

一体机节能单直驱使用说明书

All-in-one Direct Drive Instruction Book

欢迎使用本公司产品，制衣行的正确投资选择！

Welcome to use the our products, it is the right investment choices in garment industry!

本说明书为本公司新研发的“一体机节能单抬压脚直驱控制箱”产品参考手册，请认真阅读此手册以更好运用本公司产品。

一、安全说明：General Safety Instructions

1: 电机电控接通电源时（开机状态）请不要把脚放在脚踏板上

Do not put your feet on the pedals when the control box and motor is switched on (boot status)

2: 本产品请专业人士安装调试

Let professionals to install and debug this product

3: 严禁在通电时打开控制箱与电机端盖

Do not open the control box and the motor cover when energized

4: 换针，穿线或更换底线时请关闭电源

Please turn off the power when changing the needle, threading or replacing the bottom line

5: 安装，拆卸维修时请拔掉电源插头

During installation and removal service, please turn off the power and pull the plug

6: 翻抬缝纫机时请关闭电源

Please turn off the power when turn lift sewing machine

7: 使用本产品请远离高频电磁波和电波发射器等，以免所产生的电磁波干扰伺服驱动器而发生错误动作。

When use this product, please stay away from high-frequency electromagnetic waves and radio wave transmitters, etc., in case the electromagnetic waves generated interfere with the servo drive to occur wrong action .

郑重声明：

Solemnly Declare:

1: 不遵守安全使用说明操作规章，发生意外后果自负。

Do not comply with the manual book operating regulations and the safety requirements, all accidental occurrence should be taken by yourself.

2: 未经本公司授权，请勿擅自改动产品，由此而引起的后果本公司不负任何责任。

Without our authorization, please do not alter our products, our company is not liable for any consequences arising therefrom.

二、产品介绍:Product Instruction

本产品由本公司自主研发,产品个性鲜明,真正体现出了机电一体化概念,更是节能,高效,环保,优美集结于一身。可广泛适用于多种缝设备。

We design and manufacture the servomotor for the purpose of Mechanotronics. This motor features in energy-saving, high production efficiency, environmental and compact Could be used for different industrial sewing machines

1. 组成部分:Construction

控制系统由控制器和电机两部分:

The servomotor is composed of control system and motor

A. 控制器:控制箱和脚踏调速器。

A. Control system includes control box and pedal speeder

本控制系统体现出了超前的设计理念,系统操作简单易上手,整个控制系统性能优越。具有起步快,停车快、准等优点。而且电路模块保护功能完善:有欠压、过流、过压、掉电等一系列保护功能。踏调速器可实现无级调速。

This control system features is easy to use and features in excellent performance, including quick start, quick stop (sewing machine), accurate needle Position. Furthermore, the modular circuit has Self-Protection System when against lower voltage, over current, over heat etc. Speed stepless is realized by the pedal speeder.

2. 性能参数指标:Specifications

电源供电电压 Voltage	220V 单相 2 phase
频率 Frequency	50~60HZ
电机转速 Speed	200-6000RPM
电机扭矩 Motor torque	≤2.2NM

110V 性能参数指标

电源供电电压 Voltage	110V 单相 2 phase
频率 Frequency	50~60HZ
电机转速 Speed	200-6000RPM
电机扭矩 Motor torque	≤2.2NM



三、控制面板使用说明:Installation for Control Panel

1.系统按键图如下:The system key diagram is as follows



2.各按键的用途:Each key purpose



序号 The serial number	按键图标 Parameters of the code	功能说明 function instruction
1	 (菜单键) (Menu button)	参数进入 (见进入参数的操作方法) Function Enter button (below to enter the parameter method of operation) 按一下“”键数码管显示区会出现: up 为上停针; 在按一下出现 dp 为下停针; 再接按出现 on 为无停针。 This key has two uses: The first use is to direct press""key to switch up or down needle position, if up pinhole lamp lights means up needle position, if down pinhole lamp lights means down needle position, if two lamps off means no needle position.
2	 (确认键) (Confirm button)	参数确定 Parameter confirm button 按一下显示区域显示 ON, 机头灯功能开启; 再按一下显示区域显示 OFF, 机头灯功能关闭 This button also has two uses: The first use is to simply press key to off or on lamp on the head. The second use is to function parameters(confirm)key, point2 are described below
3	 (数值调整键) (Numerical adjustment key)	向上键 (修改数据时加) / (转速调整加) Up key (when increasing value)
4	 (数值调整键) (Numerical adjustment key)	向下键 (修改数据时减) / (转速调整减) Up key (when increasing value)
5	 (压脚功能键) (Presser foot switch)	按一下显示区域显示 ON, 自动抬压脚功能开启; 再按一下显示区域显示 OFF, 自动抬压脚功能关闭。 注: 长按 键, 输入密码进入参数修改选项


6	 (吸风功能键) (Trimmer switch)	按一下显示区域显示 ON, 吸风功能开启; 再按一下显示区域显示 OFF, 吸风功能关闭。 注: 长按  键, 输入密码进入参数修改选项
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3.进入参数的操作方法:To enter the parameter method of operation


例:怎样把电机的顺时针转调到逆时针转

第一步:先打打开电源;


第二步:先按 “” 键不放,再用另一只手按 “” 号键,此时画面会显示 P-00

第三步:此时按 “” 号键,画面会显示 P-02,(P-02)就是电机正反转参数(常用参数表上有)。



第四步:此时按 “” 键画面会显示 “1”


第五步:此时按 “” 号键把 “1” 调到 “0”

(“1” 为顺时针转,“0” 为逆时针转,常用参数表上有)。


第六步:按 “” 键确定参数调整完毕并退出参数。

Example: How to change the motor from clock wise to Counterclockwise The first step: Open the power;

Step two: Press the “”key, no leave, and use the other hand press the “” key, the screen will display the p-00

The third step: press “”key, the screen will display p-02, (p-02) is a motor clockwise or Counterclockwise wise parameters (common parameter list has)

Step Four: Now press “”key (enter into parameter)screen will display “1” Fifth step: press

“” key, change “1” to “0”

(“1” clockwise“0”for the counter-clockwise,common parameters list has)

Step Six: Press the “S”key to determine the parameters, save and exit the parameter.

4.恢复出厂设置:Restore factory settings

恢复出厂设置方法:先按“P”键不放,再用另一只手按“+”号键、此时画面会显示P-00,再长按“S”键约3秒即可,(恢复出厂设置值在常用参数表里)。

Restore factory settings: Press the P key, no leave, and use the other hand press the“+”key, the screen will display the p-00, then press“S” key seconds, it will Restore factory settings.

四、电控常用参数设置: Commonly used parameter setting

序号 The serial number	参数编号 Parameters of the code	参数名称 The parameter name	参数范围 Adjusting range		出厂设置 The factory Settings	备注 Other
1	P-01	最大速度 Maximum speed lock	200-6500RPM		4500 转	
2	P-02	电机方向 Direction of rotation	0是逆时针 0 is counter clockwise	1是顺时针 1 is clockwise turn	1	
3	P-03	下停角 The needle Angle	6-18 度		12 度	
4	P-04	起缝速度 Start sewing speed	200-800 转		250 转	
6	P-06	定针缝 Set the seam	0-999 针		0	
7	P-07	空				
8	P-08	空				
9	P-09	空				
10	P-10	自动间隙运行(跑合) Automatic clearance run(run)	把0改成1再按S键 Then press the S key change to 1		0	关掉电源停止跑合 Turn off the electricity stopped running
11	P-11	抬压脚起动时间 Presser foot ascend starting time	0-2000ms		0	

12	P-12	抬压脚保护时间 Ascension presser foot protection time	1-120s	4s	
13	P-14	最大电流限制 Maximum current limiting	50-1000	280	
15			1:检测针位, 0:不检测 1:detecting needle 0:no detection	1	设为 1 时, 如果 无上定位传感器 则报警 ER01, 设 为 0 时则不报警 Set "1", if there is no upper needle stop sensor will alarm ER01; set "0" no alarm
16	P-17	复位出厂密码 factory reset code	1-3	1	P-09 参数开启后 才能出现 P-17 参 数、设为 3 长按 OK 键恢复出厂 密码 when open the parameter "P09", then it can occur "P17",set "3", then long press "OK" button to recover the factory code
17	P-18	出厂密码 factory code	0000-9999	2013	
18	P-19	软起动针数 soft start stitches	0-15	0	0 针关闭该功能, 1-15 针时启用软 启动, 并设定针 数 (上停针时 有效) 0 stitch is close this function, 1-15stitches is open the soft start , and set the stitches(upper needle position is effective)
19	P-20	软起动速度 soft start speed	200-3500	800	
20	P-21	吸气功能 suction function	0:关闭 1:开启 0: close 1:start	1	电机运转时开启/ 关闭吸气功能 motor running open/close

					suction function
21	P-22	吸气开启针数 suction start stitches	1-200	30	吸气打开针数 (P23 针数打开时 有效) suction open stitches(P23 stitches open have effective)
22	P-23	吸气关闭针数 suction close stitches	0-200	0	
23	P-24	吸气动作维持时 间 suction action maintain time	50-2000ms	120ms	此参数暂时不用 this parameter do not use now
24	P-25	吸气全功率时间 suction full power time	35-1000ms	120ms	
25	P-26	吸气全功率时功 率 the power of suction full power	5-100%	100%	
26	P-27	吸气维持功率 suction maintain power	1-100%	80%	
27	P-28	吸气释放时间 suction release time	0-500ms	20ms	
28	P-29	吸气保护时间 suction protection time	1-120s	30s	吸气单次动作最 长时间 the longest time of suction single action
29	P-30	压脚触发模式 foot presser trigger mode	0:关闭 1:开启 0: close 1:start	0	1.设为 0 时,后踏 速控器压脚不 抬。设为 1 时后 踏速控器压脚抬 起, 2.维持抬起,直到 前踏或保护时间 到才会释放压 脚, 并且每次电 机停止时自动抬 压脚 1, set "0", back step the pedal,the foot presser is not up, set "1", back step the pedal, the foot presser is up. 2, the foot presser is maintain up, until front step the pedal or the

					protection time is finish then release, and motor stop, the foot presser is up automatic.
30	P-31	后抬脚启动时间 back foot presser lifter start time	0-2000ms	0	后踏延迟启动压脚的时间 the time of back step delay start foot presser
31	P-32	抬压脚动作维持时间 foot presser lifter action maintain time	50-1000ms	160ms	此参数暂时不用 this parameter do not use now
32	P-33	抬压脚全力功率时间 foot presser lifter full power time	35-1000ms	160ms	
33	P-34	抬压脚全力功率时功率 the power when the foot presser lifter full power	5-100%	100%	
34	P-35	抬压脚维持功率 foot presser lifter maintain power	1-500%	80%	
35	P-36	抬压脚释放时间 foot presser lifter release time	0-120ms	30ms	压脚释放时间 the foot presser lifter release time
36	P-37	抬压脚保护时间 foot presser lifter protection time	1-100s	10s	压脚单次抬起最大维持时间 the biggest maintain time of the foot presser lifter single time
37	P-38	显示速度 display time	200-6500RPM		显示当前电机实际速度 display the current motor real speed
38	P-39	显示速控器电压 display the volt of speed controller	14-1010	中点电压 195 Neutral point volt	显示当前速控器电压 0—1024, 相当于 0-5V Display the current speed controller volt 0-1024, it is equal 0-5V
39	P-40	显示直流母线电压 display DC buses voltage	60-500V	310v	当电压高于 395 会报警, (直流母线 电压/1.414=交流 母线电

					压)when the volt is higher than 395V will alarm,(DC buses volt/1.414 = AC buses volt)
40	P-41	过压保护开关 overload protection switch	0:关闭 1:开启 0: close 1:start	1	设为 0 关闭过压报警, 设为 1 打开报警, 当直流母线电压超过 395V 时, 报警 Er16, 电机自动停止运行, 报警后当电压低于 385v 电机可再次运行 set "0" is close the overload alarm, set "1" is open the alarm, when DC buses voltage is over 395 V , will display Er16, the motor will stop automatic, when volt is lower 385V, the motor can run.

五、一般故障处理: Common faults and treatments

序号 The serial number	错误码 Error code	错误内容 Error content	错误问题的多种可能 Several possible error problem
1	Er01:	找不到停车位 No stop signai	1. 定位器信号插头未插好 2. 定位器感应位置靠近一点与磁铜 (1mm-15mm) 距离 1. locator signal plugs not inserted 2. the locator induction position close to the point keep 1mm-1.5mm distance and magnetic steel
2	Er02:	开机没有检测到调速器 Not find the speed controller	1. 调速器插头没有插 2. 调速器线断了 1. Speed control device plug is not insert. 2. Speed controller wire is broken

3	Er03:	电机霍尔或相位线错误 Motor Hall or phase error	1. 九针插头接触不良: Nine hole plug contact undesirable 2. 电机没有安装好: The motor doesn't install good 3. 霍尔坏: Hall bad
4	Er04:	堵转保护 Lacked-rotor protection	1. 电机过载 2. 电机与电控柜连接的四心线接触不好 1. The motor overload 2. The motor and the controller connected four hole line contact is not good
5	Er05:	硬件过流保护 Hardware over-current Protection	1. 电机过载 2. 信号线接触不好或断了 1. The motor overload 2. Signal wire not good or broken
6	Er07:	串口通信时错误 Serial per communication	显示屏至主板信号线不良或主板坏 Display to the system board signal bad or bad
7	Er16:	过压保护 overload protection	1. 电机驱动电源电压过高, 220V 电源电压超过限定值 (AC310V), 或负载惯性过大导致再生电压超过限定值 (DC440V), 或电压检测回路故障。 注: (110V 控制系统电源电压超过限定值 (AC155V), 或负载惯性过大导致再生电压超过限定值 (DC220V)). 1. The motor drive power supply voltage is too high, the 220V power supply voltage exceeds the limit value(AC310V), or the load inertia is too large to the regenerative voltage exceeds the limit value(DC440V), or the voltage detection circuit fails. Note:(110V control system power supply voltage exceeds limit value(AC155V), or load inertia is too large to regeneration voltage exceeds limit value(DC220V).
8	Er20:	欠压保护 Deficiency protection	1. 电机驱动电源电压过低, 220V 电源电压低于限定值 (AC91V), 或电机驱动电源电压低于限定值 (DC130V), 或电压检测回路故障。 注: (110V 电源电压低于限定值 (AC45.5V), 或电机驱动电源电压低于限定值 (DC65V)) 1. The motor drive power supply voltage is too low, the 220V power supply voltage is lower than the limit value(AC91V), or the motor drive power supply voltage is lower than the limit value(DC130V), or the voltage detection circuit fails. Note:(110 V power supply voltage is below the limit(AC45.5 V), or motor drive power supply

			voltage is below the limit(DC 65V))
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六、作业环境要求: Environmental Requirements

1. 请不要在过潮湿环境中作作业

Please do not work at damp place

2. 220V 电控: 【220V 接入供电时电压稳定在 (AC200V~260V/单相) 之间】

220V electronic control: [220V access to power supply voltage stability between (200V~260V)]

110V 电控: 【110V 接入供电时电压稳定在 (AC100V~130V/单相) 之间】

110V electronic control: [110V access to power supply voltage stability between (100V~130V)]

3. 用户使用前必须接地, 确保人身安全

Must be adequately grounded for safety

4. 不要在过热地方作业

Do not work at high temperature

5. 控制系统与电机不要在强磁高辐射环境中作业, 以免干扰而使系统错误

Do not run motor and control system near to ferromagnetic or high-radiance area

七、保修服务:warranty Service

1. 本产品自购买起免费保修 1 年, 终身维护。保修期内除人为损坏以外出现任何质量问题可免费维修。

Our products come with year of quality guarantee, from the ship day. Within guarantee period, service is free of charge, unless man-made damage or misuse

2. 在保修期内, 以下情况出现损坏本公司不给予保修服务。

During the guarantee period, our free service does not cover below:

(1). 未经本公司同意自行拆卸, 修理, 改装造成的故障或损坏。

Dismantle the motor unit without permission, and cause damage.

3. 但凡出现无法解决的问题可以联系本公司。

please contact us whenever have problem.

