

**HP-006** ELECTRIC CONTROL BOX  
电控箱

# 使用说明书

INSTRUCTION MANUAL BOOK

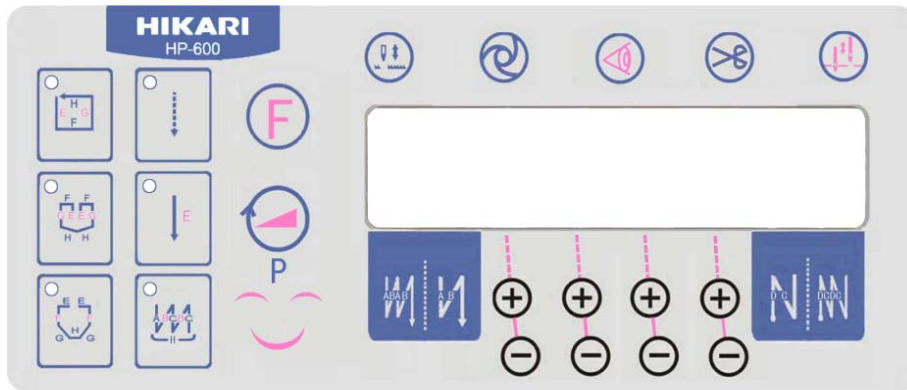


通过 ISO9001:2008  
质量管理体系认证

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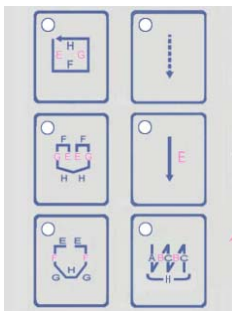
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## 1. 显示面板区域说明



显示面贴由**模式选择按键区**（6个模式按键）、**设定按键区**（P、F）、**功能按键区**（补针、自动触发、布边传感选择、剪线选择、停针位选择）、**固缝选择区**（前、后固缝）、**数字调整区**（8个数字加减键）、**显示区**六个部分组成。

### 1.1 模式选择按键区



### 1.2 设定按键区



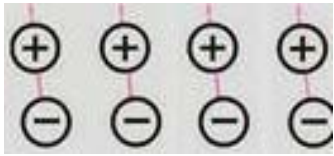
### 1.3 功能按键区



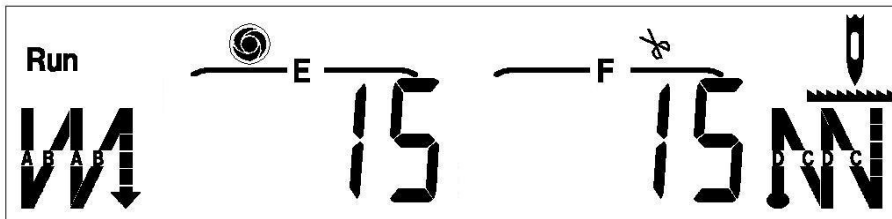
### 1.4 固缝选择区



## 1.5 数字调整区



## 1.6 显示区



## 2. 按键说明

键号	按键名称	图标	按键功能描述
K1	四段缝		选择四段缝模式
K2	八段缝		选择八段缝模式
K3	七段缝		选择七段缝模式
K4	自由缝		选择自由缝模式
K5	定长缝		选择定长缝模式
K6	W 缝		选择 W 缝模式
K7	前固缝		无、单、双、四前固缝循环选择
K8	定速缝		按定速方式缝纫
K9	布边传感器		设定或取消布边传感器功能
K10	剪线		一次模式运行完或解除模式时剪线扫线

K11	后固缝		无、单、双、四后固缝循环选择
K12	补针		每按一次补半针，长按时连续补针
K13	停针位置		设定停针时，停下针位还是停下针位
K14	多功能键		1、 功能设定 2、 存储确认 3、 速度修改
K15	显示切换		缝纫过程中切换参数显示
K16	增加		LCD 对应的位加 1
K17	减小		LCD 对应的位减 1

### 3. 组合键定义

- 1、  + ：进入或退出工艺参数设置模式。
- 2、  + ：显示上操做面板软件版本号。
- 3、  + ：显示下位机软件版本号。
- 4、  + ：显示机型码。
- 5、  按住 3 秒以上，开启/关闭夹线器。
- 6、  + ：开启/关闭自动抬压脚。
- 7、  + ：开启/关闭慢启动。

8、  +  : 显示底线针数。







9、  +  : 底线针数复位。

## 4. 显示模式及操作方法

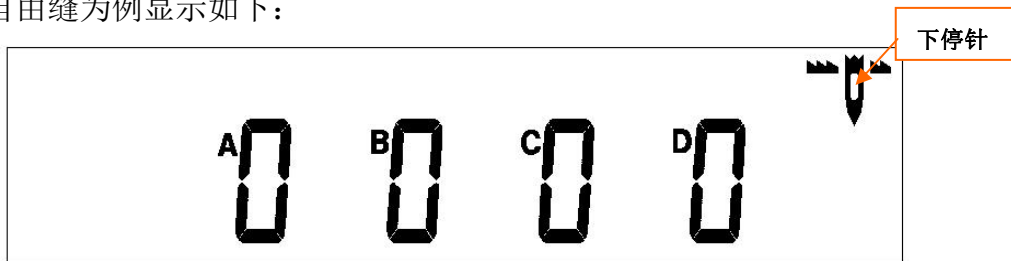
### 4.1 上电模式

上电后，显示“HELLO”。直到读取主电控参数完成。蜂鸣器鸣叫一声。

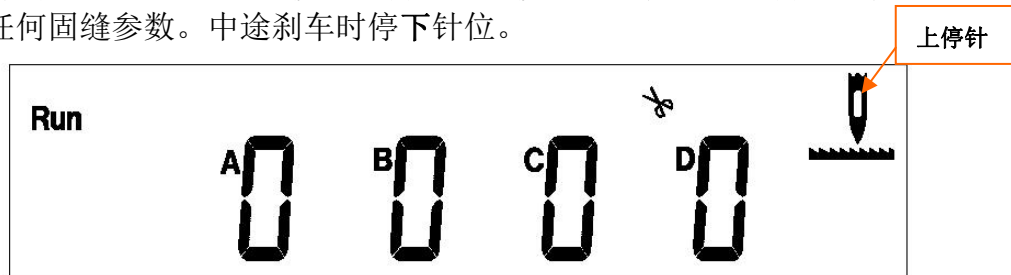
### 4.2 缝纫模式

当某个模式键（、、、、、）按下时，对应的模式指示灯将点亮。同时，显示相关的段值参数。

以自由缝为例显示如下：



显示内容表示：当前缝纫模式为自由缝（模式选择按键区的自由缝按键指示灯点亮），并且没有任何固缝参数。中途刹车时停下针位。



显示内容表示：正处于缝纫模式当中（RUN），当前缝纫模式为自由缝（模式选择按键区的自由缝按键指示灯点亮），并且没有任何固缝参数，有剪线功能，中途刹车时停下针位。

以定长缝为例显示如下：

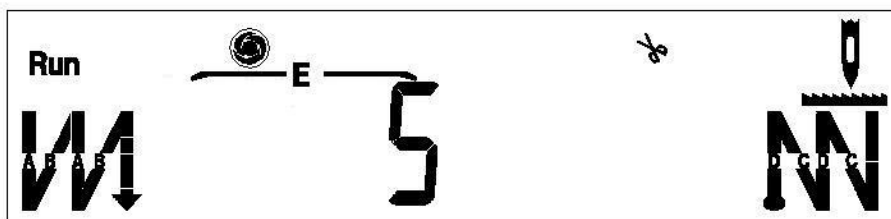


图 001

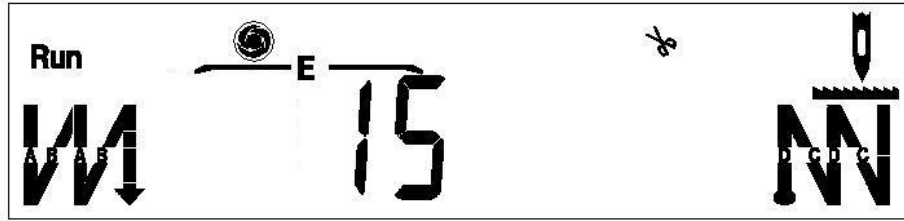


图 002

显示内容表示：正处于缝纫模式当中（RUN），当前缝纫模式为定长缝（定长缝按键的指示灯点亮），且 E 段针数为 5 针（图 001）/15 针（图 002），有前四固缝和后四固缝，自动触发模式，有剪线功能，中途刹车时停上针位。

以多段缝为例，显示如下：

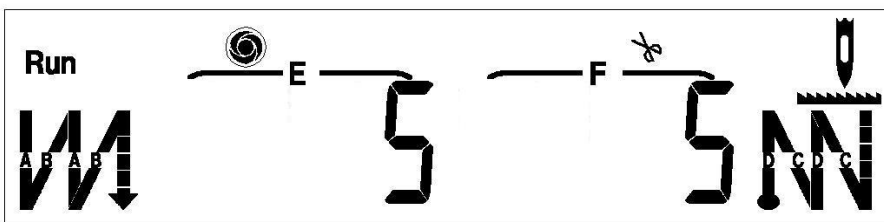


图 003

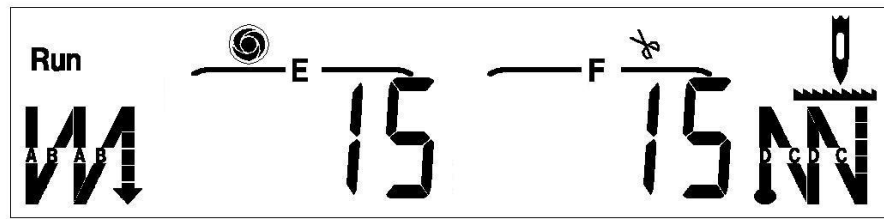


图 004

显示内容表示：正处于缝纫模式当中（RUN），当前缝纫模式的 E 段针数为 5 针（图 003）/15 针（图 004）（具体的缝纫模式见模式选择按键区的按键指示灯），当前缝纫模式的 F 段针数为 5 针（图 003）/15 针（图 004），有前四固缝和后四固缝，自动触发模式，有剪线功能，中途刹车时停上针位。

以 W 缝为例，显示如下：

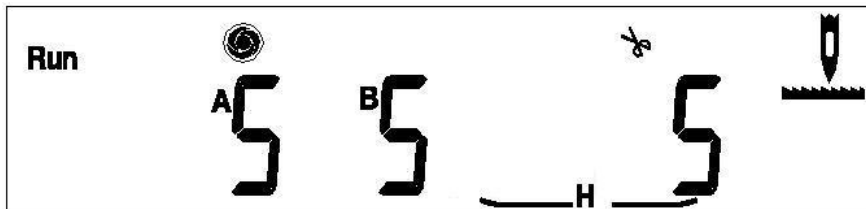


图 005

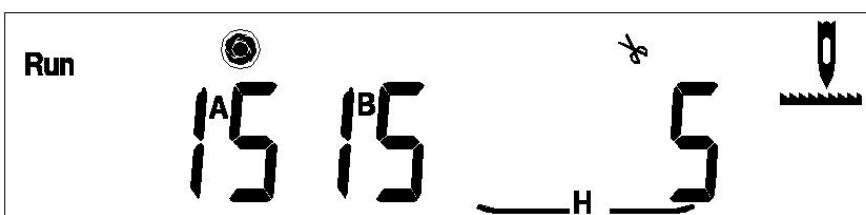





图 006

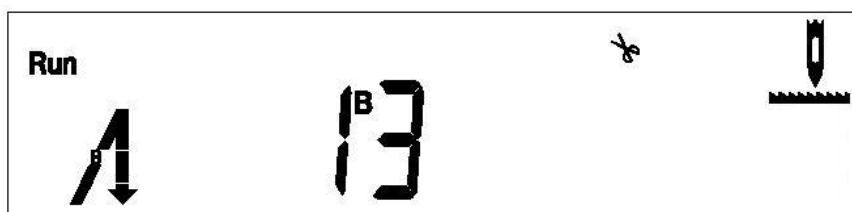
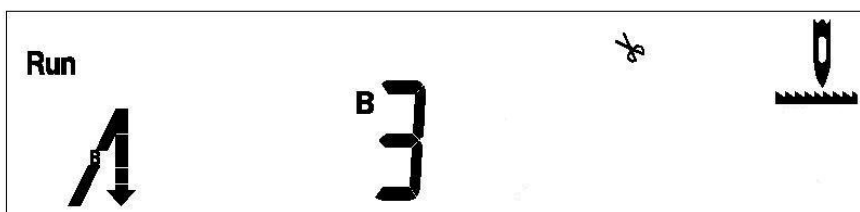
显示内容表示：正处于缝纫模式当中（RUN），当前缝纫模式为W缝（A、B、H同时存在的情况只有W缝），W缝的A段为5针（图005）/15针（图006），B段为5针（图005）/15针（图006），H段为5，自动触发模式，有剪线功能，中途刹车时停上针位。

通过按数字调整区的 、 按键，可以调整参数。

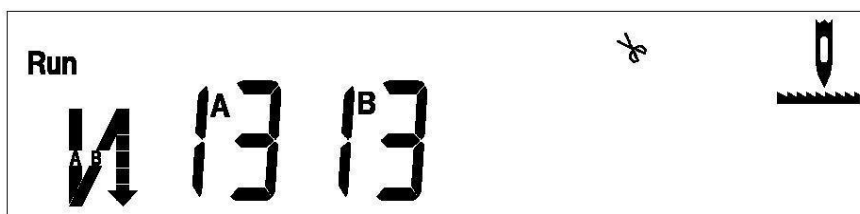
### 4.3 前固缝模式

除W缝外，按下前固缝  键，对应的显示区内前固缝图标根据前固缝参数点亮。通过按数字调整区的 、 按键，可以调整固缝针数。

以前单固缝为例，显示如下：

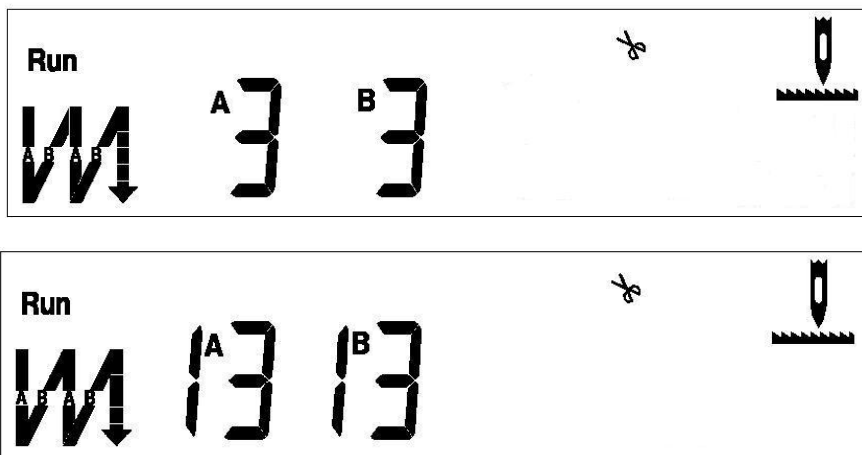


以前双固缝为例，显示如下：






以前四固缝为例：显示如下：

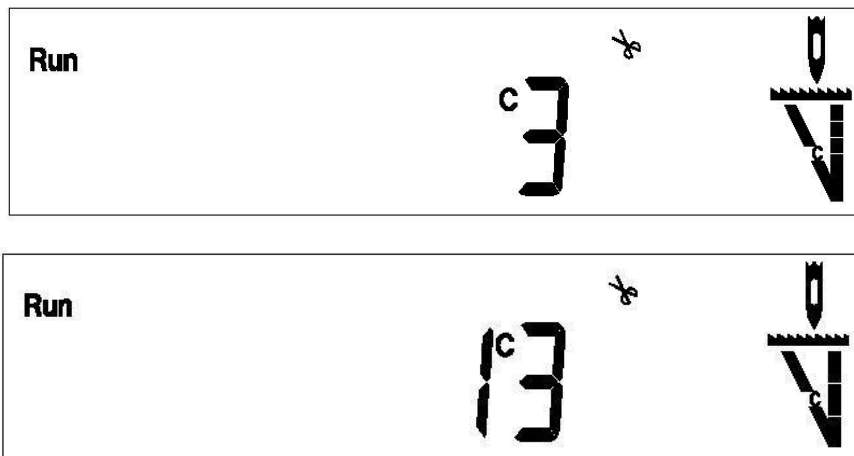




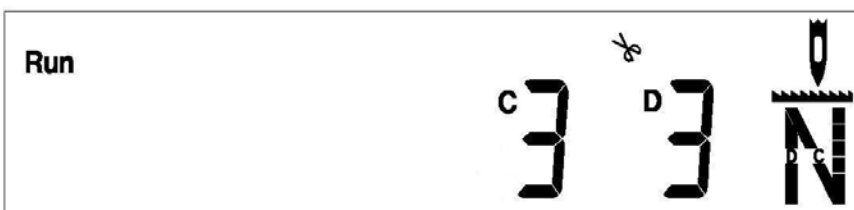
#### 4.4 后固缝模式

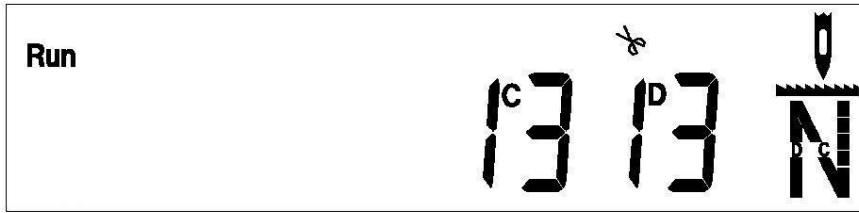
除 W 缝外，按下后固缝  键，对应显示区的后固缝图标根据后固缝参数点亮。通过按数字调整区的 、 按键，可以调整固缝针数。

以后单固缝为例，显示如下：

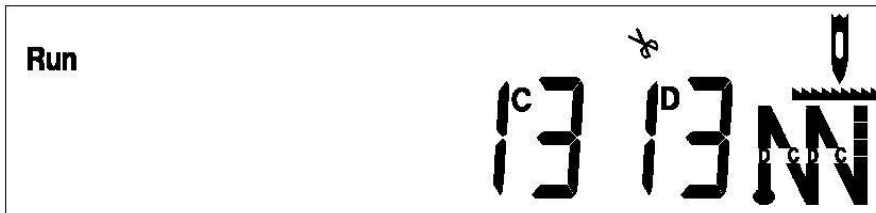
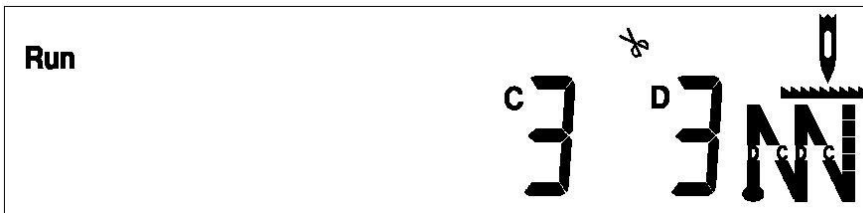


以后双固缝为例，显示如下：













以后四固缝为例，显示如下：






#### 4.5 剪刀、布边、速度自动的设定

当按一次  键，则点亮  图标，表示开启剪线功能，当再次按下  时，则关闭剪线功能， 图标消失。




当按一次  键，则点亮  图标，再按一次清除该图标。


当按一次  键，则点亮  图标，表示进入速度自动模式，再按一次清除该图标。  
注：自由缝，该按键无效。



#### 4.6 抬压脚、慢启动、夹线器的设定


按一次  +  键，显示“FOOT ON”，表示开启抬压脚功能，当再次按下  +

 键，显示“FOOT OFF”，则表示关闭抬压脚功能。


按一次  +  键，显示“SOFT ON”，表示开启慢启动功能，当再次按下  +

 键，显示“SOFT OFF”，则表示关闭慢启动功能。

按住  键 3 秒，显示“CLAMP ON”，表示开启夹线器功能，再按住  键 3 秒，显示“CLAM OFF”，表示关闭夹线器功能。

按一次  键或 2 秒时间后退出显示，恢复上一显示状态。


## 4.7 参数切换

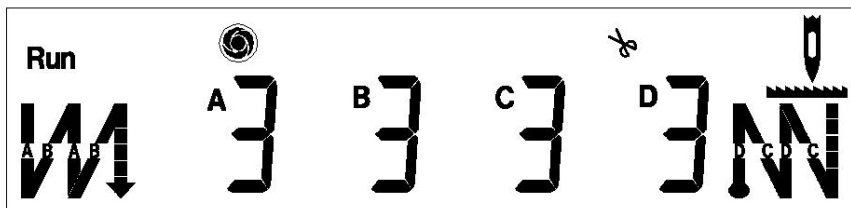
1、除自由缝和 W 缝以外，其它的缝纫模式，如果有固缝参数，则不可能在同一时刻把所有参数显示出来，此时，如果想查看其它的参数，则通过按  键，切换显示窗口。达到查看固缝参数或缝纫针数的功能。

以定长缝为例（带前后四固缝），当按下定长缝模式键后（该按键上方的指示灯将点亮），显示区马上显示定长缝的缝纫针数。显示如下：



通过显示区，我们可以得知，当前模式的 E 段针数为 15 针。有前、后四固缝。当我们想

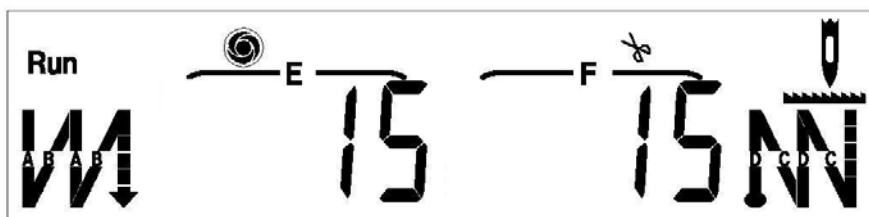
查看具体的固缝针数时，按一下  键，即可切换显示如下：



通过显示区，我们可以清楚的得知：前后四固缝的 A、B、C、D 各段的具体针数。通过

按数字调整区的 、 按键，可以调整具体的针数设定。

以多段缝为例（带前后四固缝）：具体的显示切换如下：




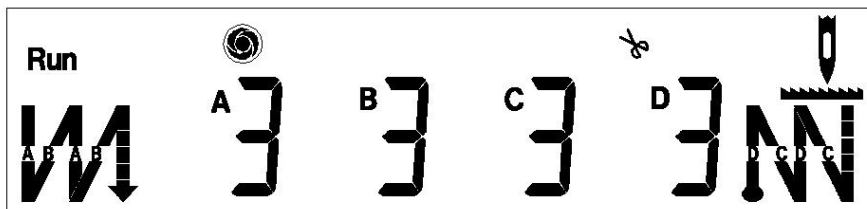
通过显示区，我们可以看到 E、F 段的具体针数。如果我们相查看另外两段的

具体针数或固缝针数时，我们可以通过  来切换显示，按一下  键，显示如下：





通过显示区，我们可以看到 G、H 两段的具体针数。如果想查看固缝查看，则再按一下



 键，则显示如下：




通过  键可以循环在以上三种显示状态下切换。

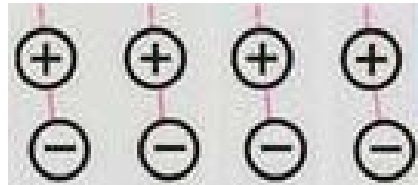
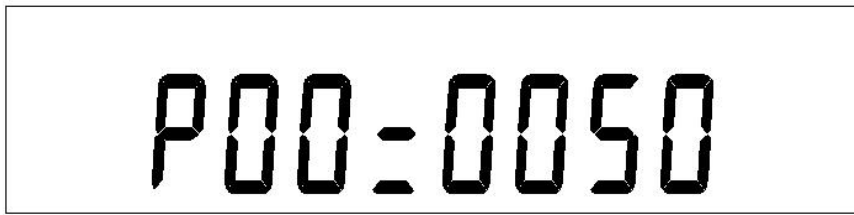
## 4.8 工艺参数调整模式

按住  不放，然后再按一次  键，即进入工艺参数调整模式，显示“PSD-0000”，



要求输入密码（密码存储在主电控内，默认出厂密码为 2222），通过数字下面的 、 按

键可以改变对应的数字，再按一下  键，校验所输入的密码是否正确？如果密码正确则进


入工艺参数调整模式。左边的四位显示参数代号，右边的四位显示参数内容，例：“P00-0050”。






组键 1 组键 2 组键 3 组键 4

上图是显示区下方的数字调整按键区，其中，组键 1-4 分别代表着文字上面的两个 、 键。




在工艺参数调整模式下，组键 1 和组键 2 用来调整参数的序号。组键 3 对应参数值的百位，组键 3 的调整范围是 0-99。按下组键 3 的  或  键时，参数的百位加 1 或减 1，当百位数加 1 大于 9 时，自动进位。减的时候，当百位数字等于 0 时，自动借位。组键 4 的调整范围是 0-99。按下组键 4 的  或  键时，参数的个位加 1 或减 1，当个位数加 1 大于 9 时，自动进位。减的时候，当个位数字等于 0 时，自动借位。

参数调整后按  键存储，否则将视为放弃调整。

#### 4.9 上操作板软件版本显示模式

按住  不放，然后按一下  键，显示上操作面板的软件版本号，十秒钟后，自动返回原来的显示内容，或按  返回原来的显示内容。

#### 4.10 下位机软件版本显示模式



按住  不放，然后按一下  键，显示下位机的软件版本号，十秒钟后，自动返回原来的显示内容，或按  返回原来的显示内容。（下位机的软件版本号按十六进制显示）

#### 4.11 速度调节



在非调整参数的模式下，按一下  键松开，即可进入速度修改模式。显示 SP = XXXX (XXXX 为自由缝最高速度)。通过按 、 键，可以调整具体的速度。连续十秒钟内没有速度调整键按下或按下  键，退出该显示模式。返回原来的显示内容。以 3500 转为例，显示如下：



#### 4.12 底线显示功能

按  +  键进入底线显示界面，显示“LN=XXXX”，表示底线剩余针数。5 秒钟后，自动返回原来的显示内容。

#### 4.13 底线复位功能

按  + ：底线针数复位，显示“LN=XXXX”，5 秒钟后，自动返回原来的显示内容。

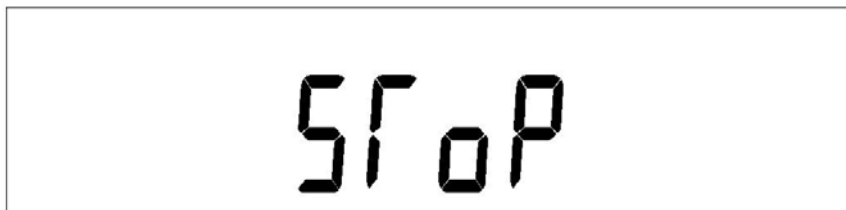
#### 4.14 故障显示模式

当接收到下位机的故障代码时，显示“ERROR-XX”，其中，XX 为故障代码。下位机的故障代码清除后，自动恢复到原来的显示。



#### 4.15 主控箱安全开关动作显示功能

当上操作面板接到下位机发送的安全开关动作故障后，显示“STOP”。当安全开关动作和故障代码同时存在时，以安全开关动作显示优先。显示如下：



### 5. 操作面板参数说明表

序号	功能参数	默认值	设定范围	单位	参数说明
P0	踏板斜率	50	1~100	%	斜率越大，低速区域越大，速度变化越大；斜率越小，低速区域越小，速度变化越小。
P1	速度比例	8	1—8		自由缝最高速度的限定比例。将自由缝最高速度分成 8 等分，通过调整等分值来改变当前自由缝最高速度
P2	系统最低转速	200	150~500	RPM	缝纫时，机头最低转速限制
P3	自由缝最高转速	4000	150~5000	RPM	自由缝模式时，机头最高转速
P4	定速缝速度	3500	150~4000	RPM	定长缝自动触发时的缝纫速度
P5	前固缝速度	1800	200~3000	RPM	执行前固缝时的缝纫速度
P6	后固缝速度	1800	200~3000	RPM	执行后固缝时的缝纫速度

P7	前固缝完暂停	off	On/off		前固缝完毕暂停，需要踏板触发后模式才继续运行
P8	后固缝前暂停	off	On/off		后固缝前暂停，需要踏板触发才执行后固缝
P9	W 缝速度	1800	200~3000	RPM	W 缝模式时的缝纫速度
P15	倒缝最高速度	2500	200~3000	RPM	倒缝时的最高速度
P16	扫线通电时间	50	20~1000	ms	扫线电磁铁的动作时间
P17	暂停过程中按键是否吸合倒缝电磁铁	on	On/off		当电机不运转时，按倒缝键是否允许倒缝电磁铁动作
P18	针迹/速度优先	0	0~1		缝纫时，针迹或速度的优先级别设定 0: 针迹优先 1: 速度优先
P19*	抬压脚开关	On	On/off		开启或关闭抬压脚功能
P21	计数功能选择	0	0-2		0:无计数功能 1:底线计数功能 2:剪线计数功能
P22	慢启动针数	2	0~15		以慢启动速度缝纫的针数
P23	慢启动速度	500	200~3000	RPM	慢启动缝纫时的速度
P24	底线基数	10	1-100		底线变化多少针时，当前计数变化 1 个单位。
P25	底线总数	2000	1-9999		设定的底线总数
P26	当前计数	2000	0-9999		当前的底线数量
P27	倒缝全额启动时间	200	20~500	ms	倒缝电磁铁的初始出力时间
P28	倒缝通电时间	2	1~50	ms	倒缝电磁铁力度保持时的高电平时间
P29	倒缝断电时间	2	1~50	ms	倒缝电磁铁力度保持时的低电平时间
P31	夹线器开关	1	0/1		设定电子夹线器功能 0: 关闭 1: 开启
P34*	上电找针位	On	On/off		上电后，是否自动找到上针位点。
P36	剪线速度	250	200~500	RPM	剪线时的运转速度
P37*	半后踏自动抬压脚	on	On/off		开启或取消半后踏自动抬压脚
P40	前固缝补偿参数 1	7	0-16		前固缝针迹补偿参数 1
P41	前固缝补偿参数 2	5	0-16		前固缝针迹补偿参数 2
P42	后固缝补偿参数 1	7	0-16		后固缝针迹补偿参数 1
P43	后固缝补偿参数 2	5	0-16		后固缝针迹补偿参数 2



	2				
P44	W 缝补偿参数 1	7	0-16		W 缝针迹补偿参数 1
P45	W 缝补偿参数 2	5	0-16		W 缝针迹补偿参数 2
P46	手动老化开关	0	0/1		0: 正常操作模式 1: 老化拖车模式
P47	老化停顿时间	2000	100-9999	ms	老化时每次运行之间的时间间隔
P48	老化运行时间	2000	100 — 9999	ms	老化时每次运行的时间（在没有定位器时有效）
P54	安全开关信号型式	0	0/1		0: 常开 1: 常闭
P55	自动抬压脚的放压脚模式	0	0/1		0: 脚踏松开后受自动放压脚时间控制或再半后踏一次退出抬压脚 1: 脚踏松开后, 自动放压脚
P57	抬压脚启动时间	250	20~1000	ms	抬压脚电磁铁的初始出力时间
P58	抬压脚通电时间	2	1~50	ms	抬压脚电磁铁的力度保持时的高电平时间
P59	抬压脚关断时间	3	1~50	ms	抬压脚电磁铁的力度保持时的低电平时间
P60	抬压脚保护时间	20	1~120	s	抬压脚工作保护时间
P61	抬压脚延迟时间	50	20~800	ms	电机停转后, 多长时间开始抬压脚
P62	放压脚延迟时间	50	20~800	ms	压脚放下后, 多少时间才允许启动
P64*	上电后自动抬压脚时间	0	0-900	s	上电后自动抬压脚的时间
P65	布边传感器功能选择	0	0—1		0: 无布边传感器 1: 有布边传感器
P67	布头布尾速度	800	200-5000	RPM	检测到布头信号后的运转速度
P69	布边延时启动时间	1000	100-9999	ms	检测到布头信号后的延时启动时间
P73	有无布边传感器	off	On/off		是否有外接布边传感器
P74	倒缝/抬压脚气动选择	0	0—3		0: 全部电动 1: 倒缝气动 2: 压脚气动 3: 全部气动
P76	剪线次数	0	0-9999		每剪一次线计数加 1,加满清零
P98	参数恢复默认值	0000h	0-9999		
P99	工艺参数密码	2222h	0-9999		

备注: 1. 常用参数说明: (单位说明: RPM 转/分钟; ms 毫秒; s 秒; hour 小时);  
2. 序号带\*表示该参数修改后需要重新上电才能生效.

## 6. 针迹补偿调整方法

### 6.1 调整前的准备

1. 查看机头针距出厂值。(一般为 3mm, 有些厂家的出厂值是 2.5mm)
2. 采用手动倒缝的方式, 正倒缝八针, 查看针迹重合效果, 保证针迹重合良好的情况下, 进入下一步调整, 否则固缝是很难调好的!

## 6.2 调整步骤

1) 上电后, 把缝纫模式设为定长缝模式, 关闭前固缝, 设单后固缝, 将 C 的参数设为 4 针, 定长针数为 4 针, 开启自动触发功能, 脚踏前踩一下, 看看针迹是否重合? 如果重合, 表明参数完全适应, 如果出现不重合现象, 将会产生以下二种情况, 然后再根据情况调整参数即可。

第一种情况: C 段短了一截或少了一针, 如图 1-1 所示。

第二种情况: C 段多了一截或多了一针, 如图 1-2 所示。

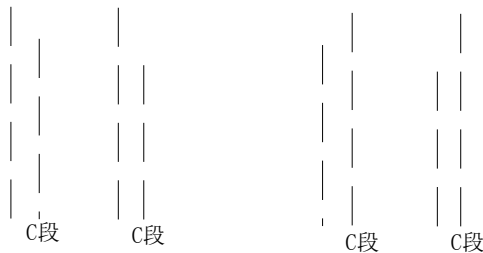


图 1-1

图 1-2

针对第一种情况, 可以通过将工艺参数 P42 的数值适当调大来达到完全重合。

针对第二种情况, 可以通过将工艺参数 P42 的数值适当调小来达到完全重合。

2) 将后固缝方式改变双后固缝, 并将 D 参数设为 4 针, 脚踏前踩一下, 看看针迹是否重合? 如果重合, 表明参数完全适应, 如果不重合, 将会产生以下二种情况, 然后再根据情况调整参数即可。

第一种情况 (少针): 最后面的 D 段短了一截或少针, 如图 1-3 所示。

第二种情况 (多针): 最后面的 D 段多了一截或多针, 如图 1-4 所示。

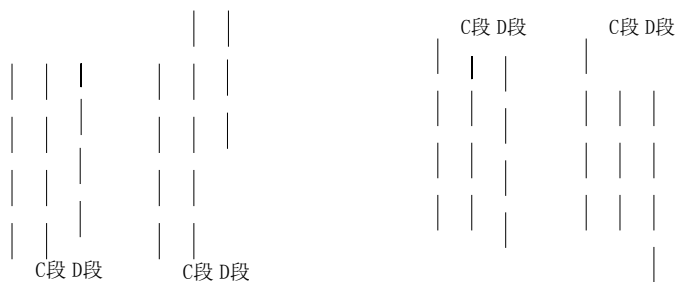


图 1-3

图 1-4

针对第一种情况, 可以通过将工艺参数 P43 的数值适当调大来达到完全重合。

针对第二种情况, 可以通过将工艺参数 P43 的数值适当调小来达到完全重合。

多段缝的前后固缝的调整方法与 W 缝的调整方法一致。也可以直接把 P42 的参数值直接写入 P40, P44。把 P43 的值写入 P41, P45。当然, 如果前后固缝的速度与 W 缝的速度不一样的时候则须要分别重调。

## 7. 故障码/故障原因/故障排除方法表

故障显示代码	故障原因	故障排除方法
Err 1	系统故障	断电后检查机头是否卡住，然后重新上电，如果还不能解决，请联系售后服务人员
Err 2	系统过压	请检查电源电压是否正常？如果电源电压高于265V，关机，请等电源电压恢复正常再开机
Err 3	系统欠压	请检查电源电压是否正常？如果电源电压低于160V，关机，请等电源电压恢复正常再开机
Err 4	电机码盘故障	请检查电机连线是否正常。
Err 5	系统故障	重新上电，如果还不能解决，请联系售后服务人员
Err 6	系统故障	重新上电，如果还不能解决，请联系售后服务人员
Err 7	电机缺相	请检查电机电源线是否脱落或松动。
Err 8	电机堵转	1、电机电源线是否脱落 2、机头是否堵住 3、电机码盘线是否松动 4、上针位是否正确（有剪线动作的情况下）
Err 9	电机过载	1、布料是否太厚 2、机头是否堵住 3、上针位是否正确（有剪线动作的情况下）
Err 11	电机码盘故障	请检查电机码盘线是否松动
Err 12	脚踏脱落故障	请检查脚踏连接线是否松动
Err 13	脚踏上电时被踩下	请检查脚踏是否被卡住
Err 14	电磁铁投入时间过长	1、上针位是否正确 2、布料是否太厚或线太粗导致剪线动作不正常
Err 15	制动回路故障	请检查刹车电阻连接线是否松动
Err 17	电磁铁过流故障	电磁铁故障，请检查电磁铁是否损坏或短路。
Err 18	制动回路故障	请检查刹车电阻连接线是否松动
Err 19 - 21	定位系统故障	电机可继续运转，但无针数记数、针位定位及剪/扫线及倒缝功能 请检查磁钢是否正常。 请检查机头是否被卡住。
Err 22	上位机通信故障	请检查控制面板与驱动器的连线是否正常
Err 23	存储器故障	重新上电，如果还不能解决，请联系售后服务人员
Err 24	机头润滑时间到	加上机器润滑油，然后恢复机头运转时间

## 8. 七段数码管显示值与实际数值对照表

数字部分：

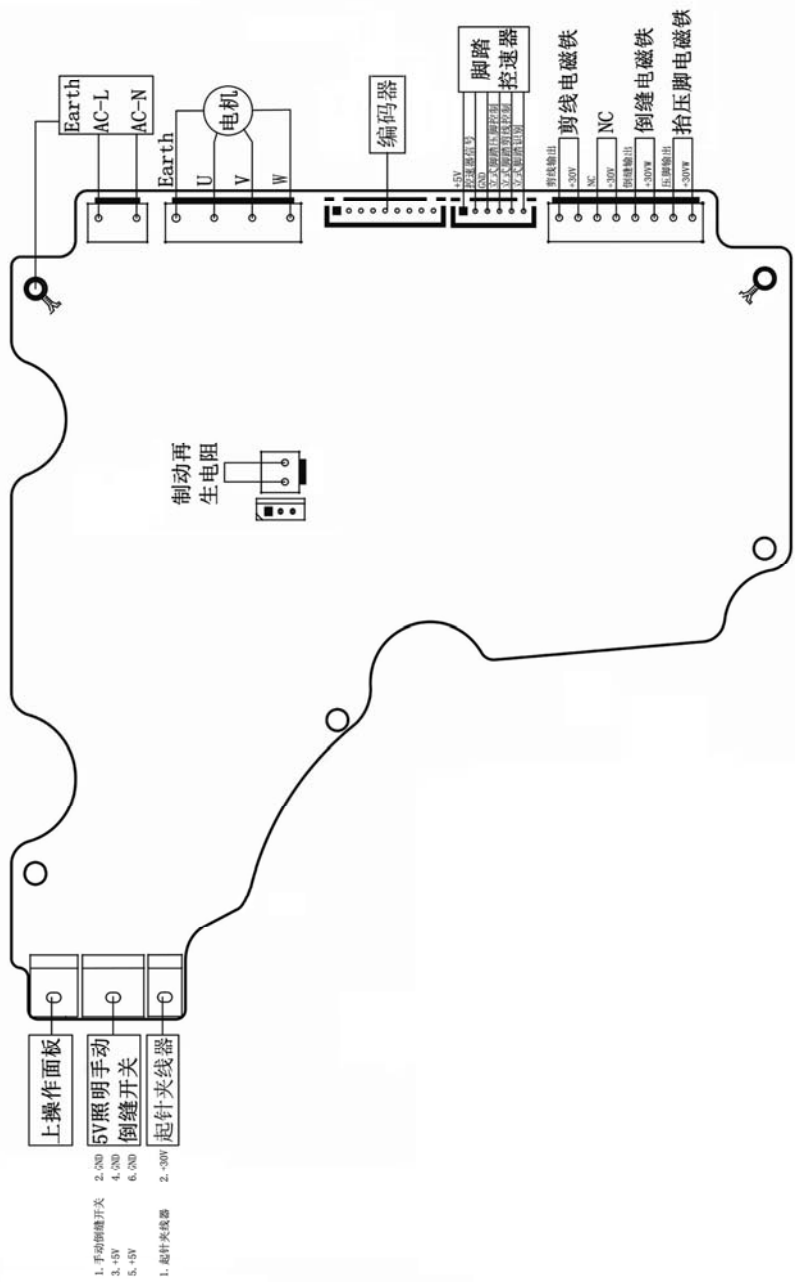
实际 字符	0	1	2	3	4	5	6	7	8	9
----------	---	---	---	---	---	---	---	---	---	---

显示 字符	0	1	2	3	4	5	6	7	8	9
----------	---	---	---	---	---	---	---	---	---	---

英文字符:

实际 字符	A	B	C	D	E	F	G	H	I	J
显示 字符	A	b	C	d	E	F	G	H	i	J
实际 字符	K	L	M	N	O	P	Q	R	S	T
显示 字符	k	L	M	n	o	P	q	r	S	T
实际 字符	U	V	W	X	Y	Z				
显示 字符	U	v	W	X	Y	Z				

## 9. 内部控制箱连接线图示

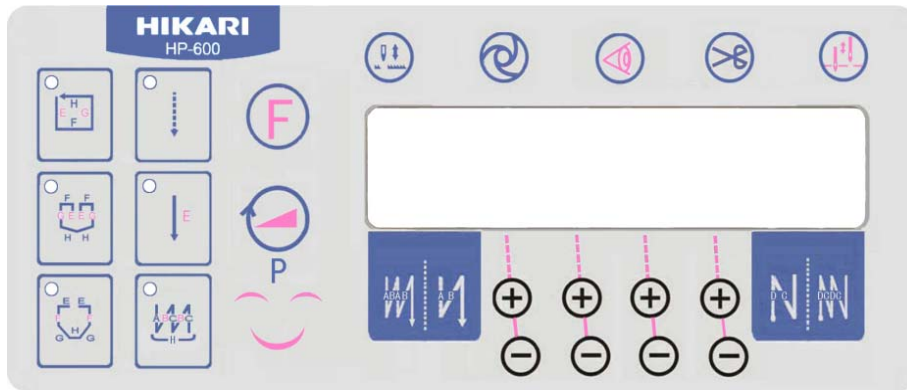


注意： 各部位的连接插头插入控制箱的插座时，要注意其形状和方向并确定插好

## List

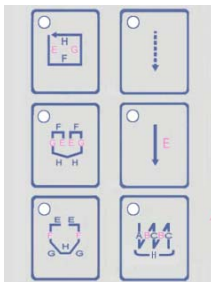
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# 1. Instruction of the panel display region



The display area is made up of six parts, including mode selection button region (six mode buttons), button region set (P, F), function button region (mending stitch, automatic trigger, cloth edge sensor selection, trimmer selection, needle stop position selection), fixed sewing selection region (fore-tacking, back-tacking sewing), digital adjustment region (8 digital plus-subtraction buttons), and display region.

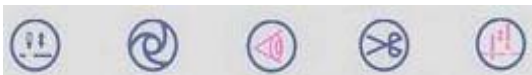
## 1.1 Mode selection button region



## 1.2 Button region set



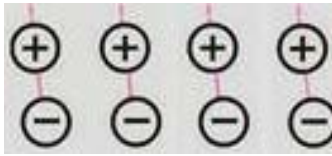
## 1.3 Function button region



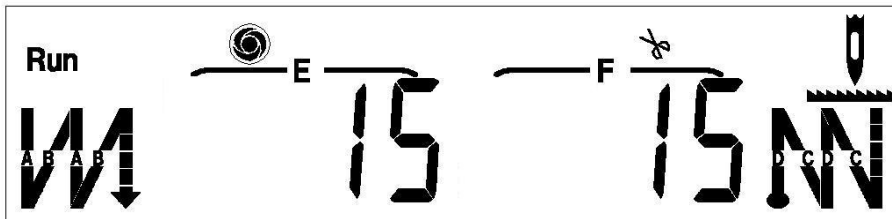
## 1.4 Selection region of fixed sewing



## 1.5 Digital adjustment region












## 1.6 Display region











## 2. Button instructions

Key No.	Key name	Icon	Button function description
K1	Four-section sewing		Select four-section sewing pattern.
K2	Eight-section sewing		Select eight-section sewing pattern.
K3	Seven-section sewing		Select seven-section sewing pattern.
K4	Free sewing		Select free sewing pattern.
K5	Fixed sewing		Select fixed sewing pattern.
K6	W sewing		Select W sewing pattern.
K7	Fore-tacking sewing		Circulate selection of non-, single-, double-, four- fore-tacking sewing.
K8	Fixed speed sewing		Sewing with fixed speed pattern.



K9	Cloth edge sensor		Set or cancel the function of cloth edge sensor.
K10	Trimming		Trimming and sweep when pattern operation finished once or canceling the function.
K11	Back-tacking sewing		Circulate selection of non-, single-, double-, four-back-tacking sewing.
K12	Mending stitch		Mending half stitch when pressing the key once, it will continuously mend stitch while holding press.
K13	Needle stop position		Selection of needle up position or needle down position when stopping the needle.
K14	Multi-function button		1.function set 2.saving confirm 3. speed modify
16	Display switch		Parameter switch display during sewing.
K20X	Increase		The corresponding bit of LCD added 1.
K21X	Reduce		The corresponding bit of LCD decreased 1.

### 3. Definition of key combination







- 1)  +  : Enter or exit the technical parameter set.
- 2)  +  : Display the version of the panel software.
- 3)  +  : Display the version of the main control box software.
- 4)  +  : Display the type of the machine.

## 4. Display mode and operating method

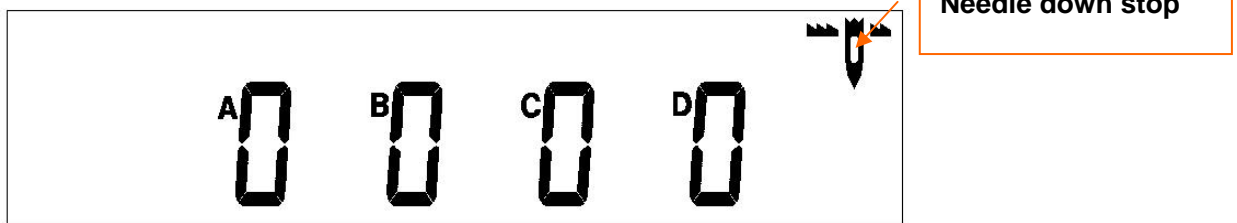
### 4.1 Power on mode

It keeps displaying “HELLO” after power on till the read of the main control parameter complete. The buzzer will tweet once.

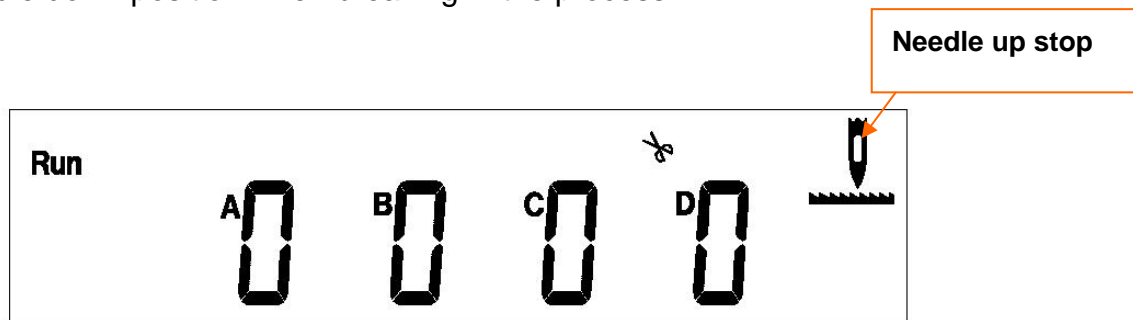
### 4.2 Sewing mode

When some button (  ,  ,  ,  ,  ,  ) is pressed, the corresponding mode indicator will be lighted up, at the same time, the corresponding parameter will display.

Take free sewing for example



The display means: the current sewing mode is free mode (indicator of free sewing in the mode selection area will be lighted up), and there is no fixed sewing parameter. Stop at the needle down position when breaking in the process.



Current display: it is running at the free sewing mode, the current sewing mode is free sewing(indicator of free sewing in the mode selection region will be lighted on). There is no fixed sewing parameter. Stop at the needle down position when breaking in the process.

Take fixed sewing for example

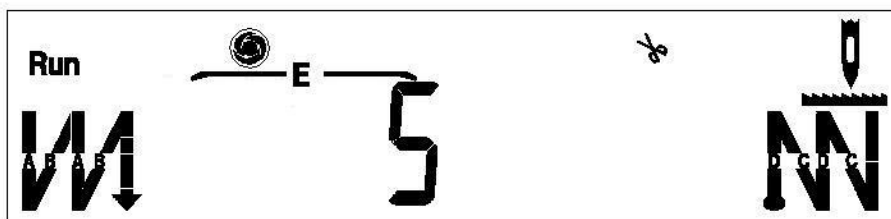


FIG. 001

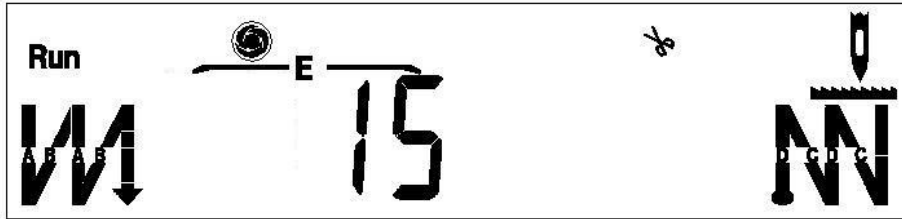


FIG. 002

Current display: it is running at the sewing mode(RUN), the current sewing mode is fixed sewing (indicator of fixed sewing in the mode selection region will be lighted up), and the stitches of E section is 5(Fig. 001)/15 stitches(Fig. 002), there are forward four-reinforcement sewing and backward four-reinforcement sewing, automatic trigger mode, trimming function. Stop at needle up position when breaking in the process.

Take multi-section for example

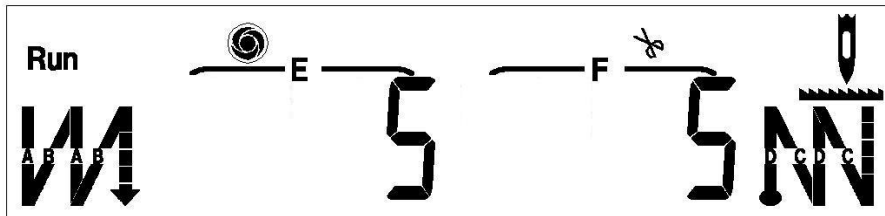


FIG. 003

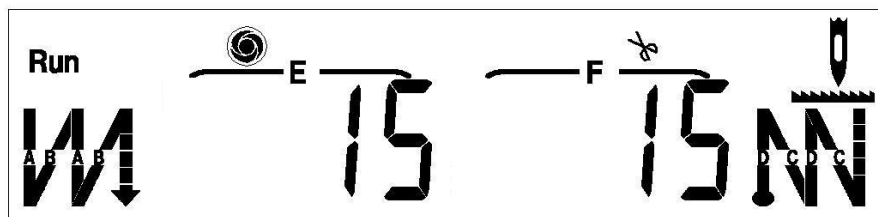


FIG. 004

Current display: it is running at the sewing mode(RUN), the stitches of E-section at the current sewing mode is 5(Fig. 003)/15 stitches(Fig.004), (specific sewing patterns according to the lighten indicator in the mode selection area). The stitches of F-section at the current sewing mode is 5(Fig. 003)/15 stitches(Fig. 004). there are forward four-reinforcement sewing and backward four-reinforcement sewing, automatic trigger mode, trimming function. Stop at needle up position when breaking in the process.

Take W sewing for example

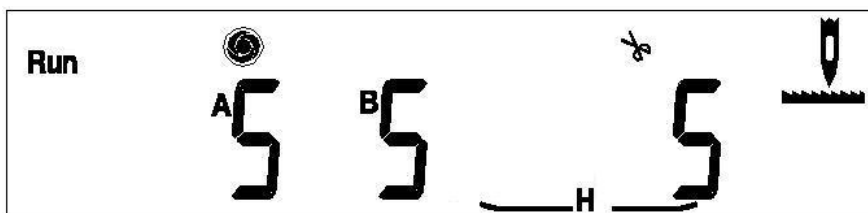


FIG. 005

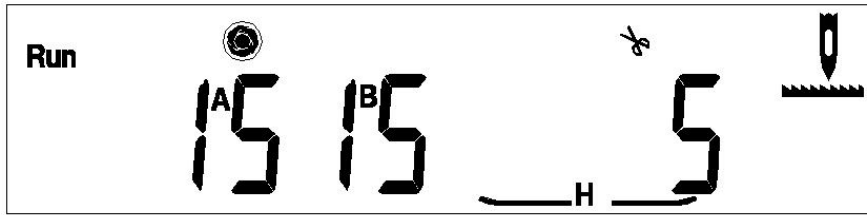







FIG. 006

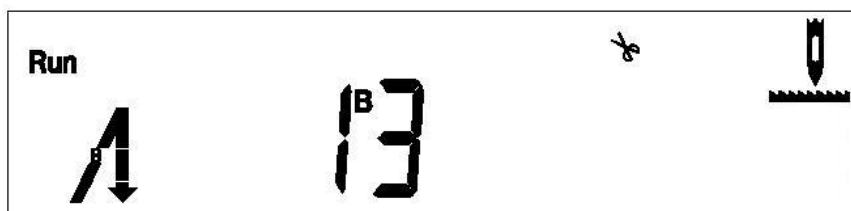
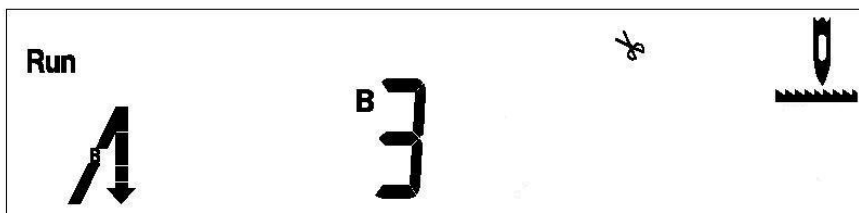
Current display: it is running at the sewing mode(RUN), the current sewing mode is W sewing(only at W sewing mode the A,B,H exist at the same time), the stitches of A section is 5(Fig.005)/15 stitches ( Fig.006 ), the stitches of B section is 5(Fig.005)/15 stitches(Fig.006), the stitches of H section is 5, automatic trigger mode, trimming function, stop at the needle up position when breaking in the process.

Adjust the parameter by pressing the button 、 in the digital adjustment region.

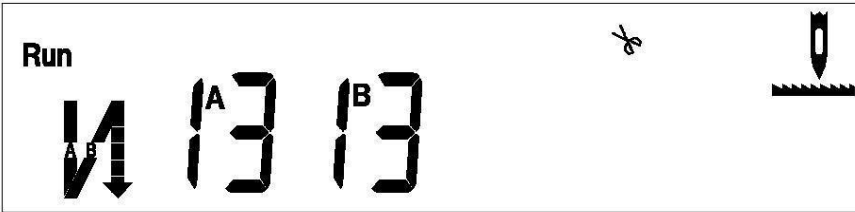
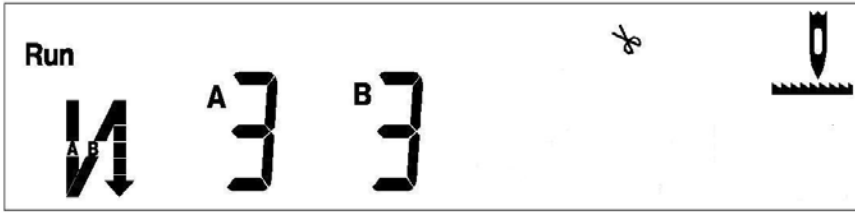
### 4.3 Fore-tacking sewing mode

Except W mode, press the fore-tacking sewing button  , the fore-tacking sewing symbol at the corresponding region will be lighted up according to the fore-tacking sewing parameter. The stitches of tacking sewing can be adjusted through pressing 、 in the digital area.

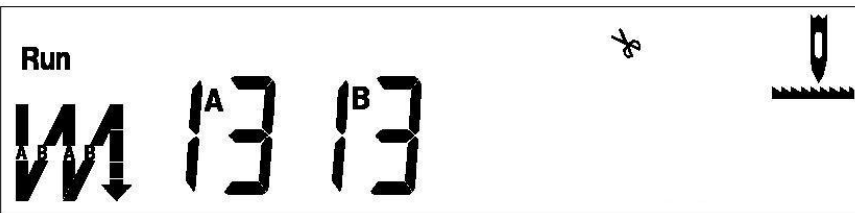
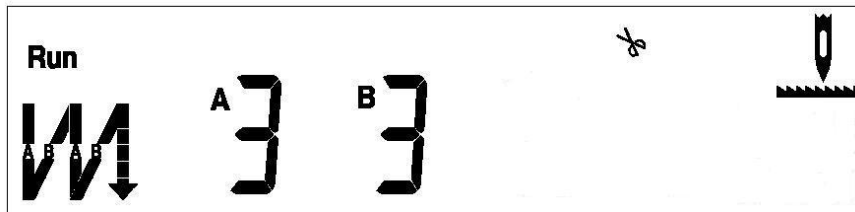
Take forward signal-reinforcement sewing for example, display as follows:






Take forward double-reinforcement sewing for example, display as follows:



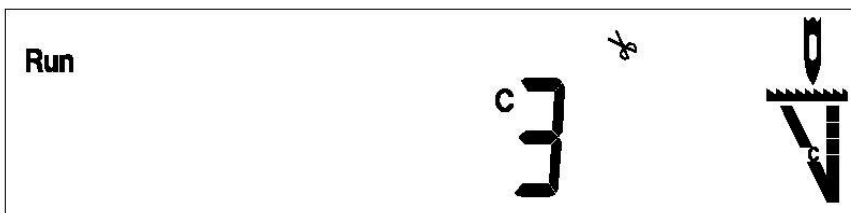
Take forward four-reinforcement sewing for example, display as follows:

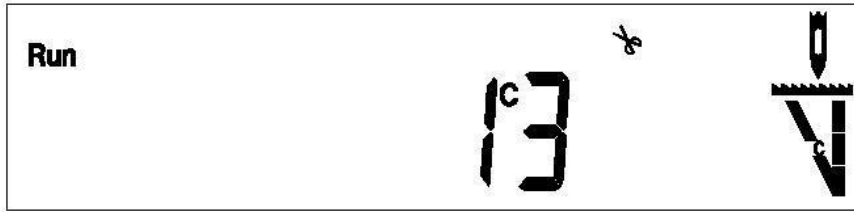


#### 4.4 Back-tacking sewing mode

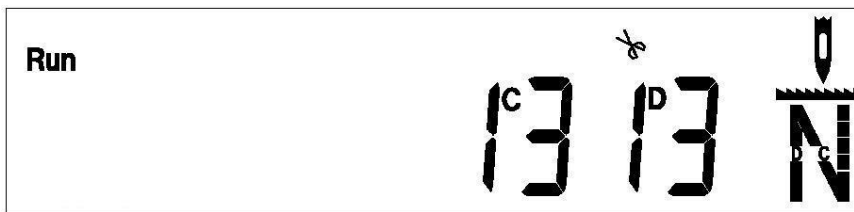
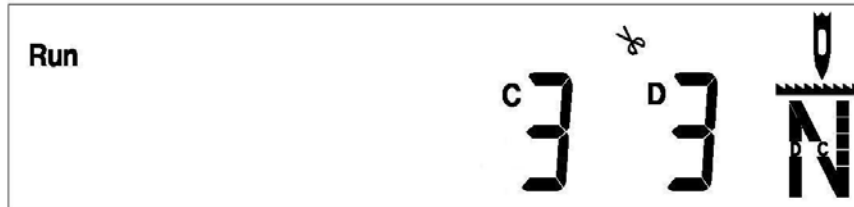
Press the back-tacking sewing button , the back-tacking sewing symbol at the corresponding region will be lighted up according to the back-tacking sewing parameter, except W sewing mode. The stitches of tacking sewing can be adjusted through pressing ,  in the digital area.

Take backward signal-reinforce sewing for example, display as follows:

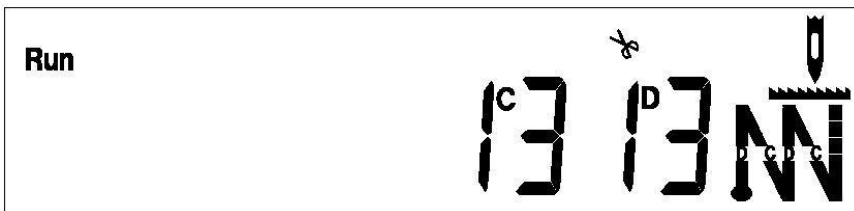
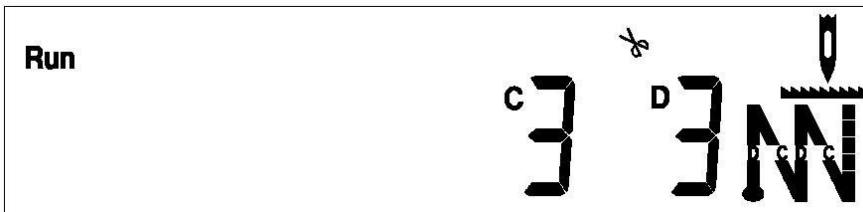






Take backward double-reinforce for example, display as follows:





Take backward four-reinforce sewing for example, display as follows:





#### 4.5 Trimming, cloth edge, automatic speed set





Press the  once, the  will be lighted up. It means the trimming function




is startup, then pressing it again, the function will be off, and  will disappear.



Press the  once,  will light, press it again to clear the icon.


Press the  once,  will light, it is at the automatic speed mode. Press it again to clear the icon. Note: This button is invalid at free sewing mode.

#### 4.6 Presser foot, soft start, clamp set


When press key  +  once, then display “FOOT ON”, presser foot function is on. When press key  +  again, then display “FOOT OFF”, presser foot function is off.

When press key  + , then display “SOFT ON”, soft start function is on. When press key  +  again, then display “SOFT OFF”, soft start function is off.

Press key  for three seconds, then display “CLAMP ON”, the clamp function is on. Press key  for three seconds again, then display “CLAMP OFF”, clamp function is off.

Press key  once or two seconds later, it escapes from current display, and recover to last display.

#### 4.7 Parameter switch

If there are fixed-parameters, not all parameters can be shown at the same time except free sewing and W sewing, meanwhile, if you want to check other parameter, press the  to switch display window. Then you can see fixed sewing parameters or sewing stitches.

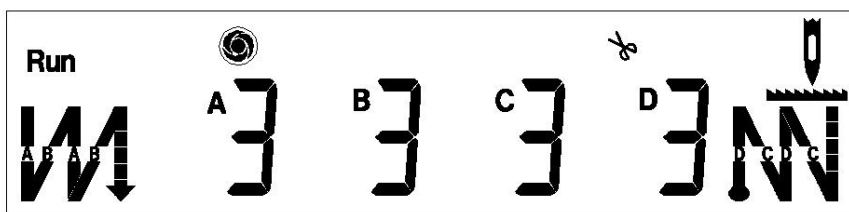
Take fixed sewing for example(including forward and backward four-reinforcement sewing), press the fixed sewing mode button(the corresponding indicator will be lighted



up), the stitches of fixed sewing will be shown as follows.



Through the display area, we can know the stitches of E section at the current mode is 5, there are four forward and backward four-reinforcement sewing. If we want to check the


specific tacking stitches, press  to switch display.




Through the display area, we can know the specific stitches of A,B,C,D section at forward and backward four-reinforce sewing. Through pressing the button  ,  in the digital adjustment area, the stitches can be adjusted.

Take the multi-section stitching for example(including forward and backward four-reinforcement sewing): The specific switch is shown below.



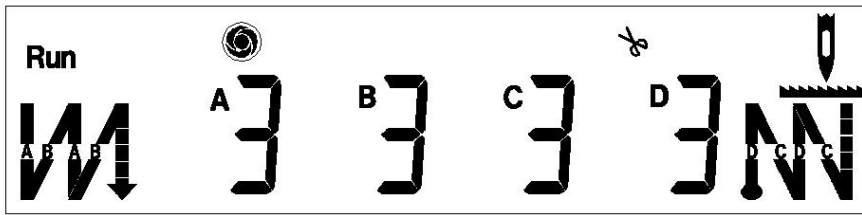
Through the display area, we can see the specific stitches of the E,F section. If we want to check the specific stitches of the other two sections, we can press the  to switch the display.



Through the display area, we can see the specific stitches of the G,H section. If we want to check the specific tacking stitches, we can press the  , then it is shown as







follows.




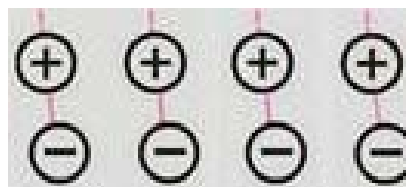
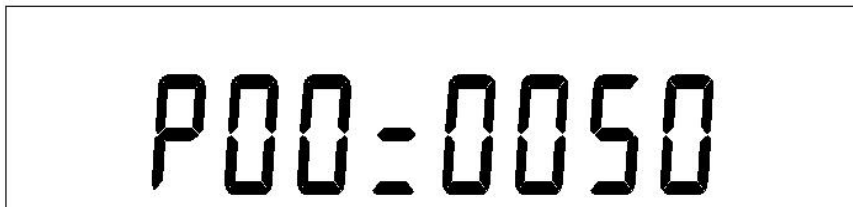
Switch the above three display status circulate through pressing



#### 4.7 Technical parameter adjustment mode


Holding the , then press , it will enter the technical parameter adjustment mode, showing "PSD-0000". Then input the password (the password is stored in the control box, the default password is 2222). Through pressing the ,  we can change the




corresponding number, then press the . If the password is correct, it enters the technical parameter adjustment mode. The left four parameters display code, the right four parameters display content, for example: "P00-0050".




key1    key2    key3    key4




The picture above is the digital adjustment area which is below the display area, the combined key 1-4 represent the two button ,  above.

At the technical adjustment mode, the combined key 1 and the combined key 2 is used to adjust the serial number of the parameter, the combined key 3 corresponds to the hundred of the parameter, the adjustment scope of combined key3 is 0-99. Press the 




or  of the combined key3, the hundred's place of the parameter will plus 1 or minus 1. If it is greater than 9 at the hundred's place, it will automatically carry from thousand. When doing substation, if the number at the hundred's place is 0, it will automatically borrow from ten. The adjustment scope of combined key4 is 0-99. Press the  or  of the combined key4, the hundred's place of the parameter will plus 1 or minus 1. If it is greater than 9, it will automatically carry from thousand. When doing substation, if the number in the hundred equals 0, it will borrow from ten.

Press  to store after adjusting the parameter.





#### 4.8 Panel software version display mode

Holding the , then press the , it will display the version of the panel, and return to the original display automatically ten seconds later, or press  to back to the original display.

#### 4.9 Control box software version display mode

Holding the , then press the , it will display the version of the main control box, it will return to the original display automatically ten seconds later, or press  to back to the original display.

#### 4.10 Speed adjustment



At the non-adjustment parameter mode, press , it will enter the speed adjustment mode. SP=XXXX displays (XXXX is the max speed of the free sewing). Press the ,  to modify speed. Continuous 10 seconds without speed adjustment button pressed, or press , it will back to the original display. Take 3500 RPM for example, display as

follows:



#### 4.11 Lower thread display



Press  and  together it enters the lower thread display, LNE=YYYY is shown, YYYY represents the lower thread parameter. Continuous 10 seconds without adjustment

buttons pressed, or press  it will back to the original display.

#### 4.12 Lower thread reset



Press the  more than 3 seconds, the lower parameter will reset.

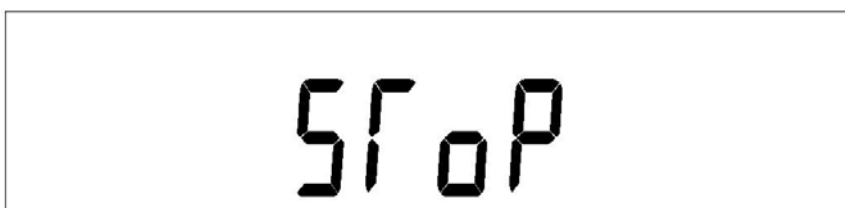
#### 4.13 Error display

ERROR-XX is displayed when received error code from the main control box, XX is error code. It will return to the original display automatically when the main control box



#### 4.14 Control box safety switching display

When the operating panel received the error code from the main control box, it displays "STOP". When the safety switching and error code exist simultaneously, safety switching will be shown first, display as follows:



## 5. Description table of operating panel parameter

Sequence	Function parameter	Default	Setting range	Unit	Parameter description
P0	pedal slope	50	1~100	%	The bigger the slope is, the larger the low-speed region is, and the faster the speed change is; the smaller the slope is, the narrower the low-speed region is, and the lower the speed change .
P1	Speed proportion	8	1~8		Presser proportion of the maximum speed of reverse sewing. The maximum speed is equally divided into eight parts, current speed can be modified through adjusting parts.
P2	System minimum speed	200	150~500	RPM	The minimum speed of motor when sewing.
P3	Maximum speed of the free sewing	4000	150~5000	RPM	The maximum speed of motor at the free sewing.
P4	Fixed sewing speed	3500	150~4000	RPM	Auto-trigger speed of fixed sewing.
P5	Fore-tacking sewing speed	1800	200~3000	RPM	Sewing speed of fore-tacking during operation.
P6	Back-tacking sewing speed	1800	200~3000	RPM	Sewing speed of back-tacking during operation.
P7	Suspend when the fore-tacking finished.	off	On/off		Pedal trigger is needed to continue operating when suspend at fore-tacking finishing.
P8	Suspend when the back-tacking finished.	off	On/off		Pedal trigger is needed to continue operating when suspend at back-tacking finishing.
P9	W sewing speed	1800	200~3000	RPM	Sewing speed at W sewing mode.

P15	Maximum speed of reverse sewing	2500	200~3000	RPM	Maximum speed of reverse sewing.
P16	Working time of thread sweep	50	20~1000	ms	Working time of thread sweep electromagnet.
P17	Whether the reverse sewing key will be absorbed when the motor stops.	on	On/off		When the motor stops, and the key pressed, whether the electromagnet acts or not.
P18	Stitch/speed priority	0	0~1		Stitch or speed priority setting during sewing: 0:stitch priority 1:speed priority
P19*	Foot presser switch	On	On/off		Turn on/off the function of foot presser.
P21	Selection of counting function	0	0~2		0:Non-counting function 1:Bobbin thread counting function 2:Trimming thread counting function
P22	Slow-startup counting	2	0~15		Stitches when sewing at slow-startup speed
P23	Slow-startup speed	500	200~3000	RPM	The sewing speed at slow-startup.
P24	Lower thread base number	10	1~100		How many stitches changes on lower thread, the current count change one unit.
P25	Total number of Lower thread	2000	1~9999		Total number of lower-thread setting.
P26	Current counting	2000	0~9999		Current amount of lower thread.
P27	Full PWM on time of reverse	200	20~500	ms	Initial startup time of reverse sewing electromagnet.
P28	PWM on time of reverse sewing	2	1~50	ms	PWM on time of reverse sewing when the electromagnet holding on.
P29	PWM off time of reverse sewing	2	1~50	ms	PWM off time of reverse sewing when the electromagnet holding on.

P31	The thread tension switch	1	0/1		Set the electric thread tension. 0: turn off 1: turn on
P34*	Automatic finding needle position	On	On/off		Whether automatic finding the needle up position at PWM on time
P36	trimming speed	250	200~500	RPM	Operating speed when trimming.
P37*	Automatic lift foot presser of half back step	on	On/off		Start or cancel automatic lift foot presser of half back step.
P40	Fore-tacking sewing compensation parameter 1	7	0-16		Fore-tacking stitch sewing compensation parameter 1.
P41	Fore-tacking sewing compensation parameter 2	5	0-16		Fore-tacking sewing stitch compensation parameter 2
P42	Back-tacking sewing compensation parameter 1	7	0-16		Back-tacking sewing stitch compensation parameter 1
P43	Back-tacking sewing compensation parameter2	5	0-16		Back-tacking sewing stitch compensation parameter 2.
P44	W sewing compensation parameter 1	7	0-16		W sewing stitch compensation parameter 1
P45	W sewing compensation parameter 2	5	0-16		W sewing stitch compensation parameter 2
P46	Manual test mode switch	0	0/1		0: normal operation mode 1: test mode
P47	senescent pause time	2000	100-9999	ms	The interval between each operation
P48	Operating time of test mode	2000	100—9999	ms	Each operating time of the test mode.(valid at no localizer)
P54	safety switch signal type	0	0/1		0: open 1: shut
P55		0	0/1		0:

P57	Startup time of lifting foot presser	250	20~1000	ms	Initial startup time of lifting foot presser electromagnet.
P58	PWM on time of lifting foot presser	2	1~50	ms	PWM on time of lifting foot presser when the electromagnet holding on
P59	PWM off time of lifting foot presser	3	1~50	ms	PWM off time of lifting foot presser when the electromagnet holding on.
P60	Protection time of foot presser lifting	20	1~120	s	Protecting time of foot presser lifting during working
P61	Delay time of lifting foot presser	50	20~800	ms	How long will it be to start to lift foot presser after the motor stops.
P62	Delay time of downing foot presser	50	20~800	ms	How long is it allowed to startup after foot presser is down.
P64*	Automatic lifting foot presser time after power on	0	0-900	s	Time of automatic lifting foot presser after power on.
P65	Function selection of cloth edge sensor	0	0-1		0: no cloth edge sensor 1: cloth edge sensor
P67	Speed of cloth edge	800	200-5000	RPM	Operating speed when detecting cloth edge signal.
P69	Delay-startup time of cloth margin	1000	100-9999	ms	Delay-startup time when detecting cloth head signal.
P73	Cloth edge sensor	off	On/off		Whether there is an external cloth edge sensor.
P74	Selection of back stitch/ foot presser lifting pneumatic	0	0-3		0: all electromotion 1: backstitch pneumatic 2: presser foot pneumatic 3: all pneumatic
P76	Number of trimming	0	0-9999		Adding 1 to the counter after trim, clear the counter to zero when it reaches max.
P98	Parameter recover to default	0000h	0-9999		

P99	Technical parameter password	2222h	0-9999		

- Note: 1 common parameter description: (RPM: round per minute; MS: millisecond ; S :second; H :hour)
- 2 The parameters marked with \*means that they should re-power after amended.

## 6. Stitch tracking compensation adjustment

### 6.1 Preparation before adjustment

1. Check the default distance of machine head needle.
2. Take the manual reverse sewing mode, sewing eight stitches and check the overlap effect of stitch tracking. If it is fine, carry on to adjust.

### 6.2 Adjustment step

1. Set the sewing mode to be fixed mode after power on, shut the fore-tacking sewing, set backward single-reinforcement sewing, set the parameter of C to be 4 stitch and fixed stitch to be 4 stitches, startup the auto-trigger. Step the pedal forward and check if the stitch tracking is overlap. If overlaps, it indicates that the parameter is suitable. Otherwise it will cause two situations, and then adjust the parameter according to the situations.

First situation: C section is shorter than normal, as is shown in Figure 1-1

Second situation: C section is longer than normal, as is shown in Figure 1-2

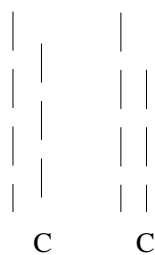


Fig 1-1

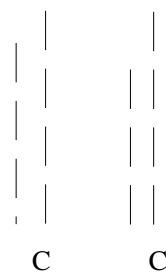


Fig 1-2

For the first situation, we can achieve fully overlap through increasing the value of the technical parameter P42 .

For the second situation, we can achieve fully overlap through decreasing the value of the technical parameter P42.

2. Change the back-tacking sewing mode to double back-tacking sewing mode, set the parameter of D to be 4 stitches. Step the pedal forward and check if the stitch



tracking is overlap. If overlaps, it indicates that the parameter is suitable. Otherwise it will cause two situations, and then adjust the parameter according to the situations.

First situation(less needle): the last section of D is shorter than normal, as is shown in Figure 1-3

Second situation(multi-stitch): the last section of D is longer than normal, as is shown in Figure 1-4

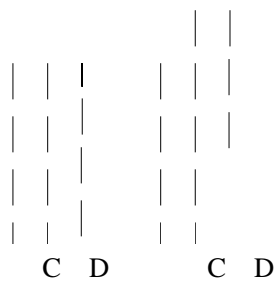


Fig 1-3

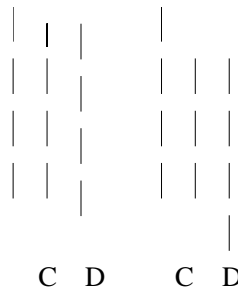


Fig 1-4

For the first situation, we can achieve fully overlap through increasing the value of the technical parameter P43.

For the second situation, it can achieve fully overlap through decreasing the value of the technical parameter P42.

The adjusting way for the forward and backward reinforcement sewing is equal to the way of W sewing. The parameter of P42 can be copy to the P40,P44. and the parameter of P43 can be copy to the P41,P45.











## 7. Table of error codes/cause /remedy

Error code	Cause	Remedy
Err 1	System error	Check whether the machine head is stuck, and then re-power, if the malfunction have not been solved yet, please contact after-sale service.
Err 2	Overload voltage	Please check whether the power supply voltage is normal, if the power supply voltage is higher than 265V, turn off the machine, and restart the machine until the power supply voltage is normal .
Err 3	Download voltage	Please whether check the power supply voltage is normal, if the power supply voltage is lower than 160V, turn off the machine, and restart the machine until the power supply voltage is normal.
Err 4	Motor code wheel error	Please check whether the motor electrical connection is normal
Err 5	System error	Re-power , if the malfunction have not been solved yet ,please contact the after-sale service.
Err 6	System error	Re-power , if the malfunction have not been solved yet ,please contact the after-sale service.



























Err 7	Motor lack phase	Please check whether the motor power cord is off or loose.
Err 8	Motor locked-rotor	<ol style="list-style-type: none"> <li>1. Check whether the motor power cord is off</li> <li>2. Check whether the machine head is stuck</li> <li>3. Check whether motor code wheel cord is loose</li> <li>4. Check whether the needle up position is correct (at the case of thread trimming movement)</li> </ol>
Err 9	Motor overload	<ol style="list-style-type: none"> <li>1. Check whether the cloth is too heavy</li> <li>2. Check whether the machine head is stuck</li> <li>3. Check whether the up needle position is correct (at the case of thread trimming movement )</li> </ol>
Err 11	Motor code wheel error	Please check whether the motor code wheel cord is loose
Err 12	Foot-controller dropped off error	Please check whether the foot-controller connection is loose.
Err 13	Foot-controller was off when turning on the electricity	Please check whether the foot board is stuck
Err 14	The time of using electromagnet is too long	<ol style="list-style-type: none"> <li>1. Check whether the up needle position is correct</li> <li>2. Check whether the fabric is too heavy or the line is too thick to cut the line normally</li> </ol>
Err 15	Brake circuit malfunction	Please check whether the brake resistor cable is loose
Err 17	Electromagnet over current malfunction	Electromagnet malfunction ,please check whether the electromagnet is broken or short circuit
Err 18	Brake circuit error	Please check whether the brake resistor cable is loose
Err 19—21	Positioning system error	<p>Motor can continue to operate, but there are no needle count, needle location, trimming/sweep and reverse stitch function. Please check whether the alnico is normal.</p> <p>Please check whether the machine head is stuck.</p>
Err 22	Panel communication error	Please check whether the connection of control panel and drive is normal
Err 23	Memory error	Re-power, if the malfunction have not been solved yet ,please contact the after-sale service .
Err 24	Machine head lubrication time is up	Add the lubrication oil, and then recover the operate time of machine head.

## 8. Table of seven-segment LED display value and actual value comparison

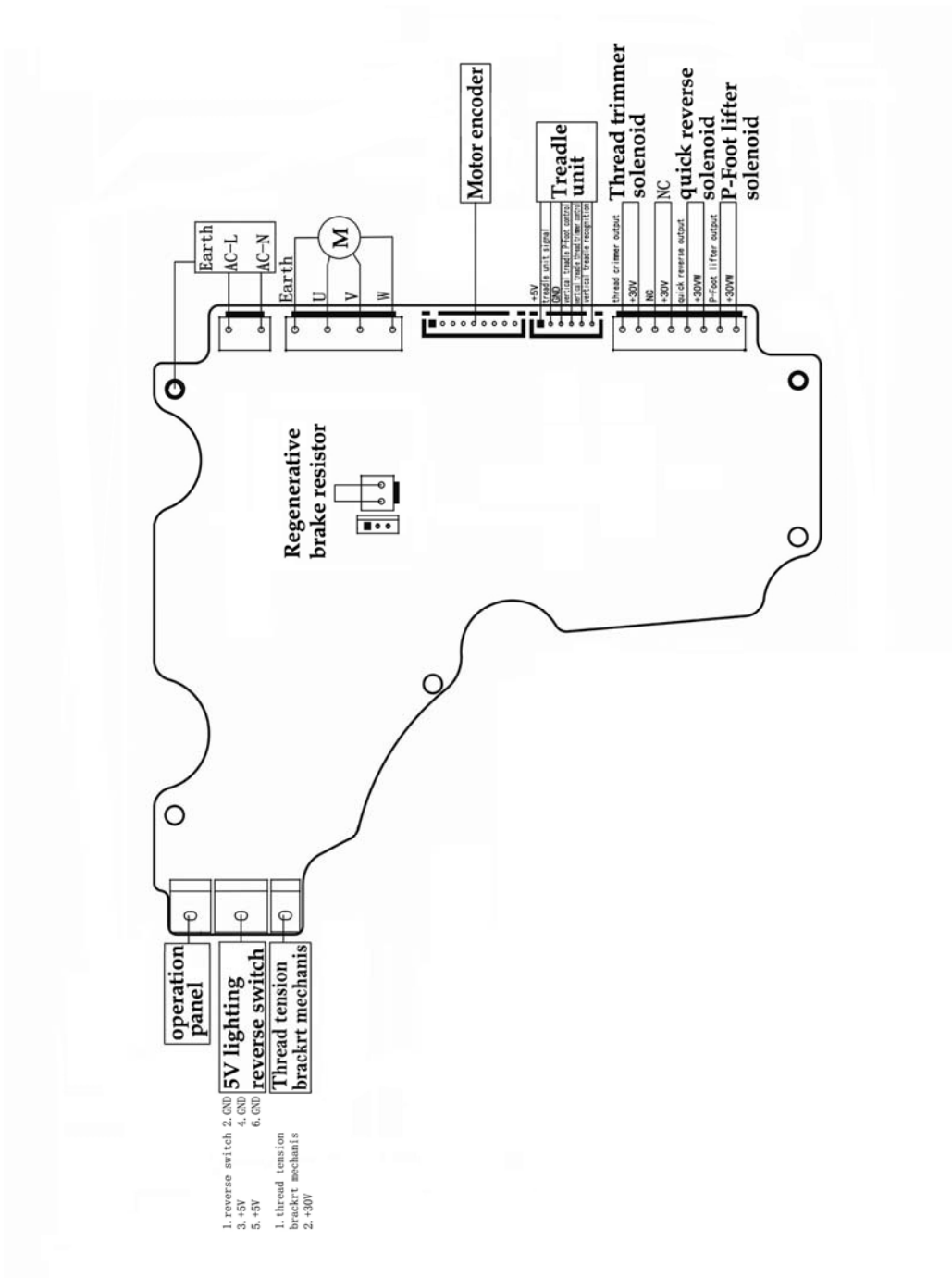
Figure part:

Actual character	0	1	2	3	4	5	6	7	8	9
Display character										

English character:

Actual character	A	B	C	D	E	F	G	H	I	J
Display character										
Actual character	K	L	M	N	O	P	Q	R	S	T
Display character										
Actual character	U	V	W	X	Y	Z				
Display character										

## 9. Icon within the control box connector



**Note:** Pay attention to the shape and direction when inserting each plug into socket of the control box and check it locked.

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http:www.chinahikari.com



此说明书仅作参考，如有更改恕不另作通知。

This manual is only for reference.  
If there is any modification,we apologize for the changing hence caused.