



# GPB-2系列智能电子拖轮

## GPB-2 Series Intelligent electronic tractor

中山百川汇盈精密实业有限公司  
Zhongshan Grand Precision Industrial Ltd.  
地址:广东省中山市东区起湾道北136号  
NO. 136, Qiwan Road North, East District,  
Zhongshan City, Guangdong Province, China  
Tel:86-760-88414888 Fax:86-760-88414668  
<http://www.usa-grand.com>

## 前言

**⚠ 注意：**使用前请仔细阅读本用户手册，并须由专业培训人员来安装或操作。

本产品仅适用于GPB-2系列电子拖轮，请勿移作其他用途。

本公司拥有对此用户手册的最终解释权。

使用中若存在任何疑问或对我们的产品或服务有任何意见或建议，请随时与我们联系。

安全说明：

- 1、安装和调试前，请仔细阅读本手册。
- 2、本手册标有**⚠**符号之处为安全注意点，必须特别注意并严格遵守，以免造成不必要的损害。
- 3、本产品须有受过专业培训的人员来安装或操作。
- 4、确保机壳安全接地并符合产品铭牌上标识的电压范围机技术要求。

**⚠** 5、在进行以下操作时，必须断开系统电源：

- ▲ 安装机器时；
- ▲ 在控制箱上插拔任何连接插头时；
- ▲ 机器休息不用及修理或调整时。

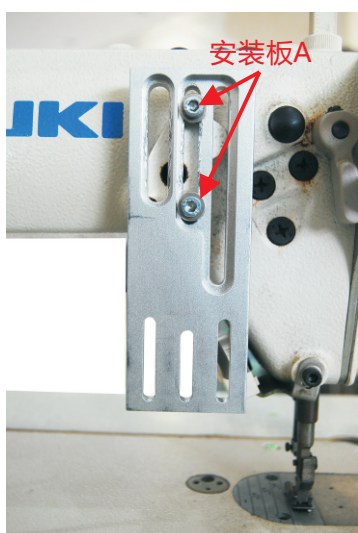
- 6、拧紧所有紧固件，以防止缝制是产生震动或停针位置错位等异常现象。
- 7、每次关闭控制系统后再次启动，应相隔10秒以上。
- 8、设置系统控制参数或进行保养修理工作应由受过相关培训的专业人员来完成。
- 9、维修所用的所有零部件，必须有本公司提供或认可，方能使用。

**⚠ 注意：**安装控制器时必须正确接地，否则将导致控制器无法正常工作，更严重的可能会被电击。

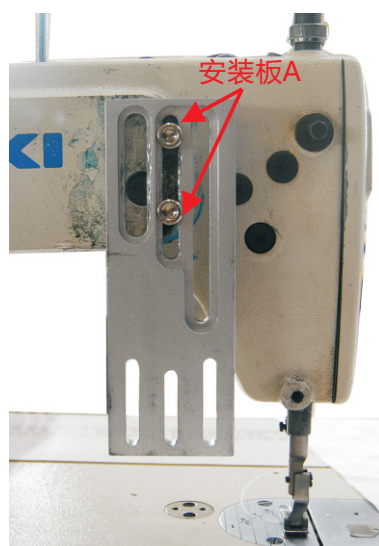


## GPB-2系列拖轮安装示例

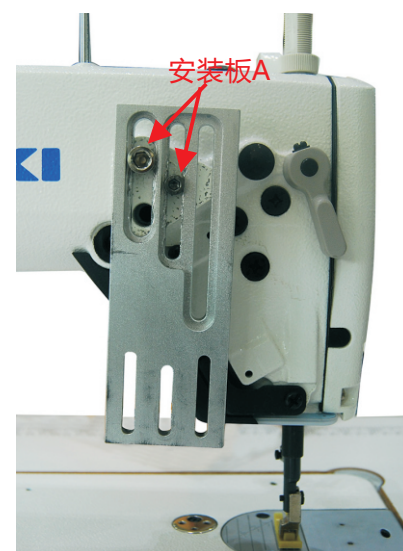
01 将安装板A用螺丝（随机器配备两种螺丝，视机器型号自行适配）固定在缝纫机背部相应孔位(安装如图所示)。



9000B

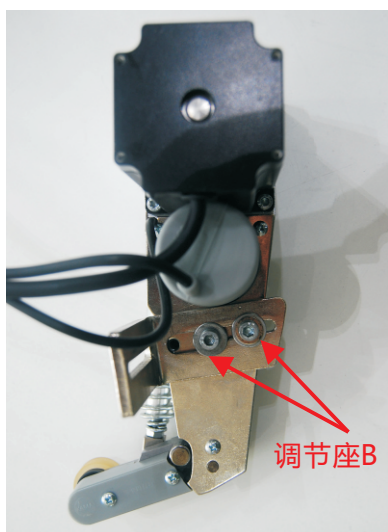


8700/900B

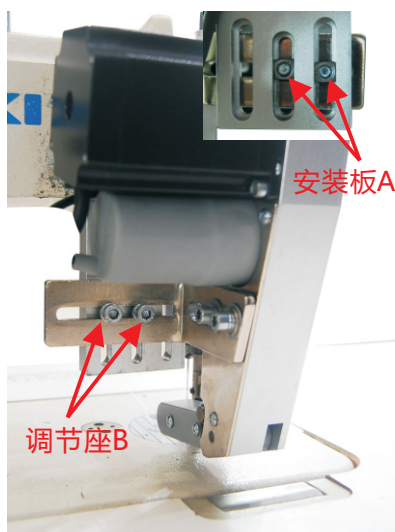


9000C /8000A

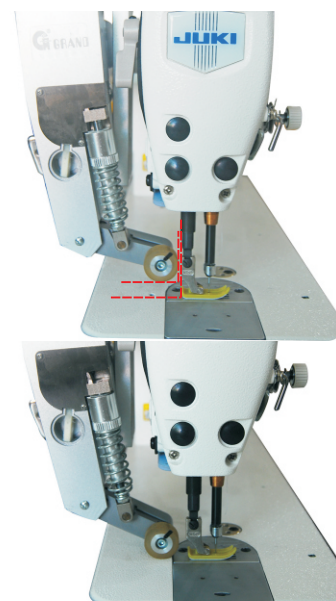
02 将调节座B用螺丝（随机器配备）固定在牵引机上（安装如图）。



03 将调节座B(连牵引机)用螺丝（随机器配备）固定在安装板A上（安装如图）。



04 调节调节座B螺丝使得提升后胶轮靠近缝纫机压脚，前后在同一条线上（注：提升后的胶轮与压脚之间约2-3mm，与缝机台高度之间约9-10mm）。



## GPB-2系列拖轮安装示例

### 04电控安装

用随机配备的自攻螺丝把电控箱固定在缝纫机台版下方。



### 注意事项

1、由于缝纫机品牌型号众多，我公司提供了多种规格的编码器安装螺丝供客户选择，请选择合适的螺丝进行安装，否则容易造成编码器严重晃动影响拖轮精度和寿命。若螺丝规格与缝纫机不匹配，请及时联系我们。

2、我公司出厂默认平缝机无自动抬压脚功能，双针机无自动倒针功能，如您的机器具备上述功能请联系我们更改电控设置。

3、拖轮滚轮固定螺丝为反牙，请更换胶轮是注意拧螺丝方向。

4、定期加油。



标配



选配

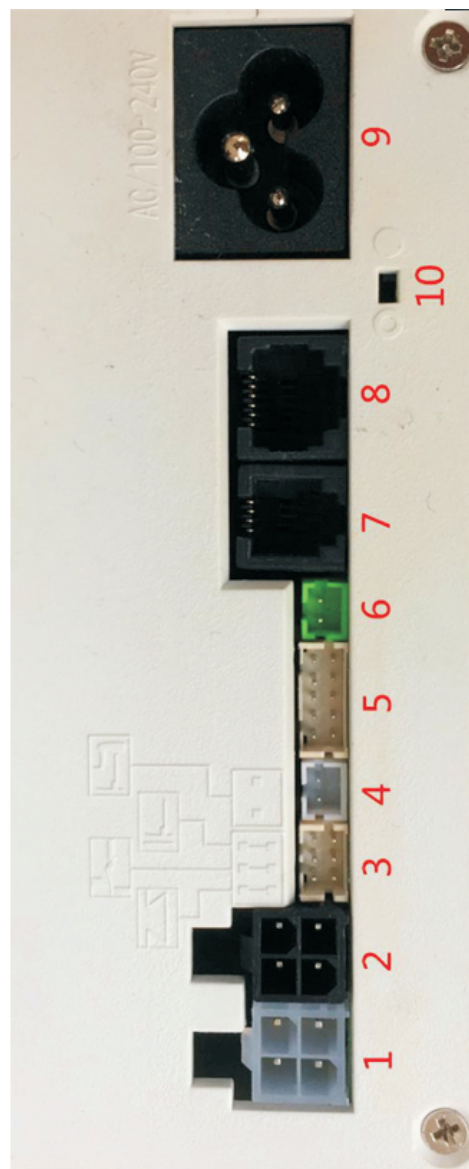
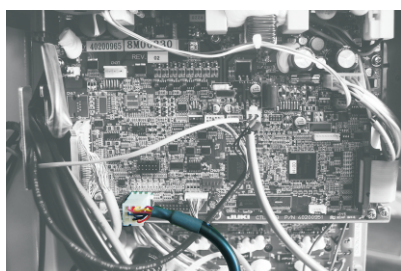


**按键说明：**

第一级界面轻按切换键后显示P0，P0闪烁后按+或-键切换P1~PN，按确认键进入PN的可调数字，进入第二级界面，数字闪烁，按+或-键调整数字大小，再按确认键保存同时数字不闪烁，第二级界面下按切换键返回第一级界面。

**接线介绍：**

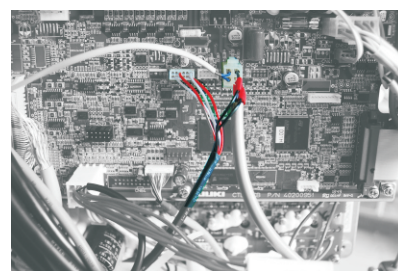
- 1、步进电机
- 2、直流电机
- 3、从左到右依次为自动倒针、自动剪线、自动抬压脚（上下一组）
- 4、膝靠抬压脚接近开关
- 5、4-5 手动倒针，4-6手动剪线，
- 4-7手动抬压脚（P8 设置为0的情况下有效）
- 6、通信接口
- 7、霍尔传感器
- 8、编码器
- 9、电源

**附JUKI 9000CF/CS控制盒（内置编码器接线安装图）**

原机器控制盒图



接线1



接线2

## 功能说明

序号	功能说明	默认值	备注说明	参数设定范围
	滚轮针距设定	60	1个数值为0.1mm, 数字45于4.5码	0-12(机器种类不一样数值范围不一样)
P0	剪线滚轮延时针数设定	0	1个数值为缝纫机工作一针, 例如数值为5, 则剪线后缝纫机下一次启动5针后滚轮落下。P0设置成0后开机滚轮压住台面, 设置成0以外的数值开机滚轮抬起悬停在上方。	0-200(布料送到下滚轮时启动滚轮最佳)
P1	抬压脚滚轮延时针数设定	0	1个数值为缝纫机工作一针, 例如数值为15, 则抬压脚后缝纫机下一次运行15针后滚轮落下, (当P5设置为1时有效, 详见P5介绍)	0-200(根据工艺选择)
P2	倒针针距设定	1	0, 1, 2	0-2
P3	模式选择	1	倒针、剪线、抬压脚三个信号功能模式选择, 设置为1缝纫机倒针时滚轮抬起	0-26(谨慎设置)
P4	缝纫机刹车抬滚轮延时设定	0	1个数值为0.1秒, 举例如数值为15, 则缝纫机刹车1.5秒后滚轮抬起, 再次踩缝纫机踏板滚轮落下工作	1-20(设定为非0状态系统默认自动抬滚轮, 自动抬压脚和膝靠抬压脚功能无效); 0(关闭)
P5	抬压脚模式选择	0	0: 滚轮跟随缝纫机压脚抬升 1: 滚轮跟随缝纫机压脚抬起, 缝纫机运行后根据P1值滚轮延迟落下 2: 第一次抬缝纫机压脚滚轮抬起, 第二次抬缝纫机压脚滚轮落下	在P5设置为1的情况下, 若此时P1设置为0时抬压脚时滚轮抬起不落下, 再次踩缝纫机后滚轮落下
P6	步进电机方向选择	0	0: 正转; 1: 倒转	

序号	功能说明	默认值	备注说明	参数设定范围	
P7	电磁阀动作选择	0	0: 关机状态滚轮压住台面, 开机后电磁阀不通电, 抬压脚时电磁阀通电, 滚轮抬起 1: 关机状态滚轮抬起, 开机后滚轮压住台面且电磁阀通电, 抬压脚时电磁阀不通电, 滚轮抬起, 关机后滚轮抬起	仅对气动拖轮版本有效	
P8	光电输入及接近开关、电磁阀设置	0	0: 启用光电输入及接近开关 1: 行程开关(或接近开关)抬压脚 2: 行程开关(或接近开关)倒针 3: 行程开关(或接近开关)剪线	需要订购相应传感器才能支持此功能	
			4: 光电检测布边启动(控制)	用于自动控制缝纫机运行用, 适用于改装自动模板机, 二次开发, 控制箱不一样需要订购相关附件。	
			5: 检测倒针信号, 后续再设定P21	JUKI 9000C专用	
P9	0-10控制缝纫机自动启动值	0	不同缝纫机设置值不一样, 于启动缝纫机设置	0-100	和参数P8配合用
P10	0-10控制缝纫机自动停止值	0	不同缝纫机设置值不一样, 于停止缝纫机设置	0-100	
P11	缝纫机延时停车针数设置	0	光电传感器检测到没有布后, 设置多少针后停止缝纫机	0-200	
P12	编码器线数设定	1000	同时按下+和-键, 大于3秒后开始进入自动测量, 旋转编码器进行编码器线数计算	0-9999	
P13	滚轮转动模式	1	0: 同步模式, 滚轮一直转 1: 凸轮模式, 滚轮和缝纫机牙齿送料同步		

序号	功能说明	默认值	备注说明	参数设定范围
P14	凸轮角度设定	140	滚轮转动区间，出厂已设定，谨慎操作(P13设置为1时有效)	0-360
P15	编码器AB相选择	1	0、A+B+Z编码器 1: A+Z编码器 2、B+Z编码器 3、AB相编码器 4、单相A编码器 5、单相B编码器 6、独立脉冲模式	0-6
P16	滚轮启动角度设定	0	机器安装好后，进入P16，此时屏幕数值闪烁，同时按+；-键数值快速闪烁，3秒后显示屏数字变化并闪烁；转动手轮显示屏数字变化，手轮必须转动1圈以上(沿缝纫机旋转方向)，缝纫机牙齿刚好处在送料状态时按下确认键保存。如果拖轮与缝纫机不同步请再次重复以上操作直到拖轮与缝纫机同步运转。	
P17	滚轮半径设定	16	滚轮半径16MM或20MM	
P18	接近开关选择	0	0: 双霍尔 1: 单接近开关	0-1
P19	编码器方向选择	0	0: 顺时针 1: 逆时针	与主轴方向装配相关
P20	9000C倒针测定	0	在P8设定为5后，进入界面，同时按下+和-键，此时数值开始闪烁，大于3秒后屏幕显示500，此时按下倒针按钮不松开，显示屏上会显示相应的值，按下电控上确认键保存数值即可	0-999
P21	端口4功能选择	0	0: 滚轮抬起 1: 滚轮倒转 2: 滚轮悬停在上方	谨慎修改



序号	功能说明	默认值	备注说明	参数设定范围
P22	剪线后拖动距离	0	剪线完毕，抬压脚动作触发后拖轮会自动向前拖动面料，1个值为1mm(此功能仅在U6为1或者2时有效，如有需要请咨询相关售后人员)	0-9999
P23	模拟量启动值设置	0	P8为1时有效，为光电1输出设置值	0.1-10
P24	恢复出厂设置	0	调整到数字100后按确认键，参数恢复出厂状态	0-9999

#### 接线介绍：

按插座位，对应插入相应的插孔。

将三色数据线（白色、红色、黑色）分别与缝纫机的抬压脚、倒针、剪线电磁铁电线并联起来（每种颜色一组，不可混接），拖轮就和缝纫机信号一致实现联动。

需要机械抬压脚抬升滚轮，将白色的4P插座的机械开关对准抬压脚的连杆上，机械行程开关固定在缝纫机靠腿连杆一侧，抬靠腿连杆的时候拨动行程开关滚轮抬起，完成缝纫机压脚与滚轮同步抬升。

#### 技术参数：

型号	GPB-2系列电子牵引机
驱动方式	电子步进直驱电机
滚轮抬升方式	电子马达驱动方式/气动方式（可选）
送布方式	与送料牙同步送布
缝纫机机头翻转角度	全角度翻转
滚轮压力调整方式	弹簧可调式
滚轮与压脚距离	抬升后1mm,下压后4mm
滚轮抬升高度	16-20mm,
支持缝纫机最大转速	6000转/分钟
滚轮调节针距	0-12mm(根据机型自动匹配)
滚轮爬坡高度	0-6mm
滚轮宽度	11-60mm
滚轮针数延时启动	0-200针
滚轮拉力	2.2-3.0 N.M（视配置而定）
最大功率	150W
与缝纫机同步方式	完全同步

## 错误提示：




序号	解决办法
E0	返厂维修
E1	返厂维修
E2	返厂维修
E3	返厂维修
E4	电机过流或相间短路，重启电源或返厂维修
E5	过压报错，重启电源
E6	欠压报错，重启电源
E7	电极开路，检查线路，重启电源
E8	内部故障，返厂维修
E9	步进电机接触不良或未连接，检查线路，重启电源
E10	存储错误，返厂维修
E11	内部参数错误，重启或返厂维修
E12	电机电感不平衡错误，重启电源或返厂维修
E13	电机电阻不平衡错误，重启电源或返厂维修
E14	返厂维修
E15	重启电源或返厂维修
E16	重启电源或返厂维修
E17	重启电源或返厂维修
E18	重启电源或返厂维修
E19	编码器线数未设置，且为0或65535，断电重启后进行设置
E20	凸轮角度未设置，且为0或65535，断电重后启进行设置
E21	拖轮半径未设置，且为0或255，断电重启后进行设置
E22	直流电机或电磁阀未连接或霍尔开关未连接，检查线路，重启电源
E23	直流电机或电磁阀堵转，检查线路重启电源
E24	检查上位位置的直流电机霍尔信号是否连接可靠
E25	检查下位位置的直流电机霍尔信号是否连接可靠
E26	检查霍尔开关信号上下位置或接近开关信号是否连接，接触是否可靠或者直流电机是否连接可靠
E27	返厂维修
E28	返厂维修

## Previous remarks

### Previous remarks

Attention please: Please read the user' s manual and the instruction of the sewing machine in detail before using. With the correctly using, it must be installed or operated by professionally trained person. This product is only suitable for GPB-2 series electronic pullers, please don' t use it for other purpose. Our company has the power of final interpretation of this user' s manual. Please contact us if you have any question when use this product or you have any comment or suggestion of our product or service.

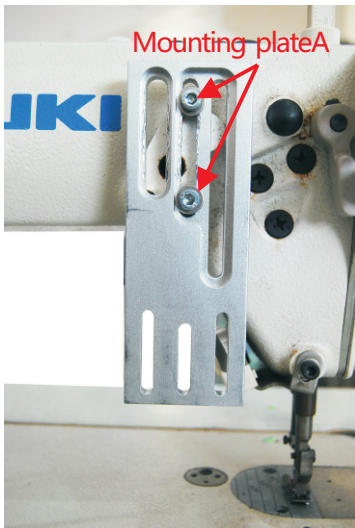
#### Safety instructions

- 1、 Please read this manual carefully before installation and debugging.
  - 2、 It' s a Safety Caution when it is marked a  sing please pay more attention to the sign and comply with it strictly in order to avoid unnecessary damages.
  - 3、 This product must be installed or operated by professionally trained persons.
  - 4、 To ensure that the chassis is grounded safely and it is according to voltage range and technical requirements in the logo of the product nameplate.
  -  5、 The system power must be disconnected during the following operation:
    - ▲ **When install the product.**
    - ▲ **When plug any connector plug on the control box.**
    - ▲ **When wear needles, replace needles, and turn to lift the head of machine.**
    - ▲ **When the machine is rest and repaired or adjusted.**
  - 6、 Tighten all fasteners to avoid the anomalies of the vibrations which the sewing produces or the dislocation of the needle position.
  - 7、 It should be separated by more than 10 seconds when start the machine again after closing the control system.
  - 8、 It must be operated by professionally trained persons when set system control parameters or maintain of repair it.
  - 9、 All parts are used to maintain must be provided or approved by our company before using.
-  Attention please: The controller must be properly grounder when it is installed, otherwise the controller won' t work normally o mr ore serious is likely to be struck by electric shock.

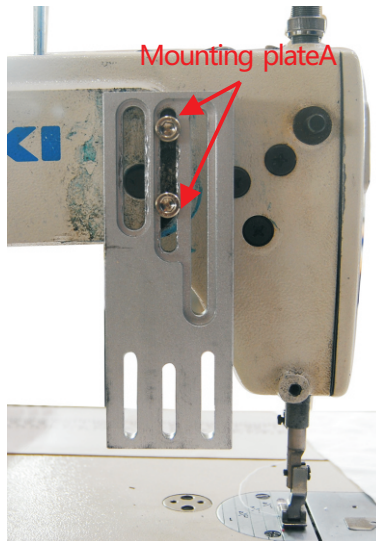


### GPB-2 series Puller Device installation example

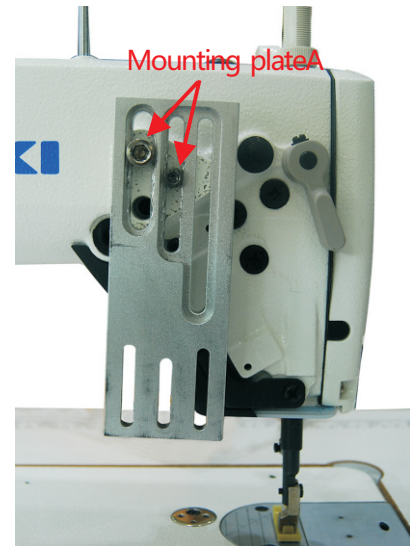
01 fix the mounting plate a with screws (two kinds of screws are provided along with the machine, which can be adapted according to the machine model) at the corresponding hole position on the back of the sewing machine (the installation is shown in the figure)..



9000B

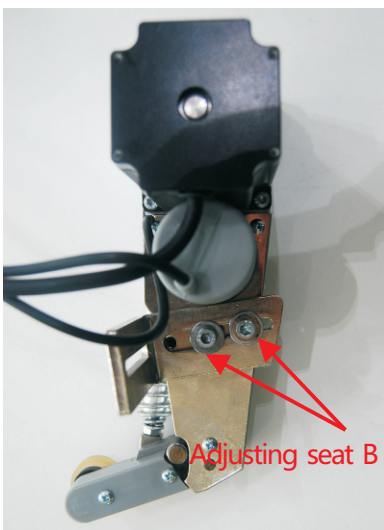


8700/900B

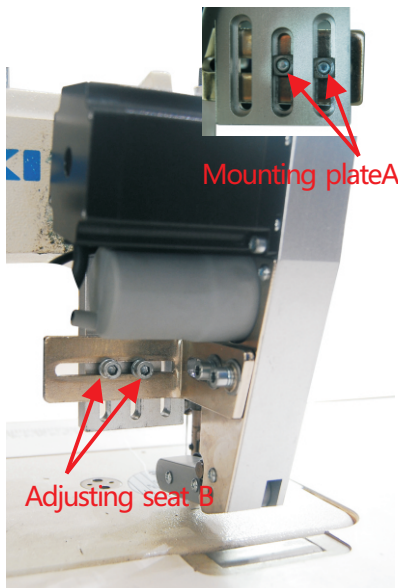


9000C /8000A

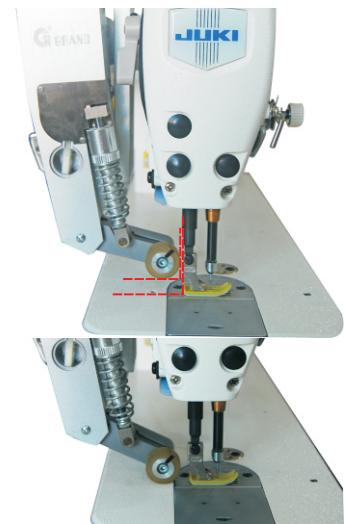
02 fix the adjusting seat B on the tractor with screws (equipped with the machine) (installation is shown in the figure).



03 fix the adjusting seat B (with the tractor) on the mounting plate a with screws (provided with the machine) (the position is shown in the figure).



04 adjust the screw B of the adjusting seat so that the raised rubber wheel is close to the presser foot of the sewing machine, and is on the same line at the front and back (Note: between the raised rubber wheel and the presser foot is about 2-3mm, and between the raised rubber wheel and the presser foot is about 9-10mm).



## GPB-2 series Puller Device installation example

### 04 electric control installation

Fix the electric control box under the sewing machine plate with the self tapping screw provided with the machine.



### NOTE

1. Due to the large number of brands and models of sewing machine, our company provides various specifications of encoder mounting screws for customers to choose. Please select the appropriate screws for installation, otherwise it is easy to cause serious shaking of encoder and affect the accuracy and service life of tug. If the screw specification does not match the sewing machine, please contact us in time.

2. Our factory default flat sewing machine has no automatic presser foot lifting function and double needle machine has no automatic needle reversing function. If your machine has the above functions, please contact us to change the electronic control settings.

3. The fixing screw of the roller of the tug is counter tooth. Please pay attention to the screw direction when replacing the rubber wheel. 4. Refuel regularly.



Standard



Optional

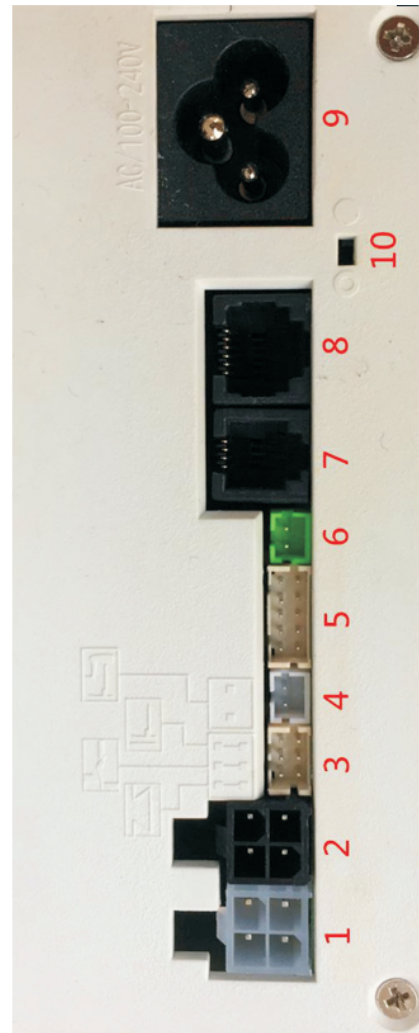


## Key instructions:

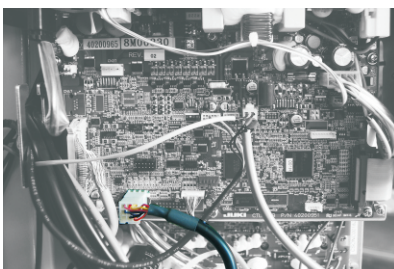
The first level interface displays P 0 after pressing the switch key lightly, the P0 flickers and then presses + or - key to switch P1~PN, and the confirmation key to enter the adjustable number of PN, then enters the second level interface. The number flickers, then presses + or - key to adjust the size of the number, and then presses the confirmation key to save the number without flickering. The second level interface presses the switch key to return to the first level interface.

## Introduction to wiring:

- 1、 Stepper motor
- 2、 DC motor
- 3、 From left to right, it automatically reversing needles, automatically trimming lines, and automatically lifting presser feet (up and down as a group)
- 4、 Knee lift foot sensor
- 5、 4-5 Manual reverse-feed、 4-6 Manual thread trimmer、 4-7 Manual lift presser foot (P8 set to 0 is valid)
- 6、 Communication interface
- 7、 Sensor
- 8、 Encoder
- 9、 power supply



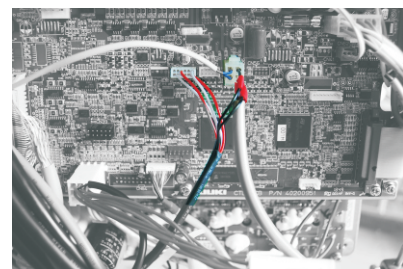
## With JUKI 9000 CF / CS control box (wiring and installation diagram of built-in encoder)



Original control box diagram



Wiring 1



Wiring 2

## Functional specifications

NO.	Functional Specifications	Default Valuens	Remark	Parameter Setting Range
	Roller stitch setting	60	1 value is 0.1 mm, and the number 60 is equivalent to 6mm stitch length	0-120
P0	Set the number of roller delay pins (Trimmer thread )	0	1 value is one needle for sewing machine, for example, the value is 5, and the tractor is started after the sewing machine works 5 pins. When P0 is set to 0, the puller press the table, and the puller are set to be lifted beyond 0.	0-200 (When the cloth is sent to the roller, it is best to start the Puller.)
P1	Set the number of roller delay pins (Presser foot lift)	0	One value is 0.1 second, for example, the value is 15, then the machine brake 1.5 (When P5 is set to 1, it is valid. See P5 for details.)	0-200 (Choose according to the process)
P2	Set the reverse-feed stitch	1	0, 1, 2	0-2
P3	Mode selection	1	reverse-feed、 thread trimmer、 lift presser foot three signal function options . If the P3 is set to 1, the rollers are lifted when reverse-feed	0-26 (Choose carefully)
P4	Setting the sewing machine brake is to lift the wheel delay	0	Setting the sewing machine brake is to lift the wheel delay	1-20 (When P4 is set to non-zero state system, default auto-lifting roller, auto-lifting foot and knee-rest lifting foot function is invalid.) 0 ( Close )
P5	Selection of lifting foot mode	0	0: Rollers follow the foot-pressing motion of sewing machine 1 : The rollers follow the presser foot of the sewing machine to raise, and the rollers drop slowly according to the P1 value after the sewing machine runs. 2 : When pressing the foot, the roller follows the foot of the sewing machine and lifts and stops above it. When the foot of the sewing machine is lifted for the second time, the roller falls down.	When P5 is set to 1, if P1 is set to 0, the rollers will not fall when the foot is lifted, then the rollers will fall when the sewing machine is stepped on again.
P6	Motor direction selection	0	0: Forward 1: Reverse	

NO.	Functional Specifications	Default Valuens	Remark	Parameter Setting Range	
P7	Selection of the solenoid valve action	0	0: When the machine is shut down, the rollers press the table, the solenoid valve is not energized after the machine is turned on, and the solenoid valve is energized when the foot is lifted, and the rollers are lifted. 1: When the machine is turned off, the rollers press the table, the solenoid valves are not energized after the machine is turned on, the solenoid valves are energized when the foot is lifted, the rollers are lifted when the machine is turned off, the rollers are pressed on the table after the machine is turned on and the solenoid valves are energized, the solenoid valves are not energized when the foot is lifted, the rollers are lifted when the machine is turned off.	Valid only for pneumatic versions	
P8	Photoelectric Input and Proximity Switch and Solenoid Valve Settings	0	0: Enable photoelectric input and proximity switches 1: Travel switch (or proximity switch) elevating the foot of sewing machine 2: Travel switch (or proximity switch) reverse-feed 3: Travel switch thread trimmer	To support this function, you need to order the appropriate sensors.	
			4: Photoelectric Detection of Sewing Machine Starting (Controlling) and Stopping	Used for automatic control of sewing machine operation, suitable for refitting automatic template machine, secondary development, control box different need to order related accessories.	
			5: Detection of inverted slit signal and subsequent setting of P21 parameters	JUKI 9000C only	
P9	0-10 Control Sewing Machine Automatic Start Value	0	The setting value of different sewing machines is different. Start the setting of sewing machines.	0-100	Combinati on with parameter P8
P10	0-10 Control Sewing Machine Automatic Stop Value	0	The setting values of different sewing machines are different. Stop the setting of sewing machines.	0-100	
P11	Sewing Machine Delayed Parking Needle Number Setting	0	The photoelectric sensor detects the number of needles and stops sewing machines after there is no cloth.	0-200	
P12	Encoder line number setting	1000	Press the + and – keys at the same time, more than 3 seconds after the start of automatic measurement, rotary encoder to calculate the number of encoder lines	0-9999	
P13	Rotary mode of roller	1	0: Synchronization mode, wheels turn continuously 1: Cam mode, the roller follows the sewing machine teeth feeding synchronously		



NO.	Functional Specifications	Default Valuens	Remark	Parameter Setting Range
P14	Cam Angle Setting	140	Roller rotation interval, factory has been set, careful operation (P13 set to 1 when valid)	0-360
P15	Encoder AB Phase Selection	1	0, A+B+Z encoder 1 : A+Z encoder 2、 B+Z encoder 3、 AB encoder 4、 Single-phase A encoder 5、 Single-phase B encoder 6、 Independent Pulse Mode	0-6
P16	Roller Start Angle Setting	0	After the machine is installed, enter P16, then the screen value flickers, while holding down +; - key, the screen value will flicker quickly, and the display number will change and flicker after 3 seconds; at this time, when turning the handwheel, the display number will change, the handwheel must rotate more than one circle (along the direction of the sewing machine rotation), when the sewing machine teeth just enter the feeding state, press the confirmation key to save. If the puller is not synchronized with the sewing machine, repeat the above operation again until the puller and the sewing machine are synchronized.	
P17	Roller radius setting	16	16MM or 20MM	
P18	Sensor selection	0	0: Two Hall Sensors 1 : One proximity switch	0-1
P19	Selection of Rotation Direction of Encoder	0	0: Clockwise 1 : counterclockwise	Relevant to spindle orientation assembly
P20	Determination of 9000C Inverted Needle	0	When P8 is set to 5, enter the interface and press the + and - keys at the same time. At this time, the value starts to flicker. After 3 seconds, the screen displays 500. At this time, the needle reversal button is pressed and the corresponding value is displayed on the screen. Press the confirmation key on the electronic control to save the value.	0-999
P21	Port 4 function selection	0	0: roller lift 1: roller reverse 2: roll hover above	Cautious revision

NO.	Functional Specifications	Default Valuens	Remark	Parameter Setting Range
P22	Drag distance after thread trimming	0	After thread trimming, the tugboat will automatically drag the fabric forward after the presser foot lifting action is triggered, 1 value is 1mm(This function is only valid when U6 is 1 or 2 )	0-9999
P23	Analog starting value setting	0	Valid when P8 is 1, it is the set value of photoelectric 1 output.	0.1-10
P24	Restore factory settings	0	After setting 100, press the confirmation button and the parameters will be restored to the factory state.	0-9999

#### Introduction to wiring:

According to the socket, corresponding sockets are inserted. The three-color data lines (white, red and black) are connected in parallel with the elevating foot of the sewing machine, the inverted needle and the shearing electromagnet wires (one set of each color is not mixed), and the tugboat and the sewing machine signal are connected in the same way. The mechanical lift foot is needed to lift the roller. The mechanical switch of the white 4P socket is aimed at the connecting rod of the lift foot. The mechanical travel switch is fixed on the side of the leg connecting rod of the sewing machine. When the leg connecting rod is lifted, the roller of the travel switch is pulled up to complete the synchronous lifting of the press foot and the roller of the sewing machine.

#### Technical parameters:

Model	GPB-2 Series Electronic Tractor
Driving mode	Electronic Stepping Direct Drive Motor
Roller lifting mode	Electronic motor drive mode pneumatic mode (optional)
Way of delivery	Synchronized feeding with feeding teeth
Turn-over angle of sewing machine head	Full angle flip
Adjustment of Roller Pressure	Spring adjustable type
Distance between Roller and Pressure Foot	1 mm after lifting and 4 mm after pressing
Roller elevation	16-20 mm
Supporting maximum speed of sewing machine	6000 rpm
Roller adjusts needle spacing	0-12mm (automatic matching according to machine type)
Roller climbing height	0-6mm
Roller width	11-60 mm
Delayed Start of Number of Roller Needles	0-200 needles
Roller pull	2.2-3.0 N.M (depending on configuration)
maximum power	150W
Synchronization with sewing machine	Complete Synchronization

**Error prompt:**

SN	Terms of settlement
E0	Depot repair
E1	Depot repair
E2	Depot repair
E3	Depot repair
E4	Over-current or inter-phase short circuit of motor, restart power supply or return to factory for maintenance
E5	Overvoltage Reporting Error, Restart Power Supply
E6	Undervoltage Error Reporting, Restart Power Supply
E7	Open the electrode, check the circuit, restart the power supply Internal failure, repairing
E8	Stepper motor contact is bad or not connected, check circuit, restart power supply
E9	Storage Errors, Return to Factory Maintenance
E10	Internal parameter error, restart or repairs
E11	Motor inductance unbalance error, restart power supply or return to factory
E12	maintenance
E13	Error of unbalanced resistance of motor, restart power supply or return to factory for maintenance
E14	Depot repair
E15	Restart power supply or return to factory for maintenance
E16	Restart power supply or return to factory for maintenance
E17	Restart power supply or return to factory for maintenance
E18	Restart power supply or return to factory for maintenance
E19	The number of coder lines is not set and is 0 or 65535. Set them after power failure and restart.
E20	Cam angle is not set and is 0 or 65535. Set up after power failure and restart.
E21	The tugboat radius is not set and is 0 or 255. Set it after power cut and restart.
E22	DC motor or solenoid valve not connected or Hall switch not connected, check the line, restart the power supply
E23	DC motor or solenoid valve blocking, check line restart power supply
E24	Check whether the Hall signal of DC motor at the upper position is reliable
E25	Check whether Hall signal of DC motor at lower position is reliable
E26	Check whether the upper and lower positions of Hall switching signal or close to the switching signal are connected, whether the contact is reliable or whether the DC motor is connected reliably.
E27	Depot repair
E28	Depot repair

序列号 serial Number	零件名称 Part Name	数量 Number
1	大臂 Shell	1
2	小臂 Shaft fixing rod	1
3	滚针轴承 Needle bearing	2
4	滚针轴承 Needle bearing	1
5	插销 Pin	1
6	固定轴 Fixed axis	1
7	插销 Pin	1
8	滚针轴承 Needle bearing	2
9	导杆螺母 Guide rod nut	1
10	固定销子 Fixed pin	1
11	导杆 Guide bar	1
12	母杆固定件 Parent rod fixation	1
13	母杆 Mother bar	1
14	滚轮轴 Roller shaft	1
15	小同步轮 Small synchronous wheel	2
16	垫片螺帽 Gasket nut	1
17	弹簧 Spring	1
18	螺帽 Nut	1
19	直流马达 DC motor	1
20	步进马达 Stepper motor	1
21	传感器 Sensor	1
22	螺帽 Nut	1
23	固定螺钉 Fixed screw	5
24	内六角螺丝 Inner six angle screw	8
25	内六角螺丝 Inner six angle screw	3
26	内六角螺丝 Inner six angle screw	1
27	内六角螺丝 Inner six angle screw	3
28	十字螺丝 Cross screw	5
29	防尘盖 Dust cover	1
30	十字螺丝 Cross screw	2
31	大盖 Large cover	1
32	小盖 Small cover	1
33	十字螺丝 Cross screw	2
34	油窗 Oil window	1
35	凸轮 Cam	1
36	安装板 mounting bracket	1
37	橡胶轮 Rubber wheel	1
38	调节螺母 Adjusting nut	1
39	卡簧 Circlip	2
40	刀片 blade	1
41	十字螺丝 Cross screw	2
42	皮带 Belt	1
43	调节座 Adjustment bracket	1
44	圆柱头内六角螺钉+垫片+螺母 Screw + Gasket + Nut	5

