



中捷缝纫机
SEWING MACHINE

1900B 电脑套结机控制系统

使用说明书

前言

欢迎您使用中捷公司生产的电脑套结缝纫机。

请您仔细阅读本说明书，以确保正确的操作使用电脑套结缝纫机，请按照本说明书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，请将本说明书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。

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1 概要说明

1.1 应用机型

SC201 加固机型。

1.2 输入方式

采用按键输入方式。

1.3 显示方式

采用数码管和发光二极管显示方式。

1.4 面板布局

操作面板整体为长方形，分为两部分，显示部分为 5 位数码管和 10 个发光二极管，操作部分为 12 个按键。参考操作说明控制面板图。

1.5 标准化

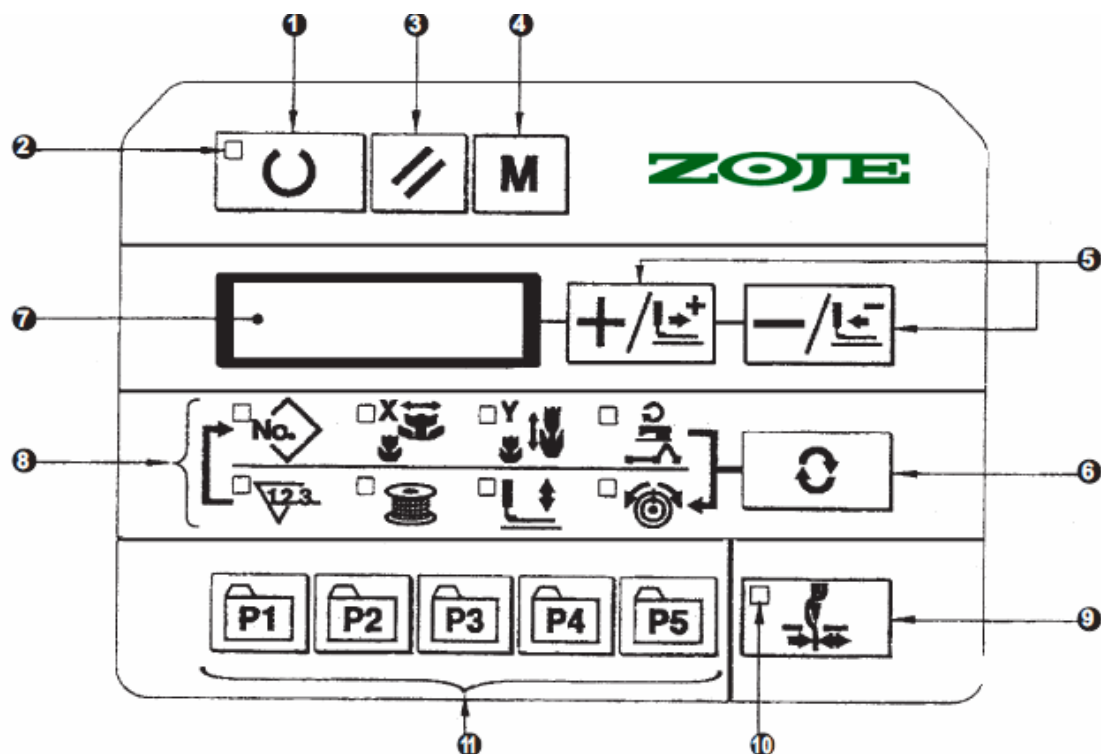
功能按键采用业界公认的图形标识，图形是国际化语言，各国用户都可以识别。

1.6 操作方式

功能键包括准备键，复位键，方式键，选择键以及抓线开关等。具体操作方法参考操作说明。

2 操作说明

2.1 控制面板开关名称和说明



(1) 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。

(2) 缝制 LED

设定编程状态时为灭灯，缝制状态时为亮灯。通过准备键来切换。

(3) 复位键

解除异常、将设定值返回到初期值时使用。

(4) 方式键

在缝制 LED 灯灭灯状态下，可以设置参数或存储花样的开关键。在缝制 LED 灯亮灯状态下，按方式键可以打开支线功能，进行穿线动作，20 秒后支线自动关闭。

(5) +/前进传送键和-/后退传送键

适用于花样号、扩大缩小率的变更、前进/后退送布。

(6) 选择键

选择设定的项目。被选择项目的项目选择 LED 和设定值被显示。

(7) 数据显示 LED

显示花样号、扩大缩小率等被选择项目的设定值。

(8) 项目选择 LED

被选择的项目的 LED 亮灯。

(9) 抓线 ON/OFF 键

可以选择抓线功能的有效/无效。有效时，抓线显示 LED 亮灯。

(10) 抓线显示 LED

亮灯时，进行抓线动作。

(11) 花样存储键

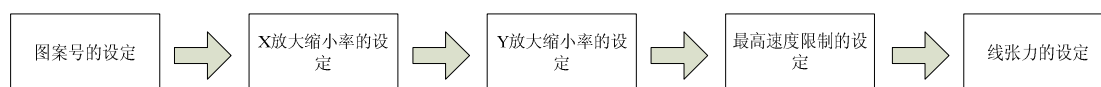
存储花样。存储后的花样一按此键就可以立即进行缝制。

变更扩大缩小率、缝制位置等可以进行存储。

2.2 基本操作

2.2.1 项目数据的设定

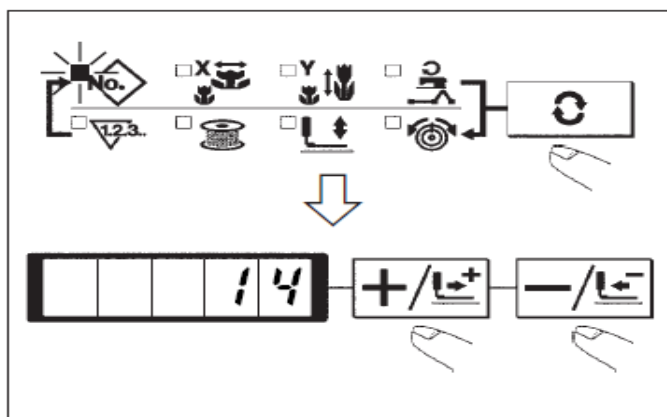
请按如下的顺序设定各项目。



1. 打开电源开关

项目选择的花样号码亮灯，数据显示部分显示出花样号码。

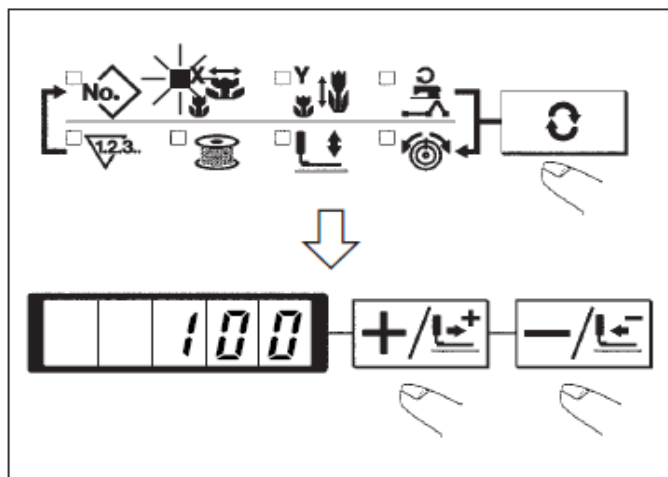
2. 花样号码的设定



(1) 按 键，设定为花样 No. 号码的显示项目 亮灯。

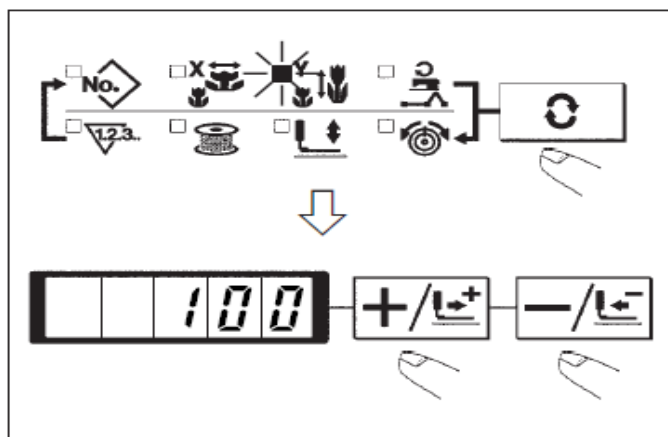
(2) 按 键、 键，画面上显示出 14。
(设定为 No.14 花样)

3. X 放大缩小率的设定



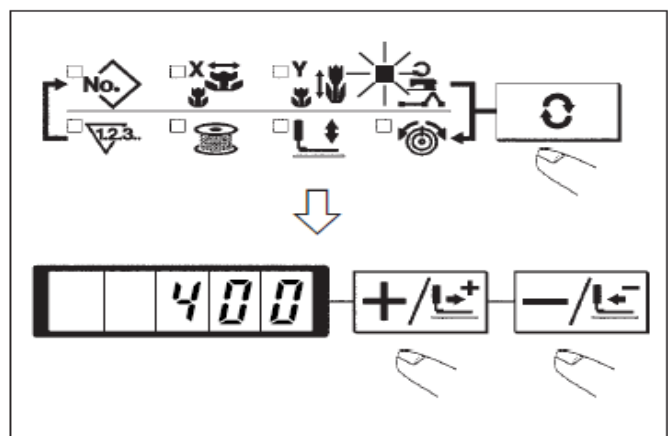
- (1) 按 键，设定为 X 放大缩小率的项目 显示。
- (2) 按 键、 键，让缝纫机显示出 100。
(把 X 放大缩小率设定为 100%)

4. Y 放大缩小率的设定



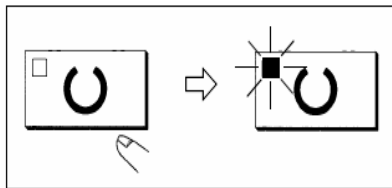
- (1) 按 键，设定为 Y 放大缩小率的项目 选择。
- (2) 按 键、 键，让缝纫机显示出 100。
(把 Y 放大缩小率设定为 100%)

5. 最高转速限制的设定



- (1) 按 键，设定为转速的项目 显示。
- (2) 按 键、 键，让缝纫机显示出 400。
(设定为 400rpm)

6. 设定结束



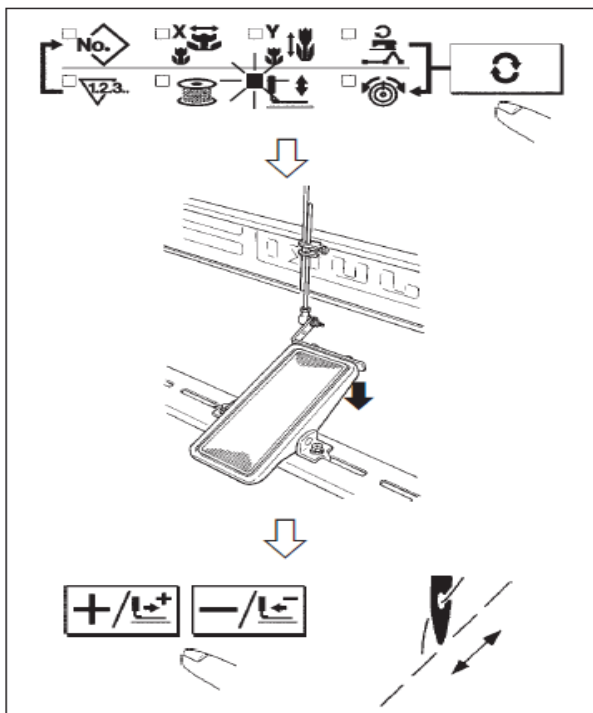
- (1) 按  键。
- (2) 压脚移动上升后，缝制 LED 亮灯，成为可以缝制的状态。

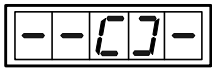
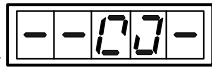
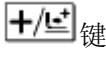
- 按下  键后，花样号、XY 放大缩小率等设定值被记忆。
- 按下  键后，可以重新确认各设定项目，但是缝制 LED 亮灯的状态不能变更。
- 按下  键后，缝制 LED 灭灯，各项的设定值可以变更。
- 当花样号为 0（出厂设置）时，按下  键后，会显示错误 E-10，此时，按下复位键后请重新确定花样号。
- 不按  键，关掉电源后，花样号、XY 放大缩小率、最高转速的设定值均不能被记忆。

2.2.2 花样形状确定

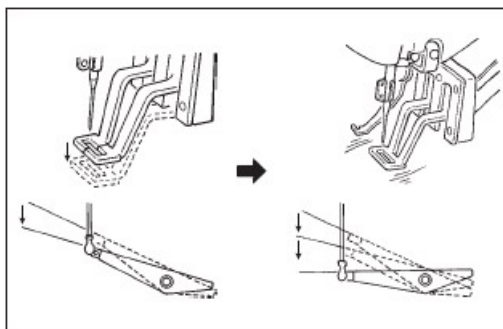
选择花样后，请一定确认花样的形状。

万一花样远离压脚，缝制途中会碰到压脚，弄断机针。



1. 按  键，缝制 LED 灯亮起。
2. 用  键选择压脚下降 ，屏幕显示 ；踩脚踏板让压脚下降，屏幕显示 。
3. 在压脚下降后的状态，按  键
4. 用  键、 键确认形状；确认缝制的花样在压脚允许的范围内。
5. 按  键让压脚上升。
6. 用  键，解除  选定（选定除  外的其他数据项目）后，按  键，结束试缝，缝制 LED 灯熄灭。

2.2.3 缝制

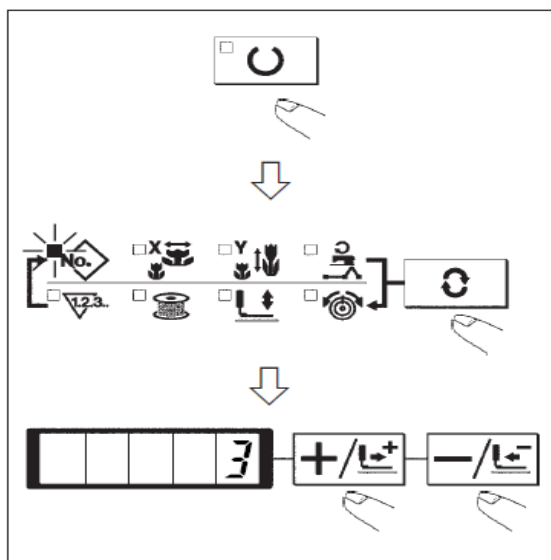


1. 把缝制品放到压脚部。
2. 把踏板开关踩到第一级，压脚下降，脚离开踏板后，压脚上升。
3. 把压脚下降一级，踩到第二级之后开始缝制。
4. 缝制结束后，压脚上升返回到起始缝的位置。

注意 1: 将踩踏板开关至第一级，压脚下降，按 **+ / L** 键、**- / R** 键可以改变花样的缝制位置；然后将踏板开关位置踩至第二级，缝纫从选定的位置开始。在缝制过程中，如出现断线等现象时，排除故障后，可以使用此方法进行补缝。

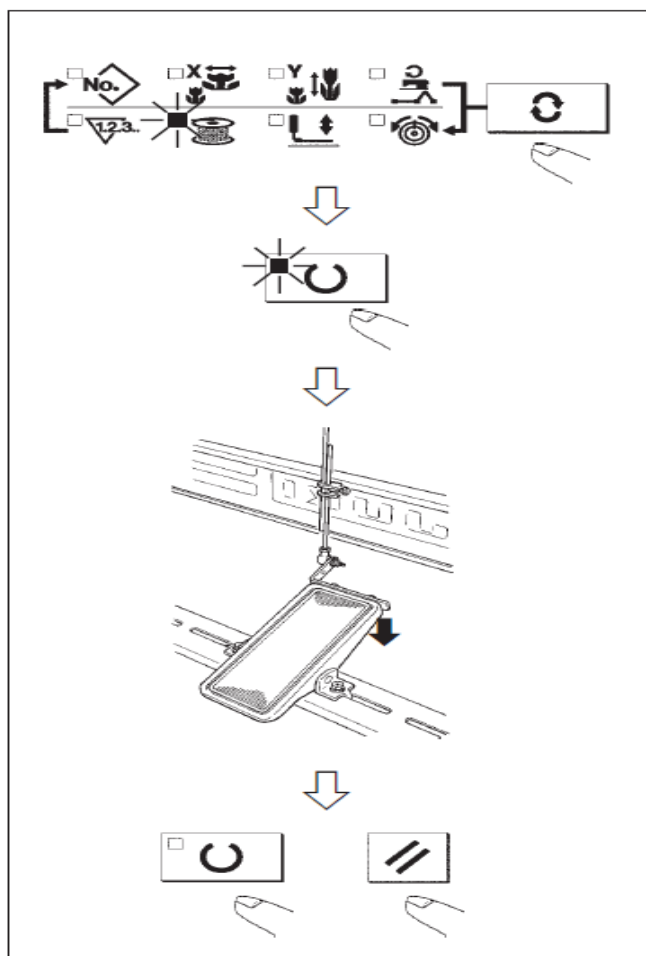
注意 2: 不要将注意 1 中的做法用作花样试缝操作，以免万一误将踏板开关踩至第二级，引起机器启动而发生危险。花样的试缝操作必须严格按照上一节中的【花样形状确定】步骤进行操作。

2.2.4 变更为其它花样



1. 按 **PI** 键，缝制 LED 灭灯。
2. 按 **0** 键，选择花样号的项目。
3. 用 **+ / L** 键、**- / R** 键设定花样号。
4. 同样地设定 XY 放大缩小率、转速等。
5. 按 **PI** 键之后，缝制 LED 亮灯，成为可以缝制的状态。

2.2.5 绕线



刚打开电源后，绕线不动作。请设定 1 次花样号后，按  键让缝制 LED 亮灯之后再进行操作。

1. 按  键，缝制 LED 灭灯。
2. 按  键，选择绕线 。（如果缝制 LED 亮灯时不能选择）
3. 按  键，压脚下降，缝制 LED 亮灯。
4. 踩踏板开关后，缝纫机开始转动。
5. 踩踏板开关之后，或者按  键、 键之后缝纫机停止转动。
6. 按  键之后，缝制 LED 灭灯，压脚上升， 键变为有效。

2.2.6 独立剪线装置

独立剪线装置，区别于一般的压脚联动及主轴联动剪线机构，拥有着独立的控制单元，可以更好的对剪线的全过程进行控制。

当存储参数 No.35 设定为 1（禁止剪线）时不进行剪线动作。

2.2.7 抓线装置

用抓线装置可以防止高速开始时的缝制不良（上线脱线、跳针、上线脏污）。抓线在抓线显示 LED 亮灯的状态动作，灭灯状态下不动作。动作 ON/OFF 的变换可以用  键来进行。抓线装置 OFF 时，自动进行低速起动。

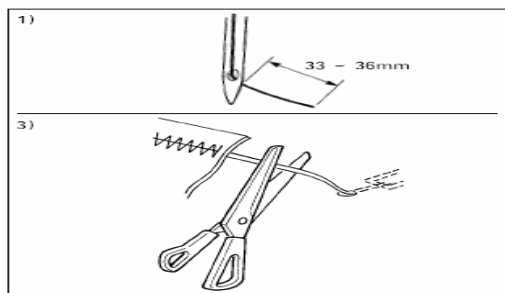
当存储参数 No.35 设定为 1（禁止）时不进行抓线动作。同时， 键无效。

使用抓上线时的注意事项

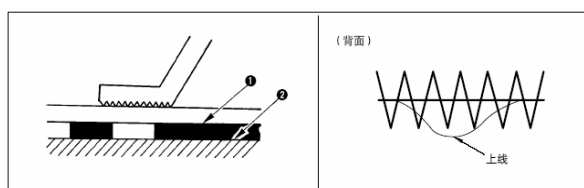
1. 有（动作）抓线时，请把缝制开始上线的长度调小之后再使用。

机针长度过长的话，布料背面的线会被拉出，同时，过长的话，容易把上线抓线的端头缝进缝迹里。

- 1) 有抓线时的机线长度约为 33~36mm。
- 2) 更换机线之后等机线变长。或用手拿机线缝制时，请把抓线键设定为 OFF。
- 3) 如果抓线夹持的上线被缝进缝迹后，请不要强行拉布料，请用剪刀等把缝进布料的上线剪掉。开始缝制的上线不会被缝进缝迹里。

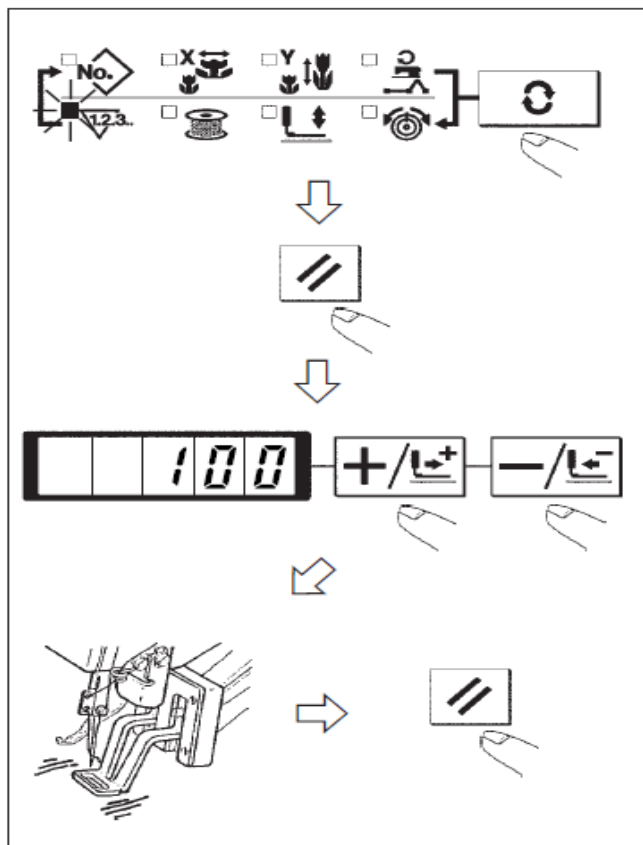


2. 让抓线动作，可以保持缝制开始的稳定缝制，可以把机针调整短，因此布料的上线缠线现象变少。
3. 使用布料不与针板紧密接触的下板时,可能发生上线松弛,不管线长度如何布料背面均卷入上线的现象。



2.2.8 底线计数器

计数器的设定在出厂状态时设定为生产计数器（加算方式）。而作为底线计数器（减算方式）时，必把 No.18 号参数的值设置为 1。

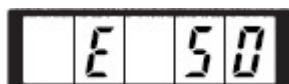


- 1) 按 键，设定为计数器显示 。
- 2) 然后按 键。
- 3) 然后，按 键、 键，设定一个旋梭可以缝制的次数。
- 4) 缝制后，每逢一次计数器减一。
- 5) 缝制完设定数后，显示屏会闪烁提示。
- 6) 更换底线，按 键，计数器值返回到设定值。
- 7) 反复 4) ~6) 的步骤。

2.2.9 暂停

把 No.31 号参数设定为 1 之后， 键或者踏板的倒档可以作为暂停功能来使用。

- 1) 按 键或踩踏板倒档，缝纫机停止转动，显示错误号 50。



- 2) 停止后的操作有以下 3 种：

- ① 按启动开关，重新开始缝制。
- ② 按 键，进行切线之后，用 键、 键调整位置，按开始开关再次开始缝制。
- ③ 按 键，进行了切线之后，再次按 键返回到原点。

2.3 设置 P 花样与 C 花样

2.3.1 使用花样键 () 进行缝制

把已经存储的花样 (No.1~200) 可以登记到 P1~P50 上。变更放大缩小率、最高转速限制、缝制位置就可以登记, 用花样的滚动窗口选择同样可以登记花样, 可以一次地叫出 P1~P25。

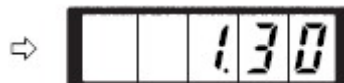
• 当选择了 P6~P25 时, 用下表所示的      键的组合 (同时按) 进行缝制。

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	P1+P2	P13	P3+P4	P20	P1+P3+P5		
P7	P1+P3	P14	P3+P5	P21	P1+P4+P5		

1. 花样键上的登记

例: 把花样 No.3、X 放大缩小 50%、Y 放大缩小 80%、最高速度限制 2000rpm、花样位置右移 0.5mm、前移 1mm 的设定到 P2。

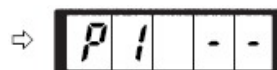
1) 打开电源, 按  键 (缝制 LED 应该灭灯)。
进入方式设定 (存储器开关设定)。



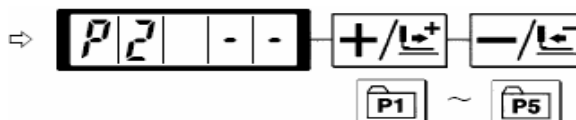
2) 用  键、 键显示出花样存储模式。



3) 按  键。进入花样存储方式。



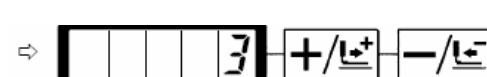
4) 按  键。(选择存储的 P-No.)



用  键、 键也可以选择。

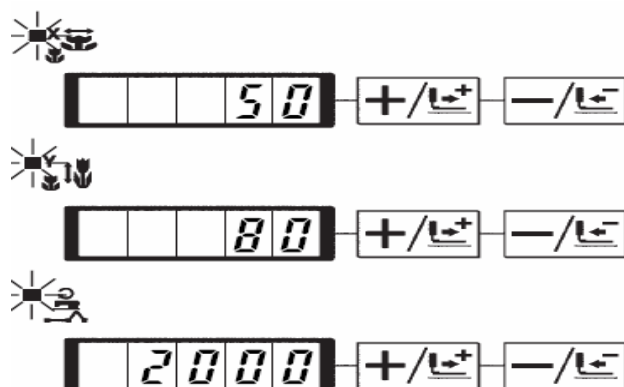


5) 用  键, 显示花样号 .



用  键、 键设定花样号码。

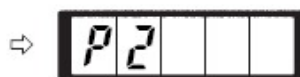
- 6) 按  键，用  键、 键设定为 X 放大缩小率  “50” %、Y 放大缩小率  “80” %、最高速度限制  “2000” rpm。



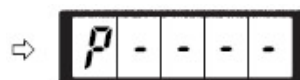
- 7) 按  键后，变为 X 放大缩小率  显示为 0.0。X 方向的移动量可以以 0.1mm 为单位进行设定。用  键、 键设定 0.5。
- 8) 按  键后，变为 Y 放大缩小率  显示为 0.0。Y 方向的移动量可以以 0.1mm 为单位进行设定。用  键、 键设定 1.0。



- 9) 按  键后，设定结束。



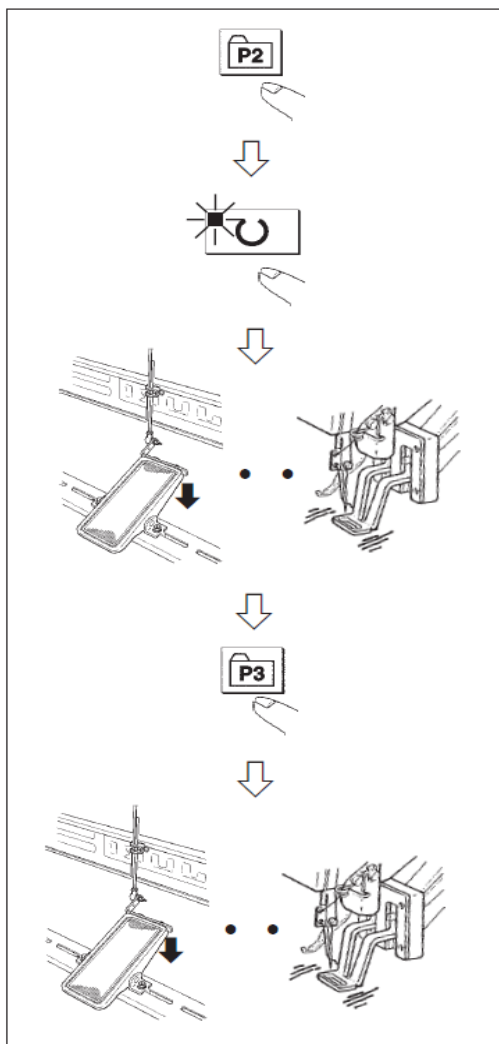
- 10) 按  键，结束花样存储方式。



- 11) 按  键，结束方式设定，返回通常方式。

2. 缝制操作

操作例：以存储的 P2 内容进行缝制，然后缝制 P3 的内容。



1. 打开电源。
2. 按 键。
3. 按 键，缝制 LED 亮灯后，压脚移动上升。
4. 确认花样形状。
5. 如果花样形状正确，则可以缝制。
6. 缝制结束后，按 键，压脚下降，检索原点，移动到缝制开始点，然后压脚上升。
(P 键在缝制 LED 亮灯时，也可以按键变换花样。)
7. 进行 4、5 项操作。

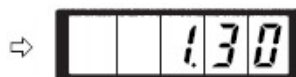
2.3.2 使用组合功能的缝制

按顺序排列已经存储的花样存储 (P1~P50)，存储到 C1~C20，每次缝制之后按顺序变换缝制花样。1 个组合号码最多可以存储 30 个花样。

1. 组合花样的存储

例：按 P1、P2、P3 的顺序组合进行存储。

- 1) 打开电源，按 键 (缝制 LED 应该灭灯)。进入方式设定 (存储器参数设定)。



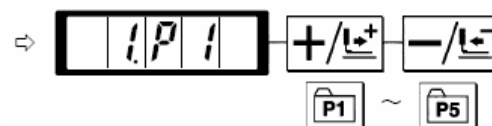
- 2) 用 键、 键显示组合模式。



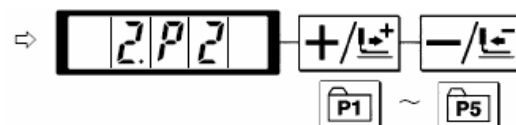
3) 按  键，缝制 LED 亮灯，进入组合
花样设定方式。用  键、 键可
以选择 C1~C20。



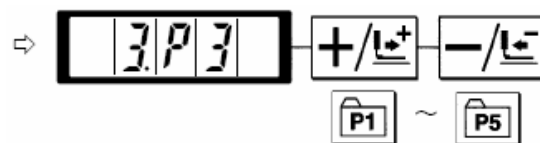
4) 按  键，然后按  键。P1 被设定
到 C1 的第 1 个花样。用  键、 键
键选择 P1~P50。



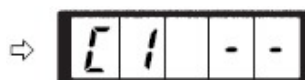
5) 按  键，然后按  键。P2 被设定到
C1 的第 2 个花样。用  键、 键
选择 P1~P50。



6) 按  键，然后按  键。P3 被设定
到 C1 的第 3 个花样。用  键、 键
键选择 P1~P50。



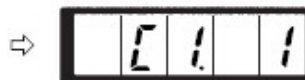
7) 按  键结束存储。



8) 按  键结束组合花样存储模式。

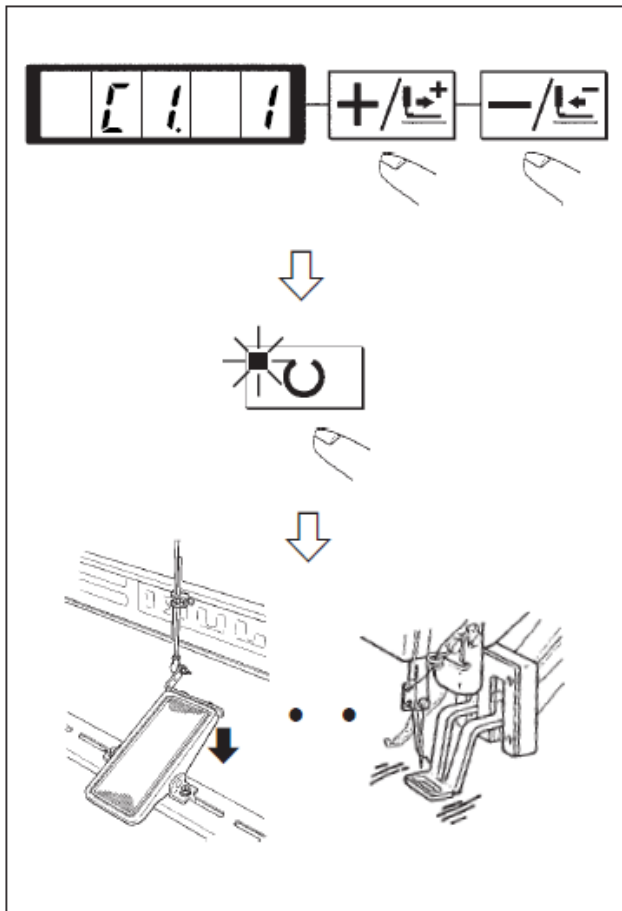


9) 按  键结束方式设定，返回通常方式。



2. 缝制操作

操作例：以存储的 C1 内容进行缝制。



- 1) 打开电源。
 - 2) 用 **+/** 键、**-/** 键把花样号设定为 C1.1。
 - 3) 按 **↺** 键，缝制 LED 亮灯，然后压脚移动上升。
 - 4) 如果花样形状良好，则可以缝制。
 - 5) 按照每次缝制组合的顺序进行缝制，最后一个花样缝制结束后，返回第一个花样，反复进行缝制。
- ✧ 缝制后，如果想返回前面的图案或跳到下一图案时，可以在缝制 LED 亮灯的状态按 **+/** 键、**-/** 键，图案显示变化，压脚移动到缝制起始点。
 - ✧ 存储 C1~C20 后，若改变 P1~P50 的话，存储在 C1~C20 中的 P1~P50 的内容也改变。
 - ✧ 每种花样都应该确认花样形状。

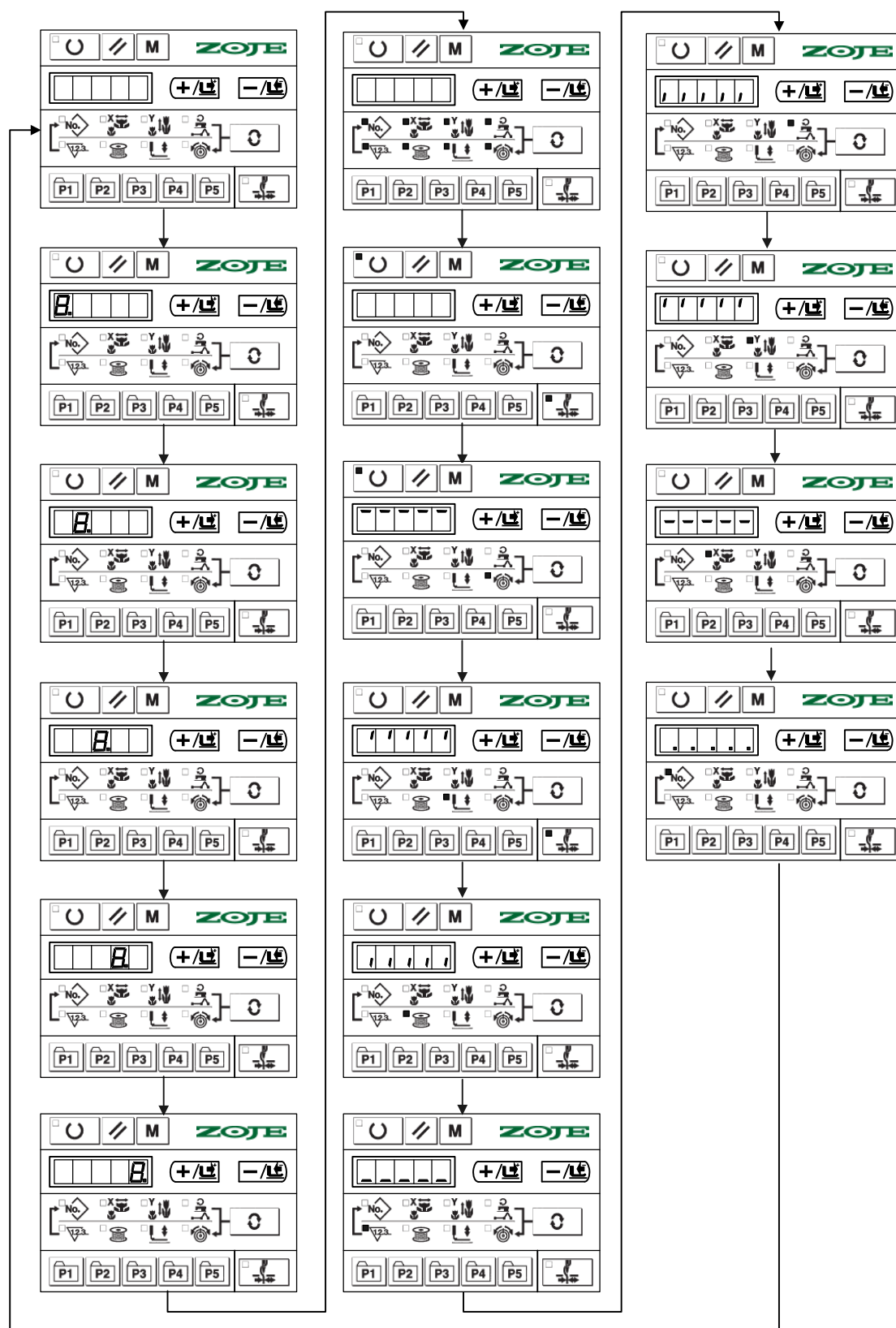
2.4 调试模式

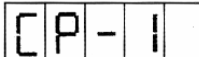
通过启动该模式，可进行保养检查操作。

- 1) 在缝制灯熄灭的状态下，按 **M** 键，显示 **1.30**，然后同时按下 **P1** **P3** **P5** 键，听到蜂鸣器响声后，在记忆开关的客户等级设定模式下可以进入调试模式。

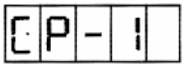
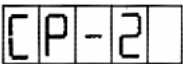
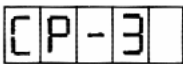
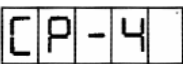
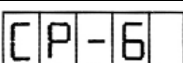
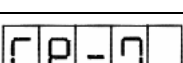
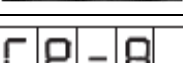
（注意）不同时按 **P1** **P3** **P5** 的话，就不能进入调试模式。

- 2) 按一次 **-/** 键进入调试模式，屏幕显示“CP---”如右图所示：**CP---**；
- 3) 按 **↺** 键，开始进行显示输出测试。显示输出测试将循环检测每个 LED 显示模块及 LED 指示灯的亮灭状态，具体流程如下图所示：



- 4) 再次按下  键, 结束显示输出测试, 屏幕显示“CP-1”, 如右图所示: 。
- 注: 只有在显示输出测试结束之后才能进行其他功能的测试选择。

5) 按 、 键，可以变更功能测试程序号，每个序号代表的功能如下表所示：

功能测试序号	功能	内容
	输入信号检验	以灯亮提示开关，传感器输入的状态。
	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
	连续运转	在设定连续运转条件后，移向连续运转模式。
	主马达旋转数检验	设定旋转数、机器启动、显示实测旋转数。
	切线调试	剪线电机动作，配合调试剪刀的安装等
	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。
	抓线马达/原点传感器检验	显示抓线马达的寸动操作，原点检索操作，以及抓线原点/抓线传感器的状态。
	_____	_____

6) 按住  键，进入功能测试。

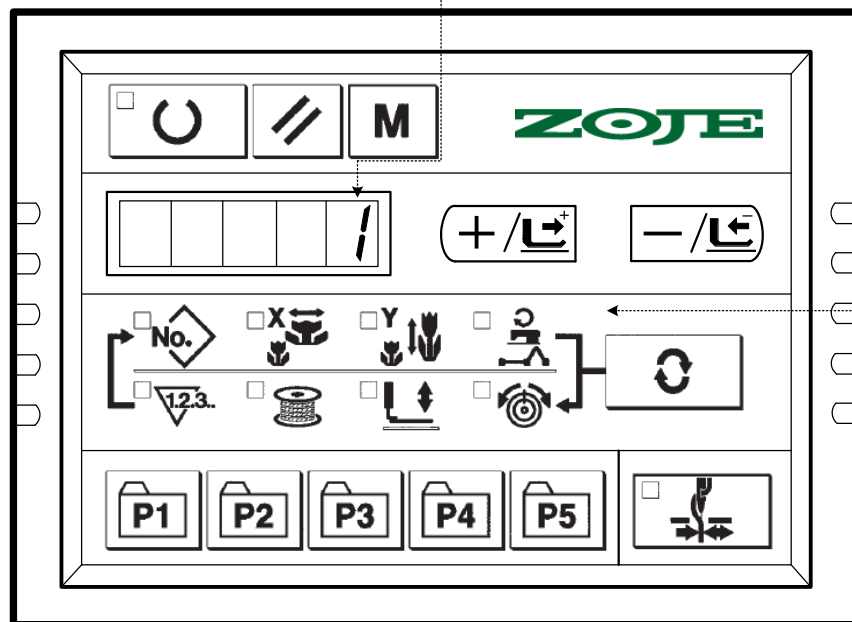
7) 各功能测试如果按  键的话，就会终止测试，返回到 5) 的状态；但是，如果使用过连续模式 1 次的话，就不能解除了，只有关闭电源才能结束。

2.4.1 CP-1（输入信号检验）

能够检验造作控制盘键、踏板开关、各种传感器等的输入状态。在屏幕显示“CP-1”时，按  键，进入 CP-1，屏幕显示“1”，即第 1 项测试内容。

提示项目选择灯熄灭/点亮下的输入状态
提示内容详见下表

提示输入No.
同时按P1和P2键的话，输入No.会累加1更新



每个输入 No.的显示内容

输入 No.	花样 NO. 灯	X 扩大灯	Y 扩大灯	速度灯	计数灯	卷线灯	压脚下降灯	支线电磁铁灯
1	/	/	键	键	键	键	键	键
2	/	/		键	键	键	键	键
3	/	/	/	/	/	/	/	/
4	踏板 0 档	踏板 1 档	踏板 2 档	/	/	/	/	/
5	压脚马达原点传感器	Y 马达原点传感器	X 马达原点传感器	抓线马达原点传感器	切线传感器	抓线传感器	/	/
6	主轴角度显示							
7	主轴马达 Z 相	/	/	/	/	/	/	/
8	/	/	/	/	/	机头翻起开关	/	/

2.4.2 CP-2（检验 X、Y 马达/原点传感器）

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。

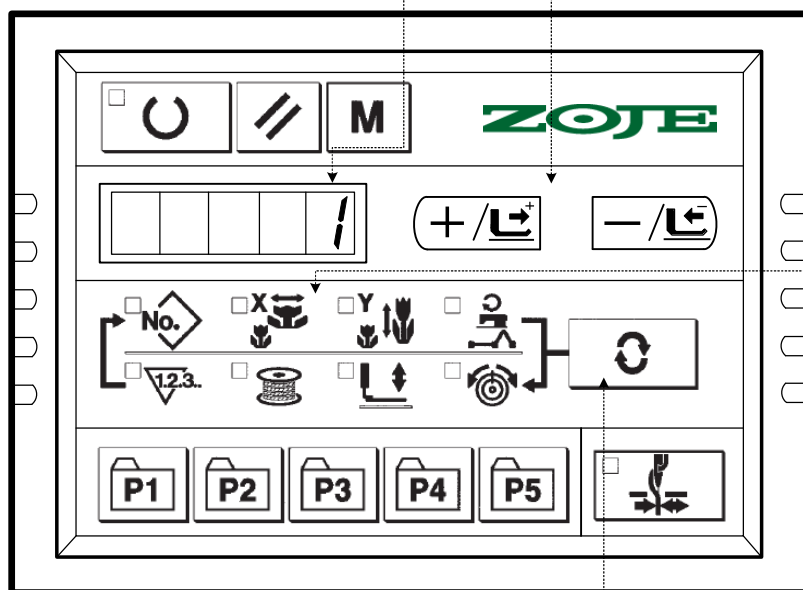
1. 准备

首先按  键，进入 CP-2，屏幕显示“1”，再按  键进行 X、Y 马达的原点检索，压脚下降，缝制灯亮起。(也可不按  键直接进行步骤 2 的操作)

2. 操作

提示X/Y原点传感器的状态：“0”或“1”

按 、 键，可以使被选择的X/Y马达在+/-方向以0.1mm为单位进行寸动



提示X/Y原点传感器的选择状态：
X 放大缩小灯亮起：X原点传感器
Y 放大缩小灯亮起：Y原点传感器

按选择键，可以切换X原点传感器或Y原点传感器的选择状态

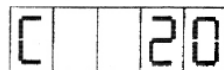
2. 4. 3 CP-3（连续运转）

当屏幕显示“CP-3”时，按  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

按 、 键，设定两次运转的间隔时间。

从 1800ms 至 9900ms 可以 100ms 为单位进行设定。(默认值 2000ms)设定后，按  键，保存设定值。

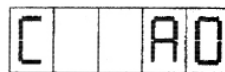


2.缝制结束有无原点检索的设定。

按 、 键，设定缝制结束时有无原点检索。

A0: 无效(默认值)

A1: 有效(每次缝制结束后进行原点检索)



设定完成后，按  键，进入普通缝制模式。

3.连续操作

在普通缝制模式下，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；如果在第 1 步操作中设定的休止时间后，就会自动再次开

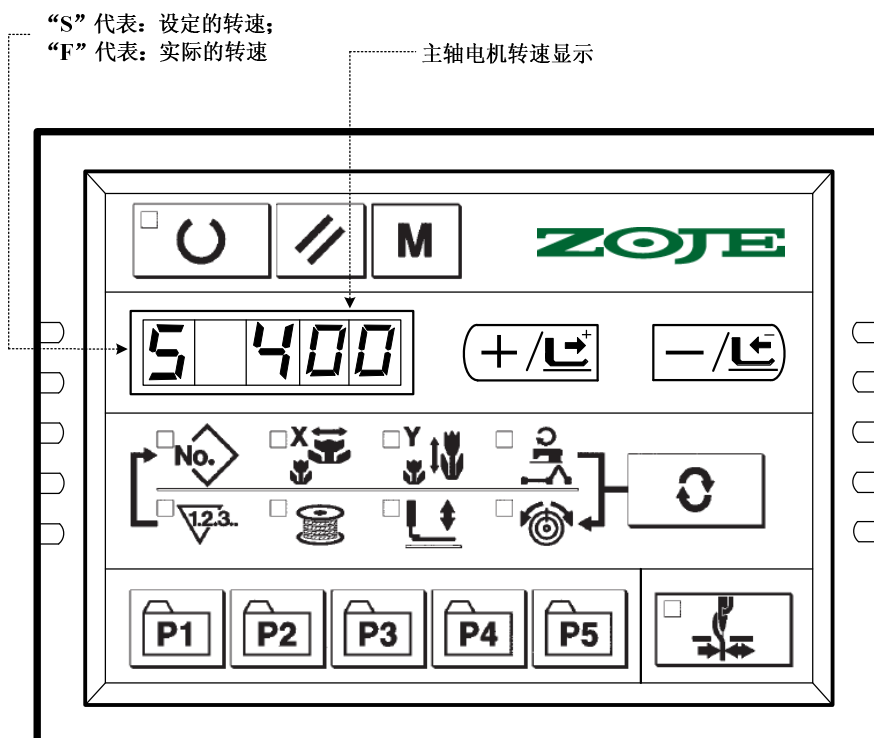
始进行缝制；如果要中止连续缝制，请在缝纫停止时，按  键停止。

2.4.4 CP-4（检验主马达转速）

设定机器的转速，在设定的转速下仅驱动机器的主马达转动，显示实测的转速。

1. 准备

首先按  键，进入 CP-4，屏幕显示“S 400”；然后按  键，进行抓线和压脚、切线马达的原点检索，缝制灯亮。



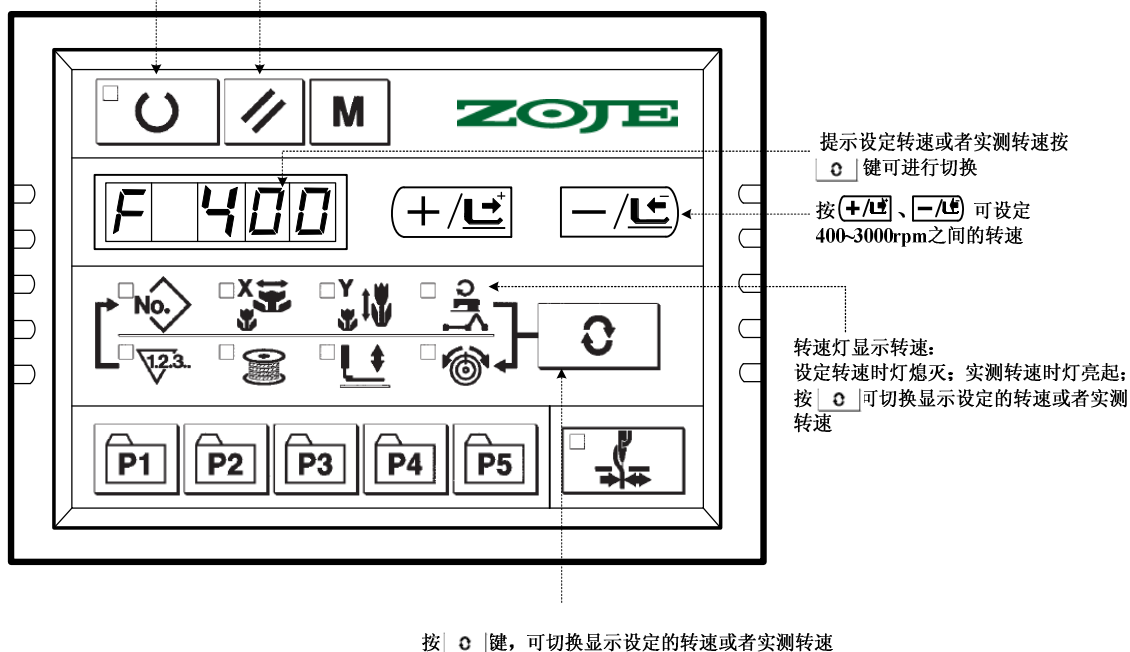
2. 操作

按 、 键，可以变更设定的主轴转速，然后按  键，机器以设定的转速

开始运转。此时，按  键，可以切换设定转速显示和实际转速显示。如需再次变更设定转速，再次按  键，使用 、 键，设定转速值，然后按  键，机器以新设定的转速运转。如需停止运转，按  键。如需退出该模式，请按  键。

按下  键，在设定的转速下让机器开始旋转；如果变更转速的话，按下  键，可以使旋转变速。

按  键的话，机器停止运转。



2.4.5 CP-5 （切线调节）

显示切线马达的寸动操作以及运行到到线弯曲位置、切线、剪刀回位、回原点的切线动作。

1. 准备

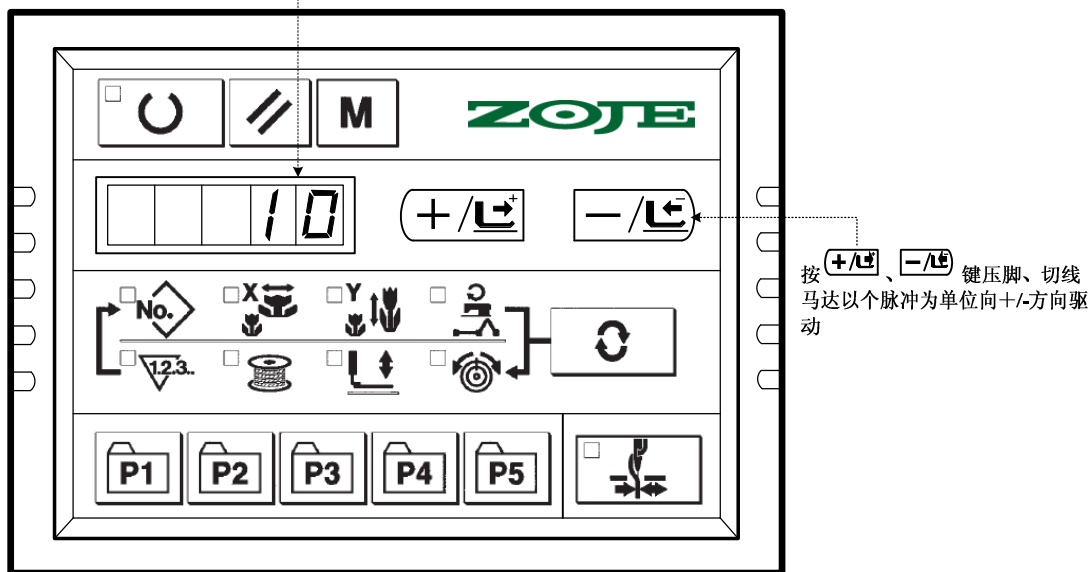
首先按  键，进入 CP-5。

2. 操作

(1) 切线马达寸动操作

按 、 键可以进行切线马达的寸动操作，供调试人员安装、调试剪刀时使用。

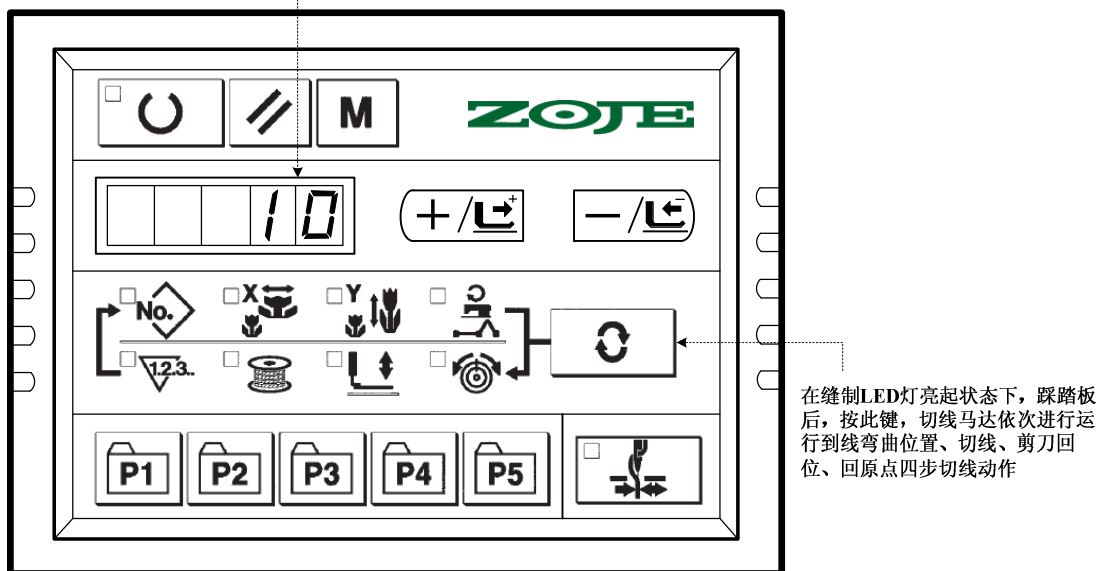
提示切线传感器的状态：“00”挡光片避光
“10”挡光片不避光



(2) 切线动作

按 键，缝制 LED 灯亮起，踩踏板进行原点检索；依次按 键，切线马达分别进行运行到线弯曲位置、切线、剪刀回位、回原点四步动作。如需退出该模式，请按 键退出。

提示切线传感器的状态：“00”挡光片避光
“10”挡光片不避光



2.4.6 CP-6（检验压脚、切线马达/原点传感器）

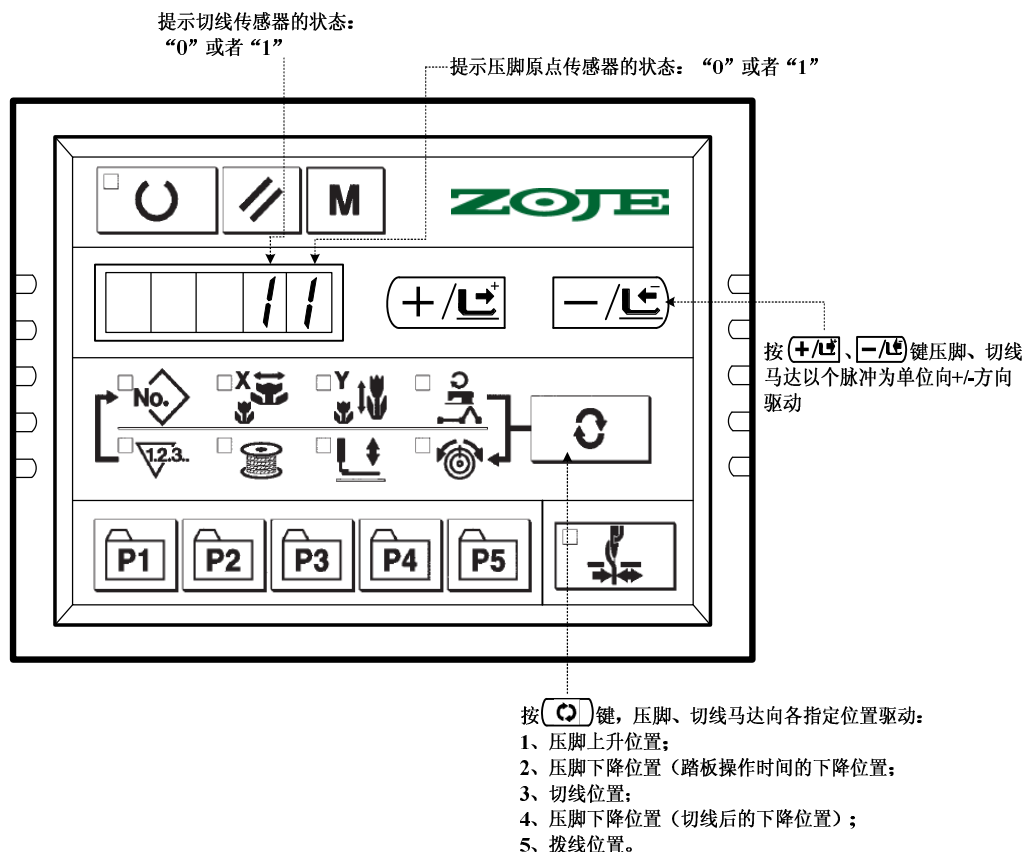
显示压脚、切线马达的寸动操作，原点检索操作以及压脚原点传感器和切线传感器的状态。

1. 准备

首先按  键，进入 CP-6，然后按  键进行抓线的原点检索，缝制灯亮。

2. 操作

按  键，在 6~8 次后，屏幕显示由“01”变为“10”，则切线传感器正常，如果与上述现象不符，请调整切线传感器的位置。



按  键，机器上相关执行部件可以按上图所示 1~5 步，循环动作。如需退出该模式，

请按  键退出。

2.4.7 CP-7（检验抓线马达/原点传感器）

显示抓线马达的寸动操作，原点检索操作以及抓线马达原点传感器和抓线传感器的状态。

1. 准备

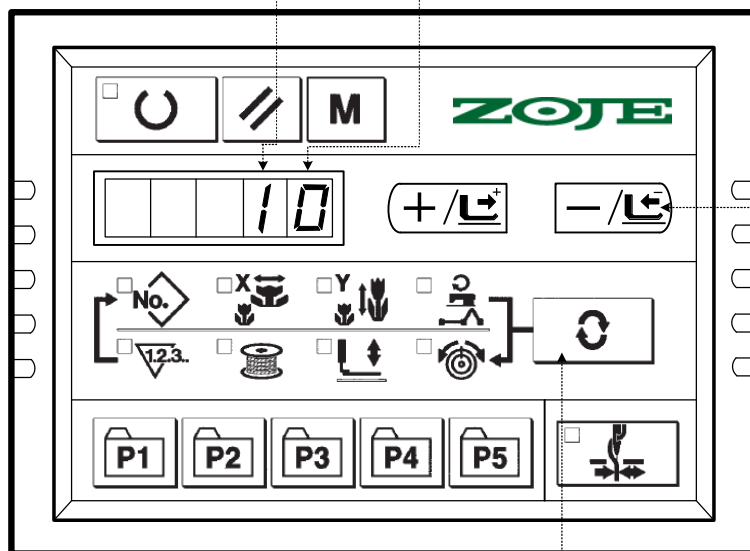
首先按  键，进入 CP-7；然后按  键，缝制灯亮起，踩踏板，进行原点检索后，屏幕显示“10”。

2. 操作

按 **+/-**、**-/-** 键，抓线器可以以脉冲为单位进行寸动。按 **+/-** 键，抓线器向后驱动；按 **-/-** 键，抓线器向前驱动。

提示抓线传感器的状态：
“0”或者“1”

提示抓线原点传感器的状态：“0”或者“1”



按 **+/-**、**-/-** 键夹线马达
以个脉冲为单位向-/+方向驱动

按 **(C)** 键，使夹线马达向各指定位置驱动：
1、待机位置（前身）；
2、线捕捉位置；
3、抓线位置；
4、退避位置。

按 **0** 键，机器可以按上图所示 1~4 的步骤循环运作。如需退出该模式，请按 **M**。

2.5 设置参数

2.5.1 设置参数的具体操作

1) 缝制 LED 灭灯的状态下，按 **M** 键之后，成为参数设置的设定方式。

（按 **M** 键之后，显示的 1.30 表示第一号参数的最高速度限制为 3000rpm。）



- 2) 参数号码可以用  键、 键进行变更。



- 3) 按  键，调整想变更的参数号码，缝制 LED 亮灯。

- 4) 用  键、 键变更参数对应值。



- 5) 按  键，可以返回出厂设置。

- 6) 按  键，存储变更内容，缝制 LED 灭灯，返回参数号码选择状态。

- 7) 按  键，结束参数设定方式，返回通常状态。

2.5.2 设置参数的设定举例

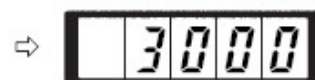
1. 缝制速度上限的设定

设定例：把缝制速度的上限设定到 1800rpm。

- 1) 在缝制 LED 灭灯的状态按  键，显示为参数号 No. 1 的内容。缝纫机的最高速度显示用参数号 No. 1 设定。



- 2) 显示参数号 No. 1 的状态下，按  键，点亮缝制 LED。参数号 No. 1 的内容被显示。



- 3) 用  键、 键设定为“1800”。



- 4) 按  键存储，缝制 LED 灭灯。

- 5) 按  键，返回通常状态。

2. 缝制开始软启动速度的设定

缝制开始的第 1 针～第 5 针的速度可以以 100rpm 为单位进行设定。可以设定为有抓线
和没有抓线。

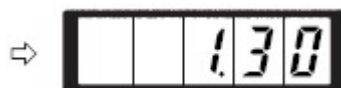
有抓线时

	出厂设置 (rpm)	设定范围
第 1 针	1500	400~1500
第 2 针	3000	400~3000
第 3 针	3000	400~3000
第 4 针	3000	400~3000
第 5 针	3000	400~3000

• 最高转速（参数号 No.1）被优先。

设定例：有抓线时，变更为第 1 针 1500→1000rpm、第 2 针 3000→2000rpm。

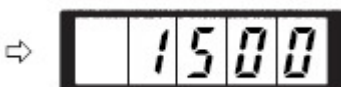
1) 缝制 LED 灭灯的状态下，按  键。



2) 用  键、 键显示出参数号 No.2，
这里设定第 1 针的缝纫机速度。



3) 按  键，缝制 LED 亮灯，第 1 针的设定值被显示出来。



4) 用  键、 键显示出“1000”。按  键则返回出厂设置。按  键后，当前的操作全被取消，返回 2) 的状态。



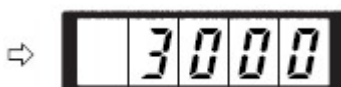
5) 按  键，缝制 LED 亮灯，第 1 针的设定值被存储。



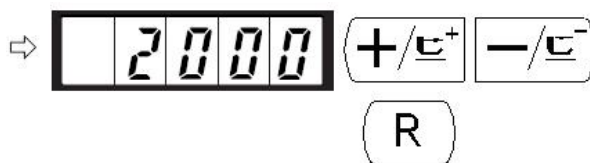
6) 用  键、 键显示出参数号 No.3，
这里设定第 2 针的缝纫机速度。



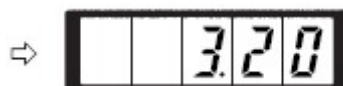
7) 按  键，缝制 LED 亮灯，第 2 针的设定值被显示出来。



- 8) 用  键、 键显示出“2000”。按  键则返回出厂设置。按  键后，当前的操作全被取消，返回 6) 的状态。



- 9) 按  键，缝制 LED 灭灯，第 2 针的设定值被存储。

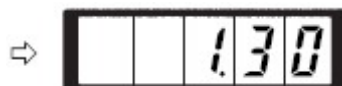


- 10) 按  键，结束参数设定方式，返回通常状态。

3. 是否可以读出花样号的设定

设定为不要的花样不能读出，防止错误的花样调出。另外，可调出可以使用的需要花样。
设定例：把 2 号花样和 3 号花样设定为不能读出。

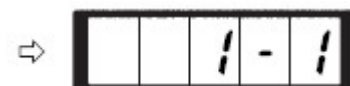
- 1) 在缝制 LED 灭灯的状态下，按  键。



- 2) 用  键、 键显示出参数号 No.201。



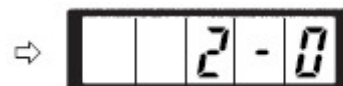
- 3) 按  键，缝制 LED 亮灯，图案 No.1 的设定值被显示出来。设定值 1：可以读出，0：不能读出。



- 4) 用  键、 键设定为花样 No.2。



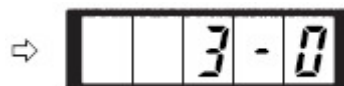
- 5) 按  键，把设定值设定为 0。



- 6) 用  键、 键设定为 No.3。



7) 按  键，把设定值设定为 0。



8) 按  键，存储设定值，缝制 LED 灭灯。



9) 按  键，结束参数设定方式，返回通常状态。

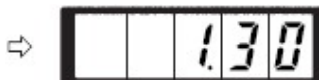
4. 计数器动作的设定

生产计数器可以作为底线计数器使用。反复缝制同样的图案，1 个梭芯可以缝制的次数（设定值）缝制结束后，缝纫机便不能起动。底线计数器采用减算方式。

计数器的设定在出货状态时设定为生产计数器（加算方式）。作为底线计数器使用时，必须变换参数开关 No.18。

设定例：把生产计数器（加算方式）变更为底线计数器（减算方式）。

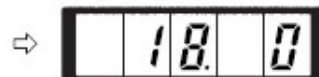
1) 在缝制 LED 灭灯的状态下，按  键。



2) 用  键、 键显示出参数号 No.18。



3) 按  键，缝制 LED 亮灯，计数器动作的设定值被显示出来。



4) 按  键把设定值设定为 1。

设定值 0：生产计数器，1：底线计数器。



5) 按  键，存储设定值，缝制 LED 灭灯。

6) 按  键，结束参数设定方式，返回通常状态。

2.5.3 用户参数设置表

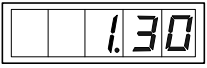
参数号	功能	调整范围	初值	备注
1.30	缝制的最高速度。 (可以以 1000rpm 为单位设定)	400~3000	3000	
2.15	第 1 针的缝制速度。(抓线) (可以以 100rpm 为单位设定)	400~1500	1500	
3.30	第 2 针的缝制速度。(抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
4.30	第 3 针的缝制速度。(抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
5.30	第 4 针的缝制速度。(抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
6.30	第 5 针的缝制速度。(抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
9.--	切线时的线张力变换同步时间	-6~4	0	1900B 无效
10.4	第 1 针的缝制速度。(不抓线) (可以以 100rpm 为单位设定)	400~1500	400	
11.9	第 2 针的缝制速度。(不抓线) (可以以 100rpm 为单位设定)	400~3000	900	
12.30	第 3 针的缝制速度。(不抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
13.30	第 4 针的缝制速度。(不抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
14.30	第 5 针的缝制速度。(不抓线) (可以以 100rpm 为单位设定)	400~3000	3000	
15.--	第 1 针的线张力(不抓线)	0~200	0	1900B 无效
16.--	缝制开始的线张力(不抓线)变换同步时间。	-5~2	0	1900B 无效
17.0	XY 扩大缩小率,最高转速限制的显示, 以及变更可否。	0: 可变更 1: 不可变更	0	
18.0	计数器动作	0: 生产计数器(加算) 1: 底线计数器(减算)	0	
26.70	压脚分段高度调节	50~90	70	
31.0	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	0	
32.1	可以禁止蜂鸣音响	0: 不响蜂鸣音 1: 操作盘操作音	1	

参数号	功能	调整范围	初值	备注
33.1	压脚分段	1~7	2	1: 不分段; 2~7: 分段
34.--	可以推迟抓线的同步时间	-10~0	0	一方向变慢
35.0	可以禁止上线抓线控制	0: 通常 1: 禁止	0	
36.--	选择送布动作的同步时间 紧线不好时设定为一方向	-8~16	12	向一侧移动过多的话, 有断针的危险。 缝制厚料时请加以注意
37.1	缝制结束后的压脚状态	0: 踩踏板抬压脚压 1: 脚直接抬起	1	
39.0	可以设定每次缝制结束后均检索原点 (除循环缝制以外)	0: 不检索原点 1: 检索原点	0	有关该参数, 详见【3.3 恢复出厂默认设置】
40.0	可以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	0	
42.0	设定针杆停止位置	0: 上位置 1: 上死点	0	上死点停止时为上位 位置停止后反转然后停止
46.0	可以禁止切线	0: 通常 1: 禁止切线	0	
49.16	可以设定卷线速度	800~2000	1600	
201.--	设定是否可以读出图案数据	0: 不能读出 1: 可以读出	机型不同则设定不同	可以分别设定花样图案打开与否
P----	进行图案登记			
C----	进行循环缝制登记			

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

在缝制灯熄灭的状态下, 按  键, 显示 , 然后同时按    键, 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【2.6 用户参数设置】一节。

3.2 服务参数列表

参数号	定义	调整范围	初值	备注
21.--	标准踏板、踏脚开关位置	50-500	140	增加设定值的话，踏板的踩踏量会增多
22.--	标准踏板、高低段行程开关位置	50-500	240	增加设定值的话，踏板的踩踏量会增多
23.--	标准踏板、启动开关位置	50-500	370	增加设定值的话，踏板的踩踏量会增多
27.--	踩踏板时压脚下降速度	100-4000pps	4000	
28.--	踩踏板时压脚上升速度	100-4000pps	1500	设定上升过度的话会引起操作不良
29.--	缝制结束时切线压脚上升速度	100-4000pps	3000	设定上升过度的话会引起操作不良
43. 1	切线时的机器旋转数选择	0: 400rpm 1: 800rpm	1	动刀分线时的旋转数;切线是在机器停止运转后进行的
44. 1	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	1	
52.--	电磁铁拨线器拨线时间	10-500ms	50	仅在选择电磁铁拨线器时才有效
53.--	电磁铁拨线器返回时间	10-500ms	100	仅在选择电磁铁拨线器时才有效
56.--	+X 方向（右侧）的移动限定范围	-20-20mm	20	在出厂状态下不考虑压脚的形状
57.--	-X 方向（左侧）的移动限定范围	-20-20mm	-20	在出厂状态下不考虑压脚的形状
58.--	+Y 方向（后面）的移动限定范围	-20-20mm	10	在出厂状态下不考虑压脚的形状
59.--	-Y 方向（前面）的移动限定范围	-20-10mm	-20	在出厂状态下不考虑压脚的形状
62. 0	花样升级	0: 普通模式 1: 花样升级模式	0	有关花样升级详见【5 通过 U 盘升级花样】一章
67.--	默认参数调用	0 或 1	1	有关该参数，详见【3.3 恢复出厂默认设置】
68.--	主轴停车补偿	-10-+10	0	
150. 0	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	
241. 0	功能选择	0: 套结（加固） 7: 钉扣	0	

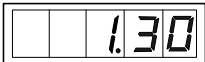
注：以上参数只供维修人员使用，用户不能轻易改动。

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。

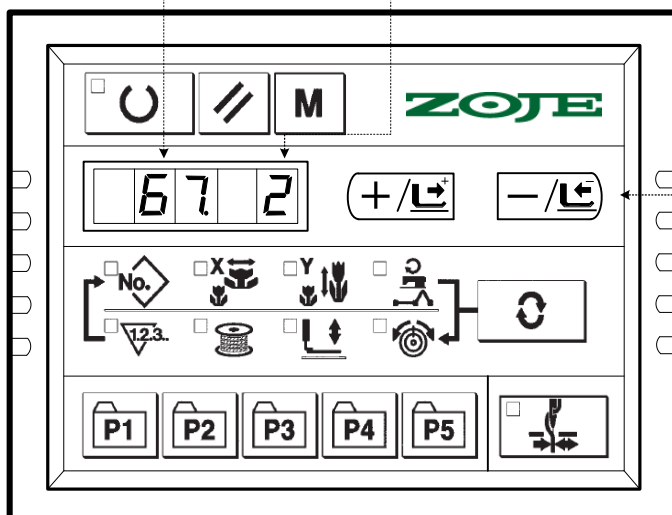
注意：恢复出厂默认设置，用户以前设定的数据参数将会被覆盖，使用此功能时，请慎重考虑，如不清楚，应及时联系厂家技术人员，在其指导下进行操作。

具体操作步骤如下：

- 1、在缝制灯熄灭的状态下，按  键，显示 ，然后同时按    键，听到蜂鸣器响声后，即开启了服务参数变更；
- 2、按 、 键，选择 67 号参数：

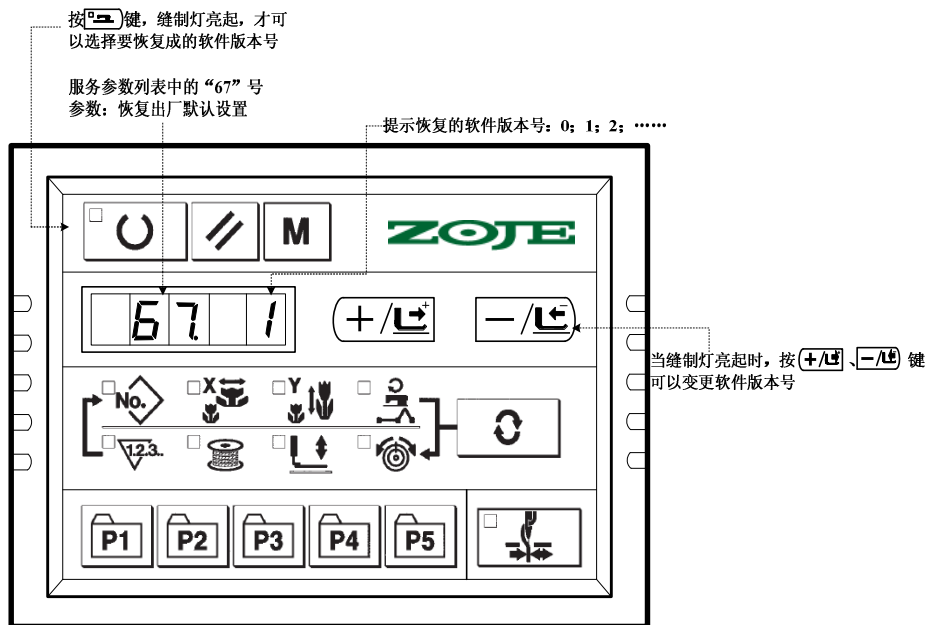
服务参数列表中的“67”号
参数：恢复出厂默认设置

提示恢复的软件版本号：0： 1： 2： ……



当缝制灯亮起时，按 、 键
可以变更软件版本号

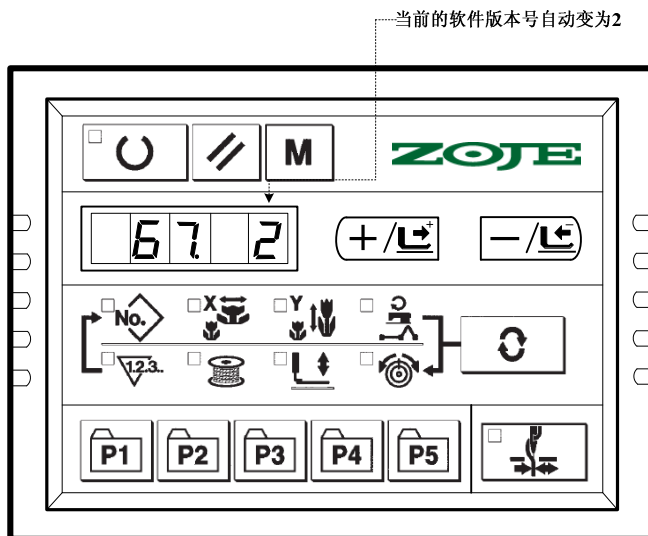
- 3、按  键，缝制灯亮起，然后按 、 键，可以选择要恢复成的软件版本号：



4、比如当前版本号为 2，你可以选择恢复为 0 或者 1（小于当前版本号的软件），然后再次

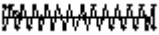
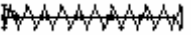
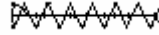
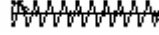
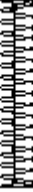
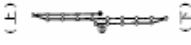
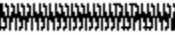
按 键确认要恢复成的版本号，缝制灯灭；

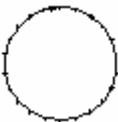
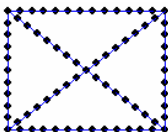
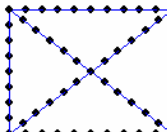
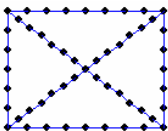
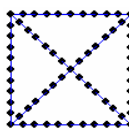
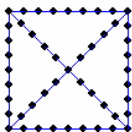
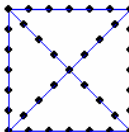
- 1、按 键，退出服务参数设置模式，返回到普通缝制模式；
- 2、然后关断电源，约 1 分钟后打开电源，给系统上电，操作面板数码管显示为“EEP——”大约 20 秒钟后，操作面板恢复正常显示（注意，这是正常现象，系统需要一定的时间完成出厂软件恢复）。
- 3、恢复完成之后，系统自动将当前软件版本号定为最高版本，比如，系统中的默认版本有 0、1 两个版本，那么恢复完成后的版本号自动为 2。

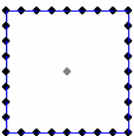
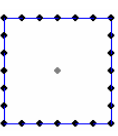
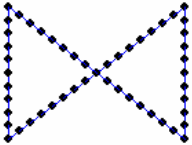
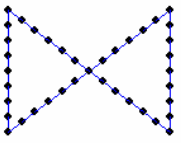
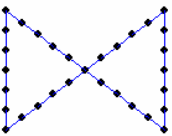
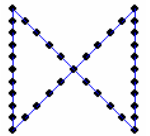
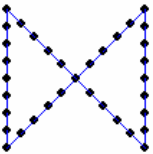
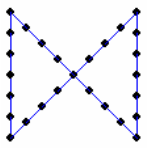
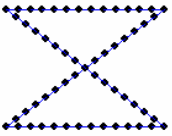
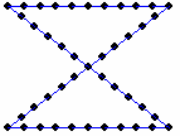
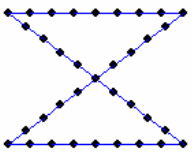
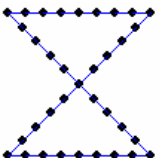
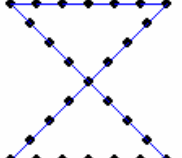
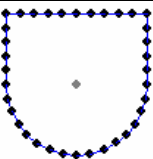
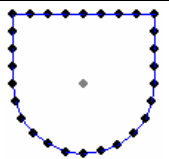
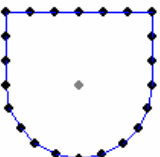
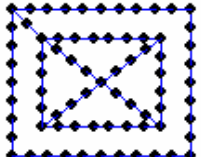
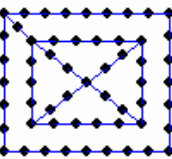
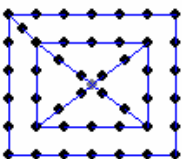


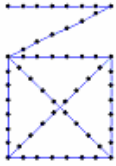
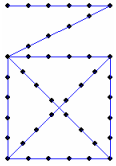
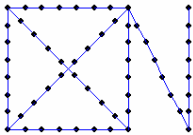
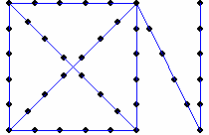
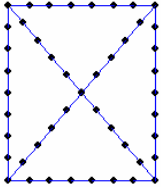
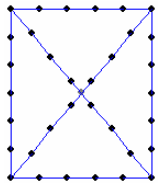
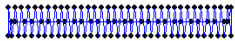
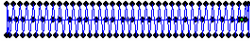
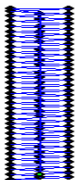
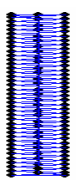
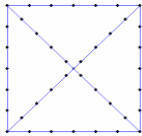
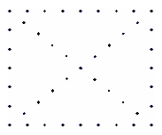
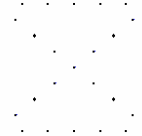
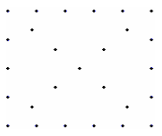
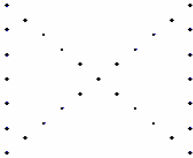
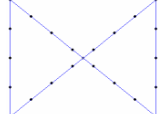
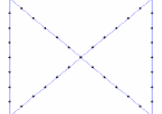
注意：在再次打开电源，给系统上电，系统进行恢复过程中，如果断电，恢复过程将被迫中断，将不能完成恢复出厂默认设置，返回到恢复之前的软件状态。

3.3 标准图案一览表

NO.	缝纫图案	针数	长×宽 (mm)	NO.	缝纫图案	针数	长×宽 (mm)
1		42	16×2	2		42	10×2
3		42	16×2.5	4		42	24×3
5		28	10×2	6		28	16×2.5
7		36	10×2	8		36	16×2.5
9		56	24×3	10		64	24×3
11		21	6×2.5	12		28	6×2.5
13		36	6×2.5	14		15	8×2
15		21	8×2.2	16		28	8×2
17		21	10×1	18		28	10×1
19		28	25×1	20		36	25×1
21		41	25×1	22		44	35×1
23		28	4×20	24		36	4×20
25		42	4×20	26		56	4×20
27		18	1×20	28		21	1×10
29		21	1×20	30		28	1×20
31		52	10×7	32		63	12×7
33		24	10×6	34		31	12×6
35		48	7×10	36		48	7×10
37		90	24×3	38		28	8×2

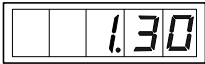
39		28	12×12		40		48	12×12
41		29	2.5×20		42		39	2.5×25
43		45	2.5×25		44		58	2.5×4.4
45		76	2.5×4.4		46		42	2.5×4.4
47		91	8×8		48		99	8×8
49		148	8×8		50		164	8×8
51		100	40×30		52		78	40×30
53		70	40×30		54		90	30×30
55		70	30×30		56		54	30×30
57		53	40×30		58		40	40×30
59		31	40×30		60		45	30×30

61		36	30×30	62		27	30×30
63		57	40×30	64		45	40×30
65		35	40×30	66		55	30×30
67		42	30×30	68		33	30×30
69		65	40×30	70		49	40×30
71		39	40×30	72		55	30×30
73		42	30×30	74		33	30×30
75		43	30×30	76		33	30×29.9
77		26	30×29.8	78		93	30×25
79		72	30×25	80		54	30×25

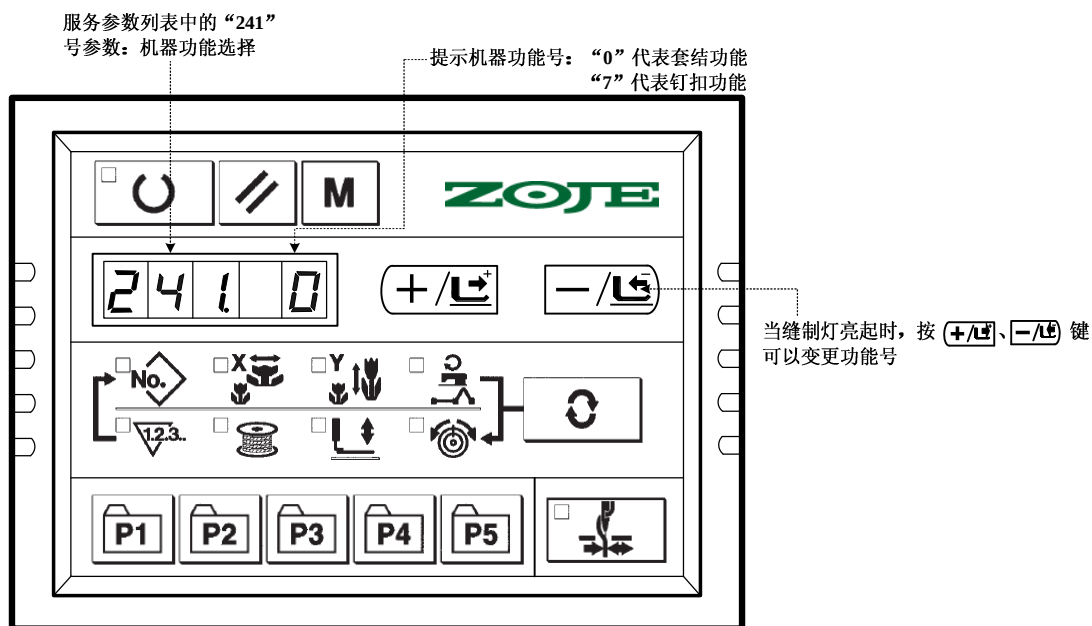
81		77	20×30		82		57	20×30
83		77	30×20		84		57	30×20
85		69	20×24.1		86		52	20×24.1
87		101	40×5		88		109	40×5
89		97	5×30		90		107	5×30
91		56	20×20		92		48	20×20
93		38	20×20		94		62	25×20
95		50	25×20		96		40	25×20
97		36	25×20		98		28	25×20
99		24	25×20		100		76	30×25

4 钉扣功能

4.1 钉扣功能设定

1、在缝制灯熄灭的状态下，按 **M** 键，显示 ，然后同时按 **P1** **P3** **P5** 键，听到蜂鸣器响声后，即开启了服务参数变更；

2、按 **+/-**、**-/-** 键，选择 241 号参数：



3、按  键，缝制灯亮起，然后按 **+/-**、**-/-** 键，将功能号变更为“7”；再次按  键确认功能号，缝制灯灭。

4、按 **M** 键，退出服务参数设置模式，返回到普通缝制模式；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和代理商联系。

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		
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		

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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)
16 • 43		8-8			33		8-8-8		
17		10-10							

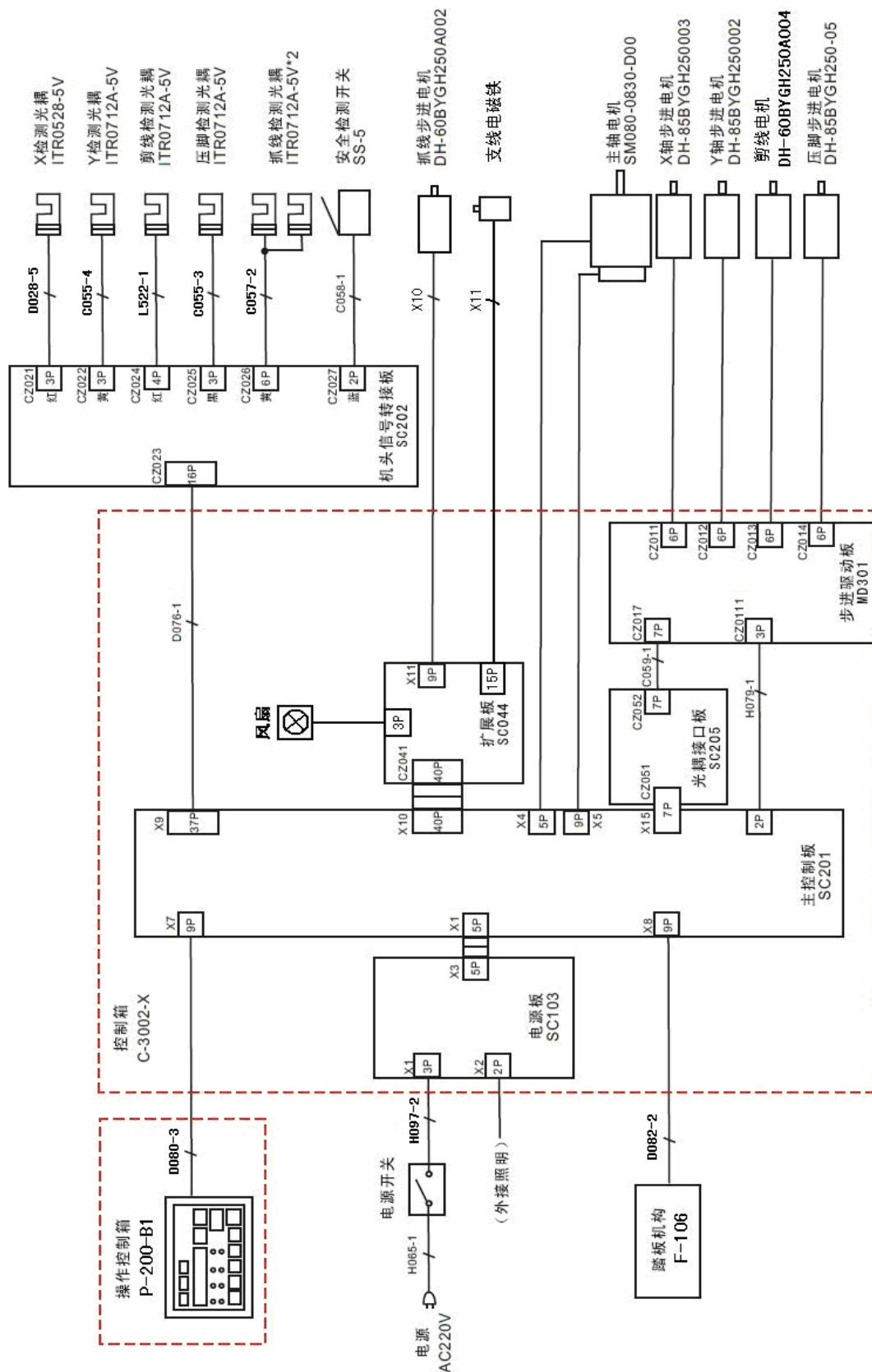
5 附录

5.1 异常信息一览表

显示					异常名称	异常内容	解除方法
E				7	机器锁定	因为发生了某些故障，缝纫机主轴不能转动。	关闭电源，排除故障原因。
E			1	0	图案 NO. 异常	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. 。确认存储器开关 NO. 201 的内容。
E			3	0	针杆上位置异常	针杆不在上位置。	转动手轮，把针杆返回到上位置。
E			4	0	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。
E			4	3	扩大异常	针迹不大于 10mm	按复位开关，确认图案和 X、Y 放大率。
E			4	5	图案数据异常	这是不能对应的图案数据	关闭电源，确认数据 ROM。
E			5	0	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		3	0	2	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		3	0	3	未接主轴器	不能检测缝纫机的上死点。	关闭电源开关，确认 X5 插头是否插紧。
E		3	0	5	切线切刀位置异常	切线刀不在正确位置。	关闭电源开关，确认机头信号电路板上的 CZ024 是否松动脱落。
E		3	0	6	抓线位置异常	抓线装置不在正规位置。	关闭电源开关，确认机头信号电路板上的 CZ026 是否松动脱落。
E		7	3	3	马达倒转	马达倒转。	关闭电源开关，确认主马达的杯环是否松动。
E		8	1	1	电压过高异常	电源电压超过规定值。	确认电源电压。
E		8	1	3	电压过低异常	电源电压不足。	确认电源电压。
E		9	0	1	马达驱动器不良	马达驱动器检测出异常。	关闭电源，稍待一些时间后再次打开电源。
E		9	0	3	脉冲马达电源异常	脉冲马达的电源不输出。	关闭电源，稍待一些时间后再次打开电源。

E		9	0	4	继电器电源异常	继电器的电源不输出。	关闭电源，稍待一些时间后再次打开电源。
E		9	0	7	X 原点检索异常	X 原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ021、控制箱 X9 是否松动、脱落。
E		9	0	8	Y 原点检索异常	Y 原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ022、控制箱 X9 是否松动、脱落。
E		9	1	0	压脚原点检索异常	压脚原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ025、控制箱 X9 是否松动、脱落。
E		9	1	3	抓线原点检索异常	抓线原点传感器不变化。	关闭电源开关，确认机头信号电路板 CZ026、控制箱 X9 是否松动、脱落。
E		9	1	4	传送不良异常	送布和主轴不同步。	关闭电源，稍待一些时间后再次打开电源。
E		9	1	6	主电路板-步进电路板通信异常	主电路板-步进电路板不能通信。	关闭电源，稍待一些时间后再次打开电源。
无显示					插头脱落	电源电压不规格。插头脱落。	关闭电源，确认电源插头、控制箱 X7 是否松动、脱落。

5.2 系统框图





中捷缝纫机
SEWING MACHINE

1900B Computerized Control System for Doubling and Tacking Machine

User' s Manual

Foreword

Thanks for using the Computerized Sewing Machine of ZOJE Company.

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, thus causes 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.

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1 General Information

1.1 Supporting Model

SC201 Bar-tacking Machine Control System

1.2 Method for Input

Via Keyboard

1.3 Method for Display

Nixie Tube and LBDs

1.4 Layout of Panel

The operation panel is in a shape of oblong, and it is divided into 2 parts, the display part and the operational part. The display part consists of 5 nixie tubes and 10 LBDs while the operational part contains 12 keys. For specific information, please refer to the figure of control panel below.

1.5 Standardization

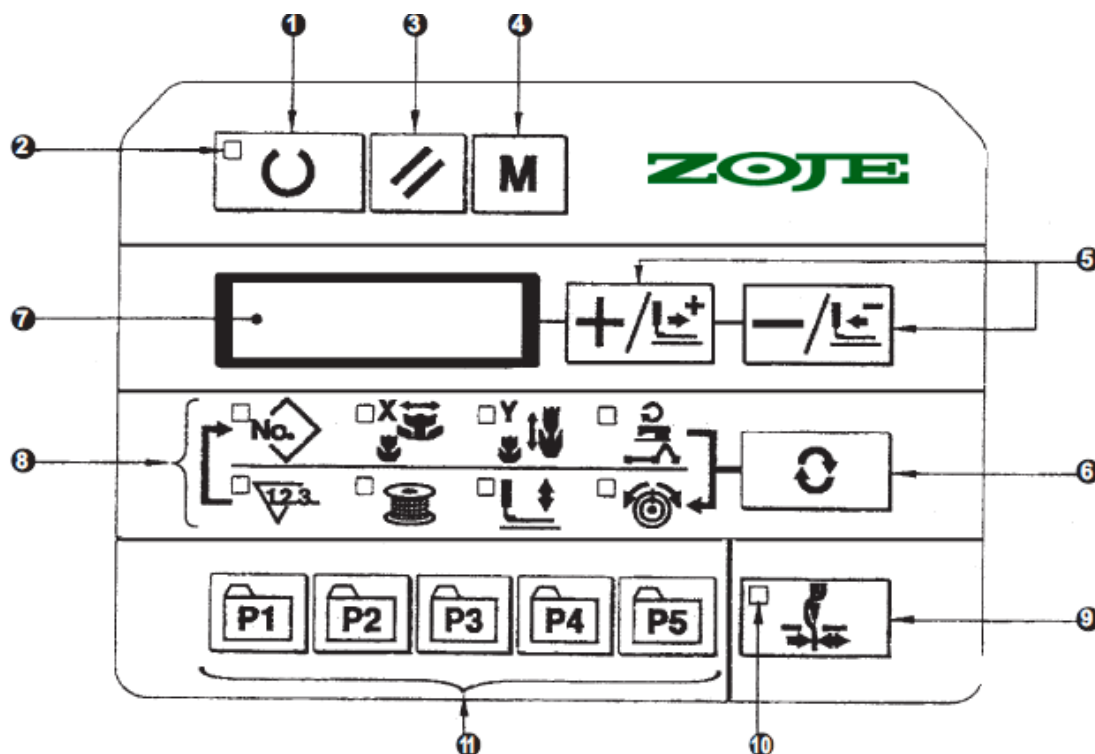
The function keys use the general figures with the meaning agreed in the trade. The figures are the internationalized language that users in each country can recognize it.

1.6 Method for Operation

The function keys include the Ready Key, Reset Key, Mode Key, Selection Key and Thread-catching Switch. For the specific operational method, please refer to the Operational Instruction.

2 Operational Instruction

2.1 Name & Description of Buttons on Control Panel



(1) Ready Key

Key for shifting between the setting/programming status of control panel and the sewing status of sewing machine;

(2) Sewing LED

It is set as: “ON” at sewing status, “OFF” at programming status. User can use the Ready Key for shifting between these two statuses;

(3) Reset Key

Release the error and restore the set value to the default value;

(4) Mode Key

When the Sewing LED is off, this key can activate the functions for setting parameters or storing the patterns; when the Sewing LED is on, this key can activate the siding function for threading actions, which will be automatically turned off in 20 seconds.

(5) +/Feed Forward Key & -/Feed Backward Key

These two keys are applicable for changing pattern number, rate of scale and feeding cloth forward/backward.

(6) Selection Key

Select the set item. The Item Selection LED and the set value of the selected item will be

displayed.

(7) Data Display LED

This LED indicates the set value of the selected items such as the pattern number, scale rate and so on.

(8) Item Selection LED

The LED of the selected item will be on.

(9) Thread-catching ON/OFF Key

The Validity/Invalidity of thread-catching function can be selected. When it is set as Validity, the Thread-catching Display LED will be on.

(10) Thread-catching Display LED

When the LED is on, the machine will catch the thread.

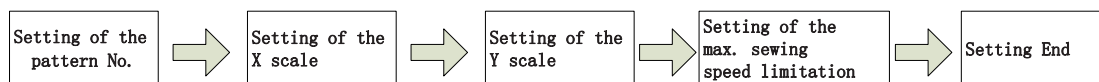
(11) Pattern Storage Key

Store the pattern. The stored pattern can be put into sewing as long as user presses this key. The changes in scale rate, sewing position and so on can also be stored.

2.2 Basic Operation

2.2.1 Settings of Item Data

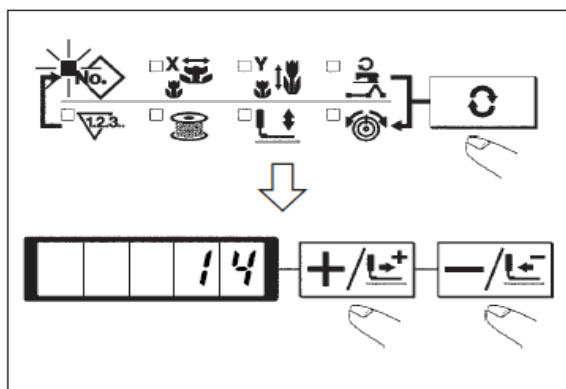
Please set the items in the following sequence:



1. Turn ON the power switch.

The pattern number of the item selection is lit up, and the pattern number will be displayed at data display part.

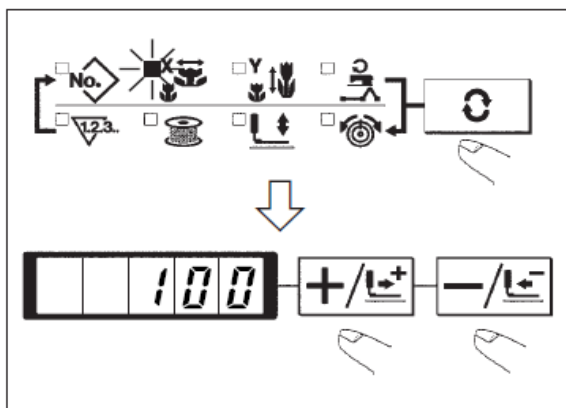
2. Setting of the pattern No.



(1) Press , and then the LED of  will be on.

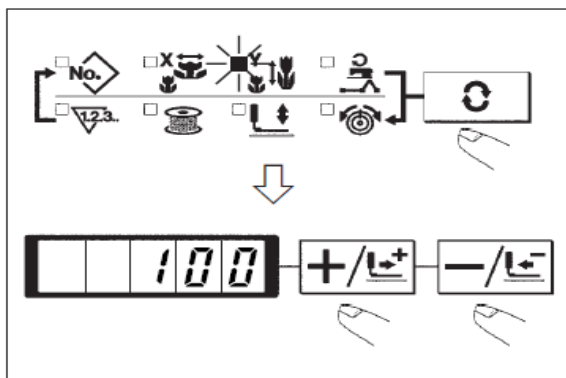
(2) Press  and  to display 14 in the Data Display LED
 (We take No.14 pattern as an

3. Setting of the X scale



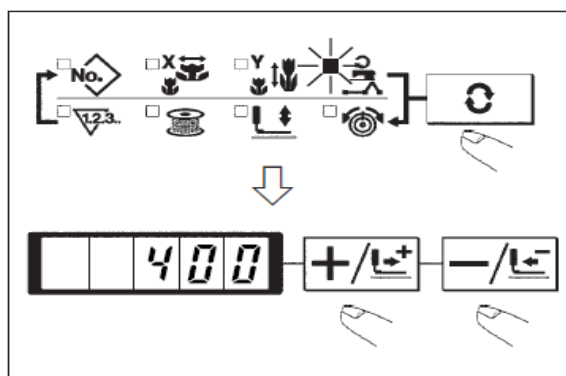
- (1) Press , and then the LED of  will be displayed.
- (2) Press  &  to display 100 at Data Display LED
 (The Scale Rate in X Direction is set as 100%)

4. Setting of Scale Rate in Y scale



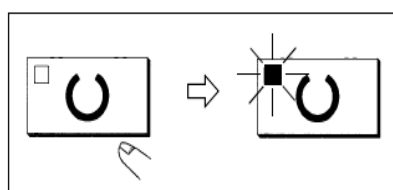
- (1) Press , and then the LED of  will be displayed.
- (2) Press  &  to display 100 at Data Display LED.
 (The Scale Rate in Y Direction is set as 100%)

5. Setting of Limitation on Max Speed



- (1) Press , and then the LED of  will be displayed.
- (2) Press  &  to display 400 at Data Display LED
 (The limitation is set as 400rpm)

6. Setting End



- (1) Press .
- (2) After the presser goes up, the Sewing LED is on. At this time the system is in the sewing status

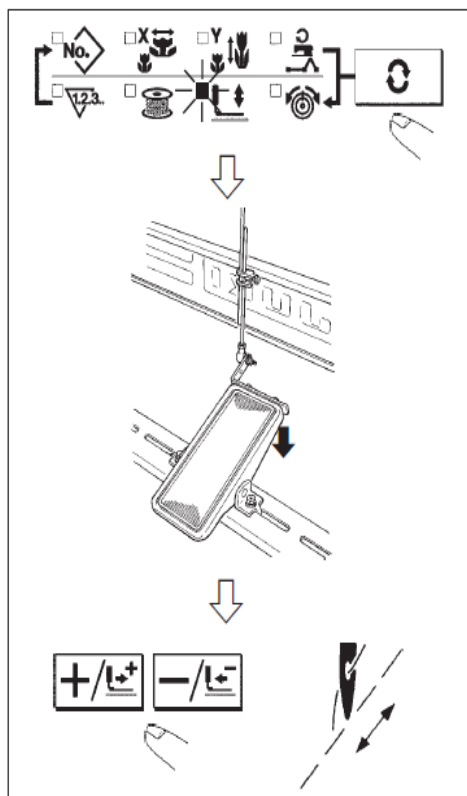
·Press  to record the set values like pattern number, X/Y scale rate and so on.

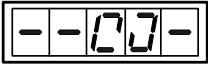
- Press  to reconfirm each set item, but the Sewing LED can't change its status.
- Press  to turn off the Sewing LED, then each set value of item can be changed
- When the pattern number is 0 (the default setting), pressing  will activate the error "E-10". At this time, please press the Reset Key to reconfirm the pattern number.
- Without pressing , the pattern number, X/Y scale rate, Max Speed and other setting values will be unable to be recorded.

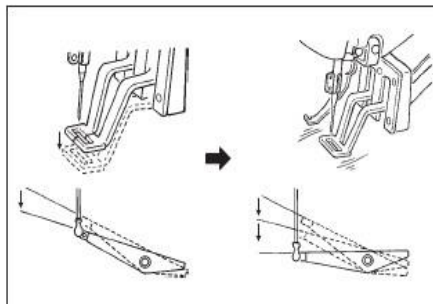
2.2.2 Confirmation of Pattern Shape

After selecting the pattern, user shall confirm the shape of the pattern.

If the pattern is far away from the presser, the needle will run into the presser, thus breaks the needle.



1. Press  to light up the Sewing LED
2. Press  to select , and then the screen displays ; step the pedal to lower the presser and then the screen displays .
3. In the status of lowering the presser, press .
4. Use  and  to confirm the shape. The confirmed pattern for sewing shall be in the permitted range of the presser.
5. Press  to lift presser.
6. Press  to release the selection of  (select other data item other than ). After that, press  to end the trial sewing and the

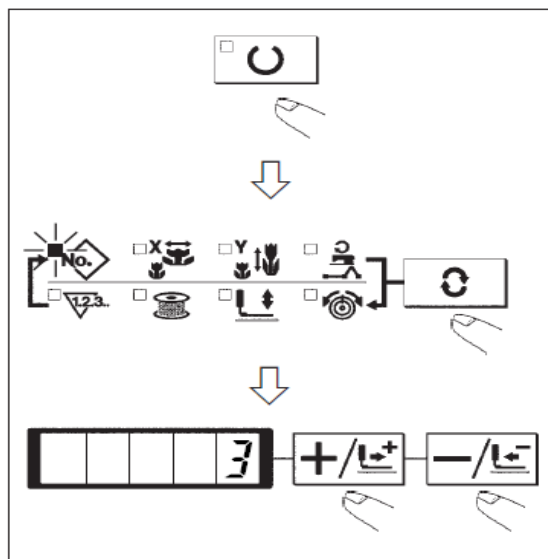


1. Put the fabric to the presser section
2. Step on the pedal switch to the level 1, then the presser goes down. If you detach the foot from the pedal, the presser will go up.
3. Lower the presser to the next level, and then depress the pedal to the second level to start sewing
4. At sewing end, the presser will go up and stop at the initial position.

Attention 1: When depressing the pedal to level 1 and lowering the presser, the user can press  &  to change the sewing position of pattern. Then the user could start sewing at the selected position by depressing the pedal to level 2. During the sewing, for the problems like thread-breakage, user can use this method for mending after releasing the malfunction

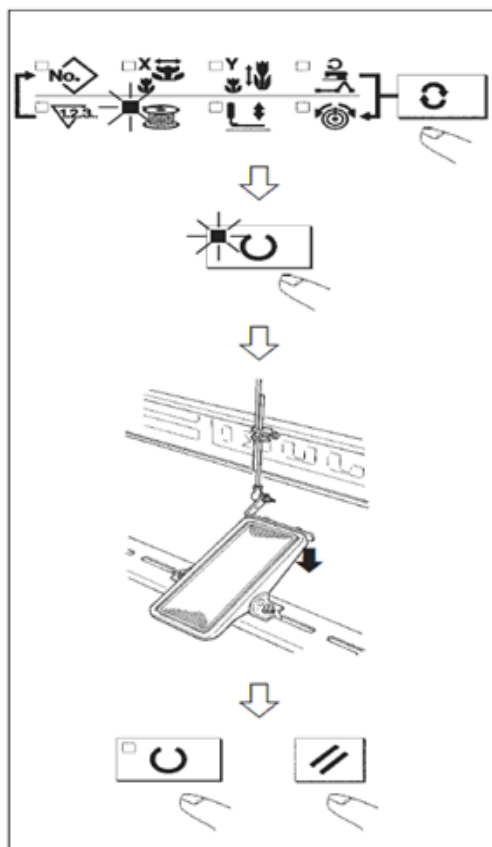
Attention 2: Don't apply the operations in Attention 1 into the operation of pattern trial sewing, in case the user depresses the pedal to level 2 by mistake, thus start the machine and cause the dangerous. For the operations in trial sewing, user shall strictly follow the descriptions of **【Confirmation of Pattern Shape】** in the above sector.

2.2.4 Change to Other Patterns



1. Press  to turn off the Sewing LED.
2. Press  to select the .
3. Use  &  to set pattern number.
4. Set the X/Y scale rate, speed and so on in the same way
5. Press  to turn on the Sewing LED, thus have access to Sewing status.

2.2.5 Winding



The winding device will not work just after power-on. Please set a pattern code and press

 to turn on the Sewing LED before the winding operation.

1. Press  to turn off Sewing LED.
2. Press  to select the . (It is unable to select when the Sewing LED is on.)
3. Press  to lower the presser and turn on the Sewing LED.
4. Depress the pedal to start the sewing machine
5. Depress the pedal switch or press  or  to stop machine
6. Press  to turn off the Sewing LED and lift the presser. Then  become valid.

2.2.6 Independent Thread-trimming Device

Independent thread-trimming, different from the general presser transmission and main-shaft transmission thread-trimming mechanisms, has the independent control unit, which can control the whole process of thread-trimming better,

If the storage parameter No.35 is set as 1 (Thread-trimming Forbidden), the machine will not perform the thread-trimming.

2.2.7 Thread-catching Device

With thread-catching device, the abnormal sewing, like the missing or staining of upper thread, as well as needle-jumping, can be avoided in the high speed start. The thread-catching function is only available when the Thread-catching Display LED is on. User can use  to turn on/off this function. When the thread-catching device is OFF, the machine will turn to low-speed start automatically.

The thread-catching action will be invalid if the Storage Parameter No.35 is set as 1

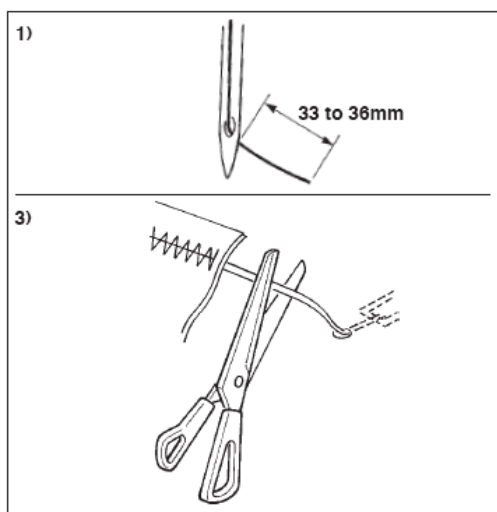
(Thread-catching Forbidden). At the same time,  becomes invalid.

Matters for attention in using the function for catching upper thread

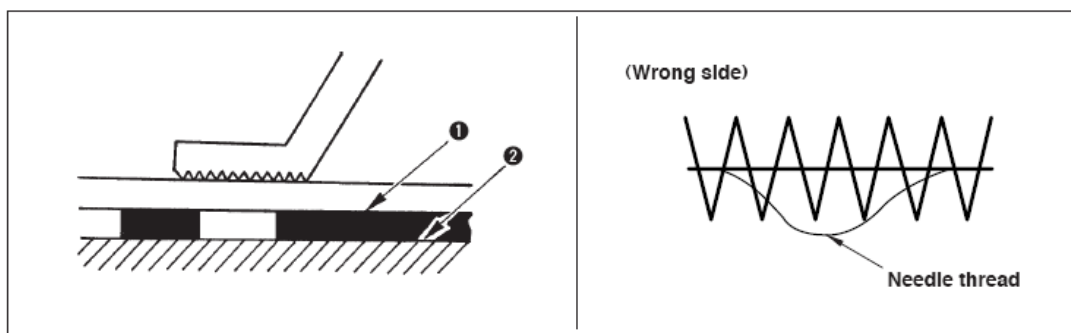
1. For catching thread, please shorten the upper thread at sewing start.

If the needle is too long, the thread at the backside of the cloth will be pulled out; meanwhile that too-long needle will easily sew the end of the thread on needle into the seam.

- 1) The standard length of needle thread in thread-catching shall be 33~36mm.
- 2) Lengthen the thread after replacing the needle thread. Or when holding the needle thread at sewing, please set the Thread-catching Key at OFF.
- 3) When the needle thread held with the thread catcher is rolled in the seams, do not draw the material forcibly but cut the connecting needle thread with the scissors or the like. The seams are not damaged since it is the needle thread at the sewing start.

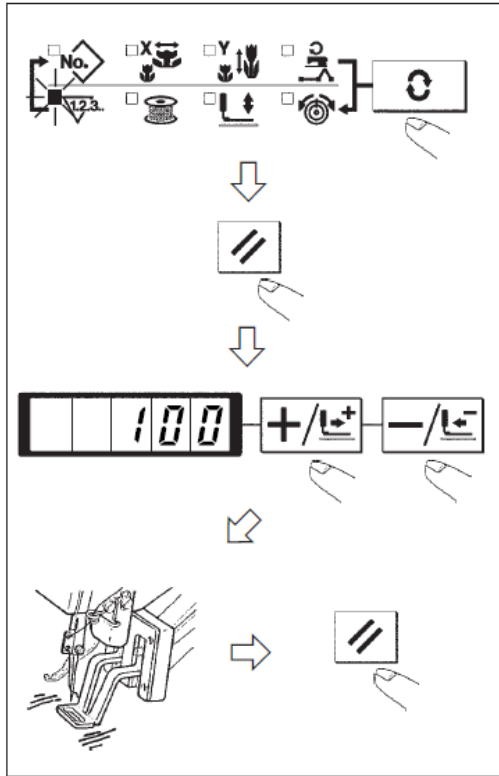


2. In order to make thread-catching action ensure the stable sewing at start, user can shorten the needle so that less needle thread could be winded in upper side of the cloth.
3. When the type of lower plate (1) that material doesn't closely contact to the board (2) is used, needle thread at backside of cloth will be rolled into the seams regardless the length of the thread or the needle thread will be loose



2.2.8 Bottom Thread Counter

The counters are set as Production Counter (Adding method) at the time of delivery. However, if it is used as the Bottom Thread Counter (subtracting method), the value of parameter No.18 shall be set at 1.



- 1) Press to select .
- 2) Then press .
- 3) After that, press & to set number of times that can be sewn with a bobbin.
- 4) Finish of sewing in each time will cause the counter to count down by one.
- 5) After the machine finishes the set times of sewing, the monitor will shine for hinting the user.
- 6) Replace the bottom thread and press again. Then the value of counter will restore to the set value
- 7) Repeat the steps from 4) to 6).

2.2.9 Pause

After user set the value of No.31 parameter at 1, or the reverse gear of pedal can be used as the pause key.

- 1) If user presses or depresses the reverse gear of pedal, the sewing machine will stop and display the error No.50.



- 2) The following are the three available operations after the pause:

- ① Press the Start Switch to start the sewing.
- ② Press and perform the thread-trimming. After that, use & to adjust the position and then press start switch to start sewing.
- ③ Press and trim the thread. After that, press again to return to the origin.

2.3 Set P Pattern & C Pattern

2.3.1 Use Pattern Key () for Sewing

The saved patterns (No.1~200) can be registered on P1~P50. It is possible to change and register the scale rate, Max speed limitation and sewing position. With the rolling window of pattern, user can also register patterns and has access to the pattern from P1~P25 at a time.

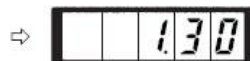
For selecting P6~P25, user can use the combinations of      (simultaneous pressing) shown in the below table at his sewing.

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	P1+P2	P13	P3+P4	P20	P1+P3+P5		
P7	P1+P3	P14	P3+P5	P21	P1+P4+P5		

1. Registration on Pattern Key

Exp: Register pattern No.3 to P2, X scale rate: 50%; Y scale rate: 80%; Max speed limitation: 2000 rpm, pattern position: 0.5mm to the right and 1mm to the front.

- 1) Turn on the power, press  (the sewing LED shall be off at this moment) to have access to Mode Setting (Setting of Storage Switch).



- 2) Use  &  to display the storage mode of pattern

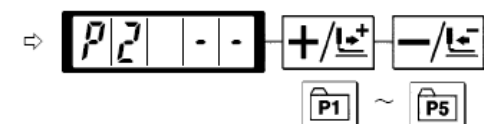
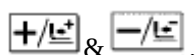


- 3) Press  to have access to the pattern storage mode.



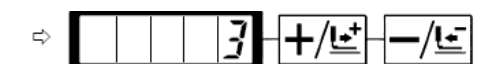
- 4) Press  to select the stored P-No.

This selection can also be done by using

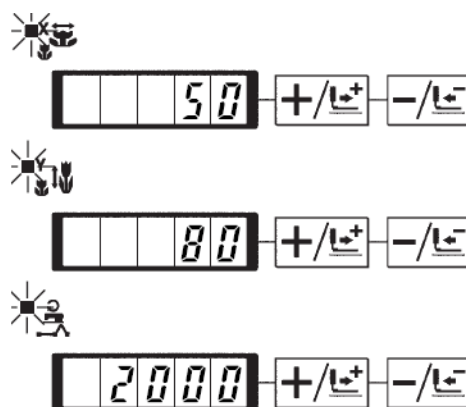


- 5) Use  to select .

Use  &  to set pattern number.



- 6) Press and use & to set the X scale rate at “50”% and the Y scale rate at “80%”, as well as Max Speed limitation at “2000”rpm.



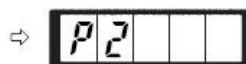
- 7) Press to activate X scale rate , which is displayed at 0.0. The stroke in X direction can be changed in step at 0.1mm. Use & to set this value at 0.5.



- 8) Press to activate Y scale rate , which is displayed at 0.0. The stroke in Y direction can be changed in step at 0.1mm. Use & to set that value at 1.0.

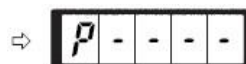


- 9) Press to end the setting.



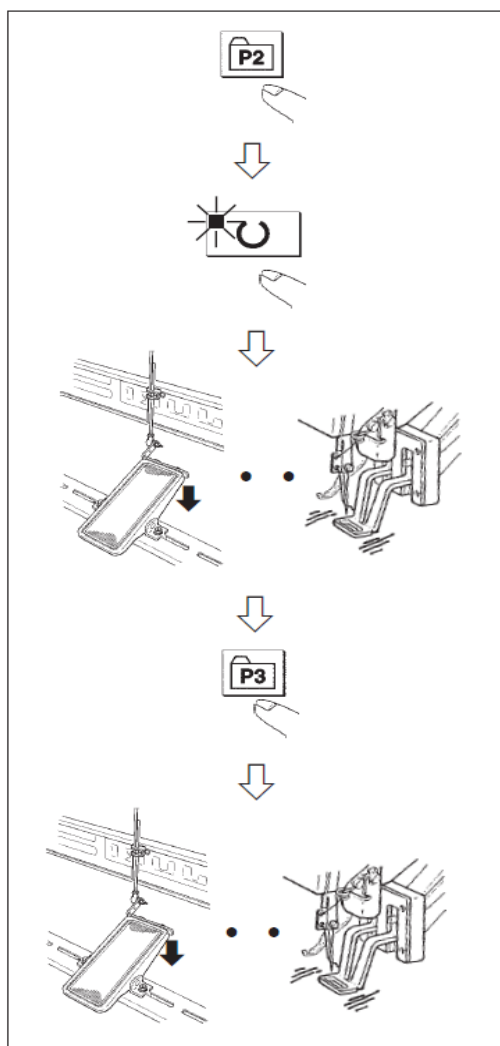
- 10) Press to end pattern storage mode

- 11) Press to end Mode Setting and return to Ordinary Mode



2. Sewing Operation

Example: sew the pattern saved as P2 at first, and then sew the P3.



1. Turn on the power.
2. Press .
3. Press to turn on the Sewing LED, and then the presser will go up.
4. Confirm the pattern shape.
5. If the pattern shape is correct, the machine will be able to carry out the sewing.
6. After sewing, please press to lower the presser for searching the origin. After that, the presser will move to the sewing start point and go up.

(When the Sewing LED is on, user can also press P keys to change the pattern.)

7. Perform the operations in Step 4 and Step 5.

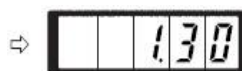
2.3.2 Sewing with Combination Functions

Store the patterns registered in the sequence as P1~P50 to C1~C20. The sewing pattern will be changed in order upon the finish of sewing in each time. 30 patterns can be stored in a combination code at most.

1. Storage of Combination Pattern

Example: Register the combination in order of P1, P2 and P3.

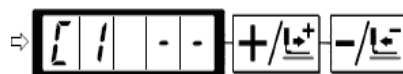
- 1) Turn on power. Press to have access to Mode Setting (for setting parameter of memory). The Sewing LED shall be off at the moment



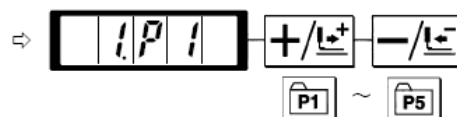
- 2) Use & to display the Combination Mode



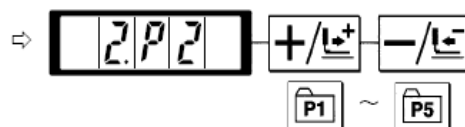
- 3) Press  to turn on the Sewing LED, thus to have access to the setting mode of combination pattern. User can select C pattern number from C1~C20 with  & .



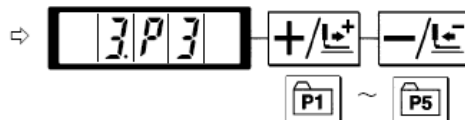
- 4) Press  and  to set the P1 as the first pattern in the C1. User can select P pattern from P1~P50 with  & .



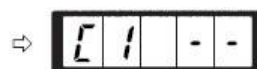
- 5) Press  and  to set the P2 as the second pattern in C1. User can select P pattern from P1~P50 with  & .



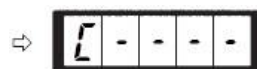
- 6) Press  and  to set the P3 as the third pattern in C1. User can select P pattern from P1~P50 with  & .



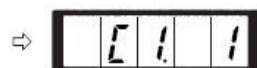
- 7) Press  to end the storage



- 8) Press  to end the storage mode of combined pattern.

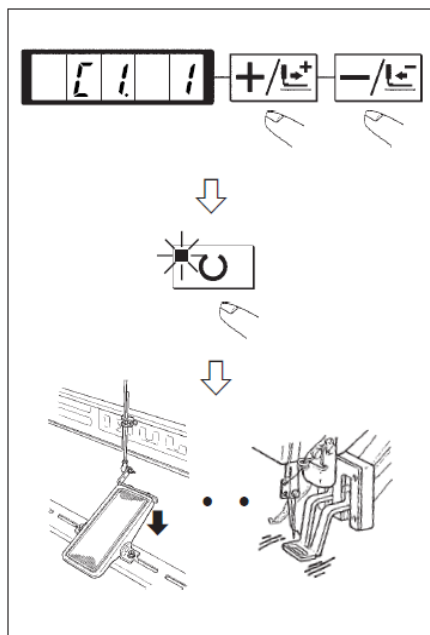


- 9) Press  to end the Mode Setting and return to the ordinary mode.



2. Sewing Operation

Example: Sew the C1 pattern.



- 1) Power on the machine
- 2) Set the pattern number as C1.1 with & .
- 3) Press to turn on the Sewing LED. After that the presser will go up.
- 4) If the pattern shape is sound, the sewing operation will proceed.
- 5) Sew the C1 pattern in the sequence in the combination. When the last pattern in the combination is finished, the machine will start sewing the first pattern and repeat this combination.

- ✧ After the sewing, if user wants to go to the previous pattern or the next pattern, user can press & when the Sewing LED is on. Then the pattern display will be changed and the presser will also move to the start point
- ✧ After storing the patterns among C1~C20, if the P pattern in P1~P50 is changed, the content of P pattern with same code will also be changed.
- ✧ Confirmation of pattern is necessary for each pattern.

2.4 Debugging Mode

Via this mode, user can perform the operations of maintenance and checking.

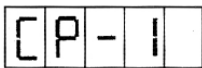
- 1) When the Sewing LED is off, press to call the display of . Then press at same time. After the ring of buzzer, the system will have access to the debugging mode via the user level setting mode of memory switch.

(Attention) Not pressing at same time will cause the failure of access to debugging mode.

- 2) Press to have access to debugging mode, the monitor will show “CP---” as displayed in

the following picture: ;

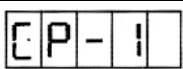
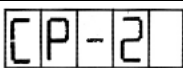
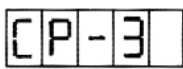
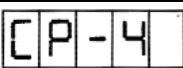
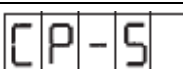
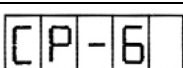
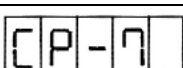
4) Press  again to end the display output test. The monitor will display “CP-1” as shown

in the following picture: .

Remarks:

Only after the display output test, can the user perform the test on other functions.

5) Press  &  to change the program code of the function test. The function stood by each code is shown in the following table:

Function Test Code	Function	Content
	Test input signal	LED hint switch, sensor input
	X/ Y Motor Origin Sensor Test	Display the statuses of the X/Y motor step motion operation, origin searching operation and X/Y origin sensor.
	Continuous Running	If setting the condition of continuous running, test the continuous running mode.
	Main motor rotation number test	Setting rotation number, machine start-up ,display of actual rotation number
	thread-trimming test	Action of thread-trimming motor, debugging the installation of knife
	Presser /thread-trimming motor /origin sensor test	Display the step motion of presser/thread-trimming motors, operation of origin searching, and the status of presser origin/presser sensor.
	Thread-catching motor/origin sensor test	Display the step motion of thread-catching motor, operation of origin searching and the status of thread-catching origin/thread-catching sensor.
	_____	_____

6) Hold  to have access to the function test.

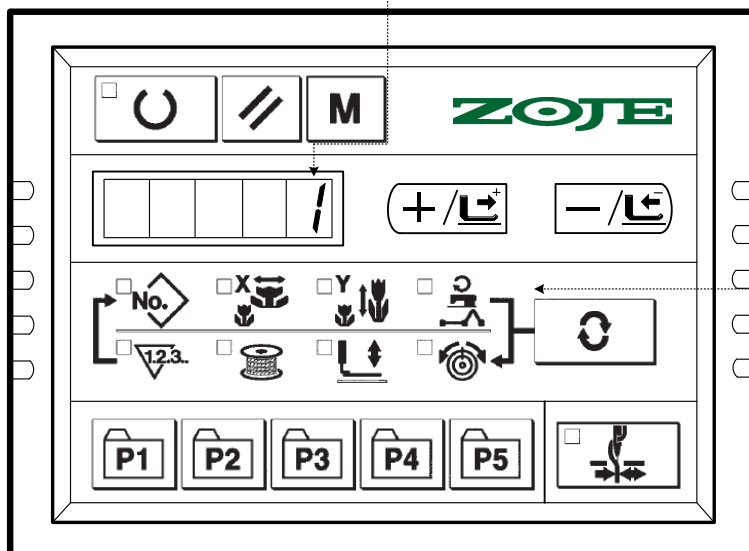
7) During the function test, if user presses , the test will be stopped and the system will return to the status of 5); However, if the continuous mode has been used for once, the test will be unable to be released. For ending the test, the user can only turn off the power.

2.4.1 CP-1 (Input Signal Test)

Test the input status of the buttons, pedal and sensors. Press  to have access to CP-1 when the “CP-1” is displayed at the screen. After that, the screen displays the “1” that means the first test content.

Hint: if press P1& P2 at the same time when you input number, the inputted number will add 1 and renewed.

Hint: for the input status hint information of Sewing LED at ON/OFF, please refer to the below table.



The display content for each inputted No.

Input No.	Pattern NO. LED	X Scale LED	Y Scale LED	Speed LED	Counter LED	Winding LED	Presser -lowering LED	Solenoid LED
1	/	/						
2	/	/						
3	/	/	/	/	/	/	/	/
4	Pedal Level 0	Pedal Level 1	Pedal Level 2	/	/	/	/	/
5	Presser motor origin sensor	Y motor origin sensor	X motor origin sensor	Thread-catching origin sensor	Thread-trimming sensor	Thread-catching sensor	/	/
6	Main-shaft angle display							
7	Main-shaft motor Z phase	/	/	/	/	/	/	/
8	/	/	/	/	/	Head tilt switch	/	/

2.4.2 CP-2 (Check X/Y Motor/Origin Sensor)

Display the statuses of X/Y origin sensor, operation of searching origin and step operation of X/Y motor.

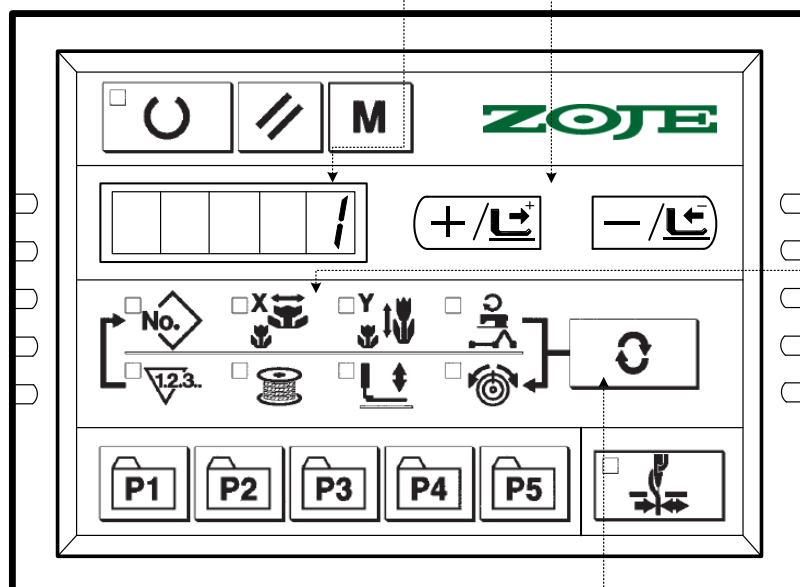
1. Preparation

Press  to have access to CP-2, and system displays “1” at screen. Then press  to search the origins of X/Y motors. At that time, the presser goes down and the Sewing LED is on (User can also perform step 2 directly without pressing ).

2. Operation

Hint: The status of X/Y origin sensor: “0” or “1”.

Press these two buttons to make the selected X/Y motor move in +/- direction with 0.1mm as each step.



Hint: the selection status of X/Y origin sensor:

X Scale LED is on: X origin sensor
Y Scale LED is on: Y origin sensor

Press Selection button to shift the selection status of X origin sensor or Y origin sensor

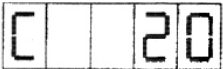
2.4.3 CP-3 (Continuous Running)

When the screen displays the “CP-3”, user can press  to have access to the Continuous Running Mode. After setting the conditions for continuous running, user can start the continuous running mode; for quitting the continuous running mode, please turn off the power.

1. Setting of Time Interval

User can press  &  to set the time interval between two operations.

From 1800ms to 9900ms, user can set the 100ms as a changing step. After the setting (the default

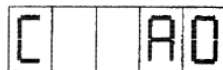
value is 2000ms), user can press  to save the set value .

2. Setting of origin search at sewing end.

User can press  &  to set the validity of origin search at sewing end.

A0: Invalid (Default value)

A1: Valid (Search origin after sewing at each time)



After the setting, user can press  to have access to the normal sewing mode.

3. Continuous Operation

Under the normal sewing mode, user can set the conditions, such as pattern number, X/Y scale rate and Max speed, and start sewing. At sewing end, if the user sets the origin search at the second step operation, the machine will search the origins of motors, including X/Y presser motors, thread-trimming motors and thread-catching motor; however, if the user set stop time in the 1st step operation, the machine will automatically start sewing again after sewing end. For

stopping the continuous sewing, please press  when the sewing ends.

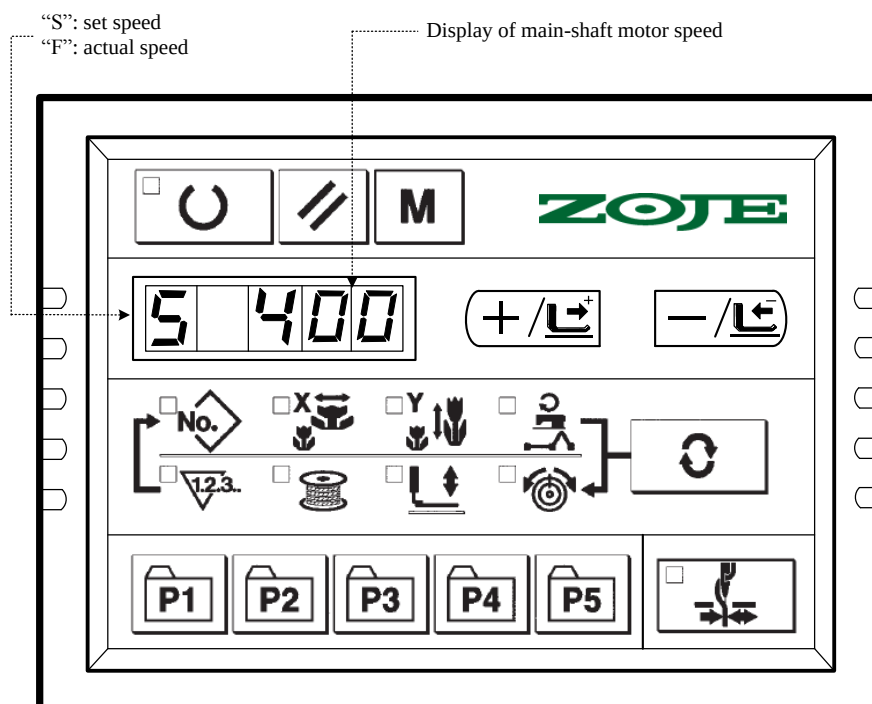
2.4.4 CP-4 (Test Main Motor Speed)

Set the speed of machine. With the set speed, the machine will only run the main motor that is used for driving the machine and display the actual speed.

1. Preparation

User shall press  to have access to CP-4 firstly. At this time, the screen displays “S

400”. Then the user can press  to search the origins of motors, including thread-catching motors, presser motors, and thread-trimming motors. At this moment, the Sewing LED is on.

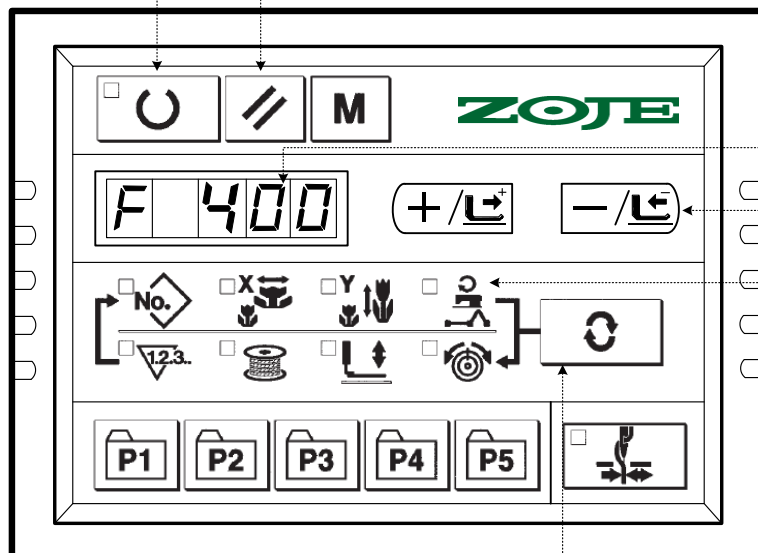


2. Operations

User can use & to change the setting on the main-shaft speed. Then the machine will run in the set speed just after user presses . At this time, by pressing , user can shift the display of set speed and the display of actual speed. For changing the set speed again, user shall press again and use & to set the speed, and then press to enable machine to run in the newly set speed. Press for stopping while pressing for quit.

By pressing this key, user can let machine run in the set speed. For changing the speed, please press.

By pressing this key, user can stop the machine.



Display the set speed or the actual speed. By pressing, user can make the shift between the displays of the speed.

Use & to set the speed between 400~3000 rpm

Speed LED:
 This LED is on at displaying the actual speed while off at displaying the set speed. Press to shift the display of these two kinds of speed.

By pressing this key, user can make the shift between the displays of the speed.

2.4.5 CP-5 (Adjustment on Thread-trimming)

Display the step motion of thread-trimming motor and the thread-trimming actions of moving to thread-curving position, thread-trimming, knife return, and return-to-origin.

1. Preparation

Press  to have access to CP-5.

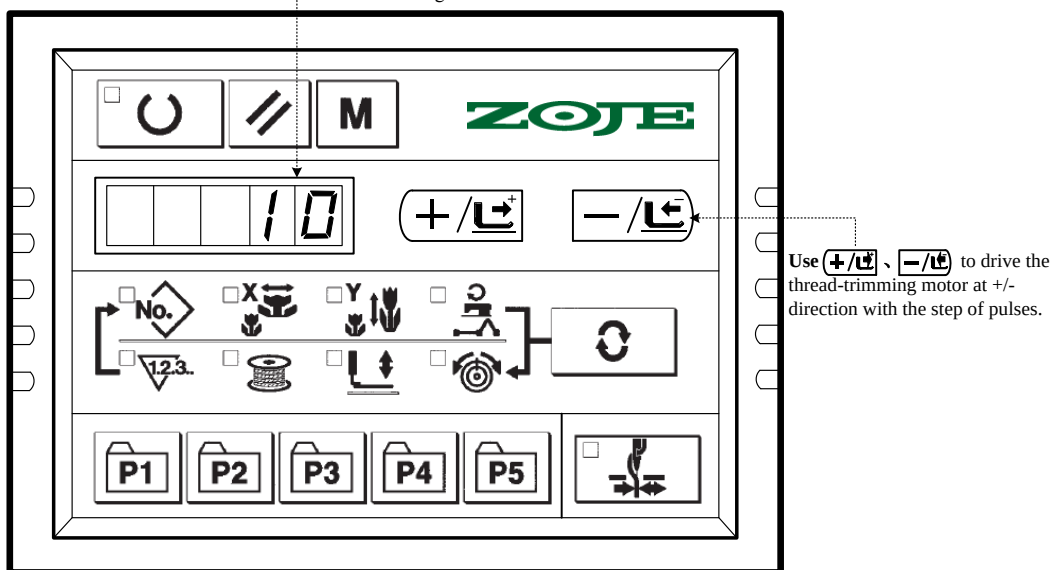
2. Operation

(1) Operation of step motion of thread-trimming motor

User can press  &  to operate the step motion of thread-trimming motor.

This function is for the staffs at their installing and debugging the knife.

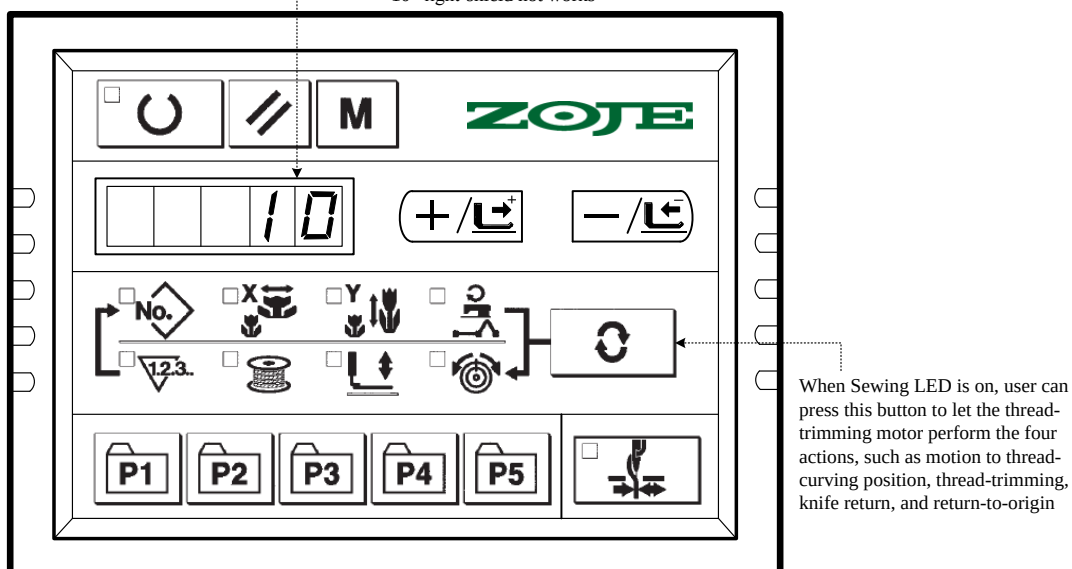
Status of thread-trimming sensor: "00" light-shield works
"10" light-shield not works



(2) Thread-trimming Action

Press  to turn on the Sewing LED, and then depress the pedal for searching the origin; by pressing  for times, users can let the thread-trimming motor perform the four actions, such as motion to thread-curving position, thread-trimming, knife return, and return-to-origin. For quitting this mode, please press .

Status of thread-trimming sensor: "00" light-shield works
"10" light-shield not works



2.4.6 CP-6 (Test Presser Origin Sensor)

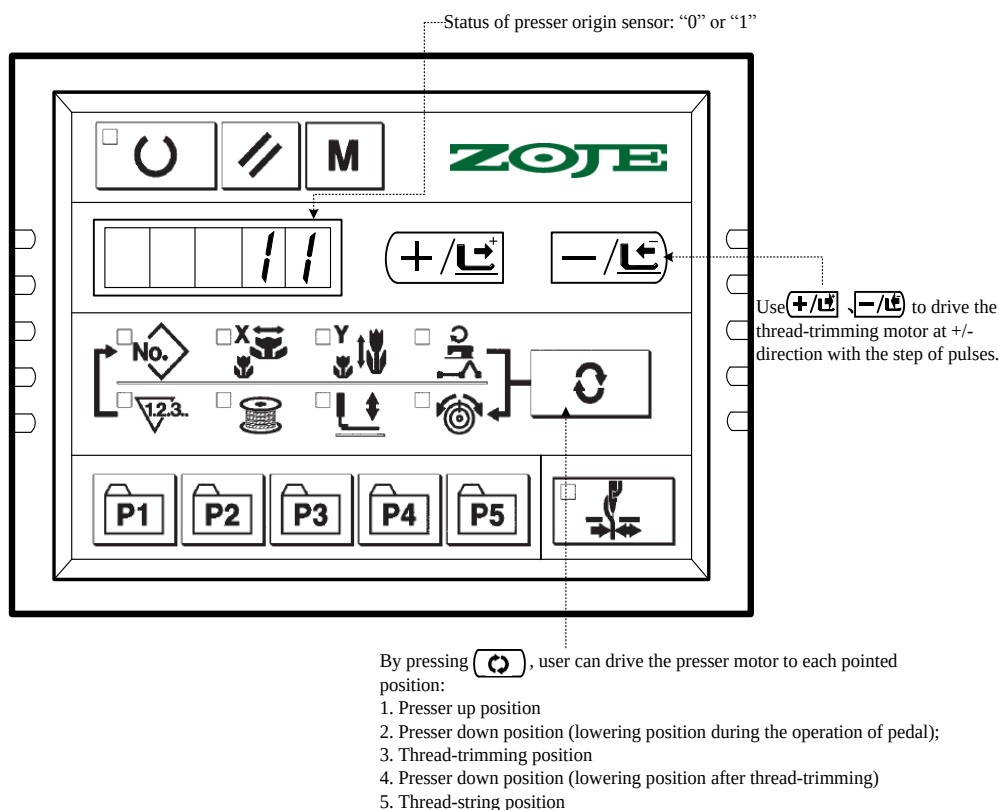
Display the step motion operation of presser motor, operation of origin search and status of presser origin sensor.

1. Preparation

Firstly, user can press  to have access to CP-6. Then user can press  to search the origin of thread-catching; at this time, the sewing LED is on.

2. Operations

If the user presses  for 6 ~ 8 times, and then the display on screen changes to “01” from “00”, it means the presser sensor is normal. If not, please adjust the position of the presser sensor.



After user presses , the relating parts on the machine will do the 5-step cyclic action in the sequence shown in above figure. Press  to quit that mode.

2.4.7 CP-7 (Test Thread-catching Motor/ Origin Sensor)

Display the step operation of thread-catching motor, the statuses of thread-catching motor origin sensor and thread-catching sensor and operation of origin search.

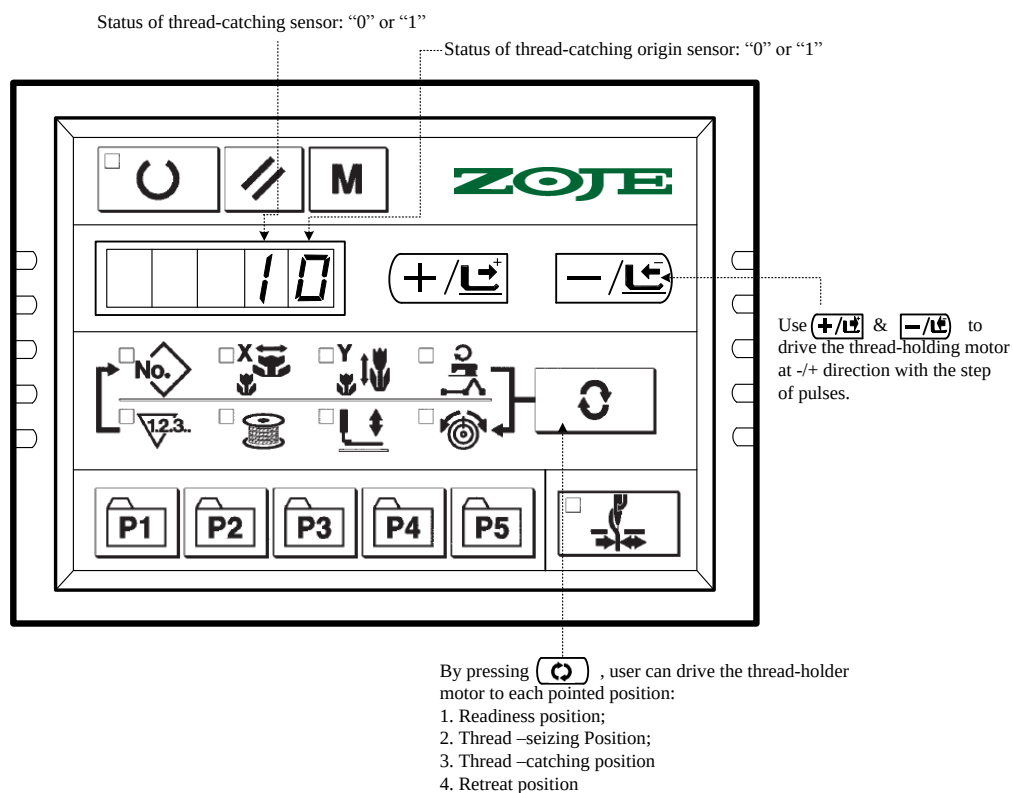
1. Preparation

Firstly, user shall press  to have access to CP-7; then press  to turn on the Sewing LED. Depress the pedal to search origin. After that the screen will display “10”.

2. Operation

By pressing  & , user can let thread-catcher move in step with the pulse as unit.

Press  to drive the thread-catcher backward; press  to drive the thread-catcher forward.



After user presses , the relating parts on the machine will do the 4-step cyclic action in the sequence shown in above figure. Press  to quit that mode.

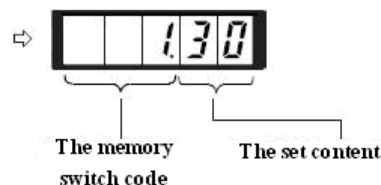
2.5 Parameter Setting

2.5.1 Specific Operations on Setting Parameters

- 1) When Sewing LED is off, user can press

 to set the parameters.

(After user presses , the displayed **1.30** means that the Max speed of the No.1 parameter is 3000rpm.)



- 2) User can use  &  to change the number of parameter.



- 3) By pressing , user can adjust the wanted parameter number and turn on the Sewing LED

- 4) By using  & , user can change the corresponding value of the parameter



- 5) By pressing , user can make the parameters return to the initial value.

- 6) By pressing , user can save the changed content and turn off the Sewing LED. After that, the machine returns to parameter number selection status.

- 7) Pressing  will end the parameter setting mode and let system return to ordinary status.

2.5.2 Example for Setting Parameters

1. Setting of Max Sewing Speed

Emp.: Set the upper limitation of sewing speed to 1800rpm

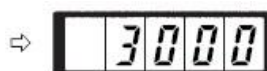
- 1) When the Sewing LED is off, user can press

 to display the content of Parameter No.1. Parameter No.1 displays the Max speed of sewing machine.



- 2) When the No.1 parameter is displayed; user can

press  to turn on the Sewing LED. Then the content of No.1 parameter is displayed in the screen.



3) User can use  &  to set the speed to “1800”   

4) Press  to save the value and turn off the Sewing LED.

5) Press  to return to the ordinary status.

2. Setting of Soft-start Speed at Sewing Start

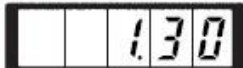
The speed of stitches from the first one to the fifth one can be set in the unit of 100rpm. User can also set the validity of thread-catching on these stitches.

With thread-catching function

	Default Setting (rpm)	Setting Range
1 st stitch	1500	400~1500
2 nd stitch	3000	400~3000
3 rd stitch	3000	400~3000
4 th stitch	3000	400~3000
5 th stitch	3000	400~3000

·For the Max speed, the No.1 parameter takes the priority.

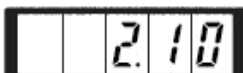
Emp.: In case of having thread-catching function, the 1st stitch will change from 1500 to 1000rpm, while 2nd stitch will change from 3000 to 2000rpm.

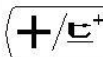
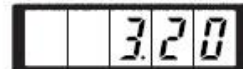
1) When the Sewing LED is off, press . 

2) By using  & , user can have the parameter code No.2 displayed. And user can set the sewing speed of 1st stitch   

3) Press  to turn on the Sewing LED and display the set value of the 1st stitch. 

4) By using  & , user can input “1000” in the screen. Press  to return to default setting. If user presses , the existing operations will be cancelled and system will return to the status in step 2).    

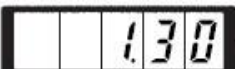
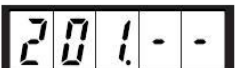
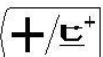
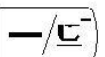
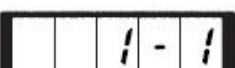
5) Press  to turn on the Sewing LED and save the set value of the 1st stitch. 

- 6) By pressing the  & , user can display the parameter code No.3 at screen. And the sewing speed of the 2nd stitch is display at here as well.   
- 7) Press  to turn on the Sewing LED and display the set value of the 2nd stitch. 
- 8) By using  & , user can input “2000” in the screen Press  to return to default setting. If user presses , the existing operations will be cancelled and system will return to the status in step 6).    
- 9) Press  to turn off the Sewing LED and save the set value of the 2nd stitch. 
- 10) Press  to end the parameter setting mode and return to the ordinary status.

3. Setting on whether to call the pattern number

User sets the machine not to read the inoperative pattern in case the unnecessary pattern is called. Additionally, the available pattern can be called when necessary.

Emp.: Set the No.2 & No.3 patterns as the inoperative.

- 1) Press  when the Sewing LED is Off. 
- 2) User can use  &  to let screen display parameter code No.201.   
- 3) Press  to turn on Sewing LED, at the same time the set value of pattern No.1 is displayed. Set value 1: Readable; 0: Unreadable. 
- 4) Set pattern No. 2 with  & .   
- 5) Set the value to 0 with . 

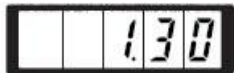
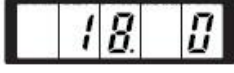
- 6) Set pattern No.3 with  &  .    
- 7) Set the value to 0 with  .  
- 8) Press  to save the set value and Turn off the Sewing LED  
- 9) Press  to end the parameter setting mode and return to ordinary mode.

4. Setting of Counter Action

The production counter can be used as the Bottom Thread Counter. In repetition sewing, if a bobbin finishes the sewing time as set in parameter, the sewing machine will stop sewing. The Bottom Thread Counter uses the subtracting method.

The counters are set as Production Counter (Adding method) at the time of delivery. However, if it is used as the Bottom Thread Counter (subtracting method), the parameter switch No.18 shall be changed.

Example: change the Production Counter (Adding method) to Bottom Thread Counter (Subtracting method).

- 1) Press  when Sewing LED is off.  
- 2) User can use  &  to let screen display parameter code No.18    
- 3) Press  to turn on the Sewing LED.
 Then the set value of the counter action is  
- 4) Set the set value to 1 with     
 Set value 0: Production Counter;
 1: Bottom Thread Counter
- 5) Press  to save the set value and turn off the Sewing LED
- 6) Press  to end the parameter setting mode and return to ordinary mode.

2.5.3 Table for Parameter Setting

No.	Functions	Adjustment Range	Default Value	Remarks
1.30	Max Speed of Sewing (it can be set in step of 1000rpm)	400~3000	3000	
2.15	Sewing speed of 1 st Stitch (thread-catching) (It can be set in step of 100rpm)	400~1500	1500	
3.30	Sewing speed of 2 nd Stitch (thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
4.30	Sewing speed of 3 rd Stitch (thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
5.30	Sewing speed of 4 th Stitch (thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
6.30	Sewing speed of 5 th Stitch (thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
9.--	Changeover time of thread tension at thread-trimming	-6~4	0	Unavailable in 1900B
10. 4	Sewing speed of 1 st Stitch (no thread-catching) (It can be set in step of 100rpm)	400~1500	400	
11. 9	Sewing speed of 2 nd Stitch (no thread-catching) (It can be set in step of 100rpm)	400~3000	900	
12.3 0	Sewing speed of 3 rd Stitch (no thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
13.3 0	Sewing speed of 4 th Stitch (no thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
14.3 0	Sewing speed of 5 th Stitch (no thread-catching) (It can be set in step of 100rpm)	400~3000	3000	
15.--	Thread tension of 1 st stitch (no thread-catching)	0~200	0	Unavailable in 1900B
16.--	Changeover timing of thread tension at the sewing start (no thread-catching)	-5~2	0	Unavailable in 1900B
17. 0	Whether to change or indicate the XY scale rate and max speed limitation	0: changeable 1 : unchangeable	0	
18. 0	Action of Counter	0: Production Counter(Adding Method) 1 : Bottom	0	

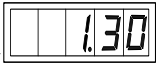
No.	Functions	Adjustment Range	Default Value	Remarks
		Thread Counter(Subtracting Method)		
25.1	Presser Division	0~1	1	0: Divide 1: Not divided;
26.7 0	Adjustment of presser height in section	50~90	70	
31. 0	Use keyboard (Clear Key) to stop sewing machine	0: invalid 1: Reset Key	0	
32. 1	Buzzer forbidden	0: no voice 1 : panel operation voice	1	
33. 1	Set number of stitches that thread-catching releases	1~7	1	
34.--	Time deferrable in catching thread	-10~0	0	Speed down in direction “-”
35. 0	Enable to forbid the control on catching upper thread	0: Normal 1: Forbidden	0	
36.--	Select the Feed time. When stitches are not well tightened, set the value in “-” direction.	-8~16	12	If it moves to one side excessively, the needle might be broken. Be careful at sewing the thick fabric.
37. 1	Presser status at sewing end	0 : Depress pedal to lift presser 1 : Presser goes up	1	

No.	Functions	Adjustment Range	Default Value	Remarks
		automatically		
39. 0	Search origin at sewing end of each time (except the cyclic sewing)	0: Not search origin 1 : Search Origin	0	Refer to 【 3.3 Recovery to Default Setting】
40. 0	Search origin at cyclic sewing	0: Not Search origin 1 : Search origin after the finish of each pattern	0	
42. 0	Stop position of needle rod	0 : upper position 1 : highest position	0	Stop at highest point: Needle rod stops at the upper position and reverses.
46. 0	Forbid thread-trimming	0: normal 1 : forbid thread-trimming	0	
49.1 6	Set winding speed	800~2000	1600	
201.- -	Whether to read the pattern data.	0: unable 1: able	Setting depends on model used.	Whether the pattern can be opened can be set respectively.
P- - - -	Register pattern			
C- - - -	Register the cyclic sewing			

3 Setting of Service Parameter

The Service Parameter is different from the ordinary parameter. Generally, these parameters are provided to the technicians for their debugging, and the users are forbidden to change them without directions from the professionals.

3.1 Activation & Modification of Service Parameter

When the sewing LED is off, operator can press  to have system display , then the operator needs to press    together. After hearing the voice from buzzer, the operation can activate and modify the service parameters

The modification is same to that of the ordinary parameters.

3.2 Table of Service Parameters

No.	Definition	Adjustment Range	Initial Value	Remarks
21.--	Positions of standard pedal & pedal switch	50-500	70	If increasing the set value, user will need to depress presser harder.
22.--	Position of standard pedal & stroke switch of high/low section.	50-500	120	If increasing the set value, user will need to depress presser harder.
23.--	Position of standard pedal & start switch	50-500	185	If increasing the set value, user will need to depress presser harder.
27.--	Dropping speed of presser at depressing pedal	100-4000pps	4000	
28.--	Lifting speed of presser at depressing pedal	100-4000pps	1500	The excessive lifting will cause problems in operation.
29.--	Lifting speed of thread-trimming presser at sewing end	100-4000pps	3000	The excessive lifting will cause problems in operation.
38.--	Start sewing with switch when presser keeps still	0: Normal 1: Not lift presser	0	
43. 1	Selection of machine rotating number at thread-trimming	0: 400rpm 1: 800rpm	0	Rotation number at dividing thread with moving knife; the thread-trimming is performed after the machine ends
44. 1	Selection on whether to feed cloth in the easy	0: Not Feed 1: Feed Cloth	1	

No.	Definition	Adjustment Range	Initial Value	Remarks
	direction at thread-trimming			
45.--	Guide diameter of needle hole for feeding cloth at thread-trimming (Changing step can be set at 0.2mm.)	16~40	16	1.6mm~4.0mm
50.--	Thread-trimming Angle	0~9	5	
56.--	Limited range of motion in +X direction (Right)	-20-20mm	20	In the initial status, regardless shape of presser.
57.--	Limited range of motion in -X direction (Left)	-20-20mm	-20	In the initial status, regardless shape of presser.
58.--	Limited range of motion in +Y direction (Back)	-20-20mm	10	In the initial status, regardless shape of presser.
59.--	Limited range of motion in -Y direction (Front)	-20-10mm	-20	In the initial status, regardless shape of presser.
62. 0	Pattern Update	0: Normal Mode 1: Pattern update mode	0	For updating the pattern, please refer to 【5 Updating pattern via U disk】
67.--	Default parameter transfer	0 or 1	1	For this parameter, please refer to 【3.3 Recovery to Default Setting】
68.--	Main-shaft stop compensation	-10-+10	0	
90.--	Preset value for bottom thread counter	0~9999	0	
91.--	Current value for production (bottom thread) counter	0~9999	0	
150. 0	Invalidity of head tilt safety switch	0: Normal 1: The safe shape of head tilt is invalid.	0	
241. 0	Functional Selections	0: Bar-tacking 7 : Button sewing	0	

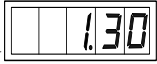
Note: the parameters above are only for the repair technicians, and ordinary users are forbidden to change those parameter

3.3 Recovery to Default Setting

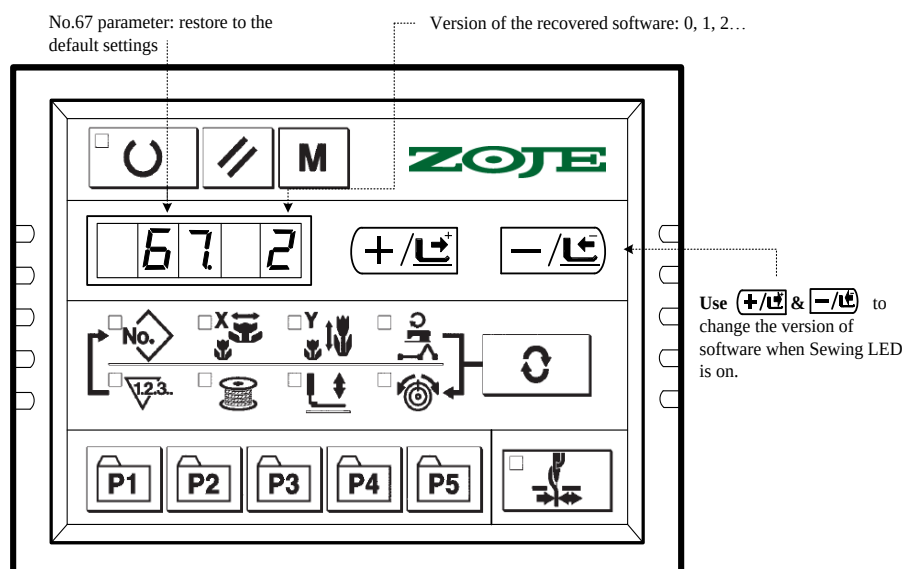
If the user changes some parameters by mistake, which are properly set at delivery, he will use the function of “Recovery to Default Setting” to restore the system.

Note: 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. For anything unknown, please contact the technicians of the manufacturer, and operate the machine with the instruction from the professionals

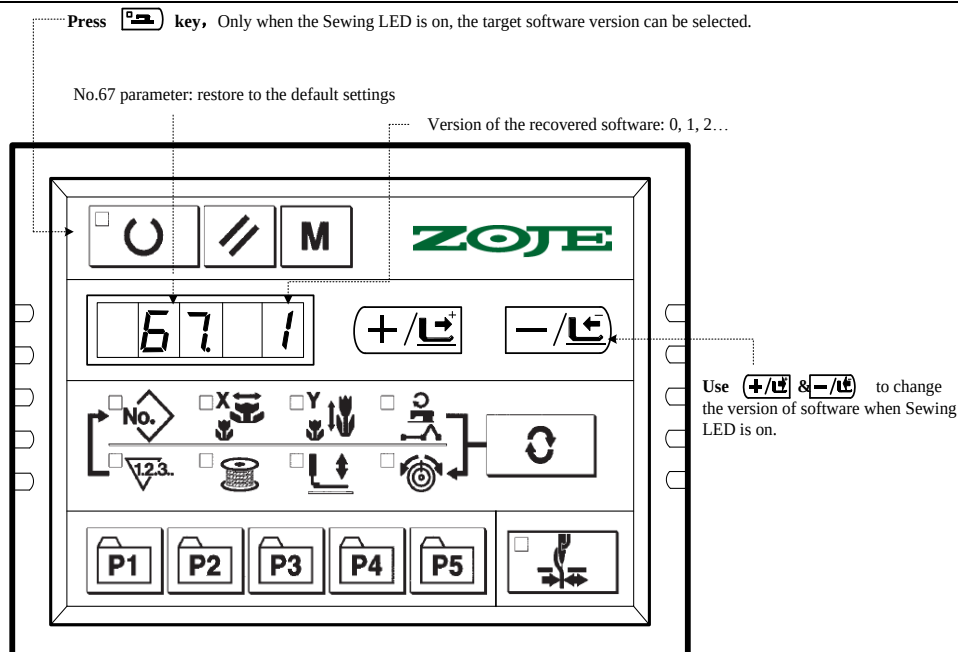
The following is the specific operation step:

- 1、 When the Sewing LED is off, operator can press  to have system display , and then the operator needs to press    together. Following the voice from buzzer, the modification of service parameters is started.

- 2、 By using the  & , the operator can select the parameter No.67:



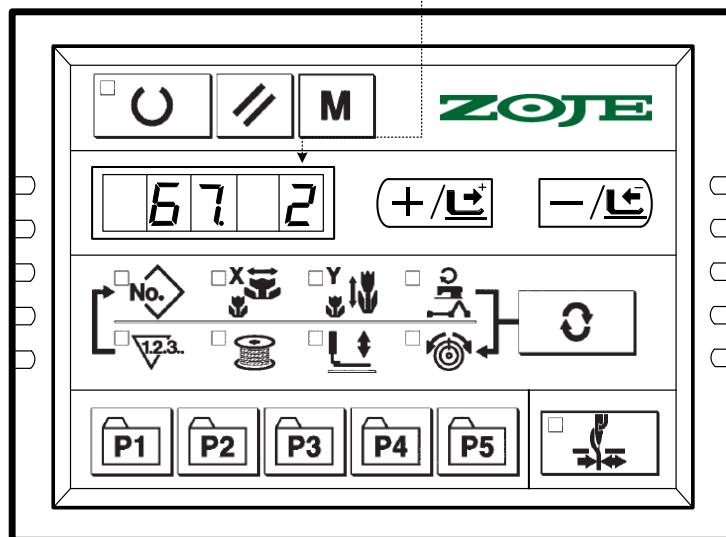
- 3、 Press  to turn the sewing LED, then select the needed software version number by using  &  :



4、 For an example, if the existing version is 2, operator can restore it to 0 or 1 (smaller than the current version number in all). And then press  to confirm the restored version number and turn off the Sewing LED;

- 1、 Press  to quit the setting mode of service parameters. Then the system will return to the normal sewing mode;
- 2、 And then, turn off the power and repower the machine after about one minute. At the moment, “EEP——” will be displayed on the operation panel. After 20 seconds, the operation panel will become to display normally (attention: it is a normal phenomenon because the system needs some time to perform the recovery of the default software).
- 3、 After the recovery, the system will set the current software version as the highest version. For example, there are 2 default versions, Version 1 & Version 0; in that case the version after the recovery will be defined at 2 automatically.

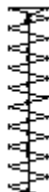
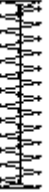
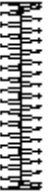
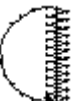
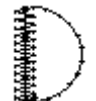
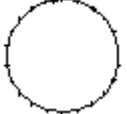
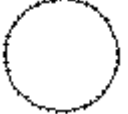
The version of the current software will become to 2 automatically.

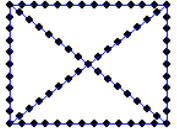
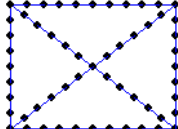
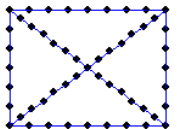
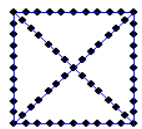
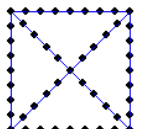
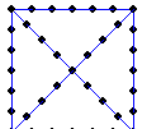
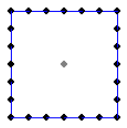
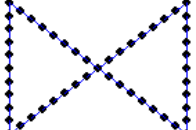
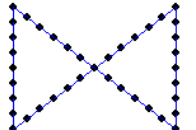
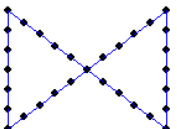
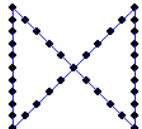
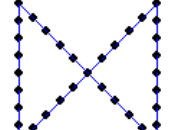
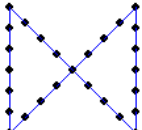


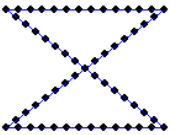
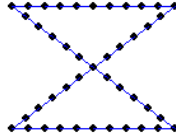
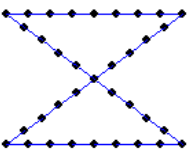
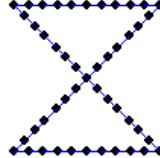
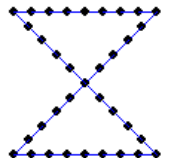
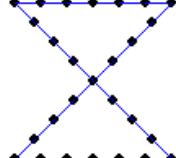
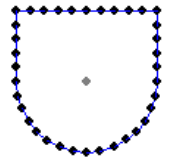
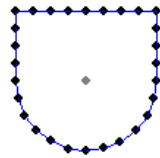
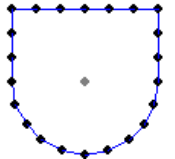
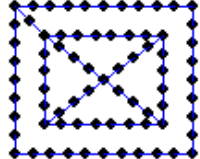
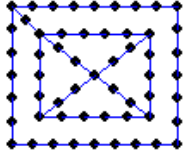
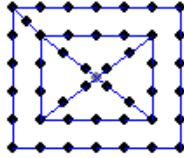
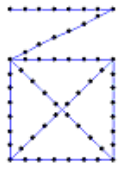
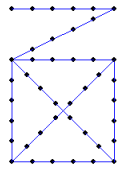
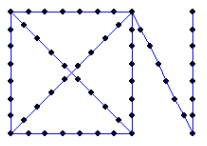
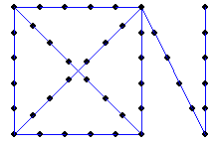
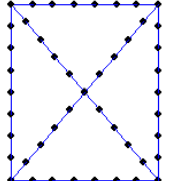
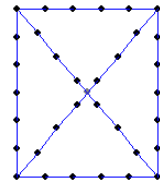
Attention: During the process of repowering the machine, if the power is off when the system is recovering, the recovery will be failed and the system will return to the software status before the recovery.

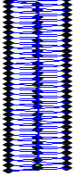
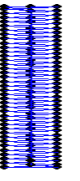
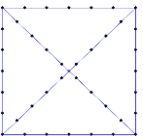
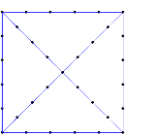
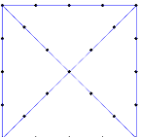
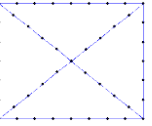
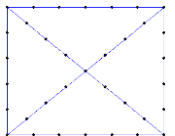
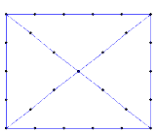
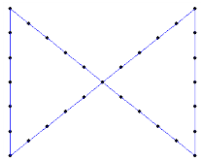
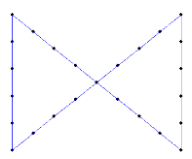
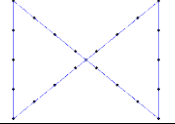
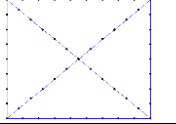
3.3 List of Standard Figure

NO	Sewing Pattern	Stitch number	Size (mm)	NO	Sewing Pattern	Stitch number	Size (mm)
1		42	16×2	2		42	10×2
3		42	16×2.5	4		42	24×3
5		28	10×2	6		28	16×2.5
7		36	10×2	8		36	16×2.5
9		56	24×3	10		64	24×3
11		21	6×2.5	12		28	6×2.5
13		36	6×2.5	14		15	8×2
15		21	8×2.2	16		28	8×2
17		21	10×1	18		28	10×1
19		28	25×1	20		36	25×1
21		41	25×1	22		44	35×1

23		28	4×20		24		36	4×20
25		42	4×20		26		56	4×20
27		18	1×20		28		21	1×10
29		21	1×20		30		28	1×20
31		52	10×7		32		63	12×7
33		24	10×6		34		31	12×6
35		48	7×10		36		48	7×10
37		90	24×3		38		28	8×2
39		28	12×12		40		48	12×12
41		29	2.5×20		42		39	2.5×25
43		45	2.5×25		44		58	2.5×4.4
45		76	2.5×4.4		46		42	2.5×4.4

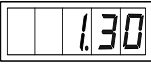
47		91	8×8		48		99	8×8
49		148	8×8		50		164	8×8
51		100	40×30		52		78	40×30
53		70	40×30		54		90	30×30
55		70	30×30		56		54	30×30
57		53	40×30		58		40	40×30
59		31	40×30		60		45	30×30
61		36	30×30		62		27	30×30
63		57	40×30		64		45	40×30
65		35	40×30		66		55	30×30
67		42	30×30		68		33	30×30

69		65	40×30		70		49	40×30
71		39	40×30		72		55	30×30
73		42	30×30		74		33	30×30
75		43	30×30		76		33	30×29.9
77		26	30×29.8		78		93	30×25
79		72	30×25		80		54	30×25
81		77	20×30		82		57	20×30
83		77	30×20		84		57	30×20
85		69	20×24.1		86		52	20×24.1
87		101	40×5		88		109	40×5

89		97	5×30		90		107	5×30
91		56	20×20		92		48	20×20
93		38	20×20		94		62	25×20
95		50	25×20		96		40	25×20
97		36	25×20		98		28	25×20
99		24	25×20		100		76	30×25

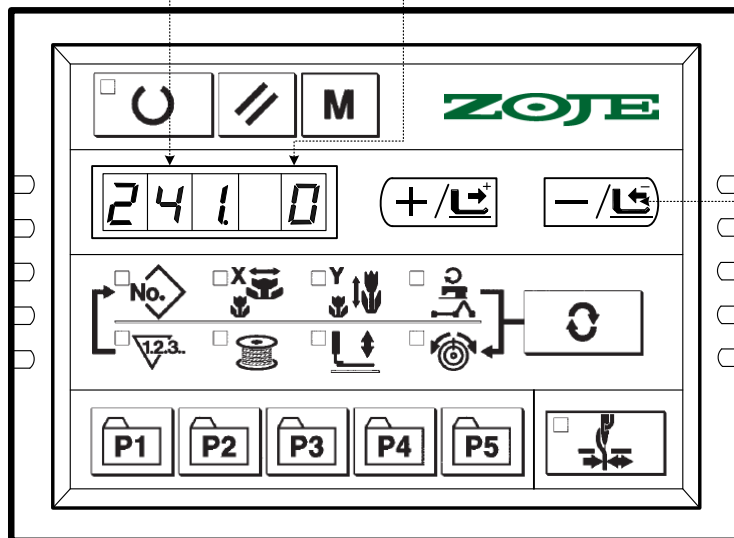
4 Function of Button Sewing

4.1 Settings

- When the Sewing LED is off, operator can press  to have system display ,
and then the operator needs to press    together. Following the voice from
buzzer, the modification of service parameters is started;
- Select the parameter No.241 by pressing  &  :

No.241parameter: selection of machine function

Number of machine function: "0": bar-tacking
 "7": button sewing



3、Press to turn on the Sewing LED. After that, user can change the function number to "7" with & ; then user shall press to confirm the function number and turn off the Sewing LED.

4、Press to quit the setting mode of service parameter. The system will return to the normal sewing mode. After user repowers the machine, the function of machine will turn to button sewing.

Attention:

The machine needs the special pressers and other supplementary equipments for sewing button. For the detailed information in this aspect, please contact to the supplier or agent of your machine.

4.2 List of Standard Pattern in Sewing Button

No	Sewing pattern	Thread number	Standard sewing length X(mm)	Standard sewing length Y(mm)	No	Sewing pattern	Thread number	Standard sewing length X(mm)	Standard sewing length Y(mm)
1·34		6-6	3.4	3.4	18·44		6	3.4	0
2·35		8-8			19·45		8		
3		10-10			20		10		

No	Sewing pattern	Thread number	Standard sewing length X(mm)	Standard sewing length Y(mm)	No	Sewing pattern	Thread number	Standard sewing length X(mm)	Standard sewing length Y(mm)
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 Appendix

5.1 List of Error Information

Display					Error Name	Content of Error	Solution
E				7	Machine Lock Error	The main-shaft of sewing machine can't rotate due to some problem.	Turn off power and release the trouble
E			1	0	Pattern NO. Error	The prepared pattern number is not registered in ROM or it is set at unreadable. The pattern is 0.	Press RESET switch to confirm the pattern NO. Confirm the content in memory switch No.201.
E			3	0	Needle Rod Up Position Error	The needle rod is not at UP position.	Turn the hand pulley to return the needle rod to its UP position.
E			4	0	Sewing Area Over	The sewing area is over the limit.	Press RESET switch to confirm the X/Y scale rate
E			4	3	Enlargement Error	The sewing stitch is below 10mm.	Press RESET switch and confirm the pattern and X/Y scale rate.
E			4	5	Pattern Data Error	The pattern data cannot be adopted.	Power off and check the data ROM
E			5	0	Pause	Press the RESET switch while sewing machine is running. The machine pauses.	Restart or return-to-origin after pressing RESET switch for thread-trimming
E		2	2	0	Controller Abnormal	The communication with executive device is abnormal.	Turn off the power and repower the machine after a while.
E		3	0	2	Head Tilt Error	Head tilt detection switch is turned ON.	The sewing machine cannot be operated with the head tilted. Return the sewing machine head to its proper position
E		3	0	3	Connection to Main-shaft Fail	Can't detection the highest point of the sewing machine	Turn off the power, and check the connection of the X5 plug.
E		3	0	5	Thread Trimmer	Knife is not at proper	Turn off the power and check

					Position Error	position.	the CZ024 at the head signal circuit board.
E		3	0	6	Thread-catching position error	The thread-catching device is at wrong position.	Turn off the power and check the CZ026 at the head signal circuit board.
E		3	0	7	Thread-trimming Motor Position Error	The thread-trimming motor is not at the right position.	Check the thread-trimming device and thread-trimming motor to make sure it has no blockage.
E		7	3	3	Motor Reverse	Motor Reverse	Turn off the power and check the coupling of the main-shaft motor.
E		8	1	1	Overvoltage Error	The voltage of power is over the specified value.	Confirm the voltage of power
E		8	1	3	Low Voltage Error	The voltage of power is too low.	Confirm the voltage of power.
E		9	0	1	Motor driver abnormal	The error is detected in motor driver.	Turn off the power and repower the machine after a while.
E		9	0	3	Power Supply of Pulse Motor Error	Power supply of the pulse motor is not output	Turn off the power and repower the machine after a while.
E		9	0	4	Solenoid Power Supply Error	Power supply of the solenoid cannot output	Turn off the power and repower the machine after a while.
E		9	0	7	X Origin Search Error	X origin sensor doesn't change.	Turn off power and check the connections of CZ021 on head signal circuit board and X9 on control box.
E		9	0	8	Y Origin Search Error	Y origin sensor doesn't change.	Turn off power and check the connections of CZ022 on head signal circuit board and X9 on control box.
E		9	1	0	Presser Origin Search Error	Presser origin sensor doesn't change.	Turn off power and check the connections of CZ025 on head signal circuit board and X9 on control box.
E		9	1	1	Y Direction Motor Busy	Y motor doesn't make action according to order	Check the stepping motor in Y direction.
E		9	1	2	X Direction Motor Busy	X motor doesn't make action according to order	Check the stepping motor in X direction.

E		9	1	3	Thread-catching Origin Search Error	Thread-catching origin sensor doesn't change.	Turn off power and check the connections of CZ026 on head signal circuit board and X9 on control box.
E		9	1	4	Transmission Error	Time lag exist between cloth-feeding motor and main-shaft motor	Turn off the power and repower the machine after a while.
E		9	1	6	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.
E		9	9	9	Abnormal status	More than one part of machine has problem.	Make sure no sensor is plugged reversely.
No Display					Plug Take-off	The voltage of power doesn't meet standard. The plug is take-off.	Turn off power and check the connections of power plug and X7 plug on control box.

5.2 System Diagram

