

Version: 2007-02



Computerized Embroidery Machine

B E C S –A88/C88

Owner's Manual



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Chapter 1 General Descriptions

















Thanks for using the Computerized Embroidery Control System of DAHAO Company. It is appreciated that you do read this manual carefully in order to operate the machine correctly and effectively. Besides, you should keep this manual for future use.

1-1 Warnings and Cautions




Notice	
 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.
 Forbidding	Don't expose the machine to humidity gas, poisonous gas, water, and dust.
 Forbidding	Don't restore or operate in vibration, which may cause trouble to the machine.
 Notice	Please abide all the warnings and safety requirements to save life.
 Notice	LCD belongs to fragile goods. Do not use hard materials to click on the screen.
 Notice	Before plugging in, please make sure if the lamp of floppy disk driver is on, don't move out the floppy disk..
 Notice	We will add appendix if necessary, if there is any difference between the manual and appendix, subject to the appendix.
In Transportation	
 Notice	Don't hold the cable when moving..
 Notice	Please abide all the warnings and safety requirements to save life.
 Force	Overloading may cause serious loss. Please load according to the instruction on the box..
Installation	



Chapter 1 General Descriptions

 Notice	Don't jam the vent on the device. Don't plug up the machine, or it may set fire.
 Notice	Make sure the installation direction is correct..
 Notice	Don't expose the machine to humidity gas, poisonous gas, water, and dust.
Cable Connection	
 Forbidding	Don't test the insulation of the circuit loop.
 Forbidding	Never try to connect overloaded electronic device on the connector..
 Notice	Make sure the insulating of the cable is fine.
 Notice	Communicating cable and power cable should be separated.
 Notice	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.
 Notice	Machine should be grounded. The resistance should be no larger than 10 Ω .
Operation direction	
 Danger	Don't operating the machine when there is any damage on the surface..
 Forbidding	When machine is running, do not touch any running part.
 Notice	Make sure the configuration of power supply in normal. Use stabilized voltage power supply when the voltage rebound is between -10%-10%.
 Notice	In case of warning, please check out the problem. Operation can only be carried out again when problem is solved.
 Notice	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. Duo to the capacitance after power off, operator must wait one minute till he can open the machine cover.
 Notice	Circuit boards can be damaged by static. Non-professional technician



	can not disassemble circuit boards.
 Notice	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).
 Notice	If machine is inactive for a long time, users should have the machine checked before power on.
Rejection	
 Notice	Rejection should obey the rules and regulations set by national industrial electronic standards.

1-2 The difference between A88 and C88

The difference between A88 and C88 is that C88 have the function of Coiling, Taping and ZIG Embroidery and C88 have the validation of factory ID, but A88 have not. Other operations or functions is same.

1-3 Main Features

1. User Friendly Touch Screen

Adoption of touch screen technology offers delightful operation and easy learning. The beautiful screen display turns everyday work into joyful experiences.

2. Shutdown of LCD Display

Following measures were taken in order to extend the LCD life: LCD will turn off automatically in case of no operation in 10 minutes (the time can be changed in parameter setting). A touch of the screen or the task-shifting key will reboot the LCD.

3. Super-Large Memory Capacity

The memory capacity reaches 16 million stitches, in which 400 designs can be restored. Its super-large memory capacity can meet demands of different



customers.

4. Maximum 1 Million Stitches for 1 Design

At present a single design in the system has the maximum of 100,000,000 stitches and 250 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 help saving time and improving efficiency. More importantly, it is one basis to realize network management.

7. Group Management of Parameters

Parameters can be divided into three groups: frequently modified parameters, practical parameters for embroidery technicians and machine parameters for machine manufacturers. The last two groups of parameters can be restored, recovered and password-protected.

8. Input & Output Using USB

Except for DOS, FDR and ZSK format, customers can use USB disk for data



transfer. USB disk supports DIR operation, which is easy for design management. For each directory, system supports operation on 400 designs or sub-directory. There is no limitation between directory levels. Design designs like DSB and DST and 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, patch sewing, etc.

11. Network Function

A surveillance LAN can be built by using the connectors and linked to the factory LAN, which realizes network management, improve production efficiency and reduce possible mistakes. It's the best choice of embroidery equipment for enterprises to take the modern enterprise management.

12. Patch Embroidery

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

13. Break Adjusting

For various machines, this function can make the machines stop correctly, which means that the main shaft stops at 100 degree.



14. Starting Point Saving

This function can save and store the start embroidering point of each design, instead of repeating moving frame manually to find the design origin when selecting the same design.

15. Mechanical Maintaining and Testing

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

16. Multi-Language Support

Currently, the system supports language shift among Chinese, English, Spanish and Turkish.

17. Design Output

Design can be output and saved into floppy disk or USB disk. Adoption of TAJIMA's binary system enjoys 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 machine 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) Compiling 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 embroidering, output or other operations.

(2) Compiling 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 embroidering, 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 as long as 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 Break Detect

In case of thread break or running 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-C88 computerized embroidery adds special embroidery functions (coiling, taping and ZIG embroidery) on the basis of BECS-A88 system.

28. Setting up B point(Selected)

This function is specially designed for easy threading when thread breaks appear on giant frame. See 9.16 for details.

29. Function of validation of factory ID (A88 system have not this function)

This function is used in validating if factory ID of control system and display system is corresponding. If not, the main screen will have error information.

1-4 Technical Specifications

1. Maximum design saving quantity: 400 designs
2. Memory capability: 16 million stitches
3. Screen resolution: 640*480
4. Network transfer speed: 10Mbps
5. Data transfer mode supported: floppy disk, USB disk and network



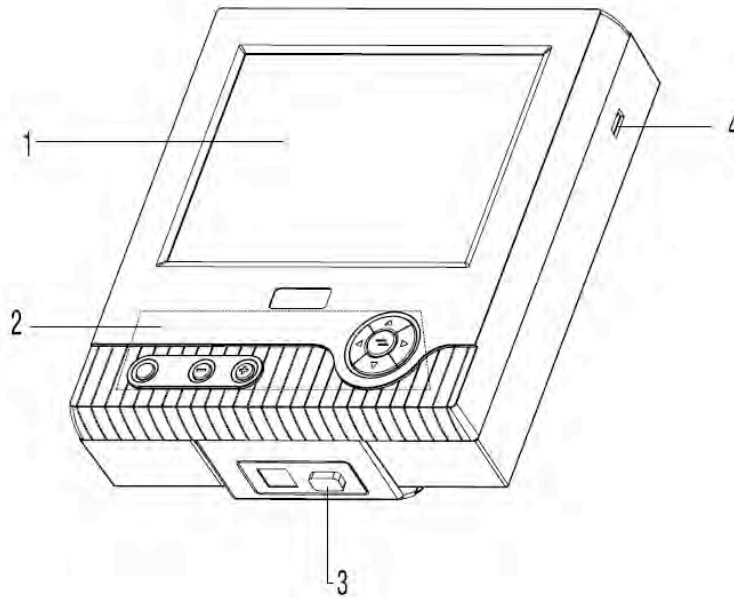
6. Stepping Precision: minimum stepping precision is 0.1mm

7. Stitch range: 0.1mm-12.7mm

Chapter 2 Operation Instruction

2-1 Configuration and Direction of the Control Panel

1 Configuration of the Control Panel



Touch Screen

A88 and C88 adopts high-luminance LCD display and touch screen man-machine interaction.

Operational Buttons

Common actions can be realized by using operational buttons on the control panel. Those actions include: frame moving speed shifting, frame moving, and manual color changing. Users can also shift among tasks.

Network Interface

C88 has two key functions: network supervision and design data transfer.

Network interface is used for network communications.

Main USB Interface



USB disk can be plugged in for data input/output.

2 Direction of the Control Panel

In order to extend the life of the control panel, please do not lay too much pressure on the screen during operation. Try to avoid using hard or shape tools to touch the panel.

3 Direction in Using the Floppy Disk

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.

4 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.

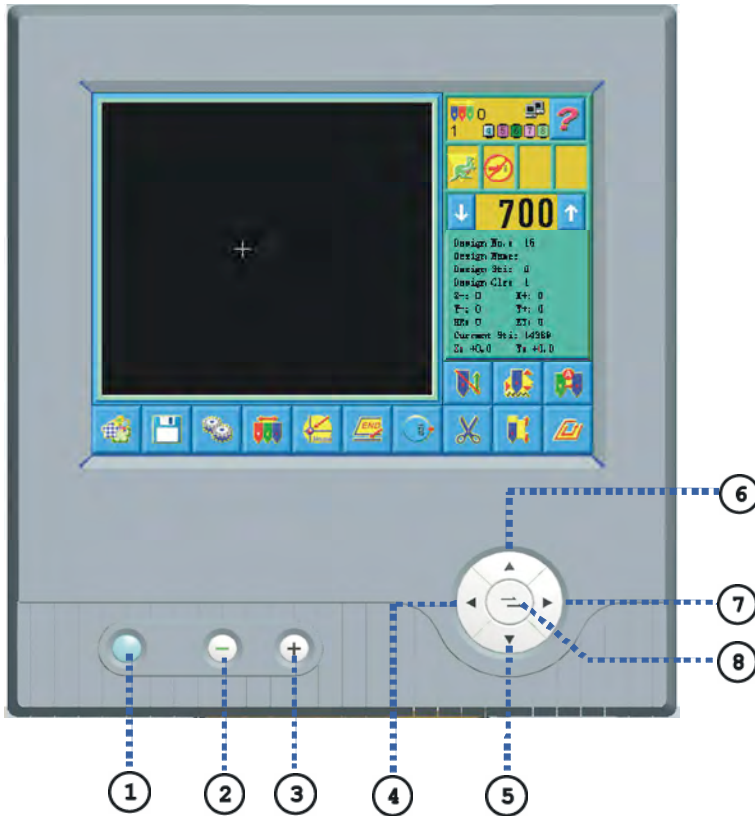
Note: During the process of USB format, sudden loss of electricity or plugging out the disk may break down the USB.



5 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

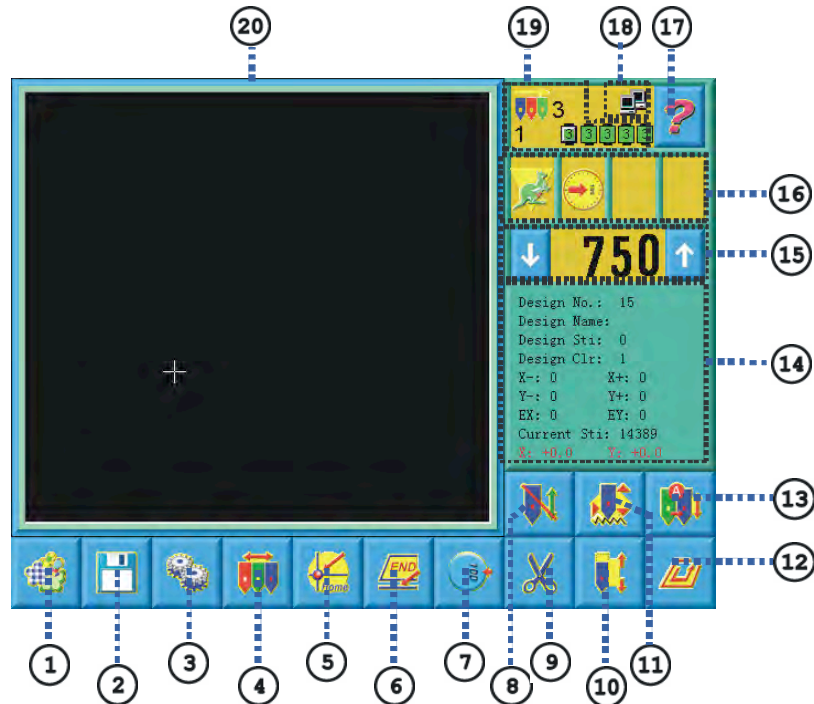
Operation can become much easier by using shortcut keys and the touch screen on the panel.




Number	Name	Description
①	Task Shift	If the user opens several screens, he can shift among the screens by this key.
②	Low Needle Position Color-changing	Press this key, and the current needle position will move towards the low needle position till the first needle position.
③	High Needle Position Color-changing	Press this key, and the current needle position will move towards the high needle position till the highest needle position.
④ ⑤ ⑥ ⑦	Manual Frame Moving	In operation the direction of frame-moving is the same as the direction key. The combination of directions is supported.
⑧	Speed Shift of Manual Frame-moving	Press this key to switch the frame-moving speed between  (high speed) and  (low speed).

2-3 Instruction of the Main Screen



















Note: in the following charts, the icons with  are touch keys; those without indicate the machine status.














No.	Display	Name	Description	Reference
①		Memory Design Management 	Click it to enter the memory design management screen, which includes “select design”, “disk input”, displaying designs, creating new designs and monogram operation.	Chapter 1 Page65
②		Disk Management 	Click it to enter the disk management, which includes operations of floppy disk and USB disk.	Chapter 3 Page 34
③		Parameter Setup 	Click it to enter the parameter setup screen which includes color changing order, normal parameters such as scaling down/up and repetition, general parameters such as sewing parameters, machine applying parameters and machine parameters.	Chapter 4 Page 48
④		Manual Color-changing 	When the machine stops and the main shaft reaches the set position () , click it to enter the manual color-changing screen and then click the corresponding needle number to change color.	2-4 Page 30
⑤		Back to origin 	When the machine stops, click it, the frame will automatically return to the start point of the current design.	2-4 Page 31



Chapter 2 Operation Instruction












No.	Display	Name	Description	Reference
⑥		Back to stop point 	When the machine stops, click the key “Manual Frame-moving” to move the frame (e.g. in case of patching). Then click this key and the frame will automatically return to the stop point of the current design.	2-4 Page 32
⑦		Turn the main shaft at 100° manually 	If the main shaft doesn't arrive at 100° () , click the key and then the main shaft will arrive to this position () .	2-4 Page 30
⑧		Preparation Status Click the key to enter Embroidery Confirmation Status 	The machine is currently in the preparation status and you can choose the design, or set the parameters such as scaling and repetition. Click the key and confirm, and the machine will switch from the preparation status () to the embroidery confirmation status () .	2-4 Page 27
		Embroidery Confirmation Status Click the key to cancel embroidery 	The machine is currently in the embroidery confirmation status. You can pull the bar to start embroidery or click the key and confirm to cancel embroidery, when the machine will return from embroidery confirmation status () to preparation status () .	2-4 Page 27
⑨		Manual Trimming 	After the machine stops, click this key to do manual trimming including bottom thread trimming.	2-4 Page 29
⑩		Assistant Operation 	Click this key to enter the assistant operation management screen, which includes operations such as memorizing and restoring the design's start point, setting the offset point, operations of	Chapter 9 Page 108


















No.	Display	Name	Description	Reference
			design periphery, positioning idling, and clearing accumulated stitch count and X/Y displacement.	
⑪		Normal Embroidery 	The machine is currently in normal embroidery status. When pulling the bar for normal embroidery, the main shaft rotates, the frame moves along the stitch trace and threads shape the design on the embroidery materials. When pulling the bar for returning, the machine returns in low-speed idling. When the machine stops, click this key to switch to the low-speed idling status ().	2-4 Page 28
		Low-speed Idling 	The machine is currently in low-speed idling status. When pulling 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 ().	2-4 Page 28
		High-speed Idling 	The machine is currently in high-speed idling status. When pulling the bar for normal embroidery, the main shaft and the frame remain inactive while the count of stitches decreases. When pulling the bar for stop, the frame directly moves to the actual position of the current stitch count. When the machine stops, click this key to switch to the normal embroidery status ().	2-4 Page 28
⑫		Other Functions 	Click this key to enter the “Other Function Operations” screen, which includes statistics information, zero point setting, continuing after power-off, setting the frame software range, access parameters management, touch screen adjusting, date/time and so on.	Chapter 10 Page 127



Chapter 2 Operation Instruction

















No.	Display	Name	Description	Reference
13		Manual Color-changing Manual Start 	In this status use manual needle-changing ( or the color-changing key on the panel) to select the needle position before embroidery, and then pull the bar to start embroidery. When meeting the color-changing code during embroidery, the machine will halt automatically and the color-changing icon () appears. And the operator need to do manual needle-changing ( or the color-changing key on the panel) to select the needle position, and then pull the bar to start embroidery (manual start).	2-4 Page 28
		Automatic Color-changing Manual Start 	If the machine is set as automatic color-changing, the color-changing sequence should be set before embroidery (click  first, and then click  to do the setting).	2-4 Page 28
		Automatic Color-changing Automatic Start 	When pulling the bar to start, needle-changing will be done automatically following the set color-changing sequence and then embroidery will start. When meeting the color-changing code during embroidery, the machine will automatically halt and do the needle-changing following the settings. If it's set as automatic start, the machine will start embroidery automatically. If it's set as manual start, embroidery will start by pulling the bar	2-4 Page 28
14		Design Information	Display the basic information of the selected design. The current stitches, X/Y displacement and other information will change with embroidering. To clear the	



No.	Display	Name	Description	Reference
			X/Y displacement, click  and then in the following screen choose the option for clearing.	
15		Decreasing the Main Shaft Speed 	It's used to decrease the main shaft speed (until the set lowest speed).	
		Increasing the Main Shaft Speed 	It's used to increase the main shaft speed (until the set highest speed).	
16		High-speed Manual Frame Shifting Status	When the machine stops, press the manual frame-shifting keys to move the frame, and the frame will move in the high speed. Switch between  and  can be achieved by pressing the switching key on the panel.	
		Low-speed Manual Frame Shifting Status	It's opposite to the high-speed manual frame shifting status and used for speed-adjusting.	
		The main shaft stops at the right position (100°).	When the machine stops while the main shaft stops at the right position, you can do operations such as color-changing and frame-moving.	
		The main shaft hasn't stopped at the right position (100°).	When the machine stops and the main shaft hasn't reached the right position, you need to turn the shaft to the 100° position manually by clicking  .	
		The main shaft runs well.	The main shaft runs well in embroidering.	
		Assistant Operation Status	Click  to enter the assistant operation management screen and select any one of embroidering along the design range, one line, one cross and the design	





Chapter 2 Operation Instruction

No.	Display	Name	Description	Reference
			outline, and then the icon  will appear after coming back to the main screen.	
		Thread Break Prompt	When the thread breaks and machine stops, this icon appears.	
		Color-changing Prompt	The machine stops and color-changing is performed.	
		Cyclic Embroidery Prompt	The machine is currently set with cyclic embroidery. Click  to enter the parameter management screen, in which the cyclic parameters can be set.	
		Offset Point Prompt	The machine is currently set with offset point. When entering the embroidery confirmation status  (before starting embroidery), click  to enter the assistant operation management screen, in which you can set offset point.	
17		Help for the Main Screen 	It's the function definitions of the keys on the main screen.	
18		Network Connection Failure	This icon is black. Click  to set network concerned parameters in "Machine Apply" screen	
		Network Connection Success	This icon is blue.	
19		Current Needle Position	The number represents the current actual needle position.	
		Current Color-changing Times	The initial value is 1, which is added one with every time of successful color-changing.	
		Color-changing Order	The order of the numbers represents the needle-changing sequence. And the	



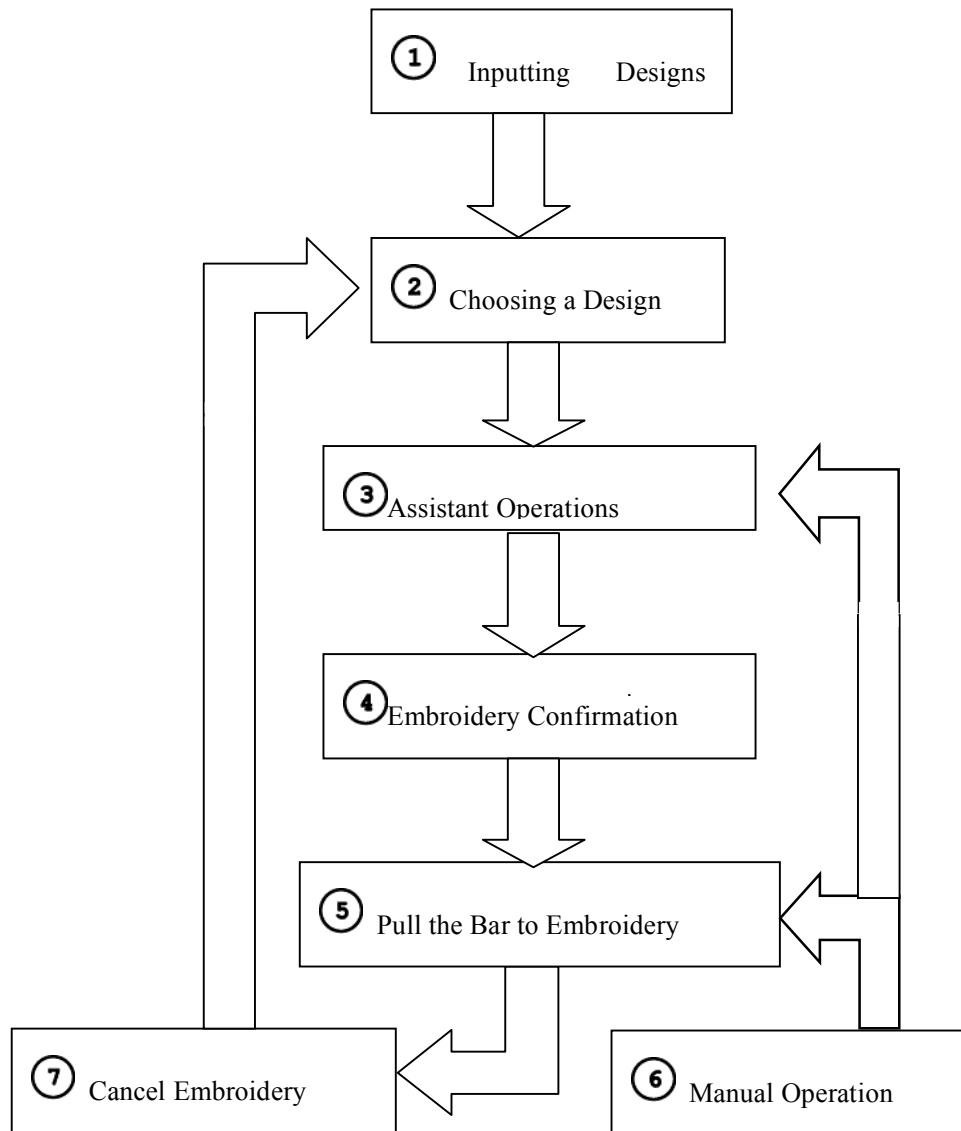
No.	Display	Name	Description	Reference
			three-dimensional icon represents the current icon.	
20		Design viewing Area	This area displays the embroidery designs.	

2-4 Notes on Menu State

If one menu is labeled , it indicates that this menu can not be accessed and modified. While if one menu is labeled , it indicates that this menu can not be accessed and modified. If there is a “Lock” on the right side of the window, then this parameter can be modified only if the relieving the password first.

2-5 Flow Chart of Embroidery

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



1 Input of Designs

The user can input designs through network, floppy disk or USB disk. Only with



(blue) it's possible to transmit designs by network. For disk operation, click




in the main screen to enter into the “disk management” screen. You can also input designs by choosing “Disk Input” in the design management screen.

2 Choosing a Design


If the design management screen is not opened, click  in the main screen to



enter it. If the screen is opened but the current window stays at another function screen, press the blue task switch key on the panel to enter the design management screen. Only in the status , it's allowed to choose design for embroidery.

① Click “Select Design” in the design management screen.




② If the design's start point has been saved, the prompt “Move frame to design's start” will appear when entering the main screen. Click  and the frame will automatically return to the start point.








3 Assistant Operation



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


① Set repetition, rotation and scaling up/down——click  to enter the parameters management screen


② Set the color-changing order——click  and then needle (color) changing to enter the color-changing screen


③ Set patching embroidery——click  to enter the design management screen. Then click “More Functions” to set patching according to prompts

④ Show the range of embroidery design, move frame along the design range, embroider along the design range, embroider one cross, embroider one line, embroider the design outline——click  to enter the assistant operation screen





⑤ Move frame to let design be central——click  to enter the assistant operation screen. Note: this function is to place the design at the centre of the design range set by software (soft range of design). To set the soft range of design, click  to enter the “Other Function Operations”.

⑥ Save the design’s start point——click  to enter the assistant operation screen. Note: The origin point has to be set before saving the start point. To set


the origin point, click  to enter the “Other Function Operations”.

⑦ Set cyclic embroidery—click  to enter the parameter management screen. Then click “Sewing Para1” and set according to prompts.


④ Embroidery Confirmation

- The user can click  after finishing assistant operations. Choose  in the followed prompt and  (embroidery preparation) will change into  (embroidery confirmation), which means that the machine has entered the embroidery confirmation status.



If  is chosen, the machine will remain in the preparation status. Pull the bar and the machine will not run and a prompt will appear to ask the user to confirm embroidery.

② Setting Off-Set Point

After embroidery confirmation, if needed, click  to set off-set point



according to the prompts. Note: It's of no effect to set off-set point after starting embroidery.

③ Setting the Way for Color-Changing and Starting



Click the position pointed in the above picture and the status will switch among



(normal embroidery),



(low-speed idling) and



(high-speed idling).

④ Setting Normal Embroidery and Idling



Click the position pointed in the above picture and the status will switch among



(normal embroidery),



(low-speed idling) and



(high-speed idling).



idling).

5 Pull the Bar to Embroider

Operation bar (embroidery bar under the table)

① Stop Status:

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

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


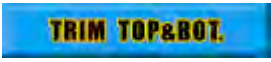


② Running status:

Pull the bar right to the end to embroider slowly and release to normal speed.

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

6 Manual Operation

① Manual Trimming





When the machine stops, click  in the main screen. In the followed prompt click  to trim, or click  to trim the bottom thread. Click  to exit trimming operation.




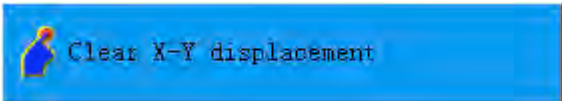
② Manual Frame-Moving

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  and then the function option  to clear the XY displacements displayed in the main screen. The function can be used with manual frame-moving.

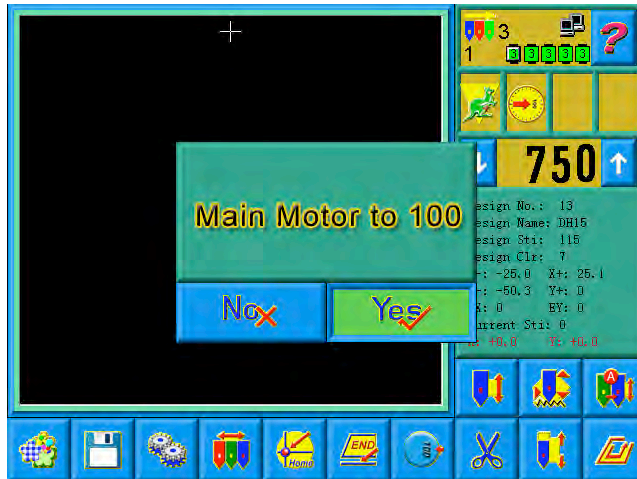
④ Manual Color-Changing



When the machine stops, click  in the main screen to enter the manual color-changing screen. Then click the needle number for color-changing, and the machine head will automatically move to the corresponding needle position. It's also possible to do color-changing by pressing the color-changing shortcut keys marked with “+,-”. Please note: if the user wants to automatically save the order of the manual color-changing (yes for “Store Manual Color” in embroidery parameters), it has to be operated in the manual color-changing screen of the touch screen.

⑤ Turn the Main Shaft to 100°Manually



Usually the main shaft is needed to stop at 100°when needle/color-changing, frame-moving and beginning embroidery. The user can manually turn the main

shaft at 100° when it hasn't reached 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) will be replaced by  (main shaft in the right position).

⑥ Back to the origin

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





⑦ Back to Stop Point

Click  in the main screen and choose  in the followed prompt. Then


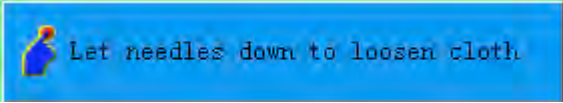


the frame will return to the stop point.




⑧ Positioning Idling

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

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


This function is intended for quilt embroidering. Click  in the main screen and then the option . 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

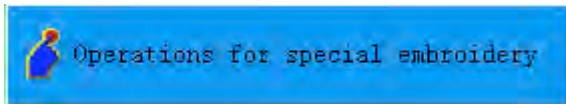


down. When the cloth is place on the frame again, click  to turn the main shaft to 100° manually.

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

Some machines are equipped with devices for AFC, sequin and special



embroidery. For such machines, click  and then



to enter the concerned menu. Click the corresponding keys according to the prompts.

⑦ Embroidery Cancel


When the machine stops, click . Choose  in the followed prompt and

 (embroidery confirmation) will change into  (embroidery cancel).





2-6 Normal Embroidery, Returning and Patching

In embroidery confirmation status (the icon  appears), push the patching switch of machine head (that will perform normal embroidery) to the normal embroidering mode, and push the patching switch of machine head that will not embroider to the patching 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 embroidering, 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 return one needle step. Pull the bar continuously and the frame will return one needle step after another continuously. After the frame return 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 of returning is usually to perform patching embroidery. After the returning stops, push the patching switch of machine head that will perform patching embroidery to go to the patching mode, and then pull the operation bar to right and the machine head will start patching embroidery while other heads don't. When the frame goes to the point where the frame begins to return, other heads whose patching switches are in normal embroidering mode will start to embroider.



2-7 Operation Bar and Turn Shaft Button

1 Operation Bar (Embroidery Bar under the Table)

Stop status: pull the bar right to begin embroidery (including idle running in high or low speed) and pull the bar left to return (including idle running in high or low speed)

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

2 Turn Shaft Button (over the operation bar case, on the right under the table)

To press the button to make the main shaft rotate one cycle and stop at 100 ± 2.5 °.

2-8 Patching Switch

1 Thread Break Detecting Device of 3-Place

There is a switch on every head of machine. When the switch is up, this head is in normal embroidering mode and when it is in the middle, this head is in patching mode and when it is down this head is in stop mode.

2 Thread Break Detecting Device of 2-Place




On every head of the machine, there is a patching switch, and it can be move with hand to the up, middle or down position, but it is stop only at the middle or down position. When the switch is pushed to up position, it cannot stay at up position, and the lamp is red, which hints that this head is in patching mode. In addition, while thread breaking during embroidering, the lamp is automatically changed into red and this head is in patching mode. When the switch is at middle position,








this head is in patching mode if the lamp is red, or this head is in normal embroidering mode if the lamp is green. When the switch is pushed to down position, the lamp is off, which hints that this head is in stop mode. When the switch is pushed to middle position from down position, the lamp will be green and the head is in normal embroidering mode.

2-9 System's Working Statuses


The machine has three working statuses:

- ① Preparation status  —— preset parameters; choose embroidery designs and other preparation work
- ② Embroidery confirmation status  —— confirm the parameter settings to enter the quasi-running status
- ③ Embroidery running status  —— embroidering



How to switch among the above work statuses?

In preparation status ( is displayed), after selecting pre-embroidery design and setting the parameters, first press "" key, and then press "" key, now the machine is in embroidery confirmation status ( is displayed). Finally, 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 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).

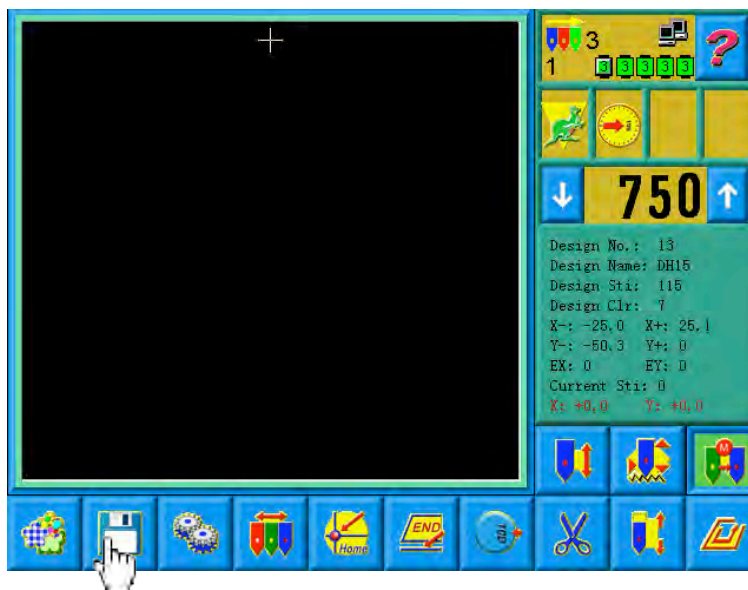
Chapter 3 Disk Management

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, formatting disk, etc. floppy disk 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 Choosing



Since the system support more than one storage device, please choose the objective disk.

- 1 Click  in the main screen

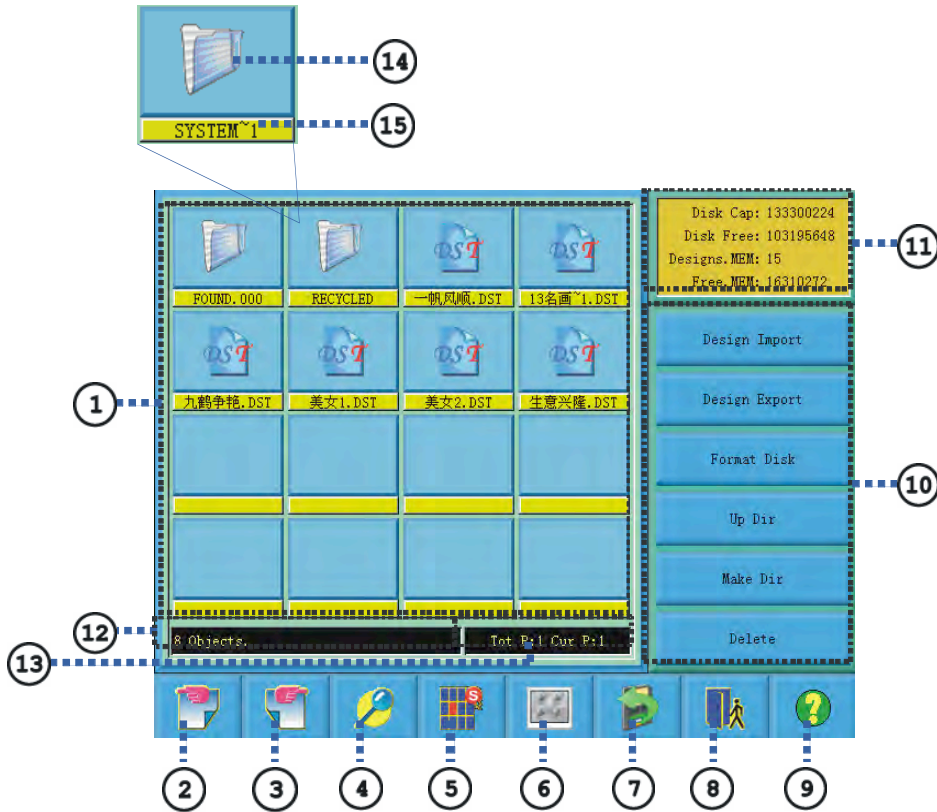











- 2 The prompt “Please Select Device” will appear. And choose the disk used for the next operation.






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 and  means floppy disk. The words are the volume name of the disk and the number in the brackets is for the disk's digital symbol.

3 Enter the Disk Management Screen.



Number	Icon	Name	Description	Reference Page
①		File List	Display the design files and folders of the disk in icons. It's used to select files.	
②		The last page	Turn to the last page if the file list is more than one page.	
③		The next page	Turn to the next page if the file list is more than one page.	
④		Preview of designs	Display the selected file and its information.	
⑤		Single- selection /Multi-selection	  Switch between single- selection and multi-selection	
⑥		Select all	Select all the items in the current folder, only in the multi-selection mode.	
⑦		Refresh	Refresh the current folder.	
⑧		Exit	Exit from the disk management.	



Number	Icon	Name	Description	Reference Page
⑨		Help	Display the help menu.	
⑩		Option key list	List the main option keys for disk management.	
⑪		Disk and memory information	Display the storage and left space of disk and memory.	
⑫		Operation Information	Display the current operation information: the file number in the current folder, information of the selected file and design.	
⑬		Page information	The current page number and total page number	
⑭		Icons of the objects	 for folder  for files of DSB form  for files of DST form	
⑮		Names of the objects	Names of the files or folders	

3-2 Select One or Several Designs

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

1 Select One Object



The objects are by default in the unselected status. When one of them is selected, its icon and words will show a different color and the information area will show

its contents like stitch number and data.



2 Click a Selected Object to Cancel the Selection



Click a selected object and it will become unselected again.

3 Click the Switch Key of Single/Multi-Selection




When selecting the objects, the system is in single or multi-selection mode. In the single selection mode, one object is selected for one time and selecting another object will automatically cancel the last selection. Click the switch key to switch between the two modes. In the multi-selection mode the user can select several objects. In the single selection mode the switch key shows  when in the multi-selection mode it shows .

4 Select More Than One Object

In the multi-selection mode click the several objects in order to select them.





- 5 Click  to select all the objects in the current folder
The key is effective only in the multi-selection mode.

3-3 Design Preview

- 1 Click and select the design in the disk management screen



Design files and folders are shown by icon in the list. One page of the list contains 16 items. Click the key to turn pages to look for designs in another page. The selected object has a green frame and a different background color.

- 2 Click Design Preview Key 



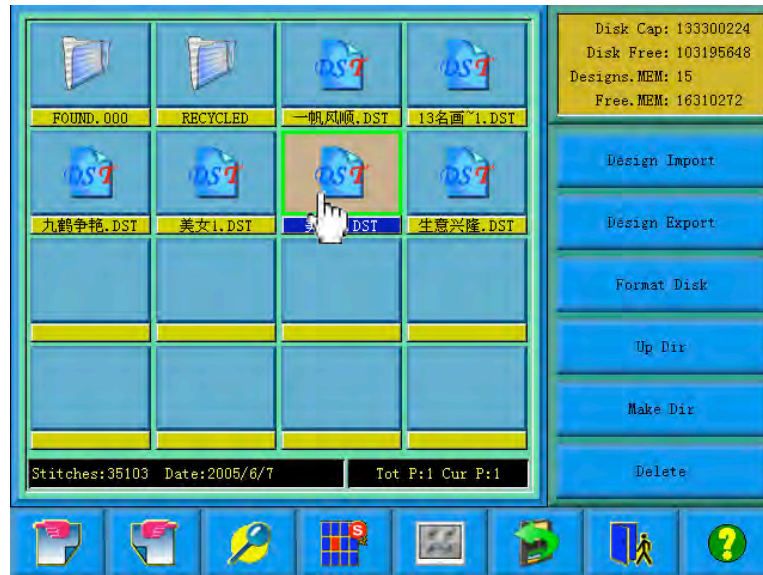
The system reads the data from the disk and displays the design's image according to a certain ratio. At the same time the design's information and color-changing number will show in the information area.

Note: More than one design is allowed to select for preview.

3-4 Design input

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 system saving.

- 3 The user inputs the design number and name.




The system provides the minimum available design number as the default value. The customer can use the small panel on the right to change the value. When several designs are input for one time, the user can only input the number of the

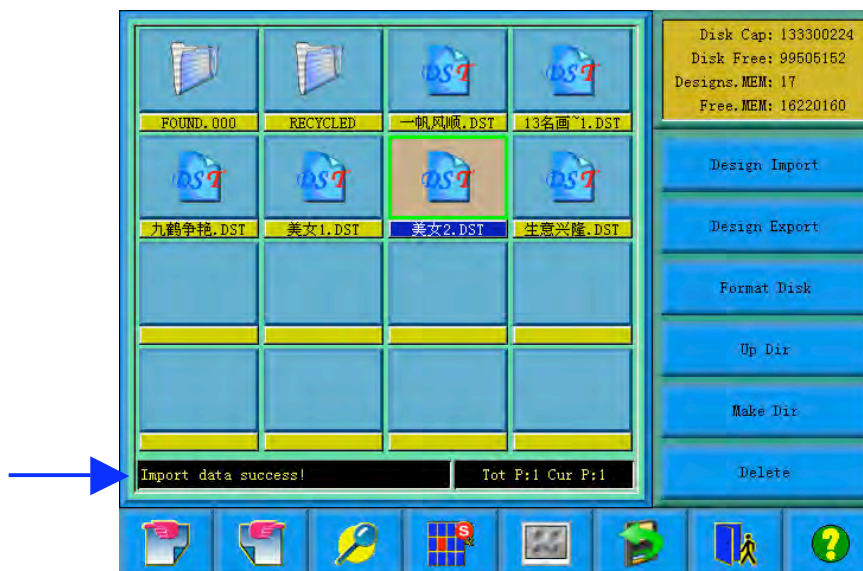
first design.

To modify the design number and name, click the object item in the left window and modify it in the right window. After the modification click the modification

confirmation key , and the results will be save.

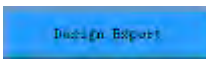
4 Click the confirmation key 

5 The system inputs the design data from the disk to the memory and displays the operation results in the information display area.




3-5 Design Output

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

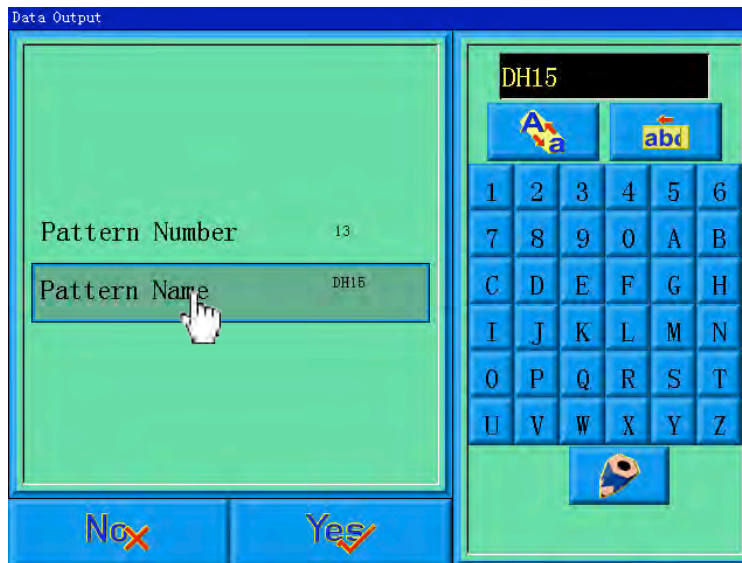
1 Click the design output key 


2 Select the design in the memory intended for output




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

3 Input of the design name for disk saving



The system uses the design name in system memory as the default design name in disk. Click  after input of the design name in disk.

To change the design name in disk, first click the item in the left window, and then change it in the right window. After the changing, click  to save the result.


- 4 The system returns to the disk management screen.

3-6 Folder Operation


- 1 Enter the folder

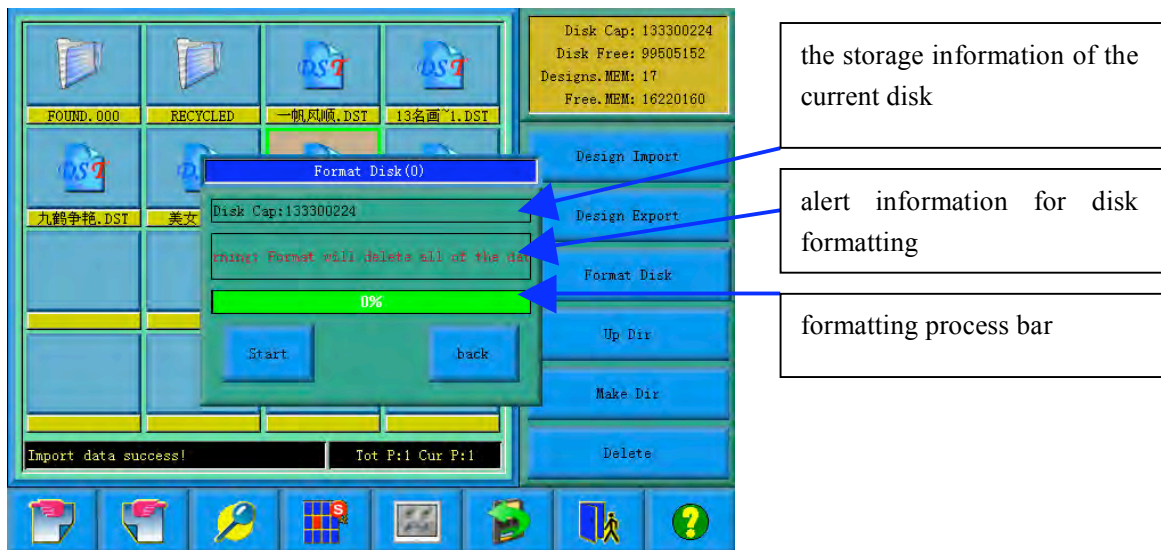
Double click the icon of the objective folder to enter it. The system reads the item list of the folder and refreshes the screen.

- 2 Return to the higher level of folder


Click  to return to the highest level of folder and the screen will be refreshed.

3-7 Formatting a Disk

- 1 Select the disk device for formatting (read 4.1 for reference)
- 2 Click the function key 



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

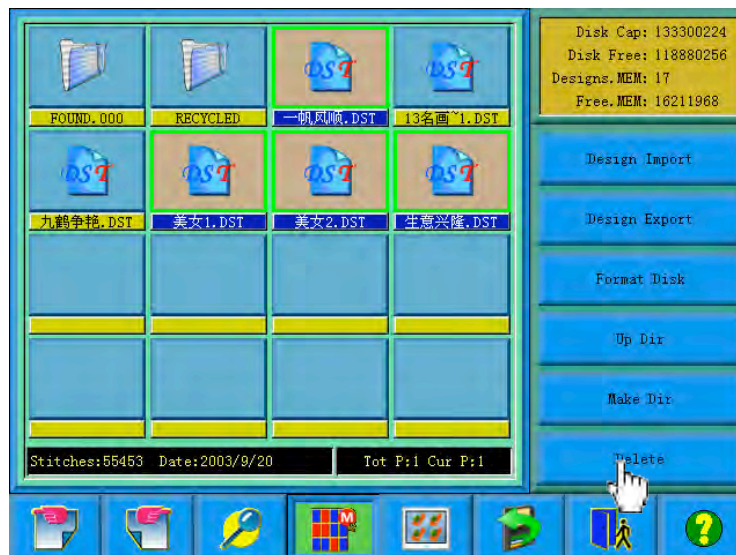
Click the returning key to return to the disk management screen.

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

3-8 Deleting Objects in Disk (Including Design Files and Folders)

1 Select one or more objects (See 4.2)

2 Click the deleting key 



3 The system asks the user to confirm the deleting operation





Note:

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

3-9 Creating a New Folder in the Current Folder

- 1 Click “make dir” key



- 2 Input the name for the new folder






3 Click  to confirm

The system will create the corresponding folder in the disk and refresh the current list of objects.



Chapter 4 Common Parameters and Color-changing Order


In this system each design has its own settings of the normal parameters (like scaling up/down and repetition) and color-changing order. When a new design is selected, the corresponding settings of normal parameters and color-changing order become effective.

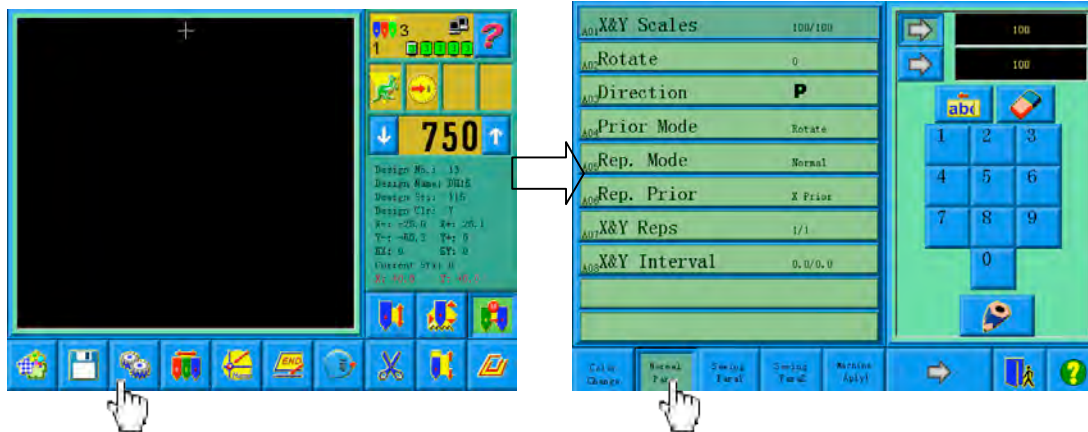
This chapter is to introduce the settings of normal parameters and color-changing order, which is entered by clicking  in the main screen.

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. To do this click "More Functions" in the memory design management screen. (See Chapter 6)

4-1 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 to be adjusted when a design is selected.

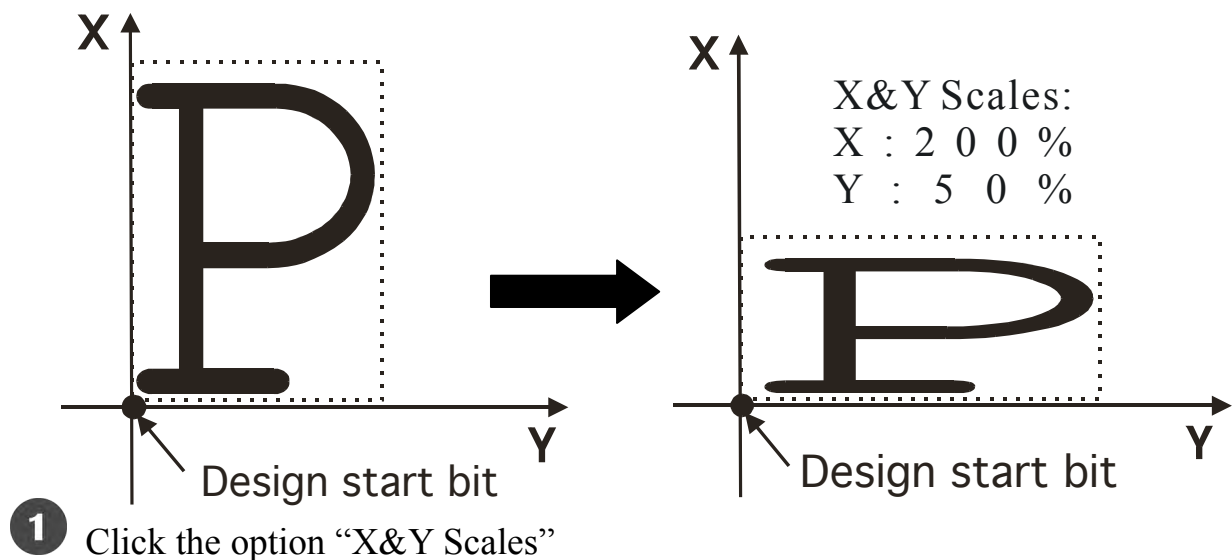
Enter the normal parameter setting screen by clicking  in the main screen.



The way to set each parameter is similar. This chapter will explain how to set the “X&Y Scales” as an example and give the definitions of other parameters (Read 4.1.1 as reference).

4.1.1 Setting “X&Y Scales”






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

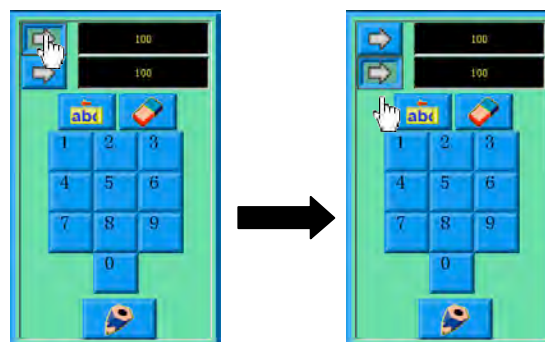




Click “X&Y Scales” in the normal parameter screen, and the right of the screen will show the parameter-setting window.


2 Set the parameter “X&Y Scales”

Click the number panel in the parameter-setting window to change the scaling ratio on X/Y direction. The user can click  to remove the last input digit and click  to remove all the input digits. Click  and  to switch between the parameter’s X and Y scaling values. To change the corresponding parameter value, first click the key  before that. This method is also often used in many other similar situations.



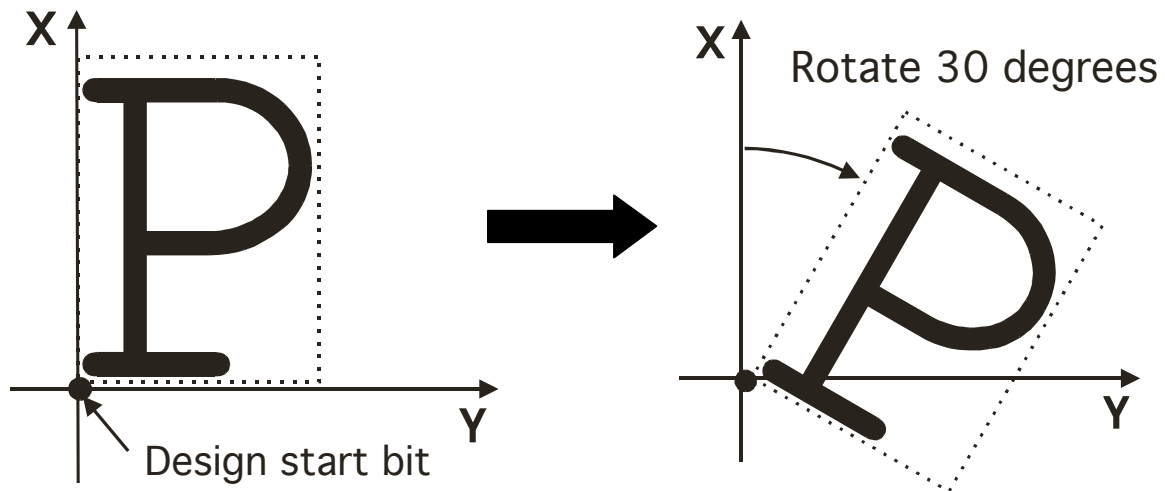
3 Click the confirmation key to save the change



After setting the parameter, the user has to click  to confirm the change and the system will save the change.

4.1.2 Setting of “Rotate”

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



4.1.3 Setting of “Direction”

Design direction	P	p	F	f	P	p	F	p	P
Embroidery shape	F	f		F	F	f		f	F

4.1.4 “Prior Mode”

There are two modes: rotating prior to scaling and scaling prior to rotating. When the user has set the parameters “X&Y Scales” and “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.

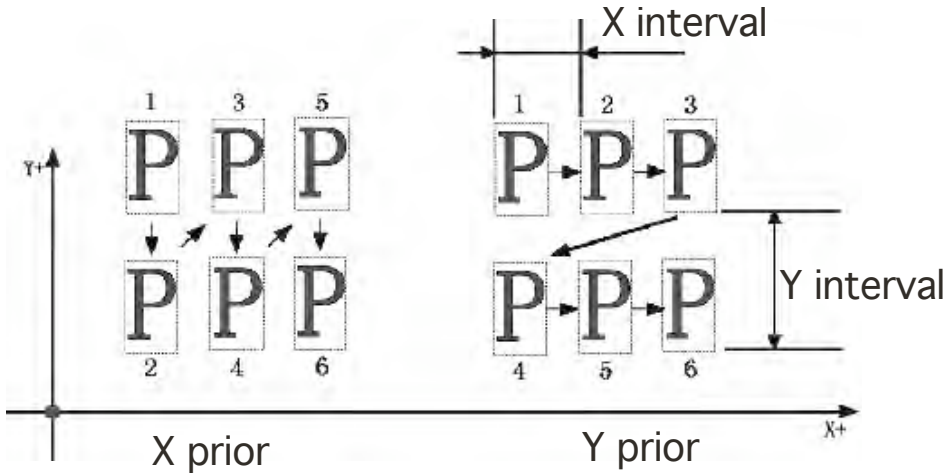
4.1.5 “Rep. Mode”

This system temporarily cannot support partial repetition.



4.1.6 “Rep. Prior”

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



4.1.7 “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.

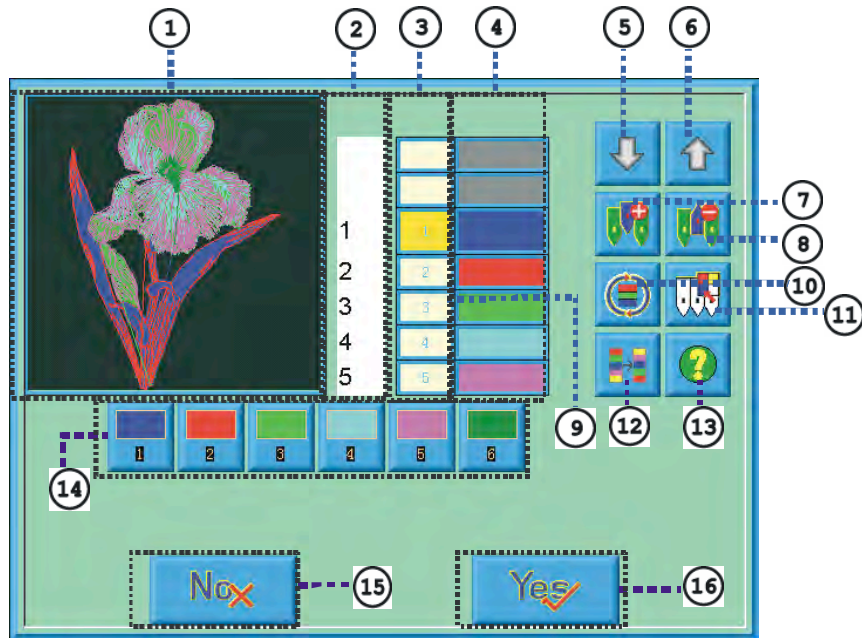
4.1.8 “X&Y Interval”




The above diagram also explains the meaning of this parameter.










4-2 Setting of Color-changing order

4.2.1 Color-changing Screen



number	Icon	Name	Description	Reference Page
①		Design display Area	Display the design according to real-time setting of color-changing order. Preview the result of color-changing	
②		List of color block sequence numbers	Display the sequence numbers of the color blocks in the design.	
③		List of needle sequence numbers	Display the needle sequence numbers corresponding to the color blocks.	
④		List of needle colors	Display the thread colors for the color blocks in the design.	
⑤		Move downward	Move downward the color-changing list to select the color block.	
⑥		Move upward	Move upward the color-changing list to select the color block.	
⑦		Insert a needle number	Click this key and a needle number to insert it in the current list of needle sequence	




number	Icon	Name	Description	Reference Page
			numbers.	
⑧		Delete a needle number	Delete the needle number in the current operation position of the needle sequence numbers. List	
⑨		The current operation position	The user can set, insert or delete a needle number in the position.	
⑩		Set the cyclic needle number	Cyclic setting according to the needle sequence number list before the current color block	
⑪		Setting of needle color	Select and set needle colors in the default colors.	
⑫		Interchange needles	Open the needle interchanging screen and set it.	
⑬		Help	Display the help menu.	
⑭		Needle number selection area	Select needle number here.	
⑮		Cancel	Cancel the color-changing setting of this time and return.	
⑯		Confirm	Save the color-changing setting and return.	

The design display area displays the designs which are under color-changing setting. Design display will change with the setting at the same time.

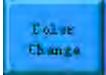









Color-changing order display area shows color blocks, needle numbers and needle colors.

Design display can be in parallel with the setting, inserting and deleting needle number. It means that the user don't need to wait for the ending of design display to do the setting and changing of color-changing order

4.2.2 Setting of the color-changing order

1 Click  in the main screen to enter the parameter setting screen.






- 2 Click  in the parameter setting screen to enter the color-changing screen.
- 3 Input the needle numbers in order in the needle number selection area. The design display in the design display area and the color list in the color-changing display area will refresh with the input of each needle number.
- 4 Click  to see if the input color-changing order is correct.
- 5 To change a needle number in the color-changing order, the user can click  to move the list to place the intended item to the current operation position, and then click the new needle number.
- 6 To insert a needle number in the color-changing order, click  to move the order list to place the intended item to the current operation position, and then click  to insert a needle number after the current item.
- 7 To delete a needle number, click .
- 8 If the user has affirm that the first N items are set correctly and hope to repeat the settings of the first N items from the N+1 item, he can click  to move the order list to place the item N+1 to the current operation position and then click .
- 9 Click  to confirm the input setting. Click  to cancel the setting and return.




4.2.3 Setting Needle Color

To make the color display in the screen get close to the design color in real embroidery, this system can set all the needle colors used by the current design. This setting will be saved with color-changing for the design.

- 1 Click  in the main screen to enter the parameter setting screen.
- 2 Click  in the parameter setting screen to enter the color-changing setting screen.
- 3 Click  to enter the needle color setting screen.




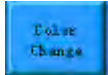

In the needle color setting screen there are totally 40 default colors for selection.

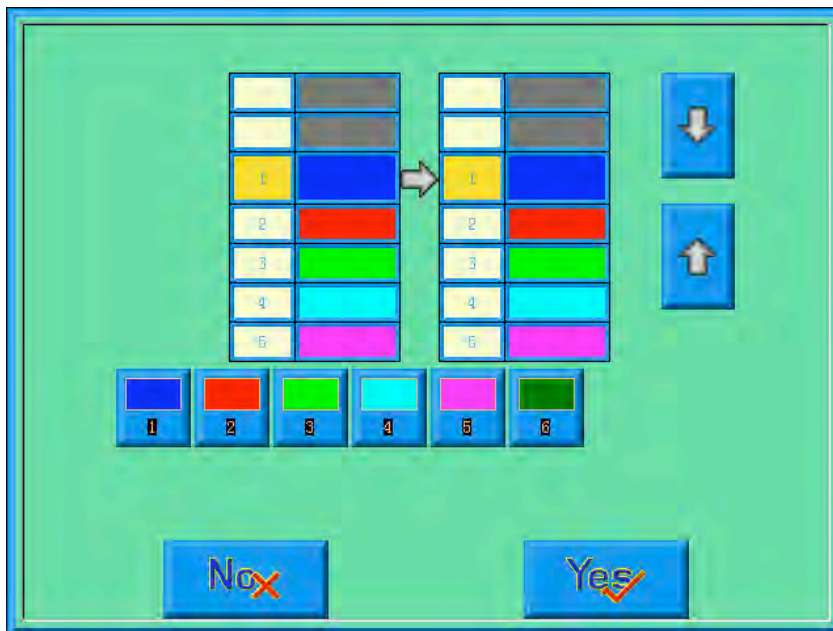
- 4 To set the needle color, select the needle first and then select the color from the 40 default color blocks. The corresponding color will be refreshed on the needle button.
- 5 Click  to save the needle color setting and return to the color-changing






order setting screen. Click  to cancel the setting and return.

4.2.4 Interchanging of Needle Colors

- 1 Click  in the main screen to enter the parameter setting screen.
- 2 Click  in the parameter setting screen to enter the color-changing screen.
- 3 Click  to enter the needle color interchanging screen.




- 4 To interchange the needle colors, click  to move the order list to select the needle and then select another needle from the needle buttons.
- 5 Click  to save the setting and return. Click  to cancel the setting and return.



Chapter 5 Setting General Parameters

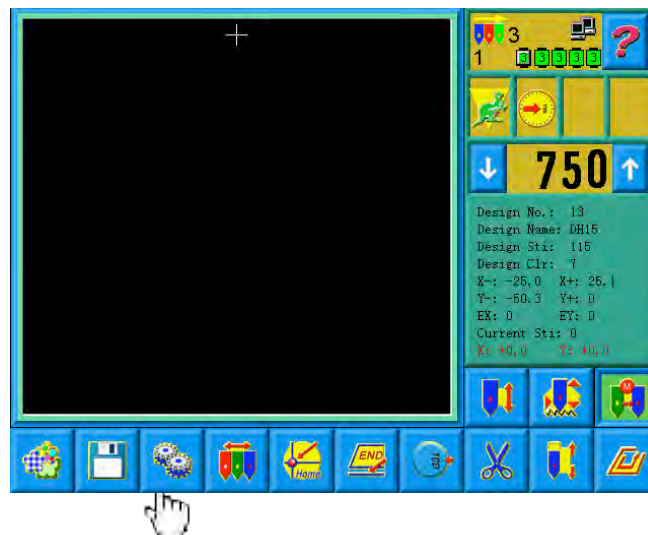
In the parameter setting screen, normal parameters and color-changing are for the current embroidering design, while other parameters are called general meters.

The general parameters include three groups: embroidery parameters, machine application parameters and machine parameters. In embroidering, the embroidery parameters may change with design and embroidery method. They cannot be set with passwords. The machine application parameters are for administrators of the embroidery factories and can be set with administrator password. Machine parameters are for the machine producer to use and usually don't need to be

changed in working, which can be set with producer password. Click  to enter the "Access parameters management" screen, and then you can set administrator and producer passwords as well as set parameters to default. (See Chapter 9)

Refer to the appendix one for every parameter's definition.

- 1 Click  in the main screen.





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



Number	Icon	Name	Description	Reference Page
①		Parameter list window	Display the parameter list of the current group and their values.	
②		Switch key	Switch among different parameter groups	
③		Turning pages of parameter groups		
④		Exit	Exit the screen	
⑤		Help	Display help menu.	
⑥		Parameter-changing Window	Change the selected parameter value in this window.	

Note:

- The number, name and value of every parameter are displayed in the parameter list window.
- When a parameter is set with a password, it can't be changed. There will be an icon in the parameter-changing window to show this situation.


5-1 Setting Procedure for General Parameters

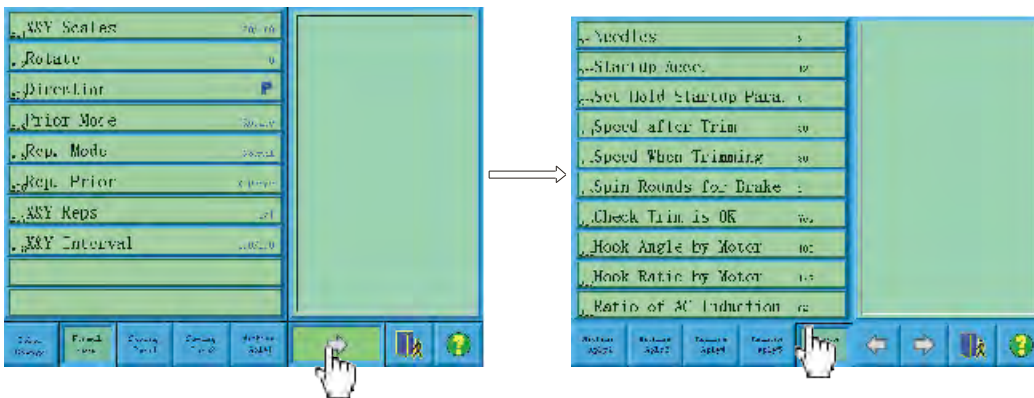
The setting procedure is similar for each general parameter.

1 Select the parameter group.

The user can use the keys on the bottom of the screen to look for the parameter.

And ensure no password or it has been input. (See Chapter 9)

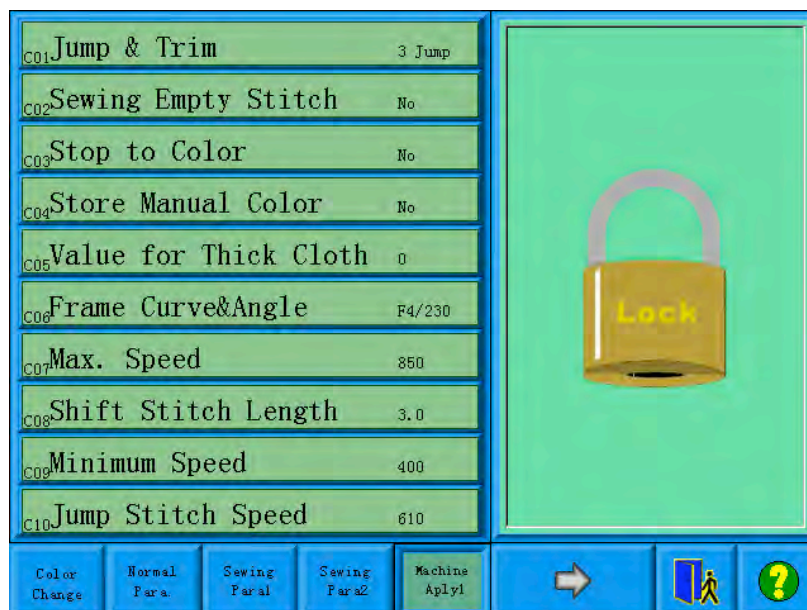
If you want to change the value of “Needles”, (which is D01 in machine parameters 1) click  to find machine parameters 1 and select it. Then all of its parameters will be shown in the parameter list window.



2 Select the parameter.



Select the parameter in the list and in the right parameter-changing window there will appear keys to change the value. If it's already set with a password, the value will not be able to change and an icon will show.




3 Change the current parameter in the parameter-changing window.



Click the keys to change the values.

4 Click the confirmation key to finish the setting.



Click  to confirm and the system will save the result.


5-2 Introduction of Some Functions of General Parameters

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

5.2.1 Cyclic Embroidery

This function is to 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 and 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. 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.

5.2.2 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 follows: 1) If mistakes are found for the automatic color-changing order in embroidering, the color-changing order can be modified with manual color-change. 2) When a new design is embroidered with manual color-change once, the color-change 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 one design embroidering.

5.2.3 Brake Adjustment (A Must for New Machine)

This function is to adjust the control parameters for braking, so as to fit machines of different mechanical characteristics, which 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 vibrate without moving or rotate in the reverse direction, the user can increase the parameter value.

After adjusting these parameters, the user can click the task swift key on the panel

to return to the main screen. Click  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.

5.2.4 Forbidding Design Output

The function is to forbid copying 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.


To use this function, the administrator password has to be set and it's possible to change this parameter after inputting the correct administrator password (refer to 10.7 machine management access).



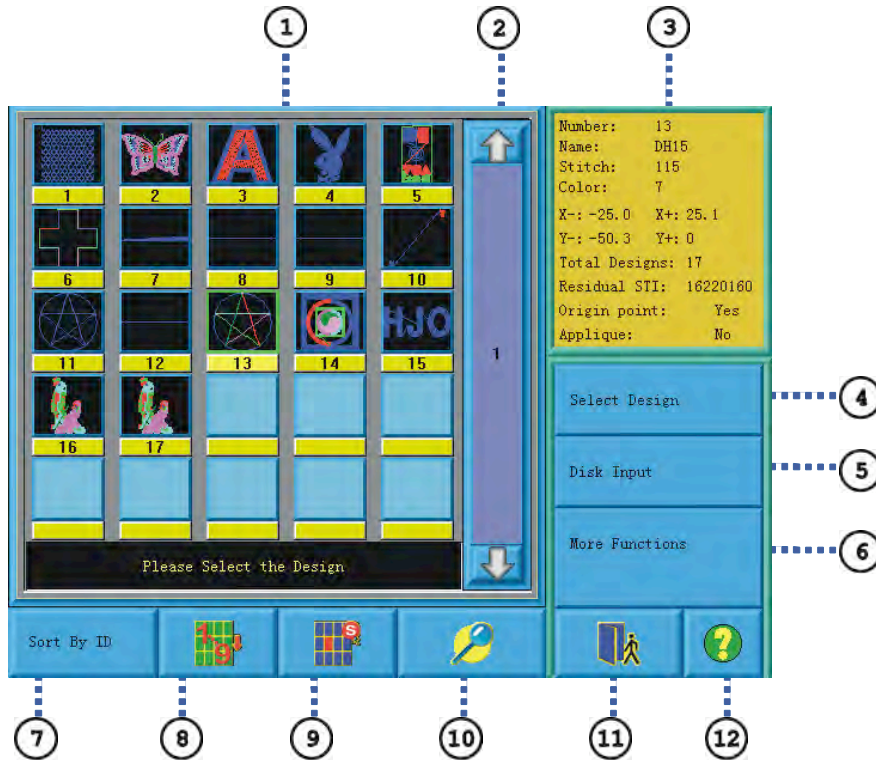
Chapter 6 Memory Design Management




Memory design management includes selecting embroidery designs, setting designs and operations to create designs.

6-1 Memory Design Management Screen and Other Memory Design Operation Screens

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

The memory design management screen includes: design image display area, navigation and pagination area, information area, menu and memory design management operation area. The design image display area can show 25 designs at most, beyond that more pages are needed. Navigation and pagination area can help switch to the designated page. The memory design management operation area is to preview designs and set their order.



Number	Icon	Name	Description	Reference Page
①		Design image display area	Show the design files in memory by icons. It's mainly for selection purpose.	
②		Navigation and pagination area	It's for quick switching to the designated page of memory design list.	
③		Information area	Display the detailed information of the selected design and memory information.	
④		Select design	In the embroidery preparation status use the selected design as embroidery design.	
⑤		Disk input	Open the disk management screen to input the designs.	
⑥		More functions	Click it to do operations such as design copying, deleting, combination and editing.	



Number	Icon	Name	Description	Reference Page
7		Choose the order method	It's possible to choose different orders for need.	
8		Choose the design order	Choose if put design images in reverse order.	
9		Single /Multi-selection	is to switch between single and multi-selection. It is a preserved button and single selection by default. <u>And it cannot be changed.</u>	
10		Design preview	Preview the design's details, scale up/down, move or imitate the design.	
11		Exit	Exit the memory design screen.	
12		Help	Display the help menu.	




Click to enter the more functions operation screen. (To operate a single design, select the design first before entering the screen.)






In this screen click the buttons to enter the corresponding operation screens.



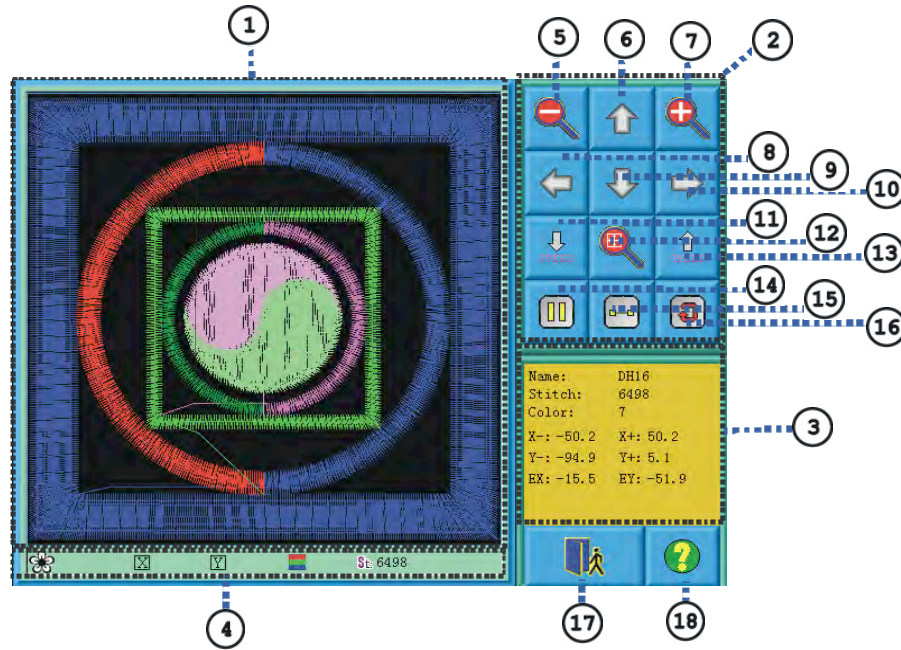
Please read the following paragraphs for detailed explanation. Click  to return to the memory design management screen.

6-2 Selecting a Design for Embroidery

- 1 Select a new design (Ensure that the system is in preparation status )
- 2 Click  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 Click  to set the selected design as the embroidery design. If the operation is completed, the system will close the memory design screen to return to the main screen.

6-3 Memory Design Preview

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



Number	Icon	Name	Description	Reference Page
①		Design preview area	Display the selected design on the designated way and speed.	
②		Design preview operation area	Control the way to display designs.	
③		Design information	Display the design information.	
④		Low speed display information	Show the real-time information in low speed display.	
⑤		Zoom in	Zoom in the design picture in the design preview area.	
⑥		Move upward	Move upward the design picture in the design preview area.	
⑦		Zoom out	Zoom out the design picture in the design preview area.	
⑧		Move left	Move left the design picture in the design preview area.	
⑨		Move downward	Move downward the design picture in the design preview area.	



Number	Icon	Name	Description	Reference Page
10		Move right	Move right the design picture in the design preview area.	
11		Speed down	Decelerate the display speed.	
12		Display to the full size	Display the design to the full size in the design preview area.	
13		Speed up	Accelerate the display speed.	
14		Draw/halt switch	is for switching between drawing design and halting the drawing.	
15		Single step display	Draw the design by single step according to clicks.	
16		Redraw the design	Display the selected design again.	
17		Exit	Exit the operation in the memory design preview screen.	
18		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 control the design display speed. Click   to control the design display and halt. Click  to automatically switch to halt for single step design display. And click  to resume normal display. Click  to redisplay the selected design.




6-4 Sorting the designs

To help find the design quickly, the user can sort the memory designs in the memory design management screen and the designs can be displayed in normal or reverse order. When the memory designs are more than one page, the current page will automatically switch to the first page after sorting.


This system supports the following sorting ways: by design stitches, width, height, name and color number.

The current sorting way is by default shown on the design sorting button. If the user wants to use another sorting way, click the design sorting button and select from the following menu and then the memory designs will be sort in the designated order.



- 1 Click  in the main screen to enter the memory design management screen.
- 2 Click the design sorting button  in the memory design management screen.
- 3 Select the sorting way from the pop-up menu, and the design image display area will refresh and sort the items according to the selected order.
- 4 Click  in the memory design management screen to select the normal or reverse order display the items.


6-5 Copy the Memory 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 “More Functions” in the memory design management screen to enter




the memory design choosing screen.



4 Click “Copy Design” 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 7 directly.

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



6 To input a new design name, click “design name” and input the new name in the pop-up window, and then click  to confirm the input.




7 Click  to carry out the copying operation, and return. Click  to cancel the copying operation, and return.






6-6 Deleting the memory design

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

- 1 Click  in the main menu to enter the memory design management screen.
- 2 Click “More Functions” in the memory design management screen to enter the memory design choosing operation screen.
- 3 Click “Delete Design” to enter its operation screen.




- 4 Select the design. The user can choose to select one design for one time or several designs by switching between  and . The screen is similar to the memory design management screen, in which the designs can also be sorted and previewed.
- 5 Click  to carry out deleting and then return to the design operation



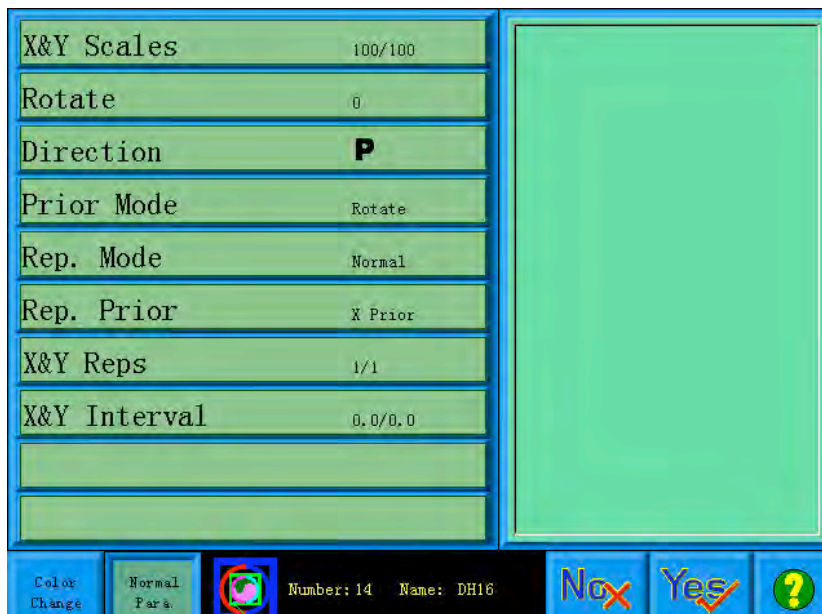
choosing screen. Cancel  to cancel deleting and return.

6-7 Setting Normal Parameters

Each design has its setting of color-changing order and normal parameters such as scaling up/down and repetition, which can be checked and set here.


- 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 “More Functions” to enter the design operation choosing screen.
- 4 Click “Normal Para”. If the selected design is the current embroidering design, the embroidery parameter setting screen will pop up. Please read Chapter Five for reference.


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






For the setting of normal parameters and color-changing, please also read Chapter

5. After setting, click  to save the setting with the design for later use.

Click  to cancel the setting and return to the design operation choosing screen.

6-8 “Compile Paras Design”

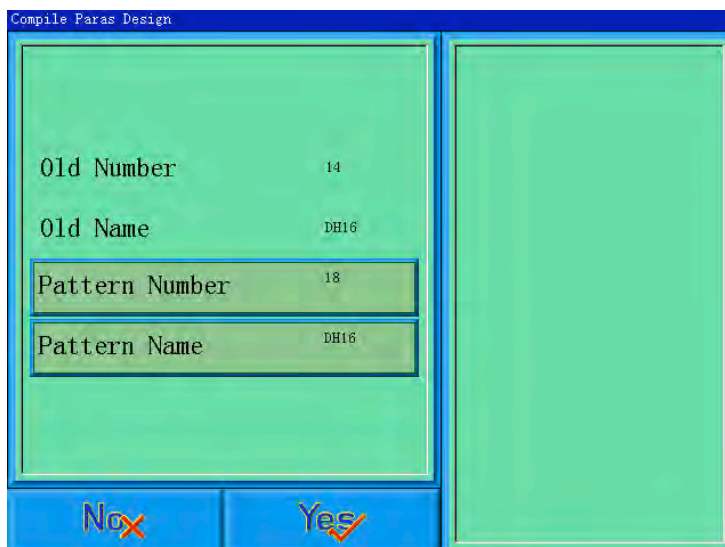
This is to change the setting of color-changing order and normal parameters such as scaling up/down and repetition, which is attached to a specific design, so as to create a new design.

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 “More Functions” to enter the design operation choosing screen.



④ Click “Compile Paras Design” to enter its operation screen.



⑤ If don't use the default values provided by the system, click “Design





Number” or “Design Name” and input the new number and name.

- 6 Click  to create a new design and return to the design operation choosing screen. Click  to cancel creating and return.

6-9 Edit Packed Design

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

icon of the packed design is shown as . To embroider a packed design, return to the memory design management screen after creating or editing the packed design. If it's already in the embroidery preparation status, click the design and “Select Design”, and the system will automatically return to the main screen. Then after embroidery confirmation, pull the bar for embroidery. The user can also edit the packed design into the common design by the editing function, so as to check and embroider the design.

- 1 Click  in the main menu to enter the memory design management screen.
- 2 To edit a saved packed design, select the packed design first. To create a packed design, carry out the following operations.
- 3 Click “More Functions” to enter the memory operation choosing screen.
- 4 Click “Edit Packed Design” to enter its operation screen.

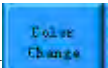
The combined ID shows the current design number and how many designs the





packed design is composed of. It's form is “the current design number (the total amount of designs)”.





5 Set the parameters of the first design, including design number, scaling ratio, rotating angle, design direction and priority mode. Please read setting the normal parameters of Chapter Four for reference.

Click , and then set the color-changing order of the current design in the packed design. The setting screen is in accordance with color-changing in Chapter Four.

6 Click  to set more than one design for packing. And click  to go back to change the parameters of designs packed.

If the current design is not the first design of the packed design, it's needed to set the interval between it and the first design. Please read input way of Chapter Four for reference.



- 7 Click  to save or click  to cancel the operation and return to the design operation choosing screen.

6-10 Programming Combined designs

The action will help to make combined design to normal embroidery design.



- 1 Select a combined design.
- 2 Click the button on the main menu
- 3 Click “more functions” to enter the memory design choosing operation screen.
- 4 Click “Compile Paras Design” to enter its operation screen.

6-11 Setting Patching Embroidery

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


Manual moving frame out: when embroidering to meet stop code, the machine will stop automatically. Move the frame to the proper position for patching with

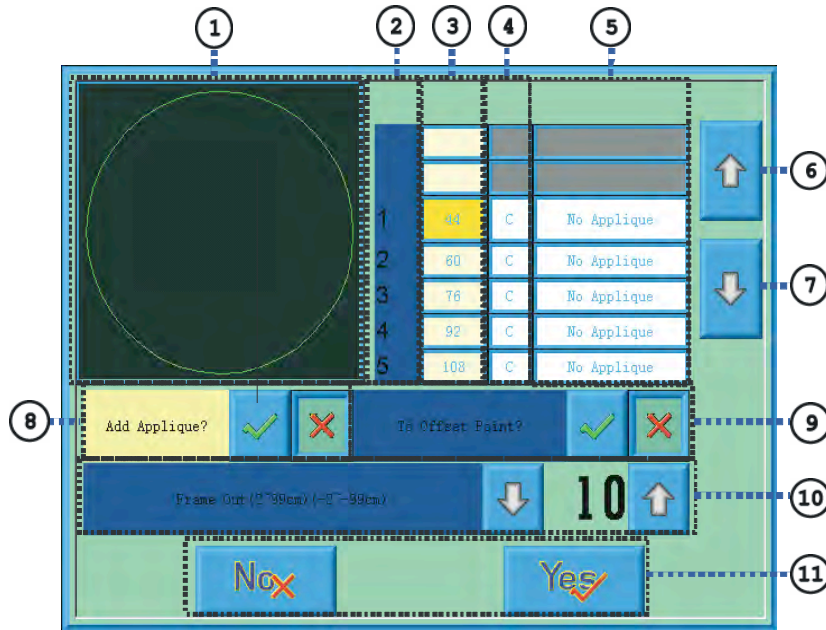


the manual frame-moving button. Then click  and  to return to the stop point. At last pull the bar for embroidery.

Automatic moving frame out has two ways: moving frame to the offset point and setting the moving distance. The operation is as follows: First set patching embroidery function for the design. Then when embroidering to the patching point, the machine moves to the offset point (which has to be set) or move out according to the set distance. After patching pull the bar and the machine will automatically return to the stop point to continue embroidery.


The following is how to add patching embroidery to the 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 “More Functions” to enter the design operation choosing screen.
- 4** Click “Add Patch Code to Design” to enter into “patching setting operation” screen.











Number	Icon	Name	Description	Reference Page
①		Design display area	Real-time display of the design when embroidering to the patching point	
②		Sequence number list	Show the sequence number of the position to set patching point.	
③		Stitch list	Display the design stitches of the position.	
④		Type list	The stitch code type C: color-changing code S: stop code	
⑤		Option list	Patching option of the position: 1. No patching 2. Moving frame out to offset point 3. Moving frame out to a certain distance	
⑥		Move upward	Move upward the patching list to select the position for patching.	
⑦		Move downward	Move downward the patching list to select the position for patching.	





Number	Icon	Name	Description	Reference Page
⑧		Patching embroidery choosing list	Choose whether to set patching embroidery.	
⑨		Whether to set the offset point	Choose whether to set the offset point	
⑩		The distance for frame to move out	Choose the distance for frame to move out: (2cm to 99cm) or (-2cm to -99cm)	
⑪		Yes No	Yes: save the patching setting and return. No: cancel the setting and return.	

The design display area shows the design which is being set with patching. After setting the patching point, the design will refresh and the result will show directly.

⑤ Click  to move the list to the position for patching. Then click  (which is after “Add Applique?”.) to change it to .

⑥ If choose to move the frame out to the offset point, change  (which is after “To Offset Point?”.) to . If choose moving the frame to a certain distance, first change  (which is after “To Offset Point?”.) to , and then click  to set the moving-out distance: (2cm to 99cm) or (-2cm to -99cm) .


⑦ Repeat ⑤ ⑥, to set all the patching positions of the design.

⑧ Click  to save the patching information and return to the design operation choosing screen. Click  to cancel setting and return.

6-12 Satin Width Adjustment

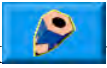



This operation is to adjust the satin width in the design according to the need.



- 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 “More Functions” to enter the design operation choosing screen.
- 4 Click “Adjust Width” to enter its operation screen.

Old Number	13
Old Name	DH15
Pattern Number	18
Pattern Name	DH15
X Adjust	0.1
Y Adjust	0.1

Buttons: No, Yes


- 5 If don't use the default values, click the design number and design name and change them.
- 6 Click “X Adjust” to input the new value, and then click  to confirm it. Click “Y Adjust” to input the new value, and then click  to confirm it.
- 7 Click  to adjust the satin width and save it as a new design to return to the design operation choosing screen. Click  to cancel the setting and return.

6-13 Shift the Frame to Make a New Design





The user often wants to embroider the boundary of a design before embroidering it, so as to help later patching. The function of “Shift the frame to make a new 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, from which the design will be embroidered.
- 2 Click  in the main menu to enter the memory design management screen.
- 3 Click “More Functions” to enter the design operation choosing screen.
- 4 Click “Frame to Make Design” to enter into operation screen.



- 5 Click  to very between satin stitch and jump stitch. Click the manual frame-moving key to move the frame along the desired route. Click  at every turning point to confirm the trace.
- 6 Click  after editing, and the system will prompt to input the new design number.
- 7 According to the prompt, input the number of the new design (The computer will provide a number for choice) and design name. Click  to create the new






design.


- 8 Click  to cancel the setting and return.

6-14 “Make True Design Range”



This function is to create a new design according to the outline of the designated 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 “More Functions” to enter the design operation choosing screen.
- 4 Click “Make True Design Range” to enter its operation screen.
- 5 If don't use the default values, click the design number and design name and change them.
- 6 Click  to create a design and return to the design operation choosing screen. Click  to cancel the setting and return.



6-15 “Hi-Speed Design”

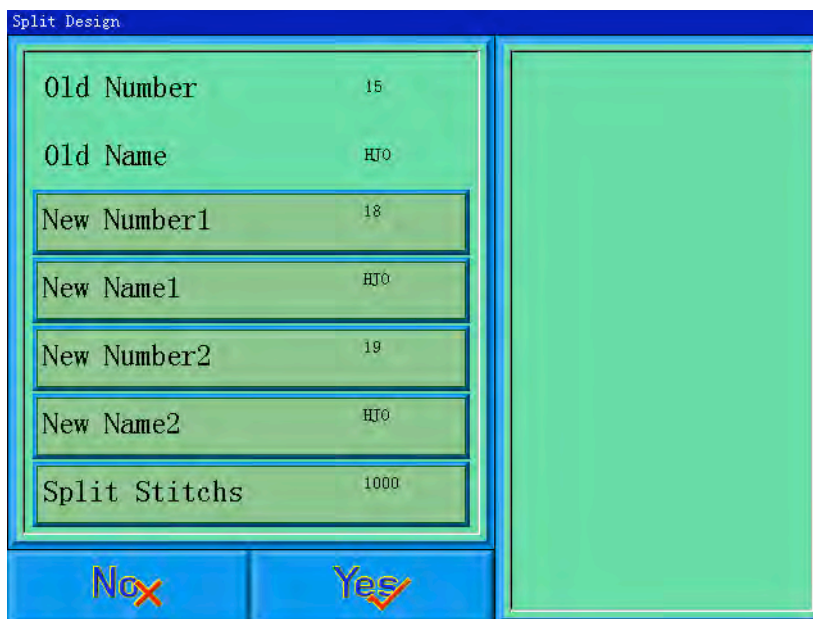
- 1 Click  in the main menu to enter the memory design management screen.
- 2 Select the design in the memory design image area of the memory design management screen.
- 3 Click “More Functions” to enter the design operation choosing screen.





- 4 Click “Hi-Speed Design” to enter its operation screen.
- 5 If don’t use the default values, click the design number and design name and change them.
- 6 Click  to create Hi-Speed Design and return to the design operation choosing screen. Click  to cancel the setting and return.

6-16 Divide the 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 “More Functions” to enter the design operation choosing screen.
- 4 Click “Divide” to enter its operation screen.
- 5 If don’t use the default values, click the design number and design name and change them.
- 6 Click “Split Stitches” to input stitch value and click  to confirm.




- 7 Click  to split a design into two and return to the design operation choosing screen. Click  to cancel the setting and return.

6-17 Combine Two 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 Click  in the main menu to enter the memory design management screen.
- 2 Click “More Functions” to enter the design operation choosing screen.
- 3 Click “Combine” to enter its operation screen.





4 Choose two designs in design choosing area, and click  to enter the screen for combining designs. If More than two designs are selected, there will be a prompt to tell you to reselect.

5 If you don't use the default values, click the design number and design name and change them.

6 Click “X interval between designs” and “Y interval between designs” to input values and then click .




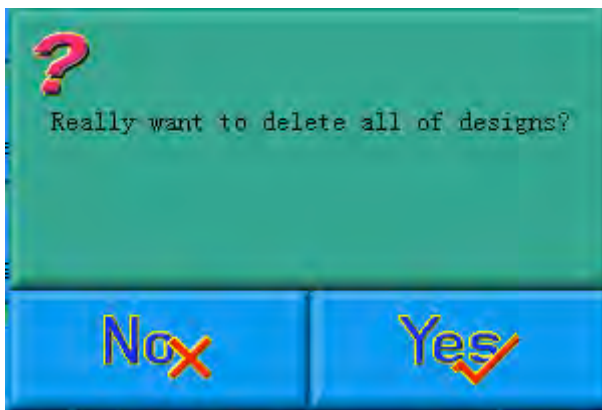




- 7 Click  to combine and return to the design operation choosing screen.
Click  to cancel the setting and return.

6-18 Clear all Memory Designs

This function is to clear all the designs in the memory. Be cautious to use it.

- 1 Click  in the main menu to enter the memory design management screen.
- 2 Click “More Functions” to enter the design operation choosing screen.
- 3 Click “Clear All”, and a confirmation window will pop up.



- 4 Click  to clear all the designs and return to the design operation choosing screen. Click  to cancel clearing and return.

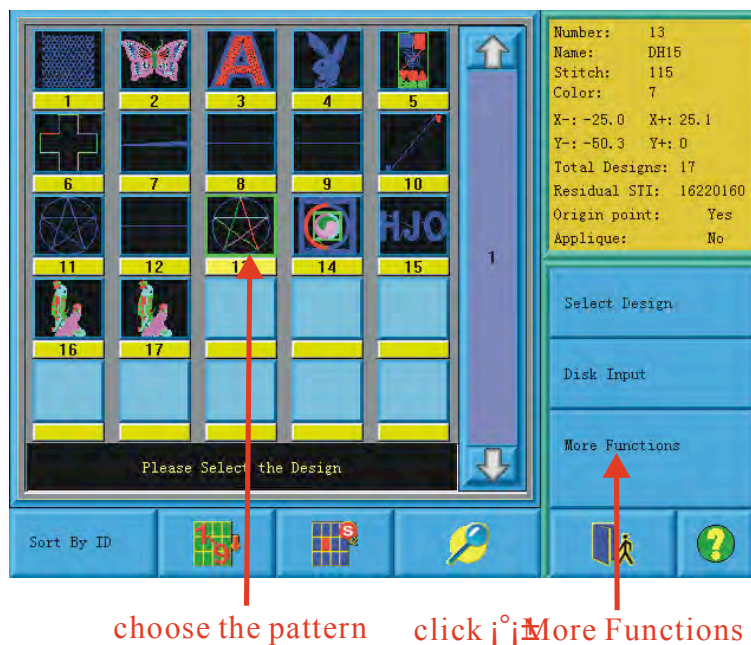


Chapter 7 Memory Design Edit

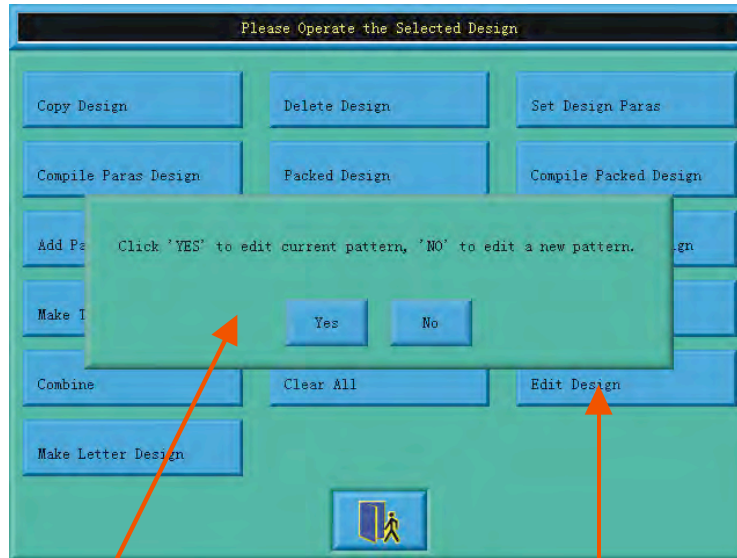
You can edit common designs smaller than 100000 needles in the memory through this function, or establish a new design.

7-1 Start Editing Design

Choose the design that will edit in the window of memory design management, then click “More Functions” key.



In “choose operation of the memory design”, click “design edit” key, after which, in pop-up confirm dialog box, pick out "Yes" to start edit the design selected at present; Click "No" edits a new design. (Note: the design selected can not be combined design, or system will warn “not common design”)



pick out " Yes" to start edit the pattern selected at present

Click "No" edits a new pattern

7-2 Pattern Edits Operation

7.2.1 Summarize



Pattern preview window: use for preview pattern. In view, use “+” mark the position of current needle. The needle trace of current stitch use white and outstanding manifestation.

Document and view operation: Use for save pattern, withdraw and looking into



the help, and zoom view function.

Needle check orientation front-panel: use for orient “current needle” (needle that need check and edit).

Needle edit function key: use for switch stitch code, insert needle, delete needle and move the needle position.

Needle information: Use for information about total stitch amount, serial number、position and type of current needle.

7.2.2 Document and View Operation



Keep the current pattern to a new document.



Reduce the pattern thus can see the all of the pattern. If the pattern size is smaller than show scope of the screen, then show the pattern with the actual size.



Enlarge the pattern to 450% to thus look into the detail of the needle vestige." Current needle" will move the middle position of the screen automatically.



Enlarge or zoom view. The scaling is 150% every time.



Withdraw the pattern editor function.



Look into online help of the pattern edit operation screen.

7.2.3 Orient Needle

Establish" current needle" arrives some one needle. At the same time, use “+” to mark the position of “current needle” in the window of pattern preview. If there is no “current needle" show in the view, so the system will renew the view automatically, and show “current needle" in the centre of view.



Move backward 1/10/100/1000 needles.



Move forward 1/10/100/1000 needles.



Move to the next change color code.



Move to the previous change color code.



Move to the next jump stitch.



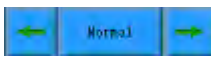
Move to the previous jump stitch..



Move to the last stitch.



Move to the first stitch.



Move to the previous or next appointed stitch code. Click the key in centre, can choose the type of stitch that need checked.

7.2.4 Convert Needle Code

After orient some one needle, click  key and can convert the type of that needle.

Include X/Y position needle for move, such as stain stitch、 jump stitch、 send sequin etc., the needle code type can convert mutually.

Don't include X/Y position needle for move, such as switch of sequin、 stop code、 change color code etc., the needle code type can convert mutually.

7.2.5 Insert Needle

Click  key can insert a new needle code after current needle.

If the current needle is the last one needle of the pattern, so the insert position of new needle is the excursion of current needle with same direction and same distance.

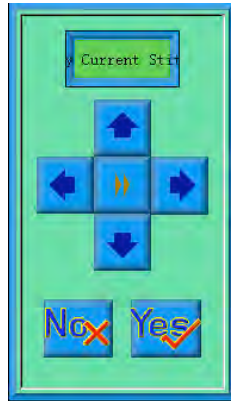
If the current needle in the middle of pattern, so the new needle insert at the middle position of current needle and next needle.

7.2.6 Delete Needle





Position the some needle, click  key and can delete that needle.

7.2.7 Move Needle

Position the some needle, click  key and can move that needle.



When press “moves the current needle only”, mean keep absolute position of all of the stitches behind current stitch. While flick, mean keep opposite position of current stitch and all of the stitches behind it, that means at the same time of move the current stitch, absolute position of stitches behind it are all follow to move.

Click  key can change size of distance for each time moving.  means move 0.1mm each time,  means move 1mm each time,  means move 5mm each time.

While move the needle vestige, will use “+” to mark new position of stitch trace automatically in the window of pattern preview. After click “YES”, refer to modification.



Chapter 8 Letter Design

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

8-1 Enter “Create Letter Pattern” Function

Click pattern management key  on main screen, enter into pattern management screen.



Click “select other operations” to enter into pattern operation select screen.





Click “create letter pattern” key, then can enter into parameter enter screen of letter embroidery.



8-2 Enter Embroidery Letter Bunch and Basic Parameter

After open the window of parameter input, enter into letter input screen automatically.



The left of window is parameter list window; the right is parameter input window.

After click one of parameter in left list, then will open the input window of this parameter in the right window. After adjust value of one of parameter, need click



key to save it.



“Letter bound”: means the letter list that will be embroidery

“Letterform”: means the letterform that use for embroidering letter. The letterform was selected here will use for all of letters, if need set letterform for individual letter, please do operation in “letter pattern adjust screen”.

“Rank method”: the rank method of letter. Total support four rank methods, including “plane” “vertical” “up arc” “down arc”.

“Letter space”: means rank space between letters, the unit is 0.1mm.

“Letter angle”: means when rank method as round arc, whether the angle of the each letter will change follows behind the position of round arc.

“Letter bound rotate angle”: means rotate angle for whole letter bound.

“Letter high zoom”: means increase or reduce letter high.



“Letter width zoom”: means increase or reduce letter width.

“Stain stitch density”: means distance between each stitch of born letter pattern.

The value is smaller, the density is bigger.

“Character rotate angle”: means rotate angle of each letter that opposite to centre of it selves.

“Change color automatically”: whether add change color code before each letter.

After establishing letter pattern parameter, click  key, enter window of “letter pattern adjust”. Click  key withdraw the function of letter pattern.

8-3 Adjust Letter Pattern

1 “Letter pattern adjust” screen

“Letter pattern adjust” screen is shown as diagram:



The operation key is divided into three parts in the screen, the left side is the article and view function key, under is letter rank adjustment key (for whole rank) , right side is the adjustment key for picked letter. The centre of screen is the area to show letter pattern.

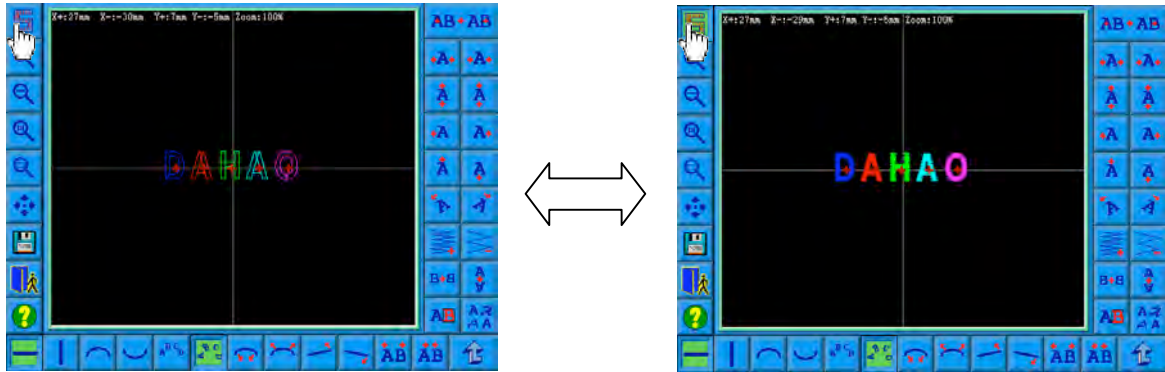
Under general circumstance, should set whole rank method of letter bound, rotate angle, letter space etc. parameters (key is under operation screen); Pick out again the particular letter, adjust rank parameter of individual letter (key is in right side of operation screen).


Letter pattern manifestation window: the central cross mean coordinate, intersection is origin (0,0) . The letter rank surrounds origin automatically.


2 View and file operation





“Needle trace”: show/hide needle trace, hide needle trace can improve operation speed.




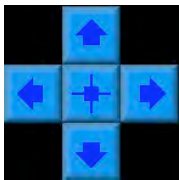
 “Enlarge”: enlarge to show the window and to look into the detail part of the letter pattern.

 “Reduce”: 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 in order to look into.

 “Move”: Move the letter pattern manifestation window, to look into different part of the pattern. Click this key, can show or hide 5 direction keys that move to see the diagram.



“Left” “right” and “up” “down”: Move letter pattern toward each direction. “center”: Move the pattern to the original position.

 “Save”: Used for save letter pattern that just edit. After clicking that key, will appear the window that can input the pattern number pattern name.

According to the pattern name and pattern number that need modification (the



serial number does not modification generally), then click confirmation to start keep.



“Withdraw”: Withdraw" establish letter pattern" function screen.



“Help”: Online help of “letter pattern adjust” screen.

3 Adjust key of whole rank parameter

If after you edit individual letter, then again to adjust whole rank parameter, the editor of the individual letter will be probably overlay.



"Level": Rank the letter bound by level method. Have totally 4 kinds of arrange way, when select one of rank method, the opposite key will present press down status..



“Vertical”: rank letter bound by vertical method.



“Up arc”: rank letter bound by round arc method with up bend.



“Down arc”: rank letter bound by round arc method with down bend.



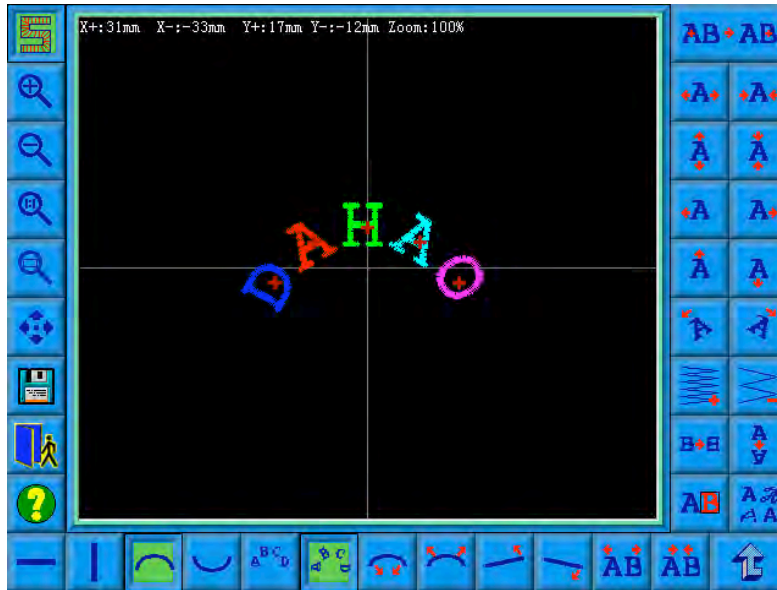
"Fix the letter direction": When rank the letter bound by round arc method, the letter angle not change with the position of round arc, but be equal to a certain angle fixedly.



“Angle follow”: when rank the letter bound by round arc method, the letter angle change follows behind the position of round arc (perpendicularity in arc)



“Radian increase”: When rank the letter bound by round arc, enlarging the radian of reference round arc.



“Radian reduces”: When rank the letter bound by round arc, reduce the radian of reference round arc.



“Whole anticlockwise rotate”: anticlockwise rotate for whole letter bound.




“Whole clockwise rotate”: clockwise rotate for whole letter bound.






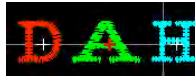
“Extend letter space”: Increase the distance between the letter.


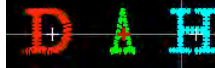



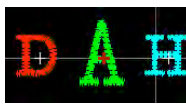
 “Reduce letter space”: reduce space between letters.



4 Pick out letter adjustment key

 “Select switch”: switch selected letter. Must pick out a certain letter and then can carry on the editor for it. When there is a red “+” in the center of letter, meaning the letter to is pick out, such as: . The system default will pick out all letters. After click “select switch” key, pick out the first letter, then click, pick out the second, depend on this kind to push. After picking out the end letter, then click “select switch”, will pick out all letters again.

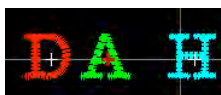
 “Increase width”: increase width of selected letter. Such as: 

 “Reduce width”: reduce width of selected letter. Such as: 

 “Increase height”: increase height of selected letter. Such as: 

 “Reduce height”: reduce height of selected letter. Such as: 

 “Left move”: Move the selected letter toward left side. Such as:



“Right move”: Move the selected letter toward left side.



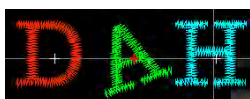
“Up move”: Up move the selected letter.



“Down move”: Down move the selected letter.

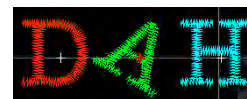


“Anticlockwise rotate”: With the letter as centre, (“+” in the centre of letter) rotate selected letter toward anticlockwise direction. Such as:



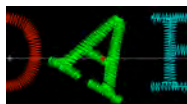
“Clockwise rotate”: With the letter as centre, (“+” in the centre of letter)

rotate selected letter toward anticlockwise direction. Such as:



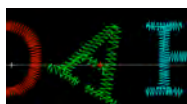
“Density increase”: Increase stain stitch density of the born letter pattern.

Such as:



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

Such as:



“Level overturns”: Left and right overturn the selected letter.



“Flip vertical”: Up and down overturn the selected letter.



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



“Change letterform”: change letterform of selected letter. After clicking this key, will flick the dialog box of select letterform, choose one of letterform that





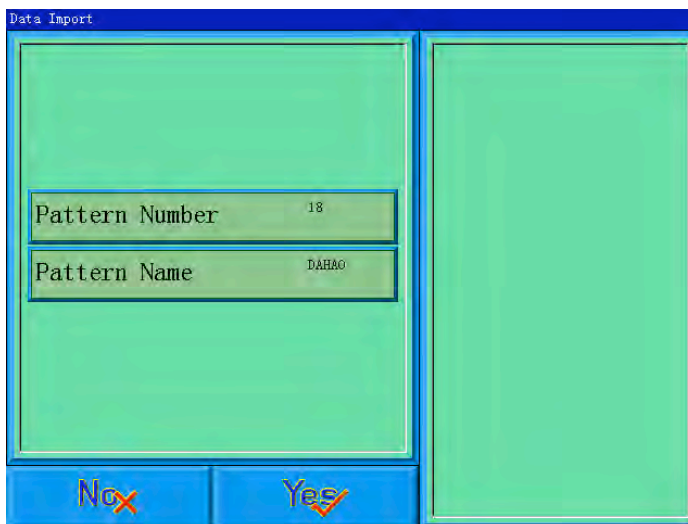
you wished, and confirm.



“Return” key is use for return the window of letter pattern input. If you need to change embroidery letter bound, can click this key to return back the previous screen to carry on the modification. All of adjustment for individual letter in this window will disappear.



8-4 Save Letter Pattern

After finish letter pattern editor, click  key. Appoint the pattern number and patter name in the pop-up window, then click  key to keep.



Flick the window in “letter pattern adjust” screen after confirm and keep it.



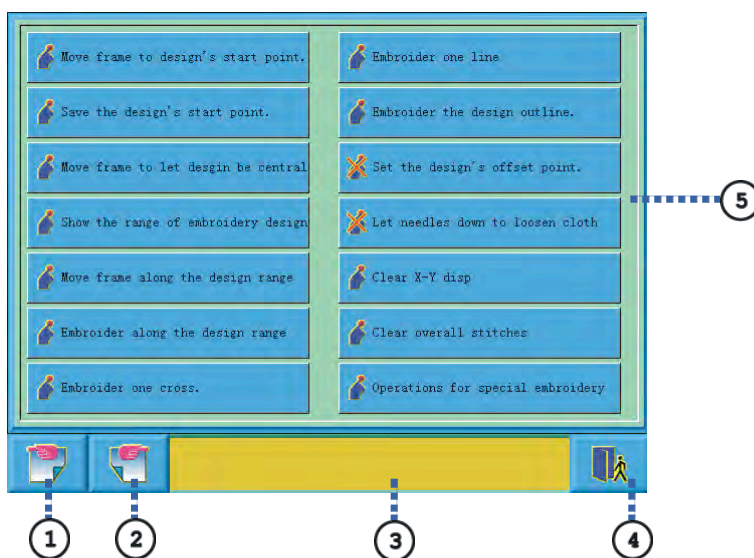
Click  key to confirm keep successfully, if do not need to continue to edit the letter pattern, click  key to withdraw.








Chapter 9 Assistant Operation Functions

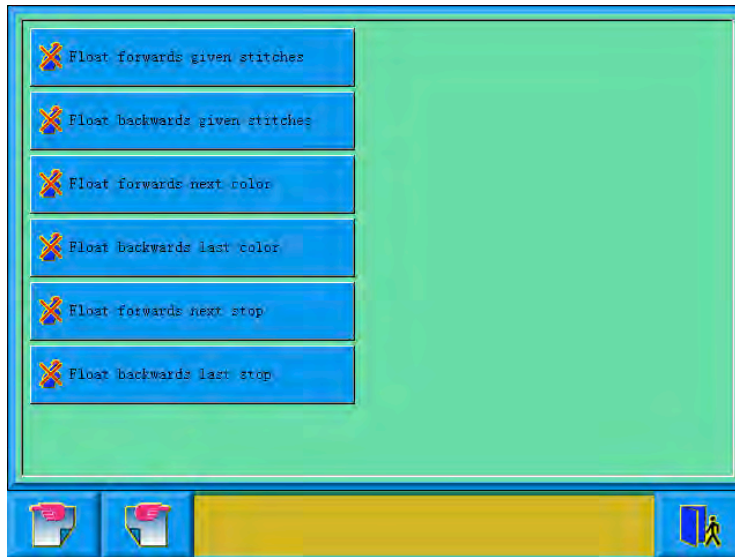
These functions are carried out by clicking the keys on the Assistant Operation screen.

Click  to enter the Assistant Operation screen.

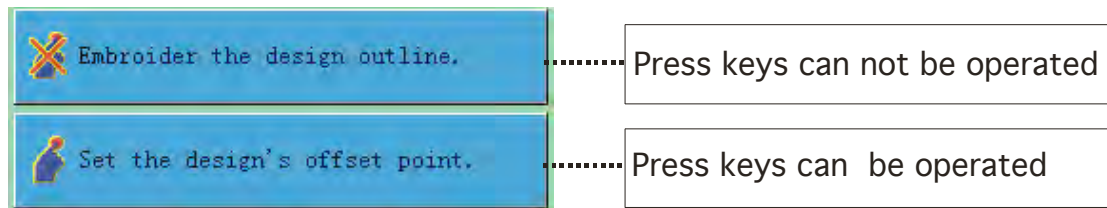


Number	Icon	Name	Description	Reference Page
①		Last page	Turn to last page.	
②		Next page	Turn to next page.	
③		Information area	Show error messages.	
④		Exit	Exit the assistant operation screen and return to the main screen.	
⑤		Key list	The list of function keys of assistant operation	

The functions are so much that the function keys take two pages. Click  and  to switch between the two pages.




The two pages have the same structure. Those keys are for different functions. Some functions may be unavailable for some machine status. In this case those keys will show different and can't be pressed down.



9-1 Move Frame to Design's Start Point

If a start point has been set for the current design, use this function to move the frame to the design's start point.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click "Move frame to design's start point"




3 Click 

4 The system moves the frame to the design's start point.

9-2 Saving the Start Point

If the origin point of the frame is already set (refer to “Setting Frame Protection when Power-off”, Chapter Ten), the machine can save the start point of the current design at the embroidery preparation status or before embroidering.


1 Move the frame to the start point.

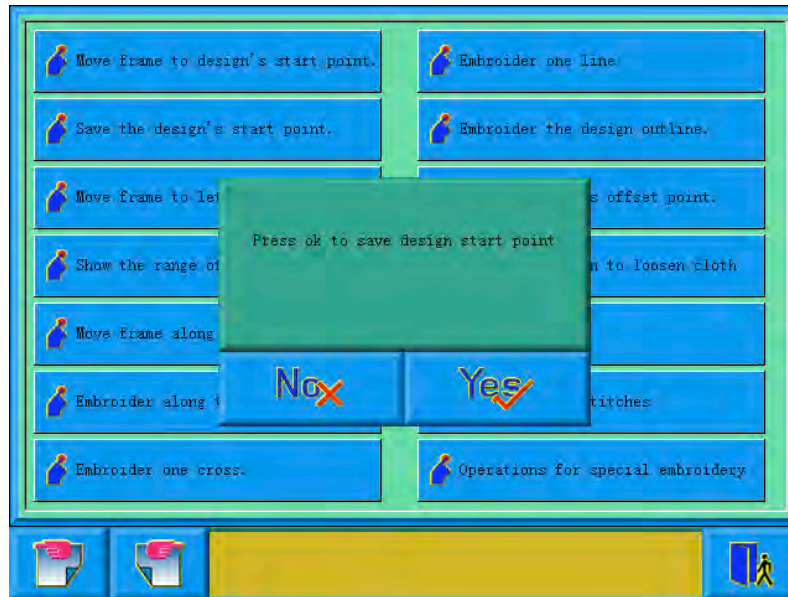
2 Click  in the main screen to enter the assistant operation screen.

3 Click “Save the design's start point”.

A prompt window will pop up.


4 Click  to save the current frame position as the design's start point.

Click  to cancel the above operation.




9-3 “Move Frame to Let Design Be Central”


This function is to move frame to position the design at the center of frame software protection, so as to embroider the design at the center of the frame. (See “Setting the Frame’s Software Protection”, Chapter Ten)

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Move frame to let design be central”.
- 3 The system asks the user to confirm.






Click  to confirm and the system will calculate and move the frame.

Click  to cancel the above operation.

④ The system returns to the main screen.

9-4 Show the Range of Embroidery Design

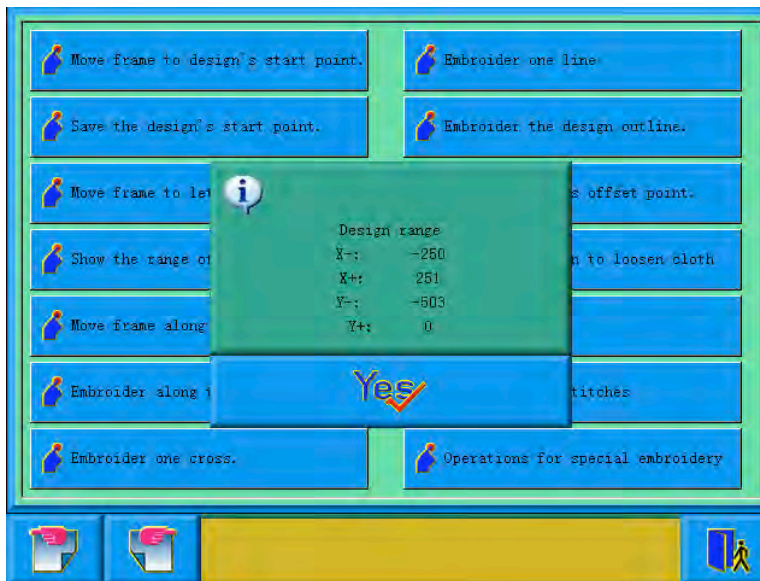
This function is to show the boundary information of a design.


① Click  in the main screen to enter the assistant operation screen.

② Click “Show the range of embroidery design”.

The system will show the concerned information.

③ The system shows the boundary information.




Click  to close the window.



9-5 Move Frame along the Design Range

This function is to move the frame along the design range to check if the design exceeds the limits. When the frame meets the limits during this process, the system has the self-correcting ability.




- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Move frame along the design range”.
- 3 The system asks the user to confirm.

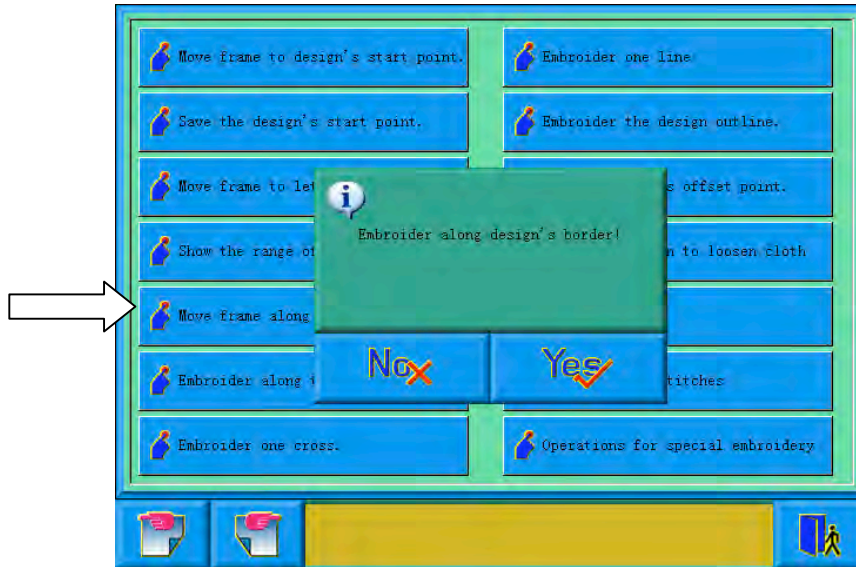


Click  to confirm and the system will move the frame along the design boundary. Click  to cancel the operation.

9-6 Embroider along the Design Range


The system is able to calculate the design’s peripheral data for embroidery. This function should be used in embroidery preparation status.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Embroider along the design range”.
- 3 The system asks the user to confirm.




Click  to confirm or click  to cancel the operation.

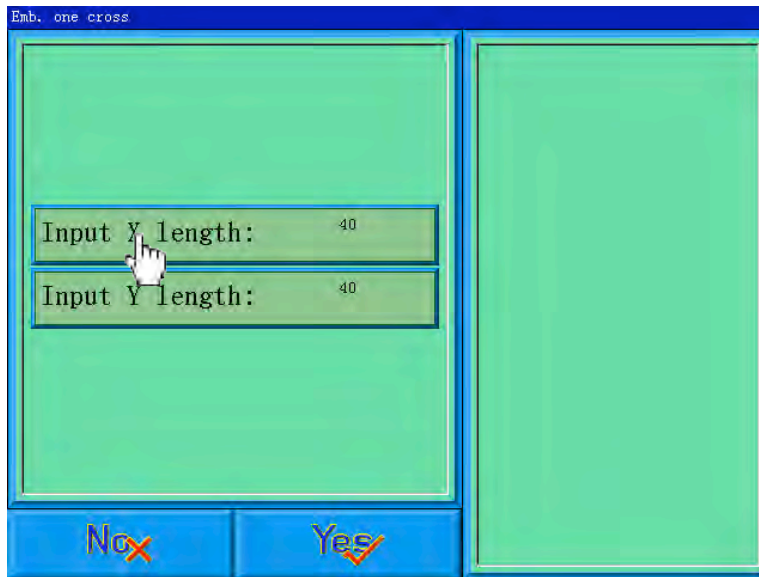
4 The system will calculate the design's peripheral data and enter the embroidery confirmation status and the main screen.

The main screen will show . The user pulls bar to embroider the design range. After finishing it, the system will automatically come back to embroidery preparation status.

9-7 Embroider one Cross


The system can embroider a cross at the current position, whose size can be adjusted according to the input.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click "Embroider one Cross".
- 3 The system will enter the setting screen for embroidering one cross.




Here the user can input the X/Y length.

- 4 Click .

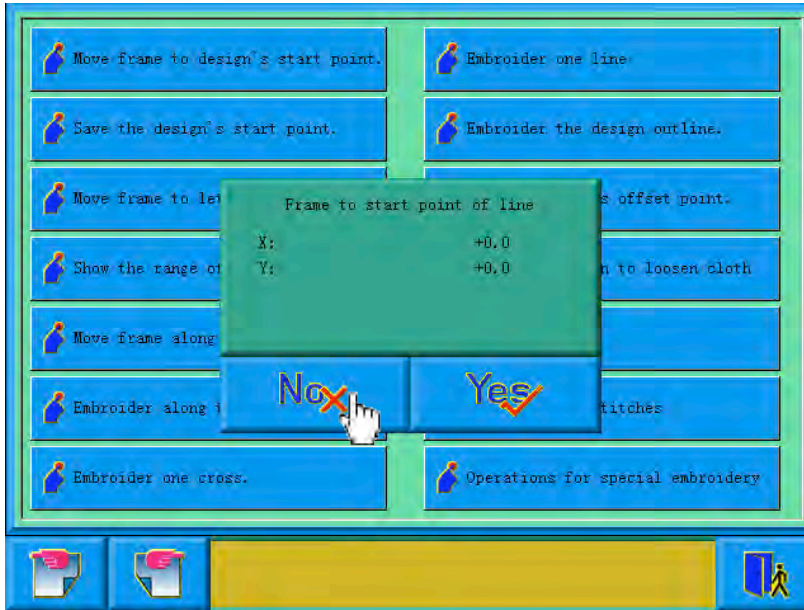
The system will create the necessary data and enter the embroidery confirmation status and main screen. Then the main screen will show . And the user can pull the bar to embroider the cross. After finishing it, the machine will come back to preparation status.


9-8 Embroider One Line

The system can embroider lines based on the user's needs.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click "Embroider one Line".
- 3 Input the line's first point's coordinates.

The system will ask the user to input the coordinates to the pop-up window.




The user uses the manual frame-moving key on the panel to move the frame to the start point of the line, and clicks  to input the coordinates.

4 Input the line's second point's coordinates.


The system will ask the user to input the coordinates.




The user uses the manual frame-moving key on the panel to move the frame to the end point of the line, and clicks  to input the coordinates.





- 5 The system will create the necessary data, enter the embroidery confirmation status and return to the main screen.

The main screen will show . And the user can pull the bar to embroider the line. After finishing it, the machine will come back to preparation status.


9-9 Embroider the Design's Outline

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Embroider the Design's Outline”.
- 3 The system will calculate and wait for the user to confirm.



The system will calculate the outline data and ask the user to confirm the above operation. Click  to confirm or click  to cancel the operation.


- 4 The system will return to the main screen and embroidery confirmation status.

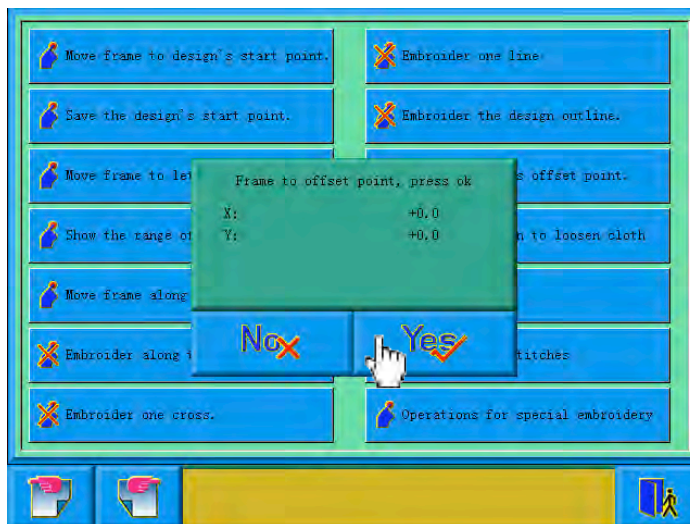
The main screen will show . And the user can pull the bar to embroider the

outline. After finishing it, the machine will come back to preparation status.


9-10 Set the Offset Point

The offset point can be set at any point other than the start point. After setting it and beginning to embroider, the frame will first move from the offset point to the start point and start normal embroidery. After embroidery, the frame will move back to the offset point. Moreover the offset point is also necessary for frame to move out when patching. The function can only be used under the embroidery confirmation status and before embroidering.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Set the design’s offset point”.
- 3 Move the frame to the offset point



The system will ask the user to confirm and input the coordinates of X and Y.

Press the frame-moving key to move the frame to the offset point and click 

to confirm. Or click  to cancel the operation.

- 3 The system will save the position of the offset point and return to the main




screen.

9-11 Let Needle Down

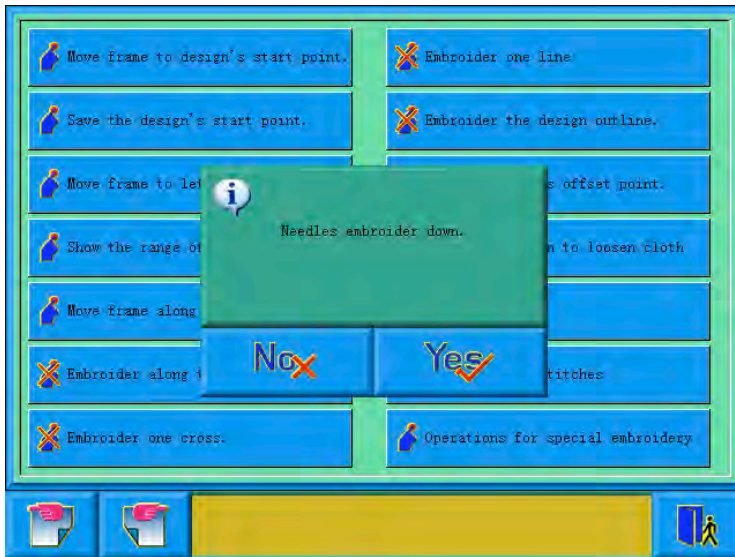
(The needle stops at the designated low position)



This function is intended for quilt embroidering. In embroidering, the needle will stop and prick into the embroidery cloth to fix it. After releasing the cloth, move the frame to the designated position. When the cloth is fixed on the frame again, It is ready for the next operation.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Let needle down to loosen cloth”.

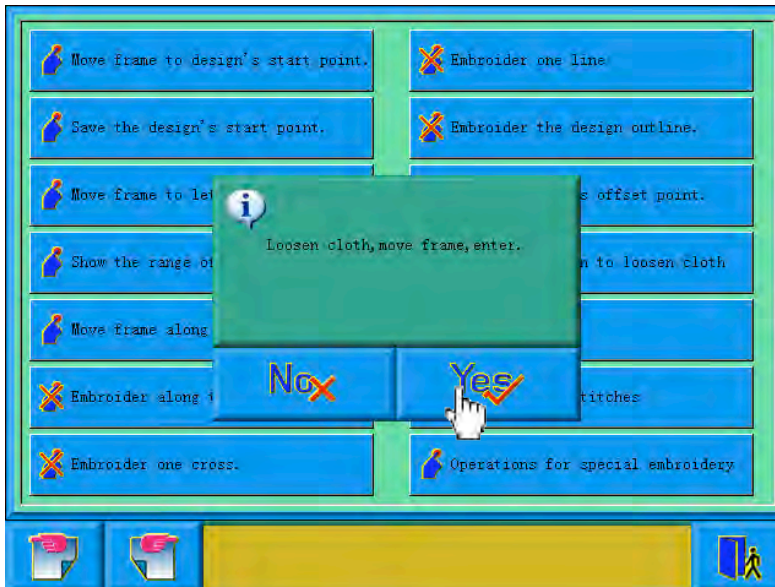




- 3 Confirm the operation.



Click  to confirm. And the needle will move down to prick into the cloth. Or click  to cancel the operation.

4 Loosen the cloth, move the frame and confirm.



Loosen the cloth and move the frame to the designated position, and click  to confirm the operation. Or click  to cancel it.


5 Confirm the frame-moving and return to the main screen.

The user can fix the cloth and pull the bar for the next embroidering.



9-12 Clearing X and Y Displacements

This is to clear the X and Y displacements.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Clear X-Y disp”.




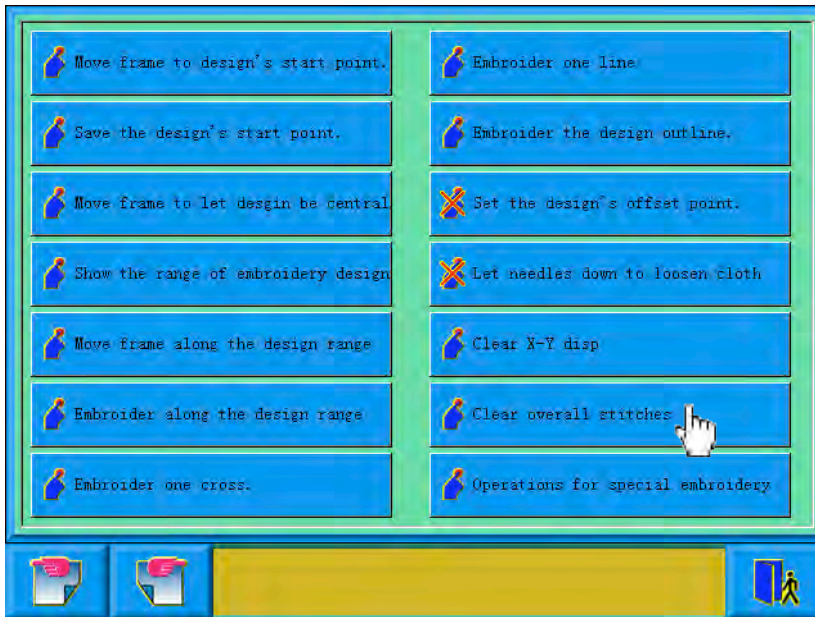
- 3 The system will set the X and Y values to 0.

The user can check the values in the main screen.

9-13 Clear Overall Stitches


Clear the current embroidered stitches.

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Clear Overall Stitches”.



- 3 The system will set the value to 0.

9-14 Operation on AFC, Squin and Coiling Devices

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Operate for special embroidery”.
- 3 Operate according to the prompts.

9-15 Positioning Idling

According to the user’s needs, this function enables the frame to the designated position without embroidering. Then the user can set the positioning idling of needle number, color-changing code and stop code.




Acco

rding to the order showed above, from the main screen to enter the positioning





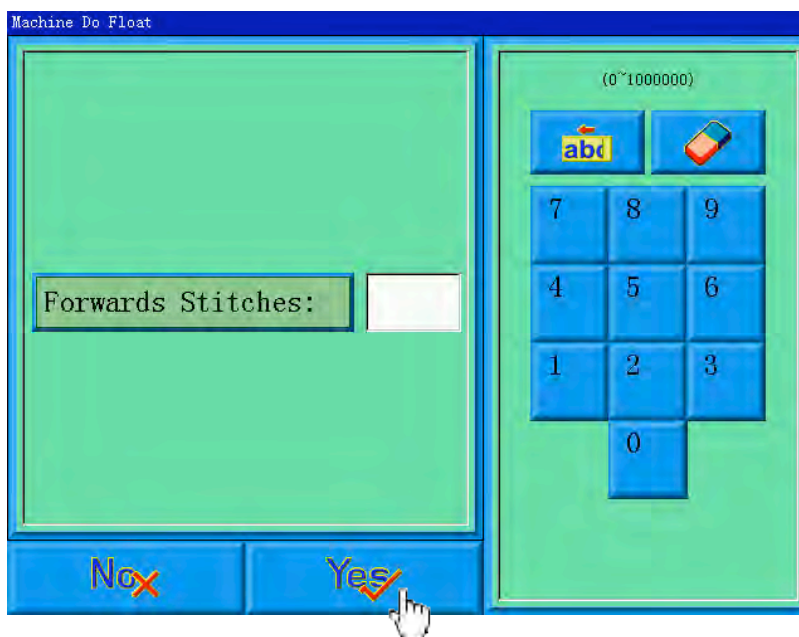
idling screen, where there is a list of function keys. The function is available in embroidery confirmation status.

9.15.1 “Float forward given stitches”

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Float forward given stitches”.
- 3 Input the forward stitches needed.

The system enters the “Machine Do Float” screen and asks the user to input

stitches. Click  to confirm or click  to cancel the operation.




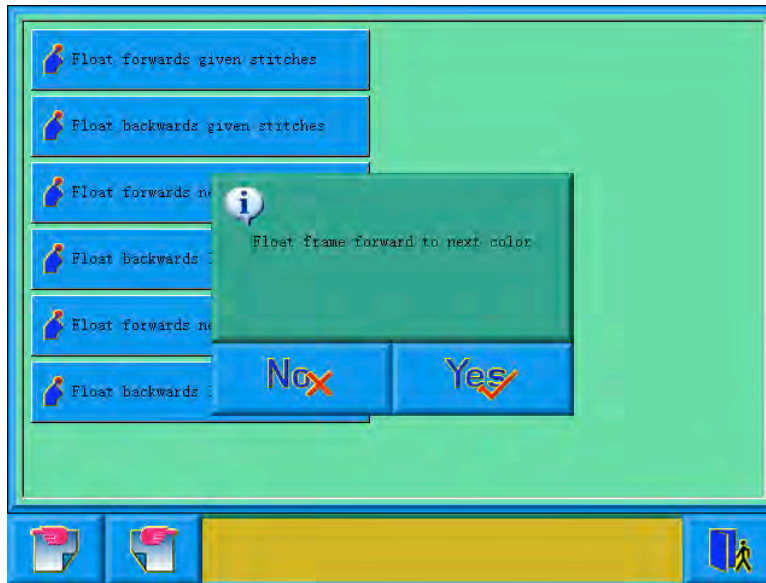
- 3 The system returns to the main screen. Pull the bar right to move the designated stitches.

9.15.2 “Float backward given stitches”

The operations are similar to that for “Float forward given stitches” except pulling the bar left.

9.15.3 “Float forward next color”

- 1 Click  in the main screen to enter the assistant operation screen.
- 2 Click “Float forward next color”.
- 3 Confirm.



- 4 The system will return to the main screen. Pull the bar right to move to the next color-changing code.

The other three functions are similar to this.

9-16 Setting point B


This function is selected and the user must customize.

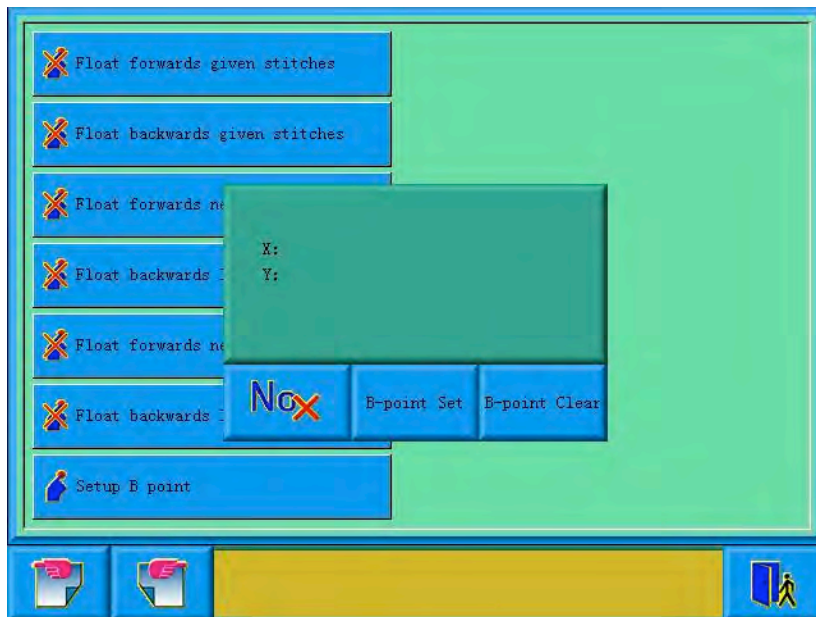
This function is developed to solve the problem of inconvenience of threading when thread break appears on giant machine.

When thread break appears, press the slow switch to let the machine trim, then the frame will move to the point B. After reloading the thread, you can pull bar to the right side to let the frame back to the stop point. Then proceed embroidering.



9.16.1 Setting Course

- 1 Set the absolute origin, see 10.3 for details.
- 2 Click the button  in the main screen to enter into assistant operation screen.
- 3 Go to page 2 and click .



Press the manual frame moving to move the frame to a proper position, click to let system back to other screen. Setting B point is complete.

If you want to clear the point B, press “clear B point”.

9.16.2 Notes

1. When frame moves to the work-off point, there is only action on Y direction.
2. It is

If the B point is set as the image below, then frame will be only moving above B (a zone indicates the inner edge of the stand), after thread break, press the slow moving switch, machine trims without letting frame go to B point; when frame is



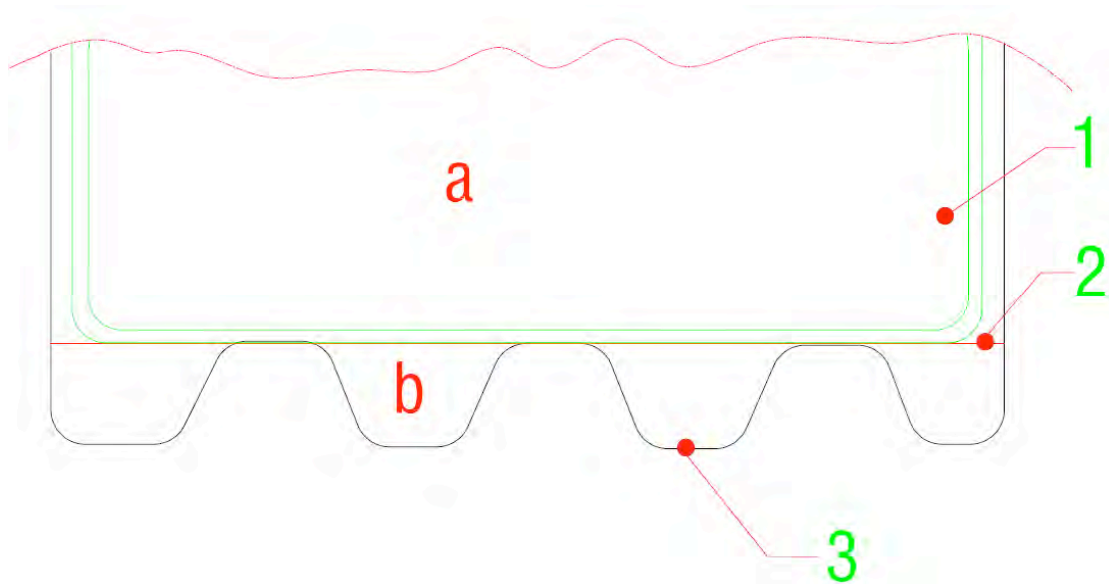
moving under B (b zone indicates the outside of stand), after thread break, press the slow moving switch, frame will move back to B point. If no action, please check the machine.

3. B point setting is as the image shows:

(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 after threading.

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



1. Frame 2. The desired line to set B point 3. Edge of the stand

Chapter 10 Other Functions


These functions include machine maintaining, information and some other system setting. Click  in the main screen to enter the “Other functions” screen, which is a list of function keys.



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



10-1 Show Some Embroidery Information

The user can get information of the current design’s parameters and some machine condition

- 1 Click  in the main screen to enter the “Other functions” screen.
- 2 Click “Show Some Embroidery Information”.
- 3 The system will show the current embroidery parameters.


They include: the number and property of the current design, X/Y displacement,

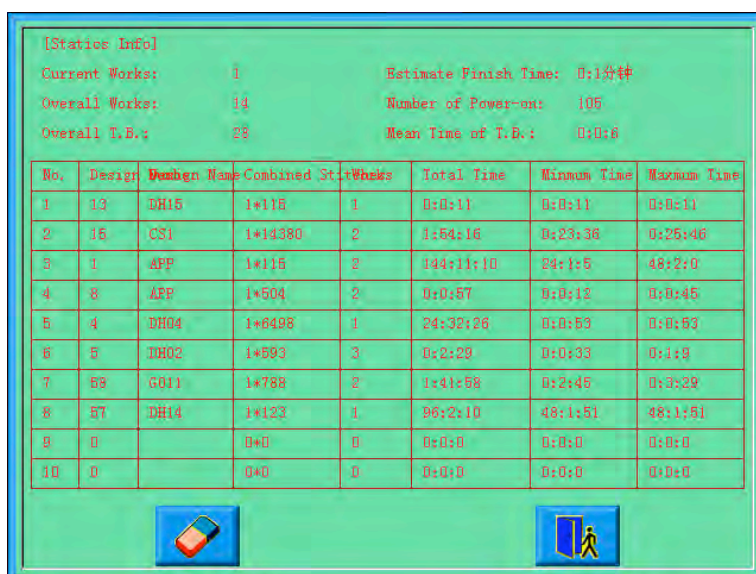


overall stitches, the left stitches in the memory, cyclic embroidery or not, origin point of the frame, software limit and offset point. Click  to return. You can also click  to clear X/Y displacement and overall stitches.



10-2 Show Machine Statistics Information


- 1 Click  in the main screen to enter the “Other functions” screen.
- 2 Click “Show Machine statistics Information”.
- 3 The system will show the machine’s statistics information.



In the above screen, the statistics information is displayed in a chart. The user can click  to clear the value and click  to return.

10-3 Setting Frame Protection when Power Off (Setting the Machine's Zero Point)

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

- 1 Click  in the main screen to enter the “Other functions” screen.
- 2 Click “Set the zero point of machine”.
- 3 Choose between “Manual way” and “Auto way”



Before setting the frame zero point manually, manually move the frame the desired origin point position, and click the key. Then the system will save the current frame as the zero point. When meeting emergency stop because of malfunctions or something unusual such as power off unexpectedly, etc. the machine will cancel the “setting frame origin” function to avoid the mistakes. So,




at that time, you should do operation of “Setting frame zero point manually” again at the last frame zero point. If the frame has been moved after power off, or if power on again after maintenance, you should do again the operation of “Setting frame zero point manually”.

If you hope the system automatically set the frame origin point, click “Auto way”, and the system will move the frame automatically and set the zero point according to the limit switch. So please ensure that the limit switch has been installed into the machine and it’s effective.

10-4 Frame Restoring after Power Off


In case of frame having been moved after power off, this operation can be used to restore the frame position before power off when the power is on again. The proper performance of this operation is based on the “SET POWER RESUME/ZERO POINT”. In addition, if the power is off in the process of embroidering operation and the frame has not been shifted, you also can directly pull the operation bar to continue embroidering after power is on again.

- 1 Click  in the main screen to enter the “Other functions” screen.
- 2 Click “Continue to Emb. after power-off”.

If it is “Setting frame zero point automatically”, the machine will automatically move to the frame zero point and then back to embroidering position before power-off. It will be invalid if the operation of “setting frame zero point manually” is done.

10-5 Set the Frame Software Range

This function is to set the embroidery range set in the software, and limit the machine embroidering to this range.

- 1 Click  in the main screen to enter the “Other functions” screen.
- 2 Click “Set the Frame Software Range”.
- 3 If have already established the software protect, the system hints the customer to clean original constitution.




- 4 After click the confirm key, establish the coordinate of the left- up corner.

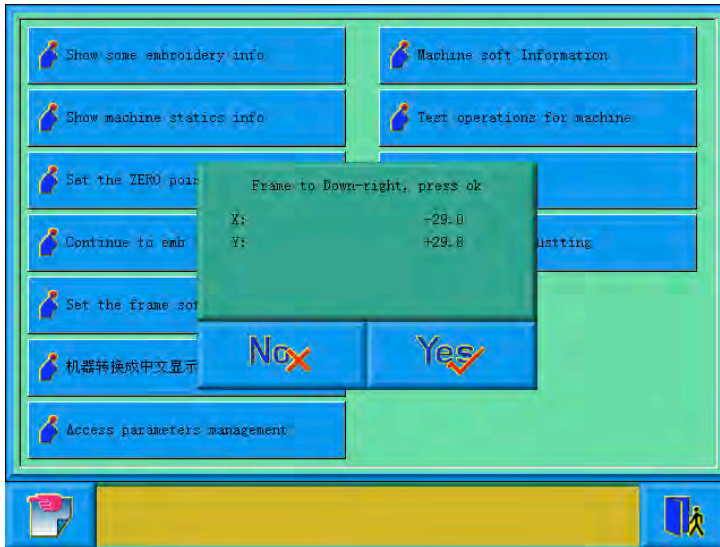




Use the move frame key on panel to move the embroidery frame, to confirmed

left-up corner point of soft limit position, click  to confirm.

5 Moving embroidery frame, input coordinate of right-down corner of soft limit position.



Use the move frame key on panel to move the embroidery frame, to confirmed

right-down corner point of soft limit position, click  to confirm.

6 The system memory embroidery frame software protection

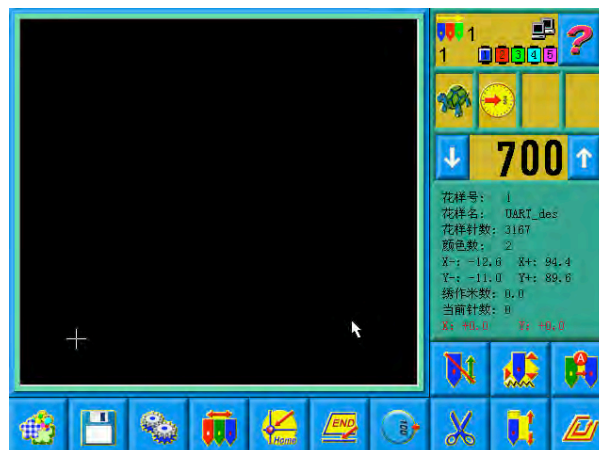
10-6 Chinese/English/Turkish/Spanish Conversion

System supports Chinese English, Turkish and Spanish conversion.

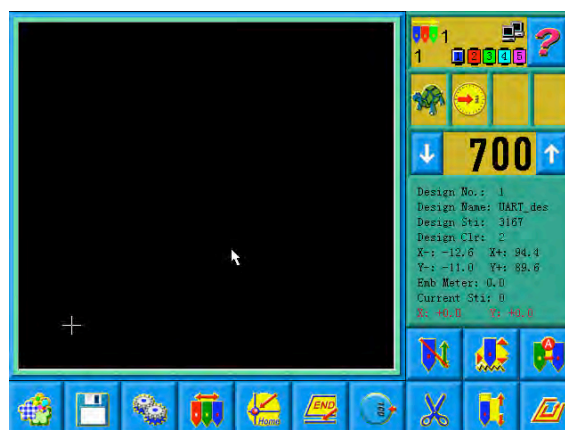
1 Click the “other functions” key  to enter into other functions screen.



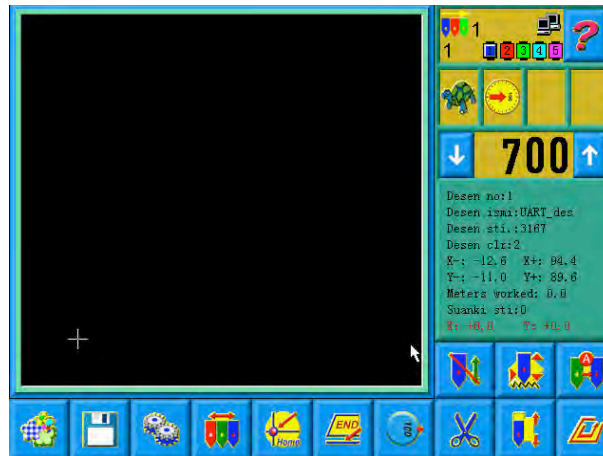
- 2 Click the shift key to show “中文/English/Turkey” or “中文/English/Espana”. Click the shift key can view the screen in中文, English, Turkish and Spanish by turns.



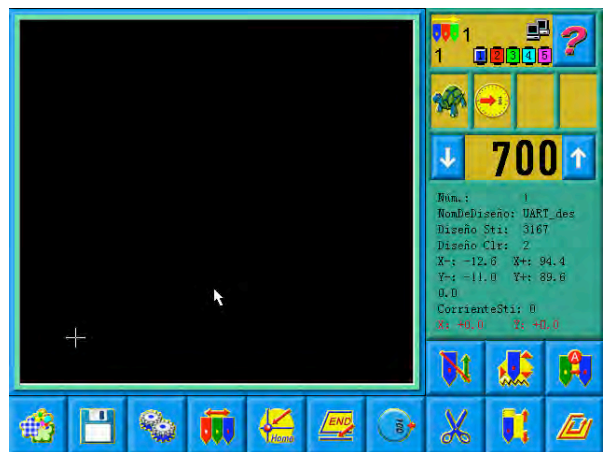
中文



English



Turkish



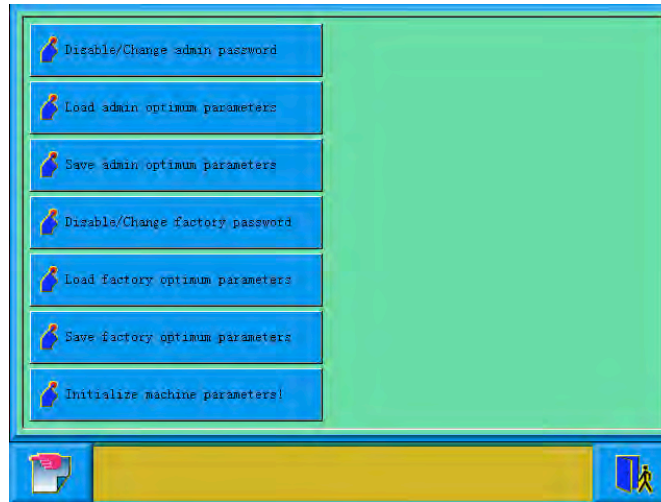
Spanish

10-7 Machine Management Access

For a convenient machine management, the common user can't access 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.

Click the usage purview management key, the system manifestation usage


purview management screen.

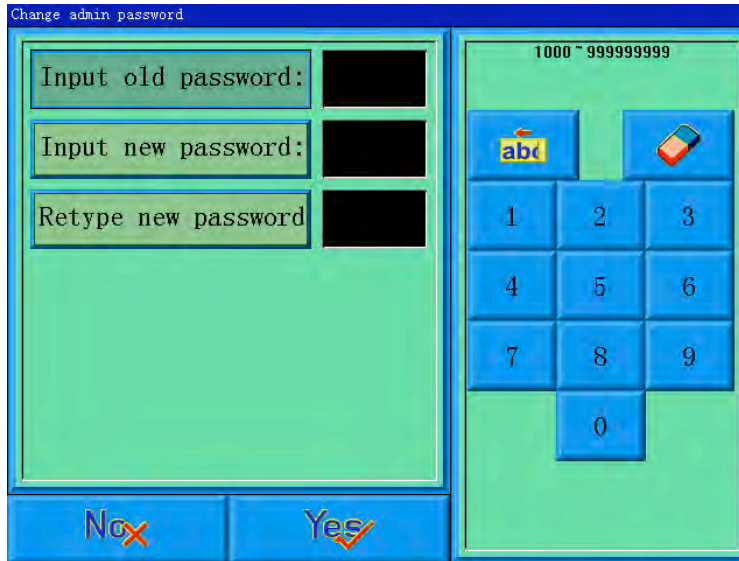


If after constitution the password, machine administrator or the factory customer need modifies the parameter, must relieve the password first, then can change, can also change the password, conservancy and instauration parameters here.

10.7.1 Machine Administrator relieve/change the password

Machine at a factory be placed in the release lock appearance, also is to say that the customer can modify all parameters, machine administrator can modify the password, after modify the password, the common customer can't modify the machine application parameter. The administrator must to relieve the lock appearance of the system parameter, also can modify after inputting the password.


- 1 Click other function key  on the main appearance; enter the other functions operation screen
- 2 Click machine administrator relieve/ change the password key

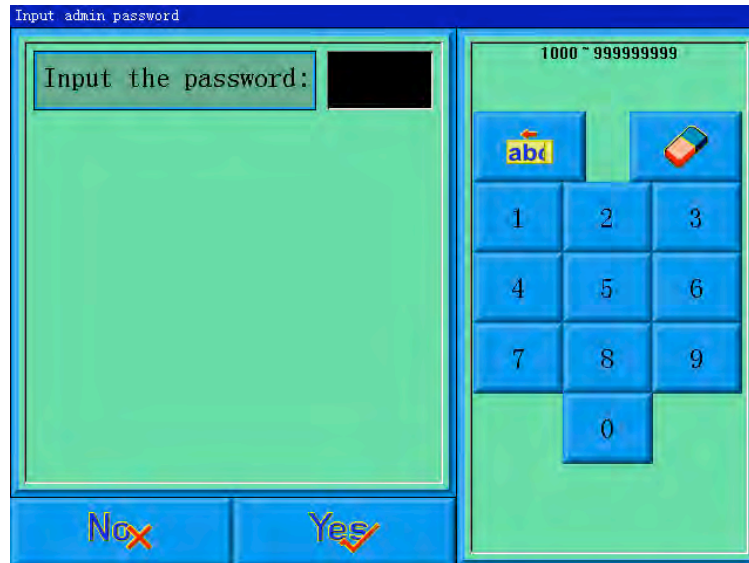


The administrator needs to input the old password and new password that need to be established one by one in order, the factory will tell the administrator of the system default password, the constitution of the password must be 4-9, to prevent the customer from making a mistake in operation, the new password must be entered twice and entered consistently, then it can be established successfully.

10.7.1 Machine Administrator Relieve Lock

After the machine administrator modifies the password, the machine is placed in a lock appearance, the common customer can't modify the machine application parameter at this time, the administrator needs to input the password first to relieve the lock before the modification parameter, the machine is placed in a lock appearance after every time it is powered up.

- 1 Click the other function key  on the main appearance, enter the other functions operation screen.
- 2 Click the machine administrator relieve/change the password key



The system manifestation customer inputs the password screen.

3 The administrator input password

After the administrator input the password, the system is placed in the lock appearance; the customer can modify the machine application parameter.

10.7.2 The Machine Administrator Saves and Recovers Optimize Parameter

The machine administrator can save and recover the homologous machine parameter. If the customer hopes to keep the parameter that establish already at present, as long as click "machine administrator save optimize parameter" key, the system can keep a set of parameter only, being to keep again the optimize parameter, will overlay the parameter of the last time conservancy. If the customer hopes to recover the optimize parameter that saved in last time, as long as click "machine administrator recover optimize parameter" key, the system will hint the customer confirmation recovery operation, after customer confirm, the system will recover the value of parameter that saved into the system.



10.7.3 Factory Customer Change the Password

The factory customer can modify all parameters, before the machine leave factory, the machine is placed in the appearance of solve the lock. After modify the password, the machine is placed in lock status, if want to modify the machine parameter, need to input the password first to make the machine be placed in the release lock appearance, machine afresh up after give or get an electric and was placed in the lock appearance again. The concrete process is similar to the process of administrator release/ change of the process, here no longer give unnecessary details.

10.7.4 Factory Relieve the Password

The method that the factory relieves the lock is similar to the method that administrator customer relieves the lock, here no longer give unnecessary details.

10.7.5 The Factory Saves and Recovers Optimize Parameter

The factory customer can save and recover the parameter that was set, the method is similar with administrator save and recover the parameter, here no longer give unnecessary details.

10.7.6 The Initialization Parameter of Machine

This function can initialize the general embroidery parameter of the machine. In the system saved a group of value of default parameter value, the factory and embroidery factory administrator can save corresponding parameter that they managed. When use this function to do initialize the parameter, the regularity is as follows:



- ① When the factory password and embroidery factory administrator password were not established, then do initialize all of general embroidery parameters to the default value that was saved by system.
- ② When that factory password has already established and has already decrypt, and then do initialize all of general embroidery parameters to the default value that was saved by system.
- ③ The factory password has already established and hasn't decrypt, embroidery factory administrator password has already established and has already decrypt, then the machine parameter was managed by factory recover to parameter value was saved by factory, the other parameters were initialized to default value that saved by system.
- ④ The factory password has already established and hasn't decrypt, embroidery factory administrator password has already established and hasn't decrypt, then the machine parameter was managed by factory recover to parameter value was saved by factory, the machine applications parameter was managed by administrator recover to parameter value that saved by administrator, the other parameters were initialized to default value that saved by system.
- ⑤ The factory password hasn't establish, embroidery factory administrator password has already established and has decrypt, and then do initialize all of general embroidery parameters to the default value that was saved by system.
- ⑥ The factory password hasn't establish, embroidery factory administrator password has already established and hasn't decrypt, then the machine



applications parameter was managed by administrator recover to parameter value that saved by administrator, the other parameters were initialized to default value that saved by system.

10-8 Validation of factory ID

Note : BECS-C88 has this function, but BECS-A88 has not.

The factory ID is saved in the hardware of both control system and display system. Meanwhile, factory ID are also contained in control system software and display system software. When power-on, validation procedures run automatically in both systems to test if factory IDs are matching. After that, system will test if the factory ID of control system and display system are matching. System works properly only when validation results are all positive, otherwise it will send out error notices when machine is electrified. Related errors and their solutions are listed below:

Error Description	Cause	Solution
FC:01 Operation software and hardware is not consistent!	Operation software and hardware validation of factory ID is not consistent	Change operation system software of certain factory
FC:02 Control software and hardware is not consistent!	Control software and hardware validation of factory ID is not consistent	Change control system software of certain factory
FC:03 Control system and Operation system's factory ID is not match!	Control system and Operation system's factory ID is not match	Change the software & hardware factory IDs of control system or operation system
FC:04 Control system has password!	Control system has password and display system has not password	Relieve control system password or change operation system
FC:05 Operation system has password from C18!	Operation system has been used and password from C18	Change operation system software
FC:06 Operation system communicate error!	Communicate connection error	Affirm connection is ok



Error Description	Cause	Solution
FC:07 Operation system factory ID not match!	Operation system hardware not match	Change Operation system circuit and affirm them match

Note: If machine send out “FC:06” error, the menu on display can be used except




or

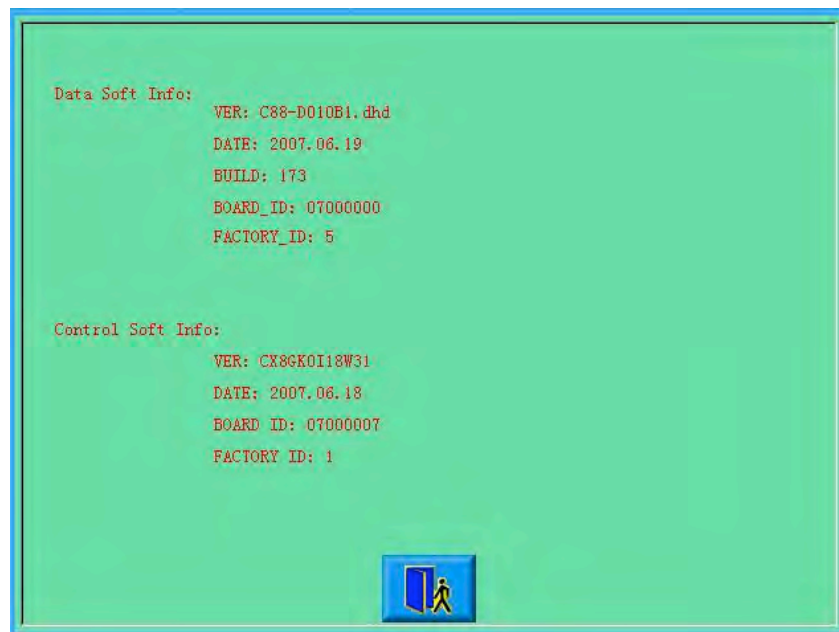


. And if machine send out other error except “FC:06”,all the menu on diaplay can not be used.

10-9 The Software Information of the Machine

- 1 Click  in the main screen, and enter the screen for other functions.

- 2 Click  Machine soft Information.



The user can check the software information of upper and lower CPUs. (The upper

is for data and the lower is for control.) And click  to return.

10-10 The Adjustment of Machine



This operation to provide to maintenance man to use only, the common



maintenance man not to use, this operation involves some mechanical works, so the need to notice the human body safety and equipments safeties when use it..

Adjust function to mainly use in the test of the machine, support and check break down, include as follows function:

The light electricity coder examination

The rotate speed of principal axis examination

Turn to move the principal axis from 100 degrees to the certain angle

Test bar switch

Test limit switch

Test electromagnet of machine head

Test thread-trimming electromagnet/ motor

Test thread-holding electromagnet

Test thread-catching electromagnet/ motor


Test thread break detecting

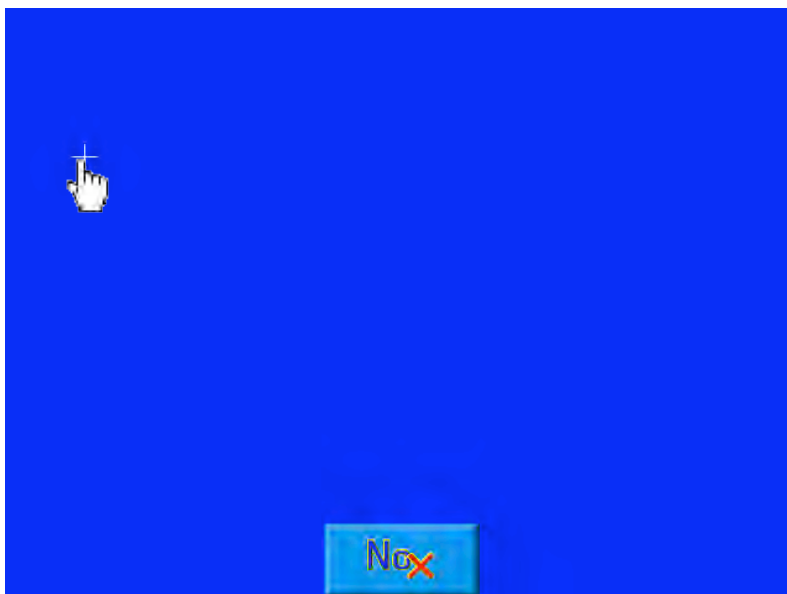
10-11 Date and Time

In date and time screens, the customer can look into and modify the system for current date and time.

10-12 The Adjustment of Touch Screen


After use a period of time of touch screen, probably occur the drift of the data, result in the problem of click the key not accurate, the problem can be resolve through adjust the touch screen.

- 1 Click other function key  on main screen, enter other functions operation screen.
- 2 Click touch screen adjust key
- 3 Typing in administrator password or factory password




- 4 Click the centre of the cross in adjustment screen one by one. If the screen image shows like following after clicking the centre of the cross, then the touch screen needs no adjustment; if the screen shows like following after clicking other part of the screen except the centre of the cross, then the screen needs adjustment. See detailed the operations in 10.12.



During the process of adjustment, there will be many of small cross with different positions in the screen, the customer should click the centre of these cross one by one in order, the system will obtain these positions data to be the basis of adjustment. Click  key withdraws the operation.

10-13 Touch Screen Adjustment

After using for a period of time, the touch screen may not be as precise as it used to be, which can be solved by adjusting the screen. During the process, the click should be right in the center of the cross. In order to avoid improper operation, this action may only be available to those administrators.

- 1 Click the “other function” key  to enter into “other function” screen.
- 2 Click the touch screen adjust key.
- 3 Type in administrator password or factory password
- 4 Click the centre of the cross in adjustment screen one by one.



During the process of adjustment, there will be many of small cross with different positions in the screen, the customer should click the centre of these cross one by one in order, the system will obtain these positions data to be the basis of

adjustment. Click  key withdraws the operation.

5 System adjusts according to the point coordinate that was clicked by customers.

System adjusts according to the point data that was entered by customers in previous step, and return back to other functions operation screen automatically.



Chapter 11 Sequin Embroidery

11-1 Brief Introduction on Sequin Embroidery

Sequin embroidery is composed by several sequins and threads. We choose those hard materials with smooth surfaces as the sequins. Embroidery works will be shining with these sequins attached. Sequin embroidery has its own way of designing. After design selection, changing and editing, users can pull bar to start embroidering. Sequin embroidery usually goes with normal or special embroideries to create combined new designs.

A. Scope:

This system applies to sequin embroidering control system which combines normal embroidering mechanism and sequin sending mechanism.

B. Features and Functions:

1. Two sending modes: Wheel and Fork;

Wheel: the core part is a wheel-like device in the whole mechanism. Its operating principle is to wheel continuous towards one direction to send sequins into position.

Fork: the core part is a planar linkage. Its operating principle is to move back-and-forth to send the sequins into position.

2. Sequin mending and Independent actions of the two sequin sending mechanism

3. Delivering a sequin by operating either manual sequin sending button or the control panel



4. Display working status separately
5. type of sequin sending and angle can be changed by operating on the control panel.

C. Specifications

1. Sequin diameter range: 3mm to 9mm;
2. The maximum speed for sequin embroidery is 850 rpm.

11-2 Operating Sequin Embroidery

11.2.1 Direction of Sequin Parameters

Parameters of sequin embroidery are listed in appendix one. Here we explain some of them as following.

1. Machine Parameters

- (1) The left (right) sequin device: usually, sequin device is located in either first needle position or the last (double sequin embroidery machine has sequin devices on both the first and the last needle position). Users can set “Yes” or “No”, which will activate or inactivate the particular sequin device.
- (2) The acting angle of left (right) sequin device should be adjusted depending on real status. Usually this parameter has been set during the manufacture progress.
- (3) Sequin sending angle of left (right) sequin device: it can be changed by making adjustment to the angle of main shaft motor.
- (4) Time needed for the sequin device’s going down: this parameter indicates the time between device’s going down and the start of embroidering(0-15, default



value is 3). We recommend that valve controlled sequin sending mechanism uses the default value, while motor controlled ones use 4 to 5.

2. Practical Parameters of the Machine

(1) The speed limit of left (right) sequin device:

The speed limit depends on the sequin size. However, sewing the same sequin with different mechanical structure, the acting angle could be different, which is directly related to the maximum speed.

Note: the maximum speed of normal embroidery should be higher than the speed limit of sequin embroidery.

(2) Automatic start or not:

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

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

(3) Sequin device automatically lift up in case of thread break

When the setting is “Yes”, system will lift up automatically in case of thread break.

When the setting is “No”, the sequin device needs manually lifting the presser foot.

11.2.2 Steps of Setting Sequin Parameters

See 5.1 General Setting of Parameters for Sequin Embroidery



11.2.3 Manual Operation of Sequin Embroidery



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


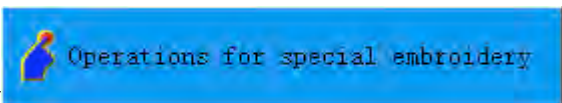
1. Centralized Operation



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

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

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

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

2. Separated Operation

Separated sequin sending manually: switch down the sequin control switch to send sequin manually to the separate head. Users can press the switch to let the device send one sequin at a time. You keep on pressing the switch, sequins will be continuously sent out.

Status lamps will tell users about the head conditions, which offer easy debugging and trouble shooting.

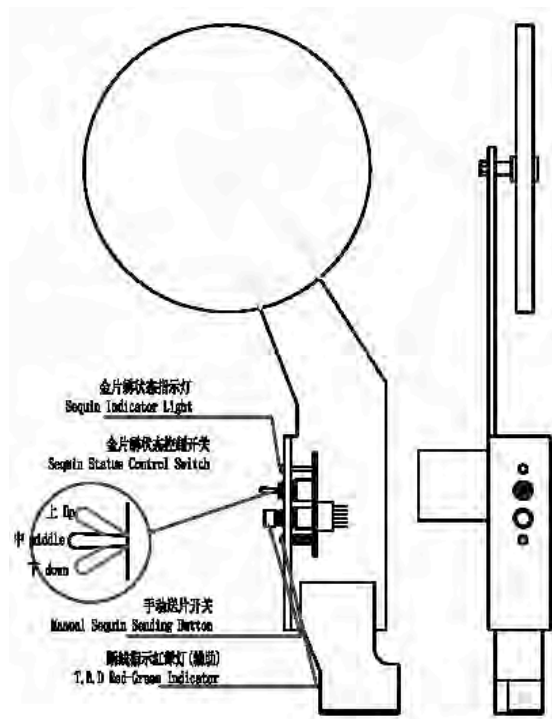
- a) When the sequin control switch is turned up, blue light is out and the valve is up. No operation is acceptable.

- b) When the sequin control switch is in the middle, blue light is on and normal embroidery is undergoing. Operation is acceptable.
- c) When the sequin control switch is down, blue light blinks and the valve is down. Manual sequin sending is available. Sequin sending order by the control panel is acceptable, while valve operation is not available.

Thread break switch is embroidery switch. When thread break switch is at the down side, neither normal embroidery nor sequin embroidery is available.

Thread break 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 perfect condition of sequin embroidering.



Location of the switch board



11.2.4 Sequin Mending

After thread break or manually turning on the red lamp, pull bar and the machine is in sequin mending. All the sequin devices will lift up; machine stops when it backs to the stop embroidering point. Pull bar again to let the sequin device (on mending head) down for mending. When it reaches the stop point, machine stops, then other sequin devices will be down to continue normal embroidery. Mending stitches in machine parameter setting is ineffective in sequin mending.

11-3 How to Act Sequin Embroidery

Users should take the following steps:

1. Use sequin design. Design selection, changing and editing are required.
2. Set sequin parameters according to the above directions.
3. Check and adjust the sequin sending device to make sure it works normally.
4. Change the needle position to the sequin position. Make sure the sequin control switch is in the middle and the blue lamp is on.
5. Pull bar to start embroidering.

11-4 Notice

During the process of embroidering, try to avoid touching the valve control switch, or it may result in destroy of the sequin sending device.



Chapter 12 Directions on Coiling, Taping and ZIG Embroidery

Note: A88 system has not this function and operations.

12-1 Function Introductions

1. Coiling function: This is a method to wind coiling thread(s) at an equal interval around a core thread in a form of coil. Left Coiling (clockwise) and Right Coiling (counterclockwise) are both available in coiling function, which could be opted in computer parameters.

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

3. ZIG function: ZIG sewing lever swings to the right or left per stitch in regard to the direction of original stitches. The upper thread forms ZIG on the embroidered material. There are six special stitches: Z1, Z2, Z3, Z4, Z5 and Z6.

Their stitches are as follows.



Z1



Z2



Z3



Z4



Z5



Z6

For convenience, Coiling, Taping and ZIG-sewing are all called special embroidery in the following.

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

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




6. The nipple of Special embroidery can be raised and lowered automatically or manually. (Only for the machines installed with relevant apparatus)
7. The highest speeds of Standard embroidery head and special embroidery head can be set up respectively.
8. Auto saving of the stop-embroidery point of the M axis: The embroidery work can continue from the stop-embroidery point when the power recovers.
9. The trimming function of the special embroidery head (no trimming\trimming of the bottom thread\trimming of both the upper and bottom threads)
10. The nipple of Special embroidery can be raised and lowered automatically before manual frame shifting or embroidering.
11. ZIG sewing lever can be tested manually.

12-2 Main Technical Details

1. The sequence of needle positions on Standard embroidery head and special embroidery head: This control system default that the first one is special embroidery needle position and Standard embroidery's are from second to end.
2. Speed range of Special Embroidery: 300—600rpm, minimum of stepping precision is 10r.
3. Angle of M-axis rotated manually: 18° /step.






12-3 Parameters and parameter setting

Press the parameter-setting key  in the main screen to set relative parameters for special embroidery. These parameters are listed in the following directions: embroidery parameter 2, machine application 4 and 5, machine parameter 3, 4 and 5.

Press embroidery parameter 2, the following parameters can be set:




1. B16 Clamp Foot Min Height Adj : 0~255

This parameter is in charge of the lowest point of the presser foot during operation.

Press the button and set parameter on the right side of the screen. Input the required value by pressing digital keys. Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish setting.

The following parameters can be set in direction of Machine application 4:




2. C35 Speed for Sequin L.: 300~600

Press this key in parameter setting screen. Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

3. C51 Spec Minimum Speed: 250~400

The parameter value is the lowest speed that the M axis can be decelerated to.




4. C52 Spec. Speed-Down Angle: 1~180

When the M axis rotating angle is larger than the set value, the main axis begins to decelerate. The recommended value is 30. Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish






setting.




5. C53 Spec. Speed-Down Ratio: 1~4

The parameter is to set the decelerating speed of the M axis. The larger the value, the faster the M axis decelerates. Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

6. C36 Ratio of Coil Emb.: The ratio of coiling: “0~3 Sti/L”

The parameter can change the coiling density; e.g. the set value 2 means one coiling every two stitches. Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

7. C37 M Axis Stop to Origin: YES/NO

The M axis returns to the origin point after the machine stops by pulling the bar: “Y/N”. Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

The following parameters can be set in direction of Machine application 5:

8. C54 Cord Emb. Needle: Y/N

Same as above


9. C55 M Axis Origin At T.B.: Y/N

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




The swinging scope of the embroidery frame in ZIG sewing: -9.0--+9.0; operation ditto. The parameter is for Z5 stitching function and applies to thick cords. For a thick cord, the Z5 embroidering is to move the frame to add to the swinging scope



of the lever. The parameter's absolute value is set according to the cord width. And the "+/-" is decided by the machine structure. The moving directions of the lever and frame should be the same. Otherwise please change the "+/-" setting.

Select this parameter, input required value in the right side of the screen,  stands for "-" and  for "." Press  to confirm.




11.C39 Spec. Emb. Trim Mode: Low, Above&Low, No Trim

Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

The following parameters can be set in direction of Machine application 3:




12.D28 Special Head Interval: 1~300.

Destined value includes: 150, 162, 166, 185, 200, 216, 225, 230, 240, 250, 270, 290, and 300.

Select this parameter, input required value by typing in certain digit. Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish setting. If predetermined value is inputted, there will be a "*" in front of the digit. If digits 1-9 are inputted, there will be a "#" in front of the digit.




The following parameters can be set in direction of Machine parameter 4:

13.D29 ZIG Swing Angle: 0~255

Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish setting.

14.D30 Clamp Foot Displace: 0~90






Adjusting the working position of clamp foot: “0--90”; operation ditto. The height is for every stitch. Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish setting.

15.D50 Z Emb Swing Adj: 0~5

Same as above




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

The “ROD POS. OF ZIG” indicates that the position of swing when M axis is in origin. Setting of this parameter must be kept in line with mechanical position.

Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

17. D39 Z Shift Control Angle: 0~180

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

Press the key  to cancel a digit and  to cancel all the digits. After input, press the key  to finish setting.




18. D40 Adj Clamp Foot Limit: 0~250

The set value is added to the limit height of the clamp foot. Operation is same as above.

19. 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. “1” means the swing starts at an early angle; “2” means the swing postpones certain angle; “3” indicates the swing postpones certain angle again to



start. Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

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

The M axis of special embroidery head has mill clearance. So without compensation, the needle will not fall in the right position. Adjust this parameter value 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, repeat the adjustment to realize the best effect.

Parameter operation is same as above.




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

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

In case of normal and sequin embroidery, the M axis stops at the angle of the set value. When the distance between the normal embroidery head and special embroidery head is small, this parameter must be set as 90° to avoid bumping.

The following parameters can be set in direction of Machine parameter 5:

22. D47 Slow Down When Coil Emb: Y/N

Press the key  or  in the right side of the screen for adjustment, and then press  to confirm.

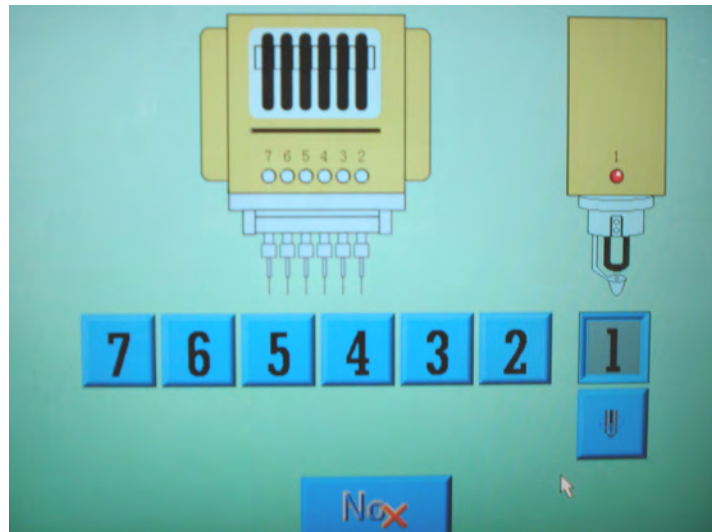


12-4 Relative Operations of Special Embroidery




12.4.1 Shift between Lock Stitch Head and Special Head

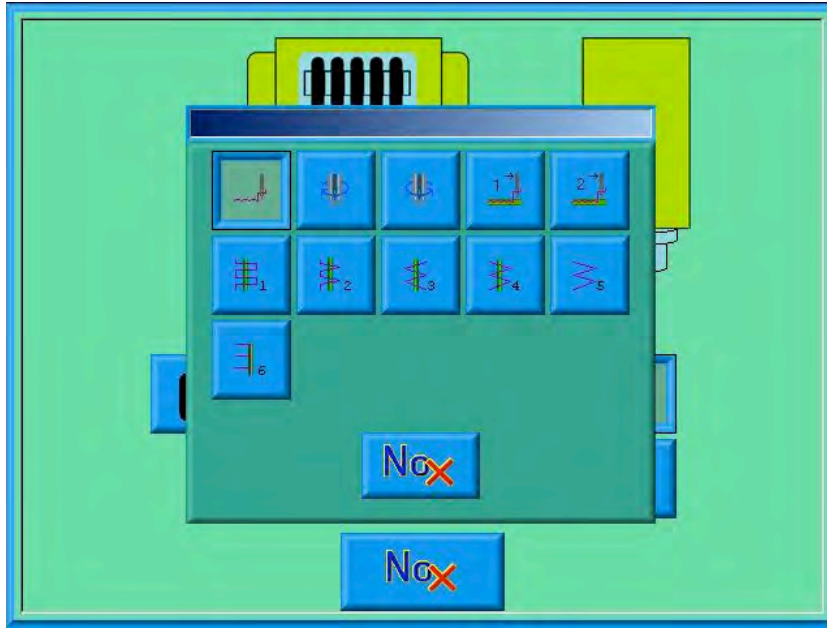
1. Manual Shift

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



“1” is for special embroidery, others are for non-special embroideries. Press

certain key to change embroidering pattern. Press to  exit. The key  indicates the embroidering pattern, press the key to change other special embroideries. Press  to exit.



Definition of icons:



go to manual shift state;



normal (lock-stitch);



right coiling;



left

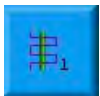
coiling;



taping 1;



taping 2;



Z1 embroidery, Its feature is that the lever swings once every two stitches.



Z2 embroidery, Its feature is that one lever swing every stitch and one lever every two stitches take place alternately.



Z3 embroidery, Its feature is one lever swing every stitch.



Z4 embroidery, Its feature is one lever swing every stitch and its lever swing direction is opposite to the one of Z3.






Z5 embroidery, Its feature is the same as Z4 and it's desirable for the embroidering of thick cords. (Refer to the parameter: the swinging scope of the embroidery frame in ZIG sewing)



Z6 embroidery, Its feature is three stitches at the same point and one lever swing every stitch.


2. Automatic Shift

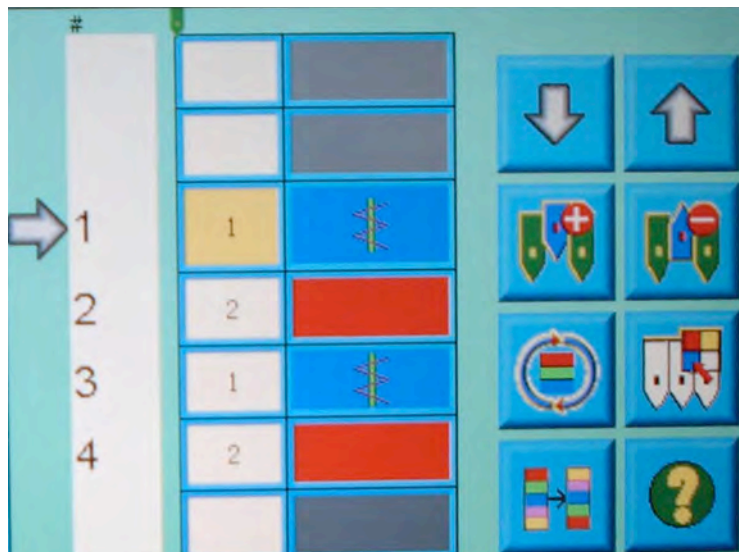
Before embroidering, automatic shift can be achieved through setting the color changing position.



In the main screen, press the key , and then select  to enter into color changing screen, and then press the key  (special head) to change special embroidery pattern:



Press relative icon to select the pattern you need, if you don't want to change, then

press  to exit. After confirm of the pattern, system will display as:



Note: Icon “” means that system go into manual shift state. It is used that setting of manual shift  still be in effect when system is in automatic shift state.

During the embroidery process, it is common to shift between normal head and special head. For instance, from special head to normal head, machine will




automatically stop at the finishing point; meanwhile, system will give the following dialogue window. After tape operations are completed, users can pull bar to close the window and shift the machine back to normal head to proceed normal embroidering.

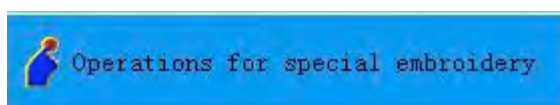


From lock-stitch to special embroidering, after automatically shift to “1” (special head), machine will stop automatically, after the operation on the tape is completed, pull bar to proceed.

12.4.2 M Axis Operation of Taping Embroidery

This function is only for machines with taping embroidery function and includes “M axis to be ready”, “M axis to cycle” and “M axis to turn”. In the main screen,

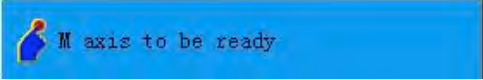


click  to enter into the “Assistant Operation” screen, select






to show the special embroidery window, “M axis to be ready”, “M axis to cycle” and “M axis to turn”.




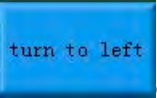
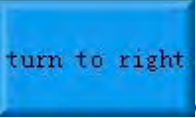

1. Return the M-axis to the Working Point

Press the key  and click  on the dialogue window to let the M axis back to the working point, click  to exit.


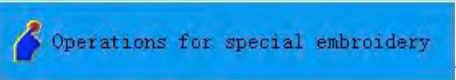
2. Return the M-axis to the Origin Point

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

3. M-axis rotated manually

Press the key  and click  on the dialogue window 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 click  on the dialogue window to let the M axis rotate to the right. It will rotate 18° right once you click the button. 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 Operation” screen, select  to show the special embroidery operation screen.

Press the key  and select  to lift the




clamp foot, select  to exit.

Press the key  and select  to lift the

clamp foot, select  to exit.



12-5 On Debugging Special Embroidery

Debugging special embroidery mainly includes zig swing to its origin and up/


down of clamp foot. In the main screen, click  to enter into “Other Functions”

screen, after that, click .

Sway Zig rod

Click the key , after seeing the dialogue window, pull bar to let all the swings act once. Click  to exit. Users can adjust swing angle by using this function.

1. Up/ down of Clamp Foot.

Click the key , after seeing the dialogue window, pull bar to let all the clamp feet act once. Pull again to let them act again.

Click  to exit.

12-6 Steps on Special Embroidery

1. Input special design, carry out design selection, changing and editing according to requirement.
2. Modify certain parameters, select color changing order and special embroidery



pattern.

3. Check special heads to make sure they are in perfect condition.
4. Pull bar to start embroidering.

12-7 Mechanical Category and Driving Mode Choice of Special Embroidery Machines

Taping machines have three moving parts in the sense of mechanics. We define them as M axis, E axis and clamp foot axis. M axis rotates a certain degrees every stitch to trace the stitch, which ensures cords or tapes always in front of needle movement. E axis swings once every one or two stitch to make the ZIG embroidery. Clamp foot axis is 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 electropneumatic valve or by hand. Its advantage is that only the M axis of the mending embroidery is moving and non-mending embroidery heads are still when mending. This will help raise the quality and efficiency of mending. The other type is without clutch device. Both of the two types are driven by servomotor and the origin of the M axis is positioned by proximity switch.

2. E axis

According to the difference in motor and whether to use the proximity switch for positioning, E axis can be divided to the following types:

- 1) Stepping motor, driving heads separately, without proximity switch for



positioning

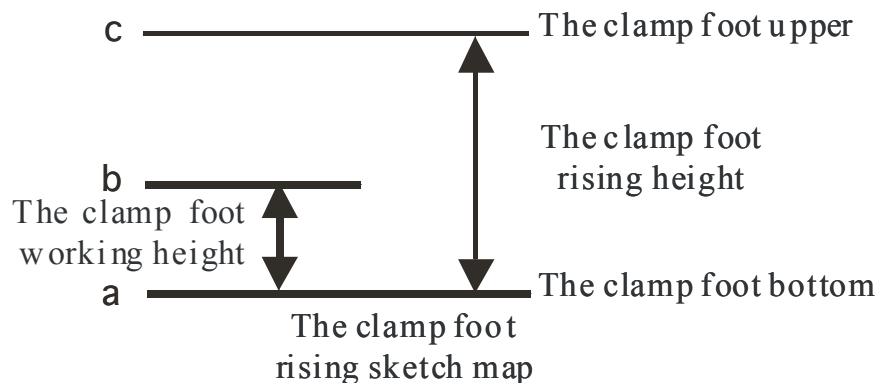
2) Stepping motor, driving heads by one motor, with proximity switch for positioning

3) Stepping motor, driving heads by one motor, without proximity switch for positioning

4) Servomotor driving, with proximity switch for positioning

3. Clamp foot axis

The working diagram of the clamp foot: (The clamp foot working height is the interval of the foot's movement with every stitch. The clamp foot rising height is the foot's moving distance from the bottom to the upper point in non-embroidery mode. And it's also called the clamp foot limited height.)



According to the difference in motor and whether to use the proximity switch for positioning, the clamp foot axis can be divided to the following types:

4. Raising the clamp foot by hand

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



(1) 2-phase stepping motor, separately driving the embroidery heads, without the holding force and proximity switch

It uses a 2-phase stepping motor for driving every special embroidery head and controlling its working height and limited height. The power is off and there is no the holding force when the clamp foot stays at the upper point or bottom point. No proximity switch is taken for positioning. And the controller by default takes that the foot is at the bottom position when turning on the machine.

(2) 2-phase stepping motor, separately driving the embroidery heads, with the holding force and without proximity switch

It uses a 2-phase stepping motor for driving every special embroidery head and controlling its working height and limited height. The power is on and 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. And the controller by default takes that the foot is at the bottom position when turning on the machine.

5. Mono-phase AC motor, driving the embroidery heads by one motor, 2 proximity switches

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

6. (2-phase or 3-phase) stepping motor, driving the embroidery heads by one



motor, 1 proximity switch

In this mode, the clamp foot working height relies on the rotating of the cam and the clamp foot is raised to the limited height by stepping motor driving the clamp axis. The upper point is set with a proximity switch to position. The bottom point is set by parameters. Both the upper and bottom points have the holding force.

7. Pneumatic motor, separately driving the embroidery heads, without proximity switch.

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

8. The composition chart for special embroidery machine controller

For different control systems, the E854 board takes different software programs while the E874 board changes the DIP switches. Refer to 12-8.

12-8 Definition Charts of DIP Switches of E874 Boards

Chart 1:

DIP1	Composition Description of the M axis
OFF	Manual clutch or without any clutch
ON	Automatic clutch

Chart 2:

DIP2	DIP3	Composition Description of the E axis
ON	ON	Stepping motor, without proximity switch for positioning
ON	OFF	Stepping motor, with proximity switch for positioning
OFF	ON	Servomotor driving, with proximity switch for



		positioning
OFF	OFF	No use

Chart 3:

DIP4	DIP5	DIP6	Composition Description of the clamp foot
ON	ON	ON	Manual
ON	ON	OFF	2-phase stepping motor, separately driving the embroidery heads, without the holding force and proximity switch
ON	OFF	ON	Stepping motor, driving the embroidery heads by one motor, with proximity switch
ON	OFF	OFF	AC motor, driving the embroidery heads by one motor, 2 proximity switches
OFF	ON	ON	Pneumatic motor driving
OFF	ON	OFF	2-phase stepping motor, separately driving the embroidery heads, without the holding force and proximity switch



Appendix I Parameter Setting List

**“Sti.” For stitches; “Emb.” For embroidery; “T. B.” for thread break; “N” for the needle number of machine heads

Number	Name	Recom mended Value	Range of Setting	Note
Frequently-Used Parameters				
A01	X&Y Scales	100/100	50%~200%	Scales of the design in X and Y directions
A02	Rotate	0	0~89	Rotating angle of the design
A03	Direction	P		
A04	Prior Mode	Rotate	Rotate, scale	
A05	Rep. Mode	Normal	Normal, part	Not used
A06	Rep. Prior	X Prior	X prior, Y prior	
A07	X&Y Reps	1/1	1~99	
A08	X&Y Interval	0.0/0.0	-999.9~+999.9	
Emb. Parameters				
B01	Auto Origin	Yes	No, Yes	
B02	To Do Cyclic Emb.	No	No, Yes	Whether to automatically repeat embroidering the design It often accompanies repetition or special punched design.
B03	Overframe by Step	No	No, Yes	
B04	Display Sti-Num or Not	Yes	No, Yes	
B05	T. B. Detect	Yes	No, Yes	Thread break detect
B06	Stop after T. B. Detect	Yes	No, Yes	
B07	Press key after T. B.	No	No, Yes	Press key (pull bar) after T. B.
B08	T. B. Back Sti.	0	0~7	It is unavailable to some machine types.
B09	Patch Count	1	1~10	How many stitches to patch before the thread break point
B10	Speed Down	Stop	No Change, Down, Stop	



Appendix I Parameter Setting List

Number	Name	Recommended Value	Range of Setting	Note
	After Patch			
B11	Sti. Not T.B. Detect		0~15	
B12	T. B. Detect When Jump	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
B14	To Set All Heads Patch	No	No, Yes	If "Yes", all unclosed heads do patching when patching.
B15	Emb Show BackGround	Yes	No, Yes	
B16	Clamp Foot Min Height Adj	1	0~255	A88 machine has not it
B17	Up Value When Jump&Nocut	Yes	No, Yes	The same as above
Machine Applications				
C01	Jump & Trim	3 Jump	No Trim, 1Jump~7Jump	
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.
C03	Stop to Color	No	No, Yes	Change stop codes into color-changing codes. It's specialized for some countries/regions.
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 into "No"
C05	Value for Thick Cloth	0	0~3	
C06	Frame Curve &	F6/230	F1/230,240,250,260,270	F2 and F4 are frame



Number	Name	Recommended Value	Range of Setting	Note
	Angle		F2/230,240,250,260,270 F3/230,240,250,260,270, 280,290 F4/230,240,250,260,270, 280,290 F5/230,240,250,260,270, 280,290 F6/230,240,250,260,270 280,290	curve. The later values are the angles of frame starting.
C07	Max. Speed	700-850	250, 300, 350, ...,1000	
C08	Shift Stitch Length (mm)	5.0	1.0~10.0	When the stitch length is longer than the set value, the machine will lower the speed.
C09	Minimum Speed	400	250,300,350,...,600	
C10	Jump Stitch Speed	400-750	400,410,750	Set the rotation speed for jump stitch.
C11	Stitches After Trim	2	1~7	
C12	Startup Stitches	1	1~9	Set the startup stitch number.
C13	Set Run Speed	80	80,90,...,150	
C14	Speed of Slow Emb.	400	80 (rpm)、 the value of the minimum speed	
C15	High Frame-Shift Speed	16	0,1,2,...,30	
C16	Low Frame-Shift Speed	12	0,1,2,...,30	
C17	Turn Off Trimming	No	No, Yes	
C18	Length of Trim	1	1~8	1 is the minimum length and 8 is the maximum length.
C19	Lock Num. After Trim	2	0~3	Set the lock stitch number when pulling the bar for embroidery after setting the trimming.
C20	Lock Stitch.	Yes	No, Yes	



Appendix I Parameter Setting List

Number	Name	Recommended Value	Range of Setting	Note
	When Trim			
C21	Length of Lock Sti. (mm)	0.6	0.3~1.5	
C22	Frame after Trim	No	No, Yes	
C23	Action after Trim	Frame Y	Frame X, Frame Y, Move Needle	
C24	Main Motor Para.	1	0~30	The parameter is invalid when it's a servo motor. When it's an electromagnetic motor, increase this parameter value to avoid main shaft vibration during braking. Usually it's set as 1.
C25	Set Break Para.	0	0~30	When the main shaft motor is an electromagnetic motor, the value is usually set as 9. When it is a servo motor, the parameter is usually set as 5—7.
C26	Para. Of Needle Down	15	0~30	
C27	Detect T. B. Mode	1	1, 2	Mode 1 uses the common take-up spring. Mode 2 uses the chopping wheel.
C28	STI. For Filter T.B.	3	1~6	
C29	Needle of Boring		No, 1, N	
C30	Boring Emb. Disp.	0	0mm, 12mm	
C31	Speed for Sequin R	400	300, 310, ..., the maximum speed	
C32	Speed for Sequin L	400	300, 310, ..., the maximum speed	



Number	Name	Recommended Value	Range of Setting	Note
C33	Auto Start for Sequin	No	No, Yes	
C34	Sequin Off after T.B.	No	No, Yes	
C35	Speed for Sequin L	400	300~600	A88 machine has not it
C51	Spec Minimum Speed	250	250~400	The same as above
C52	Spec. Speed-Down Angle	30	1~180	The same as above
C53	Spec. Speed-Down Ratio	2	1~4	The same as above
C36	Ratio of Coil Emb.	0 Sti/L	0~3 Sti/L	The same as above
C37	M Axis Stop to Origin	Yes	No, Yes	The same as above
C54	Cord Emb. Needle	Yes	No, Yes	The same as above
C55	M Axis Origin At T.B.	Yes	No, Yes	The same as above
C38	Swing Value of ZIG	0.2	-10.0~ -0.2,+0.2~+10	The same as above
C39	Spec. Emb. Trim Mode	Low	Low, Above&Low, No Trim	The same as above
C40	No Output Design	No	No, Yes	It's possible to change the value after setting the administrator password and inputting the right password.
C41	Server Port			
C42	MAC Address			
C43	IP Address			
C44	Server IP			
C51	Sequin Ind. UpDown	Yes	No, Yes	A88 machine has not it
Machine Paramaters				
D01	Needles		1,2,...,MAXNEEDLE	Set the value according to the machine situation. E.g. the value should be 9 for 9



Appendix I Parameter Setting List

Number	Name	Recommended Value	Range of Setting	Note
				needle machine. If the value is different from the machine needles, the color-changing will be abnormal.
D02	Startup Acce.	12	1,2,3,...,30	Increase the value to bring a quicker speedup after pulling the bar.
D03	Set Hold Startup Para.	0	0~3	
D04	Speed after Trim	80	60,70,80,...,150	The parameter sets the rotation speed for lock stitch.
D05	Speed When Trimming	80	80,90,100,...,250	
D06	Spin Rounds for Brake	1	1,2	2 for most machines, 1 for miniature type and machines with servo control main shaft motor.
D07	Check Trim is OK	No	No, Yes	
D08	Hook Angle by Motor	0	-100~+100	Set the hook angle by motor. When the value is increase, the hook angle is moved backward.
D09	Hook Ratio by Motor	2	1:9,1:10,1:12,1:15,1:18,1:20	
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
D11	Adjust Head Solenoid	0	0,1,2,...,30	
D12	Color-Change Speed	12	0,1,2,...,30	It's valid only when the color-changing motor is stepping motor. The larger the value, the faster the color-changing speed.



Number	Name	Recommended Value	Range of Setting	Note
D13	Speed When Overframe	16	0,1,2,...,30	
D14	Stop Ok bef. Pull Bar	Yes	No, Yes	
D15	Slow STI. After Patch	0	0~9999	
D16	Speed After Patch	Max. speed	80~Max. speed	
D17	Needle of Cord Emb.	No	No, 1, N	
D18	Speed for Cord Emb.	400	300,310,320,...,600	
D19	(AFC) Use	No	No, Yes	
D20	(AFC) Interval Time	3	0~15	
D21	Sequin R On/Off		No, Yes	The first needle position
D22	Sequin L On/Off		No, Yes	The highest needle position
D23	R Sequin Motor Angle		Mutual: 11.7,21.6,28.8,36, 9, 5. 3,8.1,15.3,18,5.4, 12.6,16.2 Single: 12,14.4,18,22.5	Sequin delivering motor angle
D24	L Sequin Motor Angle		Mutual: 11.7,21.6,28.8,36, 9, 6. 3,8.1,15.3,18,5.4, 12.6,16.2 Single: 12,14.4,18,22.5	
D25	Sequin R Adj. Angle	0	-15~+15	Main shaft motor angle
D26	Sequin L Adj. Angle	0	-15~+15	
D27	Time of Sequin Action	3	0~15	
D28	Special Head Interval	162	1~300	Destined Value: 150, 162, 166, 185, 200, 216, 225, 230, 240,



Appendix I Parameter Setting List

Number	Name	Recommended Value	Range of Setting	Note
				250、270、290、300 A88 machine has not it
D29	ZIG Swing Angle	237	0~255	A88 machine has not it
D30	Clamp Foot Displace	0	0~90	The same as above
D50	Z Emb Swing Adj	0	0~5	The same as above
D31	Rod Pos. of ZIG	Left	Left/Right	The same as above
D39	Z Shift Control Angle	0	0~180	The same as above
D40	Adj Clamp Foot Limit	179	0~250	The same as above
D41	Adj Zig Rod Angle	1	1,2,3	The same as above
D42	Rotary Gap of M Axis	0	0~10	The same as above
D43	CloseBack Light time	10 mins	Never, 2mins, 5mins, 10mins, 15mins	
D44	M Axis Work OFF Angle	0	0,90	A88 machine has not it
D47	Slow Down When Coil Emb	Yes	No, Yes	The same as above



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 for “\$”	



Appendix III Error Information

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
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



No.	Mistakes
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	Cannot delete a NULL memory
52	Read Design Error
53	Edit Forbid when Emb. Ready
54	Design is too big. Can't process.
55	Can not format the disk!
56	Unsupport operation!
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
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



Appendix III Error Information