

MAYASTAR[®]

QM-2-B25 Computer Quilt Machine



Please read this manual carefully before any operating

HONG KONG MAYA TECHNOLOGY LIMITED

<http://www.mayaemb.com>

Warning

- (1) Input power voltage must be within the rated voltage scope. If it is not this may results in errors of computer or errors of other electrical equipment, even damages the electrical parts in control case sometimes.
- (2) All shells of solo control parts in the case must be connected to outdoor ground through general ground terminal, which can not be linked with neutral line of power supply. If the ground is not securely connected, it leads to serious errors or death.
- (3) Environment must conform to the requirement of the maker. It is necessary to perform dust sucking and cleaning every day, and the sliding and rolling bearings need to be cleaned periodically. If these are not done properly, it results in mechanical errors or machines parts damage.
- (4) 2-phases power supply used by machine can not be connected with other high-powered equipment (e.g.: electric stove, Welding machine, lift, cutting machine, machine tool etc.) at same time.

All losses, which customer violate above regulations and caused, are undertaken by customers themselves.

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I Introduction

1.1 Main technique Specifications

Item	(QM-2-B25)	(QM-2-B30C)	(QM-2-B30D)
Quilt Material Size (Y direction customizable)	98" x 118" (2.5x3.0)m	118"x118" (3.0x3.0)m	133"x133" (3.4x3.4)m
Max Quilt Design Size	90" x 110" (2286x2794)mm	110" x 110" (2794x2794)mm	125" x 125" (3186x3186)mm
Max Quilt Thickness	2600g/m ²	2600g/m ²	2600g/m ²
Adjustable size	(1600-2286)x (1800-2794)mm	(2400-2794)x (2400-2794)mm	(2550-3186)x (2550-3186)mm
Weight	1500kg	1500kg	1800kg
Installation Size	(L)3800 (W)3100 (H)1700mm	(L)3800 (W)3600 (H)1700mm	(L)4200 (W)4200 (H)1700mm
Packaging Size	4.0*1.1*1.8m	4.5*1.1*1.8m	5.0*1.1*1.8m

1.1 Main features

- (1) Patterns are stored in 3.5" floppy disk as well as hard disk. The prompts during the running and initializing are displayed on the computer screen in Chinese or English. The pattern displayed on the screen changes color simulating the quilting movement in real time, and you can inquiry patterns and files directory.
- (2) Operators can initialize the working parameters according to different quilting requirement by man-machine conversation.
- (3) The machine has thread breakage detecting (suit any thread). You can start again after rethreading; the head goes back thread breaking position.
- (4) The machine can make tighten stitches automatically at the beginning and ending wait for the next quilting.

- (5) When quilting finishes, the head and frame go back to the starting position automatically, and wait for the next quilting.
- (6) Only read one pattern once when quilting a same pattern.
- (7) The machine can do connecting stitch and complementary stitch conveniently.
- (8) The aluminum alloy frame makes it easy to adjust the size.
- (9) The computer can detect working states of sensors and show them on the screen.
- (10) The computer can detect alarm signals in real time. When the computer detects the signal, all related signals are cut off, the machine stop, and the result is shown on the screen.
- (11) Quilting presser foot move down earlier and move up later than needle.
This makes the surface of thicker material more neatly.
- (12) Chinese and English operation system , press blank-space key to change when the computer start.

II Main illustration

2.1 Main transmission part illustration Chart 1 (a, b)

2.2 Electronic control case inside sketching drawing Chart 2

2.3 Machine head oiling sketch drawing Chart 3

2.4 Dimension of working field Chart 4

2.5 Function key definition

ESC: Confirm or Escape key

F1: Forward quilt and backward quilt

F2: Work and stop the machine head

F3: The thread breakage detecting

F4: Setting sewing speed

F5: Thread position

F6: Back to outpoint position

F7: Track searching

F8: High position

[Home]: return origin point

III Operating flow and instruction

3.1 Turn on

3.1.1 Switch outer power supply on then turn on computer power "on" button, wait for the appearance as diagram 10, if have no check the power switch of the display and computer, because the two buttons are usually turned on.

3.1.2The screen will show appearance as diagram 10 when the computer normal starts.

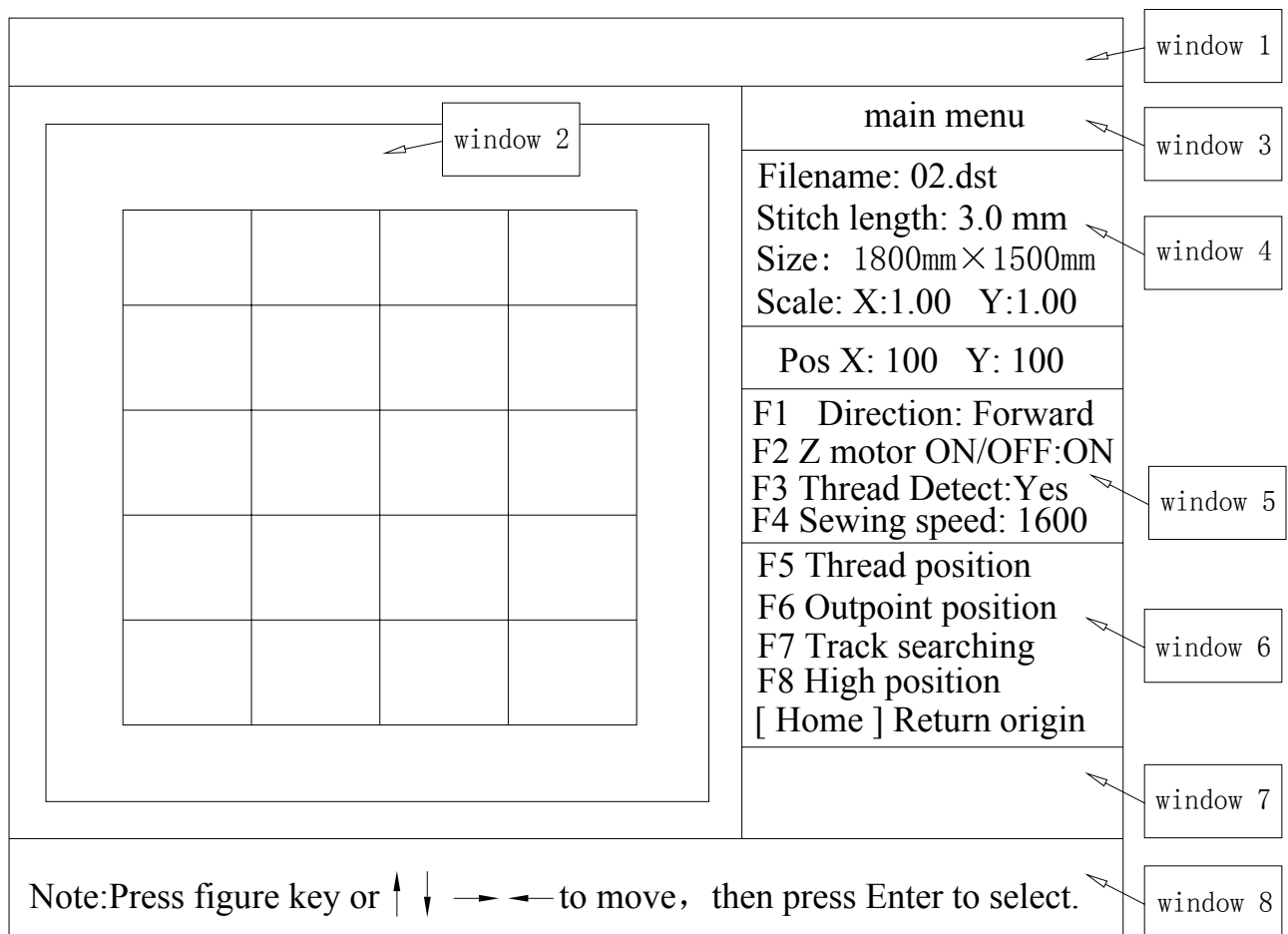


Diagram 10

Window 1、Window3: Main menu window; Window 2: Pattern display district;
 Window 4: System parameter and pattern message display window;
 Window 5、Window 6: control order menu; window 7: the hint for window 6;
 window 8: the hint for the main menu operate.

3.1.3 When the system enters the main menu, turn on the motor power "on" button. Follow diagram is the quilting process diagram, it will help you how to operate quilting correctly.

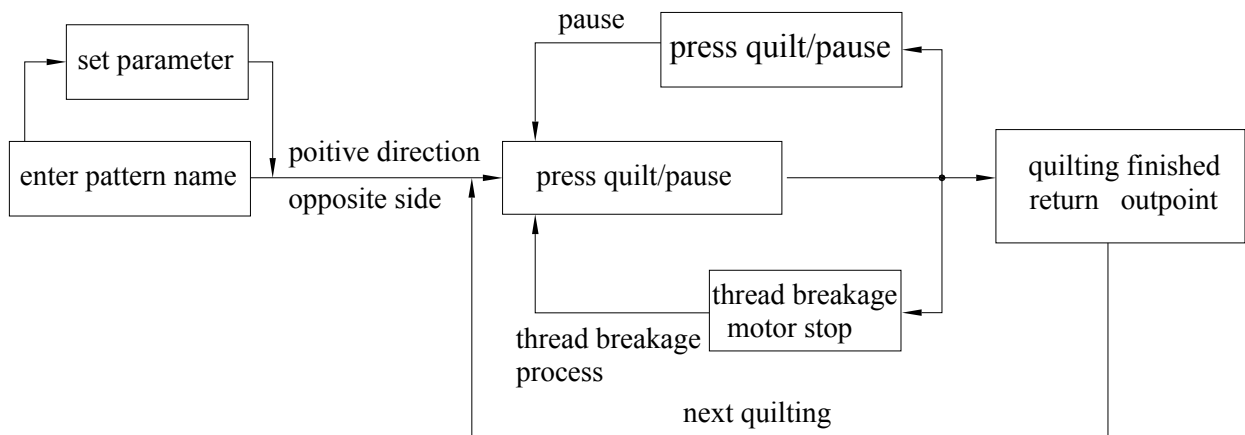


Diagram 11

Note: (1) Pause

If you want to stop the machine press quilt/pause button when the machine is working, then the machine stopped, needle go to the high position, press quilt/pause button again to quilt continue.

(2) Thread breakage process

If thread breakage detecting is "on", when the needle thread broke the machine will stop automatically, needles go to the high position. Then press forward or backward button to move the machine head to the thread breakage position, press Thread key, the machine head will go to the threading position. After threading, press quilt/pause button to quilt continue.

3.2 Mail menu function brief introduction

3.2.1 Pattern input

Press number key 1 to the function, the screen reshow as diagram 12. The window will show all pattern names in current driver. Press F1 to change the input driver disk A or disk C. If there is no pattern in the disk, the window will show "disk A or C no pattern". Press F2 to recheck the pattern of the driver. If the current driver is disk A, there will show "copy the pattern of disk A to disk C or not?" then press F3 key may don't copy. Press ↑ ↓ → ← key to move cursor to the pattern you need, press Enter or input pattern name then press Enter, the screen will show:" data processing , wait a moment.....".When the computer finished processes the date, it will return to the main menu and show the pattern you choose.

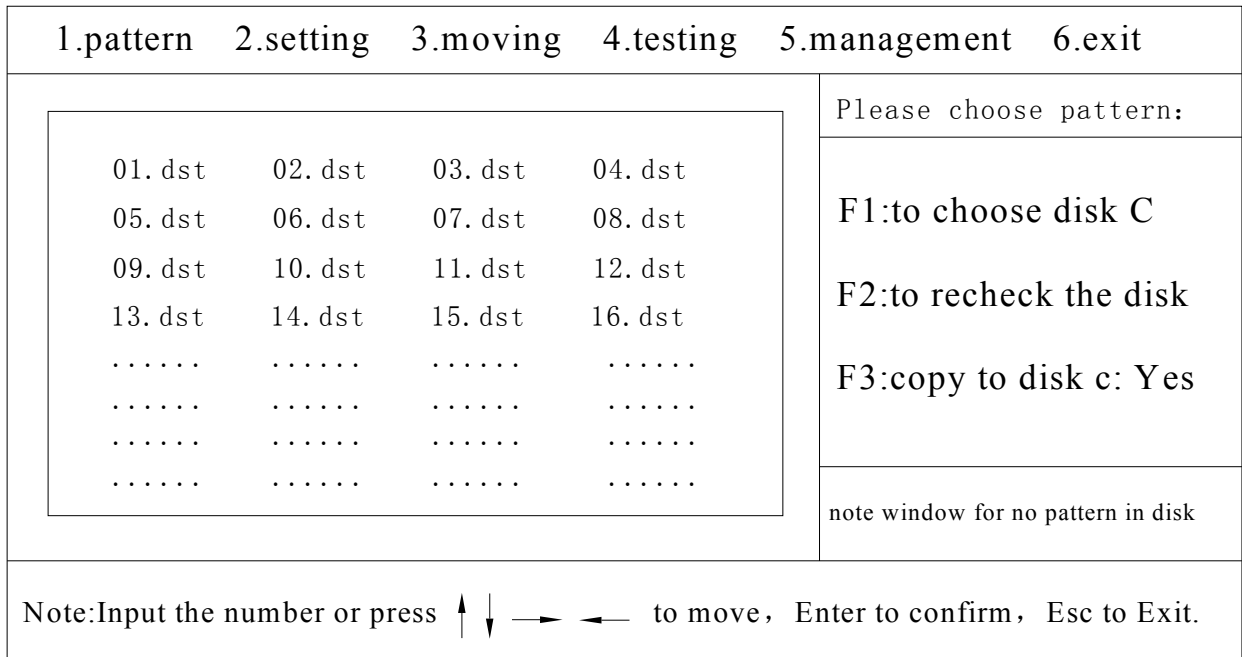


Diagram 12

3.2.2 Setting

When you adjust machine、 change the frame size or change the pattern size, you must reset limit range、 stitch length、 sewing speed、 outpoint、 space of pattern etc..

Note: Before you set the data, you must press [Home] to return to origin point.

Press number key 2 to the function, then the screen reshow as diagram 13.

(1) Sewing speed: The speed of the needle working, the highest speed is 2000rpm when the foot presser is moving, the sewing speed usually set 1600rpm and when the foot presser is not moving, the sewing speed usually set 1800rpm. Press number key 1 to modify sewing speed, press \uparrow key accelerate, press one time add 100rpm; press \downarrow decelerate, press one time reduce 100rpm. After modification press Enter to confirm, otherwise is invalid, press Esc to exit.

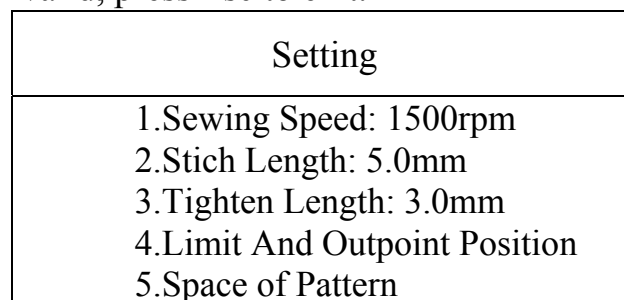


Diagram 13

(2) Stitch length: The distance of the neighborhood needle feet, it usually set between 3mm~6mm.

Press number key 2 to modify stitch length, press ↑ lengthen, press one time add 0.5mm; press ↓ shorten, press one time reduce 0.5mm. After modification press Enter to confirm, otherwise is invalid, press Esc to exit.

(3) Tighten length: Prevention line vestige shed off, at the start point and end point of line must solid sew, the tighten length is very short ,it usually is 1.5mm.

Press number key 3 to modify stitch length, press ↑ lengthen, press one time add 0.5mm; press ↓ shorten, press one time reduce 0.5mm. After modification press Enter to confirm, otherwise is invalid, press Esc to Exit.

(4) limit range and outpoint: There have adjustable limit switch on the machine's down horizontal beam and right stretch tight ,assurance man and machine safety. Concrete operation as follows: loose the bolt of the X and Y limit touch piece, take the frame on the stretch tight, press number key 4 to set the limit range and outpoint, as follows diagram 14.

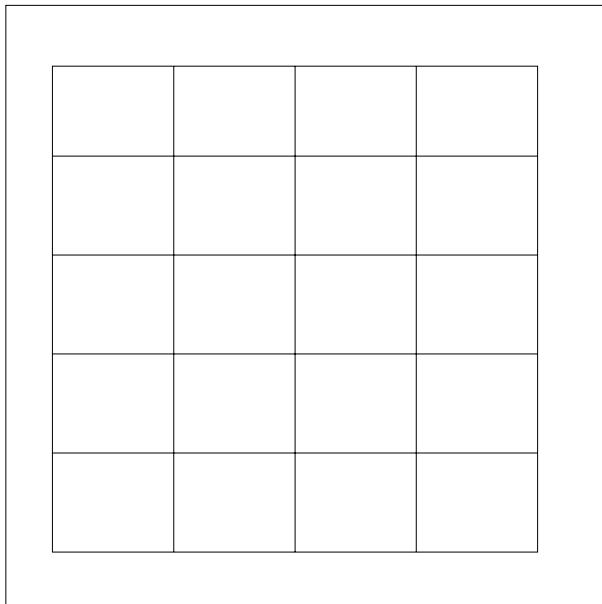
1.pattern	2.setting	3.moving	4.testing	5.management	0.exit
				1.Sewing speed: 1500rpm	
				2.Stich length:5.0mm	
				3.Tighten length:3.0mm	
				4.Limit and outpoint position	
				5.Space of pattern	
				F2 to change mode: moving by hand	
				1.Left limit: 100mm	
				2.Right limit: 1300mm	
				3.Up limit: 1900mm	
				4.Down limit: 300mm	
				5.Outpoint position: 200,1800mm	
				Current position: 0,0	
				[Home] return orgin position	
Note:Press number 1-5 to choose the opearting ,Return origin position befor! Esc to Exit.					

Diagram 14

First choose the setting way, press F2 to choose move frame by hand or input the sit value by hand. If you don't know the limit range sit value, please choose move frame by hand, operation as follows:

- (a) Press number key 1 set the left limit range, the screen show hint: press → ← to move the machine head, press F1 to change the moving speed. Move the machine head to the specify point, press Enter to confirm. Take the touch piece near the touch pole of the left limit switch, and then tighten the bolt.
- (b) Press number key 2 set the right limit range, the way as (a).
- (c) Press number key 3 to set the up limit range, the screen show hint: press ↑ ↓ to move the machine head, press F1 to change the moving speed. Move the machine head to the specify point, press Enter to confirm. Take the touch piece near the touch pole of the up limit switch, and then tighten the bolt.
- (d) Press number key 4 to set the right limit range, the way as (c).
- (e) Press number key 5 to set outpoints. Press ↑ ↓ move the frame, press → ← move the machine head, then move the frame and the machine head to the outpoint press Enter to confirm.
- (f) If you record the limit ranges value, now you can choose the way input the value by hand and input the data, that will save your times, but don't forget adjust the touch piece for protect the machine.
- (g) When you set the limit range wrong, for example, up、down、left and right limit range reverse, outpoint set out of the limit range. The computer will give the value as diagram 14 compulsory, avoid the computer crash. Now you need reset the limit range again.
After you set the limit range and outpoint, press Esc to return.

(5) Space of pattern: It is the distance the pattern mutually for the up、down、left and Right limit range. The computer can compute the move quantity and scaling automatically. For assurance pattern normal working, the scaling of X or Y can't too larger, single direction scaling usually less than 0.7. Press number key 5 to set space of pattern, the screen reshow as diagram 15.

Press number key 1 to set left space, cursor piece is on the left space column and

Input the number then press Enter. The way to set right space, up space、down space is the same as set left space. When you set the space of pattern, the zoom comparison of X、Y ward re-count and show on the screen, press Esc to return. When you set the sewing speed、stitch length、tighten length、limit range、outpoint、space of pattern, press Esc to return the main menu.

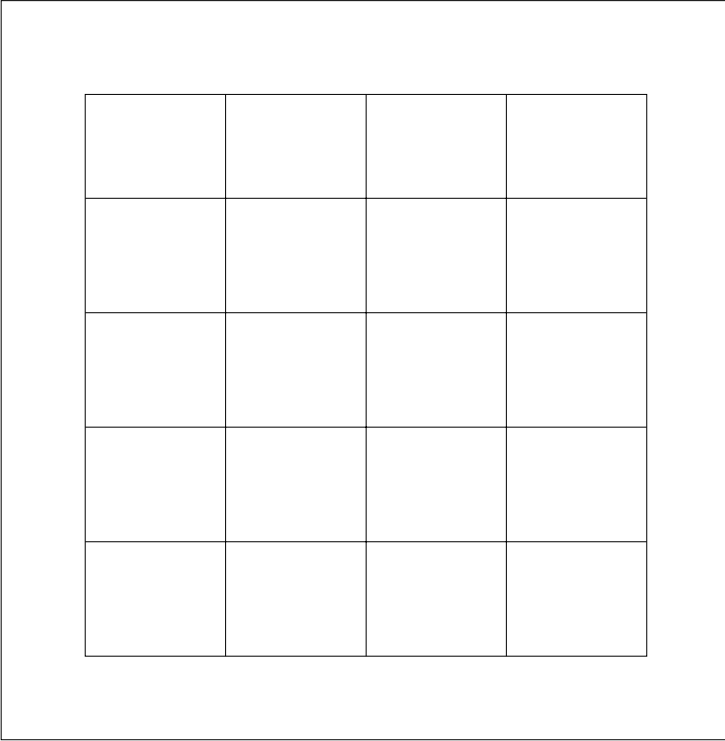
1.pattern 2.setting 3.moving 4.testing 5.management 0.exit	
	1.Sewing speed: 1500rpm 2.Stich length:5.0mm 3.Tighten length:3.0mm 4.Limit and outpoint position 5.Space of pattern
	1.Left space: 50mm 2.Right space: 50mm 3.Up space: 50mm 4.Down space: 50mm
	current scale: X: 0.900 Y:0.900
Note:Press1-4,choose the substance, unit:mm,Enter to confirm, Esc to Exit.	

Diagram 15

3.2.3 Moving frame by hand

Press number key 3 to the function, press Esc return to the main menu. The function should used for you want to move the frame by hand, then the window 3、4、5、6、7、8 in diagram 10 reshaw as diagram 16.

At this time press ↑ ↓ → ← to move the machine head and frame, Press F1 to Change the moving speed, press F8 the needle go back the high position, Press Esc return to the main menu.

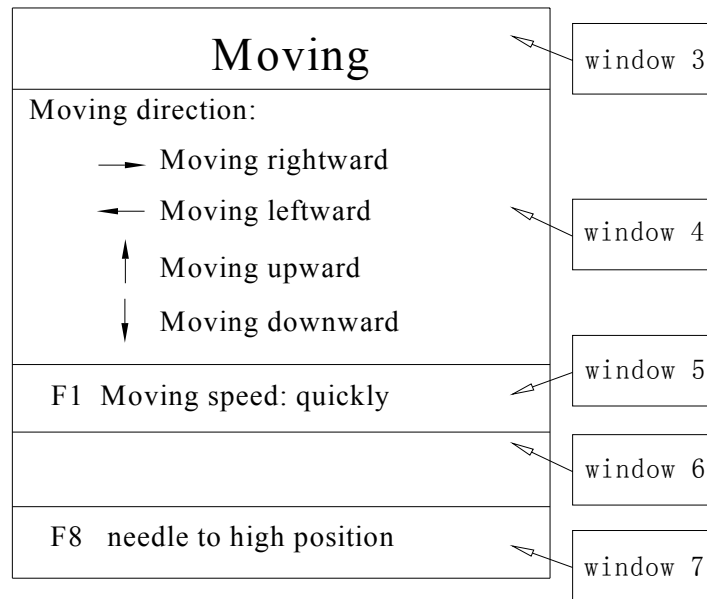


Diagram 16 (a)

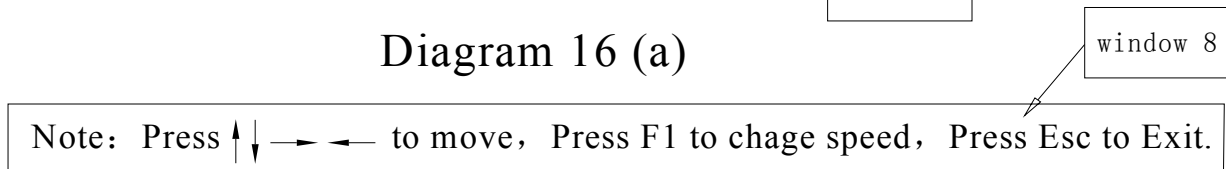


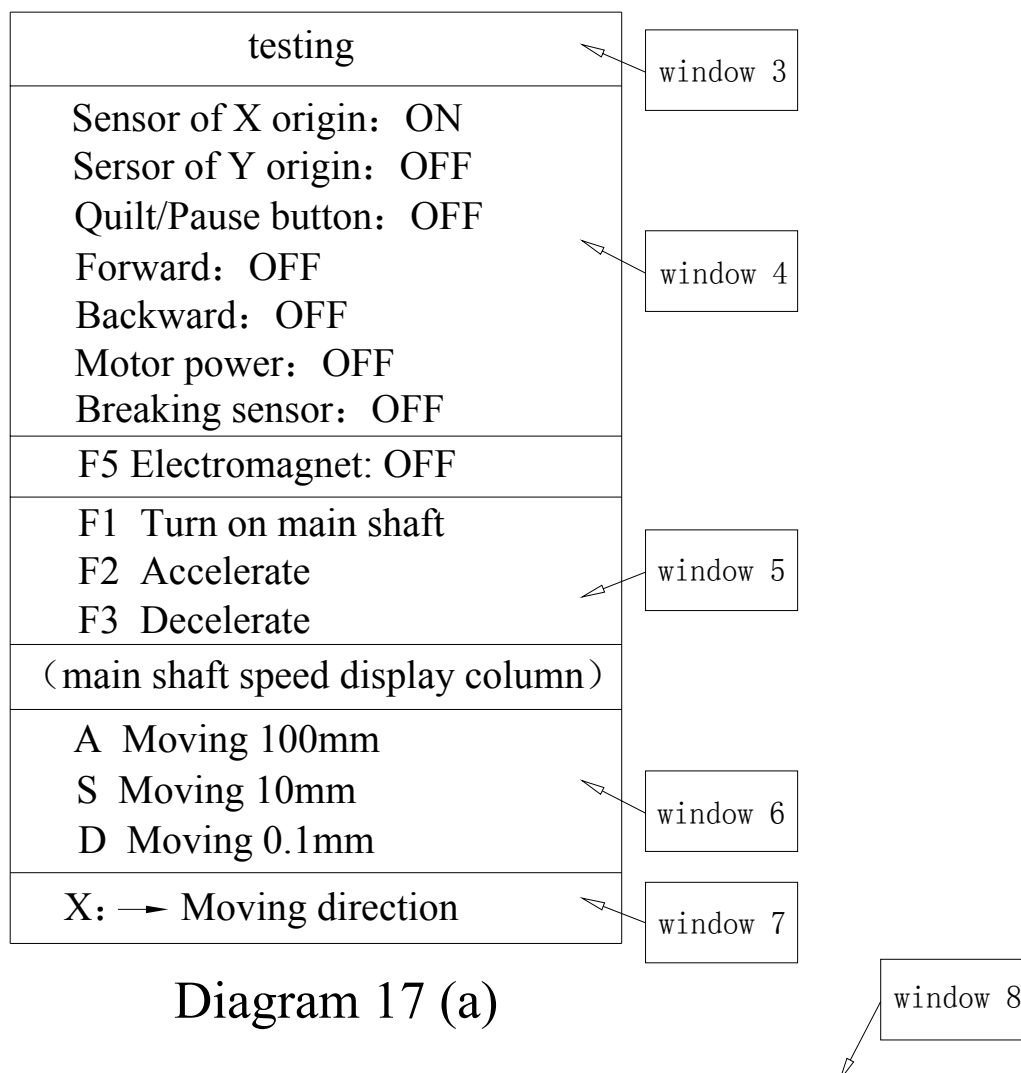
Diagram 16 (b)

3. 2. 4 System Testing

It is used for judge the machine working condition. For example to judge sensors、 quilt/pause button、 thread breakage detecting, electromagnet work well or not; motor power is on or off , needle 、 X motor 、 Y motor working condition. Press number key 4 to the function , then the window 3、 4、 5、 6、 7、 8 in diagram 10 reshown as diagram 17.

- (1) Quilt/pause button: Press quilt/pause button if the screen display "on", that the button is a good one.
- (2) motor power: When motor power is "off ", press motor power "on" button (green button), wait for a moment, the screen will show "on", and when the motor power is "on", press motor power "off " button(red button)wait for a moment , the screen will show "off " ,that the motor power can turn on and off correctly.
- (3) When motor power is "on", press F1 the screen show main shaft turn speed is 7rpm, and press F2 one time the main shaft will turn faster, press F2 again and again, the main shaft will turn on the highest speed; press F3 one time, the main shaft will

Turn slower, press F3 key again and again, the main shaft will turn on the slowest speed, and press F1 the main shaft will stop; the speed will show on the screen.



Note: Press F2 or F3 to accelerate or decelerate , Esc to back.

Diagram 17 (b)

- (4) When motor power is "on" , press →←key set the machine head move leftward or rightward; press ↑ ↓ key set the frame move upward or downward, then press A、 S、 D to move the machine head or the frame to you set first.
- (5) Electromagnet: Press F5 again and again, looks the thread tension complete on the machine head loose and tightens or not, if it loose and tighten correctly that the electromagnet is a good one.

- (6) Thread breakage detecting device: Imitate the take-up spring working when the machine is quilting, the thread breakage detecting appearance column show "no thread breakage".
- (7) Sensor of X origin: If the screen show "OFF" , the motor power is "ON" (must "ON"), press ← or → key to set the directness and press A、 S or D key move the machine head to origin point then the screen will show "on", that sensor of X origin is a good one.
- (8) Sensor of Y origin: If the screen show "off ", the motor power is "on"(must "on"), press ↑ or ↓ key to set directness and press A、 S or D move the machine head to origin point then the screen will show "on", that sensor of Y origin is a good one. All the testing finished press Esc return to the main menu.

3.2.5 Pattern management

It is convenient for customer to delete or copy pattern on A disk or C disk. Press number key 6 to the function (diagram 18), it include three sub-function pattern copy、 pattern delete and return.

Management
1.Copying 2.Deleting 0. Exit

Diagram 18

Copying
Source disk: C Target disk: A
F1: to change source disk F2:to change target disk Input serial number Enter to confirm Esc to Exit
Input the pattern number:

Diagram 19

- (1) Pattern copying: Press number key 5 to the function, the screen break as diagram 19 press F1 change the source disk A or C, press F2 change the target disk A or C. When set the source and target driver, input the pattern name you want to copy, press Enter key.

- (2) Pattern deleting: Press number key 2 to the function, the screen break as diagram 20, press F1 change the source disk A or C, press F2 change the target disk A or C. When set the source and target driver, input the pattern name you want to delete, press Enter. When the pattern save capacity is not enough, you must delete some patterns not useful and input some useful patterns.

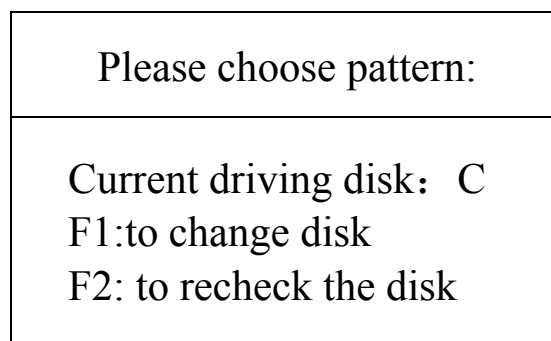


Diagram 20

- (3) Return: Press number key 0 or Esc, exit pattern management and return to the main menu.

3.2.6 Exit

Press number key 0 returns to the DOS operation system. If you want to come back the main menu again, input 26dst at c:\> then press Enter key.

3.3 Inspection before running

- (1)Ensure that the scopes of machine head movement and frame movement are as same as the maximum quilting scopes. (Adjustment is described in 3.5)

Note: Every time you change quilting size, you should do this inspection, otherwise result in knocking or damage of machine.

- (2)Ensure that the origin position and lifting height of presser foot is correct.

(Adjustment is described in 3.4)

- (3)Ensure that the needle position is correct, non-burr is at needlepoint, the surface of rotating hook is smooth, bobbin thread tension is correct, and bobbin is full enough.

- (4)Ensure that needle thread route through the thread breakage sensor correctly, the spring tension of the sensor is correct.(Adjustment is described in 5.4)

5) Ensure oiling between tension disk and tension release washer with a little silicon oil.

(6) Ensure origin positions of machine head and frame is correct. (Adjustment is described in 3.2.2)

(7) Ensure the frequency converter displays “00”.

(8) Ensure stepping motor is turned on. (prompted on the screen)

(9) Ensure the correct position of the needle stem when stop.

(Adjustment is described in 5.8)

(10) Ensure that all oiling parts are oiled. (Described in 7.2)

3.4 Initializing of presser foot origin position and adjustment of presser foot lifting height.

(1) Firstly adjust the distance between the bottom surface of presser foot and the upper surface of needle plate according to the thickness of quilting materials.

The distance is approximately equal to the materials thickness when it is pressed by maximum allowable press plus 0.5-1.0mm. For example, the material without press is 60mm thick, when we press it (on which 15mm diameter surface force presses) is 3mm thick, and then we can set the distance 3.5-4.0mm.

(2) Presser foot lifting height is according to the non-pressed thickness of the materials. The height should be higher for thick material and lower for thin material. We recommend that the minimum lifting height is not less than 10mm (The scope of the presser foot is from 3mm to 22mm).

(3) The method of adjusting presser foot lifting height: loosen the screw on front swing link. Rotate the main shaft until the needle stem is at its lowest position.

Make front swing link and front link nearly in a line. (acute angle α is 160°

$\sim 180^\circ$) Tighten the screw on front swing link. If α is 180° , the height the

16 lowest. If α is less, the height is higher.

Note: the needle point won't be lower than presser foot bottom surface when press foot bottom surface is at highest position. If it is this, make the lifting height lower.

(4)The method of adjusting origin position of presser foot: Rotate the main shaft

Until the needle stem is at its lowest position. Loosen two screws on presser foot system. Adjust the distance according to 3.7-(1). Then tighten the screws.

3.5 Overrun sensor adjustment.

Every time you change quilting size, you should adjust the overrun detecting Device on machine head and frames (main frame), otherwise result in knocking or damage of machine.

Detail: when you finish adjusting material frame sizes, fix material frame in main frame correctly. Press 3 to move frame by hand, then press ↑ ↓ move the frame to the up limit range. Adjust the limited block on board nearby Y limit switch II, the limited block must be in touch with Y limit switch II. The same way to set the down limit block、right limit block、left right limit block.

IV Control Menu

4.1 Control menu is showing in right windows of diagram 10.

(a) F1 forward quilt and backward quilt

Press F1 choose the forward or backward quilt, it usually choose forward quilt.

(b) F2 work and stop the machine head

Press F2 choose the machine head work or stop, it usually choose work.

(c) F3 the thread breakage detecting

Press F3 to set the thread breakage detecting or not. When the thread breakage detecting organization is wrong or you imitate quilting, you can set "no detecting"; other circumstance you can set "detecting".

(d) F4 setting sewing speed

Press F4 the cursor piece is on the sewing speed column, press ↑ ↓ adjust the speed, then press Enter to return. You can set the speed on the parameter setting column.

(e) F5 thread position

Press F5 the machine head will move to the thread position.

(f) F6 outpoint position

Press F6 the machine head will move to the outpoint, then you can take out the frame.

(g) F7 track searching

When the distance from thread breakage position to the machine head current position of pattern track is too long, according to the screen shown, press F7 and press ↑ ↓ to move the cursor piece to the thread breakage position on the line quickly, press → ← to search on the line, move the cursor piece to the thread breakage position press Enter, the machine head will move to the thread breakage position. Press Esc to exit, press quilt/pause button to quilt.

(h) F8 high position

If the needle is not at the high position, press F8 the machine head will go to the high position automatically.

(i) [Home] return origin point

Press [Home] the machine will search the origin automatically by the signal of the origin sensor, then move the machine head and frame to the origin position.

4.2 Sewing and working control

When you set all the parameter, computer can save the parameter (outpoint、 up limit、 down limit、 left limit、 right limit、 up space、 down space、 left space、 right space etc.)to the disk C , it will not losing as the computer turn off, unless you have not use the computer for a long time or the parameter need to modify, you must set the parameter again. The computer can reshow the pattern you used last time automatically, when you turn on the computer every time. If you want to change the pattern, please choose the pattern and input the pattern name in the main menu, there will show the new pattern, turn on the motor power, set the sewing speed、 stitch length、 thread breakage detecting parameter etc. , then press F6 move the machine head to the outpoint, take on the frame (Be careful don't collide the needle and press foot, when the frame through the machine head), press quilt/pause button to start quilt.

When the machine is quilting, the screen will show the pattern moving track and Control appearance in real time. If the thread broke, the thread breakage detecting will give alarm signal and the machine will stop. If there is no the thread breakage Detecting set off), press quilt/pause button stop the machine, press F5 to move the machine head to the thread position, after thread processing, press forward or backward button to move the machine head to the thread breakage position then press quilt/pause button to quilt continue.

When the bobbin thread used up or the bobbin thread broke, the machine will not give the alarm signal and stop, then press quilt/pause button to stop the machine, after processing, press quilt/pause button to quilt continue.

If there have surprised circumstance when the machine is working, press the (motor power) “OFF” button on the control board (red button) to stop the machine immediately, after processing, turn on the machine again.

When you finished quilting every time, the machine head will return the outpoint automatically, change the frame, press quilt/pause button to quilt continue.

Note: Don't stand in the scope of frame moving when machine is working.

4.3 Turn Off

When the machine stop working, turn off motor power, exit the main menu, and turn off the computer power then pull out the total power supply plug.

V Common errors and solutions

5.1 Thread breakage and solutions (table 1)

5.2 Slip stitch causes and solutions (table 2)

5.3 Causes of returning to origin position error and solutions

When quilting finished, the machine head and frame return starting position, The error of position is more than 5 mm, the possible causes are these.

- (1) There are matters in the open slide bearings of the upper and lower sliding ways or in the main transmission shaft, which lead to machine head's hard moving, and make the motor not to finish the moving-distance within limit time.
- (2) Some screws are loose in the main transmission, which result in the error.
- (3) Power amplifying drivers have error.
- (4) The voltage for power amplifying driver may be lower than AC190V, which result in lower output-volt. So stepping-motor's output twisting movement become lower.

Solution: if you find the condition described in (1), remove the matters and clean up the slide way. If you find the condition described in (2), tighten the screws in main transmission. If you find the conditions described in (3) or (4), refer to the description in 5.7.

5.4 Causes why thread breakage detecting device is inefficiency or it makes false

Action and solutions.

A. Causes of not detecting thread breakage:

- (1) Needle thread has escaped from tension complete of needle thread breakage detecting device or thread take-up spring, rethread needle thread correctly.

- (2)The thread take-up spring doesn't touch the coppery contact sheet, adjust the coppery contact sheet's position, and make the spring touches the sheet regularly (has enough press).
- (3)After long-time using, the surfaces of the thread take-up spring and coppery contact sheet have dust or oil, make electrical conductivity between them lower, clean up the surface, and keep good electrical conductivity.
- (4)The tension of machine head's tension complete don't coordinate with the tension of thread breakage detecting tension complete , which result in the spring on second tension complete can't spring back (can't touch the coppery contact sheet). Loosen the first tension complete tension, or tighten the second tension complete tension.

B. Causes of no reacting to needle thread breakage and solutions:

- (1)The detecting tension complete tension is too loose, which result in needle thread having broken drags the spring to move continuously. Tighten the tension complete tension.
- (2)The signal cable from sensor to computer break or cable's connector is loose. Press "Thread breakage" button to test the sensor's signal. If there is no signal, inspect the cables and connectors.

5.5 Causes why motor start slowly or it can't start and solutions.

When press "quilt/pause" button, the machine does not run or accelerates slowly (screen prompts motor run), which has three causes:

- (1)The connector between the computer and frequency converter may be loose and makes signal failure.
- (2)The frequency converter has errors.
- (3)Overload of the upper and lower transmission shaft make the motor not running.

(a) Rotate the transmission shaft by hand and inspect if it has overload. If it has overload, please find the mechanical causes and solve.

(b) The outer power supply cable's connector is loose and led to phase lost momentarily or the voltage is over the limited scope sometimes. Inspect the cables and voltage; ensure the cables in good condition and voltage in the limited scope.

(c) Look at the frequently converter panel to see if it shows in normal state.

If it shows errors, inspect the cables and connector that there has no breakage or loosening.

5.6 Causes: electronic control case has no power or it has no power partly, and solutions

A. The whole control case lacks power. Computer and monitor have no input voltage.

Causes:

Outer power supply cable is loose contact, which lead to phase lost. Or the cables in the case break.

Solutions:

Inspect by voltmeter then fix and connect again.

B. Partly lacks power

Inspect if the cable connecting screw is loose, and tighten the screws unsuitable, check if fuse breaks change the damaged parts.

5.7 Cause of power amplifier driver error and solutions

The machine can not run if power amplifier driver has error. Inspection and solution:

(1) Inspect input voltage (high voltage AC60~110V) of the driver, if the voltage is

out of this scope, you should wait until the voltage is in the scope before run the machine. If the voltage is correct, inspect if the cable's connector on the power amplifier driver panel in loose. **If has loosening, shut the outer power supply down and tighten the loose cables again.**

(2)If the warning light on the power amplifier driver lights(and the input voltage is in the limited scope), which suggests the driver may be bad, and need to change.

5.8 Needle position signal error elimination

Sometimes the screen prompts “error needle-position press F8”, and gap on the needle-position plate doesn't at sensor's position, the machine can't run. It needs to be solved manually.

(1)Causes: Some foreign matters in transmission of the machine head and machine stand or screws loosening result in main shaft rotate hard. When machine stops running, the shaft stop early, then the bolt on the needle-position plate is not at the sensor's positions which result in needle-position error.

Solutions: Clean the foreign matters and dust and ensure to move smoothly, inspect all the screws in transmission and tighten the screws inspect make sure the cables and connectors has no loosening.

(2)Causes: The main shaft has been rotated in inspection or other conditions, make the needle-position plate lost the correct position, which result in needle-position error.

Solutions: Rotate the main shaft manually until the prompt “needle-position press F8” is disappearing.

5.9 Causes of presser foot error and solutions

A. The needle stem may knock the presser foot when the machine is running.

Machine head has big noise.

B. Needle breakage and missing-stitches.

Causes:

Some screws in machine head are loosening, or bearings in back link are worn out, which result in the wrong distance between the presser foot and needle-plate.

Solutions:

A: Tighten the screws according to 3.4.

B: Replace with good ones if the bearings are worn out.

VI Floppy disk copy

6.1 Floppy disk files copy to hard disk

Floppy disk files copy to hard disk operating flow: if you want copy all the patterns, input “COPY A:*.DST”, then press Enter key. If you want copy several files of patterns, input “COPY A: pattern-name.dst”, then press Enter key.

Press “shift” key and “;” key together when you input “:”.

6.2 Common copy error

When copy the files according to 6.1, the computer screen prompt” Abort, Retry, Fail?”, it means the files on the floppy disk is damaged. Go back to “A:\>” condition, input “COPY A:.*.*” then press Enter key. If the screen prompts error immediately, it means the floppy disk is damaged. If screen prompt error when copy a file, it means this file is damaged, you can copy files one by one except error files.

6.3 Hard disk reinstalls

There is written program disk on one disk for every machine. That contains software for hard disk installation. They should be offered to the customer and customer should store it in a safe place. The installation sequence is: when the computer screens prompt :>” insert the program disk. Input “copy a:\.*.*” the press Enter key.

6.4 Copy files from E-mail

Our company will design new pattern for customer. The new pattern sends to customer by E-mail (as accessories). Open this E-mail and copy these accessories to floppy disk. Then insert that floppy disk into quilting machine computer. Copy new pattern files from floppy disk to hard disk. (Details of copying files from floppy disk to hard disk see 6.1). Then you can open your new pattern.

6.5 Delete unused pattern in hard disk

When computer display “C :>”, input “DEL pattern-name.*”, press Enter key, then delete this pattern’s files. If you want delete several unused patterns, do it in turn as well, only change the pattern-name.

VII Warning and maintenance

7.1 Warning

- (1) The general ground terminal must be connected to the outdoor ground separately. This is made of NO.3 angle steel with a length of 1.5m and hit into moist earth. And must not be linked with neutral line of power supply , the ground cable must be connected to the end of the steel with M8 zinc coated screw and the cable cross section area is lager than 1.5 mm^2 .
- (2) Please do not open the computer and frequently converter. And you can contact with the manufacturer if they have errors. Let us manufacture's people to repair the error.
- (3) If the machine has abnormal noise when running, you should stop to inspect, find the causes and solve the causes, and then you can run the machine again.
- (4) Every time you change quilting size, you should adjust the overrun detecting device on X and Y directions.
- (5) The computer and other electrical equipment must be turn off if the machine is out of power supply suddenly. After switching on you should set parameters again according to 3.2 and operate the machine quilting again from breakage according to 3.4.
- (6) When pull in or draw out the material frame, meanwhile ensure the needle is at highest position. Otherwise result in the rough of material surface.
- (7) Frame is made by two layers aluminum alloy. For keep the frame size adjustable, do not bend the frame and tough the slide surface of the fame. Smooth the surface with sandpaper and oil.
- (8) All the belts forbid the oil. If you find the oil on the belt, clean up immediately.

- (9) Environment must conform to the requirement of the maker. Otherwise the tension of belts will change evidently, electronic parts will work unsteadily, and the machine will be in the wrong.

7.2 Maintenance

- (1) Oiling several drops of special sewing machine oil on the oiling part.
- (2) Suck and clean the rotating hook base, lower and upper transmission shafts and press foot, and oil the lower and upper sliding ways every day before being off duty.
- (3) Cleaning the two sides of sliding bearing every week.
- (4) Inspect regularly the tightening of screws on the head, frame and belt wheels.
- (5) Suck and clean the dust in the electronic case with cleaner every half-month.

Table 1 (1)

symptom	cause	solution
Needle thread breakage	There are burrs or rough surface along the needle thread route that result in thread wears out and breaks.	Polish the rough surface along the thread route. Make sure that all corners are smooth.
	Wrong tension of needle thread caused by tension complete.	Adjust the tension. Make the needle thread and bobbin thread join up in the material.
	There are burrs or rough surface on the tip and passing thread surfaces of the rotating hook that result in thread wears out and breaks.	Polish the hook tip and passing thread surfaces of hook.
	The distance between the bobbin case holder position bracket and bobbin case holder is too small. Or the bulge of the position bracket is rough.	Adjust the distance between the bobbin case holder position bracket and bobbin case holder. Polish the bulge of bobbin case holder position bracket.
	The axis of the needle hole on the needle plate offset the axis of needle. Or there are burrs at the two edges of the needle hole or at the edge of presser foot.	Adjust the offsetting. Or polish edges.
	Wrong thread take-up spring twisting force and spring swing range.	Adjust the spring twisting force.
	There are loosening parts among the take-up links in the machine head.	Adjust and tighten the screws on these links in the machine head.
	There are drunkenness and gaps in the transmission of the machine head and rotating hook.	Adjust the gaps between upper and lower bevel gears, and lower the tension of upper and lower main belts.

Table 1 (2)

symptom	cause	solution
Needle thread melted	Too thick material or over-speed when using chemical fiber thread.	Cool the thread with silicon oil .use cotton thread, or reduce speed.
Needle thread is cut off	Wrong threading.	Thread correctly.
	The take-up lever goes up too earlier, the needle thread breaks when quilting.	Rotate main shaft manually until the needle stem lower 1-2 mm from its highest position. Adjust the needle-position plate , make the gap on the plate at the sensor's position
	Thread take-up spring is too tight or its swing range is too large.	Adjust the spring twisting force and rotation setting position of tension complete.
	The tip of the hook cut the bobbin thread at the needle-eye.	Lower the needle-stem position a little.
Bobbin thread loose	Tight needle thread and loose bobbin thread.	Loosen the tension control screw anticlockwise. Tighten the tension of bobbin thread.
	Thread escapes from tension complete or thread take-up spring	Rethread correctly between the tension disk and release tension washer and through thread take-up spring.
Needle thread loose	Loose needle thread and tight bobbin thread.	Tighten the tension control screw clockwise. Loosen the tension of bobbin thread.
	Bobbin is too full to rotate easily or bobbin case distorts.	Change the bobbin and make the bobbin rotate easily, or change the bobbin case.
	Thread take-up spring is too weak	Heighten the spring twisting force

Table 1 (3)

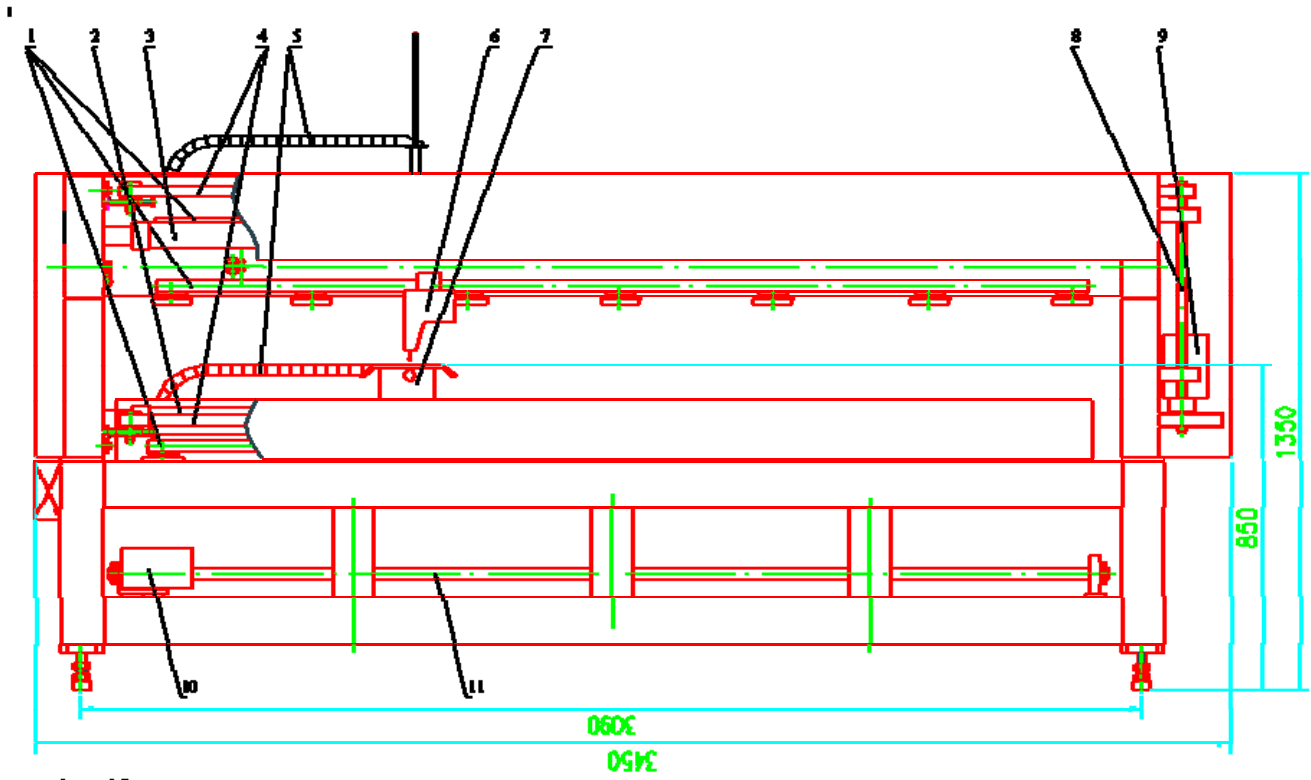
symptom	cause	solution
Needle thread is worn out	Needle thread is too tight	Loosen the tension control screw anticlockwise. But not make needle thread loose.
	Needle hole, needle-eye or other passing thread surfaces is too rough.	Polish with emery paper.
	Friction between the hook tip and needle.	Adjust the distance between needle And hook tip.
Thread breaks when start	The press on the material is too heavy.	Adjust the presser foot to reduce the press on the material.
	There is much broken thread winding on the bobbin case holder position bracket.	Clear the broken thread
	There is much broken thread under the material at stitch start.	Clear the broken thread
Bobbin thread breakage	Bobbin is too full or has been unevenly wound.	Wind bobbin thread again
	Bobbin thread is too tight	Loosen the bobbin case tension regulating screw anticlockwise.
	There are broken threads or rubbish in the bobbin case.	Clear the broken thread and rubbish.
	The thread worn out when wind bobbin thread.	Check the bobbin winder.
Thread breaks during long stitch	There are burns at the two edges of the needle hole or at the edge of presser foot.	Polish
	Tension spring is too tight.	Loosen a little.

Table 2 (1)

symptom	cause	solution
Continuous missing stitches or missing stitches during reverse quilting	Upper sliding way and lower sliding way moved each other.	Adjust the shaft. The horizontal error between machine head and rotating hook base should be <0.05 mm. The vertical error should be <0.15 mm
	Wrong setting position	Rotate main shaft manually until the needle stem raise 2 mm from lowest position. At this position the hook tip is a little lower than the middle of needle beard. Adjust the hook tip to this position and keep about 0.05 mm gap between the needle and hook tip.
	Thread take-up spring is too tight or its swing range is too large.	Reduce the spring twisting force and make spring's swing range in 8~10 mm.
	The thread outside the bobbin case is too short.	Draw the bobbin thread out about 100 mm.
	The gap between hook tip and needle is too larger.	Adjust the hook, the gap between hook tip and needle is about 0.05 mm.
	Rotating hook hooks thread earlier.	Adjust the hooking time.
	Presser foot is higher	Adjust presser foot origin position and lifting height
	Needle hole is too larger	set right needle hole , the size is about 3.5 mm
Missing stitches occasionally	Presser foot is higher	Adjust presser foot origin position and lifting height
	Needle bends	Change needle
	Thread twist is too much or thread elasticity is too strong	Change high quality thread
	Misproportion material or there are hard matters in the material.	Spread material and clear the hard matters
	Hook tip dulls	Change rotating hook

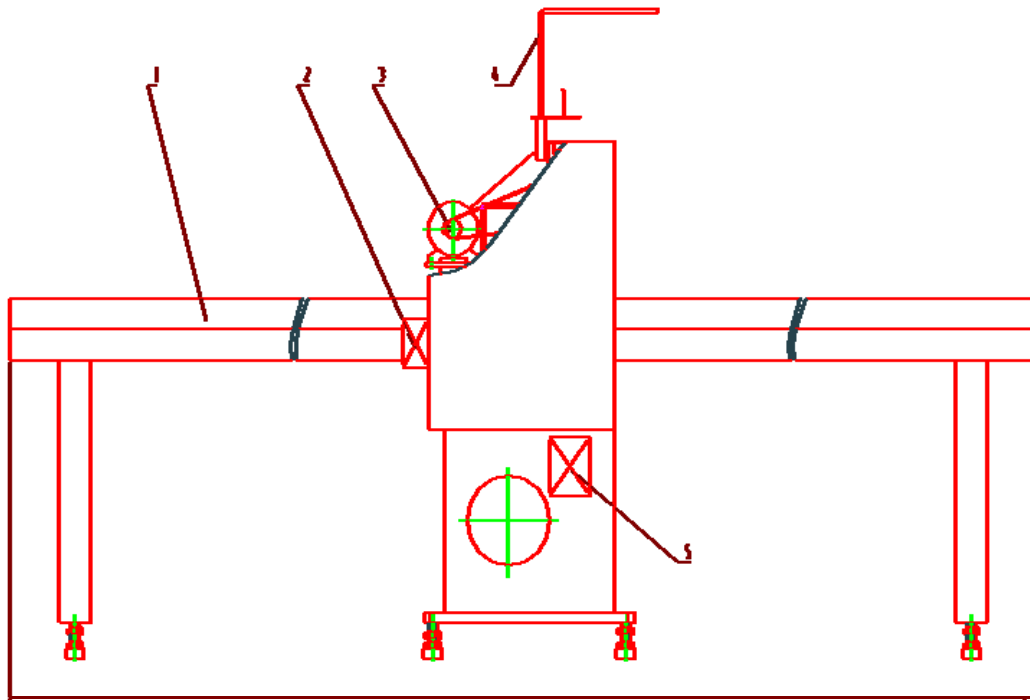
Table 2 (2)

symptom	cause	solution
Needle breakage	The screws in machine head and rotating hook base are loose.	Inspect the screws and tighten the loosen screw.
	Needle stem bends after needle broke	Change needle stem
	Needle is mounted loosely	Tighten the needle screw
Needle breaks when main frame moves	Upper main shaft and lower main shaft rotated each other.	Adjust upper and lower belt tension wheel. Tighten the tension wheel screw.
	Front and back stand frames are not in a line .The rolling wheels on the main frame crushes the sides of the stand frames. So the movement of main frame becomes unsteadily.	Adjust the stand frames, make main frame move steadily in the scope.



- 1. sliding way 2. Lower main shaft 3. Upper main shaft 4. synchronous belt 5. tank chain 6. Machine head 7. rotating hook base
- 8. shot shaft assemble 9. X stepping motor 10. Y stepping motor 11. Long shaft assemble

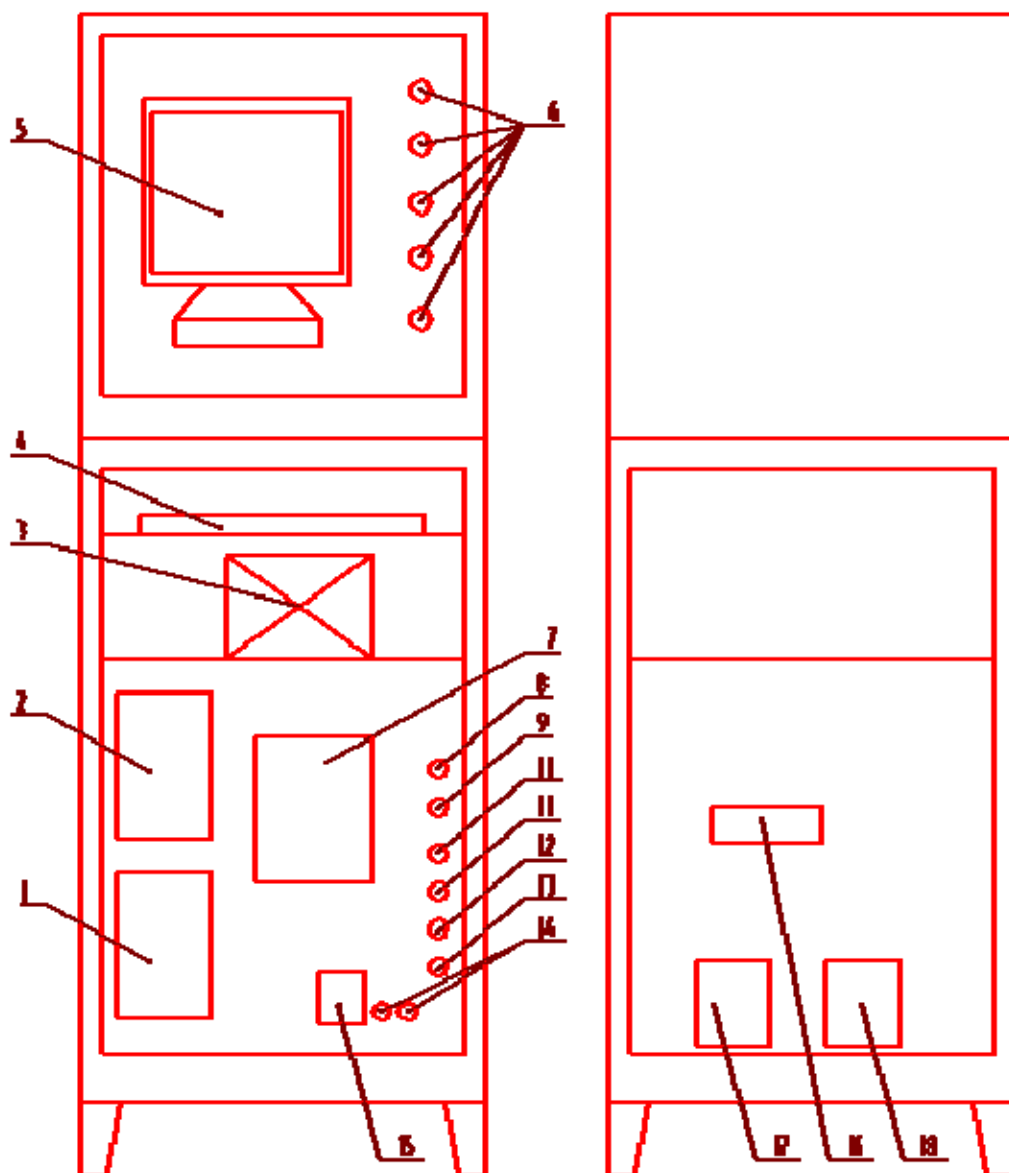
front view (chart 1a)



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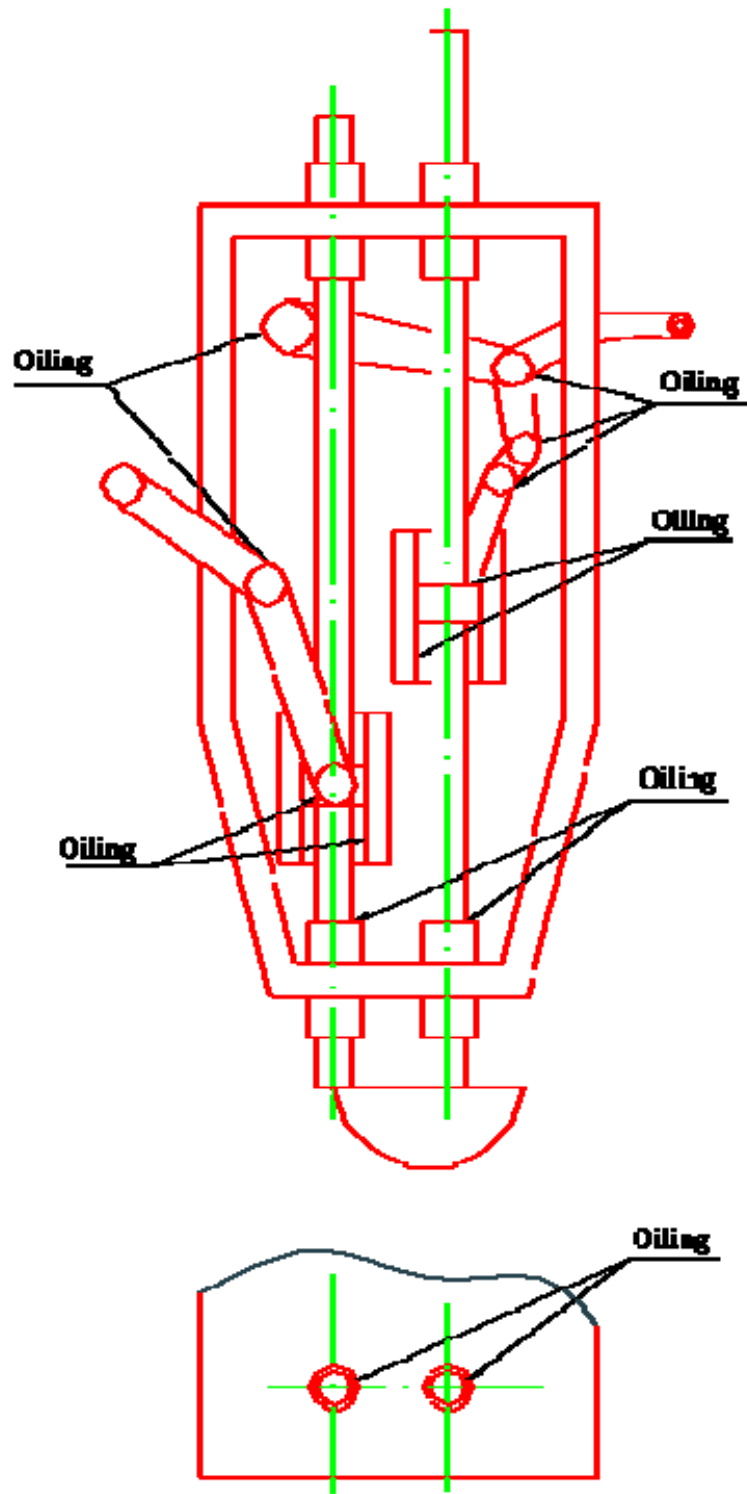
2. Frequency converter 3. Sewing motor 4. Thread guide parts 5. Oil pump

left view (sheet 1b)

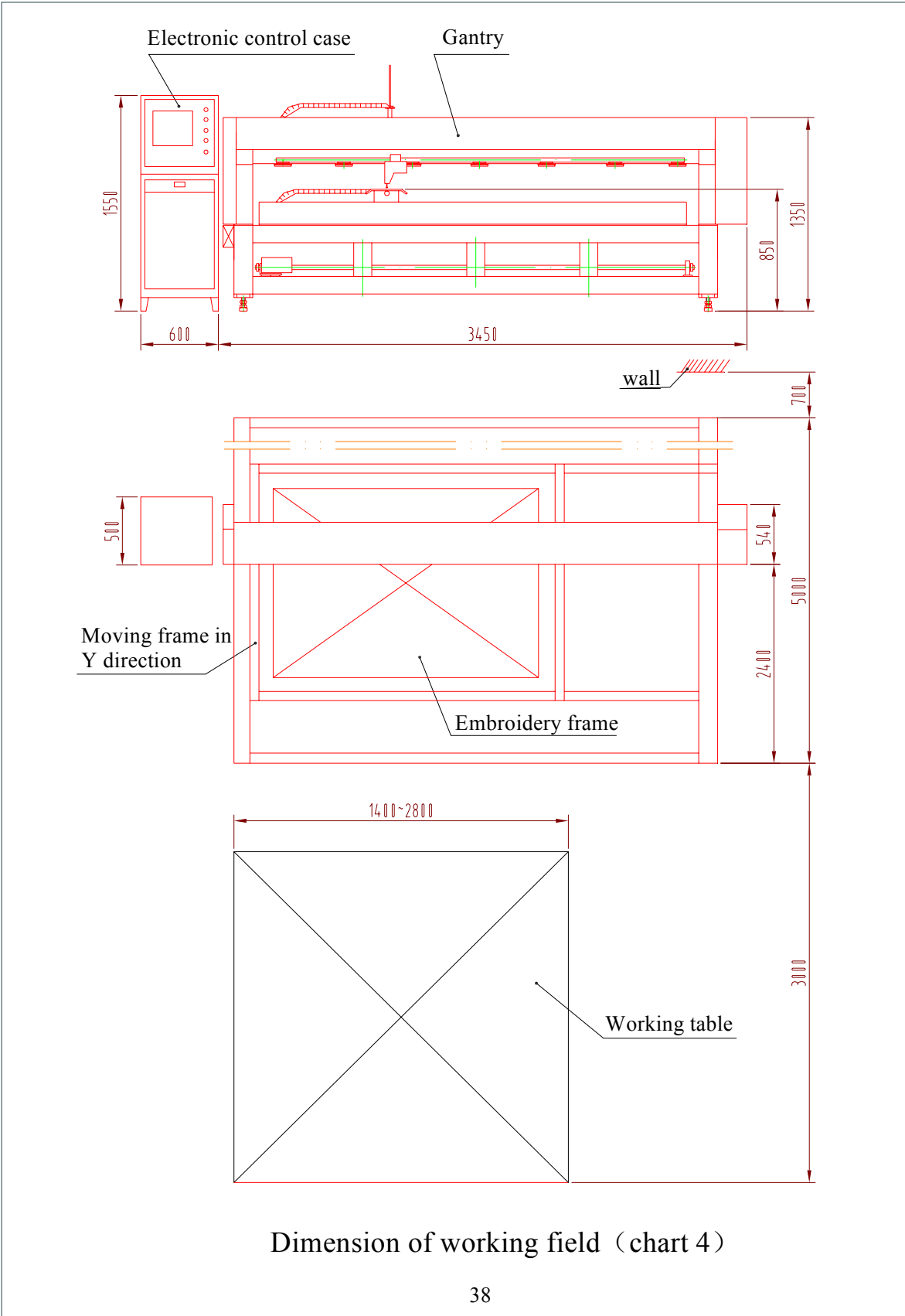


- 1、 Y-driver 2、 X-driver 3、 Computer 4、 Keyboard 5、 Display
 6、 Button 7、 Power board 8、 Control signal set 9、 Frequency signal set
 10、 Sewing motor power set 11、 Y-motor power set 12、 X-motor power set
 13、 Total power set 14、 Fuse 15、 AC Contactor 16、 Power set
 17、 Big transformer 18、 Small transformer

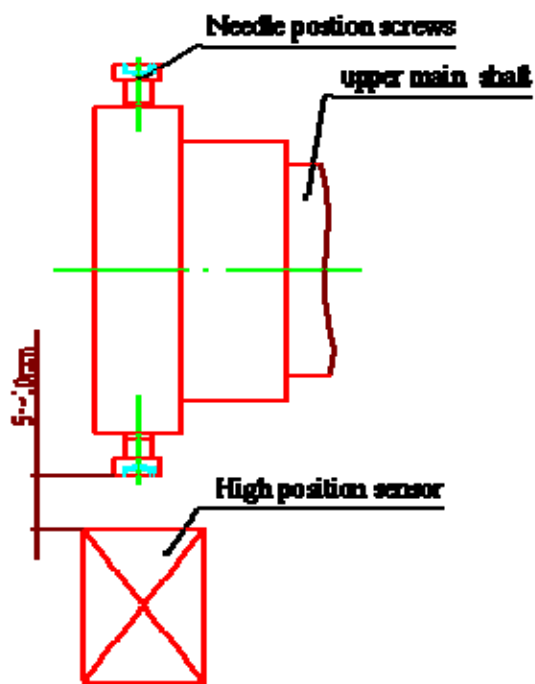
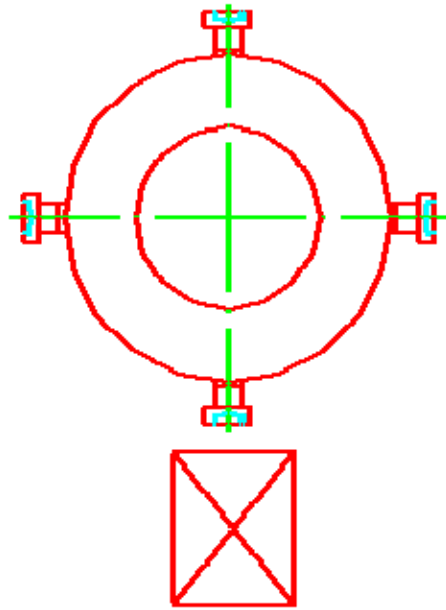
electronic control case inside sketching drawing (chart 2)



machine head oiling sketch drawing (chart 3)



Dimension of working field (chart 4)



Needle position signal sketch drawing

(chart 5)

Packing List

No	Name/Type	Unit	Quantity
1	Main machine	Set	1
2	Electronic control box	Pcs	1
3	Computer	Set	1
4	Monitor	Set	1
5	Keyboard	Pcs	1
6	Winding machine	Set	1
7	Cramp	Pcs	20
8	Synchronous belt 510L100	Pcs	1
9	Synchronous belt 420L100	Pcs	1
10	Synchronous belt 375L100	Pcs	2
11	Synchronous belt 600-5M-20	Pcs	2
12	Screwdriver	Pcs	2
13	Spanner 14-17	Pcs	1
14	Spanner 17-19	Pcs	1
15	Needle	Pack	1
16	Rotary hook	Pcs	1
17	Bobbin case	Pcs	1
18	Shuttle-cock	Pcs	10
19	Small oil boat	Pcs	1
20	Small scissors	Pcs	1
21	Program and pattern disk	Pcs	3
22	Operating menu	Pcs	1
23	Pattern book	Pcs	1
24	Enclosure box	Pcs	1