



**Richpeace**<sup>®</sup>

# 多色绗绣机产品说明书 V1.0

Multi color quilting embroidery  
machine manual book V1.0

富怡

**Richpeace**<sup>®</sup>

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多色绗绣机使用说明书 V1.0  
Multi color quilting embroidery machine  
manual book V1.0



- Richpeace**®
- 非常感谢您选购富怡产品;
  - Thank you for choosing Richpeace production;
  - 在使用之前请仔细阅读本说明书，正确安全的使用本产品;
  - Please read the instruction carefully before use and use the product correctly and safely;
  - 请妥善保管此说明书;
  - 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.

### Modell:

Four color quilting embroidery machine

### Optional devices:

Single sequin device (left or right side)

Double sequin device (left or right side)

Boring device

Tracing cording device

Auto fabric feeding device

Auto fabric collecting device

Fabric roller

Other options

## 1. 简介

富怡电脑绗绣机是专为生产高附加值的绗缝家纺与绗缝服装产品而设计制造，可用于生产诸如：被子，枕套，床罩，睡袋，服装，外套等。

### 用途:

富怡电脑绗绣机为工业用绗缝刺绣机，应用于家纺、服装等行业，主要适用于对棉、涤棉等织物一层或多层，按预先设定绗绣花样进行各种不同花型的绗缝和绣花。

### 型号:

四色绗绣机

### 选配:

单侧单亮片装置（左或右）

单侧双亮片装置（左或右）

雕孔装置

跟踪绳绣装置

自动送棉装置

自动收料装置

卷布装置

其它选配装置

## 2. Important safety instruction

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




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

## 2. 安全注意事项

正确的操作和适当的保养可以确保机器的安全，在使用本机器前，请仔细阅读使用安全注意事项。

操作和维修时必须严格遵守下面的警告标志及信号标记，确保安全。

## 2.1 Signal word definition

 <b>DANGER</b> 危险
Indicates that there is a lot of danger of death or serious injuries if the instruction is not observed.
 <b>WARNING</b> 警告
Indicates that there is a likelihood of death or serious injuries if the
 <b>CAUTION</b> 注意
Indicates a potential a hazardous situation which, if not avoided, may

## 2.1 标志定义

 <b>DANGER</b> 危险
如果会引起严重人身伤害的必须表明危险字样。
 <b>WARNING</b> 警告
警告字样表明可能会引起人身伤害。
 <b>CAUTION</b> 注意
潜在危险，可能导致人身伤害或机械损坏。



Prohibited items



Item that must be followed carefully to ensure safety operation.



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




严格禁止事项



小心遵守要求，确保运行安全  
在注释中会标注详细资料及补充说明。

 <b>WARNING ATTENTION</b>
 <b>HIGH VOLTAGE</b> Can cause shock, burn, or death. 高压可能导致触电，烧伤或死亡。

 <b>WARNING ATTENTION</b>
 <b>Moving parts can cause severe injury.</b> 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.

## 2.2 警告标签及说明

为安全起见，必须遵从标签的指示，请勿涂抹或者撕毁机器上的警告标贴。

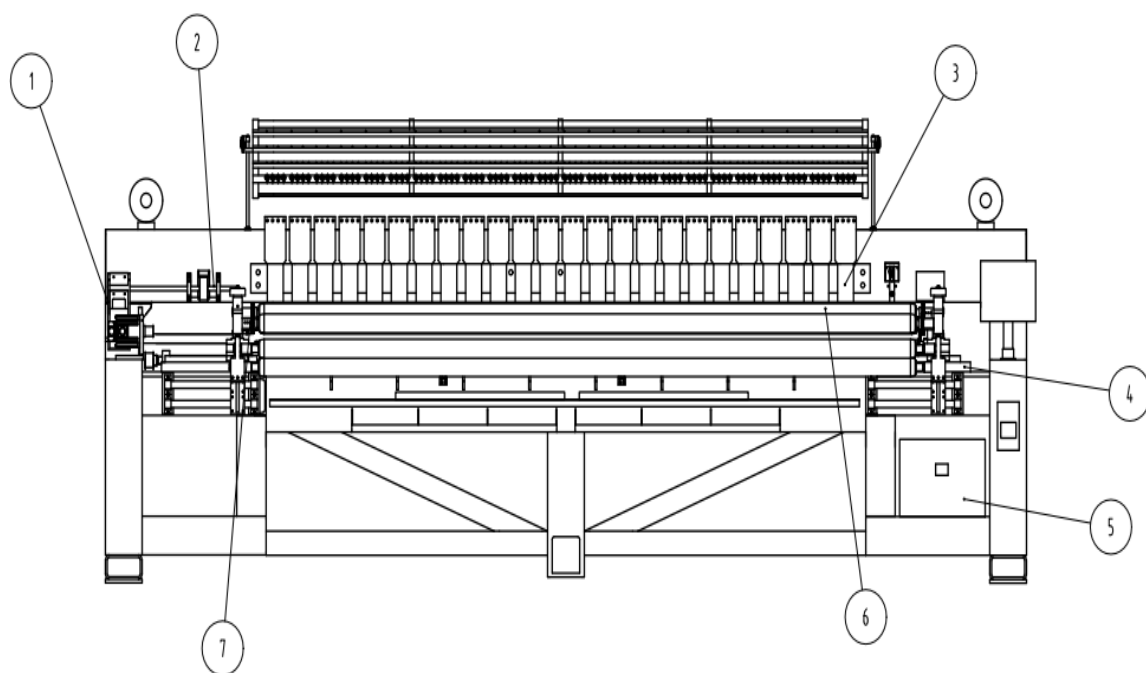
Do not detach these labels,nor make them illegible by painting,etc.

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

注意：如果警告标贴缺失，请告知本公司。

### 2.3 Warning tag illustration

### 2.3 警告标签常见位置图



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①Shaft、belt	轴、皮带
②Motor、shaft	轴、电机
③Needle bar box	针杆箱
④linear guild rail system	直线导轨
⑤electric control panel	电控箱
⑥Plastic curtain rod	软帘管
⑦gear	齿轮

### 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.

### 3. 安装

#### 3.1 安装注意事项

在坚固的地板上安装机器

机器安装所在地板必须坚硬强固,避免安装在脆弱的楼板上。如地板为钢板结构,尽可能将机器置于梁上。

避免噪音污染,车间内部墙壁、天花板、地板尽可能采用隔音和吸音的材料和结构。

防止阳光直射机器长时间暴露在阳光下会引起机器掉色、机器缺油、机器性能变化,光栅等光器件误操作等甚至导致机器损坏。因此需要采取必要的遮光措施。



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).

保留足够的维护空间为操作维修的便利，机器的四周应该预留至少 50cm 的空间。

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.

避免粉尘和湿气，粉尘和湿气会导致机器脏污、生锈和漏电，尽可能将机器置于空调房间，并定期清扫工作场地。空调风不可直接吹向机器，避免绣线蓬乱。

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

Environment requirement

Humidity:

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

Ambient

temperature:

5 to 40 °C (during operation),

-10 to 60 °C (during storage)

Others:

环境要求

相对湿度: 30-95%;

环境温度:

5-40°C (工作)

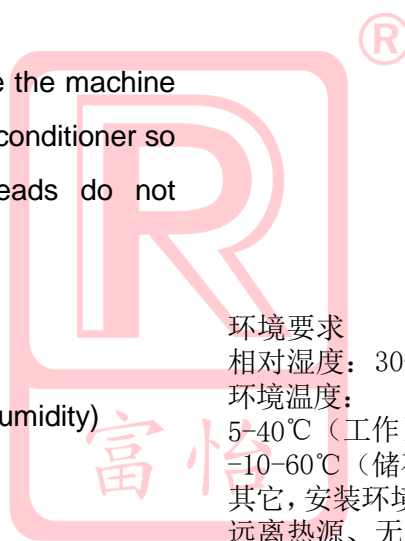
-10-60°C (储存)

其它, 安装环境必须卫生, 通风良好、远离热源、无腐蚀性气体的室内; 地面坚固平整, 附近无明显振动源。

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.

机器的安装须在熟悉安装工作和安全规则的人指导下进行。

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



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### 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 accident 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.

### 3.2 平面布置

准确机器尺寸请联系富怡销售人员或代理商。

### 3.3 拆箱和核对内容

#### 3.3.1 拆箱

当机器到达目的地，确认机器没有倒置，包装完好无误。如果发现机器有损坏时要保护现场，请承运商检查损坏的地方并且拍照，通知保险公司。

#### 3.3.2 核对内容

如果包装完善，请清点装箱单内零件，如果有什么问题，请联系本公司或者本公司授权的安装人员。

### 3.4 机器的搬运

3.4.1在搬运机器时，为防止发生人身事故或机器损坏。须遵守以下事项：

(1)在使用叉车搬运机器时，叉车必须能完全承受机器的重量及大小。并且在搬运机器的过程中要严格保持机器的平衡；

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

(2) 在搬运机器的过程中，确保机器周围危险的区域内，尤其是机器下面无人；

(3) When using a crane to carry the machine, the crane should have enough lifting force, only when the forklift can not be used, the crane can be used;

(3) 使用起重机搬运机器时，起重机应有足够的吊装力，只有在不能用叉车时，才能用起重机；

(4) The Nylon Sling should be used when using the crane to lift the machine, sling angle should be less than 40°.

(4) 使用起重机搬运机器时，须用尼龙吊索，吊索角度不大于40°。

### 3.5 Machine on site adjustment

### 3.5 机器的就位调整

#### 3.5.1 Installation Notes for Quilting

#### 3.5.1 绗绣机安装须知

##### 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.



您好，尊敬的用户。欢迎使用上工富怡绗缝绣花机，请您在安装及试运行设备之时注意以下事项。

#### 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.

#### ① 前后罗拉挡块的拆卸

在设备离开本公司后为确保在运输过程中前后罗拉因为晃动导致配件损坏，我们增加了前后罗拉的挡块在阻止罗拉左右摆动。请您在通电前务必拆卸。



**Note: There are four places at front and back**

**注：前后共四处。**

## ② Removal of the protective beam

In order to avoid bending caused by touching the front and rear rollers when the equipment is transported by forklift trucks, we have added the front and rear anti-collision beams. Please remove the front and rear anti-collision beams after the equipment is in position.

## ② 防护梁的拆卸

在设备进行叉车运输的时候，为避免接触到前后罗拉导致弯曲，我们增加了前后防撞梁，请您在设备摆好位置后拆除掉。



**Note: Each one needs to be removed at front and back.**

注：前后各一根都需拆除。

③ The floor mattress should be placed under the equipment before the equipment reaches the designated installation position.

③ 设备到达指定安装位置之前需在设备下面垫加地脚垫板



**Note: The equipment should be kept level after placement. The uneven area can be adjusted by adjusting the anchor bolts.**

注：设备在放置后需保持水平，不平的地方可通过调整地脚螺栓调整。

## ④ 线架的安装

## ④ Installation of thread frame



### ⑤ Installation of Rear Brace Rod

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



### ⑤ 后撑布辊的安装

在安装过程中需左右保持一致，对称。



### ⑥ Connection and Installation of Touch Screen

### ⑥ 触摸屏线缆的接插及安装



**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.**

**注：在设备全部安装完成后我们建议您让设备静置至少 4 个小时，来缓解设备在搬运过程中产生的应力。**

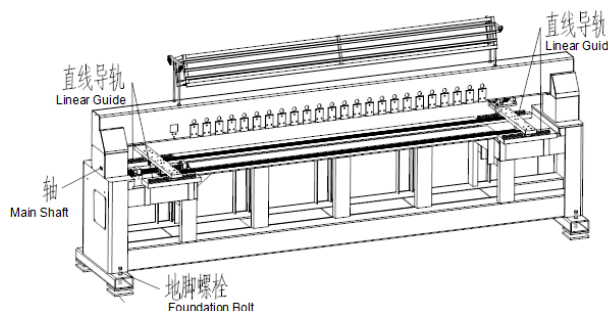


### 3.5.2 Installation and Inspection of Machine

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

### 3.5.2 机器的安装与检查

(1) 用叉车将机器运至工作场地



(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.

(2) 用 300x300 框式水平仪两只分别放于图中直线导轨上，调整机器四周的地脚螺栓，调整至机器水平位置，并按动机器四角无晃动。

(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.

(3) 用主轴扳手逆时针方向轻轻转动机器下轴不少于 10 圈，在转动时若出现卡住或有异常的声音应立即停下，请与本公司授权的专业技术人员联系进行检查。

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

(4) 机器放置好后应对机器表面进行清理和去污，对运动部件进行加油。

(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.

(5) 检查核对外电网电源电压与本机器要求输入电源电压是否一致。检查电源插座是否与机器电源插头功率形式相匹配。

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

(6) 检查机器罗拉、夹线器等部件有无松动脱落等现象。

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

(7) 检查机针是否在针孔中间位置。

(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.

(8) 本机器为防止长途运输搬运过程中出现部件损坏，出厂前在前后直线轴上加装固定套，机器安放好后使用前应及时拆卸。

### 3.5.3 Machine Adjustment

#### (1) Precautions for debugging the machine

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

#### (2) Confirmation of the Computer Program

The machine is electromechanical 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.

### 3.5.3 机器的调试

#### (1) 调试机器的注意事项

调试本机器必须由本公司授权的专业技术人员进行，同时必须仔细阅读操作手册、维护保养手册。

#### (2) 对电脑控制程序确认

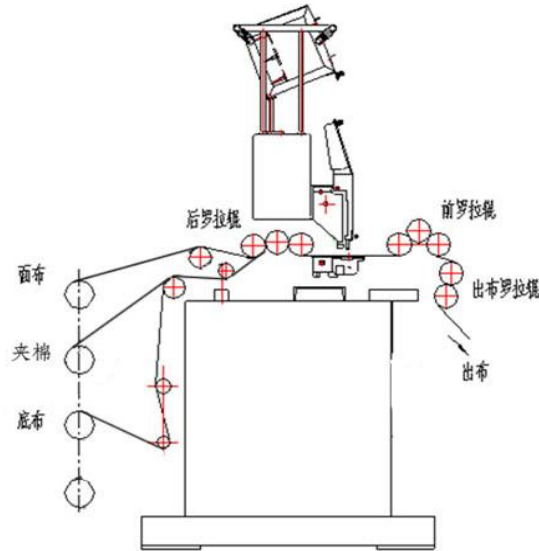
由于本机器为机电一体化产品，所有实现的机械动作都是由电脑程序来控制的，因此在调试前应对电脑控制程序进行功能性确认。

#### (3) 鞍架左右移动限位

按照电控系统操作说明，对鞍架 X 向左右方向移动，X 向左右运动行程分别用两个接近开关来控制，当鞍架左移或右移到极限位置时接近开关作用，鞍架会自动停下，同时操作显示屏上会显示“鞍架越界”提示，此时按反方向键即可解除。

#### (4) 送布出布

本机使用 Y 向罗拉送布出布，前后罗拉由电机控制，通过电机正转或反转，由罗拉夹布并带动布料移动来实现绗缝或刺绣。



1	面布 Surface Fabric	5	前罗拉 Front Roller
2	夹棉 Filling Fiber	6	出布罗拉 Products Forwarding roller
3	底布 Backing Fabric	7	出布 Finished Quilting Products Loading
4	后罗拉 Rear Roller		

#### (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 750rpm 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 600rpm 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.

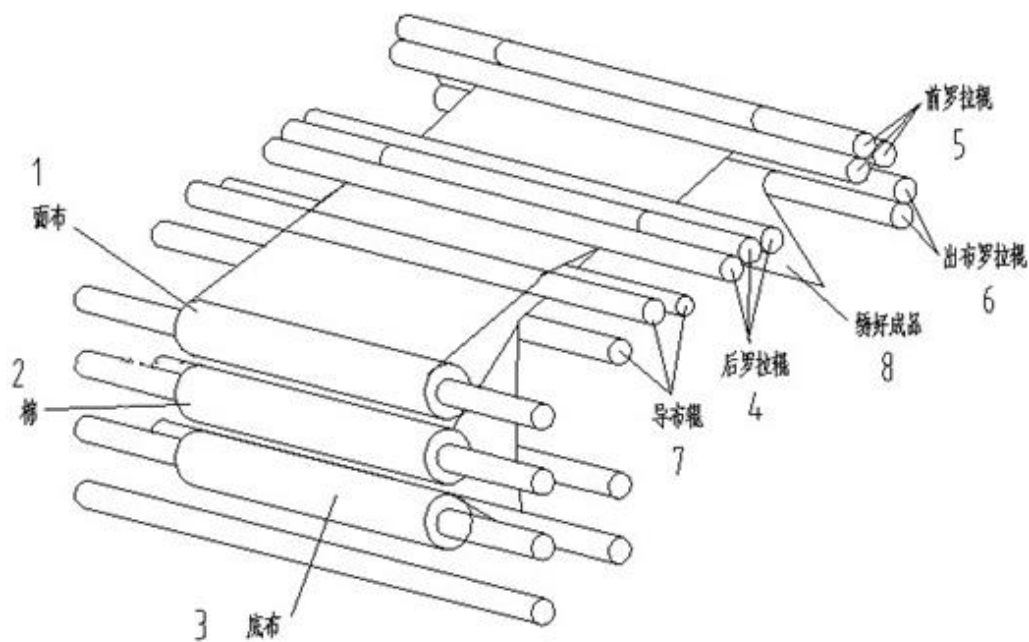
#### (5) 上下主轴机头运行

在操作箱上按电控系统操作说明书将主轴最高转速设定为 750rpm, 然后在测试状态进行运行, 起初按 100rpm 速度运行, 3 分钟后按升速键升速至 400rpm 运行, 10 分钟后提高至 600rpm 运行, 运行 20 分钟无异常即可。

#### (6) 装布料

先将底布、面布和棉在专用的卷布机上卷好, 装到本机器配置的不锈钢管子上, 然后按照图示将布料通过导布辊, 进入后罗拉、前罗拉和出布罗拉, 布料进入罗拉后必须平整无倾斜现象。





1	面布 Surface Fabric	5	前罗拉辊 Front Roller
2	棉 Filling Fiber	6	出布罗拉辊 Products Forwarding roller
3	底布 Backing Fabric	7	导布辊 Fabric Guiding Roller
4	后罗拉辊 Rear Roller	8	绗绣成品 Quilting Finished Product

#### (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.

#### (7) 力矩电机的调整

力矩电机是用来改变电机的输入电压，产生不同的电机反向扭矩，在恒定的电压状态下电机产生的扭矩相对恒定。

1) 每个力矩电机都分别装有调节钮，调节钮顺时针方向转动力距增大，逆时针方向转动力距减小直至关闭。

## 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.

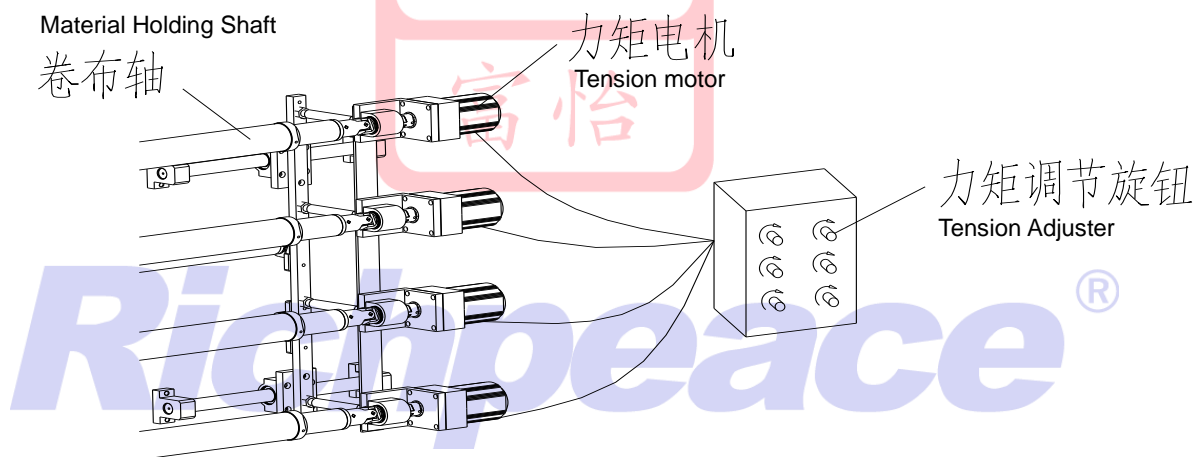
Under the condition of adjustment of torque motor well done, the effect of the quilting design will be better.

## 2) 电机拉力调整

一般根据布料的质地、伸缩率以及绗绣的花型、花型针迹来调整拉力，布的伸缩率大则拉力应大，布的伸缩率小则拉力应小，花型针数多则拉力应大，花型简单针数少则拉力应小。

拉力调整方法：按 Y 向移动键向前连续行走，力矩电机能及时将罗拉送出的布料拉紧，再按布的弹性增加或减小拉力。

力矩电机拉力调整适当会使绗绣花样的精确度提高，绗绣的效果好。



## (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,

## (8) 面线、穿线与调整方法

### 1) 面线

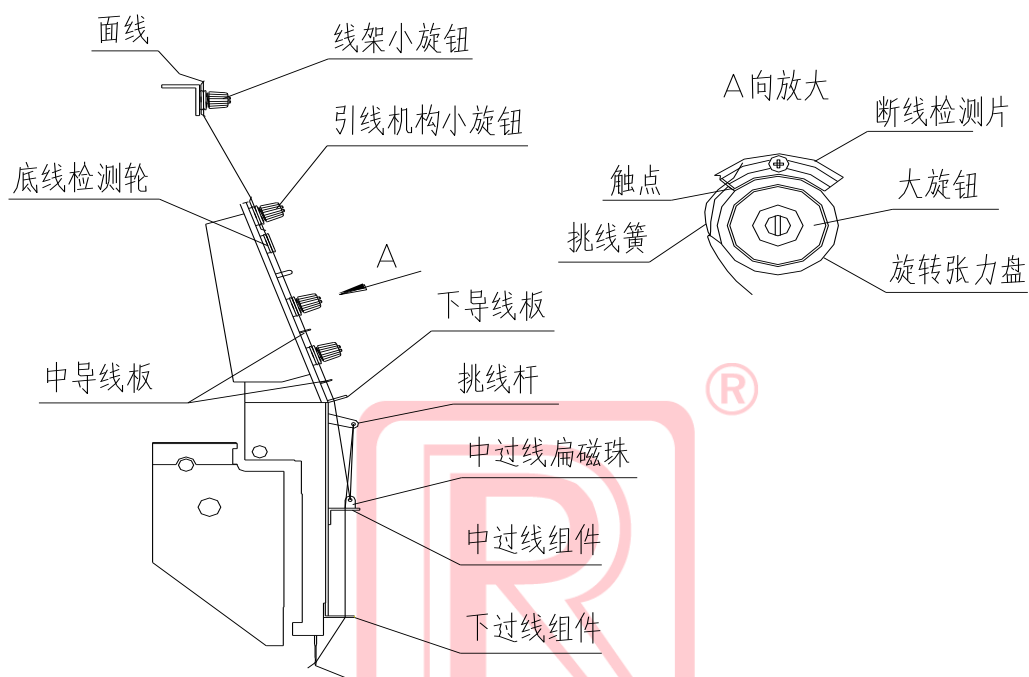
a. 必须采用高质量的绣线，避免使用质量粗劣、不合适的线

b. 面线有人造丝、棉线和聚脂线

c. 面线必须为左向捻线。用右手把线向身前拧转时，线应是收紧，反之为右向捻线。

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

2) Threading method of the upper thread      2) 面线穿线方法



1	面线 Quilting Upper Thread	10	挑线杆 Take Up Lever
2	线架小旋钮 Thread Stand Tension Knob	11	中过线组件 Middle Thread Set
3	引线机构小旋钮 Tension base Small Tension Knob	12	下过线组件 Lower Thread Set
4	底线检测轮 Bobbin Thread Detector	13	针 Needle
5	旋转张力盘（过线轮） Thread Tension Wheel	14	A 向正面放大 Front View
6	挑线簧 Thread Take Up Spring	15	大旋钮 Tension Knob
7	中导线板 Middle Thread Guiding Board	16	断线检测片 Thread Breakage Detecting Disc
8	下导线板 Lower Thread Guiding Board	17	触点 Touch Point
9	中过线扁瓷珠 Middle Thread Ceramic Ring		

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

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 break age 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  $60^{\circ}$ , 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.

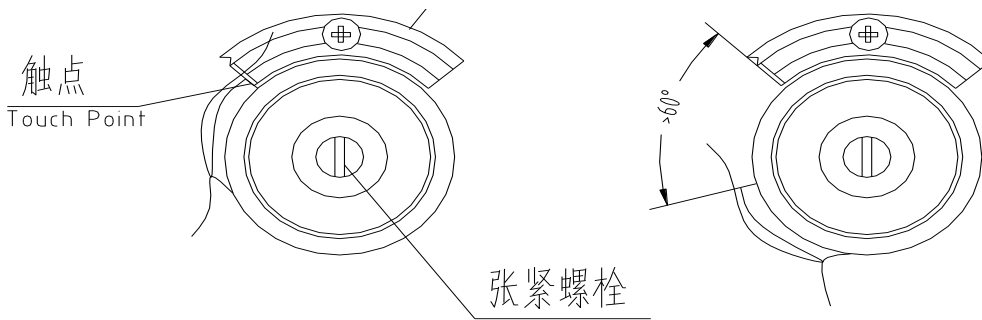
穿线顺序：2 线架小旋钮—3 引线机构小旋钮—4 绕过底线检测轮—5 旋转张力盘—6 挑线簧—7 中导线板—8 下导线板—9 中过线扁磁珠—10 挑线杆—11 中过线组件—12 下过线组件—13 针

注意：面线过旋转张力盘时是在其上绕一圈半后再通过挑线簧。

面线张力调整：面线张力可通过旋转线架小旋钮、引线机构小旋钮和大旋钮来调整。先调整线架小旋钮和引线机构小旋钮，使其轻轻压住面线，感觉稍有压力，然后调整大旋钮，使面线能不费劲且轻轻地拉向身边。

(9) 挑线簧弹性调整

挑线簧弹性应使面线从手中松开时能与断线检测片接触，当面线拉下时挑线簧应能随面线往下旋转不小于  $60^{\circ}$ ，如图。旋转角度过小可能是挑线簧弹性太强，需要调整，调整方法：用螺丝刀将张紧螺栓逆时针旋转，挑线簧弹性变小，反之则变大。挑线簧运动角度过小会产生断线，过大则针迹浮线或呈毛巾状，挑线簧调整应与面线张力调整相配合。



## (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

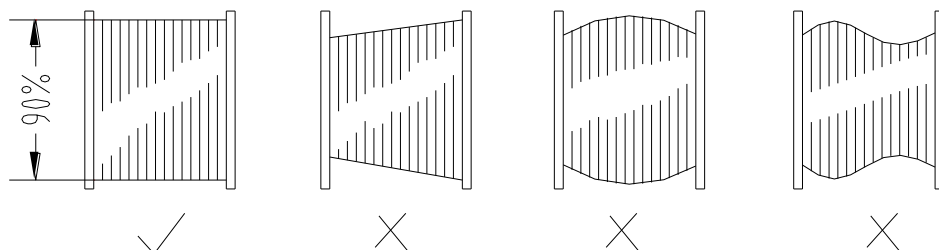
## (10) 装底线

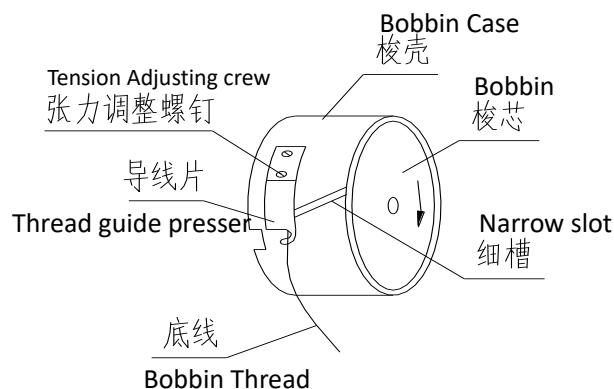
### 1) 底线

底线必须采用高质量的涤棉或涤纶线，避免使用质量粗糙、粗细不均匀的劣质底线，底线质量差会引起底线经常断线，出线量不均匀、针迹不齐、翻底线等现象，严重影响刺绣效果。

### 2) 绕底线

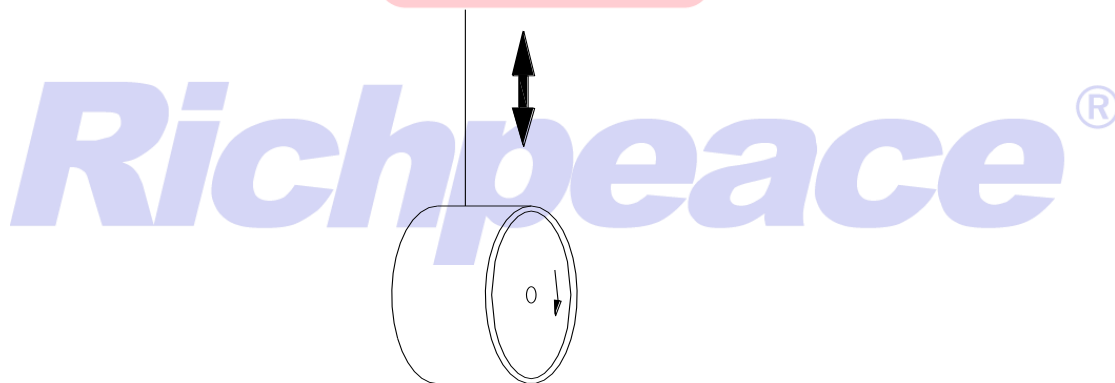
用本机器配备的绕底线机将底线绕制在梭芯上，如图第一图所示那样，注意绕在梭芯上的底线不可超过梭芯容量的 90%，过多的底线往往不能平滑地传送底线；其余三图绕制不好，往往为断线、卡线和刺绣不良的原因。





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.

将绕好底线的梭芯装入梭壳中，将底线通过细槽，并将其拉过导线片；检查梭芯是否按图十一所示方向转动，梭芯应能在梭壳内平滑转动；拧张力调整螺钉调节底线张力，合适张力的底线按图十二所示上下抖动时，底线将平滑地松开；将底线拉出梭壳外 50mm。



### 3.5.4 Adjustment of machine parts

#### (1) Needle

1) Type DB-K5 9#—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.

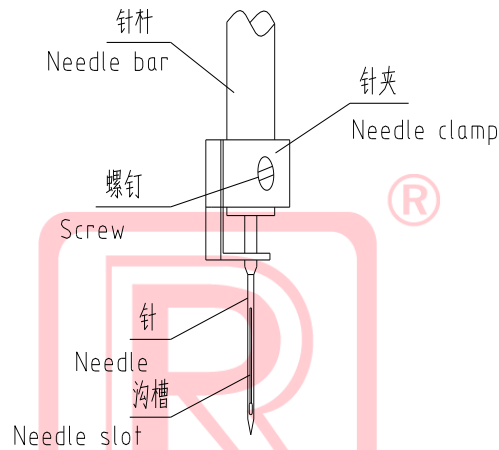
### 3.5.4 机器部件的调整

#### (1) 机针

1) 本机器适用机针型号为DB-K5的9#-18#针，可根据布料的质地要求来选择；必须选择优质的机针。

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  $30^{\circ}$ -  $45^{\circ}$  towards the right and tighten the bolt on it , as shown in following figure.

2) 装针时，有沟槽面正对着自己，不应偏斜；针顶部顶到针杆限位上端，针夹螺钉应向右倾斜  $30^{\circ}$  -  $45^{\circ}$  ，拧紧针夹螺钉

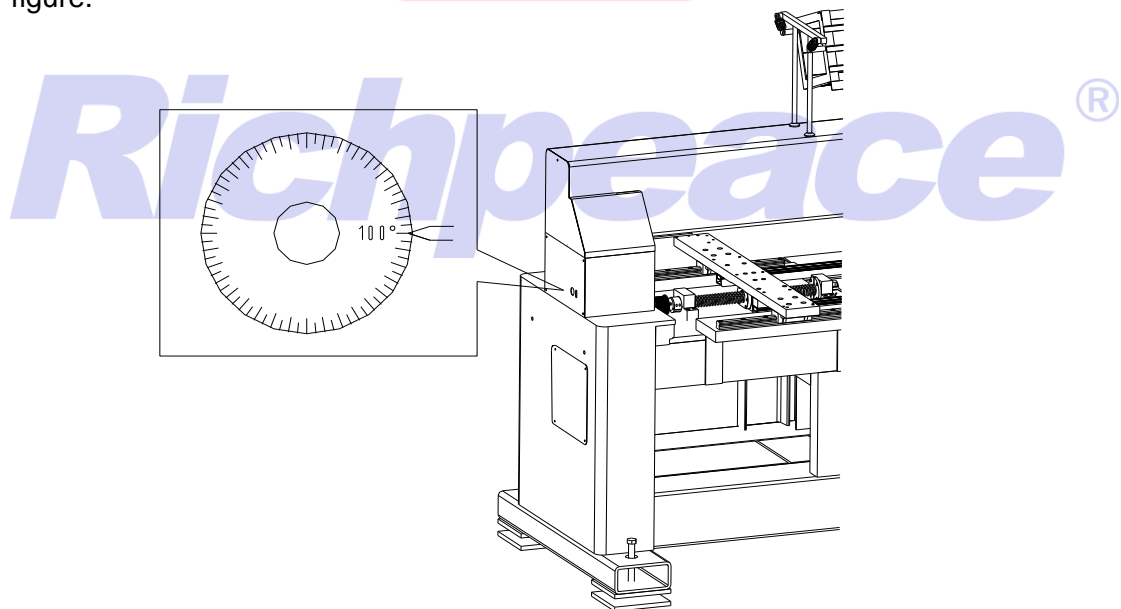


(2) Stop position of the machine

The machine stop position should be at  $100 \pm 2^{\circ}$ , and the dial scale is mounted on the lower shaft in the left panel box of the machine as shown in following figure.

(2) 机器停车位置

机器停车位置为  $100 \pm 2^{\circ}$  ，刻度盘装于机器左箱体内下轴上，如下图。



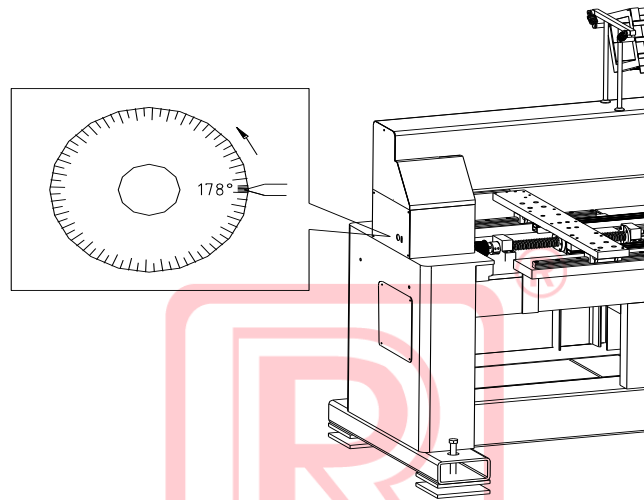


### (3) Needle Lowest Position

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

### (3) 机针下死点位置

将刻度盘按下图所示逆时针方向旋转至  $178^{\circ}$  为机器机针下死点位置。

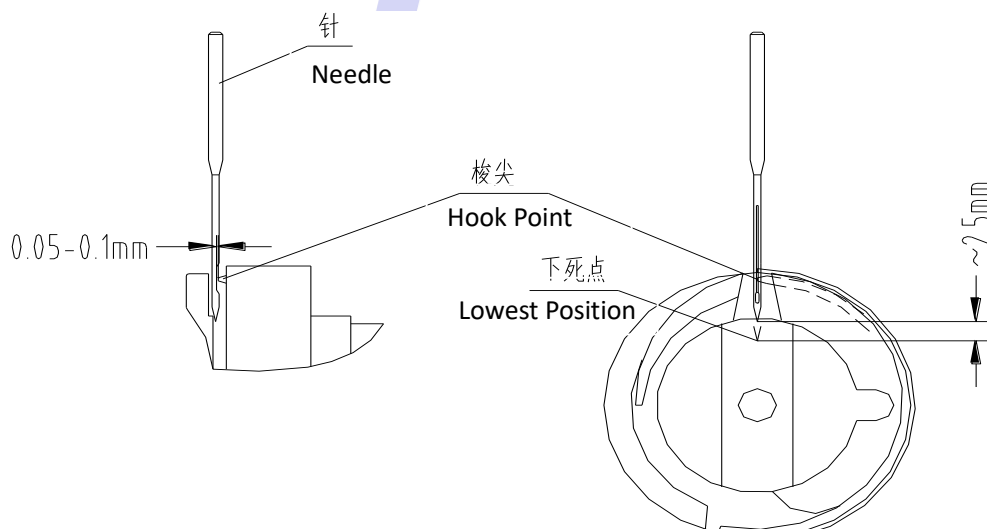


### (4) Position of needle and rotary hook

When the dial is running to  $200^{\circ}$ — $203^{\circ}$ , as shown in following figure, the position will be higher 2.5mm 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.

### (4) 机针与旋梭的位置

机针与旋梭的位置指的是旋梭梭尖与机针后凹相会位置，如下图，刻度盘位置为  $200^{\circ}$  -  $203^{\circ}$ ，此时机针从下死点向上提升约 2.5mm，梭尖与机针后凹之间间隙为 0.05-0.1mm。机针与旋梭的相对位置正确与否直接影响着机器断线率及绣品质量，因此须认真仔细地调整。





### 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.

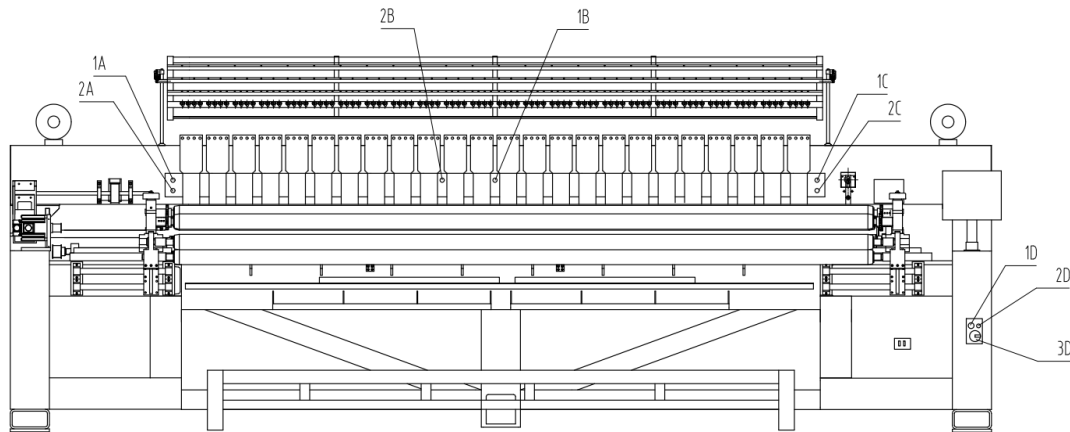
(2) Panel operation of control box and purpose of key-press

(3) Start-up and stop of the machine

并应充分理解本机器各部件的相对关系以及控制要领。

(2) 关于操作箱面板的操作及按钮用途  
关于操作箱面板的操作及按钮用途请详细参阅操作手册。

(3) 机器启动和停止



① Press the Power switch (ON) (black)

1A, 1B, 1C	启动开关（绿色） Start-up Switch (Green)
2A, 2B, 2C	停车开关（红色） Stop Switch (Red)
1D	上电指示灯 Upper electric indicator light
2D	上电按钮 On the electric button
3D	电源开关 Power Switch On

(ack) in the figure, start-up the machine.

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

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

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

### 3.5.5 绗绣操作

(1) 刺绣操作前必须仔细阅读本用户手册，

①通电：按下图中电源开关（ON）黑色，给机器通电

②按下图中启动开关（绿色）开始刺绣

③按下图中停车开关（红色）停止刺绣

④关机：按下图中电源开关（OFF）红色，给机器断电

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:

一个) 切断机器电源。

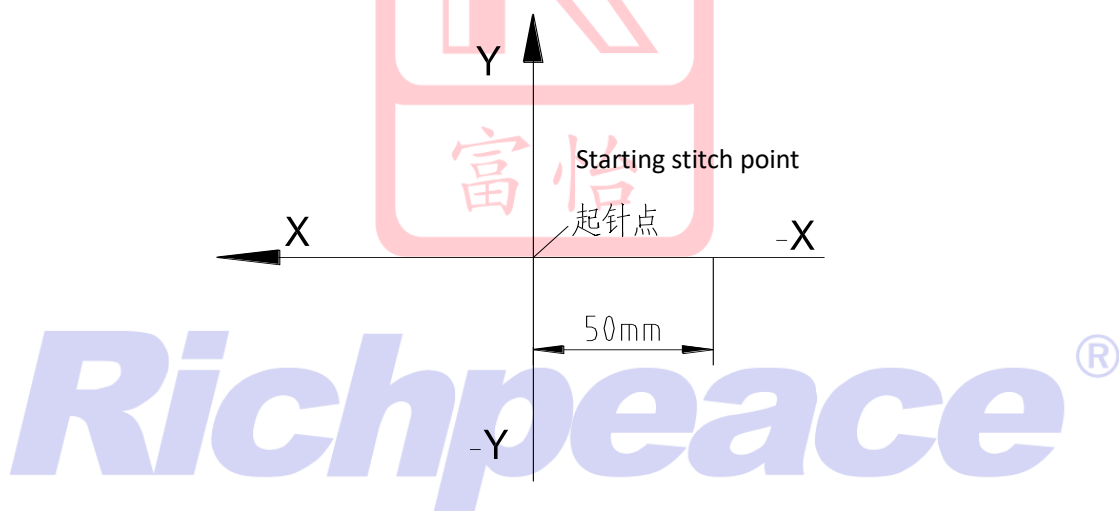
注意: 下次给机器通电前须先旋转急停开关旋钮进行复位。

#### (4) 绗绣花样的确定

① 绗绣花样必须根据本机器的两个头之间的针间距来制版, 并通过软盘或 U 盘读入电脑操作箱。

② 绗绣花样的起针点和结束点必须位于同一 Y 坐标上。

③ 绗绣起针点的确定, 首先确定花样的周边尺寸, 如图所示:



Explain: design width dimension in X:  $(+X) + (-X) = \text{design width}$

design Y-direction dimension:  $(+Y) + (-Y) = \text{design height}$

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操作人员在机器后侧时, 遇到紧急情况可按机器大梁上设置的急停开关(左右各

说明: 花样横向尺寸为:  $(+X) + (-X) = \text{花样宽度尺寸}$

花样高度尺寸为:  $(+Y) + (-Y) = \text{花样高度尺寸}$

从花样的周边尺寸可以看出花样起针点的具体位置, 例如, 图中横向 "-X" 尺寸是 50mm, 那就是说该花样的起针点是花样右边向左 50 mm。

#### (5) Confirmation of saddletree position

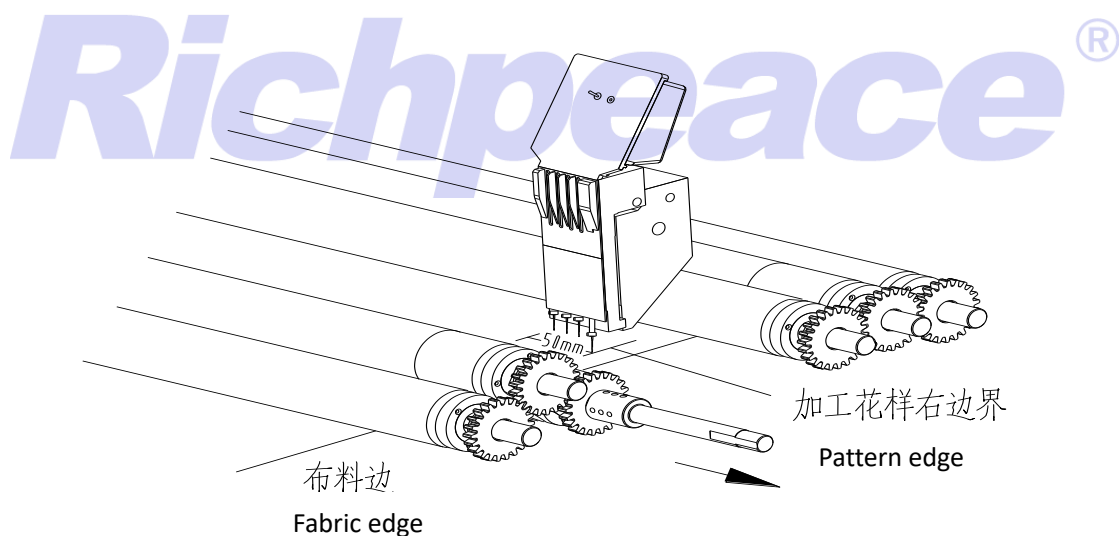
After the fabric is loaded normally,

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.

作针位的中心对称位置，在做一幅布时，两边空余的机头一样，应检查 X 向行程标尺，鞍架指针处于中间位置，如下图：

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.

起绣点定位：将最右边工作机头针对正加工花样右边界，如下图，记下标尺读数，然后右移鞍架“-X”距离，对于上例，即右移 50mm，看准读数即是花样起绣点。



(5) 鞍架对位  
布料装好后应检查布料是否装于机头工

(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.

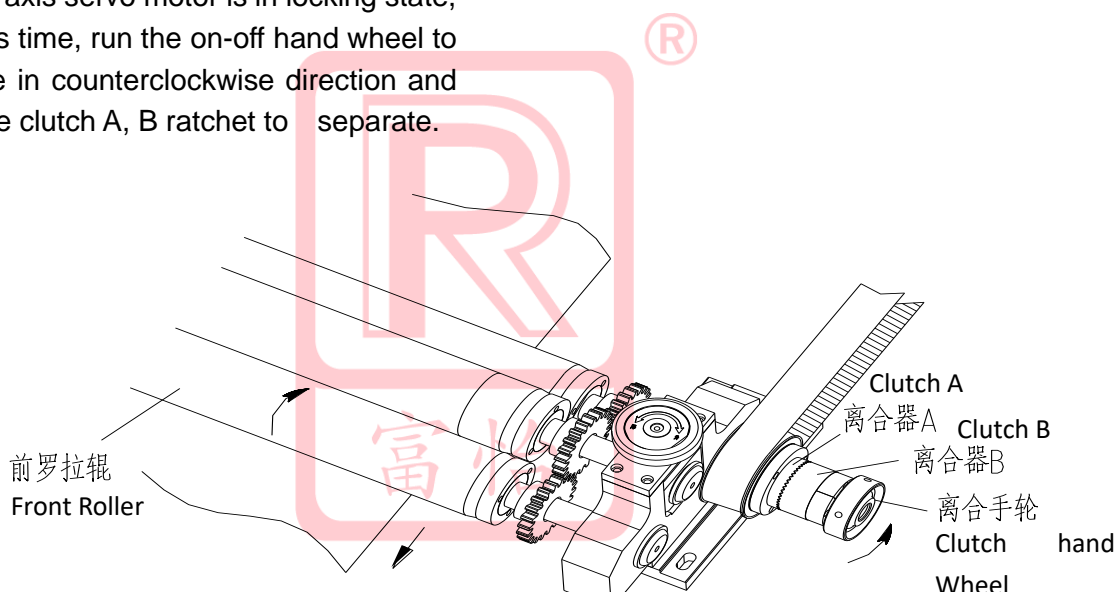
前罗拉辊和后罗拉辊之间常出现布料松弛，没有张紧，即使张紧了也达不到绗绣的张力要求，因此本机器设有专用的布料张紧装置。

Using method is as follows:

使用方法如下:

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.

① 如下图，在机器通电的情况下，Y 向伺服电机锁紧状态，此时按逆时针方向旋转离合手轮，使离合器 A、B 棘齿左右分离



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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.

② 用手按图示方向转动前罗拉辊使布料在罗拉辊的作用下拉紧

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.

③ 进一步用力旋转罗拉辊，使布料达到张紧要求后，再顺时针方向旋紧离合手轮，使离合器 A、B 棘齿完全结合，并用专用棒插入离合手轮外缘孔内进一步锁紧。

(6) 绗绣布料的预紧

在装好绗绣布料后，通常绗绣区域也就是

### (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 边框检查: 检查刺绣花版在绣布上所定起绣点是否合适。

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.

(7) 绗绣操作要点

① 花版输入: 将预先编制的刺绣花版通

过磁盘读入电脑内存。

② 花样选择: 将电脑内存刺绣花版读出供刺绣使用。

③ 本机器 Y 向为循环绗绣, 而设计花版长度有限, 故要实现连续循环绣作, 必须按照电脑绗绣机电控说明书有关刺绣操作部分, 选择“循环绣作”, 在绣花界面下, “循环绣作”出现“√”表示进入该功能, 为空表示退出该功能。

④ 定起绣点: 确定刺绣花版在绣布上的起始绣作位置。

⑤ 边框检查: 检查刺绣花版在绣布上所定起绣点是否合适。

⑥ 色序和换色后起动方式的设定: 根据花样的需要以及线色设置换置针位的顺序和换色后是手动起动还是自动起动方式。

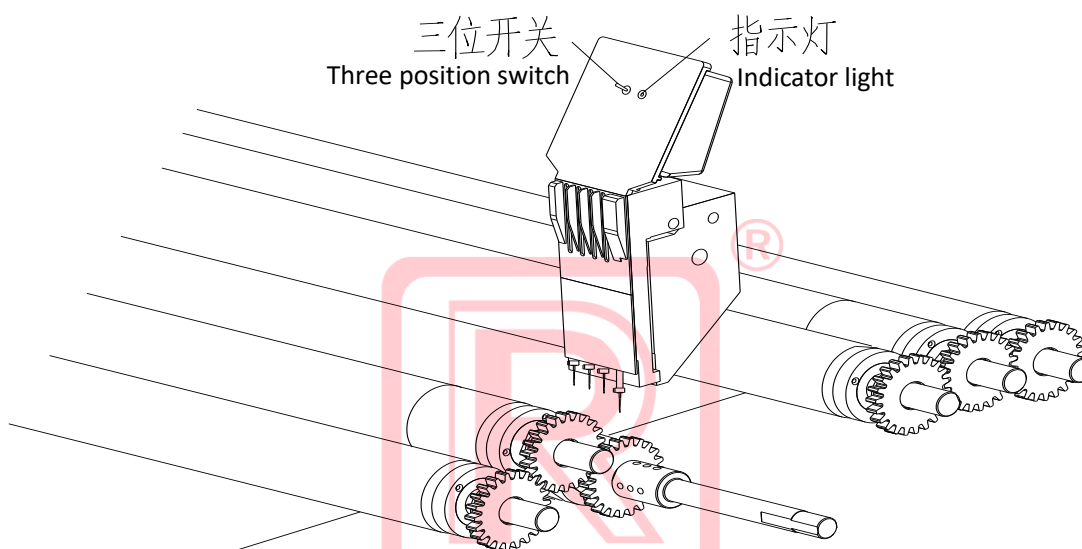
⑦ 断线检测: 本机器设有面线断线检测功能, 即断线后机器会自动停车, 并指示灯显示, 见下图。

面线断线检测参见图九, 当面线断线后挑线簧失去拉力, 挑线簧与断线检测片接触产生短路信号, 通过机器控制系统自动停车。

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.

系统自动停车



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.

⑧ 补绣：绣作时，由于断线或无底线造成漏绣时，本机器可以回退到需要位置进行补绣。具体方法：将引线机构的三位开关，见上图，向上拨一下，此时指示灯亮，按住停车开关，使布料回退到需要补绣位置，松开停车开关，按启动开关开始补绣。

底线检测：当底线断线或用完时，斩光轮不转，不产生脉冲信号，通过机器控制

### 3.6 Electrical specification

Frequency: 50/60 Hz

Voltage: 220 v / 380 v

Power: based on nameplate

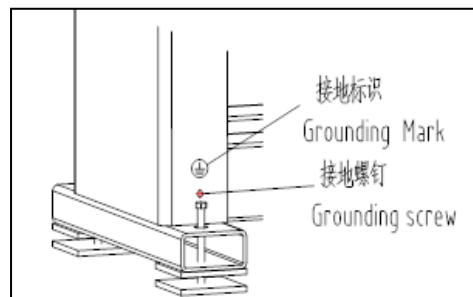
功率：见机器名牌

### 3.7 Electrical Grounding

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

### 3.7 接地

设备需要完好的接地，以保证安全稳定的工作。



### 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.

### 3.8 机器物理参数

长\*宽\*高 一见机器铭牌或向销售员询问。

设备重量：一见机器铭牌或向销售员询问。

### 3.9 Machine operation notice

1) This machine 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.

### 3.9 机器操作的注意事项

1) 本机器用于进行纺织品半成品，成品及类似材料上的刺绣加工。

2) 只允许相关人员进入工作区域使用机器，禁止无关人员靠近机器。

3) 机器必须由经过培训的人员操作。

### Warning:

follow instructions below to avoid accident :

1) Before operate the machine, must read this operation instruction and be sure fully understand the content.

### 3.6 电气性能

频率：50/60 赫兹

电压：220V/380V

### 警告

为防止发生人身事故，必须遵守如下事项：

1) 在使用机器前，必须仔细阅读本说明书。

2) Wear appropriate clothes to operate.



3) Before start the machine, be sure no people around the machine.

3) 在确认机器的转动部件周围没有人之后再启动机器。

### **During the operation**

### **机器运转时**

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.

1) 不要将手或脸靠近机器的转动部件。针杆,旋梭,挑线杆,带轮附近都很危险。

2) DO NOT disassemble the covers of the shafts and the pulley, and DO NOT start the machine if the cover is removed.

2) 不要拆卸轴,带轮的防护盖,更不能在拆掉防护盖的状态下启动机器。

### **During the machine adjustment**

### **调整机器时**

1) Switch off the main power before opening the computerized control box.

1) 在打开电控箱之前切断总电源,并且在切断总电源之前,应先关闭机器的电源开关。

2) Please stop the machine when pulling the thread or checking the embroidery.

2) 穿线或检查绣品加工情况时,必须停机。

3) Please power off the machine when turning the machine main shaft by hand.

3) 用手转动机器主轴时,必须关闭机器电源。

### **More notices**

1) Do not put sundries on the roller body of the machine and do not lean on the roller body;

### **其它注意事项**

1) 不要在机器辊体上放杂物,不要倚靠辊体;

2) Do not use bent needles;

2) 不要使用弯针;

3) Do not use the lever as a handle.

3) 不要将拉杆当作把手。

2) 穿着合适的衣服以便于操作。

## **4. Main structure**

### **D01part: Stand**

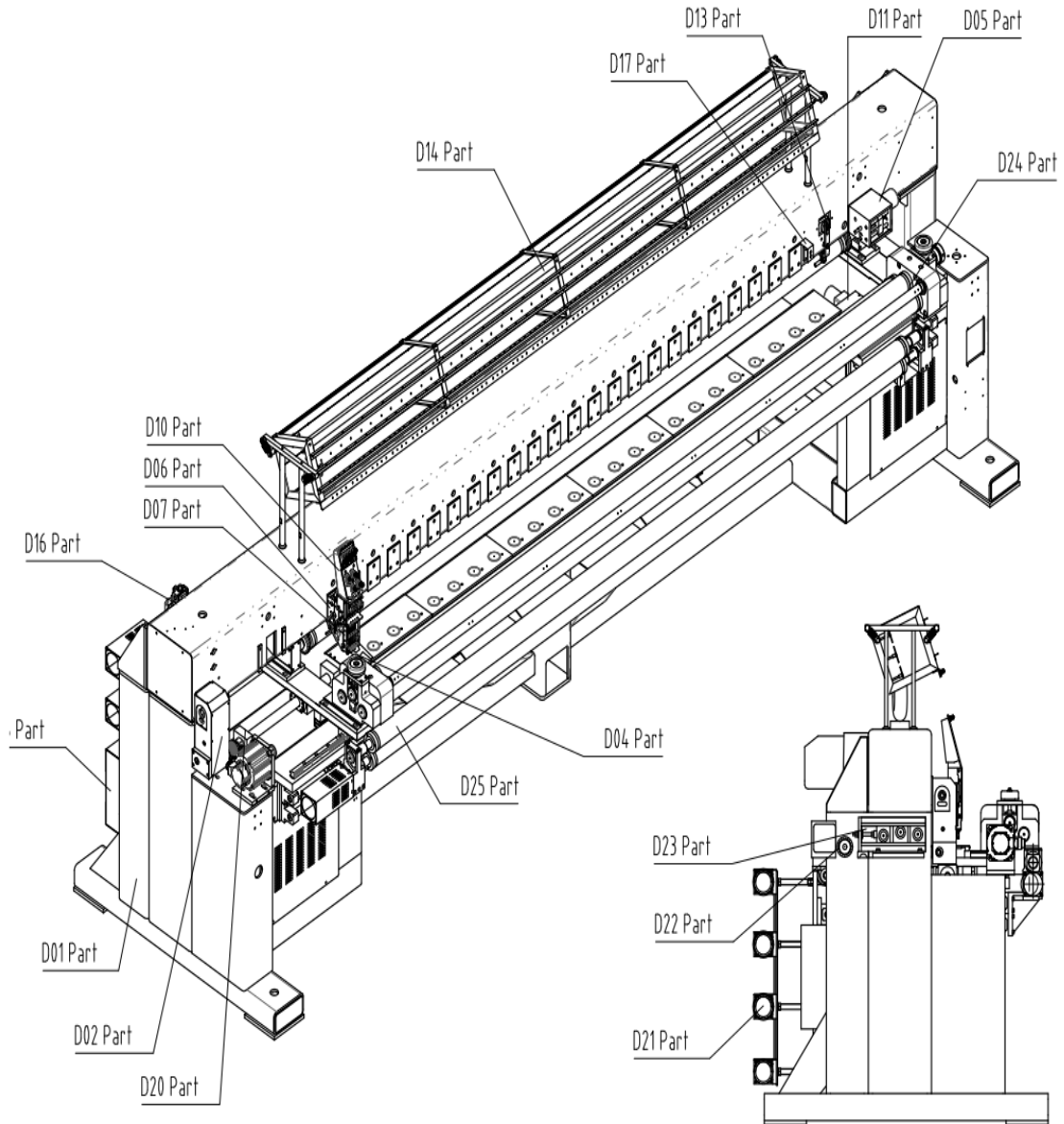


The main parts of quilting embroidery machine, including the frame, beam, roller body and other parts, are all assembled on machine rack.

绉绣机的主要部件，包括机座、横梁、辊体等其他部件全部装在机架上。

#### 4. 主要结构

D01部件：机架



#### **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.

(2) To perform hooking, fasten, trimming actions (optional), during color switching and after embroidery is completed, it is necessary to perform these 3 actions to cut the thread. Before trimming action, the thread fasten solenoid starts to operate to keep the bobbin thread mechanical retainer on the bobbin and upper thread to wind mechanical retainer for two rounds, then trimming connecting bar drives movable knife to trim the upper and bobbin thread, finally the solenoid releases and upper hook pulls the upper thread into the thread clamp.

#### **D05 part: Color changing system**

color changing system drives needle bar case to move left or right so as to change embroidery color as designed.

Color changing procedure: When it is necessary to change one color to another, the color changing motor drives the cam to rotate, so that the idler wheel moves along the cam groove to the appropriate position and performs horizontal displacement, the movement of the idler wheel drives color changing bar to move, thus the needle bar case moves left or right to complete color changing operation at required needle position.

#### **D06 part: Needle Driving**

#### **D02 部件: 主轴传动机构**

主轴传动系统将动力传动到上轴, 上下轴通过长轴传动系统来完成刺绣。

#### **D04 部件: 旋梭机构**

完成旋梭旋转和剪线两个功能。

(1) 带动旋梭工作: 由下轴转动经过两个伞齿轮旋转方向变换 90° 带动旋梭以两倍于主轴的转速旋转。由梭尖勾住上线, 使上线在梭壳上滑过与下线形成一个线套, 完成一个刺绣过程。

(2) 勾线、扣线、剪线 (带剪线功能机器): 在换色及绣品完成, 进行剪线时需扣、剪、勾三个动作。在剪线前由扣线电磁铁工作, 使下线保持器压在梭芯上, 使上线在保持器上绕两圈, 并由剪线连杆带动剪线动刀工作, 将上下线同时剪断, 扣线电磁铁释放, 而后上线勾将上线拉入上线夹。

#### **D05 部件: 换色机构**

带动针杆箱左右移动, 达到改变绣品上所需的颜色的目的。

换色过程: 当需要换色时, 由换色电机带动凸轮转动, 使滚轮沿凸轮槽移动到相应位置, 作水平移动, 滚轮的移动带动换色杆移动, 使针杆箱左右移动到所需针位完成换色工作。

#### **D06 部件: 刺布机构**

(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.

(1)带动针杆运动：由上轴通过曲柄连杆机构带动驱动滑块沿竖轴上下运动，从而使针杆上下运动进行刺布工作。

(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.

(2)带动挑线杆运动：上轴旋转同时带动曲柄旁凸轮及挑线驱动杆 A 组件，使挑线驱动杆 A、B 组件完成半转运动，从而带动挑线杆进行挑线工作。

### D07 part: Needle bar case

### D07 部件：针杆箱

(1)Color changing:needle bar case is equipped with many needle bars, it can embroider many kinds of different color threads in different time, color changing bar moves left or right to make needle bar accurately point to needle plate hole.

(1)换色：针杆箱带有多根针杆，可分别刺绣多种不同颜色的线，由换色杆左右移动，带动本部件全程使需要的针位准确的对准针板孔。

(2)Embroidering work:driving slide block of D06 parts drives connecting pin on the needle bar to move up and down to perform the embroidering work.

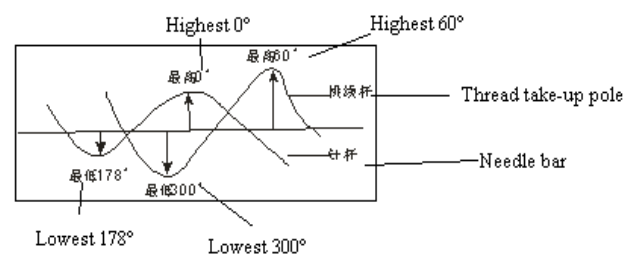
(2)刺绣工作：由 D06 部件的驱动滑块带动针杆上的连接销进行上下运动完成刺布工作。

(3)Take-up lever is driven by take-up cam on D06 parts to swing in semi-angle,and this makes take-up lever swing up and down, loose and tighten up the upper thread at the right moment,combined with needle bar to perform the embroidery work.

(3)挑线杆受 D06 部件上挑线凸轮带动进行半角度摆动，使挑线杆上下摆动，适时放松和收紧上线，配合针杆完成刺绣工作。

(4)Corresponding diagram of needle bar and take-up lever.

(4)针杆与挑线杆相应图



### 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.

### D11 part: Trimmer

Do trimming to the upper and under thread when the color change and embroidery are finished.

Working principle: when thread trimming Needed, the trimming motor drives the prejudicial cam to 180°, then the trimming reciprocator slide block brings the driving pin to move left side, the cut thread lever will also move left side in order to open the moving knife; When it return to origin point, trimming moving knife will close, then a complete cut thread working is finished.

The Solenoid works before thread hooking, making the wide picker of the bobbin thread pressing on the Bobbin and the embroidery thread revolving two circles on the wide picker, and the connecting rode will bring the knife working to cut off the bobbin thread and top-stitching thread at the same time then the upper hooker will pull top-stitching thread into thread stud

### D13 parts: Upper Thread Holder Set

During color-changing or after finishing the stitching, the solenoid will drive the

### D10 部件: 引线机构

调整上线张紧力: 每个针位都有自己相应的线道。

通过线道旋钮的松紧调整, 以保证绣品的针迹松紧合适, 并保证了断线检测功能, 减少短线率。

### D11 部件: 剪线机构

在换色和绣品完成时, 对上下线进行剪断。

工作原理: 在需要剪线时, 剪线电机转动, 带动偏心轮转动 180° 从而使剪线滑块带动传动销向左移动, 而带动剪线杆向左移动, 带动剪线动刀打开, 当转回原位时, 剪线动刀闭合, 从而完成一次剪线动作。

在勾线前由扣线电磁铁工作, 使下线保持器压在梭芯上, 使上线在保持器上绕两圈, 并由剪线连杆带动剪线刀工作, 将上下线同时剪断, 上线勾将上线拉入上线夹。

### D13 部件: 勾线机构

hooker to hook the upper thread to the thread clip of 09parts, and then it can be used in the nextstitching.

#### **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.

#### **D16 part:Spray Lubrication**

Penetrate component and rotary hook shaft all adopt oiling spray lubrication.

#### **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 embroidery, when the machine stops, press the red button to move the frame to back to start.

#### **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.

当换色或绣品完成后，电磁铁带动勾线器将上线勾入线夹中，供下次绣作使用。

#### **D14 部件：线架**

由置线板、过线架、小旋钮组成，放置绣线，分置线道，调整绣线张力。

所有线轴都放置在线架上，绣花线通过过线系统 供给刺布机构使用。

#### **D16 部件：喷雾润滑系统**

对刺布机构和旋梭轴进行润滑，刺布机构和旋梭轴均采用雾化供油方式。

#### **D17 部件：启停机构**

由启停按钮组成，绿色按钮为启动按钮，停车状态时按动，启动机器刺绣，刺绣状态时按动，进行低速刺绣；红色按钮为停车按钮，刺绣状态时按动，停止刺绣，停车时状态按动，空车倒框。

#### **D20 部件：鞍架机构**

鞍架机构安装于机架上，由伺服电机带动鞍架左右移动和前后罗拉的正反转，完成 X 向左右移动布料，Y 向前后送布。



### **D21 part:Material Feeding**

Fabric support mechanism, fabric support mechanism consists of an 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 loosening and tight can be controlled by rotation of front roller, and then the fabric is tightened by use of tension hand wheel.

### **D21 部件: 托布装置**

由一个上托架、两个中托架和一个下托架组成, 装设面布、夹棉和底布, 每个托架滚筒均装有力矩电机, 用于控制布料的张力, 由手动操作。

### **D22 部件: 导布装置**

由导布辊和分布辊组成, 采用力矩电机控制, 通过链轮链条带动不锈钢辊子进行导送布。

### **D23 部件: 后罗拉装置**

由三根辊子组成, 其转动由 Y 向伺服电机控制, 辊子之间采用齿轮啮合传动, 辊间摩擦力大小由后辊子挤压或放松控制; 辊子外螺旋式缠绕粘贴带凸点胶带, 胶带宽 50mm。

### **D24 部件: 前罗拉装置**

由三根辊子组成, 其转动由 Y 向伺服电机控制, 辊子之间采用齿轮啮合传动, 辊间摩擦力大小由上辊子升降控制。前罗拉设有带有棘齿的张紧手轮, 通过转动前罗拉辊子可以拉紧前后罗拉之间布料的松紧, 而后用张紧手轮锁紧。

### 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.

### D25 部件：出布装置

由两根罗拉辊子组成，在力矩电机控制下辊子转动，上辊子靠自重压在下辊子上，布料靠摩擦力送出。

### D26 部件：力矩控制箱

调节托布装置、导布装置和出布装置力矩电机的力矩大小。

## 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)Auto color changing (auto start):** Colors can be changed automatically through setting up the changing sequence of the needle bars . When changing color, the machine

**4) Auto trimming:** when color Changing is needed, or embroidery is finished, machine will stop to cut the threads automatically.

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

## 5. 功能与性能

1) 断线检测：当断线时，可自动停车，指示灯亮，显示断线机头。

2) 回退补绣：当绣作时，由于断线或无底线造成漏绣时，采用补绣，当某头设置了补绣功能时，其它头不进行补绣而停止

工作，当补绣完毕时全部机头同步刺绣。

3) 自动换色（自动起动）：可任意设定针杆的改变顺序进行自动换色，当换色时自动停车、换色，完毕自动起动继续绣作。

4) 自动剪线：当需要换色，或绣完一个绣品时，整机自动停车、自动剪线。

5) 花样存贮：电脑中可存储花样达 200 个，可根据需要选择使用。

- 6) Data output:** Patterns stored in computer can be copied as the same patterns and stored in a disk.
- 7) 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.
- 8) Pattern coordinate conversion:** The pattern can be rotated between 1°—89° according to requirement.
- 9) Pattern direction conversion:** The direction of the pattern can be change Between 0° -360° according to requirement.
- 10) 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.
- 11) 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.
- 12) 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.
- 13) Pattern editing and copy:** Selected pattern can be copied and split, parts of parameters can be deleted.
- 14) 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.
- 15) 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
- 6) 数据输出：可以从电脑中将花样自制成同样花样并导出磁盘。
- 7) 花样放大与缩小：花样可在 50%—200% 范围内，以 1% 为单位对花样进行放大与缩小，亦可在 X（或 Y）方向单独进行放大与缩小。
- 8) 花样坐标转换：根据需要可将花样在 1° -89° 之间选择不同角度的花形。
- 9) 花样方向转换：根据需要可将花样在 0° -360° 之间旋转任意角度。
- 10) 边框范围及限位检测：可显示花样的针数、色数及最大范围，可进行限位检测，并在限位时自动修正起绣点。
- 11) 自动反复绣同一个花样：可以自动反复绣作同一个花样，并省去调整起绣点，最多横向 99 次，纵向反复 99 次。
- 12) 偏移点功能：可将绣作完毕的花样，随绣框自动移到方便操作绣品的位置，当换上绣布，起绣下一个绣品时，绣框自动回到原起绣点刺绣。
- 13) 对花样的编辑和复制：可以对已选定的花样进行复制，分割，删除其中一部份参数。
- 14) 花样的删除和花样的总清：可根据需要对电脑中和某一个花样进行删除或全部清除。
- 15) 高速空走：绣作时可根据要求设置高速空走使主轴不转，针杆不运动，绣框自动径直移动到指定针数的位置。



will move to the selected needle position automatically.

**16) 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.

**17) 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.

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

**19) 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.

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

**21) Stitching frame& stitching open line.**

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

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

**24) 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.

**16) 低速空走:** 在绣作时可以主轴不转, 针杆不运动, 而罗拉沿着针迹前进。

**17) 跳针功能:** 在不需要刺绣的地方跳过, 针杆不下落, 当碰到平针时才开始刺绣。

**18) 手动移绣框:** 通过按移动框键, 将绣框移至 到所需要的位置。

**19) 绣框越限保护:** 当绣框移动到边线时, 由于有限开关限位, 使绣框自动停止, 并停车。

**20) 手动调整:** 主轴可根据需要在针码大、小时通过电脑键盘进行速度调整。

**21) 刺绣边框:** 刺绣开位线。

**22) 针数显示:** 可以对绣作针数进行观察并可清零。

**23) 花样长期记忆功能:** 当停电或关机后, 花样不会因无电源而丢失。

**24) 刺绣头数选择:** 可以根据需要关闭头进行隔头绣作, 也可以只留一个头进行刺绣。