重要安全事项

此缝纫机在有的国家（设置场所）由于该国的安全规定而被禁止使用。同时，技术服务也同样被禁止。

1. 使用此缝纫机时，必须遵守包括如下项目的基本安全措施。
2. 使用次缝纫机之前，请阅读本使用说明书在内的所有指示文件。同时应将此使用说明书妥善保管，以便能够随时查阅。
3. 此缝纫机应于贵国的有关安全规定一起使用。
4. 使用此缝纫机和缝纫机动作中，所有的安全装置应安装到规定位置。没有安装规定的安全装置的缝纫机禁止使用。
5. 此缝纫机应由接受过培训的操作人员来操作。
6. 使用此缝纫机时，建议戴安全防护眼镜。
7. 发生下列情况时，应立即关掉电源开关，或拔下电源线插头。
   7-1 机针、弯针、分离器等穿线和更换旋梭时。
   7-2 更换机针、压脚、针板、弯针、分离器、送布牙、护针器、支架、布导向器等时。
   7-3 修理时。
   7-4 工作场所无人了或离开工作场所时。
   7-5 使用离合马达时，请等待马达完全停止之后再进行。
8. 缝纫机以及附属装置使用的机油、润滑脂等液体流入眼镜或沾到皮肤时，或被误饮时，应立即清洗有关部分并去医院治疗。
9. 禁止用手触摸打开了缝纫机开关通电的零件或装置。
10. 有关缝纫机的修理、改造、调整应由专门训练的技术人员或专家来进行。
11. 一般的修保养应由受过专业培训的人员来进行。
12. 有关缝纫机的电气修理、维修应由有资格的电气技术人员或专家的监督和指导下进行。
13. 修理、保养有关空气。气缸等空气压缩的零件时，应切断空气压缩机供源后在进行。如 14. 有残留压缩空气时，应放掉压缩空气。但受过相当训练的技术人员或专家进行有关调整或确认工作除外。
14. 缝纫机的使用期间应定期进行清扫。
15. 为了正常安全运转，应安装底线。同时应在不受高频焊接机等强噪音源影响的环境下使用。
16. 电源插头应用具有电气专门知识人员来安装。电源插头必须连接到接地插座上。
17. 缝纫机指定用途以外不能使用。
18. 对缝纫机的改造、变更符合安全规格，并采取有效的安装措施。另外。对于有关改造和变更，本公司概不负责。
19. 本使用说明书上采用以下 2 个警告符号。

 有损伤操作人员、维修人员的危险。

 安全上需要特别加以注意的事项。

为了安全的使用该款缝纫机的注意事项

 危险	1. 为了防止触电事故，请不要在接通电源的状态下打开机壳后罩或触摸后罩内的零件 2. 变更图案后，请确认落针的位置。万一图案突出压脚，缝制中机针会碰到压脚，发生危险的断针事故。 3. 机针落下的状态请不要关闭电源。有可能挑线杆弄弯机针。
 注意	1. 打开（—）电源开关后，操作盘上不显示时，请关闭（O）电源开关确认电源的电压规格。 2. 为了防止被卷入的人身事故的发生，绕线时请确认了机针下没有障碍物之后再踩启动开关。 3. 打开电源、打开准备键、打开压脚开关时，压脚会自动地下降，为了防止人身事故的发生，请绝对不要把手指放倒压脚下面。 4. 为了防止手指碰到机针的事故，更换压脚时，请安装适合压脚的手指保护器。

目录

Ⅰ.D款一体式高速电子套结机

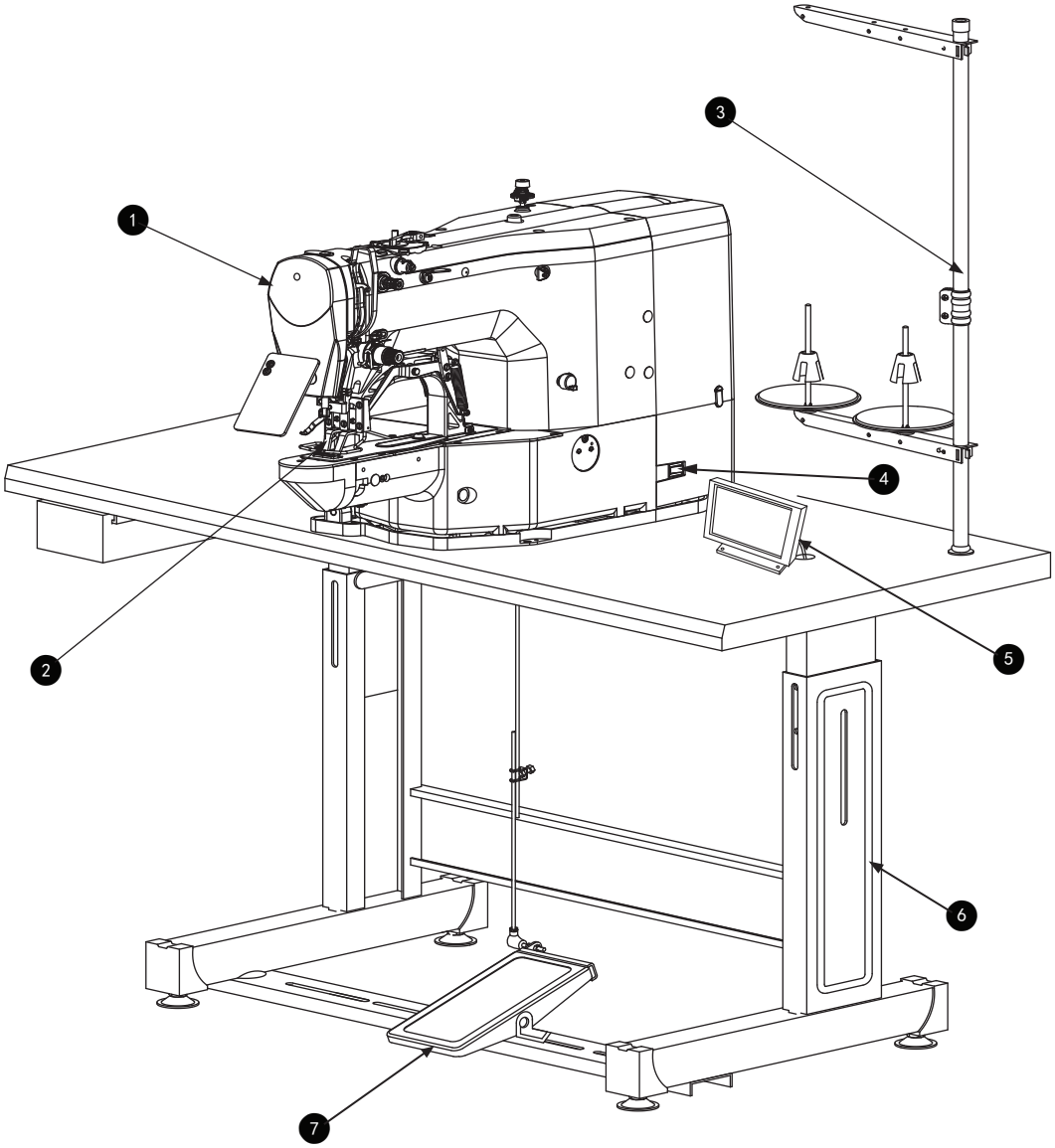
I. D 款一体式高速电子套结机的说明

［1］规格

1. 缝制范围：X（左右）方向 40mm，Y（前后）方向 30mm
2. 缝纫速度:3200rpm
3. 线迹长度：0.1-10mm
4. 压脚送布：间断送布
5. 针杆行程：41.2mm
6. 使用机针：DP×5、DP×17
7. 压脚上升量：标准 13mm　最大 17mm
8. 旋梭：标准摆梭（油线润滑）
9. 使用机油：10#白油
10. 数据记录：EPROM
11. 放大、缩小功能：X 方向、Y 方向各为 20-200%
12. 放大、缩小方式：调整线迹长短方式
13. 缝纫速度限制：400-3500，3500rpm（针距 X≤5，Y≤3.5）（100rpm）
14. 图案选择功能：图案 NO.指定（1-300）
15. 底线计数器：上升/下降方式（1-9999）
16. 缝纫机马达：550W 伺服马达
17. 外形尺寸：W：1200mm　L：540mm　H:1100mm
18. 重量：整机 55Kg
19. 功率：0.6KW
20. 使用温度范围：0℃-50℃
21. 使用湿度范围：35%-85%（无节露）
22. 电源电压：额定电机±10%　50-60Hz

[2] 各部件名称

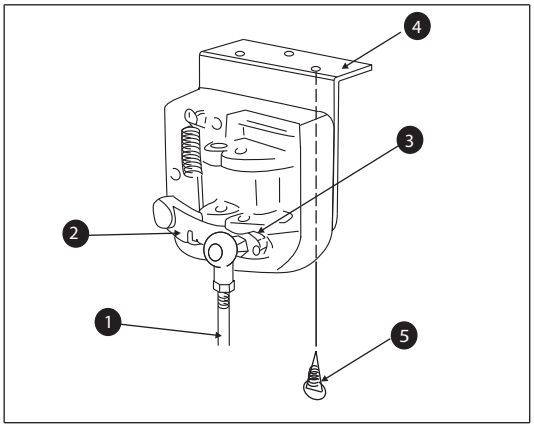
1. 主机的名称



(1). 缝纫机机头
(2). 送布压脚
(3). 线架
(4). 电源开关
(5). 操作面板
(6). 机架
(7). 脚踏开关

[3] 整机安装

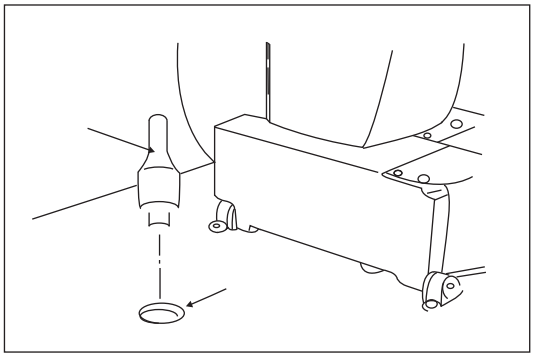
1. 脚踏开关拉杆的安装



(1).将脚踏开关拉杆①穿过脚踏开关曲柄②孔，用螺母③固定，上下拉动脚踏开关拉杆①，运动灵活，调整踏板至合适位置。

(2).将脚踏安装板④用木螺丝⑤固定在合适的位置。

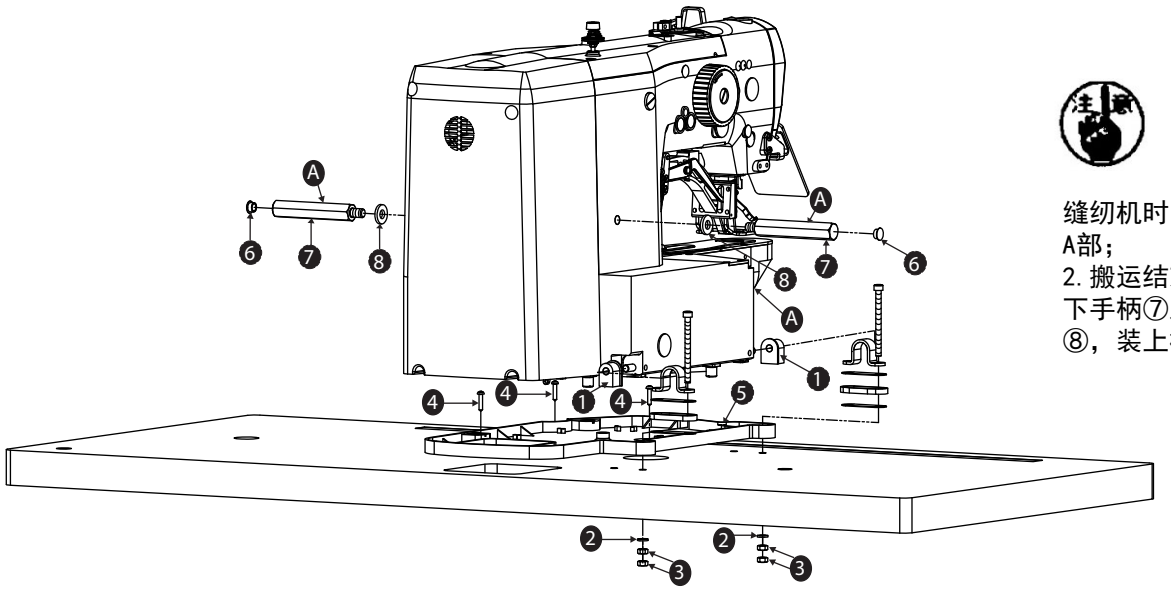
2. 机头支撑杆的安装



将机头支撑杆①装在台板孔②内

3. 机头的安装

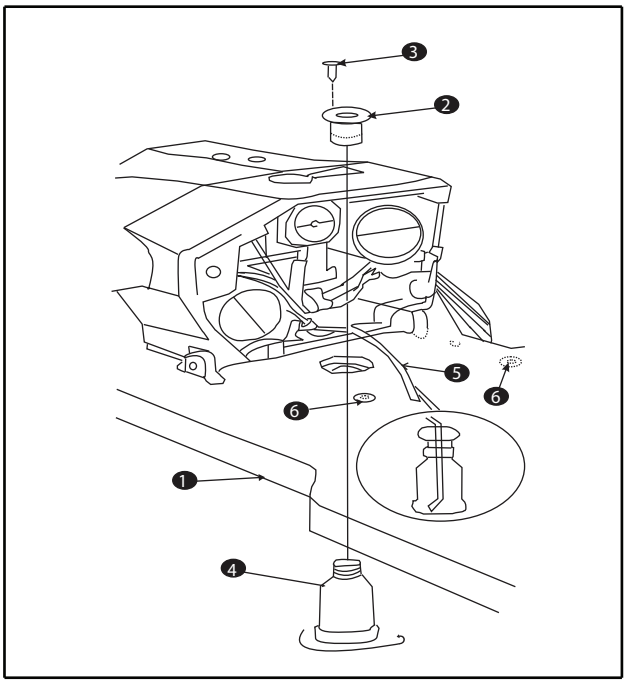
⚠注意 **搬运缝纫机时，请一定是两人以上进行操作。**



1. 搬运缝纫机时，请手持A部；
2. 搬运结束，请卸下手柄⑦及橡胶垫⑧，装上橡胶塞⑥。

(1). 将油盘⑤用木螺钉④固定在台板相应位置上；
(2). 将机头胶垫①穿在机器支撑轴上，固定缝纫机主体；
(3). 将平垫②、螺母③按图示依次固定，注意螺母③的锁紧力量，如果拧的太紧，防震效果不理想

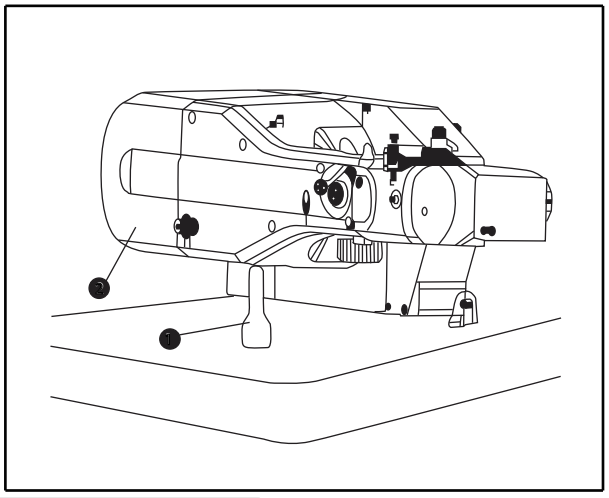
4. 废油壶及机头支垫的安装



⑴. 用四个木螺丝③把废油壶上节②固定到台板①孔内，将废油壶④从台板①下方旋进废油壶上节②中，并将机头回油管⑤装在废油壶中。
⑵. 将机头支垫⑥按图示装在台板①相应孔内。

机头放倒后，回油管⑤不能从废油壶中脱落。

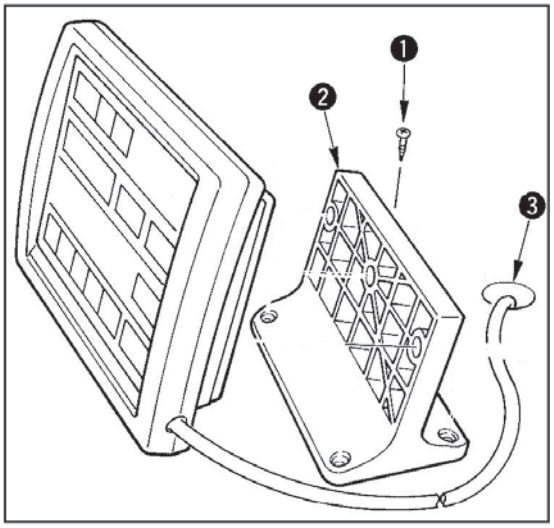
5. 机头的放倒



将机头①轻轻放倒，靠在机头支撑杆上②上。

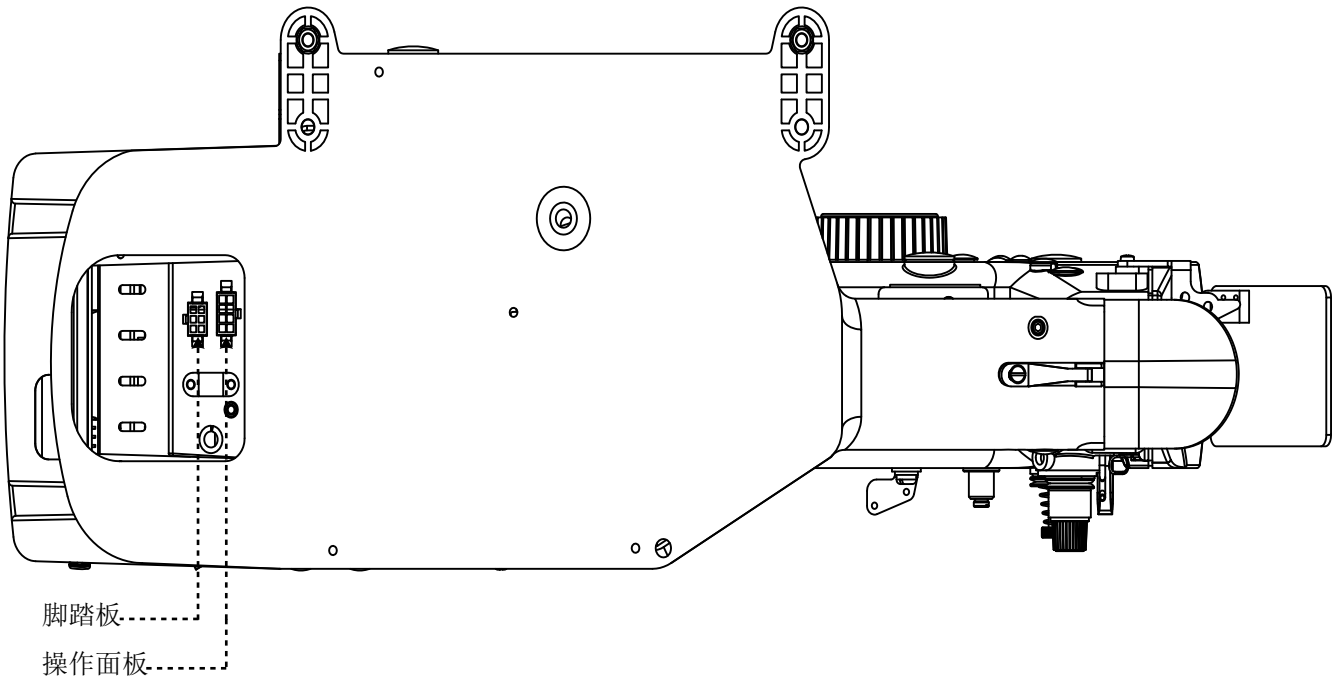
1. 放倒机头前，请先确认台板上是否有机头支撑杆；
2. 抬起机头时，请不要扳机头后罩，以免后罩受损；
3. 为防止机头侧翻，请确保台板水平。

6. 操作面板的安装



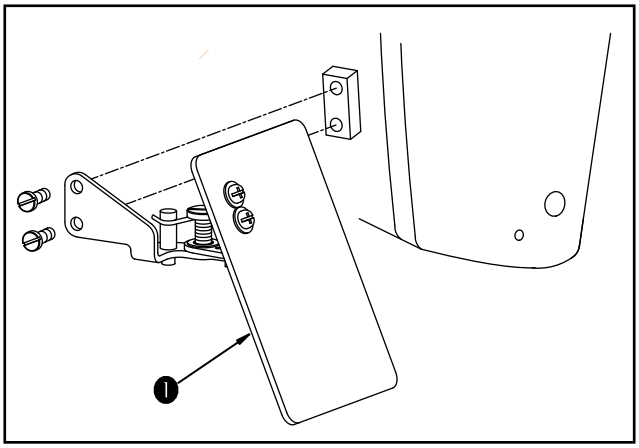
请用四个木螺丝①将操作面板②固定在台板③上操作者舒适的位置，然后将操作面板②导线穿过台板③相应孔，然后与另外端对接。

7. 电线的连接



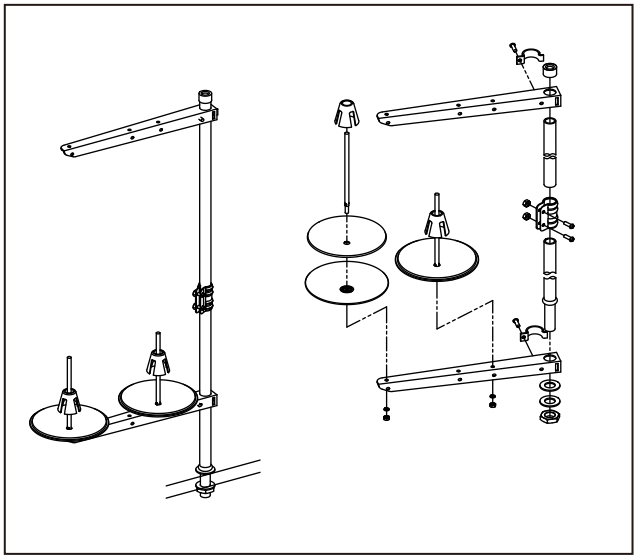
8. 眼睛防护罩的安装

⚠注意	**为防止断针飞起弄伤眼睛，请一定安装起来。**



将附件箱中眼睛防护罩装在机头
如图所示左侧。

9. 线架的安装

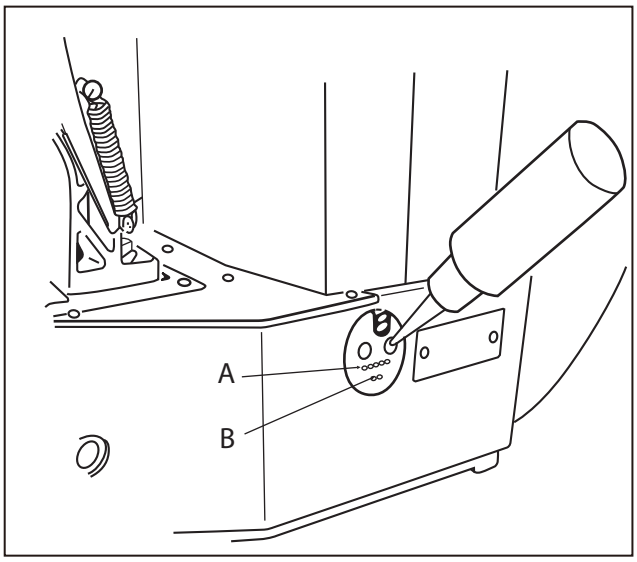


将附件箱中的线架如图装在台板孔上。

[4] 整机的准备

1. 加油

⚠注意	**为了防止突然启动造成人身事故，请关掉电源后再进行。**



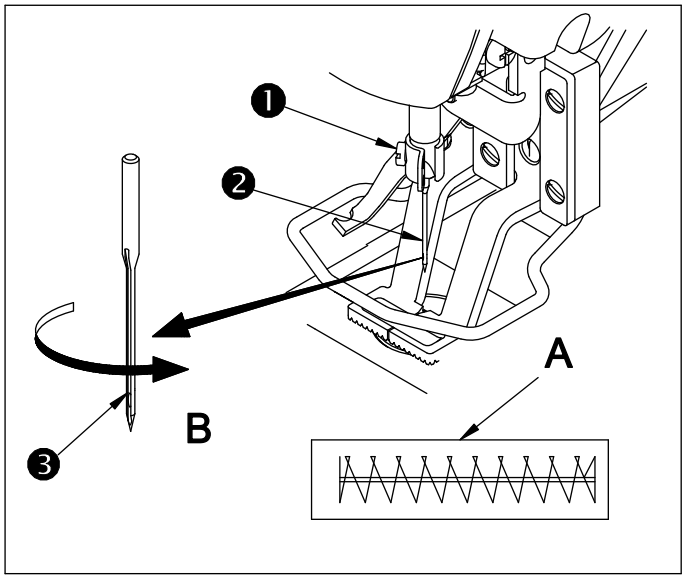
请确认机油在下线 B 和上线 A 之间。如果机油过少时，请用附属的加油器进行加油。*加油的油槽仅是向旋梭加油的。使用转速低时，如果旋梭的油量过多，可以把油量调小。（请参照[6]维修　8.旋梭油量的调整。）

1. 请注意不要向油槽和下列注意 2 的旋梭以外的部位加油。否则会发生零件故障。

2. 初次使用缝纫机或较长时间没有使用缝纫机时，请向旋梭加少量的机油后在使用缝纫机。（请参照[6]维修 2. 机针和旋梭。）

2. 机针的安装

注意 为了防止突然启动造成人身事故，请关掉电源后再进行。

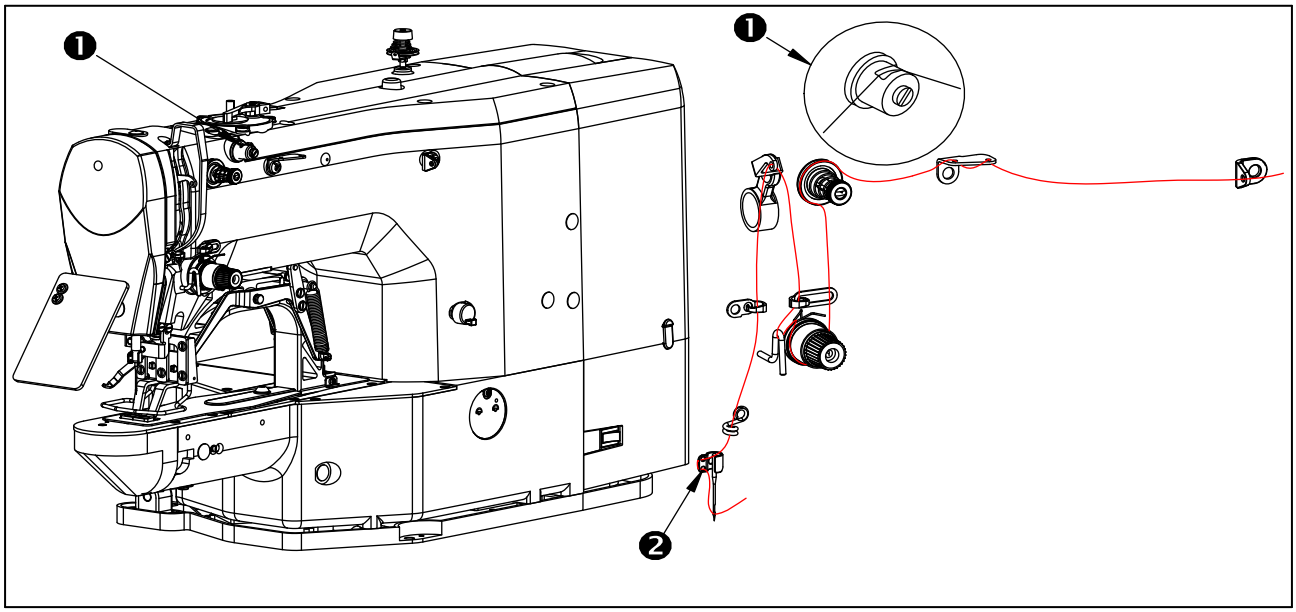


安装机针时，请拧松固定螺钉①，把机针②的容线槽③朝向面前，插进针杆的深处，然后拧紧固定螺钉①。

缝迹如 A 时，请把机针向 B 方向稍稍移动然后安装起来。

3. 上线穿线

注意 为了防止突然启动造成人身事故，请关掉电源后再进行。

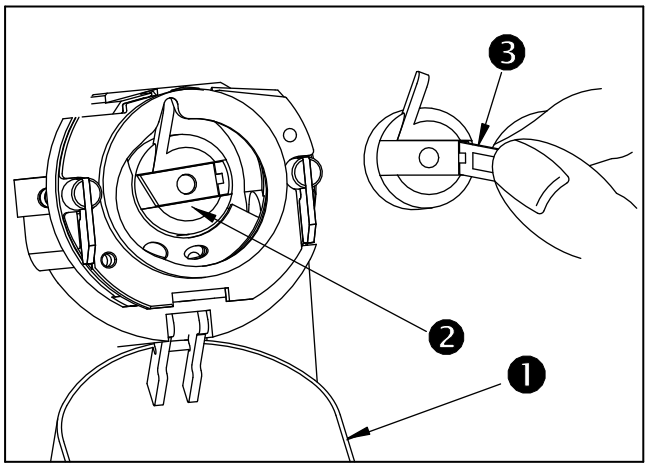


穿过机针的线应留出 4cm 左右。

1. 使用硅油时，请把线穿过润滑导线器①。
2. 粗线时，请把机线只穿过针杠导线器②1 个孔。

4. 梭壳的取下插入

⚠注意	为了防止突然启动造成人身事故，请关掉电源后再进行。

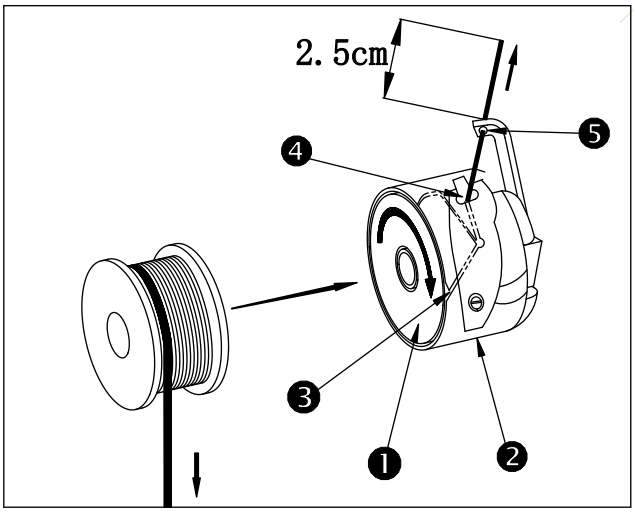


⑴. 打开梭床外罩①。
⑵. 拨起梭壳②的抓脚③，取出梭壳。
⑶. 插入时，请把梭壳深深插入摆梭轴，并关闭抓脚。

如果没有插到底，缝制途中梭壳②就有可能脱落。

5. 梭芯的插入方法

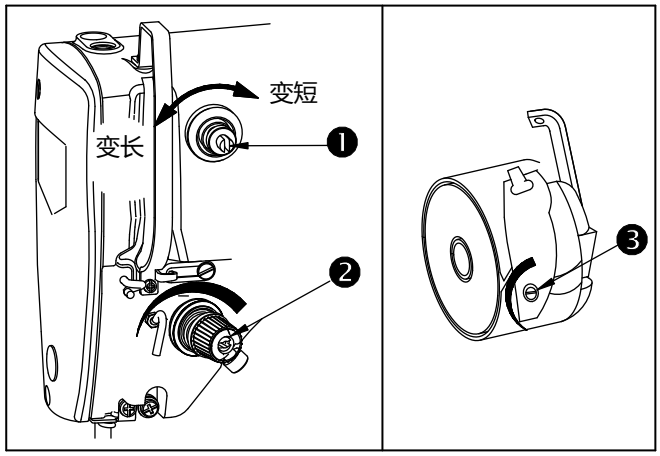
⚠注意	为了防止突然启动造成人身事故，请关掉电源后再进行。



⑴. 把梭芯①按图示的方向插入梭壳②。
⑵. 把线穿过梭壳②的穿线口③，然后拉线，把线从线张力弹簧下面的穿线口④拉出来。
⑶. 把线从梭壳②的线孔⑤穿出，从线孔约拉出2.5cm。

底线的旋转方向请按照左图所示；如果相反的话底线的拉出就不稳定。

6. 线张力的调整

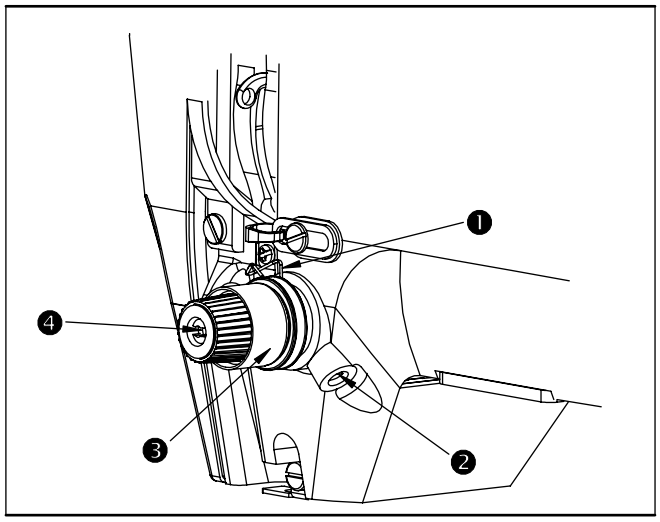


把第一线张力就旋钮①向右转动，切线后针尖上的残线长度变短，向左转动后变长。

请尽量在不脱线的情况下弄短残线。

用②调整面线张力，用③调整底线张力。

7. 挑线弹簧的调节



挑线弹簧①的标准移动量为 8～10㎜开始挑线时的强度为 0.1～0.3N。

⑴.移动量的调节

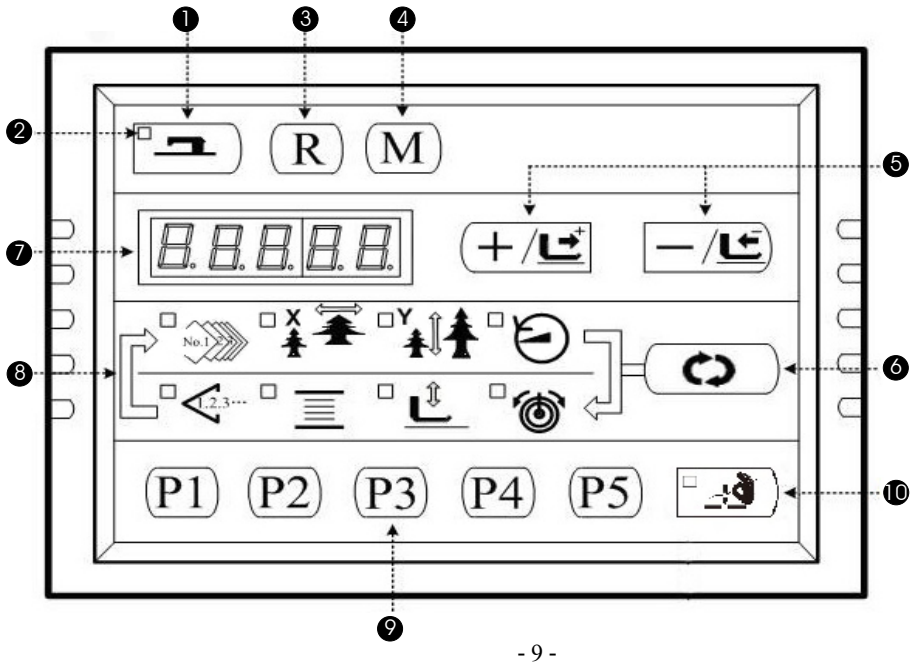
拧松固定螺钉②，转动夹线器挡圈③。

⑵.强度的调节

改变挑线弹簧的强度时，请在螺丝②拧紧的状态下，把细螺丝刀插到夹线器螺钉④的缺口部转动调节。向右转动之后，挑线弹簧的强度变强，向左转动之后，强度变弱。

［5］整机操作

1. 操作面板按键名称及说明



⑴.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。

⑵.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。

⑶.复位键
解除异常、将设定值返回到初期值时使用。

⑷.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。

⑸.＋/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。

⑹.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。

⑺.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。

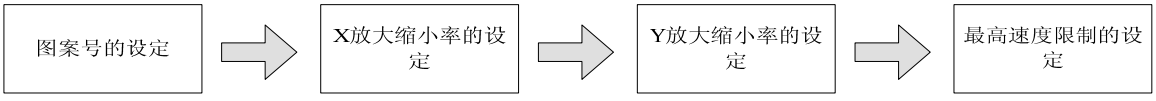
⑻.项目选择 LED
被选择的项目的 LED 亮灯。

⑼ P花样设置键
设置P花样并将其存储，存储后的P花样通过按此键就可立即进行缝制。

⑽.穿线按键
用户穿线操作,在缝制 LED 灯亮灯状态下，按穿线键可以打开支线功能，
进行穿线动作，20秒后支线自动关闭。

2.项目数据的设定

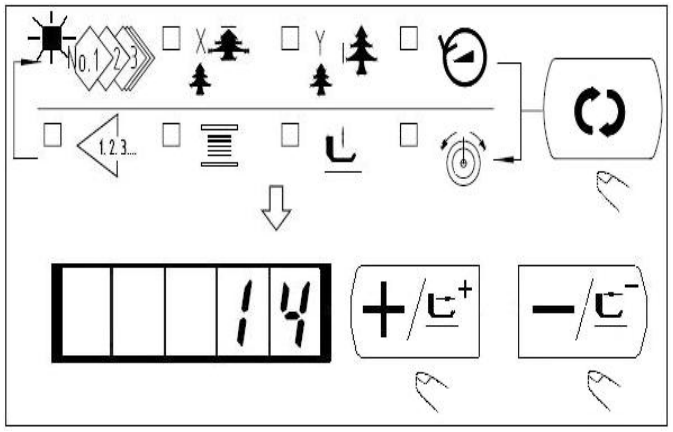
请按如下的顺序设定各项目。



⑴.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。

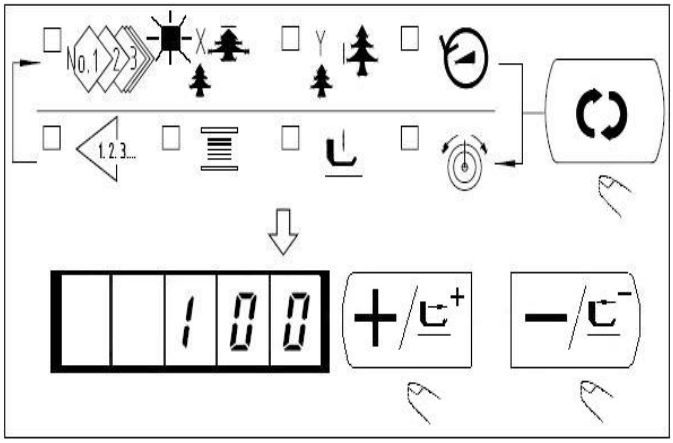
⑵. 花样号码的设定



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）

图案号码请参照标准花样一览表。

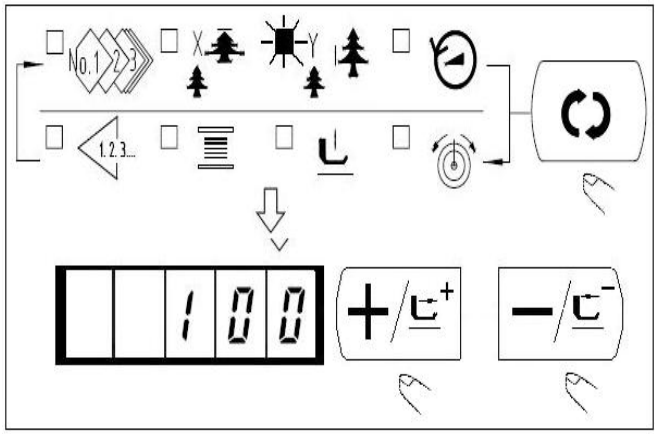
⑶. X 放大缩小率的设定



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％）

设定超过 100%的话，机针将撞到压脚，危险！

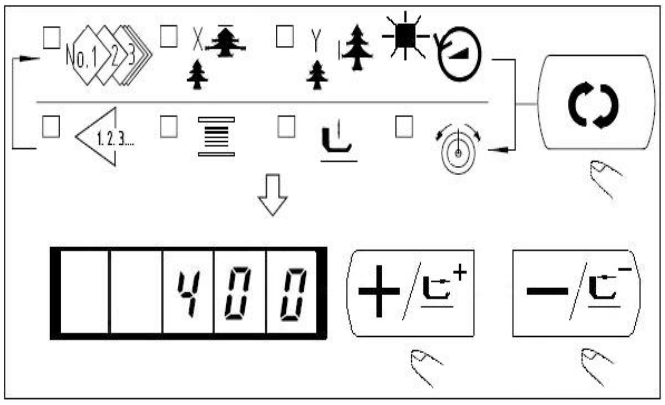
⑷. Y 放大缩小率的设定



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％）

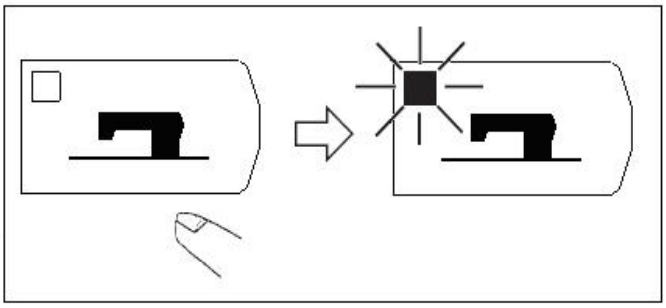
设定超过 100%的话，机针将撞到压脚，危险！

⑸. 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）

⑹. 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。

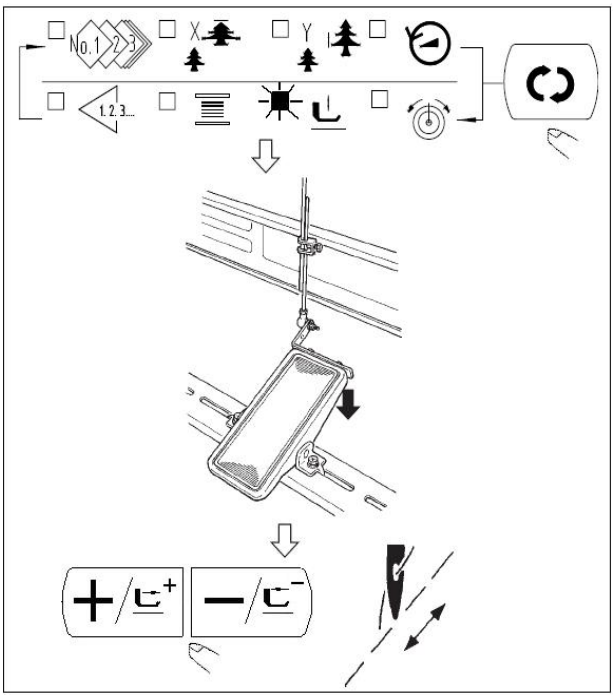
压脚上升时，压脚要先下降再移动，注意不要夹到手指！

- 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，各项目的设定值可以变更。
- 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。

3. 花样形状的确定

选择花样后，请一定要确认图案形状，如果图案远离压脚，缝纫中机针会碰到压脚，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

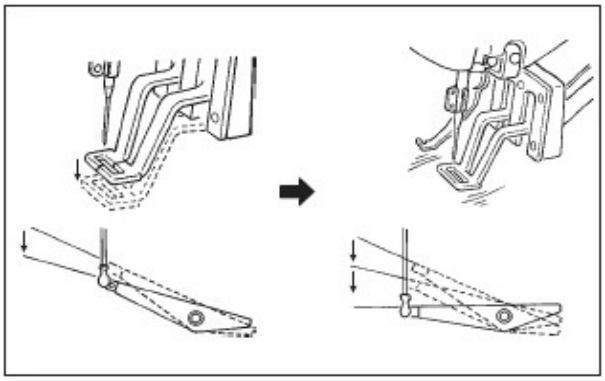
(4). 用 键、 键确认形状；确认缝制的花样在压脚允许的范围内。

(5). 按 R 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。

打开(ON)电源后，压脚不下降。

4.缝制

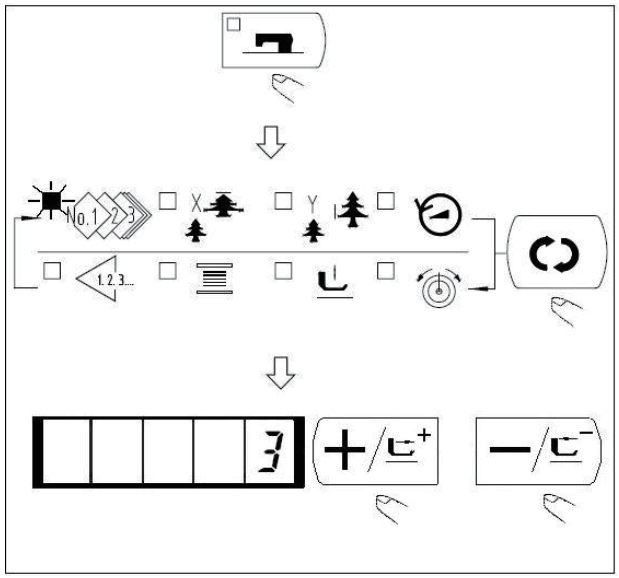


(1). 把缝制品放到压脚部。
(2). 把踏板开关踩到第一级，压脚下降，脚离开踏板后，压脚上升。
(3). 把压脚下降一级，踩到第二级之后开始缝制。
(4). 缝制结束后，压脚上升返回到起始缝的位置。

1. 将踩踏板开关至第一级，压脚下降，按 键、 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。

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。

5.花样变更



(1).按 键，缝制 LED 灭灯。

(2).按 键，选择花样号的项目。

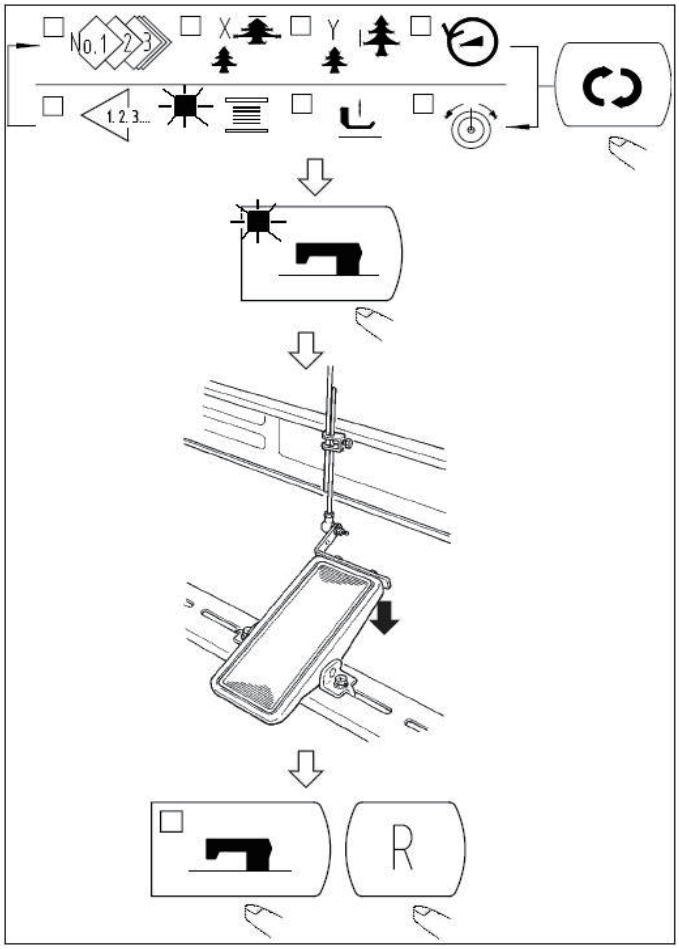
(3).用 键、 键设定花样号。

(4).同样地设定 XY 放大缩小率、转速等。

(5).按 键之后，缝制 LED 亮灯，成为可以缝制的状态。

选择花样后，请一定要确认图案形状，如果图案远离压脚，缝纫中机针会碰到压脚，弄断机针。

6.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。

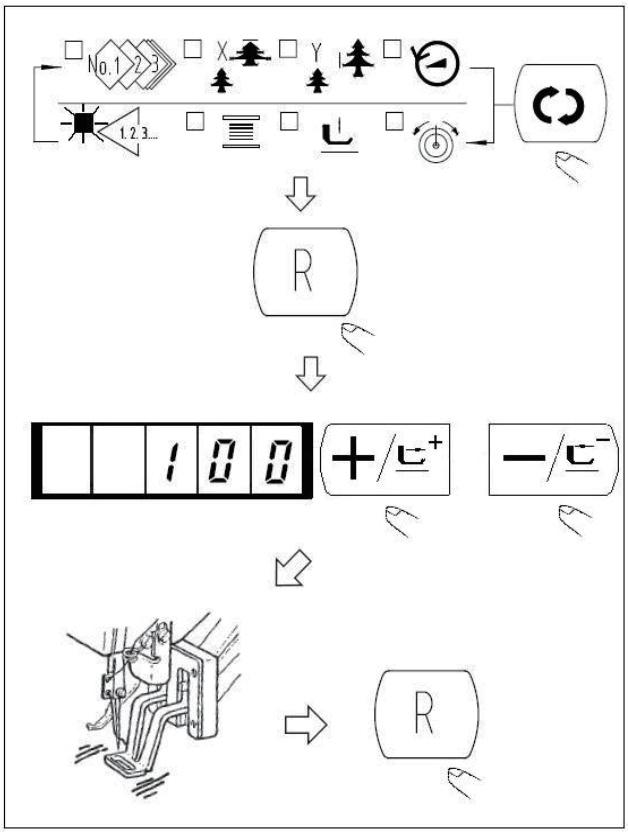
(4).踩踏板开关后，缝纫机开始转动。

(5).踩踏板开关之后，按 R 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。

7. 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，须把 No.18 号参数的值设置为 1。



(1).按 ⟲ 键，设定为计数器显示 1.2.3....。

(2). 然后按 R 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 R 键，计数器值返回到设定值。

(7). 反复 (4)～(6)的步骤。

8. 暂停

把 No.31 号参数设定为 1 之后，R 键作为暂停功能来使用。

把 No.31 号参数设定为 2 之后，踏板的倒档可以作为暂停功能来使用。

(1). 按 R 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：

A. 向前下踩脚踏板，重新开始缝制。

B. 按 R 键，进行切线之后，用 +/⊑+ 键、—/⊑- 键调整位置，再次向前下踩脚踏开始缝制。

C. 按 R 键，进行了切线之后，再次按 R 键返回到原。

9．设置 P 花样和 C 花样

9 -1. 使用花样键（P1 P2 P3 P4 P5）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。

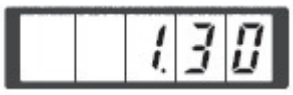
• 当选择了 P6~P25 时，用下表所示的P1 P2 P3 P4 P5键的组合（同时按）进行缝制。

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		

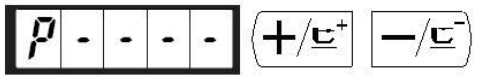
⑴.花样键上的登记

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M键（缝制 LED 应该灭灯）。进入方式设定（存储器开关设定）。

⇨ 

2. 用+/E+键、-/E-键显示出花样存储模式。

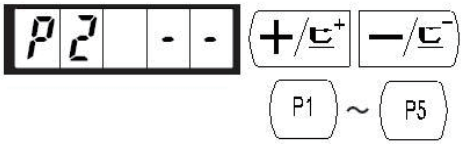
⇨ 

3. 按 键。进入花样存储方式。

⇨ 

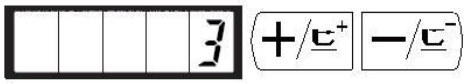
4. 按P2键。（选择存储的 P-No.）

用+/E+键、-/E-键也可以选择。

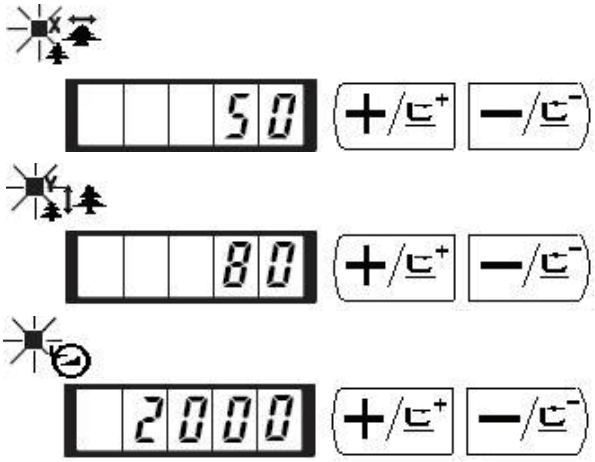
⇨ 

5. 用 键，显示花样号NO.1 2 3 。

用+/E+键、-/E-键设定花样号码。

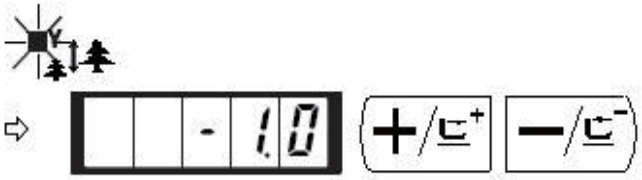
⇨ 

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。



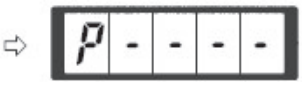
7. 按 键后，变为 X 放大缩小率 显示为 0.0。X 方向的移动量可以以 0.1mm 为单位进行设定。用 键、 键设定 0.5。

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 M 键 ，结束花样存储方式。

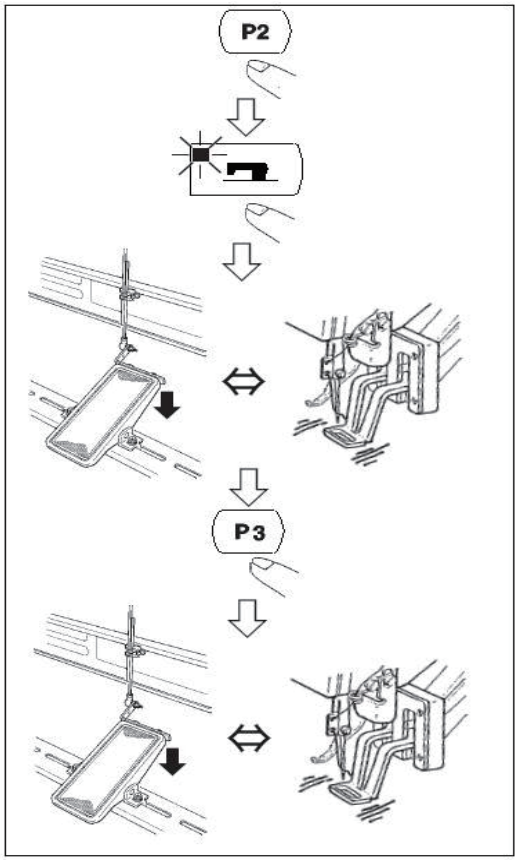


11. 按 M 键，结束方式设定，返回通常方式。

(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。

缝制 LED 亮灯时，按 P1-P25 键之后，压脚下降，请注意不要夹到手指。P26-P50 可以进行图案登记，P1-P5 不能进行登记，只能用选择图案方式指定。用 “+” “-” 键显示。缝制 LED 灯亮时，不能选择 P26-P50。



1．打开电源。

2．按P2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P3键，压脚下降，检索原点后，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。

9 -2. 使用组合功能进行缝制

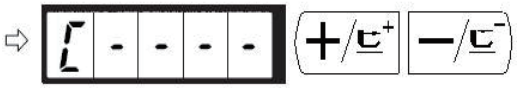
按顺序排列已经存储的花样存储（P1~P99），存储到 C1~C50，每次缝制之后按顺序变换缝制花样。1 个组合号码最多可以存储 30 个花样。

(1). 组合花样的存储

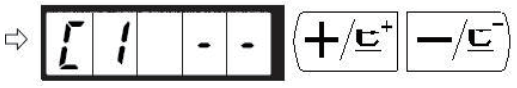
例：按 P1、P2、P3 的顺序组合进行存储。

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

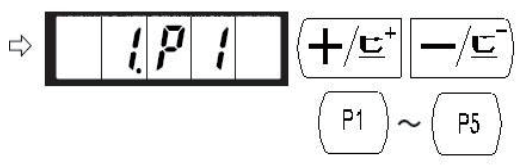
2. 用+/⊔+键、−/⊔-键显示组合模式。



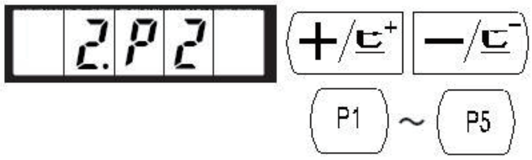
3. 按 键，缝制 LED 亮灯，进入组合花样设定方式。用+/⊔+键、−/⊔-键可以选择 C1~C20。



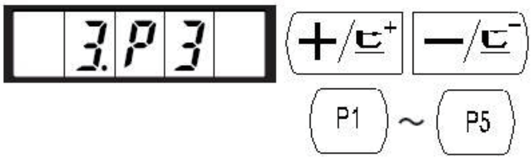
4. 按 键，然后按P1键。P1 被设定到 C1 的第 1 个花样。用+/⊔+键、−/⊔-键选择 P1~P50。



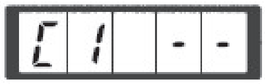
5. 按 键，然后按 P2 键。P2 被设定到 C1 的第 2 个花样。用 键、 键选择 P1~P50。



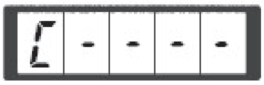
6. 按 键，然后按 P3 键。P3 被设定到 C1 的第 3 个花样。用 键、 键选择 P1~P50。



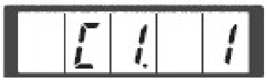
7. 按 键结束存储。



8. 按 M 键结束组合花样存储模式。

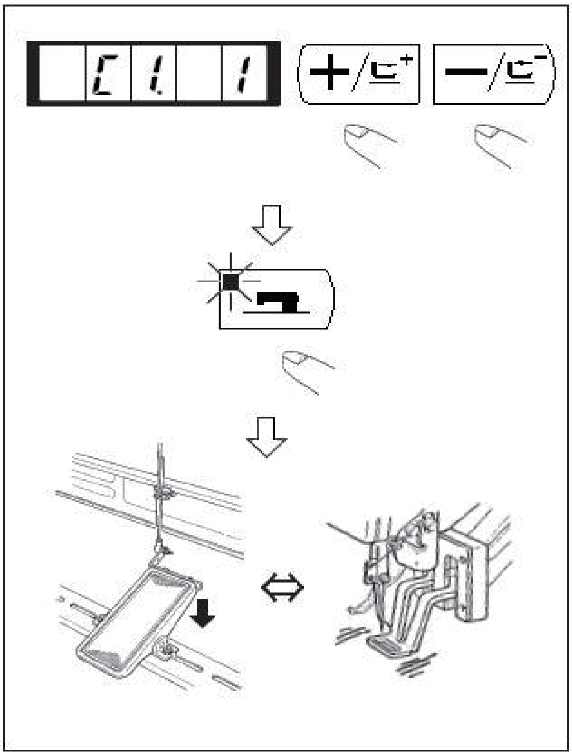


9. 按 M 键结束方式设定，返回通常方式。



⑵. 缝制操作

操作例：以存储的 C1 内容进行缝制。



⑴. 打开电源。

⑵. 用 键、 键把花样号设定为 C1.1。

⑶. 按 键，缝制 LED 亮灯，然后压脚移动上升。

⑷. 如果花样形状良好，则可以缝制。

⑸. 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。

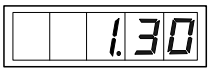
✧ 缝制后，如果想返回前面的图案或跳到下一图案时，可以在缝制 LED 亮灯的状态按 键、 键，图案显示变化，压脚移动到缝制起始点。

✧ ・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。

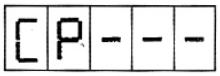
✧ 每种花样都应该确认花样形状。

10.调试模式

通过启动该模式，可进行保养检查操作。

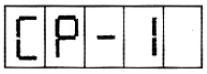
⑴. 在缝制灯熄灭的状态下，按[M]键，显示  ，然后同时按下[P1] [P3] [P5]键，听到蜂鸣器响声后，在记忆开关的客户等级设定模式下可以进入调试模式。

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

⑵. 按一次[—/⊏]键进入调试模式，屏幕显示“CP---”如右图所示：  ；

⑶. 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，具体流程如图1所示：

⑷. 再次按下[ ]键，结束显示输出测试，屏幕显示“CP-1”，如右图所示：

 。

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。

⑸. 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：

⑹. 按住[—/⊏]键，进入功能测试。

⑺. 各功能测试如果按[M]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。

⑻. 按[ ]键，进入CP参数后，选择任意CP功能测试，按[ ]键，压脚下压，再按[ ]键，压脚抬起。

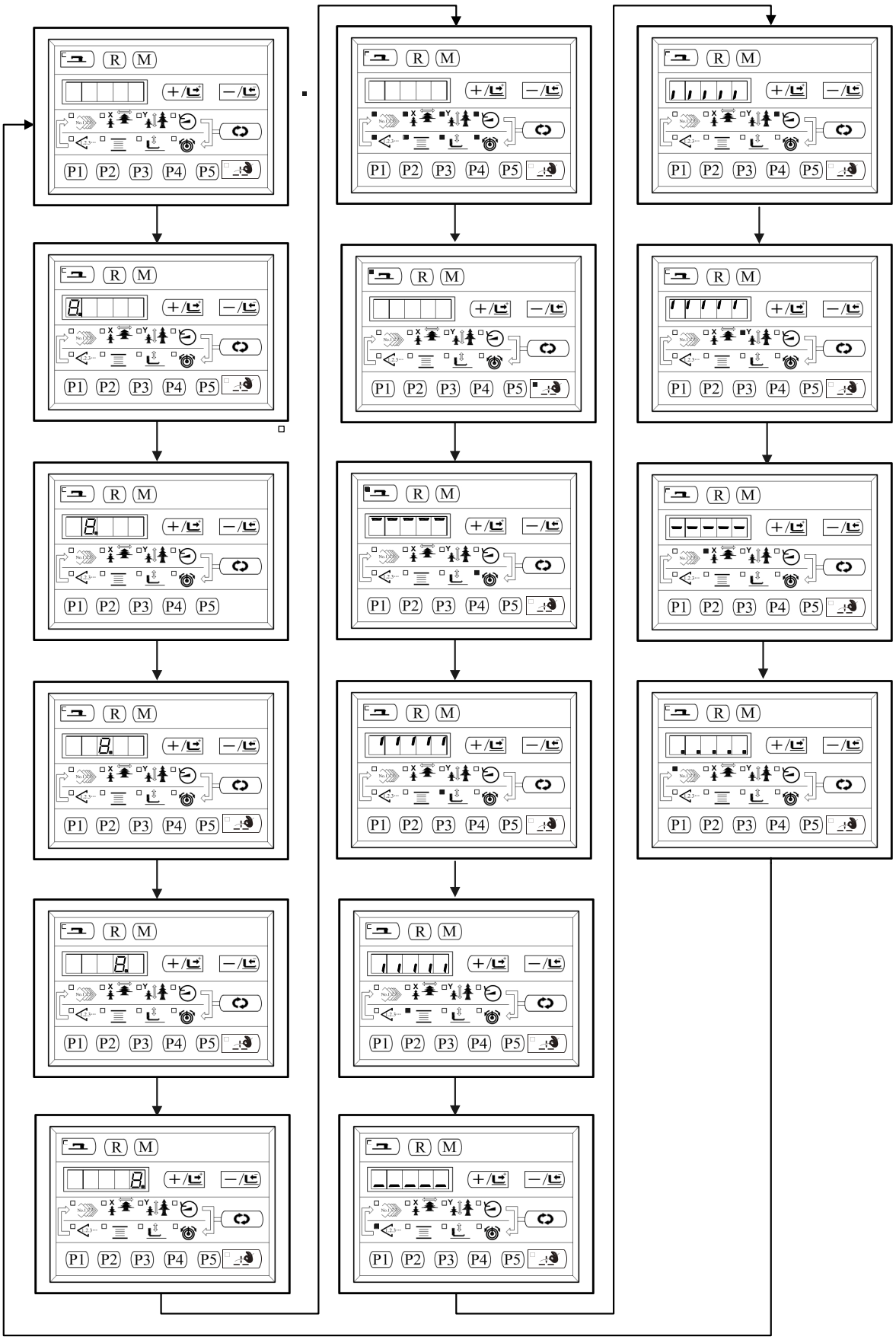
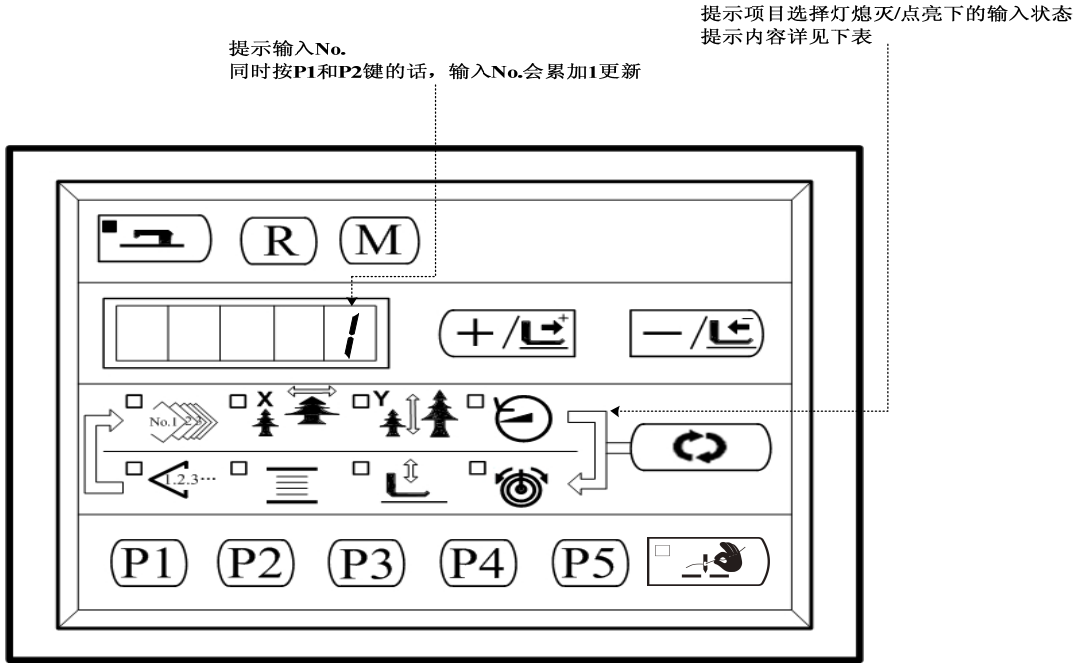


图1

功能测试序号	功能	内容
CP-1	输入信号检验	以灯亮提示开关，传感器输入的状态以及X、Y原点找正。
CP-2	XY 马达/原点传感器检验	显示 X/Y 寸动操作　　，原点检索操作以及 X/Y 原点传感器的状态
CP-3	连续运转	在设定连续运转条件后，移向连续运转模式。
CP-4	主马达旋转数检验	设定旋转数、机器启动、显示实测旋转数。
CP-6	压脚马达/原点传感器检验	显示压脚马达寸动操作，原点检索操作，以及压脚原点/压脚传感器的状态。
CP-9	软件版本号检验	显示软件版本。

10-1.　CP-1 输入信号检验

⑴能够检验操作控制键盘 、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。



每个输入 No.的显示内容

输入 No.	花样 N0.灯	X 扩大灯	Y 扩大灯	速度灯	计数灯	卷线灯	压脚下降灯	穿线灯
1	/	/	键	键	键	键	R 键	键
2	/	/		P5 键	P4 键	P3 键	P2 键	P1 键
3	/	/	/	/	/	/	/	/
4	踏板 0 档	踏板 1 档	踏板 2 档	踏板-1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	/	/	/	/	/
6	主轴角度显示							
7	/	/	/	/	/	/	/	/

(2) X、Y马达原点快速检索， 按 键，进入 CP-1，屏幕显示“1” ,再同时按 P1 、P2 4次，屏幕显示“5”，按 P1 键，压脚下压,进入X原点快速检索，按 P2 键，进入Y原点快速检索，按 M· 键，压脚抬起。

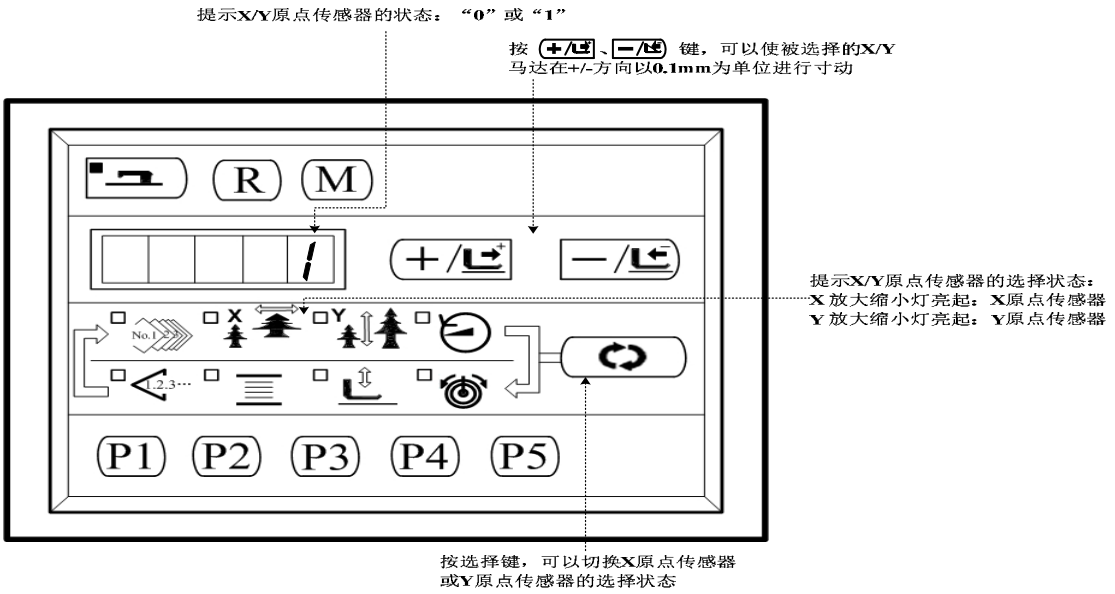
10-2. CP-2 检验 X、Y 马达/原点传感器

显示 Y 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。

⑴.准备

首先按 键,进入CP-2,屏幕显示“0”或“1”，同时 X 缩放率灯点亮。再按 键进行压脚马达的原点检索，压脚下降，缝制灯亮起。（也可不按 键直接进行步骤2的操作）

⑵.操作



⑶.X/Y 原点微调功能

1).新原点设定：首先按 ( ) 键，进入CP-2，屏幕显示“0”或“1”，再按 键，XY电机进行原点检索，压脚下降，缝制灯亮起。在缝制灯亮起的情况下，按 、 键可以使被选择的X\Y马达在+\-方向以0.1MM为单位寸动，新原点完成设定后按 (M) 退出，完成新原点的设置。如果需要对新设置的XY原点进行修改，则重复上述动作，可以在改动后的原点基础上继续进行修改。

2).原点恢复功能：首先按 ( ) 键，进入CP-2，屏幕显示“0”或“1”，再按 键进行原点检索，压脚下降，缝制灯亮起。踩脚踏板到第二档，恢复到系统原点，按M键退出。

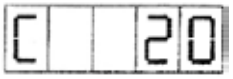
10-3.CP-3 连续运转（自动跑合）

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。

⑴.间隔时间的设定

按 、 键，设定两次运转的间隔时间。

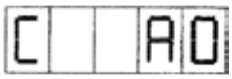
从 1800ms 至 9900ms 可以 100ms 为单位进行设定。(默认值 2000ms)设定后，按 键，保存设定值。



⑵.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）



⑶.连续操作

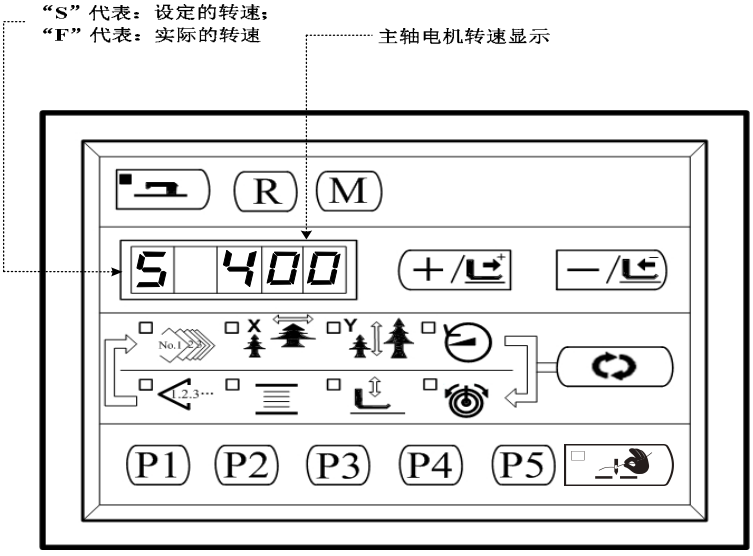
在普通缝制模式下，用户可以设定花样号码、X、Y 缩放率、最高转速等条件然后开始缝制。缝制结束之后，如果在第 2 步操作中设定有原点检索的话，则开始进行 X/Y 压脚的各个马达的原点检索；如果在第 1 步操作中设定的休止时间后，就会自动再次开始进行缝制;如果要中止连续缝制，请在缝纫停止时，按 键停止。

10-4.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。

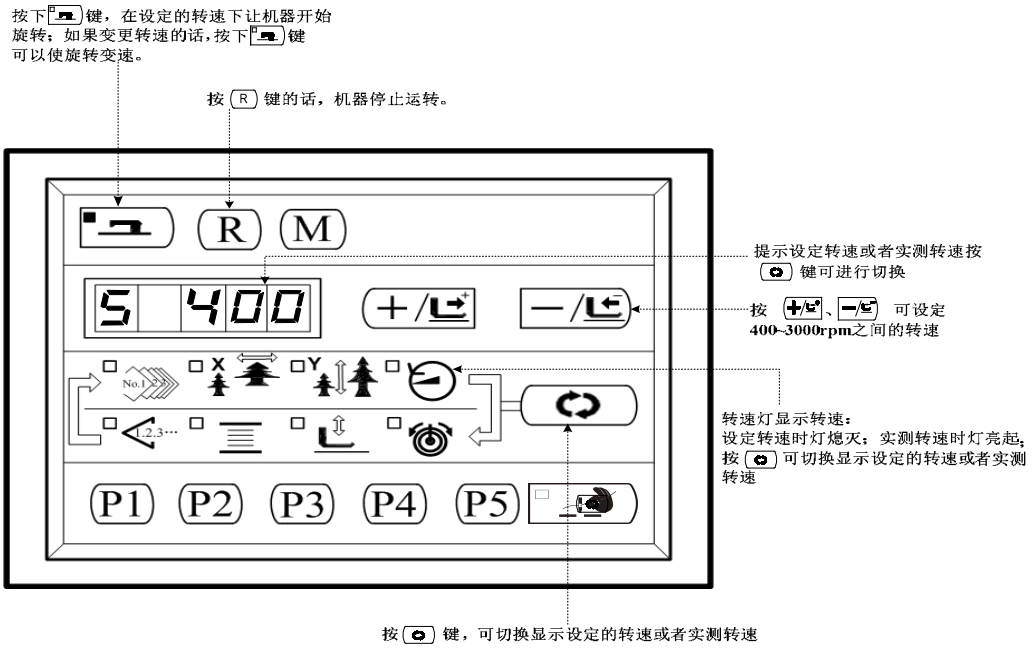
⑴.准备

首先按 键，进入 CP-4 自动进行压脚的原点检索缝制灯亮，屏幕显示“S400”。



⑵.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 R 键。如需退出该模式，请按 M 键。



10-6. CP-6 检验压脚原点传感器

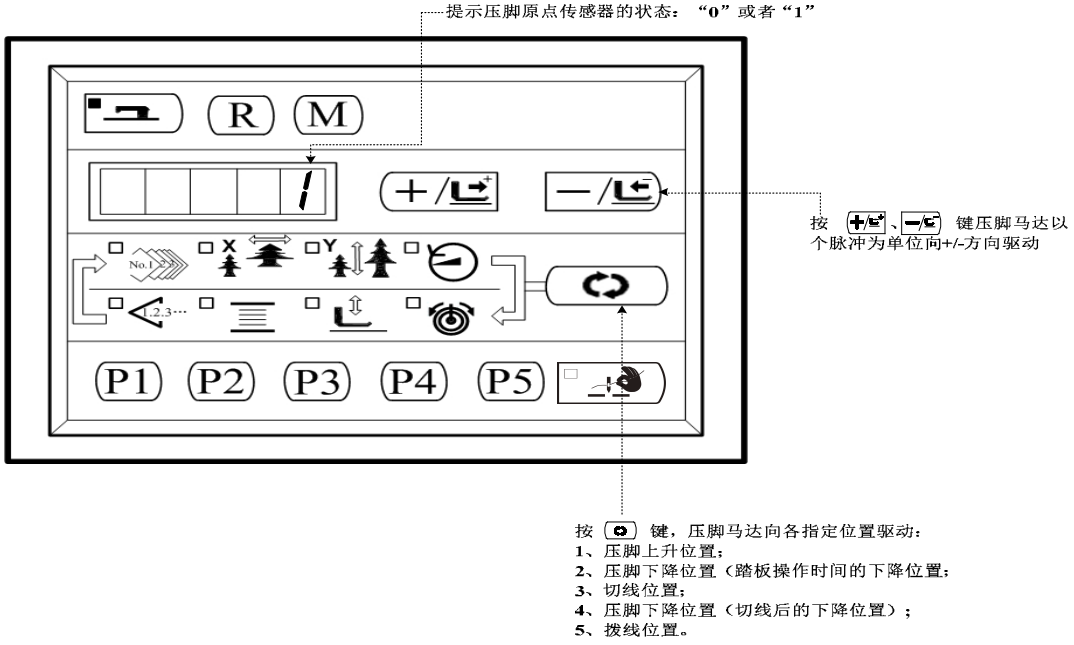
显示压脚马达的寸动操作，原点检索操作以及压脚原点传感器的状态。

(1). 准备

首先按 键，进入 CP-6 缝制灯亮，踩踏板到 2 档进行原点检索。（注：上电未进入准备状态直接进入 CP-6 模式后，可以不踩踏板进行原点检索直接按+/-键单步移动电机，以检测电机驱动是否正常；而一旦进入过准备状态或进行过原点检索后，则每次进入 CP-6 模式后必须先踩踏板到 2 档进行原点检索，才能按+/-键单步移动电机）

(2). 操作

按 键，在 1 ~ 2 次后，屏幕显示由“10”变为“11”，则压脚传感器正常，如果与上述现象不符，请调整压脚传感器的位置。



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 M 键退出。

11. 参数设置

11-1. 参数设置的具体操作

(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(+/E+)键、(−/E−)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(+/E+)键、(−/E−)键变更参数对应值。

(5).按(R)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(M)键，结束参数设定方式，返回通常状态。

11-2. 参数设置示例

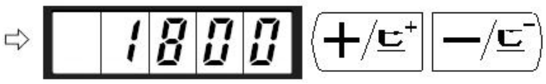
(1). 缝制速度上限的设定

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(M)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 M 键，返回通常状态

⑵.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，无抓线软启动前五针设置参数号为10.4、11.9、12.27、13.30、14.32，如下图：

无抓线时软启动前五针设置表

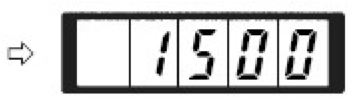
	参数号	出厂设置（rpm）	设定范围
第 1 针	10.5	500	400～1500
第 2 针	11.10	1000	400～3200
第 3 针	12.27	2700	400～3200
第 4 针	13.30	3000	400～3200
第 5 针	14.32	3200	400～3200

・最高转速（参数号 No.1）被隐藏，需高级参数打开。

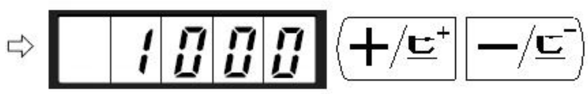
设定例：有抓线时，变更为第 1 针 1500→1000rpm、第 2 针 3000→2000rpm。

1. 缝制 LED 灭灯的状态下，按 M 键。

2. 按 键，缝制 LED 亮灯，第 1 针的设定值被显示出来。

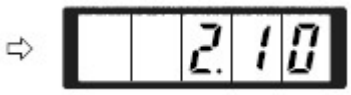


3. 用 +/ 键、 −/ 键显示出“1000”。



按 R 键则返回出厂设置。按 M 键后，当前的操作全被取消，返回 2）的状态。

4. 按 键，缝制 LED 亮灯，第 1 针的设定值被存储。



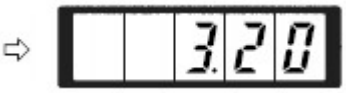
5. 用 键、 键显示出参数号 No.3，这里设定第 2 针的缝纫机速度。

6. 按 键，缝制 LED 亮灯，第 2 针的设定值被显示出来。

7. 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。

8. 按 键，缝制 LED 灭灯，第 2 针的设定值被存储。



9. 按 键，结束参数设定方式，返回通常状态。

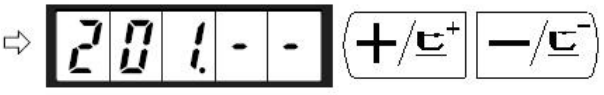
A. 是否可以读出花样号的设定

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。

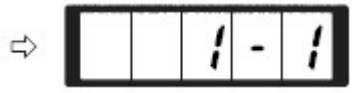
设定例：把 2 号花样和 3 号花样设定为不能读出。

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。

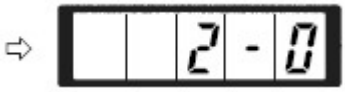


3. 按 键，缝制 LED 亮灯，图案 No.1 的设定值被显示出来。设定值 1：可以读出，0：不能读出。



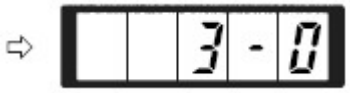
4. 用 +/E+ 键、 —/E- 键设定为花样 No.2。

5. 按 ↻ 键，把设定值设定为 0。



6. 用 +/E+ 键、 —/E- 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 M 键，结束参数设定方式，返回通常状态

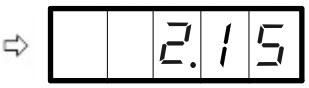
B. 计数器动作的设定

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。

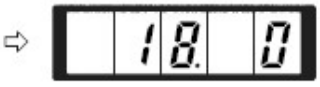
设定例：把生产计数器（加算方式）变更为底线计数器（减算方式）。

1. 在缝制 LED 灭灯的状态下，按 M 键。

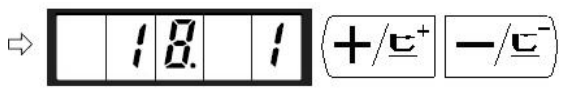


2. 用 +/E+ 键、 —/E- 键显示出参数号 No.18。

3. 按 □ 键，缝制 LED 亮灯，计数器动作的设定值被显示出来。



4. 按 +/E+ 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 M 键，结束参数设定方式，返回通常状态。

11-3．参数设置表

参数号	功能	调整范围	初值	备注
1.32	缝制的最高速度。 （可以以 100rpm 为单位设定）	400～3500	3200	
8.--	切线时的线张力	0～200	0	
9.--	切线时的线张力变换同步时间	－20～7	3	
10.5	第 1 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～1500	500	
11.10	第 2 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	1000	
12.30	第 3 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	2700	
13.30	第 4 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	3000	
14.30	第 5 针的缝制速度。（不抓线） （可以以 100rpm 为单位设定）	400～3200	3200	
15.--	缝制开始的线张力（不抓线）	0～200	10	
16.--	缝制开始的线张力（不抓线） 变换同步时间。	－16～30	0	
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	
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	
36.--	选择送布动作的同步时间 紧线不好时设定为－方向	－8～16	0	
37.1	缝制结束后压脚状态选择	0：先回起缝点再抬压脚； 1：回起缝点同时抬压脚； 2：回起缝点后手动抬压脚；	1	

参数号	功能	调整范围	初值	备注
39.0	缝制结束后是否检索原点	0：不检索原点 1：检索原点	0	
40.0	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	
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	
P----	进行图案登记			
C----	进行循环缝制登记			

12. 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。

12-1. 服务参数的开启和变更

在缝制灯熄灭的状态下，按 M 键，显示 2.15，然后同时按 P1 P3 P5 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【11-1 参数设置的具体操作】与【12-2 参数设置示例】。

12-2. 服务参数列表

参数号	功能	调整范围	初值	备注
21.--	标准踏板、踏脚开关位置	150～280	240	
22.--	标准踏板、高低段行程开关位置	300～380	330	
23.--	标准踏板、启动开关位置	400～480	430	
24.0	脚踏板类型	0：单踏板 1：双踏板	0	

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	3300	
29.--	步进剪线速度	100～4000pps	4000	
38.0	压脚不上升时,只通过启动开关可进行缝制	0：普通 1：踩踏板到1档抬压脚	0	
43.3	剪线速度	200～800rpm	300	
44.0	切线时在易于切线的方向选择有无送布的操作	0：无送布 1：有送布	0	
45.16	切线时进行送布的针孔导向直径（可设定以 0.2mm 为单位）	16～40（1.6mm～4.0mm）	16	
50.--	剪线角度	100～300	120	
56.--	+X 方向（右侧）的移动限定范围	-20～20mm	20	
57.--	-X 方向（左侧）的移动限定范围	-20～20mm	-20	
58.--	+Y 方向（后面）的移动限定范围	-20～20mm	15	
59.--	-Y 方向（前面）的移动限定范围	-20～10mm	-15	
62.0	花样升级	USB-0：普通模式 USB-1：用户花样升级模式 USB-2：参数升级模式 USB-3：导出参数模式 USB-4：默认花样升级模式	0	
63.4	厂家机头参数	0～4	4	
67.0	默认参数调用	1：参数恢复 2：花样数据恢复 3：全部数据恢复		需重新上电
68.--	主轴停针补偿	-100～100	33	
112.--	主轴停车补偿	－10～10	-7	
120.--	加润滑油报警针数	3000～12000	8000	单位:万针

参数号	功能	调节范围	初始值	备注
135.0	起缝前压脚动作顺序	0：表示XY找原点后压脚先自动空送到起缝点再降下压布 1：表示XY找原点后压脚停留在原点位置踩踏板到一档在原点降下压布踩踏板到二档压脚先自动移动到起缝点再开始缝制 2：压脚的动作在起缝时与1相同，只是当缝制结束时，压脚停留在结束点，踩踏板到1档时回到原点并抬压脚	0	
138.1	线张力控制方式	0：类电子夹线方式 1：支线方式	1	
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） 5：花样套结 7：钉扣	0	
CP---	系统检测模式			

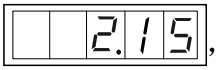
⚠注意	以上参数只供维修人员使用，用户不能轻易改动。

12-3. 恢复出厂默认设置

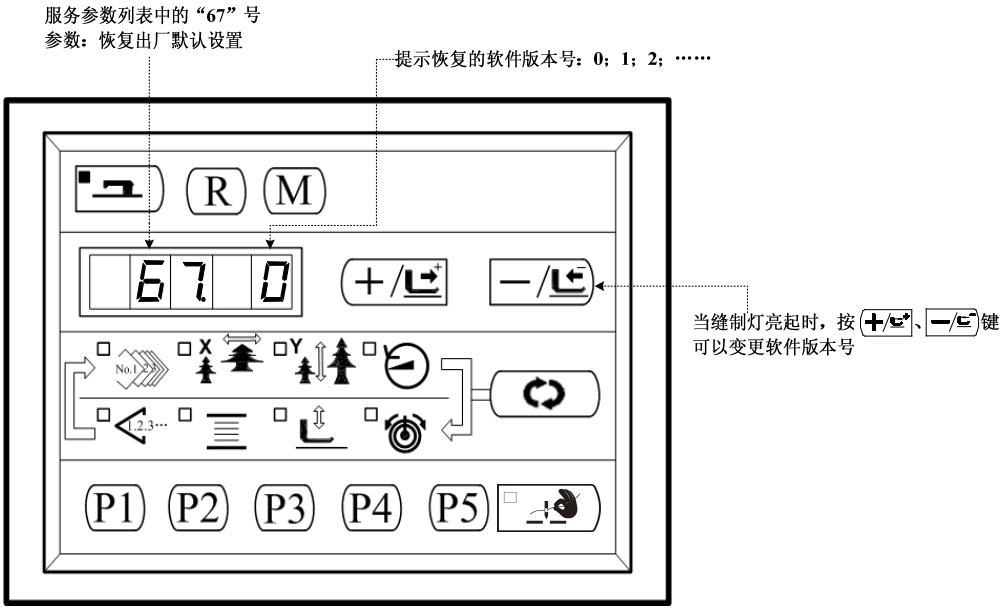
当用户无意中修改了某些出厂时设置好的参数或者电控系统出现故障时,可以尝试使用“恢复出厂默认设置”功能，进行系统恢复。

⚠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。

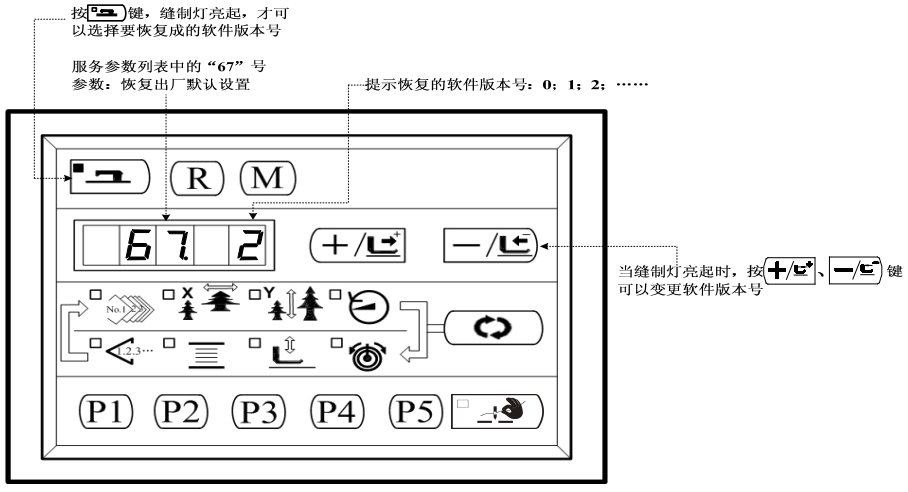
具体操作步骤如下：

(1). 在缝制灯熄灭的状态下，按 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 67 号参数：



(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). 再次按 键确认相应的恢复操作，缝制灯灭；系统蜂鸣器长鸣一声提示恢复成功；

(5). 按 M 键，退出服务参数设置模式，返回到普通缝制模式；

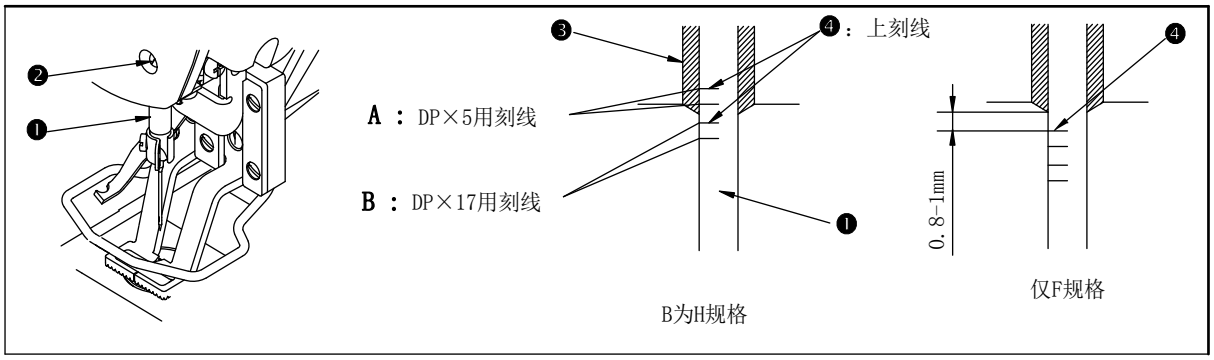
(6). 然后关断电源，约1分钟后打开电源，给系统上电；

(7). 恢复完成之后，相应的系统设置恢复到出厂时的状态，主控的各个参数、面板的P、C花样、花样号、XY缩放率、最高转速等都将恢复到默认值。

［6］维修

1. 针杠高度

注意 为了防止突然启动造成人身事故，请关掉电源后再进行。



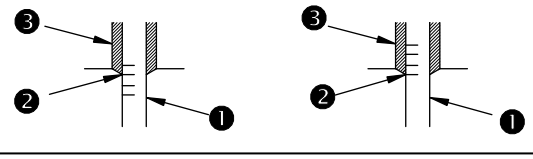
把针杆①设到最下点，拧松针杆紧固螺丝②，把针杆上刻线④和针杆下挡块③的下端调节成一致。

注意 请调节后一定确认不要有松动。有的缝制条件发生跳针时，请从针杆上刻线④往下调节 0.5mm-1mm。

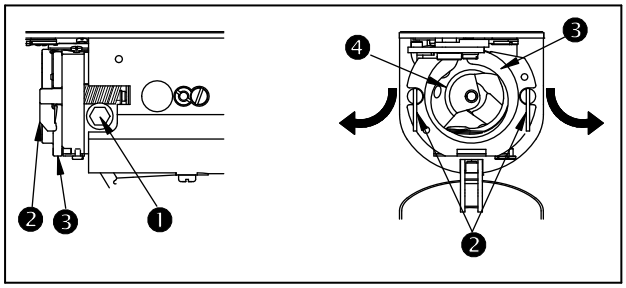
2. 机针与摆梭

注意 为了防止突然启动造成人身事故，请关掉电源后再进行。

机针和刻线的关系

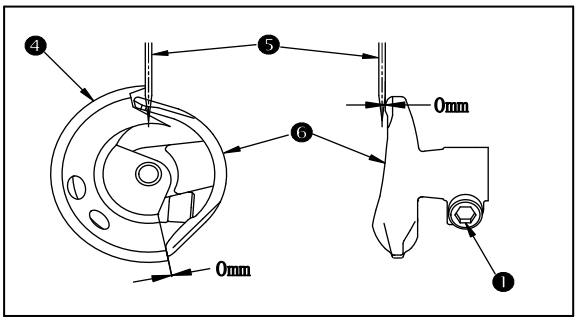


(1). 用手转动手轮，针杆①上升时，把下刻线②对准针杆下挡块前段一致。

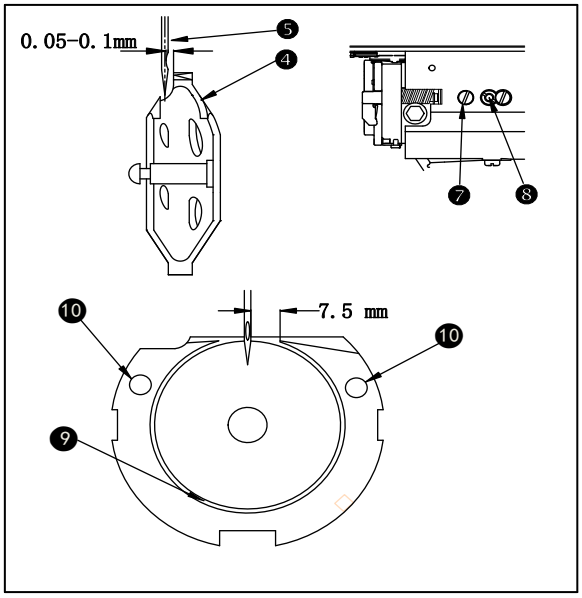


(2). 拧松驱动器固定螺丝①，左右打开梭床盖压片②，卸下梭床盖③。

此时请注意不要脱落摆梭④。



(3). 为了让摆梭④的梭尖与机针⑤的中心一致，同时防止驱动器⑥在前段面与机针相碰，弄弯机针，请把驱动器前端面与机针的间隙调整为 0mm，然后把驱动器固定螺丝①拧紧。



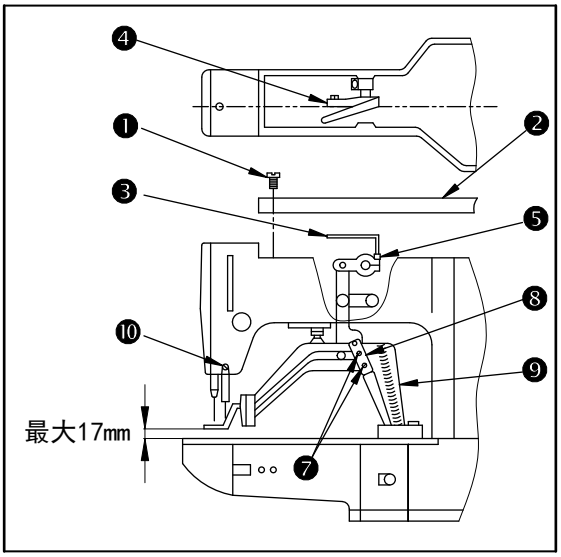
(4). 拧松梭床固定螺丝⑦，左右转动梭床调节轴⑧，调节梭床的前后位置，把机针⑤和摆梭④的梭尖的间隙调整为 0.05~0.1mm。

(5). 调节完梭床的前位置后，机针和梭床的间隙应为 7.5mm，然后拧紧梭床固定螺丝⑦。

较长时间没有使用缝纫机或清扫过旋梭周围之后时，请往导轨部⑨和油芯⑩加少量的机油后再使用。

3. 压脚的高度

注意 **为了防止突然启动造成人身事故，请关掉电源后再进行。**



(1). 在停止状态，卸下 6 只机壳上盖固定螺丝①，然后卸下机壳上盖②。

(2). 把 L 形扳手插入中央的紧固筒的六角孔螺栓⑤，把它拧松。

(3). 把 L 形扳手③向下压布压脚升高，向上抬布压脚降低。

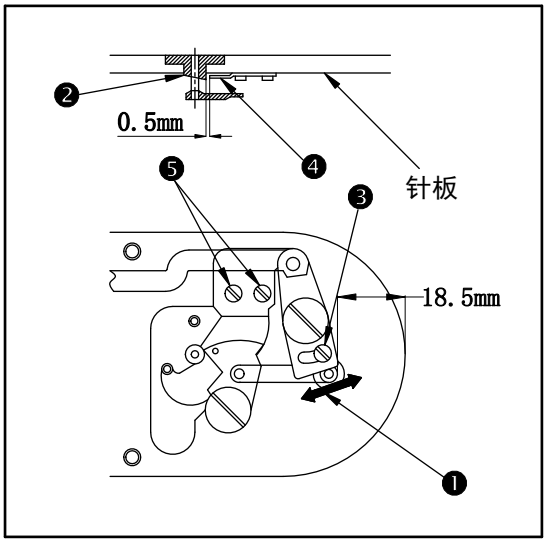
(4). 调节后，把六角孔螺栓⑤确实拧紧。

(5). 左右压脚不一致时，拧松固定螺丝⑦，调节布压脚拨杆挡板⑧调整高度。

此时，请不要让布压脚拨档杆板⑧与送料架⑨相碰。如果和拨线杆相碰，请用拨线杆安装台固定螺丝⑩调节拨线杆高度。

4.动刀和定刀

注意	为了防止突然启动造成人身事故，请关掉电源后再进行。

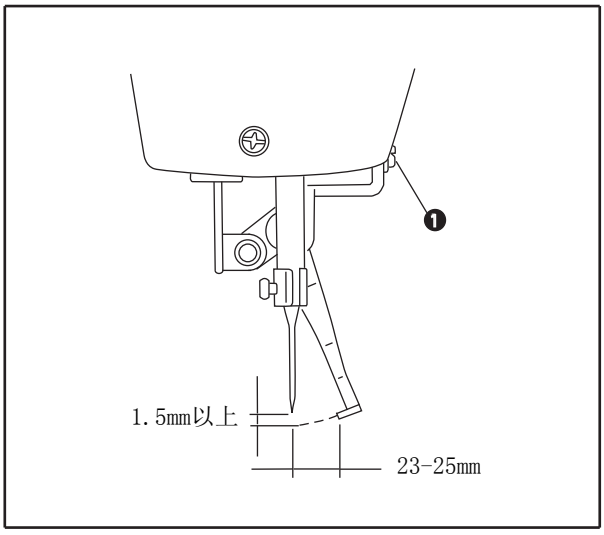


⑴.拧松调节螺丝③，向箭头方向移动动刀，把从针板前段刀切线小拨杆①前段的距离调整为 18.5mm。

⑵.拧松固定螺丝⑤，移动固定刀，把针孔导线器②和固定刀④之间的间隙调整为 0.5mm。

6.扫线杆的调整

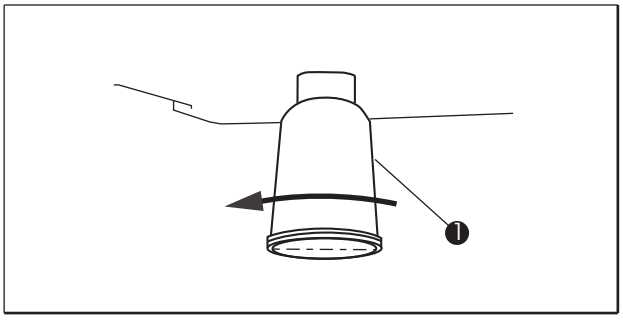
注意	为了防止突然启动造成人身事故，请关掉电源后再进行。



拧松螺丝①把挑线杆和机针的间隙调整为 1.5mm 以上。此时的扫线杆和机针的距离大约为 23~25mm 通过较宽的调整，在压脚下降时可以防止压到纫机线。
特别是使用细针时，请调宽到 23mm 左右。

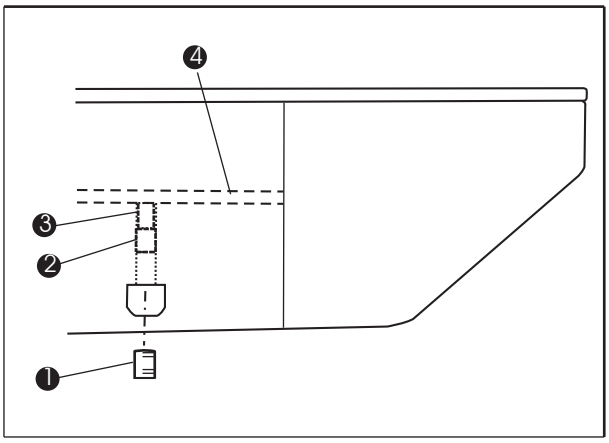
※ 机针为缝制结束停止的位置。

6. 废油的处理



积油杯①里积满了油之后，请卸下积油杯①排放出废油。

7. 旋梭的加油量



(1). 拧松固定螺丝①，卸下固定螺丝①。
(2). 拧紧调整螺丝②之后，加油管左④的油量杯弄小。
(3). 调整后，拧紧固定螺丝①固定好。

1. 在标准出货状态，轻轻拧紧②回转 4 圈的位置。

2. 弄小油量时，不要一次拧紧，拧紧②回转 2 圈，待半日左右观看一下。拧得过紧的话会磨损旋梭。

8. 向指定部位补充润滑油

使用缝纫机进行了一定的缝制次数之后，打开电源时操作盘上会显示出异常代码 No. E221。这是通知需要向指定部位补充润滑油，此时请一定补充下列润滑油，叫出存储器开关 No. 245，用复位键复位到[0]。显示出异常 No. E221 显示后，按复位键可以解除异常，但再次打开电源后会再次显示出 No. E221。

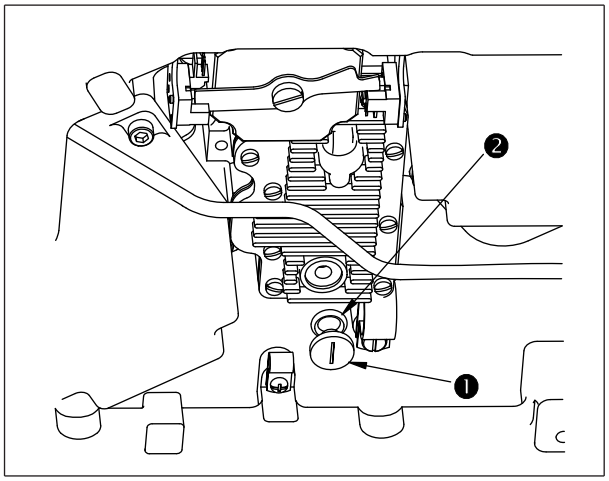
而且，异常 No. E220 显示，继续缝制一定期间后会显示出异常 No. E221，按复位键不能解除异常，同时缝纫机变成不能动作。

因此，显示出异常 No. E221 以后，请一定向下列部位补充润滑油，然后启动存储器开关 No. 245，用复位键复位到[0]。

补充润滑油之后，如果不把存储器开关 No. 245 变更为[0]，异常 No. E2220 或 No. E221 会被再次显示。

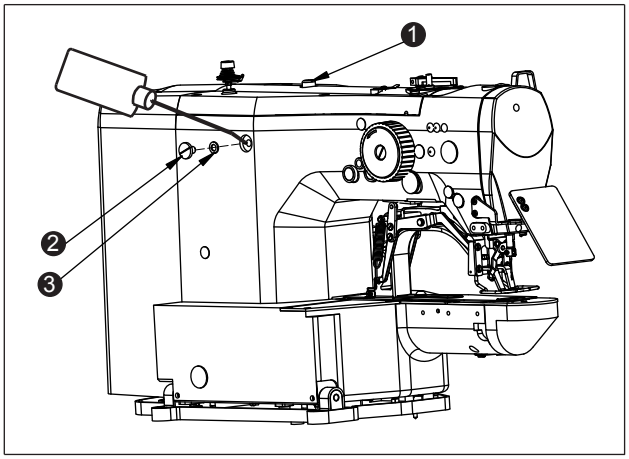
注意 **为了防止突然启动造成人身事故，请关掉电源后再进行。**

⑴. 将齿轮箱的废油放光



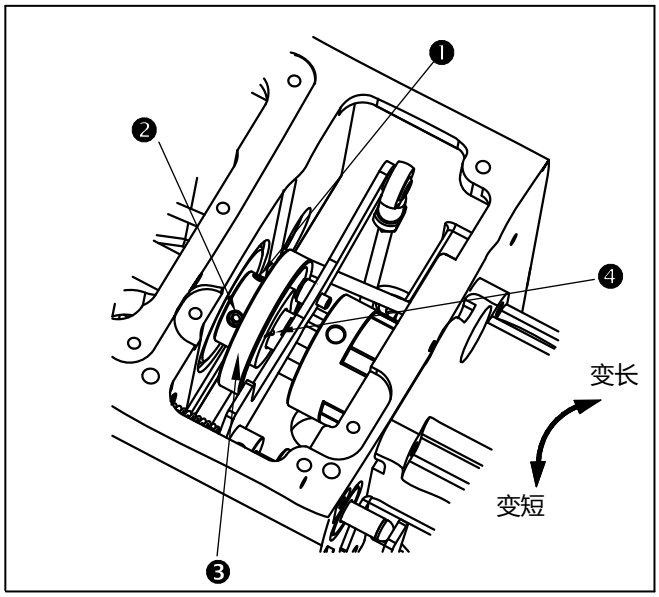
A. 放倒缝纫机，卸下密封螺钉①和密封圈②。
B. 放正缝纫机，把齿轮箱内的油放光。
C. 放倒缝纫机，把密封圈②和密封螺钉①装回去，然后再放正缝纫机。

⑵. 向齿轮箱中加入润滑油



A. 当通过油窗①观察到出油不明显或无出油时，应即时往齿轮箱内加油；
B. 在停机状态下，取下螺钉②与橡胶垫圈③，加10#白油，无出油时，加100ml,出油不明显时，加50-70ml。装回②与③，启动机器观察出油是否明显。

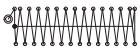
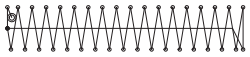
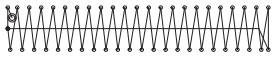
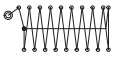
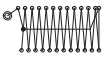
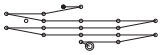
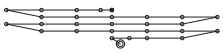
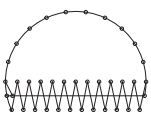
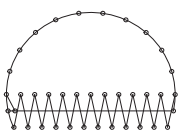
9. 剪线凸轮位置的调整

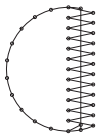
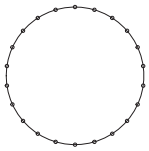
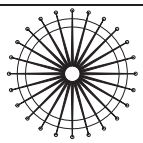
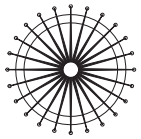
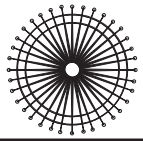
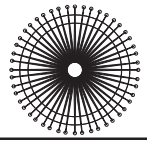


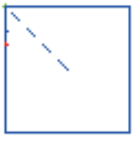
剪线凸轮③的标准位置为剪线凸轮③刻度线与上轴④定位孔对齐。
拧松固定螺钉①、②，调整剪线凸轮③位置，向右调节，切线后针尖上的残线长度变长，向左调节后变短。
如需调整，请控制在正负3° 到5° 范围内调节，如调节过多，会产生剪线不良。

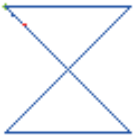
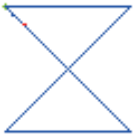
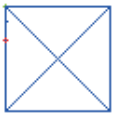
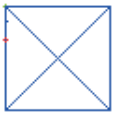
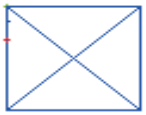
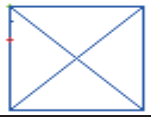
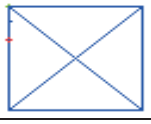
[7] 标准花样、压脚一览表

(1)标准花样一览表

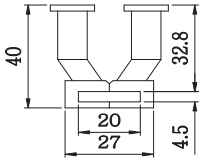
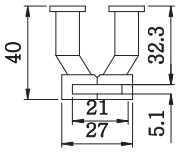
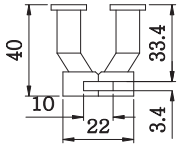
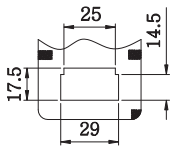
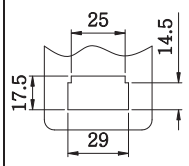
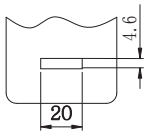
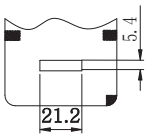
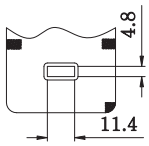
花样号	花样图案	针数	尺寸（mm）	花样号	花样图案	针数	尺寸（mm）
1		42	16×2	2		42	10×2
3		42	16×2.5	4		42	24×3
5		28	10×2	6		28	16×2.5
7		36	10×2	8		36	16×2.5
9		56	24×3	10		64	24×3
11		21	6×2.5	12		28	6×2.5
13		36	6×2.5	14		15	8×2
15		21	8×2.2	16		28	8×2
17		19	10×1	18		39	10×1
19		27	25×1	20		35	25×1
21		39	25×1	22		43	35×1
23		28	4×20	24		36	4×20
25		42	4×20	26		56	4×20
27	(上)  (下)	18	1×20	28	(上)  (下)	21	1×10
29	(上)  (下)	21	1×20	30	(上)  (下)	28	1×20
31		52	10×7	32		63	12×7

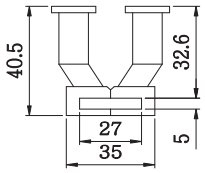
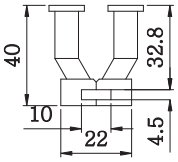
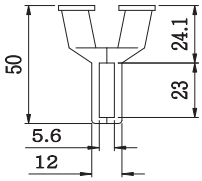
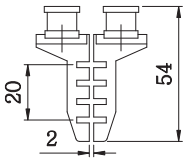
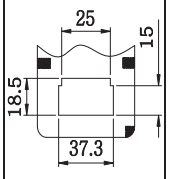
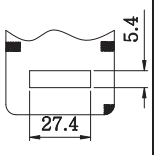
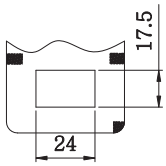
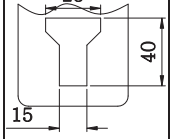
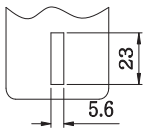
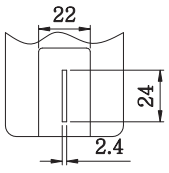
33		24	10×6	34		31	12×6
35		48	7×10	36		48	7×10
37		90	24×3	38		28	8×2
39		28	12×12	40		48	12×12
41		29	2.5×20	42		39	2.5×25
43		45	2.5×25	44		58	2.5×4.4
45		76	2.5×4.4	46		42	2.5×4.4
47		91	8×8	48		99	8×8
49		148	8×8	50		164	8×8
51		110	8×8	52		120	8×8
53		131	8×8	54		52	12.5×10

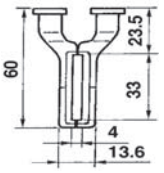
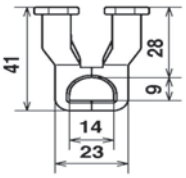
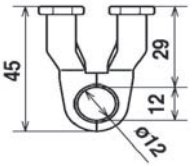
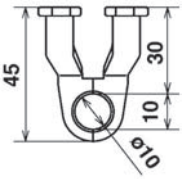
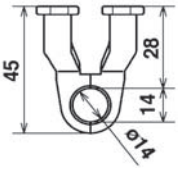
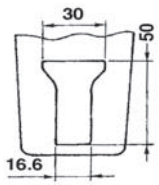
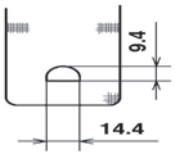
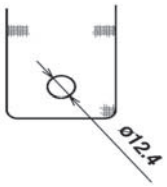
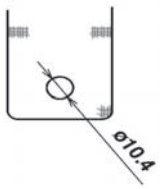
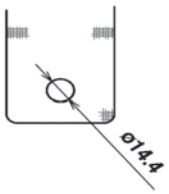
55		51	12.5×10		56		53	21×6
57		58	21×6		58		104	19×3
59		116	40×5		60		116	40×5
61		94	5×30		62		110	5×30
63		109	40×30		64		81	40×30
65		65	40×30		66		97	30×30
67		77	30×30		68		61	30×30
69		53	40×30		70		41	40×30
71		33	40×30		72		45	30×30
73		37	30×30		74		29	30×30
75		61	40×30		76		49	40×30

77		37	40×30		78		57	30×30
79		45	30×30		80		37	30×30
81		68	40×30		82		52	40×30
83		40	40×30		84		56	30×30
85		36	30×30		86		43	30×30
87		33	30×30		88		27	30×30
89		75	20×24		90		55	20×24
91		66	20×20		92		50	20×20
93		40	20×20		94		64	25×20
95		52	25×20		96		46	25×20
97		43	25×20		98		34	25×20
99		28	25×20		100		89	30×25

2. 标准压脚一览表

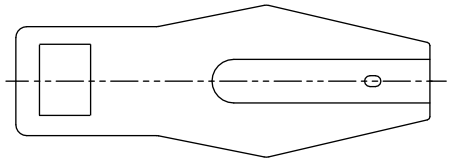
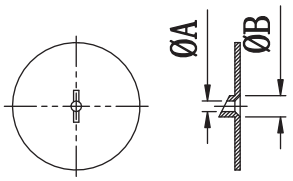
压脚号码	1	2	3	4	5
压布压脚	左：10011508　右：10011505			左：10011687 右：10011691	左：10011758 右：10011759
					
压布底板	10011565	10012300	10012279	10011751	10011755
	有齿牙	无齿牙	无齿牙	有齿牙	有齿牙
					
缝制规格	S	F	F	H	M
护指器	10011556(S、M、F)、10011695（H）				
备注	S（标准）规格机头上标准装备。	F（内衣）规格机头上装备。（根据出口地）		选购品	M（针织）规格机头上标准装备。

压脚号码	6	7	8	9	10	11
压布压脚	左：10012349 右：10012342		左：10012339 右：10012346	左：10012341 右：10012348		左：10026244 右：10026245
						
压布底板	10012277	10012302	10012286	10012296	10012301	10026246
	有齿牙	有齿牙	有齿牙	无齿牙	无齿牙	无齿牙
						
缝制规格	S	H/W	S	F	F	F
护指器	10011556(S、M、F)、10011695（H、W）					
备注	选购品	H（厚料）、W（倍旋梭）规格机头上标准装备	选购件	F（内衣）规格选购品。（根据出口地）		选购品

压脚号码	12	13	14	15	16
压布压脚	左：10026247 右：10026248	左：10026250 右：10026251	左：10012344 右：10012345	左：10026253 右：10026254	左：10026256 右：10026257
					
压布底板	10026249	10026252	10012338	10026255	10026258
	有齿牙	无齿牙	无齿牙	有齿牙	有齿牙
					
缝制规格	F	S	S	S	S
护指器	10011556				
备注	选购品	选购品	选购品	选购品	选购品

※更换压脚时，请安装合适各压脚的手指保护器。

[8] 选购件一览表

零件名称	种类	货号	备考
送料板 t=1.2 	有齿牙 / 有表面处理 缝制范围 纵 20× 横 40	10012303	
	有齿牙 / 有表面处理 缝制范围 纵30× 横40	10014401	
小针板 	A=1.9 B=2.8 无槽	10047532	S 规格
	A=1.6 B=2.0 无槽	10011757	F.M 规格
	A=2.3 B=4.0 无槽	10004727	H 规格
	A=3 B=7 无槽	10007281	渔网机用
	A=1.6 B=2.6 有槽	10004646	选用件

Ⅱ.D款一体式高速电子钉扣机的说明

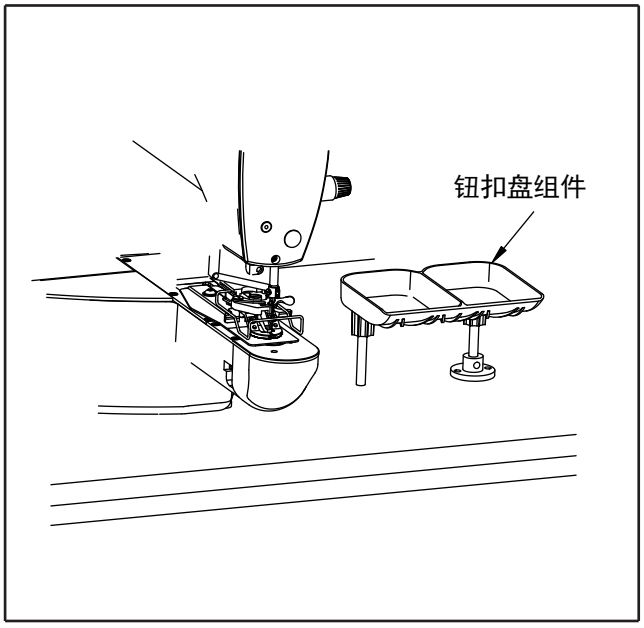
[1] 规格

这里只记述与套结机不同部位的说明内容。

⑴.转速.....最高 2700rpm
⑵.使用机针.....DP X 17 #14
⑶.压脚提升方式.....脉冲马达
⑷.压脚上升量.....最大 13mm
⑸.记忆数据数量.....50 种
⑹.拨线方式.....脉冲马达压脚提升连动

[2] 安装和缝纫前的准备

⚠注意 **搬运缝纫机时，一定要 2 人以上来搬运。**



⑴. 机头的安装与套结机相同,请参照套结机使用说明书。

⑵.附属品安装在纽扣盘架上，请安装到容易作业的位置。

运转前请转动手轮确认机针是否与纽扣相碰。

[3] 机针和缝线

机针	上线	底线
DPx17 #14	#60	#80
	#60	#60
	#50	#60
	#40	#60

机针和机线,因缝制条件不同而不同,使用时请参照左表选择,最好使用棉线、缝纫机线。

[4] 各种图案的缝制

1. 缝制花样一览表缝线数、标准缝制长度 X、Y 如下表所示（缝制程序表）

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		

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							

2.缝制花样的选择及缝制宽度

(1).缝制图案的选定方法与套结机相同。

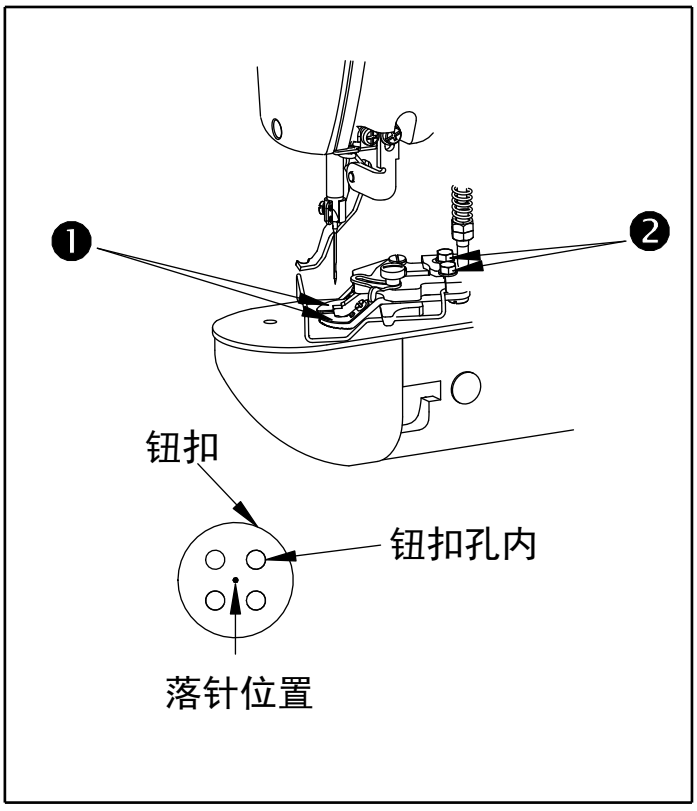
(2).缝制图案号的标准缝纫宽度与使用纽扣的纽孔不合时，请利用扩大、缩小功能进行调整。扩大、缩小方法与套结机相同。

(3).变更了缝制图案号和缝纫宽度之后，请一定确认落针位置。确认方法请参考套结机使用说明图案形状的确认。

根据缝制宽度调整 X、Y 扩大、缩小率一览表

X・Y（mm）	2.4	2.6	2.8	3.0	3.2	3.4	3.6	4.0	4.3	4.5	4.7	5.2	5.6	6.0	6.2	6.4
%	71	76	82	88	94	100	106	118	126	132	138	153	165	176	182	188

[5] 纽扣夹的位置



(1).在缝制 LED 灭灯的状态，按操作盘 M 键。

(2).把纽扣放入纽扣抓脚①。

(3).同时按 P1 P3 P5 键，按 一/⊆ 键进入调试模式，屏幕显示“CP ---”。

(4).按两次 键，进入CP,

(5).按 +/⊆ 键，进入CP-2,按 键，再按 键，踩踏板至一档。

(6).转动手飞轮，确认机针中心是否在纽扣中心。确认原点位置。

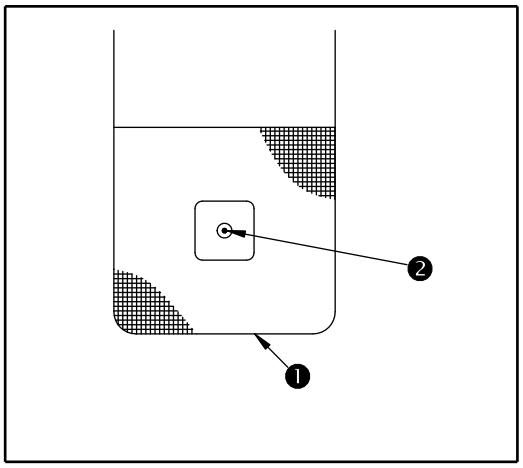
(7).如果机针没有在纽扣中心位置时，请拧松纽扣抓脚安装台固定螺丝②，进行调整。

(8).调节后，请确认图案形状。确认机针是否正好落在纽扣孔内。

⚠注意	变更了纽扣的形状、图案，或利用扩大缩小功能变更了缝纫宽度之后，请一定要确认落针位置。如果机针落到纽扣外，图案超出抓起装置，机针在缝制中会发生断针的危险。

[6] 送料板的调整

⚠注意	变更了钮扣形状、图案，或利用扩大缩小功能变更了缝纫宽度之后，请一定要确认落针位置。如果布压脚与针孔导板相碰，会发生断针的危险。另外，调整中如果踩了踏板，爪脚装置会上下移动，请注意危险。



⑴. 在缝制 LED 灭灯的状态，按操作盘 键，选择绕线状态，指示灯亮。

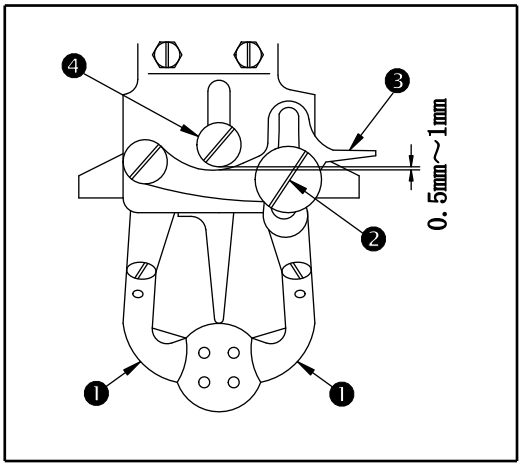
⑵. 按 键，压脚下降，各部件回零。

⑶. 调整布压脚底板①，使针孔导板②正好在布压脚底板①的H部的中心。

⑷. 按 键，压脚上升，准备缝纫。

[7] 纽扣夹张开角度调整

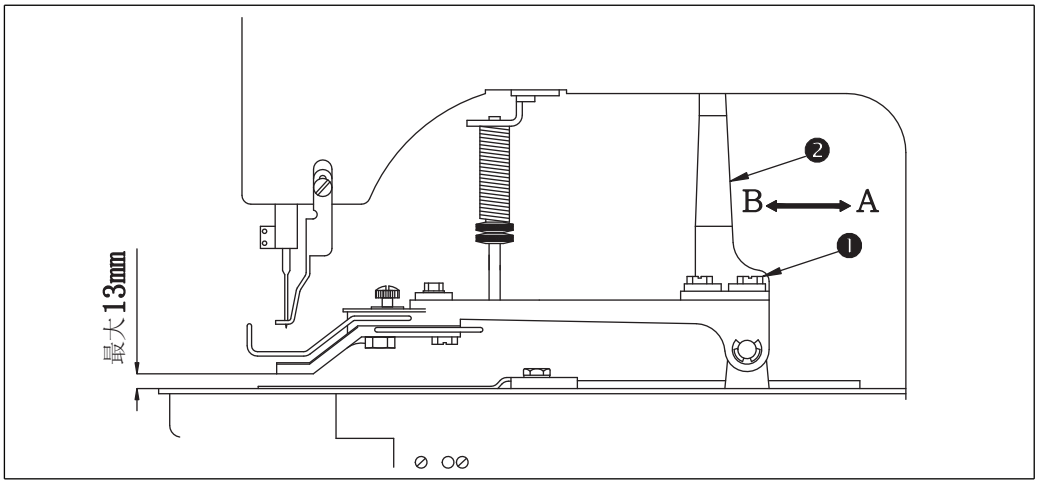
⚠注意	为了防止突然的启动造成人身事故，请关掉电源，确认马达完全停止后在进行操作。



在让停止位置的抓脚①上升的状态，拧松开关抓脚拨杆固定螺丝②，让纽扣设定到抓脚②，把抓脚打开拨杆③和塔形螺丝④之间的间隙为 0.5~1mm，然后拧紧打开抓脚拨杆固定螺丝②。

[8] 纽扣夹上升高度的调整

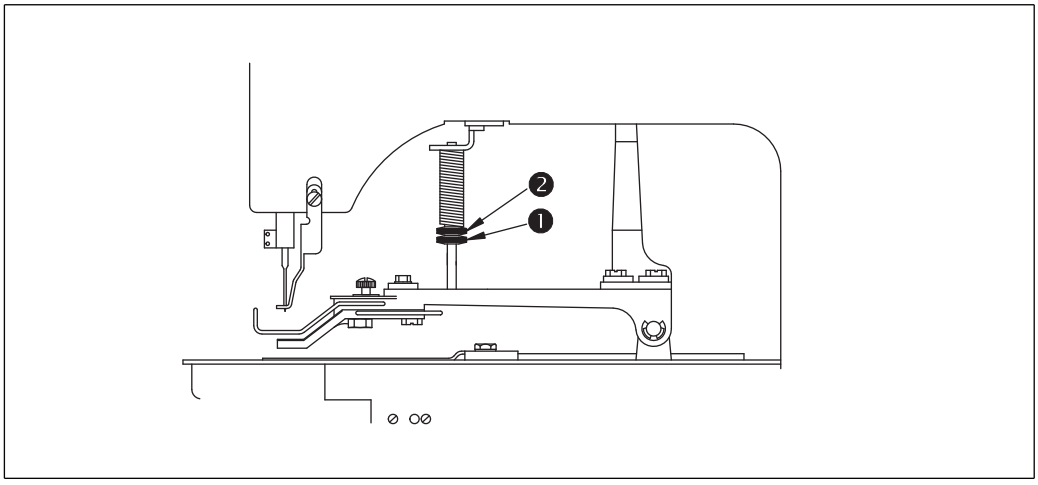
⚠注意	**为了防止突然的启动造成人身事故，请关掉电源，确认马达完全停止后在进行操作。**



请拧松 2 个固定螺丝①，前后调整压脚的提升动作板②进行调整。把压脚提升动作板②向 A 方向移动后，提升量变低，向 B 方向移动后，则变高。调整后把固定螺丝确实拧紧固定。

[9] 压脚压力的调整

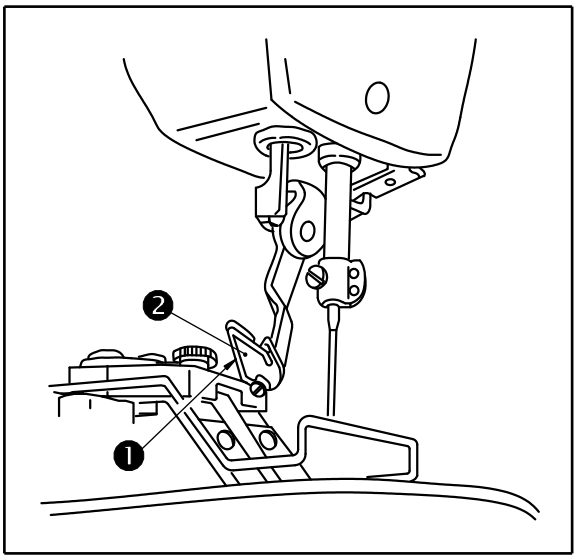
⚠注意	**为了防止突然的启动造成人身事故，请关掉电源，确认马达完全停止后在进行操作。**



拧松调整螺丝①，转动调节螺丝②，使布料运转中尽量不要偏斜。

[10] 扫线杆弹簧的调整

⚠注意 **为了防止突然的启动造成人身事故，请关掉电源，确认马达完全停止后在进行操作。**



调整扫线杆弹簧①，使扫线杆弹簧①把切线后的上线保持到挑线杆②之间，这时的强度为 20~30g（比从梭壳出来的底线稍强）。

保持过强的话，旋梭上的线就会脱落。

[11] 缝制范围

机种名称		钉扣机	
纽扣尺寸分类		中小纽扣用	
可以缝制的纽扣外径（mm）		Ø8~Ø22	
缝制尺寸（mm）	纵	0~3.5	
	横	0~3.5	

Ⅲ. 缝纫中报错信息一览表

显示	异常名称	异常内容	原因及解除方法
E10	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。
E30	针杆上位置异常	针杆不在上位置。	主轴停车位置错误，可能是主轴驱动的原因，也可能是人为转动所致。转动手轮，把针杆返回到上位置。
E40	超过缝制区域	超过缝制区域。	按复位开关，确认图案和 X、Y 放大率。 触发条件：软件花样计算报错。
E43	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。 触发条件：软件花样计算报错。
E45	图案数据异常	不能对应的图案数据	关闭电源，确认数据ROM。
E50	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。
E221	补充润滑油告警异常	机器运转到了向指定位置补充润滑油的时期，所以缝纫机停止了。	重新上电，进入参数 245，按复位键清零后，重现上电。
E302	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。
E303	90V 电源异常	90V 电压过低。	关闭电源，稍待一些时间后再次打开电源。
E305	切刀位置异常	切线刀不在正确位置	关闭电源，稍待一些时 打开电源。

显示	异常名称	异常内容	原因及解除方法
E401	闭环位置异常		
E402	反转堵转	主轴电机反转堵转	
E403	正转堵转	主轴电机正转堵转	
E404	过温	主轴电机温度过高	
E405	X步进过流	X步进电流检测异常	
E406	Y步进过流	Y步进电流检测异常	
E407	STEP 绕阻开路		
E408	STEP 编码器故障		
E410	步进90V欠压		
E411	X同步异常	X送步与主轴不同步	
E412	Y同步异常	Y送步与主轴不同步	
E413	X针数异常	完成一次缝纫后主控检测到步进板在X方向接收的命令与主控发送的命令步数不符。	

显示	异常名称	异常内容	原因及解除方法
E414	Y针数异常	完成一次缝纫后主控检测到步进板在Y方向接收的命令与主控发送的命令步数不符。	
E415	STEP2 绕阻开路		
E416	STEP2 编码器故障		
E417	STEP1 位置偏差异常	X轴位置误差过大，检查X轴编码器，或者检查负载是否过重、卡阻。	
E418	STEP2 位置偏差异常	Y轴位置误差过大，检查Y轴编码器，或者检查负载是否过重、卡阻。	
E419	电流传感器1故障		
E420	电流传感器1故障		
E435	压脚过流	压脚步进电流检测异常	
E436	抓线过流	抓线步进电流检测异常	
E447	压脚步进故障	压脚步进或者编码器故障	
E448	中压脚、抓线步进故障	步进或者编码器故障	
E733	主轴过流	主轴电机发热、停转。	
E739	主轴电机过载	主轴电机负载过大，功率超过电机承受范围。	
E740	主轴电机转速异常	主轴电机超速。	
E741	主轴电机反转异常	主轴电机发生反转。	
E811	停机时过压	供电电压过高。	

显示	异常名称	异常内容	原因及解除方法
E812	运行时过压	供电电压过高。	
E813	系统欠压	供电电压过低。	
E814	电磁铁回路故障	电磁铁短路	
E815	电流检测回路故障	电机电流检测异常	
E816	主轴电机堵转	主轴电机堵转	
E817	主轴电机停针传感器故障	主轴电机结束停针时检测不到停针信号	
E818	主轴电机初始角测量异常	主轴电机初始角测量异常	
E819	HALL故障	主轴电机HALL故障	
E906	NO5原点检索异常	第5路原点传感器不变化	
E907	X原点检索异常	X步进电机编码器故障。	
E908	Y原点检索异常	Y步进电机编码器故障。	
E910	压脚原点检索异常	压脚原点传感器不变化。	

显示	异常名称	异常内容	原因及解除方法
E911	X向步进电机故障	X电机在动作中主控再次发送动作命令。	
E912	Y向步进电机故障	Y电机在动作中主控再次发送动作命令。	
E915	主电路板-操作面板通信故障	主电路板与操作面板不能通信或通讯错误。	
E916	主电路板-步进XY电路板通信故障	主电路板与XY步进电路板不能通信或通讯错误。	
E917	主电路板-步进压脚电路板通信故障	主电路板与压脚步进电路板不能通信或通讯错误。	
E918	压脚步进电机故障	压脚电机在动作中主控再次发送动作命令。	
E919	X同步异常		
E920	Y同步异常		
E921	X步进接受指令异常		
E922	Y步进接受指令异常		
E923	剪线异常		
E947	主电路板-主轴电路板通信故障	主电路板与主轴电路板不能通信或通讯错误。	

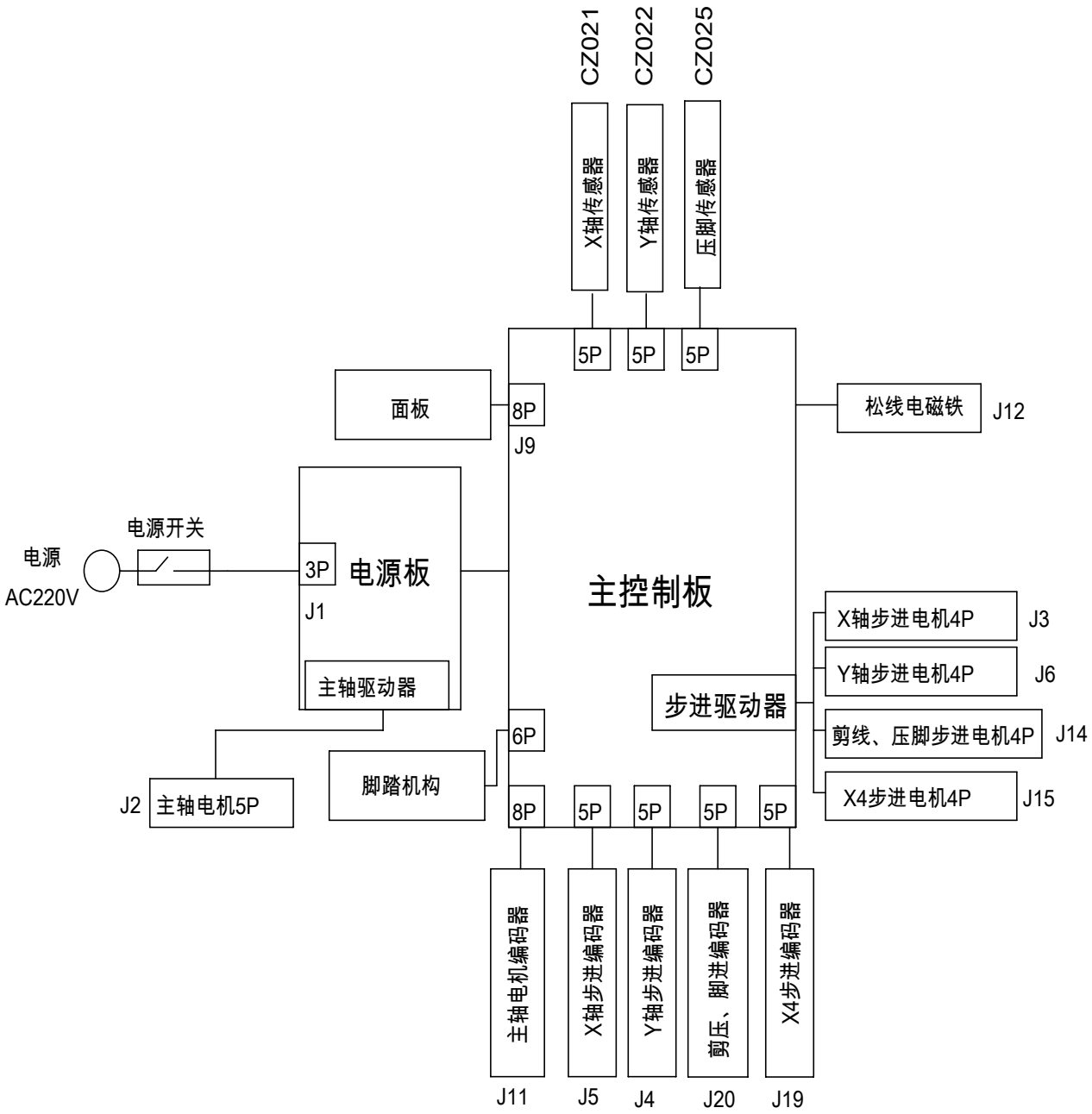
显示	异常名称	异常内容	原因及解除方法
E950	NO5步进握手故障	第5路步进通讯问题。	
E951	软件版本不符合	主控、操作屏、主轴软件不匹配	
E998	伺服软件异常	主轴软件不对。	
E999	主控软件异常	主控软件不对。	

Ⅳ.缝纫时故障、原因及对策

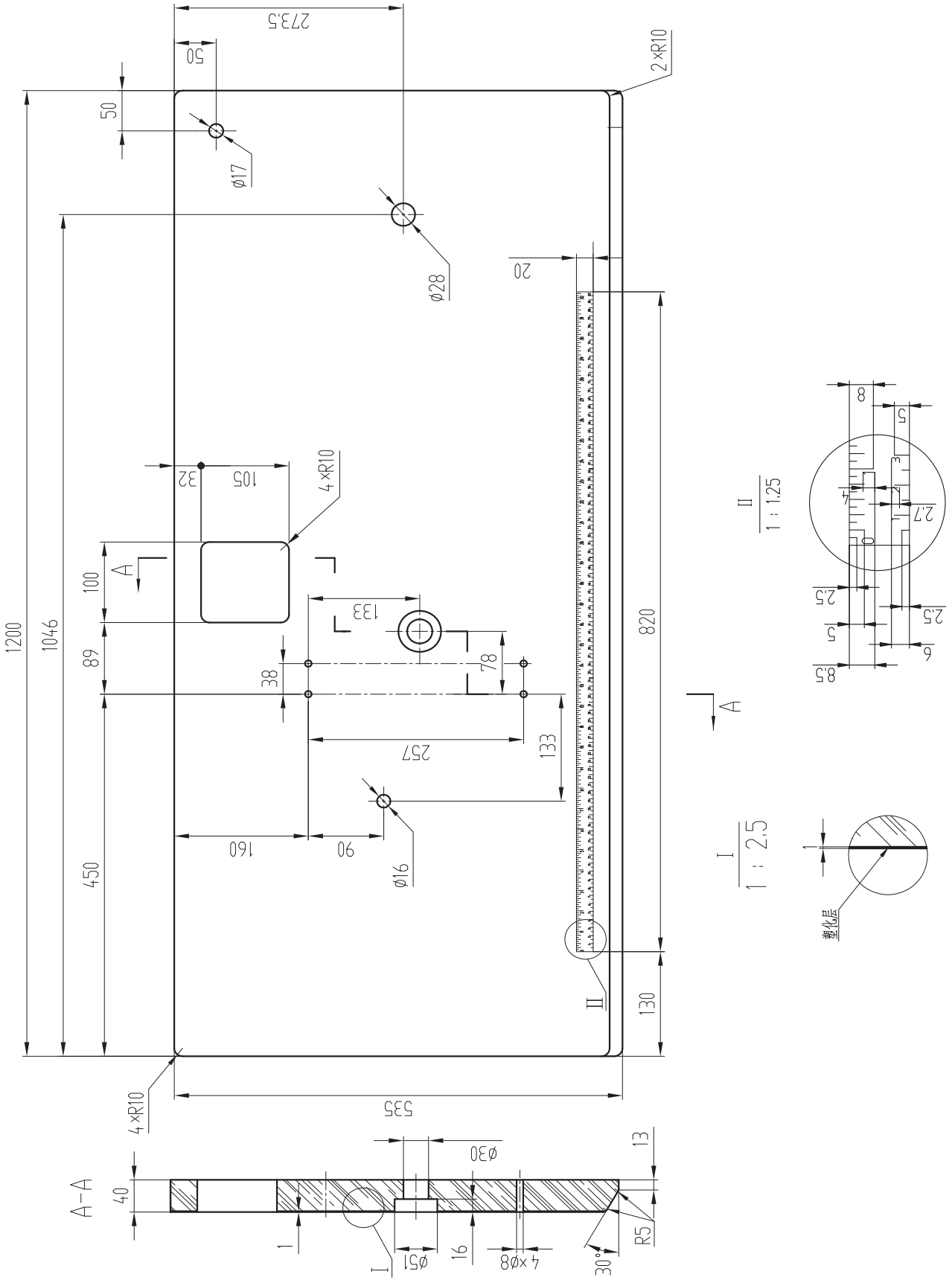
现象	原因	对策
1.始缝时脱线	①始缝时跳针。 ②切线后上线长度短。 ③底线过短。 ④第一针的上线张力高。 ⑤第一针的间距小。	○机针和旋梭的间隙调整为0.05~0.1mm ○设定始缝时软起动。 ○调节第2线张力器的浮线量。 ○把挑线弹簧弄强或把第一线张力盘的张力减弱。 ○减弱底线张力。 ○弄大针孔导向器和固定刀的间隙。 ○降低第一针的张力。 ○降低缝制开始第一针的转速。 ○增长第一针的间距。 ○下降第一针的上线张力。
2.老断线。化纤维拉断	①旋梭、驱动器上有伤。 ②针孔导向器上有伤。 ③机针碰布压脚。 ④线头进入大旋梭的沟里。 ⑤上线张力过强。 ⑥挑线弹簧过强。 ⑦化纤维摩热而断。	○卸下用细磨时或挫刀磨平。 ○用锉刀磨，或换新。 ○调节布压脚的位置。 ○卸下中旋梭，清除线头。 ○减弱上线张力。 ○减弱挑线弹簧。 ○使用硅油。
3.常断针	①针弯了。 ②针碰布压脚。 ③针过粗。 ④驱动器把针弄得过弯。 ⑤在缝制开始时压脚压住缝纫机线（机针弯曲）。	○更换机针。 ○调节布压脚。 ○根据缝制物选用适当的机针。 ○调整针和旋梭位置。 ○弄宽机针和扫线杆的距离。（23~25mm）
4.切线不断(仅限底线)	①固定刀不快。 ②针孔导线器和固定刀高低差小。 ③动刀位置不好。 ④最终针跳线。 ⑤底线张力低。	○更换固定刀。 ○把固定刀再弄弯一些。 ○调整动刀位置。 ○调整针和旋梭的同步。 ○提高底线张力。
5.常跳线	①针和旋梭调整不好。 ②针和中旋梭得间隙过大。 ③针弯了。 ④驱动器把针弄得过弯。	○调整针和旋梭的位置。 ○调整针和旋梭的位置。 ○更换机针。 ○调整驱动器的位置。
6.上线从布的里侧露出来	①上线紧线不好。 ②线张力盘浮起机构不动作 ③切线后的上线过长。 ④针数少。 ⑤缝制长度短时(缝制背面上线头露出。) ⑥针数少。	○加强上线张力。 ○确认缝制中第2线张力盘是否浮起。 ○加强第1线张力。 ○使用暗缝式下板。

7. 切线时短线	①动刀位置不好。	○调节动刀位置
8. 机线长度不一致	①挑线弹簧的张力低。	○提高挑线弹簧的张力。
9. 机线长度不能弄短	①第 1 线张力器的张力低。 ②挑线弹簧张力过强。 ③因为挑线弹簧的张力过低，所以动作不稳定。	○增强第 1 线张力器的张力。 ○降低挑线弹簧的张力。 ○增强挑线弹簧的张力，行程也变长。

Ⅴ.电控系统的系统框图


CZ021
CZ022
CZ025
X轴传感器
Y轴传感器
压脚传感器
5P
5P
5P
面板
8P
J9
松线电磁铁
J12
电源开关
电源
AC220V
3P
电源板
J1
主控制板
主轴驱动器
X轴步进电机4P
J3
Y轴步进电机4P
J6
步进驱动器
剪线、压脚步进电机4P
J14
X4步进电机4P
J15
6P
J2
主轴电机5P
脚踏机构
8P
5P
5P
5P
5P
主轴电机编码器
X轴步进编码器
Y轴步进编码器
剪压、脚进编码器
X4步进编码器
J11
J5
J4
J20
J19

Ⅵ. 台板图纸


273,5
50
50
2×R10
ø17
ø28
20
4×R10
32
105
A
100
89
1200
1046
133
78
38
257
133
820
450
160
90
ø16
II
130
4×R10
535
A
II
1 : 1.25
I
1 : 2,5
塑化层
A-A
ø30
13
40
1
I
ø51
16
8ø×4
30°
R5

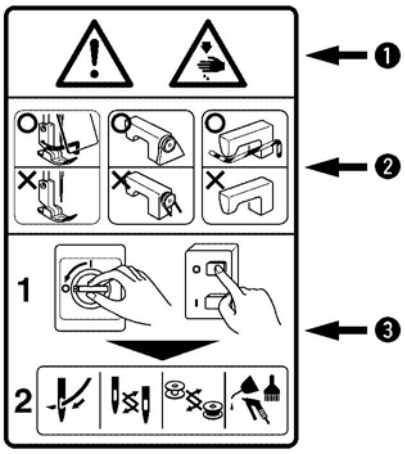
IMPORTANT SAFETY INSTRUCTIONS

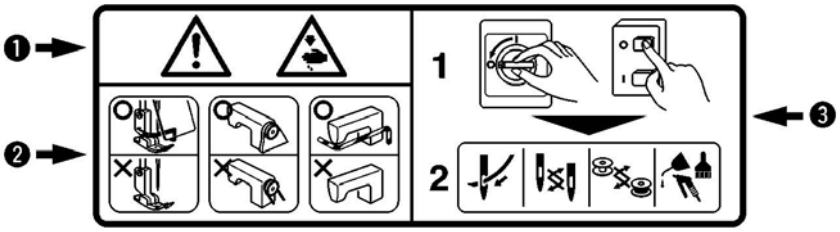
Putting sewing systems into operation is prohibited until it has been ascertained that the sewing systems in which these sewing machines will be built into, have conformed with the safety regulations in your country. Technical service for those sewing systems is also prohibited.

1. Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
2. Read all the instructions, including, but not limited to this Instruction Manual before you use the machine. In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
3. Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country.
4. All safety devices must be in position when the machine is ready for work or in operation. The operation without the specified safety devices is not allowed.
5. This machine shall be operated by appropriately-trained operators.
6. For your personal protection, we recommend that you wear safety glasses.
7. For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
7-1 For threading needle(s), loopier, spreader etc. and replacing bobbin.
7-2 For replacing part(s) of needle, presser foot, throat plate, loopier, spreader, feed dog, needle guard, folder, cloth guide etc.
7-3 For repair work.
7-4 When leaving the working place or when the working place is unattended.
7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
8. If you should allow oil, grease, etc. used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.
9. Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by JUKI can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of especially skilled personnel. Whenever you find a failure of any of electrical components, immediately stop the machine.
13. Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled. Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or especially skilled personnel.
14. Periodically clean the machine throughout the period of use.
15. Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.
17. The machine is only allowed to be used for the purpose intended. Other used are not allowed.
18. Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. Our company no responsibility for damage caused by remodeling or modification of the machine.
19. Warning hints are marked with the two shown symbols.

Danger of injury to operator or service staff

Items requiring special attention





1 • **There is the possibility that slight to serious injury or death may be caused.**

• **There is the possibility that injury may be caused by touching moving part.**

2 • **To perform sewing work with safety guard.**

• **To perform sewing work with safety cover.**

• **To perform sewing work with safety protection device.**

3 • **Turn OFF the power and perform "threading", "replacement of bobbin or needle", "cleaning", "adjustment" and "lubrication".**

FOR SAFE OPERATION

1. To avoid electrical shock hazards, neither open the cover of the electrical box for the motor nor touch the components mounted inside the electrical box.

2. After changing the pattern, make sure the needle entry point. If the pattern is protruded from the work clamp feet, the needle will interfere with the work clamp feet during sewing, and it is dangerous due to the needle breakage or the like.

3. Do not turn OFF the power in a state that the needle is lowered. Wiper may break the needle.

1. When nothing is displayed in the operation panel even when the power switch is turned ON, turn OFF the power switch and check the voltage and the type of the power source.

2. So as to prevent possible accidents caused by abrupt start of the sewing machine, depress the start switch after ascertaining that there is no interfering thing under the needle when windi ng the bobbin thread.

3. When turning OFF the power switch, turning ON the ready switch or turning ON the work clamp foot switch, the work clamp feet automatically come down. So, never place your fingers under the work clamp feet to prevent possible accidents caused by abrupt start of the sewing machine. During operation, be careful not to allow your fingers to come close to the work clamp feet.

4. So as to prevent possible accidents caused by the touch of the fingers with the needle, install a finger guard suitable for each work clamp foot when replacing the work clamp foot.

In general, during working time, in order to protect against drawing in or trapping and entanglement hazards, client will provide working clothes and hats which are tight with operators, if not , clients must rule operators wear tight clothes and operators with long hair must tie up or wear hat to prevent hazards.

CONTENTS

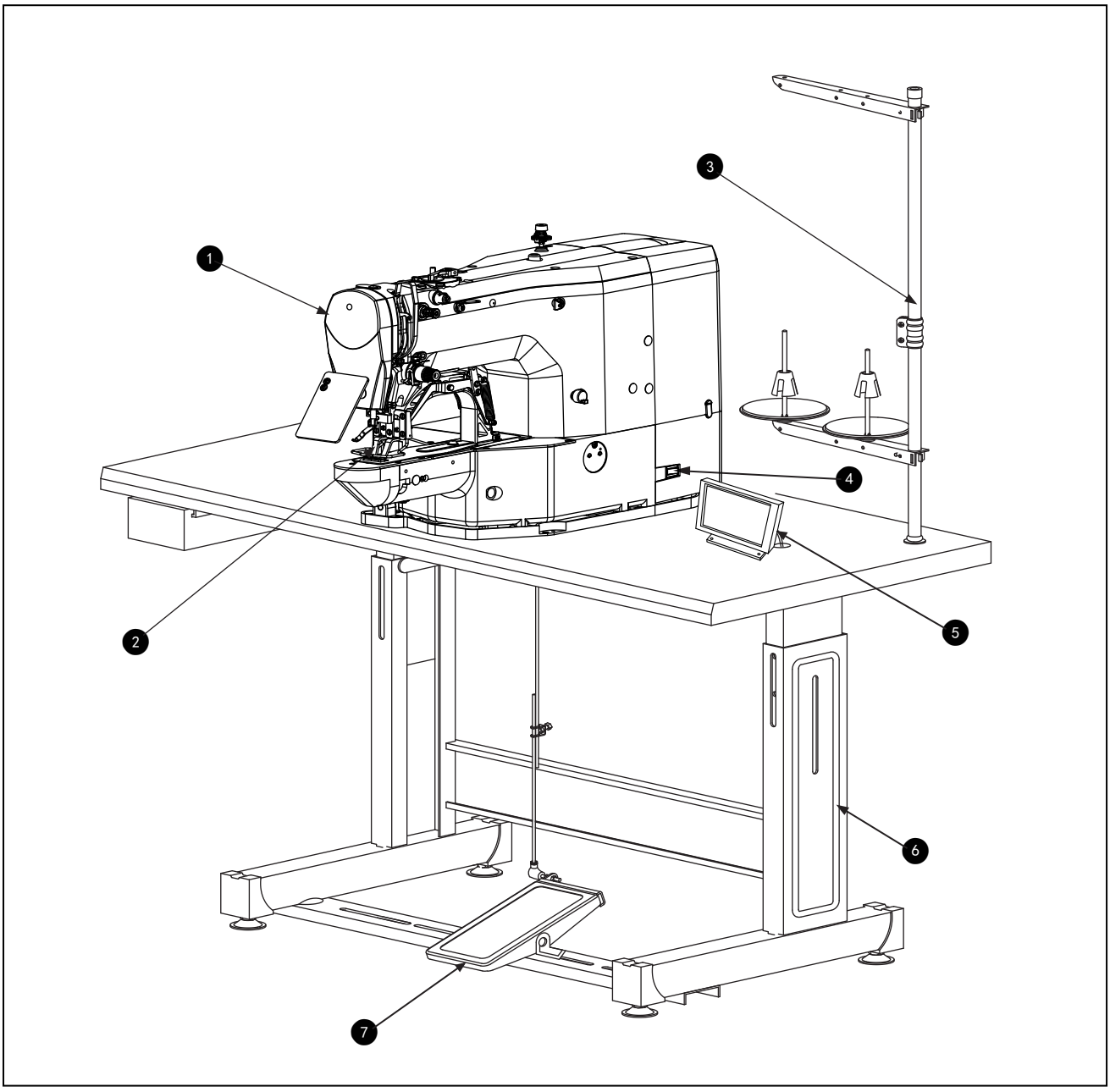
Ⅰ. EXPLANATION OF D-TYPE BARTACKING SEWING MACHINE, COMPUTER-CONTROLLED HIGH-SPEED BAR TACKING MACHINE

[1] SPECIFICATIONS

1.	Sewing area：	X（lateral）direction 40mm， Y（longitudinal）direction30mm
2.	Max. Sewing speed：	3200rpm (when sewing pitches are less than 5mm in X-direction and 3.5mm in Y-direction)
3.	Stitch length：	0.1-10mm (adjustable in 0.1mm step)
4.	Feed motion of work clamp foot：	Intermittent feed (2-shaft drive by stepping motor)
5.	Needle bar stroke：	41.2mm
6.	Needle：	DP×5、DP×17
7.	Lift of work clamp foot：	13mm (standard)　Max.17mm
8.	Shuttle：	standard semi-rotary hook （oil wick lubrication）
9.	lubricating：	oil 10# (supplied by oiler)
10.	Date recording：	EPROM
11.	Enlarging/Reducing facility：	20% to 200% (1% step) in X-direction and Y-direction　respectively
12.	Enlarging/Reducing：	Patten enlargement/reduction can be done by increasing/decreasing the stitch length
13.	Max. Sewing speed limitation：	400 to 3500rpm（100rpm）
14.	Pattern selection：	Specifying pattern No. type（1 to 300）
15.	Bobbin thread counter：	UP/DOWN type（1-9999）
16.	Sewing machine motor：	550W Servo motor
17.	Dimensions：	W：1200mm　L：540mm　H：1100mm
18.	Weight：	Machine 55Kg
19.	Power consumption：	0.6KW
20.	Operating temperature range：	5℃ to 35℃
21.	Operating humidity range：	35% to 85%（No dew condensation）
22.	Line voltage：	Rated voltage ±10%　50-60Hz

[2] CONFIGURATION

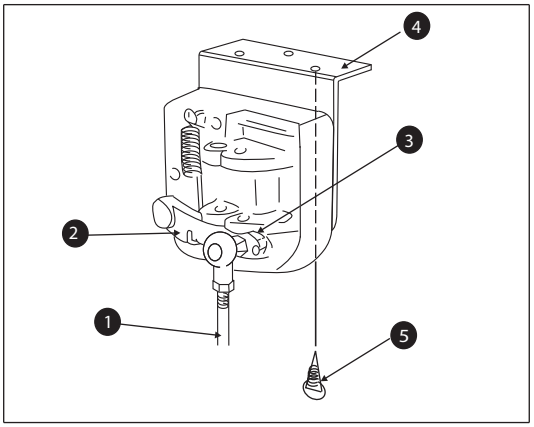
1. Names of main unit



⑴. Machine head
⑵. Work clamp feet
⑶. Thread stand
⑷. Power switch
⑸. Operation panel
⑹. Frame
⑺. Pedal switch

［3］INSTALLATION

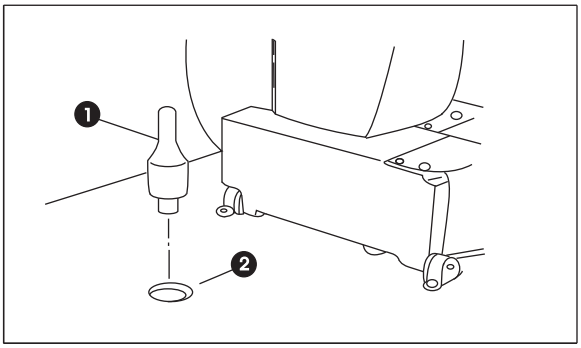
1. Attaching the connecting rod



（**1**）FIX connecting rod① to installing hole B of pedal lever ② with nut③. When connecting rod ①is installed in installing hole A, the depressing stroke go the pedal is increased.

（**2**）Secure the pedal④ with a wooden screw⑤ in place.

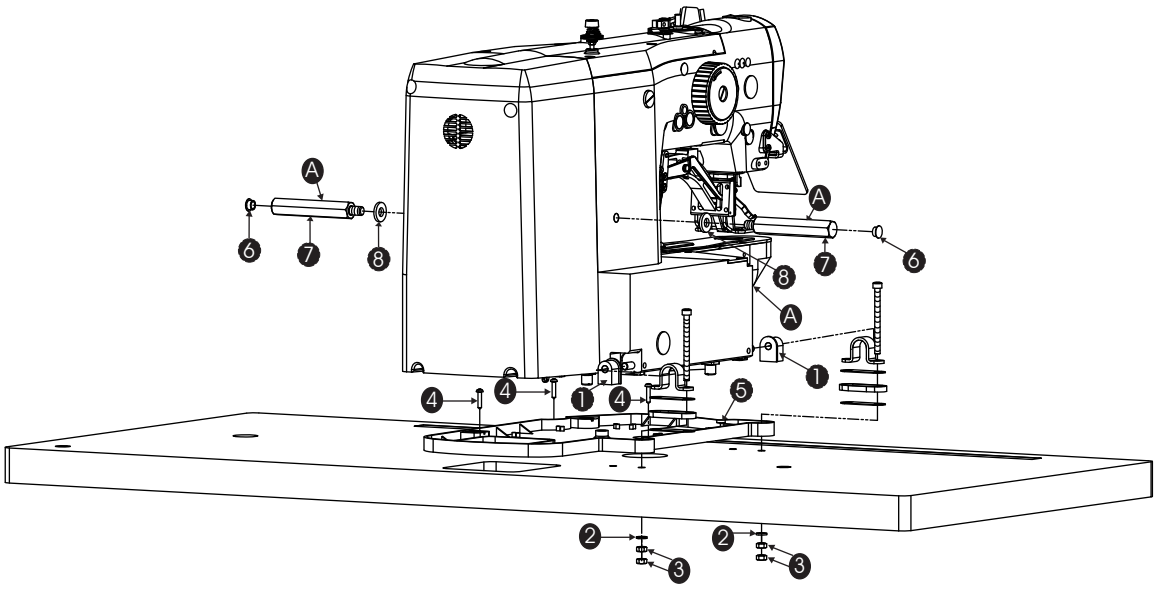
2. Installing the head support rod



Drive head support rod① in hole② in the machine table.

3. Installation of the swing machine head

WARNING : To prevent possible accidents caused by the full of the sewing machine, perform the work by two persons or more when the machine is



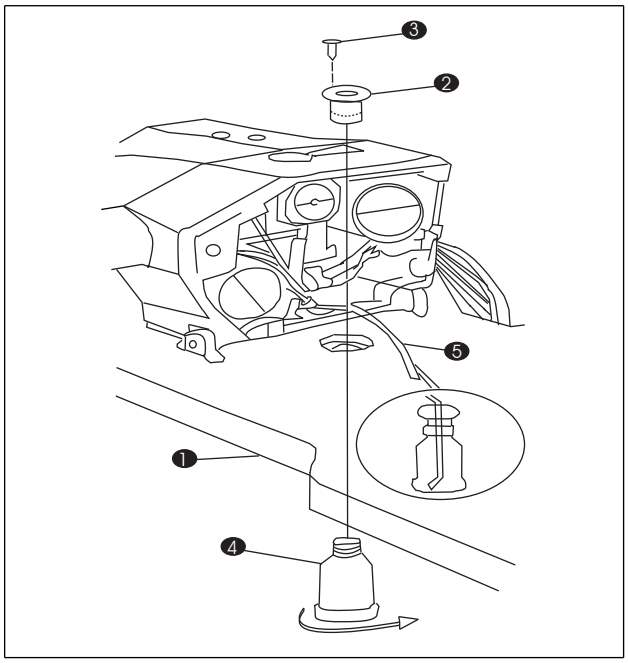
1、When handling sewing machine, please hold A Department
2、After handling, please remove the handle⑦ and rubber pad⑧, fitted with rubber plug⑥

(1). The oil plate⑤ with wood screws④ fixed in the corresponding position of the platen.

(2). Fit hinge rubber ① to the hinge shaft, and fix the swing machine.

(3). The flat pad②, nut③, followed by a fixed, pay attention to the locking nut③ force, if twisted too tightly, then the shock result is not satisfactory.

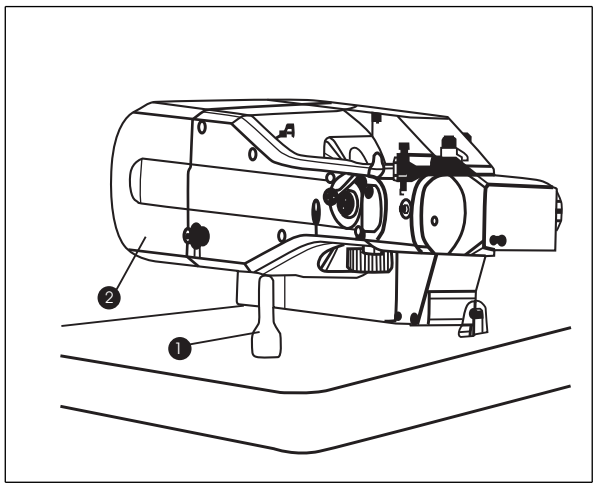
4. Installing the drain receiver



Fix drain receiver ② in the installing hole of table ① with four setscrews③. Screw in drain bin ④ to drain receiver②. Insert sewing machine drain pipe⑤ into drain bin ④ .

Insert drain pipe⑤ until it will go on further so that it does not come off drain bin ④ when tilting the machine head

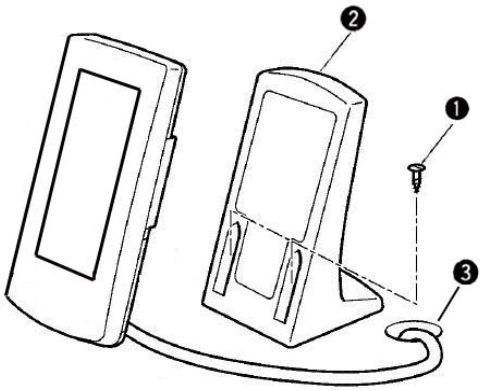
5. Tilting the sewing machine head



turn head ② gently down , and leaning the head on the head supporting bar at ①.

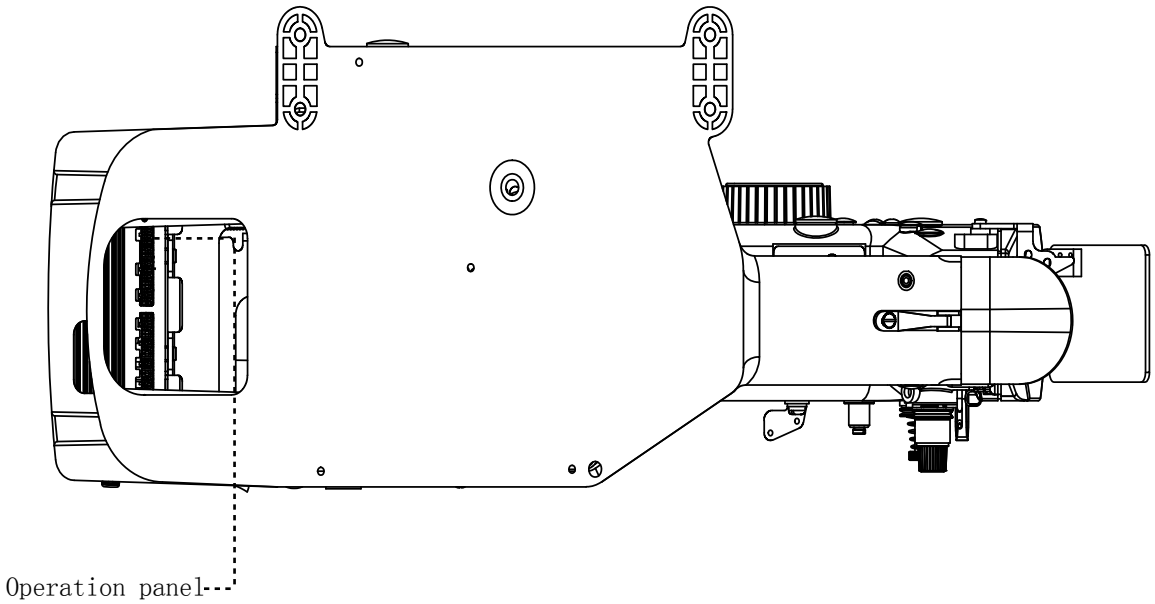
1. **Before tilting the sewing machine head, make sure that head support rod ① is attached to the machine table；**
2. **When raising the sewing machine head, do not raise it while holding motor cover ②.It will be the cause of breakage of motor cover②.**
3. **Be sure to tilt the sewing machine head on a flat place to prevent it from falling.**

6. Installing the operation panel



Use four wood screws① fix the operator panel ②on the table ③in a comfortable operation position, then the operator panel② corresponding wire hole through the table③, and then dock with the other side.

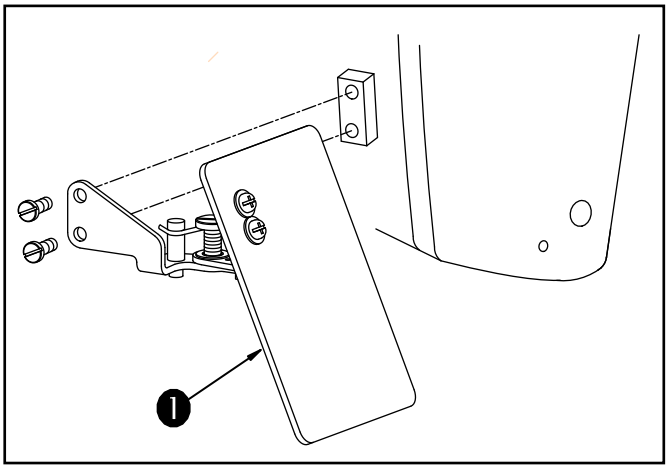
7. Connecting the operation panel



Please let the operation panel line connect with the electronic control box according to online identity, make sure the connection is correct.

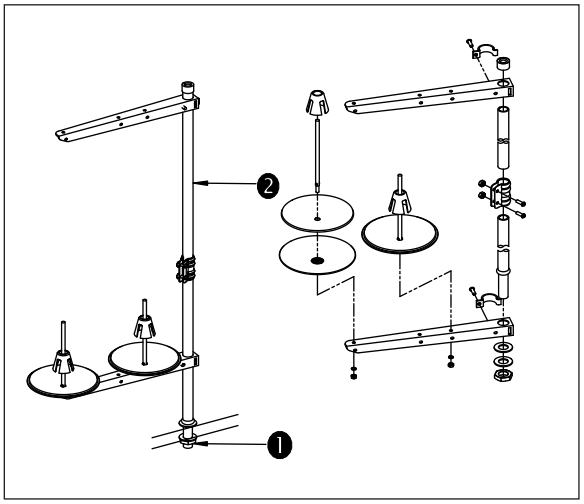
8. Installing the eye protection cover

WARNING : **Be sure to attach this cover to protect the eyes from the disperse of needle breakage.**



The eye shield in the accessories box should been installed in the head on the left.

8. Installing the thread stand

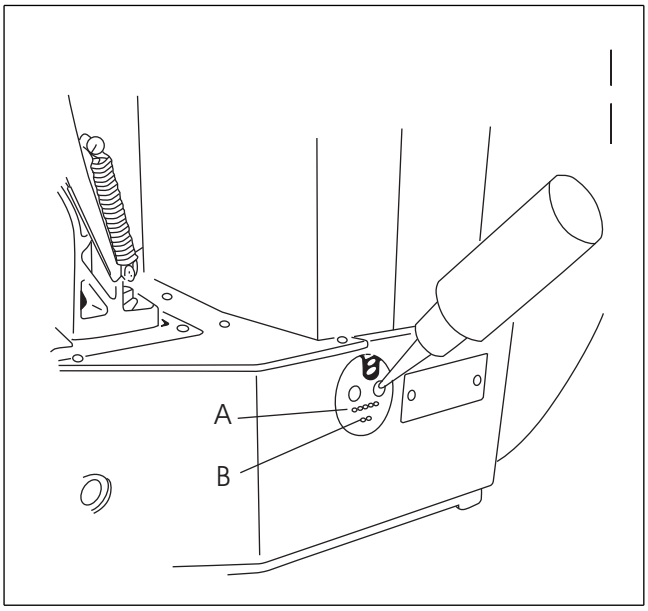


The line frame in the accessory box should be installed in Table.

[4] OPERATION OF THE SEWING MACHINE

1. Lubrication

WARNING : Turn of the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine



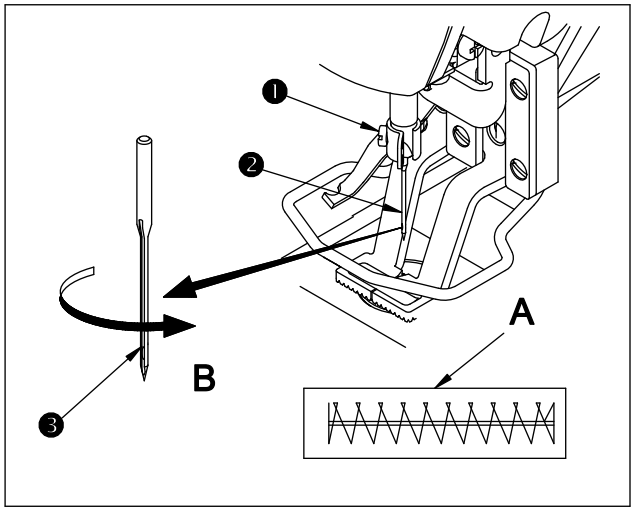
Check that the place between lower line Band upper line A is filled with oil . Fill there with oil using the oiler supplied with the machine as accessories when oil is short.
*The oil tank which is filled with oil is only for lubricating to the hook portion. It is possible to reduce the oil amount when the number of rotation used is low and the oil amount in the hook portion is excessive.(Refer to 8.Amount of oil supplied to hen kook of [7] maintenance

1. DO not lubricate to the places other than the oil tank and the hook of Caution 2 below. Trouble of components will be caused.

2. When using the sewing machine for the first time or after an extended period of disuse use the machine after lubricating a small amount of oil to the hook portion.(Refer to2.Adjusting the needle-to-shuttle relation of [7]MAINTENANCE

2. Attaching the needle

WARNING : Turn of the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine

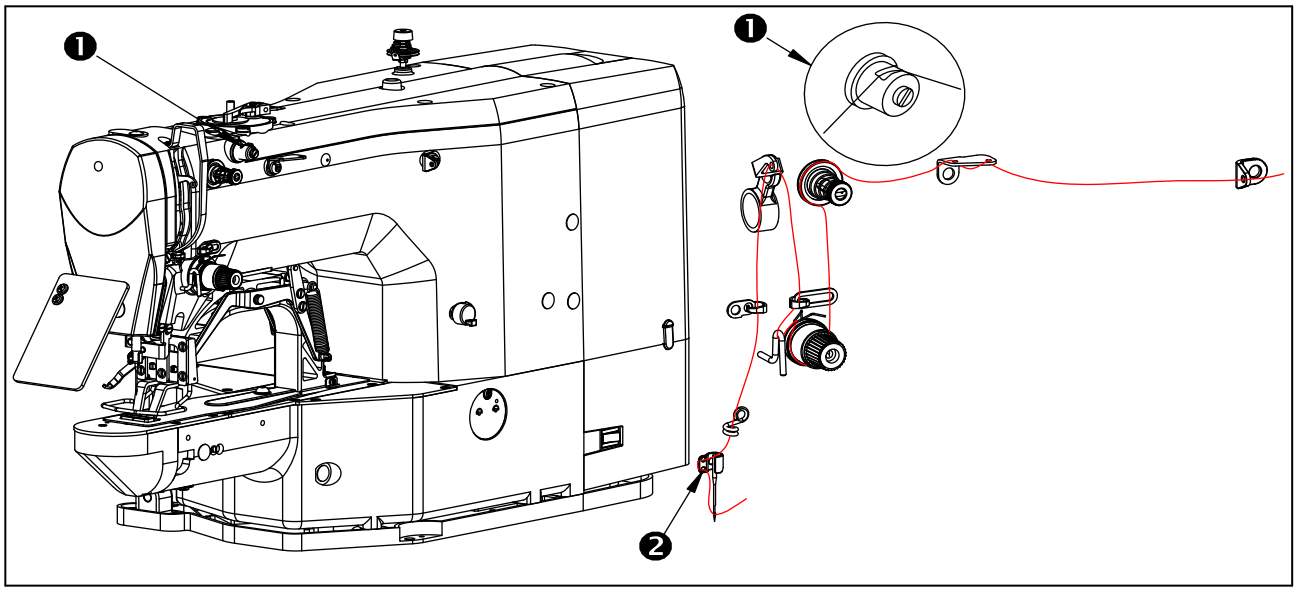


Loosen setscrew① and hold needle② with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew①.

If the stitches are made as shown in "A", attach the needle facing to the direction B" to a small extent.

3. Threading the machine head

WARNING : Turn of the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine



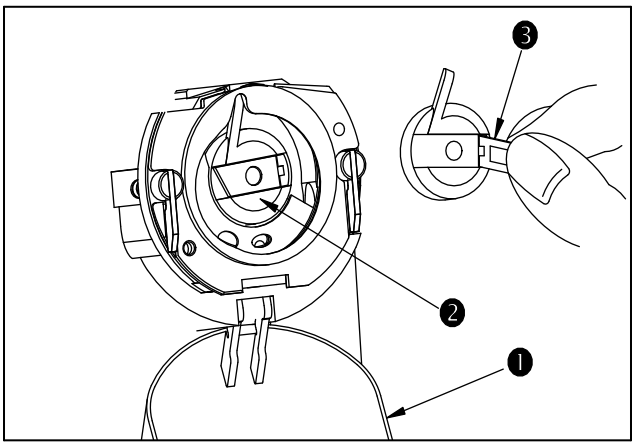
Pull out the thread by approximately 4cm from the needle after threading through the needle.

1.When the silicon oil is used, thread through thread guide for silicon①。

2.For thick thread, pass the thread through one hole only of needle bar thread guide②

4. Installing and removing the bobbin case

WARNING : Turn of the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



⑴.Open hook cover①。

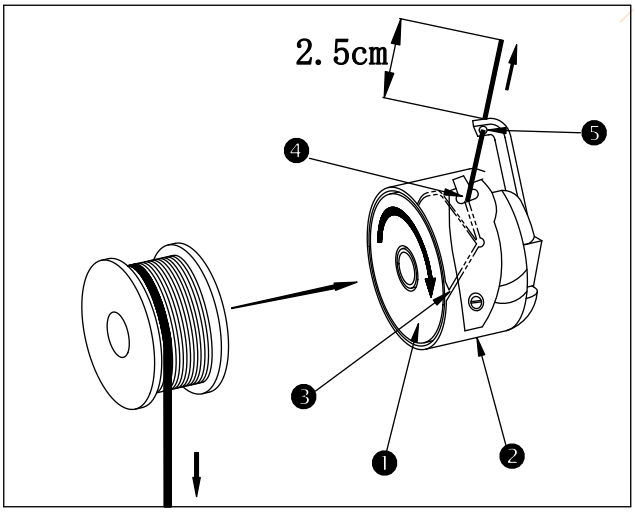
⑵.Raise latch③ of bobbin case②， and remove the bobbin case.。

⑶.When installing the bobbin case, fully insert it into the shuttle shaft, and close the latch.

If it is not fully inserted, bobbin case ② may slip off during sewing.

5. Installing the bobbin

WARNING : Turn of the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine



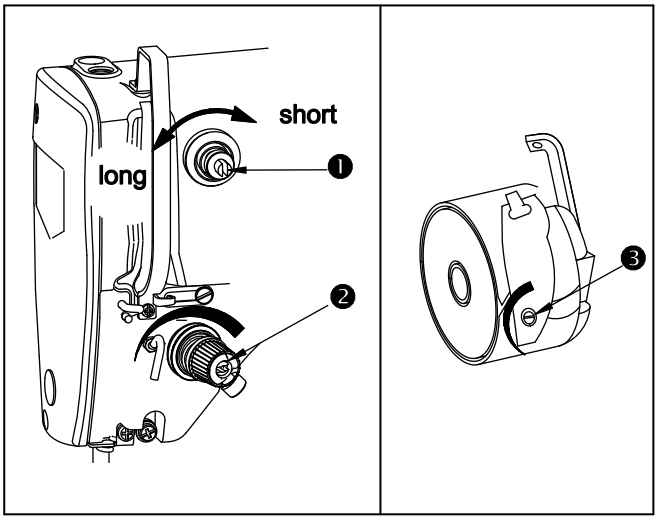
⑴. Set the bobbin ① into bobbin case ②in the direction shown in the figure.

⑵. Pass the thread through thread slit ③of bobbin case②， and pull the thread as it is. By so doing, the thread will pass under the tension spring and be pulled out from thread hole④.

⑶. Pass the thread through thread hole ⑤of the horn section, and pull out the thread by 2.5cm from the thread hole.

If the bobbin is installed in the bobbin case orienting the reverse direction, the bobbin thread pulling out will result in an inconsistent state.

6. Adjusting the thread tension



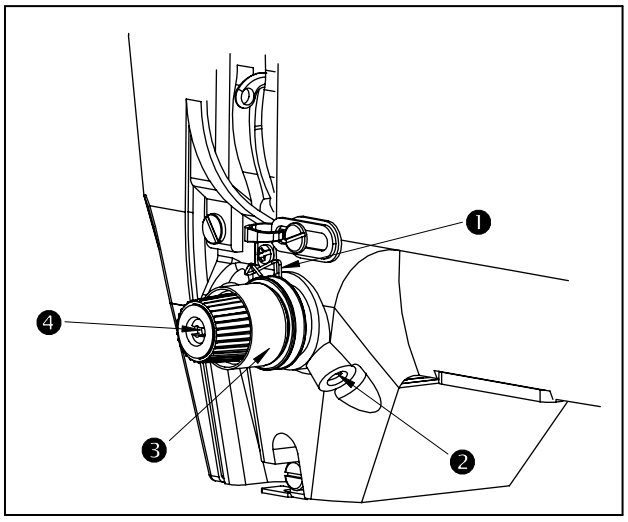
If thread tension controller No.1①is turn clockwise, the length of remaining thread on the needle after thread trimming will be shorter. If it turned counterclockwise, the length will be longer.

Shorten the length to an extent that the thread is not slipped off.

with ② to adjust the upper thread tension,

with ③ to adjust the bottom line tension.

7. Adjusting the thread take-up spring



The standard stroke of thread take-up spring ①is 8 to 10 mm, and the pressure at the start is 0.1 to 0.3N.

⑴.Adjusting the stroke

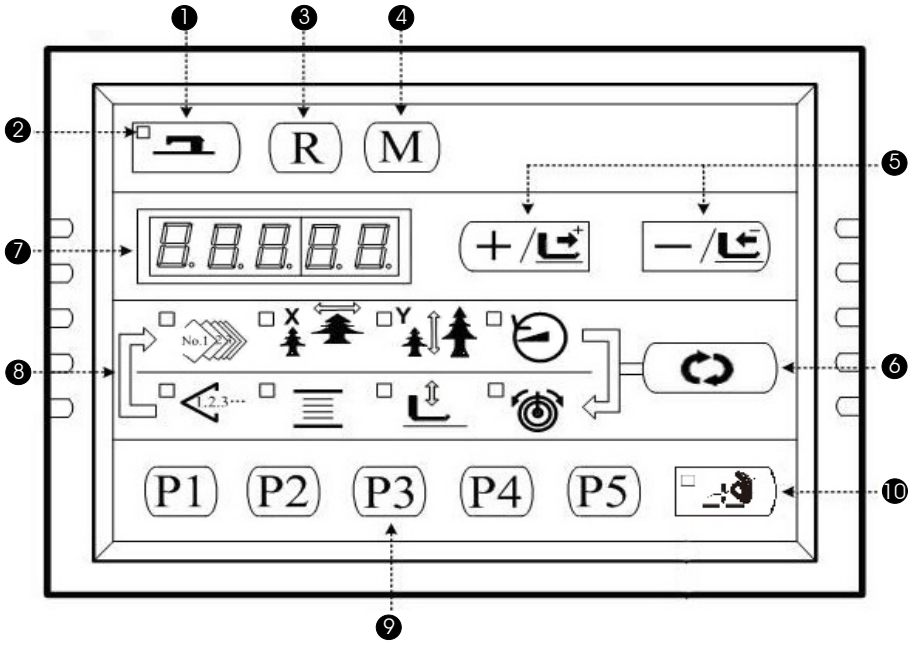
Loosen setscrew②，and turn thread tension asm. ③.Turning it clockwise will increase the moving amount and the thread drawing amount will increase.

⑵.Adjusting the pressure

To change the pressure of the thread take-up spring, insert a thin screwdriver into the slot of thread tension post ② while screw ④ is tightened, and turn it. Turning it clockwise will increase the pressure of the thread take-up spring. Turning it counterclockwise will decrease the pressure.

［5］OPERATION OF THE SEWING MACHINE

1. Name & description of buttons on control panel



⑴.Ready key

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

⑵.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;

⑶.Reset key

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

⑷.Mode key

When the Sewing LED is off, this key can activate the functions for setting parameters or storing the patterns.

⑸.＋/Feed forward key & －/Feed backward key

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

⑹.Selection key

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

⑺.Data display LED

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

⑻.Item Selection LED

The LED of the selected item will be on.

⑼.P Pattern Setting Key

Store the pattern. The stored pattern can be put into sewing as long as user presses this key.

⑽ .Threading Button

when the Sewing LED is on, this key can activate the siding function forthreading actions, which will be automatically turned off in 20 seconds.

2. Settings of Item Data

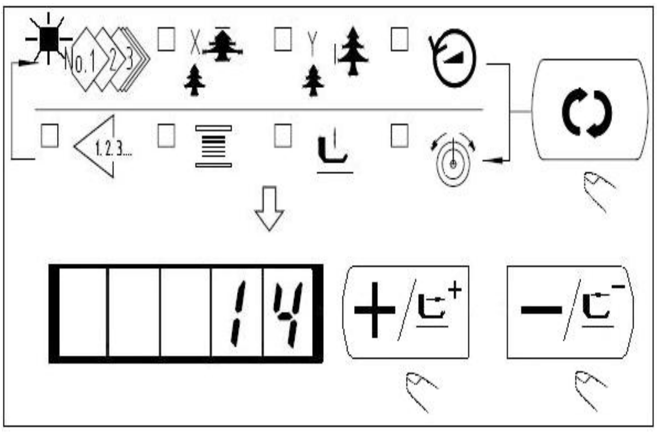
Please set the items in the following sequence:

Setting of the pattern No. → Setting of the X scale → Setting of the Y scale → Setting of the max. sewing speed limitation

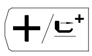
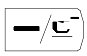
⑴. Turn ON the power switch.

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

⑵. Setting of the pattern No.

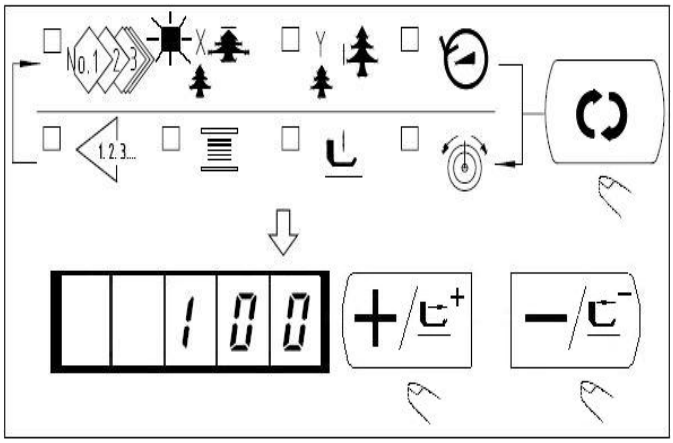


1) Press  , and then the LED of  will be on.

2) Press  and  to display 14 in the Data Display LED

Refer the pattern No. to the separate table.

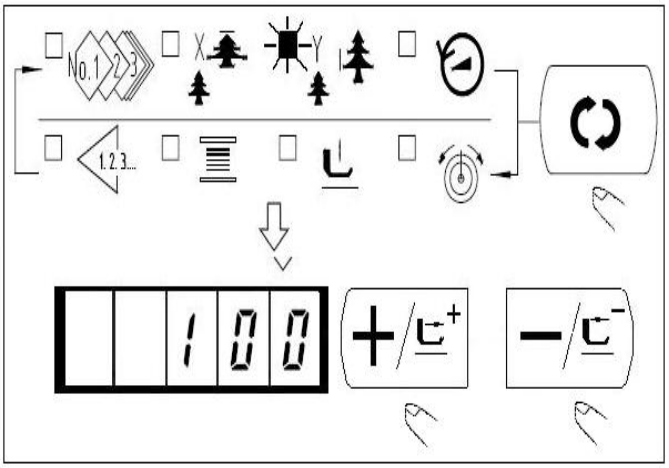
⑶.Setting of the X scale



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%）

The setting exceeding 100% is dangerous since needle and the cloth presser interferes with each other and needle breakage or the like will occur.

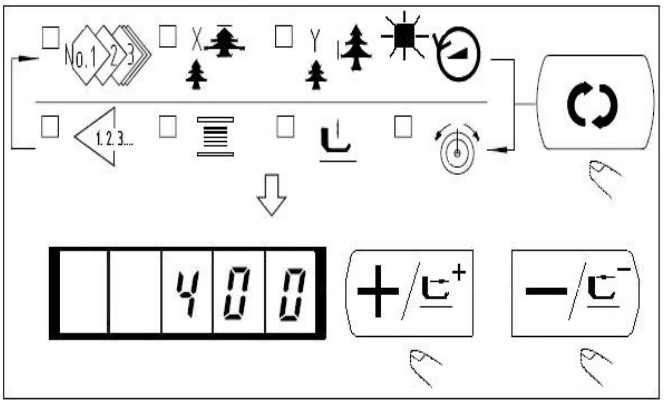
⑷.Setting of Scale Rate in Y scale



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%）

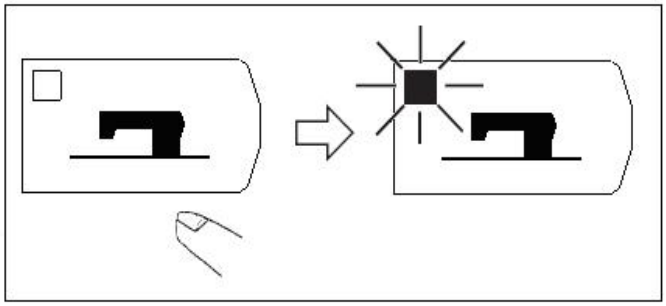
The setting exceeding 100% is dangerous since needle and the cloth presser interferes with each other and needle breakage or the like will occur.

⑸.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）

⑹. 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.

When the presser is raised, be careful that fingers are not caught in the presser since the presser moves after having lowered.

·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 changes its status.

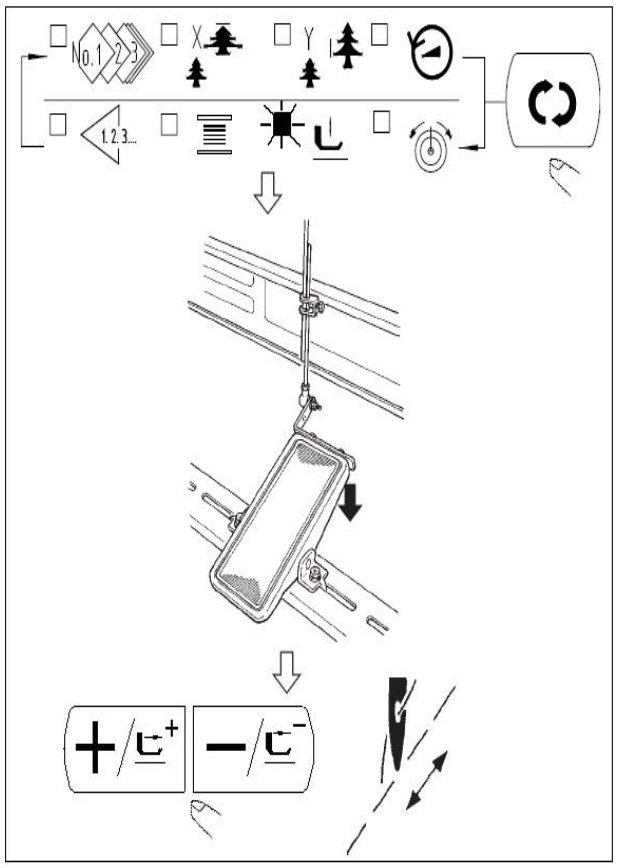
·Press [ ] to turn off the Sewing LED, then each set value of item can be changed

·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.

When turning OFF the power without pressing [ ] key, the set values of pattern No., X/Y scale, number of max. rotation, and thread tension are not memorized.

3. 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 [+/].

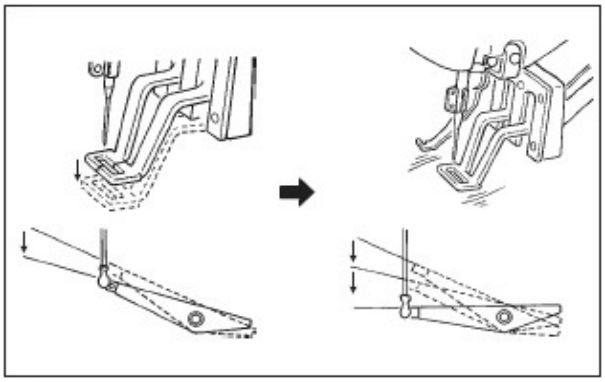
(4) . Use [+/] and [−/] to confirm the shape. The confirmed pattern for sewing shall be in the permitted range of the presser.

(5) . Press [R] 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 Sewing LED will be off.

The work clamp feet do not come down immediately after turning ON the power.

4. Sewing

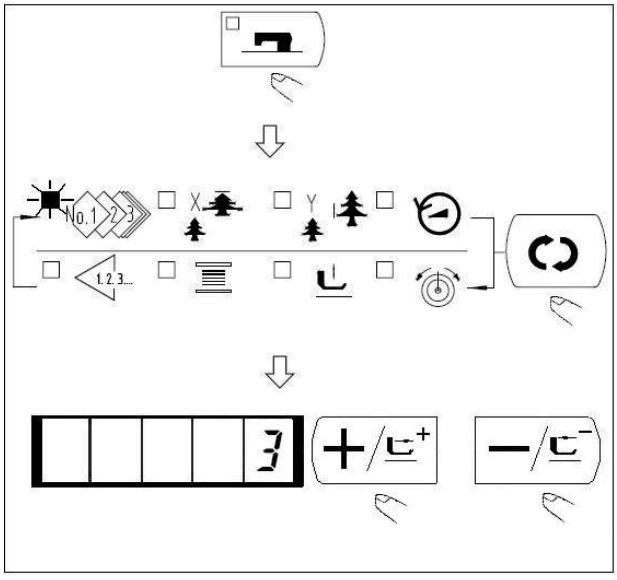


(1) .Put the fabric to the presser section
(2) .Step on the pedal switch to the level 1, then the presser goes down. If you detach the foot from the pedal, the presser will go up.
(3) .Lower the presser to the next level, and then depress the pedal to the second level to start sewing
(4) .At sewing end,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

5. Change to other patterns



(1) . Press [⌐] to turn of the Sewing LED.

(2) . Press [↻] to select the No.

(3) . Use [+/⊏+] & [−/⊏−] to set pattern number.

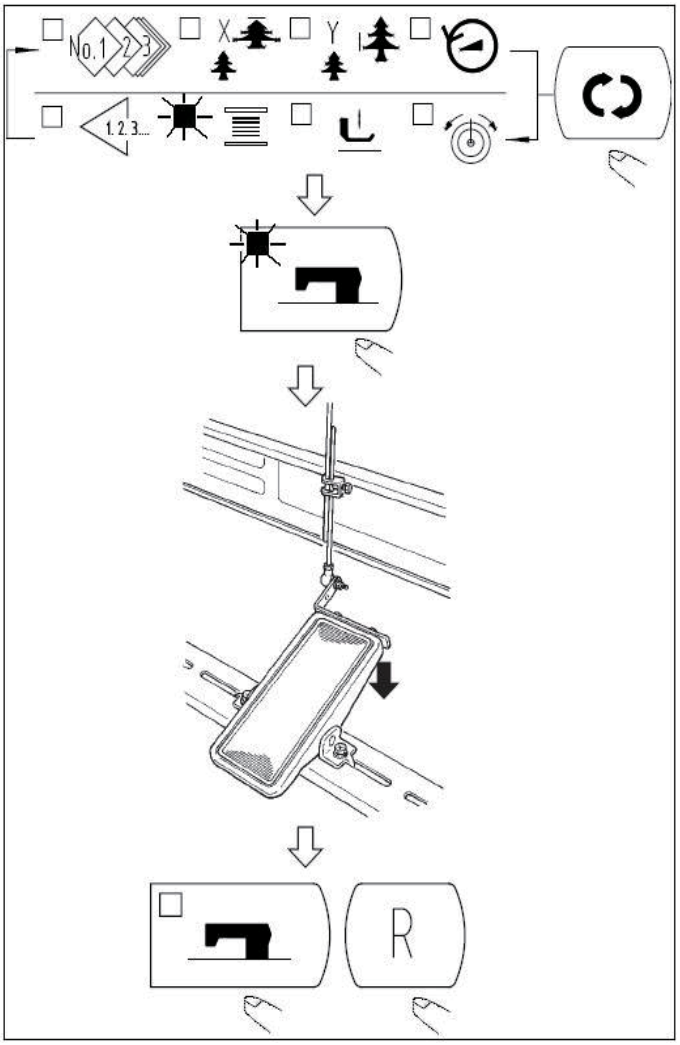
(4) . Set the X/Y scale rate, speed and so on in the same way

(5) . Press [⌐] to turn on the Sewing LED, thus have access to Sewing status.

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.

6. Winding a bobbin



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.

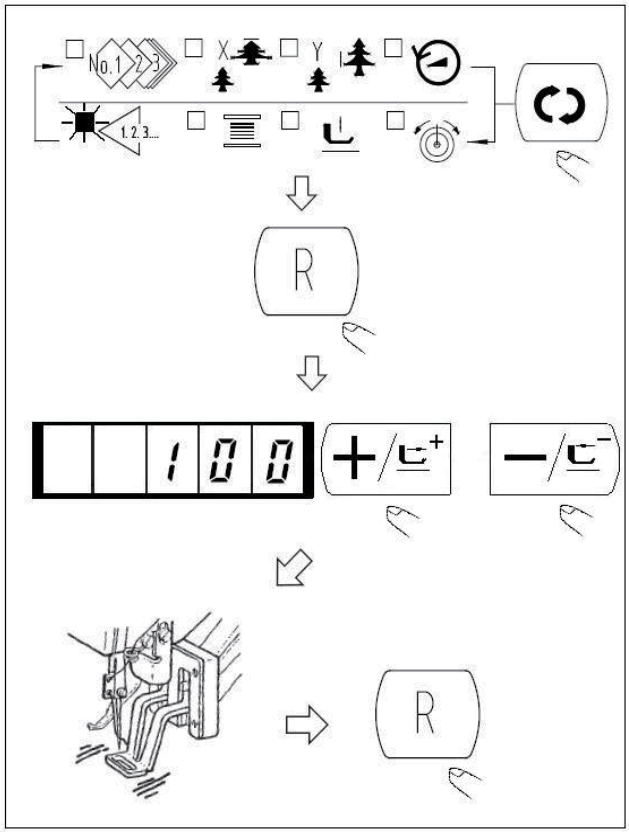
(4) . Depress the pedal to start the sewing machine .

(5) . Depress the pedal switch or press R to stop machine.

(6) . Press to turn off the Sewing LED and lift the presser. Then become valid.

7. 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 1.2.3.... .

(2) . Then press R .

(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 R again. Then the value of counter will restore to the set value

(Repeat the steps from (4) to (6)).

8. Pause

After user set the value of No.31 parameter at 1, R can be used as the pause key.

After user set the value of No.31 parameter at 2, the reverse gear of pedal can be used as the pause key.

(1). If user presses R 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:

A . Depress the pedal forward to start the sewing machine .

B . Press R and perform the thread-trimming. After that, use +/⊑+ & −/⊑− to adjust the position and then depress the pedal forward to start the sewing machine .

C . Press (R) and trim the thread. After that, press (R) again to return to the origin.

9 . Set P pattern & C pattern

9-1. Use Pattern Key (P1 P2 P3 P4 P5) 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.

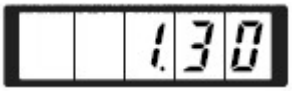
· For selecting P6~P25, user can use the combinations of (P1 P2 P3 P4 P5) (simultaneous pressing) shown in the below table at his sewing.

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		

⑴.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.

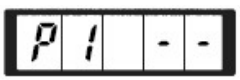
1). Turn on the power, press (M) (the sewing LED shall be off at this moment) to have access to Mode Setting (Setting of Storage Switch).

⇨ 

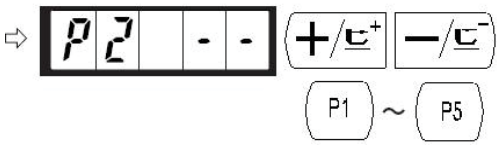
2). Use (+/E+) & (−/E−) to display the storage mode of pattern

⇨ 

3). Press (⌐) to have access to the pattern storage mode.

⇨ 

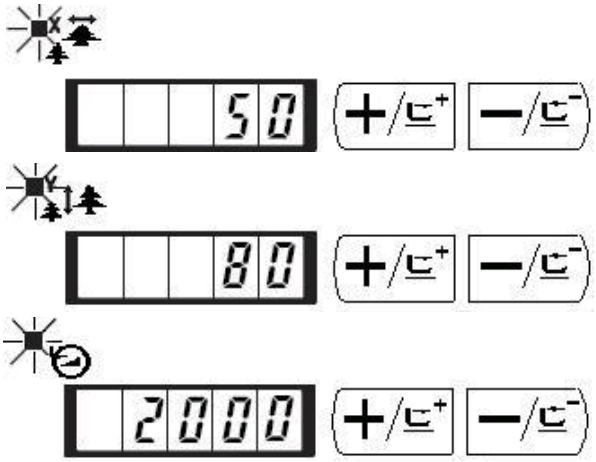
4). Press (P2) to select the stored P-No. This selection can also be done by using (+/⊏+) & (−/⊏−).



5). Use (↔) to select NO.1 2 3.

Use (+/⊏+) & (−/⊏−) to set pattern number.

6). Press (↔) and use (+/⊏+) & (−/⊏−) to set the X scale rate t "50"% and the Y scale rate at "80%", as well as Max Speed limitation at "2000"rpm.

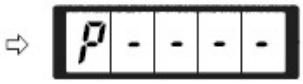


7). Press (↔) to activate X scale rate ,which is displayed at 0.0. The stroke in X direction can be changed in step at 0.1mm. Use (+/⊏+) & (−/⊏−) to set this value at 0.5.

8). Press (↔) to activate Y scale rate , which is displayed at 0.0. The stroke in Y direction can be changed step at 0.1mm. Use (+/⊏+) & (−/⊏−) to set this value at 1.0.

9). Press (⌐) to end the setting.

10). Press (M) to end pattern storage mode

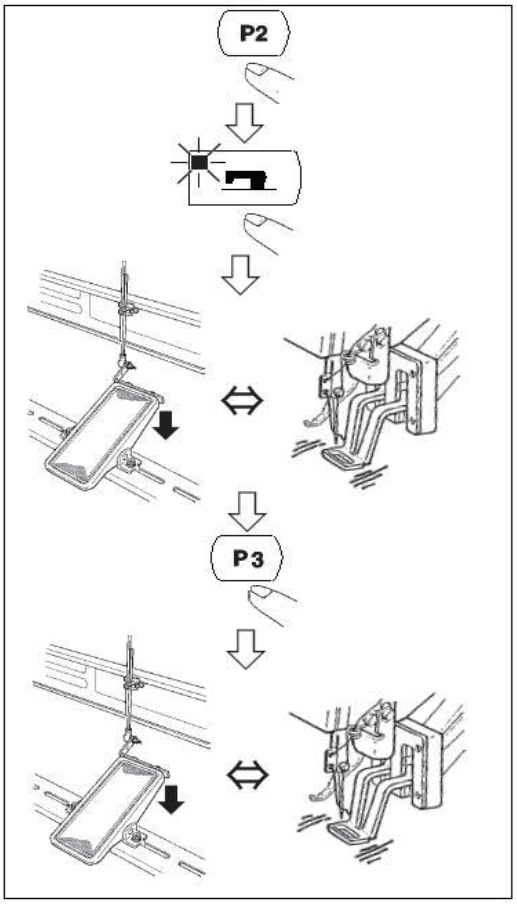


11). Press (M) to end Mode Setting and return to Ordinary Mode

⑵.Sewing operation

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

Press P1 to P25 key while the sewing LED lights up and the presser comes down. Be careful that your fingers are not caught in the presser. Pattern register from P26 to P50 can be performed. Register can not be performed in P1 to P5 key. Designate the pattern by the pattern selection only. Indicate the pattern with or key. Pattern selection from P26 to P50 cannot be performed while the sewing LED lights up.



⑴ . Turn on the power.

⑵ . Press P2 .

⑶ . Press to turn on the Sewing LED, and then the presser will go up.

⑷ . Confirm the pattern shape.

⑸ . If the pattern shape is correct, the machine will be able to carry out the sewing.

⑹ . After sewing, please press P3 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.)

⑺ . Perform the operations in Step 4 and Step 5.

9-2. Sewing with combination functions

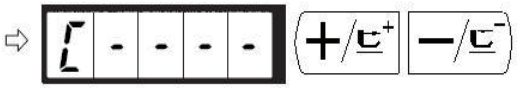
Store the patterns registered in the sequence as P1~P50 to C1~C20. The sewing pattern will be changed in order upon the finish of sewing in each time. 30 patterns can be stored in a combination code at most.

(1). Storage of combination pattern

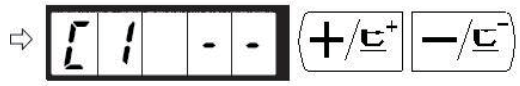
Example: Register the combination in order of P1, P2 and P3.

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

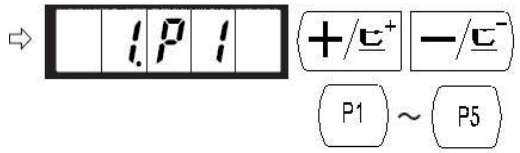
2). Use (+/⊵+) & (−/⊵−) to display the Combination Mode



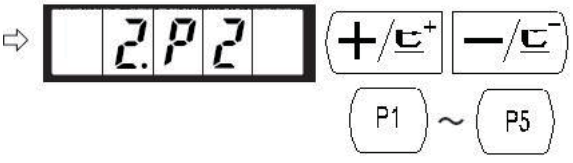
3). Press (▭) to turn on the Sewing LED, thus to have access to the setting mode of combination pattern. User can select C pattern number from C1~C20 with (+/⊵+) and (−/⊵−).



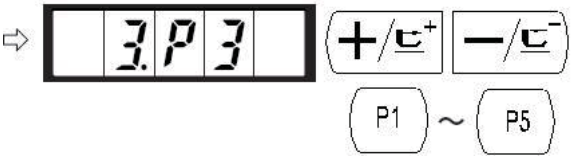
4). Press (↻) and (P1) to set the P1 as the first pattern in the C1. User can select P pattern from P1~P50 with (+/⊵+) and (−/⊵−).

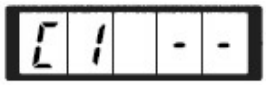


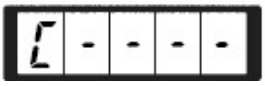
5). Press (↻) and (P2) to set the P2 as the second pattern in C1. User can select P pattern from P1~P50 with (+/⊵+) & (−/⊵−).

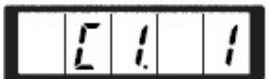


6). Press (↻) and (P3) to set the P3 as the third pattern in C1. User can select P pattern from P1~P50 with (+/⊵+) & (−/⊵−).



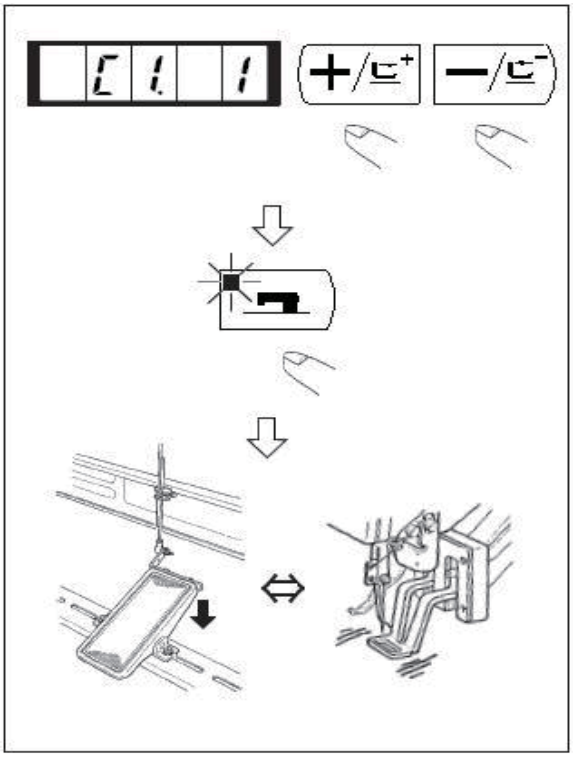
7). Press [ ] to end the storage ⇨ 

8). Press [M] to end the storage mode of combined pattern。 ⇨ 

9). Press [M] 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 [+/C+] & [—/C-].

(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.

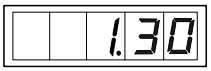
◎ After the sewing, if user wants to go to the previous pattern or the next pattern, user can press [+/C+] & [—/C-] when the Sewing LED is on. Then the pattern display will be changed and the presser will also move to the start point

◎ ·After storing the patterns among C1～C20, if the P pattern in P1~P50 id changed, the content of P pattern with same code will also be changed.。

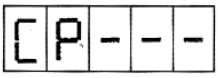
◎ Confirmation of pattern is necessary for each pattern.

10. Debugging mode

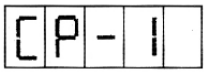
Via this mode, user can perform the operations of maintenance and checking.

(1) . When the Sewing LED is off, press (M) to call the display of  . Then press (P1) (P3) (P5) 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 (P1) (P3) (P5) 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:  ;

(3). Press [ ] to perform the display output test. This test will check the display module and indicator of each LED in cycle; the specific procedure is show in FIgure 1.

(4). Press [ ] again to end the display output test. The monitor will display "CP-1" as shown in the following picture:  .

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:

(6). Hold [−/⊑] to have access to the function test.

(7). During the function test, if user presses (M) , 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.

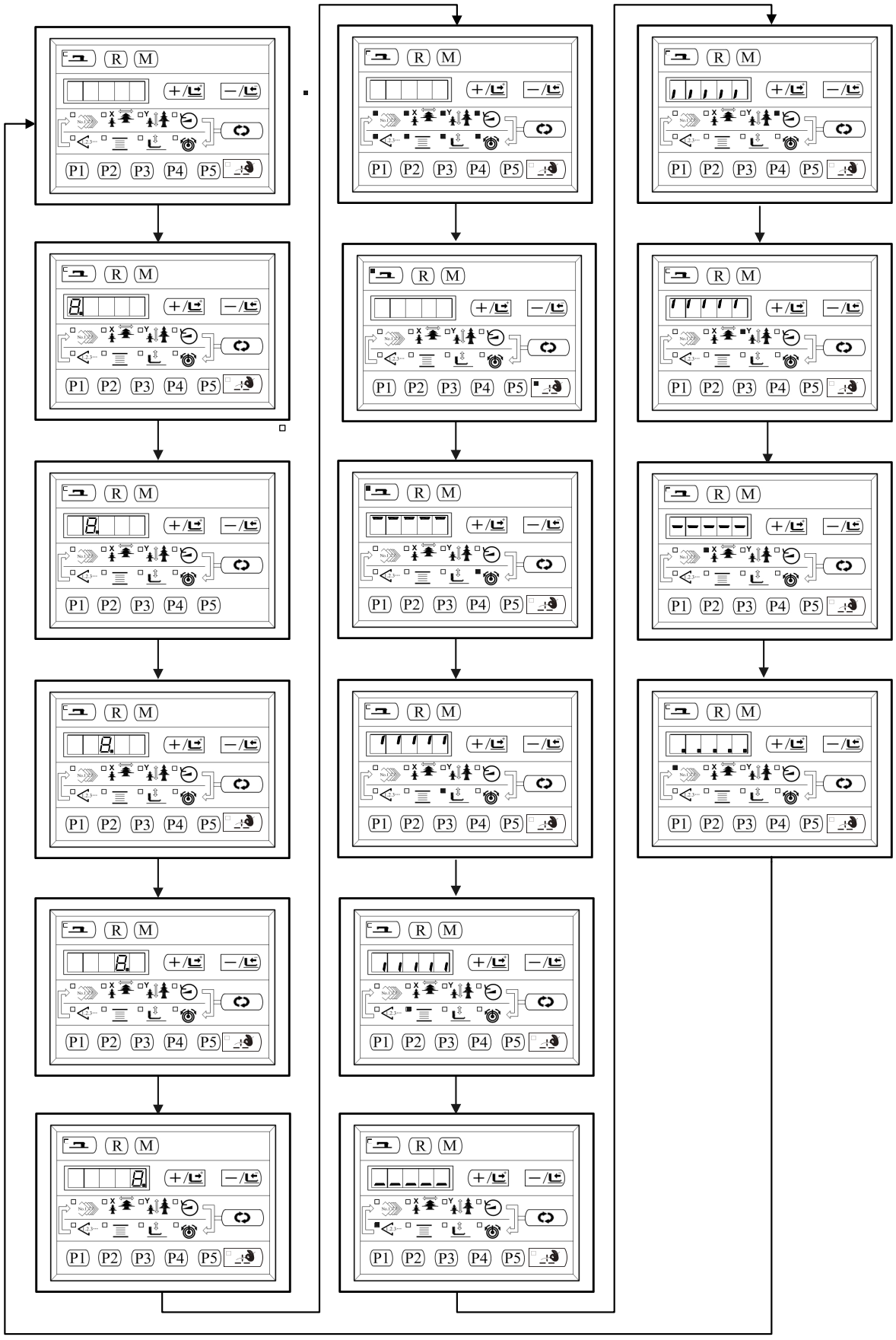
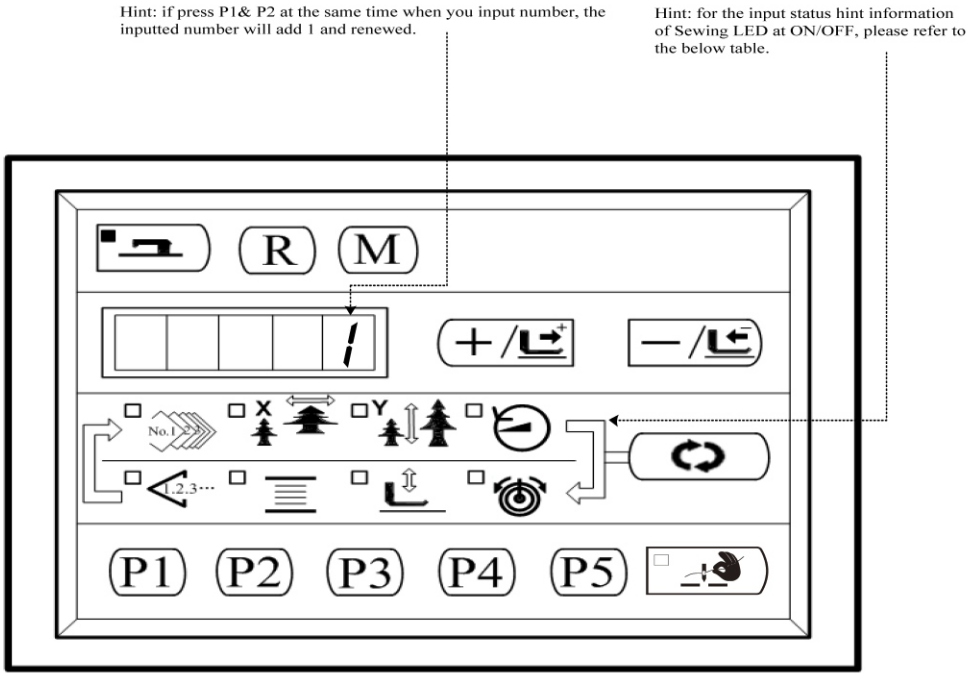


图1

Function Test Code	Function	Content
CP-1	Test input signal	LED hint switch、sensor input and X, Y origin correction
CP-2	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.
CP-3	Continuous Running	If setting the condition of continuous running, test the continuous running mode.
CP-4	Main motor rotation number test	Setting rotation number, machine start-up ,display of actual rotation number
CP-6	Presser foot motor /origin sensor test	Display the step motion of presser foot motor、operation of origin searching and the status of presser origin/presser sensor.
CP-9	The software version number test	Display software version

10−1. 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.



The display content for each inputted No.

Input No.	Pattern N0. 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	Pedal Level -1	/	/	/	/
5	Presser motor origin sensor	Y motor origin sensor	X motor origin sensor	/	/	/	/	/
6	Main-shaft angle display							
7	/	/	/	/	/	/	/	/

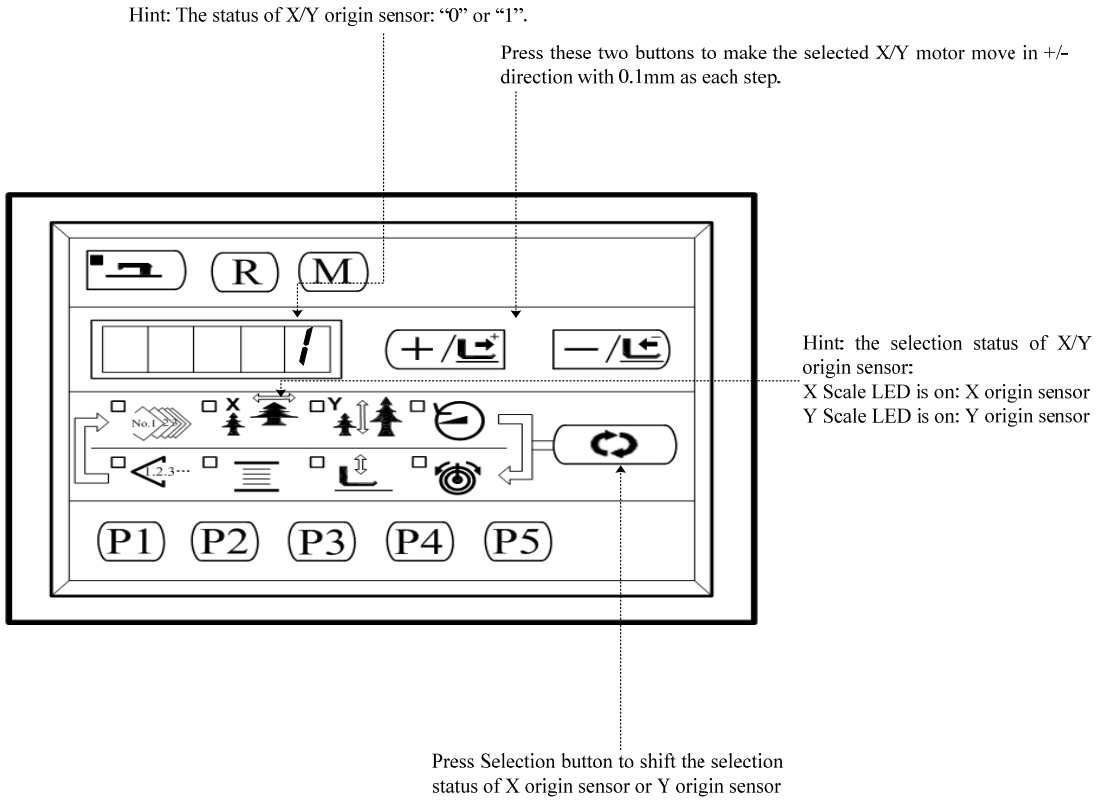
10-2. CP-2Check X/Y motor/origin sensor

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

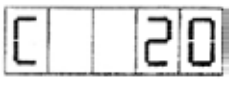


10-3.CP-3 Continuous running

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

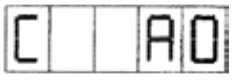
User can press & to set the time interval between two operations.

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.

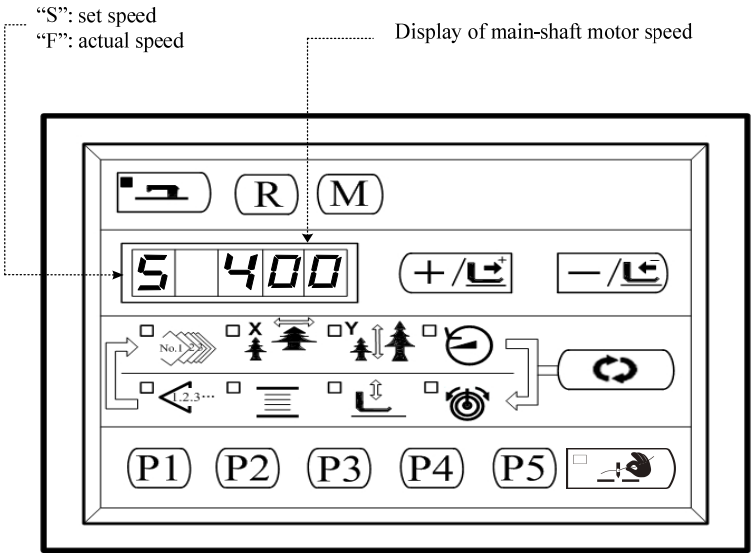
For stopping the continuous sewing, please press  when the sewing ends.

10-4. 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.

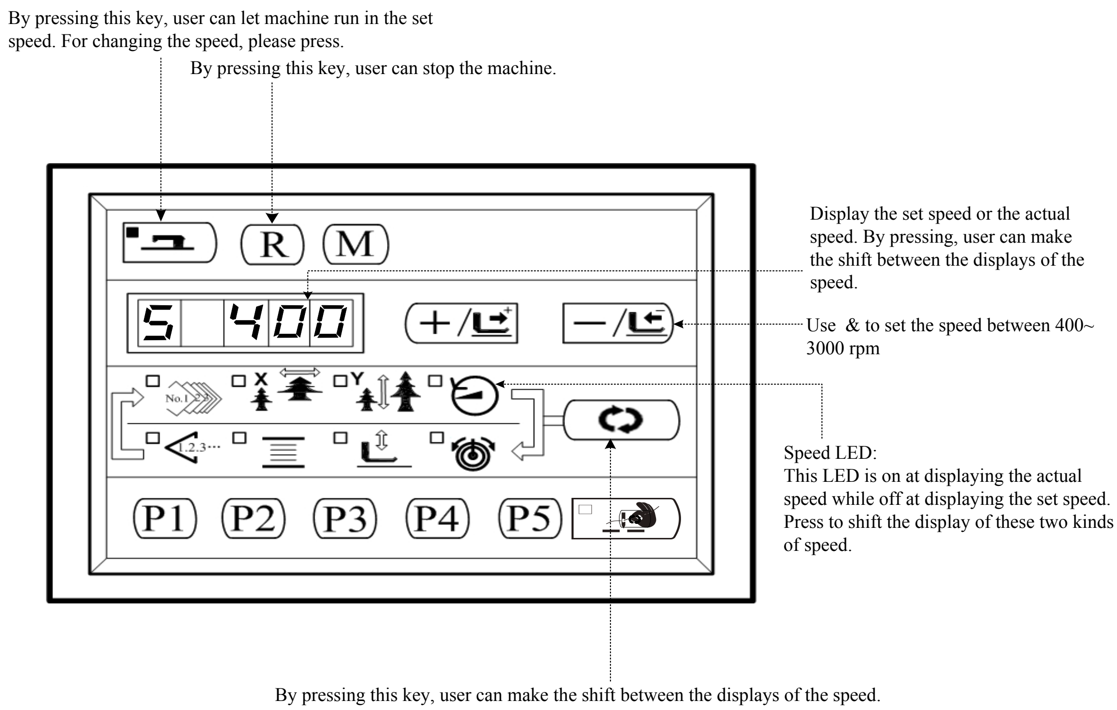
(1).Preparation

User shall press  to have access to CP-4 firstly. At this time, the screen displays "S400".



(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 [sewing key] . At this time, by pressing [shift key] , user can shift the display of set speed and the display of actual speed. For changing the set speed again, user shall press [sewing key] again and use [+] & [−] to set the speed, and then press [sewing key] to enable machine to run in the newly set speed. Press [R] for stopping while pressing [M] for quit.



10-5. CP-6 Test presser origin sensor

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

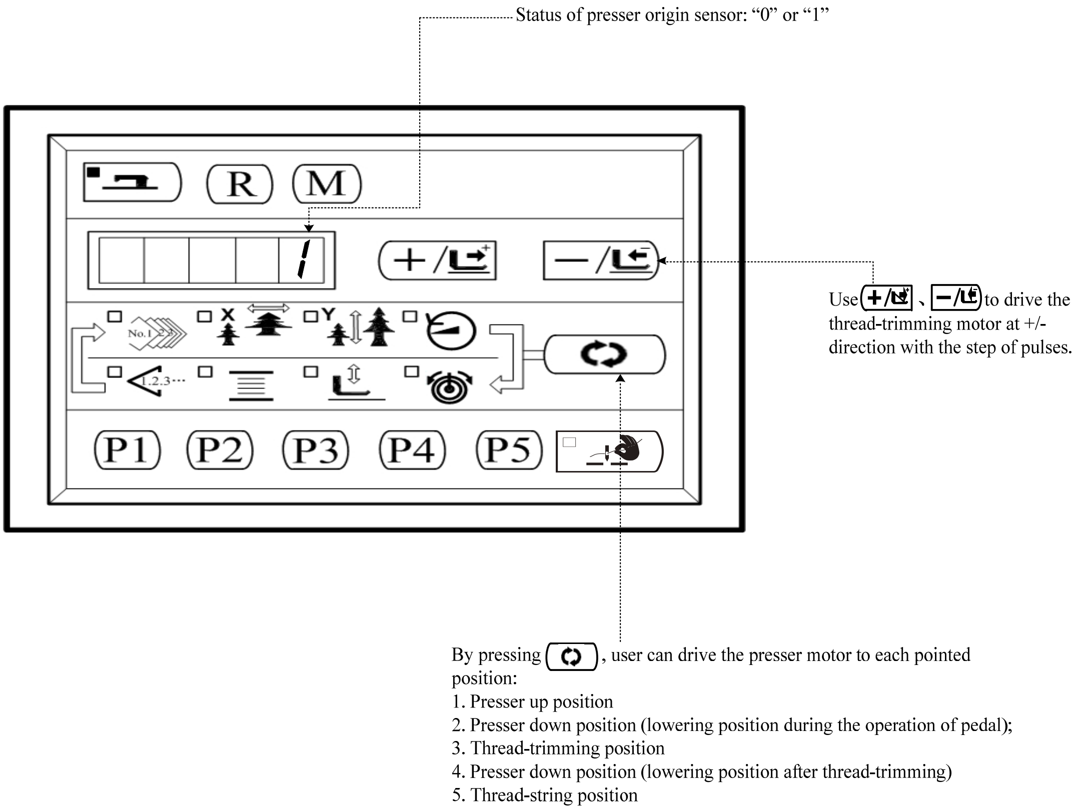
(1).Preparation

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

Note: Power-on does not enter the ready state directly into the CP-6 mode, you can not step pedal to the origin search,Directly press the +/− key to move the motor step by step to detect whether the motor drive is normal;Once you have entered the preparation state or after the origin of the search, then each time into the CP-6 mode must first step on the pedal to 2 files for the origin of detection, in order to press the +/− button to move the motor step by step.

⑵.Operations

If the user presses +/ for 1~ 2 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.

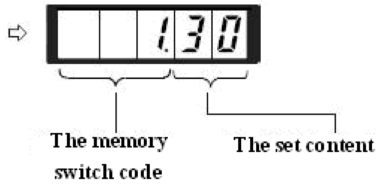


After user presses , the relating parts on the machine will do the 5-step cyclic action in the sequence shown in above figure. Press M to quit that mode.

11. Parameter setting

11-1.Specific operations on setting parameters

(1) . When Sewing LED is off, user can press M to set the parameters.

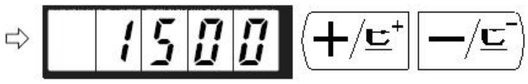


（**After user presses M , the displayed 1.30 means that the Max speed of the No.1 parameter is 3000rpm。**）

(2). User can use +/ & −/ to change the number of parameter.

(3). By pressing the sewing key, 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 R , user can make the parameters return to the initial value.

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

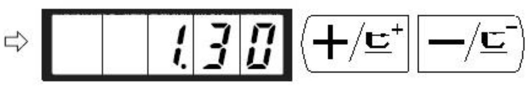
(7). Pressing M will end the parameter setting mode and let system return to ordinary status.

11-2.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 M 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 [M] to return to the ordinary status.

⑵.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.

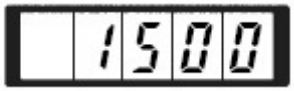
With thread-catching function

	Default Setting（rpm）	Setting Range
1st stitch	1200	400～1500
2nd stitch	2500	400～3200
3rd stitch	2700	400～3200
4th stitch	3000	400～3200
5th stitch	3200	400～3200

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

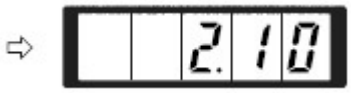
Emp.： In case of having thread-catching function, the 1st stitch will change from 1500 to 1000rmp, while 2nd stitch will change from 3000 to 2000rpm.

1） When the Sewing LED is off, press [M] . ⇨ 

2） Press [▭] to turn on the Sewing LED and display the set value of the 1st stitch. ⇨ 

3） By using [+/⊆+] & [—/⊆-], user can input “1000” in the screen. Press [R] to return to default setting. If user presses [M], the existing operations will be cancelled and system will return to the status in step 2).

4） Press [□ ▬] to turn on the Sewing LED and save the set value of the 1st stitch.

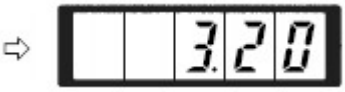


5） By pressing the [+/⊆+] & [—/⊆-], user can display the parameter code No.3 at screen. And the sewing speed of the 2nd stitch is display at here as well.

6） Press [□ ▬] to turn on the Sewing LED and display the set value of the 2nd stitch.

7） By using [+/⊆+] & [—/⊆-], user can input “2000” in the screen Press [R] to return to default setting. If user presses [M], the existing operations will be cancelled and system will return to the status in step 6

8） Press [□ ▬] to turn off the Sewing LED and save the set value of the 2nd stitch.



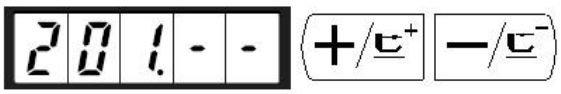
9） Press (M) to end the parameter setting mode and return to the ordinary status.

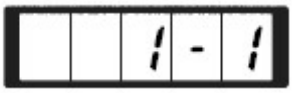
A. Setting on whether to call the pattern number

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.

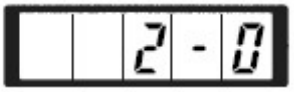
Emp.: Set the No.2 & No.3 patterns as the inoperative.

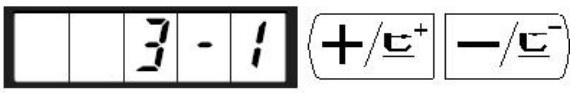
1. Press (M) when the Sewing LED is ⇨ 

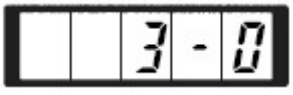
2. User can use (+/⊂+) & (—/⊂-) to let screen display parameter code No.201 ⇨ 

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 [M] to end the parameter setting mode and return to ordinary mode.

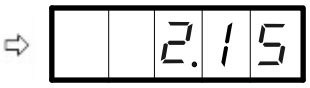
B. Setting of counter action

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.

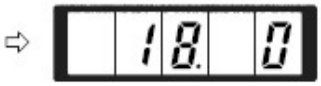
Example: change the Production Counter (Adding method) to Bottom Thread Counter (Subtracting method).

1. Press [M] when Sewing LED is off.



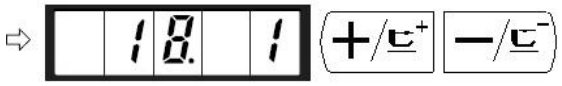
2. User can use [+/E+] & [−/E−] to let screen display parameter code No.18

3. Press [ ] to turn on the Sewing LED. Then the set value of the counter action is displayed in the screen.



4. Set the set value to 1 with [+/E+]

Set value 0：Production Counter;
1：Bottom Thread Counter



5. Press [ ] to save the set value and turn off the Sewing LED

6. Press [M] to end the parameter setting mode and return to ordinary mode.

11-3. Table for parameter setting

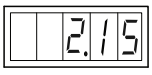
No.	Functions	Adjustment Range	Default Value	Remarks
1.32	Max Speed of Sewing （it can be set in step of 100rpm ）	400～3500	3200	
8.--	Sewing speed of 1	0～200	0	
9.--	Sewing speed of 2	-20 ～7	3	
10. 5	Sewing speed of 1st Stitch (no thread-catching) (It can be set in step of 100rpm)	400～1500	500	
11. 10	Sewing speed of 2nd Stitch (no thread-catching) (It can be set in step of 100rpm)	400～3200	1000	
12.30	Sewing speed of 3rd Stitch (no thread-catching) (It can be set in step of 100rpm)	400～3200	2700	
13.30	Sewing speed of 4th Stitch (no thread-catching) (It can be set in step of 100rpm)	400～3200	3000	
14.30	Sewing speed of 5th Stitch (no thread-catching) (It can be set in step of 100rpm)	400～3200	3200	
16.--	Changeover timing of thread tension at the sewing start （no thread-catching）	－16～30	0	
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 Thread Counter(Subtracting Method)	0	
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 2: Panel + Alarm	1	
36.--	Select the Feed time. When stitches are not well tightened, set the value in “–” direction.	－8～16	0	
37. 1	Presser status at sewing end	0：first back to the seam and then lift the foot; 1：back to the seam at the same time lift the presser foot 2： back to the point after the manual lifting presser foot	1	

No.	Functions	Adjustment Range	Default Value	Remarks
39. 0	Search origin at sewing end of each time (except the cyclic sewing)	0：Not search origin 1：Search Origin	0	
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	
46. 0	Forbid thread-trimming	0：normal 1：forbid thread-trimming	0	
49.16	Set winding speed	800～2000	1600	
201.--	Whether to read the pattern data.	0：unable 1：able	Setting depends on model used.	
P- - -	Register pattern			
C- - -	Register the cyclic sewing			

12.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.

12-1. Activation & modification of service parameter

When the sewing LED is off, operator can press (M) to have system display 

, then the operator needs to press (P1) (P3) (P5) 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.

12-2. Table of service parameters

No.	Definition	Adjustment Range	Initial Value	Remarks
21.--	Positions of standard pedal & pedal switch	150-280	240	
22.--	Position of standard pedal & stroke switch of high/low section.	300-380	330	
23.--	Position of standard pedal & start switch	400-480	430	If increasing the set value, user will need to depress presser harder.
24.0	Pedal type	0: Single 1: Double	0	
27.--	Dropping speed of presser at depressing pedal	100-4000pps	4000	
28.--	Lifting speed of presser at depressing pedal	100-4000pps	3300	The excessive lifting will cause problems in operation.
29.--	Lifting speed of thread-trimming presser at sewing end	100-4000pps	4000	The excessive lifting will cause problems in operation.
38.--	Start sewing with switch when presser keeps still	0：Normal 1：Depress Pedal to Lift Up the Presser	0	
43. 3	Selection of machine rotating number at thread-trimming	200~800	3	
44. 0	Selection on whether to feed cloth in the easy direction at thread-trimming	0：Not Feed 1：Feed Cloth	0	
45.16	Guide diameter of needle hole for feeding cloth at thread-trimming (Changing step can be set at 0.2mm.)	16~40 （1.6mm~4.0mm）	16	
56.--	Limited range of motion in +X direction (Right)	0-50mm	20	
57.--	Limited range of motion in -X direction (Left)	0-50mm	-20	.

No.	Definition	Adjustment Range	Initial Value	Remarks
58.--	Limited range of motion in +Y direction (Back)	0-30mm	15	
59.--	Limited range of motion in -Y direction (Front)	0-30mm	-15	
62.0	Pattern and Parameter Update	USB-0: Nomal USB-1: Customer pattern update mode USB-2: Parameter update mode USB-3: Parameter export mode USB-4: Default pattern update mode		
63.4	Defalut Parameter for Each Manufacturers	0~4	4	
67.--	Main Control Software Version	1 : Parameter data restore 2 : Pattern data restore 3 : Parameter and Pattern data restore together	0	
68.--	Stop position compensation	-100~100	31	
112.--	Main shanft stop position compensation	-10~10	-7	

No.	Definition	Adjustment Range	Initial Value	Remarks
135	Presser action order before sewing start	0: After origin is found in X/Y axis,the presser will move to the sewing start point and then go down to press the cloth; 1: After origin is found in X/Y axis,the presser will stop at the origin. If user steps the pedal to level 1,the presser will go down at origin and press the cloth; If user steps the pedal to level the presser will move to the start sewing point and strat the sewing; 2: At sewing start,the action is as same as in "1".The only difference is at the sewing end, which is that the end point.After user steps the pedal to level 1,the presser will return to origin and go up.	0	
138.1	Thread tension control method	0: Thread-catching Method 1: Thread-standing Method	1	
150.0	Set the safety switch to be invalid	0: Nomal 1: Invalid	0	
241.0	Machine type	0: Bar-tacking 5: 60×40 7: Button sewing	0	
CP---	System Test Mode			

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

12-3.Recovery to default setting

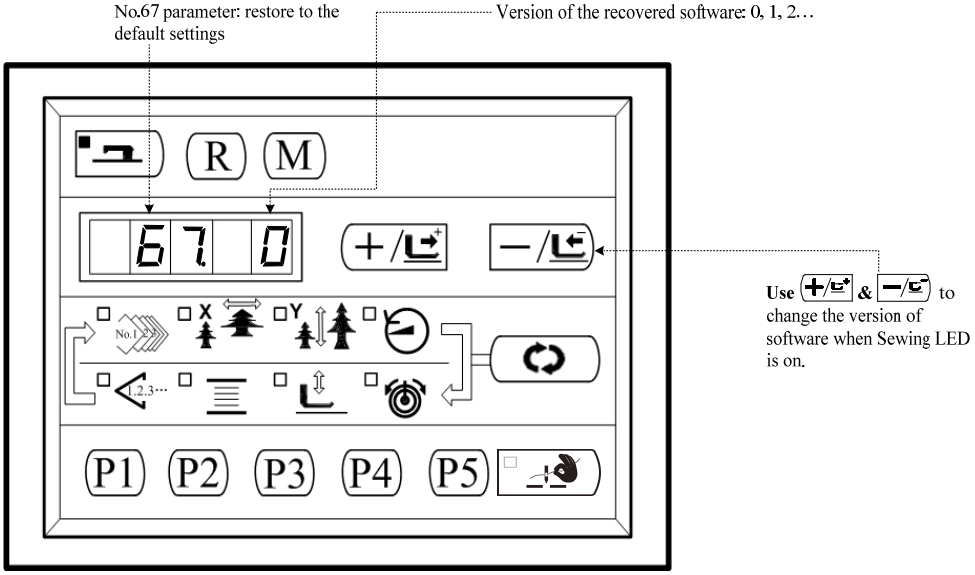
If the user changes some parameters by mistake, which are properly set at delivery, he will use the function of "Recovery to Default Setting" to restore the system.

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

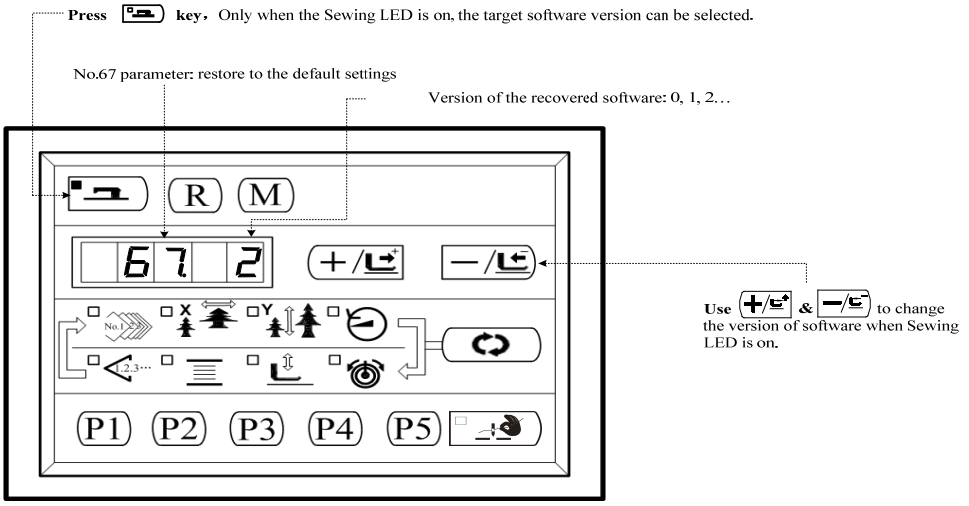
The following is the specific operation step：

1. When the Sewing LED is off, operator can press (M) to have system display 215, and then the operator needs to press (P1) (P3) (P5) 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 (+/⌐) & (−/¬)：

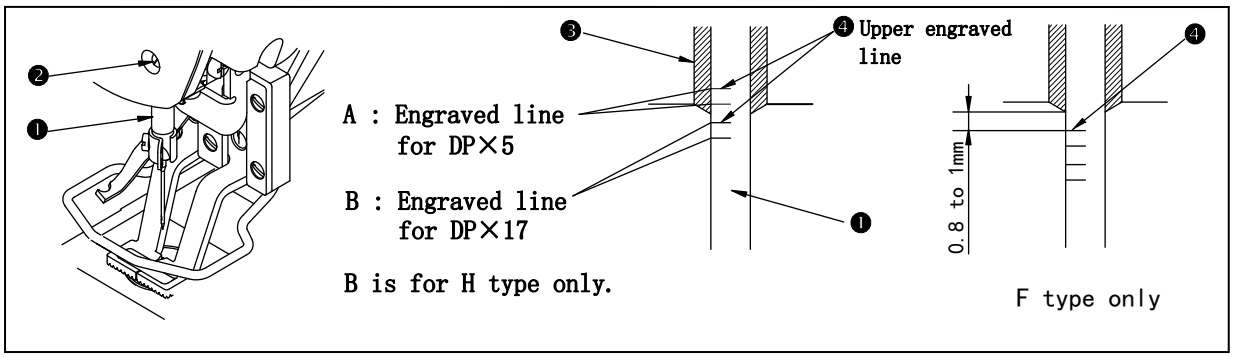


4. Press again to confirm the corresponding recovery operation, sewing lights off; system buzzer long sound prompts to restore success.
5. Press (M) to quit the setting mode of service parameters. Then the system will return to the normal sewing mode;
6. And then, turn off the power and repower the machine after about one minute.
7. After the completion of the restoration,the corresponding systerm setting to restore the state of the factory,the main control of the parameters、the panel P、C pattern、pattern number XYscaling、Maximum speed will be restored to the default value.

[6] MAINTENANCE

1. Adjusting the height of the needle bar

WARNING : Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.

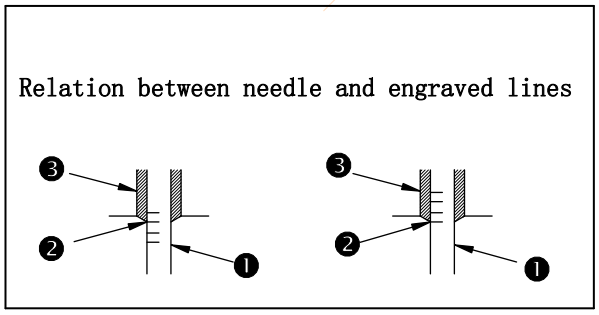


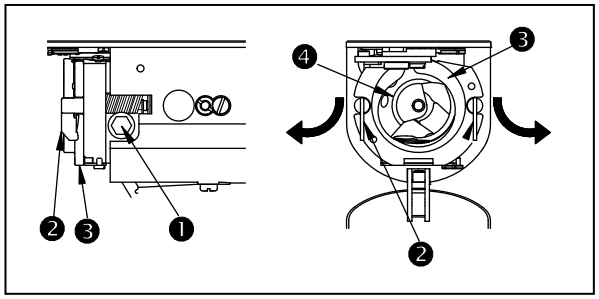
Bring needle bar ① to the lowest position of its stroke. Loosen needle bar connection screw ② and adjust so that upper marker line④ engraved on the needle bar aligns with the bottom end of needle bar bushing, lower ③. For F type only, adjust the needle bar to the position where it is lowered by 0.8 mm to 1 mm from the center of upper marker line ④ engraved on the needle bar.

After the adjustment, make sure that there is no uneven torque. When stitch skipping occurs in accordance with the sewing conditions, adjust the height of the needle bar so as to lower it by 0.5 to 1 mm from the needle bar engraved line ④ .

2. Adjusting the needle-to-shuttle relation

WARNING : **Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.**

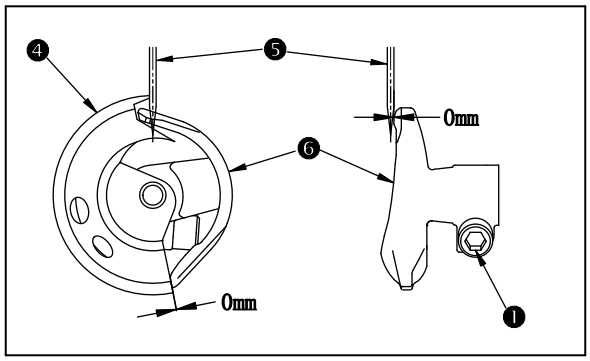




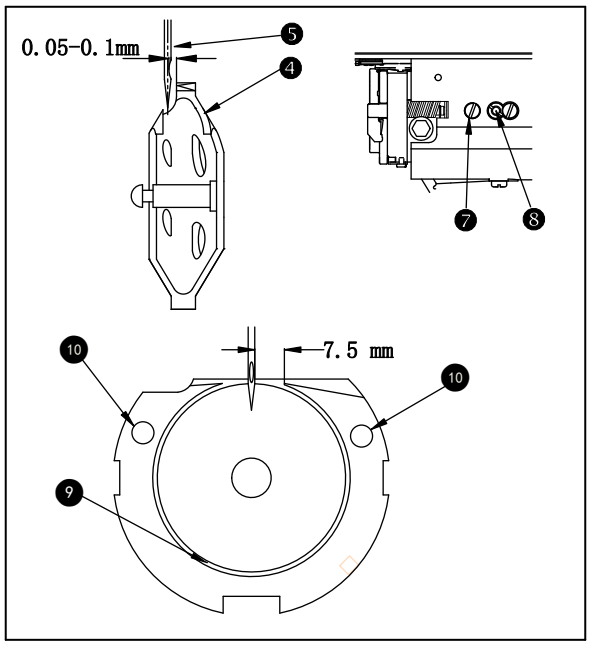
(1). Turn the hand wheel by hand. When needle bar① has gone up, adjust so that lower marker line② engraved on the needle bar aligns with the bottom end of the needle bar bushing ③ , lower.

(2). Loosen setscrew ①in the driver. Open inner hook pressers ② to the right and left, and remove inner hook presser ③ .

At this time, be careful not to let inner hook ④come off and fall.



(3). Adjust so that the blade point of inner hook ④ aligns with the center of needle ⑤, and that a clearance of 0 mm is provided between the front end of the driver and the needle as the front end face of driver ⑥receives the needle to prevent the needle from being bent. Then tighten setscrew ①of



(4). Loosen setscrew ⑦of the shuttle, and adjust the longitudinal position of the shuttle. To do this adjustment, turn shuttle race adjusting shaft ⑧clockwise or counterclockwise to provide a 0.05 to 0.1 mm clearance between needle ⑤ and the blade point of inner hook ④ .

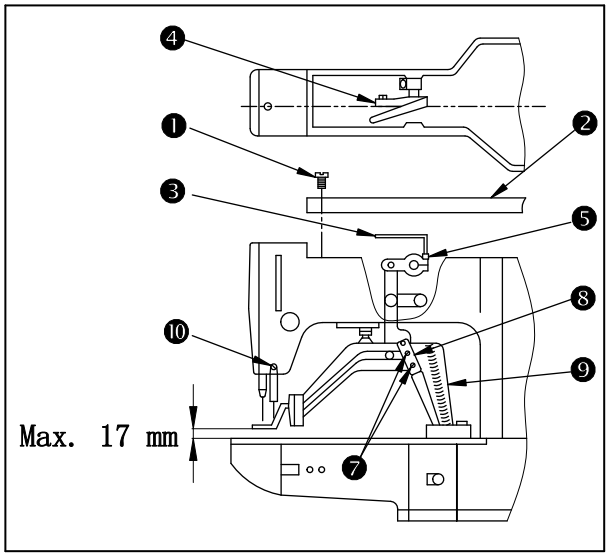
(5). After adjusting the longitudinal position of the shuttle, further adjust to provide a 7.5 mm clearance between the needle and the shuttle by adjusting the rotating direction. Then tighten setscrew ⑦ of the shuttle.

Apply a small amount of oil to race section⑨and oil wick⑩ , and use the sewing machine after an extended period of disuse or cleaning the periphery of hook portion.

3. Adjusting the lift of the work clamp foot

WARNING :

Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.

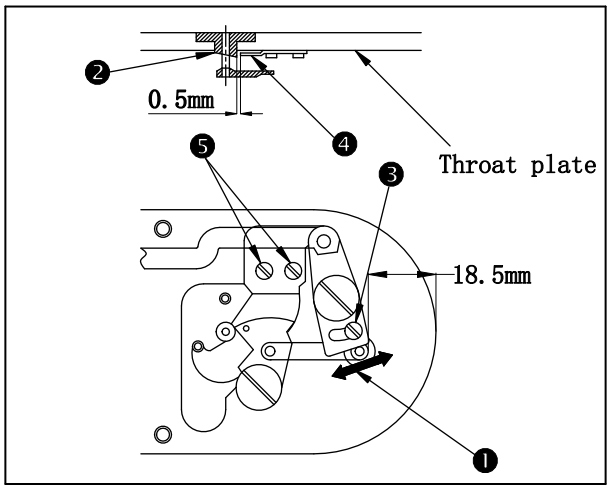


⑴ . With the machine in stop mode, remove six set screws ① of the top cover, and take off top cover②.
⑵ . Apply L-shaped wrench ③to socket bolt ⑤of clamp ④ , and loosen the socket bolt.
⑶ . Push down L-shaped wrench ③ to increase the lift of the work clamp foot, or pull it up to decrease the lift.
⑷ . After the adjustment, securely tighten socket bolt⑤ .
⑸ . If the right and left work clamp feet are not leveled, loosen fixing screw ⑦ and adjust the position of the work clamp foot lever support plate ⑧to level them.

At this time, be careful not to cause work clamp foot lever support plate ⑧to interfere with feed bracket⑨ .
If the work clamp foot lever support plate interferes with the wiper, readjust the height of the wiper using setscrew ⑩ in the wiper installing base.

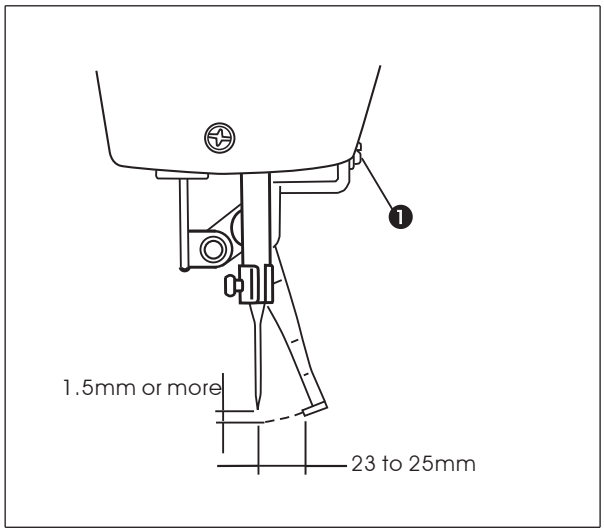
4. The moving knife and counter knife

WARNING : **Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.**



⑴. Loosen adjusting screw ③so that a clearance of 18.5 mm is provided between the front end of the throat plate and the top end of thread trimmer lever, small ① . To adjust, move the moving knife in the direction of arrow.
⑵.Loosen setscrew⑤ so that a clearance of 0.5 mm is provided between needle hole guide ② and counter knife ④. To adjust, move the counter knife.

5. Adjusting the wipper



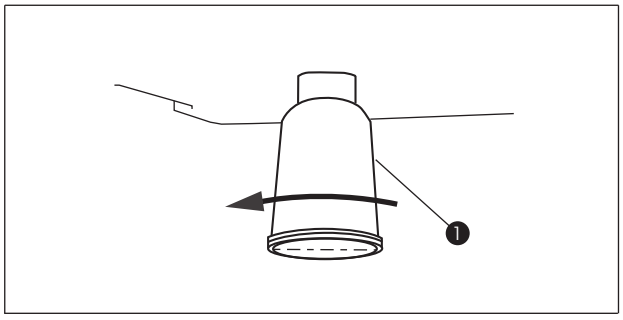
Loosen screw ①to adjust so that a clearance of1.5 mm or more is provided between the wiper and the needle.

At this time, the standard of the distance between the wiper and the needle is 23 to 25 mm. By adjusting the distance wide, the work clamp foot can prevent stepping on needle thread when it comes down.

Especially when the thin needle is used, adjust the distance wide to such an extent of 23 mm.

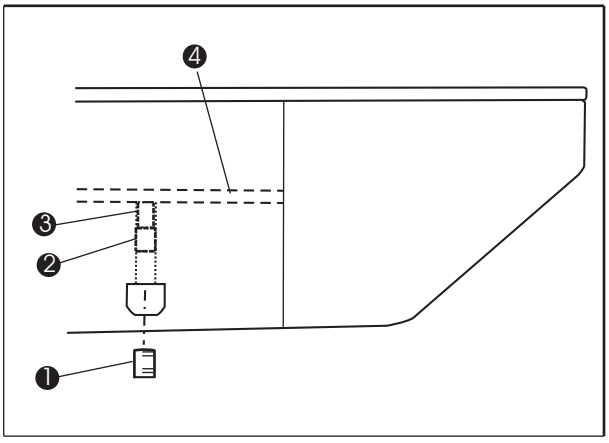
※The position of the needle is when the sewing machine has stopped after the sewing finished.

6. Draining waste oil



When polyethylene oiler ① becomes filled with oil, remove polyethylene oiler ① and drain the oil.

7. Amount of oil supplied to the hook



1) Loosen setscrew ① and remove setscrew ①.
2) When screwing in adjustment screw② , the amount of oil of oil pipe, left ④can be reduced.
3) After the adjustment, screw in setscrew ① and fix it.

1. The state of standard delivery is the position where②is lightly screwed in and returned by 4 turns.

2. When reducing the amount of oil, do not screw in the screw at once. Observe the state for approximately half a day at the position where②is screwed in and returned by2turns. If reducing is excessive, worn-out of the hook will result.

8. Replenishing the designated places with grease

When the sewing machine has been used for a certain number of times of sewing, error code No. E221 is displayed on the operation panel at the time of turning ON the power. This display informs the operator of the time of replenishing the designated places with oil. Be sure to replenish the places with the oil below. Then call the memory switch No. 245 and set it to "0" with the RESET key. Even after the display of the error No. E221, when the RESET key is pressed, the error is released, and the sewing machine can be continuously used. Afterwards, however, the error No. E221 is displayed every time the power is turned ON.

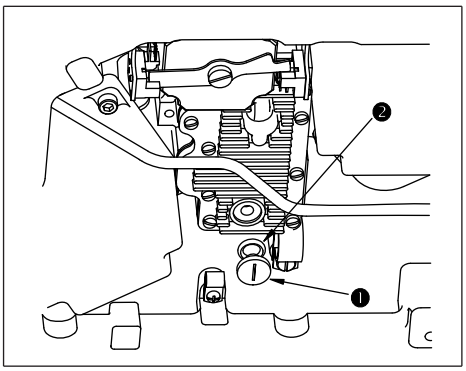
In addition, when the sewing machine is used further for a certain period of time after the display of error No. E220, the error No. E221 is displayed and the sewing machine fails to operate since the error cannot be released even when the RESET key is pressed.

When the error No. E221 is displayed, be sure to replenish the designated places below with oil. Then start up the memory switch and set No. 245 to "0" with the RESET key.

After replenishing the places with oil, the error No. E220 or No. E221 is displayed again unless the memory switch No. 245 is changed to "0".

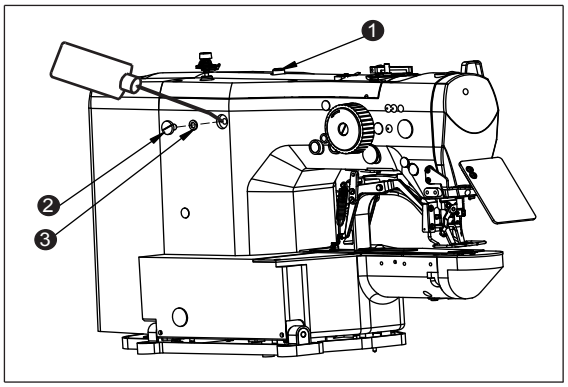
WARNING : Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.

(1) . Outflow the residual oil in gearbox



1) Tilt the machine, remove the screws ① and seal②.
2) put back sewing machine, outflow the residual oil in the gearbox.
3) tilt the machine again, put back the seals ②and screws ①, then put sewing machine back to the position.

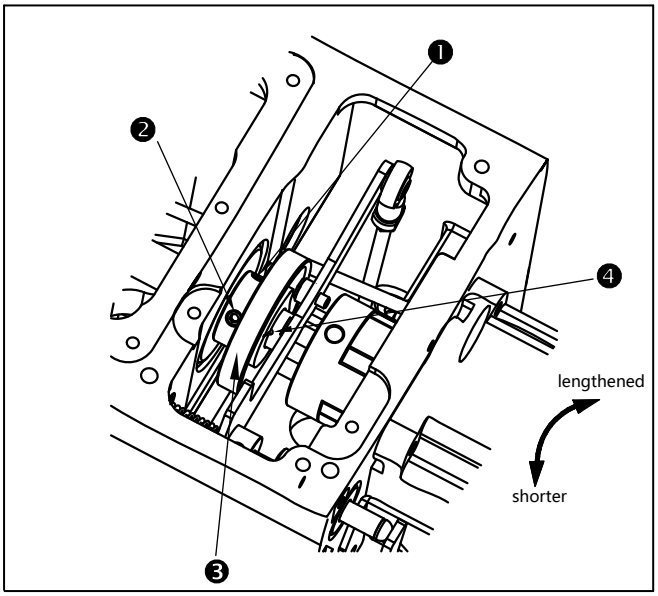
(2) . Lubricate the upper gearbox



1) When through the oil window ①, you can not find oil outlet obviously, or it is without oil outlet, you should add the oil into the wheel gear box.

2) Turn off the machine, you can take down the screw ② and the rubber washer ③ ,when it is without oil outlet, please add 100ml 10# white oil; when it is not oil outlet obviously, please add 50-70ml.Please install back ② and ③ parts, turn on the machine and check whether it is happened to oil outlet or not.

9. Adjusting the trimming cam



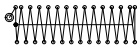
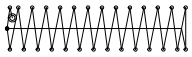
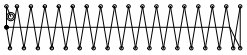
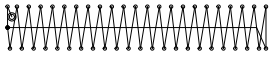
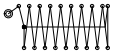
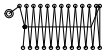
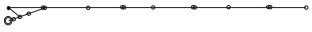
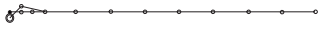
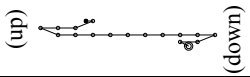
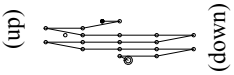
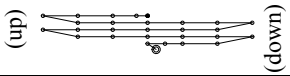
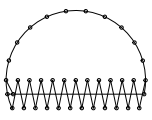
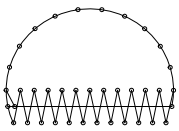
The standard position of the trimming cam is the alignment of the cutting line and the main shaft.

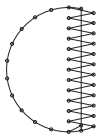
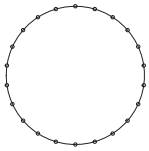
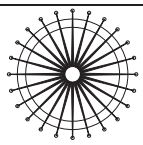
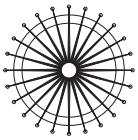
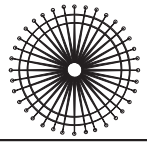
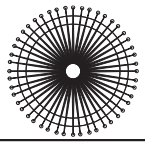
Loosen the fixing screwing ①and②,adjust the position of the trimming cam,adjust to the right, and the lenght of the residual line on the tangent point becomes longer,then the left side is adjusted to shorten lenght of the line.

IF you need to adjust ,please control in the positive and negative 3-5 degree range adjustment,such as excessive regulation will produce a bad line.

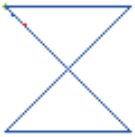
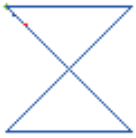
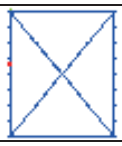
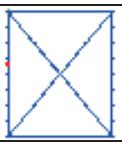
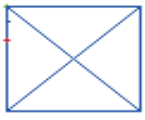
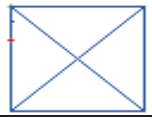
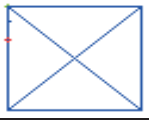
[7] Table of the standard patterns and the standard patterns

1. List of standard figure

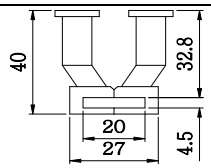
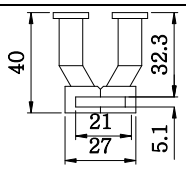
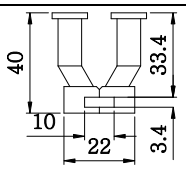
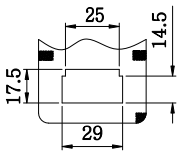
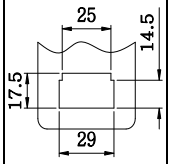
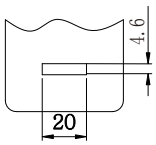
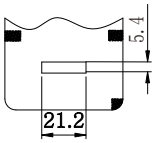
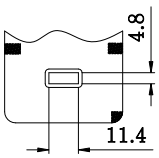
NO.	Sewing Pattern	Stitch number	Size（mm）	NO.	Sewing Pattern	Stitch number	Size（mm）
1		42	16×2	2		42	10×2
3		42	16×2.5	4		42	24×3
5		28	10×2	6		28	16×2.5
7		36	10×2	8		36	16×2.5
9		56	24×3	10		64	24×3
11		21	6×2.5	12		28	6×2.5
13		36	6×2.5	14		15	8×2
15		21	8×2.2	16		28	8×2
17		19	10×1	18		39	10×1
19		27	25×1	20		35	25×1
21		39	25×1	22		43	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

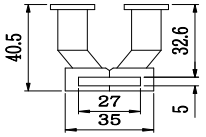
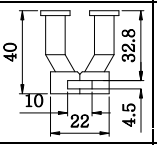
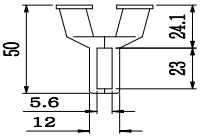
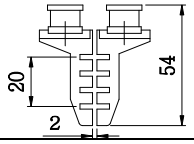
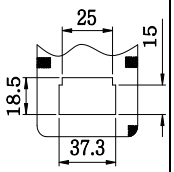
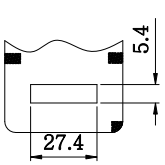
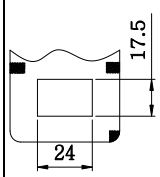
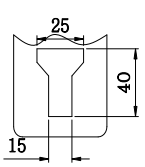
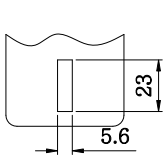
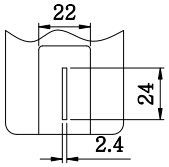
33		24	10×6	34		31	12×6
35		48	7×10	36		48	7×10
37		90	24×3	38		28	8×2
39		28	12×12	40		48	12×12
41		29	2.5×20	42		39	2.5×25
43		45	2.5×25	44		58	2.5×4.4
45		76	2.5×4.4	46		42	2.5×4.4
47		91	8×8	48		99	8×8
49		148	8×8	50		164	8×8
51		110	8×8	52		120	8×8
53		131	8×8	54		52	12.5×10

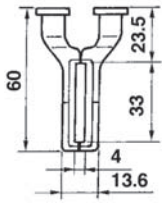
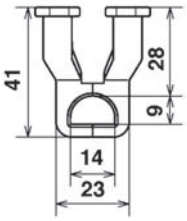
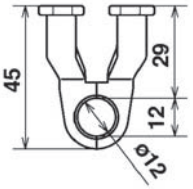
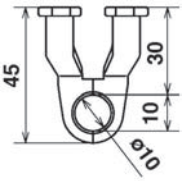
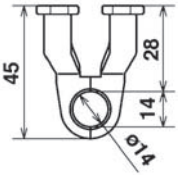
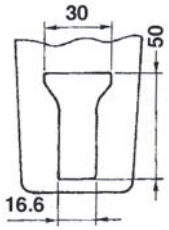
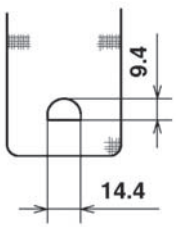
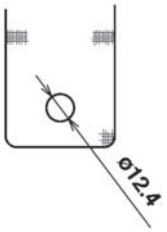
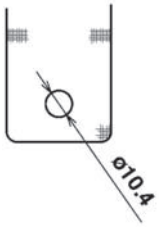
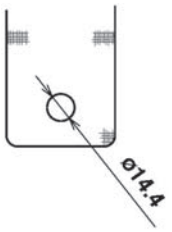
55		51	12.5×10		56		53	21×6
57		58	21×6		58		104	19×3
59		116	40×5		60		116	40×5
61		94	5×30		62		110	5×30
63		109	40×30		64		81	40×30
65		65	40×30		66		97	30×30
67		77	30×30		68		61	30×30
69		53	40×30		70		41	40×30
71		33	40×30		72		45	30×30
73		37	30×30		74		29	30×30
75		61	40×30		76		49	40×30

77		37	40×30		78		57	30×30
79		45	30×30		80		37	30×30
81		68	40×30		82		52	40×30
83		40	40×30		84		56	30×30
85		36	30×30		86		43	30×30
87		33	30×30		88		27	30×30
89		75	20×24		90		55	20×24
91		66	20×20		92		50	20×20
93		40	20×20		94		64	25×20
95		52	25×20		96		46	25×20
97		43	25×20		98		34	25×20
99		28	25×20		100		89	30×25

2. Table of the work clamp foot

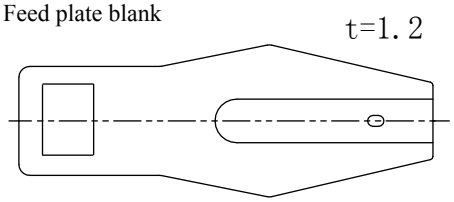
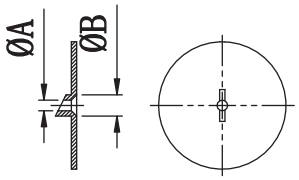
	1	2	3	4	5
Work clamp foot	Left：10011508 Right：10011505			10011687、10011691	10011758、10011759
					
Feed plate	10011565	10012300	10012279	10011751	10011755
	With knurl	Without knurl	Without knurl	With knurl	With knurl
					
Sewing specification	S	F	F	H	M
Finer guard	10011556(S、M、F)、10011695（H）				
Remarks	Standard accessory for S type machine head.	Supplied with F type machine head. (Depends on the destination)		Optional	Standard accessory for M (knit goods) type machine head.

	6	7	8	9	10	11
Work clamp foot	10012349(L) 10012342(R)		10012339(L) 10012346(R)	10012341(L) 10012348(R)		10026244(L) 10026245(R)
						
Feed plate	10012277	10012302	10012286	10012296	10012301	10026246
	With knurl	With knurl	With knurl	Without knurl	Without knurl	Without knurl
						
Sewing specification	S	H/W	S	F	F	F
Finer guard	10011556(S、M、F)、10011695（H、W）					
Remarks	Optional	Standard accessory for H type(heavy-weight material) machine head.	Optional	Accessory part for F(foundation)type.(Depends on the destination)		Optional

	12	13	14	15	16
Work clamp foot	10026247(L) 10026248(R)	10026250(L) 10026251(R)	10012344(L) 10012345(R)	10026253(L) 10026254(R)	10026256(L) 10026257(R)
					
Feed plate	10026249	10026252	10012338	10026255	10026258
	Without knurl	Without knurl	Without knurl	Without knurl	Without knurl
					
Sewing specification	F	S	S	S	S
Finger guard	10011556				
Remarks	Optional	Optional	Optional	Optional	Optional

※Install a finger suitable for each work clamp foot when replacing the work clamp foot.

[8] Table of the optional parts

Name of Parts	Type	Part No.	Remarks
Feed plate blank 	With knurl / processed Sewing area lengthwise 20 X crosswise 40	10012303	
	With knurl / processed Sewing area lengthwise 30 X crosswise 40	10014401	
Needle hole guide 	A=1.9 B=2.8 Without relief slit	10047532	Standard type
	A=1.6 B=2.0 Without relief slit	10011757	F and M types
	A=2.3 B=4.0 Without relief slit	10004727	H and W types
	A=3 B=7 Without relief slit	10007281	For net machine
	A=1.6 B=2.6 With relief slit	10004646	Selective spare part

Ⅱ.EXPLANATION OF THE D-TYPE BARTACKING SEWING MACHINE , COMPUTER-CONTROLLED HIGH SPEED LOCKSTITCH BUTTON SEWING MACHINE

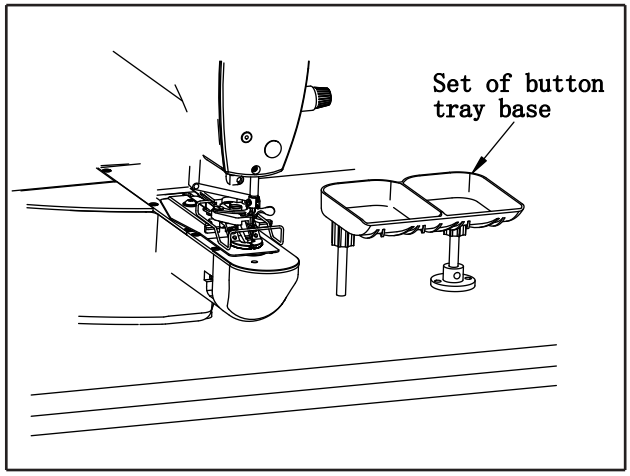
[1] Specifications

Different specifications from those of the bartacking machine only are described.

1) Sewing speed ..... Max. 2700rpm
2) Needle ..... DPx17 #14
3) Lifting method of the work clamp foot..... Stepping motor
4) Lift of the work clamp foot ..... Max. 13mm
5) Number of standard patterns .....50 patterns
6) Wiper method ..... Interlocked with work clamp foot lifter driven by stepping motor

[2] Installation of the sewing machine and preparation of the operation

WARNING : Be sure to perform the work with two persons or more when moving the sewing machine



(1). Installation of the sewing machine head is same as that of the bartacking machine.
Refer to the instruction manual for the bartacking machine.

(2). Install a set of the button tray base to a convenient place for the work as the set is included in the accessories

Make sure before operation that the needle does not strike against the button hole .

[3] Needle and thread

Needle	Needle thread	Bobbin thread
DPx17 #14	#60	#80
	#60	#60
	#50	#60
	#40	#60

Needle and thread will vary in accordance with the sewing conditions. when using the needle and the thread, select them referring to the left table. Cotton thread and polyester spun thread are recommended.

[4] Various sewing modes

1. List of sewing patterns

Number of threads and standard sewing size of X and Y are as shown in the following list.

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

No	Sewing pattern	Thread number	Standard swing length X(mm)	Standard sewing length (mm)	No	Sewing pattern	Thread number	Standard sewing length X(mm)	Standard sewing length Y(mm)
16・43		8-8			33		8-8-8		
17		10-10							

2. Selection of the sewing pattern and the sewing width.

(1). Selection of the sewing pattern is the same as that of the bartacking machine.

(2). When the distance between holes of the button used does not fit the standard sewing width of the sewing pattern No., adjust the sewing width by enlarging/reducing the sewing width.

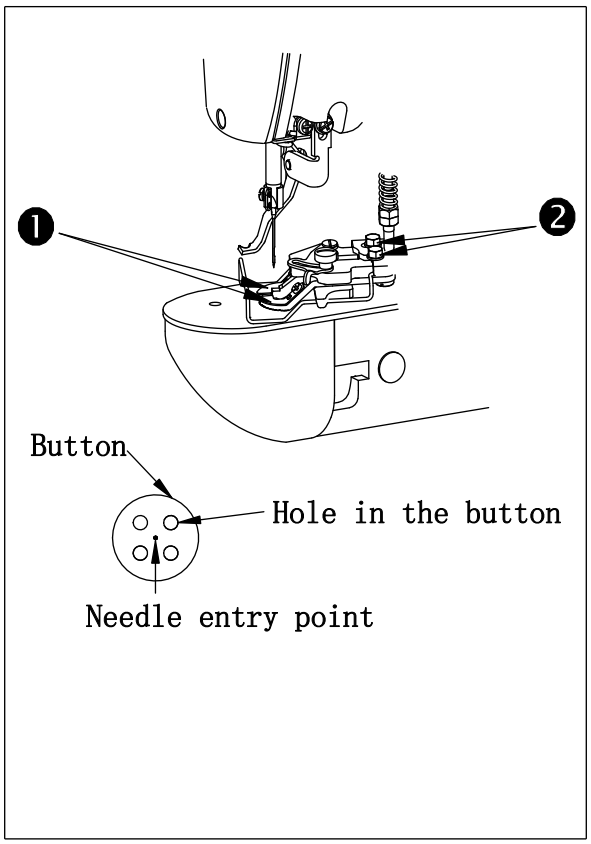
The way of enlarging/reducing is the same as that of the bartacking machine. Refer to the table given below for the scale for enlargement/reduction in terms of the sewing width.

(3). After changing the sewing pattern No. and the sewing width , make sure of the needle entry point. As for the way of confirmation, refer to the confirmation of the shape of sewing pattern in the instruction manual for the bartacking machine.

Table of XY scale in terms of the sewing width

X·Y (mm)	2.4	2.6	2.8	3.0	3.2	3.4	3.6	4.0	4.3	4.5	4.7	5.2	5.6	6.0	6.2	6.4
%	71	76	82	88	94	100	106	118	126	132	138	153	165	176	182	188

[5] Position of the button clamp jaw lever



(1). Press (M) key in the state that the swing LED goes off using the operation panel.

(2). Place a button in button clamp jaw levers ①.

(3). Press (P1) (P3) (P5) key at the same time, press the (−/▽) key to enter the debug mode, the screen shows CP ---.

(4). Press the (▭) key twice to enter the CP mode.

(5). Press (+/△) key to enter CP-2, press (↻) key, then press (▭) key, step on the pedal to a file.

(6). Turn the hand pulley and check that the center of the needle enters the center of the button.

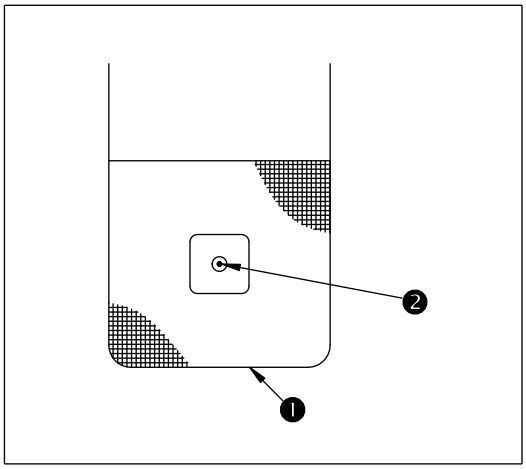
(7). If the center of the needle is not located in the center of the button, loosen screws ② in the button clamp jaw lever base to adjust so that the center of the needle enters the center of the button.

(8). After the adjustment, perform the confirmation of the pattern shape and make sure that the needle surely has entered the button hole.

WARNING: When change of the shape of button , change of the sewing pattern or enlargement/reduction of the sewing width is performed, make sure the needle entry point. If the needle extends outside the button hole or the sewing pattern extends outside the button clamp unit, the needle interferes with the button hole or the button clamp unit, resulting in the danger of the needle breakage or the like.

[6] Adjusting the feed plate

WARNING: When change of the shape of the button, change of the sewing pattern or enlargement/reduction of the sewing width is performed, make sure of the shape of the sewing pattern. If the feed plate interferes with the needle hole guide, it will result in the danger of the needle breakage or the like. Also, if the pedal is depressed during the adjustment, the button clamp unit will go up or come down. So, be careful.



(1) .in the state that the LED light off, press the key

operation panel, choose winder state, light on.

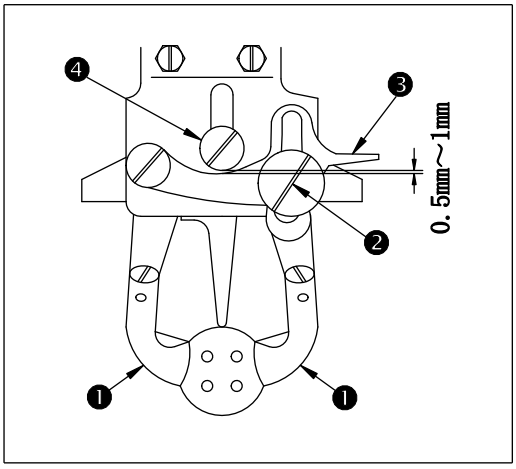
(2) .press key, the button clamp unit goes to the original position and goes down。

(3) . adjust the feed plate①, so the needle hole guide ② comes to the center of the recessed part of feed plate①H.

(4) . press key, button clamp goes up, start sewing.

[7] Adjusting the button clamp jaw lever

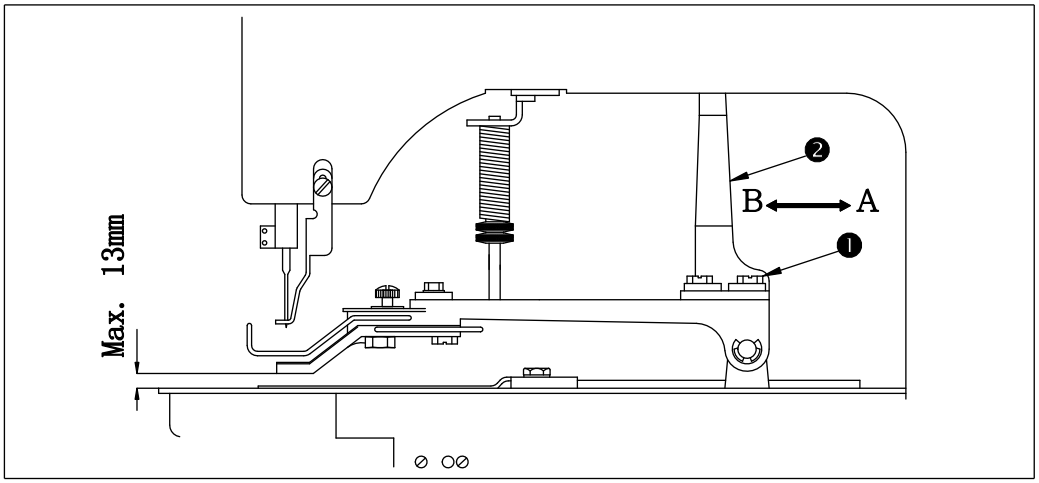
WARNING : Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.



Bring the machine to its stop-motion state. Then lift button clamp ①. Loosen screw ② in the button clamp jaw lever and adjust so that a clearance of 0.5 to 1mm is provided between button clamp jaw lever ③and hinge screw ④when placing a button in between button clamps ①. Then tighten screw ②in the button clamp jaw lever.

[8] Adjusting the lifting amount of the button clamp

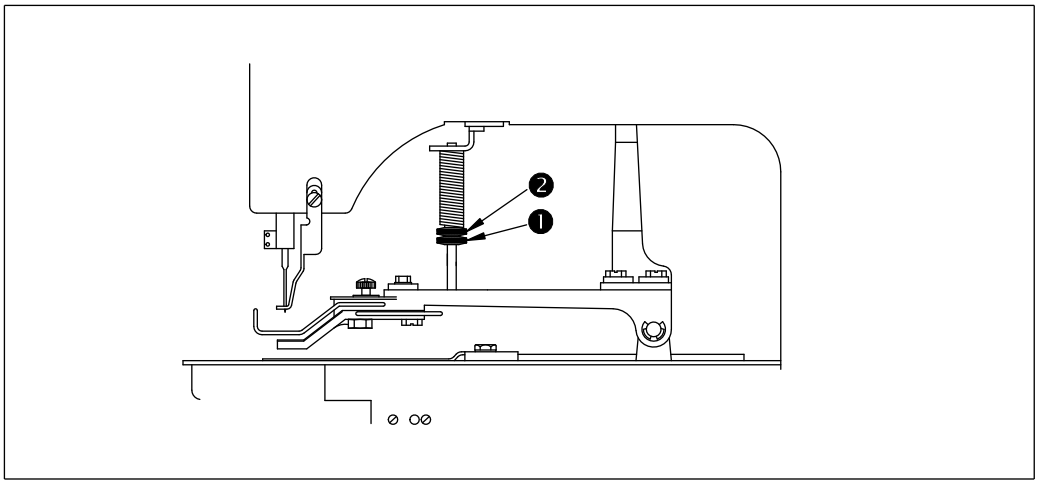
WARNING : **Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.**



Loosen two setscrews ①,and move moving plate ②back and forth in the direction of arrow to adjust. The lifting amount of the button clamp will be decreased when moving plate ②is moved in the direction "A", and be increased when it is moved in the direction of "B". After the adjustment, securely tighten setscrews①.

[9] Adjustment of the pressure of the work clamp unit

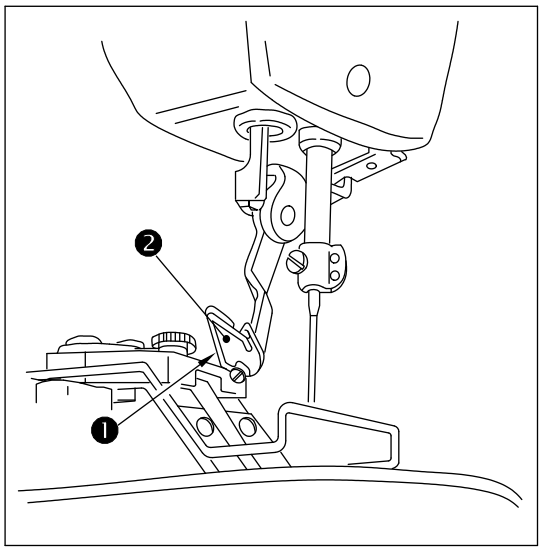
WARNING : **Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.**



The pressure of the work clamp unit should be minimized as long as the material does not warp during sewing. Loosen adjusting screw ①and turn adjusting screw ②to obtain the aforementioned pressure.

[10] Adjustment of the wiper spring

WARNING : Turn OFF the power before starting the work so as to prevent accidents cause by abrupt start of the sewing machine.



Wiper spring① retains the needle thread after thread trimming in between wiper② and the wiper spring. Correct properly the tension after wiper spring ① so that the tension at that time becomes 20 to 30 g(a little higher tension than that of the bobbin thread coming out of the bobbin case.

If the retaining of the needle thread is excessive, the thread may protrude from the upper side of the button.

[11] Button sewing scope

Model		Button sewing Machine	
Button size classification		For medium-sized buttons	
Outside diameter of applicable buttons（mm）		Ø8~Ø22	
Sewing size (mm)	0~3.5	0 to 3.5	
	0~3.5	0 to 3.5	

Ⅲ. List of error information

Display		Error Name	Content of Error	Solution
E	10	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	30	Needle Rod Up Position Error	The needle rod is not at UP position.	Spindle parking position error,may be the cause of spindle drive,may also be caused by human ratation. turn the wheel and return the needle rod to theupper position.
E	40	Sewing Area Over	The sewing area is over the limit.	Press RESET switch to confirm the X/Y scale rate Activating condition: software's pattern calculation error
E	43	Enlargement Error	The sewing pitch is beyond 10mm.	Press RESET switch to confirm the X/Y scale rate Activating condition: software pattern calculation error
E	45	Pattern Data Error	The pattern data cannot be adopted.	Turn OFF the power and check the data ROM.
E	50	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	221	Grease Replenishing Warning Error	Sewing machine has stopped since the time of replenishing the designated place with grease has come.	Immediately perform replenishing with grease and set the memory switch No. 245 to "0"with Reset.
E	302	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	303	90V Power Supply Error	The 90V power voltage is too low.	Turn off power and turn it on after a while.
E	401	The ear of closed-loop's position error		
E	402	Reverse is blocked	The spindle motor's reverse turn locked-rotor	
E	403	Forward is blocked	The spindle motor's forward turn locked-rotor	
E	404	Over-temperature	Spindle motor temperature is too high	
E	405	The x stepping motor Over-Current		
E	406	The y stepping motor Over-Current		
E	407	STEP winding open circuit		
E	408	STEP encoder error		
E	410	STEP 90V undervoltage		
E	411	X synchronous error	X sending step is out of sync with spindle	

E	412	Y synchronous error	Y sending step is out of sync with spindle	
E	413	Step Number in X Direction Abnormal	After finishing a work, the main controller finds the order received by stepping board in X direction is different from the order of step numbers given by the main controller.	
E	414	Step Number in Y Direction Abnormal	After finishing a work, the main controller finds the order received by stepping board in Y direction is different from the order of step numbers given by the main controller.	
E	415	STEP.2 winding open circuit		
E	416	STEP.2 encoder error		
E	417	STEP.1 positional deviation error		
E	418	STEP.2 positional deviation error		
E	419	No.1 current sensor error		
E	420	No.2 current sensor error		
E	435	Work clamp foot stepping motor over-current	Large current is detected by hardware	
E	447	Work clamp foot stepping motor error	Stepping board can not execution command or coder error	
E	733	Main shaft over current	Spindle motor heating and stop	
E	739	Mother board IPM Instant Over-current	Current at mother board IPM driving module is too large in short time	

E	740	Main Shaft Speed Motor Abnormal	The speed of main shaft motor is over the normal range	
E	741	Spindle motor reverse abnormal	Spindle motor reversal	
E	811	The voltage is too large when the machine is stop	Over service voltage	
E	812	The voltage is too large when the machine is running	Over service voltage	
E	813	The system under voltage	The power supply voltage is too low	
E	814	Electromagnet circuit fault	Electromagnet short circuit	
E	815	Electromagnet detection circuit fault	Motor current detection error	
E	816	Spindle motor locked-rotor	Spindle motor locked-rotor	
E	817	Spindle motor's needle halt sensor error	Spindle motor over needle halt hasn't detection sign	

E	818	Spindle motor initial angle measure error	Spindle motor initial angle measure error	
E	819	The hall error	Spindle motor hall error	
E	906	No.5 origin search error	The 5st route stepping communication problem	
E	907	X Origin Search Error	X origin sensor doesn't change.	
E	908	Y Origin Search Error	Y origin sensor doesn't change.	
E	910	Presser Origin Search Error	Presser origin sensor doesn't change.	
E	911	X stepping motor error	X motor in action when the main control to send the command again	
E	912	Y stepping motor error	Y motor in action when the main control to send the command again	
E	915	Communication Error between Main-board and Panel	Mother board can not communicate with panel or the communication is wrong	

E	916	Communication Error between Main-board and Stepping foot -board	Mother board can not communicate with Stepping foot -boardor the communication is wrong	
E	917	Communication Error between Main-board and Stepping Board	Communication between Main-board and Stepping Board is down.	
E	918	Presser stepping foot motor error	Y motor in action when the main control to send the command again	
E	919	X synchronous error		
E	920	Y synchronous error		
E	921	X stepping motor accept the instruction error		
E	922	Y stepping motor accept the instruction error		
E	923	Trimming error		
E	947	Main circuit board-Main circuit board communication fault	Parameter loaded from the head board by down machine is abnormal。	
E	950	No 5 route grip error	The 5st route stepping communication problem	

E	951	Software version inconformity	Master control,operating screen,principal axis software has mismatching	
E	998	Servo software error	Master control software has mismatching	
E	999	Main control software error	Master control software has mismatching	

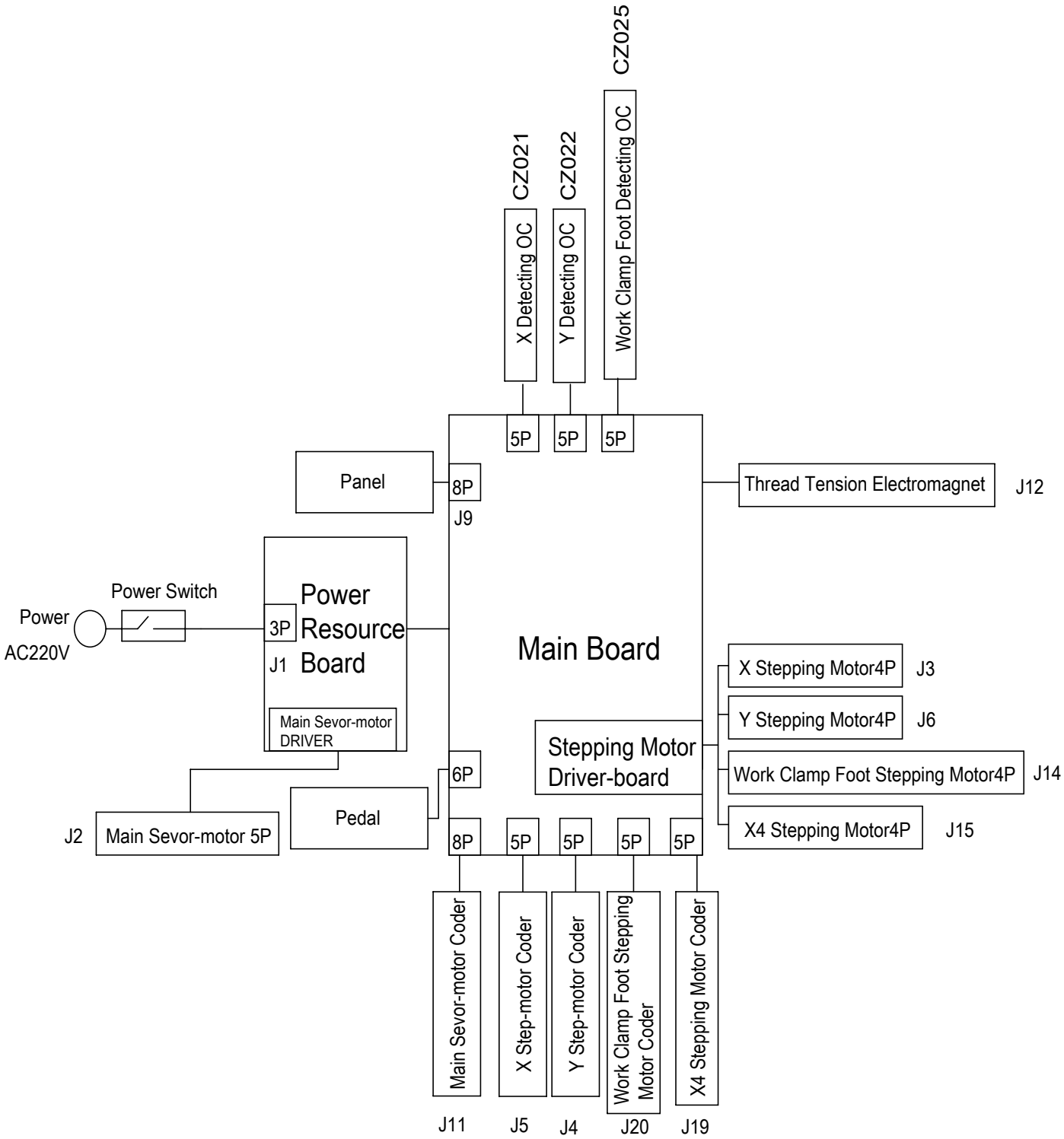
Ⅳ.Troubles and corrective measures (sewing conditions)

Trouble	Cause	Corrective measures
1.The needle thread slips off at the start of bar-tackin g	① Stitches are slipped at the start ② The needle thread remaining on the needle after thread trimming is too short. ③ The bobbin thread is too short. ④ Needle thread tension at 1st stitch is too high. ⑤ Pitch at 1st stitch is too small.	○ Adjust the clearance between the needle and the shuttle to 0.05 to 0.1mm. ○ Set soft-start sewing at the start of bar tacking. ○ Correct the thread tension release timing of the thread tension controller No.2. ○ Increase the tension of the thread take-up spring, or decrease the tension of the thread tension controller No.1. ○ Decrease the tension of the bobbin thread. ○ Increase the clearance between the needle hole guide and the counter knife. ○ Decrease the tension at 1st stitch. ○ Decrease the number of rotation at 1st stitch at the sewing start. ○ Make the pitch at 1st stitch longer. ○ Decrease the needle thread tension at 1st stitch.
2.Thread often breaks or synthetic fiber thread splits finely.	①The shuttle or the driver has scratches. ②The needle hole guide has scratches. ③The needle strikes the work clamp foot. ④Fibrous dust is in the groove of the shuttle race. ⑤The needle thread tension is too high. ⑥The synthetic fiber thread take-up spring is too high. ⑦The synthetic fiber thread melts due to heat generated on the needle.	○Take it out and remove the scratches using a fine whetstone or buff. ○Buff or replace it. ○Correct the position of the work clamp foot. ○Take out the shuttle and remove the fibrous dust from the shuttle race. ○Reduce the needle thread tension. ○Reduce the tension. ○Use silicone oil .
3.The needle often breaks.	①The needle is bent. ②The needle hits the work clamp foot. ③The needle is too thin for the material. ④the driver excessively bends the needle.	○Replace the bent needle. ○Correct the position of the work clamp foot. ○Replace it with a thicker needle according to the material. ○Correctly position the needle according to the material. ○Widen the distance between the needle and the

	⑤Needle thread is stepped on by the work clamp foot at the start of sewing (Needle bend)	wiper.(23 to 25mm)
4. Threads are not trimmed.	①The counter knife is dull. ②The difference in level between the needle hole guide and the counter knife is not enough. ③The moving knife has been improperly positioned. ④The last stitch is skipped. ⑤Bobbin thread tension is too low.	○Replace the counter knife. ○Increase the bend of the counter knife. ○Correct the position of the moving knife. ○Correct the timing between the needle and the shuttle. ○In crease the bobbin thread tension.
5.Stitch skipping often occurs.	①The motions of the needle and shuttle are not properly synchronized. ②The clearance between the needle and shuttle is too large. ③The needle is bent. ④The driver excessively bends the needle.	○Correct the positions of the needle and shuttle. ○Correct the positions of the needle and shuttle. ○Replace the bent needle. ○Correctly position the driver.
6.The needle thread comes out on the wrong side of the material	①the needle thread tension is not high enough. ②The tension release mechanism fails to work properly. ③The needle thread after thread trimming is too long. ④Number of stitches is too few. ⑤When sewing length is short(End of needle thread protrudes on the wrong side of sewing product.) ⑥Number of stitches is too few.	○Increase the needle thread tension. ○Check whether or not the tension disc No.2 is released during bar-tracking. ○Increase the tension of the thread tension controller No.1. ○Correct the position of the moving knife. ○Use the lower plate, the hole of which is larger than the presser.

Trouble	Cause	Corrective measures
7.Threads break at time of thread trimming	①The moving knife has been improperly position。	○Correct the position of the moving knife.
8.Uneven length of the needle thread	①The tension of thread take-up spring is too low.	○Increase the tension of the thread take-up spring.
9. The length of needle thread does not become short	①The tension of thread tension controller No.1 is too low.。 ②The tension of thread take-up spring is too high。 ③The tension of thread take –up spring is too low and motion is unstable.	○Increase the tension of thread tension controller No.1. ○Decrease the tension of thread take-up spring. ○Increase the tension of thread take-up spring and lengthen the stroke as well.

Ⅴ.System diagram



Ⅵ.DRAWING OF THE TABLE