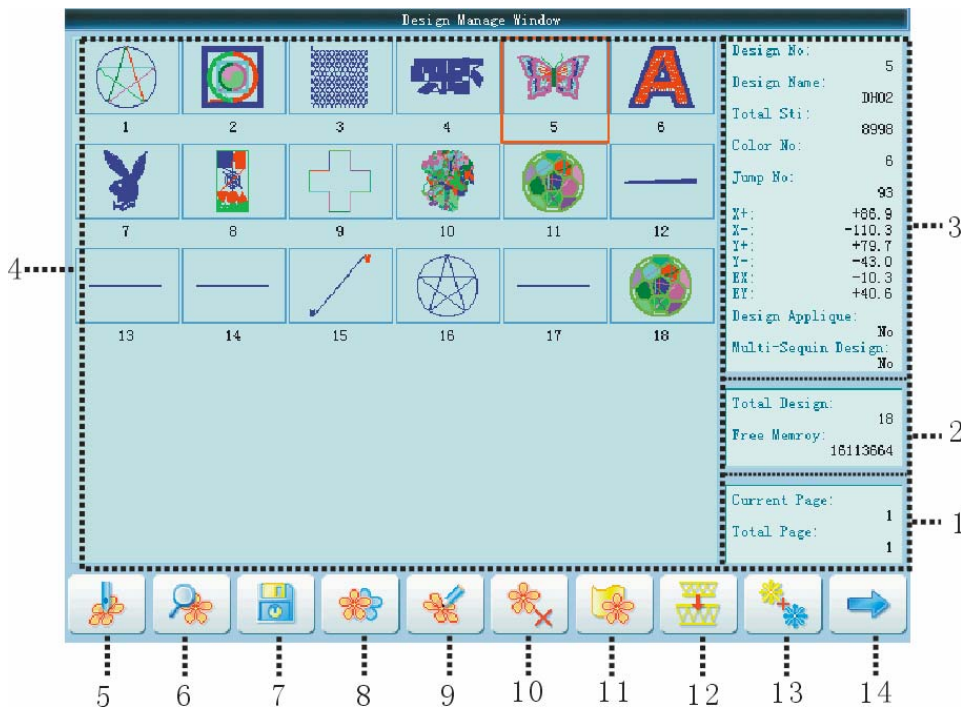
Chapter 4 Memory Design Management

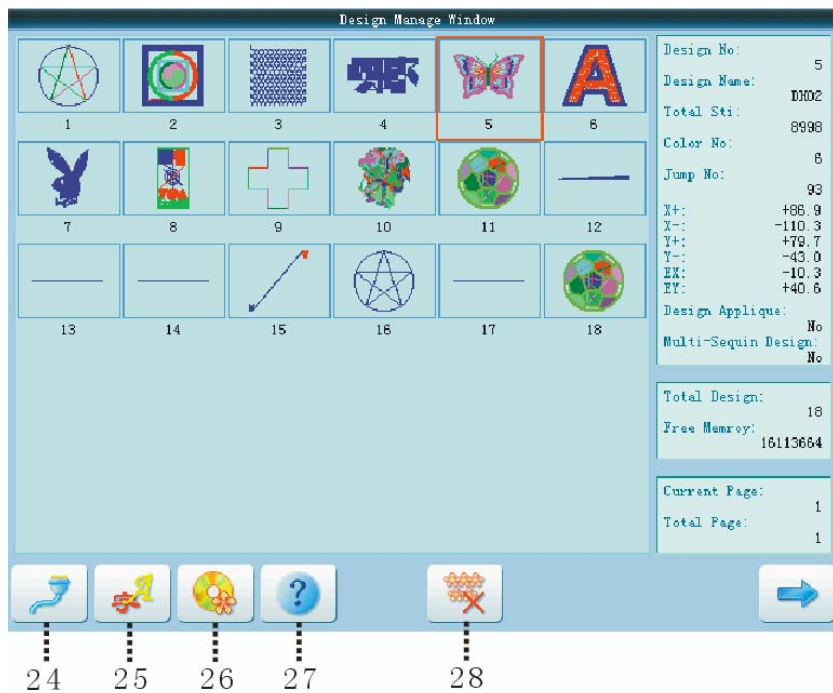
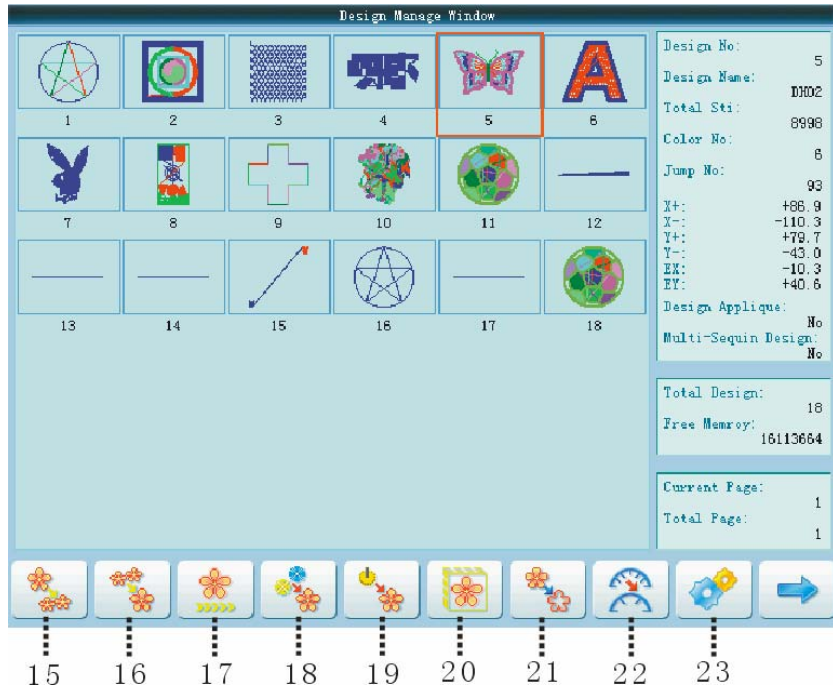
Memory design management includes selecting embroidery designs, settings and transfer of designs and operations to create designs.





4-1 Memory Design Management Screen and Other Memory Design Operation Screens



Click  in the screen to enter the memory design management window.

The memory design management window includes: design display area, information area and function menu area. The design image display area can show 30 designs at most; beyond that, more pages will be needed. The function menu area is used to preview designs and set their order.
























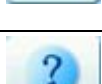




Press the key  to shift among three pages; press  to show designs in next page. Press  ,  to change different design page.

Number	Icon	Name	Description
1		Page information	Show the current page and total page number.
2		Total design number and memory information	To show the total amount of design and memory information



Number	Icon	Name	Description
3		Design information display	Display the detailed information of the selected design.
4		Design browsing	Design will be showed in icon mode. This is for design selection mainly
5		Select design	In the embroidery preparation, press the key to enter the selected design parameter screen, then confirm design parameter and use the selected design as embroidery design.
6		Design preview	Preview the design's details, scale up/down, move or imitate the design.
7		Disk operation	Please refer to Chapter 3
8		Copy the selected design	Press this key to enter the design copy window
9		Design edition	Editing the current design or new design, please refer to chapter 8
10		Delete design	Press this key to delete the current design
11		Set applique design	Press this key to set applique design
12		Satin stitch compensation	Set satin stitch compensation in memory design
13		Packed design edition	Press this key to enter into combined design editing
14		Design division	To cut one design into two designs
15		Design union	To combine two designs into one designs
16		Generate high speed design	Press this key to enter high-speed design generating window
17		Create design from packed	This function is to generate standard design from combined designs
18		design from parameter	Generate design by parameter



Number	Icon	Name	Description
19		Frame and make design	Press this key to the interface for creating design with frame motion
20		Create outline from design	Press this key to the interface for creating outline design from normal design
21		Copy design with varied stitch length	Copy design according to the set stitch length.
22		Design parameters operation	Press this key to set parameter of design
23		Input design from PC	Press this key to the interface for input design from PC
24		Monogramming operation	Press this key to go to Monogramming interface, please refer to chapter 9
25		Sequin Edition	Press this key to go to sequin edition interface
26		help	Display the Hints of design management interface
27		Delete all designs	Press this key to delete all memory designs. After clearing the entire patterns, the system will add No.100 Punching Pattern in the memory.

See the following specifications for each operation. Press the key “” to go back to the memory design management menu.

4-2 Select object

Before any operation on designs, you must select the target designs. You can select one design at each time or select several targets in one time to raise efficiency.







1. Select one object

Press “” to move icon to the object and then press “” to select it. The icon and words of the selected target appears in the blue squares.






At the selection, if the system is in multi-selection status, user can select several objects.


2. Select the items one by one

At selecting several objects, user can press “   ” or the design number key to move icon to the target item and press “” to select it. Repeat the process to select more. Or you can press “” to cancel the selection.

4-3 Selecting a Design for Embroidery

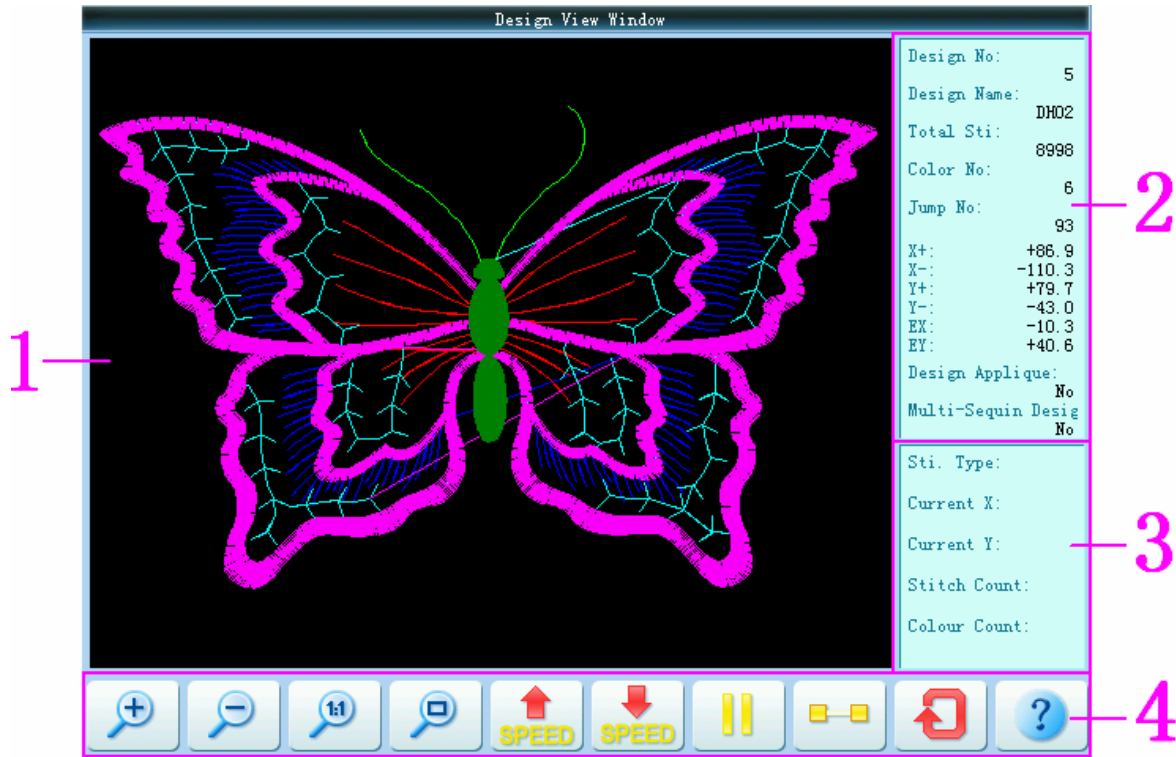
1. Select a new design (Ensure that the system is in preparation status .)
2. Press  in the main screen to enter the memory design management screen.
3. Select the design in the memory design image area of the memory design management screen.
4. Press  to enter the screen for setting the memory design parameters.

There are 30 parameters relating to the design, some of them can only be modified after the administrator password is released. The setting method of it is same as other parameter setting procedure. Please refer to 5.2 for details.

5. After changing the design parameter, press “” to quit. User can use the selected design for embroidery. If the operation is completed, the system will close the memory design screen to return to the main screen.

4-4 Design Preview

The selected design can be previewed in the memory design preview screen according to the designated way.



Number	Icon	Name	Description
1		Design preview area	Display the selected design on the designated way and speed.
2		Design information	Display the design information.
3		Stitch Track Information	
4		Zoom out	Zoom out the design picture in the design preview area.
		Zoom in	Zoom in the design picture in the design preview area.
		Real size display	Display the design in its actual size in the design preview area.
		Zoom to window	Display the design to the full size in the design preview area.
		Speed up	Accelerate the display.
		Speed down	Decelerate the display.
		Draw/pause switch	is for switching between drawing design and pausing the drawing.
		Manual display	Draw the design by single steps.




Number	Icon	Name	Description
		Redraw	Display the pattern in 2D/3D
		Help	Display the help menu.

1. Click in the main screen to enter the memory design management screen.
2. Select a design in the memory design image area of the memory design management screen.
3. Click in the memory design screen to open the memory design preview screen.

4. Click in the design preview area to control the design size. Click “” to control the design display position. Click to locate the design to the center. Click to control the design display speed. Click to control the design display and pause. Click to automatically switch to halt for single step design display. And click to resume normal display. Click to shift between 2D pattern and 3D pattern. display the pattern again. to redisplay the selected design.

4-5 Copy the memory design



1. Press in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.
3. In the memory design management screen, you may press “” to enter its operation screen. The system will automatically provide the available smallest design number and default design name. If the user doesn't want to change them, go to 6 directly.

4. To input a new design number, press “design number” and input the new number in the pop-up window, and then press “” to confirm the input.





5. To input a new design name, press “design name” and input the new name in the pop-up window.

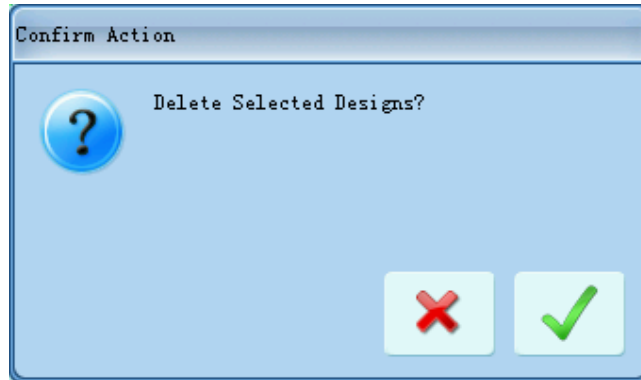



6. Press “” to confirm the input, carry out the copying operation and return to design operation selection interface. Press “” to cancel the copying operation without saving and return.

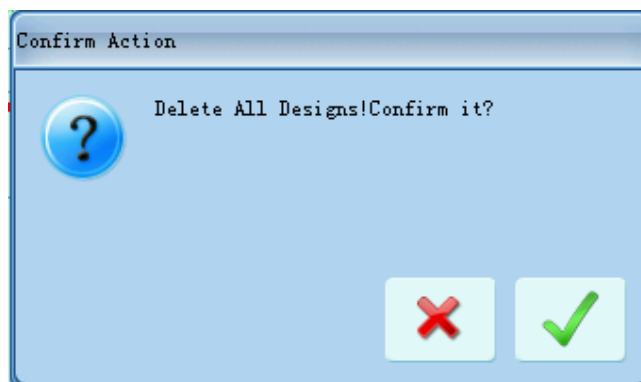
4-6 Delete the memory design



This is to delete one or more designs in the machine memory.

1. Press  in the main menu to enter the memory design management screen.
2. Select the design. The user can choose to select one design or several designs at one time.
3. In the memory design management screen, you may press  to enter the design deletion screen.





If you want to clear all the memory design, press .



4. Press “” to carry out deleting and then return to the design operation selecting screen. Press “” to cancel deleting and return.

4-7 Add applique design


The system has two ways for applique embroidery: manual moving frame out and automatic moving frame out.


Manual moving frame out: when meeting the stop code, the machine will stop automatically. User needs move the frame to the proper position for applique with the manual frame-moving button. Then you may press  and “” to return to the stop point. At last pull the bar for embroidery.

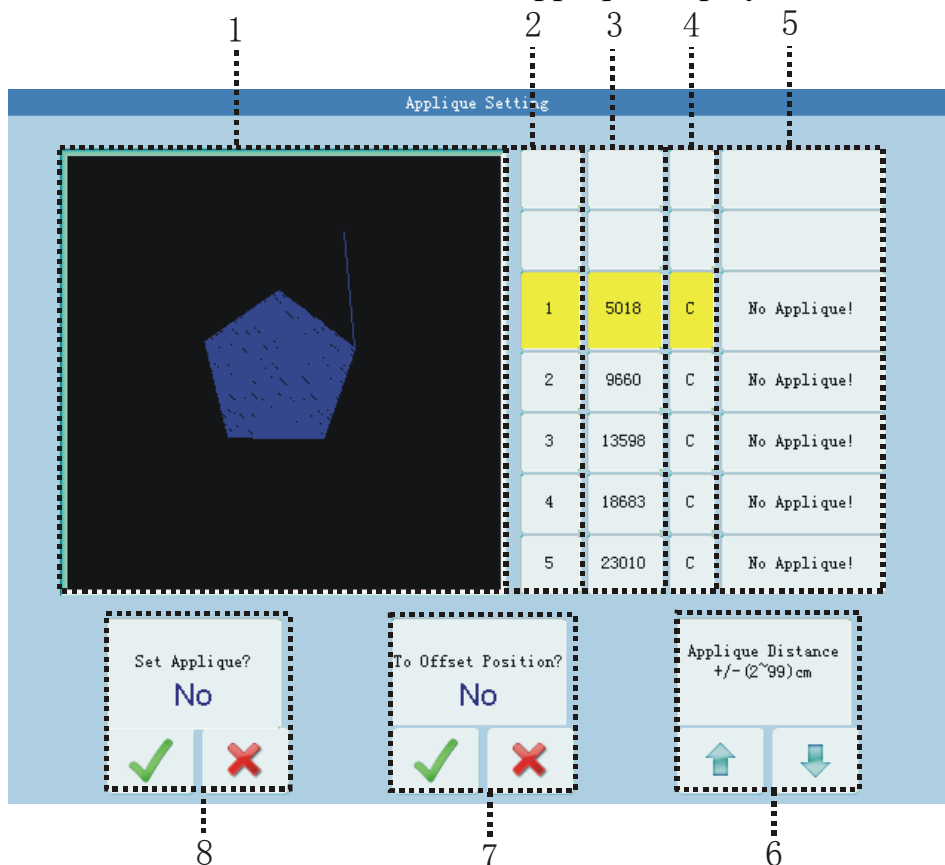
Automatic moving frame out has two ways: moving frame to the offset point and setting the moving distance. The operation is as follows: Firstly set applique

embroidery function for the design. Then when reaching the applique point, the machine moves to the offset point (which has to be set) or move out according to the set distance. After applique, pull the bar and the machine will automatically return to the stop point to continue embroidery.

The following is how to add applique to the design:

1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.

3. Press “” to enter the screen to set applique displayed as below:









Number	Name	Description
1	Design display area	Real-time display of the design when machine embroiders to the applique point
2	Sequence number list	Show the sequence number of the position to set applique point.





Number	Name	Description
3	Stitch number list	Display the stitch number at that position.
4	Type list	The stitch code type C: color-changing code S: stop code
5	Option list	Type of applique at this position: 1. No applique 2. Set offset position 3. Applique distance
6	Frame-out distance	Select the applique distance (frame-out): (2cm to 99cm) or (-2cm to -99cm)
7	Whether to go to the offset position	Choose whether to set the offset position
8	Applique embroidery selecting list	Choose whether to set applique embroidery.

The design display area shows the design which is being set with applique. After user sets the applique position, the design will be refreshed and the result will appear directly.

4. Press  to move the list to the position for applique. Then you can press  (which is after “Add Applique?”).


5. If choose to move the frame out to the offset position, press  (which is after “To Offset position?”). If the frame-out is at the fixed distance, firstly press  (which is after “To Offset position?”), and then press   to set the moving-out distance: (2cm to 99cm) or (-2cm to -99cm) .


6. Repeat 4 & 5, to set all the applique positions of the design.

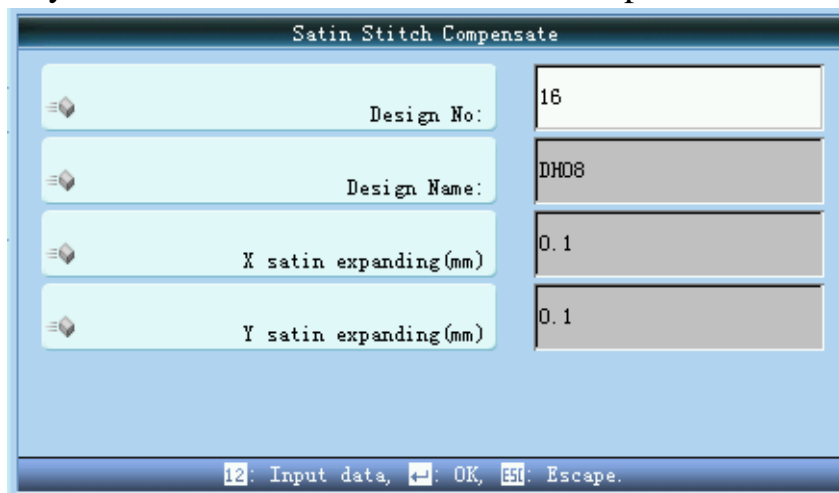
7. Press “” to save the appliqué information in the original pattern operation and return to the screen for selecting the design operation. Press “” to cancel operation and return to the screen for selecting design operation.

4-8 Satin stitch compensation





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

1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.

3. Press the key “” to enter the satin stitch compensation screen.





Field	Value
Design No:	16
Design Name:	DH08
X satin expanding (mm):	0.1
Y satin expanding (mm):	0.1


4. If user doesn't use the default values, press  to change them with keyboard.
5. Press “X (Y) Space Between two Design” to input the new value, and then press “” to confirm it.
6. Press “” to adjust the satin width, save it as a new design and return to the design operation selecting screen. Press “” to cancel the setting and return to the design operation selecting screen.

4-9 Edit packed design

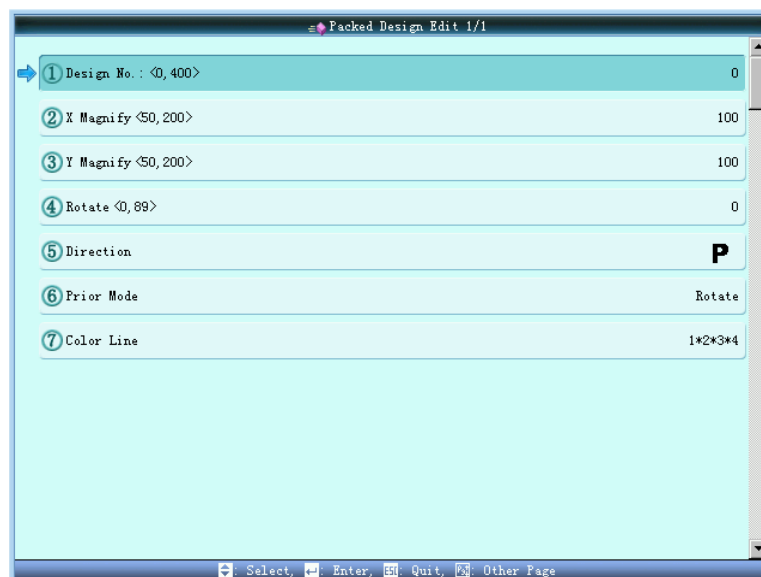
The packed design (combined design) means a design group packed from certain memory designs (less than 99) after user sets their parameters. The packed design is set as automatic continuous embroidery. In the memory design management

screen the icon of the packed design is displayed as . To embroider a packed design, user needs return to the memory design management screen after creating or editing the packed design. If it's already in the embroidery preparation status, user should select the design and the system will automatically return to the main screen. Then after embroidery confirmation, user can pull the bar for embroidery. The user can also compile the packed design into the common design by using the editing function, so as to check and embroider the design.



1. Press  in the main menu to enter the memory design management screen.
2. To edit the saved packed design, user needs select that packed design first. To create a packed design, user needs carry out the following operations.

3. Press the key “” to enter the packed design editing screen.

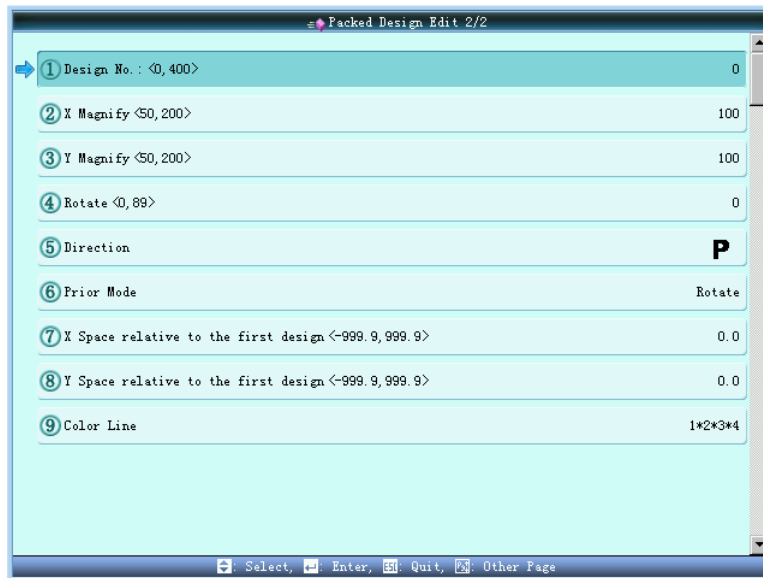
The serial number indicates how many designs form the packed design and the number of current operated design.




4. Set the parameters of the first design, including design number, scale ratio, rotating angle, design direction and priority mode as well as color-changing order.



5. Press “ PD ” to set more designs for packing. And press “ PU ” to go back to change the parameters of designs packed.

If the current design is not the first design in the packed design, user should set the interval between it and the first design.




6. Press the key “ ESC” to save the packed design.



7. After inputting the design number and its name, user can press “ ENTER” to save it and return to the design operation selecting screen. Pressing “ ESC” is to cancel the operation and return to the design operation selecting screen.


4-10 Design division


The action will divide one design into two designs at the pointed stitch.

1. Press the button  on the main screen to enter the memory design management screen.





2. Select a design.

3. Press the key “” to enter the design division screen.

4. If you do not use the default value provided by the system, please input the design number, design name, division stitches by using the keyboard, then press **ENTER** “” to confirm them.



Design Divide	
Design No. 1:	16
Design Name 1:	DH03
Design No. 2:	17
Design Name 2:	DH03
Divide Stitches:	1582

[F12]: Input data, [Enter]: OK, [Esc]: Escape.

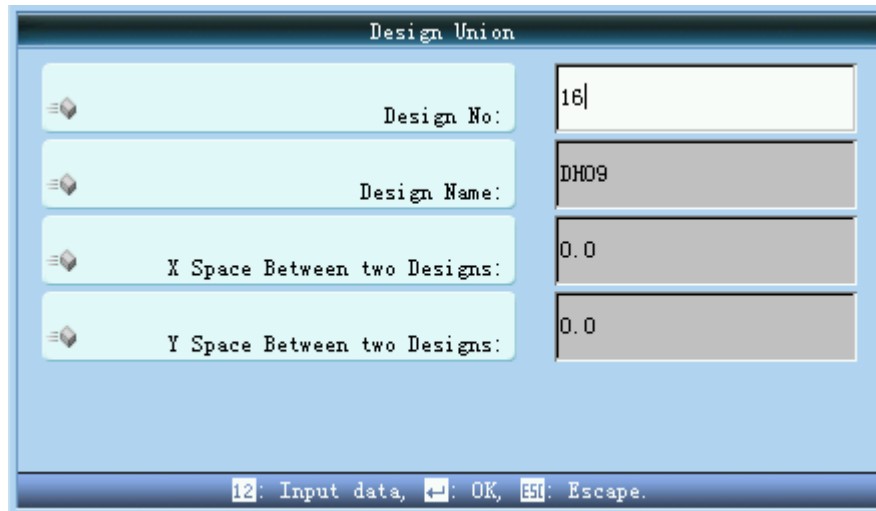
5. Press “” to divide the design into two new designs and return to the design operation selecting screen, or press “” to cancel the operation and return to that screen.



4-11 Combine the designs

This function is to combine two designs into a new one. The interval between the two designs is the distance from the end point of the first design to the start point of the second design.

1. Press  in the main menu to enter the memory design management screen.
2. Choose two designs in design selecting area. Press the key “” to enter its operation screen. If More than two designs are selected, there will be a prompt to tell you to reselect.






3. If you don't use the default values, you can use keyboard to change the design number, design name and X (Y) interval.



4. Press “” to combine and return to the design operation selecting screen.
Press “” to cancel the setting and return.



4-12 “High speed design”

The function can cut the long stitch form into short ones, which keeps embroidery in consistent high speed.

1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.
3. Press the key “” to enter the high speed design screen.
4. If user doesn't use the default values, user should press “” and change the value with keyboard.
5. Press “” to create high Speed Design and return to the design operation selecting screen. Press “” to cancel the setting and return.



4-13 Compile Packed Design

The action will create normal embroidery design from combined design.

1. Press the button  on the main screen to enter the memory design management screen.
2. Select a saved combined design.
3. Press the key “” to enter screen for creating normal design from packed design.





Input the new design number and name as required.




4. Press “” to save it or press “” to cancel the operation and return to the design operation selecting screen.

4-14 Create design from parameter

This is to change the setting of color-changing order and normal parameters such as scale and repetition, which is attached to a specific design, so as to create a new design.



1. Click  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.
3. Click “” to enter the screen for creating design from parameter.

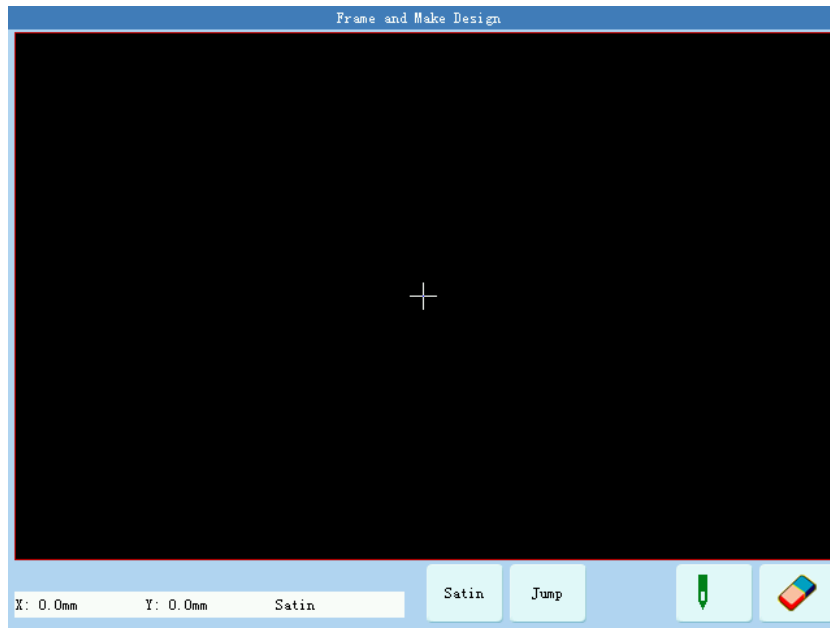









4. Click “” to input new design number and name.
5. Click “” to create a new design and return to the design operation selecting screen. Click “” to cancel creating and return.

4-15 Move frame to make design

The user often wants to embroider the boundary of a design before embroidering it, so as to provide convenience to the later applique operation. The function of “Move frame to make design” can create such a design, and you can select the new design to embroider the boundary.


1. In embroidery preparation status, stop the frame to the point, where the embroidery will be started.
2. Press  in the main menu to enter the memory design management screen.
3. Press the key “” to enter the screen for moving frame to make design.







4. Press   to switch between satin stitch and jump stitch. Press the manual frame-moving key to move the frame along the desired route. Press  at every turning point to confirm the trace.
5. Press  and then “” after editing, and the system will hint user to input the number and name of the new design.
6. According to the hints, user can input the number of the new design (The computer will provide a number for choice automatically) and design name. Press “” to create the new design.
7. Press “” to cancel the setting and return.

4-16 Create outline design from normal design



This function is to create a new design according to the outline of the designated design.

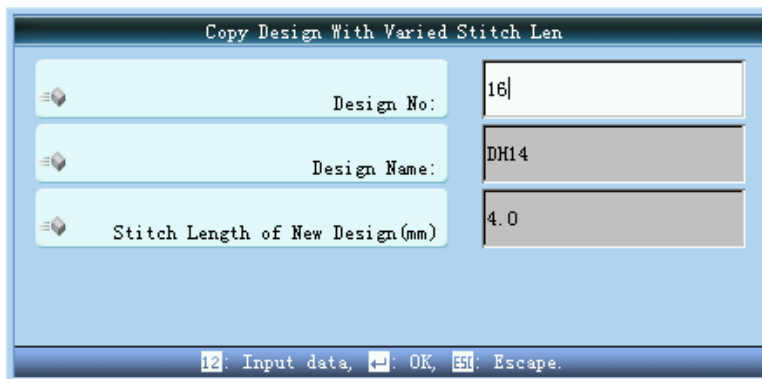
1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.

3. Press the key “” to enter the screen for creating outline design from normal design.
4. If user doesn't use the default values, press “” and change them with keyboard.
5. Press “” to create a outline design and return to the design operation selecting screen. Press “” to cancel the operation and return.

4-17 Copy design with varied switch length




This function is used to create the design with the same shape but the different stitch length.

1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.
3. Press the key “” to enter the operation screen.





Copy Design With Varied Stitch Len	
Design No:	16
Design Name:	DH14
Stitch Length of New Design(mm)	4.0

Input data, OK, Escape.

- If user doesn't use the default values, he should press “” and change them.
4. Press “” to create a design with new stitch length and return to the design operation selecting screen. Press “” to cancel the setting and return.



4-18 Design parameters operation

Each design is attached with its color-changing order and normal parameters such as scale, repetition and so on, which can be checked and set here.

1. Press  in the main menu to enter the memory design management screen.
2. Select the design in the memory design image area of the memory design management screen.
3. Press the key “”. If the selected design is the current design, the embroidery parameter setting screen will pop up. Please read Chapter 5 for reference.

If the selected design is not the current embroidering design, the non-embroidery parameter setting screen will pop up.



For setting parameters, please refer to 5.1 and 7.1. After setting, press the key **ENTER** “” to save the parameters with the design. Press the key “” to return to design operation screen.



4-19 Import design from PC

This function is not supported in this model yet.

4-20 Network Management Function

The network management function enables to realize the remote real-time supervision on machine working status and batch download.

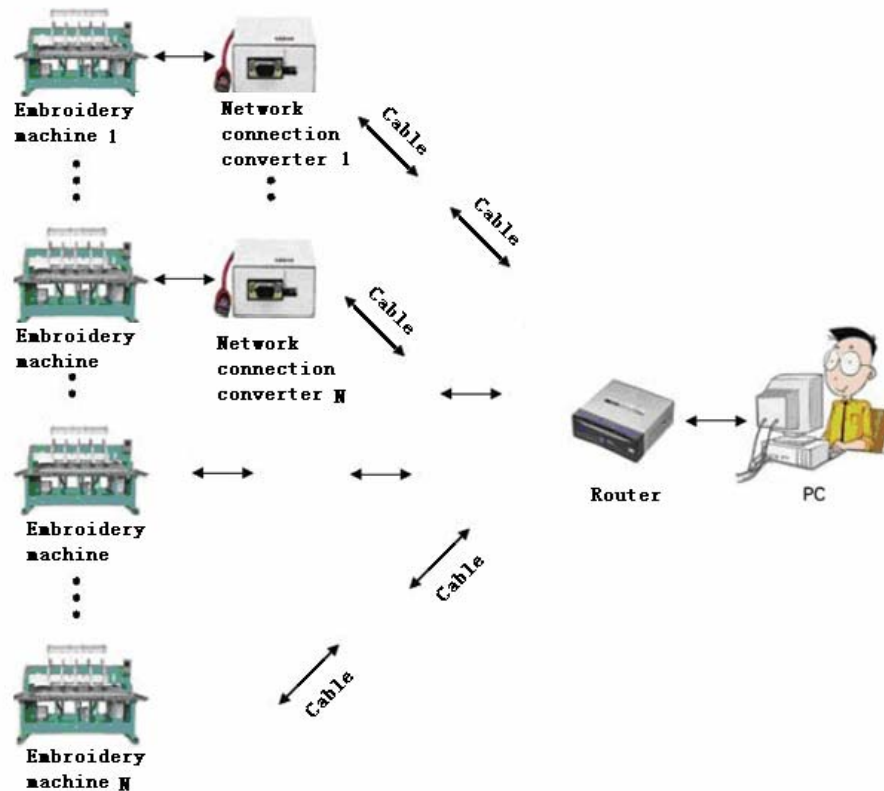
1. Network Function and Characters

(1) Embroidery Machine Supervision: Check the current status (on or off) of the entire embroidery machines; check the detailed information of one embroidery machine (including embroidery parameters, mechanical parameters and so on).

(2) Embroidery Design Management: Input the local designs, classify the designs, check the designs, transfer the designs to the embroidery machine, check or delete the designs in memory of embroidery machine.

(3) Embroidery Machine History Inquiry

2. Conditions for Realizing Network Functions



- (1) PC
- (2) PC Software, like EmbNetServer & EmbClient;
- (3) Cable, hub (or switch) and other network tools;
- (4) Dahao network connection converter and the serial port cables;
- (5) Dahao computerized embroidery machine(at present, this function is supported by 1x2, 2x2, 1x8, 2x8, xx6, 322, 328, x9S, Ax8 and Cx8 series) and the corresponding main software that supports this network function.

3. Network Function Application

The network functions are divided into two types, which are NET-03 Type and Network Port Type.

- (1) NET—03: This type is to realize the network function by using the serial port 232 on mother board. (Use direct network cable to realize network connection)



(2) Network Port Type: This type is to realize the network function by connecting the PC to network port directly. (The cross network cable is needed for connection) .

4. Procedures for Installation & Debugging

(1) Ensure the connections of mother board, hub, Dahao network connection converter, embroidery machine computer serial port or network port are ok. And make sure the communication is ok;

(2) Set the IP address of PC;

(3) Set system IP, server address, port number and other parameters of embroidery machine computer.

(4) Run server software EmbNetServer


(5) Run the client software EmbClient

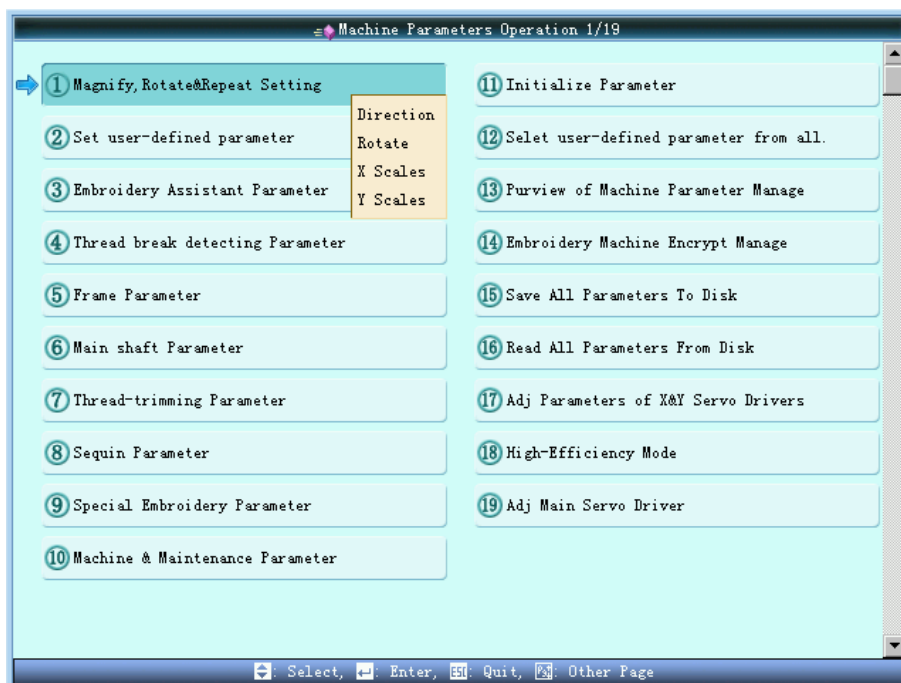



Chapter 5 Management of Machine Parameters

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

This system supports multi-missions at the same time. So it's possible to set or change the normal parameters and color-changing order of non-current designs. The entrance for the operation of those designs is at the corresponding operation screen under the memory design management screen (Please refer to Chapter 4) .

Press  in the main screen to enter the window at below:

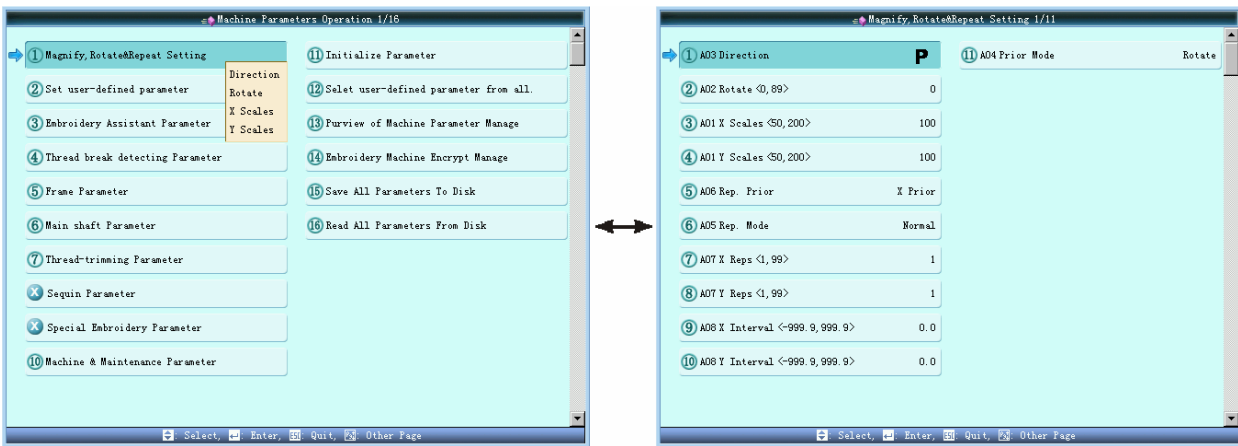


As the image shows, when you move the icon to a kind of parameters, system will show some parameters (4 at most). Press “” to enter the screen for setting that kind of parameters.

5-1 Normal Parameters

Normal parameters include: “X&Y Scales”, “Rotate”, “Direction”, “Prior Mode”, “Rep. Mode”, “Rep. Prior”, “X&Y Reps” and “X&Y Interval”. The user can control the final embroidery results by adjusting these parameters. That’s why these parameters are often adjusted when a design is selected.

In the embroidery preparation status “”, press in the main screen and then “ ENTER” to enter the normal parameter setting screen.



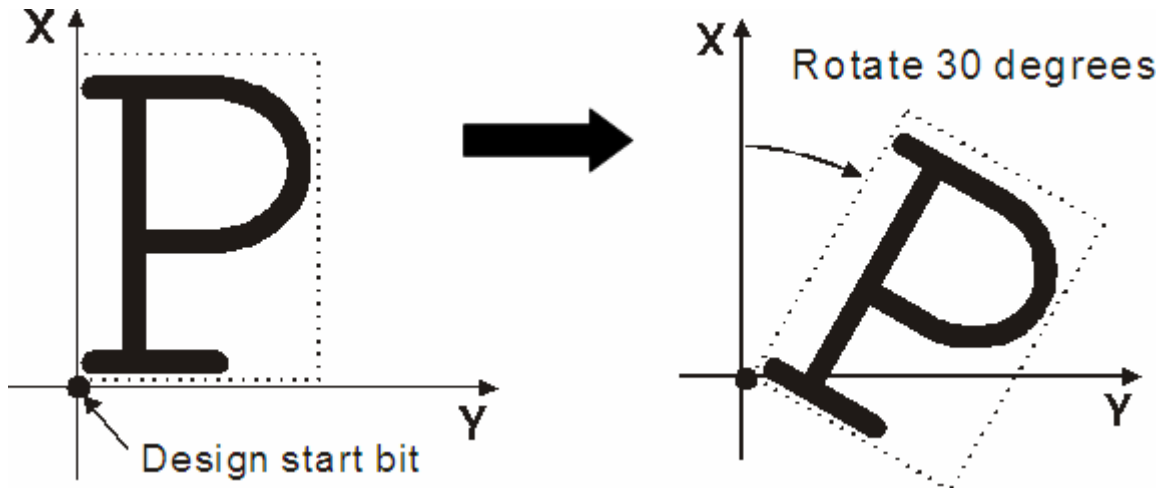
The ways to set parameters are similar. This chapter will explain how to set the “X Scales” as an example and give the definitions of other parameters (Read 5.1.3 as reference).

5.1.1 Design directions

Design direction	P	⤴	⤵	⤶	⤷	⤸	b	⤵	P
Embroidery shape	F	⌌	⌋	⌎	⌍	⌏	⌐	⌑	F

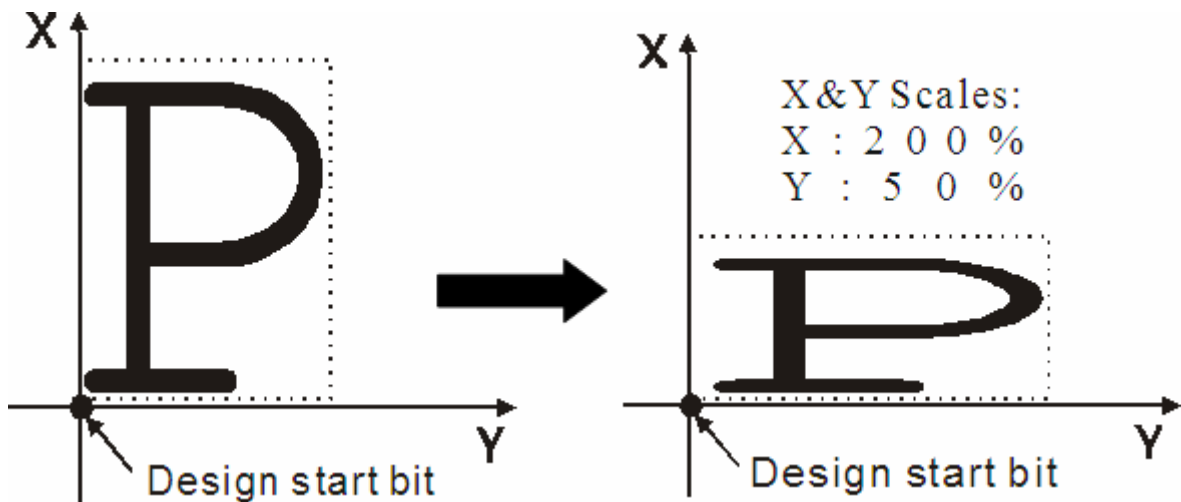
5.1.2 Setting of rotation

The user can make the design rotate in a certain angle with this parameter.



5.1.3 Setting of X-scale

This parameter controls the scaling percentages in horizontal (X) direction, so as to scale up/down the design.







1. Press the option "X Scale"



Press “X Scale” in the normal parameter screen, and the screen will show the parameter-setting window.

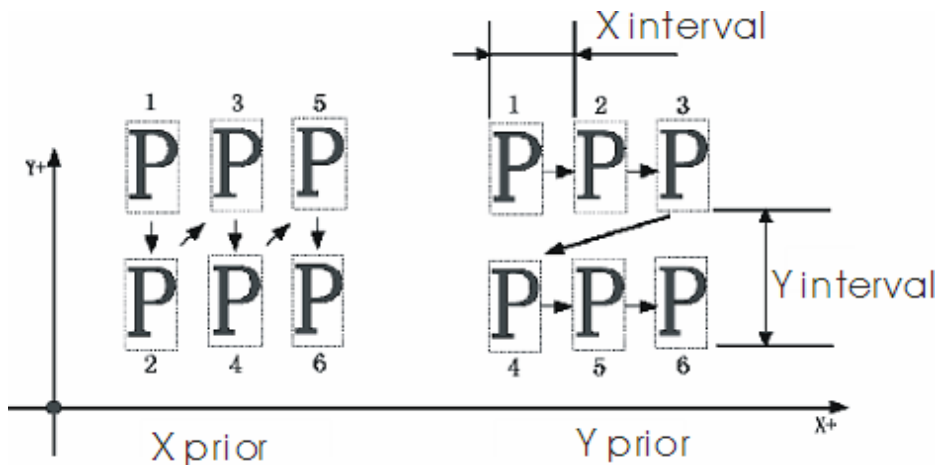
2. Set the parameter “X Scale”

Press the number panel in the parameter-setting window to change the scaling ratio in X direction. The user can press  to cancel the last input digit. Note: some parameter value is input by pressing .

3. Press the confirmation key “” to save the change. Or press “” to exit.

5.1.4 “Rep. Prior”

There are two modes: X prior to Y and Y prior to X.





5.1.5 “Rep. Mode”

Currently, system supports common repetition and part repetition. Common repetition means: after embroidering a design, system will embroider the repeated design; part repetition is based on the color, when finish embroidering one color in all the designs, system moves to the next color.

5.1.6 “X&Y Reps”

X Reps of this parameter sets the number of rows in repetition, and Y Reps of it sets the number of columns in repetition. The above diagram shows that X Reps is 3 and Y Reps is 2. The largest set value is 99*99.

5.1.7 “X&Y Interval”

The above diagram also explains the meaning of this parameter.

5.1.8 “Prior Mode”

There are two modes: rotating prior to scaling and scaling prior to rotating. When the user has selected the “Rotate”, the design will rotate first and then scale up/down with the setting rotating prior to scaling. Otherwise it will scale up/down first and then rotate.

5-2 Setting of other embroidery parameters

Other parameters include 8 groups: embroidery assistant parameters, thread-breakage detection parameters, frame parameters, main shaft parameters, thread-trimming parameters, sequin parameters, special embroidery parameters and machine configuration & maintenance parameters. For some machines with parameter-protected function, some parameters can be attached passwords by


administrators or embroidery factories. For setting the administrator passwords and the factory password, as well as initialization of parameters, please press

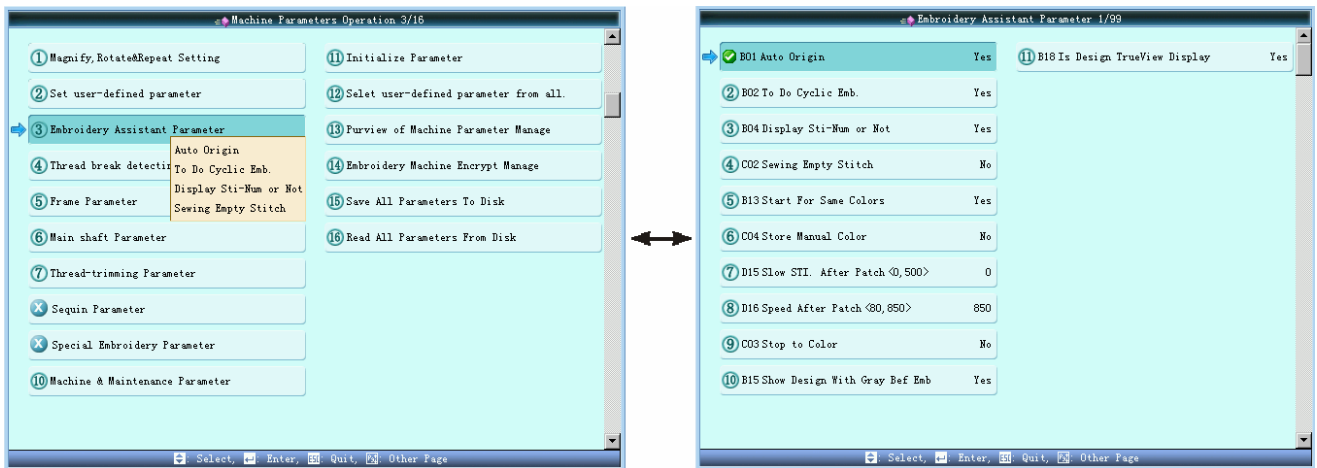


to enter the “purview of machine parameter manage” screen. (See Chapter 5.4)

Refer to the appendix one for description of each parameter.




1. Press  in the main screen.

2. The system enters the parameter setting screen, and press “” set the parameters.



Note:



1、 The number, name and value of every parameter are displayed in the parameter list window.

2、 At the machine has attached passwords: The parameter with  can't be changed unless the administrator password is unlocked; parameter with  can't be changed unless the factory password is unlocked. When a parameter is labeled by a number, then it can be changed by pressing “”.



5.2.1 Setting Procedure for Other Parameters

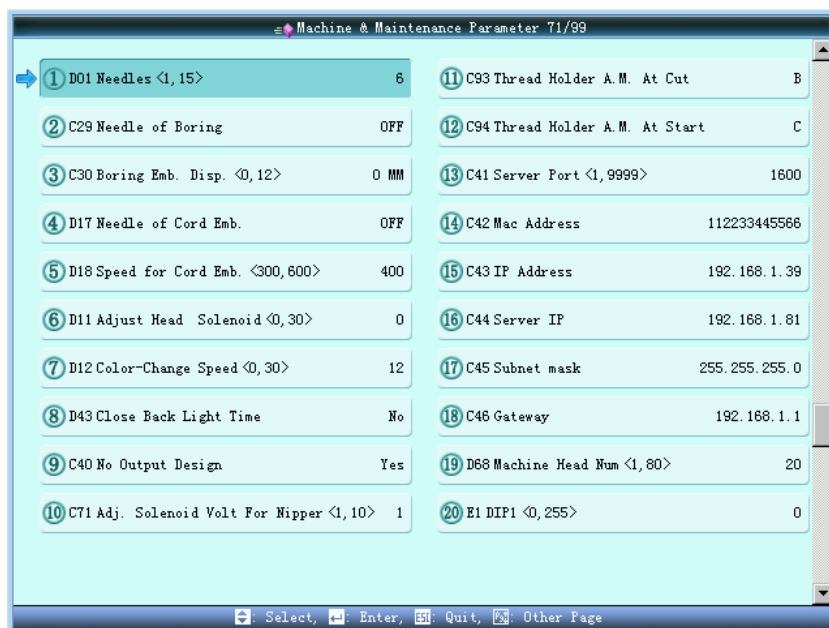
The setting procedure is similar for each general parameter. User can set them according to the description in this section.




Select the parameter group. Move the cursor to the parameter group to be changed, press “” to enter into parameter setting. Move the cursor to the parameter and press “” to change. Make sure the parameter is unlocked if the machine have password-protected function (See Chapter 5.4)



1. For instance, if you want to modify machine stitch count parameter, which is located in the first item “D01 Needles <1, 15>”, “machine & maintenance parameter”.

- (1) Press  in the main screen, move the cursor to “machine & maintenance parameter”, press “”:





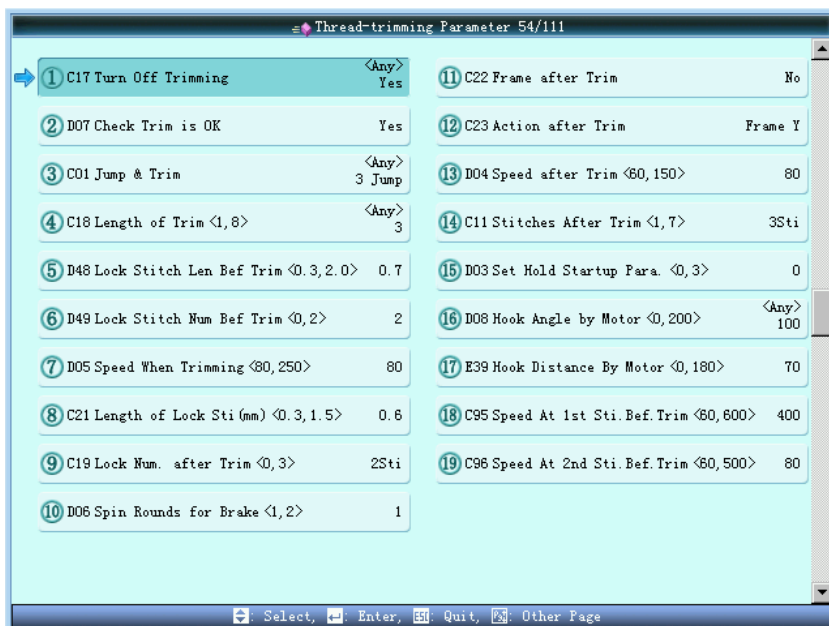
- (2) Select the parameter to be changed, select D01 Needles <1, 15>, press “”:




(3) Input needle numbers and press “” to save it. Press the key “” to turn back to machine & maintenance parameter.

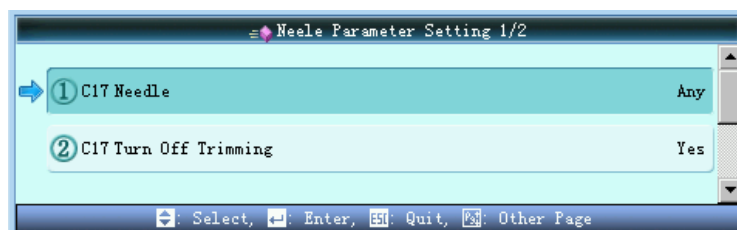
2. Exp: For changing the setting of the sub-stitch position parameter, that parameter is at “C17 Turn off Trimming” which is the first item in “Trimming Parameter”.



(1) Press “” in main interface and move icon to “Trimming Parameter”. Then press “” to enter the following interface.







- (2) Select the parameter for changing “C17 Turn off Trimming” and press “” to display the interface as below:



According to the requirement of the mechanism, user can select the corresponding needle position and set the parameters for each needle position. After setting, user needs press “” to save the setting or press “” to quit.


Note: Some of the parameter can not be inputted, you can only use   to select.

5.2.2 Introduction of Functions in Other Parameters

There are brief introductions of the parameters in the appendix one. Here are some functions used in embroidery.

1. Cyclic Embroidery

This function can increase the embroidery productivity.

When the parameter “To Do Cyclic Emb.” is set as “Yes”, the cyclic embroidery function is enabled and the icon  will appear in the main screen. When this function is enabled, after completing the designated design, the machine will automatically embroider it again without pulling the bar.

Usually, cyclic embroidery accompanies repetition embroidery or special punched designs, and the parameter “Auto Origin” should be also set as “Yes”. Thus when the machine is embroidering the back embroidery cloth-piece, the front one



can be replaced by user. After embroidering the designated design, the frame will automatically return to the start point and the machine will automatically embroider the front cloth-piece again and at this time it's possible to replace the back one.

2. Store Manual Color-changing

In embroidery confirmation status, the user can choose whether to store the manual color-changing's needle position into the color-changing order unit. Its purposes are as followed: 1) If mistakes are found at the automatic color-changing order during embroidery, the color-changing order can be modified with manual color-changing. 2) When a new design is embroidered with manual color-changing once, the color-changing order is set for the design.

To use this function, the user should set the parameter "Store Manual Color" as "Yes". Note: the parameter value will automatically change into "No" at the end of embroidery of one design.

3. Brake Adjustment (A Must for New Machine)



This function is to adjust the control parameters for braking, so as to fit machines with different mechanical characteristics, which may also change with the machine running. Thus this function can help the machinery parts to work better with the computer. The function depends on the two parameters "Set Brake Para" and "Main Motor Para."

"Set Brake Para" is to adjust the stop position of the main shaft. When the main shaft often stops at less than 100 degree, the user can increase the parameter value.



When the main shaft often stops at more than 100 degree, the user can decrease the parameter value. Thus the user can adjust the value to let the main shaft stop close to 100 degree. The value can be set between 0 and 30.

“Main Motor Para.” is to adjust cooperation between main shaft motor and machinery parts. The parameter value can be set between 0 and 30, and set as 0 in most situations. When during braking the main shaft vibrates without moving or rotates in the reverse direction, or looks like lacking of brake strength, the user can increase the parameter value.

After adjusting these parameters, the user can press the task swift key on the panel to return to the main screen. Press the key  and “ENTER”  and “←”, to check the effects of the parameter adjustment. If the user is not satisfied with the effects, he can press the swift key on the panel to return to the parameter setting screen, where he can adjust the parameter setting again. Close the parameter setting screen in the end.

4. Forbidding Design Output


The function is to forbid unauthorized copy of the designs in memory (into the disk). If the machine administrator set “No Output Design” as “Yes”, other persons are unable to output the designs to the disk. If the user needs to output, he has to cancel “No Output Design” first.

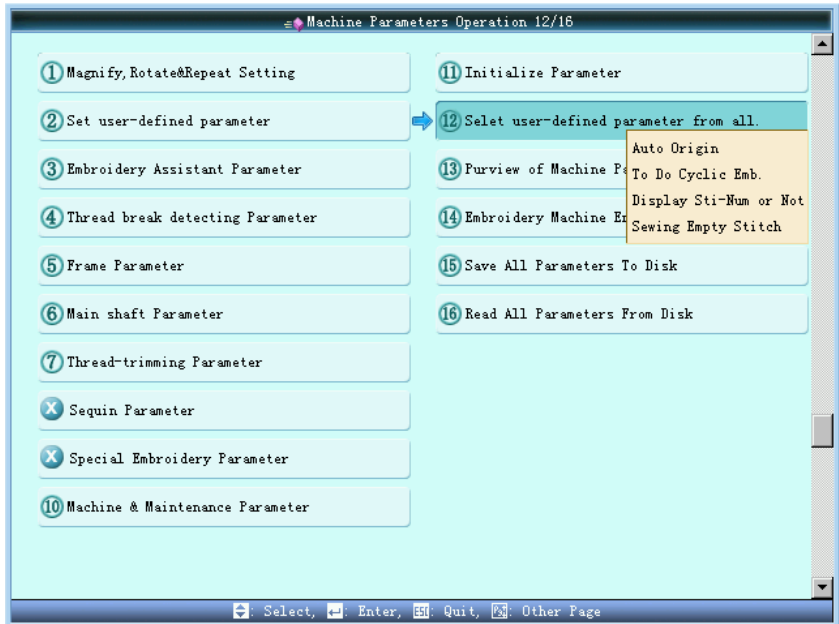
5-3 Set User-defined parameter



This function should be used with “select user-defined parameter from all”. “Set user-defined parameter” makes it easy to set the frequently changed parameters.

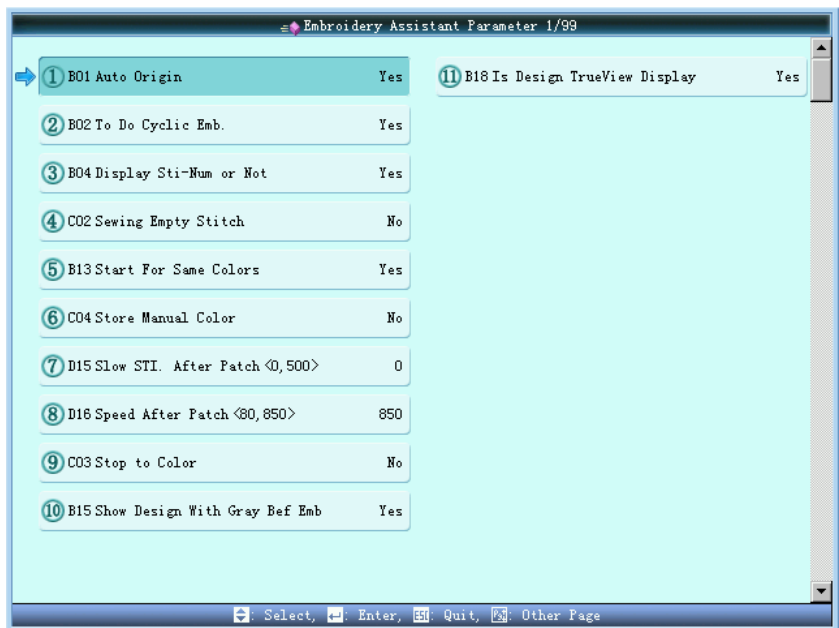
The setting should follow the steps as below:







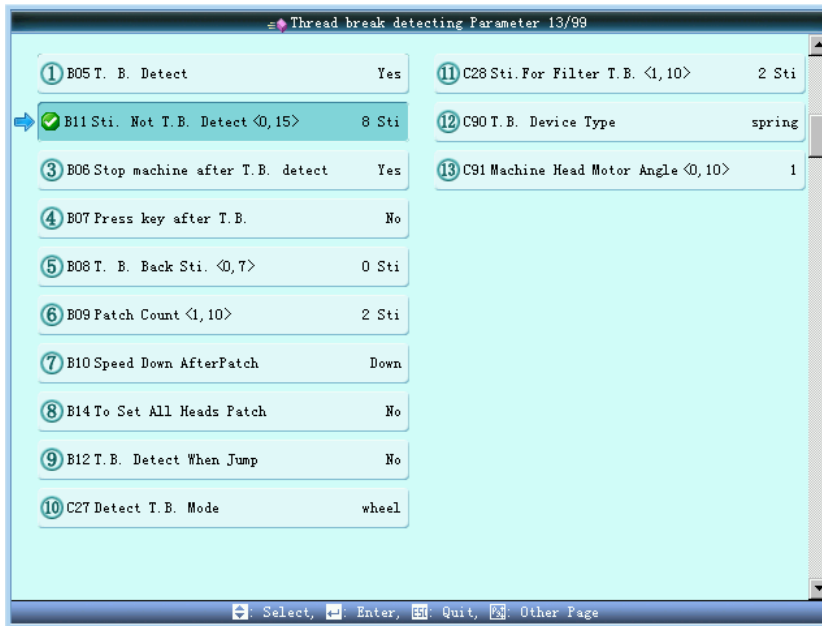
1. Press the key  in the main screen, move the cursor to “select user-defined parameter from all”.





2. Press the key “” to make this parameter as user-defined parameter, then this parameter will be listed into user-defined parameter list. You may press “” to cancel.

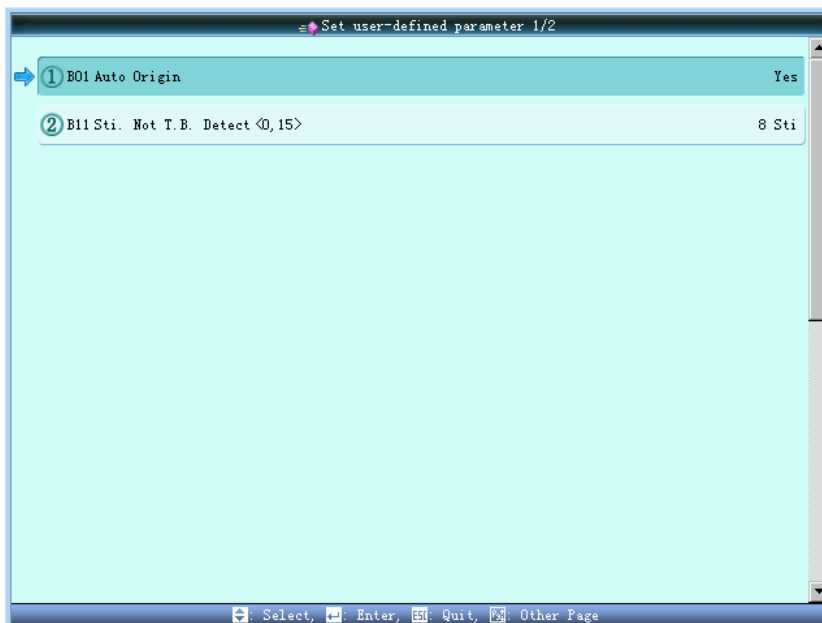


3. Press  to go to the next page. Repeat the step 2. Then press  ,  to shift between the pages. The user-defined parameters are labeled with .



4. Press the key “” to save and system goes back to machine parameter screen.

5. Move the cursor to “set user-defined parameter”, press the key “” to enter user-defined parameter screen. The setting is similar to other parameter setting.



Note: when you enter the screen of user-defined parameter, system will automatically clear the saved ones.

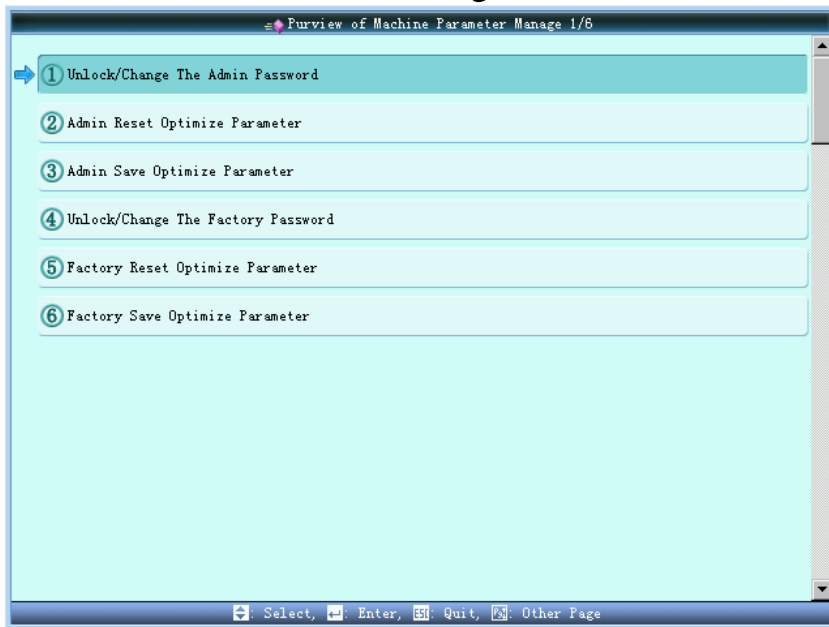


5-4 Purview of Machine Parameter Manage

Note: This section operation is fit for the machine with password-protected function only.

For the convenient management of machine, the common user can't access to the setting of all parameters; the roles of the customer are divided into the common user, machine administrator and factory customer. The purview of the common user is the lowest, can only modify the embroidery parameter of the machine, machine administrator can also modify managing parameter, but the factory user can modify all parameters.



Press “Purview of Machine Parameter Manage” to enter the following screen.




If the password is set and the machine administrator or the factory customer needs modify the parameter, he must input the password before any change. In this screen you can also change password, save or restore parameters.

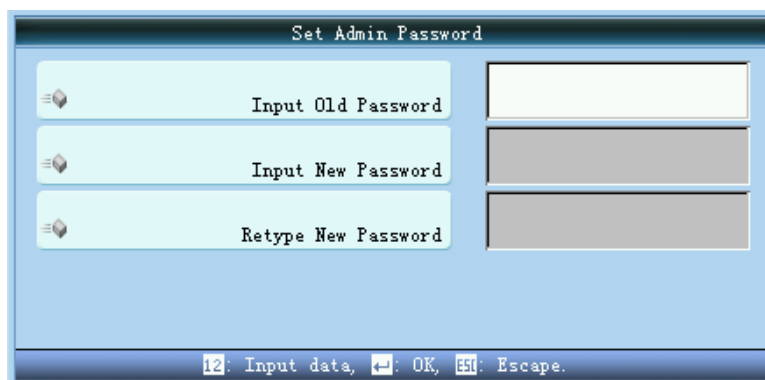
5.4.1 Unlock/Change the administrator password

When the machine leaves the producer, it's without password, namely the customer can change all the parameter. After password setting, the common customer can't modify the machine application parameter. The administrator has to input the right password before modification.

1. Press  in the main screen to enter into machine parameter management, move the cursor to unlock/change the administrator password, press “ ←”.






2. Move the cursor to “Unlock/Change the admin password”, press “ ←” and input the old password then input a new one.

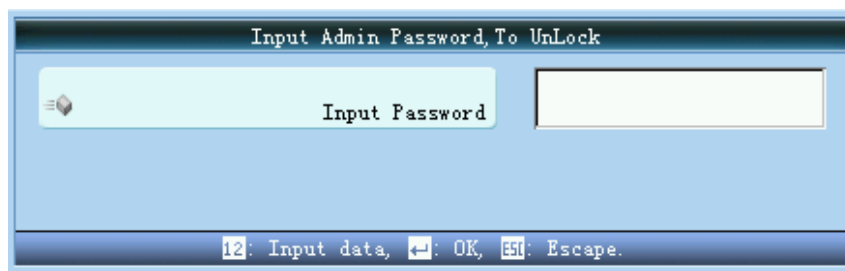


The administrator needs to input the old password and new password one by one. The machine producer will tell the administrator about default password which is in 4-9 digits. To prevent the user's wrong operation, the new password must be input two times in the same times.

5.4.2 Machine Administrator cancels machine lock

After machine administrator set the password, the machine is locked. The common customer can't modify the machine application parameters. To set these parameters, the administrator must input the administrator password or the factory password. The machine will be locked after power-on at each time.

1. Press  in the main screen to enter into machine parameter management, move the cursor to purview of machine parameter manage, press “”.
2. Move the cursor to “Unlock/change the factory password” and press “”.



System shows password input screen.

3. Administrator input password


After input the password, system is unlocked; you can modify related machine parameters.

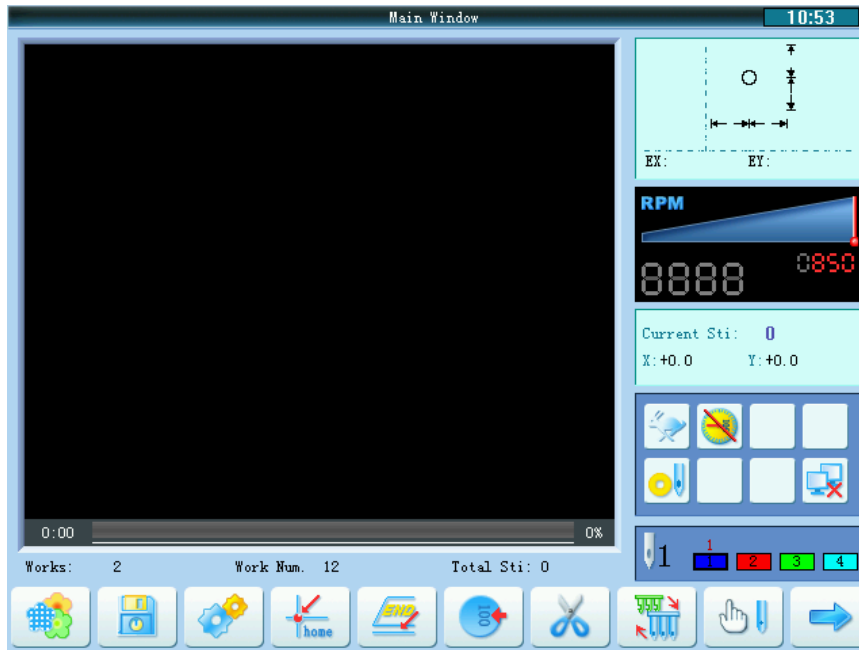
5.4.3 Administrator reset (or save) the optimized parameter




Operation:

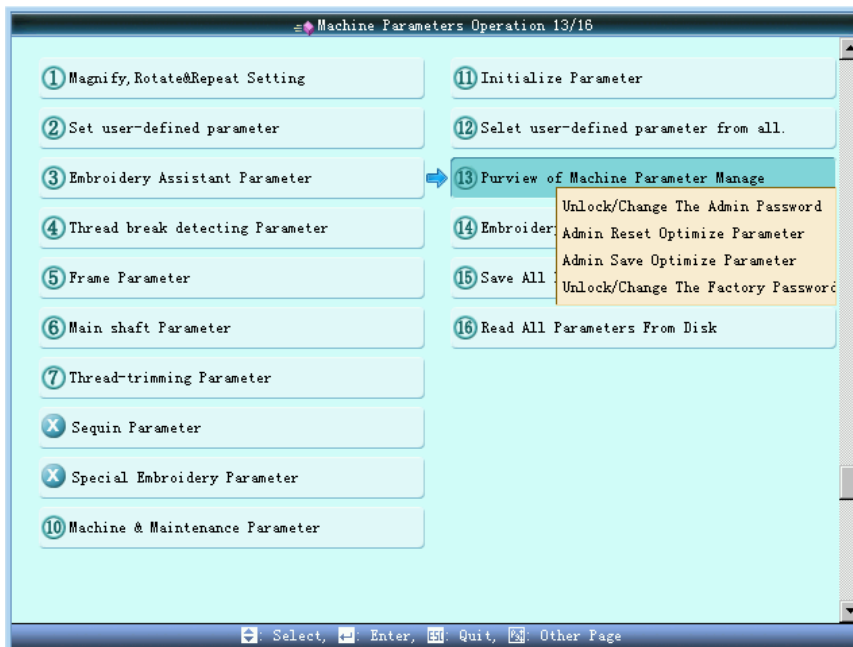
1. Administrator saves the optimized parameter



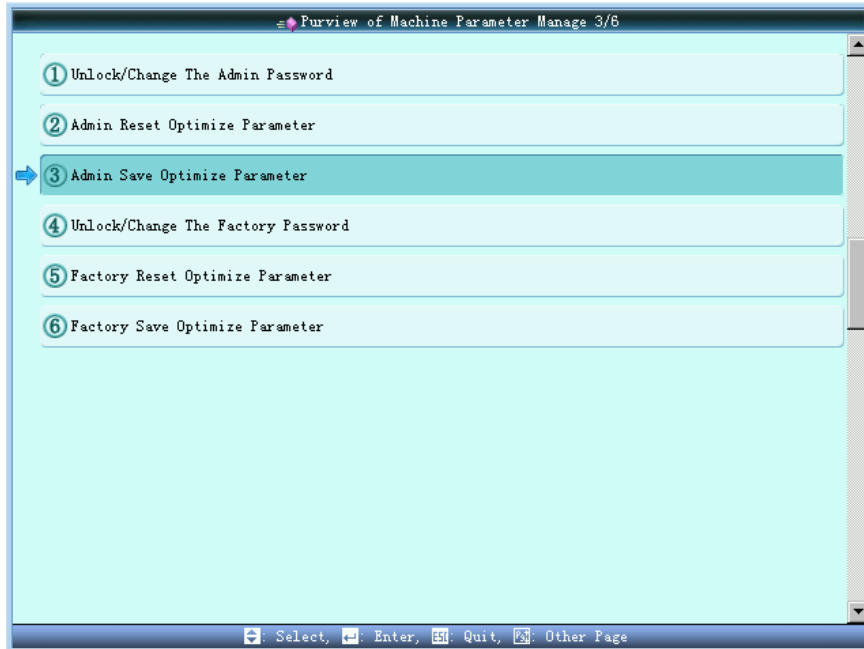
1) At main interface , press "  "key to have the menu appear as following.



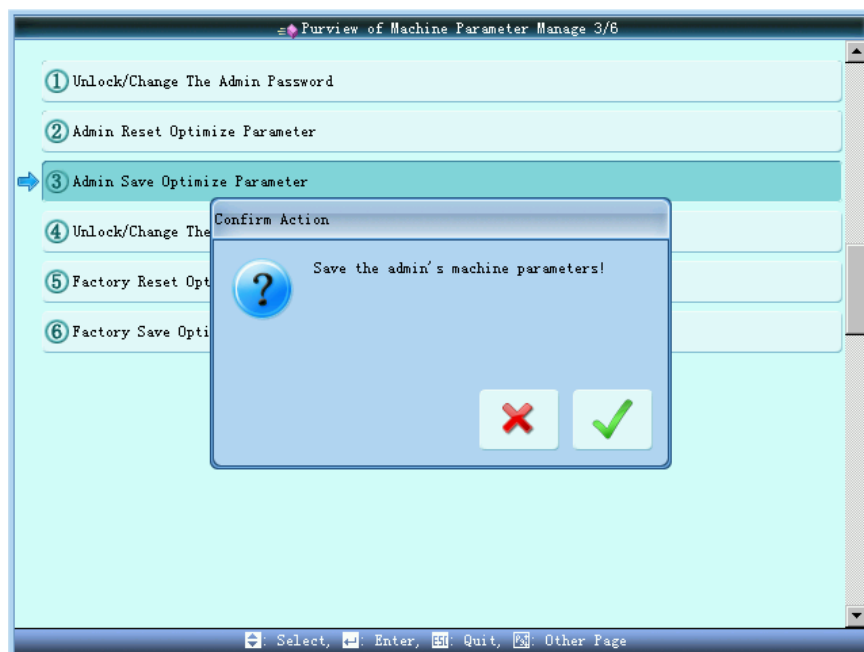
2) Press "  ", "  " to move the cursor to " Purview of Machine Parameter Manage", and press "  "key.



3) Press "▲", "▼" to move the cursor to "Admin Save Optimize Parameter", and press "ENTER" key.




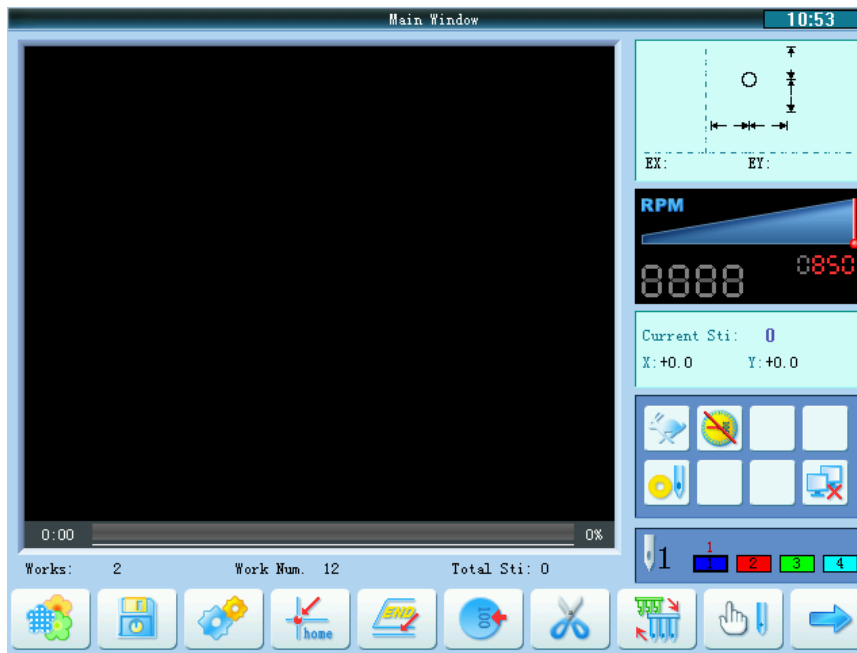
4) Turn up "Admin Save Optimize Parameter", and then press "ENTER" key.






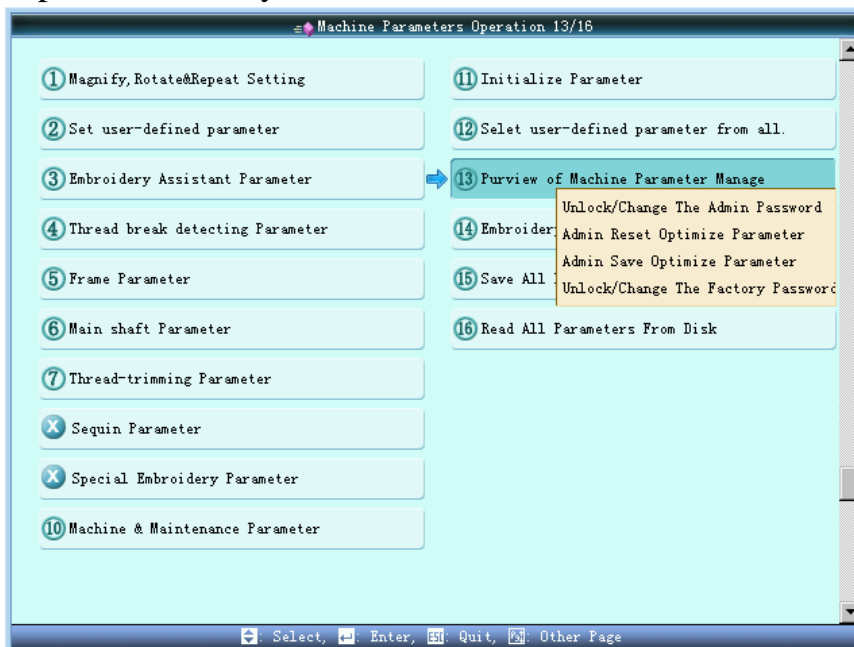
After finishing the operations at above, the parameters are saved successfully. If user needs rest the optimized parameters, please follow the steps at below:




2、 Administrator reset optimize parameter

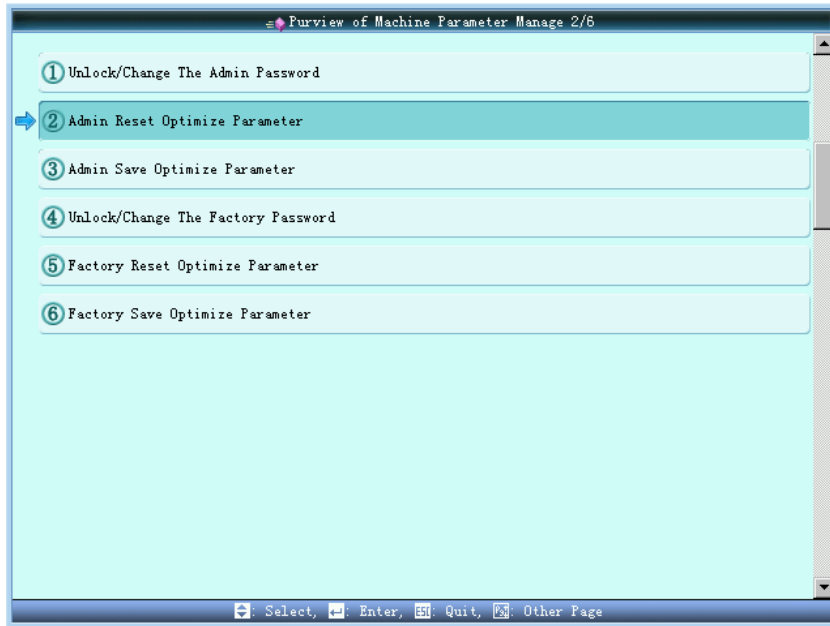
1) At main interface , press "  "key to have the menu appear as following.



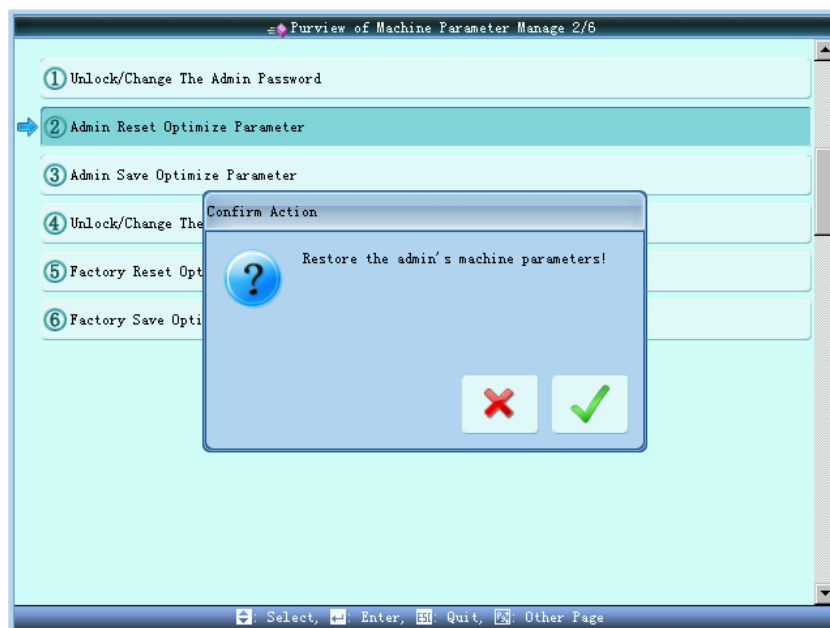
2) Press "  ", "  " to move the cursor to "Purview of Machine Parameter Manage", and press "  "key.



3) Press "  ", "  " to move the cursor to " Admin Reset Optimize Parameter", and press "  "key.



4) Turn up "Admin Reset Optimize Parameter", and press "^{ENTER}↵"key.



After the above operations, the basic parameters of the machine are reset, and the embroidery machine can be used.

5.4.4 Change the factory password

The machine producer can modify all parameters. When the machine leaves factory, the machine is unlocked. After password setting, the machine is locked. To change the machine parameters, you have to input password first. But after you repower the machine, the machine will be locked again. The details of it are similar to the "Unlock/Change The Admin Password".



5.4.5 Unlock the factory password

The procedure is similar to chapter 5.4.2.

5.4.6 Factory Save/Reset Parameters

The procedure is similar to chapter 5.4.3.

5-5 Initialize Parameters

This function can initialize the general embroidery parameters of the machine. The system saves a group of default parameter values. The factory and embroidery factory administrator can save their parameter settings. In this operation it follows the rules at below:

1. When the factory password and embroidery factory administrator password are not set or the machine has no password-protected function, all general embroidery parameters are initialized to their default values.
2. When that factory password has been set and unlocked, all general embroidery parameters are initialized to their default values.
3. When that factory password has been set and unlocked and administrator password has not been set or has been canceled, all factory-authorized machine parameters are recovered to factory saved values and other parameters are initialized to the default values.
4. When that factory password has been set and unlocked and administrator password has been set and unlocked, all factory-authorized machine parameters are recovered to factory saved values and administrator authorized machine application parameters are recovered to administrator saved values and other parameters are initialized to their default values.



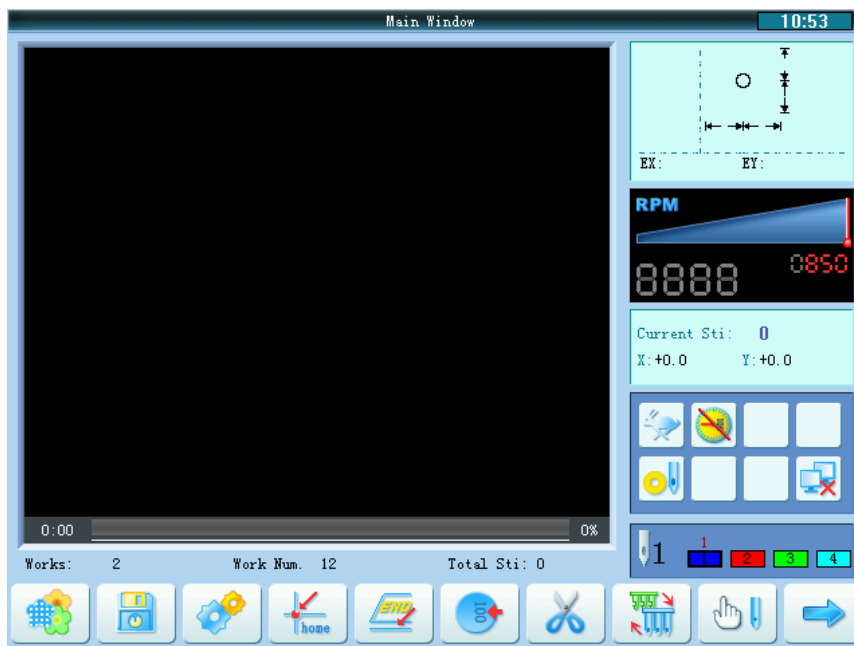
5. When that factory password has not been set and administrator password has been set and unlocked, all general embroidery parameters are initialized to their default values.




6. When that factory password has not been set and administrator password has been set and not unlocked, all administrator-authorized machine application parameters are recovered to administrator saved values and other parameters are initialized to the default values.

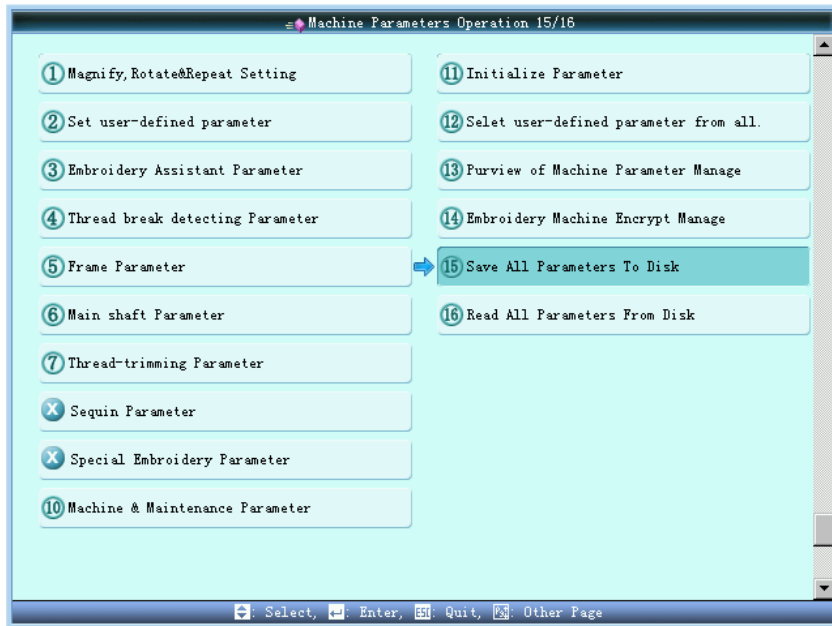
5-6 Save all parameter to disk


Operation:

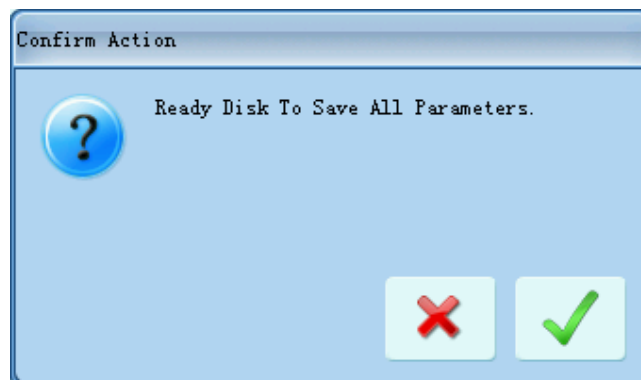
1) At main interface , press "  "key to have the menu appear as below.



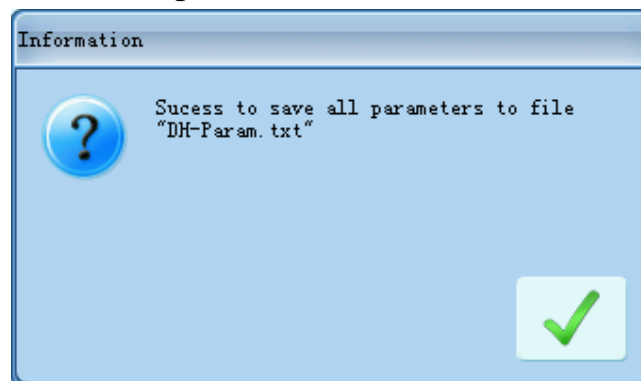
2) Press "  ", "  " to move the cursor to " Save All Parameters To Disk ", and press "  " key.



3) Turn up "Ready Disk To Save All Parameters", insert the USB and then press  "ENTER" key.



4) "Success to save all parameters to file "DH-PARAM.TXT" means the successful saving of the entire parameters to the USB.



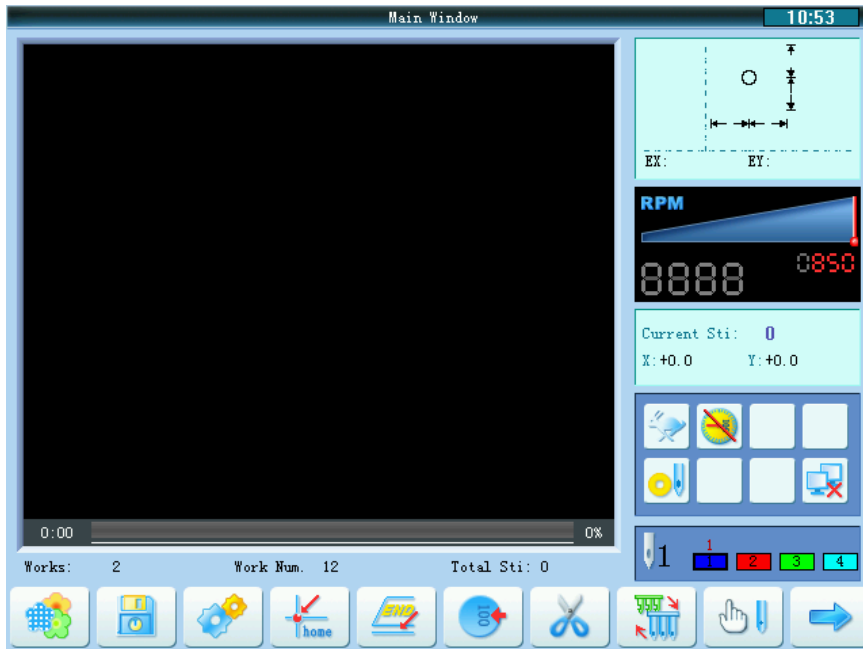
After the update, user needs to repower the computer. After the initialization, user can reset the parameters.






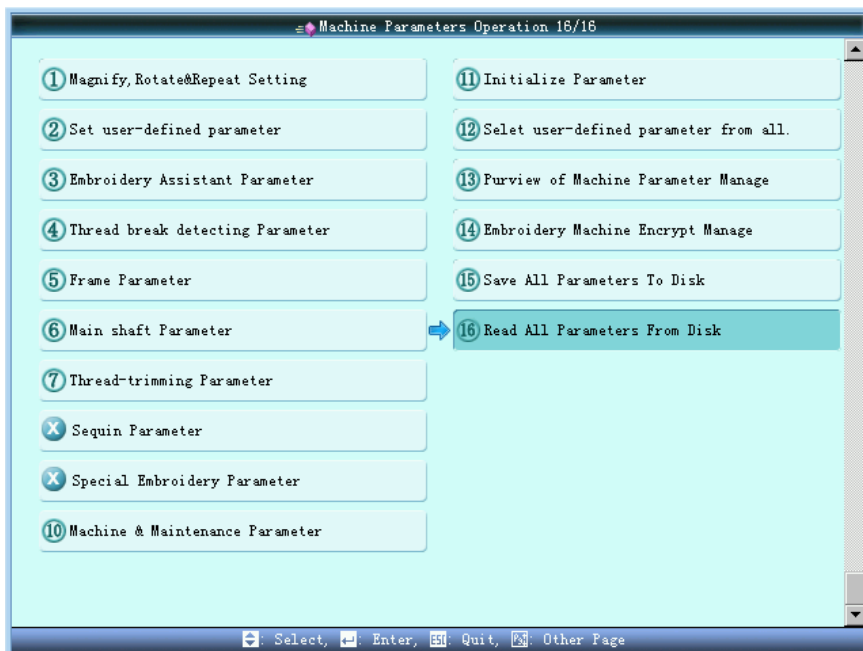
5-7 Read all parameter from disk

Operation:

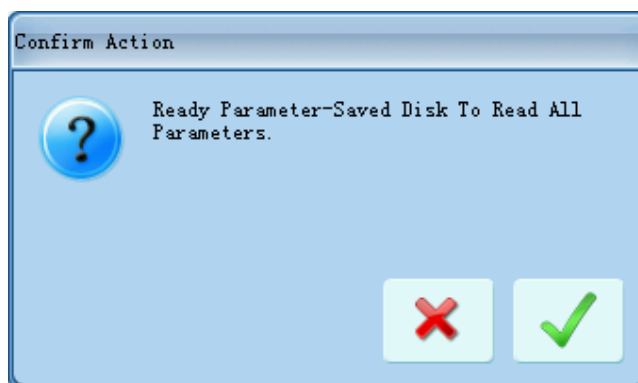
- 1、 At main interface , press "  "key to have the menu appear as below:



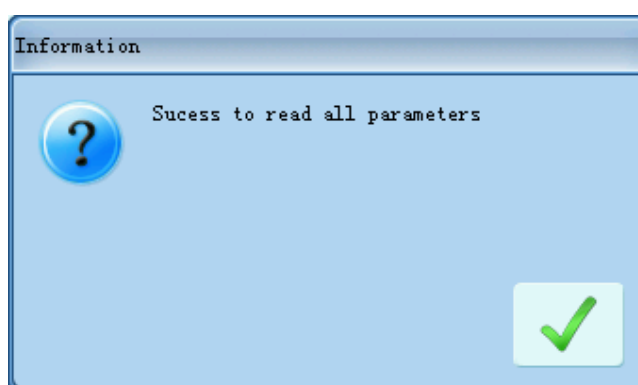
- 2、 Press "  ", "  "to move the cursor to " Read All Parameters From Disk ", and press "  "key.



- 3、 "Ready Parameters –Saved Disk To Read All Parameters " will appear, and user needs press "  "key.





4、 "Success to read all parameters " will appear.

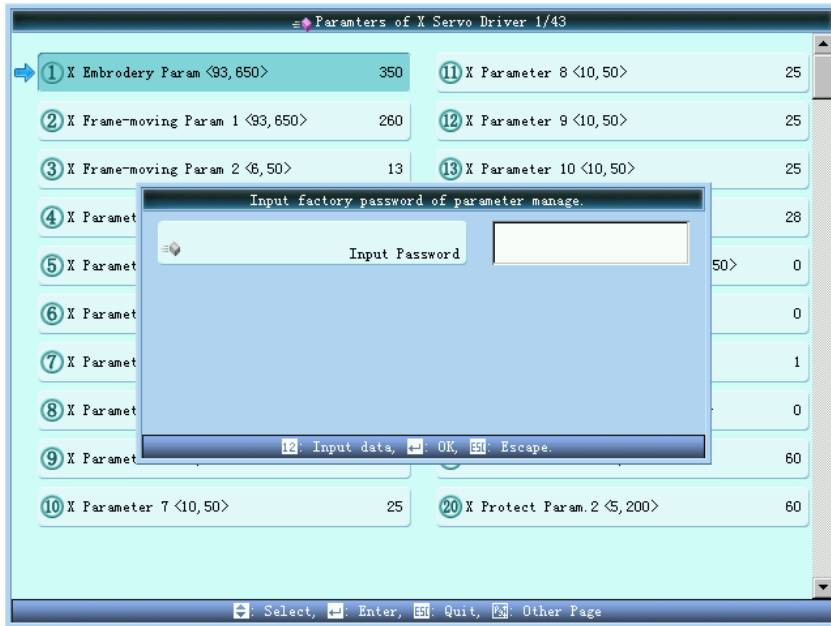



After the above operations, the system parameters will resume to the status before user updates the software. The embroidery machine can be used now.

5-8 Adjust Parameters of X & Y Servo Drivers

The type parameters are used for the machine, whose main shaft uses Dahao servo motor and driver. Only the factory can rework these parameters. Due to the password-protected function, you must input the factory password, if adjusting the parameters or performing the corresponding operation to the machine. The operation process is as followed:

- 1、 Press  in the main screen.
- 2、 The screen go into “Machine Parameters Operation” interface. Move cursor to “Adj Parameters of X&Y Servo Drivers” and press “”to “Parameters of X&Y Servo Drivers” window.



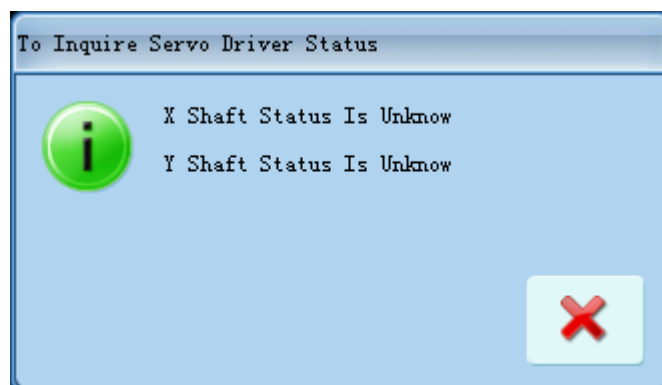
3、 Input factory password, move the cursor to corresponding item and press **ENTER** “” to do the following operation.

5.8.1 Set the parameter

The setting of these parameters is same as the other parameters. For the explanation, please see Appendix I Parameter Setting List.

5.8.2 To inquire servo driver status

This operation can inquire the Dahao servo driver status. Machine gives the windows of X/Y servo driver status after user carries out the operation. User should turn off power and adjust Dahao servo driver if the following screen appears.





5.8.3 Write driver parameters


The current setting of parameters for X&Y servo driver in the machine will be saved in the servo driver after user performs the operation. And the parameters can be saved even power is off.

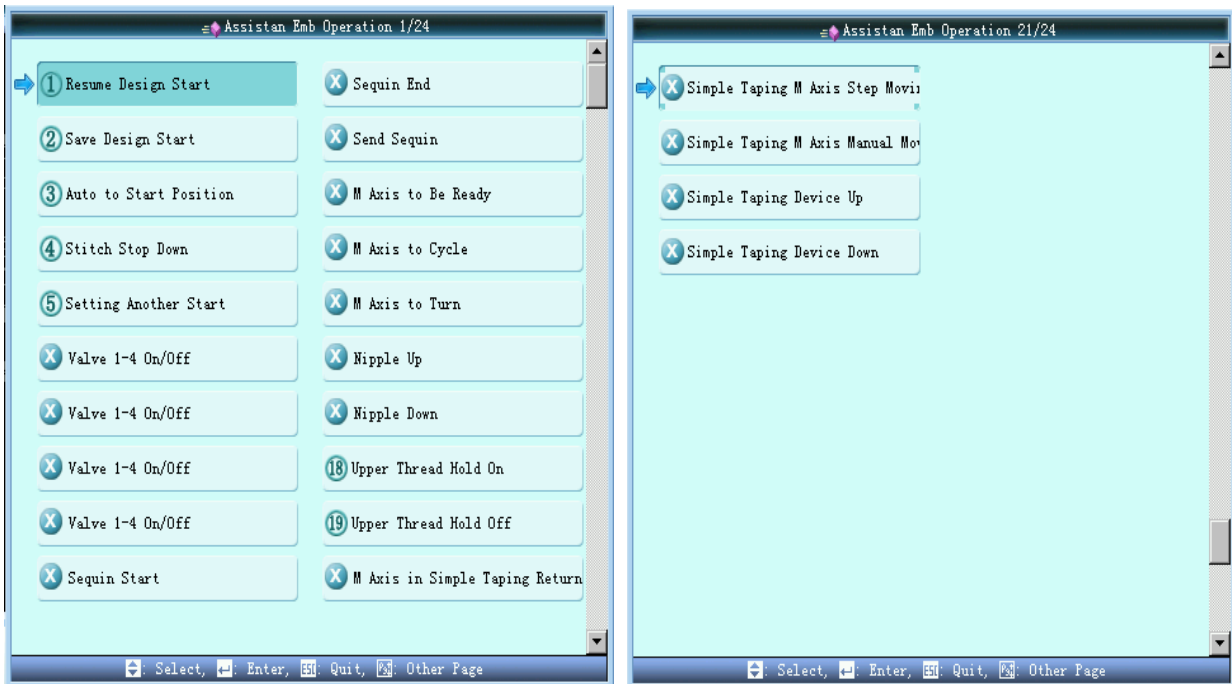
5.8.4 Restore default driver parameters

The X&Y parameters of servo driver in the machine will be restored to their default values if you operate this item.

Chapter 6 Assistant Operation

6-1 Assistant embroidery operation

Press the other function key  in the main screen to enter assistant embroidery operation screen.




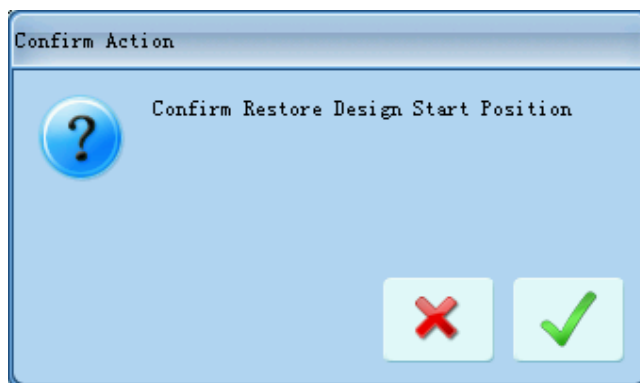
If the frame origin has been set (see 6.2.3), in the status of embroidery confirmation, you can perform design start point operation.

6.1.1 Resume Design Start



If the current design has start point, user can use this function to move the frame to the start point saved before.

1. Follow the above instruction and enter assistant embroidery operation screen.


2. Move the cursor to “Resume design start” and press “”.

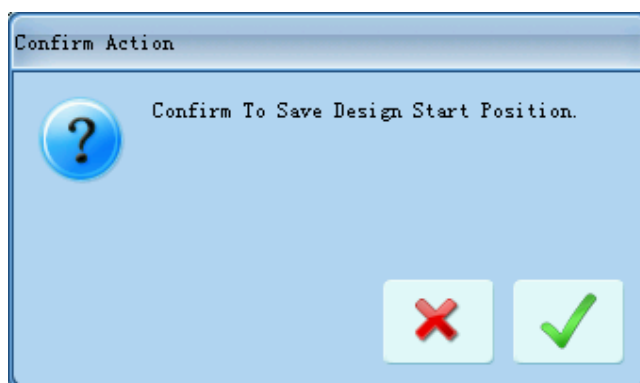


ENTER



3. Press the key “” to resume start point, then the system will move the frame to the start position that already saved before; press “” to cancel the operation.

6.1.2 Save design start

1. Move the frame to the embroidery design origin.
2. Follow the above instruction and enter assistant embroidery operation screen.
3. Move the cursor to “Save design start” and press “” to activate the following window:




ENTER

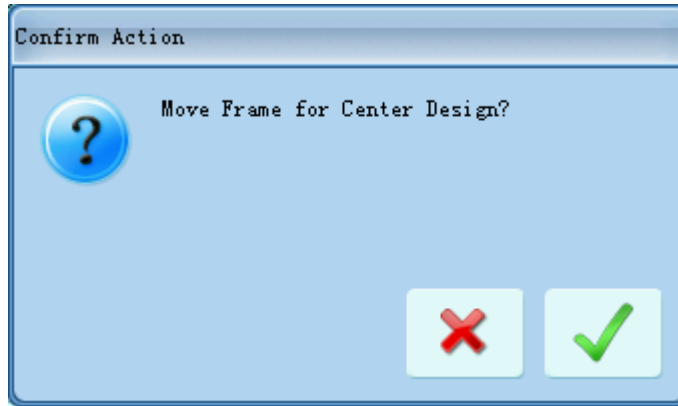
4. Press the key “” to save the current frame position as the origin. Press the key “” to cancel the operation.



6.1.3 Auto to start position

This function is used for locating design center to the frame software center set by the system (see 6.2.5) so that you can embroider the design to the center of the frame.

1. Follow the above instruction and enter assistant embroidery operation screen.

2. Move the cursor to “Auto to start position” and press “”.



Press “” to confirm, then the system will find the centre of frame and move to that position; press “” to cancel the operation.

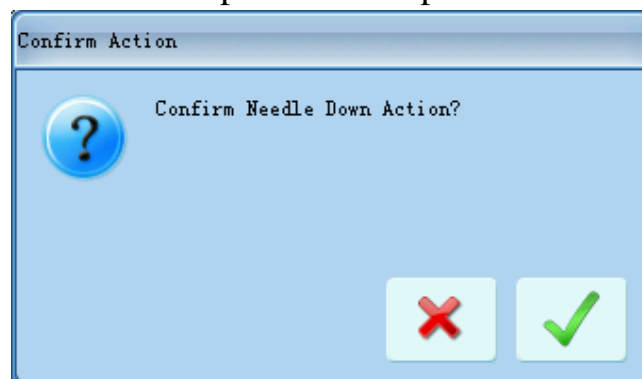
3. System goes back to the main screen.



6.1.4 Stitch stop down

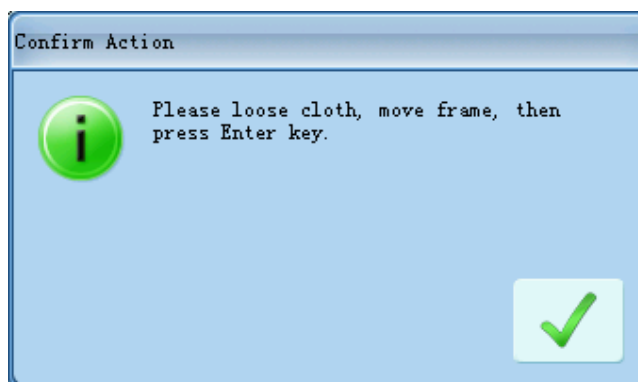
This function is used for the embroidery of the entire fabric. The needle will stop and prick into the embroidery cloth to fix it when the machine finishes a part of the embroidery. After releasing the cloth, user can move the frame to the designated position. When the cloth is fixed on the frame again, it is ready for the next operation. This function is only available at embroidery confirmation status.



1. Follow the above instruction and enter assistant embroidery operation screen.

2. Move the cursor to “Stitch stop down” and press “”.



3. Press “” to confirm operation, system lets needle go down to hold the cloth. Press “” to cancel the operation.
4. Release the cloth, move frame and confirm the operation.



After releasing the cloth, user needs move frame to desired position and press “” to confirm. If you press “”, the operation will be cancelled.


5. Back to main screen after confirmation of frame-moving

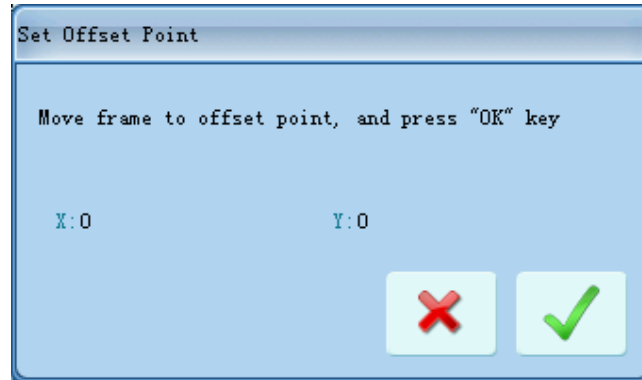
Customers can hold tight the cloth and operate main shaft to go to 100°, then pull bar to continue embroidering.



6.1.5 Setting another start

The offset point can be set at any point other than the start point. After setting it and starting embroidery, the frame will firstly move from the offset position to the start position automatically, and then the machine will start normal embroidery. After embroidery, the frame will move back to the offset point. Moreover the offset point is also the reference for the frame to move out when applique. This function can only be used under the embroidery confirmation status and before embroidery.

1. Follow the above instruction and enter assistant embroidery operation screen.

2. Move the cursor to “set offset point” and press “”.
3. Move the frame to the offset point.



The system will ask the user to move the frame to the offset point and display the coordinates of X and Y. User needs press the frame-moving key to move the frame to the offset point and press “” to confirm it, or press “” to cancel the operation.

4. The system will save the position of the offset point and return to the main screen.

6.1.6 Set B Point

This function is optional and the user has to book it advance.

This function is developed to solve the problem of threading when thread-breakage appears on giant machine.

When thread breaks, user needs press the slow switch to let the machine trim. Then the frame will move to the point B. After threading, you can pull bar to the right side to let the frame back to the stop point. Then the embroidery can go on.

I、 Setting Procedure


- 1、 Set the absolute origin, see 6.2.3 for details.



2、 Go into “Assistant Emb Operation” screen according to above description.

3、 Move cursor to “Setting B Point Machine” and press “”key.

4、 Press the manual frame-moving key to move the frame to a proper position.

5、 Press “”to confirm saving B point.

II、 Notes

1、 When frame returns to the B point, there is only action on Y direction.

2、 Frame will not move to the B point when thread breaks at some position, even you press the slow motion switch.

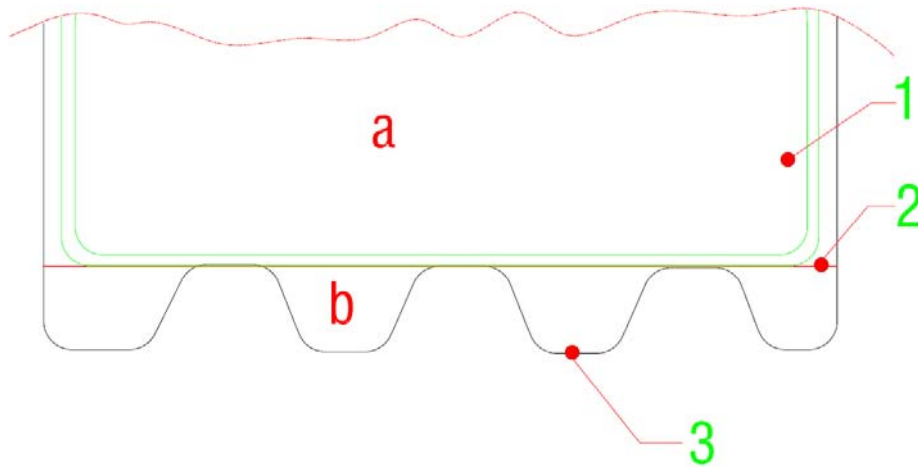
If the B point is set as the image below and frame only moves above B (a zone indicates the inner edge of the table), the machine will only have the trimming action instead of moving frame to B point then you press slow motion button after thread-breakage; only when frame is moving under B (b zone indicates the outside of table), can the frame move to the B point after you press slow motion switch at thread-breakage. If no action at frame, please check the machine.

3、 The position of the B point should be set as the image shows, at the upper edge of table notch, where it will not affect the threading operation. The reasons are as followed:

(1) If B point is above the line, then frame will back to B after slow moving.

There will be a long distance to go to the stop point after threading.

(2) If B point is under the line, threading will be greatly influenced.



1、Frame 2、 the best line for setting B point 3、 edge of the table

6.1.7 Operation on AFC, Sequin and Coiling Devices

For the machine attaching the devices for AFC, sequin or coiling, user can set that device via the controller

1. Follow the above instruction and enter assistant embroidery operation screen.
2. Operate according to the prompts.


Note: switch of valves (V1~V4) are for quilt embroidery. Other sequin and special embroidery operations are detailed in different chapters.

6.1.8 Upper thread hold operation

The operation is used for the machine having upper thread-holding function. You can activate or deactivate this function at here.

6-2 Other assistant operation

These operations include machine maintenance, information inquiry and other system settings.



Press  in the main screen to enter the “Other assistant operation” screen, which is a menu of function keys.





The screen is similar to that for assistant embroidery function. The words on the keys can help to explain their functions.

6.2.1 View Embroidery Parameter



The user can check the current design's parameter and some machine conditions.

1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “view embroidery parameter” and press “”.
3. The system will show the current embroidery parameters.



They include: design number, total embroidery stitch, free memory, cycle embroidery, frame origin, soft frame limit and offset point. Press  to clear or press “” to return.

6.2.2 View Statistics Information

1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “View Statistics Info” and press “”.
3. The system will show the machine’s statistics information.




View Statistics Info								
Power On Counter:	140							
Overall Works:	263							
Overall T.B.:	0							
Mean Time of T.B.:	00:00:00							
Estimate Finish Time:	0h 0m							
No.	DesignNo	DesignID	Name	StitchNum	Works	Total Time	Minnum Time	Maximum Time
1	10	0	DH08	59593	122	18:43:27	00:00:36	05:57:55
2	4	0	DH02	8998	129	12:13:27	00:00:17	06:07:16
3	1	0	DH15	115	2	00:00:24	00:00:02	00:00:22
4	5	0	DH03	3165	3	00:00:22	00:00:06	00:00:09
5	11	0	DH09	981	6	00:01:54	00:00:02	00:01:08
6	2	0	DH16	6498	1	00:00:10	00:00:10	00:00:10
7								
8								
9								
10								

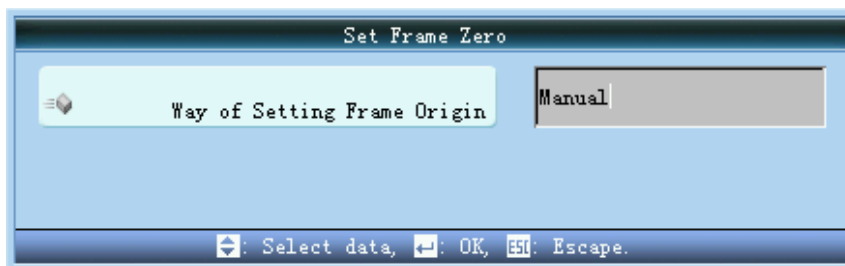
In the above screen, the statistics information is displayed in a chart. The user can



press  to clear the value and press “” to return.

6.2.3 Power resume setting/ frame start setting

Setting the frame origin position is the premise for saving the design’s start point and setting frame protection at power-off. So after machine installation or maintenance, it’s necessary to set the frame origin point.

1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “Power resume setting/ frame start setting” and press “”.
3. Use  to choose between “Manual” and “Auto”.







4. Press “” to confirm it or press “” to quit.

Before setting the frame start manually, user needs move the frame to the desired origin position and press “Manual”. Then the system will save the current frame position as the frame origin. In case of emergency stop because of malfunctions or something unusual such as unexpected power off, etc. the machine will cancel the “manual frame start” to avoid mistakes caused by the inaccuracy of “Manual Frame Start”. If the frame has been moved or the machine has been maintained after power off, user should do the operation of “Manual Frame Start” again.

If you hope the system automatically set the frame start, press “Auto”, and the system will move the frame automatically and set the start position according to the limit switch. So please ensure that the effective limit switch has been installed into the machine when you need this function.

6.2.4 Power resume



In case that frame has been moved after power off, this operation can be used to restore frame position before the power-off. The proper performance of this operation is based on the “Power resume setting/ frame start setting”. In addition, if the power is off in the process of embroidery and the frame has not been moved, you also can directly pull the operation bar to continue embroidery when power is on again.

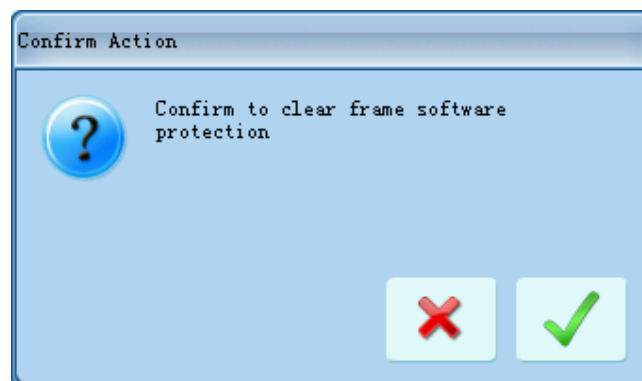
1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “Power resume” and press “”^{ENTER}.
3. Press “”^{ENTER} to confirm or “”^{ESC} to return.


If it is “auto” in “set frame origin”, the machine will automatically move to the frame origin point and then back to embroidering position before power-off. It will be invalid if the “Set frame origin” is set as “Manual”.

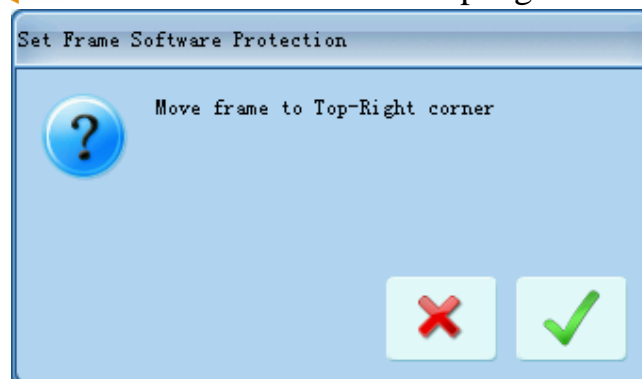
6.2.5 Set embroidery scope in software

This function is to set embroidery scope in software and make system embroider pattern in the set range. It’s the basis to locate design in the central place of the frame.


1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “set embroidery scope in software” and press “”^{ENTER}.
3. If software protection has already been set, system will ask user to clear original settings.



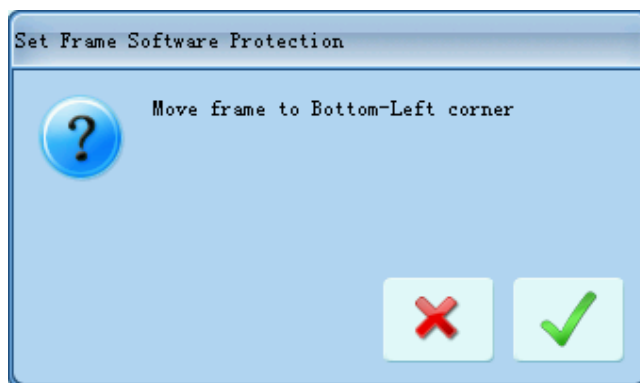
4. Press the key “”^{ENTER} to set the coordinate of top-right corner.






Use frame-moving key to move the embroidery frame, after you confirm the top-right corner, press “” to confirm.

5. Move frame and input the coordinate of bottom-left corner.





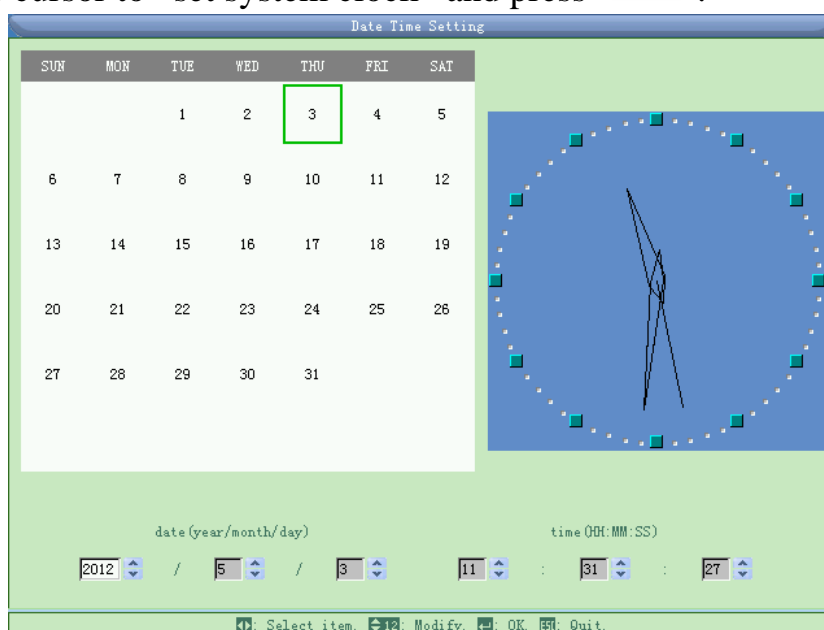
Use the frame-moving key to confirm the bottom-left corner, press “” to confirm.



6. System will record frame software protection.



6.2.6 Set system clock

In date and time screen, users can check and modify the current date and time.

1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “set system clock” and press “”.




3. Use the digital key to input numbers; use  to find the number you want; use  to select option.

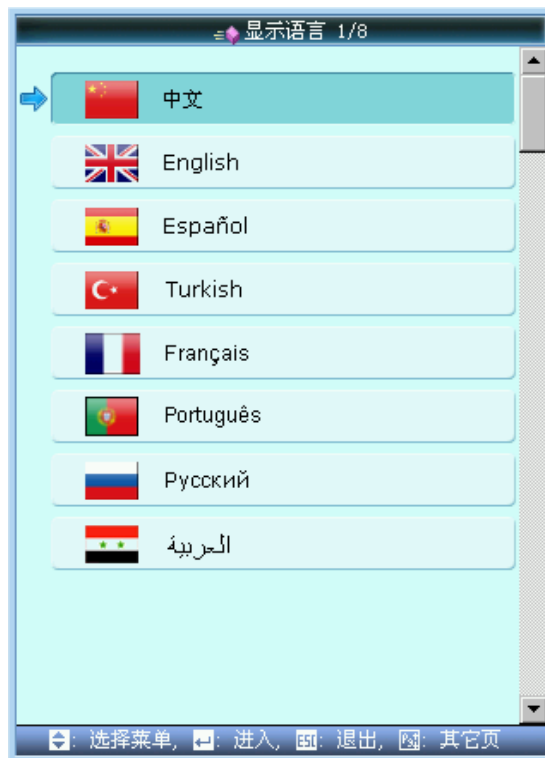
4. Press the key “” to confirm the modification, press “” to return without saving.



6.2.7 Language Choice

The system supports Chinese, English, Spanish, Turkish and so on.


1. Press  in the main screen to enter the “Other assistant operation” screen.


2. Move the cursor to “Display Language” and press “”.

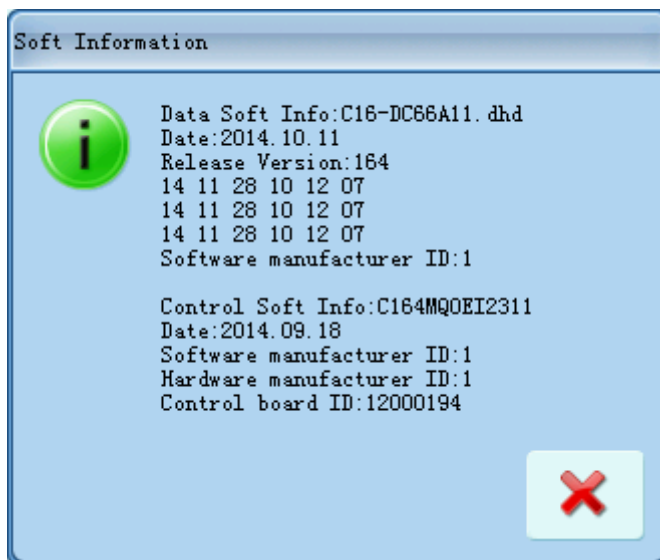


3. Move the cursor to the language of you want, then press “” to confirm or press “” to exit.

6.2.8 Machine Soft Information

1. Press  in the main screen to enter the “Other assistant operation” screen.



2. Move the cursor to “machine soft information” and press “”.



This function is used for checking the software of upper and lower machine, press

 “ESC” to exit.

6.2.9 Help

1. Press  in the main screen to enter the “Other assistant operation” screen.
2. Move the cursor to “Help” and press “”.

It displays the help information, press   or  ,  to shift between the pages.

6.2.10 Machine Test



This operation is provided to maintenance engineers only. Embroidery workers don't do this. This operation contains some mechanical work. Please pay attention to personal and equipment safety.

This function is mainly used for machine test, maintenance and problem diagnose, including:




Number	Machine Test
1	Test Encoder
2	Test main shaft
3	Rotate main shaft to fixed angle (from 100)
4	Test the pull-bar
5	Test the limit switches
6	Test the head solenoids
7	Test trim solenoids/ motor
8	Test holding solenoids
9	Test hook solenoids/ motor
10	Splay Scissor's Angle
11	Trim Motor to Find Origin
12	Test thread breakage
13	Thread Breakage Statistics
14	Count of Roller Thread Breakage Device
15	Test sequin device on/off
16	Sway Zig Rod to 100

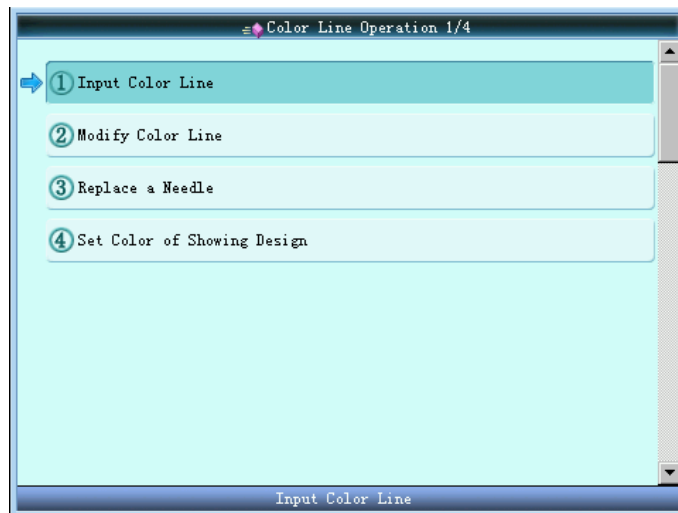
Number	Machine Test
17	Test lift clamp foot
18	Test Upper Thread Hold Function
19	Sequin A send one sequin
20	Sequin B send one sequin
21	Sequin C send one sequin
22	Sequin D send one sequin
23	Sequin equipment push valve 1.
24	Sequin equipment pull valve 1.
25	Sequin equipment push valve 2.
26	Sequin equipment pull valve 2.
27	Sequin equipment push valve 3.
28	Sequin equipment pull valve 3.
29	Test SimpleTaping Thread-loosing Motor
30	CAN Communication Test
31	Show Main Shaft Pos.
32	Show Needle Pos.

Chapter 7 Other Operation


7-1 Operation on color-changing order

The design's color-changing order is saved with the design.

Press the key in the main screen . You can operate color-changing order in the following screen.





7.1.1 Input Color Line

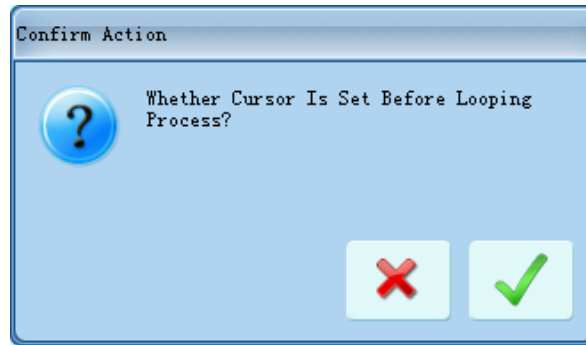
1. Move the cursor to “Input color line” and press “”:





2. Press the digital key (Note: the number you input can not be over the needle number) and input the color-changing position. The color-changing position and relative order are displayed on the screen. When setting the repeated color-changing order, user can move the icon horizontally.

If it is a special embroidery position or sequin embroidery position, the system will enter the selection window of sequin and special embroidery. For details, please refer to operations in related chapters.

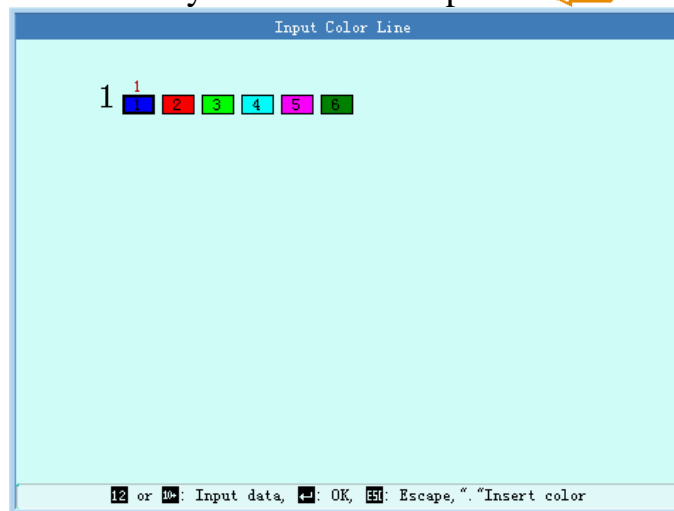
3. Pressing “” or “” will have the system hint user “Whether to cycle the setting before the icon”.






Press “” to confirm and save the input color-changing order, and then the system will set the cyclic operation; press “” to quit this interface and save the input color-changing order.

7.1.2 Modify color line

1. Move the cursor to “modify color line” and press “”:

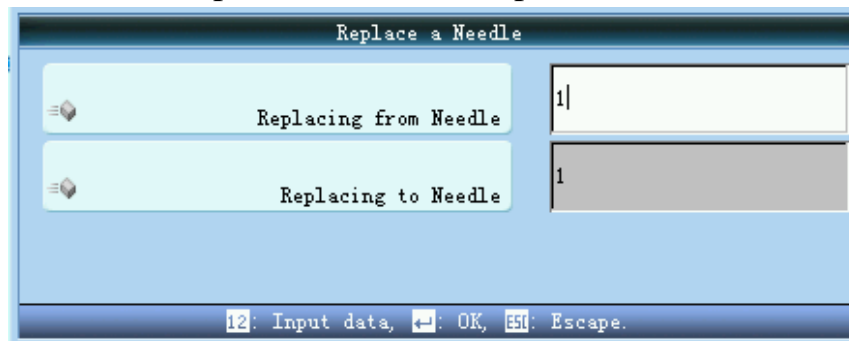





2. Press the key “” to select the position to be modified. Press the digital key to input needle position (if you input a special embroidery needle position or a sequin embroidery position, see related chapters for details.)

If you want to modify the next color, you can repeat step “2”. Press the key “” to save the color-changing order; press the key “” to exit without saving.

7.1.3 Replace a needle


1. Move the cursor to “replace a needle” and press “”:



2. Press the digital key to input “replacing from needle” and press “” to confirm and type in digits in “replacing to needle”, then press “” to save or press the key “” to exit without saving.







7.1.4 Set color of showing design



In order to make the showing effect close to the real embroidery design, the system supports setting of each needle bar color. The needle bar color can be saved with the color-changing order.

1. Move the cursor to “set color of showing design” and press “”:



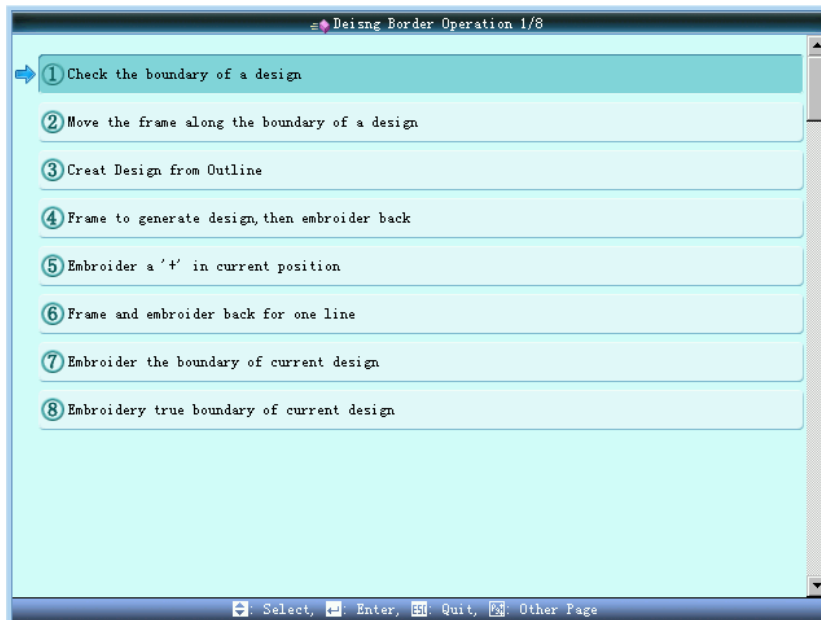
There are altogether 40 different colors for you to choose.

2. First you should press  to select the needle bar to be set, then press “   ” to select the desired color. Press “” to confirm the selection. After setting, the corresponding color will be displayed at the needle button.

3. After setting, press “” to save the needle bar color setting and return, or press the key “” to return without saving.


7-2 Design border operation

Press the key  on the main screen.

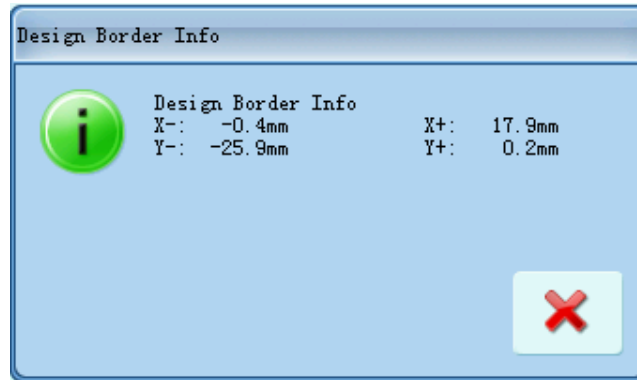


7.2.1 Check the boundary of a design

The function is used for checking current design boundary information and displaying it.

1. Move the cursor to “check the boundary of a design” and press “”.


System will display the peripheral information of the design in the window:

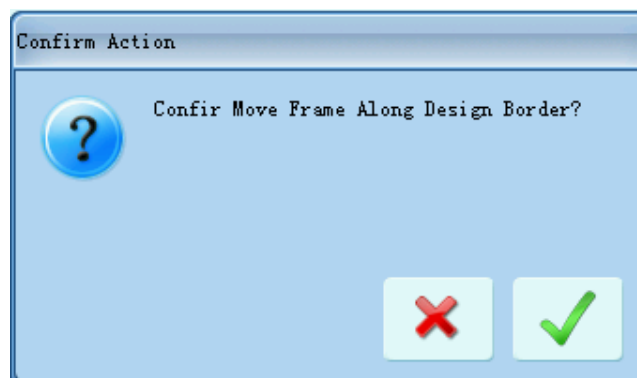




2. Press “” or “” to close the window.

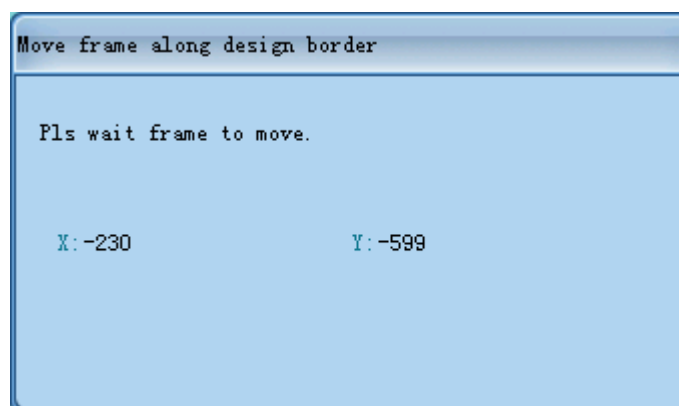
7.2.2 Move the frame along the boundary of a design

The function can drive the frame moving along the border. If it touches the limit, system will correct it to avoid over-limit in real embroidery.

1. Move the cursor to “move the frame along the boundary of a design” and press “”:




2. Press “” to let the system go along the border, or press the key “” to cancel.





3. After finishing moving, system returns to the design border operation screen.

7.2.3 Create design from outline

This operation can create a new design with the outline of the selected design


1. In the main screen, you can move the cursor to “Create design from outline” and press “”:

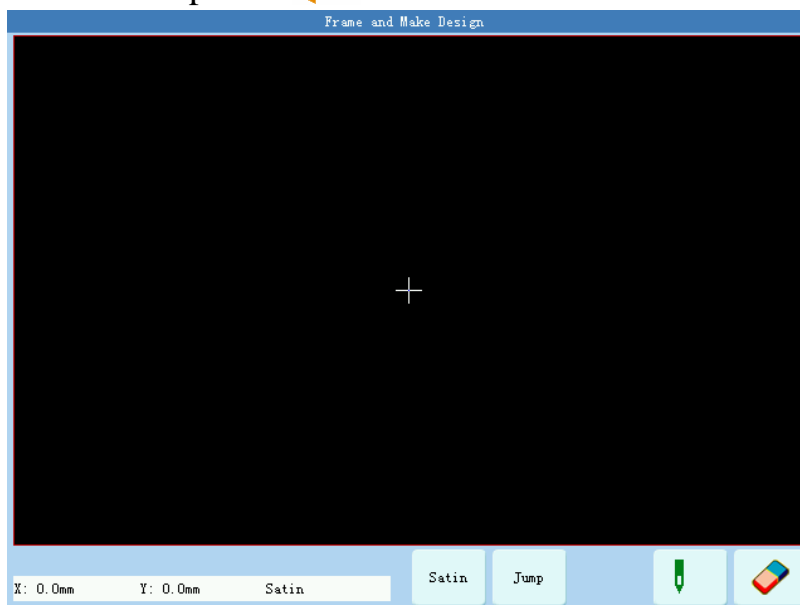


2. You can input design number and name.
3. Press the key “” to save the design or press “” to cancel.



7.2.4 Frame to generate design, then embroider back



Before embroidering a design, you may wish to embroider a sign for positioning applique. This function can help you to create that kind of design, then you can use this design as the standard for positioning.


1. In preparation status, you can move the cursor to “Frame to generate design, then embroider back” and press “”:






2. Press the key  to shift stitch (flat or jump). Press the manual frame moving key to let the frame go along the border. Press  at each turning point.

3. After edition, you need press  and “”, then system will ask for new design number and name.


4. You can input and press “”.

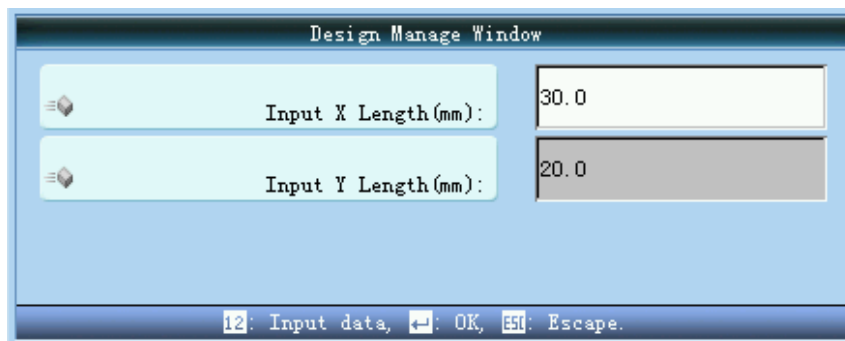
5. Press the key “” to give up current operation and return.

7.2.5 Embroider a “+” in current position


System will embroider a “+” at the current position, the size can be adjusted.


1. In design border operation, you can move the cursor to “Embroider a ‘+’ in

current position” and press “”. The system will enter the following screen:




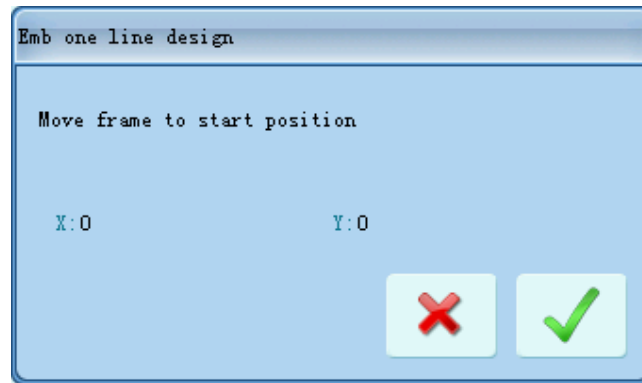
You can set the length of + in both X and Y directions:


2. After setting the length of “+” in both X and Y directions, press “”, System will generate a temporary data of the “+” and return to the main screen.

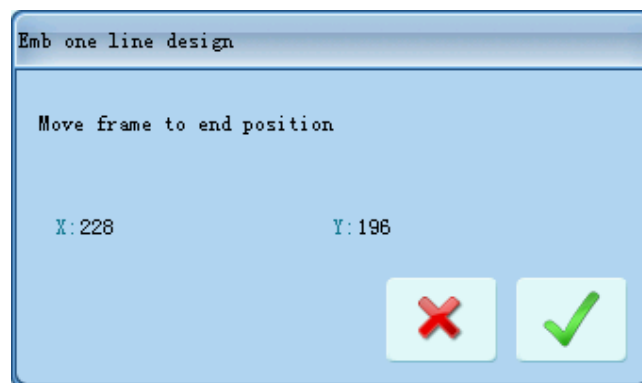
Now the label  is displayed. You can pull bar to embroider a cross. After the embroidery, the system will return to the embroidery preparation status


7.2.6 Frame and embroider back for one line

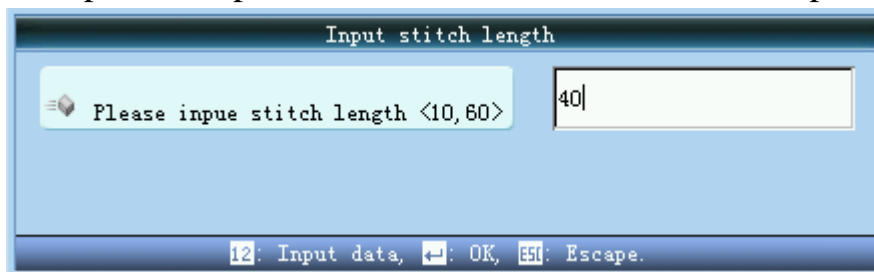
1. In design border operation, you can move the cursor to “Frame and embroider back for one line” and press “”. The system will display the start point of the frame-moving




2. Move the frame to the start point of the line, press “” to confirm the first point. System will ask to move frame to the end point.



Move to the end point and press the “” to confirm the second point.



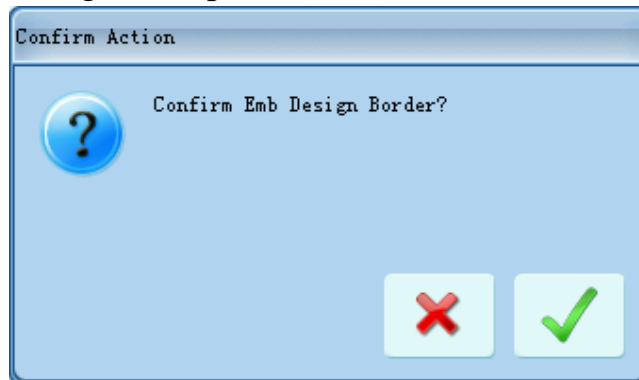
3. System will generate temporary data of the line and return to the main screen.

Now system displays  on the main screen. Pull bar to embroider line, after that, system returns to the embroidery preparing status.

7.2.7 Embroider the boundary of current design


The function can measure design border data and generate a temporary data for users. This function should be performed in embroidery preparation status.

1. In design border operation, you can move the cursor to “Embroider the boundary of current design” and press “^{ENTER}↵”:



Press the key “^{ENTER}↵” to confirm, press “^{ESC}⏏” to cancel.

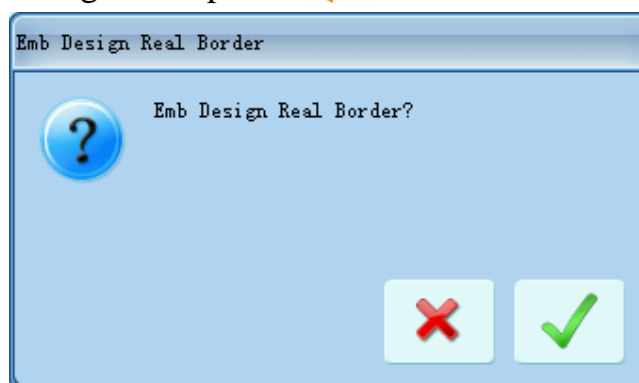
2. System will generate temporary information of the line and return to the main screen after user confirms the operation.

Now system displays  on the main screen. Pull bar to embroider border, after that, system returns to the embroidery preparing status.


7.2.8 Embroider true boundary of current design


System will generate boundary data according to the current design. Pull bar to embroider.

1. In design border operation, you can move the cursor to “Embroider true boundary of current design” and press “^{ENTER}↵”:




System will generate a temporary data according to the boundary design data and ask user to confirm.


2. Press “” to confirm and then system will return to the main screen.

Now system displays  on the main screen. Pull bar to embroider border, after that, system returns to the embroidery preparing status.

7-3 Positioning Idling

This function is only available in embroidery confirmation status .

According to the user’s needs, this function enables to move the frame to the designated position without embroidering. The user can set the forward/backward positioning idling by stitch number, color code and stop code.

Press  in the main screen to enter the positioning idling screen, where there is a list of function keys. You can press these keys to perform different idling functions.





7.3.1 Go ahead stitches

1. In the screen of positioning idling, move the cursor to “go ahead stitch” and

press “”.



2. Input the stitch number of “go ahead stitch”.


System goes to the screen of “go ahead stitch”. You can press “” to confirm or press “” to cancel.

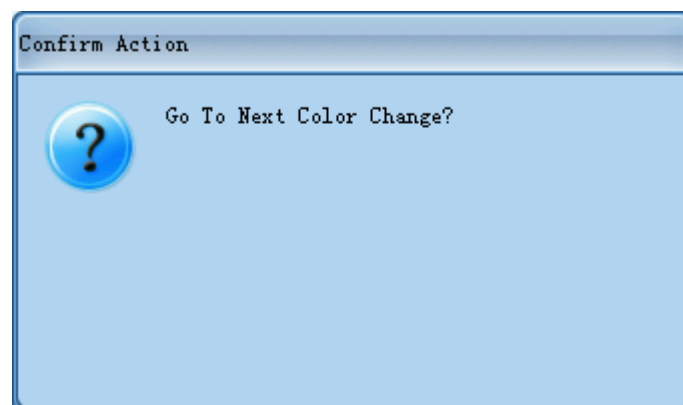
3. System goes back to the main screen. You can pull bar to right to idle to certain stitches.



7.3.2 Go back stitches

It is similar to the operation of “Go ahead stitches”. In step “3”, you should pull bar to left.

7.3.3 Next Color Code

1. In the screen of positioning idling, move the cursor to “next color code” and press “”.



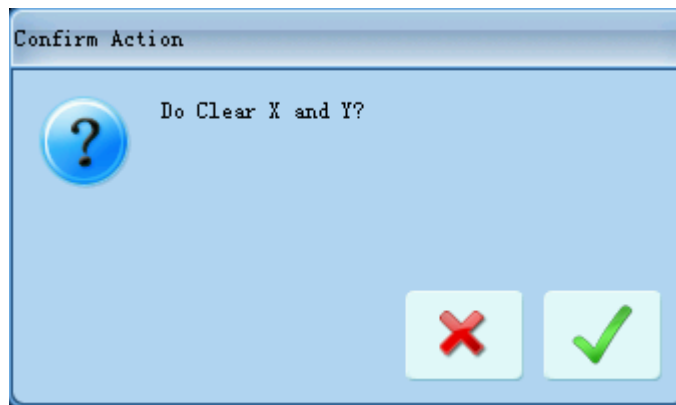
2. Press the key “”. System goes back to the main screen. You can pull bar right to idle to next code. Press “” to cancel.



The other three positioning idling items is similar to above.

7-4 Reset X/Y Displacements

This is to clear the X and Y displacements.

Press “**C**” on the keyboard, then the system will ask for user’s confirmation.



You may press “” to set X and Y values as 0. Press the key “” to cancel.


The user can check the values in the main screen.




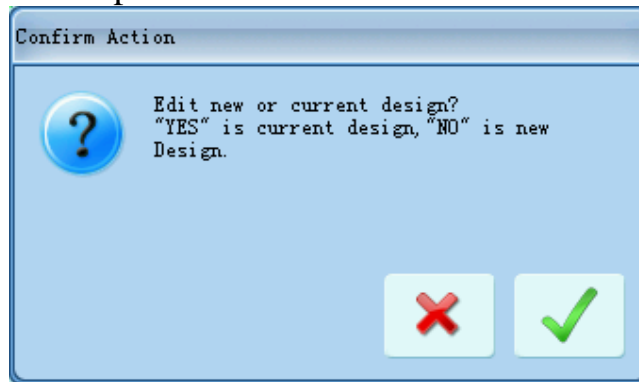
Chapter 8 Memory Design Edition

You can edit common designs in the memory through this function, or establish a new design.

8-1 Start Editing Design

Press  in the main screen to enter the memory design management screen.

Select the design and then press “”.

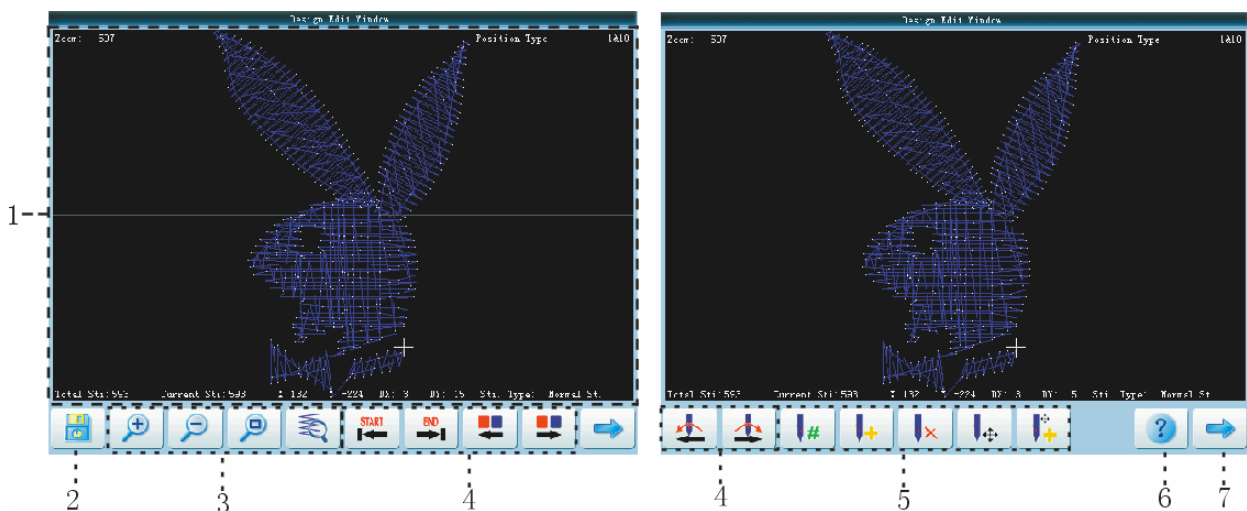


Press “” to edit the current design, press “” to edit new design.


Note: the design you selected can not be combined design, or system will warn “It isn’t common design”.

8-2 Design Editing Operation

8.2.1 Summary





Design preview window: use for preview design. In view, use “+” to mark the position of current needle. The needle trace of current stitch use white and outstanding manifestation. The scale information is displayed on the top-left while the positioning stitch type is shown at the top-right (use  to shift); the detailed stitch information is displayed to the bottom of the screen.

1. Pattern Edition Display Area: Display the currently edited pattern.
2. Document operation: to save design.
3. Image operation: to scale image
4. Stitch positioning panel: for positioning the current stitch (stitch to be viewed and edited).
5. Stitch editing function: use for switch stitch code, insert stitch, delete stitch and move the stitch position.
6. Help: press this key to view the instruction of certain key.
7. Page shifting: press this key to shift between the two pages.

8.2.2 Document and View Operation



Save the current design to a new document.



Scale up/down view. The scaling ratio is 150% every time.



Reduce the design, thus user can see the all of the design. If the design size is smaller than display scope of the screen, the system will show the design with the actual size.



Enlarge the design to 450%, thus user can look into the detail of the needle vestige. "Current stitch" will move the middle position of the screen automatically.



Review the online help of the design editing operation screen.

8.2.3 Key for Positioning Stitch and Editing Stitch

Move the current stitch to a certain stitch. At the same time use “+” to mark the position of “current stitch” in the window of design preview. If the “current stitch” is not in the window, the system will renew the display and move “current stitch” in the centre of window.

1. positioning stitch

START

 to the design start point

END

 to the design end point



to last color changing code








to next color changing code







to last jump code






to next jump code

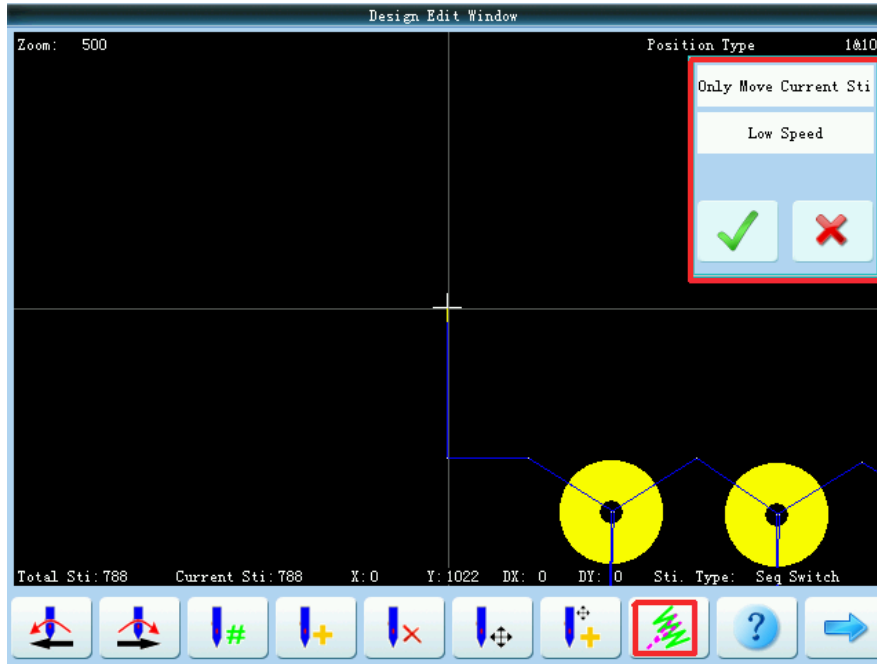
Press   to position the high speed current stitch, press   to locate low speed current stitch position, press  to shift among 1&10,100&1000, lockstitch, stop, color-changing, jump and sequin.

2. editing stitch


Click  to add one designated stitch type at present position. Press  to change stitch type. Press “” to confirm or “” to cancel.


Click  to delete current stitch.




Click  to move current stitch. Press  direction key on the panel to move current stitch position. Press  to change moving stitch speed status among high speed, middle speed and low speed.



Press  to add satin stitch at design trial continuously.

Move coordinate index to proper position by pressing direction key. Press **ENTER** “” to add a stitch trace at present position; Move coordinate index continue to add more stitches.




Press  to switch coordinate index speed among high speed, middle speed and low speed.

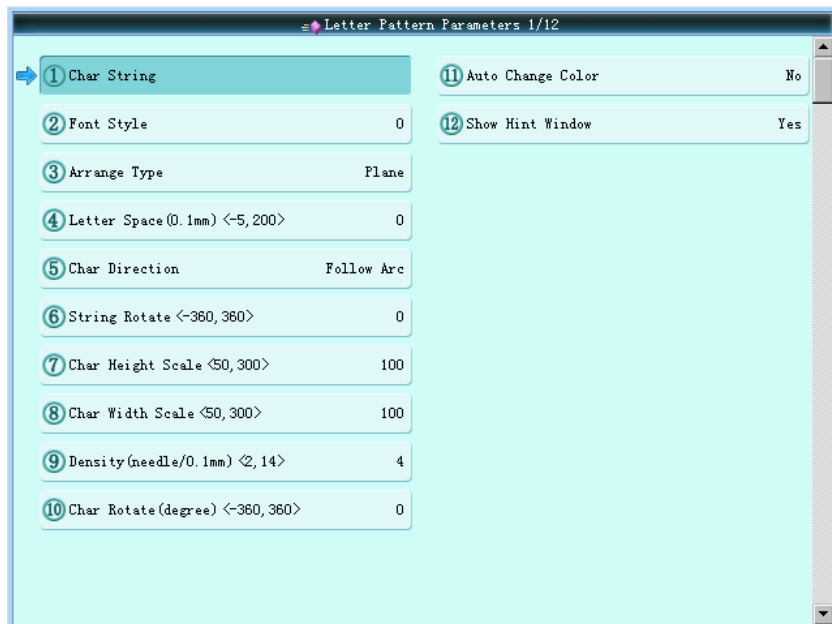
After edition, click  and input design name and number. Press **ENTER** “” to confirm and “” cancel.

Chapter 9 Letter Design



You can use the letterform storage that saved in system, to create design file based on letter.

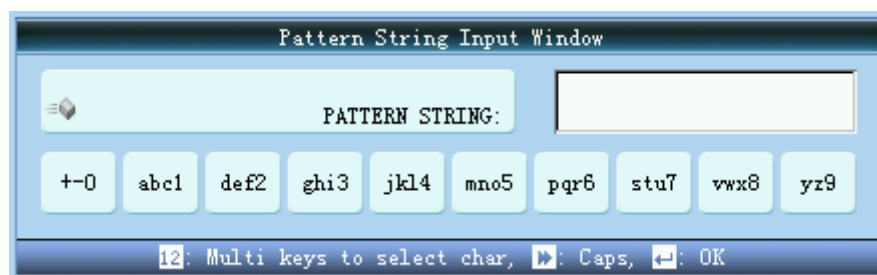
9-1 Enter Letter Design Operation

Click pattern management key  on main screen, then press  and  to enter pattern management screen.



9-2 Input Char String and Basic Parameter






After opening the window of parameter input, user can enter into pattern string input window automatically. Move the cursor to related parameters and press “ ENTER” to adjust it. After adjustment, user can press “ ENTER” again to save it.



1. “Char string”: means the letter list that will be embroidered
2. “Font style”: means the letterform that is used for embroidering letter. The letterform selected here will be applied on all of the letters if necessary. (for the font adjustment of the single letter, please refer to the section of “create character pattern”).

This is the font style window:




You can press “   ” to move the cursor to the desired font and press “”.


3. “Arrange type”: the formation of letters. There are four types: “plane” “vertical” “up arc” and “down arc”.
4. “Letter space”: means rank space between letters, the unit is 0.1mm.
5. “Char direction”: it’s to decide whether every letter’s angle changes with its position in the arc when “arrange type” is set as arc.
6. “String rotate”: means rotating angle for whole letter bound.
7. “Char height scale”: means increase or reduce letter height.



8. “Char width scale”: means increase or reduce letter width.
9. “Density”: means distance between each stitch in letter pattern. The value is smaller, the density will be larger.
10. “Char rotate”: means rotating angle of each letter that opposite to centre of itself.
11. “Auto change color”: whether to add change color code before each letter.
12. “Show hint window”: whether to show hint information window during the operations.

After establishing letter pattern parameter, you may click “” to enter window of “create character pattern”.

A. Create character pattern

The “create character pattern” screen is displayed as below. Press  to shift among these three screens:



Usually, user needs set character string parameters such as arrange type, rotating angle, letter space and so on at first. And then, select one letter to adjust its arrangement parameter (Right buttons at screen).

Character pattern display area: the central cross means coordinate, and the intersection is origin (0,0) . The letters will surround the origin automatically.

B. View and file operation

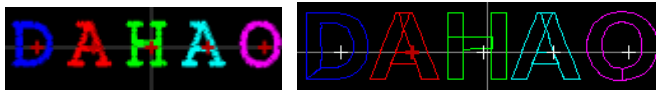


Basic parameter operation of character string: it is used for setting the basic letter parameter operation.



“Stitch/Outline”: show/hide stitch form, hiding stitch form

can improve operation speed.



“Zoom out”: enlarge to show the window and to look into the detail part of the letter pattern.



“Zoom in: reduce the show window of letter pattern.



“Fact”: Show the letter pattern with the actual size. At this time, the size of pattern in screen is equal to actual size.



“Center”: Zoom to see the diagram, show the whole pattern.





“window shift”: Click this key, screen will turn dark. Press   

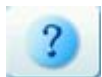


to move the window. Letter design moves along with the window.



“Save”: it is used for saving letter pattern that is being edited. After user clicks that key, the system will display the window that user can input the pattern number and pattern name. According to the pattern name and pattern number that need modification (the serial number does not need modification generally), then

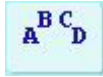
click “” to save or “” to quit.



“Help”: Online help of “create character pattern” screen.

C. Adjustment key of parameter arrangement

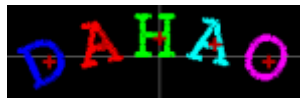
If you edit individual letter and then adjust the arrangement parameter, the edition to the individual letter will be probably covered.



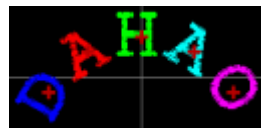
"Fix the letter direction": When user arranges the letter in arc method, the letter angle will not change with the position of round arc, but keep a certain angle.



"Angle follow": When user arranges the letter in arc method, the letter angle changes along with the position of arc (vertical to the arc)



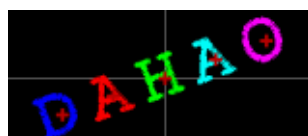
"Radian increase": When user arranges the letter in round arc, this parameter will enlarge the radian of reference arc.



"Radian reduces": When user arranges the letter in arc, this parameter will reduce the radian of reference arc.



"Whole anticlockwise rotate": rotate for whole letter string in anticlockwise direction.





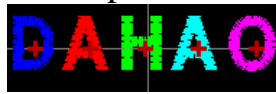
“Whole clockwise rotate”: rotate for whole letter string in clockwise direction.



“Extend letter space”: Increase the distance between the letter.




“Reduce letter space”: reduce space between letters.







D. Letter selection adjustment

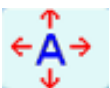






“Select switch”: switch the selected letter. User has to pick up a certain letter and then he can carry out the edition. When there is a red “+” in the center of letter, it means the letter is picked up, such as: . As default, the system will pick up all the letters. After user clicks “select switch” key, the system picks up the first letter, then the second after another click. It depends on clicking numbers. After user picks up the last letter, clicking “select switch” will pick up all letters again.

Repeat the operation and cycle in above order.



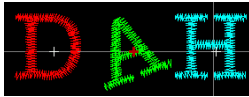
“Letter scale”: to adjust the selected letter, press  to increase height, press  to decrease height, press  to increase width while press  to decrease width.



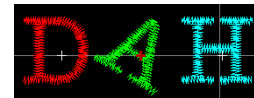
“Letter move”: after pressing this key, user can press     to move the selected letter in certain direction.



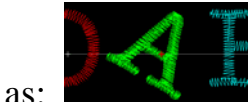
“Anticlockwise rotate”: With the letter centre (“+” in the centre of letter), rotate the selected letter in anticlockwise direction. Such as:



“Clockwise rotate”: With the letter centre (“+” in the centre of letter) , rotate the selected letter in anticlockwise direction. Such as:



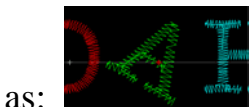
“Density increase”: Increase stain stitch density of the letter pattern. Such



as:



“Density reduces”: Reduce stain stitch density of the letter pattern. Such



as:



“Level overturns”:turn over the selected letter horizontally.




“Flip vertical”: Turn over the selected letter vertically.





“Change color switch”: Establish or cancel the change of color that was before selected letter.



“Change font”: change letterform of selected letter. After user clicks this key, system will give the dialog box of selecting letterform. User needs choose one of letterforms that is wished, and confirm it.



Press “” to return to the window of letter pattern input. If you need to change embroidery letter string, you can click this key to return to the previous screen to carry out the modification. All of adjustments for individual letter in this window will disappear.

9-3 Character Pattern Save

After finishing letter pattern editor, user needs click  key. Appoint the pattern number and patter name in the pop-up window, then click “”key to save.



The dialog box titled "Character Pattern Save" contains two input fields. The first field is labeled "Design No.:" and contains the value "31". The second field is labeled "Design Name:" and contains the value "NewName". At the bottom of the dialog box, there is a legend: "12: Input data, [OK icon]: OK, [ESC icon]: Escape."

Click “”key to confirm saving. If it has no need to continue the edition of the letter pattern, please click “” key to exit.



Chapter 10 JF Type Sequin Embroidery

10-1 Brief Introduction on Sequin Embroidery

Sequin embroidery is formed by sequins and stitch forms. We need choose those hard materials with smooth surfaces as the sequins. With the sequin in different color, size and shape, embroidery will be shining and have amazing effect. Design with Sequin codes has its own format.

JF type multi-sequin embroidery of BECS-C16 machine is divided into two groups: one is normal multi-sequin design, made by normal design making method. The other one is special multi-sequin design made by normal design software with special making method.

For normal one, you should set sequin mode when you modify the color-changing order. Special multi-sequin design can be directly embroidered only after modification of color-changing order.

Meanwhile, the machine can automatically change normal design to special design during the process of importing design. The special design will save all the sequins within normal design as sequin A. If you want further modification, you can use “sequin edit” to modify it. After that, the multi-sequin design will turn to the special multi-sequin design.

Note: Refer to appendix 4 for detailed design making rules.

A. Application Scope:

This system applies on sequin embroidery control system which combines normal embroidery head, special embroidery head and sequin-feeding mechanism.



B. Features and Functions:

1. Two ways for sending sequin: Roller Type and Lever Type;

Roller: the core part in the whole mechanism is a wheel-like device. Its operating principle is to rotate continuously towards in one direction so as to send sequins into position.

Lever: the core part is staff linkage. Its operating principle is to use the retrieval movement of the linkage to send the sequins into position.

2. Separate action of sequin mending and sequin feeding mechanism

3. Manual separate or collective sequin-feeding at one time

4. Separate display of sequin working status

5. Type of sequin feeding and angle can be changed via control panel.

C. Specifications

1. Sequin diameter range: 3mm,4mm,5mm,6.75mm and 9mm;

2. The maximum speed for sequin embroidery is 850 rpm.

D. A/B/C/D means four sequin-feeding equipments. If four sequins are delivered in the same time, A will be on the top, then B, C and D.

10-2 Embroider sequin

You may follow the steps in sequin embroidery:

1. Input design with sequin code (see 10.3)

2. If you want, you can select and edit design (see 10.4)

3. Set sequin parameters according o the instruction (see 10.5)



4. Check and adjust the sequin delivery device (10.8) and ensure the sequin-feeding device is in normal status.



5. Set color-changing order (see 10.6)
6. Back to main screen and confirm embroidery
7. Pull bar to embroider




Note: You must not touch valve switch during embroidery, or it will cause damage to the device.

10-3 Input sequin design

Press the key  in the main screen to enter into disk selection menu. Select design to import and press .

Field	Value
Design No. :	30
Design Name:	FANG_JP
Is satin stitch adjust design?	No
X satin expanding (mm)	0.1
Y satin expanding (mm)	0.1
Is New Format Multi-Sequin Design:	Yes

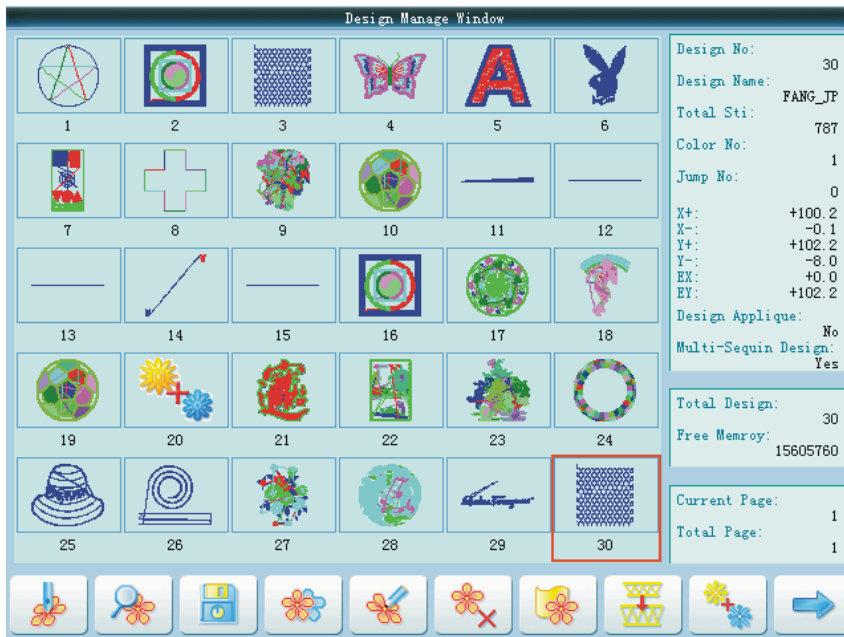
←: Select data, OK: OK, ESC: Escape.



Setting method: You should input design number and name, then press “” to confirm. In the blank of “is new format multi-sequin design”, use  or  to select an input way. Choosing “Yes” is to save all the multi-sequin design as the special sequin design. For the normal sequin design, the changed sequin design will save all the multi-sequin as “A” type sequin. If you choose “No”, normal sequin design remains the normal sequin design, while special multi-sequin designs will be saved as special multi-sequin design automatically.

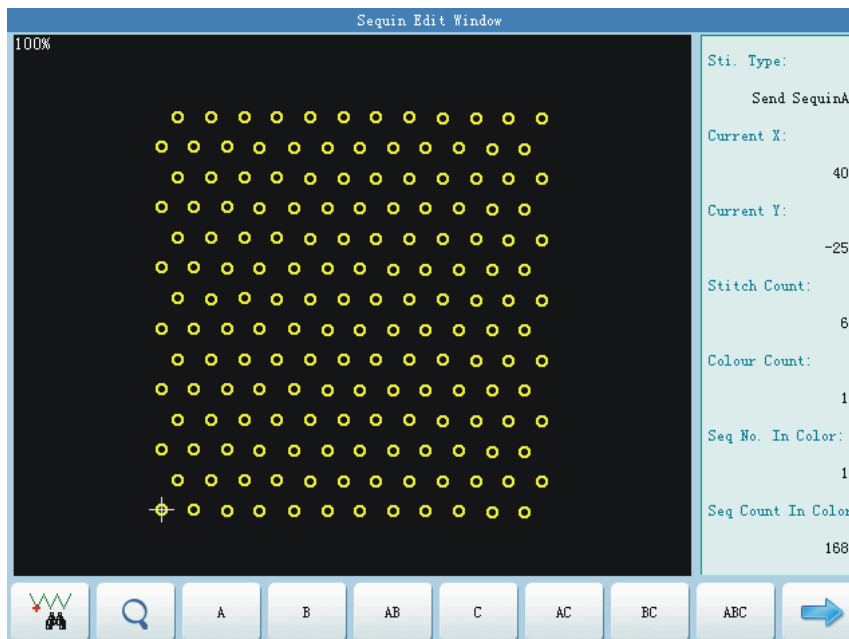
10-4 Sequin design edition

This function is to edit sequin design. All the designs will be saved as special multi-sequin design after edition, which don't need set sequin mode at adjust the color-changing order.

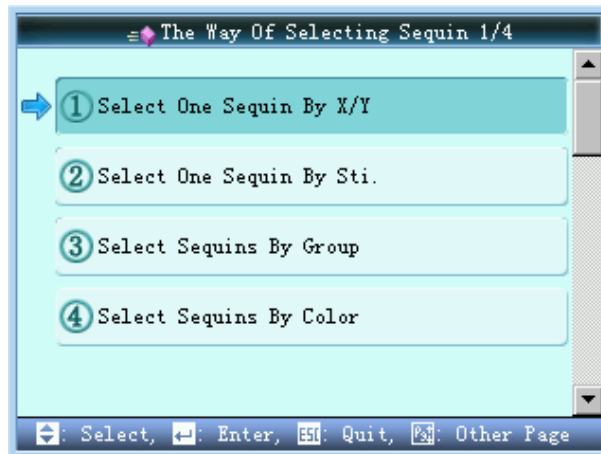
1. Press  in the main screen:




2. Press direction keys to select design with sequin code. Use  key to turn page and select  key:




3. Press the key  to search sequin:




1) Move the cursor to this menu and press “” to select one sequin:


This helps users to directly select a sequin to edit with direction keys.

2) Move the cursor to this menu and press “” to select one sequin by stitch order:


This helps users to directly select a sequin according to the embroidery order.

3) Move the cursor to this menu and press “” to select several sequins by group:

This helps users to directly select a group of sequins at every time. (Note: in the same group, sequin interval should be below 12.7mm, or they are deemed as two groups)

4) Move the cursor to this menu and press “” to select sequins by color.

This helps users to select all sequins with same color.

4. Press  key to enter “The way of viewing sequin design” screen




1) View all of sequins

Select this menu and press “” to show all the sequins within the window.

2) Zoom in of the sequin

Select this menu and press “” to zoom in the sequin.

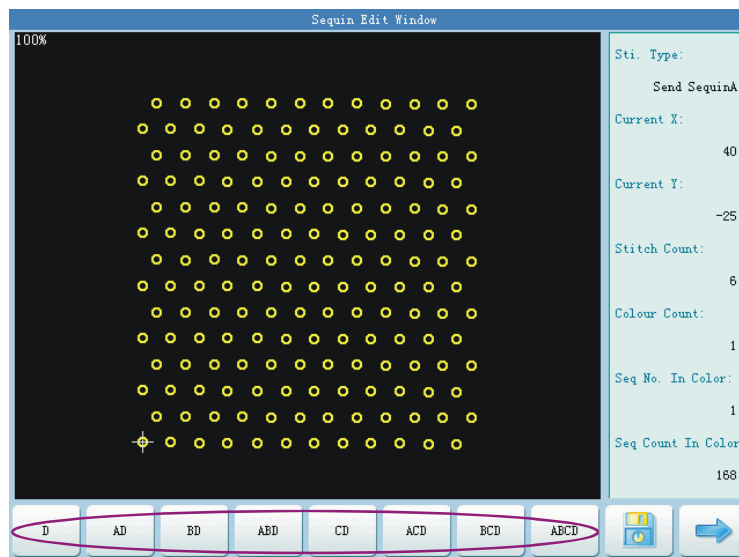
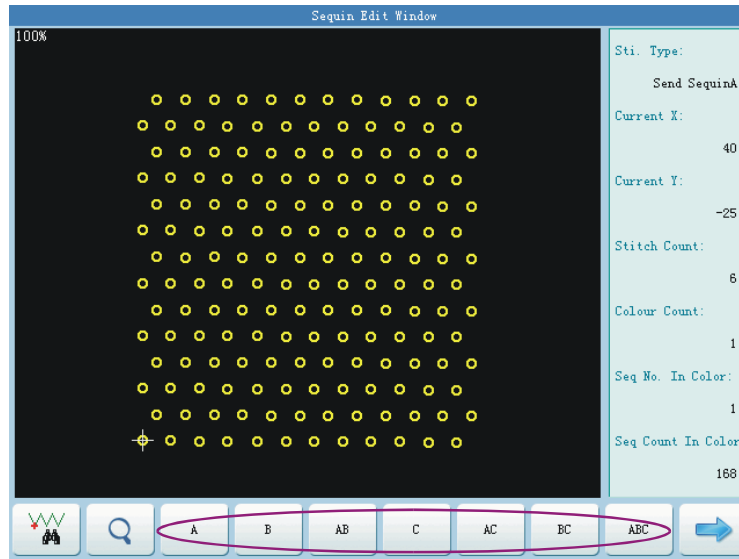
3) View all of Design Stitches

Select this menu and press “” to display all the designs containing the lockstitch, sequin stitch and other stitch codes.

5. Sequin mode selection

There are altogether 15 sequin modes for users to choose: A、 B、 AB、 C、 AC、 BC、 ABC、 D、 AD、 BD、 ABD、 CD、 ACD、 BCD、 ABCD.

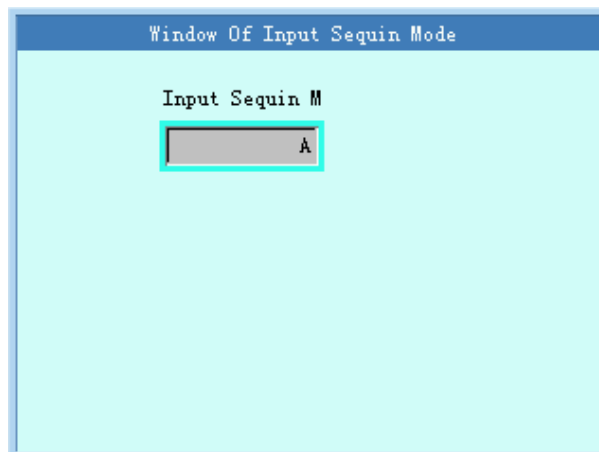
Sequin name are A, B, C and D. If all four sequins are sent at same time, sequin A will be on the top, then B, C and D.






6. Edition of Alternative Sequin



You should first select a group of sequins or sequins with the same color, then




press  to edit.






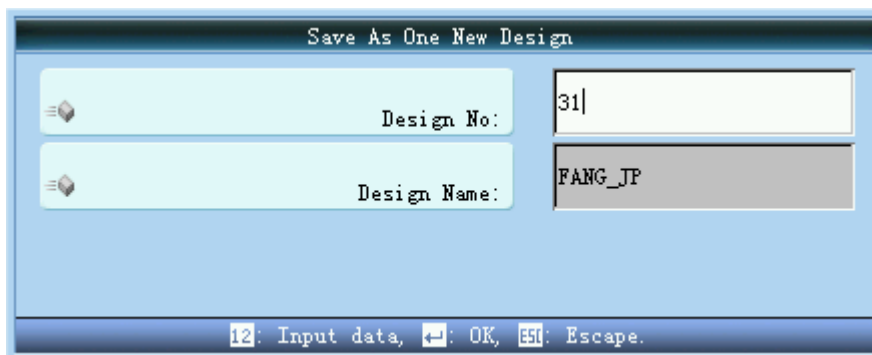
1) Use  or  to select sequin mode and press “” to confirm. Sequin name are A, B, C and D. If all four sequins are sent at same time, A will be on the top, then B, C and D.

2) After that, press “” to confirm the sequin-feeding mode, and the system will ask users to input the number of sequin-feeding. Use number key to input the number from 1 to 9999. If user embroiders a group sequin with one method, user should input “1” and confirm it by pressing “”.

3) Use  or  till you see “OVER” in the blank of “Input Sequin M”. Press “” to confirm.

7. Save as one new design

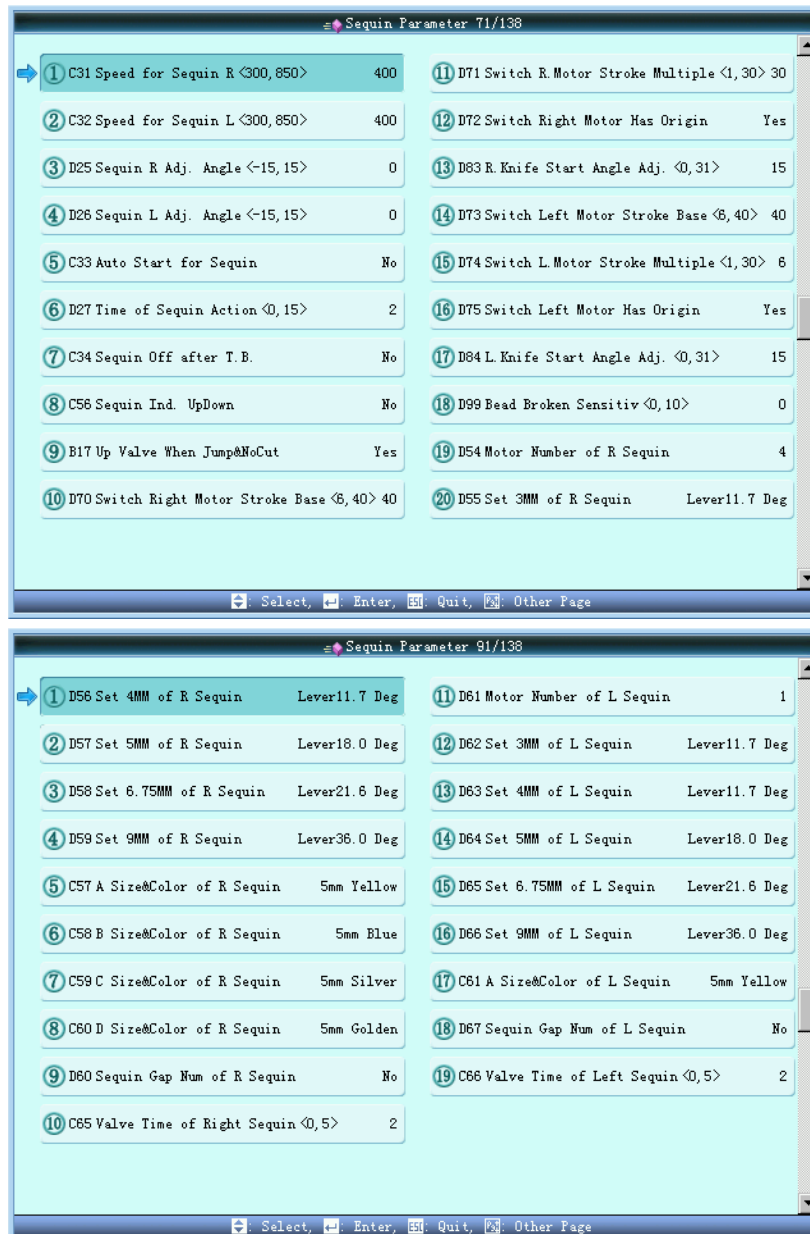
After sequin design edition, please use  to save the new design:



10-5 Parameter setting about multi-sequin embroidery

In this section, we will introduce how to debug the sequin device and set the relating parameters for multi-sequin.





Press the key  in the main screen and select “sequin parameter”:



(1) Speed for Sequin R(L):

This parameter is the Max speed of sequin embroidery

Note: the maximum speed of flat embroidery should be higher or equal to speed for sequin embroidery.

Move the cursor to this parameter and press “” to enter it. Use  or  to modify the value and press “” to confirm.



(2) L/R Sequin Feeding Angle Adj.

It is used for adjusting sequin feeding angle.

(3) Auto start for sequin:

When the setting is “Yes”, system will start embroidering sequin automatically.

When the setting is “No”, machine needs manually start.

(4) Time of Sequin Action:

This is to set the time from sequin device going down to embroidery (0-15, the default value is 2). If the sequin-feeding device is controlled by valve, please use the default value; if that device is controlled by motor, please select 4-5.

(5) Sequin off after T.B.(T.B: Thread-breakage)

When the setting is “Yes”, sequin presser foot will go up automatically in case of thread breaks. When the setting is “No”, user needs manually lift the presser foot.

(6) Sequin Ind. Up Down

When the setting is “Yes”, the action of the sequin device will be independent.

When the setting is “No”, the action will be collective.

(7) Up Valve When Jump & Nocut.(No, Yes)

(8) L/R Motor Shift Stroke Base.

(9) L/R Motor Shift Stroke Time.

(10) With Origin at L/R Motor Shift.

The parameters No.8, No.9 and No.10 at above are for the special sequin device which uses the motor of single needle dual-sequin device to shift the travel amounts of large sequin and small sequin. This kind of device contains two types: the one is with shift origin; the other is without that shift origin.



(11) L/R Knife Start Angle Adj.





This parameter is for the special sequin device using the motor to cut the sequin, which can adjust the start time of the sequin-cutting motor. The default value of this parameter is 15. The smaller this value is, the earlier the motor will be activated (Min value is 0); the larger this value is, the later the motor will be activated (Max value is 31).

(12) Bead-breakage Detection Sensitivity.

This parameter is for the beam embroidery device. “0” means to turn off the sensitivity of the beam-breakage detection. The range of this parameter is 0~10. “1” means the highest sensitivity, while “10” means the lowest sensitivity.

(13) Motor Number of R (L) Sequin







This parameter should be set according to mechanism. If there is no sequin device, you should set it as “0”.

Move the cursor to this parameter and press “” to enter. Use  or  to modify the number and press “” to confirm.

(14) Set 3/4/5/6.75/9mm of R(L) Sequin








This is to set sequin-feeding angle. If the sequin-feeding device is roller type, the parameter should be set as single way; if that device is lever type, the parameter should be set as double way. The manufacturer should set it correctly before selling the machine. The parameter is closely related to “left/right sequin device A/B/C/D size and color”. For example, “A size&color of R sequin” is set as “4mm X color”, then the corresponding sequin-feeding angle should use the value in “Set 4MM of R Sequin”.



Move the cursor to this parameter and press “” to enter. Use  or  to modify the feeding mode and press “” to confirm it. Then the system will automatically enter the screen for changing the sequin-feeding angle, where user can change value with the  or .

(15) A/B/C/D size&color of R/L sequin





This parameter should be set according to the actual mechanical structure. The order from A to D is from front to back.

Move the cursor to this parameter and press “” to enter it. Use  or  to modify the size of sequin at that position and press “” to confirm it. Then the system will automatically enter the screen for setting the color. Please use  or  to change the color and press  to finish the setting.

Note: “Motor Number of R (L) Sequin” is closely related to the number of “A/B/C/D” in parameter “A/B/C/D size&color of R/L sequin”. For example, if “Motor Number of R (L) Sequin” is set to 2, then it only displays “A/B size&color of R/L sequin”.

(16) Sequin Gap Num of R(L) Sequin

This is to set gap valve number. If there is no gap, then it should be set to 0.

Move the cursor to this parameter and press “” to enter. Use  or  to modify the value and press “” to confirm.

(17) L/R Sequin Pitch Valve Action Time.

This parameter is used to change the waiting time of the adjustment on action of interval valve. The larger the value is, the waiting time will be longer; the smaller

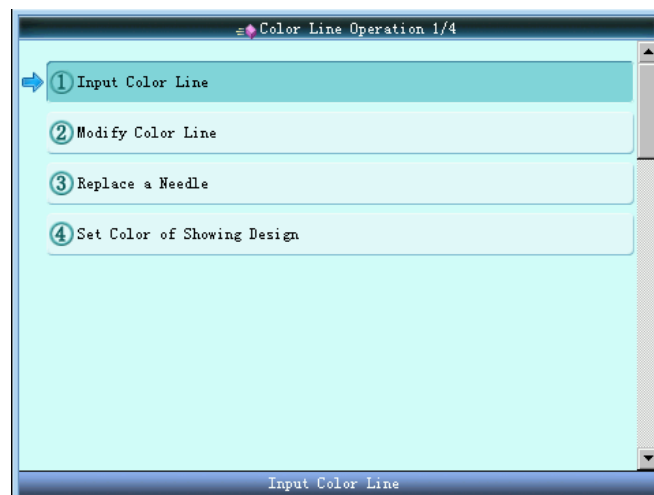
the value is, the waiting time will be shorter. User needs to adjust this value according to the actual condition of the sequin device. The default value of this parameter is 2.


10-6 Change color order and set sequin mode

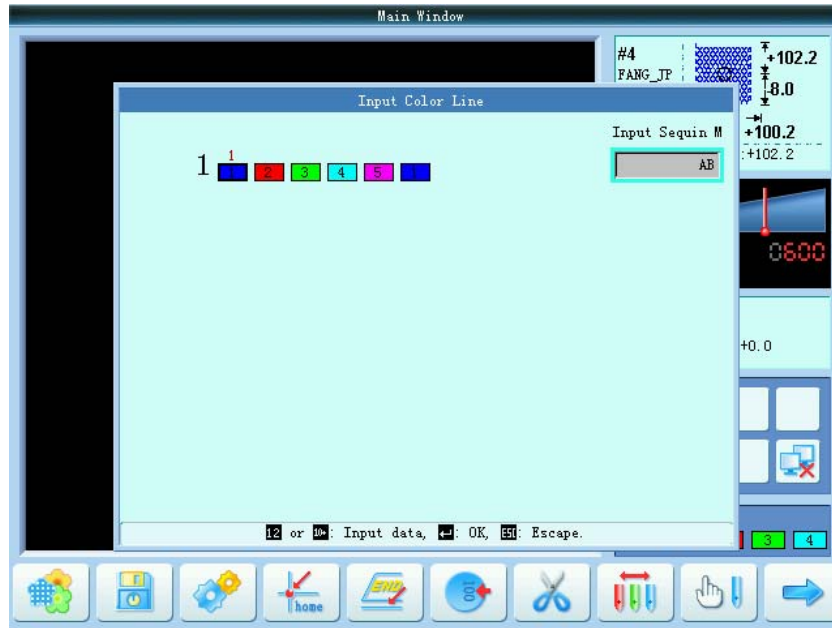
User must set sequin mode before setting color-changing for normal multi-sequin design, but for the special multi-sequin design, user only need set color-changing order instead of setting multi-sequin sequin mode.

Detailed operations are as below:




1. press the key  in the main screen:





2. Move the cursor to “input color line” and press “” to enter.
3. Input color-changing position with digits key (Note: the number you input can not be over the needle number). System will show needle position and related needle position order. If the first/end needle is multi-sequin device, it will require user to set the sequin delivery mode. If it is single sequin device or special multi-sequin design, it will be not necessary to set it. For an example of the first needle position 1, then after you input 1, it will show:



Setting of sequin-feeding mode:

- a) Press digital key confirm embroidery needle position, it will show “input sequin mode” at the position that has sequin device.
- b) Use  or  to modify the delivery mode and press “” to confirm. A stands for front motor delivery; B stands for middle motor delivery and C stands for rear motor delivery. AC stands for front/rear motor overlapped sequin, AB stands for front/middle motor overlapped sequin, BC stands for middle/rear motor overlapped sequin and ABC stands for front/middle/rear motor overlapped sequin.

Note: if there are only two motors, then B stands for rear motor.

- c) After pressing “”, you should input the number of sequin for feeding. If it requires same mode before color-changing code, then type in “1” and press “”.













- d) Press  or  till you see “Over” in “input sequin mode”, then press  “” to confirm.











For example: a machine with needle 9 as its end needle (sequins 3, 5, 7mm); first needle is single sequin (9mm). The requirement is sewing a 7mm sequin at first, then a 3 & 5mm overlapped sequin, then a 5 and 7mm alternative embroidery, then 9ps of 3mm sequin, 8ps of 5mm sequin, 4ps of 7mm sequin, 6ps of 3mm & 7mm overlapped sequins. At last, use first needle to embroider a 9mm sequins.

Settings:

(1)

















- ① press 9, it will show sequin delivery mode screen;
- ② Use  or  till you see “C” in “input sequin mode”, then press  “” to confirm;
- ③ press “1”, then press  “” to confirm;
- ④ You should use  or  till you see “Over” in “input sequin mode”, then press  “” to end the first setting.

(2)























- ① press 9, it will show sequin delivery mode screen;
- ② Use  or  till you see “AB” in “input sequin mode”, then press  “” to confirm;
- ③ press “1”, then press  “” to confirm;
- ④ You should use  or  till you see “Over” in “input sequin mode”, then press  “” to end setting.



(3)




- ① press 9, it will show sequin delivery mode screen;
- ② Use  or  till you see “B” in “input sequin mode”, then press  “” to confirm;
- ③ press “1”, then press  “” to confirm;
- ④ You should use  or  till you see “C” in “input sequin mode”, then press  “” to end setting;
- ⑤ press “1”, then press  “” to confirm;
- ⑥ You should use  or  till you see “Over” in “input sequin mode”, then press  “” to end setting.

(4)

- ① press 9, it will show sequin delivery mode screen;
- ② Use  or  till you see “A” in “input sequin mode”, then press  “” to confirm;
- ③ press 9, then press  “” to confirm;
- ④ Use  or  till you see “B” in “input sequin mode”, then press  “” to confirm;
- ⑤ press 8, then press  “” to confirm;
- ⑥ You should use  or  till you see “C” in “input sequin mode”, then press  “” to end setting;
- ⑦ press 4, then press  “” to confirm;
- ⑧ Use  or  till you see “AC” in “input sequin mode”, then press  “” to confirm;



⑨ press 6, then press “” to confirm;

⑩ You should use  or  till you see “Over” in “input sequin mode”, then press “” to end setting.

(5) press 1, then press “” to end the whole setting.



Note: if it is single sequin, it is not necessary to set sequin delivery mode.



10-7 Manual operation of sequin embroidery



It has two ways of operation, collective operation and separated operation.

1. Centralized Operation

Centralized operation can be divided into three parts: “sequin start”, “sequin end” and “Send sequin”.

(1) Press the key  in the bottom of the screen and then select “sequin start”, then press “” to let all the sequin presser feet go down.

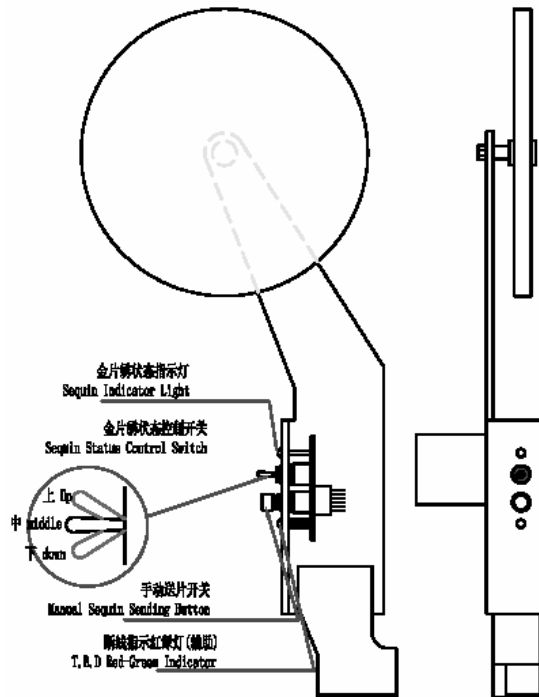
(2) Press the key  in the bottom of the screen and then select “sequin end”, then press “” to let all the sequin presser feet go up.

(3) Press the key  in the bottom of the screen and then select “send sequin”, then press “” to let all the devices (except the off ones) send one sequin at the time you press the key (sequin presser foot should be down at first).

2. Separated operation

- Thread-breakage switch is embroidery switch. When it is at the down side, neither flat embroidery nor sequin embroidery is available.
- Thread-breakage warning lamp is mounted on the sequin sending device, which offers the operator with easy view.

Note: when the manual valve control switch is in the middle, blue lamp is on, which indicates a normal condition of sequin embroidery.



Location of the sequin switch board

10-8 Debugging multi-sequin embroidery

1. Separated debugging

1) Manual operation of front motor for feeding A sequin

Press the sequin switch to the down side, turn thread-breakage detection switch to green and press manual sequin-feeding button.

2) Manual operation of middle motor for feeding B sequin

Press the sequin switch to the down side, turn thread-breakage detection switch to red and press manual sequin-feeding button.





3) Manual operation of rear motor for feeding C sequin

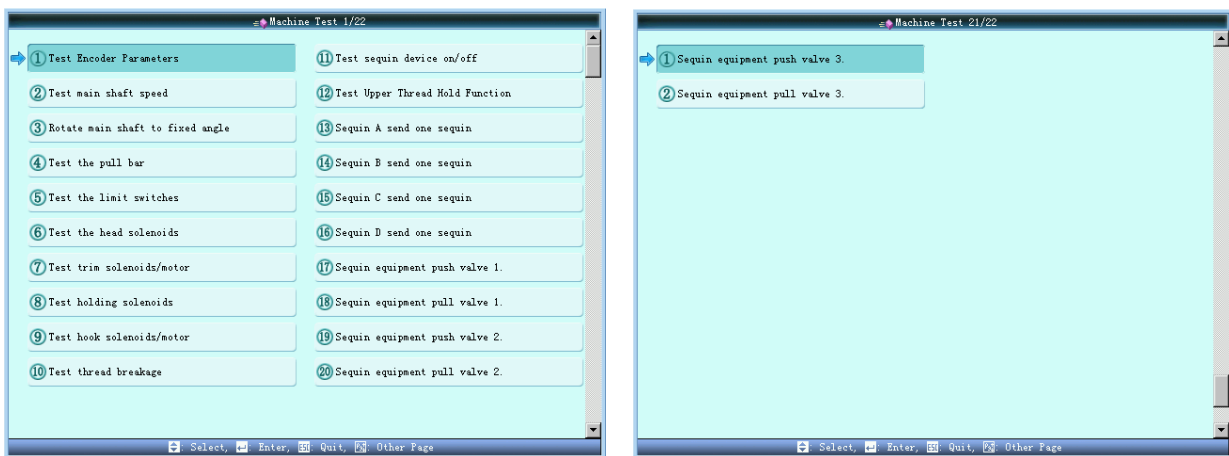
Press the sequin switch to the down side, turn thread-breakage detection switch to



the down side too (the head light is off at this moment) and press manual sequin-feeding button.

2. Collective debugging

Press the key  in the main screen and press “” to enter into “machine test” window. As shown in below, pressing  &  can shift between pages.



Then you can start the debugging after moving the icon to the relating menu of

sequin and pressing “”.

10-9 Sequin mending

After thread breaks or user manually turns on the red lamp, pulling bar will have the machine to turn to sequin mending status. All the sequin devices will go up; machine stops when it backs to the mending point. User can pull bar again to let the sequin device (on mending head) go down for mending. When it reaches the thread-breakage point, machine stops, then other sequin devices will go down to continue normal embroidery. “Patch count” in machine parameter setting is ineffective in sequin mending.



Chapter 11 Operation of Cording Embroidery

11-1 Functions

1. Cording Embroidery (ZIG Embroidery): this function is to make the bobbin thread form the design with certain stitch forms, which have been saved in the computer in advance, the Z4 and Z5. The figures of these two kinds of cording embroidery are shown at below:



Z4 Embroidery



Z5 Embroidery

2. User can set the max speed for flat embroidery and the top speed for cording embroidery respectively.
3. Thread-trimming for cording embroidery (trim bobbin thread only).
4. Before manual frame-moving, the cording device will lift the presser automatically, and it will also lower the presser automatically before starting the embroidery.

11-2 Key Technical Indexes

1. Speed of Cording Embroidery: 400~1000rpm.
2. M Axis Manual/Auto Rotation Angle: 18° /Step.

11-3 Procedure of Cording Embroidery

(1) Input cording embroidery pattern, and user can select, change and edit the pattern according to needs;


(2) Change parameter, select color-changing order and decide embroidery mode;



(3) Check the needle position of cording embroidery, and make sure it works normally; and

(4) Start Embroidery.

11-4 Related Parameters and Their Setting

Click parameter setting key  in main interface, and then user can set the parameters relating to the cording embroidery.

1. Right Cording Device: Y (N) — Y means the first needle is the cording embroidery position.
2. Left Cording Device: Y (N) — Y means the last needle is the cording embroidery position.
3. Cording Device Move Time: 1 (Default Value) — User should set this value according to the actual action time of the cording embroidery device.
4. Swing Range of Cording Embroidery: 100 (Default Value), which is the rotating angle of the wheel. In case of thread-floating, user can decrease this value to assist the adjustment. Generally, this value should be no less than 80.
5. Top Speed of Cording Embroidery: 600 (Default Value). The top speed can be set as high as 1000 rpm, according to the actual condition of machine.
6. Frame Swing of Z5 Embroidery: by adjusting the frame, user can change the embroidery range (advisable for senior users).
7. Thread-loosing Motor for Cording Embroidery: Yes. If the cording device is of double-motor type, user should set it as “Y”, otherwise “N”.
8. Thread-loosing Adjustment Value for Cording Embroidery: this is to adjust the thread-sending speed of all the thread-loosing motors. The recommended value is 9.
9. Origin of Right Cording Device: 0 (Default Value). This is for the angle between the threading point and the direction of the mechanical origin of cording device at first needle position. Angle = Parameter value *0.9. For example, if the parameter value is 30, the angle will be $30*0.9=27^\circ$.
10. Origin of Left Cording Device: 0 (Default Value). This is for the angle between the


threading point and the direction of the mechanical origin of cording device at last needle position. Angle = Parameter value *0.9. For example, if the parameter value is 30, the angle will be $30*0.9=27^\circ$.

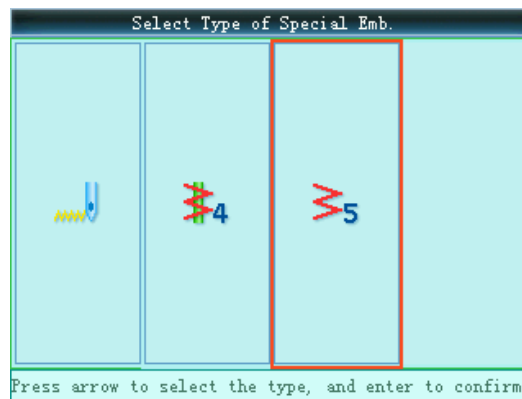
11. Cording Device Movement Detection: detect whether the device moves to the proper position. At present, this parameter is set as “N” .
12. Test Thread-sending Motor of Cording Device (Y/N): “Y” (Default Value), which means that the thread-sending motor will not rotate until the position of hall component is checked. If it is set as “N”, the thread-sending motor will run as long as the system is at embroidery status, regardless the position of the hall component.

11-5 Relative Operations of Cording Embroidery



11.5.1 Shift between Flat Embroidery Position and Cording Embroidery Position

1. Manual Shift

In the main interface, press the key  to enter into color-changing interface.



Move the cursor to the icon of applicable special embroidery type and press


the key  to save the selected type. Press the key  to exit.

Definition of Icons:

 Normal Embroidery;



 Z4 Embroidery: The rod swings once at each stitch.

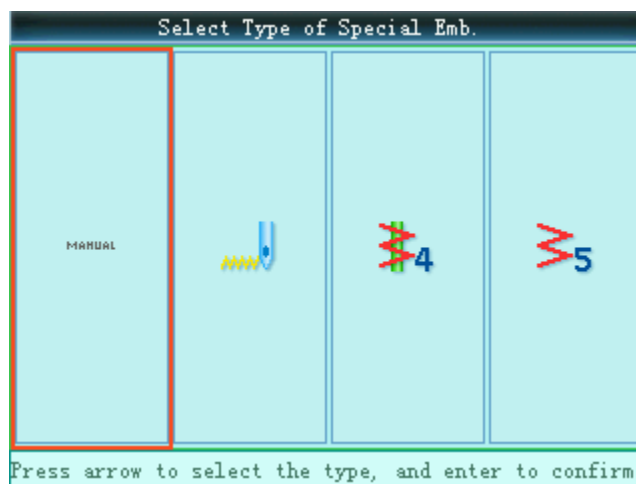



 Z5 Embroidery: the same features as Z4, and suitable for thick thread (used in cooperation with the parameter: Swinging scope of frame in ZIG embroidery).

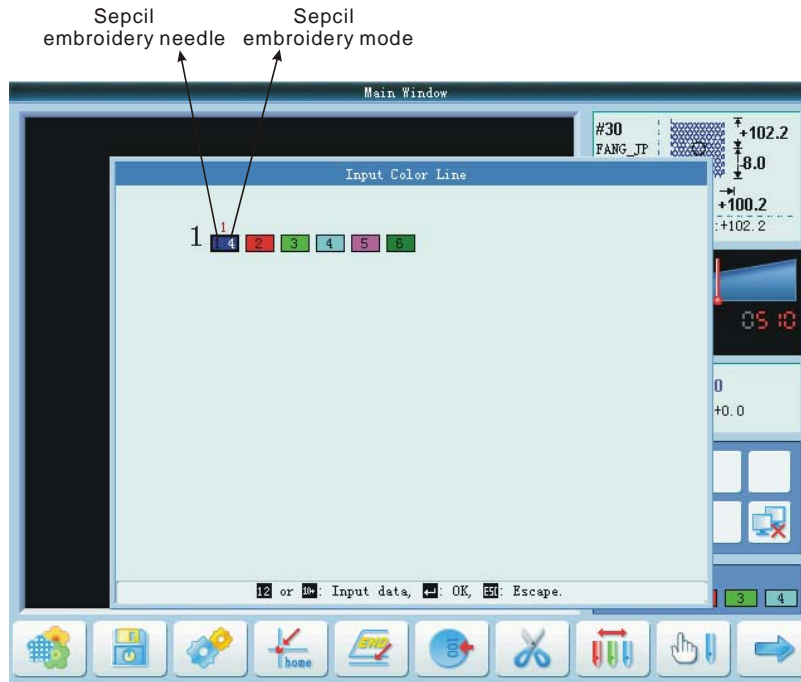
2. Automatic Shift

Before embroidery, automatic shift can be achieved through setting the color-changing position.

In the main interface, press the key  to enter into color changing interface; then move the cursor towards “input and repeat color-changing order” or “change color-changing order” and press the key  to enter the color-changing order interface; and then press “1” (special embroidery machine head) to change the cording embroidery mode:




Press relative icon to select the embroidery mode you need, otherwise press the key  to exit. After user saves the changes, system will display as follows:





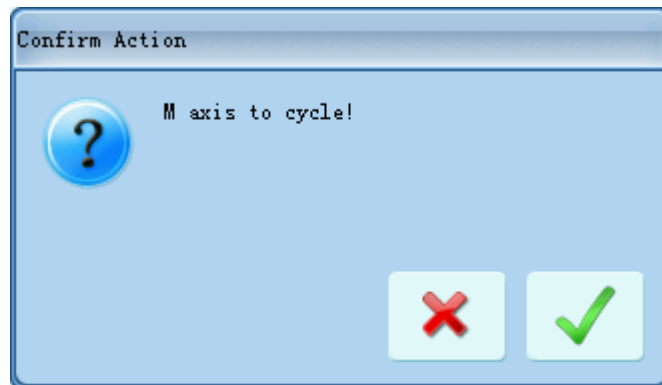
During the embroidery, when the special embroidery head finishes the work, the machine will stop at the end point. At this moment, the system will display “embroidery pause, pull bar to continue” and wait for the operation of the string. After that, user need pull bar to continue. Then, the machine will automatically shift to the flat embroidery head and work according to its functions. In a similar way, when user shifts from flat embroidery head to special embroidery head, the machine will stop automatically and wait for the preparation of string after needle position 1 (special embroidery head) is shifted. Then user can pull the bar to continue the embroidery.

11.5.2 M Axis Operation of Cording Embroidery


The operations of M axis contain “M axis to cycle” and “M axis to turn”, both of which are within the Assistant Functions. In the main interface, click the key  to enter the “Assistant Operation” interface. Turn the page until you find the parameters of “M axis to cycle” and “M axis to turn”.

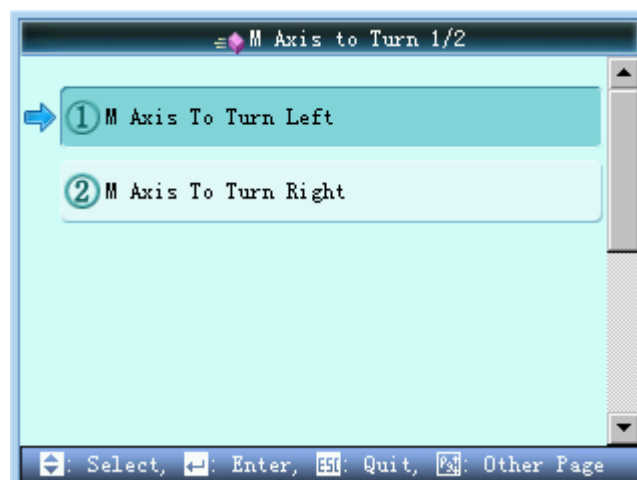
(1) Step Moving of M Axis

Press the key “M axis to cycle” and click the key  on the dialogue window to let the M axis rotate to the “Zero Point”, or click the key  to cancel the operation.



(2) Rotate M Axis Manually

Press the key “M axis to turn” and click “turn to left” on the dialogue window to let M axis rotate to the left. It will rotate 18° every time you click the button. After clicking 20 times, it will return to its origin; in the same way, click “turn to right” on the dialogue window to let M axis rotate to the right and it will rotate 18° every time you click the button. After clicking 20 times, it will return to its origin. Click the key  to exit.









Chapter 12 Directions on Coiling, Taping and Zigzag Embroidery

12-1 Function Introductions

1. Coiling function: This is a method to wind core thread in a form of coiling.

Left Coiling  (clockwise) and Right Coiling  (counterclockwise) are both available in coiling function, which is decided by the setting of parameters.

2. Taping function: Tape can be used as embroidery material. It includes taping 1  and taping 2  (blind embroidery)

3. Zigzag function: this function is to sew the core thread in the specialized stitch form on the fabric. There are six stitches form for Zigzag Sewing in computer: Z1, Z2, Z3, Z4, Z5 and Z6. Their icons are as follows.



For convenience, Coiling, Taping and Zigzag-sewing are all called as special embroidery at below.

4. Flat embroidery head and special embroidery head can be switched automatically or manually.

5. Coiling, Taping and Zigzag functions can be switched at will.

6. The presser of special embroidery can go up and down automatically or manually. (This function is only for the machines installed with relevant apparatus)

7. The highest speeds of flat embroidery head and special embroidery head can be set respectively.







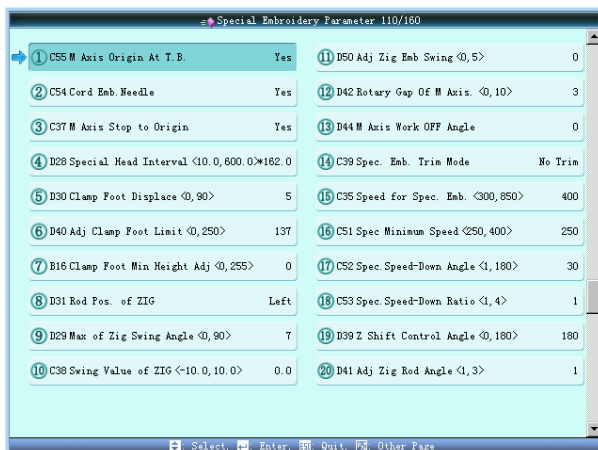
8. Auto-saving of the M axis stop point at power-off: The machine can continue the work from the stop point when the power recovers.
9. The trimming function of the special embroidery head (no trim\trim the bottom thread\trim both the upper and bottom threads)
10. The presser of special embroidery can go up automatically before manual frame-moving and go down before embroidery.
11. Zigzag sewing lever can be tested manually.

12-2 Main Technical Specification




1. The sequence of needle positions on flat embroidery head and special embroidery head: This control system deems the first one as the special embroidery needle position, and the needle position for flat/sequin embroidery are from second to end.
2. Speed of special Embroidery: 300—600rpm, adjusting step at 10r/m.
3. Manual rotating angle of M-axis: 18° /step.

12-3 Parameters and setting

Press the parameter-setting key  in the main screen and click “” enter “Special Embroidery Parameter” Press  ,  to shift page.





Move icon to the corresponding parameter and press “” to input or select the value. Press “” to save the setting or “” to cancel it. For the relating information of each parameter, please refer to appendix 1.

The remarks of these parameters are at below:

1. D28 Special Head Interval:

Range: 10~600 Default Value: 150, 162, 166, 185, 200, 216, 225, 230, 240, 250, 270, 290, and 300

If you input the default value, there will be a “*” before the value

2. D30 Clamp Foot Displace: 0~90

This parameter is to adjust the lifting height of clamp foot at each stitch.

3. D40 Adj Clamp Foot Limit: 0~250

This parameter is the Max height of the clamp foot.

4. D31 Rod Pos. of ZIG: Left/ Right

The “ROD POS. OF ZIG” determines the position of swing rod when M axis is in origin. This parameter must be set in accordance with actual mechanical position.

5. C38 Swing Value of ZIG (-10.0~-0.2, +0.2~+10.0)

The parameter is for Z5 embroidery and applies to thick cords. For thick cord embroidery, at Z5 embroidery, the system moves the frame to compensate the swinging scope of the lever. The parameter’s absolute value should be set according to the cord width. And the “+/-” is decided by the mechanical structure.

The moving directions of the lever and frame should be the same. Otherwise please change the “+/-” setting.



6. D42 Rotary Gap of M Axis: 0~10

The M axis of special embroidery head has mechanical gap, so it will generate the mechanical difference after M axis changes rotating direction repeatedly. At embroidering the flat tapes, if the shape of tape is curve and the M axis has no angle compensation, the needle will fall at the edge of the tape instead of the right position at each turning.

Adjusting this parameter value is to ensure that the needle falls in the center of tape. During machine debugging, parameter value should be “0” when needle falls in the center of tape. If not, please repeat the adjustment to realize the best effect.

Generally, this parameter should be managed by professional experts before leaving factory.

7. D44 M Axis Work OFF Angle: 0, 90

In normal and sequin embroidery, if this parameter is set at 0, the M axis will stop at the horizontal position; if it is set at 90, the M axis will stop at the vertical position. When the distance between the normal embroidery head and special embroidery head is small, this parameter must be set as 90° to avoid crashing.

8. D39 Z Shift Control Angle: 0~180

When the rotating angle is larger than the set value, the Z axis will wing faster.

9. D41 Adj Zig Rod Angle: 1~3

It is the starting angle of the rod, which indicates the relative position of the needle bar and thread. It is used for adjusting the embroidery quality. “1” means the swing starts at an early angle; “2” means the swing postpones certain angle; “3” indicates the swing postpones certain angle again and starts.



10.C36 Ratio of Coil Emb. (The ratio of coiling) : “1~4 Sti/L”

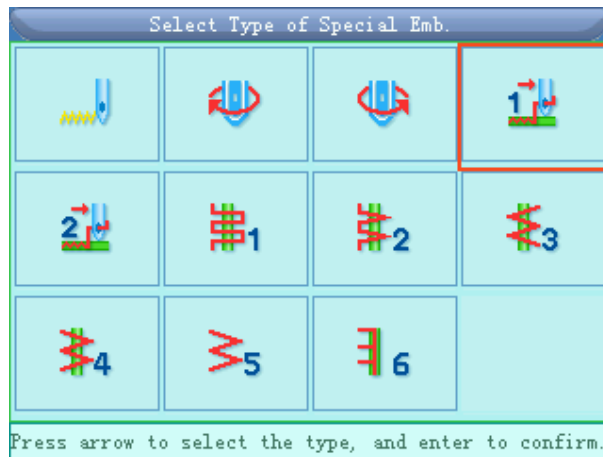
The parameter can change the coiling density; e.g. the set value 2 means one coiling every two stitches.

12-4 Relative Operations of Special Embroidery

12.4.1 Shift between Flat Stitch Head and Special Head




1. Manual Shift


In the main screen, press the key  to enter color changing screen.





Press the key “” to change other special embroideries. Press “” to exit.

Definition of icons:


 normal (lock-stitch);  right coiling;  left coiling;

 taping 1;  taping 2;


 Z1 embroidery, Its features that the lever swings once at every two stitches.


 Z2 embroidery, Its features that lever swinging once at every stitch and lever swinging once at every two stitches take place alternately.

 Z3 embroidery, Its features lever swings once at every stitch.

 Z4 embroidery, Its features lever swings once at every stitch, but its swing direction is opposite to the one of Z3.





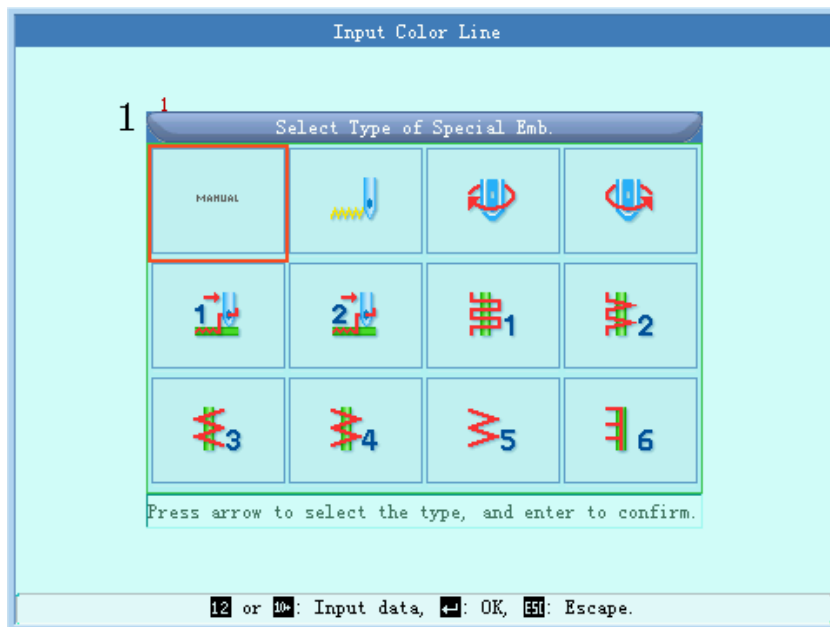
 Z5 embroidery, Its feature is the same as Z4 and it's suitable for embroidering the thick cords.



 Z6 embroidery, Its feature is that machine embroiders three stitches at one point and lever swings at every stitch.

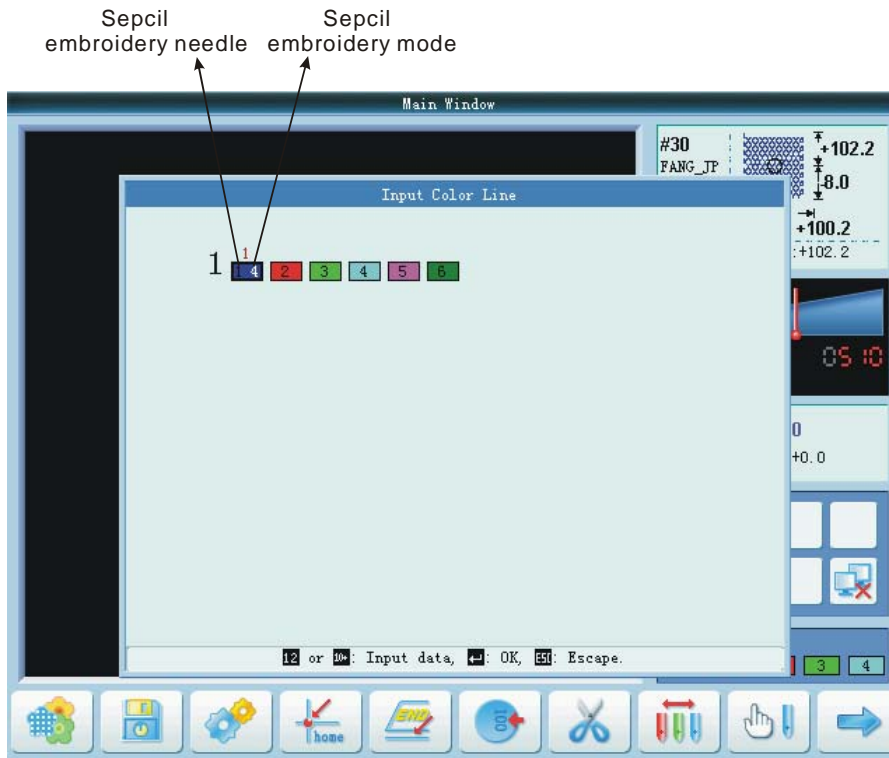
2. Automatic Shift


Before embroidery, automatic shift can be achieved through the setting of color-changing position.

In the main screen, press the key  to enter the screen for adjusting color-changing order. Move icon to “Input Color Line” or “Modify Color Line” and press “” to enter screen for inputting color-changing order. Input “1” (special head) to change special embroidery mode:



Press relative icon to select the embroidery mode you need. Press “” to save the changes, or press “” to exit. After user saves the changes, system will display as:



Note: Icon “MANUAL” means that system go into manual shift status. The  is still in effect when system is in automatic shift status.





During the embroidery, when the special head finishes the work, the machine will stop at the end point. At this moment, the system will display “embroidery pause, pull bar for start” and wait for the operation of the tape. After that, user needs pull bar to continue. Then, the machine will automatically shift to the flat embroidery head and work according to the functions of flat embroidery. When user shift the flat embroidery head to special embroidery head, the machine will stop automatically and wait for the preparation of tapes after needle position 1 (special embroidery head) is shifted. Then user can pull the bar to continue the embroidery.

12.4.2 M Axis Operation of Special Embroidery





This function includes “M axis to be ready”, “M axis to cycle” and “M axis to turn”.







1. M axis to be ready

Press the key  and click “” to activate the window. Then click “” on the dialogue window to let the M axis back to the working position. Click “” to exit.





2. M axis to cycle





Press the key  and click “” to activate the window. Then click “” on the dialogue window to let the M axis rotate to the “zero point”, click “” to exit.

3. M axis to turn

Press the key  and move icon to “M Manual”, then click “” to activate the dialogue window. Move icon to “M axis Left” to let the M axis rotate to the left. It will rotate 18° left once you click the button. After 20 times click, it will return to its origin; while moving icon to “M axis Right” and clicking “” on the dialogue window will let the M axis rotate to the right. It will rotate 18° right once you click the button as well. After 20 times click, it will return to its origin; click “” to exit.



12.4.3 Operations of Clamp Foot

In the main screen, click  to enter into the “Assistant Embroidery Operation” screen, and move cursor to “Nipple up”, then press “” to activate the operation window. Click “” to lift the clamp foot, select “” to exit.



Press the key  and select “Nipple down” and “” to activate the operation window. Click “” to lower the clamp foot, select “” to exit.



12-5 Debugging Special Embroidery


Debugging special embroidery mainly includes Zigzag swing to its origin and test of clamp foot action. In the main screen, click . Then move icon to “Machine Test” and click “ ←” to have access to the screen of machine test.

1. Zigzag rod to 100

Move cursor to “Sway Zig Rod to 100” and click the key “ ←”. According to the hint in dialogue window, user can pull bar to let all the swing rods act once. Click “” to exit.

Users can adjust swing range by using this function.

2. Clamp Foot Up/ down

Move cursor to “Test lift clamp foot” and click the key “ ←”, a According to the hint in dialogue window, user can pull bar to let all the clamp feet go up/down.

Pull the bar again to let them down/up again. Click “” to exit.

12-6 Steps on Special Embroidery

1. Input design, carry out design selection, changing and editing according to requirement.
2. Modify the relating parameters, select color-changing order and choose the special embroidery mode.
3. Check special heads and make sure they are in perfect condition.
4. Pull bar to start embroidering.



12-7 Mechanical Category and Driving Mode Selection for Special Embroidery Machines

Taping machines have three types of the motion parts in the sense of mechanics. We define them as M axis, E axis and clamp foot axis. M axis rotates a certain degrees at every stitch to trace the stitch, which ensures cords or tapes always in front of needle movement. E axis swings once at every one or two stitch to make the Zigzag embroidery. Clamp foot axis is used for lifting and lowering the clamp foot.

1. M axis

The mechanism of M axis can be divided to two types. One is with clutch device, whose action is controlled by electric valve or by hand. Its advantage is that only the M axis of the patching embroidery is moving and non-patching embroidery heads stay still at mending. This will enhance the quality and efficiency of mending. The other type is without clutch device. Both of the two types are driven by servomotor and the origins of their M axis are positioned by proximity switch.

2. E axis

According to the difference in motor and the equipment of proximity switch for positioning the origin, E axis devices can be divided to the following types:

- 1) Driven by stepping motor separately, without proximity switch for positioning origin
- 2) Driven by stepping motor collectively, with proximity switch for positioning origin

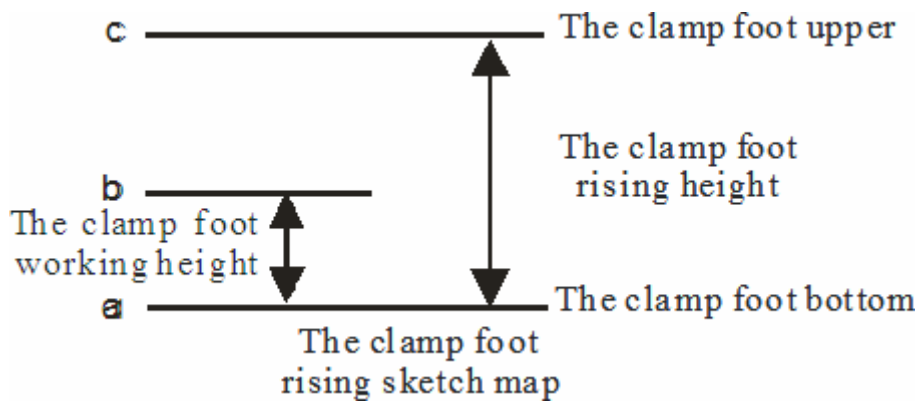


3) Driven by stepping motor collectively, without proximity switch for positioning

4) Driven by servomotor, with proximity switch for positioning origin

3. Clamp foot axis

The working progress of the special clamp foot is shown at below: (The clamp foot working height is the distance of the foot's movement at every stitch. The clamp foot rising height is the foot's moving distance from the bottom to the upper point at non-embroidery mode. And it's also called the clamp foot limited height.)



According to the difference in motor and transmission mechanism, as well as the equipment of proximity switch for positioning origin, the clamp foot axis can be divided to the following types:

1) Raising the clamp foot manually

In this mode, the clamp foot working height relies on the rotation of the cam and the clamp foot is raised to the limited height by hand.

2) Transmitted by 2-phase stepping motor separately, without the holding force and proximity switch

It uses a small 2-phase stepping motor for driving every special embroidery head and controlling its working height and limited height. There is no the holding



force when the clamp foot stays at the upper point or bottom point at power-off. No proximity switch is taken for positioning. As default setting, the controller sets the foot at the bottom position when user turns on the machine.

- 3) Transmitted by 2-phase stepping motor separately, with the holding force and without proximity switch

It uses a small 2-phase stepping motor for driving every special embroidery head and controlling its working height and limited height. At power-off, there is the holding force when the clamp foot stays at the upper point, but not at the bottom point. No proximity switch is taken for positioning. As default setting, the controller sets the foot at the bottom position when user turns on the machine.

- 4) Transmitted by mono-phase AC motor, 2 proximity switches

In this mode, the clamp foot working height relies on the rotation of the cam and the clamp foot is raised to the limited height by one mono-phase AC motor driving the clamp axis. At both the upper and bottom points, a proximity switch is installed to adjust the clamp foot rising height. Neither the upper nor bottom point has the holding force.

- 5) Transmitted by stepping motor(2-phase or 3-phase), 1 proximity switch

In this mode, the clamp foot working height relies on the rotation of the cam and the clamp foot is raised to the limited height by the stepping motor that drives the clamp axis. At the upper point, a proximity switch is installed for positioning. The bottom point is controlled by parameters. Both the upper and bottom points have the holding force.

- 6) Transmitted by pneumatic motor separately, without proximity switch.

In this mode, the clamp foot working height relies on the rotation of the cam and the clamp foot is raised to the limited height by pneumatic motor that drives the heads separately.



Chapter 13 Instruction on Operating High-Efficiency System

13-1 Descriptions of Parameters in High- Efficiency Mode

With the new speed control solution at the main software of high-efficiency system, client only needs adjust the parameters within the “**High-Efficiency Mode**”, to receive the speed parameter in the high-efficiency mode. The speed parameters of software (Min Speed and Shift Stitch Length) will be automatically generated according to the actual specification of machine .The parameters are at below:

- 1、 High-Efficiency Mode: Set whether to control speed with the high-efficiency mode
- 2、 Numbers of Flat Heads: Input parameter according to the head number
- 3、 Interval of Flat Heads (mm): Input parameter according to the head interval
- 4、 Width of Frame Y (m): Input the value according to the size of frame
- 5、 Rank of Efficiency: Select the acceleration amount

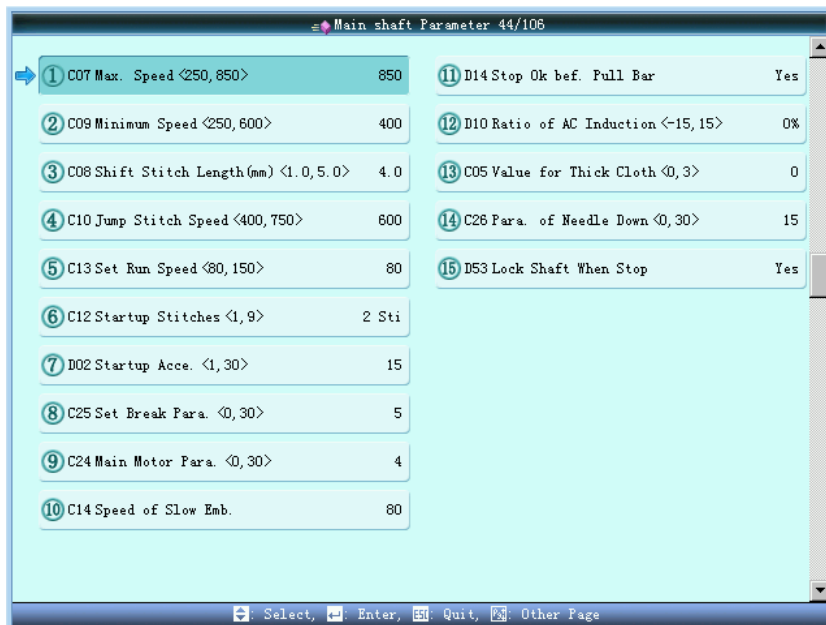
The basic speed of high-efficiency mode reflects the different specification of machine, size of frame and the available high-efficiency deceleration curve. By inputting the parameters such as “Head Number”, “head Interval and X width” and “frame width Y”, user can have system automatically generate the deceleration curve, among which the “Frame Width Y” is to set the “**Shift-Stitch Length**”, and the “head number” and “head interval” will determine the “**Min Speed**”. After client sets the **Shift Stitch Length** and the **Min Speed**, the system, according to the set value of Max speed, will give the basic speed of high-efficiency mode on the basis of the mechanical structure.

13-2 Setting of Software for High-Efficiency Mode

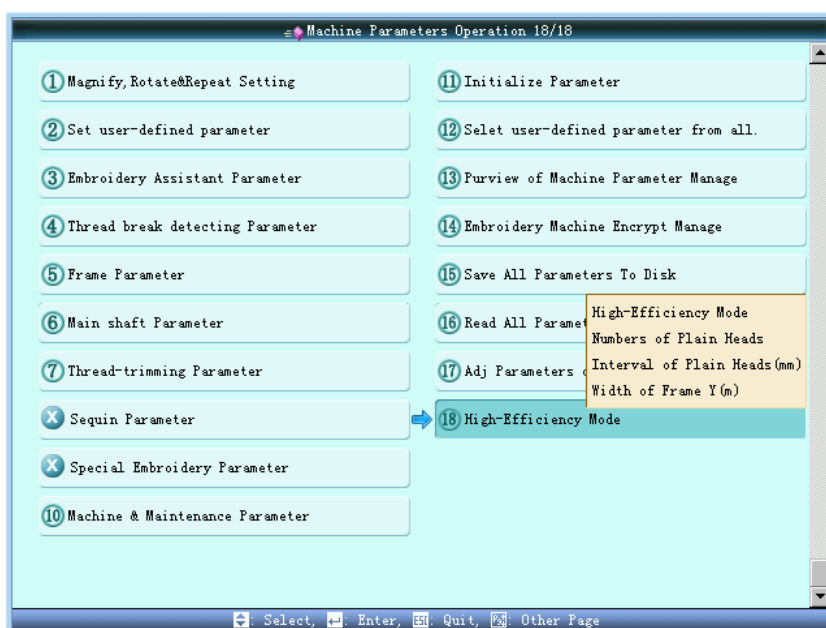
1. Update main software and perform “**System Parameter Initialization**”.

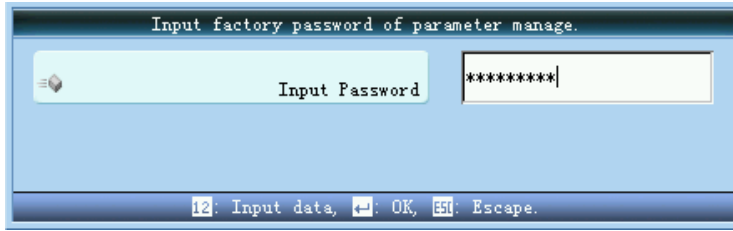


- Have access to the interface for setting the main shaft speed, input passwords (Dahao general password or special passwords customized by manufacturer) and set the **Max Speed** to 850 or other values.

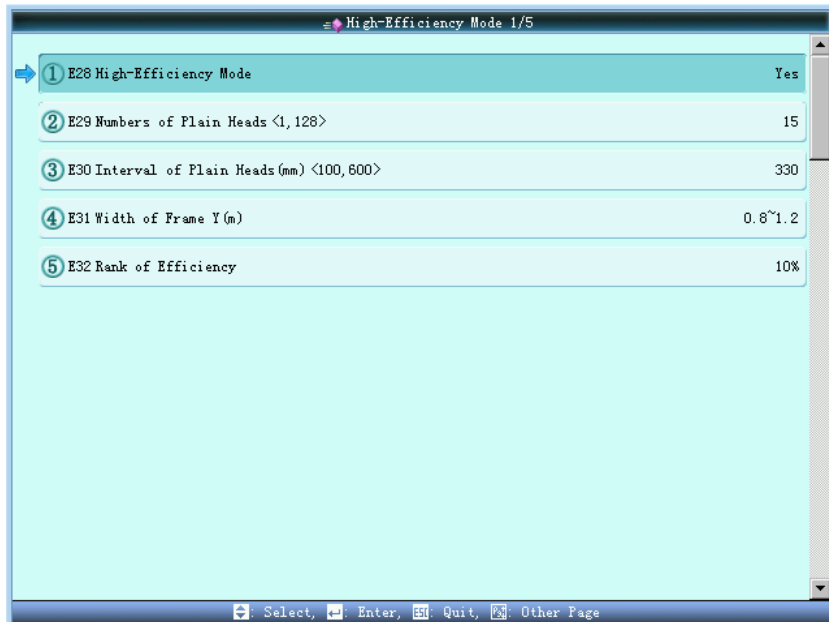


- Quit the interface, turn to “High-efficiency Machine Parameters” and input passwords (Dahao general password or special passwords customized by manufacturer).



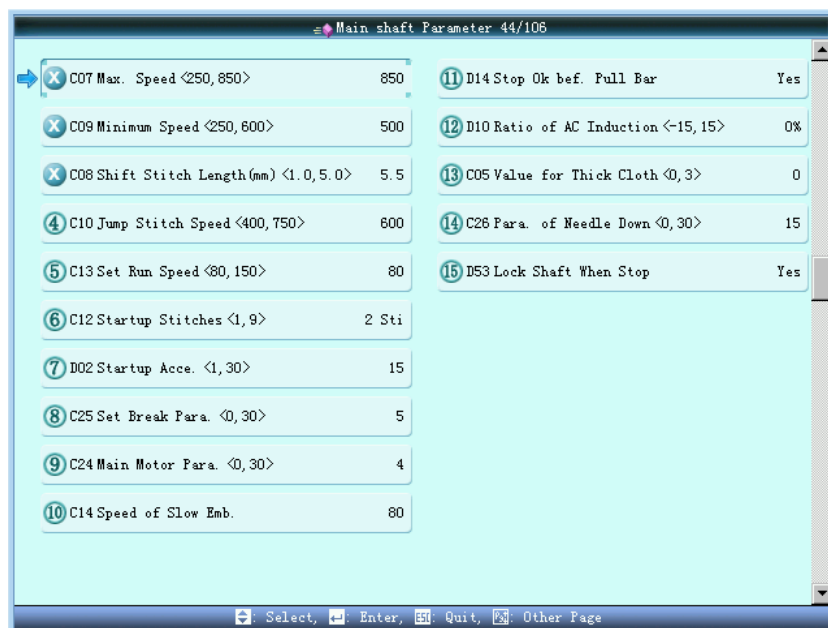


4. Have access to setting interface





Select whether to activate High-efficiency Mode. If user selects “Yes”, the system will quit this interface when the parameters relating to the machine specification, as well as the efficiency level are set. At this moment, the parameters at the speed setting interface, such as “Max Speed”, “Min Speed” and “Shift Stitch Length” will be unchangeable.



5. If client has higher standards on the embroidery quality, this software will also provide the non-high-efficiency mode. Clients only need set the “High-efficiency Mode” at “No”, the parameters at the speed setting interface, such as “Max Speed”, “Min Speed” and “Shift Stitch Length” will be changeable.

Chapter 14 Updating Control Program

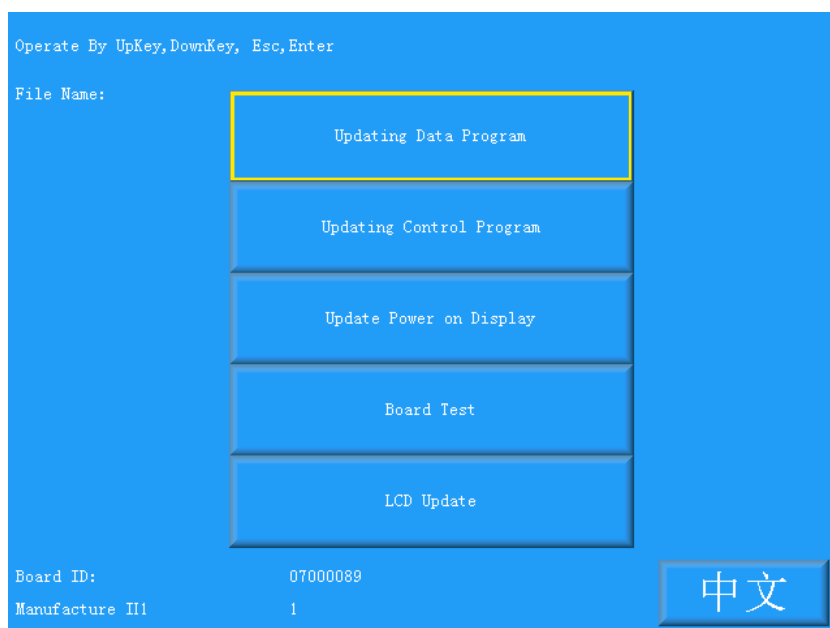
Updating Operation:

14-1 Update Data Software (Upper Machine)

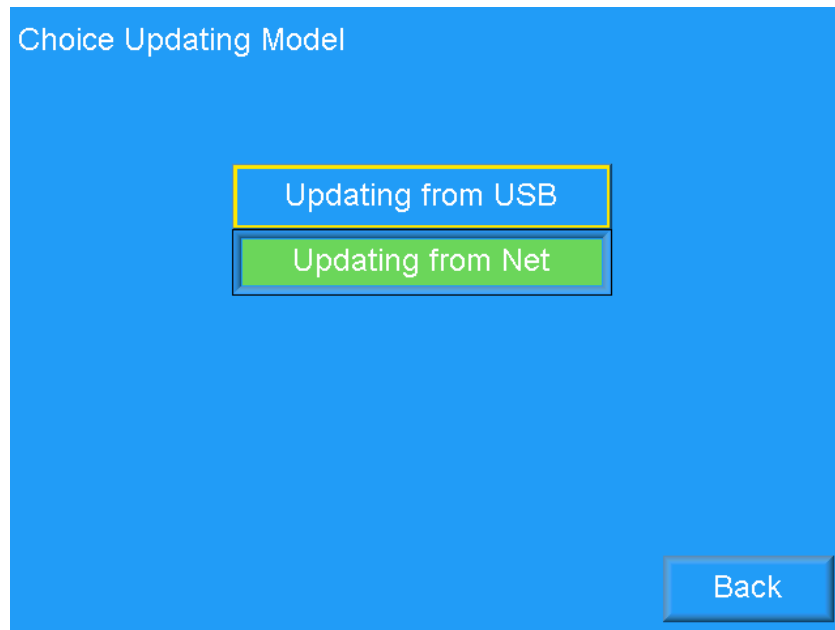
1. Hold the button “8”, at the same time turn on the power:



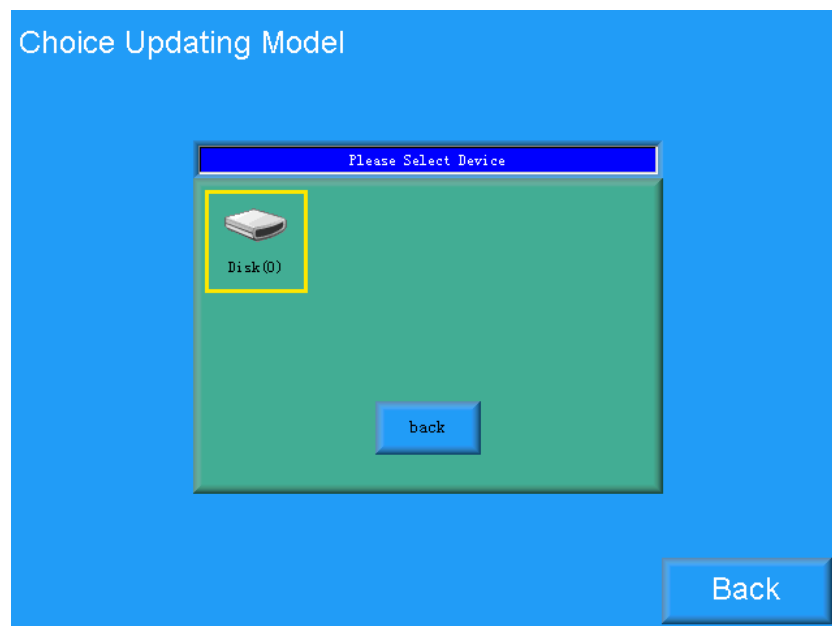
2. The screen shows the following picture, select the first “updating data program” and press enter key:



3. Select the “updating from USB” and press enter key:

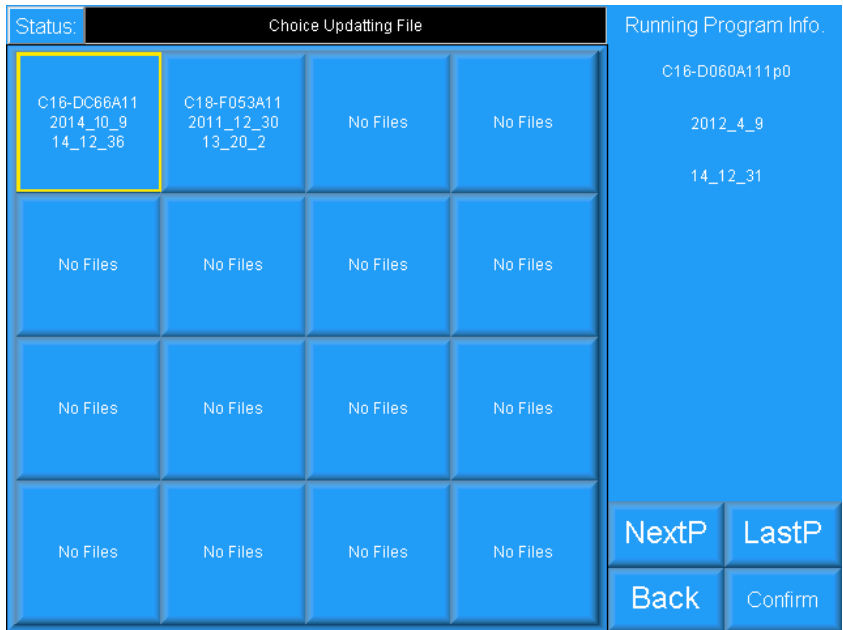


4. Select the inserted USB disk, then press enter key:

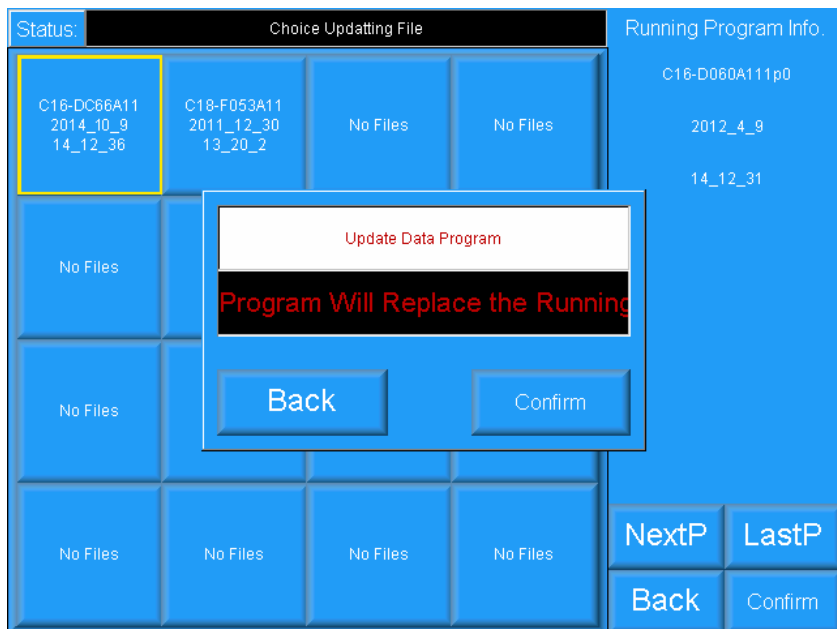




5. Select the data software file, such as:C16-DC66A11:

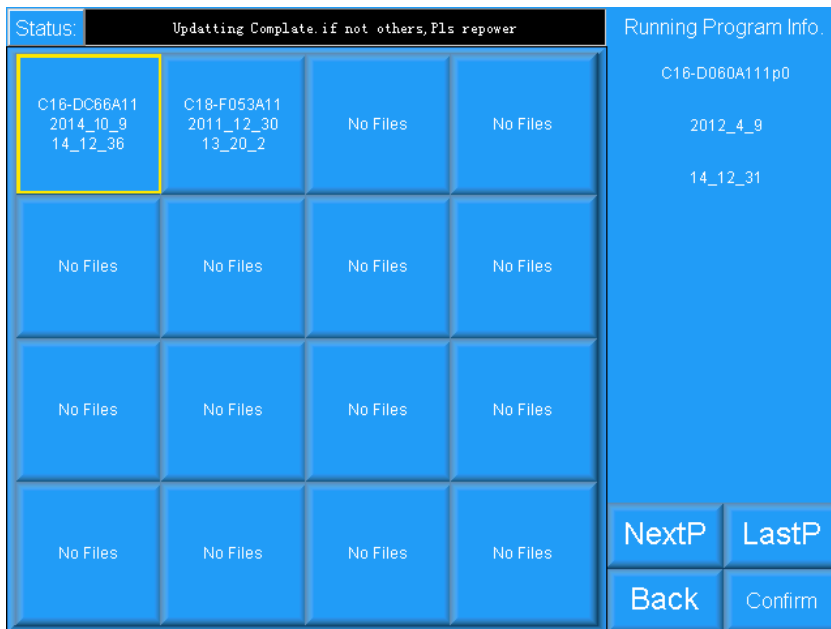


6. Press enter key to confirm the updating :



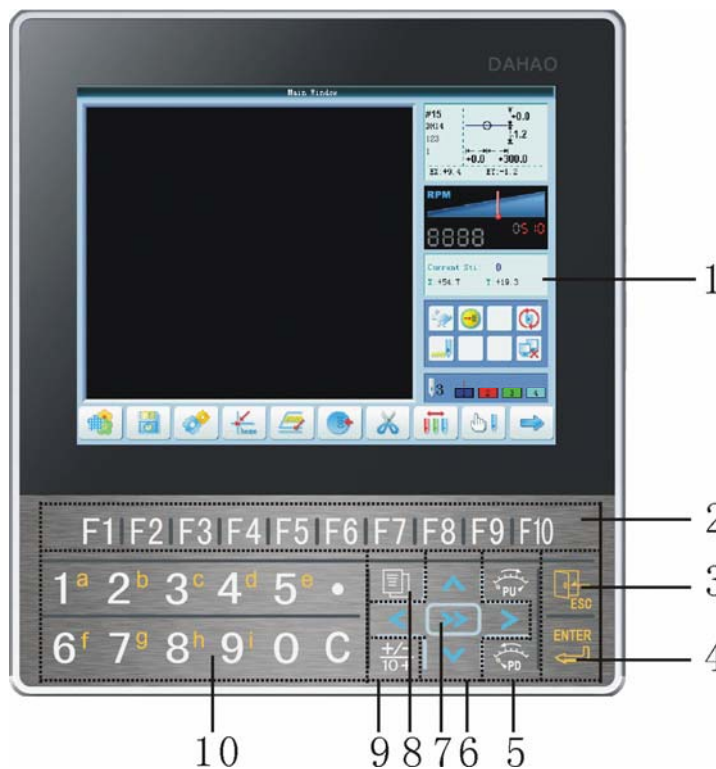


7. The screen will show “restart” when update is finished. Please turn off power:



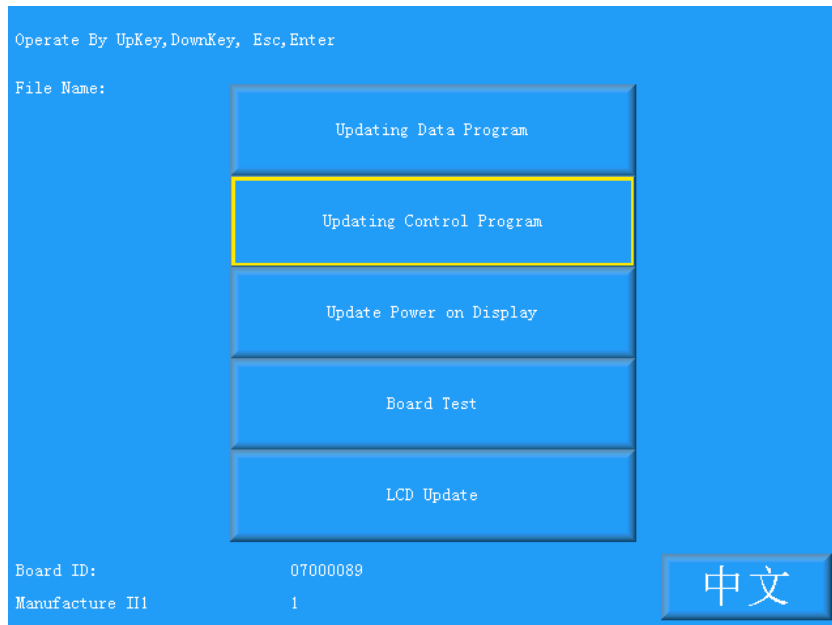
14-2 Updating control program (Down Machine)

1. Please press the button “ 8”, at the moment turn on the power:

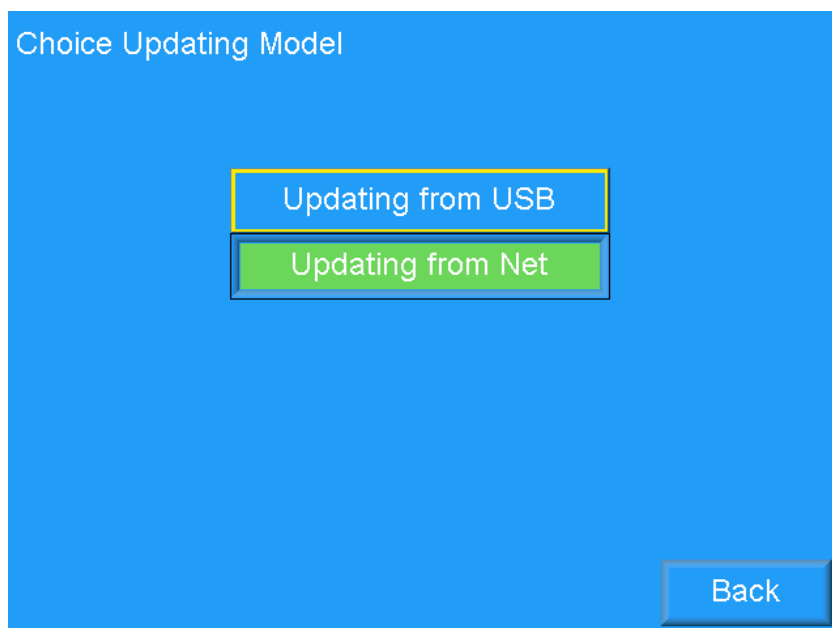




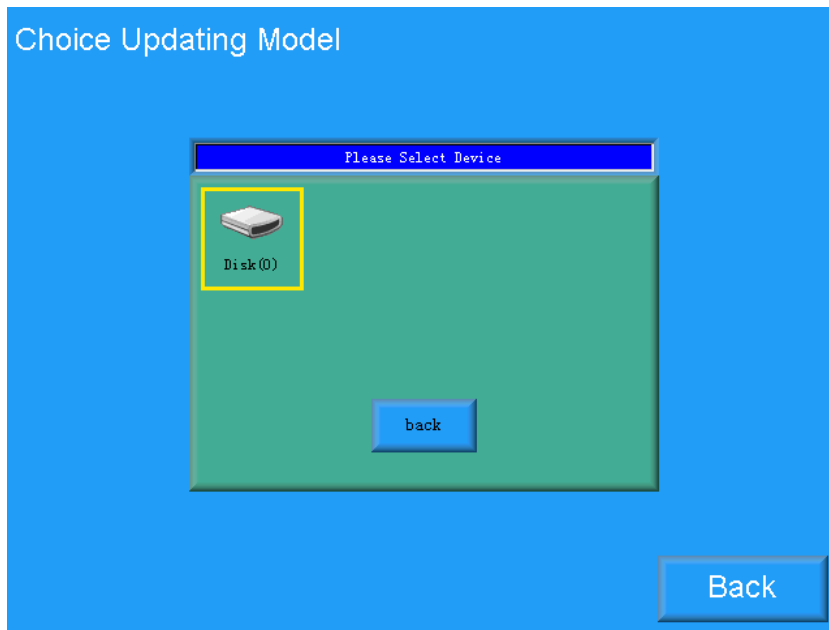
- The screen shows the following picture, select the second “updating control program” and press enter key:



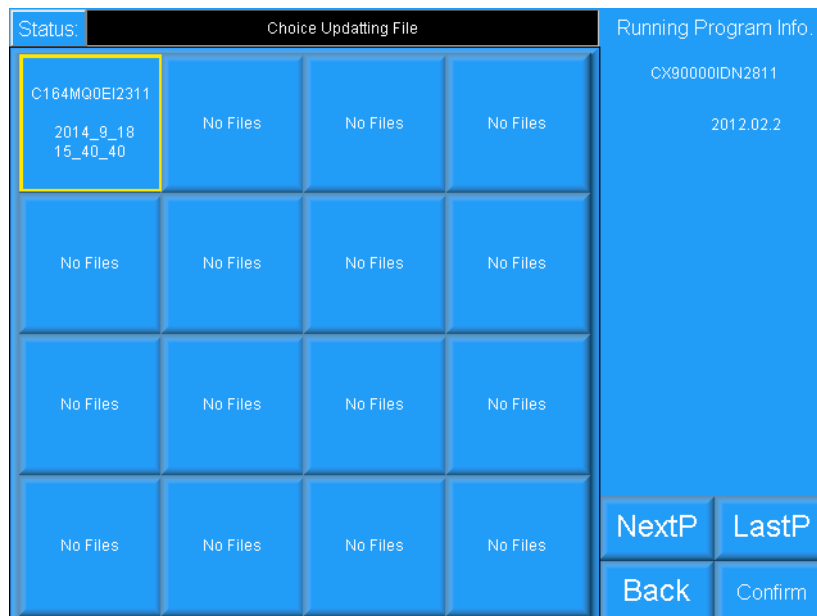
- Select the “updating from USB” , then press enter key:



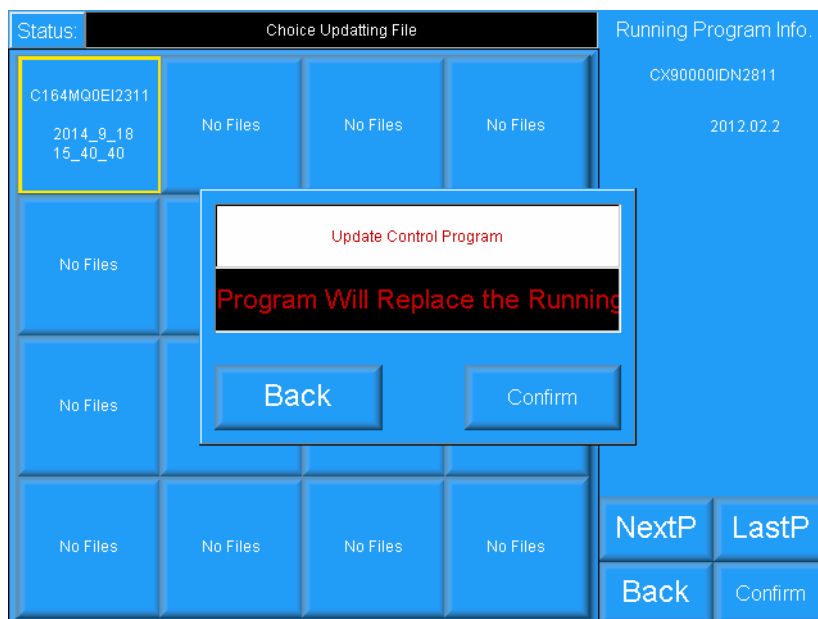
4. Select the inserted USB disk , then press enter key:



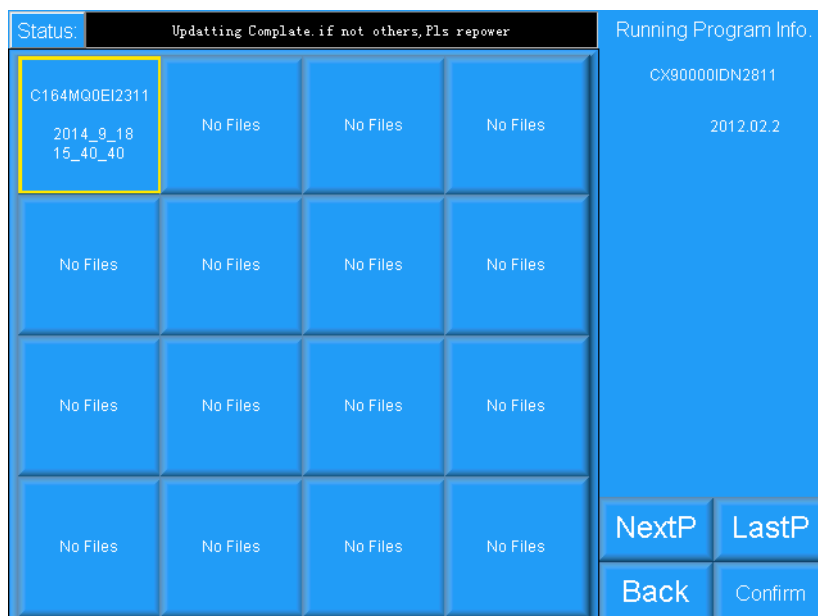
5. Select the control software file, such as:**C164MQ0EI2311**:



6. press enter key to confirm the updating:







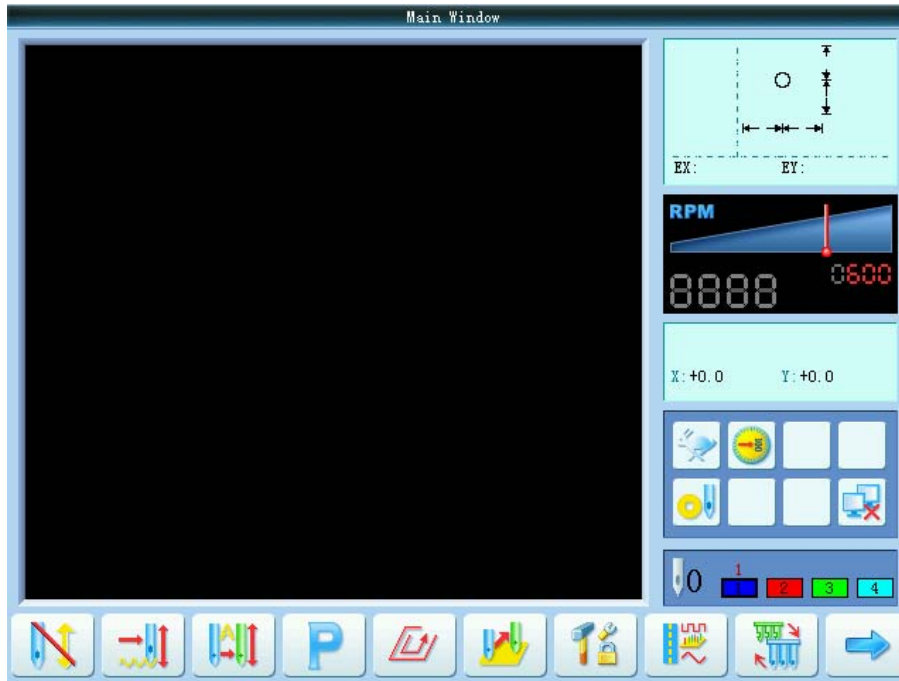
7. The screen will shows “restart” when updating is finished, please turn off power and restart:






Chapter 15 Updating Peripheral Equipment Program

Updating Procedure:

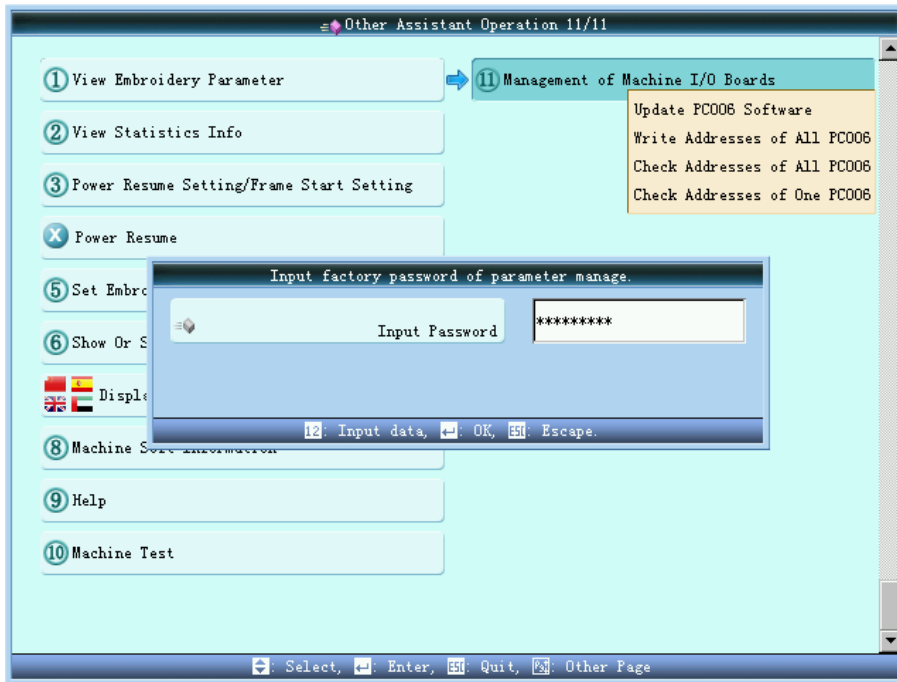
1. Press the “” key in the main screen to move the cursor to , and press “” key:
press “” key:



2. Press “ ” to move the cursor to “ Management of Machine I/O Boards ”, and press “” key:





3. Please input password, and press "ENTER" key:

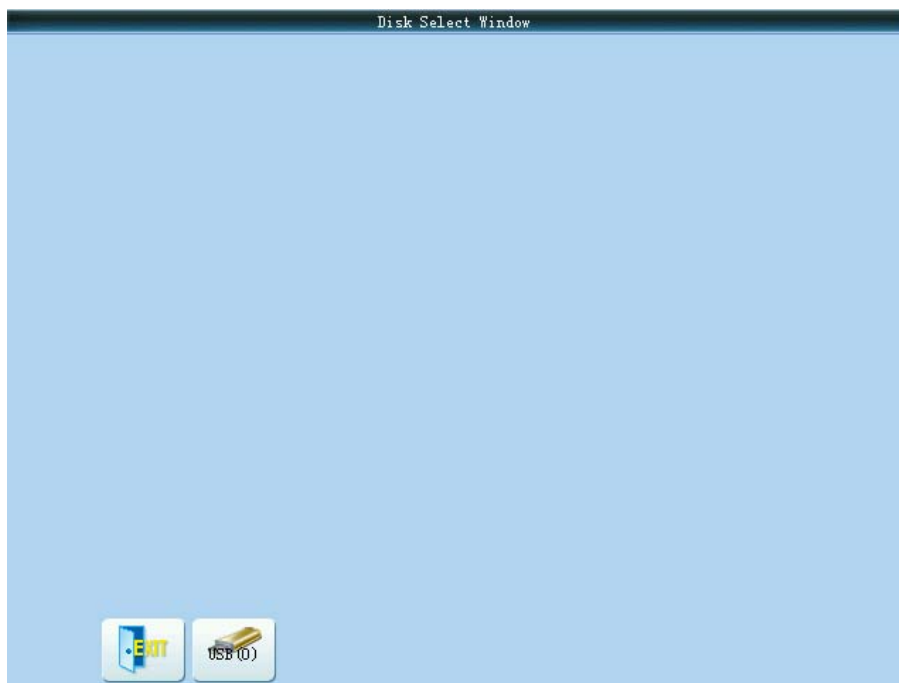


4. Press "▲▼" to move the cursor to "Update Head Board Software", and press "ENTER" key.





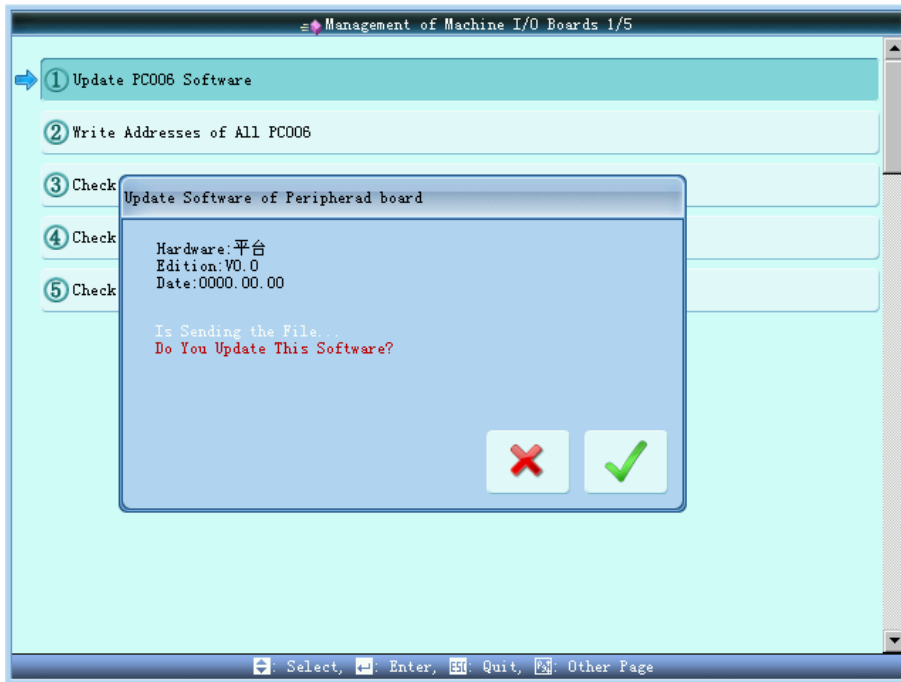
5. At main interface , move the cursor to "  " , Equipment is the USB , and press "  " key.



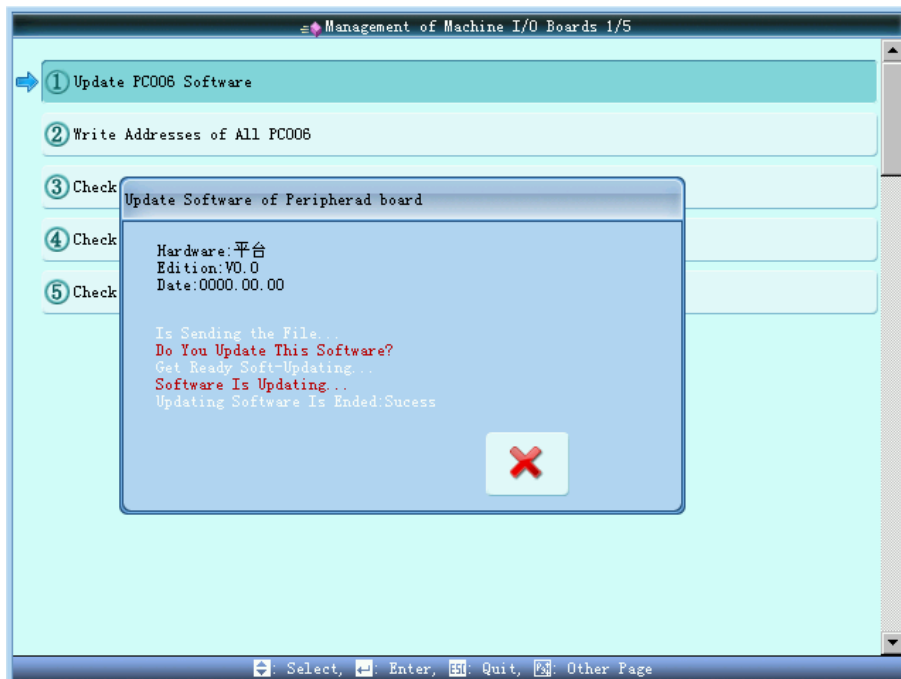
6. Press "   " select the software for update , and press "  " key.



7. Turn up "Update Software of Peripheral board", and press "ENTER" key.



8. Wait for updating software. And the screen will display "Success" when updating is finished.





Appendix I Parameter Setting List

** “Sti.” For stitches; “Emb.” For embroidery; “T. B.” for thread-breakage;

“No.” for the needle number of machine heads

Number	Name	Recommended Value	Range of Setting	Note
Magnify, Rotate & Repeat Setting				
A03	Direction	P	<input type="checkbox"/> P <input type="checkbox"/> A <input type="checkbox"/> D <input type="checkbox"/> C <input type="checkbox"/> Q <input type="checkbox"/> S <input type="checkbox"/> B <input type="checkbox"/> A <input type="checkbox"/> P	A03
A02	Rotate	0	0~89	Control the rotating angle of design
A01	X&Y Scales	100/100	50%~200%	Control the scale ratio of the design in X/Y direction
A06	Rep. Prior	X Prior	X prior, Y prior	
A05	Rep. Mode	Normal	Normal, part	Not used
A07	X&Y Reps	1/1	1~99	
A08	X&Y Interval	0.0/0.0	-999.9~+999.9	
A04	Prior Mode	Rotate	Rotate, scale	
Set user-defined Parameter (set it according to needs)				
Embroidery Assistant Parameters				
B01	Auto Origin	Yes	No, Yes	
B02	To Do Cyclic Emb.	No	No, Yes	Whether to automatically repeat embroidery at end. It often coordinates with repetition or special punched design.
B04	Display Sti-Num or Not	Yes	No, Yes	
C02	Sewing Empty Stitch	No	No, Yes	If “Yes”, the machine will omit the empty stitches (needle moving without embroidering). If “No”, the empty stitches won’t be omitted.
C77	Do Filter Short Stitch	No	No, Yes	It is fit for high-speed machine using dahao servo-motor driver. It only get effective after user confirm the embroidery again.



Appendix I Parameter Setting List

C78	Length of Filter Short Stitch	0.2mm	0.1mm~0.6mm	The same as above
C79	Long Stitch Do Auto Jump	No	No, Yes	The same as above
C80	Stitch Len of Auto Jump	No	No , 3mm~11mm	The same as above
B20	Satin Sti, Comp. When Import Dsn	No	No, Yes	
B13	Start for Same Colors	Yes	No, Yes	Whether to start in color-changing way when the later needle position is same to the former one in color-changing order.
C04	Store Manual Color	No	No, Yes	If “Yes”, manual color changing is stored in the color-changing order. After embroidery, the setting will automatically change to “No”.
D15	Slow STI. After Patch	0	0~500	
D16	Speed After Patch	Max. Speed	80~Max. Speed	
C03	Stop to Color	No	No, Yes	Change stop codes into color-changing codes at loading disk design. It’s specialized for some countries/regions.
B18	Is Design TrueView Display	No	No, Yes	
B15	Emb Show Background	Yes	No, Yes	
Thread-breakage detection Parameter				
B05	T. B. Detect	Yes	No, Yes	
B12	T. B. Detect When Jump	No	No, Yes	
B11	Sti. Not T.B. Detect	8 stitch	0 stitch ~15 stitch	
B06	Stop machine after T.B. detect	Yes	No, Yes	



B07	Pull bar after T. B.	No	No, Yes	
B08	T. B. Back Sti.	0 stitch	0 stitch ~7 stitch	It is unavailable to some machine types.(in sequin, this parameter will not be performed)
B09	Patch Count	1 stitch	1 stitch ~9 stitch	How many stitches to patch before the thread break point
B10	Speed Down After Patch	Stop	No Change, Down, Stop	
B14	To Set All Heads Patch	No	No, Yes	If "Yes", all unclosed heads do patching when patching.
C90	T. B. Device Type	spring	spring, spring+ wheel, Winding thread wheel	
C27	Detect T. B. Mode	spring	spring, wheel	
C28	STI. For Filter T.B.	3 stitch	1 stitch ~6 stitch	
C67	Sensitivity of Upper Thread	6	1~15	
C68	Sensitivity of Under Thread	6	1~15	
C69	Filter Sti. For Upper Thread	6 Sti	1~6 Sti.	
C70	Filter Sti. For Under Thread	6 Sti	1~10 Sti.	
C91		0	0~10	
Frame Parameter				
C06	Frame Curve	F1	F1~F6	The high-speed servo machine doesn't have this parameter.
C74	X direction Frame Angle A	245	230~280	It is fit for high-speed machine using Dahao servo-motor driver.
C75	X direction Frame Angle B	245	230~280	The same as above.
C76	Y direction Frame Angle A	245	230~280	The same as above.
C85	Y direction Frame Angle B	245	230~280	The same as above.



Appendix I Parameter Setting List

C49	X Backlash Correction	0.0mm	0.0~1.0mm	
C50	Y Backlash Correction	0.0mm	0.0~1.0mm	
B03	Over frame by Step	No	No, Yes	
D13	Speed When Over frame	16	0,1,2...30	
C15	High Frame-Shift Speed	16	1~30	
C16	Low Frame-Shift Speed	15	1~30	
D19	(AFC) Use	No	No, Yes	
D20	(AFC) Interval Time	3	0~15	
C72	Machine Embroidery Mode	hat	Plain, hat, Clothes	
C73	Frame Weight	1	0~20	
Main shaft Parameter				
C07	Max. Speed	700-850	250, 300, 350, ...,850	
C09	Minimum Speed	400	250,300,350...600	
C08	Shift Stitch Length (mm)	5.0(All-servo high-speed machine)	1.0~10.0(common type machine),3.0~6.0(All-servo high-speed machine)	When the stitch length is longer than the set value, the machine will lower the speed.
C10	Jump Stitch Speed	500	400~750(common type machine),400~1100(All-servo high-speed machine)	Set the rotation speed for jump stitch.
C13	Set Run Speed	80	80,90...150	
C12	Startup Stitches	1stitch	1 stitch ~9 stitch	Set the number of slow stitch before acceleration.
D02	Startup Acce.	12	1,2,3...30	Increase the value to bring a quicker speedup after pulling the bar.
C25	Set Break Para.	0	0~30	Range: 0~30. When the main shaft motor is an electromagnetic motor, the value is usually set as 9. When it is a servomotor, the parameter is usually set as 5-7.



C24	Main Motor Para.	1	0~30	The parameter is invalid when it's a servomotor. When it's an electromagnetic motor, increase this parameter value to avoid main shaft vibration during braking. Usually it's set as 1.	
C14	Speed of Slow Emb.	400	80 (rpm)、the value of the minimum speed		
D14	Stop Ok bef. Pull Bar	Yes	No, Yes		
D10	Ratio of AC Induction	0	-15% ~ +15%	The parameter is used when the main shaft uses induction motor. If the value is incorrect, the set rotation speed will be different from the virtual speed.	
C05	Value for Thick Cloth	0	0~3		
C26	Posi.Para. Of Needle Down	0	0~30		
D53	Lock Shaft When Stop	No	No, Yes		
Thread-trimming Parameter					
C17	Turn Off	C17 Needle	<any>	Any, 1~6	
	Trimming	C17 Turn off Trimming	No	No, Yes	
D07	Check Trim is OK	No	No, Yes		
C01	Jump & Trim	C01 Needle	<any>	Any, 1~6	
		C01 Jump & Trim	3 Stitch	No Trim, 1 Sti.~7 Sti.	
C18	Length of Trim	C18 Needle	<any>	Any, 1~6	1 is the min trimming length and 8 is the max trimming length.
		C18 Length of Trim	3	1~8	



Appendix I Parameter Setting List

D48	Lock Stitch Len Bef Trim	1.0	0.3~2.0	
D49	Lock Stitch Num Bef Trim	0	0~2	
D05	Speed When Trimming	80	80,90,100...250	
C20	Lock Stitch. When Trim	Yes	No, Yes	
C21	Length of Lock Sti. (mm)	0.6	0.3~1.5	
C19	Lock Num. After Trim	2	0~3	Set the lock stitch number when pulling the bar for embroidery after setting the trimming.
D06	Spin Rounds for Brake	1	1,2	2 for most machines, 1 for mini type or machines with servo control main shaft motor.
C22	Frame after Trim	No	No, Yes	
C23	Action after Trim	Frame Y	Frame X, Frame Y, Move Needle	
D04	Speed after Trim	Common:60~150; Out:80; No Cut:80	60,70,80...150	The parameter sets the rotation speed for lock stitch.
C11	Stitches After Trim	2 stitch	1 stitch ~7 stitch	
D03	Set Hold Startup Para.	0	0~3	
D08	Hook Angle by Motor	D08 Needle	<any>	Set the hook angle by motor. When user increases the value, the hook angle is moved backward.
		D08 Hook Angle by Motor	0	
E39	Hook Distance By Motor	70	0~180	
C95	Speed At 1st Sti. Bef. Trim	400	60~600	
C96	Speed At 2st Sti. Bef. Trim	80	60~500	



D09	Hook Ratio by Motor	1:12	1:9,1:10,1:12,1:15,1:18,1:20	
D32	Is cutting Machine	Yes	No, Yes	
C81	Cutting Start Angle	3	0~20	It is fit for the machine using stepping-motor for trimming thread.
C82	Cut return angle adj	4	0~30	The same as above.
C83	Cut keeper return angle	5	0~99	The same as above.
C84	Hold voltage adj	1	1~3	The same as above.
Sequin Parameter(JF type)				
C31	Speed for Sequin R	400	350~850	
C32	Speed for Sequin L	400	350~850	
D25	Sequin R Adj. Angle	0	-15~15	
D26	Sequin L Adj. Angle	0	-15~15	
C33	Auto Start for Sequin	No	No, Yes	
D27	Time of Sequin Action	3	0~15	Range: 0~15. For the machine using valve to control presser, this parameter needs setting at 2~3; for the machine with stepping motor to control presser, this parameter needs setting at 4~5.
C34	Sequin Off after T.B.	No	No, Yes	It is used to control the position of the sequin device after the thread-breakage.
C56	Sequin Ind. UpDown	No	No, Yes	
B17	Up Valve When Jump & Nocut	Yes	No, Yes	
D70	R Motor Shift Stroke Base	40	6~40	
D71	R Motor Shift Stroke Time	15	1~30	



Appendix I Parameter Setting List

D72	With Origin at R Motor Shift	Yes		
D83	R Knife Start Angle Adj	15	0~31	
D73	L Sequin Feeding Angle Ad	40	6~40	
D74	L Motor Shift Stroke Time	15	1~30	
D75	With Origin at L Motor Shift	Yes		
D84	L Knife Start Angle Adj	15	0~31	
D99	Bead-breakage Detection Sensitivity	0	0~10	
D54	Motor Number of R Sequin	No	No,1~4,1(2~4) ,1、 2	Set the parameter base on sequin device. 2~4 mean the number of sequin device driven by one motor
D55	Set 3MM of R Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D56	Set 4MM of R Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D57	Set 5MM of R Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D58	Set 6.75MM of R Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D59	Set 9MM of R Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
C57	A Size&Color of R Sequin	5mm yellow	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	
C58	B Size&Color of R Sequin	5mm blue	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	
C59	C Size&Color of R Sequin	5mm silver	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	Update the new parameter in latter
C60	D Size&Color of R Sequin	5mm golden	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	Update the new parameter in latter



D60	Sequin Gap Num of R Sequin	No	No, 1,2	
C65	Valve Time of Right Sequin	0	0~5	
D61	Motor Number of L Sequin	No	No,1~4,1(2~4) ,1、 2	Set the parameter base on sequin device. 2~4 mean number of sequin device driven by one motor
D62	Set 3MM of L Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D63	Set 4MM of L Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D64	Set 5MM of L Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D65	Set 6.75MM of L Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
D66	Set 9MM of L Sequin		Single-way 6~40 steps; Dual-way 6~40 steps	
C61	A Size&Color of L Sequin	5mm yellow	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	
C62	B Size&Color of L Sequin	5mm blue	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	
C63	C Size&Color of L Sequin	5mm silver	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	Update the new parameter in latter
C64	D Size&Color of L Sequin	5mm golden	3/4/5/6.75/9mm Yellow/Purple/Blue/Green/ Red/ Golden/ Silver/Cyan	Update the new parameter in latter
D67	Sequin Gap Num of L Sequin	No	No, 1,2	
C66	Valve Time of Left Sequin	0	0~5	
Special Embroidery Parameter				
D80	Check A_ZIG' LOOSING- MOTOR	Yes	No, Yes	
D81	A_ZIG great efficiency mode	1	1~5	



Appendix I Parameter Setting List

D86	A_ZIG EMB. R ON/OFF	首针	首针, 无	
D87	A_ZIG EMB. L ON/OFF	末针	末针, 无	
D88	A_ZIG EMB. ON/OFF TIME	0	0~5	
D90	A_ZIG SWING ANGLE	100	0~125	
D91	A_ZIG EMB. MAX SPEED	600	300~850	
D92	A_ZIG EMB. HAS LOOSING- MOTOR	有	有, 无	
D93	LOOSING- MOTOR PARAM	9	0~15	
D94	A_ZIG 5 SWING ANGLE	0.0	-10.0~10.0	
D95	A-TAPING right origin postion	0	0~100	
D96	A-TAPING left origin posion	0	0~100	
D97	A-TAPING Up&Down Detect	No	No, Yes	
C55	M Axis Origin At T.B.	Yes	No, Yes	
C54	Cord Emb. Needle	Yes	No, Yes	
C37	M Axis Stop to Origin	Yes	No, Yes	
D28	Special Head Interval	10	1~400	
D30	Clamp Foot Displace	0	0~90	
D40	Adj Clamp Foot Limit	170	0~250	



B16	Clamp Foot Min Height Adj	0	0~255	
D31	Rod Pos. of Zigzag	Left	Left/Right	
D29	Zigzag Swing Angle	90	0~90	
C38	Swing Value of Zigzag	0.2	-10.0~ -0.2,+0.2~+10	
D50	Adj Z Emb Swing	0	0~5	
D42	Rotary Gap of M Axis	0	0~10	
D44	M Axis Work OFF Angle	0	0,90	
C39	Spec. Emb. Trim Mode	No Trim	Low, Above & Low, No Trim	
C35	Speed for Sequin L	400	300~700	
C51	Spec Minimum Speed	250	250~400	
C52	Spec. Speed-Down Angle	30	1~180	
C53	Spec. Speed-Down Ratio	1	1~4	
D39	Z Shift Control Angle	0	0~180	
D41	Adj Zigzag Rod Angle	3	1,2,3	
C36	Ratio of Coil Emb.	1 Sti/L	1~4 Sti/L	
D47	Slow Down When Coil Emb	Yes	No, Yes	
Machine & Maintenance Parameter				
D01	Needles	6	1,2...15	Set the value according to the machine situation. E.g. the value should be 9 for 9-needle machine. If the value is different from the machine needles, the



Appendix I Parameter Setting List

				color-changing will be abnormal.
D68	Machine Head Num	20	1~80	
D11	Adjust Head Solenoid	0	0,1,2...30	
D12	Color-Change Speed	3	0~30	It's valid only when the color-changing motor is stepping motor. The larger the value, the faster the color changes.
E1	DIP1	3	0~255	
E2	DIP2	3	0~255	
E3	DIP3	3	0~255	
E4	DIP4	3	0~255	
C29	Needle of Boring	No	No, 1~ N	
C30	Boring Emb. Disp.	0	0mm,12mm	
D17	Needle of Cord Emb.	No	No, 1, N	N is the needle number of machine
D18	Speed for Cord Emb.	400	300,310,320...600	
D43	CloseBack Light time	15 mins	Never, 2mins, 5mins, 10mins, 15mins	
C40	No Output Design	No	No, Yes	
C71	Adj. solenoid Volt For Nipper	6	1~10	
C41	Server Port	1600	1~65535	It is used for setting sever port when it is connected to PC.
C42	MAC Address	001122334455	001111111111~009999999999	It is used for setting the MAC address of embroidery machine network card. The address is different at different machines.
C43	IP Address			It is used for setting machine address when machine connects to PC. It is different among different machines.



C44	Server IP			It is used for setting the IP address of sever when machine connects to PC.
C45	Subnet mask			It is used for setting the subnet mask of machine IP address when it connects to PC.
C46	Gateway			It is used for setting the gateway of machine when machine connects to PC.
D45	X Gap for Quilt	0.2	0~1.0	
D46	Y Gap for Quilt	0.2	0~1.0	
C47	Time for one lubricating (sec)	10sec	1~10	
C48	Stitches between two lubrications	10,000,000 stitches	1~10 million stitches	
C49	X compensation for mechanical gap	0.5	-0.5~+0.5	
C50	Y compensation for mechanical gap	0.5	-0.5~+0.5	
Adj Parameter of X&Y Servo Drivers (X parameter, available for all-servo high-speed machine)				
	X Embroidery Param	350	93~650	
	X Frame -moving Param 1	260	93~650	
	X Frame -moving Param 2	13	6~50	
	X Parameter 1	28	10~50	
	X Parameter 2	28	10~50	
	X Parameter 3	25	10~50	
	X Parameter 4	25	10~50	
	X Parameter 5	25	10~50	



Appendix I Parameter Setting List

	X Parameter 6	25	10~50	
	X Parameter 7	25	10~50	
	X Parameter 8	25	10~50	
	X Parameter 9	25	10~50	
	X Parameter 10	25	10~50	
	X Parameter 11	28	10~50	
	X Gear Backlash compensation	0	0~50	
	X CMR	0	0~100	
	X CMD	350	1~255	
	X Mofidy All Paramenters	0	-10~10	
	X Protect Parm.1	60	5~80	
	X Protect Parm.2	60	5~200	
Adj Parameter of X&Y Servo Drivers (Y Parameter, Same as X Parameter)				
High-Efficiency Mode				
E28	High-efficiency Mode	No	No, Yes	Only when this parameter is set at “Yes”, can user set the following four parameters.
E29	Flat Head Num.	15	1~128	
E30	Flat Head Interval (mm)	330	100~600	
E31	Frame Width Y (m)	0.8~1.2		
E32	Efficiency Level	10%	30%, 20%, 10%	
Shuttle Machine Parameters				
EC49	Thick Needle Pos.	No	1, 2, 3, 4, 9	
C07	Max. Speed	1100	250~1200	
E50	X Movable Frame Adj. 1	230	150~330	
E51	X Movable Frame Adj. 2	230	150~330	
E52	X Movable Frame Adj. 3	230	150~330	
E53	Y Movable Frame Adj. 1	230	150~330	



E54	Y Movable Frame Adj. 2	230	150~330	
E55	Y Movable Frame Adj. 3	230	150~330	
E56	Trim Thread Adj. 1	57	0~100	
E57	Trim Thread Adj. 2	27	0~100	
Adj Main Servo Driver				
	CMR	0	0~255	
	CMD	17	1~255	
	Emb Velo Rat. Gain	500	50~2000	
	Emb Velo Intg. Gain	160	30~800	
	Stop Velo Rat. Gain	512	50~1000	
	Stop Velo Intg. Gain	160	30~500	
	Servo Motor Rot. Dir	ClockW	ClockW, AntiCW	
	Lock Shaft When Stop	No	No, Yes	
	Drive Temperature	0°C		
	Motor Temperature	0°C		
	Drive Voltage	0V		
	Servo Driver Test			
	Write Servo Driver Param.			
	Read Servo Driver Param.			
	Reload Default Driver Param.			
	Rotate main shaft to fixed angle			

**Appendix II Directions on USB operations**

No.	Operation	Direction	Remark
1	Read & Write USB	Same as floppy disk	
2	Priority	USB	
3	Supporting format	FAT16 and FAT32	
4	Long filename	Support but no display	
5	Filename display	DOS 8.3 mode (8 digit prefix is viewable, suffix is 3 digits)	For instance: “清明上河图.DST” will be displayed as “清明上~1.DST”
6	Filename displayed in Chinese	support	
7	Sub-directory operation	support	
8	Sub-directory limit	No limitation	
9	File account in one sub-directory	400	
10	Reading & writing error/ change USB	Back to disk management or design management screen, plug in the disk again.	
11	Multi-logical disks in one USB	Support	
12	Formatting USB	support	
13	Installing of the letter base	Not support	
14	Software update	support	
15	Special character in filename	Support, except “\$”	



Appendix III Error Information & Instruction of System Level Mistake

Note: At warning or error, the figure will sparkle. For the error in the list, user needs press Eraser, check the corresponding part and perform the hinted operation. The machine with no password function has no the item about password.

No.	Mistakes
Upper monitor mistakes	
01	Operation Fail
02	Operation Break
03	Machine Communication Error
06	Not set ZERO point
07	Fail to set ZERO point
08	No design start point
09	No software range
10	Password is wrong!
11	New passwords not same
12	Emb. design not existed!
13	Dest. design existed!
14	Design not existed!
15	Open design error!
16	Error type combined design
17	Open FLASH media error
18	Design has created!
19	No enough design mem.
20	Directory is invalid.
21	FLASH media write-protect
22	Design file not existed
23	Design name is invalid
24	Design file corrupt
25	Error read/write design
26	Not open design file
27	Error read FLASH media
28	Device not existed!
29	No floppy disk
30	Invalid disk type
31	Disk sector error



Appendix III Error Information

No.	Mistakes
32	File not in disk
33	Not a file
34	File corrupt
35	disk write protect
36	Invalid directory
37	File existed!
38	Directory is full in memory.
39	Not enough space
40	Not open media
41	Error design data
42	Invalid design type
43	Not normal design
44	Not combined design
45	Please wait design operation
46	Cannot delete emb. design
47	Stitch number too large
48	Design stitches is over
49	Error design, or communication fail
51	Read Design Error
52	Edit Forbid when Emb. Ready
53	Design is too big. Can't process.
54	Can not format the disk!
55	Unsupport operation!
56	Disk Error
Lower monitor mistakes	
EC05	THE HOOK IS NOT OK
EC07	HOOKING TIME IS OUT
EC08	NOT SET (E. SET)
EC09	CANNOT RETURN
EC10	CANNOT RETURN
EC11	DESIGN NOT EXIST
EC12	STOP POSITION ERR
EC13	FRAME OVER LIMIT
EC14	CONTROL MEMORY LOST
EC16	STEP MOTOR ERR
EC17	CHANGE CLR OVERTIME
EC18	HALF RETURN ERR
EC19	NEEDLE POSTION ERR
EC20	MAIN MOTOR OVERTIME
EC21	CHANGE CLR OVERLIMIT
EC22	MAIN MOTOR REVERSE
EC23	CANNOT EMBROIDER



No.	Mistakes
EC24	CANNOT FRAME BACK
EC26	CAN NOT TRIM
EC36	SEQUIN IS ON
EC37	PULL BAR ERROR
EC38	SPE. EMB. OVERTIME
EC41	FILE NOT EXIST
EC42	FILE DIRECTORY FULL
EC43	MEMORY SPACE FULL
EC44	FILE FAT ERR
EC45	FILE DIRECTORY ERR
EC46	HAS BAD SECTORS
EC95	Thread is broken, press key
EC101	Transfer CRC Error

Instruction of System Level Mistake on CX6 Model:

At present, the CX6 model may give 2 system-level warning at start-up: the one is “Data Abort”; the other is “Start Abort”. During the process of running the data program, the system may give the warning “Data Abort” instead of the “StartAbort”. These two warnings can be seen at the upper left corner of the screen like “数据异常” & “启动异常”. We will give the explanation of these two errors:

1. “Data Abort”

This means the CPU occurs the internal and unrecoverable mistake. At present, what we can do is just to restart the computer. And has no other solutions.

2. “StartAbort”

This phenomenon may have two causes, one is not updating the data program, the other is the chip on E8820 board is damaged. Therefore the solution of it is to re-update the data program. If the problem still exists after the update, please replace the E8820.



Appendix IV Make Special Multi-Sequin Design

1、 Dahao special multi-sequin design principle

The normal design making system identifies a sequin code as a jump stitch, but it can not distinguish sequin combinations in one stitch position. For instance, it can not recognize it's a sequin A or B at one stitch position. Dahao special multi-sequin design-making principle is to add a few jump stitch codes after the original sequin code (jump stitch or stitch length is less than 0.1mm) to indicate sequin combination, thus achieve the embroidery of overlapped sequin on one stitch position. For instance, "A+C" means overlap sequin of A and C.

Rules are as followed:

The value of sequin A is 1, we use 1 sequin code.

The value of sequin B is 2, we use 1 sequin code plus 1 jump stitch.

The value of sequin A+B is 3, we use 1 sequin code plus 2 jump stitches.

The value of sequin C is 4, we use 1 sequin code plus 3 jump stitches.

The value of sequin A+C is 5, we use 1 sequin code plus 4 jump stitches.

The value of sequin B+C is 6, we use 1 sequin code plus 5 jump stitches.

The value of sequin A+B+C is 7, we use 1 sequin code plus 6 jump stitches.

The value of sequin D is 8, we use 1 sequin code plus 7 jump stitches.

The value of sequin A+D is 9, we use 1 sequin code plus 8 jump stitches.

The value of sequin B+D is 10, we use 1 sequin code plus 9 jump stitches.



The value of sequin A+B+D is 11, we use 1 sequin code plus 10 jump stitches.

The value of sequin C+D is 12, we use 1 sequin code plus 11 jump stitches.

The value of sequin A+C+D is 13, we use 1 sequin code plus 12 jump stitches.

The value of sequin B+C+D is 14, we use 1 sequin code plus 13 jump stitches.

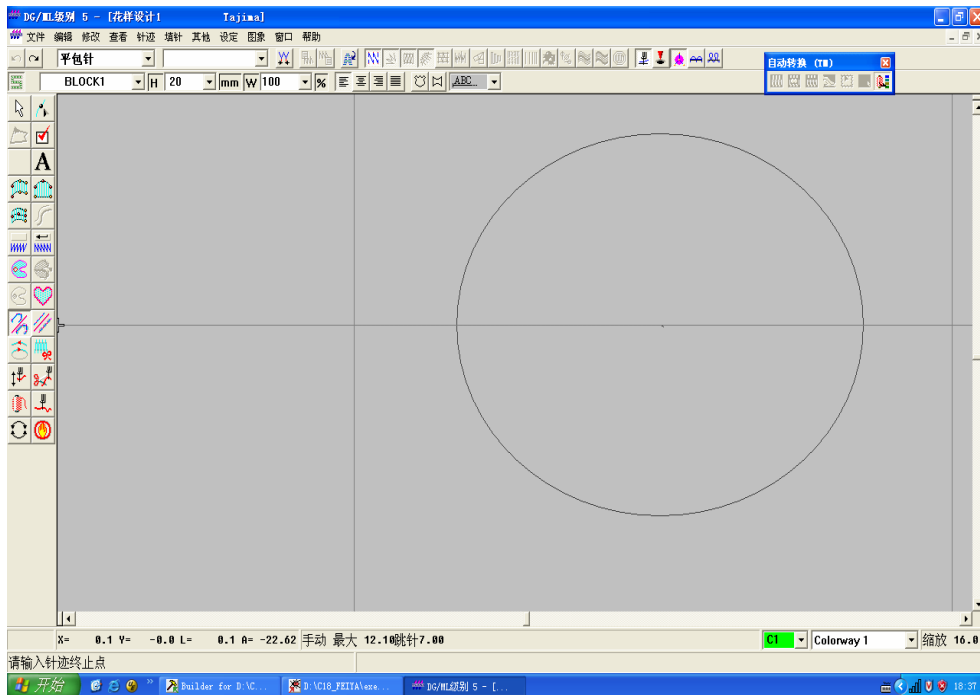
The value of sequin A+B+C+D is 15, we use 1 sequin code plus 14 jump stitches.

2、 **Make Motif for multi-sequin**

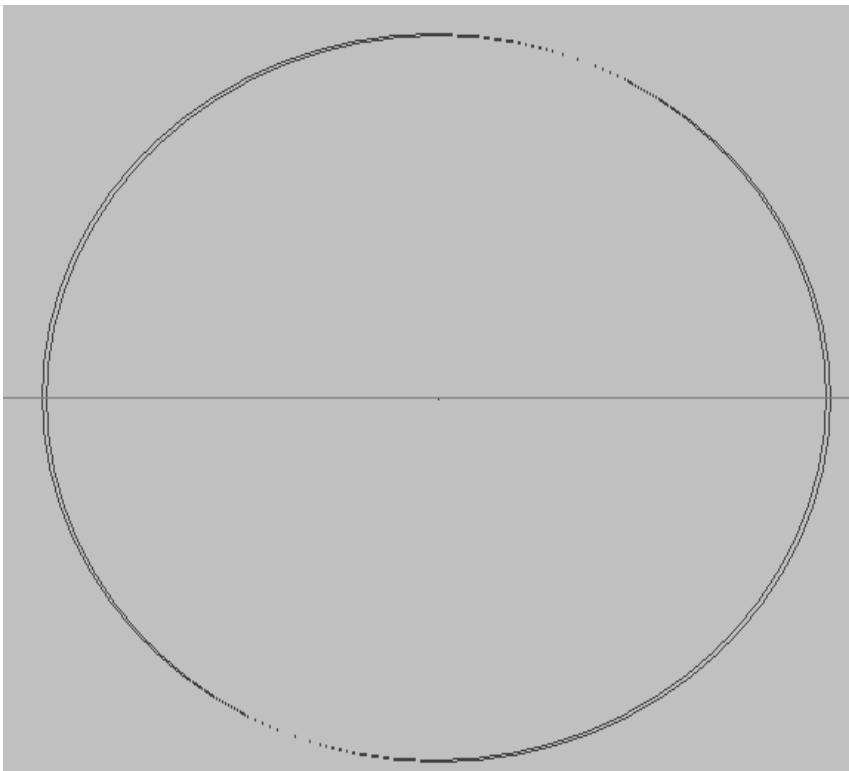
By using the function of making Motif, we can easily input sequin or sequin combinations. Example: A, B, A+B, C, A+C, B+C, A+B+C, D, A+D, B+D, A+B+D, C+D, A+C+D, B+C+D, A+B+C+D, etc.

We here take sequin B designing as an example.

- 1) Open any design making software. Firstly, we zoom in the blank to certain scale (it is for easily inputting sequins in a same place) and enter sequin status.
- 2) Input a sequin.

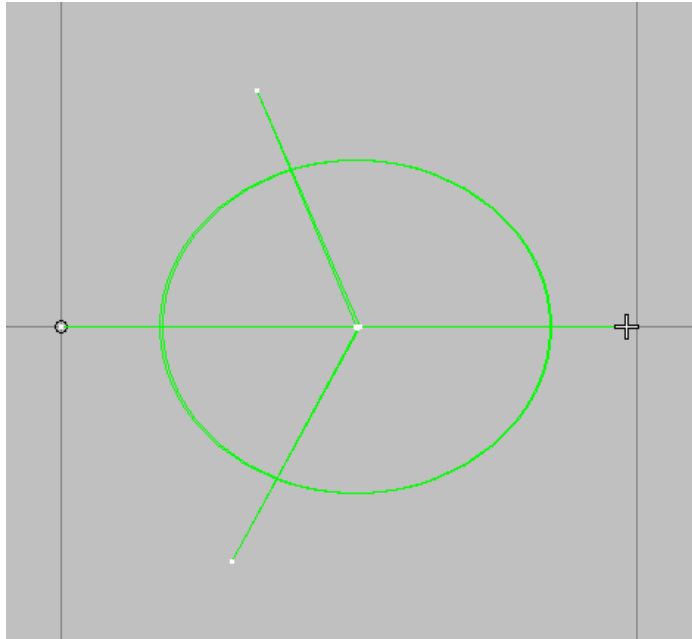


- 3) Since the value of sequin B is 2, we should put 2 sequins in here, which means, we have to add another sequin.



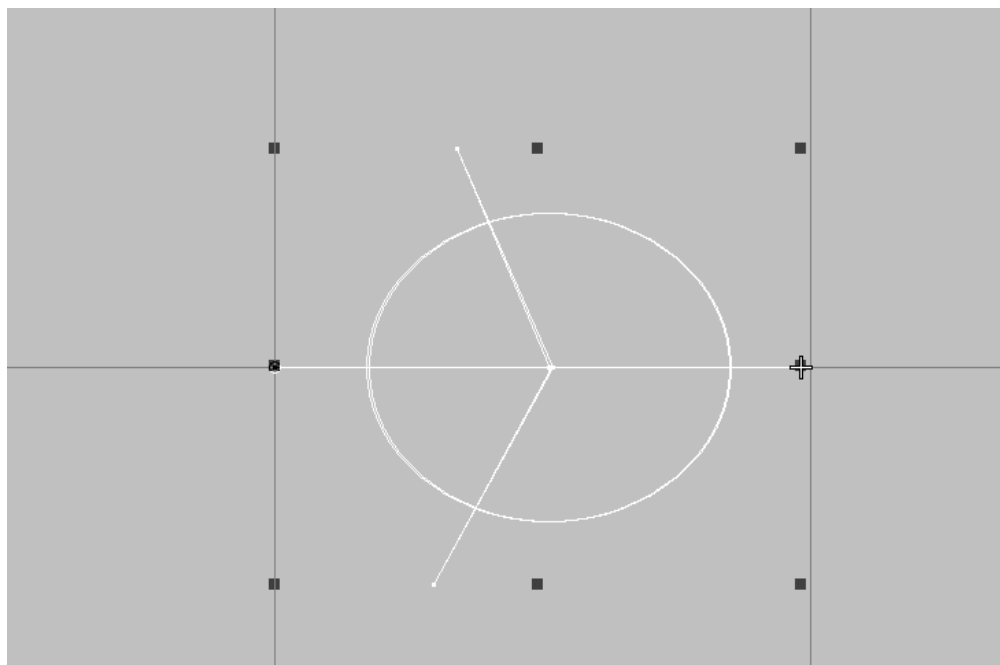


4) Continue to type in other single-stitches.



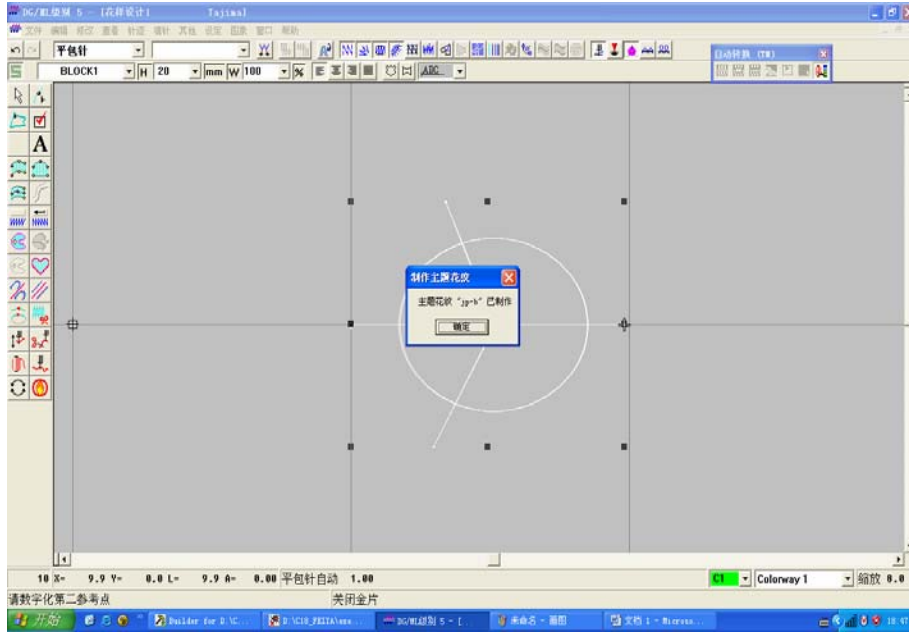
5) You can see “stitch list” shows 2 sequins as the following image.

6) Select all stitches.

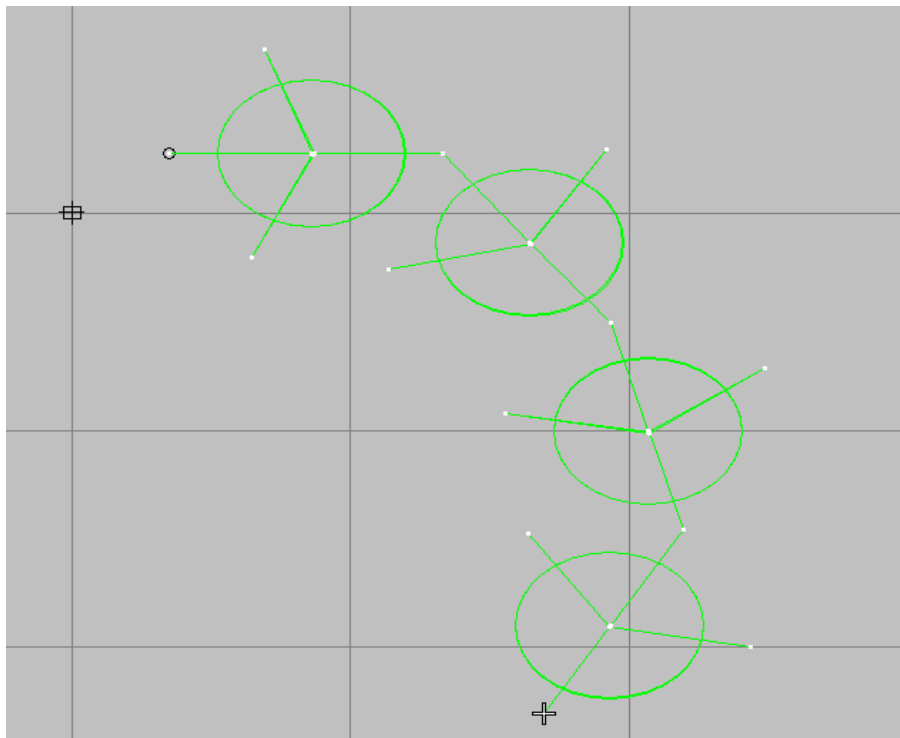


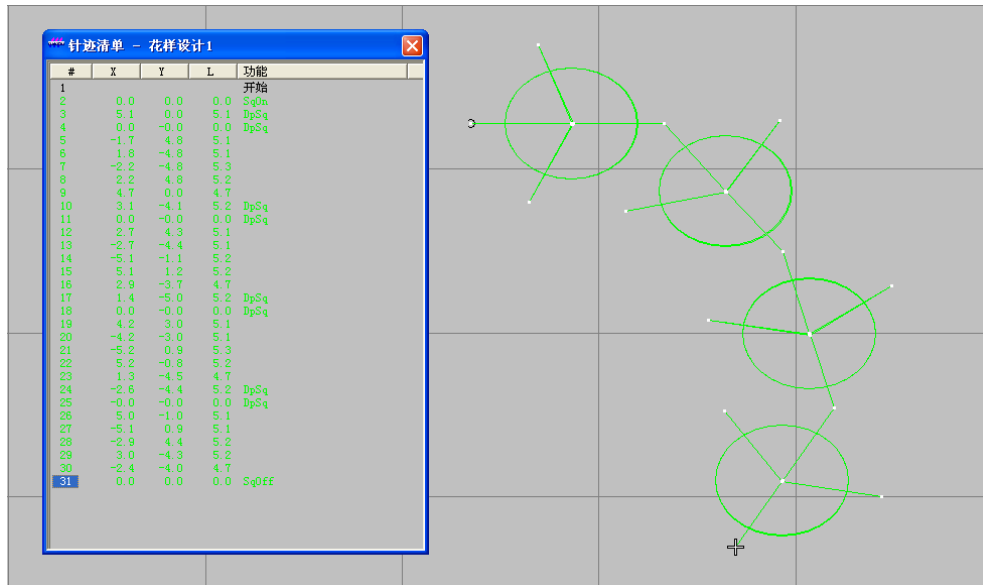
7) Making Motif, group is JP, name is JP-B

8) Input two reference points.



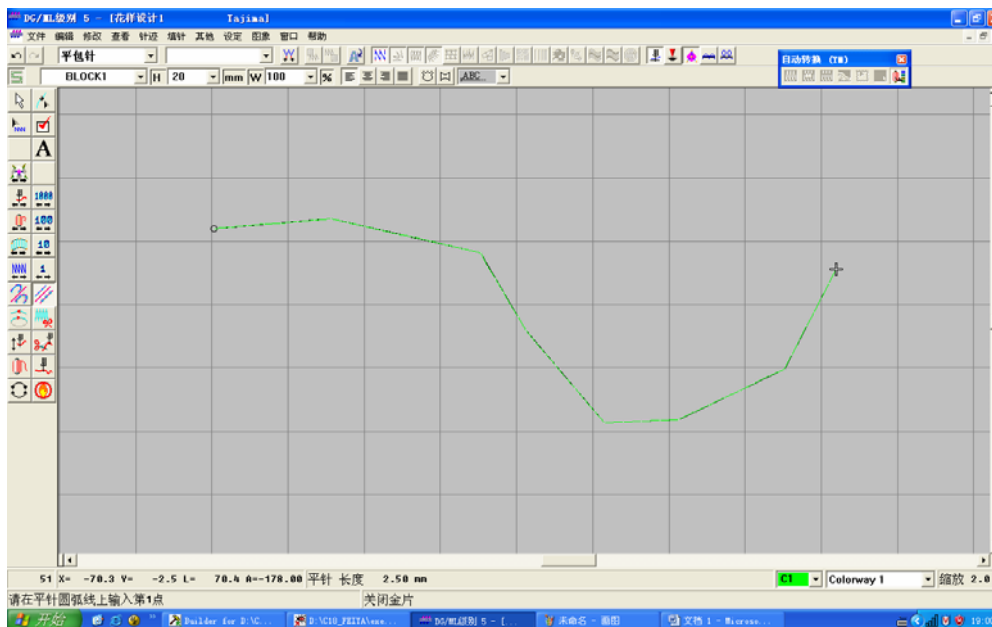
- 3、 Single needle multi-sequin, you can use “Stitch form -> Motif -> Apply”. Then “manual stitch” to finish entering.



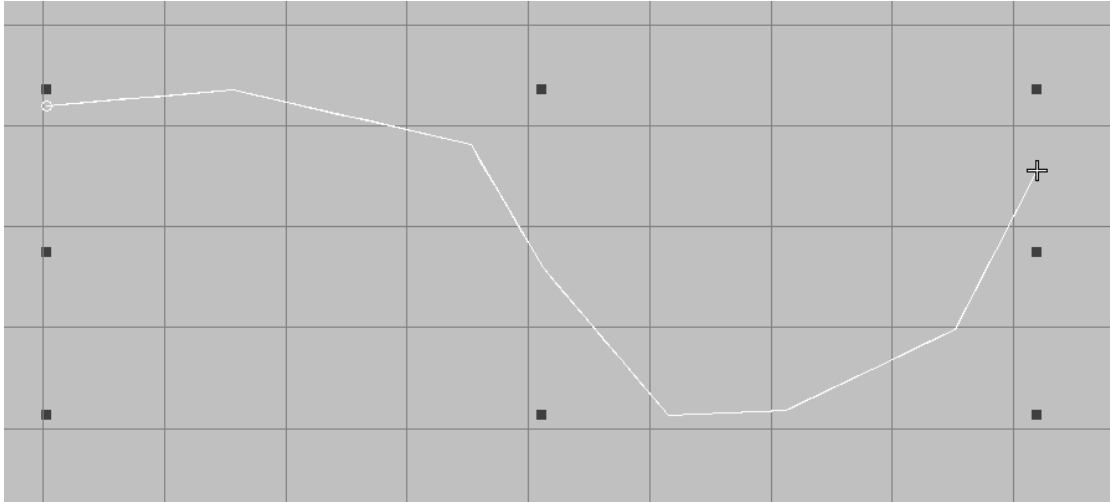


4、 Others (curve) can apply trace too.

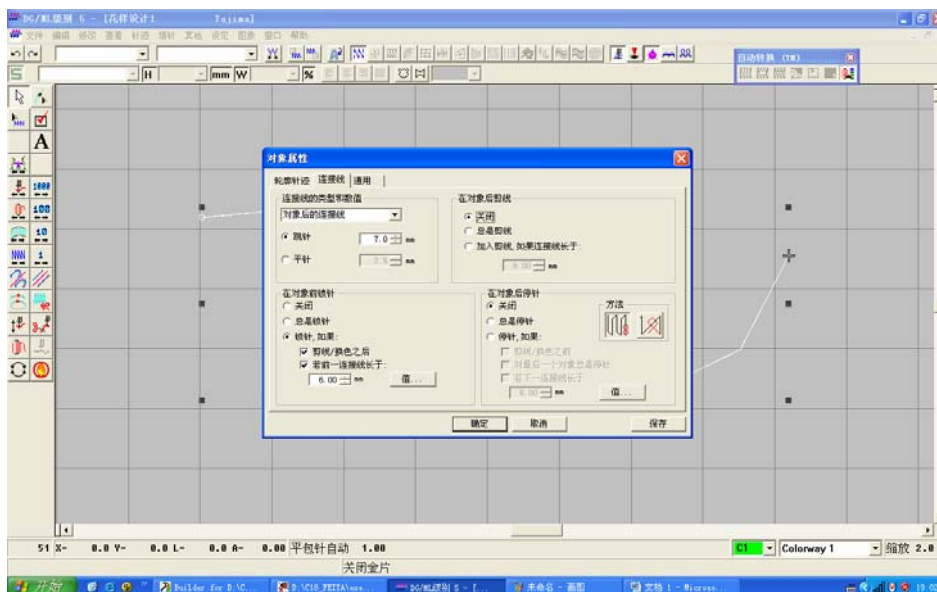
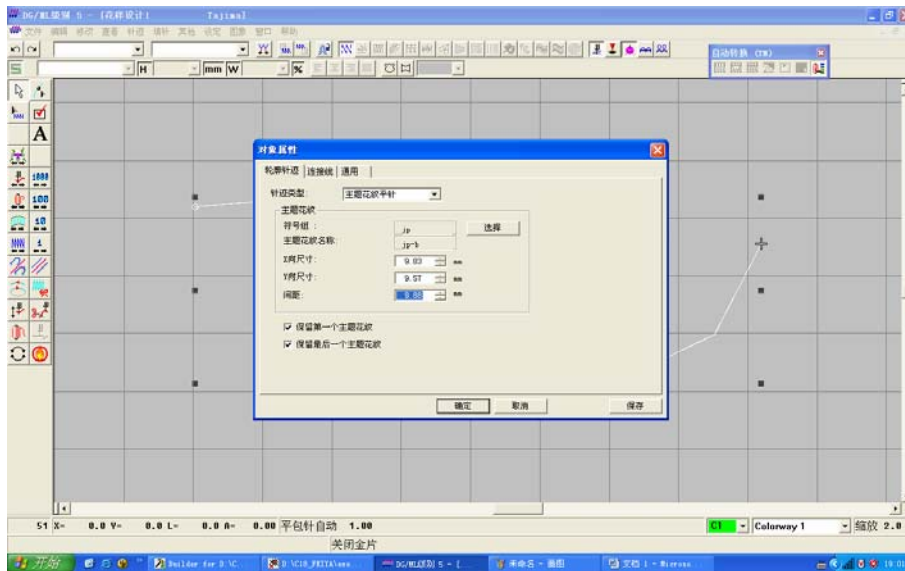
- 1) Click sequin button to enter “sequin status” (this is to ensure all the curve section have sequin, it is of importance.). Input the curve as the following.



- 2) Select a target.

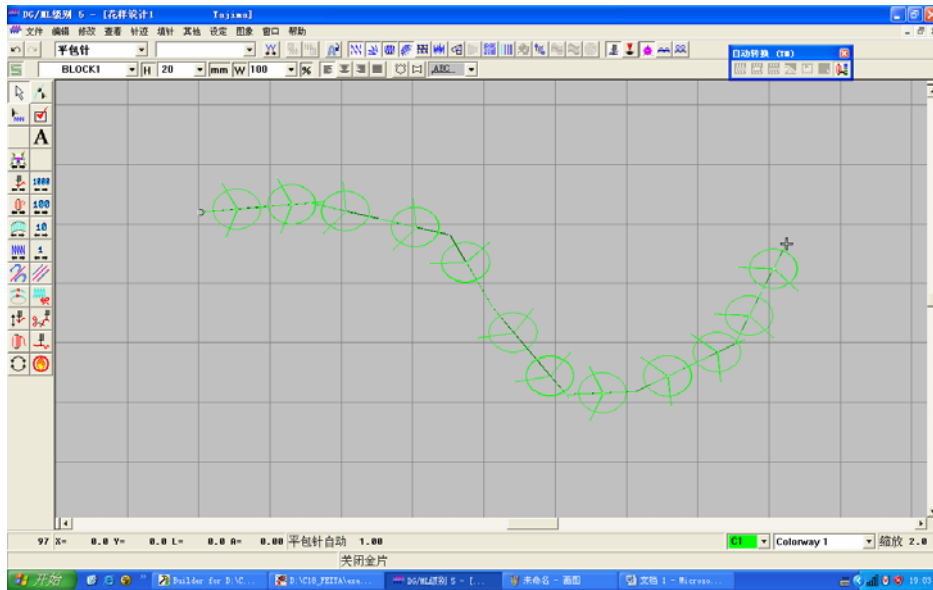


3) Set “target properties” and select related trace.





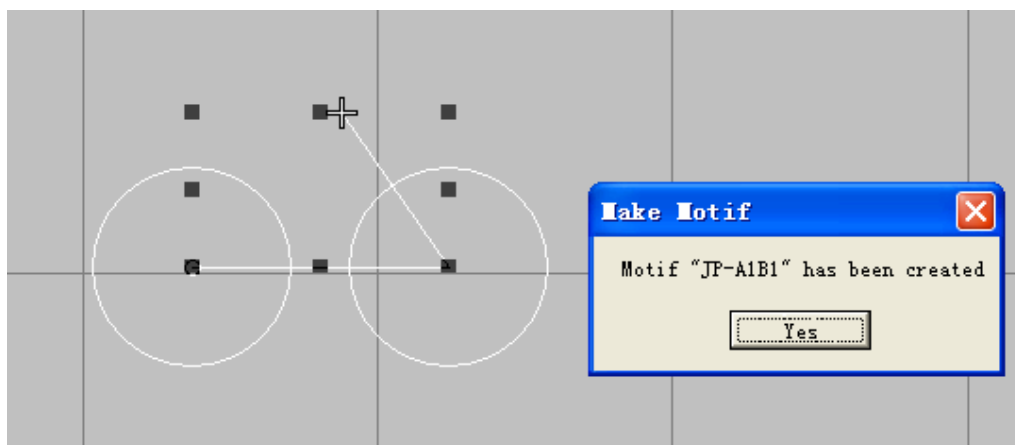
4) “Multi-sequin” input is finished.



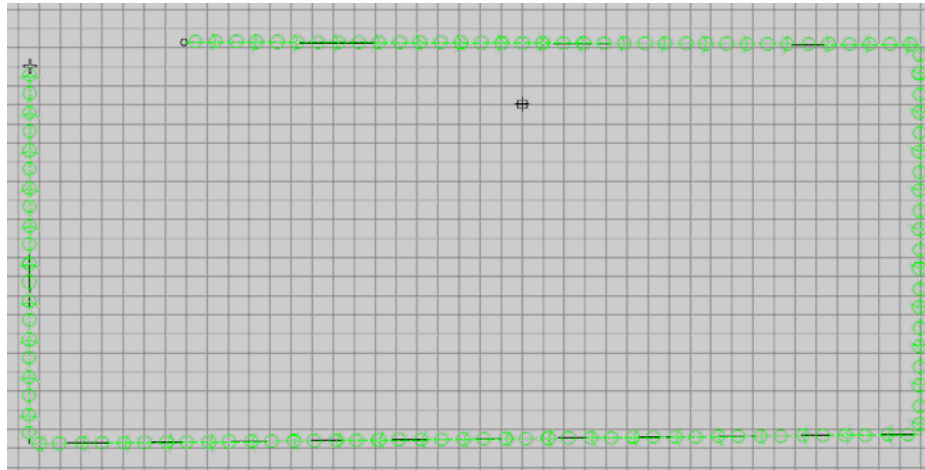
5、 Make alternative sequin design

This is to realize the embroidery of different sequin alternatively. For instance, alternative A1B1 embroidery can realize embroidery effect of A, B, A, B...

1) Firstly, you should make the alternative motif (the A1B1), as shown in below:



2) Apply the above motif to achieve alternative A1B1, as shown in below.



6、 Design maker should build up design data base

Now we have sequins: 3MM, 4MM, 5MM, 6.75MM and 9MM. while the first needle position can have 4 sequin delivery devices at most. So we can get the following 15 combinations: A,B,AB,C,AC,BC,ABC,D,AD,BD, ABD,CD,ACD,BCD,ABCD.

The design data base should be the combination of the above sequin sizes and sequin groups.

If there are two sequin delivery devices A and B, and A design document uses 3MM sequin and 5MM, the design data base should contain 3MM-A base, 5MM-B base, and 5MM-AB base. While the other design uses 4MM and 6.75MM, then the design data base should contain 4MM-A, 6.75MM-B and 6.75MM-AB.

If there are three sequin delivery devices A, B and C, and A design document uses 3MM, 4MM and 6.75MM, the design data base should contain 3MM-A base, 4MM-B base, 4MM-AB base, 6.75MM-C base, 6.75MM-AC base, 6.75MM-BC base and 6.75MM-ABC base. While the



other design data base uses 3MM, 6.75MM and 9MM, the design data base should contain 3MM-A base, 6.75MM-B base, 6.75MM-AB base, 9-C base, 9-AC base, 9-BC base and 9-ABC base.

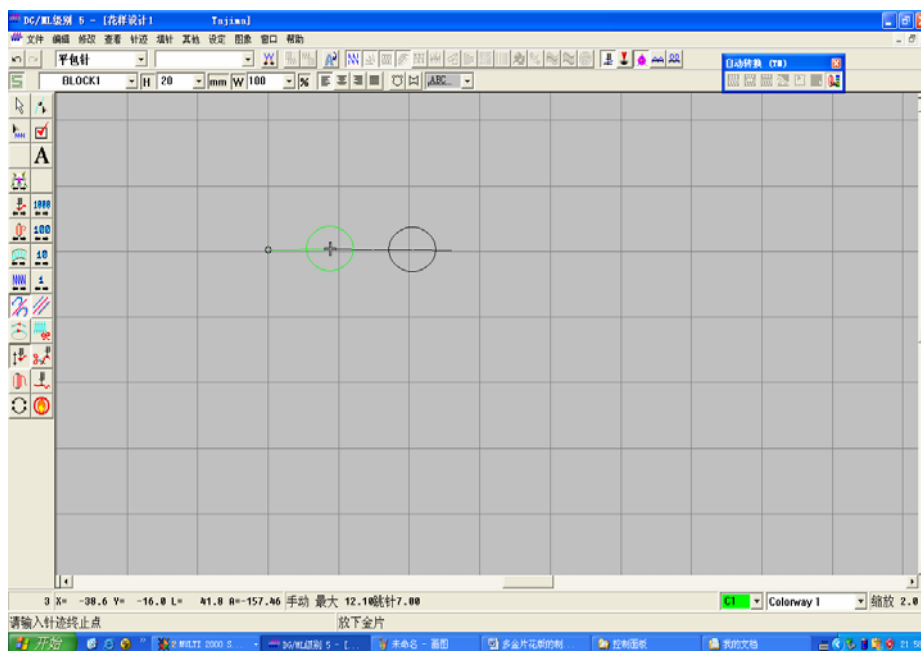
Other sequin design data bases are formed in the same principle.

The alternative sequin design data base should combine single and overlap sequins. For instance, 3MM-A sequin base and 4MM-AB sequin base can form alternate sequin of 3MM-A & 4MM-AB, which achieves embroidery effect of A, AB, A, AB...

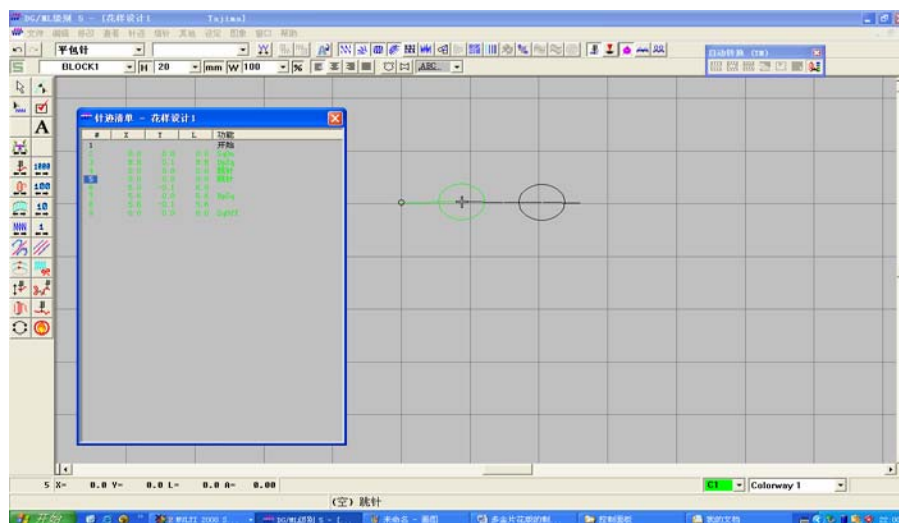
7、 Turn normal sequin design to Dahao special sequin design

According to the above rules, we just need insert some jump stitch after “sequin code”, so that we can change the original sequin code to “multi-sequin code”.

- 1) If you want to change the first sequin code to A+B sequin code, you need to locate to that stitch first (its character is to put down the sequin) .
- 2) Right click “insert jump stitch” twice to insert two jump stitches after the original sequin code.



- 3) You can see the stitch list as the following image. The first sequin is overlap A+B, the second one is sequin A.



Save as the TAJIMA DST document.



Appendix V Network Connection of Embroidery Machines

I、 Making Ethernet cable

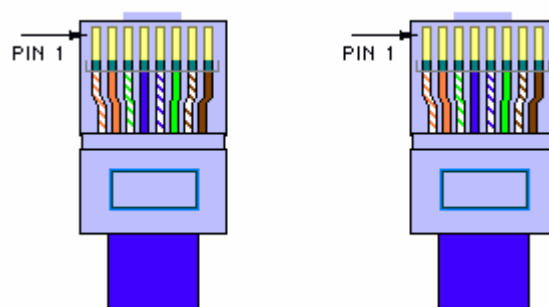
1、 Making straight-through cable

The pins in the two terminals of twisted-pair cable have to be in one-to-one correspondence. If the first pin of one terminal is green, the first pin of the other terminal must be green as well. The twisted-pair cable made in this way is usually called as “straight-through cable”.

Connection:

Pin number	1	2	3	4	5	6	7	8
Pin color	orange white	orange	green white	blue	blue white	green	brown white	brown

Shown in the following picture:



One terminal

The other terminal

Usage: a. Link switch or HUB to router

b. Link computer (including server and workstation) to switch or HUB



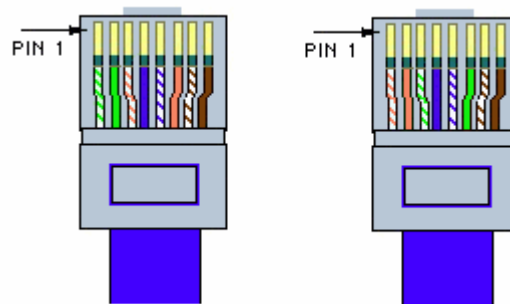
2、 Making crossover cable

1—3, 2—6 crossover connection: Twisted-pair cable has 4 pairs of pins (8 pins). Only 4 pins are used in network in the matter of fact, namely the first, second and third, sixth pins. They are used for receiving and sending signals. The connection rule is: the first pin of one terminal is connected to the third pin of the other terminal, and the second to the sixth. Other pins are connected to the corresponding pins. Cable made in this way is called “crossover cable”.

Connection:

Pin number	1	2	3	4	5	6	7	8
corresponding Pin number	3	6	1	4	5	2	7	8
Pin color	white green	green	white orange	blue	white blue	orange	white brown	brown

Shown in the following picture:



One terminal

The other terminal

Usage:

- a. Connection between switches through UPLINKS interface



- b. Connection between HUB and switch
- c. Connection between HUB and HUB
- d. Direct connection between 2 PCs (NIC to NIC)
- e. Connection between ports of Routers
- f. Connection between ADSL Modem (Ethernet port) and NIC of PC

II、 Notes for network setting parameters

1、 MAC address

In physical transmission of network bottom level, the computers are recognized by physical address (MAC). So it's necessary to keep the uniqueness of MAC address. When the first two digits of MAC address are not zero, some network equipments regards it as illegal MAC address, thus the equipment can't be linked to the network. So the first two digits of MAC address must be zero.

2、 IP address

1) Definition of IP address

IP also called as Internet address is the logic address for solely marking the computers in internet. Every computer in the internet relies on the IP address to mark itself. It's like we find the phone by the phone number in the phone book. In one network the IP address must be unique.

2) Form of IP address

One IP address includes 4 decimal integers partitioned by decimal points. Each integer is in fact composed of 8 binary numbers. So the maximum of each integer is 255 and the minimum is 0.



3) Structure and classification of IP

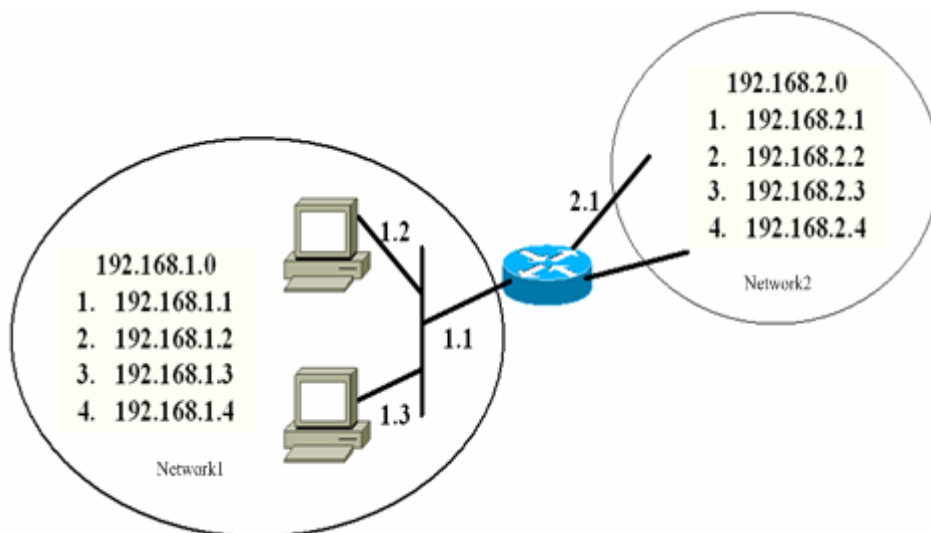
The four numbers of IP address can be divided into 2 parts. One is network number for marking the network. Another is computer number for marking the specific machine in one network. IP addresses are divided into 3 kinds: A, B and C.

A: the first number represents network and the following 3 numbers represent computer.

B: the first two numbers represent network and the following 2 numbers represent computer.

C: the first three numbers represent network and the last one represents computer.

The following example will explain the network number and computer number of C type.





Network	Network number	Computer number
1	192.168.1	.1
1	192.168.1	.2
1	192.168.1	.3
1	192.168.1	.4
2	192.168.2	.1
2	192.168.2	.2
2	192.168.2	.3
2	192.168.2	.4

3、 Subnet mask

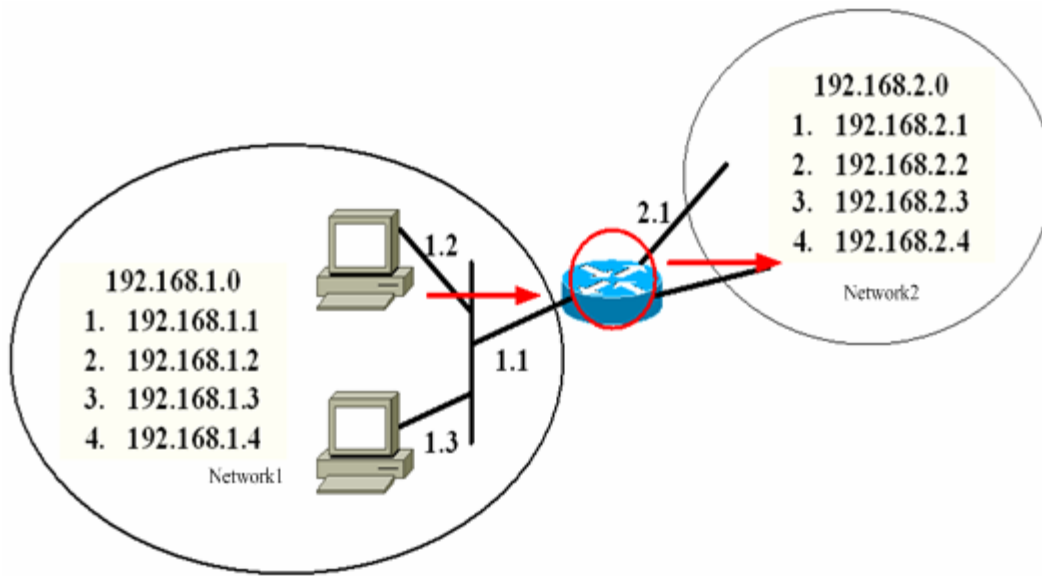
To ensure how the network number and computer number are divided, subnet mask is used to tell in one IP address which part is for network and which part is for computer. It's regulated that "1" is for network part and "0" is for computer part. IP address and subnet mask combine to tell in which network the computer is. So the subnet mask is very important. If it's wrong, it will get the wrong network address. Therefore the same network number must be set with the same subnet mask.

4、 Gateway

it's the IP address of the router which is in the same subnet of the computer. As in the followed picture, if one data packet is to be transmitted to a computer in network 2, this data packet has to be sent to the router linked to us. It's like in



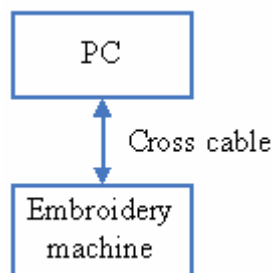
sending by post that you only need to deliver a letter to postman instead of delivering by yourself. So when the computers are not in the same network segment, the gateway also has to be set properly in setting computers. Otherwise computers don't know where to deliver the data packet.



III、 The ways to construct network

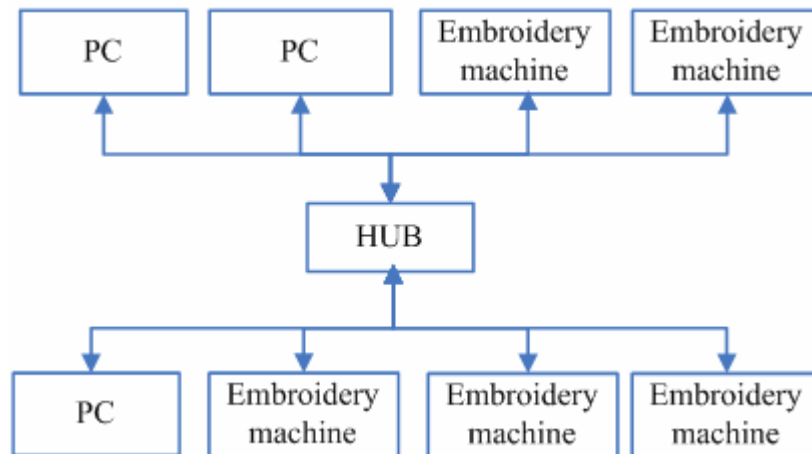
1、 One PC directly connected to one embroidery machine

In this situation, crossover cable is used to link the network interface of PC to the network interface of embroidery machine.



2、 PC and embroidery machine linked by HUB

In this situation straight-through cable is used to link PC with HUB.



3、 Connect the two networks in “2 ” through HUB

IV、 Setting the network parameters of embroidery machine

1、 MAC address of embroidery machine

Set MAC address of NIC of embroidery machine. Each embroidery machine has its sole address. The range of this parameter is 000000000000~00FFFFFFFFFFFF.

2、 IP address of server

This parameter has to be the IP address of the PC installed with EmbNetServer. This address can be found in the display window of EmbNetServer.

For the usage and installation of EmbNetServer, please refer to the CD with embroidery machine.

3、 Server Port Number

This parameter value is the port number used by EmbNetServer. The number can be found in the display window of EmbNetServer.

4、 IP address of embroidery machine



It is the IP address of embroidery machine when it's linked with PC. The IP addresses of embroidery machines can't be repeated. The network numbers of embroidery machines and PCs within one sub network have to be the same. And their computer numbers have to be different.

5、 Subnet mask

It is the subnet mask of IP address of embroidery machine when it's linked with PC. Within one sub network, the subnet masks of embroidery machines and PCs have to be the same.

6、 Gateway address

If embroidery machines are in the two different sub networks, the gateway address has to be set. Otherwise there's no need to set it.