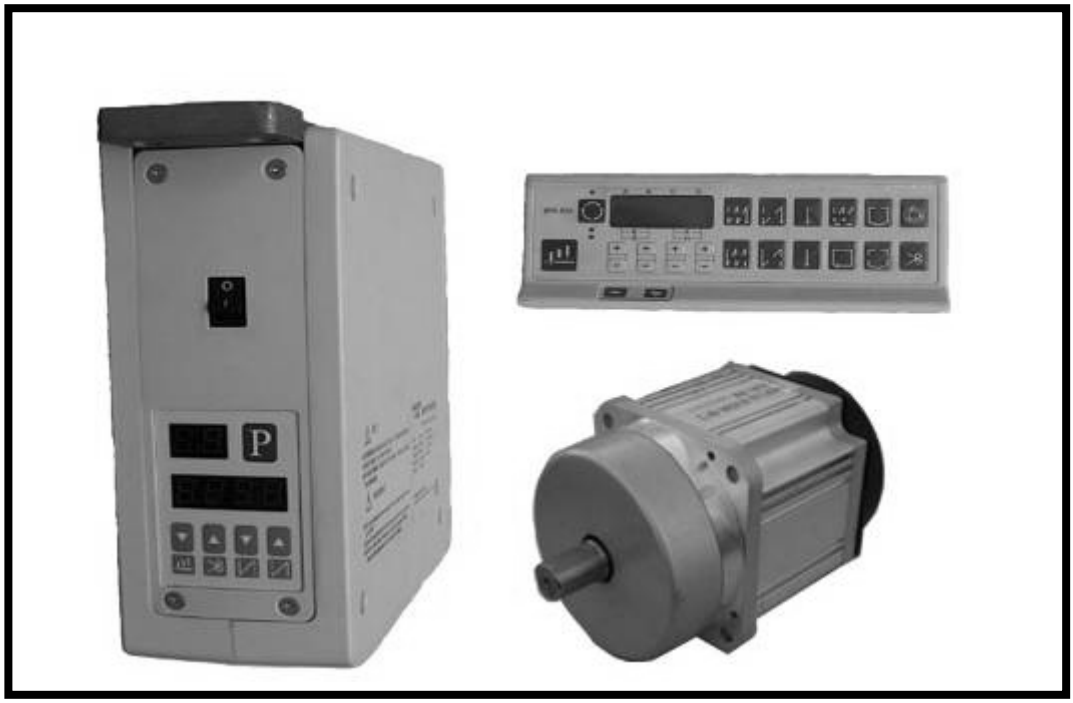
AC 伺服马达
AC Servo motor

使用说明书 V1.0
User Manual V1.0

型　号 : WR507



使用前请详细阅读本使用说明书及所搭配的缝制机械说明书，配合正确使用，并须由接受过正确训练的人员来安装或操作。

Please read the manual carefully and the manual of sewing machinery accompanied before use. Installation and operation by trained professionals and correct use are required.

目　录

1.安全上的注意事项

使用前请详细阅读本技术资料与所搭配的缝制机械说明书，配合正确使用，并必须有接受过正确训练的人员来安装或操作。

在使用或安装 EasyDriver（“易动”）型伺服马达系列控制箱驱动装置时，请注意以下事项。本驱动装置仅适用于指定的缝制机械，请勿移做其他用途。

1.1 作业环境的安全

(1)电源电压：

电源电压请遵照马达与控制箱铭牌所标之规格 200V—240V 范围操作。

(2)电磁波干扰：

请远离高频磁波机器或电波发射器等，以免所产生的电磁波干扰本驱动装置因而发生错误动作。

(3)温湿度：

a.请不要在室温 45℃以上或 5℃以下的场所操作。

b.请不要在日光直接照射的场所或室外运作。

c.请不要在暖气(电热器)旁运作。

d.请不要在相对湿度 30％以下或 95%以上或露水的场所运作。

(4)空气：

a.请不要在多灰尘或具有腐蚀性物质的场所操作。

b.请不要在有挥发性气体的场所操作。

1.2 安装的安全

(1)马达、控制箱：请遵照说明书正确装好。

(2)附属品：如要装配其它选购配件或附属品时，请先关闭电源并拔掉电源线插头。

(3)电源线：

a.请注意不要被外物压住或过度扭曲电源线。

b.装钉电源线时请不要靠近会转动的上轮，最少要离开 3 公分以上。

c.当连接电源线到电源插座时，应确定比供应电压必须符合标示在马达与控制箱铭牌上的指定电压 200V—240V 内。

(4)接地：

a.为防止杂讯干扰或漏电事故，请做好接地工程（包括缝纫机、马达、控制箱、定位器）。

b.电源线的接地线须以适当大小的导线和接头连接到生产工厂的系统地线，此连接必须被永久固定。

1.3 操作中的安全

(1)在第一次开电后，请先以低速操作缝纫机并检查转动方向是否正确。

(2)缝纫机运转时，请不要去触摸上轮、机针等会运动的部位。

(3)所有可运动的部分，必须以所提供的防护装置加以隔离，防止身体接触并请勿在装置内塞入其他物品。

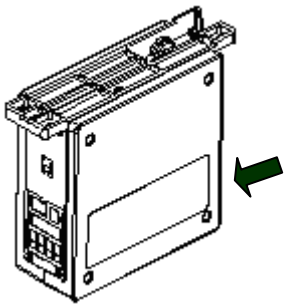
(4)请不要在拆下皮带护盖及其他安全装置下操作。

1.4 保养维修

在操作以下动作前，请先关闭掉电源：

(1)要拆卸马达或控制箱时，或在控制箱上插或拔任何连接插头时。

(2)控制箱里面有危险高压电，所以关闭电源后要等 1 分钟以上方可打开控制箱盖。



内部高压电危险

(3)翻抬车头时，与更换车针或梭子或穿线时。

(4)修理或作任何机械的调整时。

(5)机器休息不用时。

1.5 保养维修的规定

(1)修理及保养的作业，要请经过训练的技术人员执行。

(2)马达的通风口附近，请不要堆置杂物阻塞空气流通，尤其马达后风盖上更不可附著灰尘、纸屑、布屑等物，以免造成马达发烫。

(3)请不要用以下物体，如木槌、铁槌…等敲击本产品装置或马达（马达）心轴。

(4)所有维修用的零件，须由本公司提供或认可，方可使用。

1.6 危险标示、注意标示

这个标示符号表示机器安装时，如有错误恐会伤害到人体或机器会受到损坏，所以机器方面有危险性的地方会有此标志。

这个标志符号表示有高压电等，电气方面有危险性的地方会有此标志。

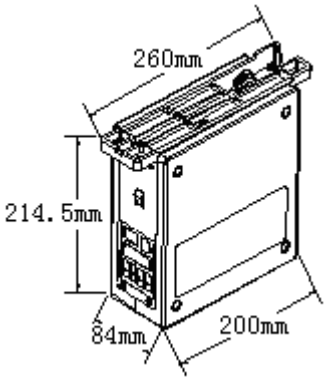
1.7 保质期限规定

本装置保证在正常工作情况且无人为失误的操作下，保证自出厂 12 个月内，无偿的为客户维修使能正常操作。

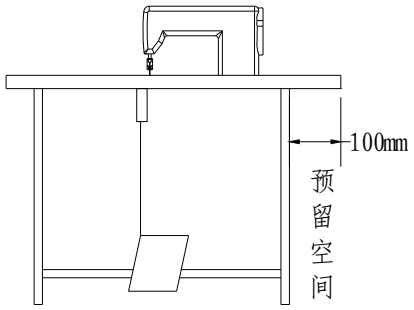
2.安装与调整

2.1 驱动器板的安装

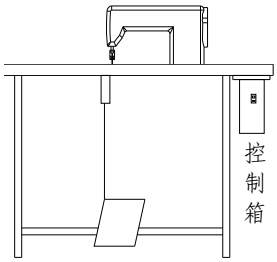
（a）控制箱尺寸图



（b）缝纫机桌板右侧必须预留 100mm 以上空间

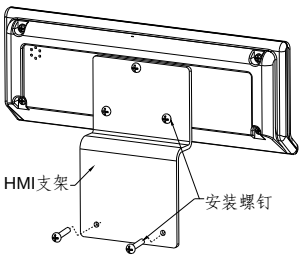


（c）控制箱安装后示意图

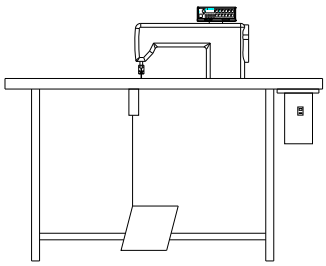


2.2 操作盒(人机接口)的安装

(a) 操作盒及其支架

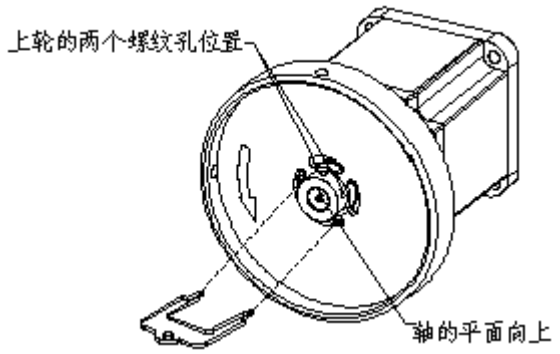


(b) 安装后示意图

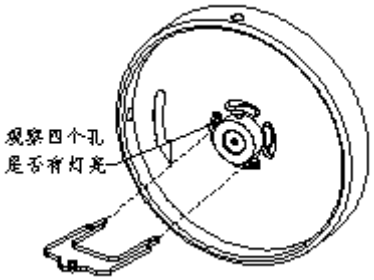


2.3 手轮的安装与调整

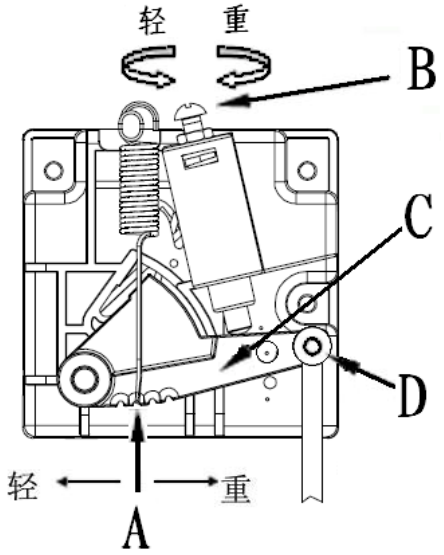
手轮安装时，使其运动方向上的第一个孔对上转轴上的切平面，并拧紧螺钉，如图



在调整针的初始位时，使用调停针工具在手轮的四个孔中沿顺时方向或逆时针方向调整，边调整边观察针的位置，直到达到用户的要求，如图



2.4 踏板的调整



踏板各部位名称：如左图所示

A、运行弹簧

B、后踏力量调整螺栓

C、踏板摇杆

D、球接连杆

表 2.1

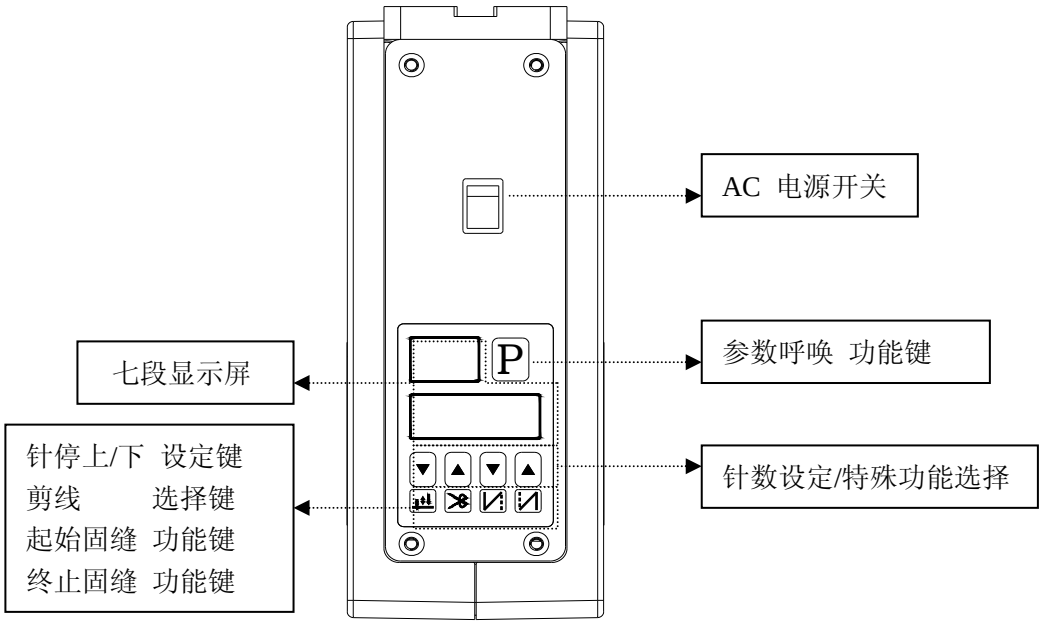
序号	调整需求	调整效果
1	踏板前踏力量调整	弹簧 A 向右侧勾时，前踏力量加重 弹簧 A 向左侧勾时，前踏力量减轻
2	踏板后踏力量调整	逆时针向上拧动螺栓，后踏力量减轻 顺时针向下拧动螺栓，后踏力量加重
3	踏板行程长短调整	球接连杆 D 选择右侧孔时，为长行程模式 球接连杆 D 选择左侧孔时，为短行程模式

3.接线与接地

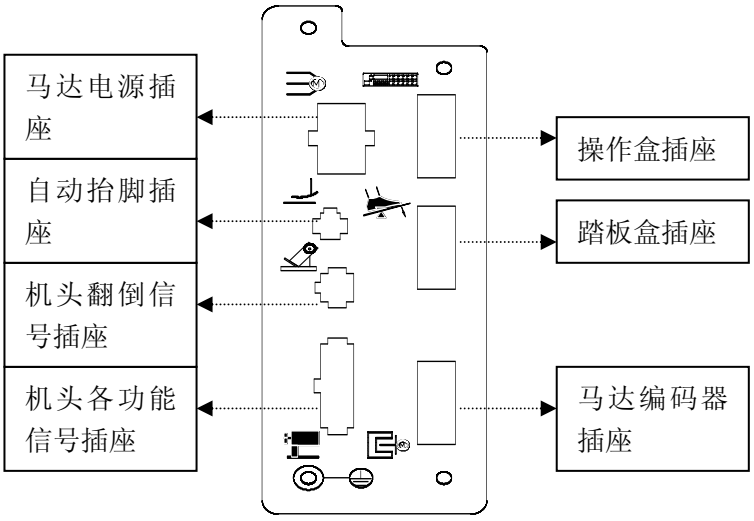
一定要做好系统的接地工程，请合格的电气工程人员予以施工。

4. 机箱各部位的名称

4. 1 机箱正面



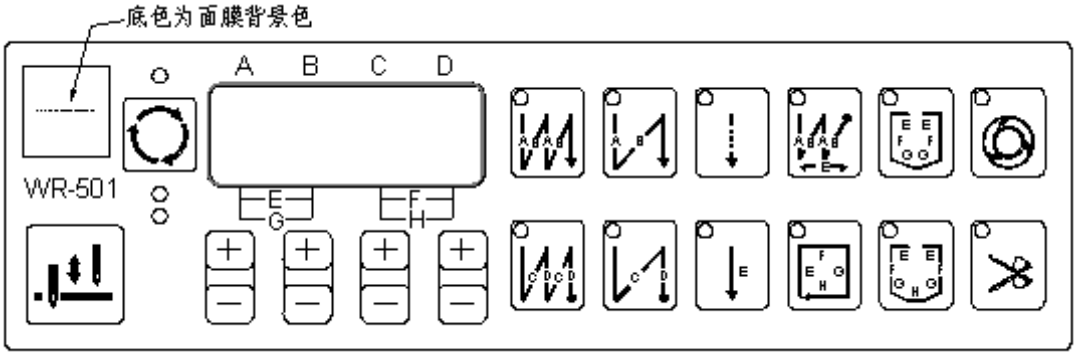
4.2 机箱背面：端子座面板

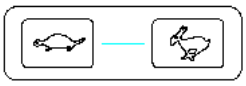


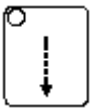
按端子座面板的指示插接各连接线，DB 插头要插牢后锁紧，其余的插头插紧后确定其锁扣已扣牢。

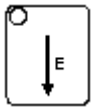
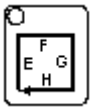
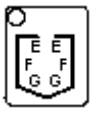
5. 操作盒使用说明

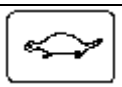
5.1 操作盒按键使用说明





功　　能	按 键	描　　述
起始固缝功能选择		执行起始固缝来回 2 次
		执行起始固缝来回 1 次
终止固缝功能选择		执行终止固缝来回 2 次
		执行终止固缝来回 1 次
自由缝		踏板往前踩，可正常缝纫，中间位置停机，往后踩，完成剪线拨线等功能
连续固缝		1、 往前踩踏板，自动执行来回缝纫动作，来回次数 E 段设定，最高可达 99 次。 2、 连续固缝模式系统默认为触发模式，无需踏板一直踩下，对应定针缝触发灯常亮。 3、 该功能有效时，前终止固缝设定无效。

定针缝	 或  或  或 	1、 往前踩踏板，执行 E 或 E、F、G、H 段设定的缝纫针数。 2、 每段缝纫过程中，抬起踏板，缝纫立即停止，继续踩踏板，则开始执行各段设定未完的针数。 3、 最后一段针数缝纫完毕，自动执行终止固缝（如果选择）剪线拨线等动作。
针数设定/查看选择		1、 执行该键，可循环切换显示屏上中下针数设定的显示值。 上端：A、B、C、D 段针数，对应水平灯亮； 中端：E、F 段针数，与之对应水平灯亮； 下端：G、H 段针数，与之对应水平灯亮。 2、 对应 A、D 段针数，可设范围 0～15 针，B、C 段针数，可设范围 1～15 针，其中，液晶显示 A、b、C、d、E、F 字样各代表 10、11、12、13、14、15 针。 3、 对应 E、F、G、H 段针数，可设范围 0～99 针。
提针/补针		1、 自由缝模式，可根据所按时间长短的不同，可以补半针、一针和连续补针。 2、 定针缝有两种情况： a. 每段缝纫未结束中间停车，按此键作提针用，即停在上针位上。 b. 每段缝纫结束中间停车，按此键可补一针或连续补针。
定针缝触发选择		1、 此键定针缝有效。触发踏板，系统自动执行 E、F、G、H 段的针数，无需一直踩下踏板。 2、 连续固缝模式，此键对应的灯常亮，表明连续固缝模式默认为触发模式。

剪线选择		设定或取消剪线功能。
调速键		减调速键。连续按下，缝纫速度降低，显示屏自动切换为速度设定值。自由缝有效。
		增调速键。连续按下，缝纫速度升高，显示屏自动切换为速度设定值。自由缝有效。

5.2 注意事项

a.上电，系统完成自检，所有的 LED 灯被点亮，显示屏显示“8888”字样，蜂鸣器会发出鸣叫，上述过程维持 500 毫秒左右时间然后恢复到正常界面。

b.操作盒上的按键有效，与之对应的指示灯则亮，表明选中该缝纫功能，每按一次，蜂鸣器会发出“哔”一声短叫。比如一个完整的缝纫功能需要有：起始固缝来回一次，自由缝及终止固缝来回一次，只要选中相应的图标即可，若要取消前终止固缝，只要再按相应的图标即可取消。

c.当仅需要单固缝时，可将 A、D 段针数设为 0 即可。

d.剪线之前，若想取消掉前终止固缝的设定（假设已选择），当次立即生效，而非等到剪完线下次才有效。

e.  “针数设定/查看选择” 键的循环设定/查看制约条件：

自由缝无切换；
定针缝一段缝、连续固缝只能在上端及中间 LED 灯循环切换；
其他模式定针缝可在上中下 LED 灯循环切换。

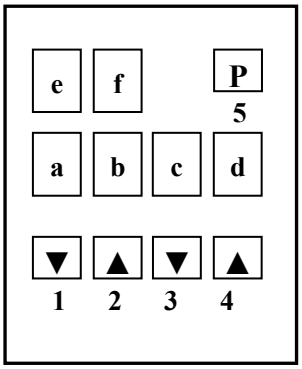
f.选中连续固缝  ，前终止固缝设定无效。

g.在自由缝模式  下，持续按  定针缝触发键 3 秒以上，可恢复操作盒出厂参数。

h.当操作盒读写参数时出错，显示屏会提示“Erro”，其他故障均由机箱小操作盒提示，出现这种情况请寻求技术支持。

6.机箱操作面板使用说明:

机箱操作面板布局如图所示，包括六个数码管 abcdef 和五个按键 12345。



6.1 缝纫功能设定

机箱操作面板的默认设定模式，通过按键 1234 和数码管 abcd 可以分别设定针位、剪线、前固缝、后固缝选择。

1：针位选择　　a：**0** 上针位；**1** 下针位

2：剪线选择　　b：**0** 不剪线；**1** 剪线

3：前固缝选择　c：**0** 无；**1**　AB 双固缝；**2**　ABAB 四固缝

4：后固缝选择　d：**0** 无；**1**　CD 双固缝；**2**　CDCD 四固缝

对于不同的工作模式及缝纫模式下，这四个设定不一定都有效。

1) 系统带机头操作盒工作。仅针位选择有效，其他通过机头操作盒设定。

2) 系统不带机头操作盒工作。

a) 自由缝、定长缝：四个设定均有效。b)连续固缝（W 缝）：仅剪线设定有效。c)简易缝纫：四个设定均无效。

3) 自动测试模式：四个设定均有效。

按下 P 键同时上电，系统进入自动测试模式，此时机头操作盒设定无效，只可通过机箱 HMI 进行自动测试的相关设定。按 P 键后同时按下键 4 启动、停止。

关于数码管 ef 的显示功能：

1） 数码管 e：显示翻抬开关的状态。　翻抬开关无效时不显示，翻抬开关有效时显示动画，表示机头已抬起，此时系统禁止运行。

2） 数码管 f：区分不同的缝纫模式。

简易缝纫时显示“E”，自动测试时显示“A”，其他模式无显示。

6.2 功能参数设定

在缝纫功能设定模式即机箱操作面板的默认模式下，长按 P 键进入功能参数设定状态。数码管 abcd 显示参数值，通过按键 34 修改；数码管 ef 显示参数编号，通过按键 12 修改，同时保存上一参数的值。按 P 键退出参数设定模式，并保存当前参数值。

按键 1234 短按每次变更，长按可连续快速增减。

注：系统运行时无法进入参数设定模式；进入参数设定模式除非退出否则系统无法运行。具体参数见双针机系统参数表。

6.3 系统监控状态

机箱操作面板默认模式下，按 P 键后同时按下键 1 进入系统监控状态。数码管 abcd 显示监控值；数码管 ef 显示监控参数编号，通过按键 12 修改。

ef	1	2	3	4
abcd	速度	电流	电压	计件数
单位	spm	A	V	件

6.4.系统故障状态

当系统检测到有故障时，系统停止运转，同时机箱操作面板显示故障代码。数码管 abcd 显示故障编号。具体的故障见故障代码列表。

7.系统参数表：

No.	项目	内容	设定范围	默认值
1	自由缝纫最高速	设定机头的最高转速	300~3000(spm)	2300
2	软起动功能	始缝时软起动设置 0：无软起动功能 1~5：软起动针数	0~5	4
4	定针缝最高速	定针缝最高速度	300~3000(spm)	1400
5	缝纫模式	缝纫模式设定（不带机头操作盒时有效） 0：自由缝纫 1：连续固缝 2：定针缝纫 3：简易缝纫	0~3	0
6	起始固缝正缝针数	起始固缝正缝针数（不带机头操作盒时有效）	0~32(针)	3
7	起始固缝倒缝针数	起始固缝倒缝针数（不带机头操作盒时有效）	1~32(针)	3
8	终止固缝倒缝针数	终止固缝倒缝针数（不带机头操作盒时有效）	1~32(针)	3
9	终止固缝正缝针数	终止固缝正缝针数（不带机头操作盒时有效）	0~32(针)	3
10	定针缝段数	定针缝段数及各段针数设定 （不带机头操作盒时有效）	1~6(段)	1
11	定针缝第 1 段针数		1~99(针)	15
12	定针缝第 2 段针数		1~99(针)	15
13	定针缝第 3 段针数		1~99(针)	15
14	定针缝第 4 段针数		1~99(针)	15
15	定针缝第 5 段针数		1~99(针)	15
16	定针缝第 6 段针		1~99(针)	15
18	定针缝触发模式	定针缝触发功能设定（不带机头操作盒时有效） 0：无触发功能 1：有触发功能	0/1	0
20	倒缝开关模式	倒缝开关功能设定 0：倒缝 1：停机时补针，运行时倒缝	0/1	0
25	抬压脚控制模式	抬压脚功能模式设定 0：无抬压脚功能 1：踏板抬压脚功能 2：剪线后自动抬压脚 3：踏板抬压脚加剪线后自动抬压脚 4：停机加剪线后自动抬压脚 5：踏板抬压脚加停机加剪线后自动抬压脚	0~5	0
27	上电定位	上电时机头自动运转至上针位功能设定 0：无上电定位功能 1：有上电定位功能	0/1	1
28	翻抬开关信号模式	机头翻抬开关信号模式设定 0：常开信号 1：常闭信号	0/1	1

37	拨线维持时间	拨线维持时间	0~800(ms)	40
42	踏板功能调整	踏板调速功能调整	10~100	60
*44	剪线速度	剪线速度	100~500(spm)	250
46	抬压脚延迟缝纫时间	为确认压脚已放下的延时	0~800(ms)	200
47	抬压脚全压输出时间	抬压脚全压输出时间	0~800(ms)	150
48	抬压脚输出占空比	抬压脚输出占空比	0~100	40
49	抬压脚保持时间	抬压脚保持时间后强制关断	1~60(s)	12
50	倒缝全压输出时间	倒缝全压输出时间	0~800(ms)	150
51	倒缝输出占空比	倒缝输出占空比	0~100	60
52	倒缝保持时间	倒缝保持时间后强制关断	1~60(s)	12
53	起始固缝速度	起始加固缝速度	100~3000(spm)	1500
54	起始固缝补偿 1	起始固缝针迹补偿参数	0~25	17
55	起始固缝补偿 2	起始固缝针迹补偿参数	0~25	2
56	终止固缝速度	终止加固缝速度	100~3000(spm)	1500
57	终止固缝补偿 1	终止固缝针迹补偿参数	0~25	18
58	终止固缝补偿 2	终止固缝针迹补偿参数	0~25	11
59	连续固缝速度	连续加固缝速度	100~3000(spm)	1500
60	连续固缝补偿 1	连续固缝针迹补偿参数	0~25	18
61	连续固缝补偿 2	连续固缝针迹补偿参数	0~25	9
69	下停针位	下停针位位置调整	120~240	177
*70	反转提针功能设定	剪线后反转提针功能选择 0： 无效 1： 有效	0/1	0
*71	反转提针角度	反转提针的角度设定 从上针位反转的角度	0~45(度)	20
73	软启动速度 1	软启动第 1 针速度	100~1000(spm)	400
74	软启动速度 2	软启动第 2 针速度	100~1500(spm)	800
75	软启动速度 3	软启动第 3 针速度	100~3000(spm)	1000
76	软启动速度 4	软启动第 4 针速度	100~3000(spm)	1200
77	软启动速度 5	软启动第 5 针速度	100~3000(spm)	1200
79	特殊功能参数	特殊功能参数（维持 2s 有效） 5：恢复出厂参数	0~15	0

* 带标记的项目是维修用的功能，如果更改了出厂时的初始设定，有可能出现损坏机器或使机器性能降低的危险。要更改时，需专业人员指导。但有时为了提高缝纫机的功能和性能，有可能随时变更功能设定值。

8. 系统功能设置说明

8.1 缝纫速度调整功能（参数 No.1，4，41~42，53，56，59，80）

(1)自由缝纫的最高速（参数 No.1）

自由缝纫时的踏板最高速设定，其最大设定值由参数 No.80 限制。

通过机头操作盒的速度调整按键可实时更改此参数值。

（注意）过高的缝纫速度可能降低缝纫机的使用寿命。

(2)加固缝纫的速度设定（参数 No.53，56，59）

No.53 起始固缝速度设定

No.56 终止固缝速度设定

No.59 连续固缝速度设定

（注意）固缝速度设置过高会影响固缝针迹的整齐美观。

(3)定针缝速度设定（参数 No.4）

各种花样定针缝的速度设置参数。

(4)低速速度设定（参数 No.41）

踏板起动运行时的速度。调整到合适值，可以用踏板方便的作出补针操作。

(5)踏板调速性能调整（参数 No.42）

用户对踏板调速性能可进行定制，调大此参数踏板加速快，反之则慢。但调得过大，会影响缝纫的舒适度；调得过小，有可能无法运行至设定的高速。

若踏板无法运行至设定高速，可适当调大此参数。

8.2 软起动功能（参数 No.2~3）

若针距较短或机针较粗，始缝面线和底线可能结不起来，通过限制始缝时缝纫机的速度可以提高缝纫的可靠性。

No.2 软起动针数设定

0 软起动功能无效

1~9 软起动针数，即始缝时在一定针数内以限制速度缝纫

No.3 软起动速度设定

（注意）设定了起始固缝时软起动功能无效。

8.3 停机针位的设定（参数 No.69）

(1)上下针位的选择

机箱操作面板默认状态下，下排左数第 1 按键设置停机针位，上方对应数字显示设定值。

0 上针位

1 下针位

(2)下针位位置调整（参数 No.69）

设置下针位的位置，从上针位的偏移角度。

8.4 未选配机头操作盒如何设定缝纫模式（参数 No. 5~18）

在系统未选配机头操作盒时，可以通过设置参数来实现特定花样缝纫的功能。

(1)缝纫模式的选择（参数 No.5）

0 自由缝纫：踩下踏板可连续运行，不计针数。

1 连续固缝：正逢针数（参数 No.6），倒缝针数（参数 No.7），正倒缝共重复次数（参数 No.11）

2 定针缝纫：缝纫至一定针数自动停机，可以设置缝纫的停机次数（参数 No.10）以及每次停机的针数（参数 No.11~17）。

3 简易缝纫：停针位置任意，不计针数，固缝模式无效，可手动倒缝和自动抬压脚。 一般若机头同步器损坏可设置成此模式继续运行。

(2)起始固缝和终止固缝功能

a.功能设定：机箱操作面板默认状态下，下排右 2 按键设置起始、终止固缝功能，上方对应数字显示设定模式。

0 固缝无效

1 固缝 2 次

2 固缝 4 次

b.针数设定：起始固缝正缝针数（参数 No.6），倒缝针数（参数 No.7）；终止固缝倒缝针数（参数 No.8），正缝针数（参数 No.9）。

(3)定针缝段数及各段针数的设定（参数 No.10~17）

定针缝可设段数（参数 No.10）为 1~7 段，各段可设针数（参数 No.11~17）为 1~99 针。

(4)定针缝触发功能（参数 No.18）

设定定针缝时各段是否一次缝完的功能。此功能无效时可以在各段缝纫过程中停机。

(5)剪线功能设定

机箱操作面板默认状态下，下排左数第 2 按键设置剪线功能，上方对应数字显示设定值。 0 剪线功能无效

1 剪线功能有效

（注意）当系统选配了机头操作盒时，缝纫设置以机头操作盒为准，参数设置无效。虽然通过参数设置可以实现花样缝纫的功能，但为了缝纫功能选择的方便和实时，建议用户选配机头操作盒。

8.5 抬压脚模式设定（参数 No.25）

设定抬压脚电磁铁的操作模式。

0 无抬压脚电磁铁操作

1 只有踏板命令可以进行抬压脚操作

2 剪线后抬压脚自动操作

3 踏板操作，剪线后自动操作

4 停机后自动操作，剪线后自动操作

5 踏板操作，停机后自动操作，剪线后自动操作

（注意）若未选配抬压脚电磁铁请将参数 No.25 设为 0。

8.6 剪线后踏板命令设定（参数 No.26）

剪线结束后，踏板后踏至剪线状态，发出抬压脚命令的设定。

若参数 No.25 设为 1、3、5，则执行抬压脚操作。

该功能是为了剪线后方便脚踏抬压脚操作的处理。

8.7 上电时自动运转至上针位（参数 No.27）

上电时，机头自动运转至上针位，可以方便进行缝纫的功能。

若原本针位在上针位附近，则不做动作。

8.8 翻转保护功能（参数 No.28）

机头处于翻转状态，为防止机器意外运转，锁定机器的功能。参数 No.28 可设定翻转开关信号的类型。

机头翻转时，机箱操作面板上排左 1 的数码管会显示翻抬动画。

8.9 缝纫计件功能（参数 No.35~36）

每次剪线结束计数增加，计算缝纫工序完成数的功能。

No.35 设定为 1，计件功能有效；设定为 0，计件功能无效。

No.36 显示计件数，按参数值更改键则清零计件数，可重新计数。

8.10 压脚放下延时缝纫功能（参数 No.46）

抬压脚电磁铁吸合时，踩踏板运行，由于电磁铁释放需要时间，压脚未压紧布料时缝纫机可能已运转，从而影响缝纫效果。通过设置此参数可以适当补偿抬压脚释放的时间。

8.11 抬压脚保持时间设定（参数 No.49）

调整压脚抬起保持时间，电磁铁长时间吸合会降低使用寿命。

压脚抬起后，经过 No.49 设定的时间，自动关闭电磁铁放下压脚。

8.12 倒缝保持时间设定（参数 No.52）

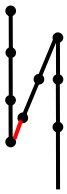
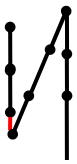
调整倒缝保持时间，电磁铁长时间吸合会降低使用寿命。

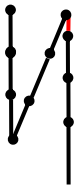
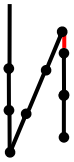
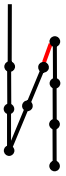
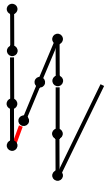
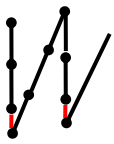
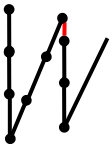
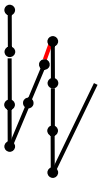
倒缝电磁铁吸合超过 No.52 设定时间后，自动关闭。

8.13 固缝针迹补偿调整（参数 No.54~55，No.57~58，No.60~61）

在作固缝操作时，若正缝倒缝针迹不一致，可调整该组相应参数，使针迹整齐美观。

调整前，请先将正缝倒缝针数设为相同针数，并通过倒缝手动拨杆确保正逢倒缝的针距相同，否则很难调整到好的效果。按照下表所列情况调节相应参数。

起始固缝 No.54 No.55	正缝 倒缝 接合 部		倒缝针数变少或变短，调大参数 No.54		正缝针数变少或变短，调小参数 No.54

	倒缝 正缝 接合 部		正缝针数变少或变短，调大参数 No.55		倒缝针数变少或变短，调小参数 No.55
终止固缝 No.57 No.58	正缝 倒缝 接合 部		倒缝针数变少或变短，调大参数 No.57		正缝针数变少或变短，调小参数 No.57
	倒缝 正缝 接合 部		正缝针数变少或变短，调大参数 No.58		倒缝针数变少或变短，调小参数 No.58
连续固缝 No.60 No.61	正缝 倒缝 接合 部		倒缝针数变少或变短，调大参数 No.60		正缝针数变少或变短，调小参数 No.60
	倒缝 正缝 接合 部		正缝针数变少或变短，调大参数 No.61		倒缝针数变少或变短，调小参数 No.61

8.14 加油提示功能（参数 No.81）

缝纫机运行一定时间后，提示加油的功能。

No.81 加油提示功能设定

0 加油提示功能无效

50~1000 运行时间超过一定小时数后提示给机器加油

运行至设定时间后，机箱操作面板显示“L.oiL”，此时机器锁定，无法运行。断电，加油完毕后，上电，长按机箱操作面板 P 键可以取消加油提示，继续运行。

8.15 反转提针功能（参数 No.70，No.71）

剪线后，反转缝纫机，让机针上升到上死点附近。参数 No.71 可调整反转的角度。

缝制厚料时，剪线后布料触碰机针无法顺利退出时使用。

（注意）机针上升到上死点附近，再次缝纫可能会引起脱线。请重新调整剪线线头长度。

9.故障代码表

故障显示	故障内容	故障可能原因	检查项目、处理
E011 E012 E013 E014	电机信号故障	电机位置传感器信号故障	电机插头是否接触良好 电机信号检测器件是否损坏 缝纫机手轮是否安装到位
E021 E022 E023 E201	电机超负荷	电机堵转 电机超负荷	电机插头是否接触良好 机头或剪线机构是否卡死 是否缝制规格厚度以上布料 电流检测信号是否正常
E101	硬件驱动故障	电流检测非正常 驱动器件直通	系统电流检测回路是否工作正常 驱动器件是否损坏
E111 E112 E113	系统电压过高	实际电压偏高 制动回路故障 电压检测有误	系统进线电压是否过高 制动电阻是否工作正常 系统电压检测回路是否工作正常
E121 E122	系统电压过低	实际电压偏低 电压检测有误	系统进线电压是否过低 系统电压检测回路是否工作正常
E131	电流检测回路故障	电流检测非正常	系统电流检测回路是否工作正常
E141	系统数据读写故障	系统数据读写非正常	系统数据读写回路是否工作正常 数据芯片是否损坏
E151 E152	电磁铁故障	电磁铁回路过流 电磁铁非正常导通	机头电磁铁是否短路 电磁铁回路是否工作正常
E201	电机电流过大	电流检测非正常 电机运转非正常	系统电流检测回路是否工作正常 电机信号是否正常
E211 E212	电机运转非正常	电机运转非正常	电机插头是否接触良好 电机信号是否不匹配
E301	操作盒通讯不良	机头操作盒通讯数据丢失	操作盒插头是否接触良好 操作盒器件是否损坏
P.oFF	掉电显示	电源关闭	等待电源重新开通
L.oiL	加油提示	运行超过加油提示时间	加油后长按 P 键取消提示状态

注：若以上故障按检查项目不能排除，请寻求技术支持。

Contents

1. Notes on safety

Please read carefully User's Guide and the manual of sewing machinery accompanied before use. Installation and operation by trained professionals and correct use are required.

Read carefully the following instructions for proper use. EasyDriver servomotor series can only be used for designated sewing machinery, with no exception.

1.1 Operating Environment Security

(1) Power Supply:

Please follow the 200V—240V indicated on the nameplates of motor and control box.

(2) Electromagnetic wave interference:

Keep away from high frequency electromagnetic wave machines or electric wave emitter so as to avoid interference.

(3) Humidity and temperature:

a. Working environment: 5℃~ 45℃, room temperature

b. Keep away from sun light, indoor use only.

c. Keep away from (electric) heating appliances

d. Relative humidity: 30％~95%, keep away from dew.

(4) Air:

a. Keep away from dusty or corrosive environment.

b. Keep away from volatile substance.

1.2 Installation Security

(1) Motor, control box: follow the steps indicated in the manual

(2) Accessories: power off and unplug power cord before installing any optional accessories.

(3) Power cord:

a. Avoid pressure or over distortion.

b. Keep the power cord at least 3 cm away from upper roller.

c. Make sure that supply voltage is between200V—240V.

(4) Earthing:

a. Handle earthing (including sewing machine, motor, control box, locator) correctly to avoid interference or creepage.

b. The earthing cord of power cord must be connected to user's system earthing cord with proper conducting wire and joint and fixed permanently.

1.3 Operation Security

(1) Operate at low speed to check if rotation direction is correct when the sewing machine is powered on for the first time.

(2) Do not touch the upper roller or needles when the sewing machine is running.

(3) All movable components must be isolated by protection apparatus provided to avoid unnecessary contact and nothing shall be put inside the machine.

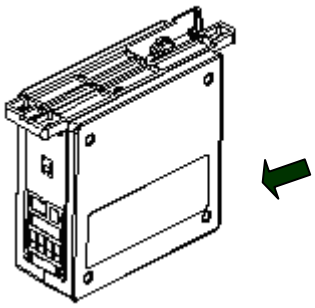
(4) No operation is allowed in the absence of belt guard and other security apparatus

1.4 Maintenance

Turn off power before conducting the following operations:

(1) Removing motor or control box, or plugging of unplugging any plugs from the control box.

(2) There is hazardous high voltage inside the control box. Do not open the control box until the power has been off for at least 1 minute.



HAZARDOUS
VOLTAGE INSIDE

(3) Moving machine head, replacing needles or shuttle or threading.

(4) Repairing or any mechanical adjustment.

(5) The machine is not running.

1.5 Regulations on Maintenance

(1) Repair and maintenance can only be performed by trained technicians.

(2) No irrelevant articles should be put near the motor's air vent, the back vent head, in particular, shall be kept free of dust, waster paper, broken fabric, etc to avoid overheating of the motor.

(3) Do not hammer this machine or motor (motor) spindle.

1.6 Warning Signs & Notices

Used where potential dangers exist.

Used where high voltage and electric danger exist.

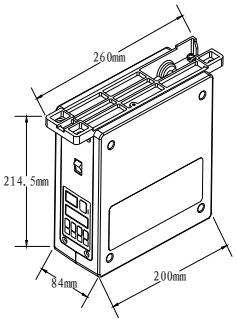
1.7 Regulations on Warranty period

Free repair service up to 12 months since leaving factory on condition that this machine is operated correctly and no human error occurs to it.

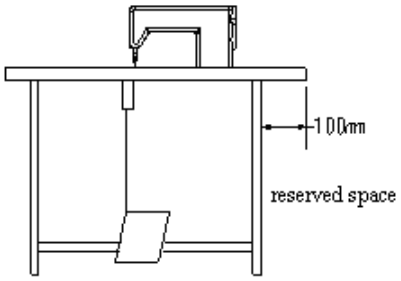
2. Installation and Adjustment

2.1 Installation of Drive Board

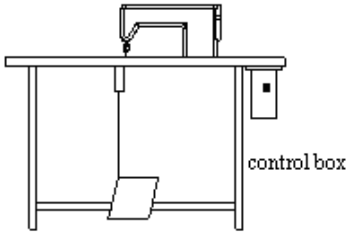
(a) Dimensions of control box



(b) At least 100mm shall be reserved for the right side of the sewing machine table.

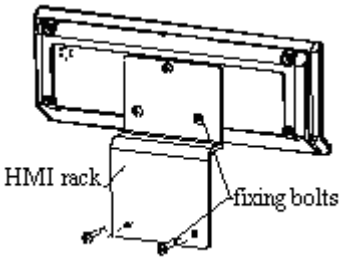


(c) After installation

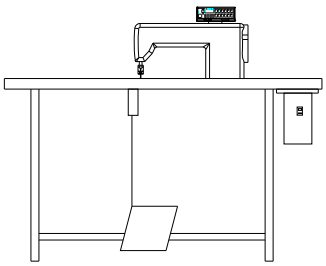


2.2 Installation of operation box (human-machine interface)

(a) Operation box and its rack

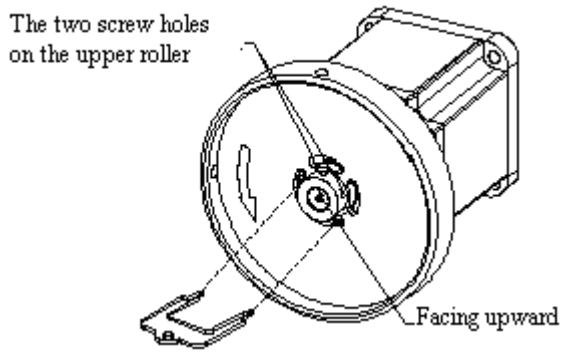


(b) After installation

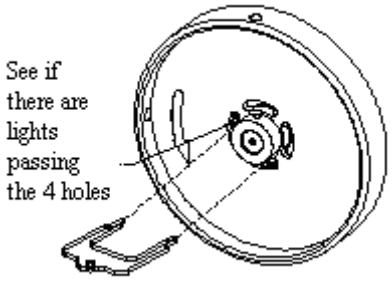


2.3 Handwheel Installation and Adjustment

Fasten the bolt when the first hole along the rotation direction of handwheel coincides with the tangent plane of the spindle, as shown in the picture.

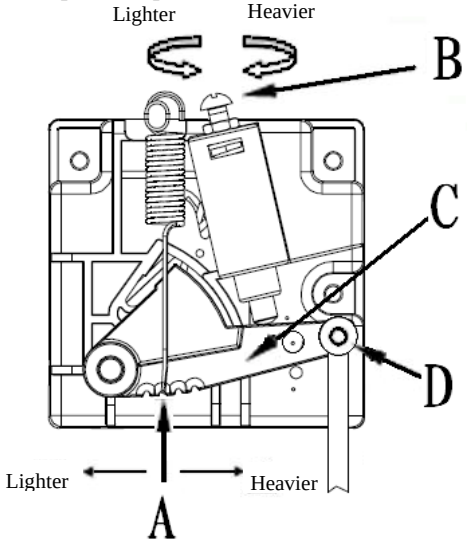


With regard to initial position of needle adjustment, use needle adjustment tools to adjust clockwise or anti-clockwise until satisfied, as shown in the picture.



2.4 Adjustment of pedal

The parts of pedal are as shown in the left figure.



A. Operation spring

B. Bolt for heeling force adjustment

C. Pedal lever

D. Ball joint link

Table 2.1

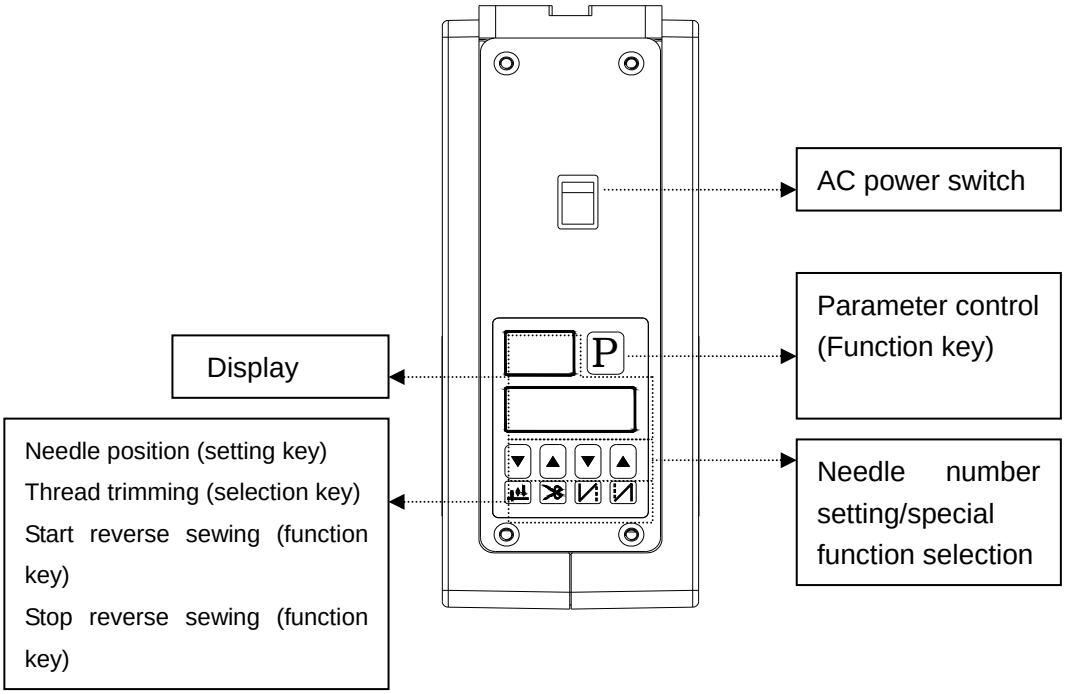
No.	Adjustment	Result
1	Adjustment of toeing force	Move spring A to the right to increase the toeing force. Move spring A to the left to reduce the toeing force.
2	Adjustment of heeling force	CCW turn the bolt to reduce the heeling force. CW turn the bolt to increase the heeling force.
3	Adjustment of pedal stroke	Secure the ball joint link D to the right hole to increase the pedal stroke. Secure the ball joint link D to the left hole to reduce the pedal stroke.

3. Connection & Earthing

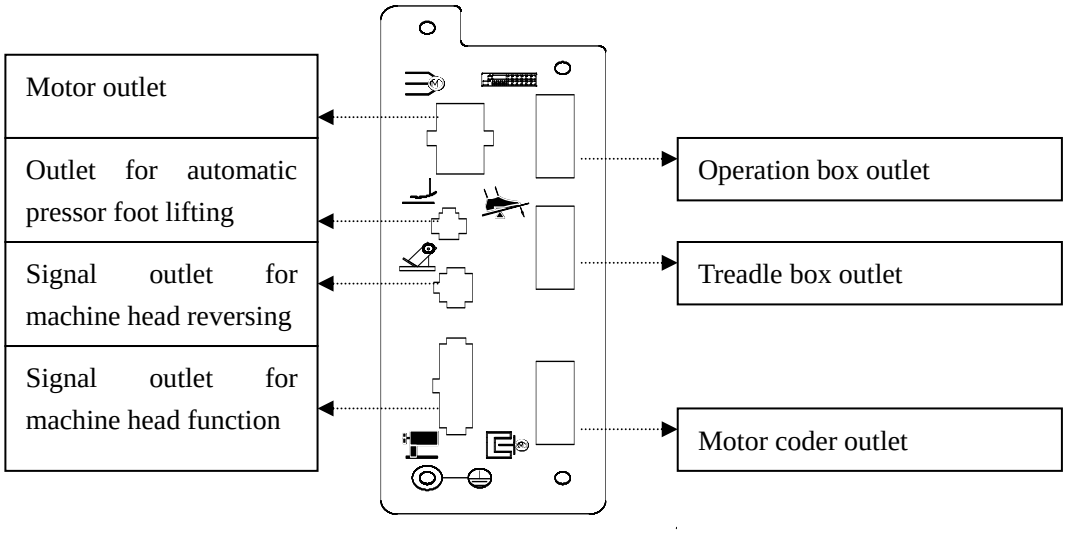
Qualified electric engineering professionals must be invited for system earthing.

4. Names of Chassis Components

4.1 Front Side



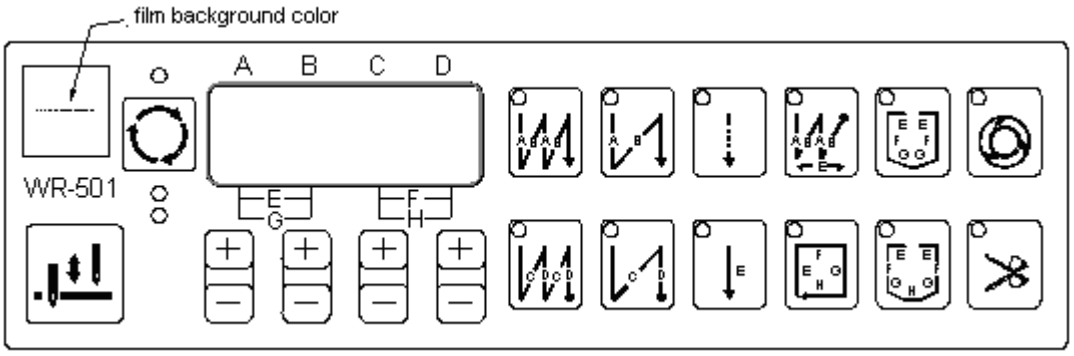
4.2 Back Side: connector

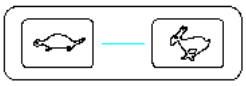


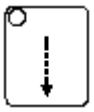
Plug wires in accordance with connector requirements; make sure that all plugs, DB in particular, have been fastened correctly.

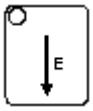
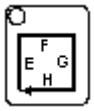
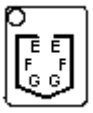
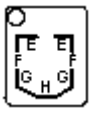
5. Instructions for Operation Box

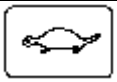
5.1 Instructions for Operation Box





Functions	Keys	Description
Starting reinforcing-sewing		execute starting reinforcing-sewing 2 times, to and fro
		execute starting reinforcing-sewing 1 times, to and fro
ending reinforcing-sewing		execute ending reinforcing-sewing 2 times, to and fro
		execute ending reinforcing-sewing 1 times, to and fro
Free-style sewing		Press treadle ahead for normal sewing, stop in the middle, behind for thread-cutting and thread wiping
continuous reinforcing-sewing		1、Press treadle ahead for automatic sewing, to and fro, which is set at E and can reach 99 times. 2、Continuous reinforcing-sewing is in trigger mode by default, treadle doesn't need to be kept being pressed, and corresponding trigger light of preset sewing is solid lit. 3、previous ending reinforcing-sewing setting is invalid if this function is valid

preset sewing	 or  or  or 	1. Press treadle ahead to execute sewing times set at E or E, F, G, H. 2. Sewing will stop immediately if treadle is lifted; press treadle again, it will go on with the rest. 3. ending reinforcing-sewing (if selected), thread-cutting and thread wiping will be automatically executed after sewing is completed
Setting needle number/check options		1. Press the key to switch between value of upper, middle and lower needle number setting displayed on the screen. upper: Needle number at A, B, C, D sections is indicated by horizontal light; middle: Needle number at E, F sections is indicated by horizontal light; Lower: Needle number at G, H sections is indicated by horizontal light. 2. reflect the Needle number at A, D sections, ranging 0～15, 1~15 for the Needle number at B, C sections. A, b, C, d, E, F stand for 10, 11, 12, 13, 14, 15 needles 3. reflect the Needle number at E, F, G, H sections, ranging 0～99.

needle-lifting/stitch compensation		1、 Free-style sewing mode: Half needle, one needle and continuous compensation as required. 2、 preset sewing : a. Stop machine when sewing is not completed; press the key for needle-lifting. b. Press the key for one or continuous stitch compensation when sewing at this section is completed
preset sewing trigger		1、For preset sewing. Trigger treadle and the system will automatically conduct sewing at E, F, G, H sections; the treadle doesn't need to be kept being pressed. 2、Solid light for continuous reinforcing-sewing mode means that it is trigger mode by default.
thread-cutting selection		Set or cancel thread-cutting function.
speed key		Speed down. Keeping pressing to lower speed, the display will automatically switch to speed set. Free-style sewing valid.
		Speed up. Keeping pressing to increase speed, the display will automatically switch to speed set. Free-style sewing valid.

5.2Notices

A. when the machine is powered on the system will perform self test and all LED lights turn on, “8888” will be displayed on the screen, buzzer sounds, the whole process will last around 500 milliseconds before returning to normal interface.

B. keys on operation box become valid, related lights turn on, indicating that the function is selected, the buzzer sounds for each pressing. A complete sewing function includes: starting reinforcing-sewing once, to and fro, free-style sewing and ending reinforcing-sewing once, to and fro. All needed is to press corresponding icon. Press the icon again to cancel a selected function.

C. set needle numbers at A, D sections to 0 for signal reinforcing-sewing.

D. before thread-cutting, cancellation of previously set ending reinforcing-sewing (if set already) becomes valid immediately.

E.  rotating setting/view conditions for “setting of needle number/view options” key:

No switch for free-style sewing;

The rotating switch of preset sewing, one-section sewing, continuous reinforcing-sewing can only be realized at upper and middle LED lights;

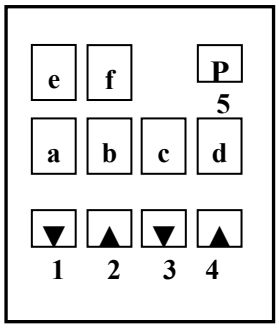
The rotating switch of other preset sewing mode can be realized at upper, middle and lower LED light.

F. The selection of continuous reinforcing-sewing  makes previous ending reinforcing-sewing invalid.

G. Under free-style sewing mode  , keep pressing  preset sewing trigger key for at least 3 seconds to return factory-set parameters of the operation box

H. “Erro” will be displayed if parameter-reading by operation box goes wrong, other errors will be notified by operation box of the chassis, seek technical support if that occurs.

6. Instructions for the Operation Panel of the Chassis



Layout of the operation box of chassis, 6 digital tubes (abcdef) and 5 keys (12345)

6.1 Setting of Sewing Functions

Press key 1234 and digital tube abcd to set needle position, thread-cutting,starting reinforcing-sewing, ending reinforcing-sewing respectively.

(1) Needle position a: **0** upper needle position; **1** lower needle position

(2) thread-cuttings b: **0** unavailable; **1** available

(3) Starting reinforcing-sewing c: **0** unavailable; **1** AB double reinforcing-sewing; **2** ABAB quadruple reinforcing-sewing

(4) Ending reinforcing-sewing d: **0** unavailable; **1** CD double reinforcing-sewing; **2** CDCD quadruple reinforcing-sewing

The four settings are not necessarily valid for different working mode and sewing mode.

(1) System runs with operation box of the machine head. Only needle position option is valid, others need to be set through the operation box of the machine head.

(2) System runs without operation box of the machine head.

A. the 4 settings for free-style sewing, preset sewing are all valid.

B. only thread-cutting setting is valid for continuous reinforcing-sewing.

C. none of the 4 settings are all valid for plain sewing.

(3) Automatic test mode: all 4 settings are valid.

The system will enter automatic test mode if key P and power button are pressed at the same time, and the settings for operation box of the machine head aren't valid, the settings related to automatic test can only be done through the operation box of chassis. Press key P and 4 to switch automatic running.

Display functions of digital tube ef:

(1) Digital tube e: indicate the status of turn/lift switch

No display for invalid turn/lift switch, animated pictures for valid turn/lift switch, which means that machine head has been lifted and system running is forbidden.

(2) Digital tube f: distinguish different sewing modes

"E" for plain sewing, "A" for automatic test, no display for other modes

6.2 Setting of Parameters

Under setting mode for sewing functions, i.e. default mode of the operation box of chassis, keep pressing key P to enter setting mode for parameters. Digital tube abcd display parameter values which can be modified by pressing key 34; digital tube ef display parameter numbers which can be modified by pressing key 12, and previous parameters will be saved at the same time. Press key P to exit setting mode for parameters, and the current parameter values will be saved.

Press key 1234 short for change each time, long to keep increasing or decreasing rapidly.

Note: the setting mode for parameters can not be entered into when the system is running; exit to enter setting mode for parameters.

See the parameter list of locksmith sewing machine for details.

6.3 System monitoring status

Under the default mode of the HMI of chassis, press key P and key 1 at the same time to enter system monitoring status. Digital tubes abcd display monitoring values; digital tubes ef display monitoring parameter number, press key 12 for modification.

ef	abcd	unit
1	speed	spm
2	current	A
3	voltage	V
4	Piecework number	piece

6.4 Status of System Error

System will stop when an error is detected and error code will be displayed by the operation panel of chassis. Digital tube abcd display error number. See error code list for details.

7. Parameter list of lockstitch sewing machine

No.	Items	Contents	Settings range	Default
1	highest speed of free-style sewing	set the highest speed for machine head	300~3000(spm)	2300
2	Soft Start	soft start setting for starting sewing 0: no Soft Start 1~9: needle number of soft start	0~5	4
3	soft start speed	soft start speed for starting sewing	300~3000(spm)	1400
4	highest speed for preset sewing	highest speed for preset sewing	300~4000(spm)	3000
5	sewing mode	sewing mode setting(valid in the absence of operation box of the machine head) 0: free-style sewing 1: continuous reinforcing-sewing 2: preset sewing 3: plain sewing	0~3	0
6	number of starting reinforcing-sewing and obverse-sewing	number of starting reinforcing-sewing and obverse-sewing(valid in the absence of operation box of the machine head)	0~32(needles)	3
7	number of starting reinforcing-sewing and reverse-sewing	number of starting reinforcing-sewing and reverse-sewing(valid in the absence of operation box of the machine head)	1~32(needles)	3
8	number of ending reinforcing-sewing and reverse-sewing	number of ending reinforcing-sewing and reverse-sewing(valid in the absence of operation box of the machine head)	1~32(needles)	3
9	number of ending reinforcing-sewing and obverse-sewing	number of ending reinforcing-sewing and obverse-sewing(valid in the absence of operation box of the machine head)	0~32(needles)	3
10	number of preset sewing sections	setting of the number of preset sewing sections and needle number of each section (valid in the absence of operation box of the machine head)	1~6(sections)	1
11	needles of the 1st section of preset sewing		1~99(needles)	15
12	needles of the 2nd section of preset sewing		1~99(needles)	15

13	needles of the 3rd section of preset sewing		1~99(needles)	15
14	needles of the 4th section of preset sewing		1~99(needles)	15
15	needles of the 5th section of preset sewing		1~99(needles)	15
16	needles of the 6th section of preset sewing		1~99(needles)	15
18	trigger mode of preset sewing	setting of preset sewing trigger (valid in the absence of operation box of the machine head) 0: trigger function unavailable 1: trigger function available	0/1	0
20	switch mode for Reinforcing-sewing	setting of switch mode for Reinforcing-sewing 0： Reinforcing-sewing 1： stitch compensation when machine stopping ,Reinforcing-sewing when machine running	0/1	0
25	control mode for pressor foot lifting	settings of pressor foot lifting mode 0: pressor foot lifting unavailable 1: treadle pressor foot lifting 2: automatic pressor foot lifting after thread-cutting 3: automatic pressor foot lifting after treadle pressor foot lifting and thread-cutting 4: automatic pressor foot lifting after machine stopping and thread-cutting 5: automatic pressor foot lifting after treadle pressor foot lifting, machine stopping and thread-cutting	0~5	0
27	Power on and positioning	Setting of machine head moving to upper needle position when powered on 0: unavailable 1: available	0/1	1

28	signal mode for turn/lift switch	Setting of signal mode of turn/lift switch of machine head 0: always open 1: always close	0/1	0
37	Hold time for thread wiping	Hold time for thread wiping	0~800(ms)	40
42	adjustment of treadle functions	adjustment of the speed adjustment functions of treadle	10~100	60
*44	thread-cutting speed	thread-cutting speed	100~500(spm)	250
46	pressor foot lifting delays sewing	delay with pressor foot lowered	0~800(ms)	200
47	output time of total pressure of pressor foot lifting	output time of total pressure of pressor foot lifting	0~800(ms)	150
48	output duty cycle of pressor foot lifting	output duty cycle of pressor foot lifting	0~100	40
49	hold time of pressor foot lifting	forced shut-down after hold time of pressor foot lifting	1~60(s)	12
50	output time of total pressure of reverse-sewing	output time of total pressure of reverse-sewing	0~800(ms)	150
51	output duty cycle of reverse-sewing	output duty cycle of reverse-sewing	0~100	60
52	hold time of reverse-sewing	forced shut-down after hold time of reverse-sewing	1~60(s)	12
53	starting reinforcing-sewing speed	starting reinforcing-sewing speed	100~3000(spm)	1500
54	starting reinforcing-sewing compensation 1	parameter of starting reinforcing-sewing stitch compensation	0~25	12
55	starting reinforcing-sewing compensation 2	parameter of starting reinforcing-sewing stitch compensation	0~25	2
56	ending reinforcing-sewing speed	ending reinforcing-sewing speed	100~3000(spm)	1500

57	ending reinforcing-sewing compensation 1	parameter of ending reinforcing-sewing stitch compensation	0~25	18
58	ending reinforcing-sewing compensation 2	parameter of ending reinforcing-sewing stitch compensation	0~25	11
59	continuous reinforcing-sewing speed	continuous reinforcing-sewing speed	100~3000(spm)	1500
60	continuous reinforcing-sewing compensation1	parameter of continuous reinforcing-sewing stitch compensation	0~25	18
61	continuous reinforcing-sewing compensation2	parameter of continuous reinforcing-sewing stitch compensation	0~25	9
69	lower needle position	Adjustment of lower needle position	120~240	177
79	parameter of special functions	parameter of special functions(valid after holding 2s) 5: return to factory-set parameter	0~15	0

*Marked Items are used for repair and maintenance, modification of factory-set value may do damage to the machine or lead to decline of performance. Professionals must be consulted if modification is necessary. However, set values may be modified anytime for improvement of the functions and performance of sewing machine.

8. Instructions for System Configuration

8.1 Adjustment of Sewing Speed (parameter No.1, 4, 41~42, 53, 56, 59, 80)

1） highest speed of free-style sewing (parameter No.1)

Setting of the highest speed of treadle under free-style sewing mode, the max value is subject to parameter No.80.

Press the speed adjustment key on the operation box of the machine head to modify this parameter.

(Note) lifetime of the sewing machine may be reduced by unnecessary high speed

2） setting of reinforcing-sewing speed(parameter No.53, 56, 59)

No.53 setting of starting reinforcing-sewing speed

No.56 setting of ending reinforcing-sewing speed

No.59 setting of continuous reinforcing-sewing speed

(Note) the appearance of reinforcing-sewing stitch may be affected by unnecessary high speed of reinforcing-sewing.

3） Setting of preset sewing speed (parameter No.4)

Parameters of various preset sewing speeds

4） low speed setting (parameter No.41)

Treadle's starting and running speed. It will be easy to conduct needle compensation with treadle

5） adjustment of the speed adjustment performance of treadle(parameter No.42)

User can customize speed adjustment performance of treadle, bigger parameter leads to higher acceleration of treadle, otherwise lower. Too big value may make working uncomfortable; too small may fail the highest speed set.

Increase the parameter if treadle is unable to reach the highest speed.

8.2 Soft Start (parameter No.2~3)

Top stitches and bottom stitches of starting sewing may be unable to link if needle distance is too short or needle is too thick, which can be improved by limiting the highest starting sewing speed.

No.2 setting of needle number of soft start

0 Soft Start invalid

1~9 needle number of soft start, i.e. limit speed with certain needle number under starting sewing mode

No.3 setting of soft start speed

(Note) Soft Start is invalid if starting reinforcing-sewing has been set

8.3 Setting of Needle positioning (parameter No.69)

1） selection of upper and lower needle position

By default, the 1st key on the lower left controls stopping needle position, corresponding upper figure display the value set

0 upper needle position

1 lower needle position

2） adjustment of lower needle position(parameter No.69)

Setting of lower needle position, deviation angle relative to upper needle position

8.4 Sewing Mode setting in the Absence of Machine Head Operation Box (parameter No. 5~18)

Special pattern may be realized by setting parameters in the absence of operation box of the machine head.

1） selection of sewing mode(parameter No.5)

0 Free-style sewing: Able to keep running after treadle has been pressed, no needle number will be counted.

1 continuous reinforcing-sewing: number of obverse-sewing (parameter No.6), number of reverse-sewing (parameter No.7), total number of obverse-sewing and reverse-sewing(parameter No.11)

2 Preset sewing: the machine automatically stop when reach certain needle number, stopping times (parameter No.10) and needle number (parameter No.11~17) of stopping can be set.

3 Plain sewing: stopping needle position is free, no needle number will be counted, reinforcing-sewing mode invalid, manual reverse-sewing and automatic pressor foot lifting is available. This mode will be useful if the synchronizer of machine head is damaged.

2） starting reinforcing-sewing and ending reinforcing-sewing

(1) Function setting: by default, the 2nd key on the lower right controls starting, ending reinforcing-sewing, corresponding upper figure display the mode set.

0 reinforcing-sewing invalid

1 reinforcing-sewing 2 times

2 reinforcing-sewing 4 times

(2) Setting of needle number: number of starting reinforcing-sewing and obverse-sewing (parameter No.6), number of reverse-sewing (parameter No.7); number of ending reinforcing-sewing and reverse-sewing (parameter No.8), number of obverse-sewing (parameter No.9).

3） setting of number of preset sewing sections and needle of each section(parameter No.10~17)

Section number for preset sewing (parameter No.10): 1~7; needle number for each section (parameter No.11~17): 1~99.

4） trigger function of preset sewing (parameter No.18)

Decide whether sewing will be completed without stop at each section under preset sewing mode. Machine can be stopped at each section during running if this function is invalid.

5）setting of thread-cutting

By default, the 2nd key on the lower left control thread-cutting function, corresponding upper figure display the value set.

0 thread-cutting unavailable

1 thread-cutting available

(Note) If there is operation box of the machine head available, sewing settings will be determined by the operation box of the machine head, parameter setting is invalid. It is recommended to use operation box of the machine head for pattern sewing even if parameter settings support pattern sewing.

8.5 Pressor Foot Lifting Mode setting (parameter No.25)

Set the operation mode of the magnet of pressor foot lifting.

0 magnet operation unavailable

1 Only treadle command can conduct pressor foot lifting

2 automatic pressor foot lifting after thread-cutting

3 treadle operation, automatic operation after thread-cutting

4 automatic operation after machine stopping and thread-cutting

5 treadle operation, automatic operation after machine stopping and thread-cutting

(Note) set parameter No.25 to 0 if the magnet of pressor foot lifting is unavailable

8.6 Treadle Setting after Thread-cutting (parameter No.26)

Move treadle to thread-cutting status after thread-cutting is completed to send pressor foot lifting command setting.

If parameter No.25 is set to 1, 3, 5, then pressor foot lifting will be executed.

This function is used to facilitate pressor foot lifting after thread-cutting.

8.7 Automatic Top Positioning When Powered-On (parameter No.27)

When powered on, the machine head will automatically move to upper needle position, which can facilitate sewing.

No action if needle position is around upper needle position.

8.8 Roll-over Protection (parameter No.28)

Lock machine's functions to prevent unexpected accident when machine head is under roller-over status. Parameter No.28 controls types of roller-over signals.

When machine head is under roller-over status, the digital tube on the upper left 1 of the operation panel of chassis will display roller-over picture.

8.9 Sewing Piecework (parameter No.35~36)

Counts will increase when thread-cutting is over to calculate finished sewing working procedures.

If No.35 is set to 1, piecework is available; if set to 0, piecework is unavailable.

No.36 display piecework number, press parameter value to clear piecework number for recounting.

8.10 Sewing with Delayed Pressor Foot (parameter No.46)

When the magnet of pressor foot lifting operates, press treadle. Since it takes time for magnet to release, sewing machine may have begun running before pressor foot press materials firmly, affecting sewing effects. Parameter can be used to compensate the time for pressor foot lifting to release.

8.11 Pressor Foot Lifting Hold Time setting (parameter No.49)

Adjust the hold time of pressor foot, long time operating can reduce the lifetime of magnet.

After pressor foot is lifted, magnet will be automatically stopped to lower pressor foot after the time set by No.49.

8.12 Reverse Sewing Hold Time Setting (parameter No.52)

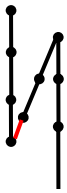
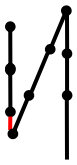
Adjust the hold time of reverse-sewing; long time operating can reduce the lifetime of magnet.

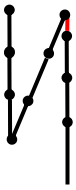
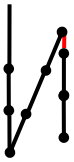
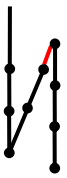
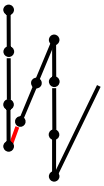
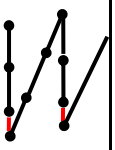
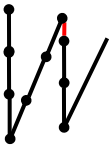
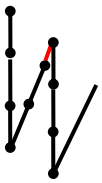
Reverse-sewing magnet operation will be automatically stopped after the time set by No.52.

8.13 adjustment of reinforcing-sewing compensation (parameter No.54~55, No.57~58, No.60~61)

Under reinforcing-sewing operation, adjust corresponding parameters to improve stitch appearance if obverse- and reverse-sewing stitches are not consistent

Before adjustment, please first set the number of obverse-sewing and reverse-sewing to the same, e.g. 3; follow the instructions below to adjust corresponding 2 parameters.

starting reinforcing-sewing No.54 No.55	Connection between obverse- and reverse-sewing		Increase parameter No.54, if the number of reverse-sewing decreases or the first stitch becomes short.		Reduce parameter No.54, if the number of obverse-sewing decreases or the last stitch becomes short.

	Connection between reverse- and obverse-sewig		Increase parameter No.55, if the number of obverse-sewing decreases or the first stitch becomes short.		Reduce parameter No.55, if the number of reverse-sewing decreases or the last stitch becomes short.
ending reinforcing-sewing No.57 No.58	Connection between reverse- and obverse-sewig		Reduce parameter No.58, if the number of reverse-sewing decreases or the last stitch becomes short.		Increase parameter No.58, if the number of obverse-sewing decreases or the first stitch becomes short.
	Connection between obverse- and reverse-sewing		Reduce parameter No.57, if the number of obverse-sewing decreases or the last stitch becomes short.		Increase parameter No.57, if the number of reverse-sewing decreases or the first stitch becomes short.
continuous reinforcing-sewing No.60 No.61	Connection between obverse- and reverse-sewing		Increase parameter No.60, if the number of reverse-sewing decreases or the first stitch becomes short.		Reduce parameter No.60, if the number of obverse-sewing decreases or the last stitch becomes short.
	Connection between reverse- and obverse-sewig		Increase parameter No.61, if the number of obverse-sewing decreases or the first stitch becomes short.		Reduce parameter No.61, if the number of reverse-sewing decreases or the last stitch becomes short.

9. Error Code Table

Error codes	Contents	Checking and treatment
E011 E012 E013 E014	electric engine signal error	If electric engine plug is well contacted if electric engine signal detecting device has been broken if sewing machine handwheel correctly installed
E021 E022 E023 E201	electric engine overload	If electric engine plug is well contacted if machine head or thread-cutting mechanism has been blocked completely if materials are too thick
E111 E112 E113	Voltage too high	If the voltage on the inlet wire is too high
E121 E122	Voltage too low	If the voltage on the inlet wire is too low
E151 E152	magnet error	If machine head magnet suffers short circuit
E211 E212	Abnormal electric engine operation	If electric engine plug is well contacted If electric engine signal is matched
E301	Poor operation box communication	if operation box plug is well contacted if operation box components are damaged
P.oFF	Power-fail	Wait for power supply to resume
L.oiL	Refill oil	Keep pressing key P to cancel notice after refilling

Note: consult technical support if errors still exist.