Richpeace Computerized Single Color Double Row Quilting and Embroidery Machine Instruction Manual V1.0

Prepared: Reviewed: Approved:

Single Color Double Row

Quilting and Embroidery Machine Instruction Manual V1.

- Thank you for choosing Richpeace production;
- Please read the instruction carefully before use and use the product correctly and safely;
- Please keep this specification properly;

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1. Brief Introduction

Richpeace computerized quilting and embroidery machines are designed for the production of high-value added quilting products for home-textile and garments application,such as quilt, cushion, bedcover,sleeping bag, garments, jacket, etc.

Application：

Richpeace Quilting & Embroidery machine is a kind of industrial equipment, and it is widely used in home textile and garment industries, and mainly used for quilting and embroidering different patterns or designs on one layer or multi-layers contain fabrics made by cotton and chemical fiber.

Model：

Single Color Double Row
Quilting and Embroidery Machine

Optional devices:

Auto fabric feeding device
Auto fabric collecting device
Fabric roller
Other options

2. Important safety instruction

Operation of this machine requires correct operation and appropriate maintenance toensure safety.

Please read this chapter carefully and do not attempt operation or maintenance the machine before you thoroughly understand the items.

2.1 Signal word definition

DANGER
Indicates that there is a lot of danger of death or serious injuries if the instruction is not observed.
WARNING
Indicates that there is a likelihood of death or serious injuries if the instruction is not observed.
CAUTION
Indicates a potential a hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

Prohibited items

Item that must be followed carefully to ensure safety operation.

The information which gives details or supplements the explanation appears under NOTE.

WARNING ATTENTION	
	HIGH VOLTAGE Can cause shock, bum, or death. 高压可能导致触电，烧伤或死亡。

WARNING ATTENTION	
	Moving parts can cause severe injury. 注意卷入，夹入。

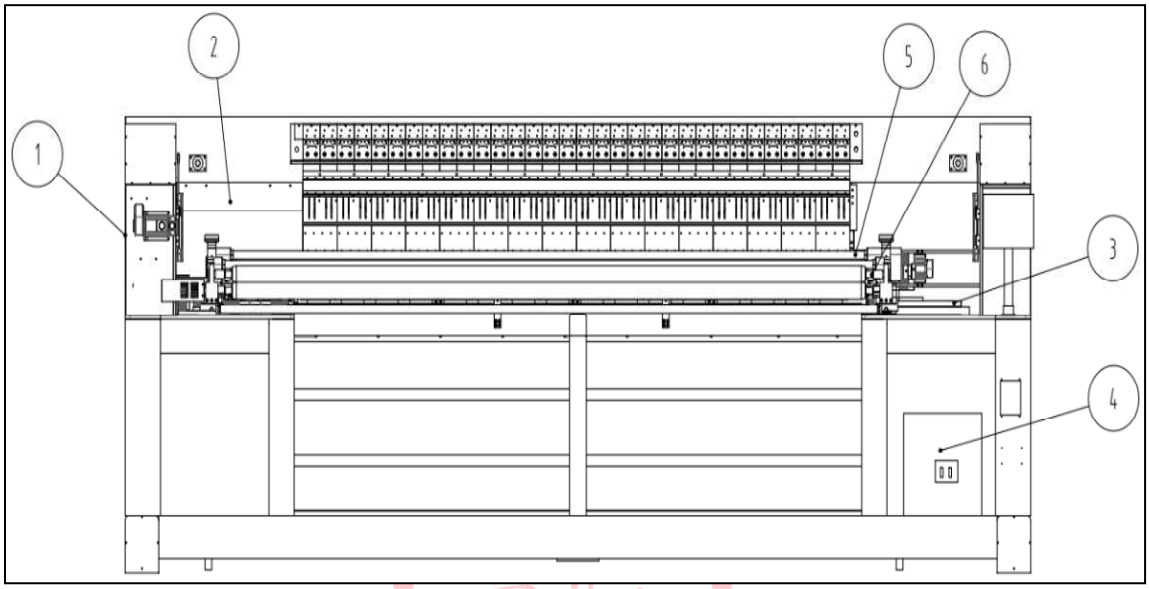
2.2 Warning labels and spec. plate

The machine has warning labels that bear instructions for safe operation. Machine operators must follow the instructions shown on the warning labels.

Do not detach these labels,nor make them illegible by painting,etc.

NOTE:if a warning label is missed or damaged,Please contact your Richpeace distributor.

2.3 **Warning tag illustration**



①Shaft、belt
②Motor、shaft
③linear guild rail system
④electric control panel
⑤Plastic curtain rod
⑥gear

3. Installation

3.1 Cautions before installation

Install the machine on a sturdy floor

The floor structure must be strong enough to bear the machine weight (indicated on the spec. plate. If the floor is supported by steel frames, place the machine stand on the steel beams as long as possible.

Prevent the operation noise

To improve the sound insulation performance of the factory in addition to the operation with reduce noise of this machine, use the interior finish materials which show high sound insulating performance for the walls, ceilings and floor.

Avoid direct sunlight

If the machine exposed to direct sunlight over a period, the machine body may be discolored or deformed, sometimes it'll influence the work of photosensitive component, put curtains or shades to the site to prevent the machine from direct sunlight.

Provide enough space for maintenance

For maintenance purpose, provide at least 50 cm clearance around the machine (at the right, left, and back side of the machine).

Avoid dust and moisture

Dust and moisture lead to dirt and rust on the machine. Install air conditioning equipment, and periodically clean the working area.

Use caution not to expose the machine to direct wind from the air conditioner so that the embroidery threads do not become disheveled.

Environmrnt reguirement

Humidity:

30 to 95%RH (relative humidity) without condensation.

Ambient temperature:

5 to 40 ℃(during operation),

-10 to 60℃ (during storage)

Others:

The machine should be installed in clean, drafty, sunless place, away from of heat source, no indoor corrosive gas; solid ground formation, in the vicinity had no significant source of vibration are also important.

Installation must be carried under the instruction of people who is familiar with the installation working and safety principle.

3.2 **machine layout**

Accurate dimension please contact Richpeace dealer.

3.3 Unpack and check contents

3. 3. 1 **Unpacking**

When machine was delivered to customer site, make sure the machine is not inversion, the packing material is in good condition, if not, please ask the transporter to check the damage together and take photo for future use. If you find something break or rupture, please don't do anything and inform the insurer to do further inspection.

3.3.2 Checking content

If the package is complete, please count the parts in the packing list. If there is any problem, please contact our company or our authorized installation personnel.

3.4 Machine transport

3. 4. 1 During the transport process, following items should be followed in order to avoid any accidence or damage:

(1)The forklift must fully bear the machine weight and measurement when using it to lift the machine, and must keep machine balance during the transport process.

(2)During the transport process, make sure that there is no one nearby especially beneath the machine.

3.5 Machine on site adjustment

3.5.1 Installation Notes for Quilting Embroidery Machine

Dear users, welcome to use SGG Richpeace quilting embroidery machine. Please pay attention to the following items when installing and commissioning the equipment.

① the block removal of front and back rollers

After the equipment left the company, in order to ensure that the front and rear rollers were damaged due to shaking during transportation, we added the front and rear rollers' block to prevent the rollers from swinging left and right. Please dismantle it before switching on the electricity.

Note: There are four places at front and back

②Before the equipment reaches the designated installation location, a anti-vibration pads needs to be installed under the equipment.

③Installation of Rear Brace Rod

In the process of installation, the left and right should be consistent and symmetrical.

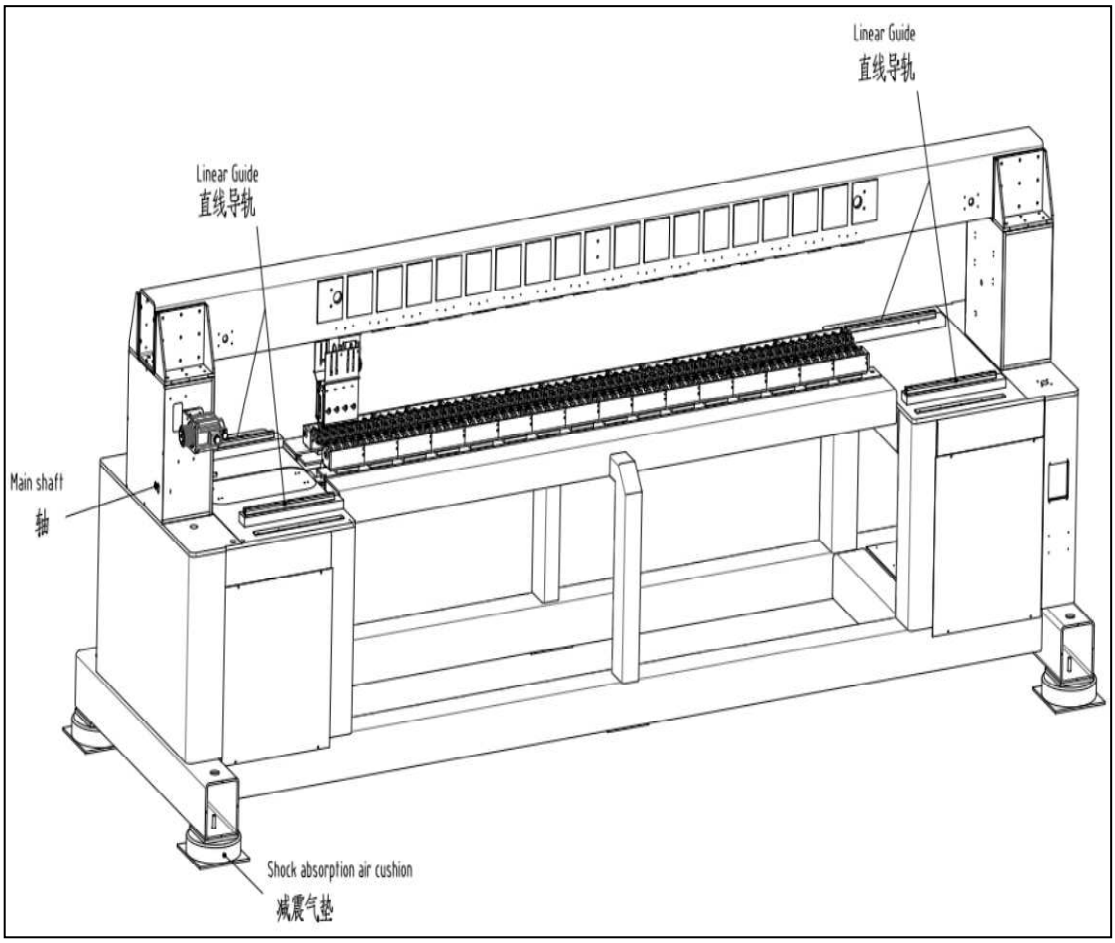
④Installation of thread frame

⑤ Connection and Installation of Touch Screen

Note: After all the equipment is installed and connected, we suggest that you leave the equipment standing for at least 4 hours to relieve the hard force produced during the handling process.

3.5.2 **Installation and Inspection of Machine**

(1)Transport the machine to workplace by use of fork truck



(2) Place 2 sets of 300 x 300 gradienter on the linear rail, and then adjust the four foundation bolts on the machine four bases to level position to ensure the machine is steady.

(3)Please use spanner of the main shaft to turn bottom shaft of the machine in counterclockwise direction for at least 10 rounds, if there is some exceptional voice, stop the machine at once, and please contact the service personal assigned and trained by our company or contact Richpeace company directly.

(4)Please clean the machine surface and lubricate the moving parts of the machine after installation.

(5)Please check whether the power supply is same as the machine required. Please inspect if the power of power socket is same as the plugs required.

(6)Please check if the machine rollers and thread clamp device are loose to avoid to fall off.

(7)Please check if the needle is in the middle of the pinhole.

(8)In order to avoid machine parts damage in the process of transportation and unloading, before delivery, on the front and back linear axes of the machine, there

added the fixed sleeves, after the machine is installed and before usage of the machine, the fixed sleeves should be dismantled.

3.5.3 **Machine Adjustment**

(1)Precautions for debugging the machine

The commissioning of the machine must be carried out by the company's auth orized professional and technical personnel, and must read the operation manu al and maintenance manual carefully.

(2)Confirmation of the Computer Program

The machine is electrome chanical integration product, so it is necessary to confirm the computer program before machine adjustment because all the operations are controlled by computer program.

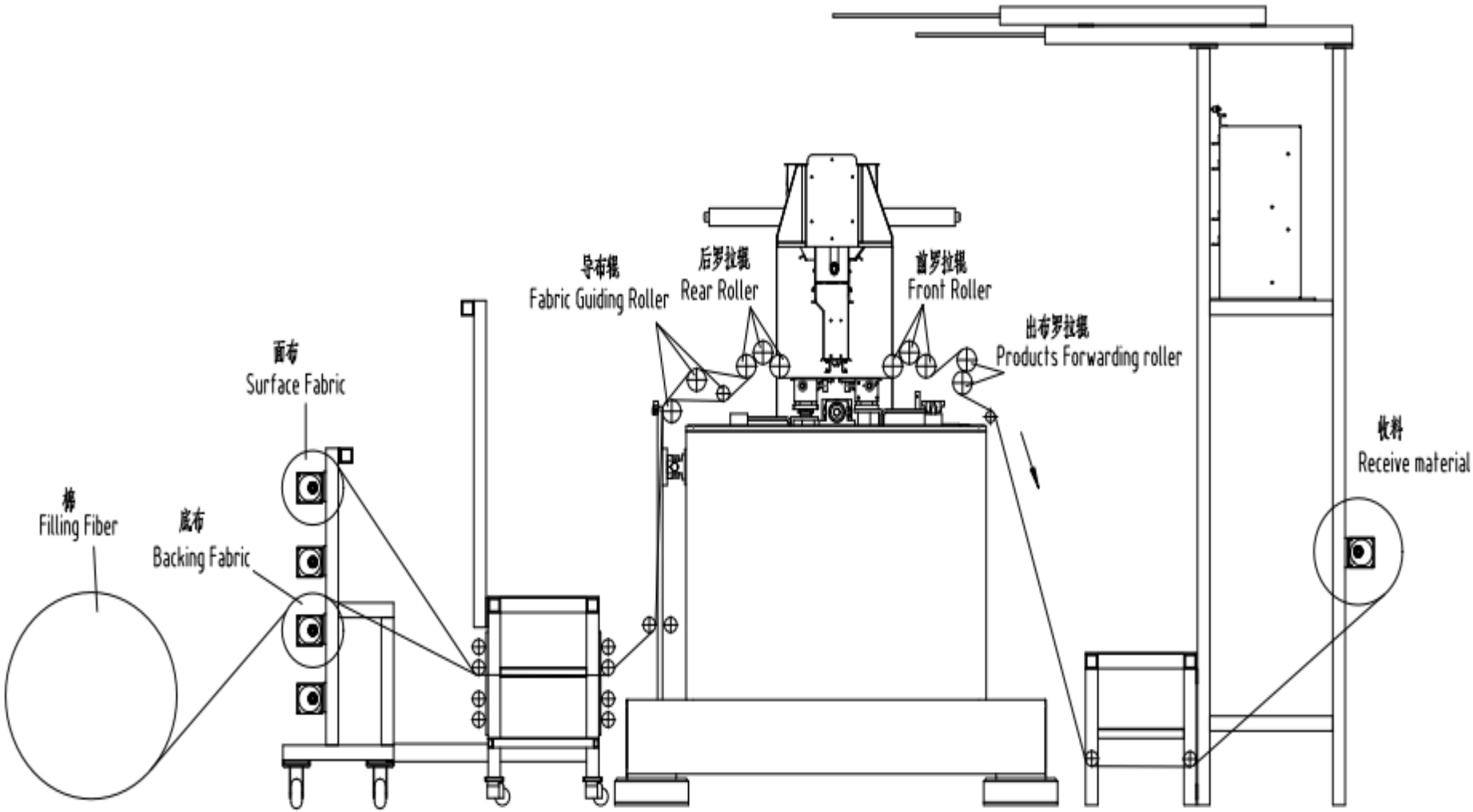
(3) Left and Right Limit of Saddletree Moving

According to operational instruction of electronic control system, saddletree x-axis of the machine moves left and right, and the travel of x-axis moving left or right is controlled by two proximity switches on both sides of computer control system. When the saddletree moves left or right to reach max position, it will stop automatically, at the same time, the operation console displays “saddletree beyond mark ”on the screen,
and at this time press reversion key to resolve.

(4)Fabric Loading and Delivery Systems

This kind of machine makes use of the y-axis roller to load and deliver fabric, front and back rollers are controlled by motor to move in positive and negative directions. By means of roller to drive fabric, y-axis infinite loop quilting is realized.

1	Surface Fabric	5	Front Roller
2	Filling Fiber	6	Products Forwarding roller
3	Backing Fabric	7	Receive material
4	Rear Roller		


棉
Filling Fiber
底布
Backing Fabric
面布
Surface Fabric
导布辊
Fabric Guiding Roller
后罗拉辊
Rear Roller
前罗拉辊
Front Roller
出布罗拉辊
Products Forwarding roller
收料
Receive material

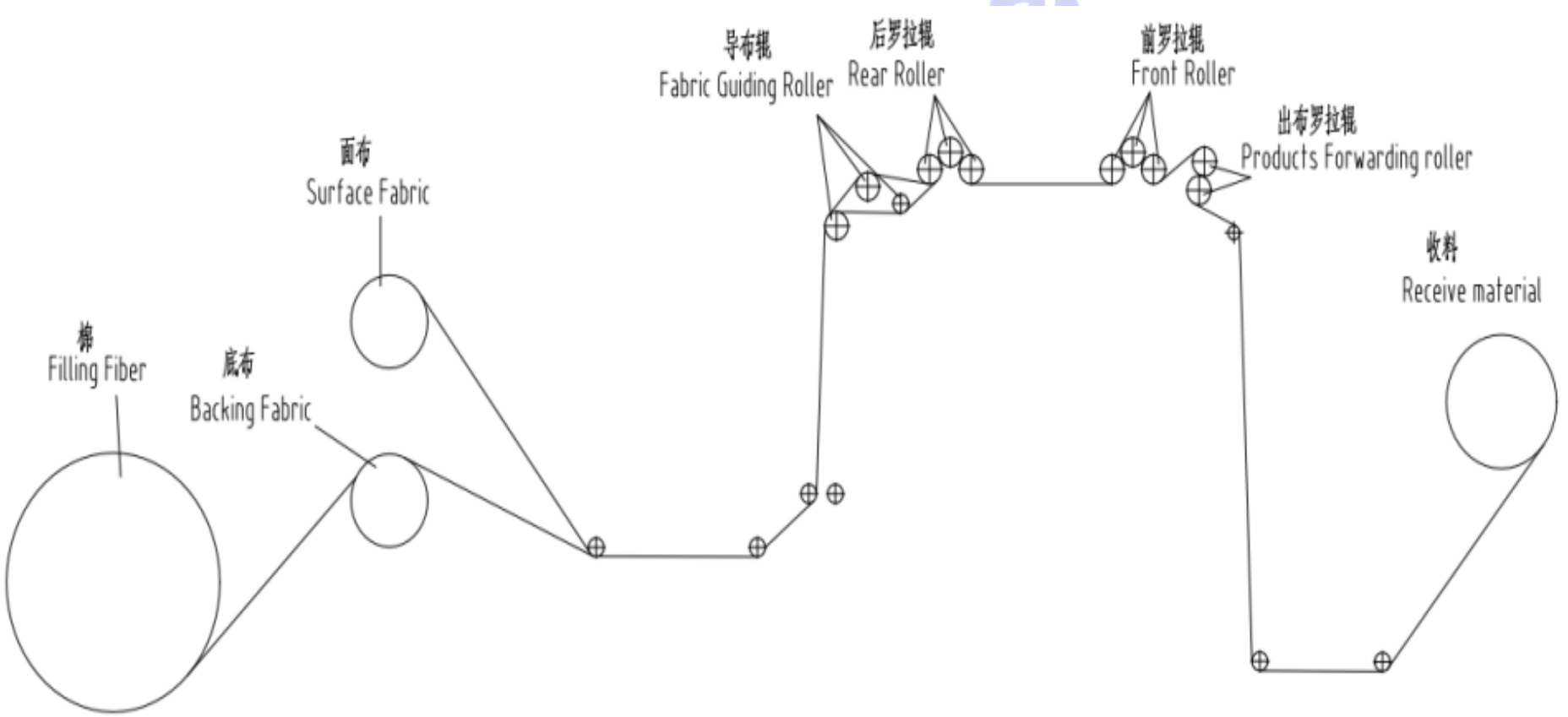
(5)Operation of upper and lower main shafts

According to the operation manual of electronic control system, the max speed of the main shaft is adjusted to 650rpm in the operation box. Then the machine starts to operate. At first the speed is set up to 1000rpm. After 3 minutes, press raising speed key to make the speed enhance to 400rpm, and after 10 minutes, enhance speed up to 500rpm and keep this speed for 20 minutes for normal operation.

(6)Fabric Loading

Place bottom fabric, surface fabric and quilted fabric on the special roller and place them on the stainless steel tube equipped with the machine, shown as following figure, load the fabric through fabric guide roller, back roller, front roller
and unloading roller to keep the fabric flat and non tilt.

1	Surface Fabric	5	Front Roller
2	Filling Fiber	6	Products Forwarding roller
3	Backing Fabric	7	Fabric Guiding Roller
4	Rear Roller	8	Receive material


棉
Filling Fiber
底布
Backing Fabric
面布
Surface Fabric
导布辊
Fabric Guiding Roller
后罗拉辊
Rear Roller
前罗拉辊
Front Roller
出布罗拉辊
Products Forwarding roller
收料
Receive material

(7) Adjustment of torque motor

Torque motor is used to change the input voltage of motor, and it produces different motor reverse torques. The torque produced by motor is relative steady under the state of constant voltage.

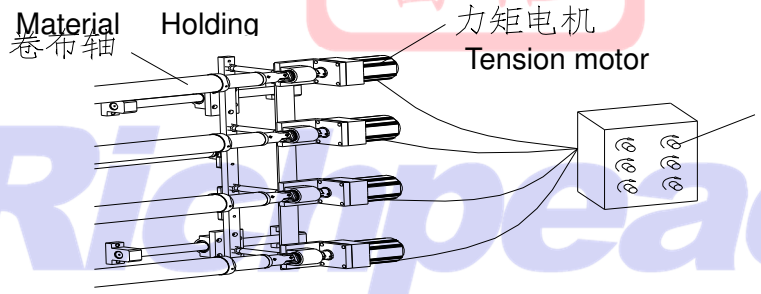
1) Every torque motor is provided with adjust knob, torque increases when knob turns in clockwise direction, torque decreases until to stop when knob turns in counterclockwise direction.

2) Adjustment of motor pull

We should adjust the pull according to the fabric material, magnification ratio,quilting design and needle stitch and so on, the power should be bigger if magnification ratio is bigger, the pull should be smaller if the magnification ratio is smaller, and at the same time the power should be bigger if the design stitch is more, the pull should be smaller if the design stitch is smaller.

Adjustment method of pull: Press Y-axis direction key to move forward continuously,the torque motor can tighten the fabric sent out by roller, and increase or decrease the pull according to the elasticity of the fabric.

Under the condition of adjustment of torque motor well done ,the effect of the quilting design will be better.



(8)Upper thread, needle threading and thread adjustment method

1) Upper thread

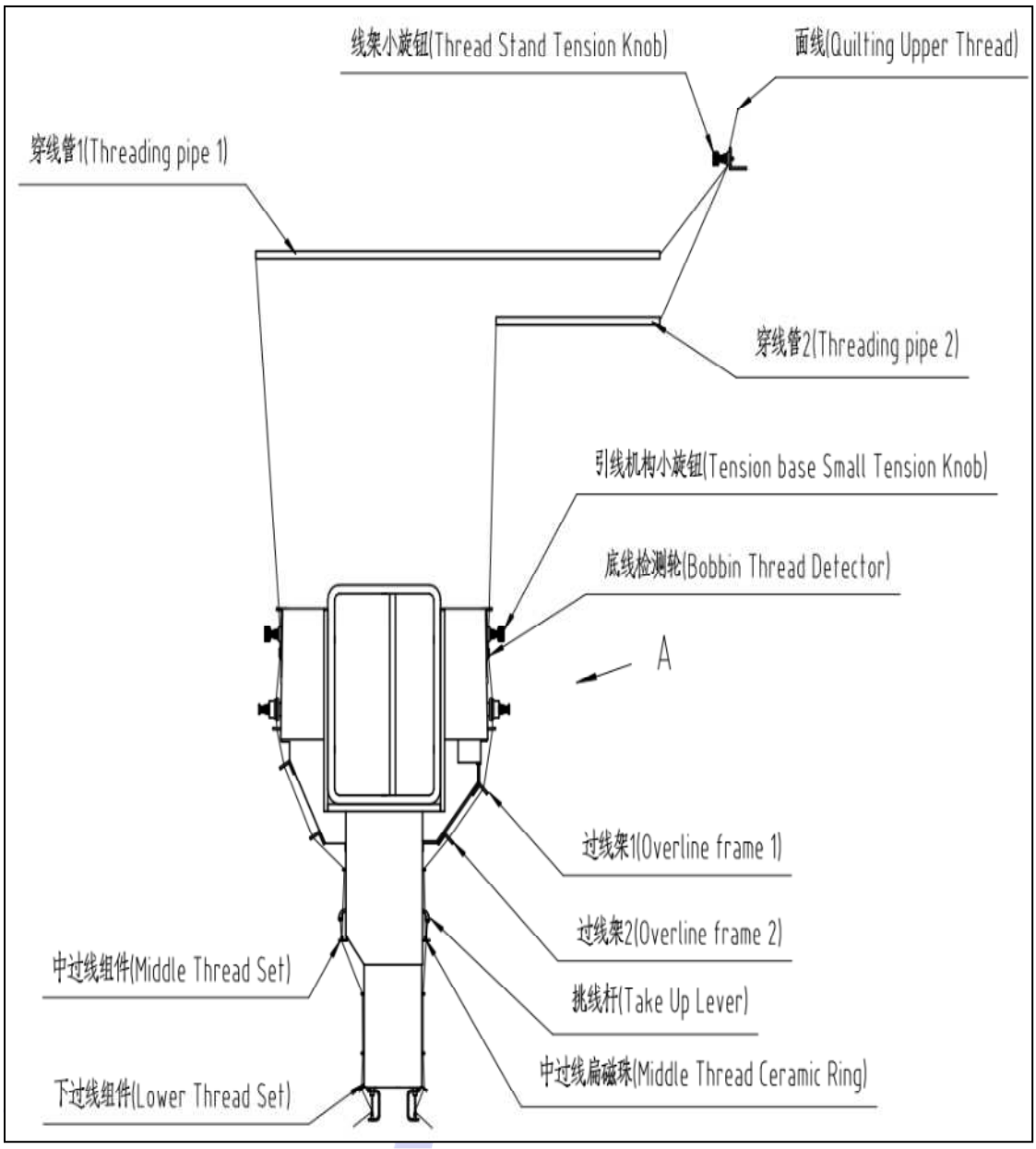
a.It is necessary to use high quality thread, and avoid to use bad quality thread or unsuitable thread;

b. Upper thread has various kinds of rayon, cotton and polyester thread;

c. Upper thread must be z twist (twist in left direction). Twist the thread in your right hand in counterclockwise direction,

and the z twist thread get tighten. Conversely, twist in right direction.

2) Threading method of the upper thread



1	Quilting Upper Thread	10	Take Up Lever
2	Thread Stand Tension Knob	11	Middle Thread Set
3	Tension base Small Tension Knob	12	Lower Thread Set
4	Bobbin Thread Detector	13	Needle

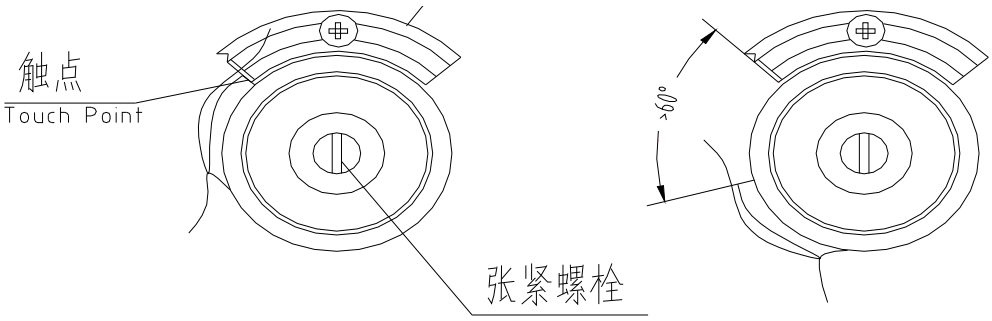
5	Thread Tension Wheel	14	Front View
6	Thread Take Up Spring	15	Tension Knob
7	Overline frame 1	16	Thread Breakage Detecting Disc
8	Overline frame 2	17	Touch Point
9	Middle Thread Ceramic Ring	18	The thread pipe

Threading sequence:
2-18-3-4-5-6-7-8-9-10-11-12-13

Attention：
The upper thread should circle one and an half round when passing through the rotary tension disk, and then passes through the take-up spring.
Adjustment of upper thread tension:The thread tension can be adjusted by means of the first tension thread course, second tension thread course and base tension. The first tension thread course and second tension thread course can be adjusted at first, and make them press the upper thread, then adjust the base tension and pull the thread easily.

(9) Elasticity adjustment of take-up spring

Elasticity of take-up spring should be that upper thread can touch with thread breakage inspection device when upper thread is loosed from hand, and when upper thread is pull-down, the rotary angle of the take-up spring with upper thread should be more than 60°, as shown in Fig .When the rotary angle is too small, that means the elasticity is too strong, we should adjust tension bolt in counterclockwise by use of screw driver. When elasticity of take-up spring is too small, we should adjust tension bolt in clockwise direction to increase elasticity. Too small rotary angle of the take-up spring could lead to thread breakage, and too big rotary angle of the take-up spring could lead to stitch unstable. The tension adjustment of the take-up spring should be combined with tension adjustment of the upper thread.



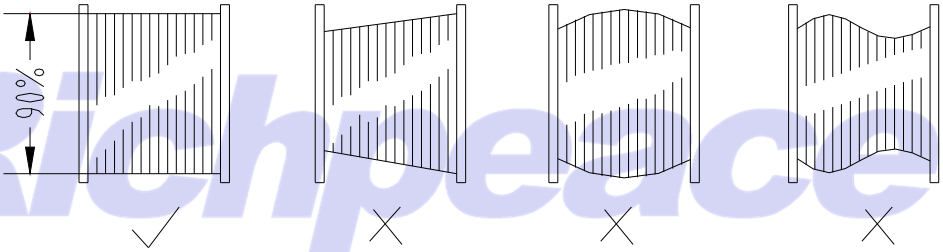
(10) Bobbin threading

1) Bobbin thread

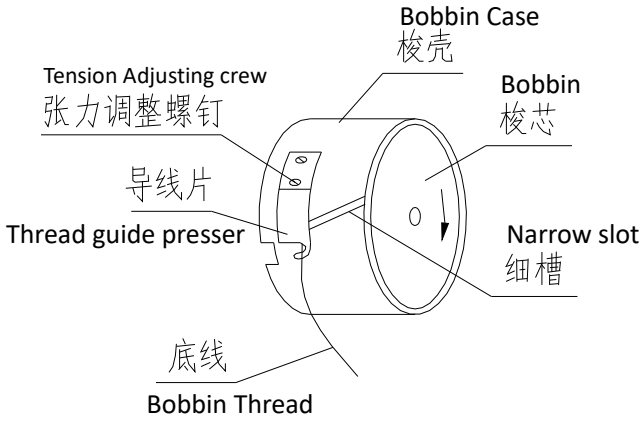
It is necessary to use high quality polyester-cotton(t/c) and terylene bobbin thread, and do not use bad quality bobbin thread to avoid thread breakage and inferior quilting. Bad quality bobbin thread could lead to embroidery non-uniform, stitch unevenness and bobbin thread turning over and so as to have bad Influence on embroidery quality.

2) Adjustment of bobbin thread

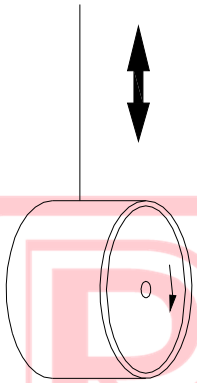
Use the bobbin thread winder equipped with the machine to wind the bobbin thread around the bobbin, as shown in Fig.10. Attention: the bobbin thread around the bobbin could not be more than 90% of the bobbin capacity, too much bobbin thread could lead to unsmooth carrying course as shown in Fig.10, the left side winding of following figure is good, and the other three windings are not good. These windings can result in thread breakage, thread locking and bad embroidery.



3) Bobbin threading and thread tension adjustment



Put the finished bobbin thread into bobbin case.Then put the bobbin thread through the tiny slot, and pull it go round the thread guide device. Check if the bobbin rotates in direction as shown in fig.10, the bobbin should run smoothly inside the bobbin case. Adjust bobbin thread tension by means of rotating the adjusting screw, and the suitable tension of the bobbin thread is shown in fig.12. If tension is proper, the bobbin thread can be pulled steadily out of the bobbin case. Pull the bobbin thread out of the bobbin case about 50mm, but not too long.

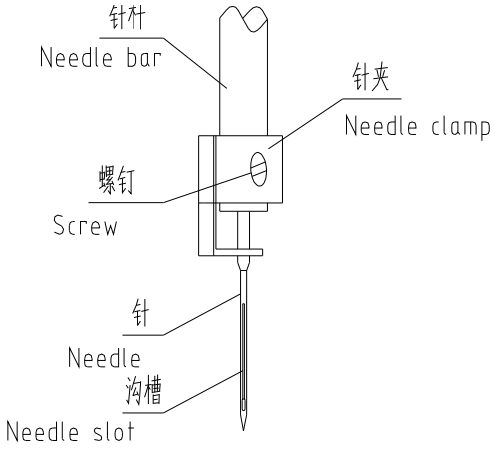


3.5.4 Adjustment of machine parts

(1) Needle

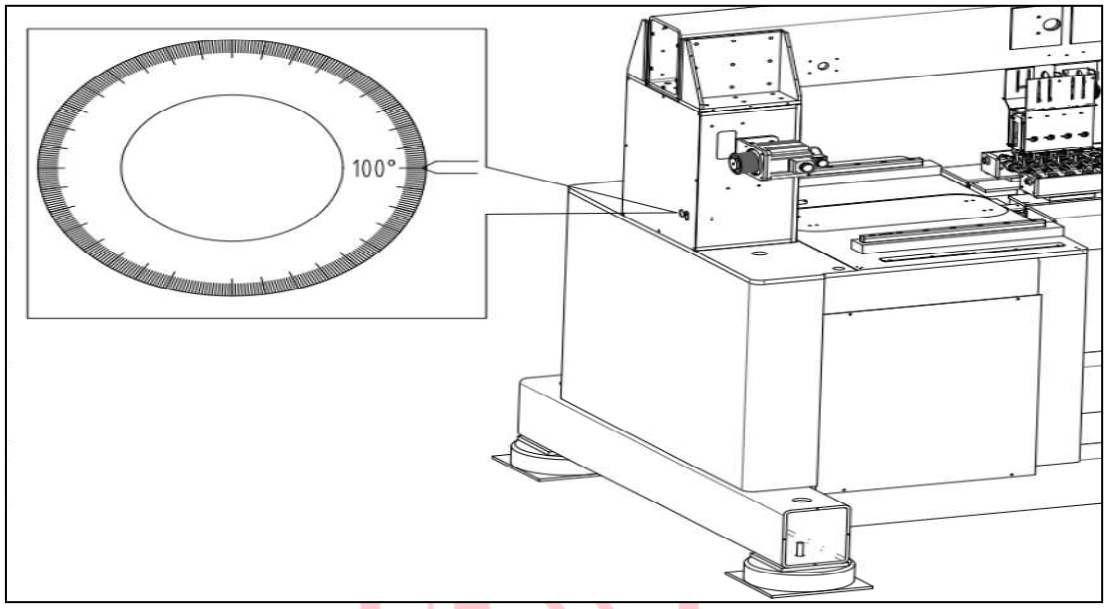
1）Type DB-K5 14#—18# needles are suitable for the use of the machine, please choose high quality needle for the machine, and we can also choose the needle according to fabric texture.

2）When installing the needle, keep the grooved surface to the operator or worker and incline of the needle is not permitted; the top of the needle should be touch the upper end of limited needle bar, the needle clamp screw should incline 30°- 45° towards the right and tighten the bolt on it，as shown in following figure.



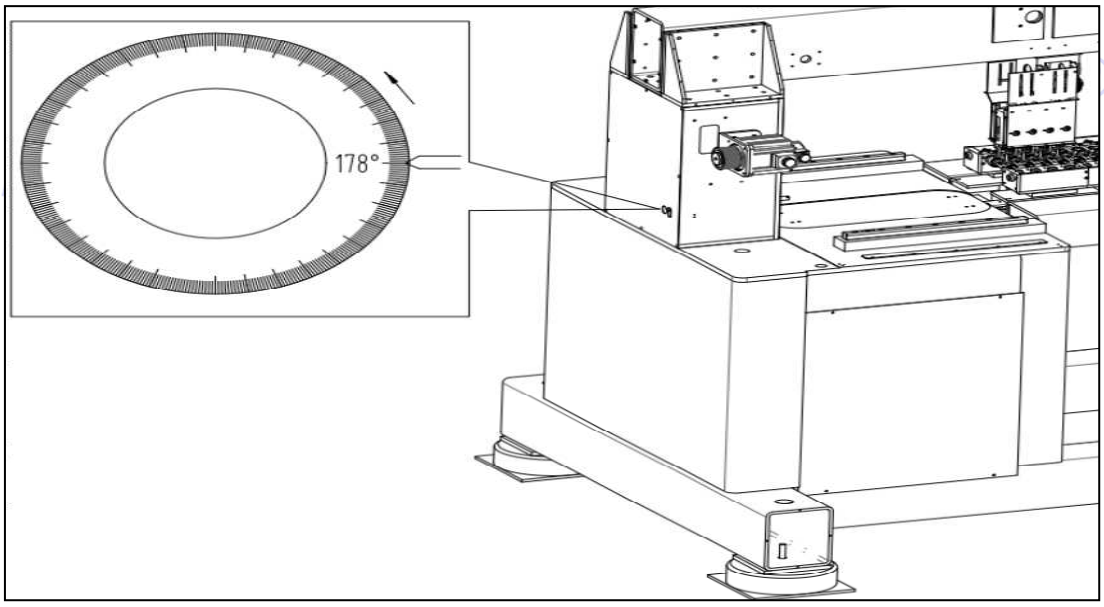
(2) Stop position of the machine

The machine stop position should be at 100±2°，and the dial scale is mounted on the lower shaft in the left panel box of the machine as shown in following figure.



(3) Needle Lowest Position

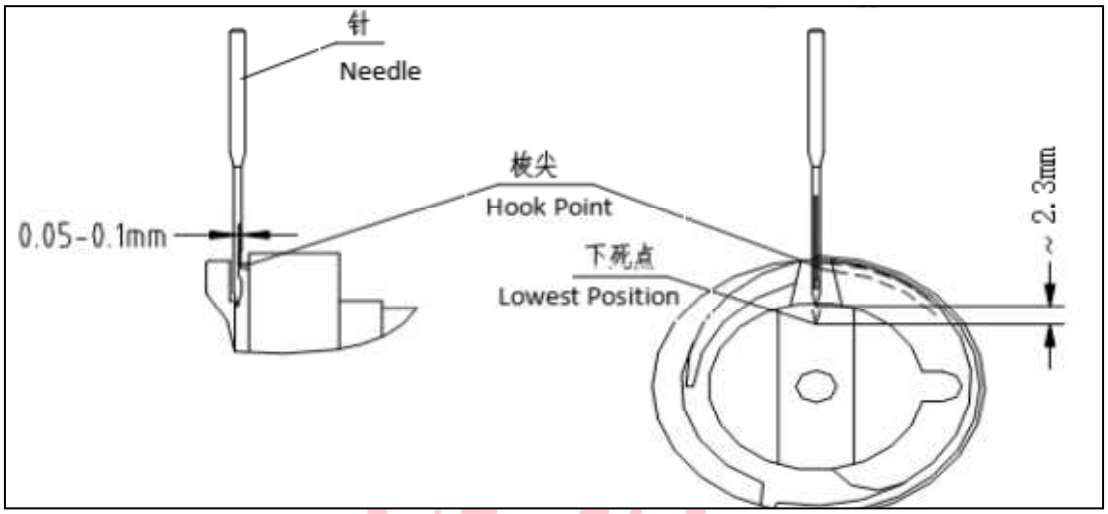
As shown in following figure, run the dial scale in counter clockwise direction to 178°, this degree reaches the bottom position of the machine needle, that is lowest point position of the needle.



(4) Position of needle and rotary hook

When the dial is running to 200°—203°, as shown in following figure, the position will

be higher 2.3mm than bottom position of the needle. Keep 0.05-0.1mm clearance between the needle and top of the hook. The relative position between needle and rotary hook is very important to quilting and embroidery quality, thus we should adjust the position carefully.

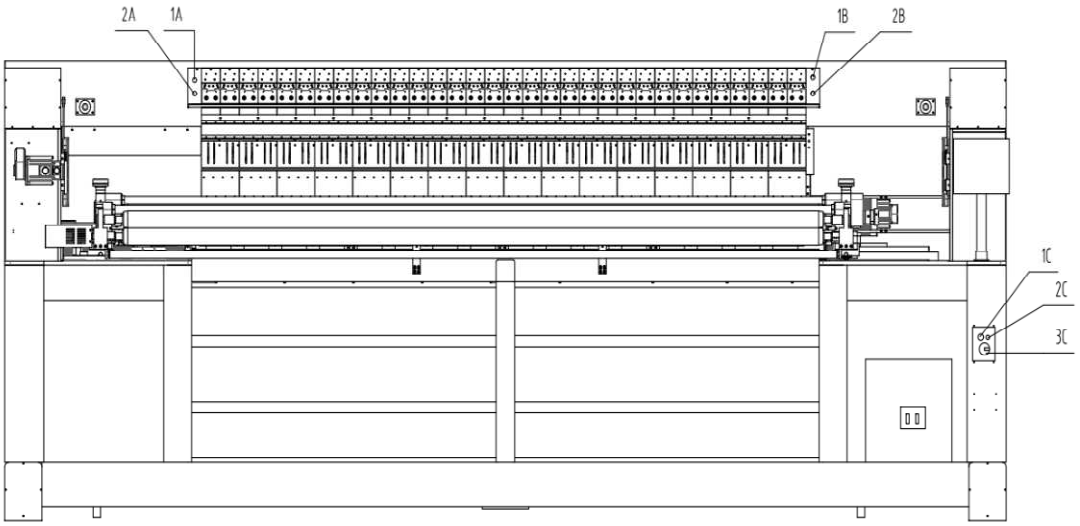


3.5.5 Quilting Operation

(1)Please read the user manual carefully before operation, and sufficiently understand the contents in this manual as well as relative relationship between parts of the machine.

(2) Panel operation of control box and purpose of key-press

(3) Start-up and stop of the machine



1A, 1B	Start-up Switch (Green)

2A, 2B	Stop Switch (Red)
1C	Upper electric indicator light
2C	On the electric button
3C	Power Switch On

①Press the Power switch (ON) (black) in the figure, start-up the machine.

②Press the Start-up switch (green) in the figure, start to embroider.

③Press the Stop switch (red) in the figure, stop embroidery.

④Press the Power switch(OFF) (red) in the figure, stop the machine.

⑤Operators work in the back of the machine, in case of emergency can press Emergency Stop switch (one on either side of the machine cross-beam) to cut off power supply.

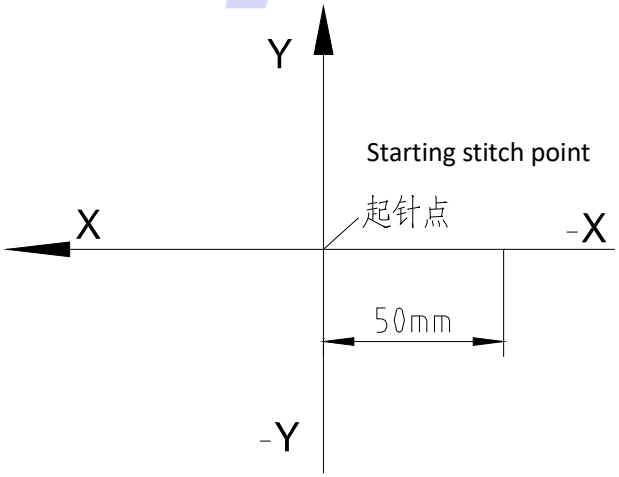
Attention：Please rotate Emergency stop switch for reset at first before start-up the machine next time.

(4) Confirmation of the quilting design

① The design should be made according to the needle distance between two heads, sending into computer operation box by use of the software or u-disk.

② The start and finish stitch point of the design should be the same in Y axis

③ Confirmation of Starting stitch point: to confirm the frame dimension of the design as shown in figure 18 before start embroidery:



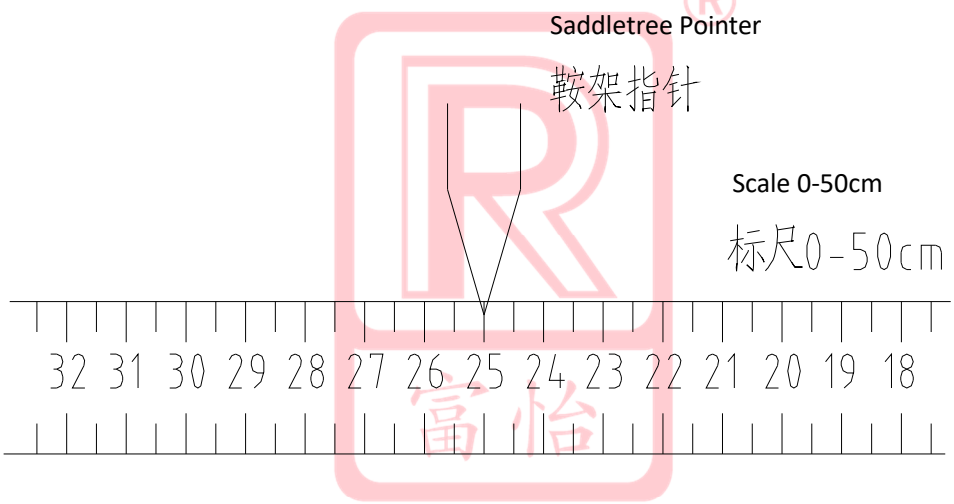
Explain: design width dimension in X：（+X）+ （-X）= design width

design Y-direction dimension：（+Y）+ （-Y）= design height

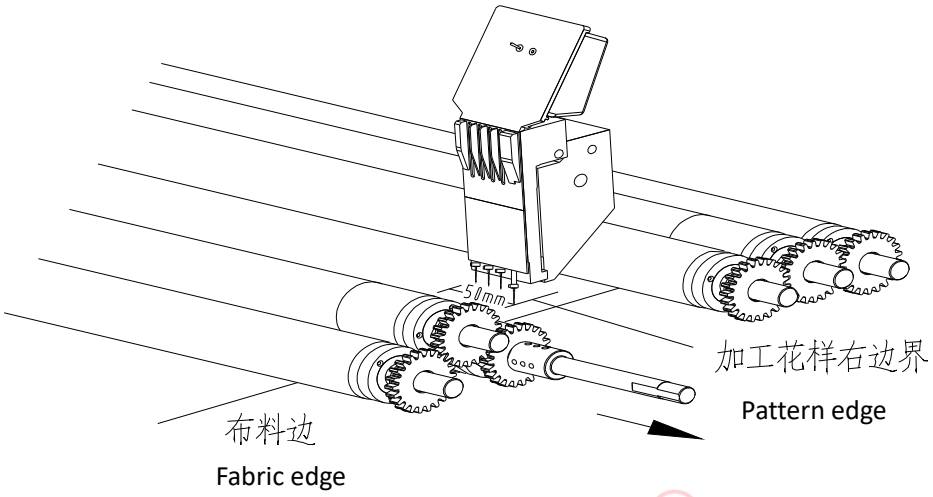
The pattern starting stitch point position can be figured out according to the dimension of the design, for example, “-X” is 50mm, that means that first position should be 50mm from the right position of the design.

(5) Confirmation of saddletree position

After the fabric is loaded normally, please make sure that the fabric is on the middle position of roller. We can check the travel indicator scale, and the pointer of the saddletree aims at the middle position as shown in following figure.



Location of the start point: Keep the needle of right head aim at the right side of the fabric, as shown in following fig.20, remember the position reading as show on the scale. Then move saddletree “-X” distance to the right side, as above example, moving right for 50mm, the reading should be the start position or start point of embroidery.

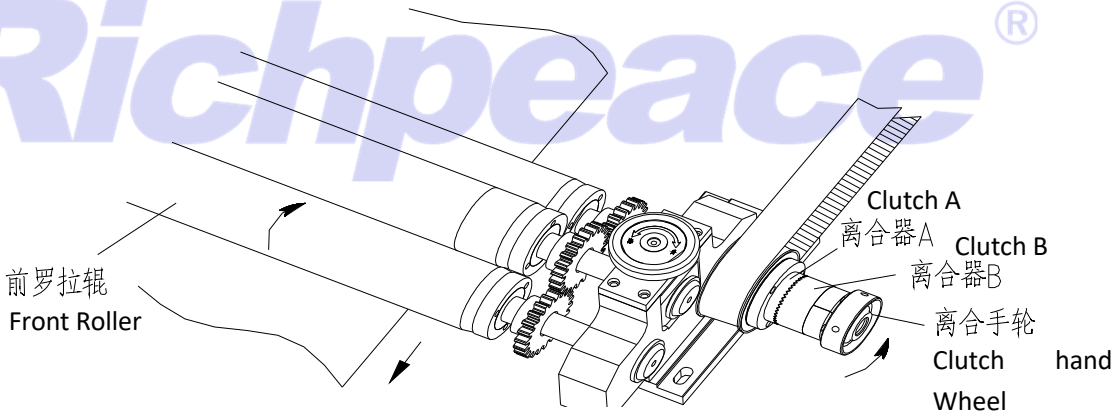


(6) Fabric Pre-tighten

After the fabric is loaded, fabric loosing situation between front roller and back roller is often appeared, this is because the fabric does not tightened, even though the fabric is tightened, the tension requirement of the quilting and embroidery are not met, thus the machine has been equipped with special tightening system to tight the fabric.

Using method is as follows:

① As shown in following figure, under the condition of that the machine is turn on, y-axis servo motor is in locking state, at this time, run the on-off hand wheel to rotate in counterclockwise direction and let the clutch A, B ratchet to separate.



② As shown direction in following figure, rotate the front roller to tighten the fabric by hand, and the fabric is tightened under the action of roller.

③ Further rotate roller forcibly, when tension requirement of the fabric is satisfied,

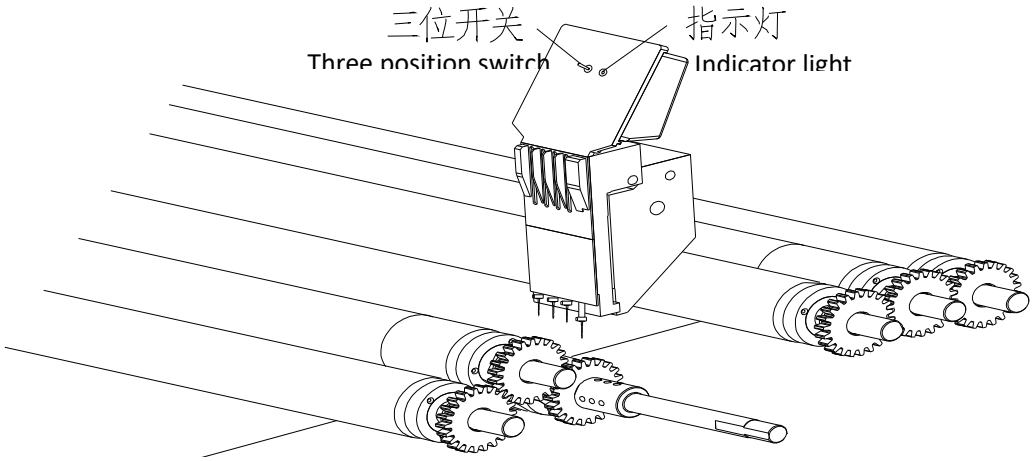
tighten the clutch hand wheel in clockwise direction to let the clutch A, B ratchet to connect, use the special rod to insert in outer margin hole of clutch hand wheel to lock.

(7) Key points of operation

① Patterns input: input the programmed embroidery patterns into the computer memory by means of disk.
② Patterns choose: Read out the embroidery patterns from the computer memory to use for embroidery.
③ The machine y-axis is repeat quilting, because the length of prefabricated design is limit, if we want to realize continuous repeat quilting and embroidery, we must choose “repeat embroidery” according to the embroidery operation described in computerized quilting and embroidery machine electronic control manual. Under the interface of embroidery, “repeat embroidery” appears to show to enter into this function, blank shows to withdraw this function.
④ Set start-up point: Make sure that the embroidery patterns are in the starting position on the fabric.
⑤ Border inspection: Check whether the starting point of the embroidery pattern on the embroidery fabric is appropriate.
⑥ Set start-up mode after color sequence and color changing:According to the patterns and color thread to set up the sequence of needle changing and start-up mode of manual or auto after the color is changed.
⑦ Thread breakage inspection: This machine is provided with the broken thread detection function. When the thread breaks, the machine will stop automatically, and the indicator lights to show that the thread broke, as shown in following figure.

Upper thread breakage inspection is shown in fig.9, when upper thread breaks, the take-up spring will lose tension to touch the sensor so as to generate short circuit signal, and the machine stops to operate automatically by means of control system.

Bottom thread detection:When bottom
thread break or used up, the thread breakage detecting wheel doesn't run and can't generate pulse signal, and the machine stops to operate automatically by means of control system.



⑧ Mending embroidery：When thread breakage or no bobbin thread cause stitch missing，the machine can return to the required position to mend the stitches.
Method of mending is: as shown in above figure, push the three-position switch upward, at this time the indicator lights, press the stop switch to let fabric back to required mending position, and then loose stop switch and press start-up switch to carry out the mending embroidery.

3.6 Electrical specification

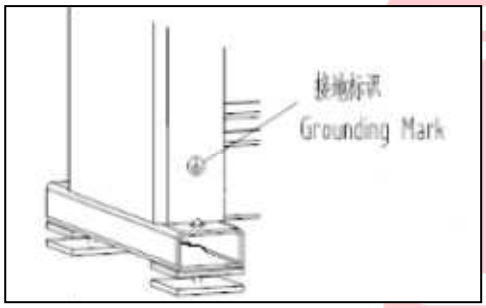
Frequency: 50/60 Hz

Voltage: 220 v / 380 v

Power: based on nameplate

3.7 Electrical Grounding

The device must be properly grounded to ensure safe and stable operation.



3.8 Physical parameters

Length * width * height - see the nameplate of the machine or ask the salesman.

Equipment weight: - See the nameplate of the machine or ask the salesman.

3.9 Machine operation notic

1) This macine is used for the stitching on the textile semi-finished or finished articles, or other similar embroidery materials.
2) Only relevant people are allowed to enter the machine working environment to prevent irrelevant people from using the machine.
3) Machine must be operated by the trained people.

Warning:

follow instructions below to avoid accident :

1) Before operate the machine, must read this operation instruction and be sure fully understand the content.
2) Wear appropriate clothes to operate.
3) Before start the machine, be sure no people around the machine.

During the operation

1) DO NOT let your face or hands approach the moving parts. The places around the needle bars, rotary hooks, take-up levers, main shaft pulley are very dangerous.
2) DO NOT disassemble the covers of the shafts and the pulley, and DO NOT start the machine if the cover is removed.

During the machine adjustment

1) Switch off the main power before opening the computerized control box.
2) Please stop the machine when pulling the thread or checking the embroidery.
3) Please power off the machine when turning the machine main shaft by hand.

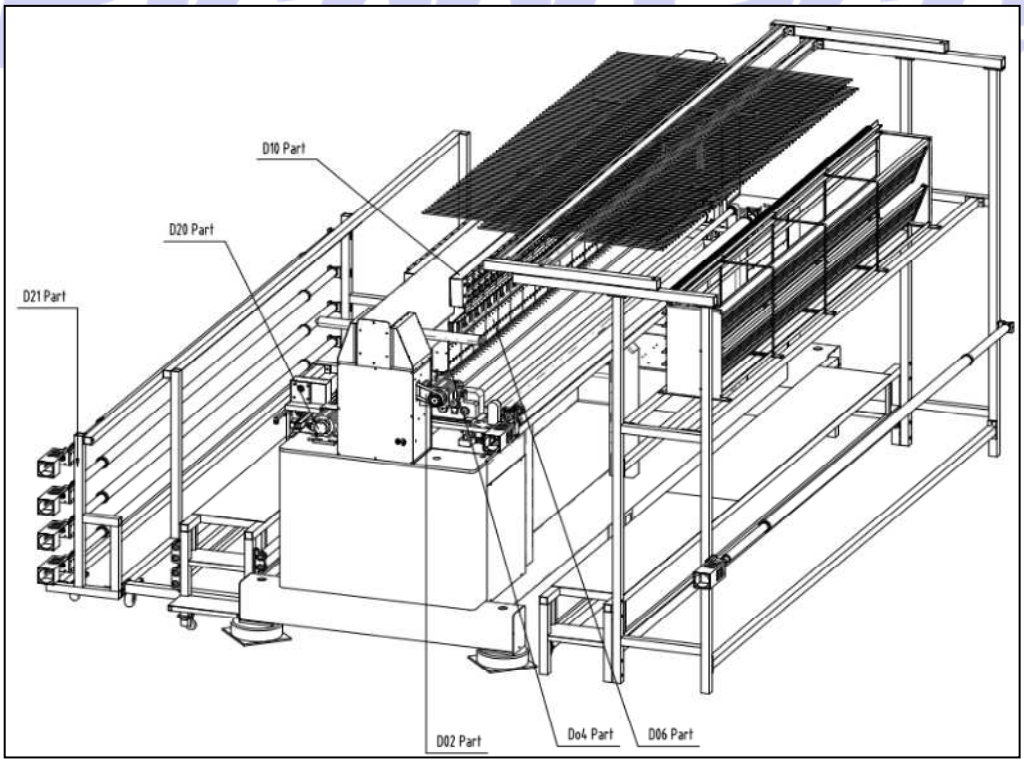
More notices

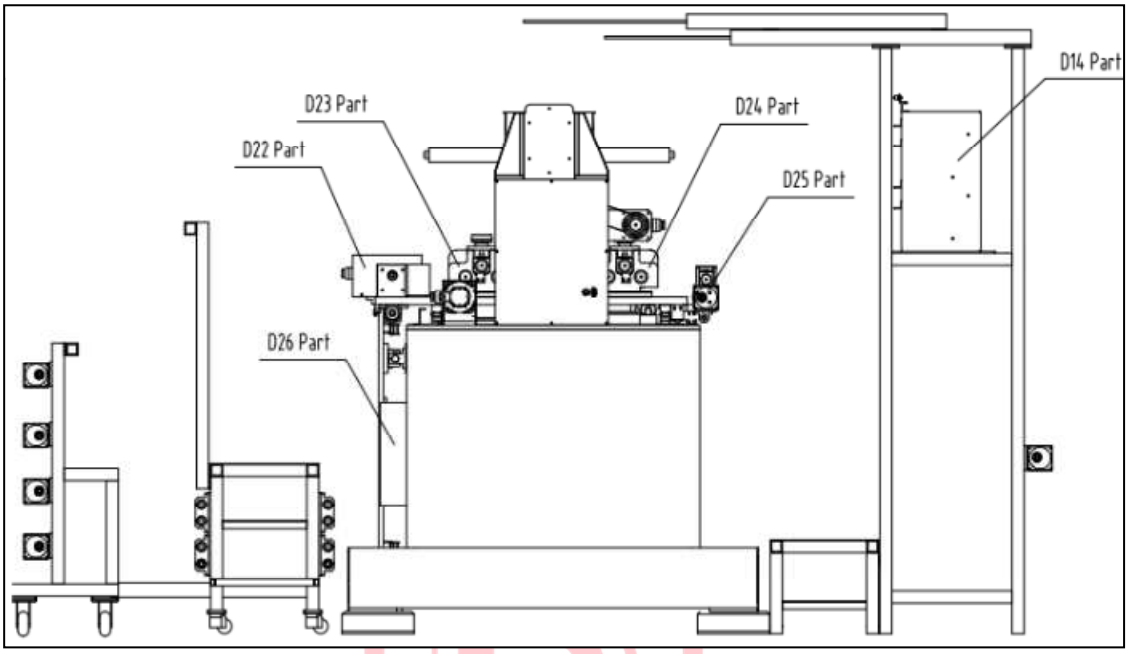
1) Do not put sundries on the roller body of the machine and do not lean on the roller body;
2) Do not use bent needles;
3) Do not use the lever as a handle.

4. Main structure

D01part: Stand

The main parts of quilting embroidery machine, including the frame, beam, roller body and other parts, are all assembled on machine rack.





D02 part: Main shaft driver system

Main shaft driver system transfers shaft motor power to upper shaft and lower shaft (with same rotary direction) by means of multi-wedge transmission system to complete the embroidery.

D04 part: Rotary hook

It performs two functions: hook rotary and thread trimming.

(1)Drive rotary hook to operate: through two spiral bevel gears to change direction of 90 ° to drive the rotary hook shaft to rotate in twice speed of the main shaft. The hook point hooks the upper thread and lets it to slip on the hook case, thus upper thread and bobbin thread form a loop to perform a process of embroidery.

D06 part: Needle Driving

(1)It drives the needle bar to move: upper shaft drives reciprocating slider to move up and down along vertical axis by means of crank link mechanism so as to drive the needle bar to move up and down to perform embroidery.

(2)It drives the thread take-up lever to move: upper shaft rotates at the same time to drive cam and sector gear on the side of the crank, and it makes sector gear rotate an half round so as to drive the thread take-up lever to work.

D10 part：Tension Base

Individual tension base, its function is used to adjust the upper thread tension each needle position has its own thread course.

By means of loose and tightness

Adjustment of thread course knob,stitching can be ensured to fit to embroidery, and ensure that thread breakage inspection function is right so as to decrease the rate of thread breakage.

D14 part:Thread Stand

Thread stand,it consists of thread stand plate,thread guide and small knob, it is used to place embroidery thread,separate the thread course and adjust the tension of embroidery thread.

All tread spool are located on tread rack, the tread is feed to needle via tread path.

D17 part:Start-Stop

Start-up and stop mechanism, it consists of start-up and stop buttons.the green button is start-up button, when the machine stops, press the green button to start the machine to embroider;when the machine embroiders,press the green button to embroider in low speed; red button is stop button, when the machine embroiders, press the red button to stop

D20 part:Saddletree

saddletree is installed on the machine stand, the servo motor drives saddletree module to move left or right, and it also drives roller on front and back to rotate pros and cons to perform X — axis movement of fabrics and Y —axis front and back loading of fabrics.

D21 part:Material Feeding

Fabric support mechanism, fabric support mechanism consists of a upper support, two middle supports and a bottom support, it is used to set surface cloth, quilted cloth and bottom fabric,each bracket roller is equipped with moment motor to control the fabric tension manually.

D22 part:Fabric Guider

Fabric guide system, fabric guide system consists of fabric guide roller and fabric distributing roller, it is controlled by moment motor to drive stainless steel roller by means of chain wheel and chain to guide and feed the fabric.

D23 part：Rear Roller

Rear roller mechanism, the back roller mechanism consists of three rollers, its rotation is controlled by Y–axis servo motor,transmission between rollers is controlled by gear mesh, and the friction size between rollers is controlled by back roller extrusion or loosen. Outside the roller is wrapped with type spirally, the width of the type is 50mm .

D24 part：Front Roller

Front roller mechanism, the front roller mechanism consists of three rollers, its rotation is controlled by Y–axis servo motor,transmission between rollers is controlled by gear mesh, and the friction size between rollers is controlled by means of upper roller up and down.

The front roller is provided with tension hand wheel with ratchet, the fabric loosing and tight can be controlled by rotation of front roller, and then the fabric is tightened by use of tension hand wheel.

D25 part：Forwarding Roller

Fabric unloading system, Fabric unloading system is consists of two rollers, rotation of the bottom roller is controlled by special moment motor,upper roller holds down the upper roller by its own weight, and the fabric is sent out by friction.

D26 part：Feeding Controller

Material Feeding control box, s used to control the motor torque of fabric support system, fabric guide system, fabric unloading system.

5.Functions and features

1) **Thread breakage detection:**When thread breaks, the machine can stop automatically,the indicating light will be on, showing the head of thread-breakage.

2) Mending embroidery: When Thread breakage or no bobbin thread causes stitch missing, the machine can mend the stitches:When certain head is mending, all other heads will stop to wait for working synchronously after the mending work of certain head is finished.

3) Pattern storage: Up to 200 patterns can be stored in computer and users can choose these patterns according to requirements.

4) Data output: Patterns stored in computer can be copied as the same patterns and stored in a disk.

5) Zoom in and zoom out: The range of patterns can be changed between

50%—200%, taking 1% as increment. This function can also be used in X (or Y) axis direction independently.

6) Pattern coordinate conversion: The pattern can be rotated between 1°—89° according to requirement.

7) Pattern direction conversion: The direction of the pattern can be change Between 0°-360° according to requirement.

8) Frame area and limit inspection：

Displays the stitch quantity，the color quantity and the maximum area and limits the frame as well as adjusts the start point automatically when the frame limit switch is on.

9) Auto repeat pattern：Patterns can be repeated to embroider at maximum 99 times along X axis and Y axis，the start point can be adjusted automatically.

10) Auto back to start point：When a pattern is finished，the machine will move the patterns along with the frame to a convenient position，when next embroidery is started，frame will be back to start point automatically to embroider.

11) Pattern editing and copy：Selected pattern can be copied and split，parts of parameters can be deleted.

12) Patterns deleting：The selected pattern can be deleted from the computer，and all the designs can be cleared from the computer for the sake of storing the new pattern.

13) High speed frame moving：When embroidering, according to the requirement，the frame can move at a high speed under the conditions of no rotation of the main shaft or no movement of the needle bars，the frame will move to the selected needle position automatically.

14) Low speed frame moving：When doing embroidery，the frame can move along with the stitches under the conditions of no rotation of the main shaft or no movement of the needle bars.

15) Jumping stitches: The needle can jump over the area where no embroidering is needed, needle bar do not need to drop, and it starts to stitch when it meets flat embroidery.

16) Moving the frame manually: Press the "move frame" key, the frame can be moved to the required position.

17) Frame limit protection: When the frame overruns the limit, it will stop and the machine will stop automatically due to the switch for the limit.

18) Adjusting the main shaft rotation speed manually: The speed of the main shaft can be adjusted according to the needle stitch length.

19) Stitching frame& stitching open line.

20) Showing the stitch qty: The embroidery stitch qty can be observed and cleared to Zero.

21) Pattern storage for long term: Patterns in the computer can be saved even power is off or machine stops.

22) Choice of stitching head: Head Interval Stitching can be done when needed, just turning off the heads unneeded; or only one head can do embroidery when needed.