SC511/MASC511
圆头锁眼机-触摸屏 E1

2016-05

3006048

前　言

欢迎您使用本公司的特种缝纫机控制系统。

请您仔细阅读本操作手册，以确保正确的操作、使用特种缝纫机，请按照本手册内注明的方式进行操作，否则，如违规操作所造成损失本公司不承担责任。此外，请将本用户手册妥善保存在安全地点，以便随时查阅。若发生故障须由本公司指定的技术人员或专业人员进行维修。

Foreword

Thank you for using Dahao Computerized Control System for Special Sewing Machine.

It is appreciated that you do read this manual carefully in order to operate the machine correctly and effectively. If the user operates the machine contrary to regulations herein, thus cause loss to user or third party, we will not take responsibility. Besides, you should keep this manual for future use. For any fault or problem of machine, please ask the professionals or the technicians authorized by us for repair service.

安全注意事项

1. 安全操作的标志及含义

本使用说明书及产品所使用的安全标志是为了让您正确安全的使用产品，防止您及其他人受到伤害。标志的图案和含义如下：

⚠ 危险	如果忽视此标记而进行错误的操作，会导致人员的重伤或死亡。
⚠ 注意	如果忽视此标记而进行错误的操作，会导致人员的受伤和设备的损坏。
	该符号表示“应注意事项”。三角中的图案表示必须要注意的内容。（例如左边的图案表示：“当心受伤”）
	该符号表示“禁止”
	该符号表示“必须”。圆圈中的图案表示必须要做的内容。（例如左边的图案表示“必须接地”）

2. 安全注意事项

⚠ 危险	
	打开控制箱时，先关闭电源开关并将电源插头从插座上拔下后，等待至少 5 分钟后，再打开控制箱盖。触摸带有高电压的区域会造成人员受伤。
⚠ 注意	
使用环境	
	应避免在强电气干扰源（如高频焊机）的附近使用本缝纫机。 强电气干扰源可能会影响缝纫机的正常操作。
	电源电压的波动应该在额定电压的±10%以内的环境下使用。 电压大幅度的波动会影响缝纫机的正常操作，需配备稳压器。
	环境温度应在 0℃～45℃的范围内使用。 低温或高温会影响缝纫机的正常操作。
	相对湿度应在 35%～85%的范围内，并且设备内不会形成结露的环境下使用。 干燥、潮湿或结露的环境会影响缝纫机的正确操作。
	压缩空气的供气量应大于缝纫机所要求的总耗气量。压缩空气的供气量不足会导致缝纫机的动作不正常。
	万一发生雷电暴风雨时，关闭电源开关，并将电源插头从插座上拔下。雷电可能会影响缝纫机的正确操作。
安装	
	请让受过培训的技术人员来安装缝纫机。
	安装完成前，请不要连接电源。 如果误按启动开关，缝纫机动作会导致受伤。
	缝纫机头倒下或竖起时，请用双手操作。不要用力压缝纫机。 如缝纫机失去平衡，缝纫机滑落到地上会造成受伤或机器损坏。
	必须接地。 接驳地线不牢固，是造成触电或误动作的原因。
	所有电缆应固定在离活动部件至少 25mm 以外处。另外，不要过度弯曲或用卡钉固定得过紧。会引起火灾或触电的危险。

	请在机头上安装安全罩壳。

缝纫	
	本缝纫机仅限于接受过安全操作培训的人员使用。
	本缝纫机不能用于除缝纫外的任何用途。
	使用缝纫机时必须戴上保护眼镜。 如果不戴保护眼镜，断针时机针折断部分可能会弹入眼睛造成伤害。
	发生下列情况时，请立即切断电源。否则误按下启动开关时，会导致受伤。 1.机针穿线时 2.更换机针时 3.缝纫机不使用或人离开缝纫机时
	缝纫过程中，不要触摸任何运动部件或将物件靠在运动部件上，因为这会导致人员受伤或缝纫机损坏。
	如果缝纫机操作中发生误动作，或听到异常的噪声或闻到异常的气味，应立即切断电源。然后请与购买商店或受过培训的技术人员联系。
	如果缝纫机出现故障，请与购买商店或受过培训的技术人员联系。
维护和检查	
	只有经过训练的技术人员才能进行缝纫机的维修、保养和检查。
	与电气有关的维修、保养和检查请及时与电控厂家的专业人员进行联系。
	发生下列情况时，请关闭电源并拔下电源插头。否则误按启动开关时，会导致受伤。 1. 检查、调整和维修 2. 更换弯针、切刀等易损零部件
	在检查、调整和修理任何使用气动设备之前，请先断开气源，并等压力表指针下降到“0”为止。
	在必须接上电源开关和气源开关进行调整时，务必十分小心遵守所有的安全注意事项。
	未经授权而对缝纫机进行改装而引起的缝纫机损坏不在保修范围内。

Safety Matters for Attention

1. Signs & Definitions of Safety Marks

This User's Manual and the Safety Marks printed on the products are to enable you to use this product correctly so as to be away from personal injuring. The signs and definitions of Marks are shown in below

⚠Danger	The incorrect operation due to negligence will cause the serious personal injury or even death.
⚠Caution	The incorrect operation due to negligence will cause the personal injury and the damage of mechanism.
	This kind of marks is "Matters for Attention", and the figure inside the triangle is the content for attention. (Exp. The left figure is "Watch Your Hand!")
	This kind of mark is "Forbidden".
	This kind of mark means "Must". The figure in the circle is the contents that have to be done. (Exp. The left figure is "Ground!")

2. Safety Matters for Attention

⚠Danger	
	For opening the control box, please turn off the power and take away the plug from socket firstly, then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the person injury.
⚠Caution	
Using Environment	
	Try not to use this sewing machine near the sources of strong disturbance like power cable disturbance and static disturbance. The source of strong disturbance will affect the normal operation of the sewing machine.
	The voltage fluctuation shall be within ±10% of the rated voltage. The large fluctuation of voltage will affect the normal operations of sewing machine, and the regulator will be needed in that circumstance
	Working temperature: 0℃～45℃. The operation of the sewing machine will be affected by environment with temperature beyond the above range.
	Relative Humidity:35%～85 %(No dew inside the machine), or the operation of sewing machine will be affected.
	The supply of the compressed gas should be over the consumption of the sewing machine. The insufficient supply will be cause the abnormal operation of the machine.
	In case of thunder, lightning or storm, please turn off the power and pull plug out the socket. Because these will have the influence on the operation of sewing machine
Installation	
	Please ask the trained technicians to install the sewing machine.
	Don't connect machine to power supply until the installation is finished. Otherwise the action of sewing machine may cause personal injury once the start switch is pressed by mistake.
	When you tilt or erect the head of sewing machine, please use both of your hands in that operation. And never press the sewing machine with strength. If the sewing machine loses its balance, it will fall into floor thus causes the personal injury or mechanical damage.

	Grounding is a must. If the grounding cable is not fixed, it may cause the electric-shock and mis-operation of machine
	The entire cables shall be fixed with a distance at 25mm away from the moving component at least. By the way, don't excessively bend or tightly fixed the cable with nails or clamps, or it may cause the fire or electric shock.
	Please attach the safety cover at the head.

Sewing	
	This sewing machine can only be used by the trained staff.
	This sewing machine has no other usages but the sewing.
	When operating the sewing machine, please remember to put on the glasses. Otherwise, the broken needle will cause the personal injury.
	At following circumstances, please cut off the power at once so as to avoid the personal injury caused by the mis-operation of start switch: 1. Threading; 2. Replacement of needles; 3. The sewing machine is left unused or beyond supervision
	At working, don't touch or lean anything on the moving components, because both of the above behaviors will cause the personal injury or the damage to the sewing machine
	During working, if the mis-operation happens or the abnormal noise or smell is found at the sewing machine, user shall cut off the power at once, and then contact the trained technicians or the supplier of that machine for solution.
	For any trouble, please contact the trained technicians or the supplier of that machine.
Maintenance & Inspection	
	Only can the trained technicians perform the repair, maintenance and inspection of this sewing machine.
	For the repair, maintenance and inspection of the electrical component, please contact the professionals at the manufacturer of control system in time.
	At following circumstances, please cut off the power and pull off the plug so as to avoid the personal injury caused by the mis-operation of start switch: 1.Repair, adjustment and inspection ; 2. Replacement of the consumptive devices, like needle, knife and so on.
	Before checking, adjusting and repair any air-driven equipment, user needs cut off the source of gas and wait for the pressure indicator drop to "0".
	If you have to adjust the machine when the power is on, you can't be too careful at following the entire Safety Matters for Attention
	If the sewing machine damages due to the unauthorized modification, our company will not be responsible for it.

目 录

Contents

1 概要说明

1.1 概述

SC511 系列工业缝纫机电脑控制系统，主轴电机采用具有世界先进水平的交流伺服控制技术驱动，具有力矩大、效率高、车速稳定和噪音低等特点。操作面板设计多样化可满足不同客户的配套要求；系统采用德国式结构设计，安装和维修方便快捷，系统面板操作程序可通过 U 盘快速升级，方便用户不断提高产品性能。

1.2 功能和指标参数

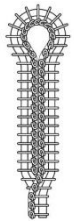
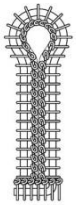
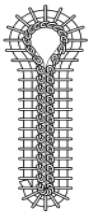
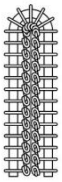
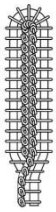
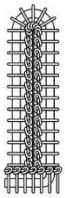
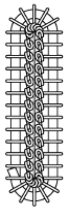
SC511 系列数控交流伺服系统的功能及参数详见表 1。

表 1: 功能及参数对照表

序号	机　型 项　目	SC511/MASC511
1	用途	男装、女装、休闲装、牛仔裤、裤装
2	缝制速度	1000—2700rpm
3	针迹形状	无加固缝
		锥形加固缝
		直线加固缝
		圆形加固缝
		菊花眼
4	锁缝长度	圆眼孔 8-42mm、一字形孔 5-50mm
5	针迹节距	0.5-2.0mm
6	针迹幅宽	1.5mm—5.0mm，机械可调 1.5—4.0mm
7	锥形加固长度	0-20mm
8	压脚高度	标准 12mm（可以到 16mm）
9	启动方式	双脚踏开关或是手动开关
10	送布方式	X/Y/Z 的 3 脉冲马达间歇送布
11	剪面线及剪底线驱动方式	电磁阀驱动
12	切锤驱动方式	电磁阀驱动
13	安全装置	急停开关、机头翻倒开关及电路故障自动保护功能
14	花样输入及升级方式	U 盘
15	操作面板支持语言	汉语、英语
16	上轴马达	小型 AC 伺服马达 750W 皮带传动驱动方式
17	空气压力	主调节器：0.5MPa，气锤压力调节器：0.4Mpa
18	额定功率	600W
19	使用温度范围	0℃ ～45℃
20	使用湿度范围	35%～85% （无结露）
21	电源电压	AC 220V ± 10%；50/60Hz

※ 产品执行标准：QCYXDK0004—2016《工业缝纫机计算机控制系统》。

1.3 针迹形状

圆头锁眼			
			
无加固缝	锥形加固缝	直线加固缝	圆形加固缝
一字形锁眼			
			
无加固缝	锥形加固缝	直线加固缝	圆形加固缝
菊花眼			
			

1.4 标准化

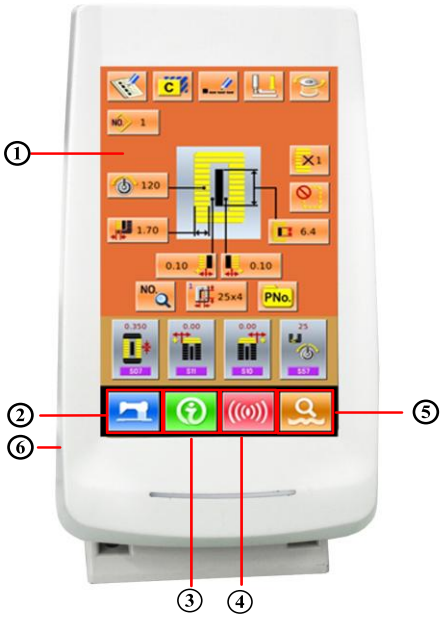
功能按键采用业界公认的图形标识，图形是国际化语言，各国用户都可以识别。

1.5 操作方式

采用真彩全触摸液晶屏，界面更加友好直观，操作也更为便捷。具体操作方法参考操作说明。

2 基本操作说明

2.1 操作面板说明



（前面）

（右侧面）

① 花样数据显示区域　② 功能模式按键区域
③ 电缆线　④ U盘插口

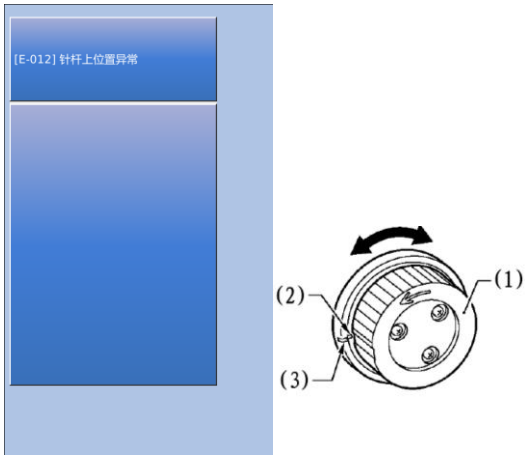
2.2 基本操作

① **打开电源开关**

打开电源开关后，操作屏幕的花样数据显示区域依次显示：

欢迎使用SC511系列锁眼机→SC511-00（01或02）→创建数据→请按启动开关

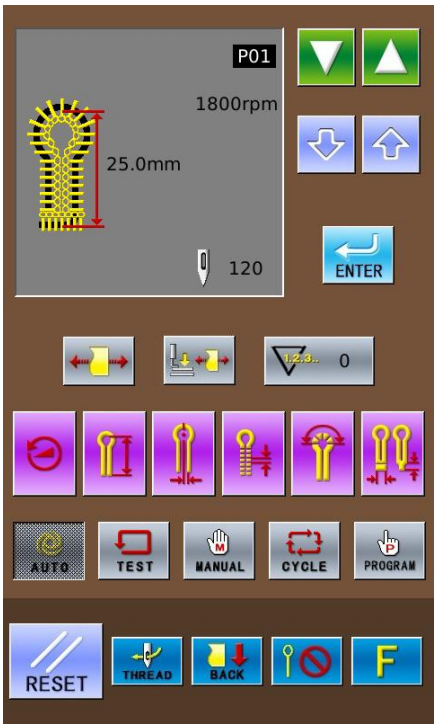
注：当打开电源之后，操作面板显示图（A）“E-012”时，请按图（B）所示方向转动手轮（1），使手轮上的钢印（2）和缺口（3）一致。



（A） （B）

② **按下启动开关**

踩下右侧脚踏板开关后，送布台移动到放置布料的位置。操作面板上显示前一次操作时的模式（自动模式、试送布模式、手动模式、循环程序模式、程序模式中的任何一个）的待机状态。



注：移动到各种模式后，在开始下一个动作前的状态称为“待机状态”。

2.3 花样程序的设定方法

2.3.1 缝制数据输入界面

数据输入界面如右图所示，详细功能说明请见【表 1：按键说明表】。

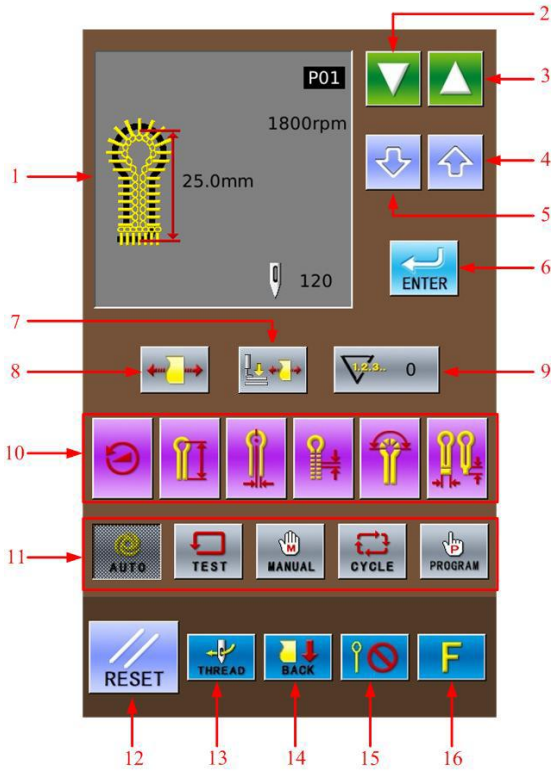
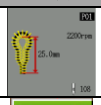
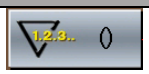


表 1：按键说明表：

序号	图标	功能	备注
1		缝制形状显示	显示花样号，花样形状，花样长度，花样针数，缝制速度等信息
2		减小程序及参数号码键	
3		增加程序及参数号码键	
4		增大参数内容及数值键	
5		减小参数内容及数值键	
6		ENTER（确认）键	确认参数及花样数据的内容
7		落压脚前绷布键：  落压脚后绷布键： 	默认为落压脚后绷布，如果设置成落压脚前绷布，缝制完一个花样后自动恢复。
8		绷布开启键：  绷布禁止键： 	默认为绷布开启，如果设置成绷布禁止，缝制完一个花样后自动恢复。

序号	图标	功能	备注
9		计数器数值显示	
10		快捷方式键	可快捷修改 6 个与花样相关的参数
11		缝制模式键	可切换至自动、手动、试送布、循环、程序 5 个缝制模式
12		RESET(复位)键	清除错误信息显示
13		THREAD（穿线）键	进入穿线模式
14		FRONT（前进）键：  BACK（后退）键： 	将布料放置从“前面”或是“后面”的位置进行交换
15		先切刀键：  后切刀键：  无切刀键： 	设定切刀动作
16		参数管理键	进入参数设置

2.3.2 花样程序的设定

建议在使用前预先设定好经常要使用的花样数据参数，在以后的使用中只要选择花样号码就能调出已经设定好的花样，这样可以节省每次因重新设定花样参数所需花费的时间。

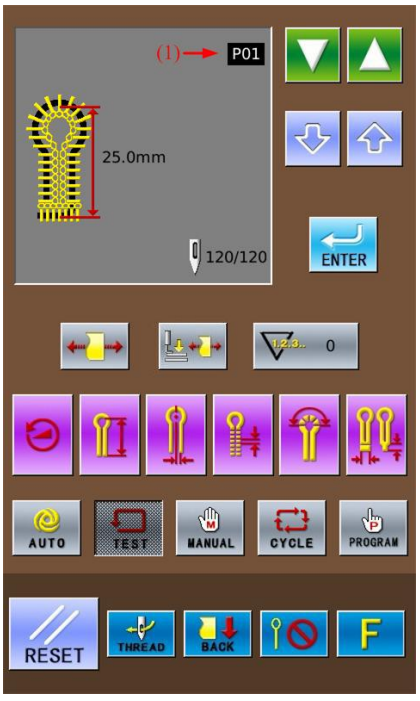
花样程序号可以登录 20 个，并随时可变更各项目的数据参数。

出厂时，花样程序号 P01~P20 均保存着默认的花样程序内容。（程序号 P01~P20 全部是同样的内容。）

① 按下试送布模式按键 

② 选择要更改内容的花样程序号 P01~P20（1）。

每按一次  键，花样号（1）就会按 P01→P02→…P20→C1→C2…C9 的顺序切换（按  键则为相反方向切换。）



③ 按下程序模式键 

在花样数据显示区域显示出前次选择的花样参数号（2）和其具体参数信息（3）

④ 按  键选择想要变更的参数号（2）。

⑤ 按  改变参数（3）的内容。

参数信息（3）闪烁表示其内容尚未确定。

⑥ 按 

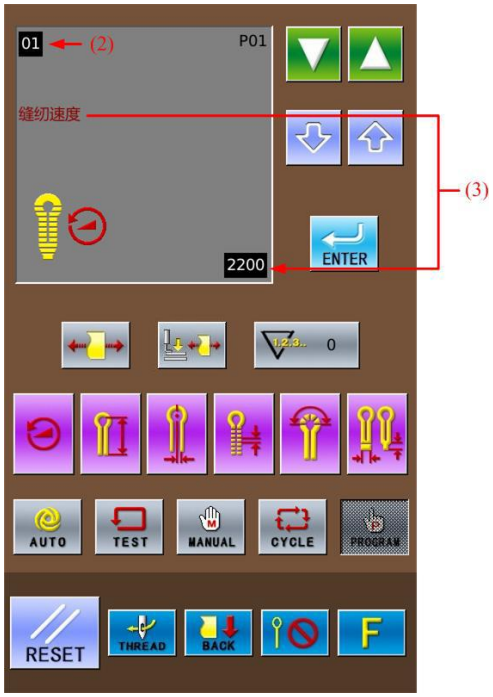
键确定已更改的内容。

参数信息（3）从闪烁变为不闪表示其内容已被确定。如果在闪烁时不按 

键，而是按 

键中的任何一种键，更改的参数（3）会被废除，恢复为更改前的数值。

⑦ 重复上述的 4~6 步骤的顺序，更改其他的参数。

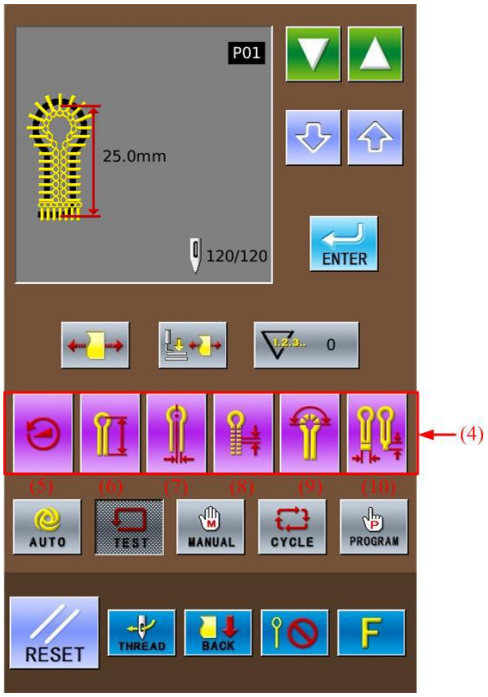


2.3.3 关于快捷方式键

在快捷方式键（4）中，登录了经常使用的以下 6 个参数。

（5）缝纫速度（参数号 No.01）
（6）钮孔锁缝长度（参数号 No.02）
（7）切刀间隔（参数号 No.03）
（8）针迹节距（参数号 No.04）
（9）圆头部针数（参数号 No.05）
（10）加固缝长度（参数号 No.06、No.08、No.10）

注：在参数号 No.40 中设定不同的加固缝样式，对应于不同的加固缝长度参数（10）。



2. 3. 4 S 级花样参数一览表

根据其他参数的设定的内容，有一部分参数的设定值可能无法更改或无效。

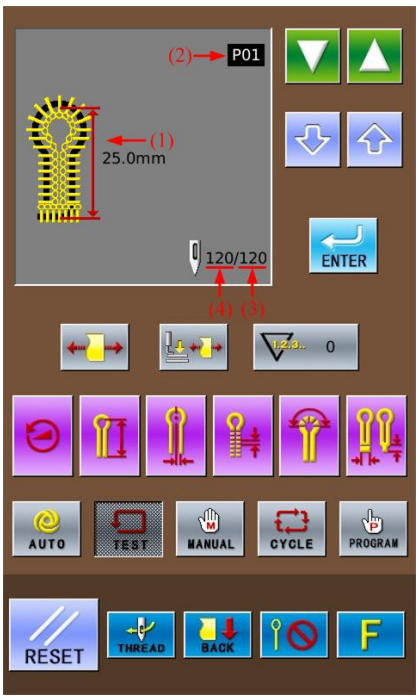
参数号	设定内容	设定范围	单位	初始值
S01	缝制速度 	1000~2700rpm	100	1800rpm
S02	钮孔锁缝长度 	5~50mm	0.5	25mm
S03	切刀间隔 	-2.5~0.5mm	0.05	0.2mm
S04	针迹节距 	0.5~2.0mm	0.1	1.0mm
S05	圆头部针数 	4~20 针	1	9 针
S06	锥形套结长度 	1~20mm	1	6mm
S07	偏移量 	0.5~2.0mm	0.1	1.5mm
S08	直线加固缝长度 	2.0~6.0mm **（单侧 3.0mm 为止）**	0.1	5.0mm
S09	直线加固缝针数 	5~18 针	1	7 针
S10	圆形加固缝针数 	5~17 针	1	7 针
S11	切刀形状 	1~6 **（根据不同的切刀号码，选择适当的切刀形状）**	1	2
S12	针摆宽度校正 	-1.0~1.0mm	0.1	0.0mm
S13	圆头部位低速 	-600~0rpm **（圆头部低速是以参数 01 缝纫速度的设定值为基准）**	100	0rpm
S14	直线加固缝速度 	1000~2500rpm **（缝纫速度比直线加固缝速度慢时，直线加固缝速度将和缝纫速度一样）**	100	1800rpm
S15	慢起针针数 	0~3 针	1	0 针
S16	慢起针速度 	400~1500rpm **（缝纫速度比慢起针速度慢时，慢起针速度将和缝纫速度一样）**	100	700rpm

参数号	设定内容	设定范围	单位	初始值
S17	切刀 X 方向校正 	-0.5~0.5mm	0.05	0.0mm
S18	切刀 Y 方向校正 	-0.7~0.7mm	0.05	0.0mm
S19	起缝加固缝针数 	0~4 针	1	0 针
S20	尾缝加固缝针数 	0~4 针	1	0 针
S21	X 方向校正 	-1~6	1	0
S22	Y 方向校正 	-1~6	1	0
S23	θ 1 校正 	-3~3	1	0
S24	θ 2 校正 	-3~3	1	0
S25	锥形套结角度 	-5~5	1	0
S26	加固缝宽度校正 	-1.0~0.0mm	0.1	0.0mm
S27	加固缝重合量 	0.0mm~2.0mm	0.1	1.0mm
S28	加固缝 X 方向校正 	-1.0mm~1.0mm	0.1	0.0mm
S29	加固缝倾斜校正 	-3~1	1	0
S30	圆头部形状校正	-25~25	1	0
S31	尾缝加固缝节距 	20%~100%	5%	100%
S32	圆形结重叠针数 	1~4 针（45° 以内）	1	1 针
S33	无切刀时的运针 	1~2	1	1
S34	菊花眼切刀尺寸 	2~5mm	1	2
S35	菊花眼针数 	8~100 针	1	20
S36	菊花眼重叠针数 	1~5 针（45° 以内）	1	2
S37	加固缝间距	0~30	1	0
S38	预留（将来升级扩展时使用。）			
S39	复制花样	OFF~P01~P20	1	OFF

参数号	设定内容	设定范围	单位	初始值
S40	加固缝样式 	1：无加固缝 2：锥形加固缝 3：直线加固缝 4：圆形加固缝	1	2
S45	结合部线迹调整/花样生成方式	0~1		1

2.4 试送布模式确认缝纫花样

试送布模式是在上轴停止的状态下，仅送布台按正常缝纫时的状态一样进行工作。使用该模式便于对机针和压脚之间的位置关系进行确认。



① 按下试送布模式键

按下试送布模式键 

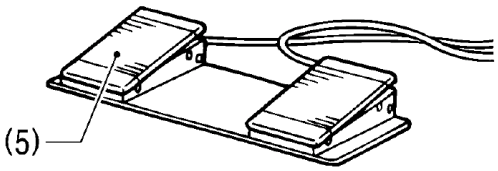
后，在缝制数据显示区域显示出缝纫花样的针迹形状（1）、花样号码（2）、总针数（3）、剩余针数（4）等。

② 选择花样号

每按一次  键，花样号（2）就会按 P01→P02→…P20→C1→C2…C9…P01 的顺序切换。（按  键正好相反，为逆顺序。）

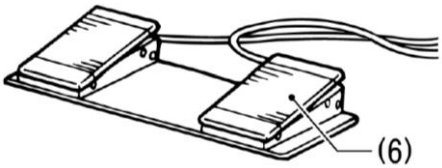
③ 按下压脚开关

踩下左侧压脚踏板（5）后，压脚下降

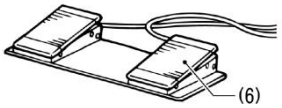


④ 按下启动开关

踩下右侧启动踏板（6）后，送布台将会移动到缝纫开始的位置处。



⑤ 按启动开关（6）或是按  键，开始试送布缝纫。

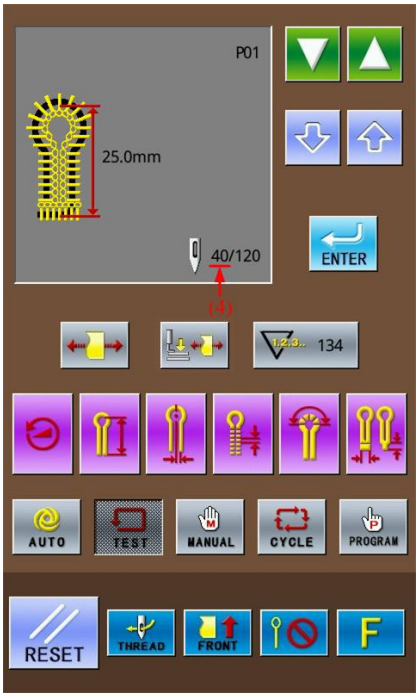


或 

（每按一次缝纫2针。）
（如果一直按着的话就会连续缝纫。）

注：缝纫数据显示区域显示的剩余针数（4）每次减 少 2 针。

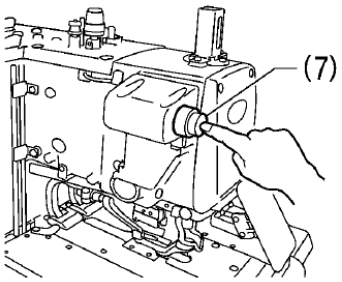
到达最后一针时蜂鸣器会鸣响。
试送布模式，不进行剪线和切刀动作。



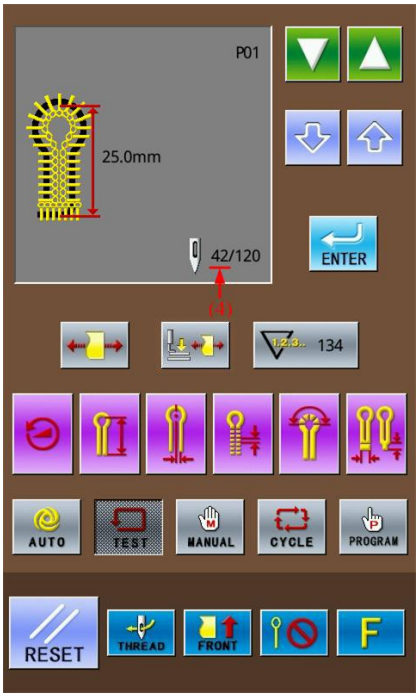
⑥ 希望试送布终止时送布台回到布料设定位置。

按下暂停开关（7），然后再按 

键



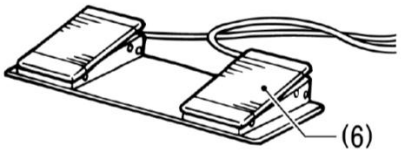
⑦ 送布中，想要送布台回到前面的缝纫位置时。



按下  键，每按一次会倒退 2 针。缝制数据显示区域显示的剩余针数（4）每次会增加 2 针。

⑧ 到达最后一针时。

踩下启动踏板开关（6），一直到缝制数据区域显示的剩余针数变为 0，送布台回到布料设　　定位置为止。之后花样数据区域会显示“送布测试结束!”。

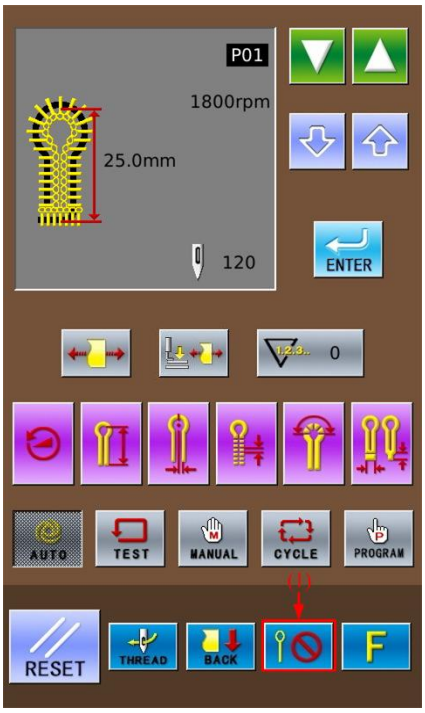


2.5 切刀动作的切换

① 无切刀

不实行切刀动作。

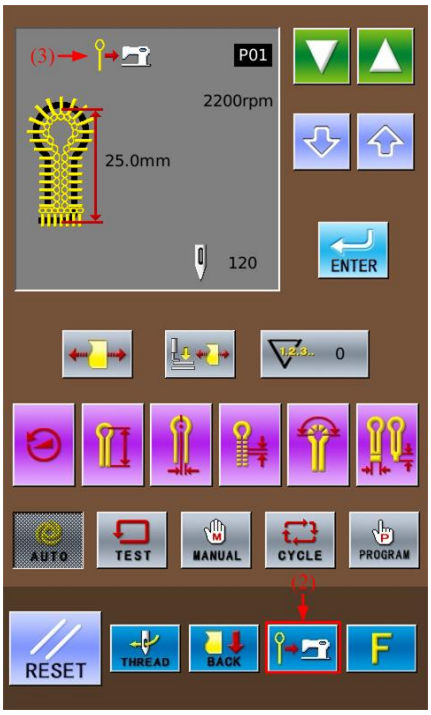
此时界面显示如右图，按切刀模式键切换到无切刀（1）。



② 先切刀

在切布动作实施后，再进行缝纫动作。

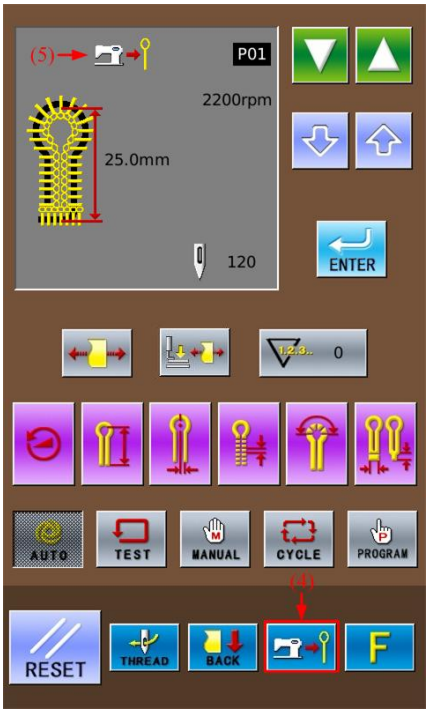
界面如右图所示，按切刀模式键切换到先切刀（2），此时先切刀模式会在缝制数据显示区域显示出来（3）。



③ 后切刀

在缝纫动作完成后，再实施切刀动作。

界面如右图所示，按切刀模式键切换到后切刀（4）。此时后切刀模式会在缝制数据显示区域显示出来（5）。



2.6 布料设定位置的切换方法

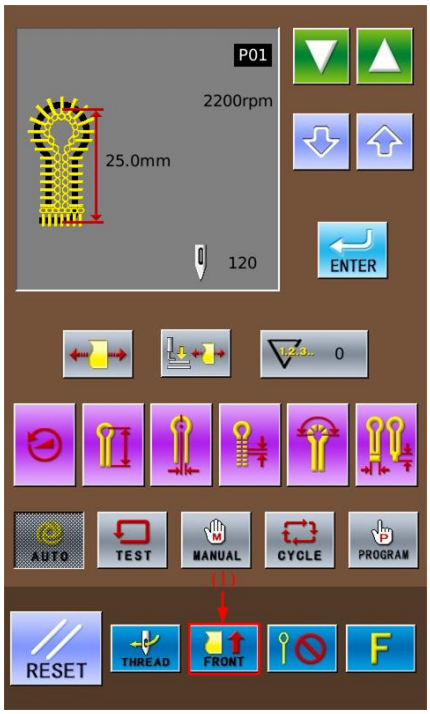
因为能够将送布台比标准的布料设定位置更向前移动，所以比较容易进行布料的设置。特别是使用后切刀时，循环时间被缩短。

① 要移动送布台到前面时

在自动模式、试送布模式或是手动模式的待机状态时，按送布位置切换按键（1）将送布模式切换为 

，此时，送布台将会移动到前面（缝纫起始的位置）。

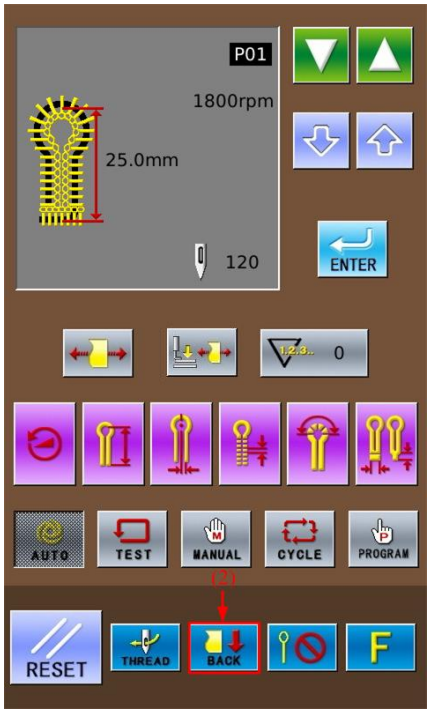
注：前面的位置是指操作人员面向机器时，靠近自己的方向。



② **移动送布台到后面（标准布料设定位置）时**

再按一次送布位置切换按键（2），送布模式切换为 

，此时送布台将会回到后面（标准的布料设定位置）。



2.7 穿线模式

穿线模式在穿面线时使用。如果切换成穿线模式时，针杆的 Z 轴进行 180° 的转动后，XYZ 轴步进电机的励磁将被切断。此时，针杆和送布台可以自由移动，便于穿面线。

① **进入穿线模式**

在自动模式、试送布模式或是手动模式的待机、状态时，按穿线模式按键（1）将送布模式切换为穿线模式，此时：

1．花样数据显示区域会显示“请按RESET按键”（2）。

2．夹线器变为开放状态。

3．蜂鸣器鸣响，针杆回转180°，之后XYZ轴步进电机的励磁被切断。

② **穿面线**

三分钟后，夹线器自动关闭。

③ **穿面线完成**

穿面线完成后，按 

键

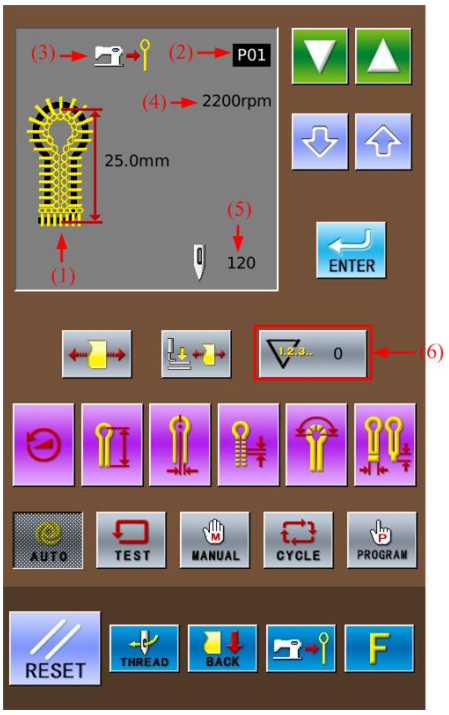
针杆和送布台在回原点进行原点检测后，返回到布料设定位置。

夹线器关闭。

3 缝制操作说明

3.1 自动模式

- 初次进行自动缝纫时，请务必进行试缝。
- 在气温较低的环境下使用 SC511 时，请进行多次试缝操作，以便使电机加温。



① 按下自动模式键

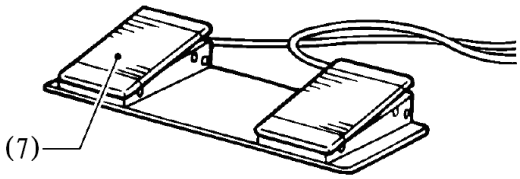
按下自动模式键 AUTO 后，在花样数据显示区域显示缝纫针迹的形状及长度

（1）花样形状
（2）花样号码
（3）切刀动作
（4）缝制转速
（5）当前花样总针数，
（6）生产计数器

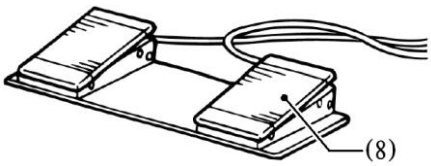
② 按 ▼▲ 键选择想要的花样程序号（2）。每按一次 ▲ 键，花样程序号（2）就会按 P01→P02→…P20→C1→C2…C9 的顺序切换（按 ▼ 键则为相反方向切换。）

③ 选择希望的切刀动作（无切刀/先切刀/后切刀）。注：有关切刀动作的切换方法具体请参考**【2.5 切刀动作的切换】**

④ 在压脚下放入要缝制的布料后，踩下压脚踏板开关（7）。



⑤ 按启动踏板开关（8），缝纫开始。

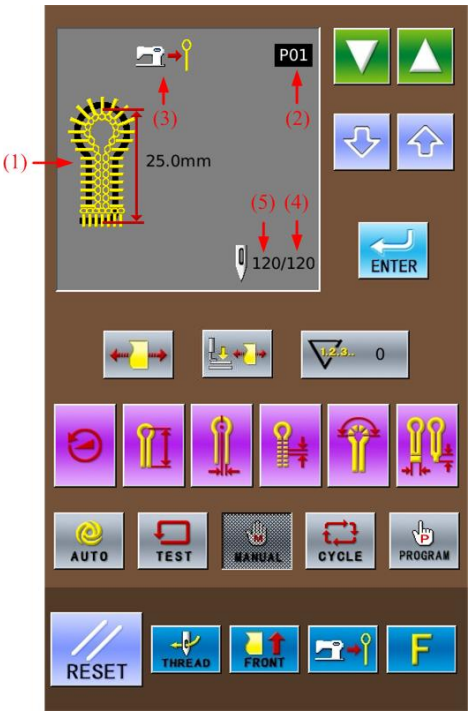


⑥ 如果要反复缝制时，请重复操作上述的第④~⑤的步骤

3.2 手动模式

⚠ 注意
在手动缝纫中因切锤有动作，请不要将手放在切锤旁边。有可能会导致重伤。

在手动模式下，用手转动手轮，送布台能一针一针的移动。这对进行分纱器的同步调整时会比较方便。



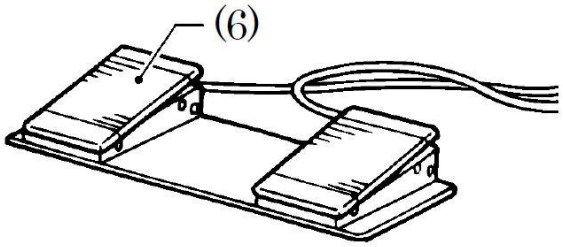
① 按成手动模式

在缝制数据显示区域显示缝纫针迹的形状（1），花样程序号码（2），切刀动作（3），总针数（4），剩余针数（5）等。

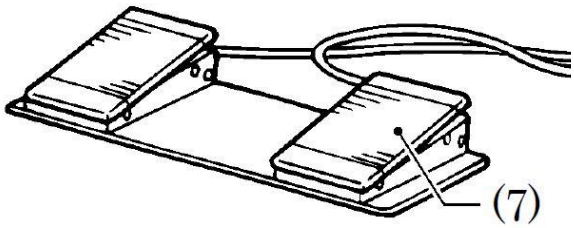
② 按  键选择希望的花样程序号（2）

每按一次  键，花样程序号（2）就会按P01→P02→…P20→C1→C2…C9的顺序切换（按  键则为相反方向切换。）

③ 在压脚的下面放入缝制布料，按下压脚开关（6），放下压脚



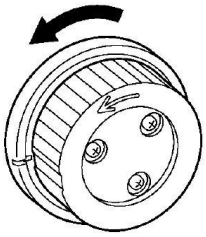
④ 按启动开关（7），将送布台移动到缝纫开始的位置。



注意：

将切刀动作设定为“先切刀”时，因切锤的移动请一定注意安全。

⑤ 上轴手轮向左回转

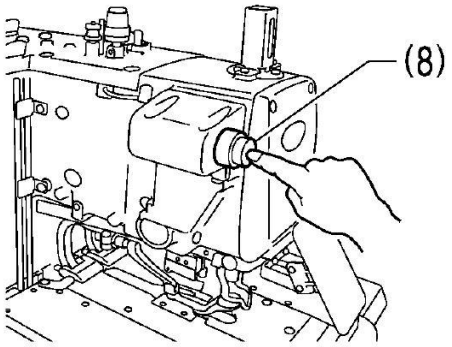


上轴手轮每转一圈，送布台会移动到下一针的缝纫位置，上轴手轮每回转半圈（针杆上下 1 次），缝制数据显示区域显示的剩余针数（5）就会减少 1 针。

注意：

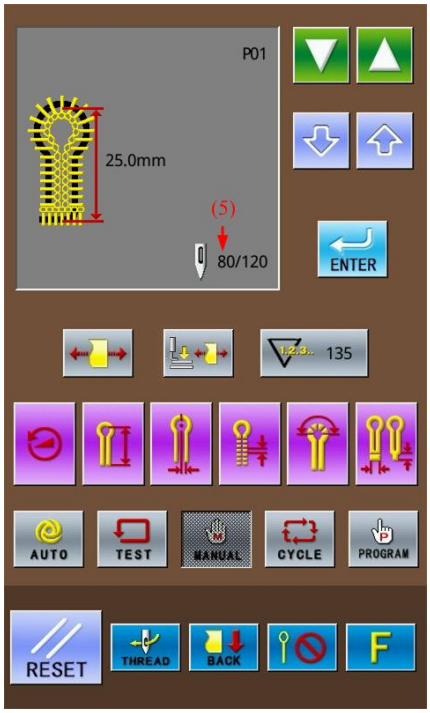
如上轴手轮逆方向转动的话，送布台将不会移动形成针迹的形状，请不要将手轮逆向转动。

⑥ 如想中止手动缝纫，送布台回到布料放置位置时按急停开关（8）



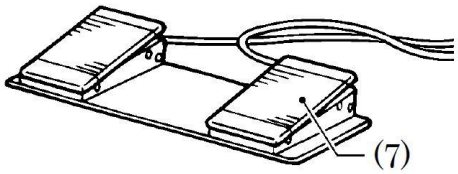
操作面板显示“缝纫中暂停开关被按下”，按  键解除报警返回缝制画面，然后再按 

键。



⑦ 在到达最后一针时

针杆在针的上位置停止状态，按启动开关（7）。



（一直按着，直到送布台回到布料放置位置为止。）

在进行切线动作，送布台回到布料放置位置之后，操作面板提示“手动操作结束”。

注意：

将切刀动作设定为“后切刀”时，因切锤的动作，请一定注意安全。

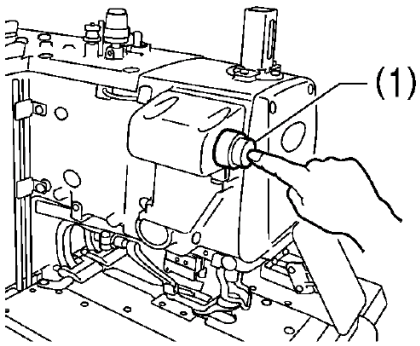
3.3 暂停开关

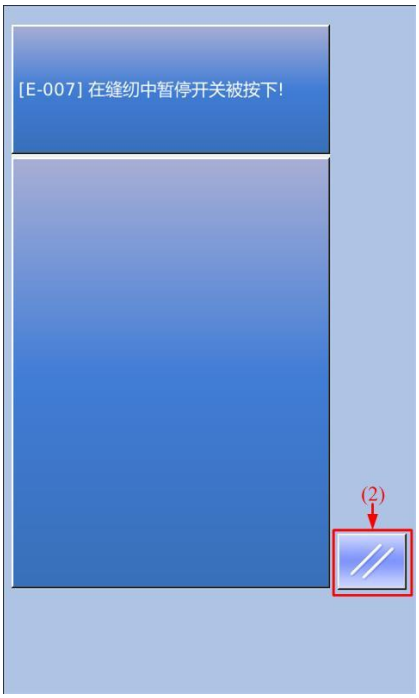
自动缝纫中的暂停

暂停开关一般是在发生断线等情况时为了让缝纫机停车而使用。

3.3.1 暂停的方法

在缝纫中，按下暂停开关（1）后，缝纫机将停车，操作面板会提示“在缝纫中暂停开关被按下”。





3. 3. 2 解除暂停的方法（不进行继续缝纫时）

① 在操作面板提示“在缝纫中暂停开关被按下”时按复位键（2）。

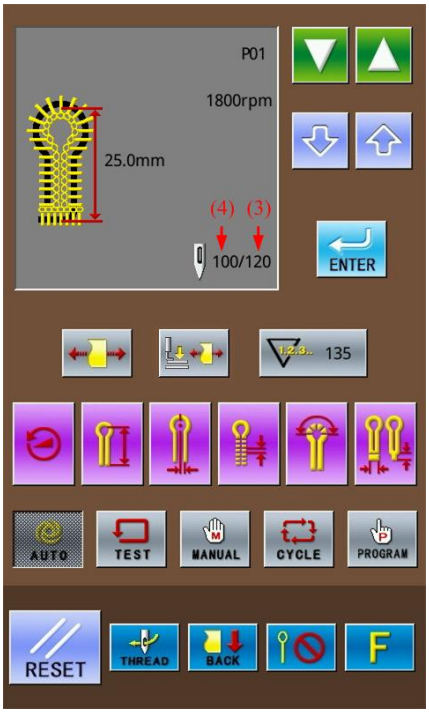
操作面板返回到缝纫画面，在花样数据显示区域显示“请按RESET或“向下”按键”。

② 排除暂停时的异常原因。

③ 按下 

复位键，针杆和送布台在进行原点检测后，返回到布料设定位置。

3. 3. 3 解除暂停的方法（进行继续缝纫时）



① 在操作面板提示“在缝纫中暂停开关被按下”时按复位键（2）。

操作面板返回到缝纫画面，在花样数据显示区域显示“请按 RESET 或“向下”按键”。

② 排除暂停时的异常原因

如果面线发生断线等情况时，可以按 

键进入穿线模式。

③ 按一次“向下”按键  ，在花样数据显示区域会显示出缝纫花样的总针数（3）和剩余针数（4）。

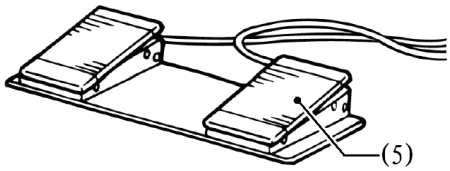
④ 按  键或是  键，送布台可以按缝制花样的形状进行移动，以便于确定继续缝纫的位置。

如果面线发生断线等情况时，可以按 

键进入穿线模式。

注：按  键前进，按  键倒退。如果一直按着的话将会连续前进或倒退。

⑤ 选定好继续缝纫的位置后，踩启动踏板开关（5），继续完成当前花样的自动缝纫。



3.4 循环缝制功能的使用方法

在单独花样程序（P01~P20）中，可以对编辑好的单独花样进行组合，登记成多个花样进行连续缝制的“循环花样程序”，便于使用。

循环花样程序：

循环花样最大设定数	9 个（C01~C09）
单个循环花样的最大花样数	9 个（S1~S9）（同一个单独 P 花样程序可以被多次选择）

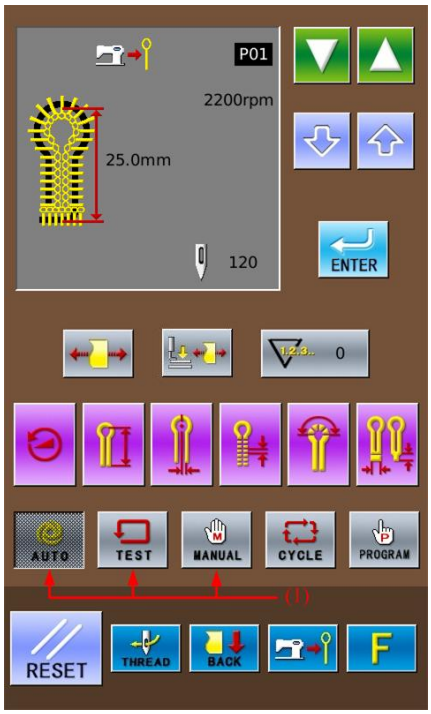
程序示例：

选择 3 步为有切刀动作的单独花样程序 P01，和 1 步为无切刀动作的单独花样程序 P03 组成循环花样程序，将该程序设定为 C1 作为示例进行说明。

循环花样程序 C1 的设定内容：

C 花样步号	S1	S2	S3	S4
单独花样号	P01	P01	P01	P03
切刀动作	有	有	有	无

① 按右图中的按键（1），选择任意一个缝纫模式。（以自动模式为例）



② 按  键选择循环花样程序号C1。

每按一次  键，花样号就会按 P01→P02→…P20→C1→C2…C9…P01 的顺序切换。（按  键正好相反，为逆顺序。）

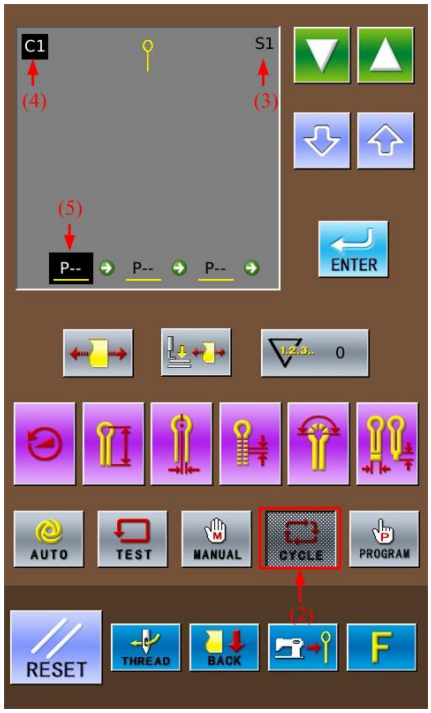
③ 按下循环程序模式（2）

在缝制数据显示区域会显示：

（3）步号

（4）循环程序号

（5）步号 S1 中被设定的花样号内容。



④ 按  键把步号 S1 的内容（5）设定为 P01。

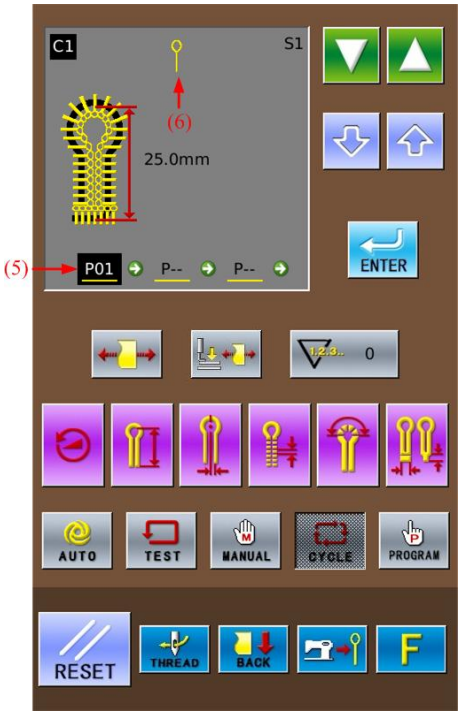
“P01”的“___”是有切刀动作之意，在缝制数据显示区域会有切刀打开的显示（6）。

“P--”的“--”是未设定花样之意。

如果当前花样设定了“P--”的话，之后的步号中的内容均会被删除。

⑤ 按  键确定已更改的内容。

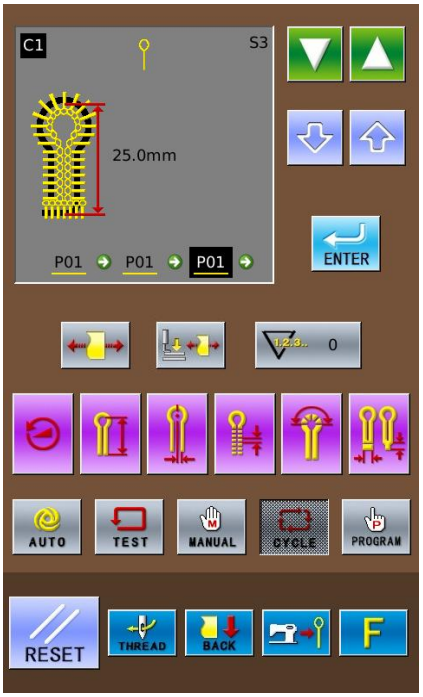
步号 S1 的内容（5）将从闪烁变为不闪烁。



⑥ 按  将步号（3）变为 S2

⑦ 重复上述的 4~5 的步骤，将步号 S2 的内容设定为和 S1 相同的“P01”，将步号 S3 的内容也设定为和 S1 相同的“P01”。

⑧ 按  键确定已更改的内容。



⑨ 按  将步号（3）变为 S4。

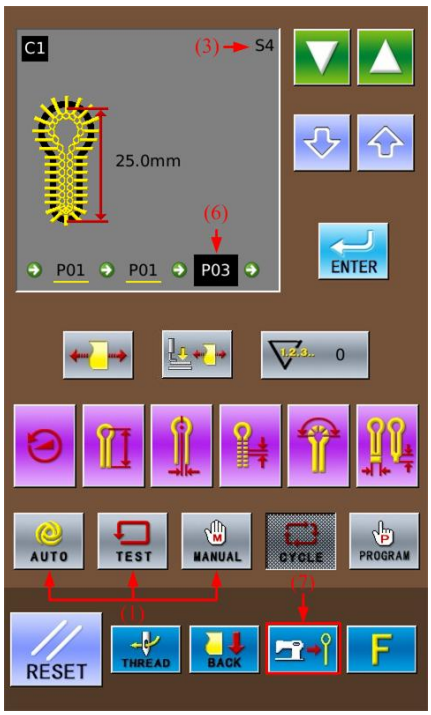
按  键把步号 S4 的内容（6）设定为 P03。

按切刀动作键（7）将（6）处的“P03”改为“P03”。（无切刀动作的设定）

⑩ 按  键确定已更改的内容。

按（1）中的任意一个键，结束循环程序模式的设置。

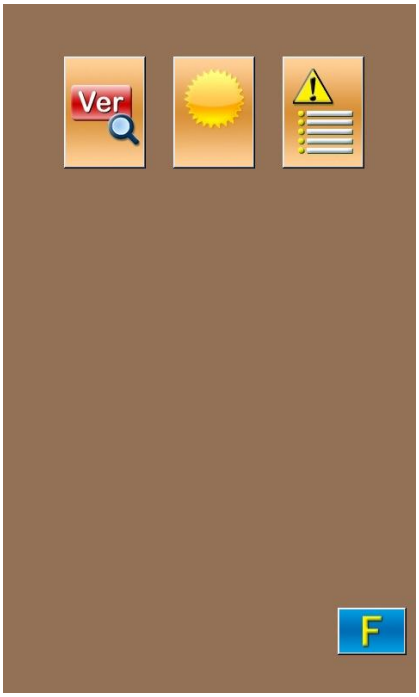
注：选择了循环程序进行自动缝制时，对于切刀动作来说，在自动缝制模式时依然可以进行切刀动作的更改，C 花样程序中有切刀动作的花样将以当前的切刀模式设定一致。



4 参数设置模式界面

在缝制数据输入界面，按下  键可以切换数据输入界面和参数设置模式界面（如右图所示），在参数模式界面下可以进行一些详细的设置和编辑操作。

在缝制数据输入界面长按  键 3 秒可以进入设置模式等级 2 状态。



设置模式等级 1

设置模式等级 2

4.1 功能说明

设置模式等级 2：

序号	图标	功能
1		软件版本查询
2		亮度调节
3		故障信息记录
4		通信模式
5		U 级参数
6		恢复出厂设置
7		参数备份还原

4.2 软件版本查询

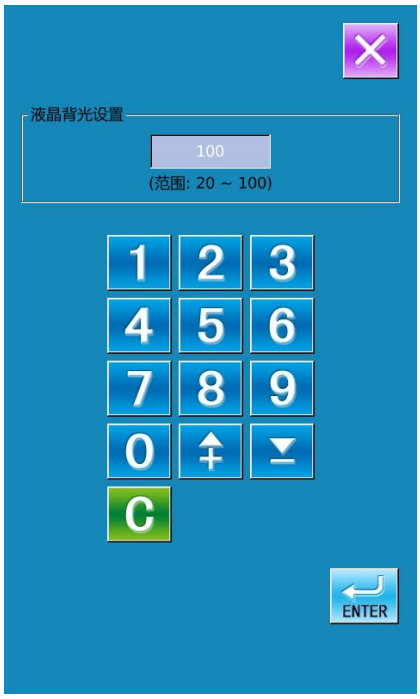
在设置模式等级 1 下，按下  进入软件版本查询界面（如右图所示）。

（1）：操作面板程序版本号
（2）：控制器程序版本号
（3）：主轴电机版本号
（3）：X 轴、Y 轴步进电机程序版本号
（4）：Z 轴步进电机程序版本号
（5）：文件系统版本号
（6）：操作系统版本号
（7）：操作面板程序编译时间

按下  键可以把软件版本导出到 U 盘根目录下，文件名为 version.png。

4.3 亮度调节

在设置模式等级 1 下，按下  可以进入亮度调节界面（如右图所示），分为 20~100 档。可以通过加键  或减键  调节所需的数值，也可以通过数字键盘输入数值然后按下  完成输入。



4.4 故障信息记录

在设置模式等级 1 下，按下  可以进入故障信息记录界面（如右图所示），界面中显示了系统发生的故障信息内容，序号越小表示该故障信息发生的时间越新。

另外还记录了每次报警发生时的生产计数。

可以通过  键或  键进行翻页，查看更多的报错信息。

按下  键会清除掉全部故障信息记录。

4.5 通信功能模式

通信功能模式包含以下功能：
1、 通过 U 盘对操作面板程序进行升级；
2、 操作面板和 U 盘之间传输 U 级参数。

4.5.1 操作面板升级

① 进入通信功能界面

插入U盘，在设置模式等级2下，按下 键进入通信功能模式（如右图所示）。

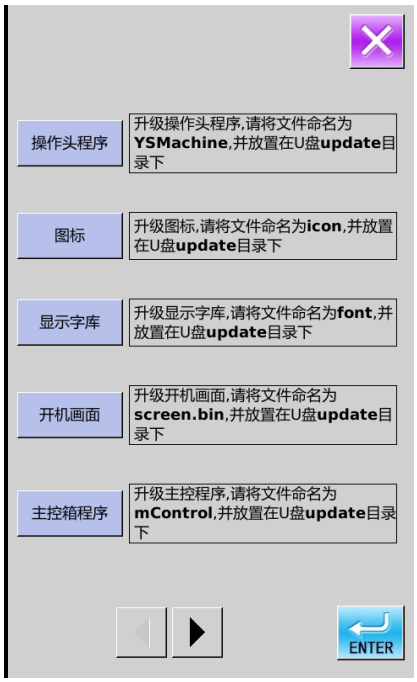
：软件升级

：批量选择升级开机画面

② 进入软件升级界面

按下 键进入软件升级界面（如右图），在该界面下可以进入软件升级。

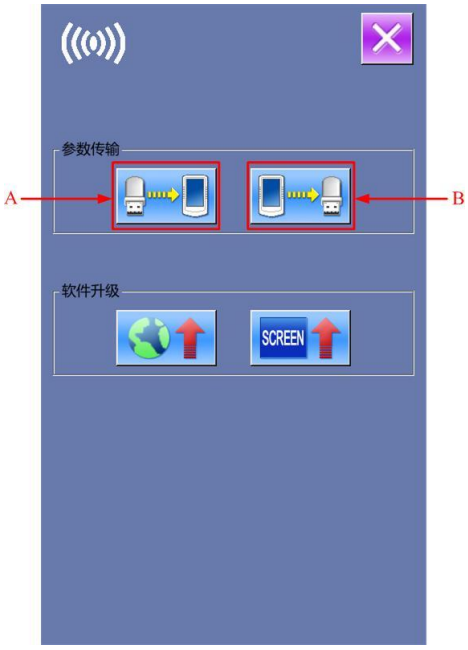
升级软件需要放在 U 盘「update」目录下，点击需要升级的内容，然后按下 键即可。



③ 升级成功

升级成功后会显示提示信息，关机再上电即可。

4.5.2 参数导入导出



① 显示通信界面

在设置模式等级2下，按下 键进入通信功能模式（如右图所示）。

A：从U盘中向操作面板导入参数

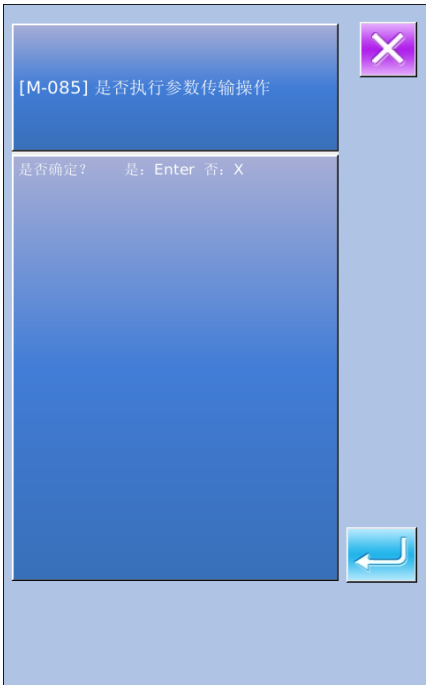
B：把操作面板保存的参数导出到U盘中

※ 从U盘导入参数时，请将参数文件保存在U盘的DH_PARA目录中，并命名为：YS_Param

※ 从操作面板导出参数时，导出的参数文件保存在U盘的DH_PARA中，参数文件命名为：YS_Param

※ 参数文件是二进制文件，对文件的操作在操作头上完成，不要手动修改文件，以免影响使用。

② 按A指示键，完成从U盘向操作面板导入参数



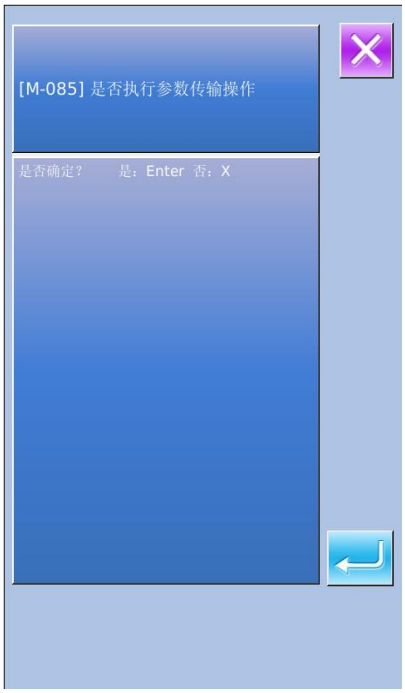
A、按回车键 完成从 U 盘向操作面板导入参数并退出

B、按退出键 取消并退出

③ 按B指示键，完成操作面板的参数导出到U盘

A、按回车键完成从操作面板向 U 盘导出参数并退出

B、按退出键取消并退出



4.6 参数设置

4.6.1 参数的设置方法

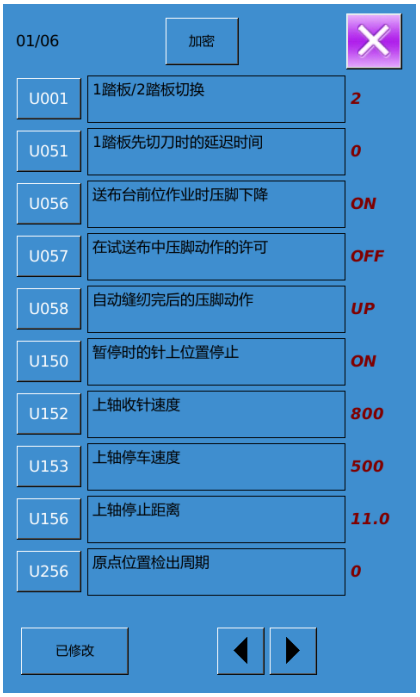
① 进入参数设置

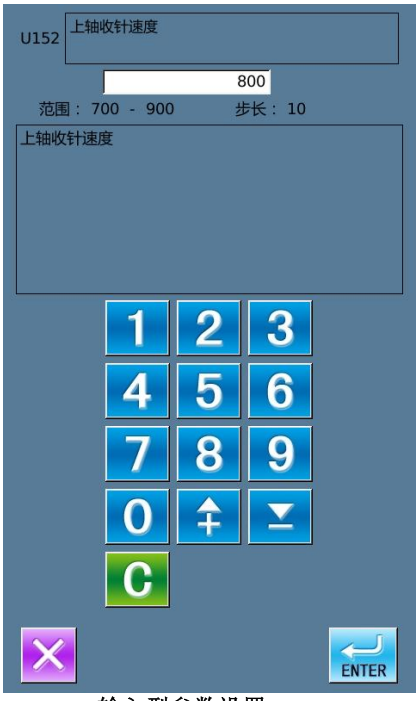
在设置模式等级 2 下，按键进入 U 级参数设置界面（如右图所示）。

按键退出参数设置界面。

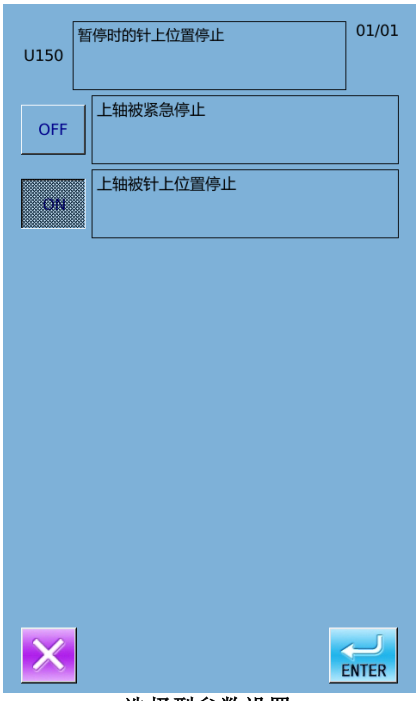
当有参数修改时，在参数设置界面显示【已修改】按键，

选择想要修改的参数后进入设置状态，参数设置分为数据输入类型和选择类型。举例如下：





输入型参数设置



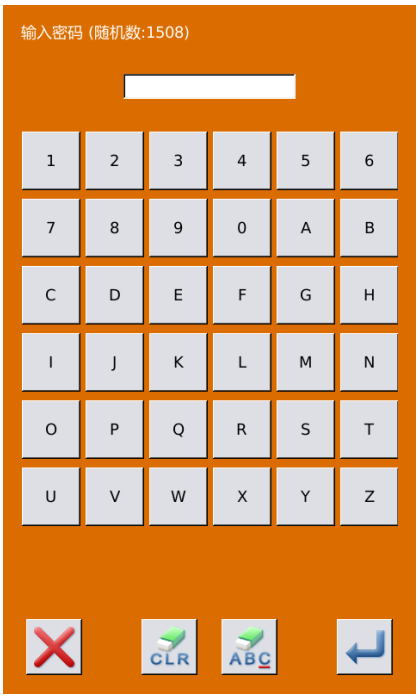
选择型参数设置

② **参数加密**

按“加密”键后， 进入密码输入界面。

：清除全部输入内容

：删除一个字符



③ 修改需要加密的参数

输入正确的密码后，进入参数加密界面。

A、选择要加密的参数

B、按【全选】，全部参数加密

C、按【反选】，反向选择参数加密

D、按退出键 退出加密功能

④ 查询已修改参数

A、 当有参数修改时，在参数设置界面会显示【已修改】按键

B、在参数设置界面，按下【已修改】按键，可以查询已修改过的参数。

首先要求输入密码，输入密码界面的操作参考②内容，输入正确的密码后进入到已修改参数查询界面

C、在已修改参数查询界面下，可以查询到所有修改过的参数列表，在该列表中显示修改的当前值和复位值。

在该界面下：

- 按【还原所有】按键，将全部修改的参数恢复为复位值
- 按参数名称键，例如【最大切刀间距】，再点按【选择还原】将选中的参数恢复为复位值。参数键可以多选。
- 按参数号码键，例如【U453】，能够进入参数设置界面，可以重新设置参数数值。

4.6.2 U 级参数表

参数号	参数名称	参数说明	设置范围	默认值
U001	1 踏板/2 踏板切换	切换踏板类型， 0:模拟单踏板踩 1 档压脚下降，踩 2 档实现缝制(仅 MASC511 系统设置该值有效)； 1：双踏板中的单踏板，即通过踩右踏板可以实现降压脚并启动； 2、双踏板，左踏板控制压脚上升和下降，右踏板实现缝制；	0~2	2
U051	1 踏板先切刀时的延时时间	下切刀模式下，选择数字单踏板时，缝台回到原点后到切刀动作的时间间隔	0~800ms	0
U056	送布台前位作业时压脚下降	0：缝台从后位移动到前位(放布位置)时，抬压脚再移动，即缝制完成后先抬压脚，缝台移动到放布位置；1：缝台从后位移动到前位时，先移动缝台，到位后再抬压脚；即缝制结束后，缝台先回到放布点，再抬压脚	0~1	0
U057	在试送布中压脚动作的许可	在“TEST”模式下，是否可以通过踏板控制压脚升降	0~1	0
U058	自动缝纫完了后的压脚动作	0：自动缝制完成后，压脚自动上升 1：自动缝制完成后，压脚不自动上升，只能通过踩踏板控制上升	0~1	0
U150	暂停时的针上位置停止	0：按急停后，主轴紧急停止，停止在任意位置 1：按急停后，主轴停止在上针位置(正常停车位)	0~1	1
U152	上轴收针速度	缝纫停车之前倒数第 2 针的速度	700~900rpm	800
U153	上轴停车速度	缝纫停车时最后一针的速度	250~600rpm	350
U156	上轴停止距离	主轴停止的位置调整	2.5~17.5	11.0
U256	原点位置检出周期	设置缝制完成后步进电机是否进行找原点	0~9	0
U301	自动模式的参数确认栏	设置快捷参数设置的定义		1
U350	程序模式的禁止	是否锁定花样，设置该参数后将无法变更花样		0
U351	循环程序模式的禁止	设定循环程序是否起效，即是否允许设置 C 花样		0
U352	计数器变更的禁止	设定计数器功能是否起效，即是否进行计数		0
U353	缝制速度编辑的禁止	设定是否允许设置转速，即最高转速是否允许调节		0
U354	程序号码编辑的禁止	设定是否允许变更花样号		0

U355	先切刀变更的禁止	设定是否允许先切刀，0：允许 1：禁止	0~1	0
U356	后切刀变更的禁止	设定是否允许后切刀，0：允许 1：禁止	0~1	0
U357	安全开关使能	设定安全开关是否有效，0：无效 1：有效	0~1	0
U358	气压检测使能	设定气压检测是否有效，0：无效 1：有效	0~1	0
U450	最高缝制速度	设定最高的缝制转速	1000~2700rpm	2700
U451	最大循环程序数	设定 C 花样允许设置的个数	0~9	9
U452	循环程序时的产品计数	0：每缝制完一个花样后进行计数 1：每缝制完一个 C 花样后进行计数	0~1	0
U453	最大切刀间距	设定切刀间距的可设定的最大范围，即 S03 的可设定范围	0.5~1.2mm	0.5
U454	最大直线加固缝长度	设定直线加固缝花样时，直线套结的长度，及 S08 的可设定范围	6~9mm	6
U455	无切刀时的追加针摆振幅	设置不切刀时，摆针的宽幅，对 X 方向进行补偿	0~1.0mm	0
U456	缝纫开始针摆幅度修正	设置开始缝制时摆幅的大小	-1.0~0mm	0
U550	气锤 ON 时间	在使用气锤传感器时，设置气锤与切刀的接触时间，时间越大，气锤的动作时间越长	25~200ms	50
U551	识别气锤原点高度	在使用气锤传感器时，调节气锤在上位置时传感器的值，使传感器的数值与机械高度匹配，避免出现气锤不在位置的误报警	150~170	160
U552	气锤原点错误检查	0：无气锤原点错误检查(无气锤传感器或者传感器未装时设置为 0) 1：有气锤原点错误检查(只有在装配了气锤传感器，且传感器正常时可以设置为 1)	0~1	0
U553	根据时间来识别气锤上升位置	表示气锤上升多长时间后认为气锤已上升到位，可以进行后面的动作，在无气锤传感器或者气锤传感器不正常时，需要设置该参数为非 0 值	0~500ms	100
U554	根据时间来识别气锤下降	当无气锤传感器或者气锤传感器不正常时,设置该参数为非 0 值，调节气锤的动作时间，时间越大，气锤的动作时间会越长，切料的时间也就越长	0~500ms	200
U555	面线残留量的增加	调节面线剪线的动作时间，参数越大，动作时间越长	0~3	0
U556	面线松线时间	调节面线电磁铁的动作时间，参数越大，电磁动作时间越长	0~100ms	50

U557	面线松线 OFF 时序	当机器为 02 款时(U850=2),调节面线电磁铁的动作时间，参数越大，电磁铁动作时间越长	0~100ms	50
U558	底线剪刀装置的使用禁止	0:底线剪线有效，可以正常使用 1：关闭底线剪线功能，一般 00 款无底线剪线		0
U559	忽视底线剪刀感应器和计数器	用于设置底线剪线的控制方式，设置为 0 时表示通过传感器来判断底线剪线是否动作正常，设置为大于 0 的数时，表示通过时间来控制底线剪线的动作时间，不受传感器的限制，一般在不装配底线剪线传感器或者传感器异常时设置该参数	0~50ms	30
U560	底线剪线时间	当机器为 02 款时(U850=2),调节底线剪线开始动作的时间	0~100ms	0
U577	动框方式	用于调节 X\Y\Z 三轴的动框同步时间，此外，由于 SC511(开环系统)经常出现 Z 轴跑位的情况，该参数设置越大，Z 轴的动框时间越长,Z 轴跑位的风险就越小；目前默认为 1 或 4	0~5	1
U578	动框同步调整 1	用于调节动框的起始角度，数值越大，动框角度越靠后，数值越小，动框角度越靠前	-50~100	0
U579	Z 轴同步调整	用于调整 Z 轴的动框角度，数值越大，Z 轴的动框角度越靠后，数值越小，动框角度越靠前	-50~50	0
U580	面线挑线动作时间	用于调节面线挑线动作的起始时间，即设置在面线电磁铁动作多长是时间后，面线挑线再动作	0~200ms	0
U581	面线张力调整	用于调整面线电磁铁电流的大小，注意该参数隐藏了一个功能，就是当该参数设置小于 15 时，可以改用其它端口控制线张力电磁铁，此时，需要将电磁铁端口更改至 LED 灯的控制端口(L494 的 CT5)	0~250	230
U752	切刀 X 位置校正	用于调节 X 向起缝点的位置	-0.5~0.5mm	0
U850	缝纫机头部规格	设置整机规格，00 款：不带剪底线功能 01：具有剪底线功能 02 款：带芯线电磁铁，且剪底线机械与 01 款不同	0~2	01
U852	菊花眼压脚	设置菊花眼压脚是否有效，当该参数设置为 1 时，所有的花样将都变为菊花眼花样	0~1	0
U853	使用语言	语言选择	中文、英文	中文
U854	背光自动关闭	是否自动关闭面板的背光	0~1	0

U855	背光自动关闭等待时间	设置在没有对面板进行操作多长时间后关闭背光		3
U856	状态按键显示风格	设置显示风格		0
U857	音量大小	设置面板蜂鸣器声音大小		0
U858	照明灯亮度调整	设置机头照明灯的亮度	0~5	0
U909	切布位置调整	用于调整切布时的缝台位置	0~250	0
U910	缝台位置调整	用于调节缝台Y向的起缝位置，针对中捷之前出现过的好几种压脚增加的参数，使程序能兼容中捷不同的压脚	0~400	0
U911	切刀定位补偿	使用气锤传感器时，对其传感器值进行调整，使传感器数值与机械能匹配	1~60	15
U913	DIP1	临时调试用参数	-100~100	0
U914	DIP2	临时调试用参数	-100~100	0
U915	主控烧录地址	主控程序的烧录地址，默认为E0000(917504)，通过U盘升级主控程序之前需要确认该参数是否正确	0xA0000~0xE0000	0xE0000

4.7 恢复出厂设置

① 在设置模式等级 2 下，按  键进入恢复出厂设置界面，如右图所示：

可以选择：

（1）LEVEL1：花样和循环程序（包括 S 级花样参数及 C 花样循环程序）

（2）LEVEL2：存储开关（包括 U 级参数）

（3）LEVEL3：全部内部数据

（4）LEVEL4：格式化 U 盘

具体初始化内容见下表：

初始化的级别及初始化的内容			
	LEVEL1	LEVEL2	LEVEL3
程序内容	初始值	—	初始值
循环程序	清除	—	清除
存储开关	—	初始值	初始值
程序号	1	—	1
参数号码	1	—	1
生产计数器	—	—	0
模式	程序	—	程序
布料放置位置	里面放置	—	里面放置
切刀动作	OFF	—	OFF

② 选择要初始化的参数后，按 

键确认。

画面切换到如右图所示，按 

键后执行初始化操作。

4.8 参数还原备份

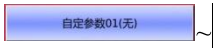
用户可以根据需要保存 8 组 U 级参数数值，用于以后的调用。

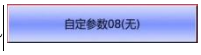
在设置模式等级 2 下，按 
键进入参数还原备份界面，如右图所示：

清除键：清除全部已经保存的自定参数

保存键：保存当前参数

恢复键：恢复当前参数

① 点击 

~ 

其中任意一键，以确定参数保存位置，然后点击「保存」键进行保存。

② 观察「自定参数 xx（有/无）」键显示内容，如果括号内显示为「有」的则表示该位置上存储了用户参数。

，例如 

。

③ 选择已经存储参数的自定参数键，按下「恢复」键就会重新加载相应的参数设定值。

④ 按下「清除」键会清楚全部已存参数。

5 附录 1

5.1 报警信息一览表

错误号	错误名称	报错原理	解决方案
E-001	IPM 频繁过流		1、检查主轴电机是否正常； 2、检查主板是否正常
E-002	24V 过流	硬件检测，24V 有短路现象，该错误检查从系统上电就对板件进行监测	1、逐个排查电磁铁、气阀等端口，确认电磁铁、气阀是否正常； 2、检查风扇是否有短路问题； 3、检查扩展板 SC034 是否有正常
E-003	24V 欠压	硬件检测，24V 有断路现象，该错误检查从系统上电就对板件进行监测	检查扩展板 SC034 是否正常
E-004	机头板参数读取错误	1、在上电的时候主控会读取机头板参数(K 参数），如果读取的参数超过了正常参数范围则会报错； 2、在修改了 K 参数后，主控会将参数存入机头板，然后再读取出来，如果参数超过了正常范围则会报错。	1、检查 X9 线缆，与主控箱插接是否牢靠，线缆是否有短路或断路； 2、检查机头板上线缆插接是否牢靠；　　3、更换机头板
E-005	电机运行异常（主轴电机堵转）	主轴电机不能正常转动时会报改错	1、检查机械上是否有卡点，导致主轴卡死；　　2、检查主轴电机是否正常； 3、检查主板是否正常； 4、确认是否缝制的布料比较特殊，我司主轴电机不能有效穿透
E-006	在待机中按了急停开关	在非缝制状态，按下了急停开关就会报改错	1、松开急停开关，确认其处于自然状态；　　2、检查急停开关线缆是否正确插接，X9 线缆是否插接牢靠； 3、检查急停开关是否正常；
E-007	在缝纫中按了急停开关	在缝制过程中，按下了急停开关，进入缝制暂停状态	1、松开急停开关，按照面板提示操作即可，进入暂停状态后可清楚错误后，踩踏板可继续缝制； 2、如果在缝制过程中没有按下急停开关,但报了改错,则按照处理 EB06 的方法检测线缆及开关，尤其注意有些厂家将急停开关装在机头面板里，要确认其是否会与机壳接触造成短路
E-008	急停开关接触不良	系统在开电时会检测急停开关信号是否正常，如信号不正常则在开电时会报该错误	按照处理 EB06 的方法检测
E-009	启动踏板未在正常位置	系统在上电时会检测启动踏板信号，如启动踏板被踩下，则会报错	1、检查启动踏板是否被踩下，如果踩下松开踏板即可，系统会自行恢复； 2、检查踏板线缆是否与主控箱插接牢靠； 3、检测踏板是否正常；

			4、检测主板是否正常
E-010	压脚踏板未在正常位置	系统在上电时会检测压脚踏板信号，如压脚踏板被踩下，则会报错	1、检查压脚踏板是否被踩下，如果踩下松开踏板即可，系统会自行恢复； 2、检查踏板线缆是否与主控箱插接牢靠； 3、检测踏板是否正常； 4、检测主板是否正常
E-011	机头翻到错误	检测机头翻到开关信号是否正常	1、该错误可以同 U357 进行关闭； 2、可以检测机头翻到开关线缆与 X9 线缆对接是否可靠； 3、检测机头翻到开关是否正常
E-012	针上位置停止错误	停车位置不对时会报该错误，系统会检测两个信号，一个是上针位传感器信号，正常的停车位置上针位信号此时应该被挡住，传感器应该亮起；再一个是主轴零位信号，正常的位置主轴零位信号应该为低电平，即处于 340° 左右的位置；只有以上两个条件同时满足的时候才是正常位置，否则系统就会报该错误。正常的停车位置就是，针杆停止在内针，且针杆处于最高位置。	1、检查上针位传感器线缆对接是否可靠； 2、检查上针位传感器是否工作正常，是否存在误感应； 3、检查上针位传感器安装是否到位； 4、检查主轴电机安装是否正常，其停针位置是否正常。
E-013	同步信号检出器连接不良（主轴未连接）	主轴电机编码器未连接就会报该错	1、检查主轴电机编码器线缆是否与主控插接牢靠； 2、检查主轴电机编码器线缆是否正常； 3、检查主板是否正常。
E-014	X 轴原点异常	X 电机在找原点时，在规定的时间及步数内未找到原点	1、检查 X 电机的 XORG 线缆与 X9 线缆插接是否正确、牢靠，插针是否有松动； 2、检查 X9 线缆插接是否牢靠； 3、检查 X 电机后面的位置检测板上线缆插头是否有松动； 4、观察 X 电机是否正常运转，是否有动作，动作是否正常，如电机不动作则可能是电机的问题，也可能是步进板的问题 5、检查主板是否正常
E-015	Y 轴原点异常	Y 电机在找原点时，在规定的时间及步数内未找到原点	

E-016	Z 轴原点异常	Z 电机在找原点时，在规定的时间及步数内未找到原点	1、检查 Z 电机的 ZORG 线缆与 X9 线缆插接是否正确、牢靠，插针是否有松动； 2、检查 X9 线缆插接是否牢靠； 3、检查 X 电机后面的位置检测板上线缆插头是否有松动； 4、观察 Z 电机是否正常运转，是否有动作，动作是否正常，如电机不动作则可能是电机的问题，也可能是步进板的问题 5、检查主板是否正常
E-017	IPM 过流 1		1、采用 1730 电机的机型时，进入 I07 对主轴进行初始化； 2、检查主轴电机是否正常； 3、检查主板是否正常
E-018	IPM 过流 2		同 EB17 的处理
E-019	步进版本异常	系统在上电时，会先查询步进驱动板的软件版本，如果步进驱动板的软件与主控不匹配则会报该错误，还有就是给步进发了查询命令，但主控一直没有收到也会报该错误	1、检查主板和步进板之间的通信线缆是否插接牢靠； 2、检查步进板上的软件标签是否为该机型的； 3、检查步进板是否正常； 4、检查主板是否正常
E-020	面线断线	暂无用	
E-021	底线剪线异常	系统在剪底线的时候会检测底线剪线传感器信号是否正常，该传感器是一个磁性感应传感器，安装在底线剪线气缸上	1、检查机器上是否配置了该传感器，如无配置则通过更改参数 U559，采用时间控制的方式，一般说来设置为 30 即可； 2、进输入检测模式检查该传感器信号是否正常； 3、检查底线剪线传感器的对接插头是否插接牢靠
E-022	气锤下降了但气锤位置异常	气锤动作前以及抬升后会检查传感器位置是否正常，如果数值偏低则会报错，传感器的数值是在传感器装配完后，进输出检测模式，选择“030”选项，踩启动踏板后，气锤会下降，然后系统自动记录数值的。一般说来传感器的数值需要在 160 以上，数值可以通过进入输入检测模式查看	1、检查机器上是否装配了气锤传感器，如果没有装配该传感器，则需要将 U552 设置为 0，U553 设置为 100 左右，U554 设置为 180 左右，此时，系统将不再检测传感器信号，而采用时间控制； 2、检查传感器线缆是否对接可靠； 3、检查传感器安装是否正确。
E-023	气锤不下降气锤位置异常	气锤下降后会检查传感器位置是否正常，如果传感器没有跟随气锤一起转动，则数值偏高就会报错，传感器的数值是在传感器装配完后，进输出检测模式，选择“030”选项，踩启动踏板后，气锤会下降，然后系统自动记录数值的。一般说来传感器的数值需要在 160 以上，数值可以通过进入输入检测模式查看	同 EB22 处理

E-024	300V 过压	硬件检测，系统会对主板电压进行监控，超过限值后就会报错	1、确认电控输入电源电压是否正常； 2、检查主板是否正常
E-025	暂无		
E-026	300V 欠压	硬件检测，系统会对主板电压剪线监控，低于 165V 后就会报错	1、确认电控输入电源电压是否正常；2、检查主板是否正常
E-027	步进过流	主控查询步进板，步进板如果检测到过流后，会将错误返回给主控	1、逐个排查电机，看是否是由于电机异常引起的；2、检查步进板是否正常
E-028	冷却风扇不工作	系统会对外部的冷却风扇是否正常工作进行监测，如果风扇没有正常运转，则会报该错误。对于中捷的机器，可以通过 U650 设置是否对冷却风扇进行监控	1、检查风扇的线缆是否插接牢靠； 2、检查风扇是否正常； 3、检查扩展板是否正常
E-029	气锤不能下降到底	同 EB23	同 EB22 处理
E-030	步进板通信异常	主控发送命令给步进板时，步进板在规定的时间内未回复就会报该错	1、检查主板和步进板之间的通信线缆是否插接牢靠；2、检查步进板是否正常； 4、检查主板是否正常
E-031	X 电机运行异常	最新的程序中，开环已经没有该错误了；对于 ASC511/MASC511 闭环系统，该错误是在恢复 X 电机电流时(进入穿线模式，X 轴回松轴，退出后会恢复电机电流)，如果 300ms 内步进没有回到原点则会报该错误	1、检查 X 轴电机是否正常动作，动作是否正确；2、检查电机编码器线缆是否与控制箱插接牢靠；3、检查步进板是否正常
E-032	Y 电机运行异常	最新的程序中，开环已经没有该错误了；对于 ASC511/MASC511 闭环系统，该错误是在恢复 Y 电机电流时(进入穿线模式，Y 轴回松轴，退出后会恢复电机电流)，如果 500ms 内步进没有回到停止点则会报该错误	1、检查 Y 轴电机是否正常动作，动作是否正确；2、检查电机编码器线缆是否与控制箱插接牢靠；3、检查步进板是否正常
E-033	放布板越界	X 向缝制宽度超过 10mm 或者 Y 向缝制长度超过 70mm 或者 Z 轴转过了 400° 则系统会报该错误	检查花样参数设置是否正确；可以将花样参数进行初始化
E-034	Z 电机运行异常	最新的程序中，开环已经没有该错误了；对于 ASC511/MASC511 闭环系统，该错误是在恢复 Z 电机电流时(进入穿线模式，Z 轴回松轴，退出后会恢复电机电流)，如果 300ms 内步进没有回到停止点则会报该错误	1、检查 Z 轴电机是否正常动作，动作是否正确；2、检查电机编码器线缆是否与控制箱插接牢靠；3、检查步进板是否正常

E-035	主轴电机闭环异常	主轴电机在首次运转时，会先进行找原点动作，如果在 2S 内没有找到零位则系统会报该错误	1、检查主轴电机编码器线缆是否与主控插接牢靠； 2、检查主轴电机编码器线缆是否正常； 3、检查主板是否正常。
E-036	主轴零位信号异常	缝制过程中，在 1s 内主控没有检测到零位脉冲	同 EB35 的处理
E-037	主轴编码器异常	在缝制过程中，进入零位中断的角度与实际角度不符，超过正常角度范围时会报改错；此外，在等待动框的过程中，如果超过 500ms 还没有到动框的角度也会报改错	同 EB35 的处理，此外，需查看 U578\U579 设置值是否过大
E-038	主轴停止异常	在停车时，主轴在 1S 内没有给出停车标志，则会报改错	同 EB35 的处理
E-039	缝纫停止异常	在花样缝纫结束后，要进行剪线、切刀等各动作，这些动作如果没有在 5S 内完成，则会报改错	1、查看参数设置是否正确，可以将参数进行初始化； 2、是否进行了特殊操作引发该错误； 3、程序 bug 导致的，需要查明是在进行到哪一步时出现的问题
E-040	SPI 通信繁忙	主控给步进发送命令时，上一次发送的命令没有发送完成，2ms 内新命令没有发送成功则会报错	记录是否进行了哪些操作，可能是这些操作引起的，软件 bug 问题
E-041	内外针信号错误	缝制过程中，在每次运转到停车位置(内针位置针杆最高点)时主控会检测上针位信号是否正常，如果此时没有检测到上针位置则会报错；目前的程序不再进行该项检测	同 EB12 的处理
E-042	X 电机繁忙	目前程序不再检测	
E-043	Y 电机繁忙	目前程序不再检测	
E-044	Z 电机繁忙	目前程序不再检测	
E-045	花样缝制针数错误	缝制过程中实际缝纫的总针数与花样总针数不符时会报这个错	出现这个问题多半可能是程序 bug 的问题，可以进入到 TEST 模式，进行试缝，看实际缝制的针数是否与面板显示的针数一致
E-046	主轴转速异常	主轴的实际运转速度与设置转速不符会报这个错	1、检查主轴电机是否正常； 2、检查主板是否正常
E-047	暂无		
E-048	暂无		
E-049	暂无		
E-050	气压异常	装配了气压传感器的机器，开启检测功能后，系统监测到气压低时会报改错，通过 U358 可以关闭该报错功能	1、检查机器是否配置了气压检测开关，设置 U358 参数与机械配置匹配； 2、检查气压检测线缆对接是否牢靠，气压检测端口与安全开关检测端口是同一端口，这两个开关只能装配其中一个，不能同时安装； 3、调节气压表，确保气压压力正常
E-051	X 电机过流	ASC511/MASC511 步进板报出的错误，X 电机电流异常，注意查看步进板 DSP1 周边的 LED 红灯是否常亮	X 电机步进板或步进电机故障，可通过更换步进板或步进电机进行排查

E-052	Y 电机过流	ASC511/MASC511 步进板报出的错误，Y 电机电流异常，注意查看步进板 DSP1 的 LED 红灯是否常亮	Y 电机步进板或步进电机故障，可通过更换步进板或步进电机排查
E-053	X 电机超差	ASC511/MASC511 步进板报出的错误，X 电机位置异常，注意查看步进板 DSP1 的 LED 红灯是否常亮	同 EB51 处理
E-054	Y 电机超差	ASC511/MASC511 步进板报出的错误，Y 电机位置异常，注意查看步进板 DSP1 的 LED 红灯是否常亮	同 EB52 处理
E-055	X 电机超速	ASC511/MASC511 步进板报出的错误，X 电机转速异常，注意查看步进板 DSP1 的 LED 红灯是否常亮	同 EB51 处理
E-056	Y 电机超速	ASC511/MASC511 步进板报出的错误，Y 电机转速异常，注意查看步进板 DSP1 的 LED 红灯是否常亮	同 EB52 处理
E-057	DSP1 通信异常	ASC511/MASC511 系统，主板与步进板通信错误，SPI 通信校验未通过 查看步进板 MD1 是否三个 LED 指示灯常亮，如果均常亮，代表步进对通信数据校验未通过；如果均不亮，表示步进对通信数据校验正确，但主控校验未通过	1、检查主板与步进板的通信线缆是否连接可靠；　　2、观察是否进行了特殊操作，便于查找问题；3、检查步进板是否正常
E-058	Z 电机过流	ASC511/MASC511 步进板报出的错误，Z 电机电流异常，注意查看步进板 DSP2 周边的 LED 红灯是否常亮	Z 电机步进板或步进电机故障，可通过更换步进板或步进电机进行排查
E-059	暂无		
E-060	Z 电机超差	ASC511/MASC511 步进板报出的错误，Z 电机电流异常，注意查看步进板 DSP2 周边的 LED 红灯是否常亮	同 EB58 处理
E-061	暂无		
E-062	Z 电机超速	ASC511/MASC511 步进板报出的错误，Z 电机电流异常，注意查看步进板 DSP2 周边的 LED 红灯是否常亮	同 EB58 处理
E-063	暂无		
E-064	DSP2 通信异常	ASC511/MASC511 系统，主板与步进板通信错误，SPI 通信校验未通过 查看步进板 MD2 是否三个 LED 指示灯常亮，如果均常亮，代表步进对通信数据校验未通过；如果均不亮，表示步进对通信数据校验正确，但主控校验未通过	1、检查主板与步进板的通信线缆是否连接可靠；　　2、观察是否进行了特殊操作，便于查找问题；3、检查步进板是否正常

5.2 信息提示一览表

信息号	信息名称	子信息内容
M-001	设置值太大	请输入范围内数值
M-002	设置值太小	请输入范围内数值
M-003	存储参数异常	请按下确定键恢复出厂设置
M-004	通讯错误	操作头与控制箱通讯异常
M-005	操作头与控制箱类型不符	请核对机型、厂家和软件版本
M-006	硬件时钟故障	发现硬件时钟故障,请联系厂家维修
M-007	密码错误	请重新输入
M-008	输入用户 ID 有误	请重新输入
M-009	确认密码失败	请重新输入密码
M-010	禁止修改系统时间	设置了分期密码,不能修改系统时间
M-011	密码文件写入失败	
M-012	密码文件读取失败	
M-013	密码保存成功	
M-014	清除全部密码失败	密码文件无法被删除
M-015	清除密码失败	清除密码后，文件写入异常
M-016	密码文件被恶意删除	用户设置的分期密码被恶意删除，请关机
M-017	输入不能为空	请输入密码
M-018	当前密码不符	请重新输入当前密码
M-019	新密码不一致	请重新输入新密码并再次确认
M-020	分期密码不能和总密码相同	请重新输入密码
M-021	确定进入触摸屏校正模式	是否确定？是：enter　否：X
M-022	触摸屏校正成功	校正成功，请关闭电源后重启
M-023	触摸屏校正失败	请重新校正
M-024	SRAM 初始化	清除掉 SRAM 总的全部数据，请关电并将拨码开关位置还原
M-025	关机，再见	
M-026	无报警记录	
M-027	确定清除报警记录	是否确定？是：enter　否：X
M-028	USB 盘已拔出	USB 盘已经拔出
M-029	保存软件版本成功	软件版本已经成功保存到 U 盘根目录下
M-030	计数器达到设定值	按下确定键清除
M-031	超出缝制范围	请确保花样数据在风中范围以内
M-032	针数超出范围	请减少花样针数
M-033	加载出厂花样	内存中没有花样,需要加载出厂花样
M-034	花样数据错误	当前花样数据错误,将由出厂花样

信息号	信息名称	子信息内容
		替换
M-035	花样信息文件打开失败	恢复出厂花样配置
M-036	是否恢复出厂设置	确定键执行操作，取消键退出操作
M-037	恢复参数成功	恢复参数成功，请重新启动机器
M-038	是否还原所有设定	其否确定？是：enter　否：X
M-039	是否还原选择项目	其否确定？是：enter　否：X
M-040	未选择项目	请选择一个或几个参数项
M-041	成功	已成功执行当前操作
M-042	失败	当前操作执行失败
M-043	是否格式化 U 盘	按下确定键执行格式化操作，按下取消键退出当前操作。格式化后会删除全部 U 盘文件！
M-044	是否格式化内存	按下确定键执行格式化操作，按下取消键退出当前操作。格式化后会删除全部内存花样数据！
M-045	请关机	当前操作结束，请重新启动机器
M-046	没有选中升级条目	请选中要升级的条目，至少要选中一个条目
M-047	选中的升级条目中有些不存在	不存在升级文件的条目返回后将会取消选中，如果要升级剩下的条目，请再次确认
M-048	升级成功	升级成功，请重新启动机器
M-049	升级主控程序时校验失败	
M-050	拷贝文件失败	请检查磁盘空间是否已满
M-051	拷贝文件失败	请检查是否拔出了 USB 盘
M-052	文件读写错误	文件读写错误
M-053	是否执行参数传输操作	是否确定？是：enter　否：X
M-054	打板生成数据错误	
M-055	循环缝花样打开失败	花样文件错误
M-056	打开文件失败	打开文件失败
M-057	是否清除全部自定参数	是否确定？是：enter　否：X
M-058	超出设定值范围	

5.3 故障检修

现象	原因	措施
断线	线张力太大	适当的调整线张力
	机针的安装方法不正确	按正确的方向安装机针
	和机针相比线太粗	选择使用符合机针的线
	机针和弯针的关系不匹配	调整机针和弯针的间隙、针杆高度、弯针和分纱器的高度
	机针、弯针、分纱器、转线盘和线道有损伤或毛刺	对各零部件进行打磨或更换
	穿线不正确	在线道上正确穿线

跳针	面线张力太大或太小	适当的调整面线张力
	机针尖折断或弯曲	更换新机针
	机针与弯针尖之间的间隙不正确	正确调整机针和弯针尖之间的间隙
	机针、弯针和分纱器的关系不匹配	正确的调整三者之间的关系
	机针和机针护架调整不正确	正确的调整机针护架
	弯针尖变钝	用油石修理或更换新的弯针
	机针的安装方法不正确	按正确的方向安装机针
	机针过细	选择符合缝制条件的机针
断、折针	机针弯曲	更换新机针
	机针、弯针和分纱器的关系不匹配	正确的调整三者之间的关系
	机针和机针护架调整不正确	正确的调整机针护架
	机针过细	选择符合缝制条件的机针
面线未切断	上动刀的刀锋不利	更换新的上动刀
	气压太小，上动刀不能切到底	调整气压
	上动刀勾不住面线	安装面线弯针在最后前一针处切断
	最后一针因跳针上动刀勾不住面线	参考“跳针”一栏，防止跳针
	上动刀的位置不正确	调整上动刀位置
底线未切断	动刀的刀锋不利	更换新的动刀
	气压太小，上动刀不能切到底	调整气压
	动刀的位置不正确	调整动刀、扫线器的位置
	剪底线用的刃压太小	调整到适当的刃压
缝纫开始时缺针	底线夹不住	调整底线夹线（01 规格）、或是底线压板（02 规格）
	面线在剪线后残留长度太短	调整副夹线器
	面线放出量不足	调整面线放出量
切孔不良	切锤压力过小	调整到适当的切锤压力
	切刀和切锤接触不良	修磨切锤面
	切刀的刀锋不利	更换新的切刀
线不够紧密	面线张力过强或过弱	适当地调整面线张力
	底线张力过强或过弱	适当地调整底线张力
	挑线簧的强度和行程不合适	调整挑线簧的强度和行程

6 附录 2

6.1 电控箱安装尺寸

本公司电控目前共有 3 种安装方式。分别为四孔安装方式、三孔安装方式、四槽安装方式。详细尺寸见下图。

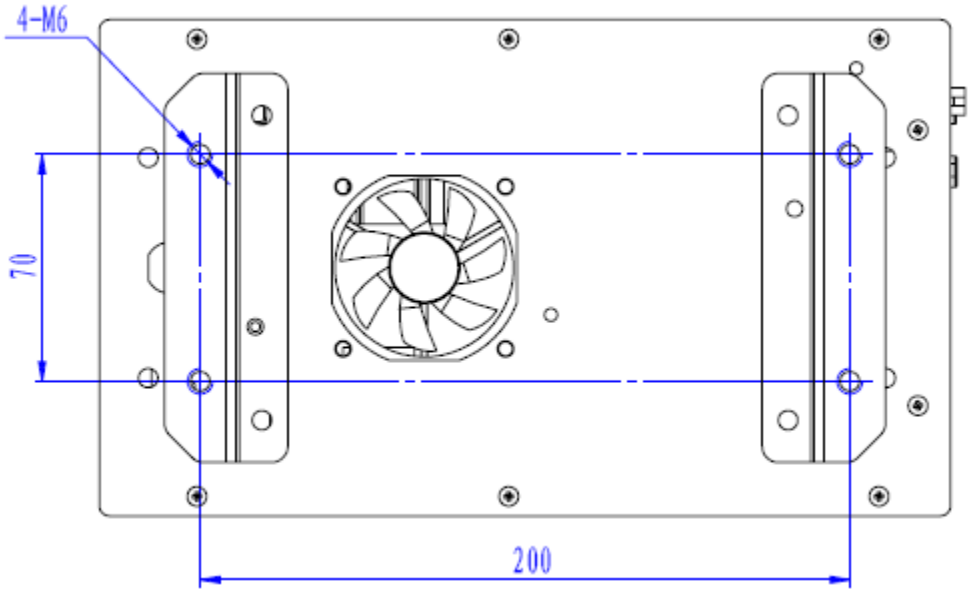


图 1 四孔安装尺寸图

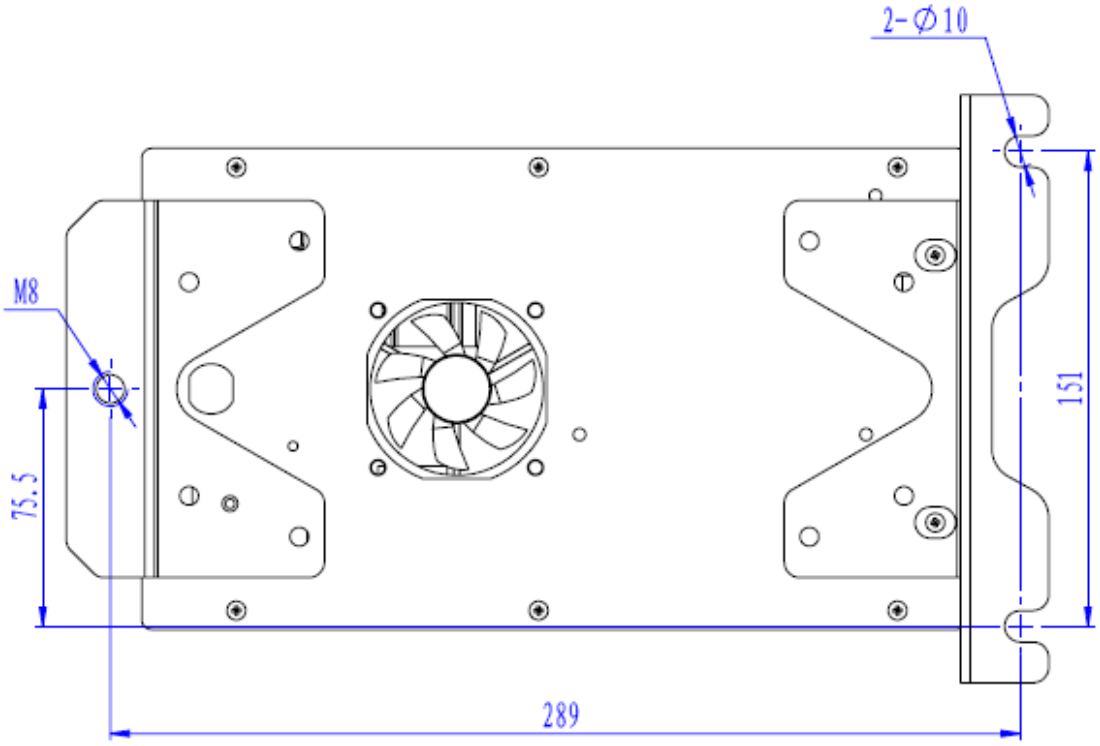


图 2 三孔安装尺寸图

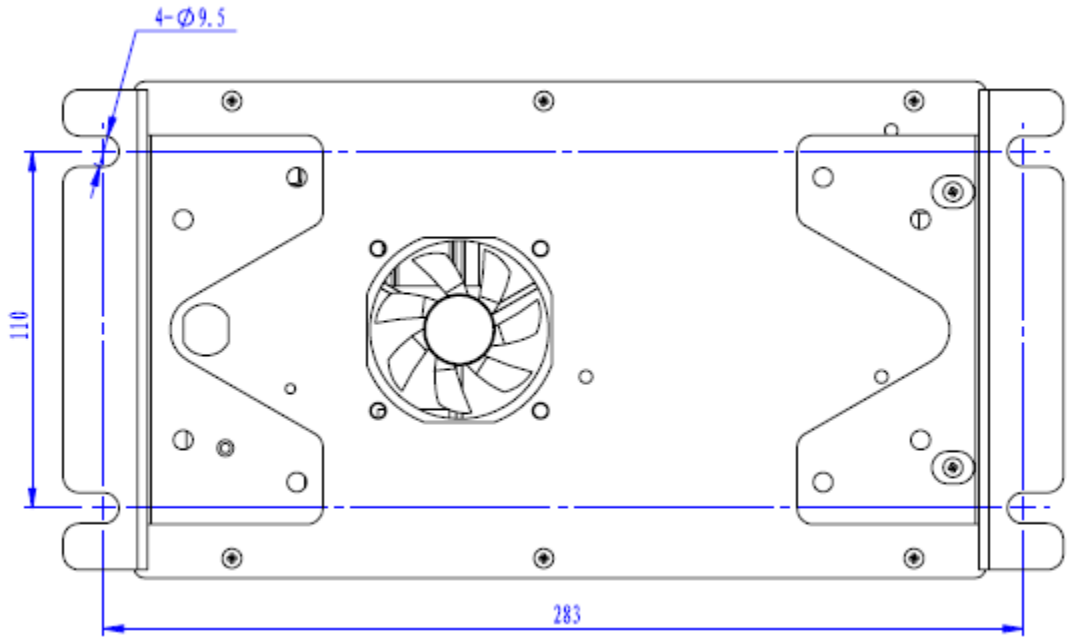


图 3 四槽安装尺寸图

6.2 操作箱安装尺寸

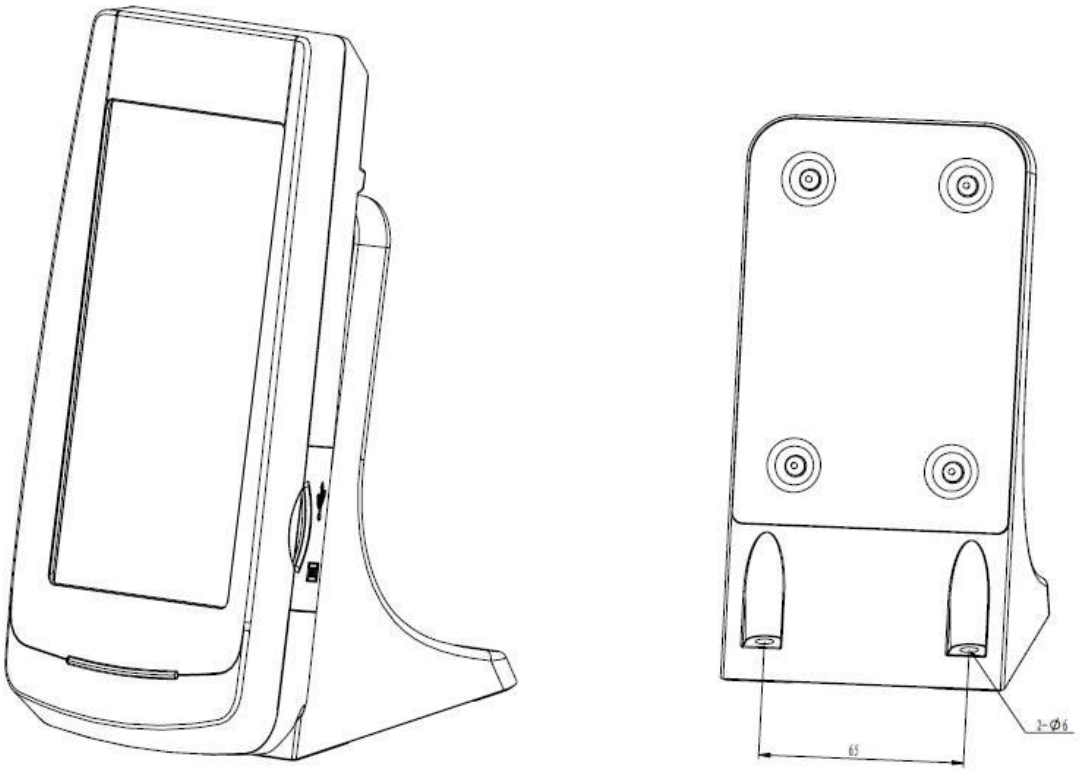
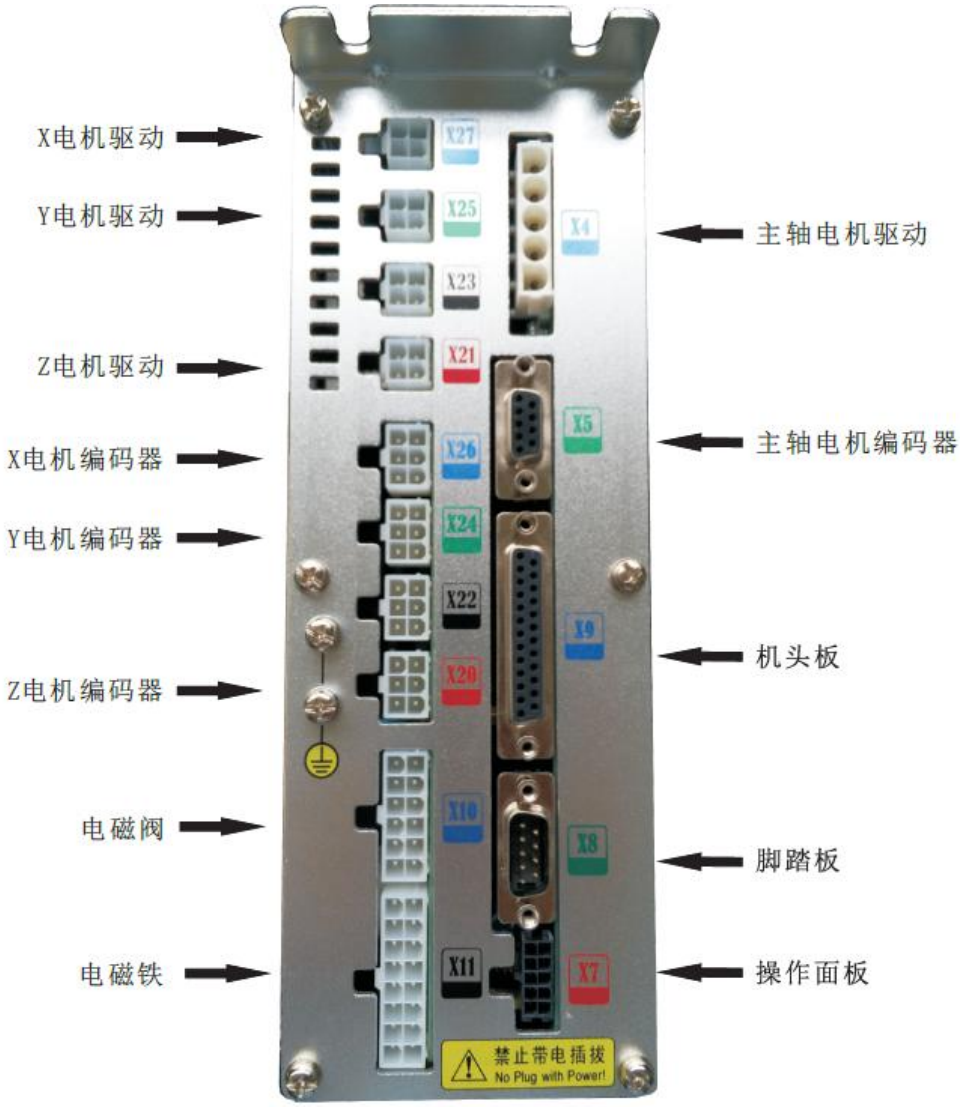


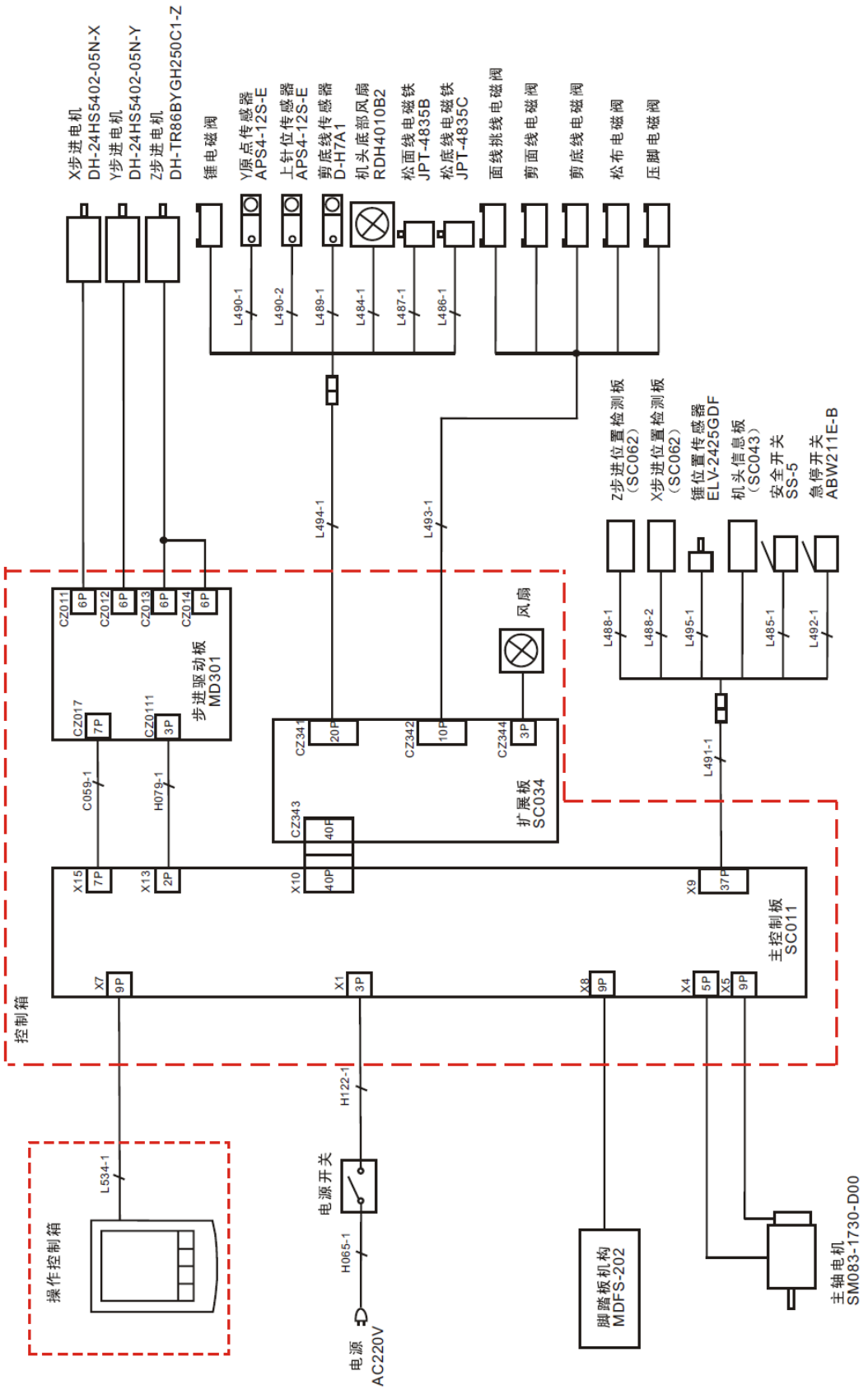
图 4 操作箱安装尺寸图

6.3 控制箱外部连接线缆

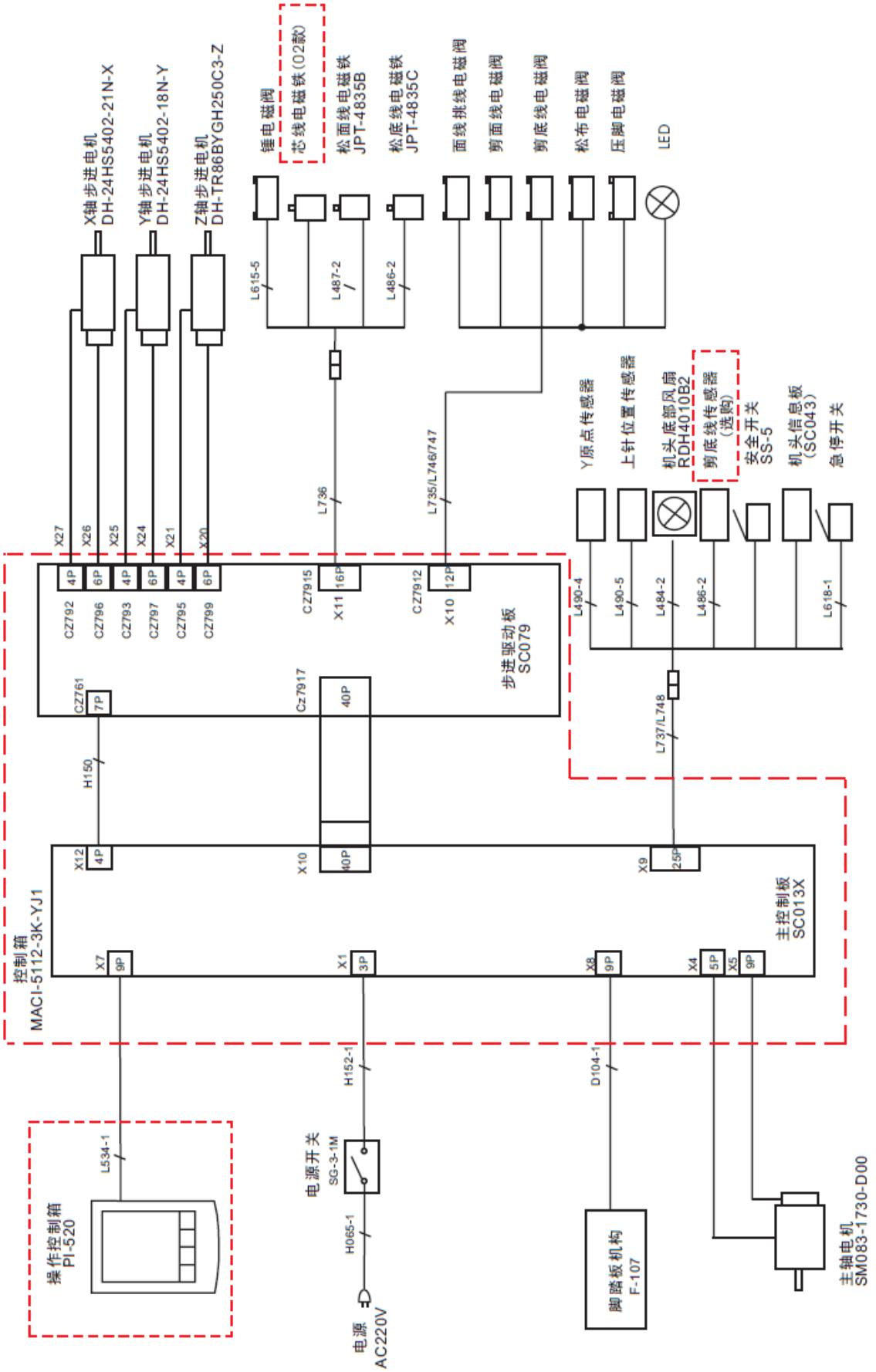
外部线缆插头上有对应的编号，请仔细对照图中编号进行连接。



6.4 SC511(9820)圆头锁眼机系统框图



6.5 MASC511 圆头锁眼机系统框图



SC511/MASC511
Computerized Control System for Eyelet Buttonhole Machine
- Touching Panel E1

1 General Information

1.1 General

SC511 Series Computerized Control System for Sewing Machine is characterized by the advanced technology it adopted. Its main shaft motor features large torque, high efficiency, stable running and low noise by adopting the advanced AC Servo Control Technology; its operating panel can meet various demands from clients in attaching; its structure of system is designed in German style which is easy to repair and install; and its system control software can be updated via U disk, providing convenience to client in improving the function of product continuously.

1.2 Functions & Parameters

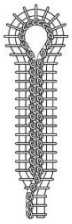
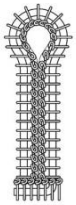
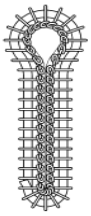
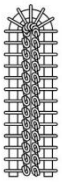
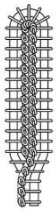
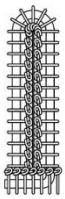
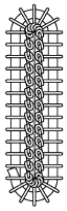
For the functions and parameters of SC511 Series AC Servo System, please refer to Table 1:
Table 1: Comparison of Functions & Parameters

No.	Model Items	SC511
1	Usage	Man's cloth, Women's dress, Leisure wears, Jeans and Trousers
2	Sewing Speed	1000—2700rpm
3	Shapes of Stitch Form	Without Bar-tacking Sewing
		Taper bar-tacking Sewing
		Linear bar-tacking Sewing
		Round Bar-tacking Sewing
		Radial Tacking
4	Length of Buttonhole	Eyelet 8-42mm、Linear Buttonhole 5-50mm
5	Stitch Form Pitch	0.5-2.0mm
6	Stitch Form Width	1.5mm—5.0mm，Mechanical adjustment:1.5—4.0mm
7	Length of Taper Bar-tacking	0-20mm
8	Presser Height	Standard 12mm（Max 16mm）
9	Start Mode	Double-pedal Switch or Hand Switch
10	Cloth-feeding Mode	X/Y/Z 3 Pulse Motor Intermittent Feeding
11	Drive Mode for Trimming Upper/ Bottom Thread	Driven by Solenoid Valve
12	Drive Mode of Knife	Driven by Solenoid Valve

13	Safety Device	Emergency Stop Switch, Head Turn-over Switch and Circuit Automatic can Protection Function
14	Method for Pattern Input & Update	U Disk
15	Available Language in Operation Panel	Chinese & English
16	Upper Axis Motor	Small AC Servo Motor 750W, Belt Transmission Drive Mode
17	Air Pressure	Main Adjuster: 0.5MPa; Air-hammer Pressure Adjuster:0.4Mpa
18	Power Consumption	600W
19	Operation Temperature Range	0℃～45℃
20	Operation Humidity Range	35%～85% （No Dew Condensation）
21	Line Voltage	AC 220V ± 10%；50/60Hz

※ Effective standard for product:QCYXDK0004—2016《Computerized Control System for Industrial Sewing Machine》.

1.3 Shape of Stitch Form

Eyelet Buttonhole			
			
No Bar-tacking	Taper Bar-tacking	Linear Bar-tacking	Round Bar-tacking
Linear Buttonhole			
			
No Bar-tacking	Taper Bar-tacking	Linear Bar-tacking	Round Bar-tacking
Radial Hole			
			

1.4 Standardization

The functional keys attach the figures known by the public. Because the figure is the internal language, users from any country can recognize it.

1.5 Operation Method

By using TFT touching-panel screen, this system features the user-friendly interface and easy operation. For specific method of operation, please refer to the operating instruction.

2 Basic Operating Instruction

2.1 Operation Panel

（Front Side）

（Right Side）

① Pattern Data Display Area ② Function Mode Button Area
③ Power Cable ④ U Disk Port

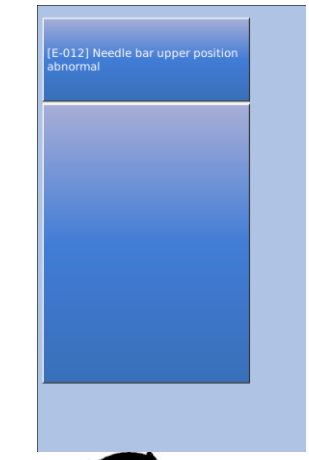
2.2 Basic Operation

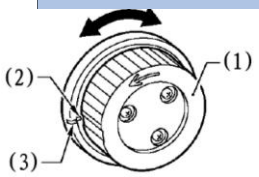
① **Turn on Power**

After user turns on the power, the system will display the contents at below in order at the Pattern Data Display Area：

Welcome to using SC511 Buttonhole Machine →SC511-00（01or 02）→Create Data→ Please Start Switch.

Note：If figure “E-012” is displayed on the operation panel A when user turns on the power supply, please turn the wheel (1) in the directions shown in figure B and make the print (2) face to the gap (3) directly



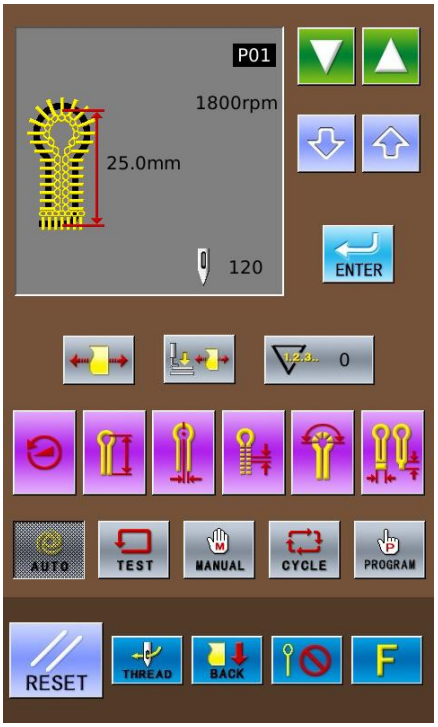


（A） （B）

② **Step Pedal for Start**

After user stepped the right pedal for start, the feeding board will move to the position where the cloth is located. In the operation panel, the readiness status of the previous operation mode (it might be Auto Mode, Manual Mode, Test Mode, Cycle Mode or Program Mode) will be displayed.

Note：The “Readiness Status” is the status before the next action when the system moves to a mode.



2.3 Settting Methods of Patten Program

2.3.1 Interface for Inputting Sewing Data

The data input interface is shown In the right figure. For detailed functional instructions, please refer to Table 1: Button Instruction Table.

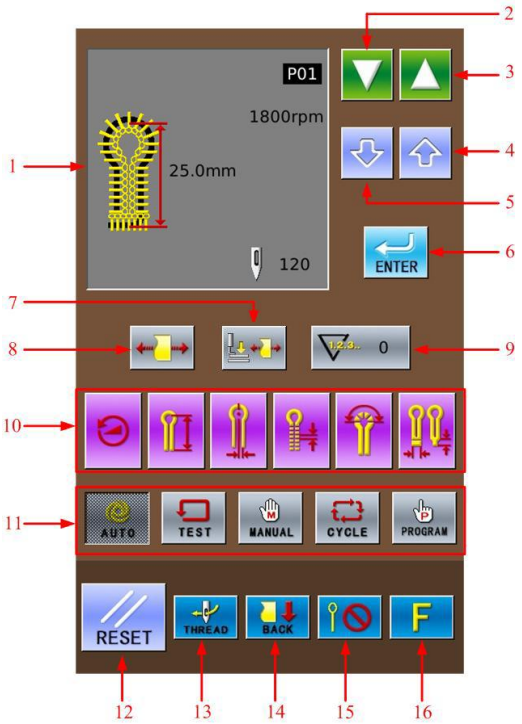
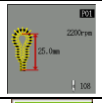
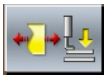


Table 1：Button Instruction Table:

No.	Figure	Functions	Remarks
1		Display of Sewing Shape	Display the pattern number, patter shape, length, stitch number, sewing speed and so on.
2		Decrease Number of Software & Parameter	

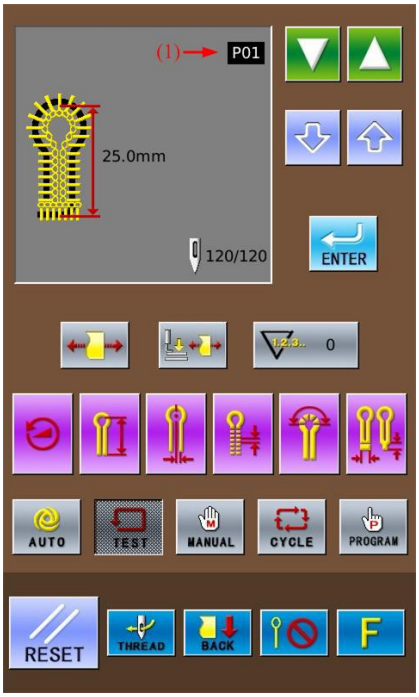
No.	Figure	Functions	Remarks
3		Increase Number of Software & Parameter	
4		Increase Value & Parameter Content	
5		Decrease Value & Parameter Content	
6		ENTER（Confirmation）Key	Confirm the parameter and the pattern data.
7		Cloth-tightening before presser down:  Cloth-tightening after presser down: 	The default setting is the Cloth-tightening after Presser Down. If user sets it as Cloth-tightening before Presser Up, this parameter will return to default setting when one pattern is finished
8		Cloth-tightening Permitted:  Cloth-tightening Forbidden: 	The default setting is the Cloth-tightening Permitted. If user sets it as Cloth-tightening Forbidden, this parameter will return to default setting when one pattern is finished.
9		Display the value in Counter	
10		Hot Keys	Quickly change 6 parameter relating to the pattern
11		Sewing Mode	Five available sewing modes: Auto, Manual, Test, Cycle and Program
12		RESET	Release the display of incorrect information
13		THREAD	Have access to the threading mode
14		FRONT:  BACK: 	Shift the positions of the feeding board. Alternative positions: Front & Back.
15		Cut-before-Sewing:  Cut-after-Sewing:  Non-Cut: 	Set the actions of knife
16		Parameter Management	Have access to parameter setting

2.3.2 Setting of Pattern Program

It is advised to preset the pattern data parameters which are frequently used so that user would only need to select the pattern code to have access to the set pattern in the future usage, thus saves the time for resetting the parameters at each time.

The 20 patterns can be registered at most, whose parameters can be altered at any time.

When leaving the factory, pattern codes from P01 ~P20 save the default pattern program (The patterns from P01 ~ P20 are all the same.)



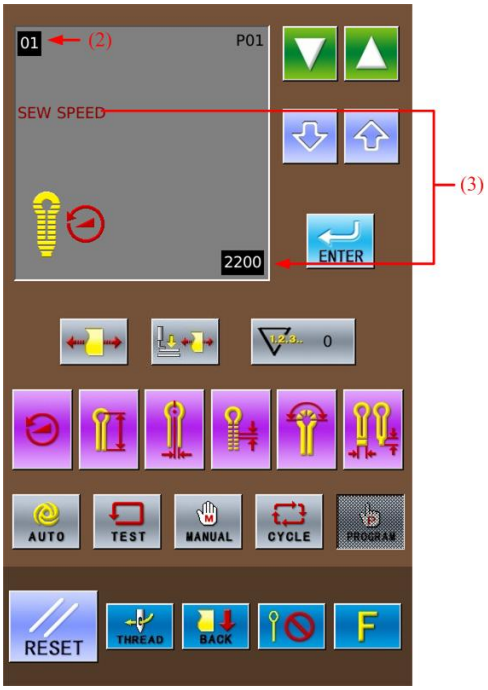
⑧ Press TEST

⑨ Select a pattern code from P01~P20 (1) for changing the content.

Pattern code (1) will change in the following sequence: P01 → P02 → … P20 → C1→C2…C9, at each pressing ▲. （press ▼to change the code in the contrary direction.）

⑩ Press PROGRAM

The pattern data display area will display the parameter code (2) and the specific parameter information (3) at previous time.



⑪ Press ▼ ▲ to select the parameter code（2）

⑫ Press ⇩ ⇧ to change the content of parameter(3).

The shining parameter information (3) means the content is uncertain

⑬ Press ENTER to confirm the changed content.

If the parameter information is still, that means it has been confirmed. If user presses any key among ▼, ▲, AUTO, TEST, MANUAL instead of ENTER at (3) shining, the changed parameter (3) will be abandoned and return to the original value.

⑭ Repeat the operation from 4 to 6 to change other parameters.

2.3.3 About Hot Keys

Among the Hot Keys (4), the following 6 parameters are registered for their frequent usage:

(5)Sewing Speed (Parameter code No.01)

(6)Length of Lockstitch Sewing at Buttonhole (Parameter code No.02)

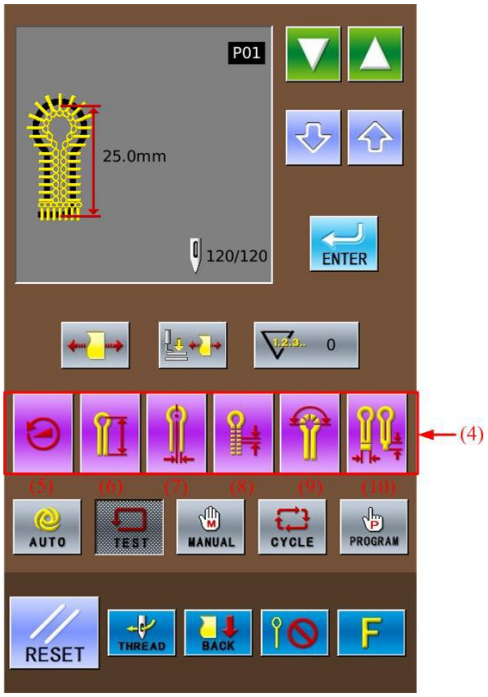
(7)Pitch of Knife（Parameter code No.03）

(8)Distance between Stitch Form (Parameter code No.04)

(9)Stitch Number at Eyelet Part（Parameter code No.05）

(10)Length of Bar-tacking (Parameter code No.06、No.08、No.10)

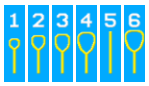
Note: The different bar-tacking sewing types set in parameter code No.40 are corresponding to the various values of bar-tacking sewing length parameter (10).

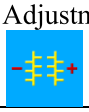


2.3.4 List of Pattern Parameters at S level

According to the set content of other parameters, the default value of some parameters may be unchangeable or invalid.

Parameter Code	Content	Range	Unit	Default Value
S01	Sewing Speed	1000~2700rpm	100	1800rpm
S02	Length of Lockstitch Sewing at Buttonhole	5~50mm	0.5	25mm
S03	Pitch of Knife	-2.5~0.5mm	0.05	0.2mm
S04	Distance between Stitch Form	0.5~2.0mm	0.1	1.0mm
S05	Stitch Number at Eyelet Part	4~20 Stitches	1	9 Stitches
S06	Length of Taper	1~20mm	1	6mm
S07	Offset	0.5~2.0mm	0.1	1.5mm

Parameter Code	Content	Range	Unit	Default Value
S08	Length of Linear Bar-tacking 	2.0~6.0mm **（Each side at 3.0mm as MAX）**	0.1	5.0mm
S09	Stitch Number of Linear Bar-tacking 	5~18 针	1	7 针
S10	Stitch Number of Round Bar-tacking 	5~17 针	1	7 针
S11	Shape of Knife 	1~6 **（select the proper knife, according to the different knife code）**	1	2
S12	Sewing Width Adjustment 	-1.0~1.0mm	0.1	0.0mm
S13	Eyelet Part Low Speed 	-600~0rpm **（This parameter takes the default value of the parameter 01 sewing speed as standard.）**	100	0rpm
S14	Speed of Linear Bar-tacking 	1000~2500rpm **（if the sewing speed is lower than the linear bar-tacking speed, these two speeds will become equal.）**	100	1800rpm
S15	Stitch Number of Slow-start 	0~3 Stitches	1	0 stitch
S16	Speed of Slow-start 	400~1500rpm **（if the sewing speed is lower than the slow-start speed, these two speed will become equal）**	100	700rpm
S17	Knife Adjustment in X Direction 	-0.5~0.5mm	0.05	0.0mm
S18	Knife Adjustment in Y Direction 	-0.7~0.7mm	0.05	0.0mm
S19	Stitch number of bar-tacking at start 	0~4 针	1	0 针
S20	Stitch number of bar-tacking in end 	0~4 针	1	0 针
S21	Adjustment in X Direction	-1~6	1	0

Parameter Code	Content	Range	Unit	Default Value
				
S22	Adjustment in Y Direction 	-1~6	1	0
S23	θ1Adjustment 	-3~3	1	0
S24	θ2Adjustment 	-3~3	1	0
S25	Taper Bar-tacking Angle 	-5~5	1	0
S26	Adjustment on Bar-tacking Width 	-1.0~0.0mm	0.1	0.0mm
S27	Coincidence Amount of Bar-tacking 	0.0mm~2.0mm	0.1	1.0mm
S28	Adjustment of Bar-tacking in X Direction 	-1.0mm~1.0mm	0.1	0.0mm
S29	Adjustment of incline angle of Bar-tacking 	-3~1	1	0
S30	Round Head Correction	-25~25	1	0
S31	Pitch of bar-tacking at sewing-end 	20%~100%	5%	100%
S32	Stitch Number of Round coincidence 	1~4 Stitches（Within 45°）	1	1 Stitch
S33	Stitch moving when without cutting 	1~2	1	1
S34	Cutting Size of Radial Hole 	2~5mm	1	2
S35	Stitch Number of Radial 	8~100 Stitches	1	20
S36	Coincident Stitch Number of Radial Hole 	1~5 Stitches（Within 45°）	1	2
S37	Bar-tacking Pitch	0~30	1	0
S38	Reserved (For future use)			
S39	Pattern Copy	OFF~P01~P20	1	OFF

Parameter Code	Content	Range	Unit	Default Value
S40	Type of Bar-tacking 	1：No Bar-tacking 2：Taper Bar-tacking 3：Linear Bar-tacking 4：Round Bar-tacking	1	2
S45	Stitch adjustment/pattern generation method at the joint part	1. The panel board program of versions earlier than V104 is mainly used to adjust the stitch at the joint part of the eyelet portion. 2. As for the panel board program from V104, user can choose pattern-making mode: 0 means to use the previous pattern-making method, while 1 means to use the original pattern-making method.	0~1	

2.4 Confirm Pattern under Test Feed Mode

Test Feed Mode is that only cloth-feeding board works normally when the upper shaft keeps still. This mode is used to confirm the positional relation between needle and presser.

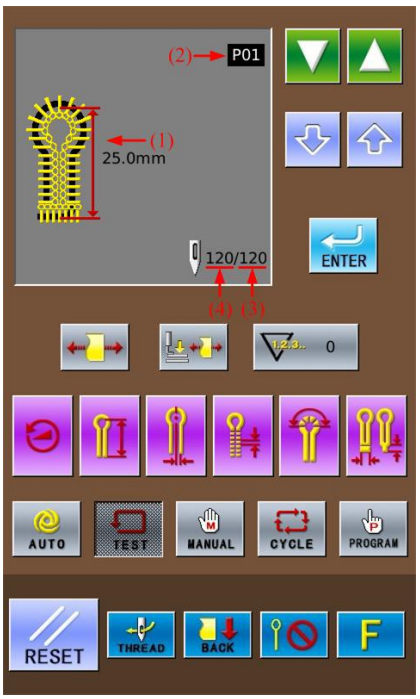
⑨ **Press Test Key**

Press 

to display the stitch form (1), pattern code (2), total stitch number (3) and leftover stitch number (4) in the pattern data display area

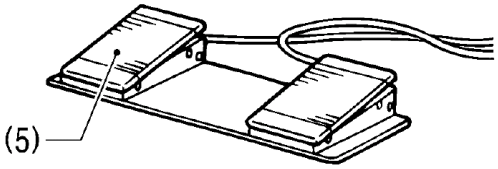
⑩ **Select the Pattern Code**

The pattern code will change in the following sequence: P01 → P02 → … P20 → C1→C2…C9…P01 at pressing the  . (Press  to reverse this sequence.)



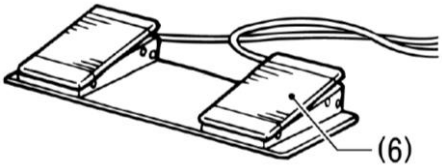
⑪ **Step Presser Pedal**

Step the left pedal (5) to lower the presser

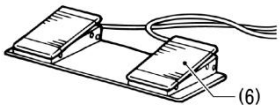


⑫ **Step the Start Pedal**

Step the right pedal (6) to make the cloth-feeding board move to the position of sewing start.



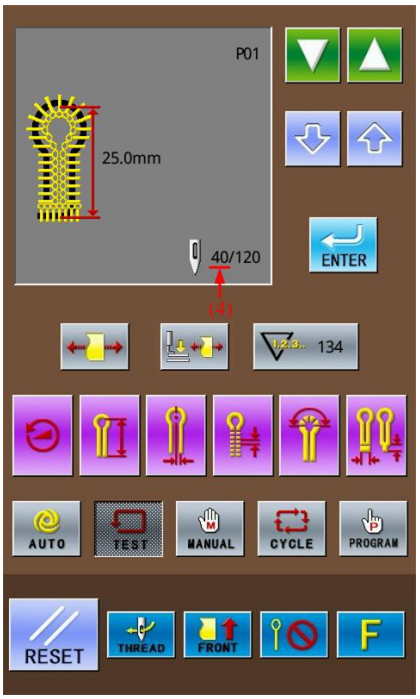
⑬ **Step Pedal（6）or press to start the sewing under Test Mode.**



or

（2 stitches will be sewn at each pressing.）

（Holding for continuous sewing）



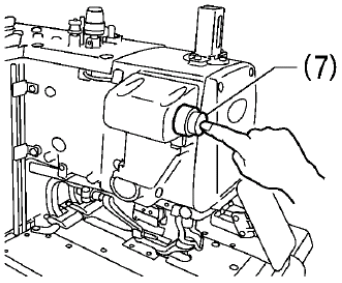
Note: the leftover stitch number (4) displayed at the data display area will reduce 2 stitches at each time.

The buzzer will work at the last stitch.

No thread-trimming actions and knife actions in test mode.

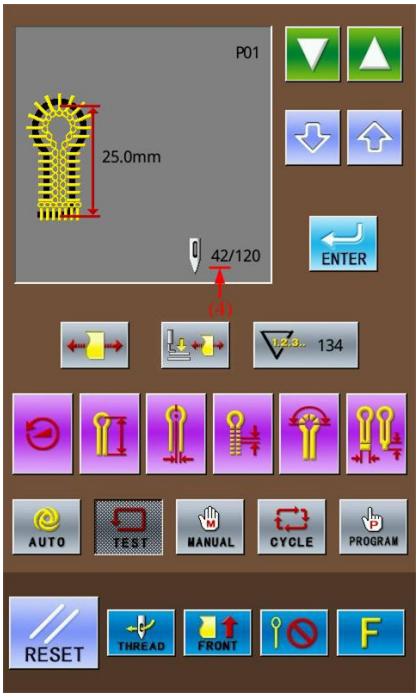
⑭ **If user wishes the cloth-feeding board to return to the cloth setting position at the ending of the test**

Please press Pause switch (7), and then press RESET.



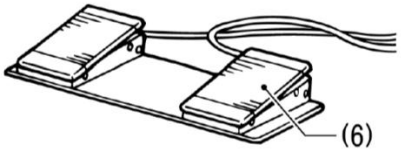
⑮ **During the cloth-feeding, if user wants cloth-feeding board to return to the former sewing position:**

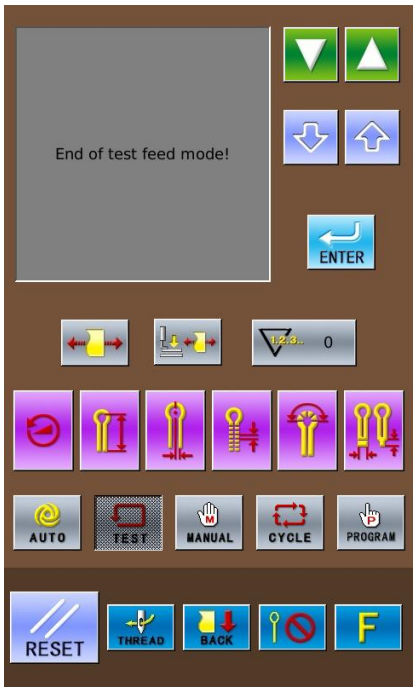
Please press  , 2 stitches will be returned at each pressing. The leftover stitch number (4) will add 2 stitches at each time.



⑯ **Last Stitch**

Step Start Pedal (6) until the leftover stitch number turns to 0 and the cloth-feeding board returns to the position for setting cloth. After that, the pattern data area will display “END OF TEST FEED MODE”.



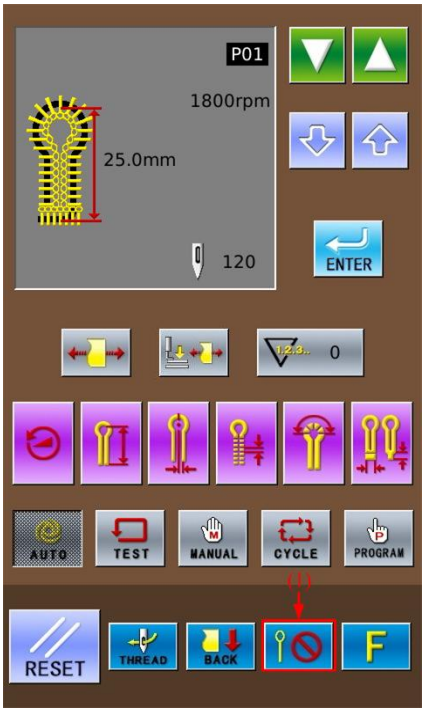


2.5 Shift of Knife Actions

④ **Non-Cut**

No knife action during the sewing.

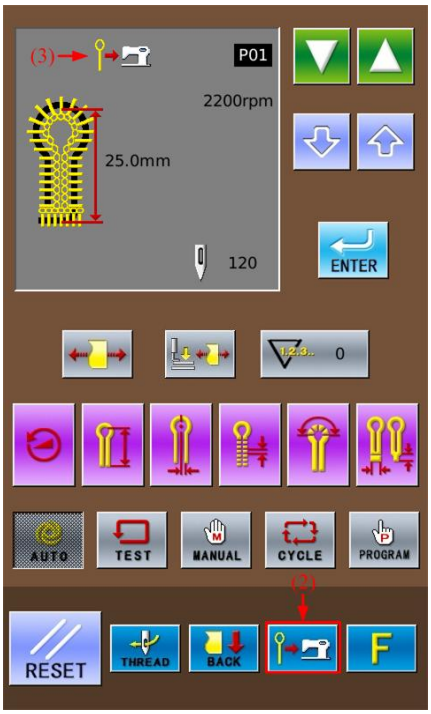
At this time, the interface shows as the picture at right. Press the Knife Mode Key to shift the status to Non-Cut (1).



⑤ **Cut-before-Sewing**

The sewing actions are after the cutting.

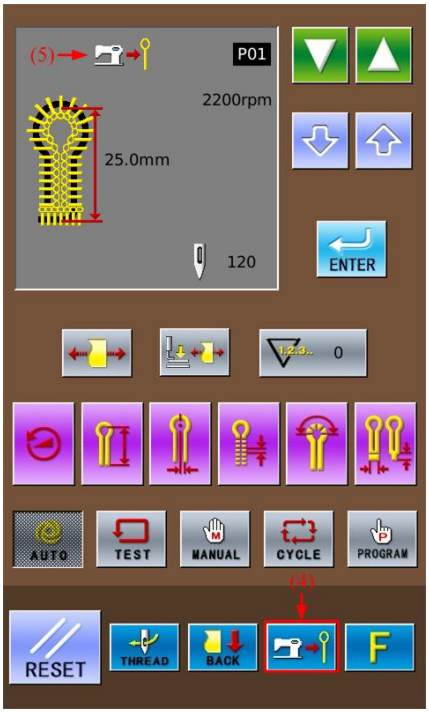
In the interface shown as the right figure, shift the Knife Mode to the status of Cut-before-Sewing (2). At this time, this mode will be displayed in area (3).



⑥ **Cut-after-Sewing**

The sewing actions are before the cutting action.

In the interface as shown in right, press Knife Mode Key to shift the status to Cut-after-Sewing (4). At this time, this mode will be displayed at area (5).



2.6 Method for Shifting Cloth Position

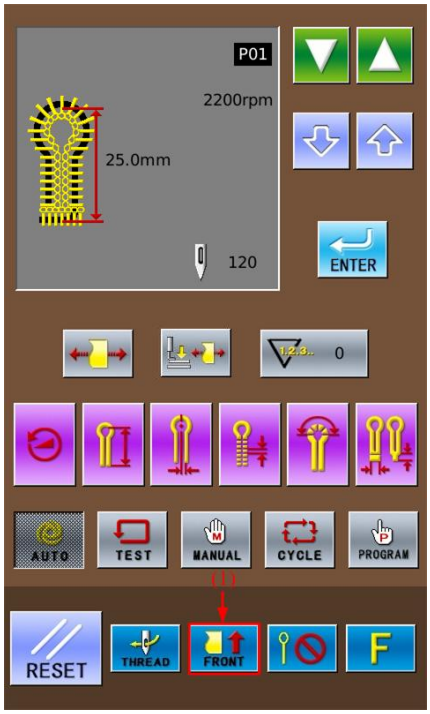
Because this function can move the cloth-feeding board to a position more forward than standard position for setting cloth, it will be easy for setting the cloth. Especially at the status of Cut-after-Sewing, the time of the cycle is shortened.

③ **Move the cloth-feeding board to the front**

In the readiness status of Auto mode, Test Feed mode or Manual mode, press Cloth Position Shift Key (1) to change the feeding mode to 

. At this time, the cloth-feeding board will be moved to the Front (position of sewing start).

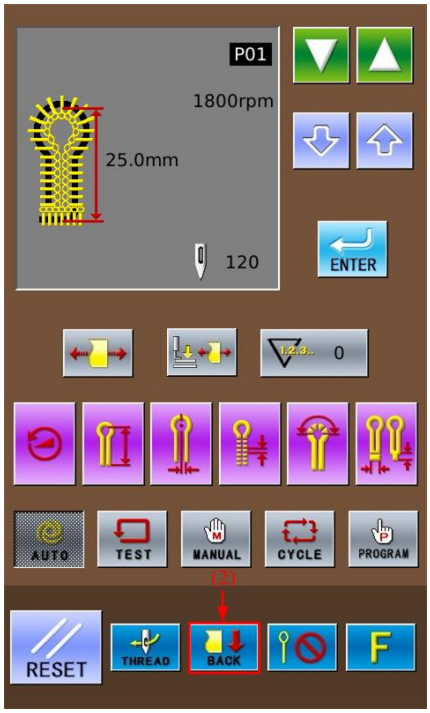
Note：Front is the position nearer to the operator when he faces to the machine.



④ **Move cloth-feeding board to backside (standard position for setting cloth)**

Press the Cloth Position Shift Key (2) again to change the cloth-feeding mode to 

. At the moment， the cloth-feeding board will return to the backside (the standard position for setting cloth).



2.7 Threading Mode

This mode is used in threading the upper thread. At threading mode, if the Z axis of needle rod turns 180 degree, the excitation of stepping motors on X, Y and Z axis will be cut off. At this time, the needle rod and cloth-feeding board can move freely so as to be easy for threading the upper thread.

④ **Have access to threading mode**

In the readiness status of Auto mode, Test Feed mode or Manual mode, press Threading Mode Key (1) to shift from cloth-feeding mode to threading mode. At this time:

1. The pattern data display area will have “Threading mode press ‘RESET’ ” (2).
2. The thread-holder goes into open status.
3. The buzzer rings and the needle rod returns for 180° , then the excitation of the stepping motors on X, Y & Z axis will be cut off

⑤ **Threading Upper Thread**

After 3 minutes, the thread-holder will be turned off automatically.

⑥ **Finish of Threading Upper Thread**

After threading the upper threads, please press 

.

When the needle rod and cloth-feeding board are moved to origin for origin test, they will return to the position for setting cloth.

The thread-holder is off.

3 Instructions on Sewing Operations

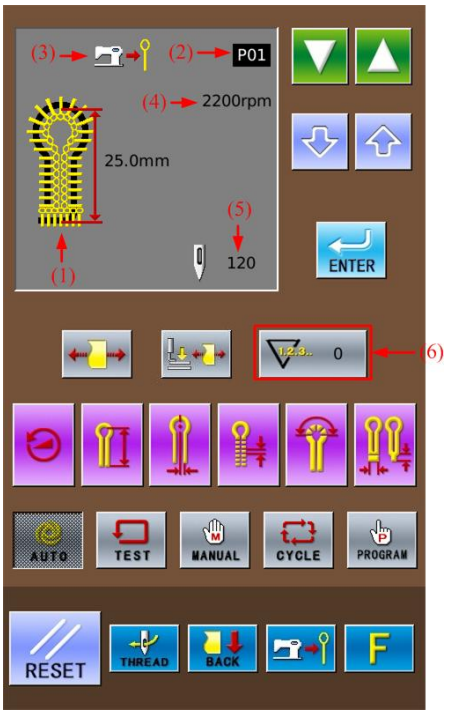
3.1 Auto Mode

- For the automatic sewing at first time, do please perform the trial sewing.
- When using SC511 in the environment with low temperature, user shall perform the trial sewing for several times, so as to warm up the motor.

⑦ Press Auto Mode Key

Press 

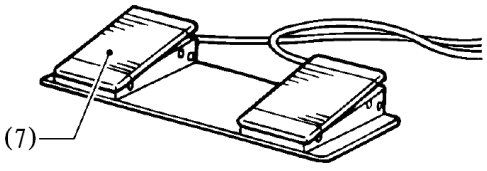
to show the Shape & Length of sewing stitch: Pattern Shape (1), Pattern Code (2), Knife Action (3), Sewing Speed (4) and Total Stitch Number of Existing Pattern (5) at pattern data display area, as well as the Number of Production (6) at Production Counter Key.



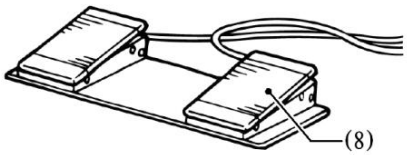
⑧ Press  to select the wanted pattern code (2). The pattern code will change in the following sequence: P01→P02→…P20→C1→C2…C9 at each pressing on  . Press  to change the code in the contrary direction.

⑨ Select the wanted action of knife (Non-Cut/ Cut-before-Sewing/Cut-after-Sewing).
Note: For the detailed shift method of Knife Action, please refer to **【2.5 Shift of Knife Actions】**

⑩ Lay the fabric for sewing under the presser, step the presser pedal (7).



⑪ Step the start pedal (8) to start the sewing 。



⑫ For sewing repetition, please repeat the operation in the 4th & 5th steps at above.

3.2 Manual Mode

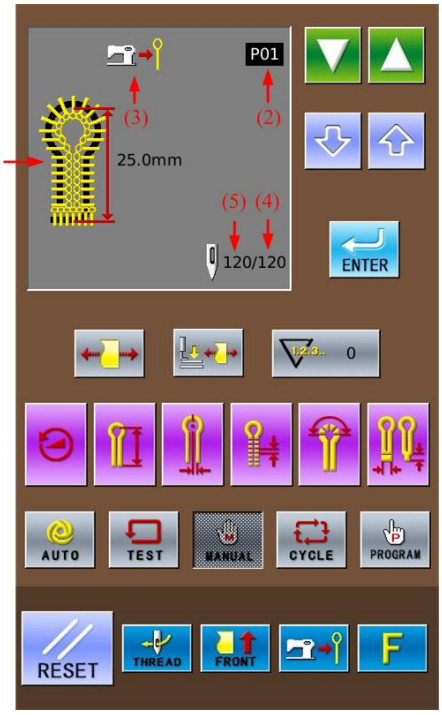
Caution

Due to the knife will act during the manual sewing, please keep hand away from the knife. Otherwise the operator may suffer serious injury.

Under manual mode, turn the wheel to move the cloth-feeding board in stitch by stitch. This will simplify the operation in synchronizing adjustment of yarn-divider.

⑧ Press Manual Mode

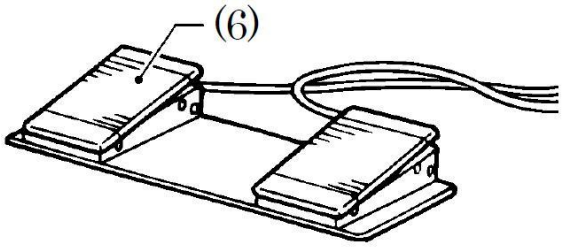
Shape of Sewing Stitch Form (1), Pattern Code (2), Knife Action (3), Total Stitch Number (4) and Leftover Stitch Number (5) are shown in the sewing data display area.



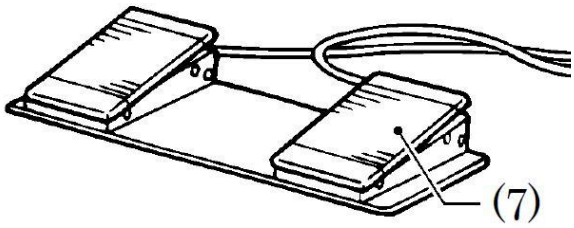
⑨ Press  to select the wanted pattern code (2).

The pattern code (2) will change in the following sequence: P01→P02→… P20→ C1 →C2…C9 at each pressing on  . （Press  to change the code in contrary direction.）

⑩ Lay the fabric for sewing under the presser, step the presser pedal (6) to lower the presser.



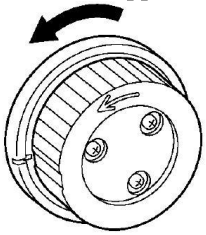
⑪ Step start pedal (7) to move the cloth-feeding board to the position of sewing start.



Caution：

When setting the knife action as “Cut-before-Sewing”, the operator shall look out for his hand at knife moving.

⑫ Turn Hand-wheel at Upper Axis to Left

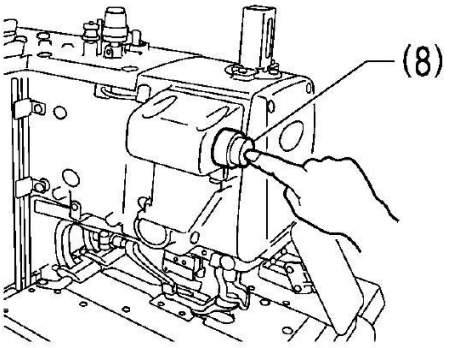


The cloth-feeding board will move to the sewing position of the next stitch at each turning round of upper axis hand-wheel. When the wheel reverses for half a cycle, the leftover stitch number (5) at sewing data display area will reduce 1 stitch

Caution：

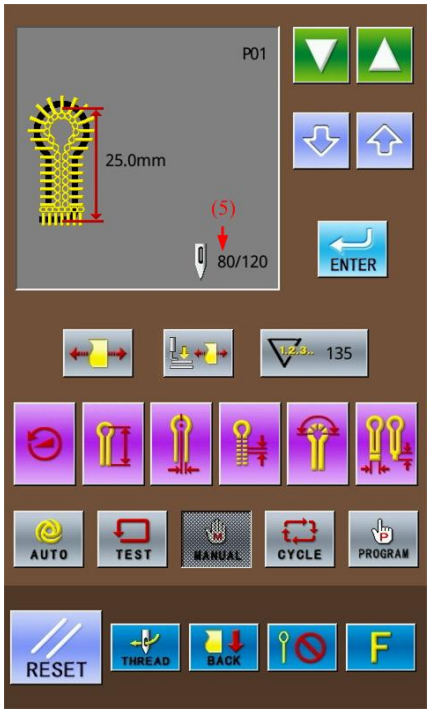
If the upper axis hand-wheel turns reversely, the cloth-feeding board will not move the shape with the set stitch form. Please don't turn the wheel reversely.

⑬ For stopping the manual sewing, press emergence stop switch (8) when the cloth-feeding board returns to the position for laying cloth



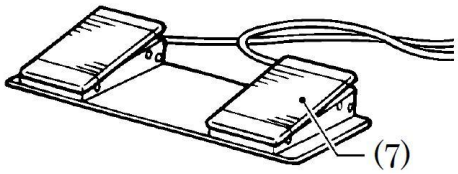
The "Pause Switch Is Pressed In Sewing" is displayed on operation board. Press  to return to sewing interface and then press 

.



⑭ At Last Stitch

The needle rod stops at the upper position of needle. Step start pedal (7) at this time.



(Hold it until the cloth-feeding board returns to the position for laying cloth.)

In thread-trimming actions, when the cloth-feeding board returns to the position for laying cloth, the system will hint “END OF MANUAL MODE” in the operation panel.

Caution：

When setting knife action as “Cut-after-Sewing”, user shall look out the action of knife.

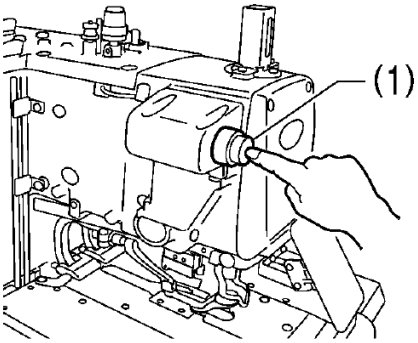
3.3 Pause Switch

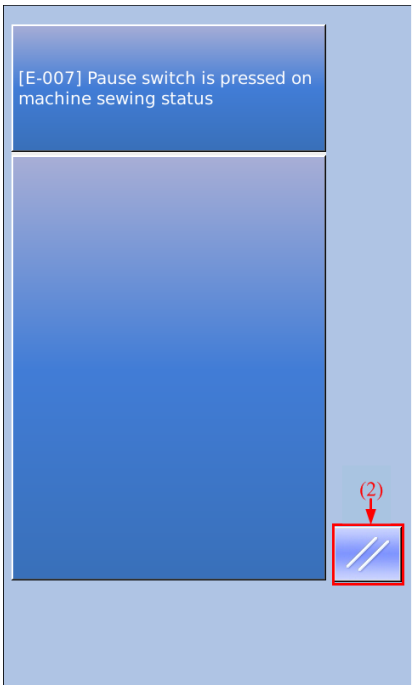
Pause in Auto Sewing

The pause switch is generally used for stopping the sewing machine at thread-breakage and other circumstance

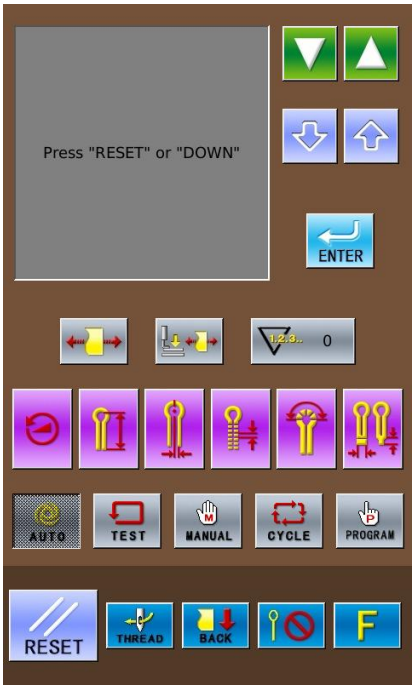
3.3.1 Methods for Pausing

During the sewing, press the pause switch (1) to stop the sewing machine, and then the operation panel will hint “E-007 Pause Switch is pressed on machine sewing status”.





3.3.2 Method for Releasing Pause (For Stopping the Work)



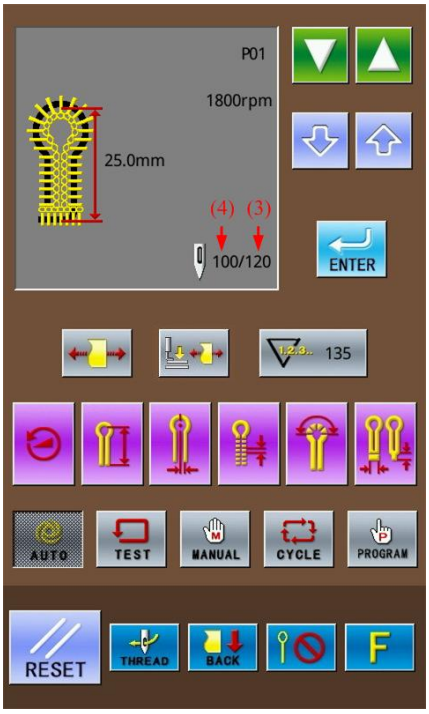
④ Press RESET (2) when the interface displays “E-007 Pause Switch is pressed on machine sewing status”

Then the operation penal will show the sewing interface, and the pattern data display area shows “Press ‘Reset’ or ‘Down’”

⑤ Release the error causing the pause.

⑥ Press RESET. After the needle rod and the cloth-feeding board performs the origin test, they will return to the position for setting cloth.

3.3.3 Method for Releasing Pause (For Continuing the Work)



⑪ Press RESET (2) when the interface displays “E-007 Pause Switch is pressed on machine sewing status”

Then the operation penal will show the sewing interface, and the pattern data display area shows “Press ‘Reset’ or ‘Down’

⑫ Release the error causing the pause.

If the upper thread is broken, press THREAD to have access to the threading mode.

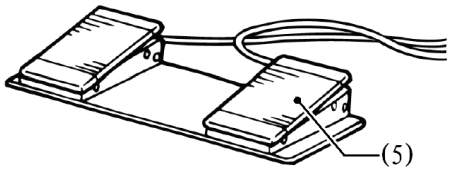
⑬ Press to display the total stitch number of pattern (3) and the leftover stitch number (4) in the pattern data display area.

⑭ Press or to move the cloth-feeding board according to the shape of pattern so as to confirm the position for continuing the sewing job.

If the upper thread is broken, please press THREAD to have access to threading mode.

Note: press to proceed; press to reverse. Holding means to keep proceeding or reversing.

⑮ Select the position for continuing the sewing, step the start pedal (5) to continue the automatic sewing of the existing pattern.



3.4 Usage Instructions on Cyclical Sewing Function

In the single pattern program (P01~P20), system can combine several edited single patterns together and register them into a “Cyclical Pattern Program” for continuous sewing, which is easy for using.

Cyclical Pattern Program：

Max Amount for Cyclical Patterns	9 个（C01~C09）
Max Amount of Single Pattern in a Cyclical Pattern	9 个（S1~S9）（A single P pattern can be selected for many times)）

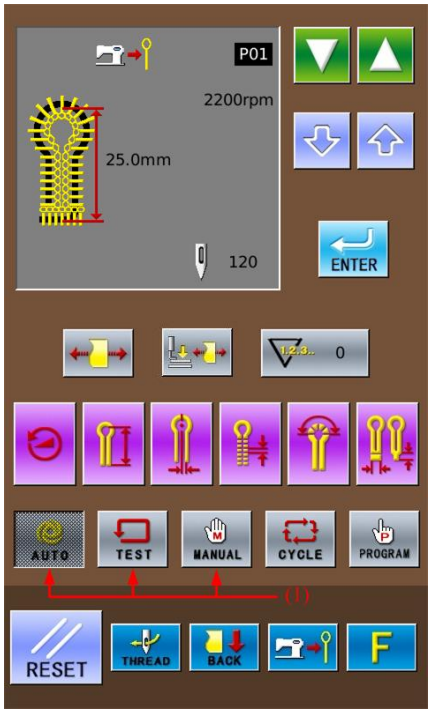
Example：

We select a single pattern P01 (3 steps, with knife action) and a single pattern P03 (1 step, without knife action) to combine a cyclical pattern, which is set as C1 for example

The set contents of Cyclical Pattern Program C1：

Step Code of C Pattern	S1	S2	S3	S4
Name of Single Pattern	P01	P01	P01	P03
Knife Action	Yes	Yes	Yes	No

⑥ Press the keys (1) at the right interface to select sewing mode in random.（Take the auto mode as example.）



⑦ Press  to select C1, the pattern number of that cyclical pattern program

The pattern code will change in the following sequence: P01→P02→…P20→C1 →C2…C9…P01 at each pressing on  .

（Press  to reverse the sequence.）

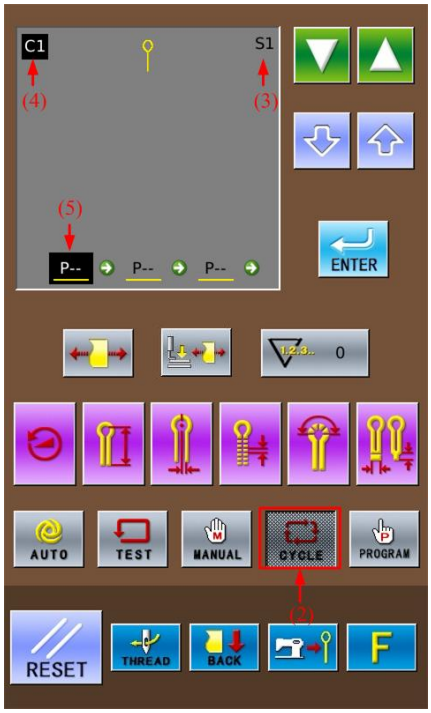
⑧ Press Cycle Mode Key (2)

The sewing data display area will show the following contents:

（3）Step Code

（4）Cyclic Program Code

（5）Pattern Content Set in S1.



⑨ Press  to set the content of S1 (5) as P01

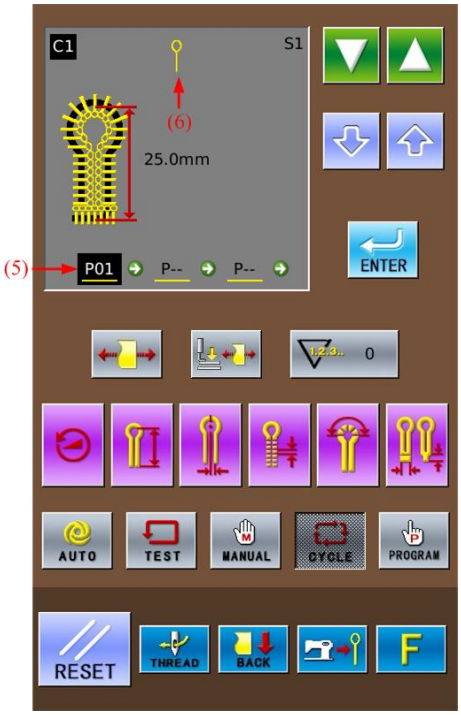
“ The “___” in “P01” means that this pattern has the knife action, therefore the knife mark (6) is shown in the sewing data display area

“--” in “P--” means the pattern in this step has not been set yet.

If you set the existing pattern as “P--”, the content in the following steps will be deleted.

⑩ Press  to confirm the changed content.

At that time, the content of S1 (5) will not be shining any more.

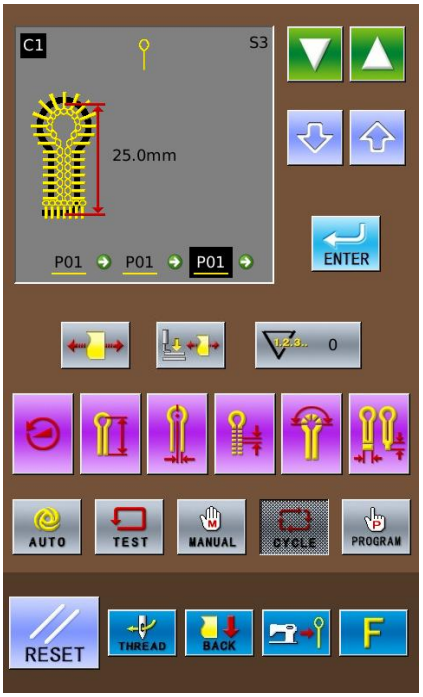


⑯ Press  to change the step code （3） to S2.

⑰ Repeat the operations in steps 4 & 5 at above to set the content of S2 as “P01”, which is as same as that of S1. Repeat the operations in steps 4 & 5 at above to set the content of S3 as “P01”, which is as same as that of S1.

⑱ Press 

to confirm the changed content.



⑲ Press  to change the Step Code （3） to S4.

Press  to set the content of S4(6) as P03.

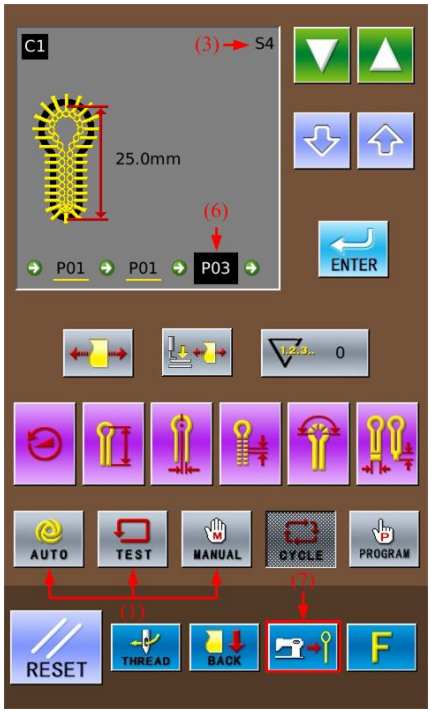
Press Knife Action Key (7) to change the “P03” at (6) to “P03”.（Without Knife Action）

⑳ Press 

to confirm the changed content.

Press any key in（1）to end the setting in the Cycle Mode

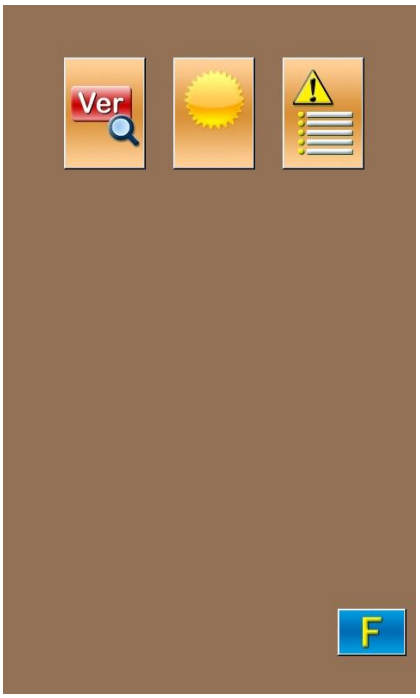
Note: When selecting the cyclical program to perform the automatic sewing, the user can change the knife action in the Auto Mode. And the knife action in the C pattern will be kept same to the knife mode set at present.



4 Interface of Parameter Setting Mode

In the interface for inputting sewing data, press  to shift the data input interface and parameter setting mode interface (as shown in right). In the interface of parameter mode, user can make some detailed settings and edition operations.

In the interface for inputting sewing data, hold  for 3 seconds, then the system will have access to the setting mode Level 2.



Setting Mode Level 1

Setting Mode Level 2

4.1 Description of Functions

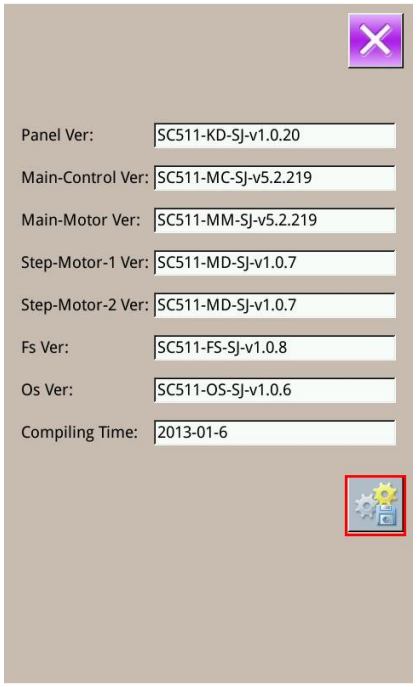
Setting Mode Level 2:

No.	Figure	Functions
1		Inquiry of software version.
2		Lightness adjustment
3		Error information record
4		Communication mode
5		U level parameter
6		Recovery to default setting
7		Parameter back-up & recovery

4.2 Software Version Inquiry

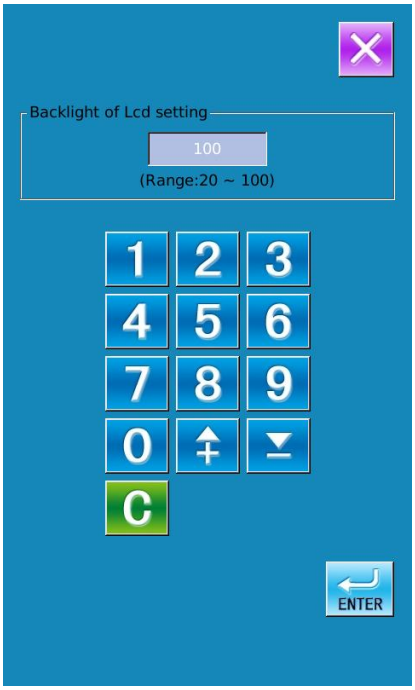
In Level 1 of Setting Mode, press  to have access to the interface for inquiring the software version (as shown in the right figure).
(1): Version of Operation Penal Program
(2): Version of Controller Program
(3): Version of Main Motor Program
(4): Version of X Axis & Y Axis Stepping Motor Program
(5): Version of Z Axis Stepping Motor Program
(6): File System Version
(7): Operation System Version
(8): Compiling Time of Panel Program

Press  to output the software version to the base inventory of U disk with name version.png.



4.3 Lightness Adjustment

In Level 1 of Setting Mode, press to have access to the interface of lightness adjustment (as shown in the right figure), whose range is from 20 to 100. User can press or to adjust the value and it is also possible to input the value via the number keys. Press ENTER to confirm the input.



4.4 Error Information Record

In Level 1 of Setting Mode, press to have access to the interface for recording the error information (as shown in right). In the interface, the times of the various kinds of errors and the recent error information will be displayed. The smaller number means the later occurrence.

Additionally, the system will also record the production number at each warning.

User can use or to turn the pages for checking more error information.

Press C to clear all the error records.

4.5 Communication Function

The communication mode contains the following functions:

3、 Update Panel Software via U Disk；

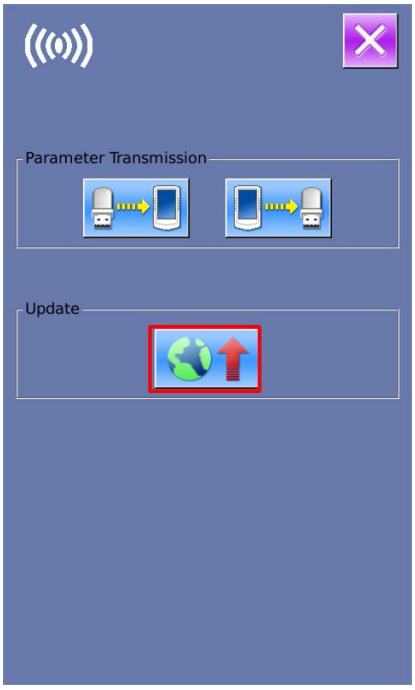
4、 Transfer U Level Parameters between Panel and U disk

4.5.1 Operation Penal Update

④ **Have access to the interface of communication function**

Insert U disk, in Level 2 of Setting Mode, press  to have access to the communication function mode (as shown in the right figure).

 ：Software Update

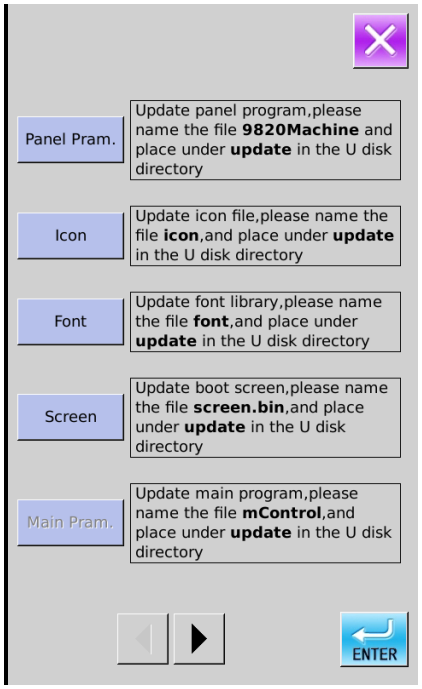


⑤ **Enter Software Update Interface**

Press  to enter the software update interface (as shown in right), where user can update the software

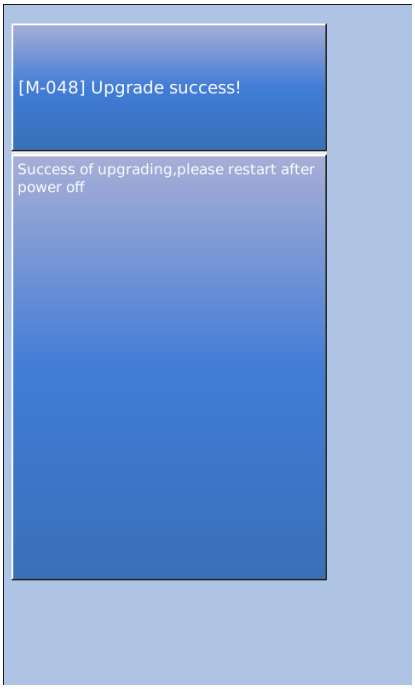
The updating software is located at 「update」in U disk. Click the content for update, then please press 

.

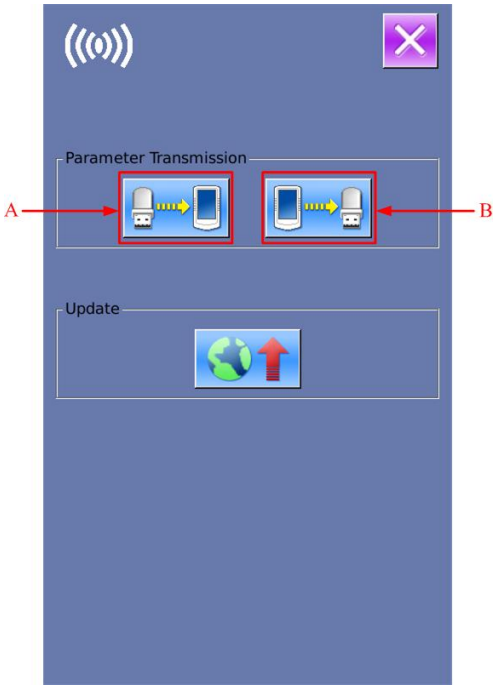


⑥ **Finish Updating**

After the update, the system will display the hint information. Please restart the machine.



4.5.2 Input/ Output of Parameters



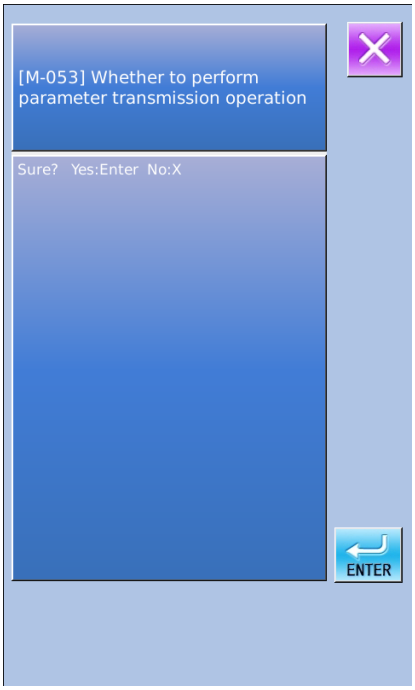
④ **Display the Communication Interface**

Insert U disk. In the level 2 of Setting Mode, press  to have access to the Communication function mode
A: Input Parameter from U disk to Panel
B: Output Parameter from Panel to U disk

※ **When inputting patterns from U disk, user has to save the parameters into the DH_PARA in the U disk with name 9820Param**

※ **When outputting patterns from operation panel, user has to save the parameters into the DH_PARA in the U disk with name 9820Param**

※ **The parameter file is the binary file, which is operated on the control panel. User can not change that file manually on PC, or the file may be damaged.**



⑤ **Press Button A to Input Parameters from U Disk to Operation Panel**

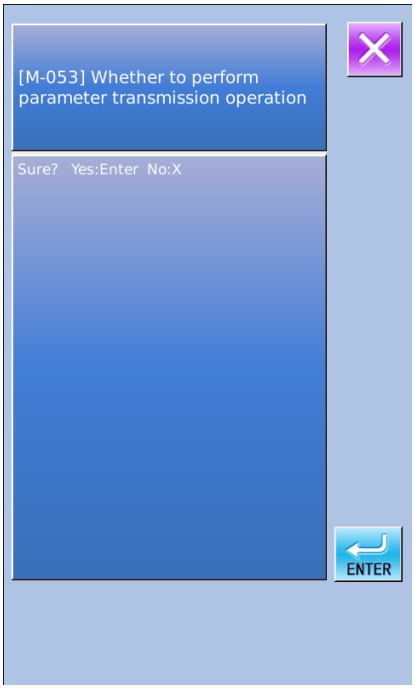
A、Press  to input the parameters and quit

B、Press  to quit directly.

⑥ **Press Button B to Output Parameters to U Disk**

A、Press  to output parameters from operation panel to U disk and quit

B、Press  to quit directly



4.6 Parameter Setting

4.6.1 Method for Setting Parameters

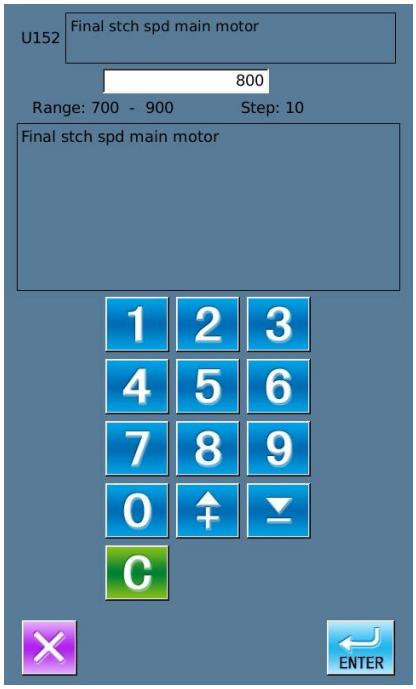
⑤ **Have Access to Parameter Setting Interface**

In Level 2 of Setting Mode, press  to have access to the interface for setting U level parameters (as shown in right picture).

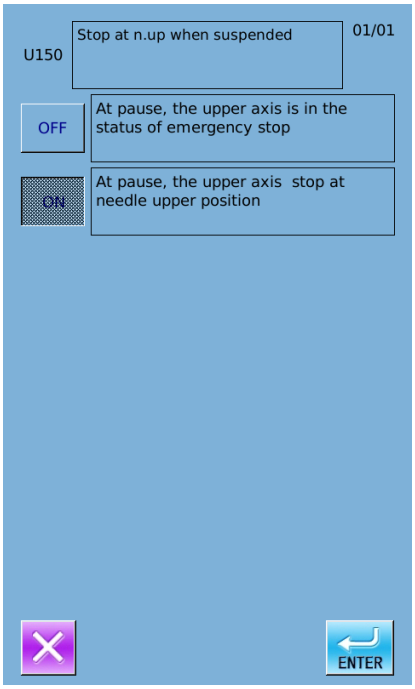
Press  to quit the setting interface

When some parameters are changed, the system will display the “Modified” in the parameter setting interface.

Select the parameter for changing; Then the system will enter the setting status. The parameters are separated as “Data Input Type” and “Selection Type”. Please refer to the example at below:



Input Type



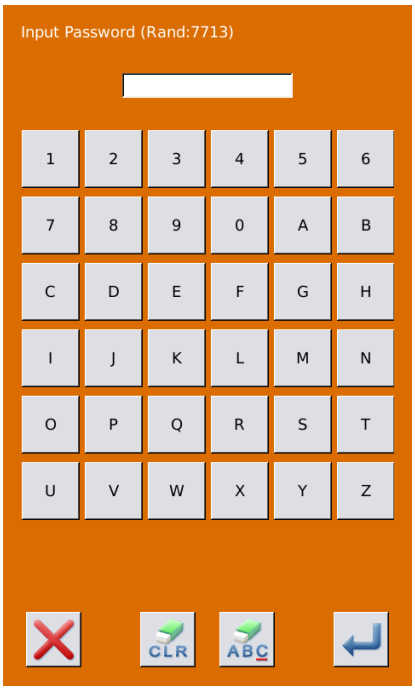
Selection Type

⑥ Parameter Encryption

Press "Encryption" to enter the password input interface.

Press CLR to clear all the content

Press ABC to erase one figure at each pressing



⑦ **Change the Parameter**

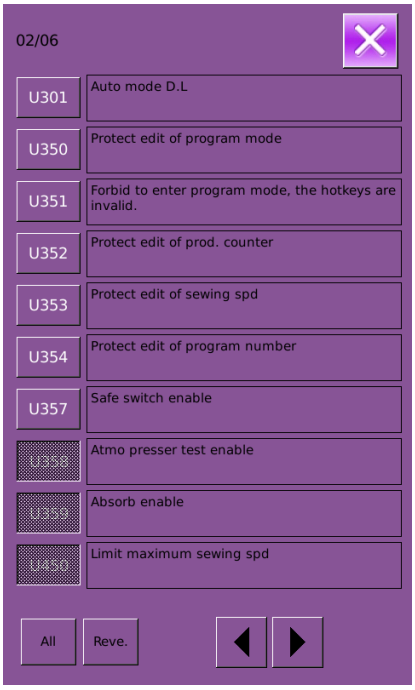
Input the right password to enter the interface for parameter encryption

A、Select the parameter for encryption

B、Press【Select All】to attach password to all the parameters

C、Press【Reverse】 to select parameter for encryption in reverse way

D、Press  to quit the encrypting function



⑧ **Check the changed parameter**

D、When parameter is changed, the system will display “Modified” key at parameter setting interface.

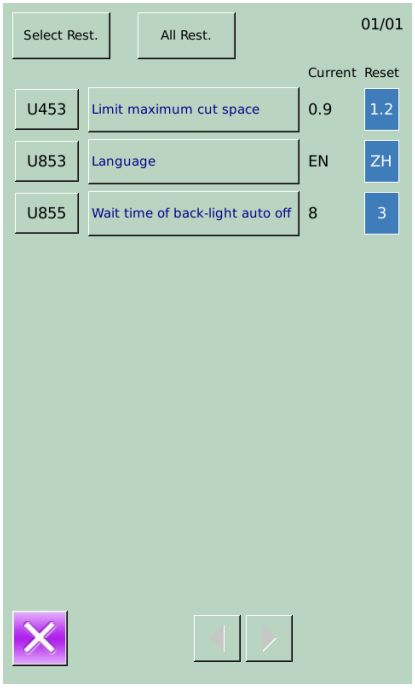
E、In the parameter setting interface, press【Modified】 to check the changed parameters.

At first, the system will ask user to input the password. For the operation at password input interface, please refer to the “A” at ②. After inputting the right password, user can enter the interface for inquiring changed parameters.

F、Under the interface of changed parameter inquiry, user can find the list containing all the changed parameters with their current value and default value.

In that interface:

- Press【All Rest】 will restore all the changed parameters to their default values
- Click Parameter Name, like【Limit maximum cut Space】 and then press【Select Rest.】to restore this parameter to the default value. User can select many parameters at here.
- Press Parameter Number, like【U453】 to enter the parameter setting interface, where user can reset the parameter value.



4.6.2 List of Parameters at U Level

No.	Functions	Description	Range	Default Setting
U001	1 Pedal/2 Pedals Switch	1: Step the start pedal to lower the presser, and the sewing machine starts. 2：Press the presser switch to lower the presser. Then step the start pedal to start the sewing machine.	1~2	2
U051	Delay time before cut for 1 Pedal model	For automatic sewing in Cut-before-Sewing mode, this parameter will determine the delay time of knife action after the pedal 1 is stepped	0~800	0
U056	Lower clamp when move front	0：OFF After sewing, the cloth-feeding board moves to the position set before with the presser at up position; the presser keeps up at searching the original 1：ON After sewing, the presser doesn’t rise until the cloth-feeding board moves to the position for laying cloth; during the process of searching origin, the presser keeps going down when each axis return to origin. The presser doesn’t rise until the frame goes to the position for laying cloth.	0~1	0
U057	Enable clamp at test	0：OFF The raise of presser is forbidden in test mode 1：ON In Test mode, the following operations can make presser go up： （A）：Manual switch type or double pedal type: press presser switch （B）：pedal type：return to pedal In restarting the test mode, the following operations have to be done for lowering the presser （A）：Manual switch type or double pedal type: press presser switch （B）：pedal type：return to pedal	0~1	0
U058	Clamp action after sewing	0：Up Presser goes up when the automatic sewing is finished	0~1	0

No.	Functions	Description	Range	Default Setting
		1：Down Presser keeps going down when the automatic sewing is finished. Please perform the following operations when the presser rise: （A）：Manual switch type or double pedal type: press presser switch （B）：pedal type：return to pedal		
U150	Stop with needle up at pause	0: After activating emergency stop, the main shaft stops immediately at any position; 1: After activating emergency stop, the main shaft stops at needle upper position (normal stop position)	0~1	1
U152	Final stch spd main shaft	Set speed of the last stitch	700~900	800
U153	Last speed main shaft	Set the stop speed	250~450	350
U156	Stop angle main shaft	The stop control section will be prolonged when this value goes up.	2.5~17.5	11.0
U256	Interval of origin detect	0：OFF Do not detect origin after sewing 1~9：Detect the origin position after sewing in certain times.	0~9	0
U301	Parameter confirmation column in Auto Mode	Make the quick parameter setting		1
U350	Forbid Program Mode	Determine whether to lock pattern, and pattern cannot be changed after setting this parameter		0
U351	Forbid Cycle Mode	Set the validity of the cycle mode, to determine whether to allow C pattern setting		0
U352	Forbid to change counter	0：OFF General Conditions 1：ON Forbid to change the value in products counter	0~1	0
U353	Forbid to edit sewing speed	Determine whether to allow speed setting, that is, the adjustment of the maximum speed		0
U354	Forbid to edit the program code	Determine whether to allow pattern number modification		0
U355	Forbid to change to Cut-before-Sewing	Determine whether to allow cut-before-sewing, 0: Yes, 1: No	0~1	0

No.	Functions	Description	Range	Default Setting
U356	Forbid to change to Cut-after-Sewing	Determine whether to allow cut-after-sewing, 0: Yes, 1: No	0~1	0
U359	Waste material collection	Set the validity of waste material collection, 0: invalid, 1: valid	0~1	0
U357	Safe Switch	0：OFF Safe Switch Invalid 1：ON Safe Switch Valid	0~1	1
U450	Max sewing speed	Set the Max sewing speed	1000~2700	2700
U451	Max cycle program number	Set the number of C pattern	0~9	9
U452	Product count for cycle pattern	0: Count after sewing a pattern 1: Count after sewing a C pattern	0~1	0
U453	Max knife interval	Set the max knife interval	0.5~1.0	0.5
U454	Max linear bar-tacking length	Set the max length of linear bar-tacking	6~9	6
U455	Additional needle swing at Non-cut	If the Non-cut is used, the needle swing will be added automatically.	0~1.0	0
U456	Adjustment of needle swing at start	Set adjustment of needle swing at sewing start	-1.0~0 mm	0
U457	Adjustment of main shaft speed	Adjust the speed of the main shaft	-900~0 rpm	0
U458	Bar-tacking vertical turning speed	Set the speed at the start of the sewing of the linear bar-tacking	200~900rpm	900
U550	Time for air-hammer ON	The larger value, the longer contact time between air-hammer and knife will become.	25~200	25
U551	Air-hammer origin height	In readiness status, Error code E650 will be activated when the value of air-hammer position sensor is smaller than this value. (only effective when the air-hammer origin error detection is turned on)	150~170	160
U552	Air-hammer origin error detection	0：OFF No air-hammer origin error detection (used when the air-hammer position sensor is down) 1：ON Have air-hammer origin error detection	0~1	1
U553	Determine air-hammer rise position by time	0：OFF According to position of air-hammer to detect the lowering of air-hammer 50~500：Detect the lowering of air-hammer according to time（used when the air-harmer position sensor is down）	0~500	0
U554	Determined air-hammer	0：OFF Determine the position of	0~500	0

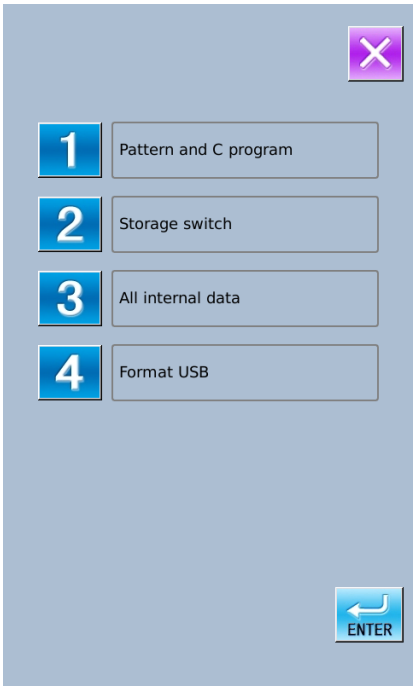
No.	Functions	Description	Range	Default Setting
	lowering by time	air-hammer for lowering. 50~500：Detect the lowering of the air-hammer according to time (used when the air-hammer position sensor is down.)		
U555	Increase of leftover upper thread	0：OFF General Conditions 1~3：Because only the sequence delay of trimming upper thread is set, the leftover upper thread may be increase after sewing.	0~12	0
U556	Time for loosing upper thread	The larger value, the longer the time for loosing upper thread after thread-trimming.	0~100	50
U557	Upper thread-loosing Off Sequence	0~100：the larger value is, the later the thread-loosing OFF time after trimming will be.	0~100	50
U558	Forbid to use bottom thread trimmer device	0：OFF General Conditions (Bottom thread trimmer device is activated） 1：ON Forbid to use bottom thread trimmer device	0~1	1
U559	Neglect of bottom thread knife sensor and counter	0：OFF Detect the bottom thread knife device is off according to the OFF sensor of bottom thread trimmer 5~50：Detect the bottom thread knife device is off according to time. Set this parameter with a step at 5ms	0~50	0
U560	Bottom thread-trimming time	0~100：the larger value is, the later the thread-trimming time will be.	0~100	0
U561	Upper thread-breakage sensor	Not available		0
U562	Stitch number before action of upper thread-breakage sensor	Not available		5
U563	Stitch number for judging upper thread-breakage	Not available		4
U564	Upper thread-catching device	Not available		0
U565	Upper thread-catching close time correction	Not available		0
U576	Upper	Not available		10

No.	Functions	Description	Range	Default Setting
	thread-catching open time			
U577	Frame-moving Method	0~5 ：select different frame-moving method	0~5	1
U578	Frame-moving adjustment 1	-50~50：Adjust the XY frame-moving angle	-50~100	0
U579	Z axis frame-moving adjustment	-50~50：Adjust Z axis frame-moving angle	-50~50	0
U580	Upper thread taking-up action time	0~200：Start time adjustment of upper thread taking-up	0~200	0
U581	Upper thread tension adjustment	0~250：Adjust upper thread solenoid current	0~250	230
U582	Presser boost air-hammer action interval	Set the time for the action of presser boost air-hammer after the action of main air-hammer	0~100 ms	50
U583	Waste collection air valve action time	Set the action time of waste collection air valve	200~800ms	500
U584	X frame-moving time adjustment	Adjust the frame-moving time of X axis	-3~5ms	0
U585	Y frame-moving time adjustment	Adjust the frame-moving time of Y axis	-5~5ms	0
U586	Fast moving time adjustment	This value is used to adjust the speed of the fast moving of the cloth-feeding board; the smaller the value is, the faster the cloth-feeding board moves.	100~-120	-100
U588	Frame-moving adjustment 2	Not available		0
U650	Time to buzzer stop/fan detection	This value is to set the buzzer status in case of error alarm; however, as for ZOJE 9820, this value is to control the detection of the cooling fan status (EB028); when set as 0, to activate the detection, otherwise not.	0~15S	0
U651	Motor excitation status at error	This value is used to control whether to loose X/Y/Z axis when control system reports error	0~1	0
U752	Adjustment of X position on knife	The set value is the adjustment of X position on knife, which will be added into entire pattern program.	-0.50~0.50	0
U850	Sewing machine head configuration	0：-00 Set configuration as -00 1：-01 Set configuration as -01 2：-02 Set configuration as -02	0~2	0
U852	Radial Hole Presser	0：OFF Use general presser (except that of radial hole) 1：ON Use the special program for	0~1	0

No.	Functions	Description	Range	Default Setting
		radial hole presser. The displayed is the special parameter for radial hole.		
U853	Language	0：Chinese 1：English	0~1	0
U854	Backlight auto Off	Whether to activate backlight auto off	0~1	0
U855	Backlight auto off wait time	Set the waiting time of the backlight auto off		3
U856	Button display style	Set the display style		0
U857	Voice Volume	Set the voice volume of the buzzer		0
U858	Password setting/lamp brightness control	Set whether password is needed to start the machine.	0~5	0
U911	Air hammer down detection adjustment	Set adjustment of hammer lowering detection	0~60	15
U912	Main shaft motor type/Y axis origin searching method	Not available to machines of other manufacturers and only open to ZOJE 9820, for its Y axis sensor used to be installed at the front, but now is installed at the back after finalizing of the machine. When set as 1, the sensor shall be installed at the back, but when set as 0, the sensor shall be installed at the front under the cloth-feeding board.	0~1	ZOJE, SHNJA: 1 Others: 0
U913	DIP1	Temporary adjusting parameter（reserved）	-100~100	0
U913	DIP2	Temporary adjusting parameter（reserved）	-100~100	0

4.7 Initialization of Parameters

③ In level 2 of setting mode, press  to have access to interface of parameter initialization, as shown in right:



User can select:

（1）LEVEL1：Para. And C Program (Level S pattern parameter and C pattern cycle program)

（2）LEVEL2：Storage Data (Including U level parameters)

（3）LEVEL3：All Internal Data

（4）LEVEL4：Initialize U disk

The detailed initialization content is at below

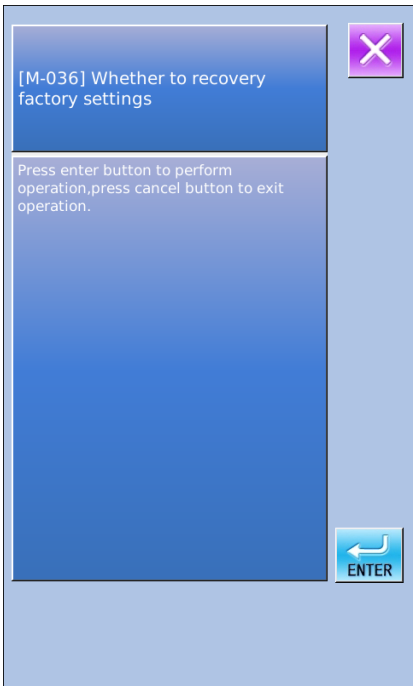
Level, Content & Clear of Initialization			
	LEVEL1	LEVEL2	LEVEL3
Program Content	Default value	—	Default value
Cycle program	Clear	—	Clear
Storage switch	—	Default value	Default value
Program code	1	—	1
Parameter code	1	—	1
Production counter	—	—	0
Mode	Program	—	Program
Position for locating cloth	Built-in	—	Built-in
Knife action	OFF	—	OFF

④ Select the parameter for initialization, then press 

for confirmation.

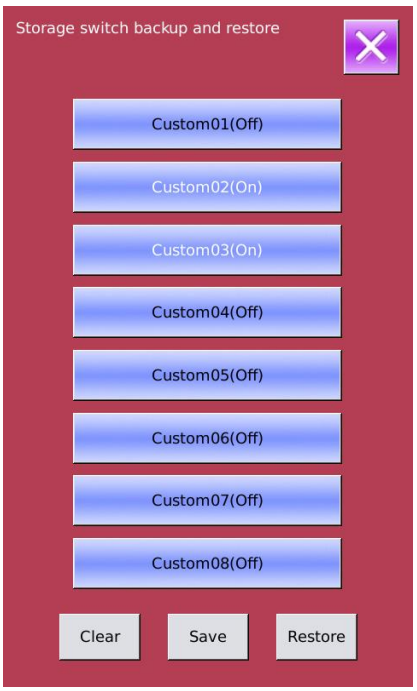
The right interface will be displayed on the screen, press 

to initialize the parameter.



4.8 Parameter Back-up & Recovery

User can save 8 groups of U level parameter for future use。

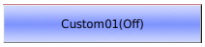
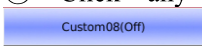


In setting mode level 2, press  to enter the interface of parameter back-up & restoration, as shown in right:

Clear：Clear all the customized parameters that are saved.

Save：Save current parameters

Restore：Restore the current parameters

① Click any key among  ~  to set the position for saving the parameter. And then press「Save」to save that parameter.

② Check the content on「Custom xx（On/Off）」. If「On」is displayed in bracket, that means this position has the user parameter, for an example 

③ Select the button with parameters, press「Restore」to reload the corresponding parameter values

④ Press「Clear」to delete all the saved parameters

5 Appendix 1

5.1 List of Warning Information

Malfunction code	Name of Malfunction	Method for Settlement
System Malfunction		
E-001	IPM over-voltage or over-current	Turn Off Machine
E-002	Supplementary device (24V) over-voltage	Turn Off Machine
E-003	Supplementary device (24V) low-voltage	Turn Off Machine
E-004	EEPROM Error	Turn Off Machine
E-005	Motor running error	Turn Off Machine
Special Malfunction		
E-006	Press Pause key at ready status	Release pause key
E-007	Press Pause key at sewing status	Press RESET
E-008	Pause Key bad connection	Turn Off Machine
E-009	Start Switch is held or bad connection at start switch	Release the start switch or turn off machine. And check the connection
E-010	Presser Switch is held or bad connection at presser switch	Release the start switch or turn off machine. And check the connection
E-011	Machine head is tilted.	Turn Off Machine
E-012	Needle bar upper position abnormal	Turn wheel to upper position
E-013	Synchronization signal detector connection error	Turn Off Machine
E-014	Can not find X feeding motor origin. X feeding motor abnormal or bad connection at X origin sensor	Turn Off Machine
E-015	Can not find Y feeding motor origin. Y feeding motor abnormal or bad connection at Y origin sensor	Turn Off Machine
E-016	Can not find θ feeding motor origin. θ feeding motor abnormal or bad connection at θ origin sensor	Turn Off Machine
E-017	IPM Over-current	Turn Off Machine
E-018	IPM Over-current	Turn Off Machine
E-019	Program version of main controller or motor error.	Turn Off Machine
E-020	Upper thread-breakage	Press RESET
E-021	Bottom thread-trimming device not work or bottom thread-trimming sensor abnormal	Turn Off Machine
E-022	Hammer is lowered or hammer position sensor is abnormal	Turn Off Machine
E-023	Hammer is not lowered or hammer position sensor is abnormal	Turn Off Machine
E-024	Power over-voltage	Turn Off Machine
E-025	Stepping motor over-voltage	Turn Off Machine
E-026	Power low-voltage	Turn Off Machine
E-027	Stepping motor over-current	Turn Off Machine

Malfunction code	Name of Malfunction	Method for Settlement
E-028	Fan not work	Turn Off Machine
E-029	Hammer can not go down	Turn Off Machine and Increase Knife Pressure
E-030	Stepping board communication abnormal	Turn Off Machine
E-031	X motor running abnormal	Turn Off Machine
E-032	Y motor running abnormal	Turn Off Machine
E-033	Cloth board over--range	Turn Off Machine
E-034	Z motor running abnormal	Turn Off Machine
E-035	Motor close loop abnormal	Turn Off Machine
E-036	Main-shaft 0 position signal error	Turn Off Machine
E-037	Main-shaft encoder error	Turn Off Machine
E-038	Main-shaft stop abnormal	Turn Off Machine
E-039	Sewing stop abnormal	Turn Off Machine
E-040	SPI communication busy	Turn Off Machine
E-041	Stitch signal error	Turn Off Machine
E-042	X motor busy	Turn Off Machine
E-043	Y motor busy	Turn Off Machine
E-044	Z motor busy	Turn Off Machine
E-045	Pattern stitch number error	Turn Off Machine
E-046	Main-shaft speed abnormal	Turn Off Machine
E-047	No encryption device	Turn Off Machine
E-048	Wrong password 1	Turn Off Machine
E-049	Wrong password 2	Turn Off Machine
E-050	Low pressure	Turn Off Machine
E-051	X motor over-current	Error reported from ASC511/MASC511 stepping board, indicating abnormal current of X motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.
E-052	Y motor over-current	Error reported from ASC511/MASC511 stepping board, indicating abnormal current of Y motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.
E-053	X motor position error	Error reported from ASC511/MASC511 stepping board, indicating abnormal position of X motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.
E-054	Y motor position error	Error reported from ASC511/MASC511 stepping board, indicating abnormal position of Y motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.

Malfunction code	Name of Malfunction	Method for Settlement
E-055	X motor over-speed	Error reported from ASC511/MASC511 stepping board, indicating abnormal speed of X motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.
E-056	Y motor over-speed	Error reported from ASC511/MASC511 stepping board, indicating abnormal speed of Y motor. Please check whether the red LED lights surrounding stepping board DSP1 are on.
E-057	DSP1 Communication Abnormal	Communication error between the main board and the stepping board of ASC511/MASC511 system, and failed validation of SPI communication Check the three LED indicators of stepping board MD1; if all are on, it means the stepping board fails to validate the communication data; if all are off, it means the main control board fails to do so
E-058	Z motor over-current	Error reported from ASC511/MASC511 stepping board, indicating abnormal current of Z motor. Please check whether the red LED lights surrounding stepping board DSP2 are on.
E-059	Not Available	
E-060	Z motor position error	Error reported from ASC511/MASC511 stepping board, indicating abnormal current of Z motor. Please check whether the red LED lights surrounding stepping board DSP2 are on.
E-061	Not Available	
E-062	Z motor over-speed	Error reported from ASC511/MASC511 stepping board, indicating abnormal current of Z motor. Please check whether the red LED lights surrounding stepping board DSP2 are on.
E-063	Not Available	
E-064	DSP2 Communication Abnormal	Communication error between the main board and the stepping board of ASC511/MASC511 system, and failed validation of SPI communication Check the three LED indicators of stepping board MD2; if all are on, it means the stepping board fails to

Malfunction code	Name of Malfunction	Method for Settlement
		validate the communication data; if all are off, it means the main control board fails to do so

5.2 Hint List

No.	Name	Content
M-001	Set value too large	Please input value within range
M-002	Set value too small	Please input value within range
M-003	Parameter save error	Press Enter to recover default setting
M-004	Communication error	Communication error between operation panel and control box
M-005	Operation head not match to control box	Please check the model and the software version
M-006	Clock error	The hardware clock is down, please contact manufacturer for repair
M-007	Wrong password	Input again
M-008	Wrong user ID	Input again
M-009	Fail to confirm password	Input password again
M-010	Can not change system time	Periodical password has been set, can not change system time
M-011	Password file input error	
M-012	Password file load error	
M-013	Password save successful	
M-014	Clear all password failed	Can not delete password file
M-015	Fail to clear password	After clearance of password, the input of file has problem
M-016	Password file is deleted without authorization	Password file is deleted without authorization, please turn off machine
M-017	Can not input blank	Input password again
M-018	Current password not match	Input current password again
M-019	New password not match	Input new password again
M-020	Periodical password is same to super password error	Input password again
M-021	Enter touching panel correction mode	Are You Sure？Yes：enter No：X
M-022	Correction successful	Correction is successful, please restart machine
M-023	Correction failed	Please perform correction again
M-024	SRAM initialization	Clear all the data within SRAM, please turn off machine and restore the DIP switch
M-025	Turning off	
M-026	No warning record	
M-027	Clear warning record	Are You Sure？Yes：enter No：X
M-028	USB is pulled out	USB is pulled out
M-029	Save software version successful	Software version is saved to the root directory of U disk
M-030	Counter at set value	Press ENTER to release it

No.	Name	Content
M-031	Over sewing range	Please make sure the pattern is within the sewing range
M-032	Stitch number over range	Please reduce patter stitch number
M-033	Load default patterns	No pattern in memory, please load default patterns
M-034	Pattern data error	Current pattern data error, it will be replaced by default patterns
M-035	Pattern information file open failed	Restore to default pattern configuration
M-036	Restore to default setting	Press Enter to perform operation; Press ESC to quit
M-037	Parameter recovery successfully	Successful recovery of parameter. Please restart machine
M-038	Restore all the settings	Are You Sure？Yes：enter No：X
M-039	Restore the selected items	Are You Sure？Yes：enter No：X
M-040	Not select an item	Please select one or several parameters
M-041	Successful	Current operation is successful
M-042	Failed	Current operation is failed
M-043	Initialize U disk	Press Enter to perform operation; Press ESC to quit. The initialization will delete all the files in U disk
M-044	Initialize memory	Press Enter to perform operation; Press ESC to quit. The initialization will delete all the files in memory
M-045	Please turn off machine	Current operation is finished, please restart machine
M-046	Not select update item	Please select at least one item for update
M-047	Selected item for update is not existed	If the item has no update file, the system will cancel the selection. If user wants to update the rest, please confirm again
M-048	Update successful	Update successful, please restart machine
M-049	Verification failed at updating main control software	
M-050	Copy failed	Check the room of memory
M-051	Copy failed,	Check whether the U disk is pulled out
M-052	File I/O error	File I/O error
M-053	Parameter transfer	Are You Sure？Yes：enter No：X
M-054	Pattern-designing data error	
M-055	Cyclic sewing pattern open error	Pattern file has mistake
M-056	Open file failed	Open file failed
M-057	Clear all customized parameters	Are You Sure？Yes：enter No：X
M-058	Over set range	

5.3 Malfunction Settlement

Malfunction	Reasons	Solutions
Thread-breakage	Thread-tension is so high.	Adjust the thread-tension to proper level
	The needle is not properly installed.	Install the needle in the right direction
	Compared to needle, the thread is so thick.	Select the thread fitting to the needle
	The needle doesn't match to the bend needle.	Adjust the pitch between the needle land bend needle, as well as the height of needle rod, bend needle and yarn divider.
	There is damage or rags on needle, bend needle, yarn divider, winding plate or thread rail.	Polish or replace the rough parts.
	Threading method is wrong.	Thread correctly.
Needle-jumping	The upper thread tension is too large or too small.	Adjust the upper thread tension to a proper level
	The needle tip is broken or crooked.	Replace for a new needle
	The interval between needle and bend needle tip is incorrect.	Adjust the interval between the needle and bend needle tip to a proper level.
	The needle, bend needle and yarn divider don't match to each other.	Adjust the relationships among these three.
	The needle and needle stand are not adjusted properly.	Properly adjust the needle stand.
	The bend needle tip is blunt.	Polish it or replace it.
	The needle is not properly installed.	Install the needle in right direction.
	The needle is too thin.	Select needles fit the sewing conditions
Needle-breakage	The needle is crooked	Replace a new needle
	The needle, bend needle and yarn divider don't match to each other	Adjust the relationships among these three.
	The needle and needle stand are not adjusted properly.	Properly adjust the needle stand.
	The needle is too thin.	Select needles fit the sewing conditions
Upper thread is not cut off.	The upper knife is not so sharp	Replace a new upper knife
	The pressure is too low to let upper knife cut to bottom.	Adjust the pressure
	The upper knife can't catch the upper thread.	Install a upper thread bend needle, and cut the thread at the stitch before the last one
	At the last stitch, the upper knife can't catch the upper thread due to the needle-jumping	Refer to "Needle-jumping", try to avoid the needle from jumping
	The position of upper knife is improper	Adjust the position of upper knife
Bottom thread is not cut off.	The knife is not so sharp.	Replace a new knife.
	The pressure is too low to let upper knife cut to bottom	Adjust the pressure
	The position of knife is improper	Adjust the position of the knife and thread-scanner
	The pressure on knife for trimming bottom thread is too low	Adjust to a proper knife pressure level

Stitch-missing at sewing start	Can't hold bottom thread.	Adjust the bottom thread holder (configuration 01) or bottom thread pressing board (configuration 02)
	The leftover part of the upper thread after trimming is too short.	Adjust the assistant thread holder.
	The released upper thread is far from sufficient.	Adjust the amount of released upper thread.
Cutting function abnormal	Low pressure on cutting device	Adjust the pressure to a proper level
	Knife doesn't properly contact to the cutting hammer	Polish the surface of cutting hammer
	The knife is not so sharp.	Replace a new knife.
Low thread density	The tension of upper thread is so strong or so weak	Adjust the upper thread tension to a proper level.
	The tension of bottom thread is so strong or so weak	Adjust the bottom thread tension to a proper level.
	The strength and stroke of take-up spring are improper.	Adjust the strength and stroke of take-up spring.

6 Appendix 2

6.1 Installation Size of Control Box

At present, there are three kinds of installation methods for the computerized controllers of our company, which are 4-hole installation, 3-hole installation and 4-slot installation. For the detailed size, please refer to the picture as below:

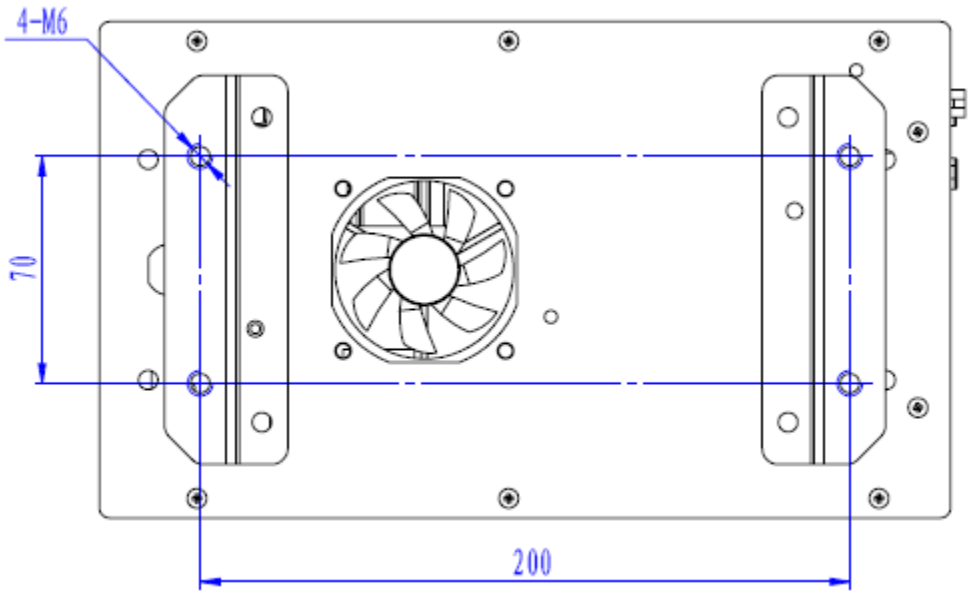


Figure 1 Size of 4-hole Installation

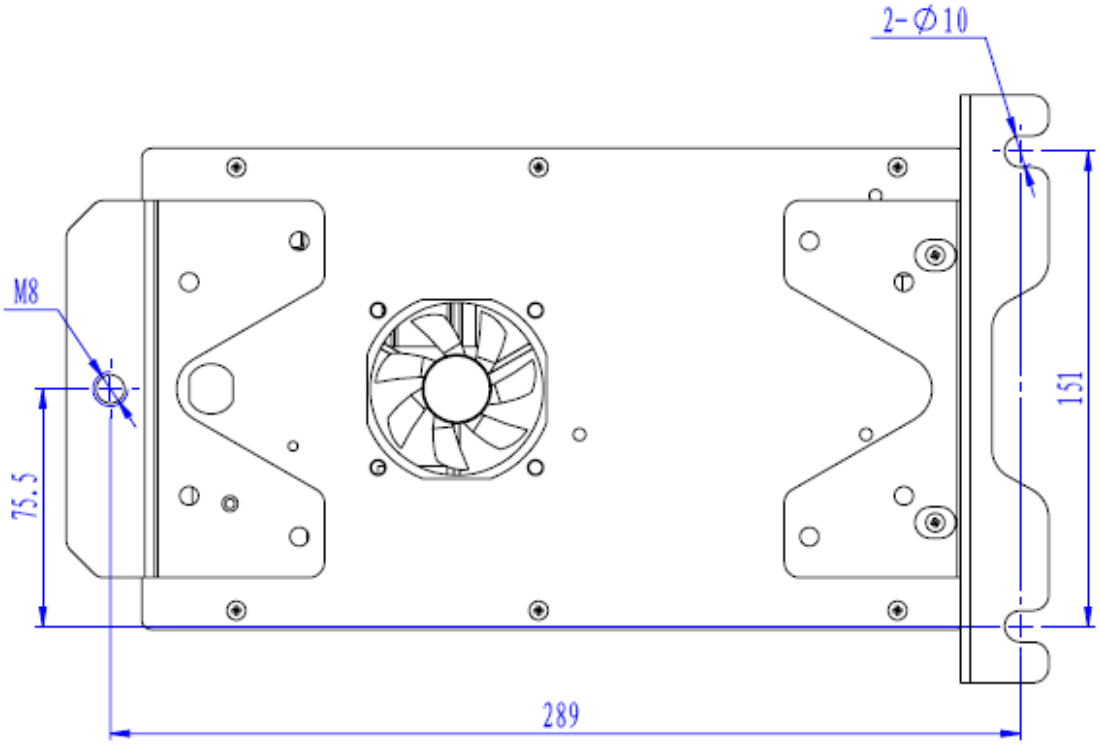


Figure 2 Size of 3-hole Installation

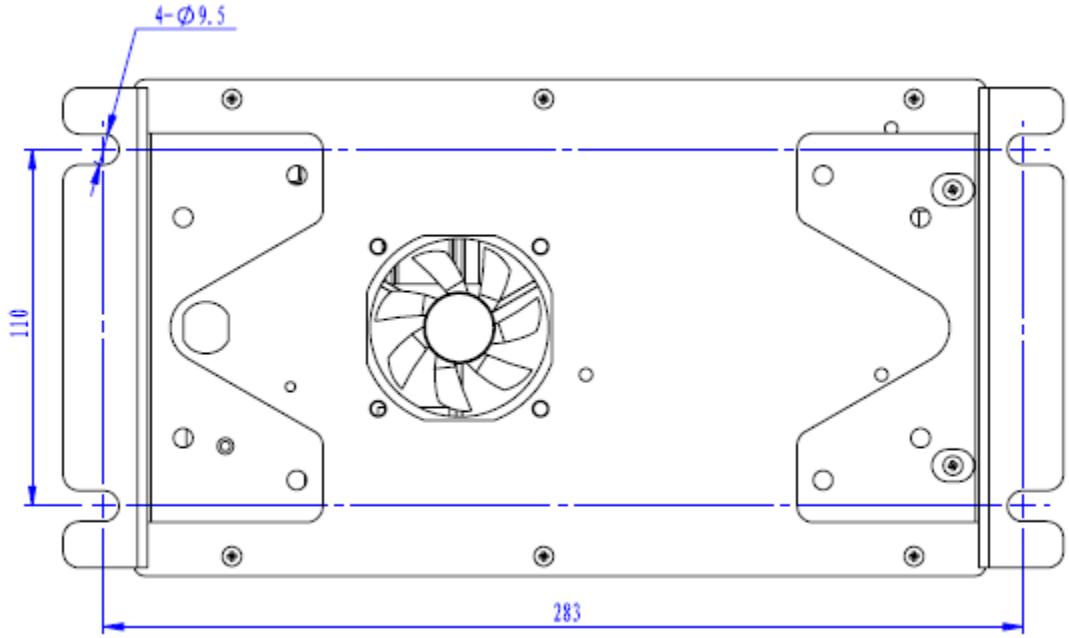


Figure 3 Size of 4-slot Installation

6.2 Installation Size of Control Box

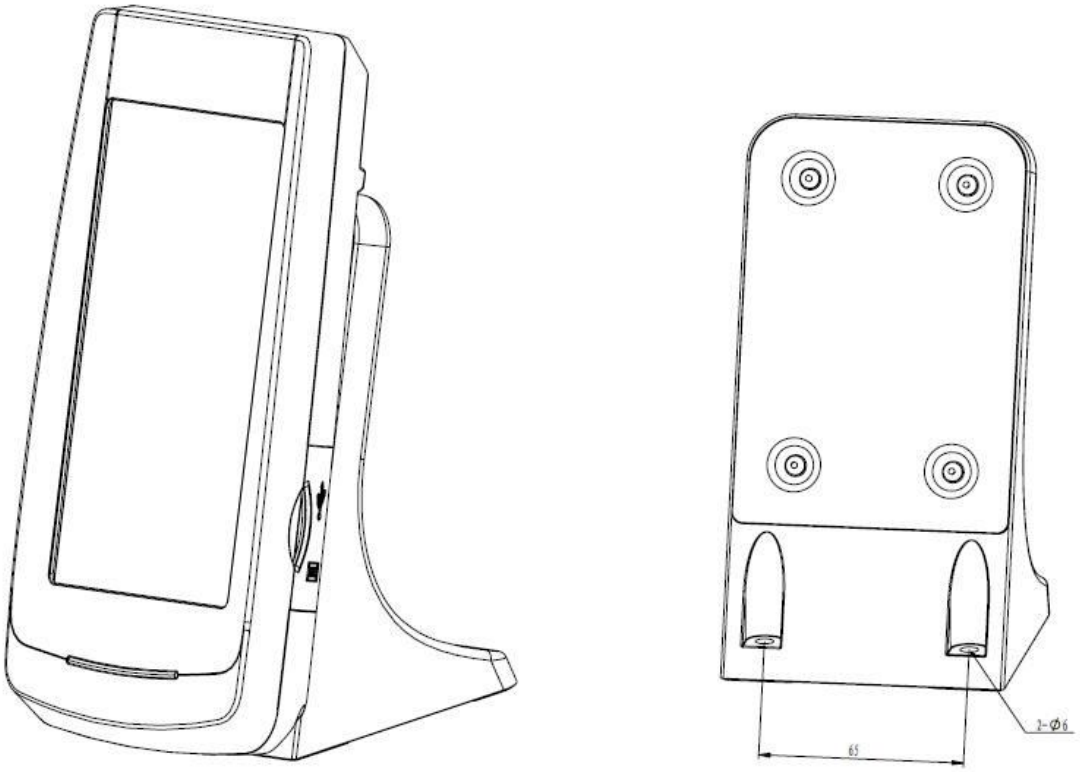
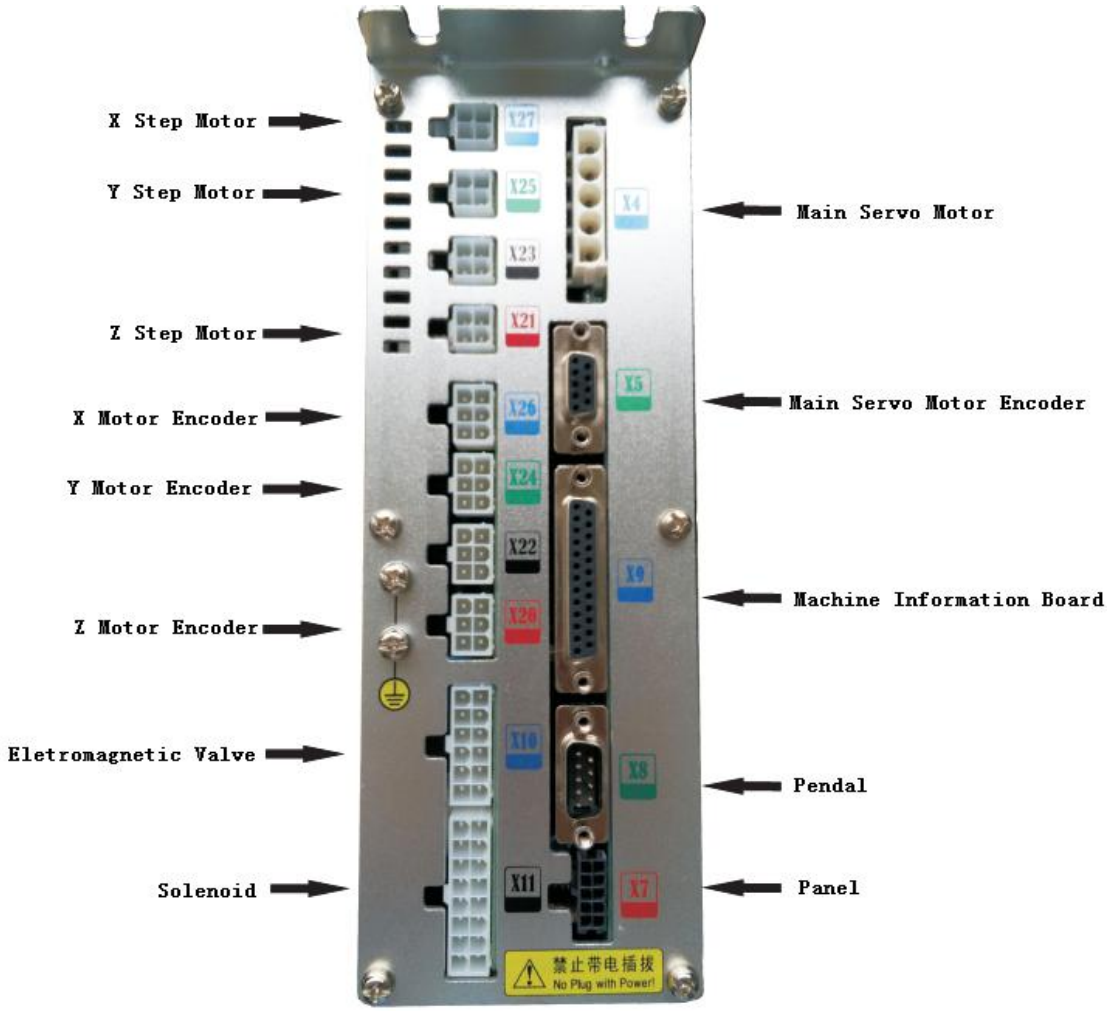


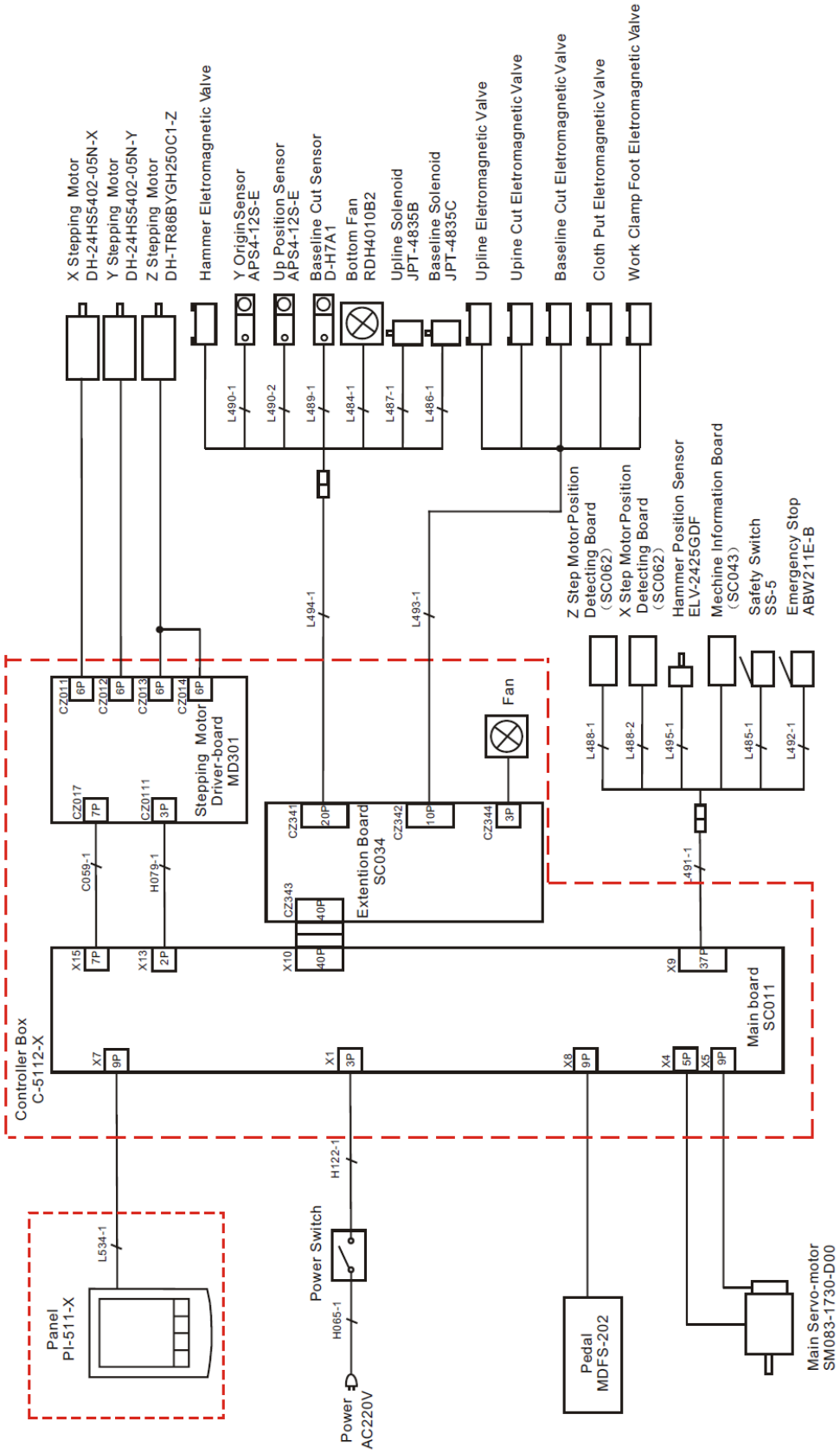
Figure 4 Installation Size of Control Box

6.3 Diagram of Connection of the External Cable and Control Box

Please check the corresponding symbol on both the external cable and control box. Follow the symbol to make the connection.



6.4 SC511(9820) Eyelet Buttonhole Machine System Diagram



6.5 MASC511 Eyelet Buttonhole Machine System Diagram