20X

套结钉扣机(液晶按键 N)

Bar-tacking and Button Sewing Machine(LCD N)

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 our 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

3. Signs & Definitions of Safety Marks

This Operation 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 injury. 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 mark 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!”)

4. Safety Matters for Attention

Danger Danger	
	For opening the control box, please turn off the power and take away the plug from socket firstly, and then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the person injury.
Caution Caution	
Usage Environment	
	Try not to use this sewing machine near the sources of strong disturbance like high-frequency welding machine. 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, Therefore a voltage regulator is needed in that situation.
	Working temperature: 0℃~45℃. The operation of the sewing machine will be affacted 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 compressed gas shall be over the consumption required by the sewing machine. The insufficient supply of compressed gas will lead to the abnormal action of sewing machine.

	In case of thunder, lightning or storm, please turn off the power and pull plug out the socket. Because these will have 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 at that situation by mistake.
	When you tilt or erect the head of sewing machine, please use both of your hand 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 add security cover on the machine 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 in case the needle is broken.
	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 on needles; 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 of 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 at once so as to avoid the personal injury caused by the mis-operation of start switch:.

	1.Repair, adjustment and inspection ; 2.Replacement of the component like curve needle, knife and so on
	Before the inspection, adjustment or repair of any gas-driven devices, user shall cut off the gas supply till the pressure indicator falls to 0.
	When adjusting the devices needing the power supply and gas supply, users can’ t be too careful to follow 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 20X 技术参数表

No.	机型 / 项目	20X
1	用途	套结、钉扣
2	缝制范围	X(左右) 方向 40mm× Y(前后) 方向 30mm
3	最高缝纫速度	套结模式：3200rpm 钉扣模式：2700rpm
4	缝迹长度	0.1mm–10.0mm (0.1mm 单位)
5	送布	间接送布(脉冲马达 2 轴驱动方式)
6	针杆行程	41.2mm
7	机针	DP ×5 #14 (DP×5 #11(F,M), (DP×17#21 厚料))
8	抬压脚方式	脉冲马达
9	压脚上升量	标准 14mm, 最大 17mm(反转抬针时)
10	标准花样数	100 个
11	拨线方式	脉冲马达抬压脚连动
12	抓线装置	标准：通常 0
13	面线张力	电子夹线器
14	旋梭	半旋转标准摆梭
15	加油方式	旋转部：微量加油
16	机油	缝纫机油
17	润滑脂	缝纫机用润滑脂
18	数据记忆	Flash Memory
19	放大缩小功能	X 方向、Y 方向各自独立缩放 20%~200%（1%单位）
20	放大缩小方式	线迹长度增减方式
21	缝制速度限制	400-3200rpm(100rpm 单位)
22	花样选择功能	花样号码指定方式(1-200)
23	底线记数	上转/下转方式(0 –999999)
24	机械马达	550W 小型 AC 伺服马达(直接驱动方式)
25	外形尺寸	208mm×106mm×64mm
26	控制箱重量	约为 1.4 Kg
27	额定功率	770W
28	使用温度范围	0℃ - 45℃
29	使用湿度范围	35% - 85% （无结露）
30	电源电压	AC 220V ± 10%；50/60Hz

※最高缝制速度请根据缝制条件降低速度使用

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

1.2 应用机型

20X 电子套结(加固)钉扣机。

1.3 输入方式

采用按键输入方式。

1.4 显示方式

采用黑白点阵液晶屏和发光二极管显示方式。

1.5 面板布局

操作面板整体为长方形，分为两部分，显示部分为 1 个点阵液晶屏和 2 个发光二极管，操作部分为 24 个按键。参考操作说明控制面板图。

1.6 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。

1.7 操作方式

功能键包括准备键，复位键，模式键，穿线/绕线键、选择键、加减键、编辑键、返回键以及特殊功能键等。具体操作方法请参考第 2 节“操作说明”。

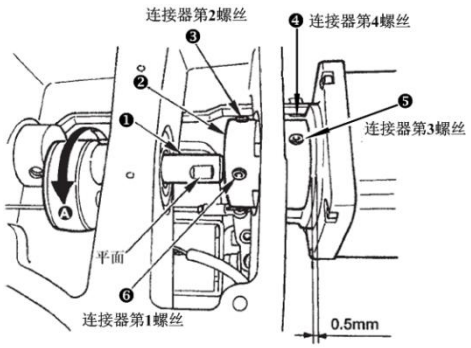
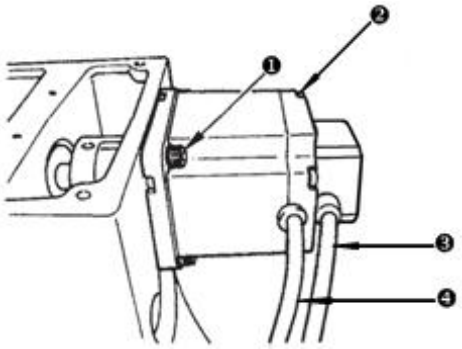
2 操作及调试

2.1 控制面板图示及说明

序号	功能	描述
A	液晶显示屏	显示图案编号、形状等各种数据。
B	模式键	设置参数或存储花样的开关键。
C	复位键	解除异常、将设定值返回到初期值时使用。
D	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。
E	缝制准备 LED	缝制模式时点亮。
F	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。
G	压脚找原点键	在 LED 灯灭的状态下，压脚放下，XY 步进找原点。
H	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，把拨线机构（或扫线机头）移动到右侧。在卷线时使用。
I	项目选择键	切换选择不同图案类型、菜单项或参数。
J	计数器键	在缝纫模式编辑（未准备）状态下，按下后可以直接进入计数器设置模式。
K	编辑键	显示编辑画面，选择项目，或者显示详细画面。
L	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。

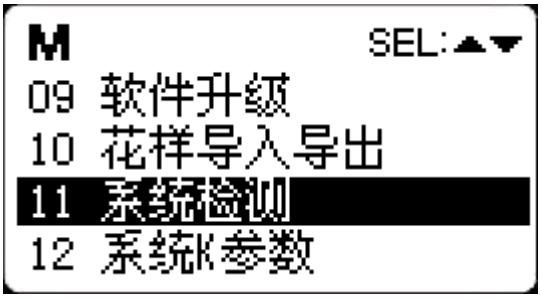
M	花样转速设置键	在缝纫模式编辑（未准备）状态下，按下后可以直接进入花样参数的转速设置模式。
N	返回键	返回前一个画面。
0	P 花样设置键	设置 P 花样并将其存储，存储后的 P 花样通过按此键就可立即进行缝制。
P	C 花样设置键	设置 C 花样并将其存储，存储后的 C 花样通过此案件就可立即进行缝制。

2.2 主轴马达的安装

主轴马达通过连接器❷连接到缝纫机的上轴❶上，马达连接器由 4 个螺丝分别固定到缝纫机上轴及马达主轴上。首先，将连接器第 1 螺丝❻垂直于缝纫机上轴平面拧紧，然后拧紧连接器第 2 螺丝❸；连接器第 3 螺丝❺垂直于马达主轴平面拧紧，然后拧紧连接器第 4 螺丝❹，这样完成了主轴马达与缝纫机上轴的连接。安装图示如图：	
主轴马达的外部线缆朝向（从缝纫机后部向前部看去，电机线缆朝向观察者的左手边），安装位置如图所示： ❶为主轴马达安装固定螺丝，共有 4 个；❷为主轴马达后壳固定螺丝，共 4 个； ❸为主轴马达编码器信号线；❹为主轴马达电源线。	

2.3 系统检测模式（调试模式）

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。

2.3.1 系统输入检测

1) 能够检验操作控制盘键、踏板开关、各种传感器等的输入状态。在选中“01 系统输入检测”时，按编辑键进入。

2) 在该模式中，按项目选择键切换输入检测项目，而检测信号的状态在屏幕右侧显示。

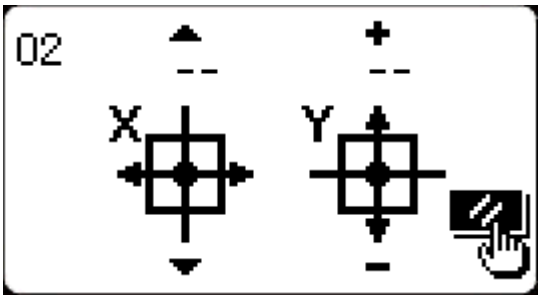
2.3.2 XY 原点校正

显示 XY 马达的寸动操作，原点检索操作以及 X/Y 原点传感器的状态。

1) XY 电机单步运行测试

如果在开机后从未按过准备键进入准备状态，而是直接按模式键 M 进入系统菜单的系统检测模式，则进入该“02 XY 原点校正”模式后可以直接按项目选择键和数据变更键 分别对 XY 电机进行单步移动。如果在开机后按准备键进入过准备状态，则每次进入该“02 XY 原点校正”模式后必须先按一次复位键执行 XY 原点检索后才能单步移动电机，而此时表示的是 XY 电机原点校正功能。

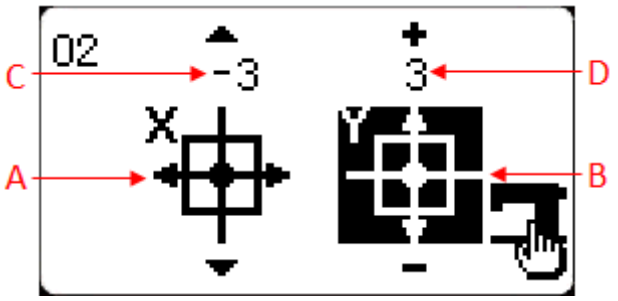
在移动 XY 电机的过程中，如果原点传感器信号发生变化，屏幕显示的图标会改变为反色显示。



2) XY 电机原点校正

先按一次复位键  执行 XY 原点检索，屏幕上会显示出 X 电机的原点传感器状态 A 和当前校正值 C，以及 Y 电机的原点传感器状态 B 和当前校正值 D。

按项目选择键  和数据变更键  分别对 XY 电机进行单步移动，同时校正值也会随之改变，观察压脚正中与机针针孔位置重合后，按准备键  保存校正值并返回。如果修改后但不想保存校正值，需要按返回键  或模式键  放弃保存并返回。



2.3.3 老化模式

在选中“03 老化模式”时，按编辑键  进入连续运转模式。在设定了连续运转条件后，启动连续运转模式；如果要解除连续运转模式请关闭电源。

1) 间隔时间的设定

在显示“(01)老化间隔”时，按数据变更键 

 ，设定两次运转的间隔时间。

从 0 至 9900ms 可以 100ms 为单位进行设定。（默认值 2000ms ）。

2) 缝制结束有无原点检索的设定。

按项目选择键  键切换到显示“(02) 原点检索”，设定缝制结束时有无原点检索。

OFF：无效(默认值)

ON：有效（每次缝制结束后进行原点检索）

设定完成后，按准备键  保存设置，并进入普通缝制模式主界面。

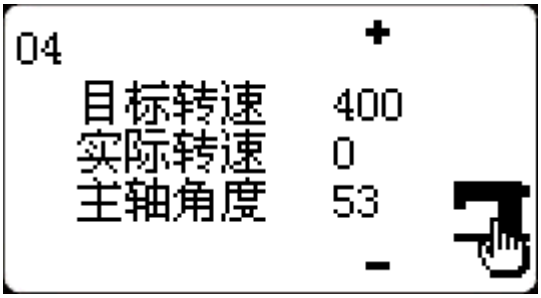
3) 连续操作

在普通花样缝制模式下，用户可以设定花样号码、X、Y 缩放率、最高转速等条件然后开始缝制。缝制结束之后，如果在第 2 步操作中设定有原点检索的话，则开始进行 X/Y 压脚、切线/抓线的各个马达的原点检索；在经过设定的时间间隔后再次自动开始进行缝制；如果要中止连续缝制，请在缝纫停止时，按准备键  停止。

若要终止继续缝制，请关闭电源。

2.3.4 主轴检测

设定机器的转速，在设定的转速下仅驱动机器的主马达，显示实测的转速。

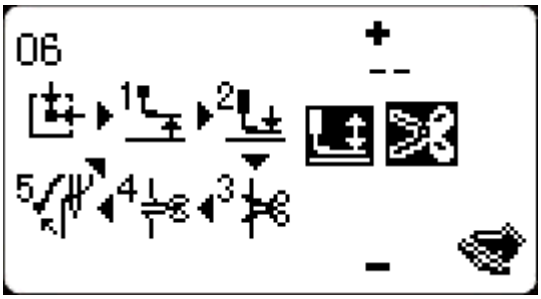
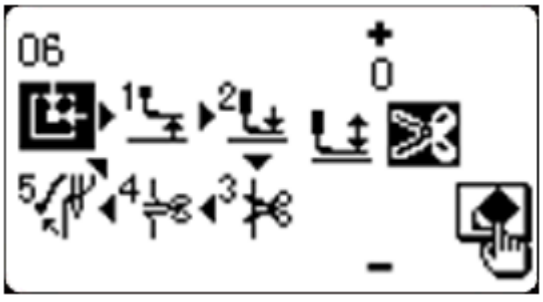
1) 准备 在选中“04 主轴检测”时，按编辑键进入该模式，各个电机自动执行原点检索，屏幕上会显示出主轴电机的“目标转速”、“实际转速”和“主轴角度”。	

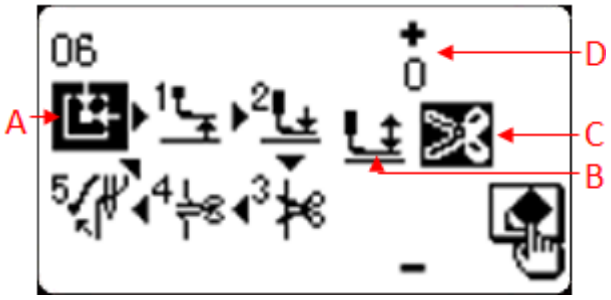
2) 操作

按数据变更键，可以变更设定主轴的目标转速，然后按准备键，机器以设定的转速开始运转。如需再次变更设定转速，可以在运转过程中继续使用数据变更键设定转速值，然后按准备键，机器以新设定的转速运转。如需停止运转，按复位键。如需退出该模式，请在机器停止运转的情况下，按按返回键或模式键M。

2.3.5 压脚电机检测

显示压脚、切线马达的寸动操作，原点检索操作以及压脚原点传感器和切线传感器的状态。

1) 压脚电机运行测试 类似【02.3.2 XY 原点校正】模式中的操作，在上电后没有进入过准备状态的情况下，进入“06 压脚电机检测”模式后，可以直接按数据变更键对压脚电机执行单步移动测试，屏幕上会显示压脚原点剪刀位置两传感器信号状态。而一旦执行了原点检索，每次进入该模式后，必须先踩踏板到 2 档执行原点检索，之后才能移动电机。	
2) 压脚电机位置模拟运行测试 在该模式中踩踏板到 2 档执行原点检索后，可以按编辑键让电机在抬起、降下等几个工作位置模拟运行。	

3) 压脚电机原点校正 在该模式中踩踏板到 2 档执行原点检索后，不按编辑键  让电机保持在原点位置 A 状态下，按数据变更键  可以修改当前原点校正值 D，同时压脚原点传感器信号 B 和剪刀位置传感器信号 C 也会根据实际状态显示变化。修改好是设置数值后，按准备键  保存校正值并返回。如果修改后但不想保存校正值，需要按返回键  或模式键  放弃保存并返回。	

2.3.6 系统输出检测

在该模式下，可以通过按项目选择键  键切换要检测的设备，按编辑键  驱动设备动作。

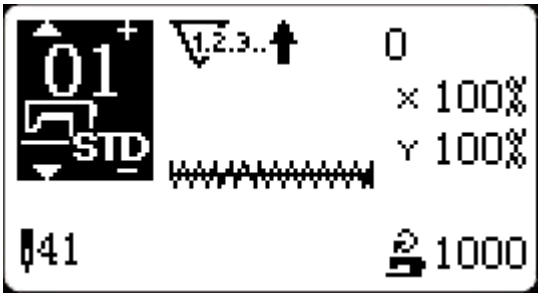
（01）拨线电磁铁
（02）主夹线器电磁铁
（03）起针夹线器电磁铁

2.3.7 面板检测

在该模式下，可以通过按编辑键  点亮面板上的所有 LED 灯，并让 LCD 液晶屏全屏显示，再次按编辑键  返回正常显示状态。

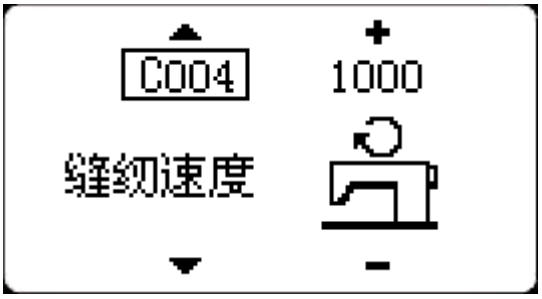
2.4 基本操作

2.4.1 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、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（包括外部导入花样）、P 型花样和 C 型循环花样。***	

2.4.2 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。
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。**	
(2) 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。 还可在缝纫模式编辑（未准备）状态下，按花样转速设置键，直接显示出 C004 缝制速度。	

(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.。

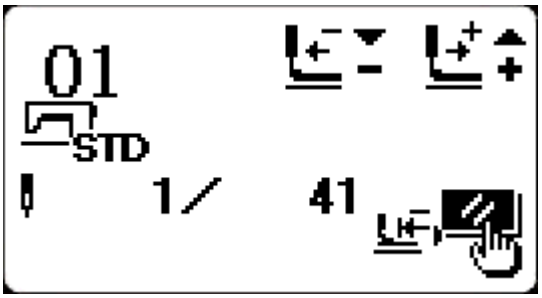
注意：不按准备键  开关，关掉电源后，图案 No.、XY 扩大缩小率、最高转速的设定值均不能被记忆。

2.4.3 图案形状的确认

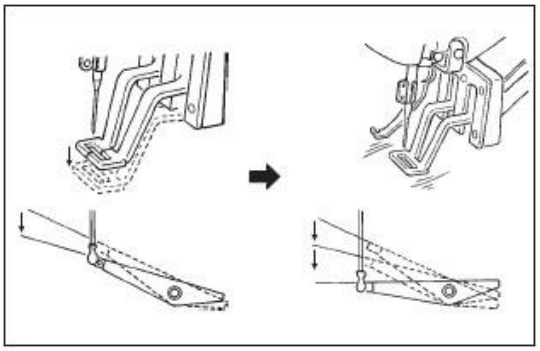
警告！

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。

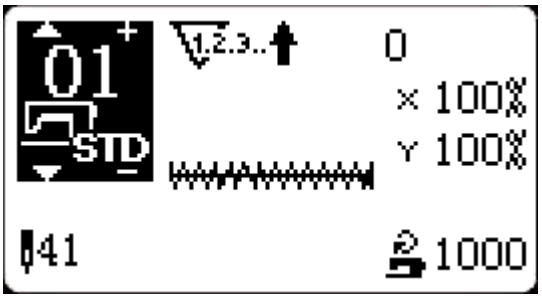
2. 确认图案形状时，请注意如果在针杆下降后的状态下按了＋／－键的话，针杆将自动地复位到上位置之后压脚才移动。

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」。	

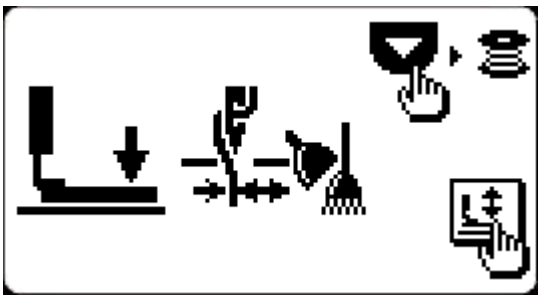
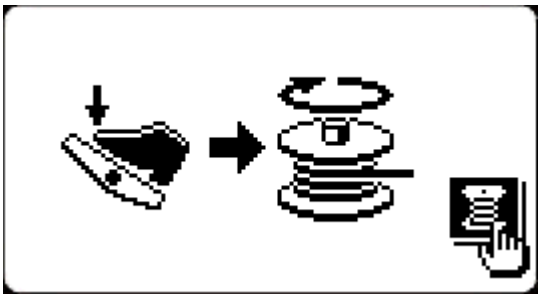
2.4.4 缝制

缝制： 1. 把缝制品放到压脚部。 2. 踩踏板开关至第一级，，压脚下降；松开踏板后，压脚上升。 3. 踩踏板开关至第二级之后开始缝制。 4. 缝制结束后，压脚上升返回到起始缝的位置。	

2.4.5 向其他图案的变更

按准备键  ，准备键 LED 指示灯熄灭。 用数据变更键  设定图案 No.。 与【02.4.2 项目数据的设定】同样，可以设定 XY 放大缩小率、速度等。 按了准备键  之后，准备键 LED 指示灯点亮，变成可以缝制的状态。 选择图案后，请一定确认图案的形状。 万一图案远离压脚，缝制途中机针会碰到压脚，弄断机针。 如要切换到 P 型花样或 C 型花样则需要先进行切换花样模式	

2.4.6 卷绕底线

1) 按准备键  ，准备键 LED 指示灯熄灭。 2) 按压脚卷线键  ，选择下降压脚。 3) 按▼键  ，显示卷线画面。 4) 踩踏踏板之后，缝纫机转动。	
5) 再次踩踏板或者按了复位键  之后，缝纫机停止。 6) 按了准备键  、返回键  之后，结束卷线画面。 **注意：刚刚打开（ON）电源后，卷线不动作。选择任意花样，按  键进行原点检索之后再进行操作。**	

2.4.7 缝纫中计数器使用

(5) 计数器值的设定方法

1) 进入计数器设定画面

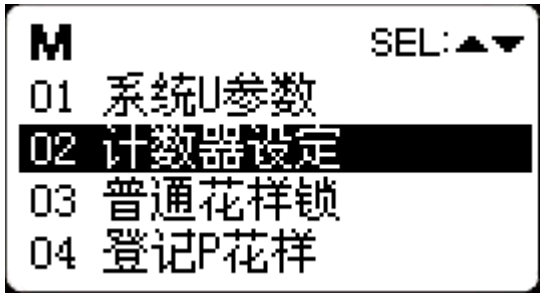
a. 在准备键 LED 指示灯熄灭的输入模式，按模式键 M，显示出模式画面。

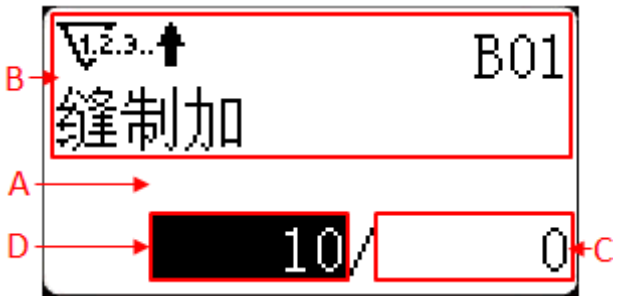
用项目选择键，把「02 计数器设定」设定为选择状态。

按编辑键，显示计数器画面 A。

计数器画面 A 被显示，成为可以设定。计数器值的设定只能用输入模式进行设定。如果是缝制模式时，请按准备键，准备键 LED 指示灯熄灭的状态下。

b. 在准备键 LED 指示灯熄灭的输入模式，按计数器键，显示出计数器画面 A。





2) 计数器选择和数值变更

按项目选择键，反转表示计数器类别的图标 B。按数据变更键，从下列计数器类别中选择适当的计数器。按项目选择键，反转**计数器设定值 C**。按数据变更键，输入设定值（目标值）。

3) 计数器现在值的变更

按项目选择键，反转**计数器现在值 D**。按复位键之后，可以清除计数器途中的值。

另外，用数据变更键也可以进行数值编辑（当前值）。

4) 计数器类别

B01 缝制加数计数器

每进行 1 形状的缝制之后，现在值数字加 1。

现在值和设定计数器

B02 缝制减数计数器

每进行 1 形状的缝制之后，现在值数字减 1。

现在值到达 0 之后，显示出减数计数器画面。

B03 件数加数计数器

加算计数进行 1 个循环缝的各个现在值。现在值和设定值相等之后，显示出加数计数器画面。

B04 件数减数计数器

减算计数进行 1 个循环缝的各个现在值。现在值到达 0 之后，显示出减数计数器画面。

B05 底线加数计数器

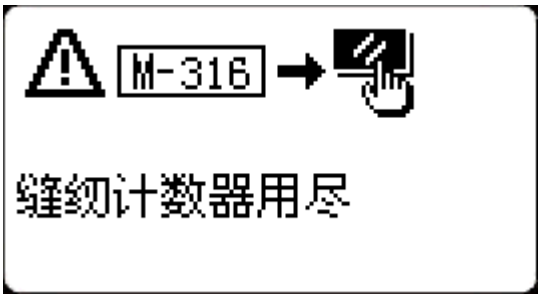
每缝制 10 针，在现在值的基础上进行加算。现在值和设定值相等之后，显示计数器加数画面。

B06 底线减数计数器

每缝制 10 针，在现在值的基础上进行减算。现在值等于 0 之后，显示计数器加数画面。

B07 不使用计数器

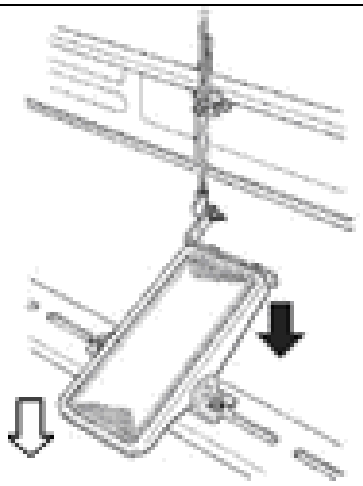
5) 计数器加数的解除方法

缝制作业中如果到达加数条件之后，则显示出加数画面。按复位键 之后，复位计数器，返回缝制模式。而且，开始再记数。	

2.4.8 暂停的使用方法

(1) 踏板急停功能

脚踏板分为三档：1 档压脚下降；2 档正常缝制；3 档（脚跟向后反踩）为急停档。

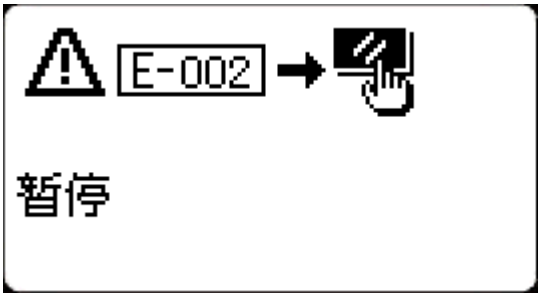
1） 按下准备键后向前⬇踩脚踏板，压脚下降； 2） 再次向前⬇踩脚踏板便开始缝制； 3） 在缝制过程中，如果需要急停，您可以向后⇩踩一下脚踏板，机器进入急停，面板显示“E-002”。	

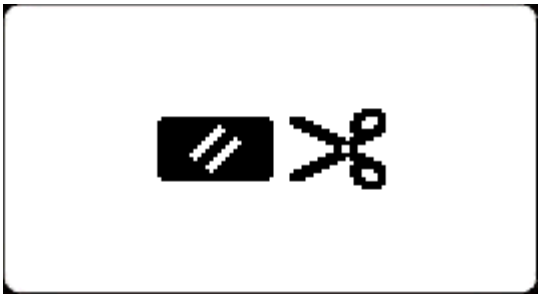
(2) 面板急停

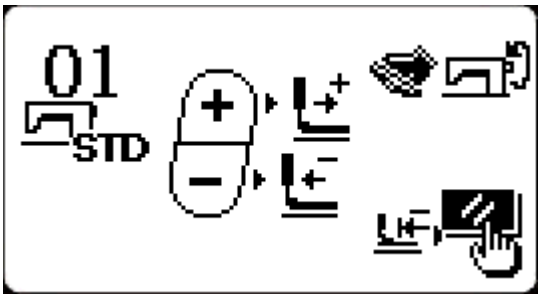
1) 用存储器开关 U031 把复位键设定为 1 之后，复位键变成暂停键，缝制中可以用来停止缝纫机。

2) 用复位键  让缝纫机停止，E-002 被显示出来。按了复位键  之后，解除异常，前进后退送布画面被显示出来。

注：除上述两种操作方式外，可根据需求设置为外置急停，并在电控 X45 插座上外接开关。







3) 解除后的操作有以下 3 种

1. 用开始开关重新开始缝制。

2. 按复位键  ，进行切线后，用数据变更键  调整位置，然后再用开始开关开始缝制。

3. 按复位键  ，进行切线后，再次按复位键  复归原点。

4.按复位键进行切线后，再次踩踏板可继续进行缝制。

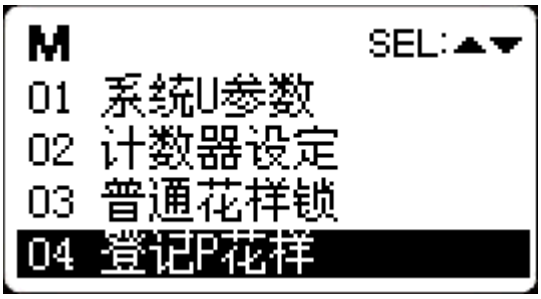
2.5 设置 P 花样与 C 花样

2.5.1 图案键登记与缝制

(1) 往图案键上的登记

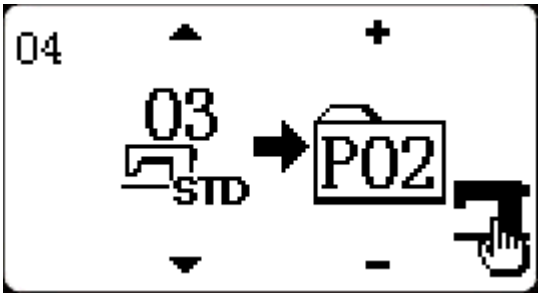
设定例：把图案 No.3、X 扩大缩小 50％、Y 扩大缩小 80％、最高速度限制 2,000sti/min、线张力“50”、图案位置右移 0.5mm、前移-1mm 的设定登记到 P2。

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。



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[M]或者按返回键[↩]。



4) 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。

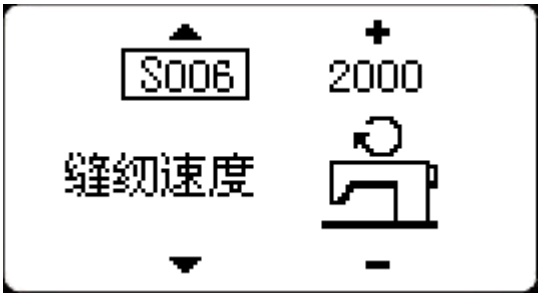
5) 按了编辑键[✎]之后，按项目选择键[▲][▼]，找到「X 缩放率」，显示为 100%。可以用 1%单位来设定 X 缩放率。用数据变更键[+][−]把数据变更为 50%。

6) 按项目选择键[▲][▼]，找到「Y 缩放率」，显示为 100%。可以用 1%单位来设定 Y 缩放率。用数据变更键[+][−]把数据变更为 80%。

7) 按项目选择键[▲][▼]，找到「缝纫速度」，显示为当前值，可以用 100 单位来设定缝纫速度。用数据变更键[+][−]把数据变更为「2000」sti/min。

8) 按准备键[↩]之后，设定结束。

9) 按返回键[↩]。结束图案登记方式。



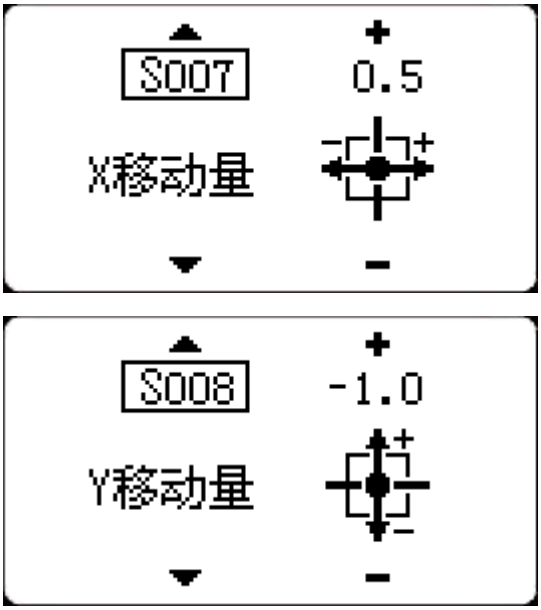
分别进行设定，把 X 移动量设定为「0.5」，把 Y 移动量设定为「－1.0」。

1) 按了编辑键之后，「X 移动量」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」。

2) 按了编辑键之后，「Y 移动量」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」。

3) 按准备键之后，设定结束。

4) 按返回键。结束图案登记方式。



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 P6 P7 键的组合（同时按）进行缝制。

P-No.	选择键	P-No.	选择键	P-No.	选择键	P-No.	选择键
P1	P1	P8	P1+P4	P15	P4 +P5	P22	P2+P3+P4
P2	P2	P9	P1+P5	P16	P1+P2+P3	P23	P2+P3+P5
P3	P3	P10	P2+P3	P17	P1+P2+P4	P24	P2+P4+P5
P4	P4	P11	P2+P4	P18	P1+P2+P5	P25	P3+P4+P5
P5	P5	P12	P2+P5	P19	P1+P3+P4		
P6	P6	P13	P3+P4	P20	P1+P3+P5		
P7	P7	P14	P3+P5	P21	P1+P4+P5		

2.5.2 使用组合功能（循环缝制）的缝制

本缝纫机可以顺次地缝制复数的循环缝制图案数据。
最多可以输入 99 个图案，缝制具有多个不同的图案的缝制物时可以使用。
另外，最多还可以登记 99 个数据。需要时，请拷贝之后使用。

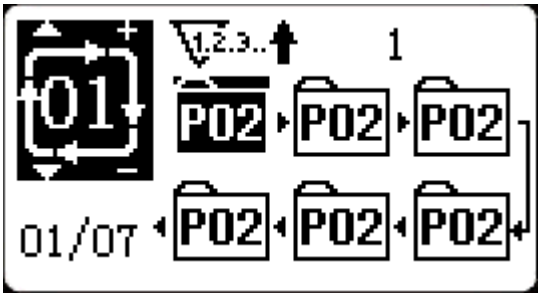
(1) 循环数据的选择

1) 设定为输入模式

按准备键  LED 指示灯熄灭输入模式下变换为输入模式。仅输入模式时，可以选择连续缝制数据。

2) 选择循环缝制数据

按项目选择键  顺序在已登记的图案之间进行切换，显示被登记的循环数据 No.。这时，请选择想缝制的循环数据 No.。



3) 进行缝制

在连续缝制数据被选择的状态下，按了准备键  之后，准备完了 LED 亮灯，变成可以缝制。

选择花样时仅登记了循环数据 No.1，没有输入缝制图案，不能成为缝制状态。因此，请参照下页（2）循环数据的编辑方法进行输入。

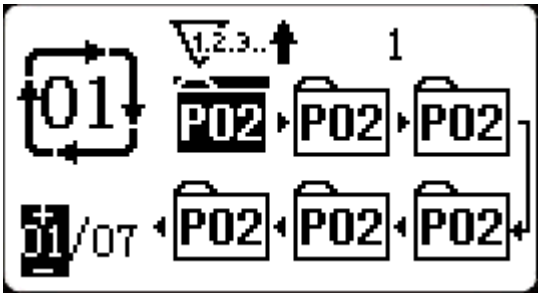
(2) 循环缝数据的编辑方法

1) 设定为输入模式

在准备键 LED 灯熄灭状态下，可以进行连续缝制数据操作。按三角箭切换花样模式到循环花样模式。

2) 把循环缝数据设定为编辑状态

按了编辑键  之后，进入编辑状态，当前选中编辑点的图案 No.变为反色显示。按了项目选择键  之后，在选择位置追加指示图标  被显示，此状态可以编辑数据。



3) 添加花样

按了项目选择键  之后，当前选中编辑点顺次切换，在移动到最后一个图案之后，显示出追加图标  。

4) 修改花样

按项目选择键  ，移动到要修改的花样位置。

5) 插入花样

在编辑点选择中，按了编辑键  之后，在选择位置追加指示图标  被显示，此时可以插入图案数据。

6) 上述功能后续操作

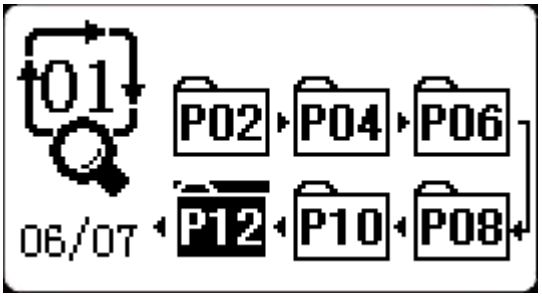
按数据变更键[+][−]之后，可以变更修改所需要的花样。被登记的图案 No.被显示出来，可以进行选择。如有上述需要，可进行相对应的步骤操作。

7) 删除或取消花样数据

按复位键[//]后，可以删除编辑点的图案数据。

按了返回键[↩]之后，取消图案数据的插入，移动到输入模式。

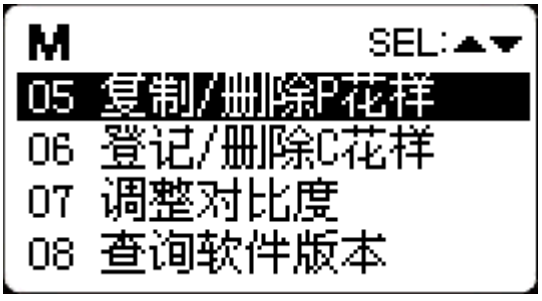
(3) 缝制操作

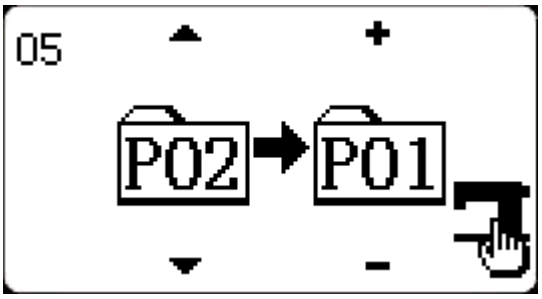
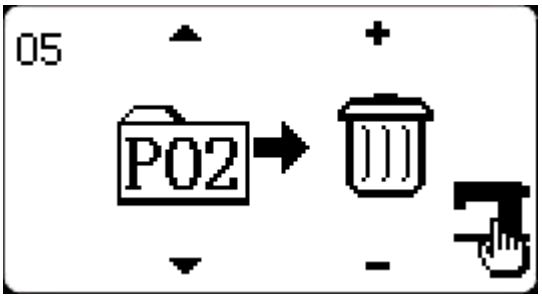
1) 打开（ON）电源。 2) 用项目选择键[▲][▼]选择循环图案,然后用数据变更键[+][−]选择循环图案 No.。 3) 按准备键[⟲],准备键 LED 指示灯点亮之后，压脚移动，然后上升。 4) 按数据变更键[+][−],可选择开始缝制的子花样。	

2.6 复制/删除 P 花样和 C 花样

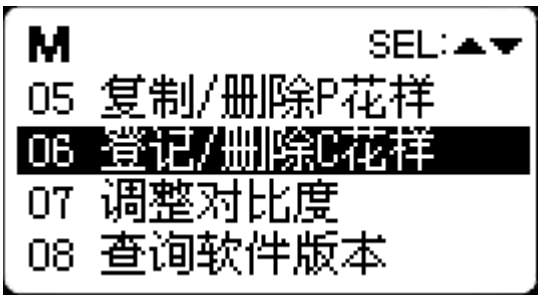
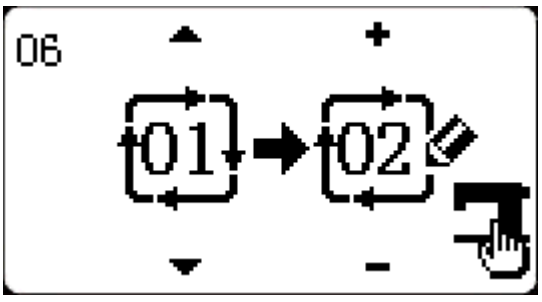
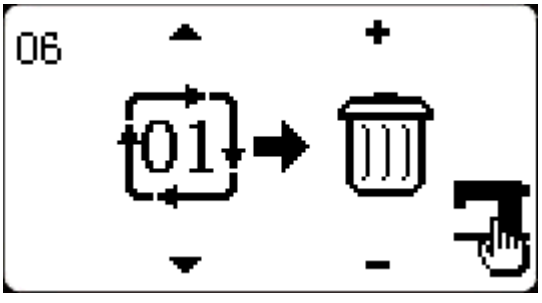
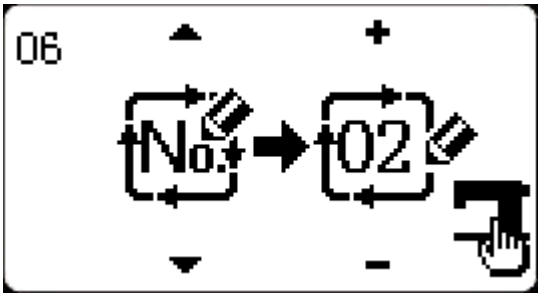
可以将已经登记的 P 花样复制为新的 P 花样，C 花样也可以复制。也可以将已经存在的 P 花样或 C 花样删除（但如果只剩下最后一个 C 花样，这个 C 花样是不可以删除的）。

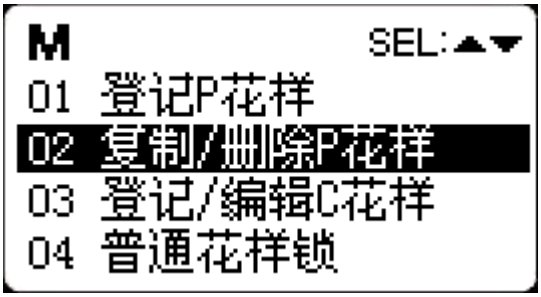
2.6.1 复制/删除 P 花样

1) 在缝制灯熄灭的状态下，按模式键[M]进入系统菜单，按项目选择键[▲][▼]选中“05 复制/删除 P 花样”，再按编辑键[✎]进入该模式。	

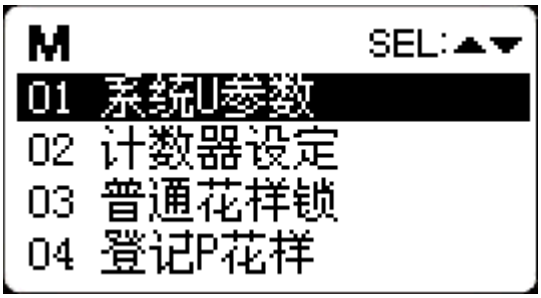
2) 用项目选择键[▲][▼]切换被复制（已经存在）的 P 花样号，用变更数据键[+][−]切换要新复制（尚未存在）的 P 花样号。确定好后，按准备键[ ]执行保存操作并返回。如果想要放弃修改，按返回键[ ]不保存返回。	
3) 在使用变更数据键[+][−]切换要新复制的 P 花样号时，可以选中删除图标，如果此时按准备键[ ]，将会删除已经存在的 P 花样。	

2.6.2 复制/删除 C 花样

1) 在系统菜单中，按项目选择键[▲][▼]选中“06 登记/删除 C 花样”，再按编辑键[ ]进入该模式。 2) 类似 P 花样的复制/删除操作，可以使用变更数据键[+][−]切换新的 C 花样号执行复制操作，选择表示删除 C 花样， 使用项目选择键[▲][▼]切换为 图标时， 表示登记一个新的空 C 花样。	 
	

注：在准备键 LED 指示灯熄灭的输入模式下，按 P/C 快捷键 也可进行复制/删除功能选项。	

2.7 存储器开关的启动和变更

1) 设定输入模式 在准备键 LED 指示灯熄灭的输入模式下， 可以变更存储器开关数据。 2) 进入存储器开关数据编辑画面 按了模式键 M 之后，模式画面（操作人员等级）被显示出来。 按项目选择键 ▲ ▼，选择「01 系统 U 参数」。按了编辑键 之后，变成存储器开关数据画面。	
3) 选择变更的存储器开关数据 按项目选择键 ▲ ▼，选择想变更的数据项目。 4) 变更数据 用变更数据键 + −，可以增减变更设定值。 5) 保存并退出 在执行完数据变更操作后，按返回键 保存修改并退出该模式回到模式画面，再按返回键 回到缝制画面。	

2.7.1 用户参数设置表

参数号	功能	调整范围	初值	备注
U001	缝制的最高速度。 （可以以 100rpm 为单位设定）	400～3200	3000	
U002	第 1 针的缝制速度。（抓线） （可以以 100rpm 为单位设定）	400～1500	1500	

U003	第 2 针的缝制速度。（抓线） （可以以 100rpm 为单位设定）	400～3200	2500	
U004	第 3 针的缝制速度。（抓线） （可以以 100rpm 为单位设定）	400～3200	2700	
U005	第 4 针的缝制速度。（抓线） （可以以 100rpm 为单位设定）	400～3200	3000	
U006	第 5 针的缝制速度。（抓线） （可以以 100rpm 为单位设定）	400～3200	3200	
U007	第 1 针的线张力（抓线）	0～200	200	
U008	切线时的线张力	0～200	0	
U009	切线时的线张力变换同步时间	－6～4	0	
U010	第 1 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～1500	400	
U011	第 2 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	900	
U012	第 3 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	2700	
U013	第 4 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	3000	
U014	第 5 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	3200	
U015	第 1 针的线张力（不抓线）	0～200	0	
U016	缝制开始的线张力（不抓线）变换同步时间。	－5～2	0	
U025	压脚分段开关	0：压脚分段 1：禁止压脚分段	1	
U026	2 级行程时压脚分段高度调整	50～90	70	
U030	语音开关	0：关闭 1： 开启	1	
U031	可以用操作键盘（清除键）停止缝纫机动作	0：无效 1：操作盘复位键 2：外接急停开关	0	
U032	可以禁止蜂鸣音响	0：不响蜂鸣音 1：操作盘操作音 2：操作盘操作音和报警提示音	2	
U033	设定抓线开放的针数	1～7 针	2	
U034	可以推迟抓线的同步时间	－10～0	-5	
U035	可以禁止上线抓线控制	0：通常 1：禁止	1	
U036	选择送布动作的同步时间 紧线不好时设定为－方向	－8～16	-8	

U037	缝制结束后压脚状态选择	0：先回起缝点再抬压脚； 1：回起缝点同时抬压脚； 2：踩踏板手动抬压脚；	1	
U038	压脚不上升时，只通过启动开关可进行缝制	0：普通 1：禁止抬压脚	0	
U039	缝制结束后是否检索原点	0：不检索原点 1：检索原点	0	
U040	设定循环缝制时的原点检索	0：不检索原点 1：每 1 图案结束 2：整个循环结束	0	
U041	设定 P 花样缝制时的原点检索	0：不检索原点 1：检索原点	0	
U042	设定针杆停止位置	0：上位置 1：上死点	0	
U043	机头 LED 照明灯亮度	0～10	8	
U046	可以禁止切线	0：通常 1：禁止切线	0	
U049	可以设定卷线速度	800～2000	1600	
U055	钉扣禁止起缝加固设置	0：起缝加固 1：起缝不加固	0	
U063	XY 缩放率设定方法	0：按百分比设定 1：按尺寸设定	0	
U135	起缝前压脚动作顺序	0：压脚在起缝点待命 1：压脚在原点待命	0	
U200	语言选择	根据设置选择语言	简体中文	
U212	气阀分离压脚下降顺序	0：同时下降 1：先下降左再下降右 2：先下降右再下降左	0	
U213	气阀分离上升顺序	0：同时上升 1：先上升左再上升右 2：先上升右再上升左	0	
U214	翻转压脚使能	0：禁止 1：使能	1	
U245	加油报警错误清除	按复位键清除	显示机器累计运转针数	

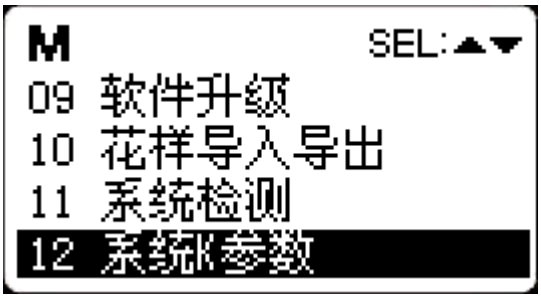
3 服务参数设置

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。

3.1 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 3~7 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，具体操作方法可参考【2.7 存储器开关的启动和变更】一节。



3.2 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 3：双踏板，但只运行踏板起控制作用	0	
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	剪线速度	300～800	400	
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	10～60	35	
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	0～9	5	
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	1～15	6	需重新上电生效
K104	Y 步进电机全流参数	1～15	6	需重新上电生效
K106	抓线步进电机全流参数	1～15	10	需重新上电生效
K108	压脚步进电机全流参数	1～15	9	需重新上电生效
K109	X 步进电机半流参数	1～15	8	需重新上电生效
K110	Y 步进电机半流参数	1～15	8	需重新上电生效
K111	压脚步进电机半流参数	1～15	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	1450～2050	1750	
K127	BD 长度	390～590	490	

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	
K180	(X)电机找原点方式	0：外部传感器 1：电机编码器 2：主控控制	0	
K181	(Y)电机找原点方式	0：外部传感器 1：电机编码器	0	

		2：主控控制		
K182	(C)电机找原点方式	0：外部传感器 1：电机编码器 2：主控控制	0	
K183	(P)电机找原点方式	0：外部传感器 1：电机编码器 2：主控控制	0	
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
K228	主轴停车锁轴使能	0：不锁轴 1：锁轴	0	
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。

3.3 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：

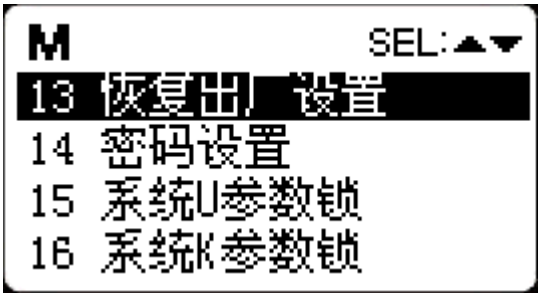
在缝制灯熄灭的状态下，按住模式键 M 持续 3 秒，面板蜂鸣器会鸣响一声，然后按 键选中“13 恢复出厂设置”，然后按辑键，进入恢复出厂设置菜单,再按项目选择键 选择要恢复的项目，确定后按准备键，确认执行恢复操作。

（01） 恢复面板

（02） 恢复机头板

（03） 恢复步进

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。	

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。

3.4 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  键选择需要查看的版本。

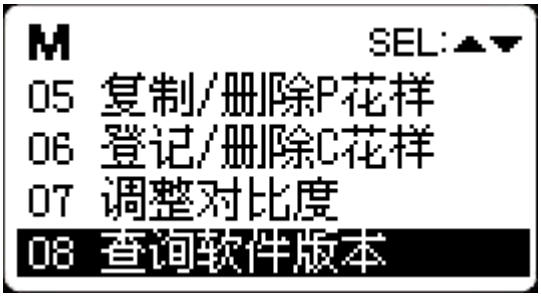
软件版本按顺序显示如下：

主控: 机型-MC-厂家代号-版本号

面板：机型-LKD2-厂家代号-版本号

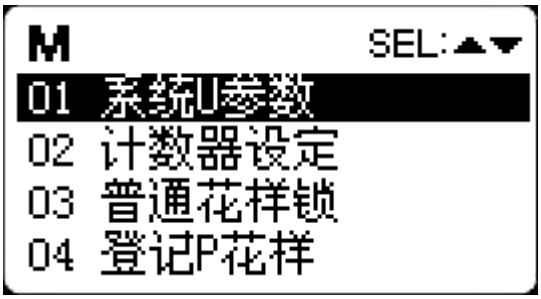
步进 1：机型-MD1-厂家代号-版本号

步进 2：机型-MD2-厂家代号-版本号



3.5 查看运行总针数和清除加润滑油报警信息

当机器运行一段时间后，可能会出现“M-333 机器需要加润滑油了”提示信息，表示需要补充润滑油。在此种情况下，可以先按复位键  清除报警信息，然后按模式键  进入系统菜单，选择“01 系统 U 参数”，按编辑键  进入 U 参数设置模式，再按项目选择键  选择“U245 清除加润滑油总针数”，按复位键  就可以清除，机器运行总针数，不再显示该提示信息了。

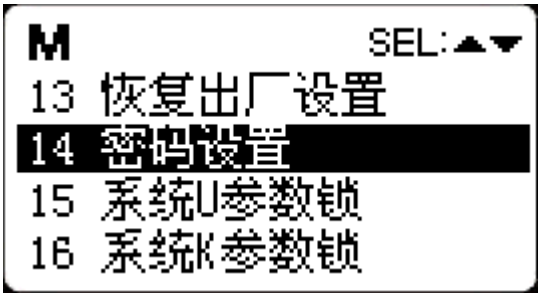
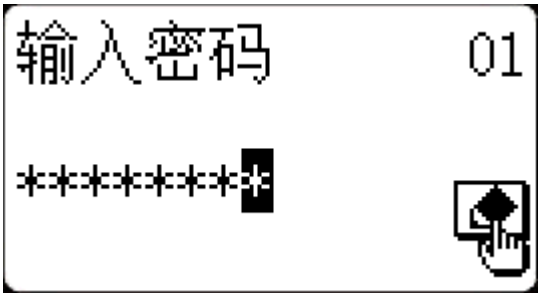
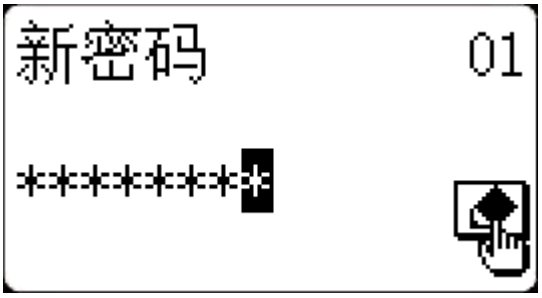


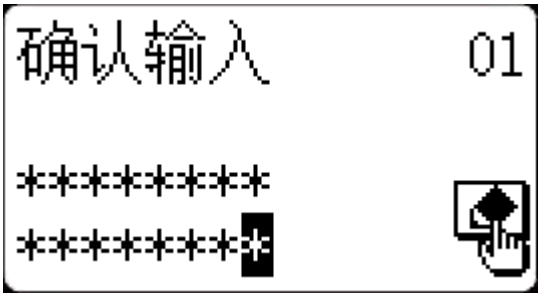
3.6 用户密码设置及系统 U/K 参数锁定

系统提供了可供用户自行设置的密码管理机制，用户输入设定密码后，可以解锁一些高级功能，如设置系统参数加锁保护，避免因为误操作修改了关键参数而导致机器出现异常的情况。

3.6.1 修改用户密码

如果需要使用用户密码，需要先进入密码管理模式修改密码，操作方法为：

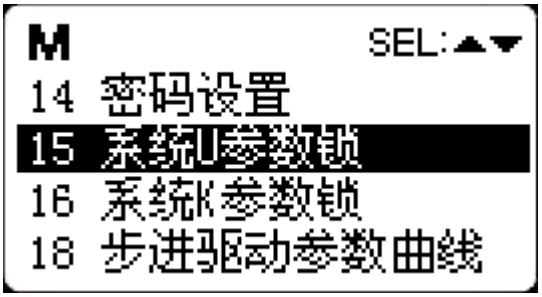
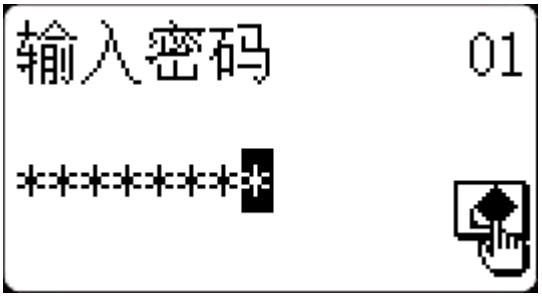
<table>
<tr>
<td>在缝制灯熄灭的状态下，长按模式键 M 持续按住 3 秒，听到蜂鸣器响声后，按项目选择键 ▲ ▼ 选择“14 密码设置”，然后按编辑键 ✎ 进入密码输入界面。</td>
<td> 
</td>
</tr>
<tr>
<td>通过按项目选择键 ▲ ▼ 可以向后移动、向前删除输入的密码位，按变更数据键 + − 设置当前选中位的密码字符。允许输入的密码字符范围是“0~9”，“A~Z”。当输入完毕后，按编辑键 ✎ 确认，如果密码输入正确，就会进入新密码输入界面，否则提示错误并返回系统菜单。
注意：出厂默认的密码是都是固定的，有关这方面的详细信息请您与您的机械供应商或代理商联系。</td>
<td> 
</td>
</tr>
<tr>
<td>需要输入第一行“新密码”和第二行“确认输入”的密码完全一致时，最后按编辑键 ✎ 确认才会修改成功，否则将提示“输入不一致”的错误信息。如果想要放弃修改密码操作而中途退出时，可以按返回键 ↩ 或模式键 M 退出。
注意：在成功修改密码后，请务必牢记密码并避免密码信息泄露！</td>
<td> 


</td>
</tr>
</table>

3.6.2 设置系统 U/K 参数锁

此功能可以让用户自行对需要保护的参数加锁或解锁，每一个系统 U 参数和 K 参数都可以独立设置锁

定或解锁状态。这里以系统 U 参数锁举例说明操作方法，K 参数方法与 U 参数类似。

在系统菜单中按项目选择键选择“15 系统 U 参数锁”，然后按编辑键进入密码输入界面，输入正确密码并按编辑键确认后即可进入系统 U 参数锁设置界面。如果密码输入不正确，是不能进入该界面的。	
在该界面下，用项目选择键选择选择要修改锁定/解锁状态的系统 U 参数，用变更数据键修改参数锁定/解锁状态值。如果显示为表示对参数加锁，如果显示为表示对参数解锁。被加锁的参数，在对应的参数修改界面中会显示锁定图标，尝试修改参数值时会进入输入密码的界面，只有输入了正确的密码后才可以暂时解开该参数的锁定状态，可以修改参数值。一旦从参数设置模式界面返回后，再次进入参数设置界面，这些被设置为锁定的参数仍然会恢复锁定状态。	 

当设置完毕参数锁以后，可以按返回键或模式键保存并退出。

4 钉扣功能

4.1 钉扣功能设定

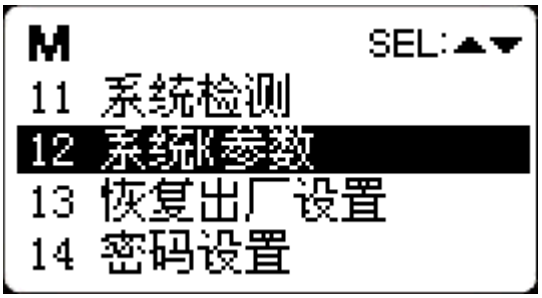
1、 在缝制灯[ ]灭的状态下，长按[M]键 3 秒，此时能听到蜂鸣器响一声，松开[M]键，即开启了服务参数变更；

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您的机械供应商或代理商联系。



4.2 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		

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)
6 • 37		8-8			23 • 46		6	0	3.4
7		10-10			24		10		
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							

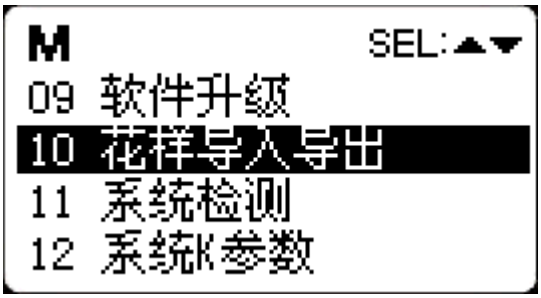
5 通过 U 盘升级花样

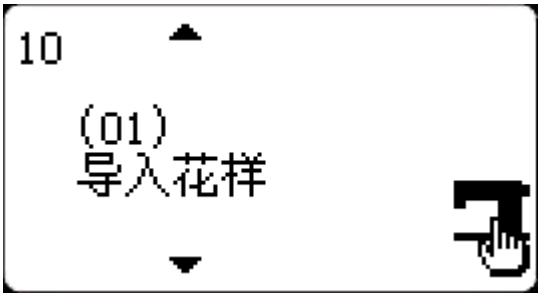
可支持 VDT 花样的单个导入(追加)：
(01)导入花样：导入(追加)花样，如果导入的花样号已经存在则进行覆盖；
(02)导出花样：导出所有外置花样到 USB 存储设备；
(03)删除花样：清除(格式化)面板外置花样存储区域；

5.1 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。

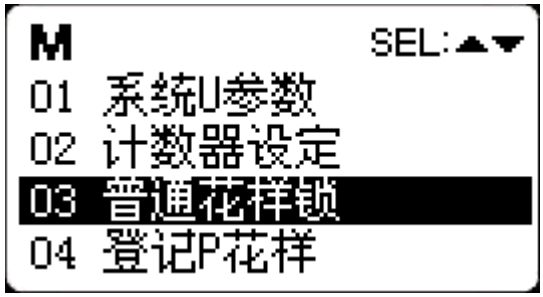


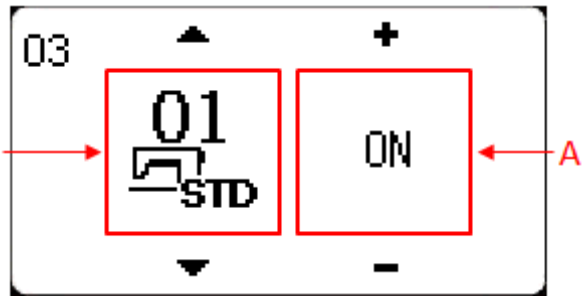


5) 按准备键 ，面板显示“操作执行中，请勿关机!”，开始执行花样导入操作。
注意：在此步骤操作之前，请确认已经先将 U 盘插入面板 USB 接口，如若未插入 U 盘而执行该步骤操作，则无法进行升级操作，面板会提示“M-324 U 盘未连接”错误。
6) 当升级完毕后，面板显示“操作成功!”并自动回到导入花样模式界面，表示花样升级完成。
注意：如果电控中已经存在 101~200 号升级的某些花样，也可以通过在 U 盘中存入命名编号与电控中已存在花样不同的花样文件，并按照上述操作进行花样追加；如果 U 盘中存入命名编号与电控中已存在花样相同的花样文件，则进行升级操作后，电控中那些编号相同的花样将被替换。
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 M 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。

6 附录 1

6.1 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。
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，检查该路光藕。
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，检查剪刀位置传感器。

显示	异常名称	异常内容	原因及解除方法
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-025	X 原点检索异常	X 原点传感器不变化。	关闭电源开关，检查电机和原点传感器。
E-026	Y 原点检索异常	Y 原点传感器不变化。	关闭电源开关，检查电机和原点传感器。
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，检查电机和原点传感器。
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，检查电机和原点传感器。
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

显示	异常名称	异常内容	原因及解除方法
			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-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。

显示	异常名称	异常内容	原因及解除方法
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。

显示	异常名称	异常内容	原因及解除方法
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。

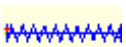
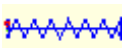
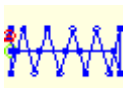
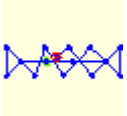
6.2 面板异常信息一览表

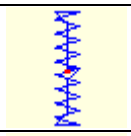
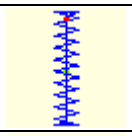
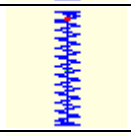
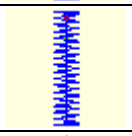
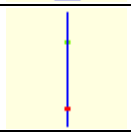
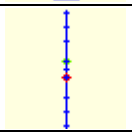
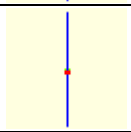
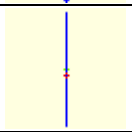
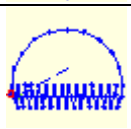
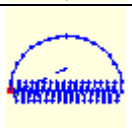
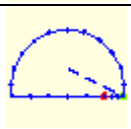
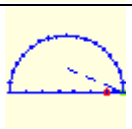
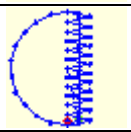
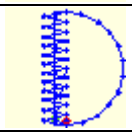
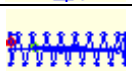
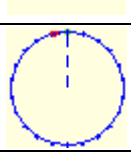
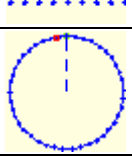
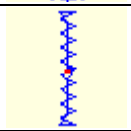
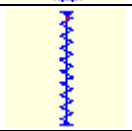
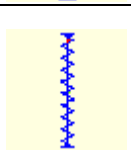
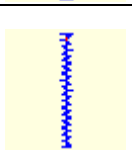
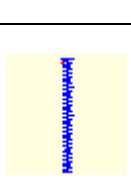
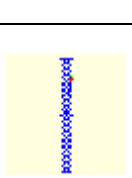
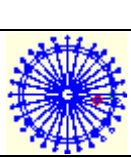
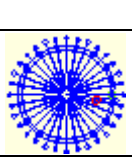
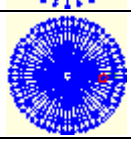
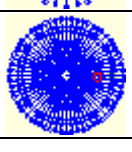
错误代码	异常名称	异常内容	原因及解除方法
M-300	存储异常	面板定义的数据存在错误	内部错误，需要升级面板程序
M-301	内存异常	面板内存数据异常	内部错误，需要升级面板程序
M-302	机型异常	面板上电读取机型参数值不在已定义的机型范围以内。	按复位键后进入 K241 号参数，选择已定义的机型后保存参数。
M-303	系统 UK 参数异常	面板读取 EEPROM 中内存参数范围异常	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-304	机头板参数异常	面板接收到下位机发送的机头板参数范围异常。	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-305	普通花样参数异常	面板使用花样参数时发现花样参数范围异常。	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-306	花样不存在或未开启	被准备的图案 NO.没有登记到 ROM 里，或是被设定为不能读出。图案 NO.为 0。	按复位开关，确认图案 NO.。确认使用花样已经在普通花样锁打开。
M-307	花样数据异常	面板读取花样缝纫数据时发现标志数据格式异常。	选择其他号码的花样。
M-308	缝纫数据过大	计算花样数据时发现花样数据过大超出正常范围。	更换其他花样缝纫。
M-309	花样超出缝制范围	计算花样数据时发现花样超出缝制区域。	按复位开关，确认图案轮廓尺寸是否在 K056、K057、K058 和 K059 参数限定范围以内。
M-310	针距超出正常范围	计算花样数据时发现花样针距超出正常范围。	按复位开关，确认图案和 X、Y 放大率。
M-311	花样数据传输异常	面板给主控制器发送花样数据过程中出现错误。	检查花样是否正确，检查面板与主控制器通信线缆是否连接正常。

错误代码	异常名称	异常内容	原因及解除方法
M-312	普通花样锁加载异常	面板加载 EEPROM 中普通花样锁数据时出现错误。	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-313	当前花样参数异常	面板加载 EEPROM 中当前花样参数数据时出现错误。	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-314	参数设定超出正常范围	设置参数值超出正常范围。	按复位键后重新修改设置参数值。
M-315	缝纫计数器加载异常	面板加载 EEPROM 中缝纫计数器数据时出现错误。	按复位键后进入系统菜单，进行恢复出厂设置操作。
M-316	缝纫计数器用尽	缝纫完成后计数器到达设置的限定值。	按复位键解除。
M-317	面板与主控通信异常	主电路板与操作面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操作面板是否有故障。
M-318	外置花样存储空间已满	在导入 USB 花样时检测到面板存储外置花样数据的存储器空间已满。	先将现有内置花样导出后，删除花样后再进行花样导入操作。
M-319	外置花样存储区数据格式异常	操作头读取外置花样数据格式信息时发现标志数据异常。	进入系统菜单的花样导入导出模式，执行删除花样操作。
M-320	导入花样已存在	在导入 USB 花样时检测到面板中已经有相同号码的外置花样。	将 USB 存储设备中要导入的花样名更改为未使用的号码再进行导入操作。
M-321	导入花样未找到	在导入 USB 花样时在 USB 存储设备上没有找到要导入花样号的花样文件。	选择在 USB 存储设备上已存在花样号的花样文件进行导入。
M-322	花样删除错误	在删除面板外置花样时检测到要删除花样号的花样数据不存在。	选择已经存在花样号的花样数据进行删除。
M-323	花样读取错误	面板在从外置花样数据存储区域读取花样数据时出现异常。	选择其他号码的花样。
M-324	U 盘未连接	在进行花样导入、导出操作时面板检测到读写 USB 存储设备异常。	更换 USB 存储设备进行操作。
M-325	导入花样文件尺寸过大	在进行花样导入操作时，面板检测到导入的花样超出了最大尺寸限制。	确认要导入的花样文件尺寸都在合理范围以内。
M-326	外置花样不存在	缝纫准备时读取外置花样不存在。	选择其他号码的花样。
M-327	要删除的 P 花样被 C 花样引用	在删除 P 花样时发现该 P 花样已经被加入到 C 花样中。	先将该 P 花样从 C 花样中删除，再执行删除 P 花样的操作。
M-328	U 盘中没有花样	在进行花样导入操作时，面板检测到 USB 存储设备中没有花样。	确定已经将花样文件命名正确并保存在 USB 存储设备指定目录中。

错误代码	异常名称	异常内容	原因及解除方法
M-329	没有登记 P 花样	在进入 P 花样复制/删除或 C 花样复制/删除模式前发现没有登记任何 P 花样。	请先登记 P 花样再进入这些模式。
M-330	普通花样全部被关闭	在进入 P 花样登记模式前发现所有普通花样都已经被关闭。	请先进入普通花样锁模式解锁普通花样在执行操作。
M-331	P 花样已满不能登记 P 花样	在进入 P 花样登记模式前发现所有 P 花样都已经被登记。	请先删除一部分 P 花样后再登记新的 P 花样。
M-332	不能删除最后的 C 花样	在删除 C 花样时发现当前删除的是最后一个 C 花样。	不允许删除最后一个仅剩的 C 花样。
M-333	机器需要加润滑油了	机器运转到了向指定位置补充润滑油的时期，所以缝纫机停止了。	按复位键后，进入参数 U245，按复位键清零后，可以继续使用。
M-999	未知错误	面板未定义的错误。	关机，更新操作头程序。

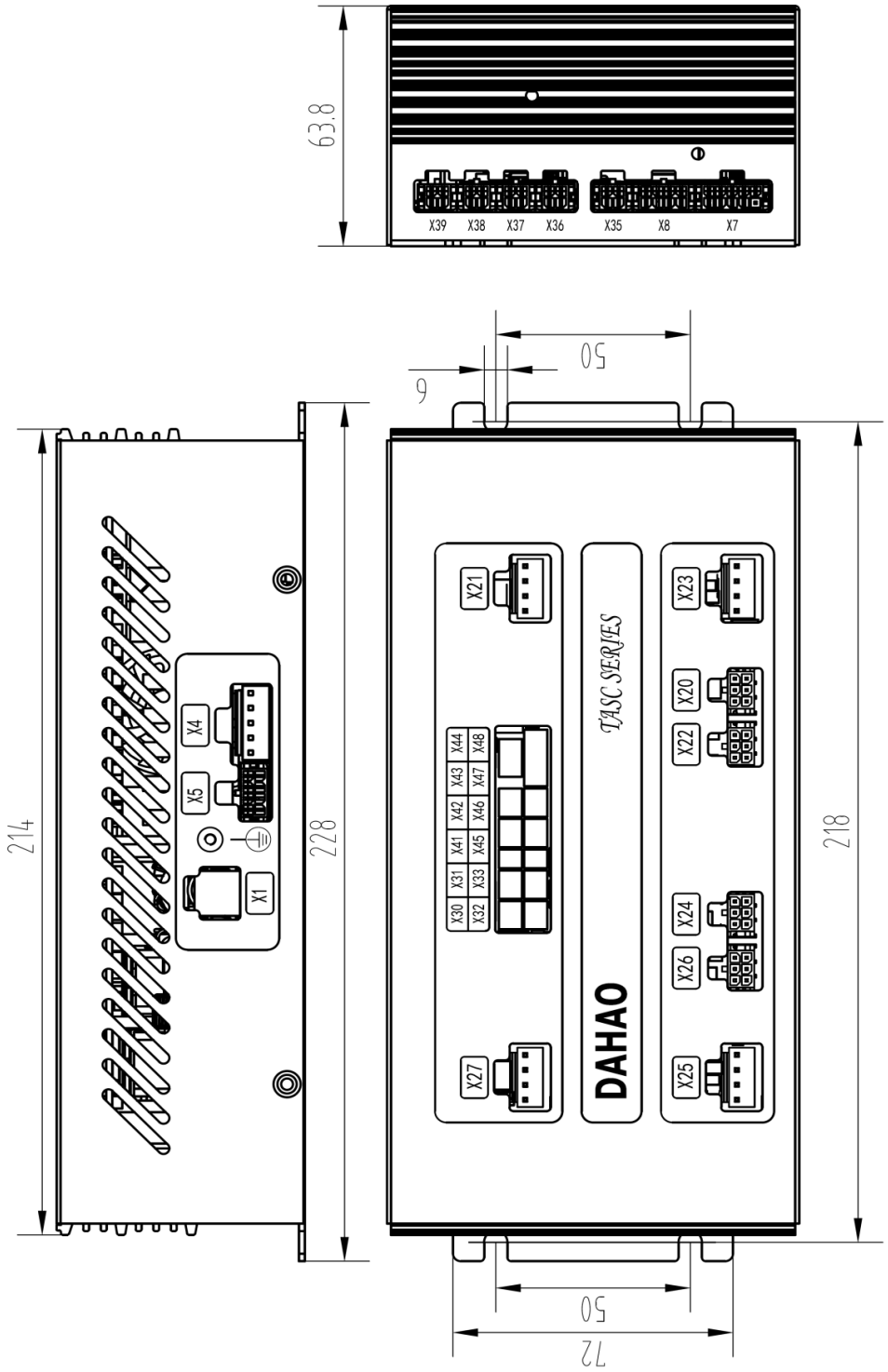
6.3 套结标准花样一览表

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

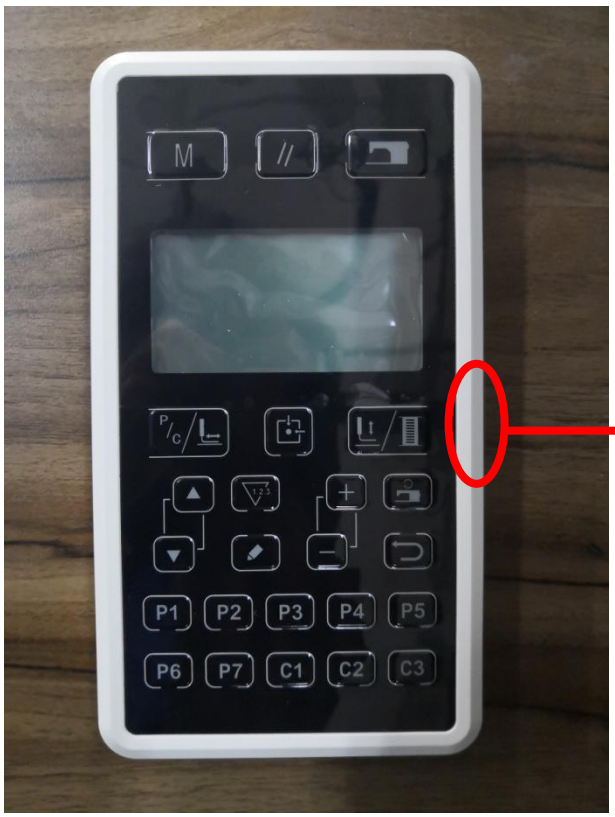
23		27	4×20		24		35	4×20
25		41	4×20		26		55	4×20
27		17	0×20		28		20	0×10
29		20	0×20		30		27	0×20
31		51	10.1×7		32		62	12.1×7
33		23	10.2×6		34		30	12×6
35		47	7×10		36		47	7×10
37		89	24×3		38		27	8×2
39		25	11.8×12		40		45	12×12
41		28	2.4×20		42		38	2.4×25
43		38	2.4×25		44		57	2.4×30
45		75	2.4×30		46		41	2.4×30
47		89	8×8		48		98	8×8
49		147	8×8		50		163	8×8

7 附录 2

7.1 电控箱安装尺寸



7.2 操作箱安装尺寸

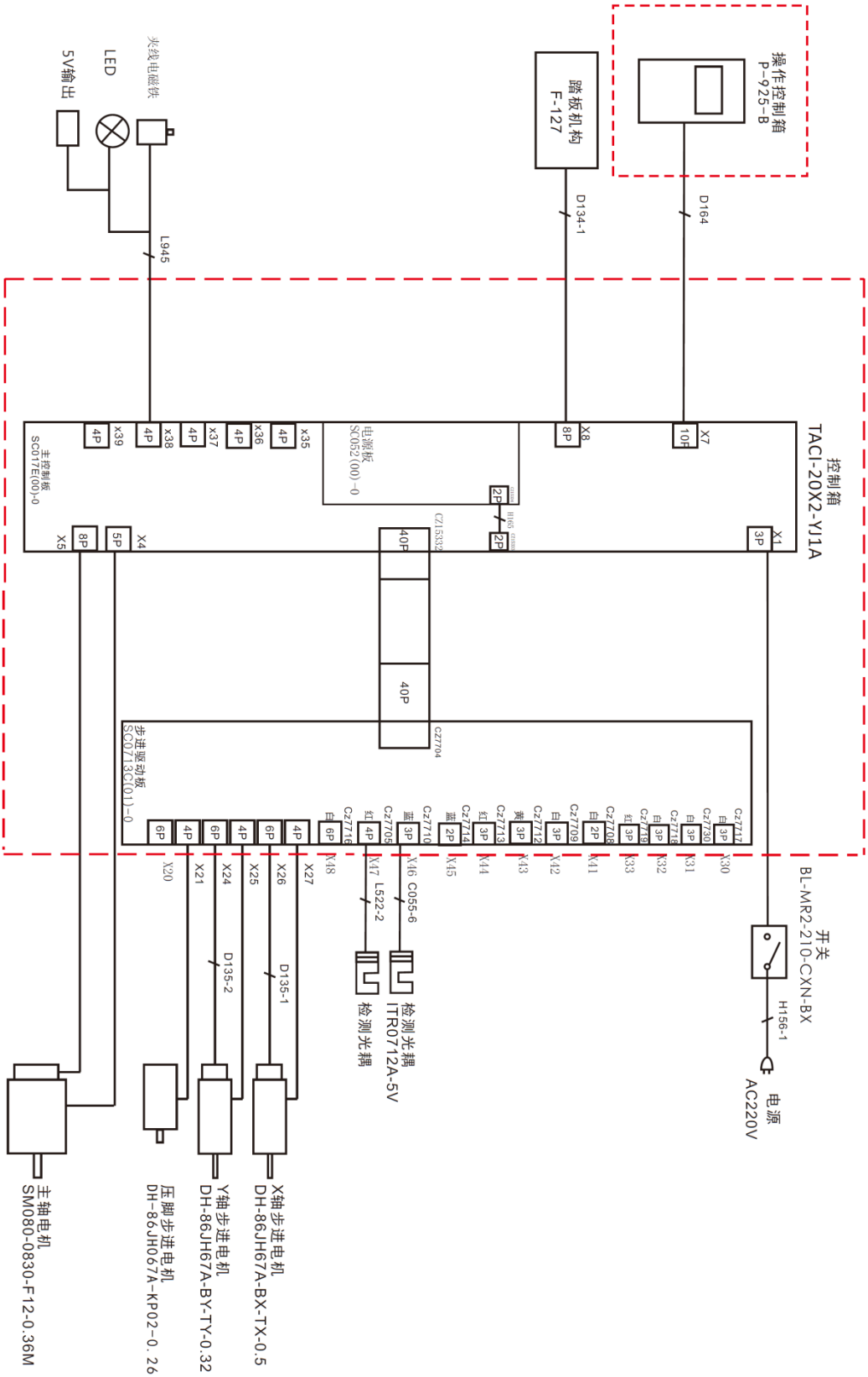


操作头

USB 接口

7.3 系统框图

(1) TASC201-2N/B 系统框图



1 General Information

1.1 Technical Parameters of 20X

No.	TYPE / ITEM	20X
1	Purpose	Bartacking / Button Lockstitch
2	Sewing Area	X(lateral) direction 40mm ×Y(longitudinal) direction 30mm
3	Max. Sewing Speed	Doubling & Tacking：3200rpm Button Sewing：2700rpm
4	Stitch Length	0.1mm – 10.0mm (adjustable by 0.1mm)
5	Cloth Feed	Intermittent Feed(2-axis drive by pulse motor)
6	Needle Bar Stroke	41.2mm
7	Needle	DP ×5 #14 (DP×5 #11(F,M), (DP×17#21 thick cloth))
8	Type of Lifting Presser Foot	Driven by pulse motor
9	Height of Presser Foot	14mm (Standard), Max. 17mm
10	Total Number of Standard Patterns	100
11	Wiper Type	To work together with Presser Foot driven by Pulse Motor
12	Thread Catching Device	Standard : 0
13	Needle Thread Tension	Electrical Thread Tension Release
14	Shuttle	Standard Semi-rotary Hook or Semi-rotary Double Hook
15	Lubricating Method	Rotary Part: Lubricate with minimum amount
16	Lubricating Oil(Liquid)	Ordinary Sewing Machine Lubricating Oil (Liquid)
17	Grease	Ordinary Sewing Machine Grease
18	Data Memory	Flash Memory
19	Scaling Facility	20%~200%(by 1%) in X direction and Y direction respectively
20	Scaling Method	By increasing/decreasing the stitch length
21	Max. Sewing Speed Limitation	400-3200rpm (by 100rpm)
22	Pattern Selection	Specifying Pattern No. Type (1-200)
23	Bobbin Thread Counter	Up/Down Type (0 – 999999)
24	Sewing Machine Motor	550W Compact AC Servomotor (Direct Drive)
25	Dimensions	208mm×106mm×64mm
26	Weight	1.4Kg
27	Rated Power	770W
28	Operation Temperature Range	0℃ - 45℃
29	OperationHumidityRange	35% - 85% （No Dew Condensation）
30	Line Voltage	AC 220V ±10%; 50-60Hz

※ Please reduce the max. sewing speed in accordance with the sewing conditions.

※ Effective standard for product:QCYXDK0004—2016 “Computerized Control System for Industrial Sewing Machine”

1.2 Corresponding Machine Type

20X electronic bar-tacking and button sewing machine

1.3 Input Mode

Use keys to input.

1.4 Display Method

Use black and white lattice LCD and LED to display all the information.

1.5 Panel Layout

The quadrate Panel can be divided into two parts, the display part and the operation part. The display part consists of 1 lattice LCD and 2 LEDs and the operation part consists of 24 keys. Refer to the picture of the panel.

1.6 Standardization

The function keys use standard images recognizable and popular within the industry. Image is an international language that can be understood by any nation.

1.7 Operation Mode

Function keys include READY key, RESET key, MODE key, THREADING/WINDING key, SELECTION key, UP/DOWN key, EDIT key, RETURN key and other keys for special functions. See operation instruction for detailed operating methods.

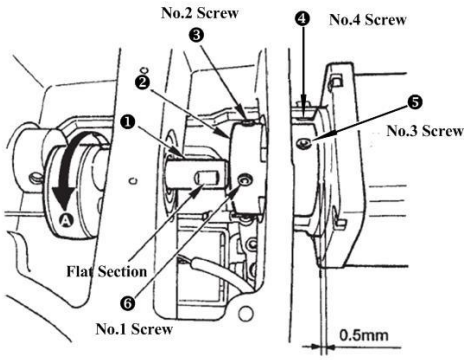
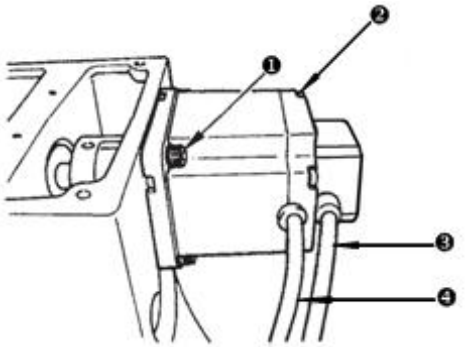
2 Operation and Debugging

2. 1 Instructions of Operation Panel

No.	Function	Discription
A	LCD	Display pattern number, shape and various other data.
B	Home Key	This key initiates the setting of parameters or stored patterns.
C	RESET Key	This key is used for canceling error or returning the set value to the initial value
D	READY Key	This key changes from the setting state of the panel to the sewing state where the sewing machine actually operates.
E	Sewing Ready LED	LED is on under sewing mode.
F	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.
G	Presser Foot Origin Key	When LED is off, lower down the presser foot and find origin of XY stepping.
H	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 dial the lin organization to the right. Press this key when winding.
I	MODE Key	This key initiates the setting of parameters or stored patterns.
J	Counter Key	Under sewing editing mode (unready for sewing), press it to enter counter setting

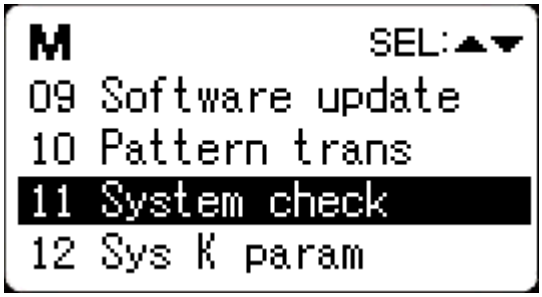
		mode directly.
K	DATA SETTING Key	This key is used to modify the pattern number or parameter value. Under trial sewing mode, this key is used to move single needle and feed cloth.
L	SELECTION Key	This key is used to select among various pattern types, menu items or parameters.
M	Sewing Speed Key	Under sewing editing mode (unready for sewing), press it to enter sewing speed setting mode directly.
N	EDIT Key	This key is used to display editing interface, select item or display detailed information.
O	RETURN Key	This key is used to return to the previous interface.
P	C Pattern Setting Key	Set and save C patterns, and press this button to start sewing the saved C pattern.

2. 2 Installing the Main Shaft Motor

Assemble the main motor to the main shaft ❶ through the coupling❷. And you need 4 screws to fix the coupling to the upper shaft and the main shaft. Fix the coupling with No.1 Screw❻and make sure that it is vertical towards the Flat Section, and then screw No.2 screw❸. Fix the coupling to the main shaft motor with No.3 screw❺, and make sure it is vertical to the flat section of the main shaft motor. Then screw the No.4 screw ❹ to finish the assembling task. The right diagram shows you the details:	
This right diagram shows you the directions of external cables of the main shaft motor (look from back, and the line is on your left-hand side): ❶ Screws for fixing the main shaft motor, totally 4; ❷ Screws for fixing the back cover of the motor, totally 4;❸ main shaft motor encoder signal cable; ❹ power line for the main shaft motor.	

2. 3 Text Mode

This mode is activated to conduct maintenance operation.

1） When the sewing LED is off, hold pressing  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:

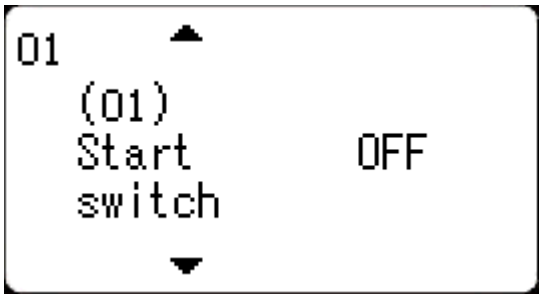
Function Test Item	Function	Description
01 System Input Test	Input signal test	LED light as the indicator to show the status of sensor input
02 XY Origin Adjustment	XY motor/origin sensor test	Display inching operation, origin searching operation and the status of X/Y origin sensor of X/Y motor
03 Aging 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  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.

2.3.1 System Input Test

1) This function is used to test the input status of panel keys, pedal switch and various sensors. Select "01 System Input Test" and press  key to enter.

2) Under this mode, press  key to change test item and the status of the test signal is displayed at the right side of the screen.



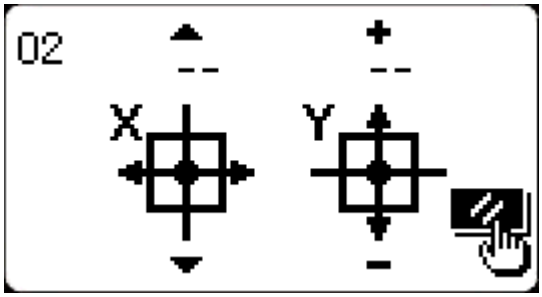
2.3.2 XY Origin Adjustment

This function is to display the inching operation, origin searching operation and the status of X/Y origin sensor of X/Y motor.

1) XY Motor Single Step Running Test

If after machine start, user has never pressed key to enter ready status but rather directly pressed M key to enter system test mode, enter “02 XY Origin Adjustment” and then user can directly press key and key to move XY motors step by step respectively. If user has ever pressed key to enter ready status after machine start, every time user enters “02 XY Origin Adjustment” mode, user need press key to search XY origin before moving motor step by step. Under this situation, this item indicates XY motor origin adjustment function.

During moving XY motors, if the signal of the origin sensor changes, the icon displayed on the screen will become shadowed.

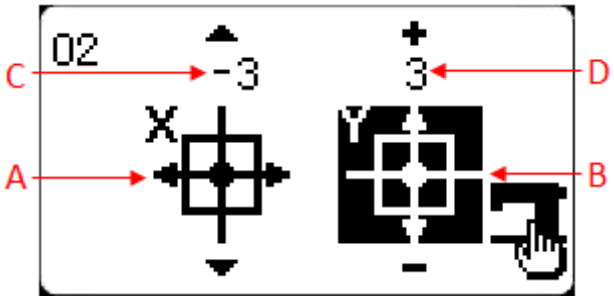


2) XY Motor Origin Adjustment

First press key to conduct XY origin search. On the screen will be displayed the origin sensor status A of X motor and the current adjustment value C, as well as the origin sensor status B of Y motor and the current adjustment value D.

Press the key and key to move X/Y motors respectively step by step and the adjustment value will change simultaneously.

Observe the center of the presser foot and the position of needle hole. When they overlap, press key to save the adjustment value and return. If user doesn’t want to save the adjustment value, press key or M key to give up the saving.



2.3.3 Aging Mode

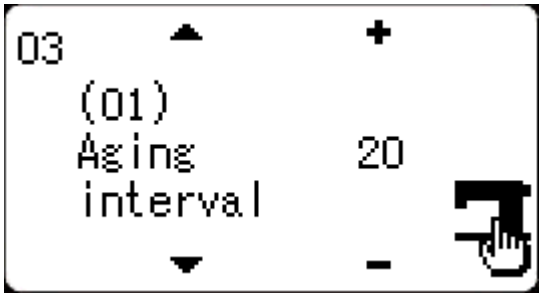
After selecting “03 aging mode”, press key to enter continuous running mode. After setting its

conditions, activate the continuous running mode; turn off the power to release the continuous running mode.

1) Interval Time Setting

When the screen displays "(01) aging interval", press  key to set the interval time between two operations.

The setting range: 0~9900ms (by an increment of 100ms); default value: 2000ms.



2) Origin Search at Sewing End

Press  key to shift to "(02) origin search" to set the origin search at sewing end.

OFF: invalid (default)

ON: valid (origin search at each sewing end)

After setting, press  key to save and enter the main interface of normal sewing mode.

3) Continuous Operation

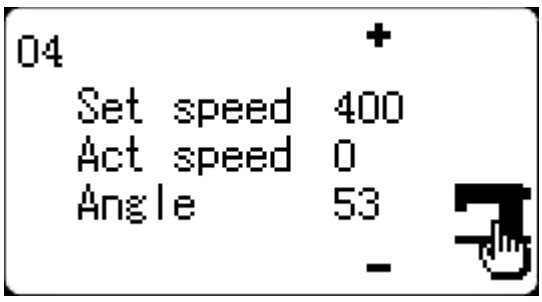
Under sewing mode of normal patterns, user can set pattern No., X/Y scale rate, max. rotation speed and other conditions before starting sewing. At sewing end, if the origin search is set to be valid in step 2, the system will conduct the origin search of X/Y presser foot and thread-catching/trimming motors. After the set interval time, the system will automatically start sewing again. If user need stop continuous sewing, press  key at sewing end to pause and turn off the power to terminate the continuous sewing.

2.3.4 Main Shaft Detection

Set the rotation speed of the machine, and then drive the main motor of the machine to display the actual rotation speed under the set rotation speed.

1) Preparation

Select "04 main shaft detection" and then press  key to enter. Each motor will automatically execute origin research. The screen will display the "target rotation speed", "actual rotation speed" and "main shaft angle" of the main shaft motor.



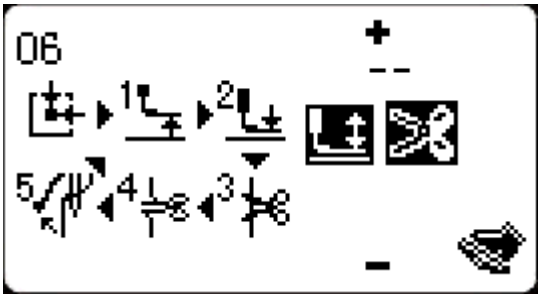
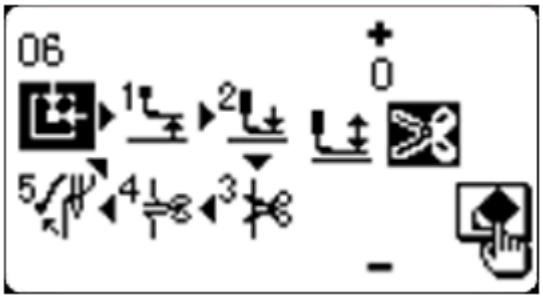
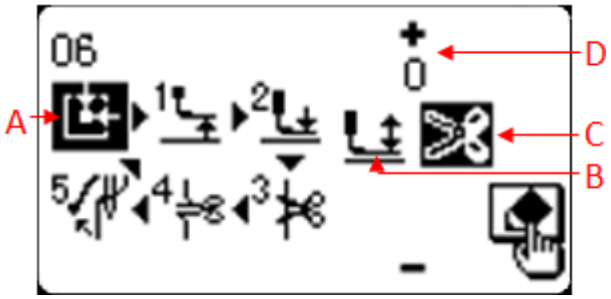
2) Operation

Press  key to change the target rotation speed of the main shaft, and then press  key to operate the machine at the set rotation speed. If the set rotation speed need changing, user can continue pressing  key during the operation to set the rotation speed and then press  key again to operate the machine at the new set rotation speed. Press  key to stop the machine. After machine stops, press 

key or M key to quit.

2.3.5 Presser Foot Motor Detection

This function can be used to display the inching operation, origin search operation of the presser foot/thread-trimming motors and the status of presser foot origin sensor and thread-trimming sensor.

1) Presser Foot Motor Running Test The operation is similar to [02 XY Origin Adjustment]. If the machine hasn't entered sewing ready status after power on, user can just enter "06 presser foot motor test" and press + − key to execute single step movement test of presser foot motor. At that time, the screen will display the signal status of the two sensors at the presser foot origin position and cutter position. Once origin search is made, user need step pedal to level 2 to execute origin search before moving the motor.	
2) Simulation Operation Test of Presser Foot Motor Under this mode, step pedal to level 2 to execute origin search, and then press key to make simulation operation of the motor at various work operation such as lifting up or lowering down.	
3) Presser Foot Motor Origin Adjustment Under this mode, step the pedal to level 2 to execute the origin search. Without pressing key, the motor will remain at the origin position A. Press + − key to change the origin adjustment value D, and at the same time presser foot origin sensor signal B and cutter position sensor signal D will change correspondingly. After setting the value, press key to save and return. User can also press key or M key to quit saving and return.	

2.3.6 System Output Test

Under this mode, press  key to shift and select the device to be tested, and press  key to drive that device.

（01）Wiper solenoid

（02）Tension solenoid

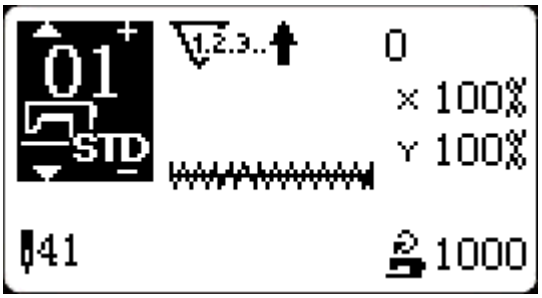
（03）Clamp solenoid

2.3.7 Panel Test

Under this test, press  key to light up all LED lights on the panel and the full screen of LCD, and press  key to return to normal display status.

2. 4 Basic Operations

2.4.1 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(Pattern imported from outside), P pattern and C cyclic pattern.	

2. 4. 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.

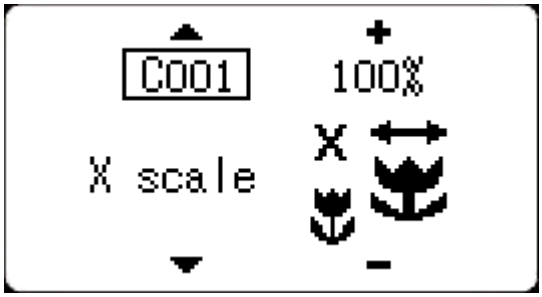
(1) X Size Input

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.



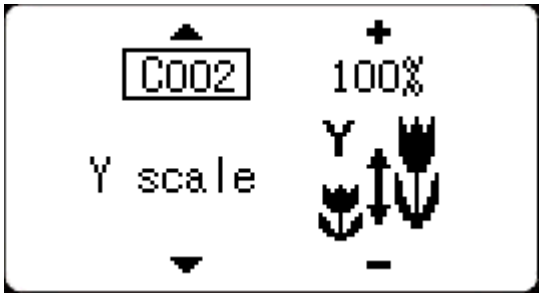
(2) Y Size Input

Press  to display C002 Y 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.



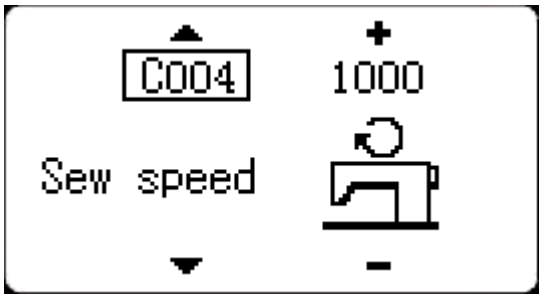
(3) Sewing Speed Input

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.

Or under sewing editing mode (unready for sewing), press Sewing Speed Key  to enter C004 sewing speed setting mode directly.



(4) 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.

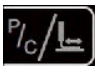
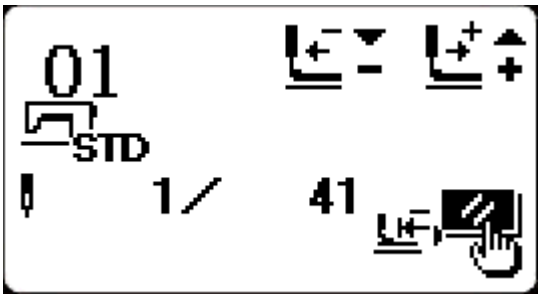
Note: if user turns off power before pressing  key, the set value of pattern No., XY scale rate, max. rotation speed and thread tension will not be saved.

2. 4. 3 Pattern Shape Confirmation

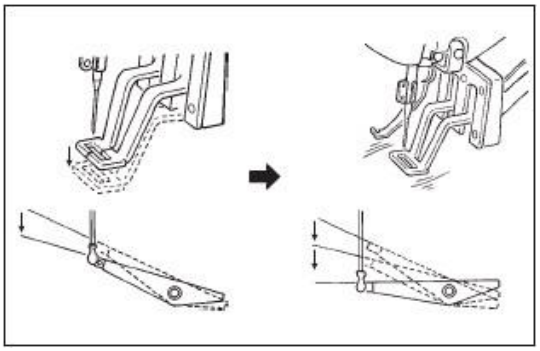
Warning!

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.

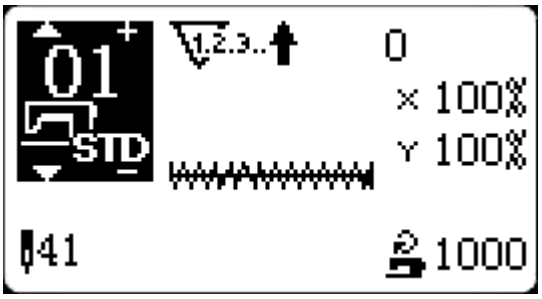
2. When confirming the pattern shape, please note that if user press +/- keys when the needle bar is down, the needle bar will lift automatically before the presser foot moves.

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

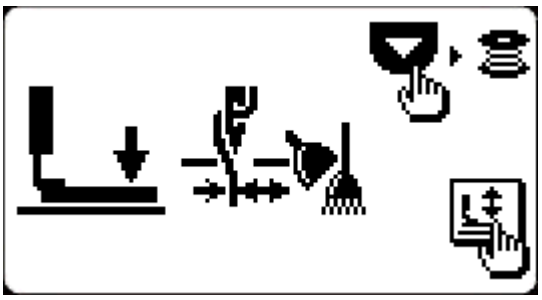
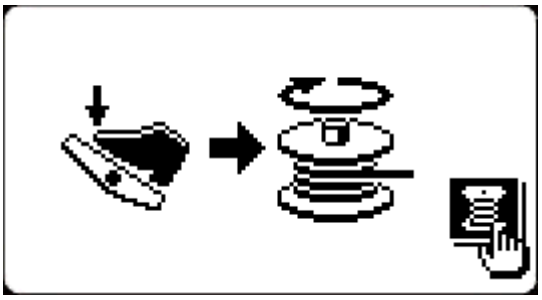
2. 4. 4 Sewing

Sewing: 1. Put sewing material under presser foot. 2. Step pedal to level 1 to lower the presser foot and release the pedal to lift the presser foot. 3. Step pedal to level 2 to start sewing. 4. At sewing end, presser foot will lift and return to sewing start.	

2. 4. 5 Change to Other Pattern

Press  key and sewing LED is off. Press  key to set pattern No. XY scale rate, speed, etc. can be set in the same way as [2.4.1 item data setting]. Press  key and sewing LED lights up to enter sewing status. Please confirm the pattern shape after pattern selection, in case the pattern is away from presser foot and needle will collide with presser foot and break during sewing. If you switdh to P pattern or C pattern ,you need to switch pattern mode first.	

2. 4. 6 Bobbin Thread Winding

1) Press  key and sewing LED is off. 2) Press  key to lower the presser foot. 3) Press  key to display winding interface. 4) Step the pedal to run the sewing machine. 5) Step the pedal again or press  key to stop the sewing machine.	
6) Press  key and  key to finish the winding interface. **Note: when just power on, the winding function is inactive. Select any pattern and then press  key to search origin before the winding operation.**	

2. 4. 7 Use of counters in sewing

(1) Counter Setting Method

1) Enter counter setting interface

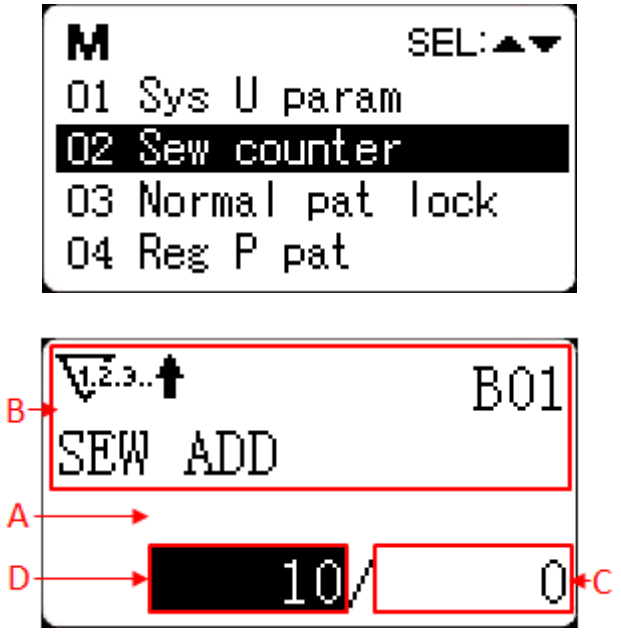
a. Under input mode, when sewing LED is off, press M key to display the mode interface.

Press ▲▼ key to select “02 counter setting”.

Press ✎ key to display counter interface A.

When counter interface A is displayed, counter can be set under input mode. If the system is under sewing mode, press key to turn off the sewing LED.

b. Under input mode, when sewing LED is off, press key to display the counter interface.The counter interface A will be displayed.



2) Select counter type and Change counter value

Press ▲▼ key to shadow the counter type icon B. Press +− key to select the proper counter type.Press ▲▼ key to shadow the counter value C. Press +− key to input the set value.

3) Change the present counter value

Press ▲▼ key to shadow present counter value D. Press // key to clear the present counter value and press +− key to edit the present value.

(2) Counter Type

B01 Sewing Plus Counter

The present value will add 1 after sewing 1 shape.

Present value and set value.

B02 Sewing Minus Counter

The present value will deduce 1 after sewing 1 shape.

When present value reaches 0, minus counter interface will be displayed.

B03 Piece Number Plus Counter

Calculate present value of 1 cyclic sewing by adding number. When present value equals with set value, counter interface will be displayed.

B04 Piece Number Minus Counter

Calculate present value of 1 cyclic sewing by deducing number. When present value reaches 0, counter interface will be displayed.

B05 Bobbin Thread Plus Counter

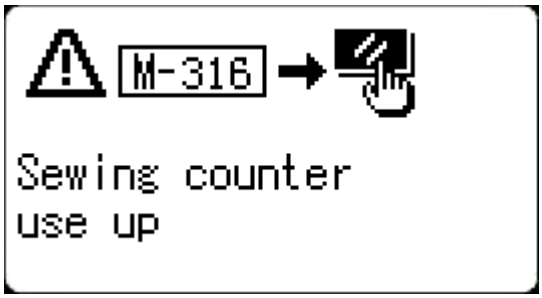
Add to the present value after every 10 stitches. When present value equals set value, counter interface will be displayed.

B06 Bobbin Thread Minus Counter

Deduce the present value after every 10 stitches. When present value reaches 0, counter interface will be displayed.

B07 Counter Nonuse

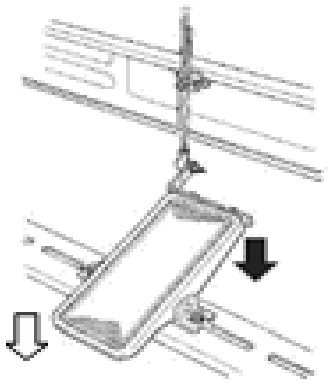
(3) Counter Release

When the counter value is exhausted, counter interface will be displayed. Press // key to reset the counter and then the counter will start counting again.	

2. 4. 8 Pause

(1) Emergency Stop by Pedal

Pedal has three levels: level 1 to lower the presser foot, level 2 to start sewing and level 3 (to step backward with heel) for emergency stop.

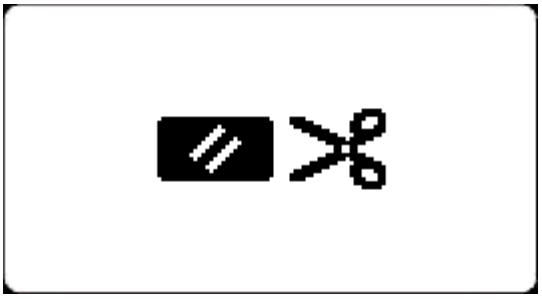
1） Press the READY key and then step forward ⬇ the pedal to lower the presser foot; 2） Step forward ⬇ the pedal again to start sewing; 3） During sewing, user can step backward ⇩ the pedal to stop the machine emergently and the panel will display “E-002”.	

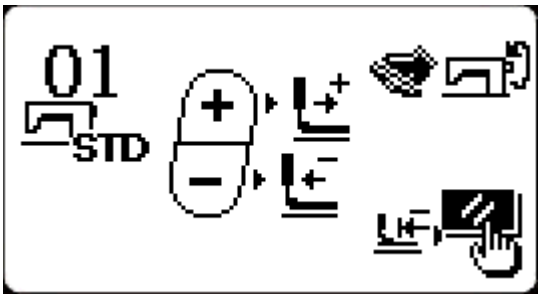
(2) Emergency Stop by Panel

1) Use parameter U031 to set the RESET key as 1 and the RESET key will be changed into pause key to stop the machine during sewing.

2) Press  to stop the machine and “E-002” will be displayed. Press  key again to release the error and the interface to feed cloth forward/backward will be displayed.

Note:In addition to the above two modes of operation,it can also be set as an esternal emergency stop according to the requirements,and an external switch on the electrically controlled X45 socket.





3) Then, 3 operations are available:

1. Use starting switch to start sewing.

2. Press  key to trim thread and use  key to adjust position. Then use starting switch to start sewing.

3. Press  key to trim the thread and press  key again to return to origin.

4.After pressing RESET key to trim thread, user can step the pedal again to continue sewing.

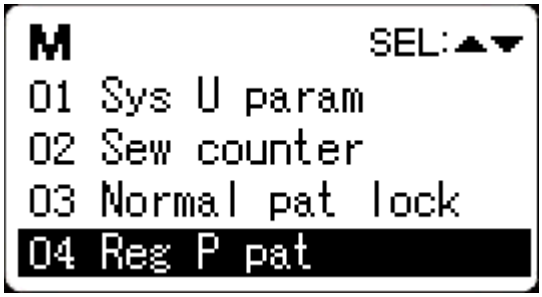
2.5 P Pattern and C Pattern Setting

2.5.1 Use Pattern Key to Sew

(1) Register to Pattern Key

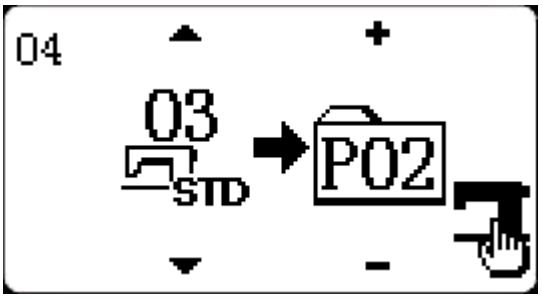
Example: register pattern No.3 to P2, with X scale rate as 50%, Y scale rate as 80%, sewing speed as 2000sti/min, X scale rate as 0.5, Y scale rate as -1.0..

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.



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 M key or ↩ key.



4) Set separately the X scale rate as 50%, Y scale rate as 80%, sewing speed as 2000 sti/min.

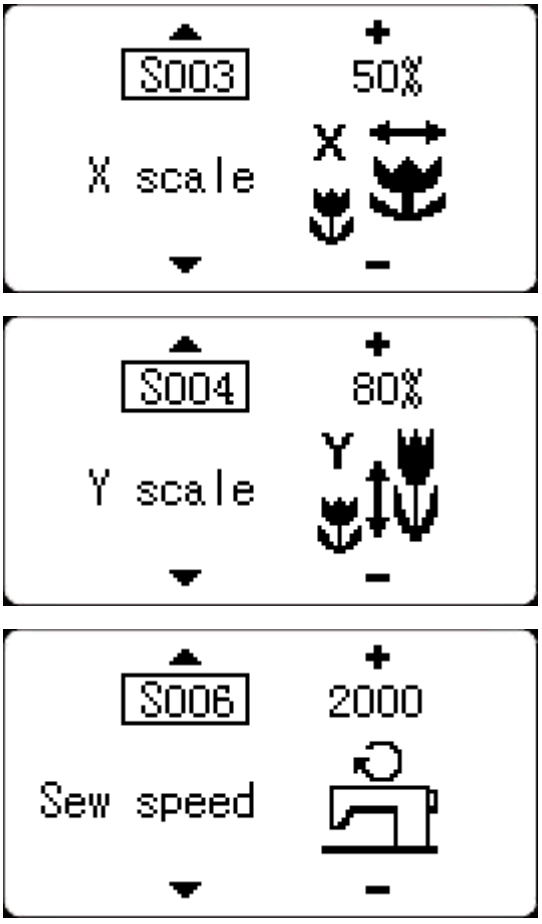
5) Press ✎ key , then press ▲▼ key and X scale rate will be displayed as 100%. the increment of X scale rate can be set as 1%. Press +− key to change the data into 50%.

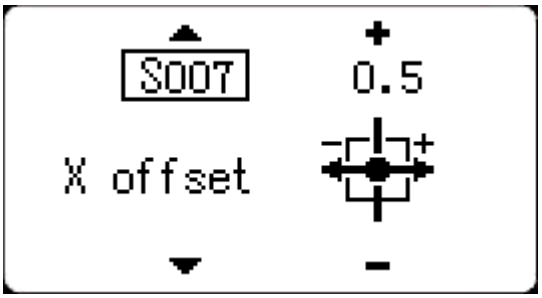
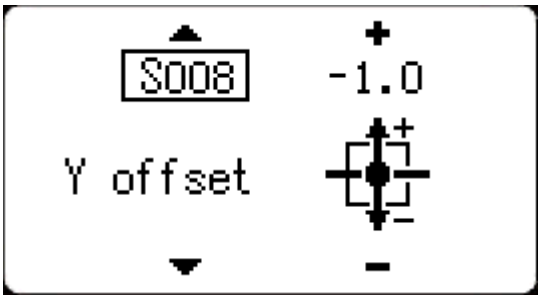
6) Press ▲▼ key and Y scale rate will be displayed as100%. The increment of Y scale rate can be set as 1%. Press +− key to change the data into 80%.

7) Press ▲▼ key and sewing speed will be displayed as the current value. The increment of sewing speed can be set as 100. Press +− key to change the data into 2000 sti/min.

8) Press ⚙ key to complete setting.

9) Press ↩ key to complete pattern registering



method. 10) Set separately the X scale rate as 0.5, Y scale rate as -1.0. 11) Press key , then press key and X scale rate will be displayed as 0.0. the increment of X scale rate can be set as 0.1mm. Press key to change the data into 0.5. 12) Press key and Y scale rate will be displayed as 0.0. The increment of Y scale rate can be set as 0.1mm. Press key to change the data into -1.0. 13) Press key to complete setting. 14) Press key to complete pattern registering method.	 

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 

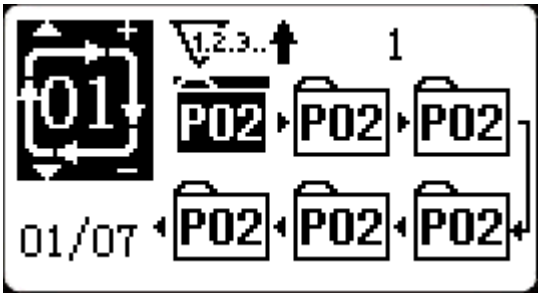
keys (press simultaneously) to sew.

P-No.	Selection Key	P-No.	Selection Key	P-No.	Selection Key	P-No.	Selection Key
P1	P1	P8	P1+P4	P15	P4 +P5	P22	P2+P3+P4
P2	P2	P9	P1+P5	P16	P1+P2+P3	P23	P2+P3+P5
P3	P3	P10	P2+P3	P17	P1+P2+P4	P24	P2+P4+P5
P4	P4	P11	P2+P4	P18	P1+P2+P5	P25	P3+P4+P5
P5	P5	P12	P2+P5	P19	P1+P3+P4		
P6	P6	P13	P3+P4	P20	P1+P3+P5		
P7	P7	P14	P3+P5	P21	P1+P4+P5		

2.5.2 Group Sewing (Cyclic Sewing)

This machine can be used to sew several patterns in order cyclically.
Up to 99 patterns can be inputted. In addition, 99 data of group sewing can be registered. If necessary, please make a copy for future use.

(1) Cyclic Data Selection

1) Set as input mode Under input mode, when sewing LED is off, select cyclic sewing data. If the system is under sewing mode, press  key to change into input mode. The cyclic sewing data can only be selected under data mode.	

2) Select cyclic sewing data

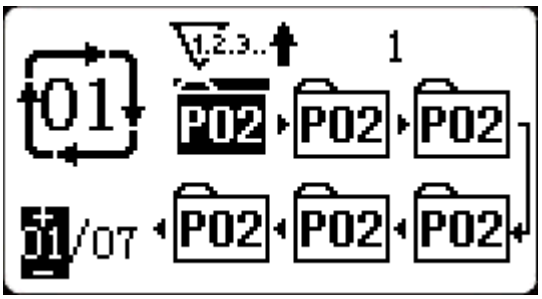
Press  key to shift among the registered cyclic sewing data No. and continuous sewing data No. At this time, user can select the intended cyclic sewing No.

3) Conduct sewing

After selecting the continuous sewing data, press  key and sewing LED lights up, ready for sewing.

Only cyclic data No.1 is registered without sewing patterns and therefore cannot be used for sewing. Please follow the following editing method to input patterns.

(2) Cyclic Sewing Data Editing Method

1) Set as input mode Under input mode, when sewing LED is off, user can input continuous sewing data. Change the pattern mode to cyclic pattern mode by following the arrows. 2) Set cyclic sewing data as editing status Press  key to enter editing status and the selected pattern No. for editing will become shadowed. press  key, the icon  will be displayed.At that time, data can be edited.	

3) Add pattern

Press  key to change the editing content and when move to the last pattern, user can add patterns.

4) Modify the pattern

Press  key,then move to the position where you want to modify the pattern.

5) Insert the pattern

After selecting the editing content, press  key to display the icon  which means pattern data can be inserted.

6) The above functions follow

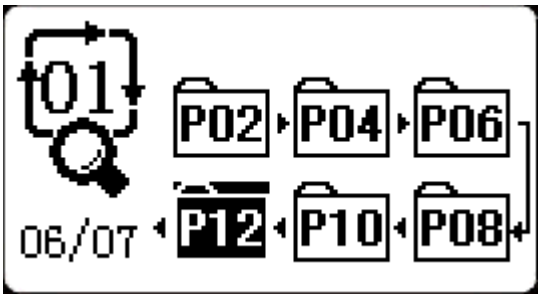
Press  key to change the pattern to be modified. The registered pattern No. will be displayed for

editing.You can repeat the above ateps if required.

7) Delete/Cancel pattern data

Press  key to delete the pattern data. Press  key to cancel pattern data input and return to input mode.

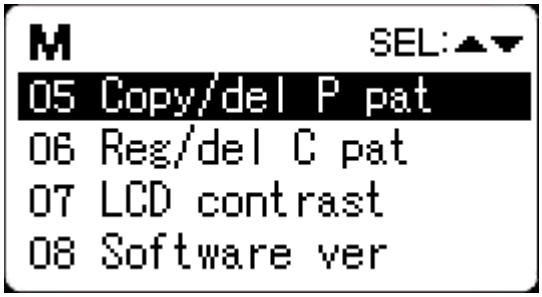
(3) Sewing Operation

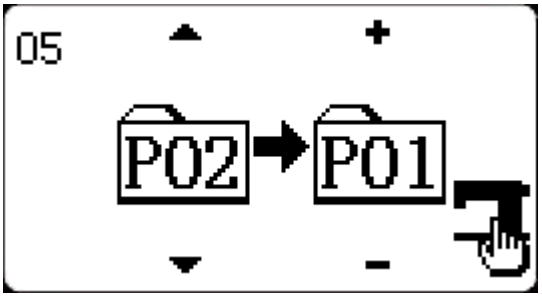
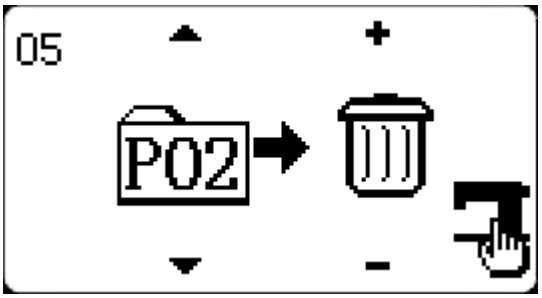
1) Turn on the power. 2) Press  key to select cyclic pattern and press  key to select the pattern No. 3) Press  key and sewing LED lights up. Presser foot will move and then lift. 4) press  key ,you can choose to sew sub-patterns.	

2.6 Copy/Delete P Pattern and C Pattern

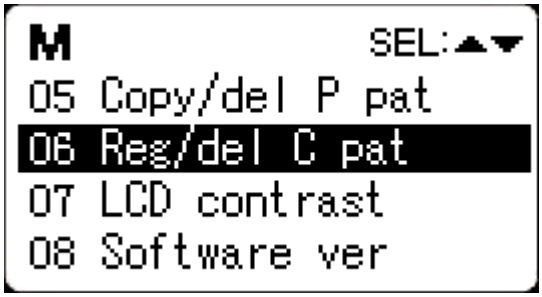
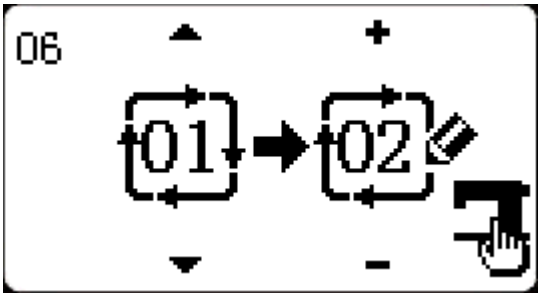
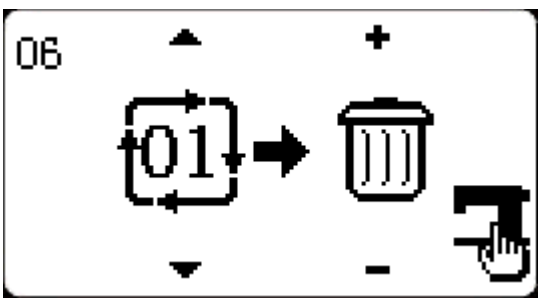
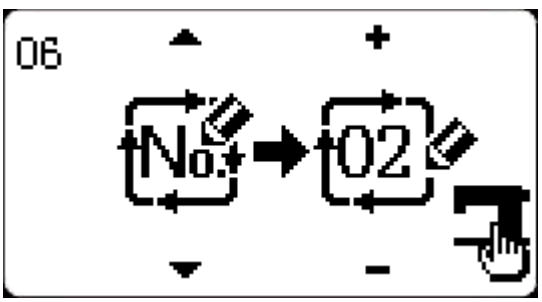
Registered P patterns can be copied into new P patterns, so are C patterns. Existing P patterns or C patterns can also be deleted (the last C pattern cannot be deleted).

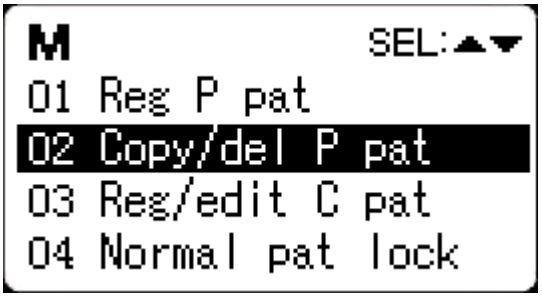
2.6.1 Copy/Delete P Pattern

1) When sewing LED is off, press  key to enter system menu, press  key to select "05 copy/delete P pattern" and then press  key to enter this mode.	

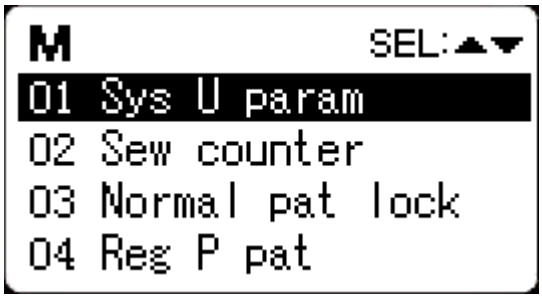
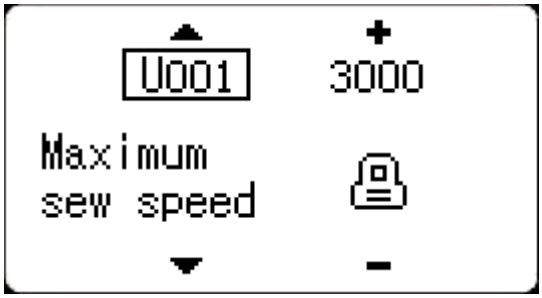
2) Press key to shift to the P pattern number(existing) to be copied, and press key to shift to a new P pattern number (new). After confirmation, press key to save and return.Press key to quit saving and return.	
3) When pressing to shift to new P pattern number, user can selecticon, and if user press at that time, the existing P pattern will be deleted.	

2.6.2 Copy/Delect C Pattern

1) Under the system menu, press key to select "06 copy/delete C pattern" and press key to enter this mode. 2) Similar to the operation to copy/delete P pattern, press key to shift new C pattern number to execute copying operation or press key to delete C pattern. When press key to shift to the icon , it means to register a new empty C pattern.	 
	

Note: When sewing LED is off, press  key to enter Copy/Delete menu	

2.7 Memory Switch Activation and Change

1) Set input mode When sewing LED is off, memory switch data can be changed. 2) Enter data editing interface Press  key to display the mode interface (operator level). Press  key to select "01 U parameter" and press  key to enter memory switch data interface.	
3) Select data to be changed Press  key to select the data item to be changed. 4) Change data Press  key to increase or decrease the set value. 5) Save and quit After completing data change, press  key to save and quit, and return to mode interface. Press  key again to return to sewing interface.	

2.7.1 User Parameter Setting List

No.	Function	Adjustment Rang	Default Value	Remarks
U001	Max Speed of Sewing （it can be set by an increment of 100rpm）	400～3200	3000	

U002	Sewing speed of 1st Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～1500	1500	
U003	Sewing speed of 2nd Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3200	2500	
U004	Sewing speed of 3rd Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3200	2700	
U005	Sewing speed of 4th Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3200	3000	
U006	Sewing speed of 5th Stitch (thread-catching) (It can be set by an increment of 100rpm)	400～3200	3200	
U007	Thread tension of 1st Stitch (thread-catching)	0～200	200	
U008	Thread tension at the time of thread-trimming	0～200	0	
U009	Changeover time of thread tension at thread-trimming	－6～4	0	
U010	Sewing speed of 1st Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～1500	400	
U011	Sewing speed of 2nd Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3200	900	
U012	Sewing speed of 3rd Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3200	2700	
U013	Sewing speed of 4th Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3200	3000	
U014	Sewing speed of 5th Stitch (no thread-catching) (It can be set by an increment of 100rpm)	400～3200	3200	
U015	Thread tension of 1st Stitch (no thread-catching)	0～200	0	
U016	Changeover timing of thread tension at the sewing start (no thread-catching)	－5～2	0	
U025	Presser Foot Division	0: Divided 1: Not divided	1	
U026	Adjustment of presser foot height in section level 2	50～90	70	
U30	The voice switch	0:OFF 1:ON	1	

U031	Use keyboard (Clear Key) to stop sewing machine	0: invalid 1: RESET key 2: External emergency stop	0	
U032	Buzzer forbidden	0: no voice 1: panel operation voice 2: panel operation voice and alarm voice	2	
U033	Set number of stitches that thread-catching releases	1～7 stitches	2	
U034	Time deferrable in catching thread	－10～0	-5	
U035	Forbid the control on catching upper thread	0: Normal 1: Forbidden	1	
U036	Select the Feed time. When stitches are not well tightened, set the value in "–" direction.	－8～16	-8	
U037	Presser foot status at sewing end	0: Back to sewing start and then lift 1: Back to sewing start and at the same time lift 2: lift the presser foot manually by stepping the pedal	1	
U038	When the presser foot doesn't lift, sewing can only be done by starting switch	0: Normal 1: Forbidden to lift presser foot	0	
U039	Search origin at sewing end	0: Not search origin 1: Search Origin	0	
U040	Search origin at cyclic sewing	0: Not Search origin 1: Search origin after the finish of each pattern 2:The whole cycle ends	0	
U041	Search origin at sewing of P pattern	0: Not search origin 1: Search Origin	0	
U042	Stop position of needle bar	0: upper position 1: highest position	0	
U043	Brightness of LED spotlight at the machine head	0～10	8	The larger value, the brighter; 0 means off.
U046	Forbid thread-trimming	0: normal 1: forbid thread-trimming	0	
U049	Set winding speed	800～2000	1600	
U055	Forbid start bar tacking at button sewing	0: start bar tacking 1: no start bar tacking	0	
U063	Setting method of X/Y scale rate	0: by percentage 1: by size	0	
U135	Presser foot movement order before sewing	0: stand-by at the sewing start 1: stand-by at the origin	0	
U200	Language	Set language	Simplified	

			Chinese	
U212	Air valve separate presser foot lowering order	0: lower at the same time 1: lower left presser first and then right presser 2: lower right presser first and then left presser	0	
U213	Air valve separate presser lifting order	0: lift at the same time 1: lift left presser foot first and then right presser foot 2: lift right presser foot first and then left presser foot	0	
U214	Overturn Presser Foot Availability	0: forbidden 1: available	1	
U245	Clear lubricating alarm error	Press RESET to clear	Display the accumulated number of sewn stitches	

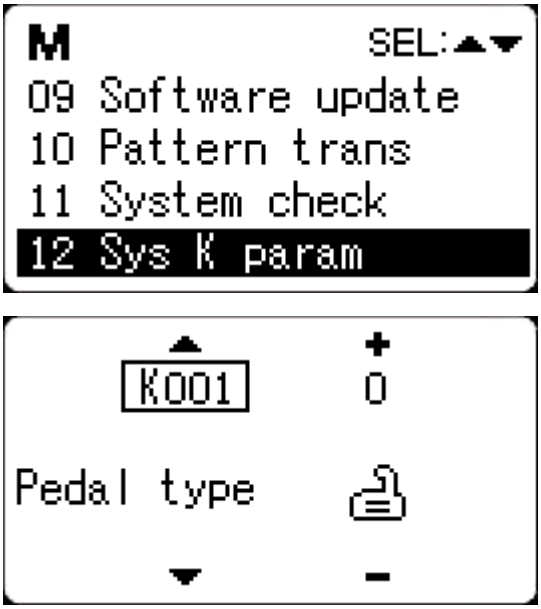
3 Service Parameter Setting

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.

3.1 Service Parameter Activation and Change

When sewing LED is off, hold pressing M key for 3~5 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, please refer to [2.7 memory switch activation and change].



3.2 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	Speed of Thread-trimming	300～800	400	
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	10～60	35	
K074	Presser foot control mode shift	0: air valve control 1: motor control	1	
K095	Thread-trimming angle	0～9	5	
K097	Thread-trimming method at pause	0: automatic thread-trimming 1: manual thread-trimming	1	
K102	X stepping motor full-current parameter	1～15	6	Effective after restart
K104	Y stepping motor full-current parameter	1～15	6	Effective after restart
K106	Thread-catching stepping motor full-current parameter	1～15	10	Effective after restart
K108	Presser stepping motor full-current parameter	1～15	9	Effective after restart
K109	X stepping motor semi-current parameter	1～15	8	Effective after restart
K110	Y stepping motor semi-current parameter	1～15	8	Effective after restart
K111	Presser foot stepping motor semi-current parameter	1～15	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; 3: Neither Clear nor Plus/Minus	0	
K122	OC length adjustment	－128～128	0	
K123	OD length adjustment	－128～128	0	
K124	BD length adjustment	－512～512	0	
K125	OC length	1780～2380	2080	
K126	OD length	1450～2050	1750	
K127	BD length	390～590	490	
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	－10～30	0	
K137	Thread clamp release angle at sewing start	－150～150	0	
K138	Thread clamp holding time after trimming at sewing start	－2～1	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	－20～20	0	
K142	Holding force adjustment of branch thread tension solenoid	－40～40	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	0～1	0	0:Allowed 1:Prohibited
K164	The height of the middle pressure foot	14~18	16	Only if the K02 parameter is set to 3
K165	The height of the middle pressure foot follows	0~10	3	Only if the K02 parameter is set to 3

K166	The middle pressure foot with synchronous	-10~10	0	Only if the K02 parameter is set to 3
K172	Set stitch number for thread breakage detection	0～10	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	
K180	(X)motor find origin mode	0：External sensor 1：Motor encoder 2：The master control	0	
K181	(Y)motor find origin mode	0：External sensor 1：Motor encoder 2：The master control	0	
K182	(C)motor find origin mode	0：External sensor 1：Motor encoder 2：The master control	0	
K183	(P)motor find origin mode	0：External sensor 1：Motor encoder 2：The master control	0	
K221	Button locating pin X coordinates	-600~600 Units:0.1mm	0	
K222	Button locating pin Y coordinates	-600~600 Units:0.1mm	0	
K227	Main Shaft Motor Type	0: 0830-F11 1: 0830-F01	0	Effective after restart
K228	Spindle stop lock shaft function	0:Don’t lock shaft 1:Lock shaft	0	
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.

3.3 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.

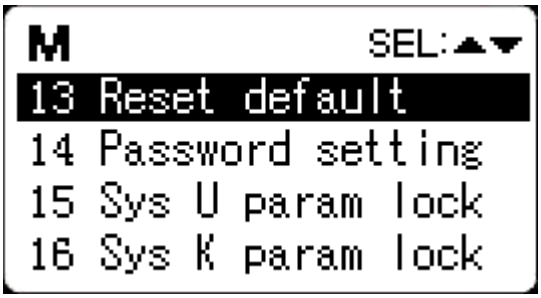
At recovering the default settings, the entire parameters that are set by user before will be covered. Therefore, please take caution in using this function. If necessary, please contact the technicians of the manufacturer, and operate the machine with the instruction from the professionals.

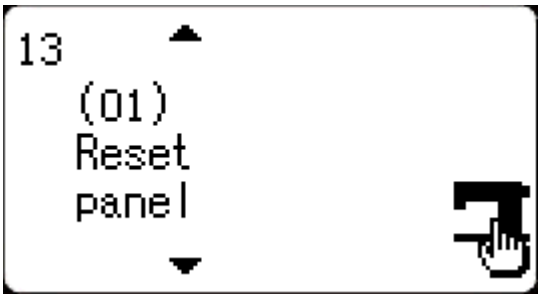
The specific operation procedure is as follows:

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.

（01） Reset panel
（02） Reset EEP
（03） Reset step

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.

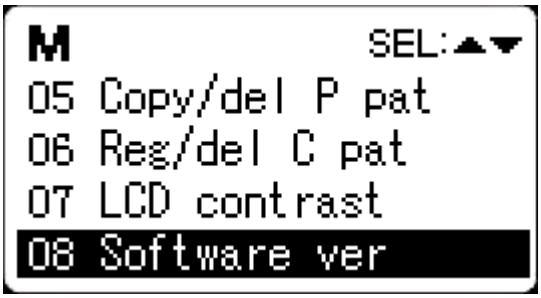


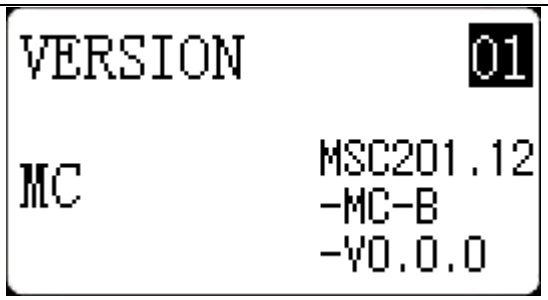


Note: During the restoring process, if the power supply is shut down by accident, the restoring process has to be aborted and you failed to restore the default setting. The software will return to the former state before restoring.

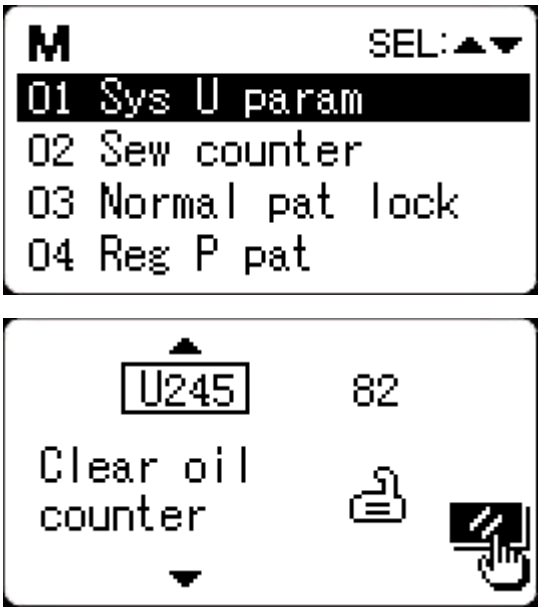
3.4 Software Version Display

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 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	

3.5 Check Total Number of Stitches and Clear Lubricating Alarm

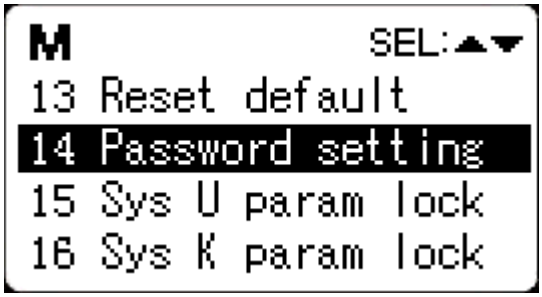
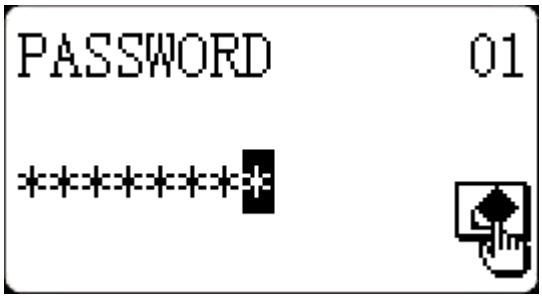
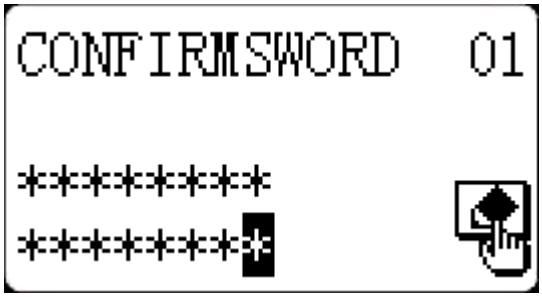
After the machine runs for a period of time, the system may hint "M-333 machine needs lubricating", which means lubricating is needed. Under this situtation, press key first to clear the lubricating alarm, and then press M to enter system menu. Select "01 system U parameter" and press key to enter U parameter setting mode. Then press key to select "U245 clear stitich number for lubricating" and press to clear the total number of stitches, to stop displaying the same message.	

3.6 Password Setting and U/K Parameter Lock

The system provides users with password management function for them to set password by themselves. After inputting the set password, user can unlock certain advanced functions. User can lock system parameters to prevent change of key parameters by mistake so as not to cause problems.

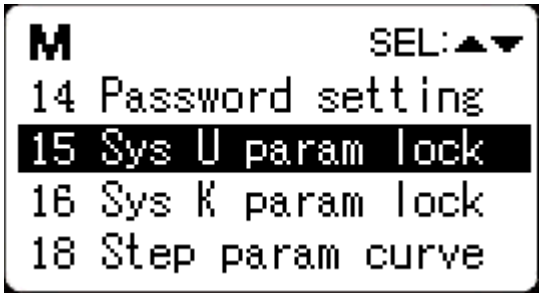
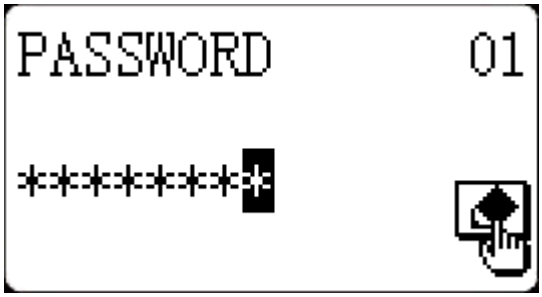
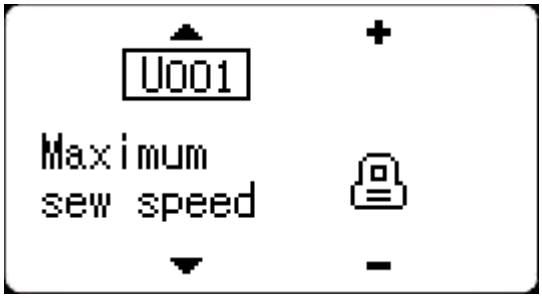
3.6.1 Change Password

If user need change password, first enter password management mode and then change the password by the following method:

when sewing LED is off, hold pressing M key for 3 seconds until the buzzer rings, press ▲▼ key to select “14 password setting” and press ✎ key to enter password input interface.	
Press ▲▼ key to move backward or forward to delete the password position to be inputted. Press + − key to input the password character for the selected position. The available password characters are “0~9”, “A~Z”. After completing input, press ✎ to confirm and enter the new password input interface. Otherwise, the system will report error and return to the system menu. **Note: the default password is fixed; for more information, please contact your machine manufacturer or its agents.**	
User need input the new password in the first line and re-input the same password to confirm it. Then press ✎ to confirm the password change. Otherwise, the system will hint “wrong password”. If user will give up the password change operation, press ↩ key or M key to quit. **Note: after successful change of password, please remember the password and keep it secret!**	 

3.6.2 Set U/K Parameter Lock

This function allows user to lock or unlock parameters that need protecting. Every U parameter and K parameter can be set to be locked or unlocked. The setting method is the same for U parameter and K parameter, and here take U parameter lock for example.

Under the system menu, press  key to select "15 U parameter lock" and press  key to enter password input interface. Input the right password and press  key to enter U parameter lock setting interface. The password has to be correct, otherwise user cannot enter this interface.	
Under this interface, press  key to select the U parameter that need change its locked/unlocked status, and press  to change the locked/unlocked status. The symbol  means locked and  means unlocked. When parameter is locked, user need input password to change its set value. When user quit the parameter setting interface and enter it again, the locked parameters will remain locked.	 

After completing the parameter lock setting, press  key or  key to save and quit.

4 Button Sewing Function

4.1 Button Sewing Function Setting

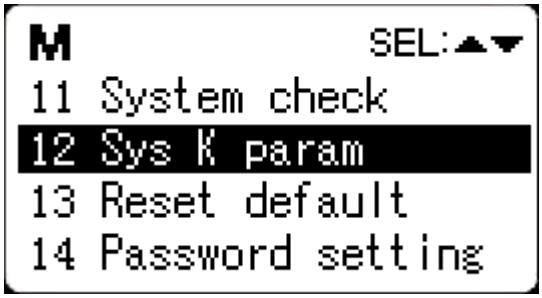
1、 When sewing LED  is off, hold pressing  key for 3 seconds until the buzzer rings, and release  key to activate service parameter medication;

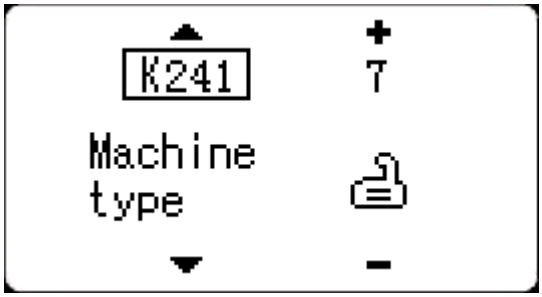
2、 Press  key to select "12 system K parameter", press  key to enter and then press  key to select parameter K241;

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.





4.2 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

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)
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		
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							

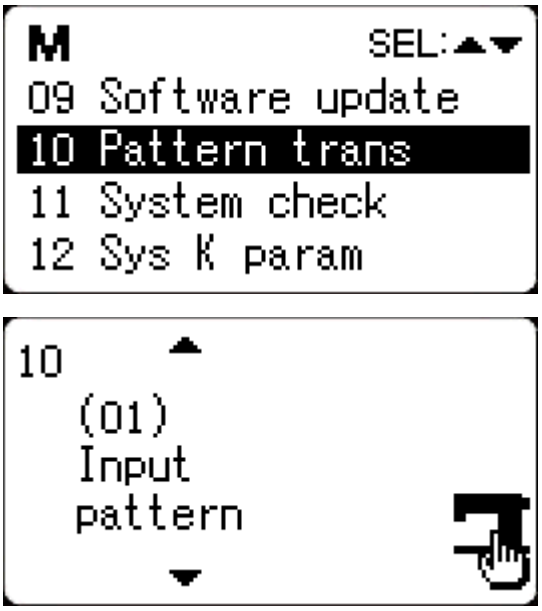
5 Update Pattern Data by USB Disk

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;

5.1 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.



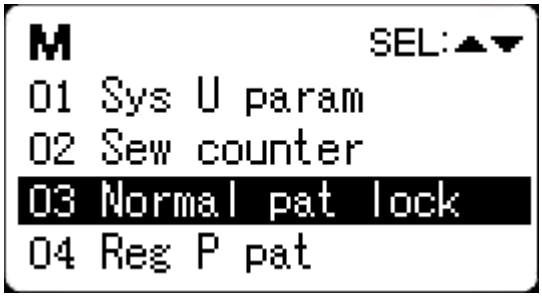
5) Press ↵ key, and when the panel hint "operation executing, please do not turn off the machine", the patterns are starting to be imported.
Note: before this operation, please confirm the U disk having been connected to USB interface; if not, this update operation cannot be done and the panel will hint "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

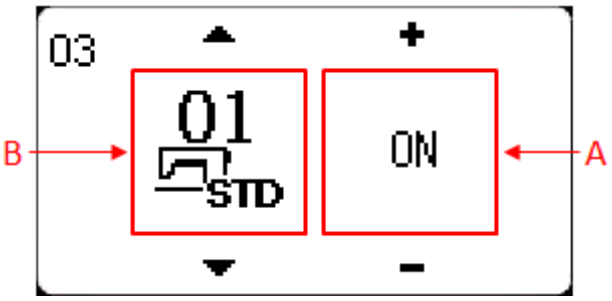
the U disk are the same with those in the panel, the patterns with the same number in the panel will be replaced.

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.

6 Appendix 1

6.1 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.
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 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.

Code	Name	Content	Solution
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 Cutter Position Sensor.
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 to Aging	After entering aging mode, the machine stops.	Shut down the machine
E-025	X Origin Search Error	X origin sensor doesn't change.	Turn off power and check motor and Origin Sensor.
E-026	Y Origin Search Error	Y origin sensor doesn't change.	Turn off power and check motor and Origin Sensor.
E-027	Presser Origin Search Error	Presser origin sensor doesn't change.	Turn off power and check motor and Origin Sensor.
E-028	Thread-catching Origin Search Error	Thread-catching origin sensor doesn't change.	Turn off power and check motor and Origin Sensor.
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

Code	Name	Content	Solution
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 Over-speed	The system detects the actual speed of the main shaft motor exceeding the speed limit	Turn off the power and repower the machine 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-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 Route (X25) 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

Code	Name	Content	Solution
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
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

Code	Name	Content	Solution
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.

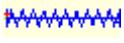
6.2 Operation Panel Error List

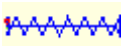
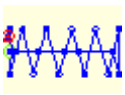
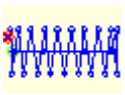
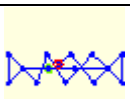
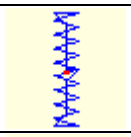
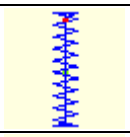
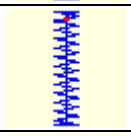
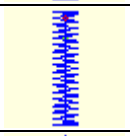
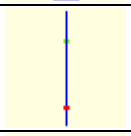
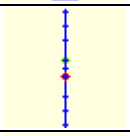
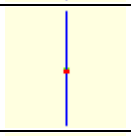
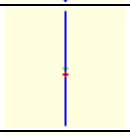
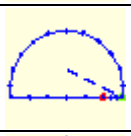
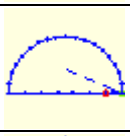
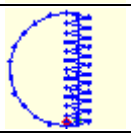
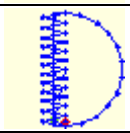
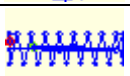
Code	Name	Content	Solution
M-300	Memory Abnormal	There exists error with the data defined by the operation panel.	Internal error: user need update the panel program.
M-301	Memory Abnormal	Panel memory data abnormal	Internal error: user need update the panel program.
M-302	Machine Type Parameter Error	The machine type data read by the operation panel is not within the set range.	Press RESET key to automatically enter parameter No. 241 to select and save the defined machine type.
M-303	UK Parameter Abnormal	Abnormal range of the parameter read by the panel from EEPROM	Press RESET key to enter the system menu and recover the default setting.
M-304	Head Board Parameter Abnormal	Abnormal range of parameters received by panel from down computer	Press RESET key to enter the system menu and recover the default setting.
M-305	Normal Pattern Parameter Abnormal	When using pattern parameter, the panel detects abnormal parameter range.	Press RESET key to enter the system menu and recover the default setting.
M-306	Pattern Not Found or Locked	The prepared pattern No. hasn't been registered to ROM or set as not to be read. The pattern No. is displayed as 0.	Press RESET key, confirm the pattern No. and make sure the pattern is unlocked.
M-307	Pattern Data Abnormal	When the panel reads the sewing data of the pattern, the data format is found to be abnormal.	Select other patterns.
M-308	Sewing Data Too Large	When being computed, the size of the pattern data is found to be too large	Select other patterns for sewing.

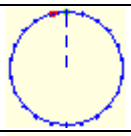
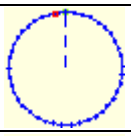
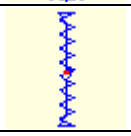
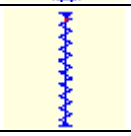
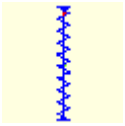
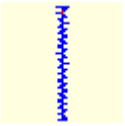
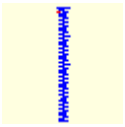
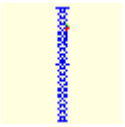
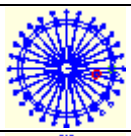
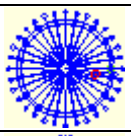
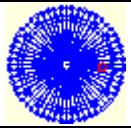
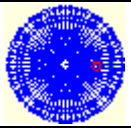
Code	Name	Content	Solution
		and beyond normal range.	
M-309	Pattern beyond Sewing Range	When being computed, the pattern is found to be beyond sewing range.	Press RESET key, confirm the size of the pattern is within the set range of parameters K056, K057, K058 and K059.
M-310	Stitch Length beyond Normal Range	When being computed, the stitch length is found to be beyond normal range.	Press RESET key, confirm the pattern and X/Y scaling up rate.
M-311	Pattern Data Communication Abnormal	Error occurs when the panel sends pattern data to the main control.	Check the pattern and the cable connection between the panel and the main control.
M-312	Normal Pattern Lock Abnormal	The panel can't read the normal pattern lock data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-313	Present Pattern Parameter Abnormal	The panel can't read the pattern parameter data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-314	Parameter Setting beyond Normal Range	The set value of the parameter exceeds normal range.	Press RESET key and change the set value.
M-315	Counter Abnormal	The panel can't read the counter data from EEPROM.	Press RESET key to enter the system menu and recover the default setting.
M-316	Counter Exhausted	The counter has reached the upper limit after the sewing.	Press RESET key.
M-317	Communication Error between Main Board and the Panel	There is no communication or communication error between main board and the panel.	Turn off the power and repower the machine after a while. Check the communication cable, the main board and the panel.
M-318	The Storage Space for External Patterns Full	When patterns are imported to the control panel via USB, the storage space for such patterns is found full.	First export the internal patterns before deleting them, and then import patterns again.
M-319	External Patterns Format Abnormal	Pattern data is found abnormal when its format data is read by the control panel	Enter the parameter import/export mode of the system and delete such patterns.
M-320	Imported Pattern Already Exist	When importing pattern from USB storage device, pattern with the same number is found to exist already in the panel.	Change the number of the pattern in the USB storage device to be imported.
M-321	Imported Pattern Not Found	When importing pattern from USB storage device, the pattern to be imported is not found.	Select existing patterns in the USB storage device.
M-322	Pattern Deletion Error	When deleting external pattern, it is found to be not exist.	Select existing pattern for deletion.

Code	Name	Content	Solution
M-323	Pattern Read Error	There is problem with reading pattern data from external pattern storage area.	Please select other patterns.
M-324	USB Device Not Connected	When importing or exporting patterns, the panel detects abnormal USD storage device.	Change another USB storage device
M-325	The Size of Imported Pattern Too Large	When importing patterns, the panel detects that the imported pattern is too beyond the size limitation.	Make sure the imported pattern is within the size range.
M-326	External Pattern Not Found	Under sewing ready status, the external pattern to be read is not found.	Please select other patterns.
M-327	P Pattern to Be Deleted is Cited by C Pattern	When being deleted, the P pattern is found to have been added to certain C pattern.	First delete the P pattern from the C pattern and then delete the P pattern.
M-328	USB Patterns Not Found	The pattern number to be imported can't be found after USB connection	Make sure the pattern is correctly named and saved under the designated directory of the USB storage device.
M-329	No Registered P Pattern	Before entering the P pattern or C pattern copy/deletion mode, no P pattern has been registered.	Please register P patterns before entering those modes.
M-330	All Normal Patterns Shut Down	Before entering P pattern registration mode, all normal patterns are found to have been shut down.	Please unlock normal patterns.
M-331	No More Registration of P Patterns	Before entering P pattern registration mode, it is found that all P patterns have been registered.	Please delete some P patterns before registering new ones.
M-332	No Deletion of the Last C Pattern	The C pattern to be deleted happens to be the last one.	The deletion of the remaining last C pattern is prohibited.
M-333	Alarm to Lubricate the Machine	It is time to add lubricating oil to certain parts of the machine, so the machine stops working.	Restart the machine, enter parameter No. 245 and press RESET key, and then power on again
M-999	Undefined Error	Undefined error of the operation panel	Shut down the machine and update the control panel program.

6.3 Standard Button Sewing Pattern List

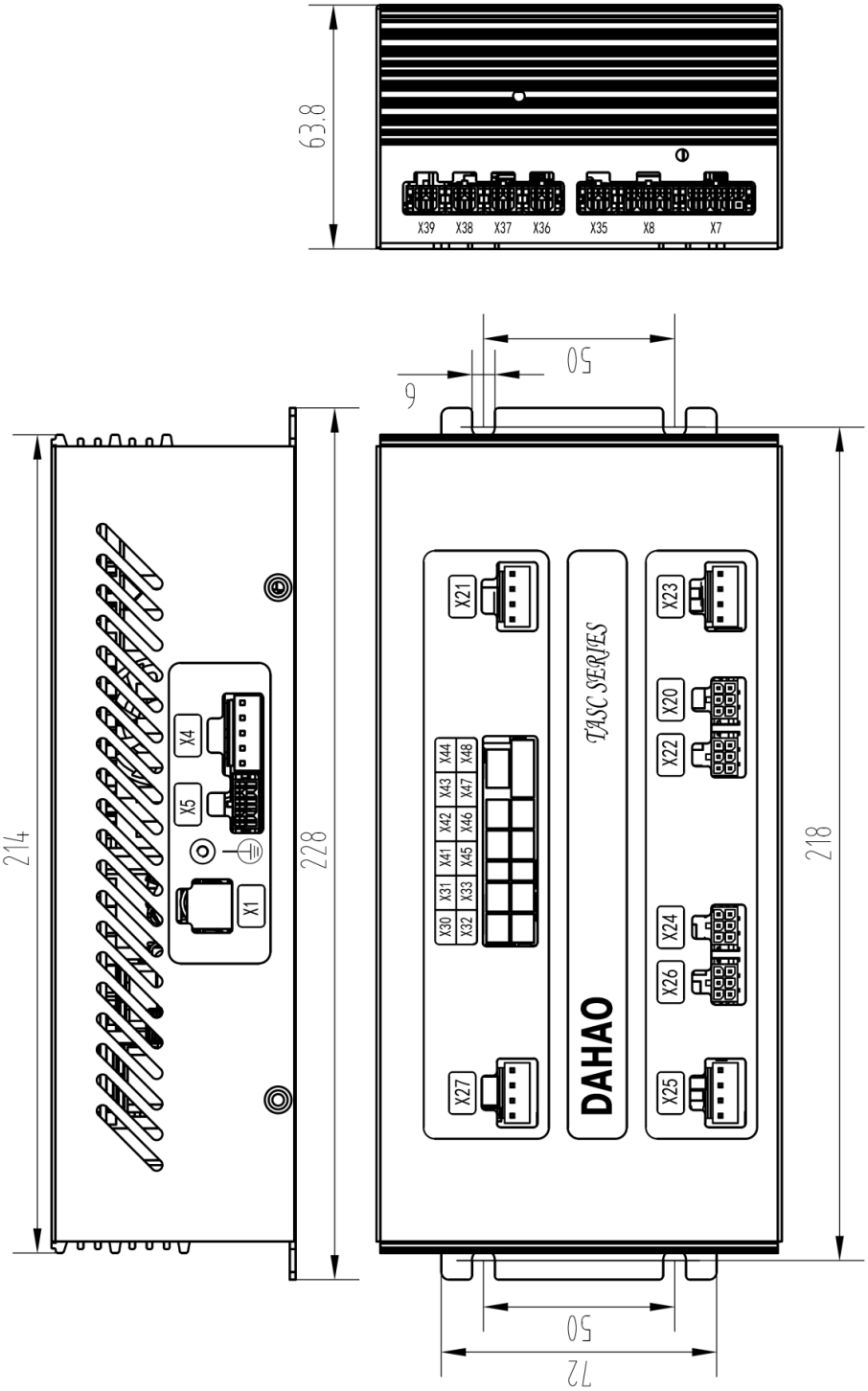
NO.	Pattern	Stitches	L×W (mm)		NO.	Pattern	Stitches	L×W (mm)
1		41	16×2		2		41	10×2
3		41	16×2.4		4		41	24×3

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

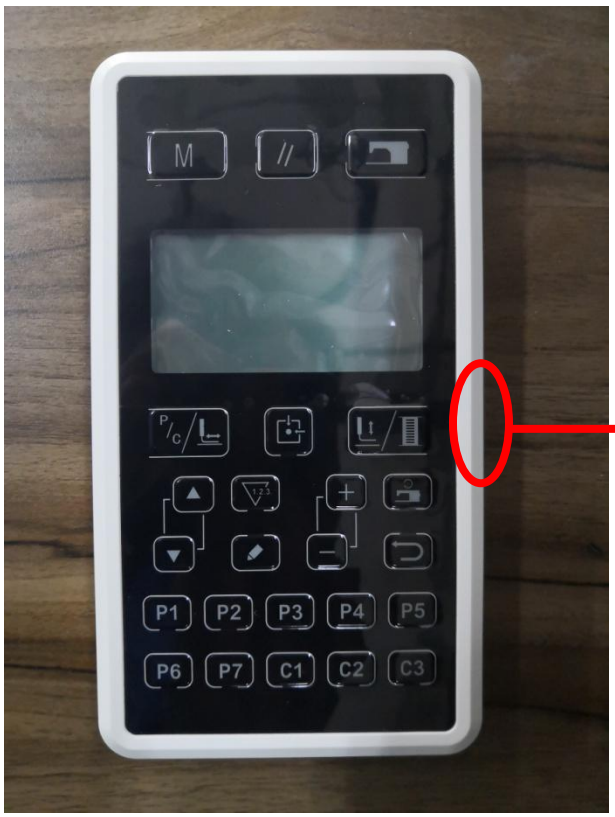
39		25	11.8×12		40		45	12×12
41		28	2.4×20		42		38	2.4×25
43		38	2.4×25		44		57	2.4×30
45		75	2.4×30		46		41	2.4×30
47		89	8×8		48		98	8×8
49		147	8×8		50		163	8×8

7 Appendix 2

7. 1 Installation Size of Control Box



7.2 Installation Size of Operation Panel



Panel

USB Port

7.3 The Control System Diagram

（1）TASC201-2N/B