产品使用说明书

Manual book

JK-T1900G

201 套结钉扣机（液晶按键 N）

201Bar-tacking and Button Sewing Machine
(LCD Keys N)

1 控制面板图示及说明

A. 液晶显示屏
显示图案编号、形状等各种数据。

B. 准备键
控制面板的设定编程状态和缝纫机实际动作的缝制状态的变换键。

C. 复位键
解除异常、将设定值返回到初期值时使用。

D. 模式键
设置参数或存储花样的开关键。

E. 压脚卷线键
提升、下降压脚。上升时，把针杆移动到原点；下降时，把针杆移动到右侧。在卷线时使用。

F. 项目选择键
切换选择不同图案类型、菜单项或参数。

G. 数据变更键
修改图案编号或参数值，在试缝模式中单针移动送布。

H. 编辑键
显示编辑画面，选择项目，或者显示详细画面。

I. 返回键
返回前一个画面。

J. P 花样设置键

设置 P 花样并将其存储，存储后的 P 花样通过按此键就可立即进行缝制。

K. 缝制准备 LED

缝制模式时点亮。

L. C 花样设置键

设置 C 花样并将其存储，存储后的 C 花样通过此案件就可立即进行缝制。

M. 压脚找原点键

在 LED 灯灭的状态下，压脚放下，XY 步进找原点。

N. PC 花样切换/单步缝制

在 LED 灯灭的状态下，进入 P/C 花样列表，在 LED 灯亮的状态下，压脚放下，XY 步进找原点。

2 系统检测模式

通过启动该模式，可进行保养检查操作。

1） 在缝制灯熄灭的状态下，按住模式键 M 持续 3 秒，面板蜂鸣器会鸣响一声，然后按项目选择键 选中"11 系统检测"，再按编辑键 可以进入调试模式。	

2） 按项目选择键 可以变更功能测试程项目，按编辑键 进入测试项目，每个序号代表的功能如下表所示：

功能测试项目	功能	内容
01 系统输入检测	输入信号检验	以灯亮提示开关，传感器输入的状态。

02 XY 原点校正	XY 马达/原点传感器检验	显示 X/Y 马达寸动操作，原点检索操作以及 X/Y 原点传感器的状态
03 老化模式	连续运转	在设定连续运转条件后，移向连续运转模式。
04 主轴检测	主马达旋转数检验	设定旋转数、机器启动、显示实测旋转数。
06 压脚电机检测	压脚、切线马达/原点传感器检验	显示压脚、切线马达寸动操作，原点检索操作，以及压脚原点/压脚传感器的状态。
08 系统输出检测	输出信号检验	驱动输出电磁铁/气阀动作。
09 面板检测	检测 LED 与 LCD	检测面板显示屏和 LED 灯是否;正常。

3） 各功能测试如果按返回键 ⟜ 或模式键 M 的话，就会终止测试，返回到 2）

的状态;但是，如果使用过老化模式 1 次的话，就不能解除了，只有关闭电源才能结束。

3 P 花样与 C 花样

3.1 图案编号的设定

打开电源开关。

在画面的左上方图案 No. 被显示，图案形状、X/Y 放

大缩小率、线张力值、缝制速度也被显示出来。

按了数据变更键 ⊕⊖ 之后，可以变更图案 No. 。按

项目选择键 ◄► 进行花样模式切换;即:**内置花样、**

P 型花样和 C 型循环花样。
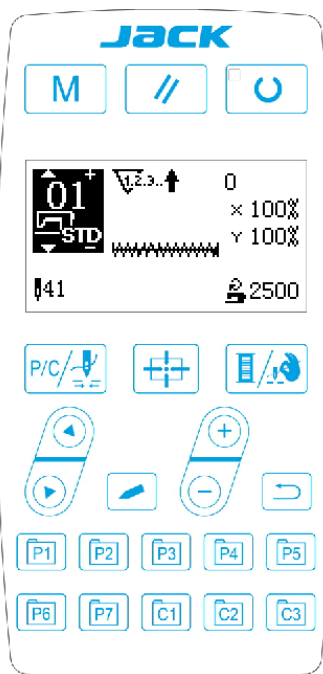
3.2 项目数据的设定

按了编辑键 ✎ 之后，项目数据输入画面被显示出来。

3

在画面的左侧显示出可以编辑的项目，在画面右侧显示出设定内容。

用项目选择键 选择项目，然后可以用数据变更键 变更设定内容，按 退出后自动保存。

(1)　X 尺寸的输入 请按项目选择键 ，显示出 C001X 尺寸。 请按数据变更键 ，显示出希望的数值。 X、Y 的尺寸输入，用存储器开关 U063 输入%或者从实际尺寸值进行选择。（默认值：%输入） **注意：设定超出压板允许缝制范围时，机针和布压脚会相碰，发生断针，非常危险。**	

4
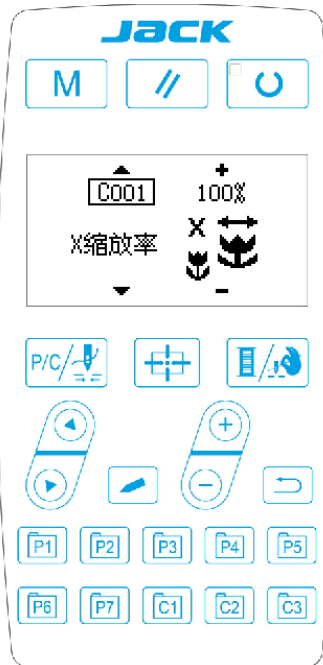
⑵　Y 尺寸的输入

请按项目选择键 ，显示出 C002Y 尺寸。

请按数据变更键 ，显示出希望的数值。

X、Y 的尺寸输入，用存储器开关 U063 输入%或者从实际尺寸值进行选择。（默认值：%输入）

注意：设定超出压板允许缝制范围时，机针和布压脚会相碰，发生断针，非常危险。
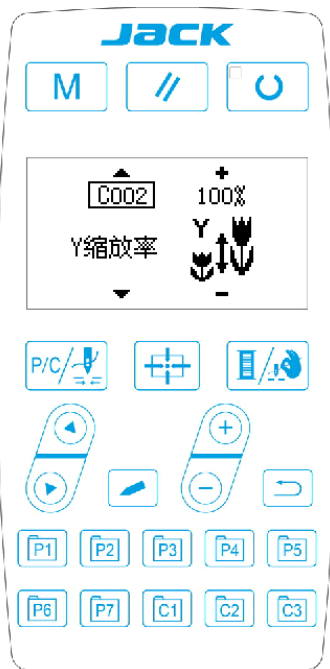
(3) 缝制速度的输入

请按项目选择键 ，显示出 C004 缝制速度。

请按数据变更键 ，显示出希望的数值。

输入的最大范围是存储器开关 U001 最高缝制速度的

数值。
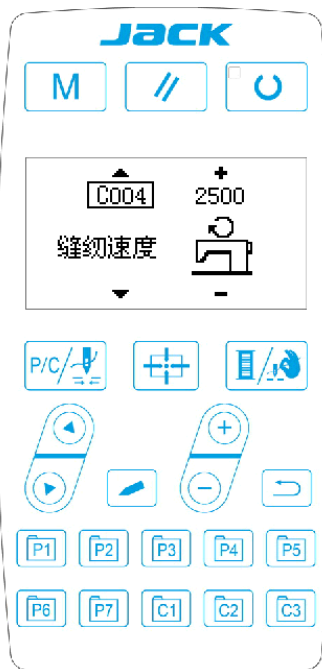
(4) 设定结束

按准备键 。

压脚移动→上升后准备键 LED 指示灯点亮，成为可以缝制的状态。

注意：按准备键压脚进行回花样起缝点过程中，压脚首先下降然后再移动，因此请注意不要夹到手指。

* 按准备键 之后，图案 No.、XY 扩大缩小率等设定值被记忆。

*再按次准备键 之后，准备键 LED 指示灯熄灭。可以变更各项目的设定。

* 请确认了图案 No.之后再使用。显示着图案 No.的状态下按了准备键 之后，会显示 M-306 异常错误。此时，请重新设定图案 No.。

注意：不按准备键 开关，关掉电源后，图案 No.、XY 扩大缩小率、最高转速的设定值均不能被记忆。

3.3 图案形状的确认

警告！

1. 选择图案后，请一定确认图案的形状。如果图案远离压脚，缝制途中机针会碰到压脚，弄断机针。

2. 确认图案形状时，请注意如果在针杆下降后的状态下按了＋／－键的话，针杆将自动地复位到上位置之后压脚才移动。

1) 按准备键，准备键 LED 指示灯点亮。 2) 按 P/C 键，显示出「形状确认画面」。	
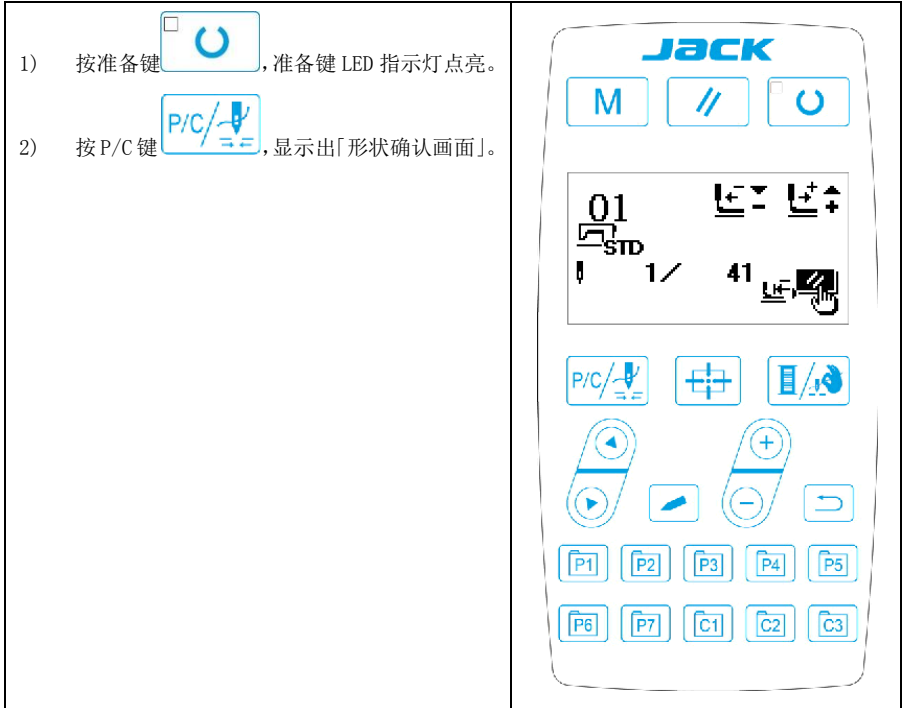
3.4 设置 P 花样与 C 花样
3.4.1 使用图案键进行缝制

可以把已经登记的图案（No.1~200）登记到 P1~P99 上。变更扩大缩小率、最高转速限制、线张力、缝制位置就可以登记，用图案 No. 的滚动窗口选择同样可以登记图案，可以一次地叫出 P1~P25。

＊选择了 P6~P25 时，用下表所示的 P1 P2 P3 P4 P5 键的组合（同时按）进行缝制。

3.4.2 往图案键上的登记

设定例：把图案 No.3、X 扩大缩小 50％、最高速度限制 2,000sti/min、图案位置右移 0.5mm、前移 1mm 的设定登记到 P2。

1) 打开（ON）电源，然后按模式键 【M】 。
（准备完了 LED 应该灭灯）进入方式设定（存储器
开关设定）。按项目选择键 ，把「04 登记 P
花样」设定为选择状态。按编辑键 ，显示图
案登记模式。

M   SEL:▲▼
01 系统U参数
02 计数器设定
03 普通花样锁
04 登记P花样

2) 按编辑键 ，然后请用数据变更键

 进行项目数据的编辑。

3) 按项目选择键 ，把标准图案设定为

No.3。按数据变更键 ，把 P-No.设定为 2。按

了准备键之后，P2 被登记，模式画面被显示出来。

按模式键 或者按返回键 。

4)
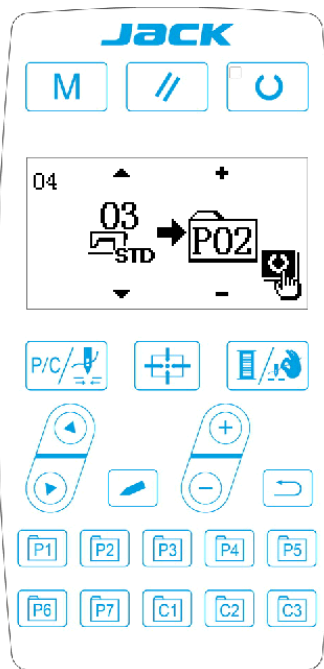
5) 分别进行设定，把 X 尺寸缩小率设定为「50」%，把 Y 尺寸缩小率设定为「80」%，把缝制速度设定为「2000」sti/min，把线张力设定为「50」。

6) 按了编辑键 之后，「X 放大缩小率」显示为 0.0。可以用 0.1mm 单位来设定 X 方向的移动量。用数据变更键 把数据变更为「0.5」。

7) 按了编辑键 之后，「Y 放大缩小率」显示为 0.0。可以用 0.1mm 单位来设定 Y 方向的移动量。用数据变更键 把数据变更为「－1.0」。

8) 按准备键 之后，设定结束。

9) 按模式键 M 。结束图案登记方式。

10) 按模式键 M 。结束方式设定，返回通常方式。

4 服务参数设置

服务参数有别于普通参数，一般禁止用户自行更改，这些参数提供给专业技术人员，供其调试时使用。

4.1 服务参数的开启和变更

在准备键 LED 指示灯熄灭的状态下，长按模式键 M 持续按住 3 秒，听到蜂鸣器响声后，就能对服务参数进行启动与变更。

服务参数的修改与普通参数相同。

4.2 服务参数列表

参数号	功能	调整范围	初值	备注
K001	脚踏板类型	0：模拟单踏板 1：数字单踏板 2：双踏板	0	

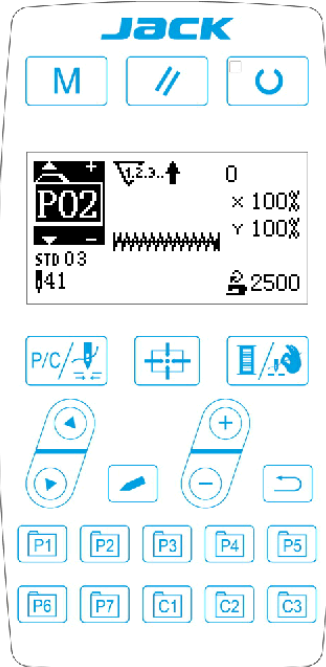| 参数号	功能	调整范围	初值	备注
		3：双踏板，但只运行踏板起控制作用		
K002	中压脚控制方式	0：无中压脚控制 1：未使用 2：电磁铁控制中压脚 3：机械控制中压脚	0	
K019	气动外压脚上升时间	0～90	30	
K021	标准踏板、踏脚开关位置	50～200	70	
K022	标准踏板、高低段行程开关位置	50～200	120	
K023	标准踏板、启动开关位置	50～200	185	
K027	踩踏板时压脚下降速度	100～4000pps	4000	
K028	踩踏板时压脚上升速度	100～4000pps	1500	
K029	缝制结束时切线压脚上升速度	100～4000pps	3000	
K043	切线时的机器旋转数选择	3～8	8	
K044	切线时在易于切线的方向选择有无送布的操作	0：无送布 1：有送布	0	
K045	切线时进行送布的针孔导向直径（可设定以 0.2mm 为单位）	16～40（1.6mm～4.0mm）	16	
K056	+X 方向（右侧）的移动限定范围	0～50mm	20	
K057	-X 方向（左侧）的移动限定范围	0～50mm	20	
K058	+Y 方向（后面）的移动限定范围	0～30mm	15	
K059	-Y 方向（前面）的移动限定范围	0～30mm	15	
K064	拨线方式选择	0：电磁铁拨线 1：电机拨线	1	
K066	压脚联动拨线操作脉冲数	30～60	45	
K074	压脚控制模式切换	0：气阀控制 1：电机控制	1	
K095	剪线角度	－10～10	0	
K097	暂停后的切线方式	0：自动切线 1：手动切线	1	
K102	X 步进电机全流参数	0～15	7	需重新上电生效
K104	Y 步进电机全流参数	0～15	11	需重新上电生效
K106	抓线步进电机全流参数	0～15	2	需重新上电生效
K108	压脚步进电机全流参数	0～15	14	需重新上电生效

参数号	功能	调整范围	初值	备注
K109	X 步进电机半流参数	0～15	7	需重新上电生效
K110	Y 步进电机半流参数	0～15	6	需重新上电生效
K111	压脚步进电机半流参数	0～15	5	需重新上电生效
K112	主轴停车补偿	－10～10	0	
K120	加润滑油报警针数	3000～12000	5000	单位：万针
K121	计数器锁定	0：可清零可加减； 1：可清零不可加减； 2：不可清零可加减； 3：不可清零不可加减	0	
K122	OC 长度微调	－128～128	0	
K123	OD 长度微调	－128～128	0	
K124	BD 长度微调	－512～512	0	
K125	OC 长度	1780～2380	2080	
K126	OD 长度	1440～2040	1740	
K127	BD 长度	430～630	530	
K128	步进驱动类型设定	0：DSP1 闭环，DSP2 闭环； 1：DSP1 开环，DSP2 闭环； 2：DSP1 闭环，DSP2 开环； 3：DSP1 开环，DSP2 开环；	0	需重新上电生效
K135	分线延时	－10～30	0	
K137	起针夹线器松开角度	－150～150	0	
K138	起针夹线器剪线后夹紧时间	－2～1	0	-2 表示关闭起针夹线器剪线后夹紧动作
K140	线张力控制方式	0：电子夹线 1：机械夹线	0	
K141	支线张力电磁铁吸合力度微调	－20～20	0	
K142	支线张力电磁铁保持力度微调	－40～40	0	
K150	机头翻起安全开关可以无效	0：普通 1：机头翻起安全形状无效	0	
K160	禁止反踩踏板急停	0～1	0	0：允许反踩急停 1：禁止反踩急停
K164	中压脚抬起高度	14～18	16	只有在 K02 设置为 3 时有效
K165	中压脚随动高度	0～10	3	只有在 K02 设置为 3 时有效
K166	中压脚随动同步	－10～10	0	只有在 K02 设置为 3 时有效
K172	断线检测针数设置	0～10	0	大于 0 表示断线

参数号	功能	调整范围	初值	备注
				后过多少针急停 0 表示关闭断线检测
K173	剪线动作方式设置	0：中捷 1900D 三段剪线 1：中捷 1900B 一段剪线	0	需重新上电生效
K174	剪刀位置传感器使能	0：禁用 1：开启	1	
K221	帽眼定位销 X 坐标	-600～600，单位 0.1mm	0	仅对帽眼机型生效
K222	帽眼定位销 Y 坐标	-600～600，单位 0.1mm	0	仅对帽眼机型生效
K227	主轴电机类型	0：0830-F11 1：0830-F01	0	需重新上电生效
K241	功能选择	0：套结（加固） 5：花样套结 7：钉扣	0	

注：以上参数只供维修人员使用，用户不能轻易改动。

4.3 恢复出厂默认设置

当用户无意中修改了某些出厂时设置好的参数或者电控系统出现故障时，可以尝试使用"恢复出厂默认设置"功能，进行系统恢复。

注意：恢复出厂默认设置，用户以前设定的数据参数将会被覆盖，使用此功能时，请慎重考虑，如不清楚，应及时联系厂家技术人员，在其指导下进行操作。

具体操作步骤如下：

1. 在缝制灯熄灭的状态下，按住模式键 **M** 持续 3 秒，面板蜂鸣器会鸣响一声，

   然后按 键选中"13 恢复出厂设置；然后按辑键 ，进入恢复出厂设置

   菜单，再按项目选择键 选择要恢复的项目，确定后按准备键 ，确

   认执行恢复操作。面板会先提示"操作执行中，请勿关机！"表示正在执行恢复操作，此时不可以关闭电源。当经过一段时间后恢复完成，面板会提示"请关机！"信息，关闭电源再打开电源后，就完成了恢复出厂设置的操作。

2. **注意：在确认恢复操作后，系统进行恢复过程中，面板会提示"操作执行中，请勿关机！"，如果断电，恢复过程将被迫中断，将不能完成恢复出厂默认设置，会导致操作失败。**

3. **注意：上电后，在面板右侧有一键恢复出厂设置按键，可直接进入恢复出厂设置界面。**

4.4 软件版本显示

在缝制灯 灭的状态下，长按 键 3 秒，此时能听到蜂鸣器响一声，松

开 键，然后按 键选中"08 查询软件版本"。再按 键进入软件版本查

看界面。之后按 或 键选择需要查看的版本。

软件版本按顺序显示如下：

主控: 机型-MC-厂家代号-版本号
面板：机型-LKD2-厂家代号-版本号
步进 1：机型-MD1-厂家代号-版本号
步进 2：机型-MD2-厂家代号-版本号

5 钉扣功能设定

1、 在缝制灯 灭的状态下，长按

 键 3 秒，此时能听到蜂鸣器响一声，
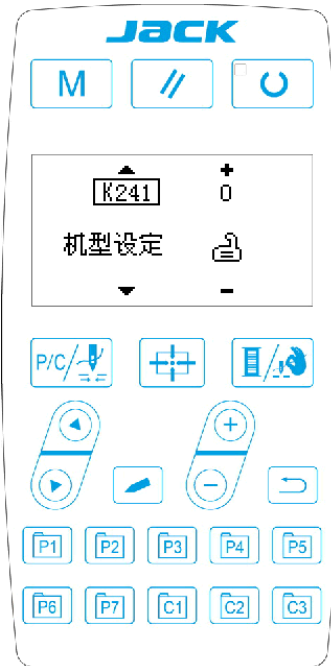
松开 键，即开启了服务参数变更；

2、 按 键，选择"12 系统 K 参数"，按

进入，再按 键，选择 K241 号参数；

3、 按 键，将参数值变更为"7"，然后按

 键确认修改。此时面板会先提示"操
作执行中，请勿关机！"的信息，一定不要关闭
电源。经过一段时间后面板提示"请关机！"的
信息，就可以关闭电源了

4、 断电并再次上电后，机器功能变更为钉扣功能。

注意：机器的钉扣功能需要钉扣所需的专用压脚等辅助外设，有关这方面的详细信息请您与

6 通过 U 盘升级花样

可支持 VDT 花样的单个导入(追加)：

(01) 导入花样：导入(追加)花样，如果导入的花样号已经存在则进行覆盖；

(02) 导出花样：导出所有外置花样到 USB 存储设备；

(03) 删除花样：清除(格式化)面板外置花样存储区域；

6.1 花样升级操作

电控可以使用 U 盘将 VDT 格式的花样输入到系统中，升级后的花样编号为 101~200。也可以将电控中 101~200 号已经存在的花样导出到 U 盘中。

1) 使用花样编辑软件制作 VDT 格式的花样文件，并命名为"XXX.VDT"(注：XXX 必需为 101~200 的花样号码，同时该号码也是升级后的花样号)。
2) 在 U 盘根目录下建立一个名为 DH_PAT 的文件夹，将步骤 1 中制作好的花样保存到 U 盘中的这个 DH_PAT 目录下，一次可以导入多个花样文件。
3) 在准备键 LED 指示灯熄灭的状态下，按模式键 **M** 进入系统菜单，按项目选择键 选中"10 花样导入导出"，再按编辑键 进入该模式。
4) 按项目选择键 选中"01 导入花样"，并将存入花样的 U 盘插入到面板右侧的 USB 接口上。
5) 按准备键 **U** ，面板显示"操作执行中，请勿关机！"，开始执行花样导入操作。
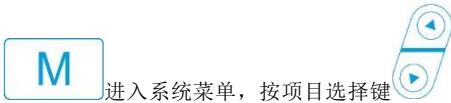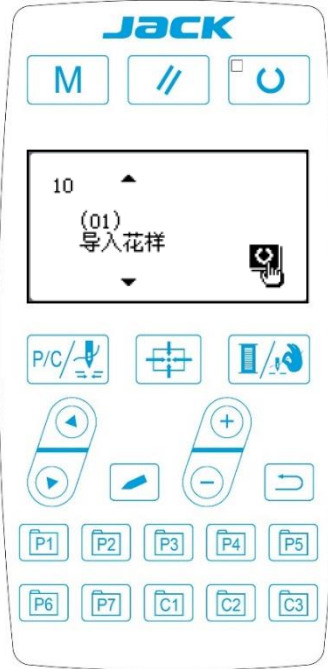
注意：在此步骤操作之前，请确认已经先将 U 盘插入面板 USB 接口，如若未插入 U 盘而执行该步骤操作，则无法进行升级操作，面板会提示"M-324 U 盘未连接"错误。

6) 当升级完毕后，面板显示"操作成功！"并自动回到导入花样模式界面，表示花样升级完成。

注意：如果电控中已经存在 101~200 号升级的某些花样，也可以通过在 U 盘中存入命名编号与电控中已存在花样不同的花样文件，并按照上述操作进行花样追加；如果 U 盘中存入命名编号与电控中已存在花样相同的花样文件，则进行升级操作后，电控中那些编号

相同的花样将被替换。

另外，在第 4 步中，除了将功能号改为 01 进行花样升级导入操作外，还可以将功能号改为 02 和 03，分别进行花样的导出和删除操作。改为 02 时的功能是将面板中已导入的花样备份操作，而改为 03 时的功能是将所有 101~200 号花样全部删除清空，当电控出现报"M-318　　　外置花样存储空间已满"或"M-319　　　外置花样存储区数据格式异常"错误时，可以尝试此删除操作。

7) 打开花样锁：花样升级完毕后，在缝制界面如果选择花样号时，如果不能选中新升级的U盘花样，可能是因为没有将花样锁打开，101~200 号花样出厂默认时是锁定不能选择的，需要进行如下操作：

在准备键 LED 指示灯熄灭的状态下，按模式键
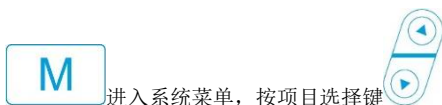
 进入系统菜单，按项目选择键
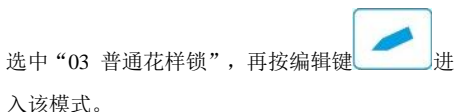
选中"03 普通花样锁"，再按编辑键 进入该模式。

在该模式中，左半部分 A 显示的是普通花样号，

可以按项目选择键 在 1~200 之间切换；右

半部份 B 显示的是花样状态，显示为"ON"时花样打开可以缝纫，显示为"OFF"时花样锁定不能缝纫。可以用数据变更键 修改花样打开或锁定的状态。

8) 用项目选择键 和用数据变更键 将导入的花样打开，按返回键 保存修改回到系统菜单，再按返回键 返回到正常缝制模式。
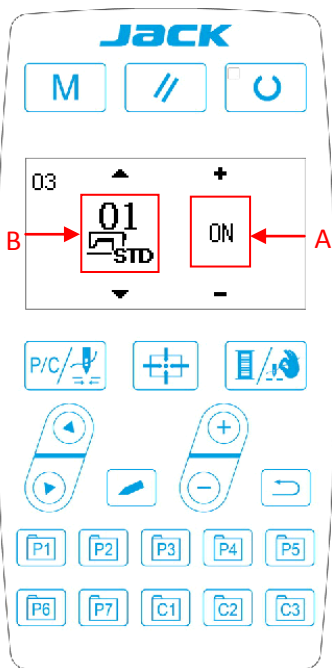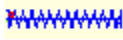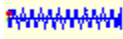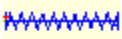
7 附录
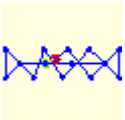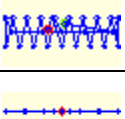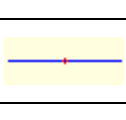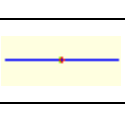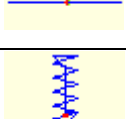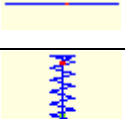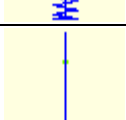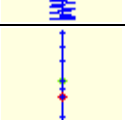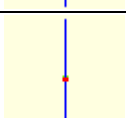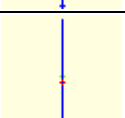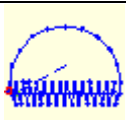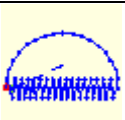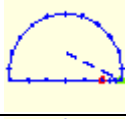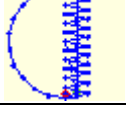
7.1 钉扣标准花样一览表
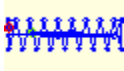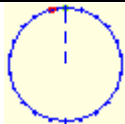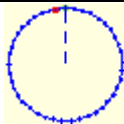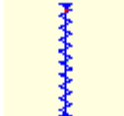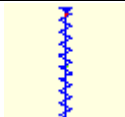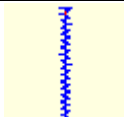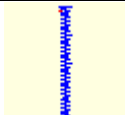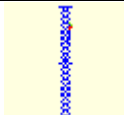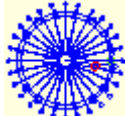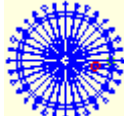
图案号	缝制图案	缝线（根）	标准缝制长度 X（mm）	标准缝制长度 Y（mm）	图案号	缝制图案	缝线（根）	标准缝制长度 X（mm）	标准缝制长度 Y（mm）
1・34		6–6	3.4	3.4	18・44		6	3.4	0
2・35		8–8			19・45		8		
3		10–10			20		10		
4		12–12			21		12		
5・36		6–6			22		16		
6・37		8–8			23・46		6	0	3.4
7		10–10			24		10		

17

NO.	缝纫图案	数值			NO.	缝纫图案	数值		
8		12–12			25		12		
9 • 38		6–6			26 • 47		6–6	3.4	3.4
10 • 39		8–8			27		10–10		
11		10–10			28 • 48		6–6		
12 • 40		6–6			29		10–10		
13 • 41		8–8			30 • 49		5–5–5	3.0	2.5
14		10–10			31		8–8–8		
15 • 42		6–6			32 • 50		5–5–5		
16 • 43		8–8			33		8–8–8		
17		10–10							

7.2 套结标准花样一览表

NO.	缝纫图案	针数	长×宽(mm)	NO.	缝纫图案	针数	长×宽(mm)
1		41	16×2	2		41	10×2
3		41	16×2.4	4		41	24×3
5		27	10.1×2	6		27	16×2.4
7		35	10×2	8		35	16×2.4
9		55	24×3	10		63	24×3
11		20	6.1×2.4	12		27	6.2×2.4

13		35	6.1×2.4		14		14	8×2
15		20	8×2		16		27	8×2
17		20	10×0		18		27	10×0
19		27	25.2×0		20		35	24.8×0
21		40	25.2×0		22		43	35×0
23		27	4×20		24		35	4×20
25		41	4×20		26		55	4×20
27		17	0×20		28		20	0×10
29		20	0×20		30		27	0×20
31		51	10.1×7		32		62	12.1×7
33		23	10.2×6		34		30	12×6
35		47	7×10		36		47	7×10

37		89	24×3	38		27	8×2
39		25	11.8×12	40		45	12×12
41		28	2.4×20	42		38	2.4×25
43		38	2.4×25	44		57	2.4×30
45		75	2.4×30	46		41	2.4×30
47		89	8×8	48		98	8×8
49		147	8×8	50		163	8×8

7.3 主控异常信息一览表

显示	异常名称	异常内容	原因及解除方法
E-001	脚踏板未在中央位置	在进入准备缝制状态过程中脚踏板被踩下。	确认进入准备缝制界面时踏板没有被踩下。
E-002	暂停	缝纫机运转中按了复位开关，暂停。	按复位开关切线后，再次开始或返回原点。
E-003	机头翻倒异常	机头翻倒检测开关被设定为 ON。	在放倒机头的状态不能运转。请返回到正常的位置。技术人员可直接用短路块将机头板上的 2P 蓝色插头短路。
E-004	电压过低异常	电源电压不足。	采样 UZKIN 模拟量过低，确认电源电压及相关电路。
E-005	电压过高异常	电源电压超过规定值。	检测到 AC_OVDT 信号为高，确认电源电压及相关电路。

E-007	主轴驱动器不良	主轴驱动器检测出异常。	关闭电源，稍待一些时间后再次打开电源。
E-008	24V 电源异常	24V 过流。	关闭电源，稍待一些时间后再次打开电源。
E-009	24V 电源异常	24V 电压过低。	关闭电源，稍待一些时间后再次打开电源。
E-010	气阀（风扇）故障	开机后系统检测到气阀或风扇电压信号异常。	关机，检查外设有无短路情况。
E-012	压脚位置异常	压脚不在正确位置。	关闭电源开关，确认机头信号电路板上的 CZ025 是否松动脱落。若未松动，检查该路光耦。
E-013	编码器未接	不能检测 ADTC 信号。	关闭电源开关，确认 X5 插头是否插紧。
E-014	电机运行异常	主轴电机在运行过程中到达 0°时电气角度范围异常。	关机。查看电机编码器信号是否正常。
E-015	超过缝制区域	超过缝制区域。	按复位开关，确认图案和 X、Y 放大率。 触发条件：软件花样计算报错。
E-016	针杆上位置异常	针杆不在上位置。	主轴停车位置错误，可能是主轴驱动的原因，也可能是人为转动所致。转动手轮，把针杆返回到上位置。
E-018	切线切刀位置异常	切线刀不在正确位置。	关闭电源开关，确认机头信号电路板上的 CZ024 是否松动脱落。若未松动，检查该路光耦。
E-019	急停开关未在正常位置	启动之前检测到急停开环被按下。	自恢复错误。
E-020	步进软件版本错误	步进板软件版本错误。	更换套结机使用的步进板或更新步进办程序。
E-022	机器老化停止	在老化模式下机器进入了停止状态。	关机。
E-023	抓线位置异常	抓线装置不在正确位置。	关闭电源开关，确认机头信号电路板上的 CZ026 是否松动脱落。 若未松动，检查该路光耦。
E-025	X 原点检索异常	X 原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ021、控制箱 X9 是否松动、脱落。
E-026	Y 原点检索异常	Y 原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ022、控制箱 X9 是否松动、脱落。
E-027	压脚原点检索异常	压脚原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ025、控制箱 X9 是否松动、脱落。
E-028	抓线原点检索异常	抓线原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ026、控制箱 X9 是否松动、脱落。

E-030	主电路板-步进电路板通信异常	主电路板与步进电路板不能通信或通讯错误。	关闭电源，稍待一些时间后再次打开电源。检查通讯线缆及主板与驱动板是否有故障。
E-031	步进驱动异常	步进驱动板过流。	关闭电源，稍待一些时间后再次打开电源。
E-034	主轴驱动器不良	主轴驱动器检测出异常。	关闭电源，稍待一些时间后再次打开电源。
E-035	主板 IPM 瞬时过流	主板 IPM 驱动模块短时间内电流过大。	关闭电源，稍待一些时间后再次打开电源。更换主轴电机确认电机是否损坏；如果问题不能解决，请更换主板。
E-036	主板 IPM 多次过流	主板 IPM 驱动模块在上电后累计多次出现过流。	关闭电源，稍待一些时间后再次打开电源。更换主轴电机确认电机是否损坏；如果问题不能解决，请更换主板。
E-037	主轴过流	马达停转。	在机械不卡的情况下，检查主轴编码器是否连接良好。
E-038	机器锁定	因为发生了某些故障，缝纫机主轴不能转动。	发送主轴运转命令后，主轴电机无反映。查看主轴电机驱动电路六路 PWM 波形是否正常，编码器反馈信号是否正常，也可能是机械卡死所造成。
E-039	主轴超速	在机器运转过程中检测到主轴电机实际转速超过限定最大值。	关闭电源，稍待一些时间后再次打开电源。
E-040	停车电流异常	主轴停车过程中出现过流。	关闭电源，稍待一些时间后再次打开电源。更换主轴电机确认电机是否损坏；如果问题不能解决，请更换主板。
E-043	剪线电机原点检索异常	剪线原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ026、控制箱 X9 是否松动、脱落。
E-044	下位机机头板参数异常	下位机从机头板读取参数异常。	确认机头板是否完好，X9 线缆是否插好。可以通过按复位键使用 67 号参数尝试对机头板参数进行恢复操作。
E-056	步进闭环 DSP1(X25/X27)通信错误	步进对接收到的指令进行校验未通过。	查看 SPI 通信线缆连接是否正确、牢固。
E-057	步进闭环 DSP1 第一路(X27)过流	硬件检测到有大电流出现。	首先检查电机是否正常，可测量电阻、电感值是否在正常范围内。如果电机正常，则需确认步进板硬件是否正常。
E-058	步进闭环 DSP1 第一路(X27)超差	检测到的编码器反馈位置与程序中的指令位置不符。	将步进电机改成开环模式运行，如果可以正常动作，则电机正常。如果电机不能正常动作，则需要排查步进板驱动部分及电机本体。做完上述工作

			后，排查编码器部分，看编码器线缆是否插错，是否插牢，是否有编码器信号线损坏以及步进板信号反馈部分及编码器本体是否正常。
E-059	步进闭环 DSP1 第一路(X27)超速	通过编码器反馈信号检测到电机转速异常时报此错误。	检查方法同检查超差错误。
E-060	步进闭环 DSP1 第二路(X25)过流	硬件检测到有大电流出现。	首先检查电机是否正常，可测量电阻、电感值是否在正常范围内。如果电机正常，则需确认步进板硬件是否正常。
E-061	步进闭环 DSP1 第二路(X25)超差	检测到的编码器反馈位置与程序中的指令位置不符。	将步进电机改成开环模式运行，如果可以正常动作，则电机正常。如果电机不能正常动作，则需要排查步进板驱动部分及电机本体。做完上述工作后，排查编码器部分，看编码器线缆是否插错，是否插牢，是否有编码器信号线损坏以及步进板信号反馈部分及编码器本体是否正常。
E-062	步进闭环 DSP1 第二路(X25)超速	通过编码器反馈信号检测到电机转速异常时报此错误。	检查方法同检查超差错误。
E-063	步进闭环 DSP2(X21/X23)通信错误	步进对接收到的指令进行校验未通过。	查看 SPI 通信线缆连接是否正确、牢固。
E-064	步进闭环 DSP2 第一路(X23)过流	硬件检测到有大电流出现。	首先检查电机是否正常，可测量电阻、电感值是否在正常范围内。如果电机正常，则需确认步进板硬件是否正常。
E-065	步进闭环 DSP2 第一路(X23)超差	检测到的编码器反馈位置与程序中的指令位置不符。	将步进电机改成开环模式运行，如果可以正常动作，则电机正常。如果电机不能正常动作，则需要排查步进板驱动部分及电机本体。做完上述工作后，排查编码器部分，看编码器线缆是否插错，是否插牢，是否有编码器信号线损坏以及步进板信号反馈部分及编码器本体是否正常。
E-066	步进闭环 DSP2 第一路(X23)超速	通过编码器反馈信号检测到电机转速异常时报此错误。	检查方法同检查超差错误。
E-067	步进闭环 DSP2 第二路(X21)过流	硬件检测到有大电流出现。	首先检查电机是否正常，可测量电阻、电感值是否在正常范围内。如果

			电机正常，则需确认步进板硬件是否正常。
E-068	步进闭环 DSP2 第二路(X21)超差	检测到的编码器反馈位置与程序中的指令位置不符。	将步进电机改成开环模式运行，如果可以正常动作，则电机正常。如果电机不能正常动作，则需要排查步进板驱动部分及电机本体。做完上述工作后，排查编码器部分，看编码器线缆是否插错，是否插牢，是否有编码器信号线损坏以及步进板信号反馈部分及编码器本体是否正常。
E-069	步进闭环 DSP2 第二路(X21)超速	通过编码器反馈信号检测到电机转速异常时报此错误。	检查方法同检查超差错误。
E-070	步进板 90V 电源过流	步进板 90V 电源过流。	关闭电源，稍待一些时间后再次打开电源。
E-071	升降机头位置异常	升降机头不在正确位置。	检查升降机头传感器信号是否正常。
E-072	随动中压脚电机原点检索异常	电机找不到原点。	需要进入检测模式排查电机动力线或编码器线是否连接稳定，电机运行是否正常。
E-073	XY 针距过大异常	XY 针距超过 12.7mm。	缩小花样针距。
E-090	USB 升级步进错误	查询步进状态超时。	检查步进板程序是否正确。
E-093	步进闭环 DSP1(X25/X27)通信数据包校验错误	主控与步进通信错误。	检查主控与步进通信线路是否稳定可靠。
E-094	步进闭环 DSP1(X25/X27)通信数据包非法命令	主控与步进通信错误。	检查主控与步进通信线路是否稳定可靠。
E-095	步进闭环 DSP2(X21/X23)通信数据包校验错误	主控与步进通信错误。	检查主控与步进通信线路是否稳定可靠。
E-096	步进闭环 DSP2(X21/X23)通信数据包非法命令	主控与步进通信错误。	检查主控与步进通信线路是否稳定可靠。
E-097	主控软件与主板硬件类型不符	主控板件使用错误。	更换对应产品的主控板件。
E-098	步进 DSP1 曲线数据 CRC 校验错误	步进曲线数据异常。	重新升级 DSP1 的步进曲线。
E-099	步进 DSP2 曲线数据 CRC 校验错误	步进曲线数据异常。	重新升级 DSP1 的步进曲线。

1 Instructions of Operation Panel
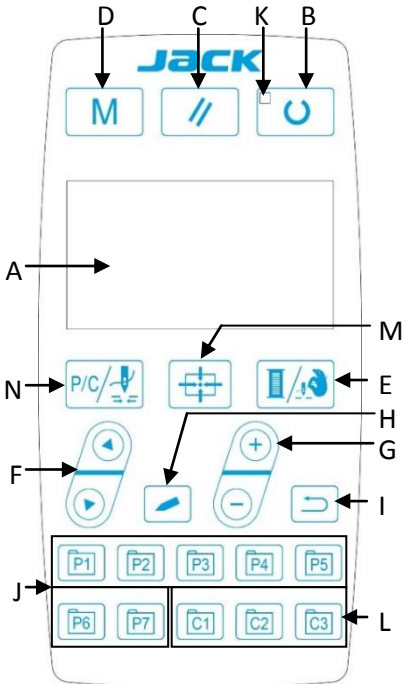
A. LCD

Display pattern number, shape and various other data.

B. READY Key

This key changes from the setting state of the panel to the sewing state where the sewing machine actually operates.

C. RESET Key

D. This key is used for canceling error or returning the set value to the initial value.

E. MODE Key

This key initiates the setting of parameters or stored patterns.

F. PRESSER FOOT/WINDING Key

This key is used to lift or lower the presser foot. When presser foot is up, move the needle bar back to origin; when the presser foot is down, move the needle bar to the right. Press this key when winding.

G. SELECTION Key

This key is used to select among various pattern types, menu items or parameters.

H. DATA SETTING Key

This key is used to modify the pattern number or parameter value. Under trial sewing mode, this key is used to move single needle and feed cloth.

I. EDIT Key

This key is used to display editing interface, select item or display detailed information.

25

J.   RETURN Key

This key is used to return to the previous interface.

K.   Sewing Ready LED

LED is on under sewing mode.

L.   C Pattern Setting Key

Set and save C patterns, and press this button to start sewing the saved C pattern.

M.   Presser Foot Origin Key

When LED is off, lower down the presser foot and find origin of XY stepping.

N.   C Pattern Shift/Single-step Sewing

When LED is off, enter P/C pattern list; after LED is on, lower down the presser foot and find origin of XY stepping.

2 Text Mode

This mode is activated to conduct maintenance operation.

1） When the sewing LED is off, hold pressing **M** key for 3 seconds, and you would hear the ring of the buzzer. Then select item "11 system test" by pressing ◀▶ key and press ✎ key to enter test mode.	
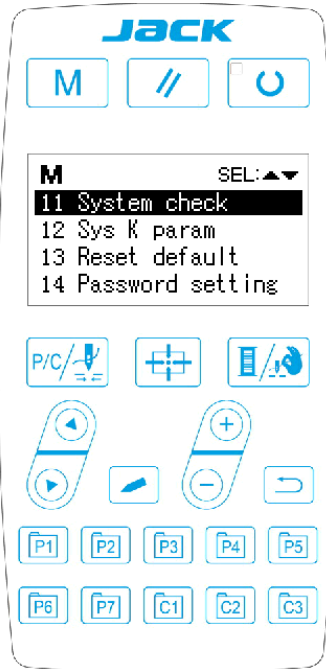
2) Press ◀▶ key to change the function item for test and press ✎ key to enter the item for test. The functions represented by each number are as follows:

Function Test Item	Function	Description

01 System Input Test	Input signal test	LED light as the indicator to show the status of sensor input
02 XY Origin Adjustment	XY motor/origin sensor test	Display inching operation, origin searching operation and the status of X/Y origin sensor of X/Y motor
03 Aging Mode	Continuous running	Change to continuous running mode after setting the conditions of continuous running
04 Main Shaft Test	Main motor rotation number test	Set up the rotation number, start machine and display the actual rotation number.
06 Presser Foot Motor Test	Presser foot, thread-trimming motor/origin sensor test	Display inching operation of presser foot and thread-trimming motor, origin searching operation and the status of presser foot origin/presser foot sensor.
08 System Output Test	Output signal test	Drive the movement of output solenoid/air valve.
09 Panel Test	LED and LCD test	Test the status of panel displayer and LED light.

3) During the function test, if user presses [⤺] key or [M] key, the test will be terminated and the system will return to the status of step 2); however, if the aging mode has been used once, the aging mode can't be released unless the power supply is shut off.

3 P Pattern and C Pattern
3.1 Pattern Number Setting

Open power swtich. On the left upper side of the screen will be displayed the pattern No., as well as pattern shape, X/Y scale rate, thread tension and sewing speed. Press ⊕⊖ key to change pattern No. and press ◄► key to shift pattern mode, that is, **memory pattern, P pattern and C cyclic pattern.**	
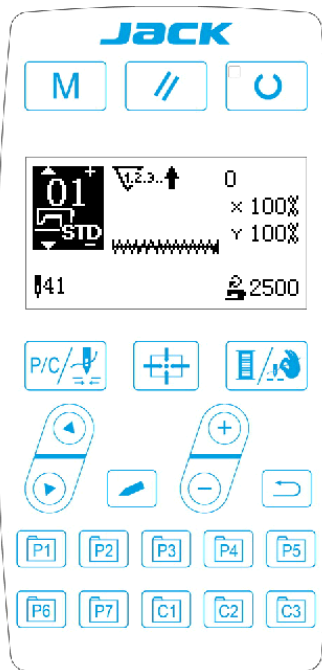
3.2 Item Data Setting

Press [✐] key and the item data input interface will be displayed.

On the left side is the item to be edited and on the right side is the content of setting.

Press ◄► key to select item, press ⊕⊖ key to change the content and press [↩] to save and return.

X Size Input

Press ◀▶ to display C001X size.

Press +/- key to display the intended value.

X/Y size can be inputted by % or by actual size (set by parameter U063) and the default setting is % input.

Note: if the set value is beyond the sewing range allowed by the presser foot, the needle may collide with the presser foot and thus cause needle breakage which is very dangerous.
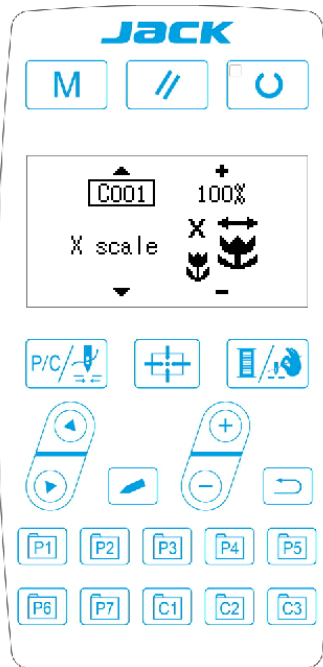
(5) Y Size Input

Press [buttons] to display C002 Y size.

Press [+/- key] key to display the intended value.

X/Y size can be inputted by % or by actual size (set by parameter U063) and the default setting is % input.

Note: if the set value is beyond the sewing range allowed by the presser foot, the needle may collide with the presser foot and thus cause needle breakage which is very dangerous.

30
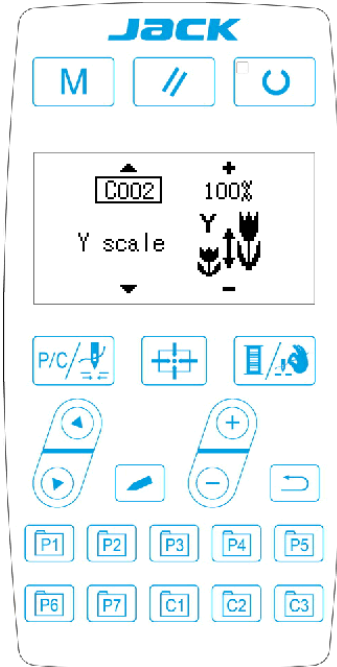
(6) Sewing Speed Input Press ⊲⊳ key to display C004 sewing speed. Press +/− key to display the intended value. The inputted value is limited by the max. sewing speed set by parameter U001.	
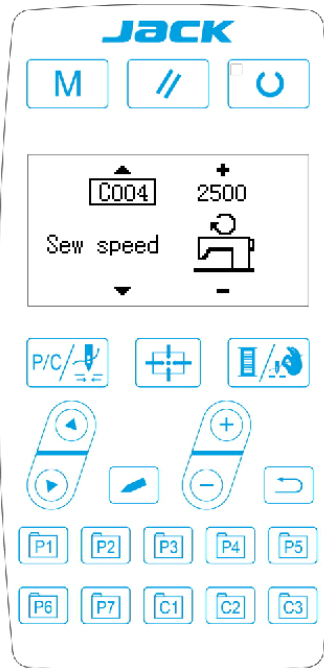
(7) Setting Completion

Press ⟳ key.

Presser foot moves and lifts and sewing LED lights up to enter sewing status.

Note: press READY key and the presser foot will return to the sewing start. The presser foot will lower down before moving. Therefore, please watch your fingers.

* Press ⟳ key to save the set value of pattern No., XY scale rate, etc.

* Press ⟳ key again, and sewing LED will be off. At that time, user can change the setting of each item.

* Please confirm the pattern No. first. Otherwise, press ⟳ key will initiate error M-306. At that time, user need reset the pattern No.

Note: if user turns off power before pressing ⟳ key, the set value of pattern No., XY scale rate, max. rotation speed will not be saved.

3.3 Pattern Shape Confirmation

Warning!

1. After selecting the pattern, user must confirm the pattern shape. If the pattern shape is away from the presser foot, the needle may collide with the presser foot and break.

2. When confirming the pattern shape, please note that if user press +/- keys when the needle bar is down, the needle bar will lift automatically before the presser foot moves.

1) Press key and sewing LED will light up. 2) Press key to display "Pattern Shape Confirmation".	
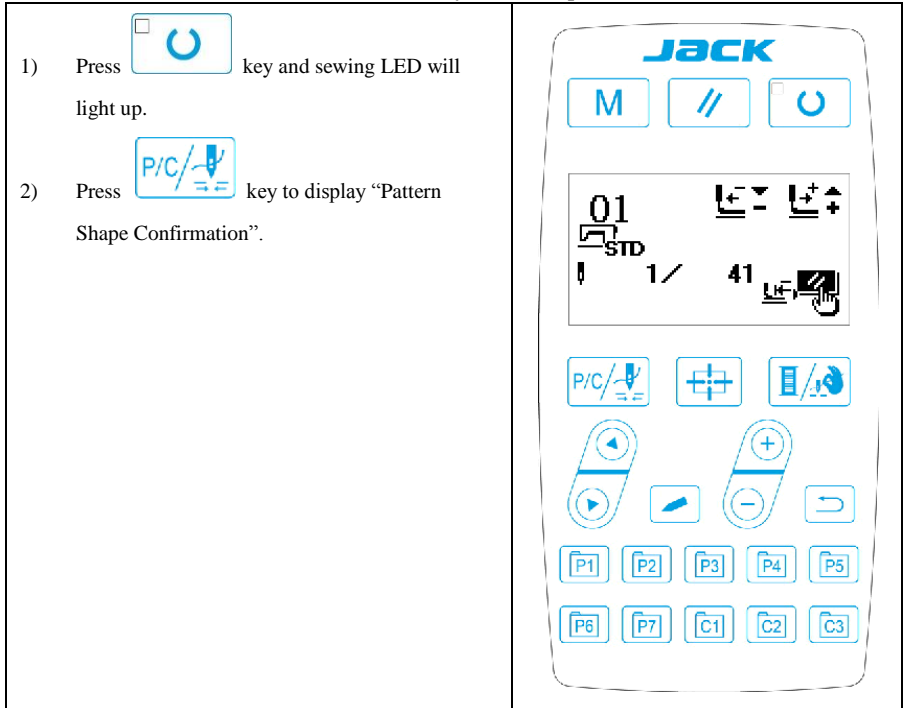
3.4 P Pattern and C Pattern Setting

3.4.1 Use Pattern Key to Sew

User can register patterns (No.1~200) to P1~P99. Patterns can be registered after changing scale rate, max. rotation speed, thread tension and sewing position. User can also use pattern No. rolling window to register pattern. P1~P25 can be displayed at the same time.

* When selecting P6~P25, user can use the combination of keys (press simultaneously) to sew.

3.4.2 Register to Pattern Key

Example: register pattern No.3 to P2, with X scale rate as 50%, max. speed of 2000sti/min, pattern position as 0.5mm to the right and 1mm forward.

1) Turn on the power and then press [M] key. (Sewing LED is off.) Enter mode setting (memory switch setting). Press ◀ ▶ key to select "04 register P pattern" and press ✎ key to enter pattern register mode.

M   SEL:▲▼
01 Sys U param
02 Sew counter
03 Normal pat lock
04 Reg P pat
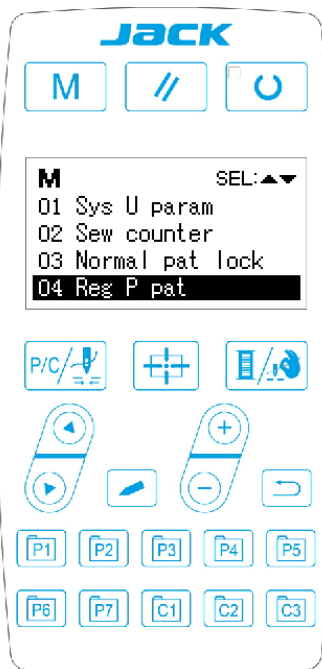
2) Press key and then press key to edit item data. 3) Press key to set the standard pattern as No.3. Press to set P-No. as 2. Press READY key to register P2 and the mode interface will be displayed. Then press key or key.	
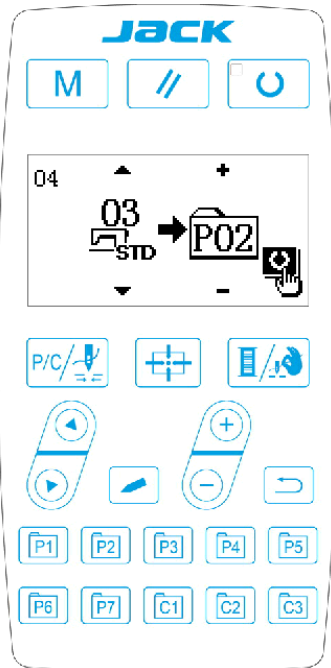
4) Set separately the X scale rate as 50%, Y scale rate as 80%, sewing speed as 2000 sti/min and thread tension as 50. 5) Press [pencil icon] key and X scale rate will be displayed as 0.0. the increment of X direction movement can be set as 0.1mm. Press [+/−] key to change the data into 0.5. 6) Press [pencil icon] key and X scale rate will be displayed as 0.0. The increment of X direction movement can be set as 0.1mm. Press [+/−] key to change the data into 1.0. 7) Press [⟳] key to complete setting. 8) Press [M] key to complete pattern registering method. 9) Press [M] key to complete setting and return to normal mode.	
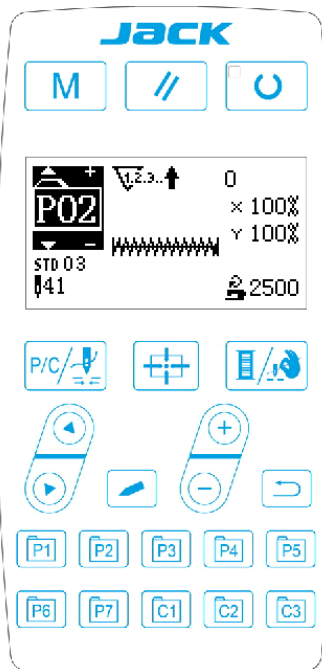
4 Service Parameter Setting

Service parameters are different from normal parameters and usually are not allowed to change by users. These parameters are for technicians to debug the machine.

4.1 Service Parameter Activation and Change

When sewing LED is off, hold pressing [M] key for 3 seconds until the buzzer rings so as to activate and change the service parameter.

The operation of service parameter change is the same with that of normal parameter.

4. 2 **Service Parameter List**

No.	Function	Adjustment Range	Default Value	Remarks
K001	Pedal Type	0: Analog Single Pedal 1: Digital Single Pedal 2: Double Pedals 3: Double Pedals, but only the operation pedal controls	0	
K002	Intermediate Presser Foot Control Method	0: no control 1: not used 2: solenoid control 3: mechanical control	0	
K019	Lifting time of pneumatic outer presser foot	0～90	30	
K021	Positions of standard pedal & pedal switch	50～200	70	
K022	Position of standard pedal & stroke switch of high/low section.	50～200	120	
K023	Position of standard pedal & start switch	50～200	185	
K027	Dropping speed of presser foot at depressing pedal	100～4000pps	4000	
K028	Lifting speed of presser foot at stepping pedal	100～4000pps	1500	
K029	Lifting speed of thread-trimming presser foot at sewing end	100～4000pps	3000	
K043	Selection of machine rotating number at thread-trimming	3～8	8	
K044	Selection on whether to feed cloth in the direction for easy thread-trimming	0: Not Feed 1: Feed	0	
K045	Guide diameter of needle hole for feeding cloth at thread-trimming (by an increment of 0.2mm)	16～40（1.6mm～4.0mm）	16	
K056	Limited range of motion in +X direction (Right)	0～50mm	20	
K057	Limited range of motion in -X direction (Left)	0～50mm	20	

K058	Limited range of motion in +Y direction (Back)	0～30mm	15	
K059	Limited range of motion in -Y direction (Front)	0～30mm	15	
K064	Select thread wiping method	0: solenoid 1: motor	1	
K066	Impulse number for coactions of presser foot and wiper	30～60	45	
K074	Presser foot control mode shift	0: air valve control 1: motor control	1	
K095	Thread-trimming angle	－10～10	0	
K097	Thread-trimming method at pause	0: automatic thread-trimming 1: manual thread-trimming	1	
K102	X stepping motor full-current parameter	0～15	7	Effective after restart
K104	Y stepping motor full-current parameter	0～15	11	Effective after restart
K106	Thread-catching stepping motor full-current parameter	0～15	2	Effective after restart
K108	Presser stepping motor full-current parameter	0～15	14	Effective after restart
K109	X stepping motor semi-current parameter	0～15	7	Effective after restart
K110	Y stepping motor semi-current parameter	0～15	6	Effective after restart
K111	Presser foot stepping motor semi-current parameter	0～15	5	Effective after restart
K112	Main shaft stop correction	－10～10	0	
K120	Stitch number for alarm to add lubricating oil	3000～12000	5000	Unit: ten thousand stitches
K121	Counter Lock	0: Clear and Plus/Minus; 1: Clear Only; 2: Plus/Minus Only;	0	

		3: Neither Clear nor Plus/Minus		
K122	OC length adjustment	$-128\sim128$	0	
K123	OD length adjustment	$-128\sim128$	0	
K124	BD length adjustment	$-512\sim512$	0	
K125	OC length	$1780\sim2380$	2080	
K126	OD length	$1440\sim2040$	1740	
K127	BD length	$430\sim630$	530	
K128	Stepping Drive Type	0: DSP1 Close DSP2 Close 1: DSP1 Open DSP2 Open 2: DSP1 Close DSP2 Open 3: DSP1 Open DSP2 Open	0	Effective after restart
K135	Thread-separating delay	$-10\sim30$	0	
K137	Thread clamp release angle at sewing start	$-150\sim150$	0	
K138	Thread clamp holding time after trimming at sewing start	$-2\sim1$	0	-2 means thread holding action prohibited after thread-trimming at sewing start
K140	Thread Tension Control Method	0: electronic 1: mechanical	0	
K141	Suction force adjustment of branch thread tension solenoid	$-20\sim20$	0	
K142	Holding force adjustment of branch thread tension solenoid	$-40\sim40$	0	
K150	Invalidity of head tilt safety switch	0: Normal 1: The safety status of tilt head is invalid.	0	
K160	Prohibit stepping the pedal backward for emergency stop	$0\sim1$	0	0:Allowed 1:Prohibited
K172	Set stitch number for thread breakage detection	$0\sim10$	0	Value bigger than 0 means the stitch number after

				thread breakage before emergency stop 0 means thread breakage detection is off.
K174	Sensor availability at the cutter position	0: forbidden 1: in use	1	
K227	Main Shaft Motor Type	0: 0830-F11 1: 0830-F01	0	Effective after restart
K241	Function Selection	0: Bar-tacking 5: Pattern bar-tacking 7: Button sewing	0	

Note: the above parameters are for the use of repairers only and user should not change them without caution.

4. 3 Restore Default Setting

If the user changes some parameters by mistake, which are properly set at delivery, the function of "recovery to default setting" can be used to restore the system.

At recovering the default settings, the entire parameters that are set by user before will be covered. Therefore, please take caution in using this function. If necessary, please contact the technicians of the manufacturer, and operate the machine with the instruction from the professionals.

The specific operation procedure is as follows:

When the sewing LED is off, hold pressing [M] key for 3 seconds until the panel

buzzer rings. Press (▶) key to select "13 recovery to default setting", and then press [✎]

key to enter the menu for restoring default setting. Press (◀)(▶) key again to select the item to be

restored and then press [○] key to execute the recovery operation. The panel will hint

"executing, please do not turn off the machine", which means the recovery operation is undergoing

and the power supply shall not be shut down. When the operation is completed, the penal will hint

"please turn off the machine" and then you can shut down the machine and restart it to restore the default setting.

Note: During the restoring process, if the power supply is shut down by accident, the restoring process has to be aborted and you failed to restore the default setting. The software will return to the former state before restoring.

4.4 Software Version Display

When sewing LED ⟳ is off, hold pressing M key for 3 seconds until the buzzer sings. Release M key and then press ▶ key to select "08 inquire software version". Press ◢ key to enter the software version inquiry interface, where user can press ◀ key or ▶ key to select the version to be inquired. The software version will be displayed in the following order:

Main control: machine type-MC-manufacturer code-version number

Operation panel: machine type- LKD2-manufacturer code-version number

Stepping 1: machine type- MD1-manufacturer code-version number

Stepping 2: machine type- MD2-manufacturer code-version number

5 Button Sewing Function Setting

1、 When sewing LED is off, hold pressing key for 3 seconds until the buzzer rings, and release key to activate service parameter medication; 2、 Press key to select "12 system K parameter", press key to enter and then press key to select parameter K241; 3、 Press key to change the parameter value into "7" and press key to confirm the change. At this time, the panel will hint "operation executing, please do not turn off the machine", and user must not cut off the power supply. When the panel hint "please turn off the machine" after a while, user can cut off the power supply 4、 Then power the machine again and the function changes into button sewing	
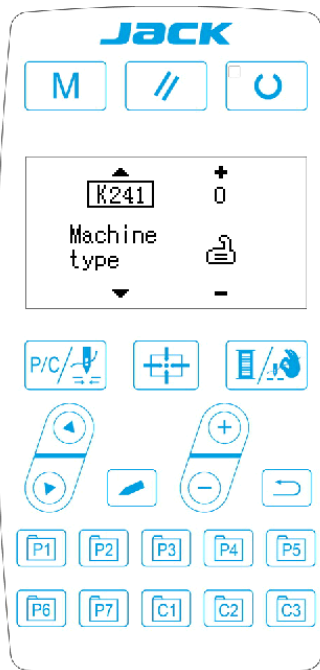
Note: the button sewing function of the machine requires special presser foot and other auxiliary external devices. For more information, please contact your machine manufacturer or its agents.

6 Update Pattern Data by USB Disk

Support import (addition) of single VDT pattern:

(01) Import pattern: import (add) pattern, and cover the pattern of the same number with imported pattern;

(2) Export pattern: export all external patterns to USB storage device;

(3) Delete pattern: clear (format) the panel's storage area for external patterns;

6.1 **Pattern Data Update**

User can import VDT format patterns to the control system via U disk, with the updated pattern number from 101 to 200. User can also export existing patterns numbered 101~200 that are stored in the control system to U disk.

1) Use pattern-editing software to make pattern file in VDT format and name it by "XXX.VDT". (Note: XXX shall be a number between 101~200 which at the same time is the updated pattern number.) 2) Create a new file folder named DH under the root directory of U disk, and save the pattern made in the previous step under the directory of DH (many patterns at one time). 3) When the sewing LED is off, press [M] key to enter system menu. Press key to select "10 pattern import/export" and then press key to enter this mode. 4) Press key to select "01 import pattern" and insert the U disk containing patterns to the USB interface at the right side of the panel. 5) Press [O] key, and when the panel hint "operation executing, please do not turn off the machine", the patterns are starting to be imported.	JƏCK M // O 10 (01) Input pattern P/C ⊕ I/⚙ P1 P2 P3 P4 P5 P6 P7 C1 C2 C3
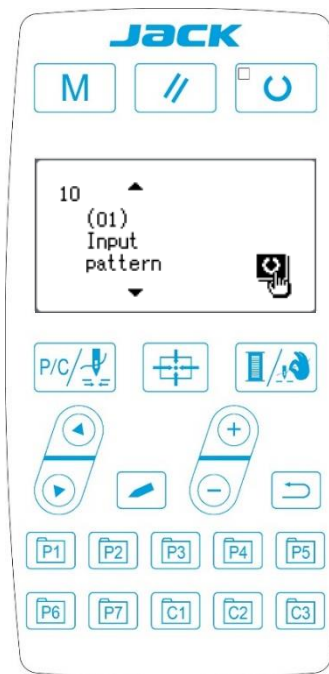
Note: before this operation, please confirm the U disk having been connected to USB

interface; if not, this update operation cannot be done and the panel will hint "M-324 U disk not found".

6) After the update, the panel will display "Operation succeeded!" and the system will automatically return to the interface for importing patterns.

Note: if there are already patterns numbered 101~200 in the panel, patterns named with different numbers can be added to the system via U disk following the above operations; if the pattern numbers in the U disk are the same with those in the panel, the patterns with the same number in the panel will be replaced.

In addition, apart from the pattern update import operation under function number "01", user can also change the function number to "02" and "03" to export and delete patterns respectively. To change function number to "02" means to back up imported patterns, while to change function number to "03" means to delete all patterns numbered 101~200, which may be done when external pattern storage area is full or the data format of the external pattern storage area is abnormal.

7) Open pattern lock: after update, if the patterns updated via U disk cannot be selected on the sewing interface, the possible reason is that the pattern lock is unopened, for the default setting of patterns number 101~200 is locked and unable to be selected. User need make the following operation:

When sewing LED is off, press [M] to enter system menu, press ◄ ► key to select

"03 normal pattern lock" and press ✎ key to enter.

Under this mode, the left part A displays the
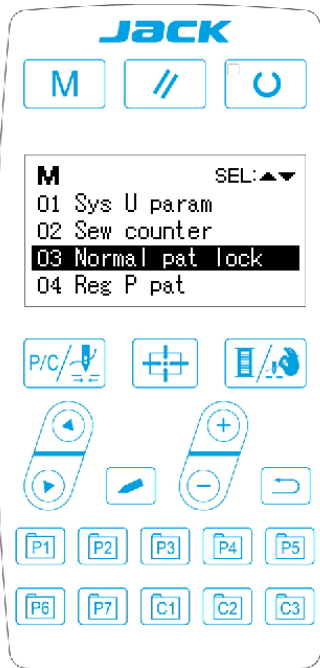
normal pattern number, and user can press ▲▶ key to change from 1~200; the right part B display the pattern status, "ON" for open and "OFF" for lock. User can press ⊕⊖ to open or lock the pattern.

8) Use ◀▶ key and ⊕⊖ key to open the pattern, press ⮐ key to save and return to the system menu, and then press ⮐ key again to return to the normal sewing mode.
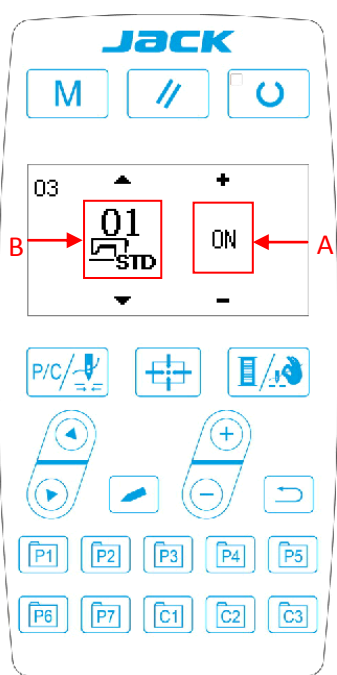
7 Appendix
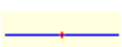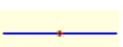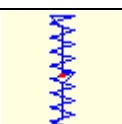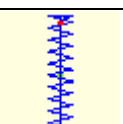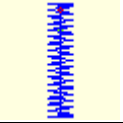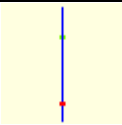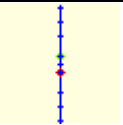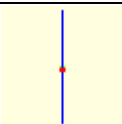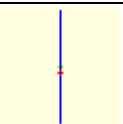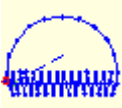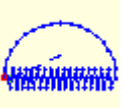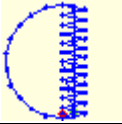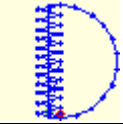
7.1 Standard Button Sewing Pattern List
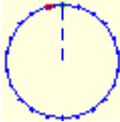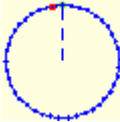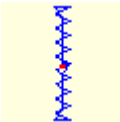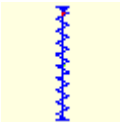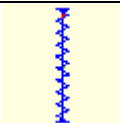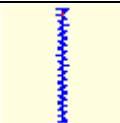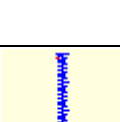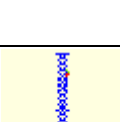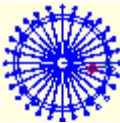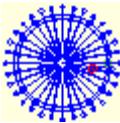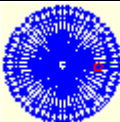
No.	Sewing Shape	Sewing Thread (line)	Standard Sewing Length X(mm)	Standard Sewing Length Y(mm)	No.	Sewing Shape	Sewing Thread (line)	Standard Sewing Length X(mm)	Standard Sewing Length Y(mm)
1 • 34		6–6	3.4	3.4	18 • 44		6	3.4	0
2 • 35		8–8			19 • 45		8		
3		10–10			20		10		
4		12–12			21		12		
5 • 36		6–6			22		16		
6 • 37		8–8			23 • 46		6	0	3.4
7		10–10			24		10		
8		12–12			25		12		

44

NO.	Pattern				NO.	Pattern			
9 • 38		6-6			26 • 47		6-6	3.4	3.4
10 • 39		8-8			27		10-10		
11		10-10			28 • 48		6-6		
12 • 40		6-6			29		10-10		
13 • 41		8-8			30 • 49		5-5-5	3.0	2.5
14		10-10			31		8-8-8		
15 • 42		6-6			32 • 50		5-5-5		
16 • 43		8-8			33		8-8-8		
17		10-10							

7. 2 Standard Button Sewing Pattern List

NO.	Pattern	Stitches	L×W (mm)	NO.	Pattern	Stitches	L×W (mm)
1		41	16×2	2		41	10×2
3		41	16×2.4	4		41	24×3
5		27	10.1×2	6		27	16×2.4
7		35	10×2	8		35	16×2.4
9		55	24×3	10		63	24×3
11		20	6.1×2.4	12		27	6.2×2.4
13		35	6.1×2.4	14		14	8×2

15		20	8×2	16		27	8×2
17		20	10×0	18		27	10×0
19		27	25.2×0	20		35	24.8×0
21		40	25.2×0	22		43	35×0
23		27	4×20	24		35	4×20
25		41	4×20	26		55	4×20
27		17	0×20	28		20	0×10
29		20	0×20	30		27	0×20
31		51	10.1×7	32		62	12.1×7
33		23	10.2×6	34		30	12×6
35		47	7×10	36		47	7×10
37		89	24×3	38		27	8×2

39		25	11.8×12	40		45	12×12
41		28	2.4×20	42		38	2.4×25
43		38	2.4×25	44		57	2.4×30
45		75	2.4×30	46		41	2.4×30
47		89	8×8	48		98	8×8
49		147	8×8	50		163	8×8

7. 3 Main Control Error List

Code	Name	Content	Solution
E-001	Pedal not in the middle position	Pedal is stepped down when entering the ready sewing status	Make sure the pedal is not stepped down when entering the ready sewing status
E-002	Pause	RESET key is pressed while sewing machine is running. The machine pauses.	Restart or return-to-origin after pressing RESET key for thread-trimming.
E-003	Head Tilt Error	Head tilt detection switch is set as ON.	The sewing machine cannot be operated with the head tilted. Return the sewing machine head to its proper position. Technicians can use short circuit board to short circuit the 2P blue plug on the head board.
E-004	Low Voltage Error	The voltage of power is too low.	Sampling UZKIN analog quantity is too low. Confirm the voltage of power and related

Code	Name	Content	Solution
			circuit.
E-005	Overvoltage Error	The voltage of power is over the specified value.	The detected signal of AC_OVDT is high. Confirm the voltage of power and related circuit.
E-007	Main shaft driver abnormal	The error is detected in main shaft driver.	Turn off the power and repower the machine after a while.
E-008	24V power supply error	24V over-current	Turn off the power supply and then turn it on again after a while.
E-009	24V power supply error	24V voltage is too low	Turn off the power supply and then turn it on again after a while.
E-010	Air valve (fan) problem	After start, the system detects abnormal signal about the voltage of the air valve or fan.	Shut down the machine to check if there is any short circuit
E-012	Presser Foot Position Error	Presser foot is not at proper position.	Turn off the power and check connection of the CZ025 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-013	Encoder Disconnection	The system can't detect ADTC signal.	Turn off the power, and confirm whether plug X5 is connected properly.
E-014	Motor Running Abnormal	When the main shaft motor is running, the range of the electrical angle is abnormal at 0 °	Shut down the machine to check the motor encoder.
E-015	Beyond Sewing Area	The sewing area is beyond the limit.	Press RESET switch to confirm the pattern and its X/Y scale rate. Triggering condition: pattern computation error.
E-016	Needle Bar Up Position Error	The needle bar is not at UP position.	The main shaft stop position error may be caused by main shaft drive, or may be caused by human error. Turn the hand wheel to return the needle bar to its UP position.
E-018	Cutter Position Error	The cutter is not at the right position.	Turn off the power and check the connection of the CZ024 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-019	Emergency Stop Switch Not at Normal Position	Before start, the emergency stop switch is found pressed down	Manually solve the problem
E-020	Stepping Software Version Error	The software version for the stepping board is false.	Change the stepping board or update the stepping board program.
E-022	Machine Stop Due	After entering aging	Shut down the machine

48

Code	Name	Content	Solution
	to Aging	mode, the machine stops.	
E-023	Thread-catching Position Error	The thread-catching device is at wrong position.	Turn off the power and check the connection of the CZ026 at the head signal circuit board. If the connection is ok, check the optocoupler.
E-025	X Origin Search Error	X origin sensor doesn't change.	Turn off power and check the connections of CZ021 on head signal circuit board and X9 on control box.
E-026	Y Origin Search Error	Y origin sensor doesn't change.	Turn off power and check the connections of CZ022 on head signal circuit board and X9 on control box.
E-027	Presser Origin Search Error	Presser origin sensor doesn't change.	Turn off power and check the connections of CZ025 on head signal circuit board and X9 on control box.
E-028	Thread-catching Origin Search Error	Thread-catching origin sensor doesn't change.	Turn off power and check the connections of CZ026 on head signal circuit board and X9 on control box.
E-030	Communication Error between Main-board and Stepping Board	Communication between Main-board and Stepping Board is down.	Turn off the power and repower the machine after a while. Check the connections of the communication cable, main board and drive board.
E-031	Stepping driver Error	Over-current occurs to stepping drive board.	Turn off the power and repower the machine after a while.
E-034	Main shaft driver abnormal	The error is detected in main shaft driver.	Turn off the power and repower the machine after a while.
E-035	Main Board IPM Sudden Over-current	The current for the main board IPM drive module is too much within a short period of time	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-036	Main Board IPM Multiple Over-current	Over-current happens repeatedly to the main board IPM drive module after power on	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-037	Main Shaft Over-current	Motor stops.	If there is no mechanic problem, check the connection of the main shaft encoder
E-038	Machine Lock Error	The main-shaft of sewing machine can't rotate due to some problem.	After user sending order to rotate the main shaft, the main shaft motor doesn't respond. Check the PWM curve of the main shaft motor, the signal of the encoder and whether there is mechanic problem.
E-039	Main Shaft	The system detects the	Turn off the power and repower the machine

Code	Name	Content	Solution
	Over-speed	actual speed of the main shaft motor exceeding the speed limit	after a while.
E-040	Current Abnormal When Stop	Over-current occurs during the stop process of the main shaft	Turn off the power and repower the machine after a while. Change the main shaft motor to check if the motor is damaged; if problem remains, change the main board.
E-043	Thread-trimming Motor Origin Search Error	Thread-trimming origin sensor doesn't change.	Turn off power and check the connections of CZ026 on head signal circuit board and X9 on control box.
E-044	Machine Head Board Parameter Abnormal with Lower Computer	The lower computer read abnormal parameter from the machine head board.	Check the machine head board and the connection of X9 cable. Press RESET key to use parameter No. 67 to restore the parameters of the machine head board.
E-056	Stepping Close Loop DSP1(X25/X27) Communication Error	The verification of the received order at stepping board is failed	Check the connection of SPI communication cable
E-057	Stepping Close Loop DSP1 1st Route (X27) Over-Current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-058	Stepping Close Loop DSP1 1st Route (X27) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-059	Stepping Close Loop DSP1 1st Route (X27)Over-speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-060	Stepping Close Loop DSP1 2nd	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok,

Code	Name	Content	Solution
	Route (X25) Over-Current		user should check the hardware on stepping board
E-061	Stepping Close Loop DSP1 2nd Route (X25) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-062	Stepping Close Loop DSP1 2nd Route (X25) Over- speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-063	Stepping Close Loop DSP2(X21/X23) Communication Error	The verification of the received order at stepping board is failed	Check the connection of SPI communication cable
E-064	Stepping Close Loop DSP2 1st Route (X23) Over-Current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-065	Stepping Close Loop DSP2 1st Route (X23) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-066	Stepping Close Loop DSP2 1st Route (X23) Over- speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error

Code	Name	Content	Solution
E-067	Stepping Close Loop DSP2 2nd Route (X21)Over-current	Large current is detected by hardware	At first, please check motor. Then check the resistance and sensor value. If the motor is ok, user should check the hardware on stepping board
E-068	Stepping Close Loop DSP2 2nd Route (X21) Position Error	The detected encoder response position is not consistent with the position set in the order.	Change the stepping motor to open loop mode and run it. If the motor can work normally, the motor is ok. If the motor can't work normally, user should check the driving part on the stepping board and the motor itself. After the above operations, user should check the encoder. Make sure the connection and the condition of the encoder cable is ok. And make sure the signal response part on the stepping board and the encoder itself is ok.
E-069	Stepping Close Loop DSP2 2nd Route (X21) Over-speed	The system will give this warning when it detects the abnormal motor speed via the encoder response signal.	The checking method is the same with that for Position Error
E-070	Stepping Board 90V Power Supply Error	Stepping board 90V is over-current	Turn off the power supply and then turn it on again after a while.

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