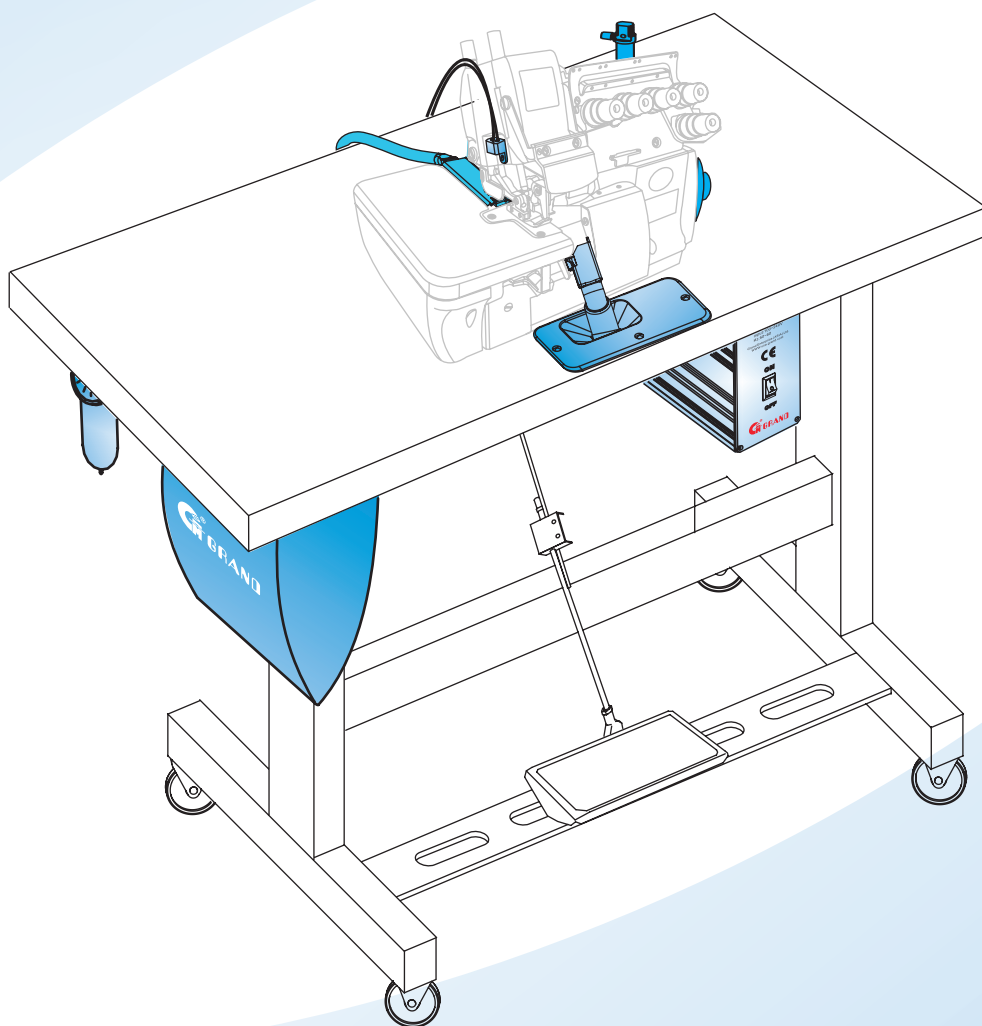


MANUAL 用户手册



MODEL & DEVICES

GMD1-EA-P

直驱电机自动感应吸风剪线集尘装置

DD motor & Automatic induction thread cutting suction device

GRAND AUTOMATIC SEWING PRODUCTS SERIES

Contents

目 录

1、 Product introduction	(1)
产品介绍	
2、 Components and installation instructions	(2-6)
组件及安装说明	
3、 Controller face the version and controller connection instructions	(7)
控制器面版及控制器连接说明	
4、 Control box parts drawing	(8)
控制器配件图	
5、 Direct drive motor parts drawing(GMD1 Series)	(9)
直驱电机配件图(GMD1系列)	
6、 The installation instructions(GMD Series)	(10-11)
直驱电机安装说明(GMD系列)	
7、 Adjustment of speed governor	(12)
调速器安装及调整	
8、 Common trouble shooting	(13-14)
常见故障排除	
9、 GMD1-EA-P motor control parameters and setting	(15-16)
GMD1-EA-P电机参数表及设置	

1、Product introduction

产品介绍

1) EA Series DD motor & Automatic induction thread cutting suction device Description(with over-lock machine, Patented product, Specially designed):

百川EA系列直驱电机自动感应吸风剪线装置简介（配包缝机用、专利产品、特别设计）：

Patent design overlock sewing machine automatic trimming device, can adjust arbitrarily according to the technical requirement before and after the length of the line, and is equipped with chain of dust collector device, can before and after adjusting the technique requirements before and after air suction time respectively, high efficiency and energy saving and environmental protection.

主要配置“剪线刀组+感应电眼+直驱电机及控制系统”整合成“自动抬压脚、前后吸风切线集尘”的微电脑智能新型自动化产品，操作上更简单易用，重点是它的安装“兼容性”很强，各种国内外品牌新旧包缝机均可安装，使用更方便、更直观、范围更广泛，面向工业缝制技术未来发展的新趋势。

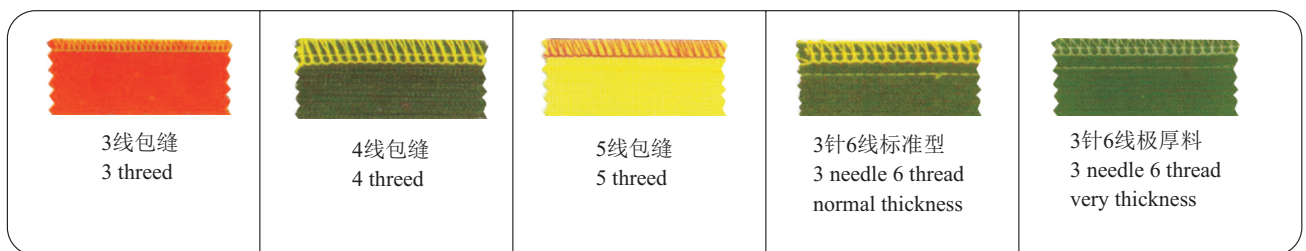
2) Product features

产品特点

- * Using the latest high-speed microcomputer control chip, assure product features.
采用最新的高速微电脑控制芯片，保证产品功能强大。
- * Specially designed infrared light electric system, sensitive and reliable.
特别设计的红外光电系统，灵敏可靠。
- * Easy-to-use design.
简单易用的设计。
- * Dust-collection is non-continuous type save compressed air
集尘用气非连续式，节约压缩空气。
- * Suitable for main brand-names at market.
适合市场上大部分主流品牌包缝机。

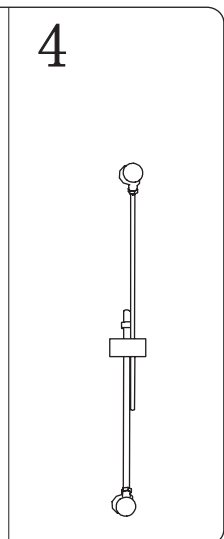
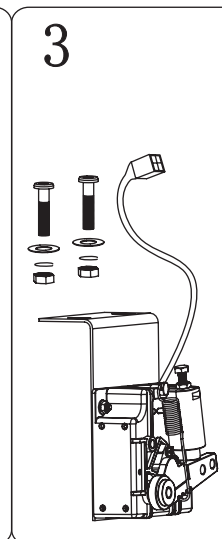
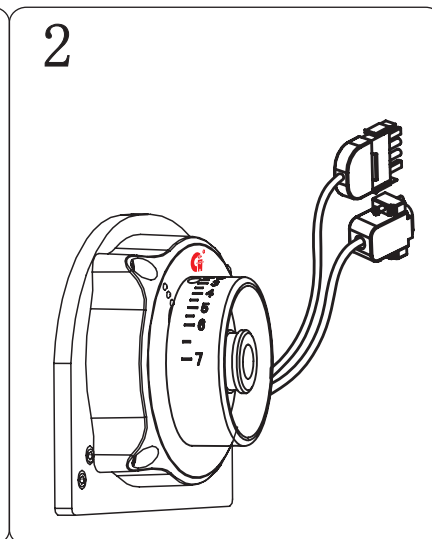
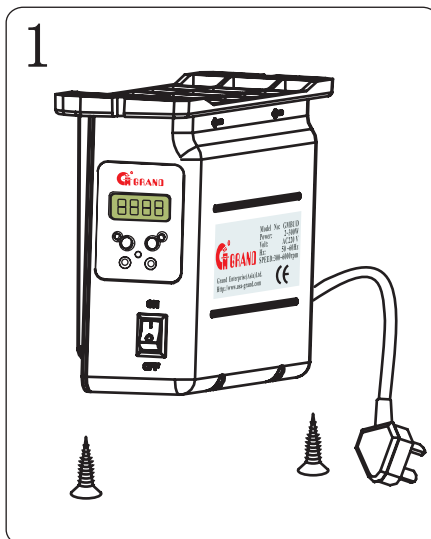
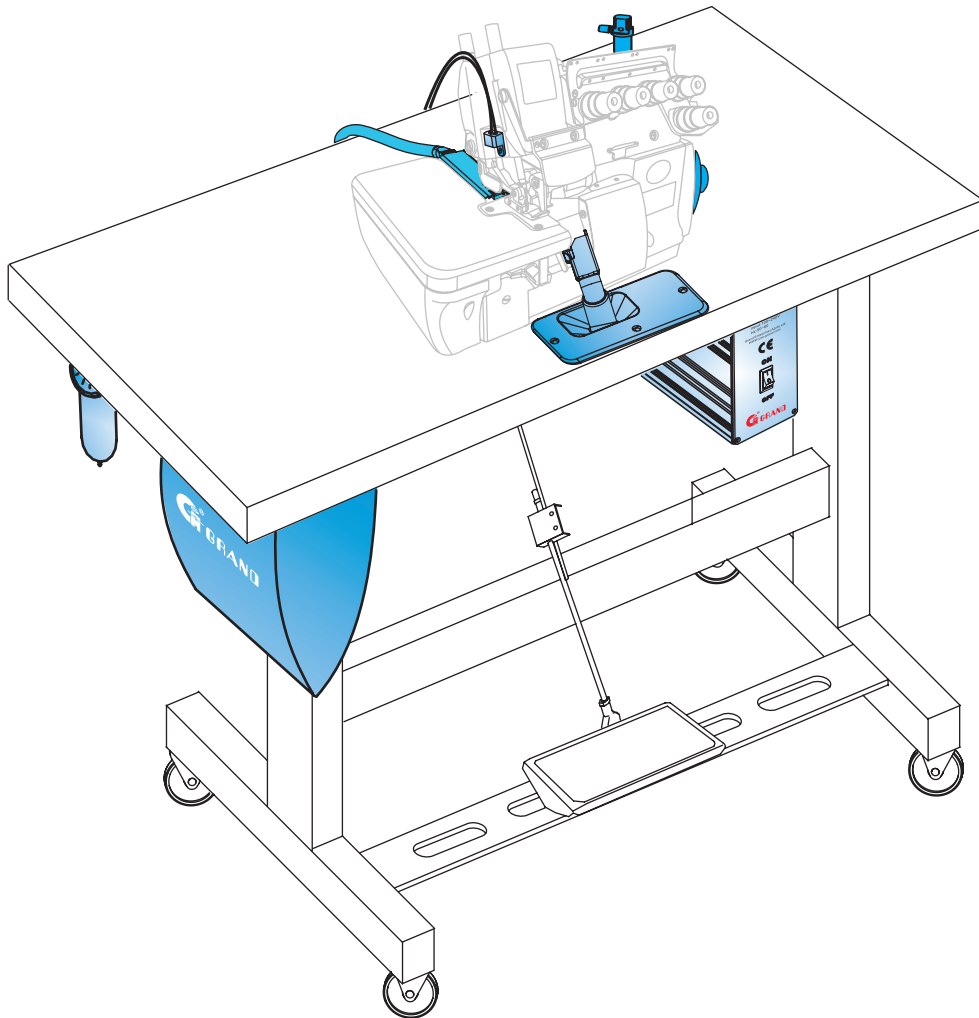
3) Suitable products(partial)

可剪缝制品种类(一部分)



2、Components and installation instructions 组件及安装说明

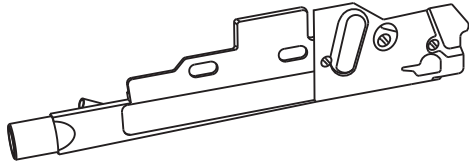
快速安装图 Fast installation diagram



2、Components and installation instructions

组件及安装说明

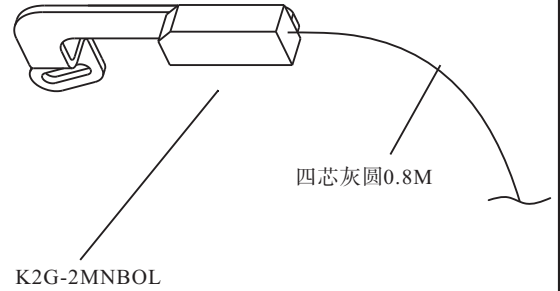
1.切刀组 Cutter



2.电子眼组件(EA)

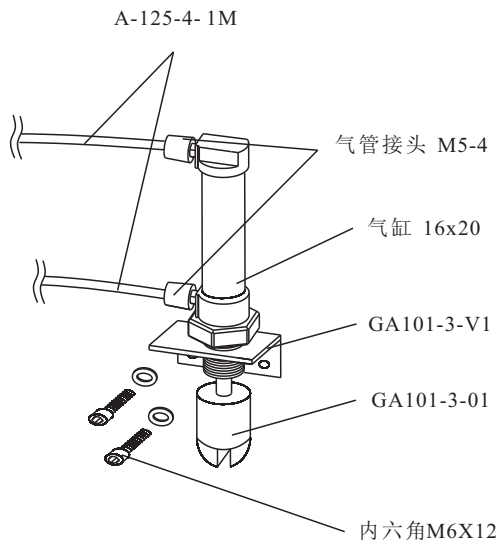
Electronic eye component

配:
M4X10内六角2个
4.5平垫2个
弹垫2个



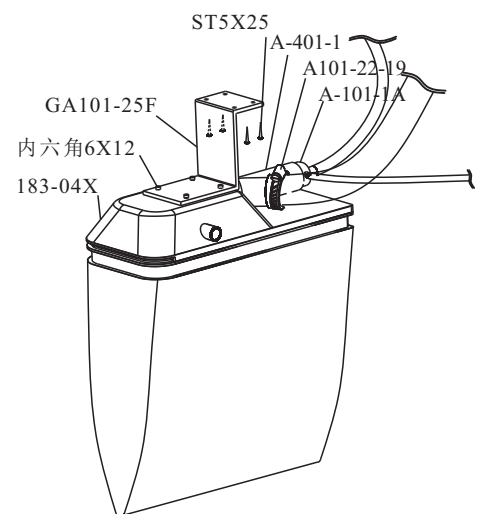
3.气动起压脚组件(AP-16-20)

Pneumatic lifting assembly



4-1.集尘组件(GA112-1)

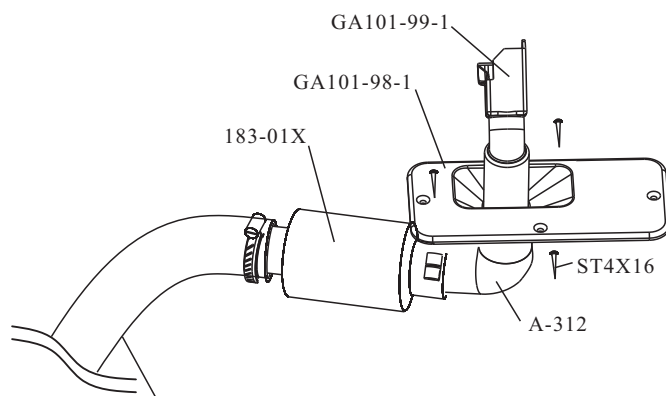
Air collecting dust assembly



2、Components and installation instructions 组件及安装说明

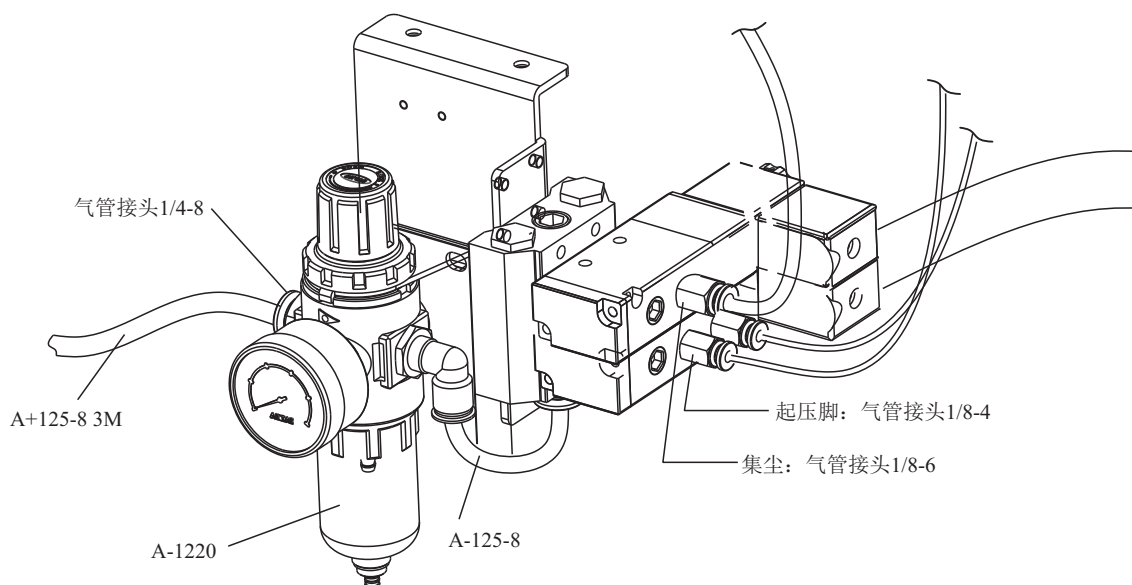
4-2.集尘组件(GA112-1)

Air collecting dust assembly



5. 气阀开关组件(A-1220-S2)

Valve switch module

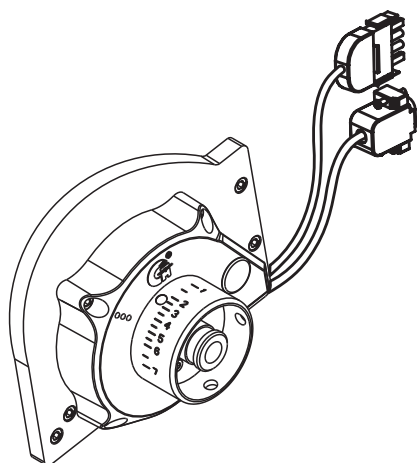


2、Components and installation instructions

组件及安装说明

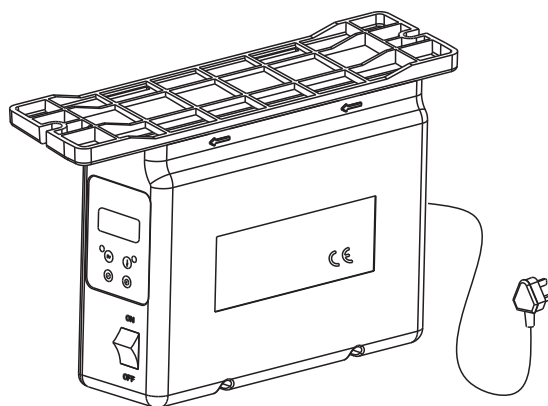
6.直驱电机GMD1

Direct drive motor



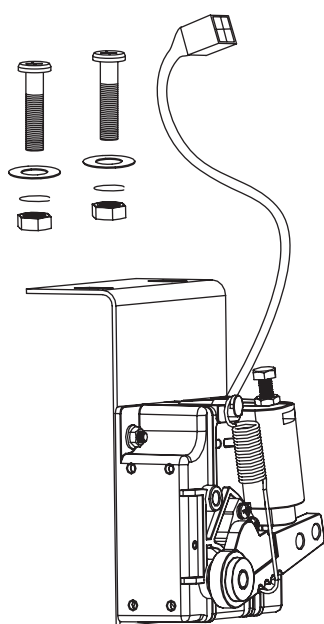
7.电控箱GMD/1A

Electric control panel



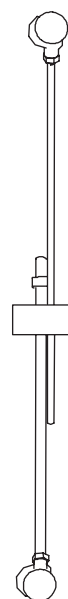
8.分体调速器(MD1-03)

Split speed governor



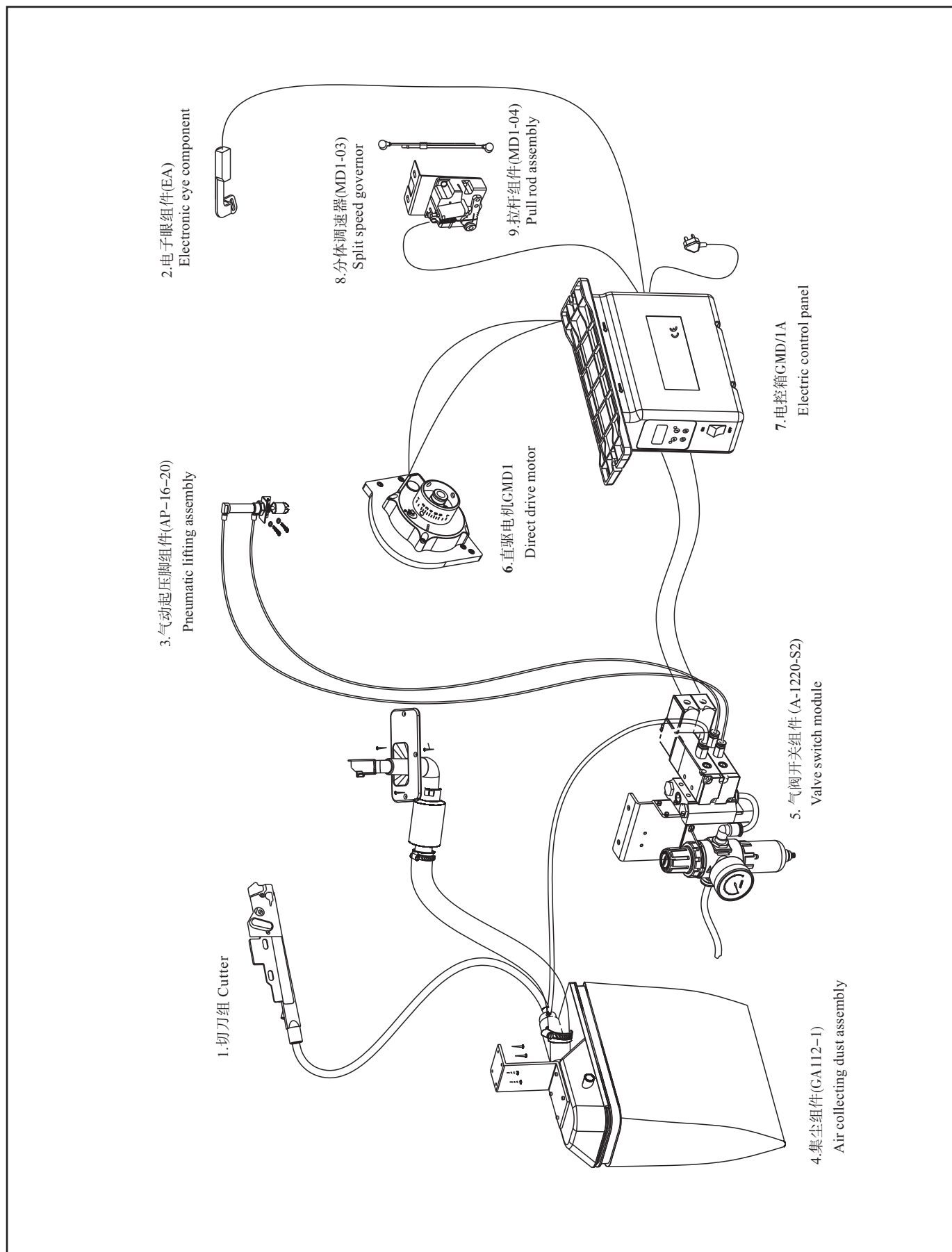
9.拉杆组件(MD1-04)

Pull rod assembly



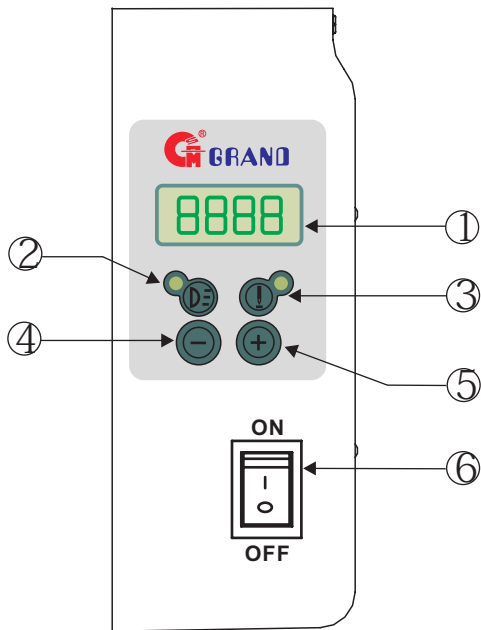
2、Components and installation instructions

组件及安装说明

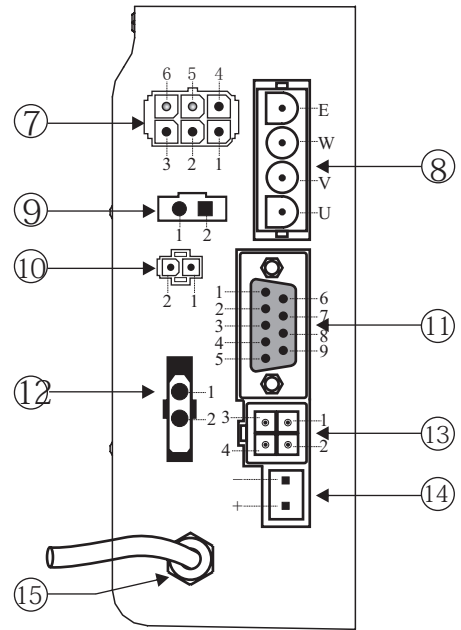


3、Controller face the version and controller connection instructions

控制器面版及控制器连接说明



Controller face version
控制器面版



The control box tail version
控制盒尾板

① Speed display screen
速度显示屏

② Suction setting
间隔吸风设定按钮

③ Needle stop button
停针按钮

④ Speed governing button“-”
调速(减少)按钮

⑤ Speed governing button“+”
调速(增加)按钮

⑥ Switch of system power supply
系统电源开关

⑦ Reflex eye
反射电眼接口

⑧ Interface of motor Three-phase power supply
电机三相电源接口(E/W/V/U)

⑨ Air suction (solenoid valve) interface
吸风(电磁阀)接口

⑩ Foot Lifter (solenoid valve) interface
起压脚(电磁阀)接口

⑪ Motor signal interface
电机信号接口

⑫ 220v Output Socket
220v输出插座

⑬ Interface of speed governor
调速器接口

⑭ Interface of illuminating lamps
照明灯接口

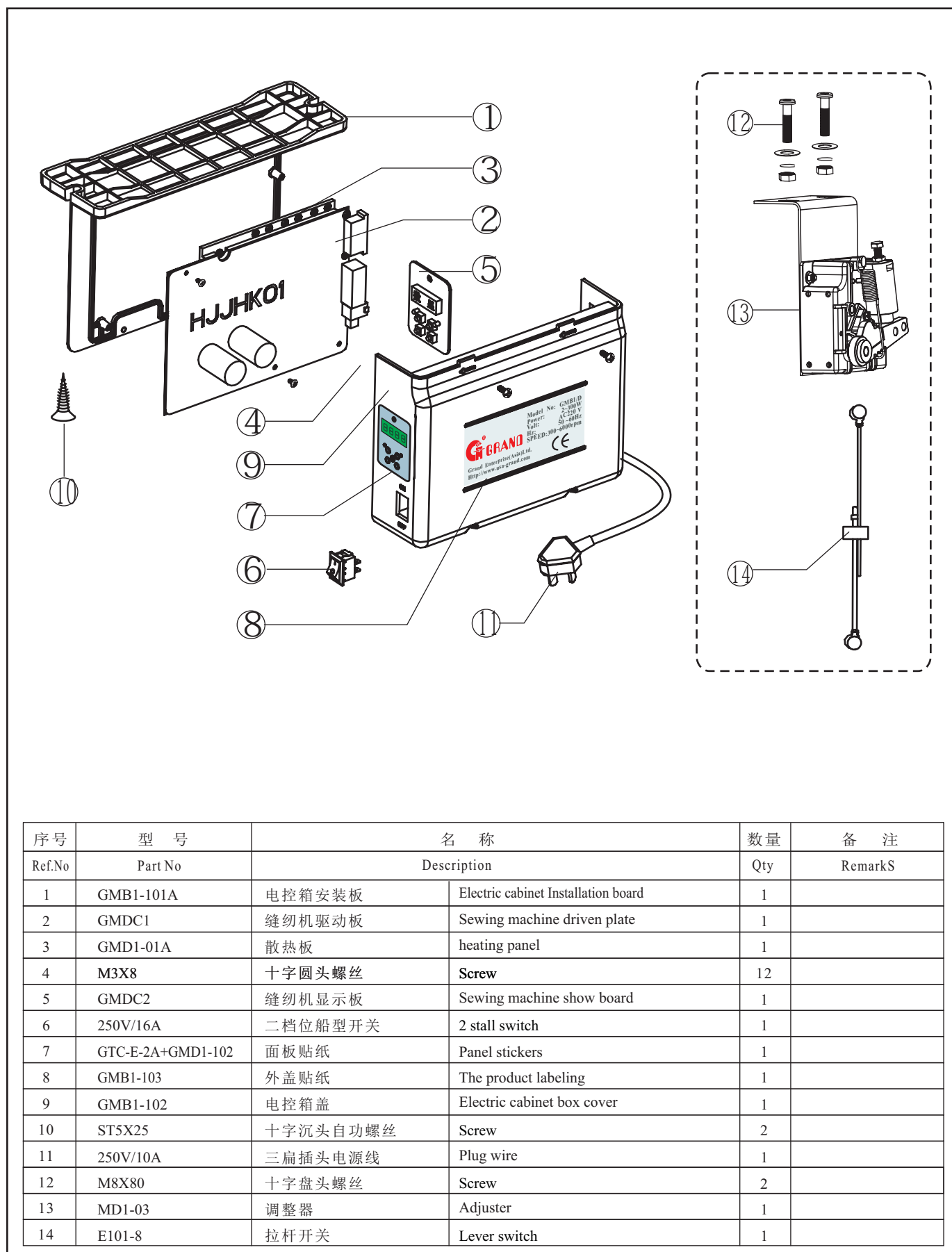
⑮ Power supply cord
电源插头

Caution : Before adjustment, you must conform the highest rotational speed of the sewing machine you are using, in order not to influence the performance of the sewing machine with too high rotational speed. The parameter for the rotational speed of the motor of servo control system ranges from 0-6000 rotation/minute, while adjusting, speed governing button can be pushed to set the actual highest running speed of the sewing machine.

注意：在调整之前必须要确认您所使用的缝纫机最高转速，以免转速过高影响缝纫机的性能。伺服控制系统电机转速参数调整范围为0~6000转/分钟，调整时可按调整速按钮对缝纫机实际最高运行速度进行设置。

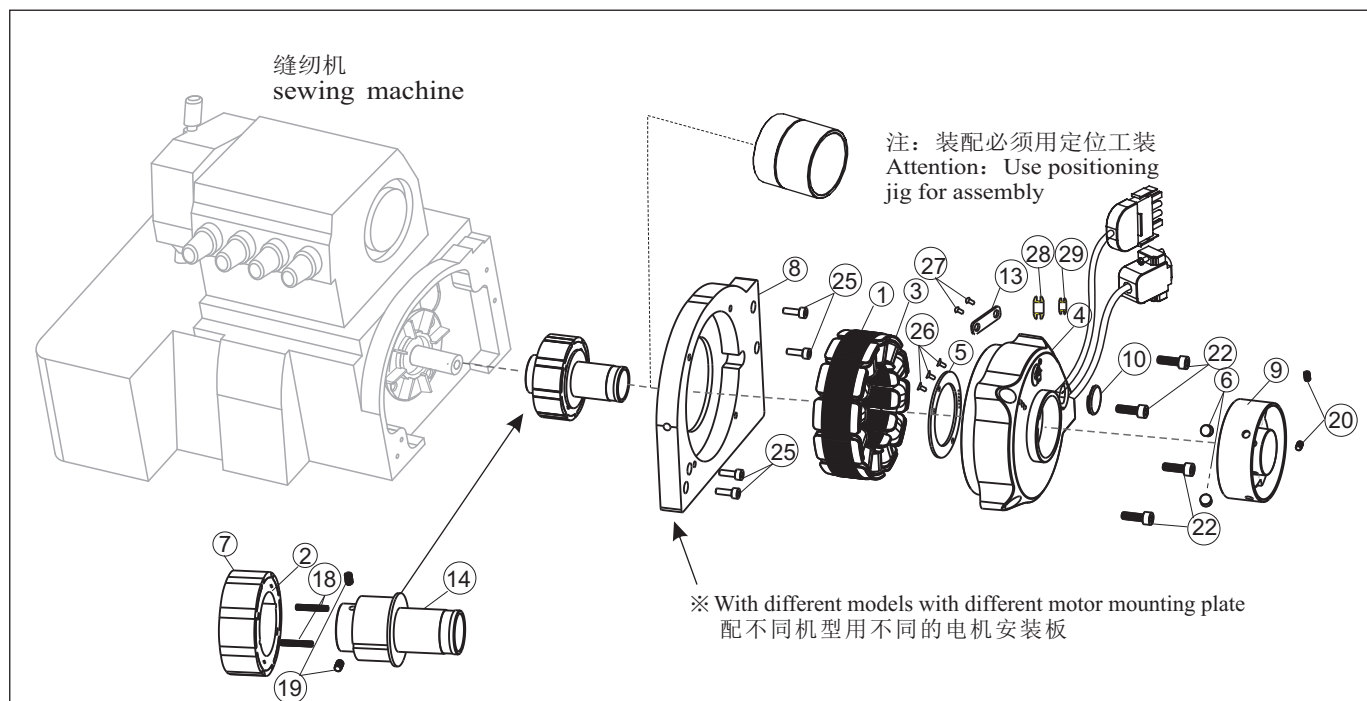
4、Control box parts drawing

控制器配件图



序号	型号	名称		数量	备注
Ref.No	Part No	Description		Qty	Remarks
1	GMB1-101A	电控箱安装板	Electric cabinet Installation board	1	
2	GMDC1	缝纫机驱动板	Sewing machine driven plate	1	
3	GMD1-01A	散热板	heating panel	1	
4	M3X8	十字圆头螺丝	Screw	12	
5	GMDC2	缝纫机显示板	Sewing machine show board	1	
6	250V/16A	二档位船型开关	2 stall switch	1	
7	GTC-E-2A+GMD1-102	面板贴纸	Panel stickers	1	
8	GMB1-103	外盖贴纸	The product labeling	1	
9	GMB1-102	电控箱盖	Electric cabinet box cover	1	
10	ST5X25	十字沉头自功螺丝	Screw	2	
11	250V/10A	三扁插头电源线	Plug wire	1	
12	M8X80	十字盘头螺丝	Screw	2	
13	MD1-03	调整器	Adjuster	1	
14	E101-8	拉杆开关	Lever switch	1	

5、Direct drive motor parts drawing(GMD1 Series) 直驱电机配件图(GMD1系列)

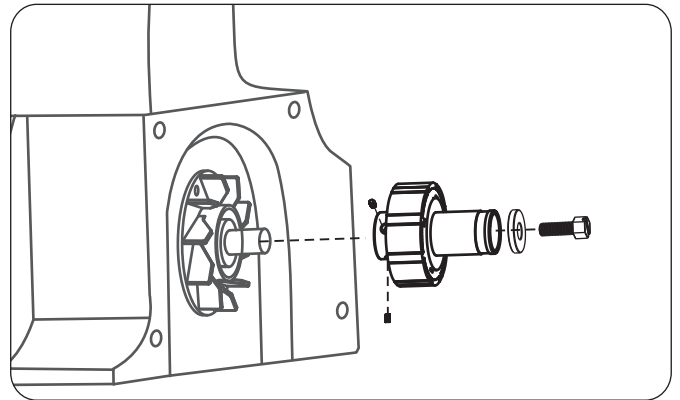


序号	型号	名称		数量	备注
Ref.No	Part No	Description		Qty	
1	GMD1-01	定子硅钢片	The stator silicon steel sheet	1	
2	GMD1-02	转子硅钢片	Rotor silicon steel sheet	1	
3	GMD1-03	骨架	Skeleton	1	
4	GMD1-Y04	电机壳	Motor housing	1	
5	GMD1-05	霍尔板	Hall plate	1	
6	GMD1-06	强磁铁	Magnet	2	
7	GMD1-07	磁钢	Magnetic steel	1	
8	GMD1A-04-V5	电机安装板	Motor mounting plate	1	
9	GMD1-105-A5	小风叶手轮	Small blades the handwheel	1	
10	GMD1-10	护线罩	Convenient cover	1	
13	GMD1-13A	锁线板	Lock line board	1	
14	GMD1-J14N-V1	转子芯	The rotor core	2	
18	φ3X20	弹性销	Elastic pin	2	
19	M5X6	内六角圆柱头螺钉	Screw	2	
20	M5X5	内六角圆柱头螺钉	Screw	2	
22	M5X18	内六角圆柱头螺钉	Screw	4	
25	M4X12	内六角圆柱头螺钉	Screw	4	
26	M3X4	内六角圆柱头螺钉	Screw	3	
27	M3X6	十字盘头螺钉	Screw	3	
28	φ8	护线圈	To protect the coil	1	
29	φ6	护线圈	To protect the coil	1	

6、The installation instructions(GMD Series) 直驱电机安装说明(GMD系列)

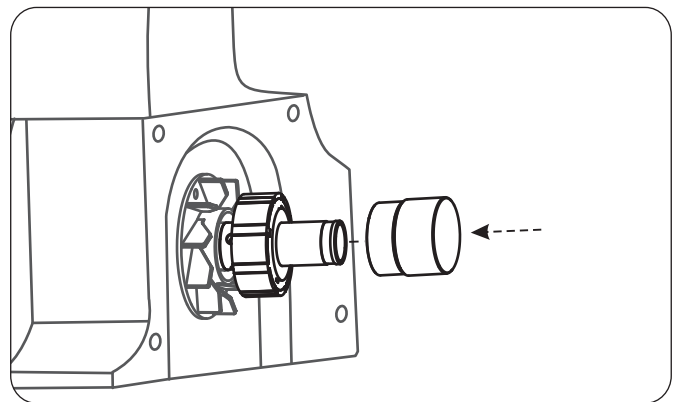
1) Installation rotor components 安装转子组件

Loaded on rotor components, With hex tight set screws tight stator
装上转子组件，用螺丝固定好转子。



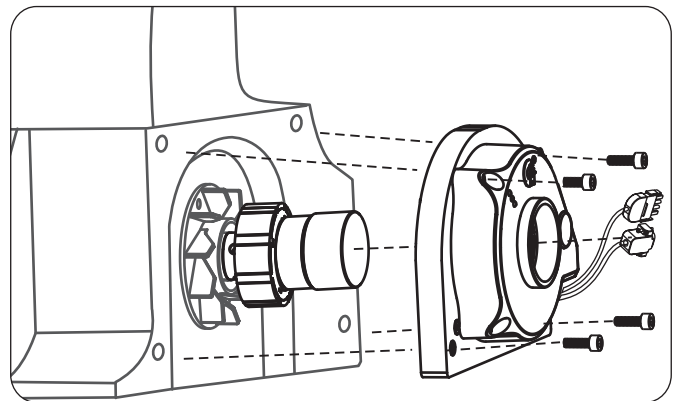
2) Installation Concentricity positioning jig 安装同心度定位工装(必须使用)

Loaded on concentricity positioning jig(Prior to installation, the positioning clamp shall fully coordinate with the motor)
装上同心度定位工装(同心度定位工装要完全配合电机)

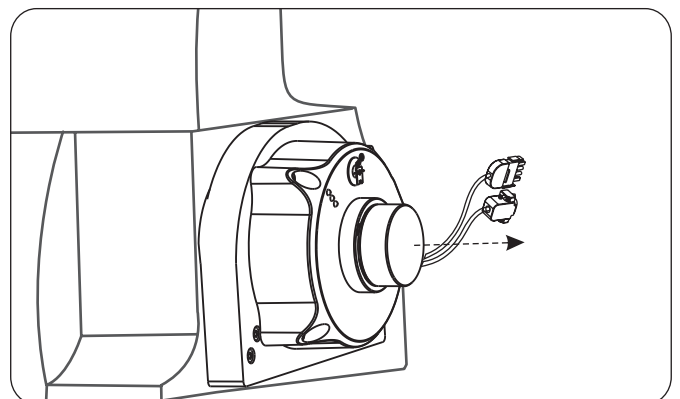


3) Installation the motor 安装电机

Aim the place, mount motor, with four inside hexagonal cylindrical head screw lock.(Attention: To align the motor housing side slot on the positioning ring)
对好位置，装上电机，然后再用四颗内六角圆柱头螺丝固定好。
(注意：电机外壳边要对准定位圈上的槽)



4) Taking out the positioning clamp 取出同心度定位工装



6、The installation instructions(GMD Series) 直驱电机安装说明(GMD系列)

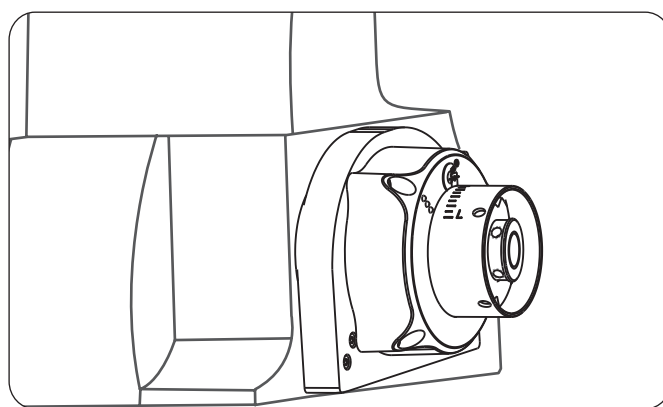
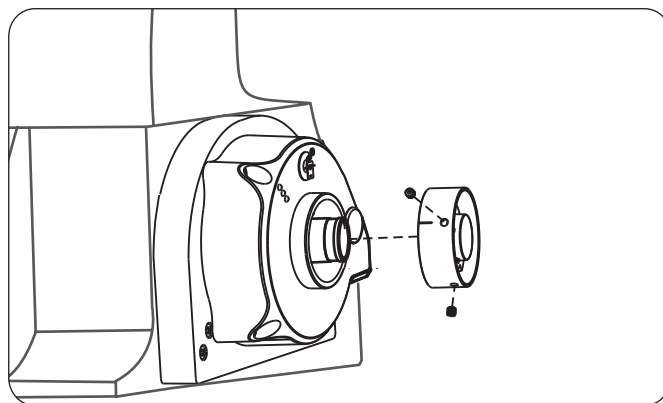
5) Installation the hand wheel

安装手轮

Aim the place, Loaded on the handwheel, with four inside hexagonal cylindrical head screw lock. (Attention: While installing the hand wheel, the machine needle is adjusted to the highest position, roll the rotor to adjust the needle to the highest position and make sure the magnetic steel of the hand wheel is in alignment with the Hoare of the motor shell.)

对好位置，装上手轮，然后再用2颗内六角圆柱头螺丝固定好。

(注：安装手轮要注意上下定针，上下针的位置，转动里面的转子使针位调最上针位置，手轮磁铁L位对准电机霍尔位置。)



6) Connection control box, complete the installation

连接控制盒, 完成安装



Attentions 注意事项

1. If the positioning clamp does not fully coordinate with the motor, there will be bad concentricity existing, which will directly the output capacity of the motor.
如定位夹具没有完全配合电机就会出现同心度不好，会直接影响电机输出功率。
2. Before taking out the positioning clamp, the terminal surface of the rotor and the terminal surface of the stator coiled silicon steel sheet must be on the same flat surface. In the event of unparallel, the methods of adding and reducing wavy spacers are adopted to make them be on the same flat surface; otherwise the quantity of electriccurrent will disaccord and influence the capacity and rrtational speed of the motor.
在取出定位夹具前转子的端面与定子矽钢片的端面必须在同一平面上。如不平行则采用增减波形垫片的方法使其处于同一平面，否则会出现电流大小不一致，影响电机功率和转速。
3. While installing the hand wheel, the machine needle is adjusted to the highest position; the magnetic steel of the hand wheel is in alignment With the Hoare of the spear plate.
安装手轮时，把缝纫机机针调到最高位，手轮的磁钢对准盖板的霍尔。

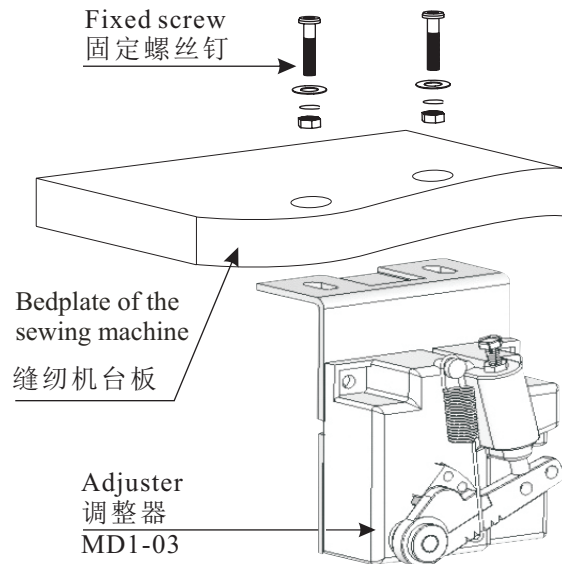
7、Adjustment of speed governor 调速器安装及调整

■ Installation of speed governor

调整器安装

The speed governor consists of front foot power spring, back foot power spring and pedal cantilever. Fixing the speed governor at the designated position of the bedplate of these sewing machine with screw fasteners.

调速器由前踏力弹簧、后踏力弹簧、踏板悬臂组成。将调速器用螺钉固定在缝纫机台板指定的位置上。



■ Pedal adjustment

踏板的调整

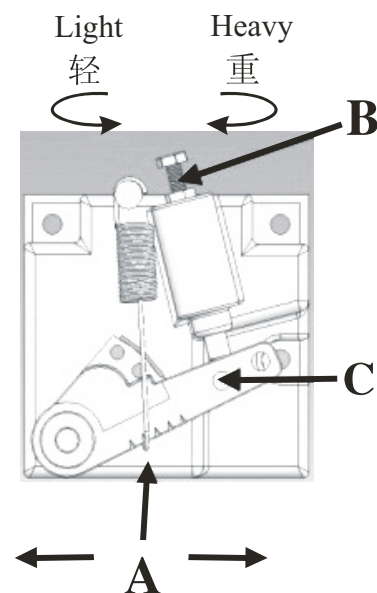
When the spring strikes out towards the right side, it indicates that the power is heavier. When the spring strikes out towards the left side, it indicates that the power is lighter. When suspender locks and installs towards the right hole, it indicates that the journey is relatively longer. When suspender locks and installs towards the left hole, it indicates that the journey is relatively shorter.

当弹簧向右侧勾时，表示力量愈重，当弹簧向左侧勾时，表示力量愈轻。当吊杆向右侧孔锁装时，表示行程较长。当吊杆向左侧孔锁装时，表示行程较短。

(A) Two springs for front foot power
前踏力两弹簧

(B) Two springs for back foot power
后踏力两弹簧

(C) Pedal cantilever
踏板悬臂



8、Common trouble shooting

常见故障排除（一）

If faults happen to the sewing machine while it is working , the control dge the faults by itself, display the fault codes on the display screen and help your quickly make diagnosis and repair.

缝纫机在工作过程中出现故障，控制系统会自动判断故障并显示出故障代码，帮你快速诊断与维修。

Code schedule of common faults:

常见故障代码一览表

Fault code 故障代码	Fault cause 故障原因	Diagnosis and maintenance methods 诊断与维修方法
E-01	Indicating short circuit protection for the hardware 表明过流短路保护	The reasons are: the driving tubes of the control device are damaged; the line circles are short out and passed excess current within the moment. The method for solving it is to cut off the system power supply and then to restart the power supply after 30 seconds to observe whether it normally works. If the faults have not been removed, please try again for several times, if they still have not been removed, please contact the supplier. 原因是控制器驱动管损坏、电机线圈短路、瞬间过流。解决方法是关闭系统电源，30秒后重新启动电源观察是否正常工作。如果故障没有清除，请多试几次，仍然没有清除，请联系供应商。
E-02	Indicating over-current protection for the software 表明堵转过流保护	The reason is that the load is too large. The method for solving it is to cut off the system power supply and then restart the power supply after 30 seconds to observe whether it normally works. If the faults have not been removed, please try again for several times, if they still have not been removed, please contact the supplier. 原因是负载过大，解决方法：关闭系统电源，30秒后重新启动电源观察是否正常工作。如果故障没有清除，请多试几次，仍然没有清除，请联系供应商。
E-03	Indicating protection for the input voltage 表明输入电压保护	The reason is that the voltage of the power supply exceeds the use scope. The method for solving it is to cut off the system power supply and to check whether the input voltage of the power supply is normal. If the voltage of the power supply is normal, please contact the supplier. 原因是电源电压超出使用范围。解决方法：关闭系统电源，检查电源输入电压是否正常，联系供应商。

8、Common trouble shooting

常见故障排除（二）

Fault code 故障代码	Fault cause 故障原因	Diagnosis and maintenance methods 诊断与维修方法
E-05	Indicating protection for the input voltage 表明输入电压保护	<p>The reason is that the voltage of the power supply exceeds the use scope. The method for solving it is to cut off the system power supply and to check whether the input voltage of the power supply is normal. If the voltage of the power supply is normal, please change the power supply plate or contact the supplier.</p> <p>原因是电源电压超出使用范围。 解决方法：关闭系统电源，检查电源输入电压是否正常。若电源电压正常，则更换电源板或联系供应商。</p>
E-06	Indicating locked rotation protection 表明堵转保护	<p>The reason is that the rotation is mechanically locked or the motor is default phase. The method for solving it is to cut off the power supply and to repair the sewing machine or contact the supplier.</p> <p>原因是机械堵转、或电机缺相。 解决方法：关闭系统电源，维修缝纫机械或联系供应商。</p>
E-07	Indicating protection for empty load 表明空载保护	<p>The reasons are: the needle position sensor is broken-down, the magnet, the sensor, the lines and the motor are not connected. The method for solving it is to check whether the outgoing line for the motor is normally connected, if the outgoing line is normally connected, please contact the supplier.</p> <p>原因是针位传感器故障，磁铁、传感器、线路、电机没接。 解决方法：是检查电机出线是否连接正常，若出线连接正常，请联系供应商。</p>
E-13	Indicating the coder is broken-down 表明编码故障	<p>The reason is that the coder of the motor is badly contacted or damaged. The method for solving it is to check whether the signal line for the motor is normally connected, if the signal line is normally connected, please contact the supplier.</p> <p>原因是电机编码器接触不良或损坏。 解决方法：检查电机信号线是否连接正常，若出线连接正常，请联系供应商。</p>
E-15	Indicating the pedal is broken-down 表明踏板故障	<p>The reason is that the plug contact is badly contacted or there are problems related to the circuit of the operation panel. The method for solving it is to check whether the outgoing line for the pedal is normally connected, if the outgoing line is normally connected, please contact the supplier.</p> <p>原因是踏板插头接触不良或操作板线路问题。 解决方法：检查踏板出线是否连接正常，若出线连接正常，请联系供应商。</p>

9、GMD1-EA-P motor control parameters and setting

GMD1-EA-P电机参数表及设置

(软件T-04: 单电子眼反射 / The single digital reflection)

序号	参数	参数说明	参数范围	备注(1):稍重机型	备注(2):重机型(四针六线)
Ref.No	Parameters	Parameter	Parameter scope	Note(1):Heavier models	Note(2):Weight Model (4 pin 6 line)
A-01	1	运行模式Operation mode	0手动manual, 1半自动semi-automatic, 2全自动automatic		出厂需设置:3000 default:3000
A-02	5000	最高限速Maximum speed limit	1000-6000		
A-03	300	最低限速Minimum speed limit	100-3000		
A-04	600	停机速度Downtime speed	100-1500		
A-05	30	加速度 Acceleration	2-50		
A-06	1	停针模式Needle model	0下停针Down stop needle, 1上停针Up stop needle, 2无定位停针No	手轮L(上停针Down) 手轮4(下停针Up)	右上位灯亮有上下停针功能 Right light on has up and down stop needle function
A-07	0	显示速度Display speed	0不显示No, 1显示Display		
A-08	4	吸风功能设定 Suction function set	0不吸NO, 1前吸Before, 2前后吸Before and after, 3后吸after, 4长吸Long, 5间隔吸interval		
A-09	100	吸风持续时间Suction duration	50-2000ms	此项无作用No role	
A-10	200	间隔针数设定Pin number set apart	5-1000		
A-11	2	功刀功能Cutting function	0不切No cut, 1前切Before cut, 2前后切Before and after cut, 3后切After cut		
A-12	10	前吸风针数Before cutting needle	1-99		
A-13	10	后吸风延时针数After cutting needle	1-99		
A-14	80	切刀时间Time of Knife	30-500ms	此项无作用No role	
A-15	0	后切后是否停针 If after cutting is stop needle	0不停No step, 1停针stop needle	设为1时, 停机时 脚踏板需回位 When set to 1, when stop The pedals to return	
A-16	500	定针速度Constant speed	100-3000		出厂需设置/default:500
A-17	40	定针电流Step needle current	5-550		重机型需增加Weight models to increase
A-18	100	停机电流Stop current	1-500		重机型需增加Weight models to increase
A-19	1	马达方向motor direction	0逆时针reversal, 1顺时针corotation		四针六线出厂设置/default:0
A-20	3	反踩模式Reverse step mode	0起压脚Presser foot, 1上停针Up stop , 2软件不控制反踩功能 No control 3先上停再起压脚Up stop to Presser foot		当设为0或1时, A-06需设为1即上停针 When set to 0 or 1, A - 06 should be set to 1 on the needle
A-21	500ms	压脚延时Presser foot delay	30-2000ms	抬压脚多长时间放下 How long time will the presser foot down	
A-22	100ms	启动保护时间 Start the protection time	30-2000ms		抬压脚放下后多长时间工作 How long time will the presser foot down after working
A-23	20	后切停机延迟针数 After cutting down delay pin number	1-99		
A-24	0	电眼是否控制电机 If electric eye control motor	0不控制,1控制		
A-25	1	前遮电眼是否前吸风 Whether covered magic eye before the suction	0不吸风,1吸风		
A-26	500ms	后切延时吸风时间 After the cut delay suction time	10-2000ms	即间隔吸风时间 Suction time interval	
A-27	300ms	后吸风持续时间After suction duration	10-2500ms		
A-DD		恢复默认设置Restore default Settings			
A-EE		保存Save			

9、GMD1-EA-P motor control parameters and setting

GMD1-EA-P电机参数表及设置

(软件T-04: 单电子眼反射 / The single digital reflection)

备注(Remark)

运行模式A-01说明(Operation mode A - 01) :

(1) 设为0手动时: A带有手动剪线的A-20只能设为(1上停针)或(2软件不控制反踩功能), B带有起压脚的A-20只能设为(0起压脚);
To 0 when manual: A manual trimming with A - 20 can only be set as the needle (1) or (2) software does not control the step function, B A - 20 with the presser foot is set as the presser foot (0);

(2) 设为1半自动时: 带有剪线的A-20只能设为 (1上停针)或(2软件不控制反踩功能)起压脚用电子开关控制;

When set to 1 semi-automatic: A - 20 with shear line can only be set as the needle (1) or (2) software does not control the step function up presser foot with electronic switch control;

(3) 设为2全自动时: A-20只能设为(0起压脚),无剪线功能。

Is set to 2 automatic: when A - 20 is set as the presser foot (0), no trimming function.

Operating methods:

操作方法:

- 1、Press at the upper right key “!” and hold, Turn on the power switch,
按下右上键“!”不放, 打开电源开关;
- 2、Screen display “7777”, press the “+” to “7779” confirmation to enter (upper right key is okButton).
屏幕显示“7777”时, 按“+”到“7779”确认即可进入(右上键方是确认键)。
- 3、After parameter modification is completed, pls set "A-OO" or "A-EE" and then press "!" button to save, you will see "PPPP"; Pls restart the motor for use again,
参数修改完成后, 按到“A-EE”, 再按右上键“!”显示“PPPP”保存, 关电源重新启动才可使用。

Remarks:

备注:

- (1) Screen display “7777”, press the “+” to “7782” will enter “auto continuous operation” (self-checking).
屏幕显示“7777”时, 按“+”到“7782”确认即可进入自检状态。
- (2) Support PCB V14 version.
支持PCB板 V14的版本。
- (3) Work, press the left key 8 seconds don't put can display 7777, according to the number + 7779, press the right key to confirm.
工作时, 按下左键8秒不放也可显示7777时, 按+号到7779, 按右上键确认即可进入。
- (4) The normal production mode, the or so direction key to adjust speed, after running the motor can be saved.
普通生产模式下, 左右方向键调整速度, 运行电机后才可保存。
- (5) Enter any parameters setting, a straw before stepping on the wind.
进入任意参数设定时, 反踩前吸管吸风。
- (6) Upper right on the needle function (the default is the needle under the counter on the needle)
右上灯亮有停针功能(默认为下停针反踏上停针)。

Don't open:

不开放:

Boot to hold the upper left button, open the power switch, according to "7778", then press left and right buttons to adjust to the "7578", then press the upper left button can be adjusted to the program version T - 04, according to the upper right button to save.

开机按住左上角按键不放, 打开电源开关, 显示“7778”, 再按左右按键调整到“7578”, 再按左上角按键可调整到程序版本T-04, 按右上按键确认保存。



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