781F 步进+伺服使用说明书

前言

Preface

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" 一体步进+伺服控制箱"产品参考手册，请认真阅读此手册以更好的运用本公司产品！

This user manual is for our newly developed "Integrated step + servo control box" products reference manual, Please read this manual carefully,hope it can give you useful help!

阅读本说明前以下要求说明请注意：

Before reading the manual,please note the following requirements:

1：用户使用作业前必须可靠接地，保证人生安全！

The user must be grounded before operations to ensure safety

2：非专业人士请勿拆卸控制箱

Non-professionals do not disassemble the control box

3：控制箱与电机远离强磁高辐射环境

The control box and motor away from the magnetic high radiation environment

4：不要在过热环境中作业

Do not work in hot environment

5：不要在过于潮湿环境中作业

Do not work in humid environments

6：220V 电控：【220V 接入供电时电压稳定在（AC200V~260/单相）之间】

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

电源供电电压 Voltage	220V 单相 1 phase
频率 Frequency	50~60HZ
电机转速 Speed	200-4000RPM
电机扭矩 Motor torque	≤3.5N.M

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

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

电源供电电压 Voltage	110V 单相 1 phase
频率 Frequency	50~60HZ
电机转速 Speed	200-4000RPM
电机扭矩 Motor torque	≤3.5N.M

安全叮嘱：

Safety requirement:

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 .

郑重申明：

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.

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

保修策略：

Warranty policy:

1：本产品自购买起免费保修 2 年，终身维护。保修期内除人为损坏外出现的任何质量问题可免费修

Since from the purchase of this product,the free 2-year warranty,lifetime maintenance. During the warranty period,any quality problems the product will be free repaired,except artificial damage.

2：未经本公司同意自行拆卸，改装造成损坏将不给于保修

Without our consent disassemble or modify,the damaged will not give in warranty

3：但凡出现无法解决的问题可以联系本公司

Whenever find the problem can not be solved,you can contact with our company

目 录

Contents

一、显示屏常用操作介绍： Introduction of display screen common Operation

1.功能介绍：

| 序 号 No.1	按键图标 Button Icons	功 能 说 明 Function Description
1	P	1．短按 P 键，进入密码界面；输入正确密码即进入参数界面。 Short press the P key to enter the password interface; enter the correct password to enter the parameter interface. 2.长按 P 键，进入控制箱软体版本号。 Long press the P key to enter the control box software version number.
2	OK	1.参数确定保存键 Parameter determines the Save button 2. 长按"OK"键 3 秒钟，显示当前控制箱的电机状态、调速器状态及当前输入电压。 Long press the "OK" button for 3 seconds to display the current control box motor status, governor status and current input voltage.
3	+	1."+"键（修改参数号时加） "+" button (Add when modifying the parameter number) 2.在调整 LED 灯亮度界面时，按该键 LED 灯亮度增强。 When adjusting the brightness of the LED light interface, press this button to increase the brightness of the LED light.
4	−	1."-"键（修改参数号时减） "-" button (Decrease when modifying the parameter number) 2.在调整 LED 灯亮度界面时，按该键 LED 灯亮度减弱。 When adjusting the brightness of the LED light interface, press this key to decrease the brightness of the LED light.
5	←	向左键（修改参数值时减） Left key (decrease when modifying parameter value)
6	→	向右键（修改参数值加） Right arrow (Add to modify parameter value)

7		**1.** 短按该键进入机头 **LED** 灯亮度调整界面。 Short press this key to enter the brightness adjustment interface of the machine head LED light. **2.** 进入 **LED** 灯亮度调整界面之后，短按该键增强 **LED** 灯亮度。 After entering the LED light brightness adjustment interface, short press this key to increase the LED light brightness.
8	清零 Clear	当前工作个数清零键 **Clear key for current number of jobs**
9	恢复出厂设置 Reset	恢复出厂设置键 **Factory reset button**
10		进入步进抬压脚相关参数键 **Enter the related parameter keys of stepping presser foot lifting**
11	语言选择 Language	语言切换键 **Language switch key**
12	F	上针位标定键 **Upper needle position calibration key**

二、如何进入参数与如何修改参数

How to enter parameters and how to modify the parameters

系统参数进入解析：

System parameters enter the analysis:

1. 短按（ P ）键将进入"系统参数"列表（需要密码**.2021** 进入调整，按 OK 进入）。

1. Short press the (P) key to enter the "system parameter" list (password required. 2021 to enter the adjustment, press OK enter).

2. 短按（ + ）（ − ）键，切换参数编号，在需要修改参数值请按（ ← ）（ → ）键进行加或减，

2. Short press the (+) (−) key to switch the parameter number. When you need to modify the parameter value, press the (←) (→) key to add or subtract.

3. 修改完毕参数后需要按（ OK ）键保存参数并退出系统参数调节。

3. After modifying the parameters, you need to press the (OK) key to save the parameters and exit the system parameter adjustment.

三：操作参数说明表： Operating Parameter Description Table

菜单号 System parameter list	功能说明 Function Description	功能参数默认值 Function parameter default values	功能参数范围 Function parameter ranges	参数说明 Parameter Description
P00	最大缝纫速度 MAX Sewing speed	2800	200～4000	转 / 分钟 Round / Minute
P03	踏板加速曲线 Pedal acceleration curve	100	0 —100％	
P06	慢启动选择 Slow Start Selection	1	0 — 1	0：禁用 1：启用 0: Disable 1: Enabled
P07	慢启动速度 Slow start speed	350	200 — 800	转 / 分钟 Round / Minute
P08	慢启动针数 Slow start Stitches number	2	1 — 30	针数 Stitch number
P12	大盘信号选择 Market signal selection	1	0 — 1	0：禁用 1：启用 0: Disable 1: Enabled
P15	输入电压检测开关 Input voltage detection switch	1	0 — 1	0：禁用 1：启用 0: Disable 1: Enabled
P16	低速速度大小 Low speed speed size	800	200～1500	转 / 分钟 Round / Minute
P19	步进停止时候钳位电流大小 Clamping current when stepping stops	12	0~50	数值越大步进越有力 The larger the value, the stronger the step
P21	主伺服延时启动 Delayed start of main servo	100	100~1500	毫秒 ms
P22	步进抬压脚上行程 Upper stroke of stepping presser foot	780	0~2400	越小越往上顶 The smaller the top
P23	步进抬压脚下行程 Lower stroke of stepping presser foot	2100	0~2400	越大压脚越往下压 The larger the presser foot, the lower the press
P24	步进电流大小 Step current size	31	0~50	数值越大步进越有力 The larger the value, the stronger the step
P25	步进速度大小 Step speed size	36	0~80	数值越大步进速度越快 The larger the value, the faster the stepping speed
P26	压脚抬起后自动放下时间 Automatic presser foot lifter	10	1 — 120	秒 Second

	down time			
P27	步进压脚延时启动	0	0~900	毫秒 ms

四：错误代码解析 ： Error code analysis

显示的错误码 Display error code	错误码意思 Error code meaning	错误的产生 Various possible for the erro	解决错误 Solution
ER-01	软件过流		
ER-02	脚踏板信号错误 Foot controller signal error	1：开机时没插调速器 2：调速器插反 3：调速器线断开 4：调速器损坏 1: Not plugged foot controller into control box 2: foot controller inserted upside 3: foot control box line broken 4: foot controller damage	1：检查调速器信号线 2：更换调速器 3：更换控制器 1: check the foot controller signal line 2: change the foot controller 3: replace the foot controller
ER-03	电机相位信号错误 Motor phase signal error	1：五针插头接触不良 2：电机安装时霍尔和转子存在大偏差 3：电机霍尔坏 1: Nine-pin terminal plug Poor connect 2: Hall and rotor has large deviations when the motor is mounted 3: Motor hall damage	1：打开电机上的橡皮盖通过孔看电机转子与定子是否在同一平面保障误差不超过1MM 2：更换电机 3：更换控制器 1: open the rubber cover on the motor through the hole to see whether the motor rotor and stator in the same surface to ensure the error is not more than 1MM 2:replace the motor 3: replace the control box
ER-04	电机堵转保护 Motor stall protection	1：缝纫机过重或堵死 2：电机过载 3：电机4线驱动线没连接好或插反 1: Sewing machine overweight or blocked 2: Motor overload 3: 4-wire motor drive cable is not connected or inserted upside	1：检查电机4P线 2：检查缝纫机是否过重 3：更换控制器 1: check motor 4P line 2: check whether the sewing machine is too heavy 3: replace the controller
ER-05	硬件过流保护 Hardware over current	1：缝纫机过重或堵死 2：电机过载 3：电机相位信号线没连接好 4.功率管损坏 1: Sewing machine overweight or blocked 2: Motor overload 3: Motor phase signal line is not connected 4: Power tube damage	
ER-06	主电机停针信号未检测到	1. 九针插头接触不良 2. 电机霍尔坏 1.Nine-pin terminal plug Poor connect 2.Motor hall damage	更换电机 replace the motor

ER-07	过压 Over load	1.电机驱动电源电压过高，220V 电源电压超过限定值（AC310V），或负载惯性过大导至再生电压超过限定值(DC440V),或电压检测回路故障。（110V 控制系统电源电压超过限定值（AC155V），或负载惯性过大导至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).	过压 Over load
ER-08	欠压故障 Under voltage error	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))	欠压故障 Under voltage error
ER-10	主电机编码器故障 Main motor encoder failure		
ER-11	大盘信号未检测到 The market signal is not detected		
ER-13	步进通讯失败 Stepping communication failed		
ER-14	串口通讯超时 Serial communication timeout	1：显示屏连接主板线连接不良 2：主板芯片损坏 1:Display bad cable connection Motherboard 2: Motherboard chip damage	1：检查显示屏与控制器连接线 2：检查控制器是否还可运行，如不能运行就是控制器损坏 3：检查机器旁是否有高频机器干扰 4：更换显示屏 1:Check the connection line between

			the display screen and the control box.
			2: check whether the controller run well, if not, controller damage
			3: check whether there is a high frequency machine near the machine interference
			4: change the display panel
ER-22	步进电机复位失败 Stepper motor reset failed		
ER-23	步进电机上抬堵转 Stepper motor lifts up and stalls		
ER-24	步进电机回原点堵转 Stepper motor back to the origin blocked		
ER-25	步进电机下压堵转 Stepper motor under pressure and locked rotor		
ER-26	步进板硬件过流 Stepper board hardware overcurrent		
ER-27	步进板软件过流 Stepper board software overcurrent		