

HIKARI® 富山
高端电脑包缝机开创者与领导者
THE CREATOR AND LEADER OF HIGH-END COMPUTERIZED OVERLOCK MACHINE

HMS1310系 PATTERN SEWING MACHINE 电脑花样机

使用说明书 INSTRUCTION MANUAL BOOK

上海富山精密机械科技有限公司
Hikari(shanghai)precise Machinery Science&technology Co.,Ltd

中国上海市金山区朱泾工业园区中达路800号
NO.800.zhongda Road,jinshan Zone,shanghai,china

电话: (00) 86-21-67311111
TEL: (00) 86-21-67311111
传真: (00) 86-21-67311311
Fax: (00) 86-21-67311311
E-mail:hikari@chinahikari.com
http:www.chinahikari.com



此说明书仅作参考。如有更改恕不另作通知。
This manual is only for reference.
IF there is any modification, we apologize for the changing hence caused.



通过 ISO9001:2008
质量管理体系认证

中文

HMS1310系列
使用说明书

重要安全事项

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

7. 使用此缝纫机时，必须遵守包括如下项目的基本安全措施。
8. 使用此缝纫机之前，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。
9. 此缝纫机应与贵国的有关安全规定一起使用。
10. 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。
11. 此缝纫机应有接受过培训的专业人员来操作。
12. 使用此缝纫机时，建议戴安全防护眼镜。
13. 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行。
14. 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皮肤上时，或被误饮时，应立即清洗有关部分并去医院治疗。

1. 禁止用手触摸打开了缝纫机开关通电的零件或装置。
2. 油管缝纫机的修理、改造、调整应由接受过专门训练的技术人员或专家来进行。
3. 一半的维修保养应有受过训练的人员来进行。
4. 有关缝纫机的电气方面的修理、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。
5. 修理、保养有关空气、气缸等压缩空气的零件时，应切断空气压缩机供气源后再进行。如有残留压缩空气时，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动作时除外。
6. 缝纫机的使用期间应定期进行清扫。

15. 为了正常安全运转，应安装地线。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的人来安装。电源插头必须连接到接地插座上。

17. 缝纫机制定用途以外不能使用。
18. 对缝纫机的改造、变更应符合安全规格，并采取有效的安全措施。
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。

(1) →

(2) →

(3) →

(3) ←

- ① 有发生中轻度伤害、重伤、死亡的危险。
 - 触摸了活动部分的话，有发生负伤的危险。
- ② 应安装安全防护器，然后再进行缝制。
 - 应安装安全护照，然后在缝制。
 - 应安装保护装置，然后在缝制。
- ③ 应关掉那之后，在进行穿线、更换梭芯、机针、清扫、调整、加油。

为了安全地使用 HMS1310 缝纫机的注意事项

 危险	1. 为了防止触电事故，打开电源时，请不要打开马达电气箱盖，也不要触摸电气箱内的零件。 2. 变更图案后，请确认落针位置。万一压脚超越图案范围，缝制中有可能机针与压脚相碰，发生断针的危险。另外，请确认被设定的压脚和安装到缝纫机的压脚始是否一致。
 注意	1. 打开 (ON) 电源开关后，操作盘上什么也不显示时，请关闭 (OFF) 电源开关，然后确认电源电压和电源规格。 2. 为了防止造成人身事故，打开电源时和缝纫机运转途中，请不要把手指放到挑线杆、布压脚、切布刀以及机针下面的附件。 3. 为了防止突然的启动造成人身事故，放缝纫机时，拆卸马达外罩时，请关掉电源。 4. 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。 5. 变更图案、准备键 ON、压脚开关 ON、中压脚按钮 ON、绕线按钮 ON 时，压脚自动下降，为了防止突然的启动发生的事故，请绝对不要把手指放到压脚下面。 6. 为了防止卷入机器的人身事故，缝纫机运转中请不要把手指、头发、衣服靠近马达、切刀等驱动部分，也不要物品放到机器的上面。 7. 为了防止对人身伤害，请不要在卸下马达外罩、眼镜保护罩等安全装置的状态下运转缝纫机。 8. 为了防止对人身伤害，放倒缝纫机时和返回原来位置时，请注意不要夹到手指等。 9. 为了防止触电和损坏电气零件的事故，插拔电源插头之前请一定关掉电源开关。 10. 为了防止损坏电气零件的事故，打雷时，请停止作业，拔下电源插头，以保证安全。 11. 为了防止损坏电气零件的事故，从寒冷的地方已到暖和的地方等时，容易发生结露现象，所以请待水滴完全干燥之后再打开电源。 12. 为了防止损坏电气零件的事故，停电时，请一定关掉电源。 13. 本装置请在工业用环境下使用。在一般家庭里使用时如果靠近电视机或收音机使用的话，有发生接收不良的事故。 14. 长时间连续使用缝纫机的话，缝纫机主机的一部分、操作盘背面等有可能有温度上升到 15°C 左右，感觉到发热，但是这并非异常，对零部件等没有影响。 15. 请不要往机油槽盒旋梭以外加缝纫机油。因为本机除旋梭以外采用润滑脂润滑，如果加了缝纫机油的话，润滑脂就会漏泄出来，造成磨损。 16. 因为本产品属于精磨机器，所以操作时请充分注意，不要把水、油溅到机器上面，也不要让机器掉落给与机器冲击。

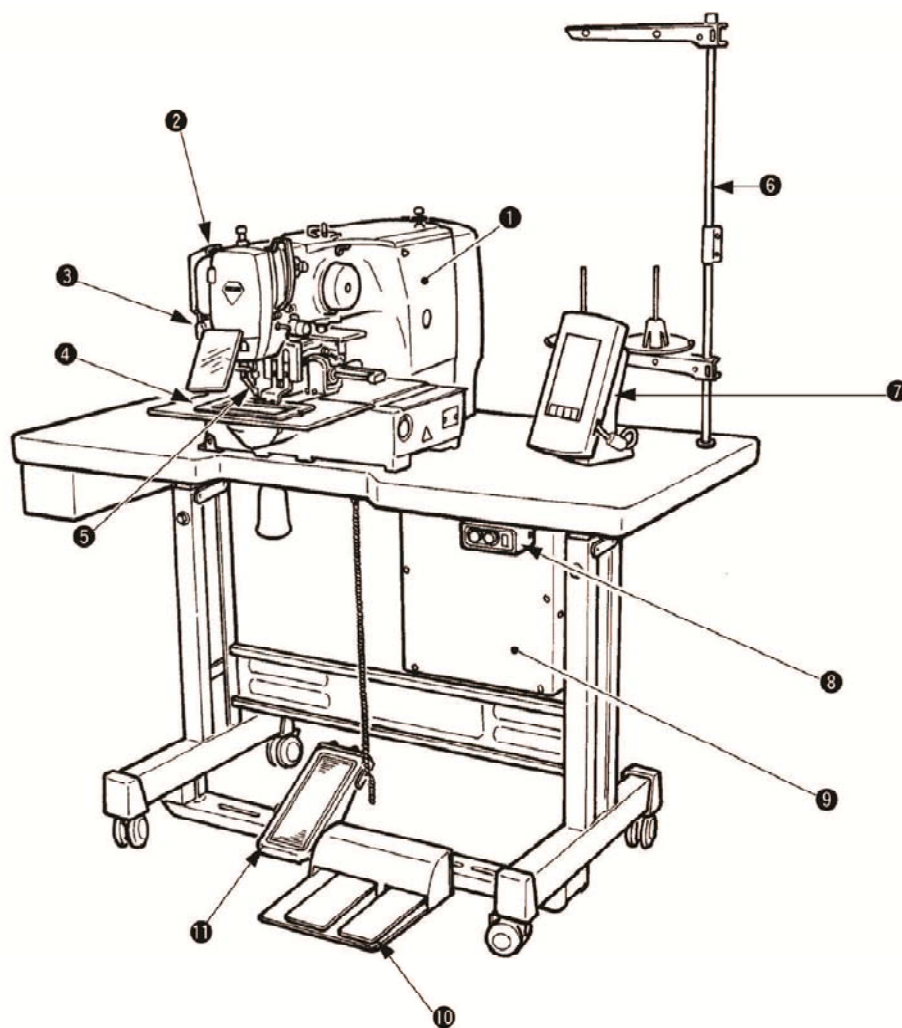
目录

1. 规格	1
2. 各部的名称	2
3. 安装	3
3-1. 电气箱的安装	3
3-2. 电源开关的安装、连接	3
3-3. 缝纫机机头的安装	3
3-4. 废油槽盒机头支撑橡胶塞的安装	4
3-5. 安全开关	4
3-6. 操作盘的安装	6
3-7. 安装脚踏板链(只限 S 规格)	6
3-8. 线架装置的安装方法	6
3-9. 缝纫机的抬起方法	7
3-10. 眼镜保护罩的安装	7
4. 缝纫机的准备	8
4-1. 加油方法	8
4-2. 机针的安装方法	8
4-3. 上线的穿线方法	8
4-4. 梭壳的取下插入	9
4-5. 旋梭的插入方法	9
4-6. 线张力的调整方法	10
4-7. 中压脚的高度	11
4-8. 挑线弹簧的调节	12
5. 缝纫机的操作	12
5-1. 缝制	12
6. 缝纫机的维修保养	13
6-1. 针杆高度(改变机针长度)	13
6-2. 机针与旋梭	13
6-3. 压脚的高度	15
6-4. 中压脚的上下行程调节	15
6-5. 移动刀和固定刀	15
6-6. 断线检测板	16
6-7. 废油的处理	16
6-8. 旋梭的加油量	16
6-9. 缝制时的故障、原因和对策	17
7. 选购品	19
7-1. 针孔导板一览	19
7-2. 冷却油槽	19
7-3. 拨线器	19

1. 规格

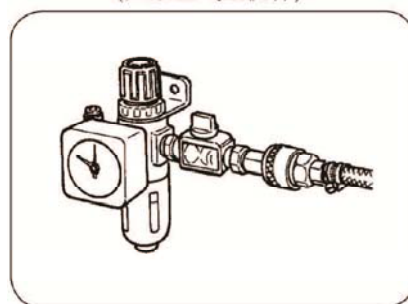
		X(左右) 方向	Y(前后) 方向
1	缝制范围	HMS1310: 130mm×100mm	
2	最高缝纫速度	2700rpm(间距 3mm 以下时)	
3	线迹长度	0.1-12.7mm(最小分辨率 0.05mm)	
4	压脚送布	间断送布(脉冲马达双轴驱动方式)	
5	针杆行程	41.2mm	
6	使用机针	DP×5、DP×17	
7	外压脚上升量	最大 25mm(仅气动式最大 30mm)	
8	中压脚行程	标准 4mm(0-10mm)	
9	中压脚上升量	20mm	
10	可以变更中压脚下位置	标准 0-3.5mm(最大 0-7.0mm)	
11	旋转	半旋转倍旋转	
12	使用机油	HIKARI 新机油(加油方式)	
13	花样数据的记忆	EEPROM、外部媒体 · EEPROM: 最大 200 图案(最大 20000 针/1 图案) · 外部媒体: 最大 999 个图案(最大 50000 针/图案)	
14	暂停功能	在缝制途中可以让缝纫机停止	
15	放大、缩小功能	可以选择缝迹缝制图案时, 可以独立地放大、缩小 X、Y 轴。1%-400%(0.1%单位)	
16	放大、缩小方式	可以选择增减缝迹长度/增减针数方式 (仅在选择图案按钮时和 CP-20 为缝迹长度增减时)	
17	缝纫速度限制	200-2700rpm(100rpm 单位)	
18	花样选择功能	图案 No. 选择方式(EEPROM: 1-200, 外部媒体: 1-999) (CP-20 为滚动式)	
19	底线计数器	加数计数/减数计数方式(0-9999)	
20	缝制计数器	加数计数/减数计数方式(0-9999)(仅限于 IP-410)	
21	存储器后备	切断电源时, 自动地记忆使用的图案。	
22	第 2 原点的设定	用微动开关可以把缝制后的针位置移动到缝制范围内的任意位置设定为第 2 原点。此设定也可以被记忆。(仅限于 IP-410)	
23	缝纫机马达	伺服马达	
24	外形尺寸	W: 1200mm L: 710mm H: 1200mm (不包括线架装置)	
25	质量(总质量)	机头 69kg, 电气部 16.5kg	
26	消费电力	500VA	
27	使用温度范围	5°C-35°C	
28	使用湿度范围	35%-85%(无结露)	
29	电源电压	额定电压±10% 50/60Hz	
30	使用空气压力	标准 0.35-0.4MPa(最大 0.55MPa)(仅气动式)	
31	空气消费量	1.8dm ³ /min(ANR)(仅气动式)	
32	针杆上死点停止功能	缝制后, 可以让针杆返回到上死点位置。	

2. 各部的名称



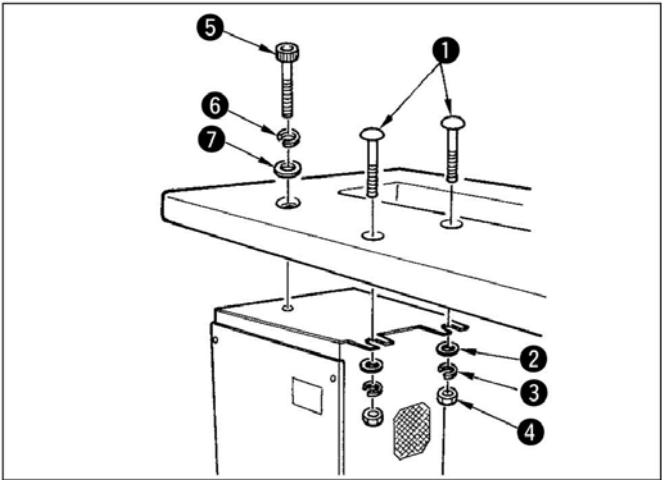
1. 缝纫机机头
2. 拨线开关
3. 暂停开关
4. 外压脚
5. 中压脚
6. 线架装置
7. 操作盘 (IP-410 或 CP-20)
8. 电源开关
9. 控制箱
10. 脚踏板
11. 手动踏板 (除气动式)

空气控制装置
(只限空气型机种)



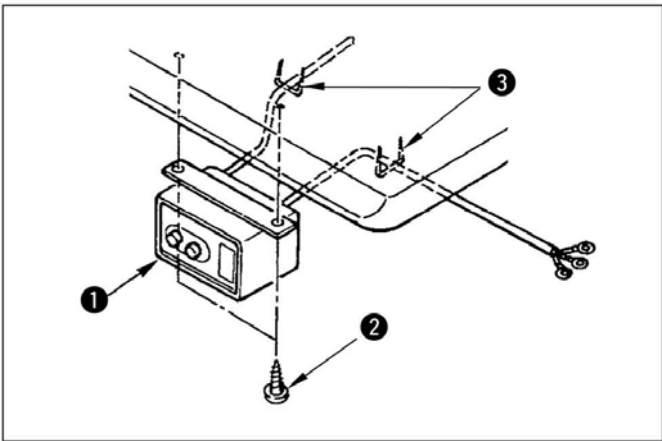
3. 安装

3-1. 电气箱的安装



缝纫机机台上附属的圆头螺栓(1)平垫片(2)弹簧垫片(3)螺母(4)按照图示的位置安装好，再把头上有六角凹坑的螺栓(5)弹簧垫(6)平垫片(7)按照图示的位置安装好。

3-2. 电源开关的安装、连接开关的安装、连接



1) 电源开关的安装

请把电源开关(1)用木螺丝(2)固定刀几台下面。请根据使用形态，用复数的卡扣(3)固定好电缆线。

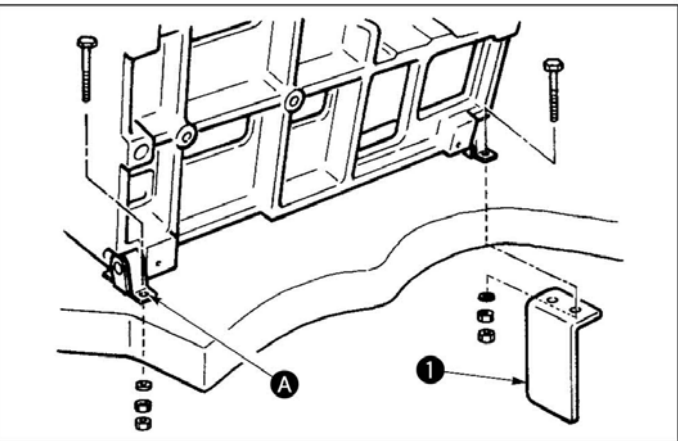


卡扣(3)包括固定操作盘电缆用共附属了(5)个。

3-3. 缝纫机机头的安装

！ 危险

搬运缝纫机时，请一定 2 人以上进行。

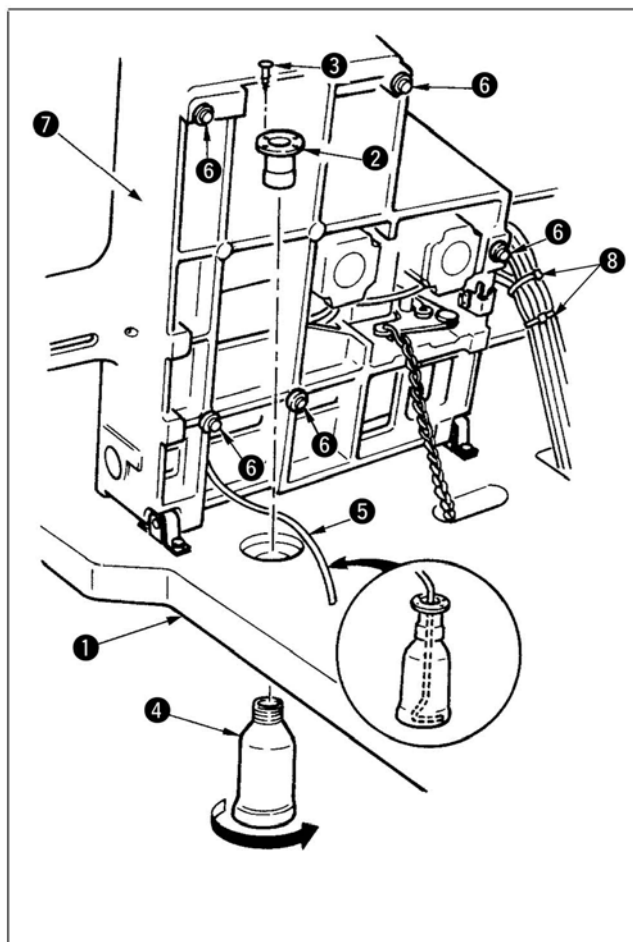


1) 如图所示，把铰链 A 孔对准机台孔固定。



气动规格时还请固定电磁阀安装板(1)。

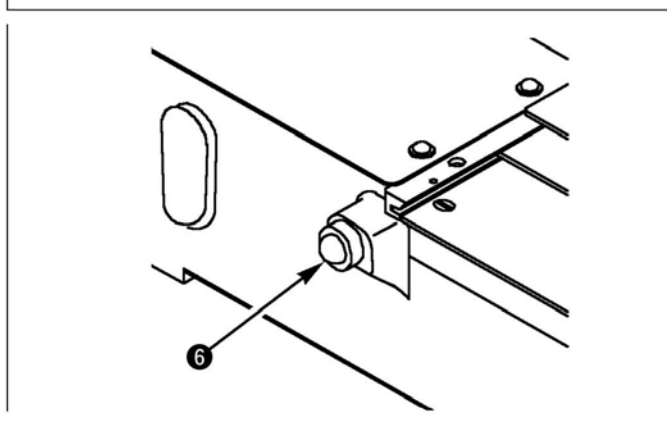
3-4. 废油槽和机头支撑橡胶的安装



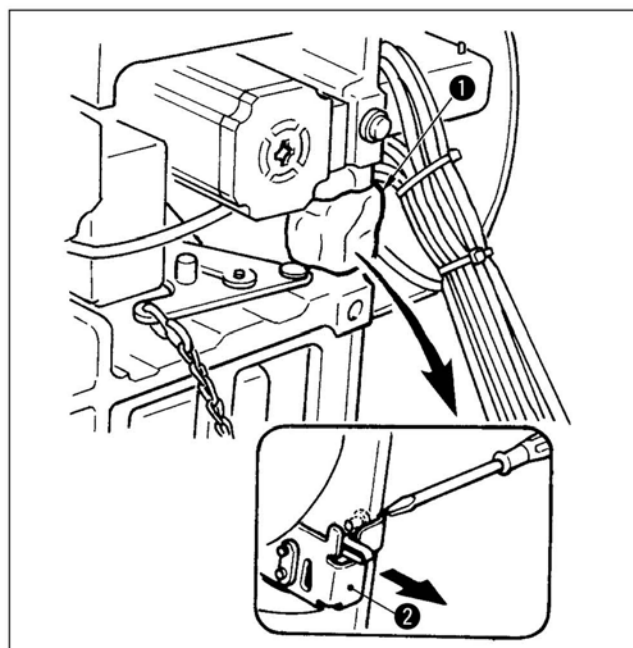
- 1) 用固定螺丝(3)(2个)把废油槽(2)固定到机台(1)的安装孔上。
- 2) 把废油销(2)拧进废油槽(4)里。
- 3) 把缝纫机废油管(5)插到废油销(4)里。
- 4) 把机头支撑橡胶(6)插到机台(7)上。
- 5) 如图所示, 请用扎线带(8)捆扎好。(不包括空气软管)



1. 放倒缝纫机机头后, 废油管(5)应该不从废油销(4)脱落, 牢牢地插到最里面。
2. 请写下固定废油管(5)的胶带。



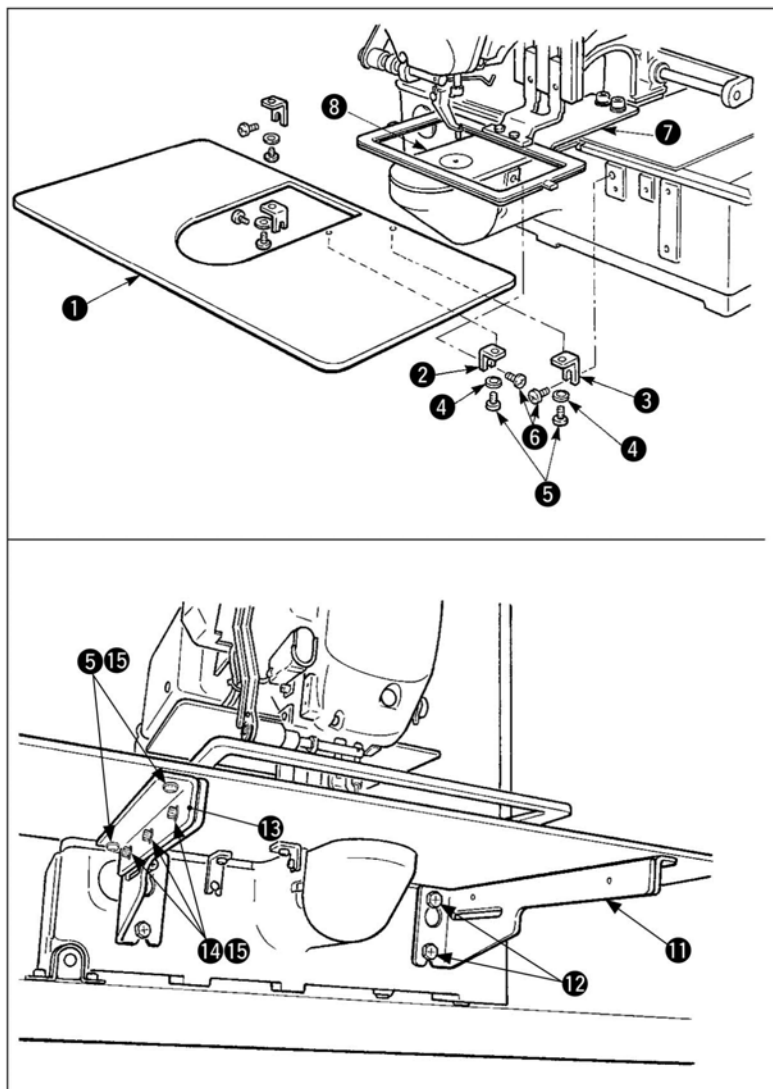
3-5. 安全开关



请取下固定安全开关(2)的拨杆部的胶带(1)。



1. 不取下胶带(1)使用的话, 放倒缝纫机的状态下缝纫机也会转动, 非常危险。
2. 安装后, 缝纫机动作时如果发生异常 302, 请用螺丝刀拧松安全开关安装螺丝, 项缝纫机的下方调整安全开关(2)的位置。



- 1) 用固定螺丝 (M5) (6)把针板辅助护罩支
座 A(2)、B(3)临时固定刀机台上。

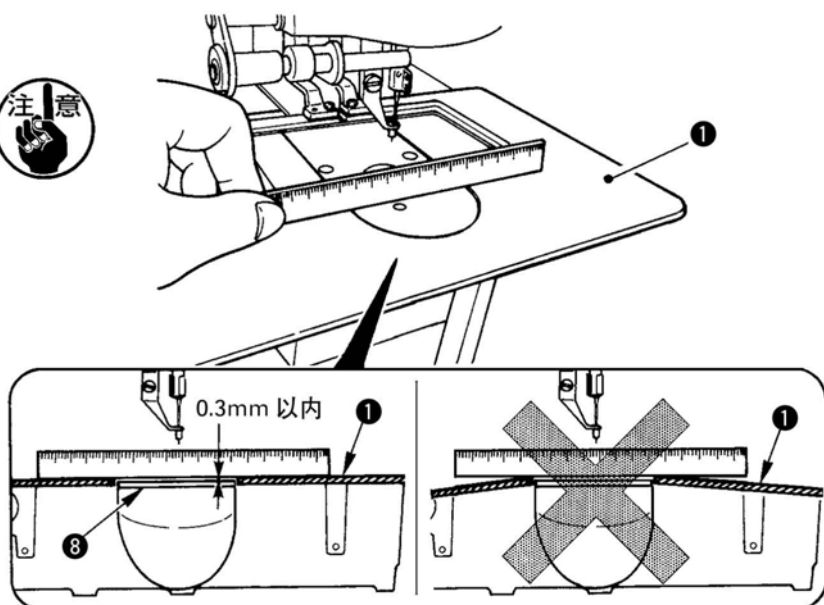


关于固定针板辅助护罩支座 A(2)
的螺丝(6), 请使用带六角孔和带
+ 的螺丝中的使用方便的螺丝。

- 2) 把送布台向里面移动, 把针板辅助护
罩(1)插进下板(7)和针板(8)之间。此时,
请注意不要让下板(7)弯曲。
- 3) 请用针板辅助护罩固定螺丝(5)和垫片
(小)(4)固定针板辅助护罩(1)。
- 4) 用固定螺丝 (M6) (12)临时把针板辅助护
罩支架(11)固定到机台上。
- 5) 用固定螺丝(14)和垫片 (大) (15)临时把针
板辅助护罩座(13)固定到针板辅助护罩
支架(11)上。
- 6) 最后请用针板辅助护罩固定螺丝(5)和
垫片 (大) (15)固定针板辅助护罩(1)。



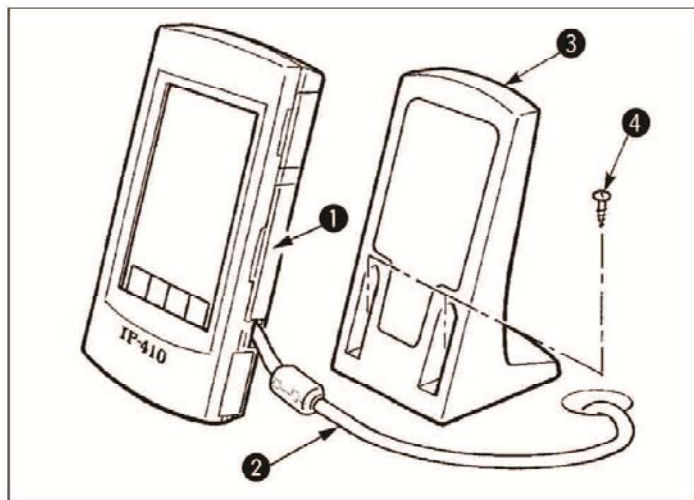
请注意针板辅助护罩支架(11)的
左右形状不同。



1. 请注意针板辅助护罩
支架的方向不要弄错
2. 固定时, 请让针板辅助
护罩(1)比针板(8)高
(0.3mm 以内)。如果比
针板(8)低的话, 就会发
生因传送不良而造成
断针等事故。
3. 请用直尺等确认针板
辅助护罩(1)是否安装
的水平。如果安装的不
水平的话, 下板(7)的部
分会碰到针板辅助护
罩(1), 发生异常磨损的
故障。

3-6. 操作盘的安装

PL-400A-D 的安装

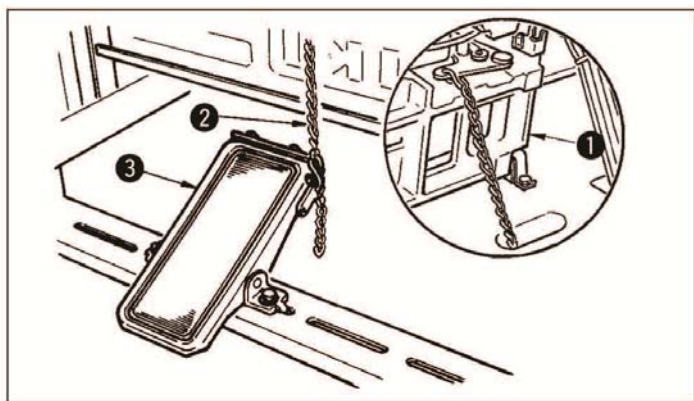


- 1) 请打开护罩(1)，卸下电缆线(2)，然后把电缆线穿过机台的孔后，在机台上面重新再连接到操作盘。
- 2) 用 2 个木螺丝(4)把操作箱安装板(3)固定到机台上的任意部位。



为了防止操作盘破损，请安装到碰不到 X 移动护罩、机头夹的位置。

3-7. 安装踏板链(只限 S 规格)

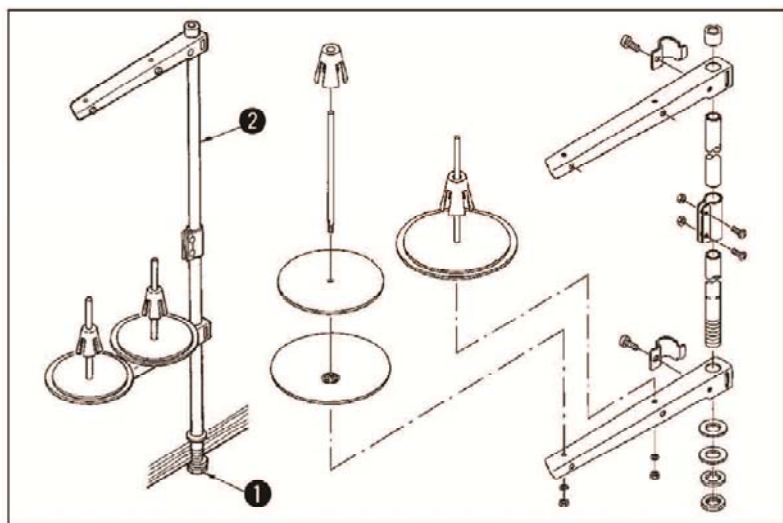


用链条(2)把缝纫机(1)和操作踏板(3)连接起来。



放倒缝纫机时，请一定把链条(2)从手动踏板(3)拆卸下来之后再放倒缝纫机。

3-8. 线架装置的安装方法



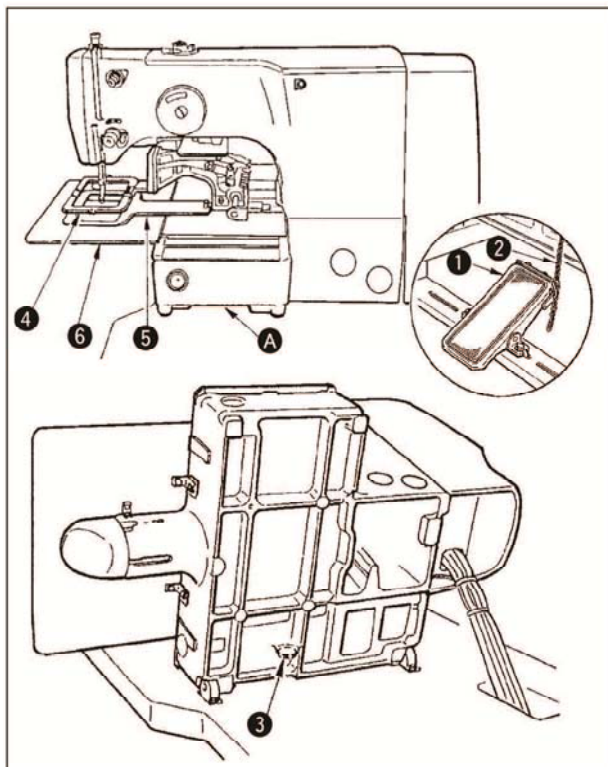
- 1) 组装线架装置，把它安装到机台在上方的孔上。
- 2) 拧紧固定螺母(1)，不让线架装置松动。
- 3) 可以进行天井配线时，请把电源线从线架立杆(2)中穿过。

3-9. 缝纫机的抬起方法



注意

放倒缝纫机和抬起缝纫机时，请注意不要让缝纫机夹住手指。同时，为了防止突然的启动发生意外事故，请把电源关掉之后再进行操作。



抬起缝纫机时，请用手拿着缝纫机台插入部 A，轻轻地抬起直到机台橡胶座(3)顶到机台，S 规格时，请先把链条(2)从手动踏板(1)卸下之后再进行操作。



1. 为了防止缝纫机翻倒，请一定在水平的地方抬起缝纫机。
2. 抬起缝纫机时，首先把压脚(4)向右侧移动到移动限位，然后用胶带等进行固定。如果在移动或固定不充分稳定的状态下抬起缝纫机的话，有可能损坏 X 移动护罩和 X 移动轨，而且还有可能碰到由于自重向左倾斜的压脚(4)和中压脚等，而造成零部件损坏。



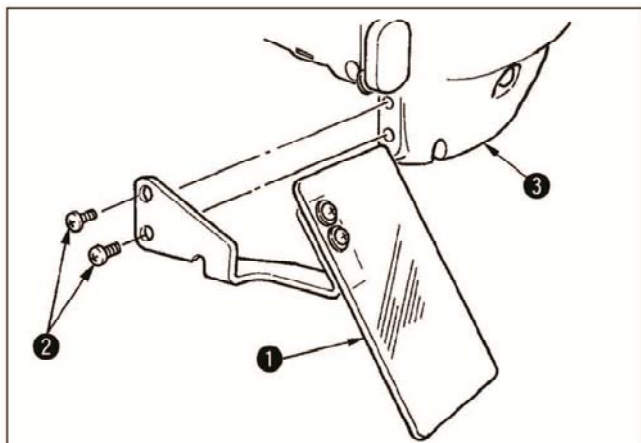
1. 为了防止缝纫机翻倒，请一定在水平的地方抬起缝纫机。
2. 不卸下针板辅助护罩(6)就抬起缝纫机的话，机台会与针板辅助护罩相碰，因而造成针板辅助护罩弯曲变形、破损、缝纫机翻倒等故障。
3. 抬起缝纫机时，首先把压脚(4)向右侧移动到移动限位，然后用胶带等进行固定。如果在移动有可能碰到由于自重向左倾斜的压脚(4)和中压脚等，而造成零部件损坏。

3-10. 眼镜保护罩的安装



危险

为了保护断针飞起弄伤眼睛，请一定安装起来。



请一定用螺丝(2)把眼睛保护罩(1)安装到缝纫机面罩(3)上之后再使用缝纫机。

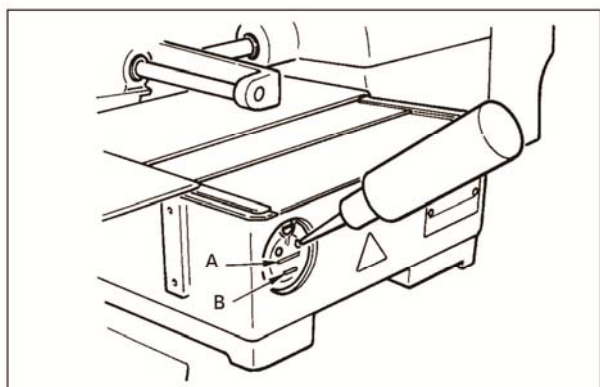
4. 缝纫机的准备

4-1. 加油方法



注意

为了防止突然的启动造成人身事故，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，如果旋梭的油量多，可以把油量调小。



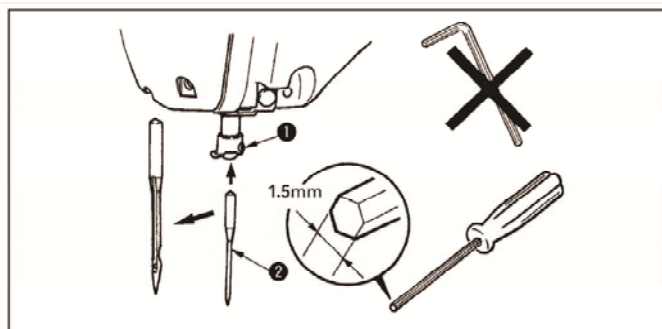
1. 请注意不要向油槽和下列注意 2 的旋梭以外的部位加油。否则会发生零件故障。
2. 初次使用缝纫机或较长时间没有使用缝纫机时，请向旋梭加少量的机油后再使用缝纫机。

4-2. 机针的安装方法



注意

为了防止突然的启动造成人身事故，请关掉电源后再进行。



拧松固定螺丝(1)，把机针(2)的长沟槽朝向面前，插进针杆的深处，然后拧紧固定螺丝(1)。



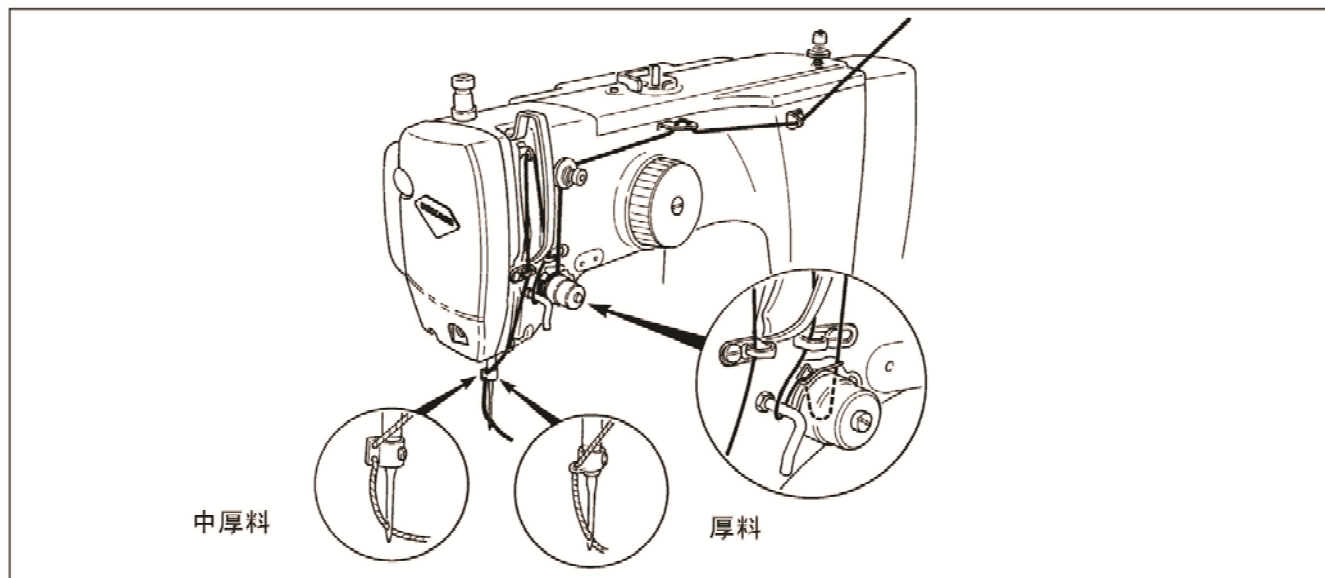
拧紧固定螺丝(1)时，请一定使用附属的六角螺丝刀(货号：40032763)。请不要使用 L 型的六角杆扳手。否则有可能损坏固定螺丝(1)。

4-3. 上线的穿线方法



注意

为了防止突然的启动造成人身事故，请关掉电源后再进行。

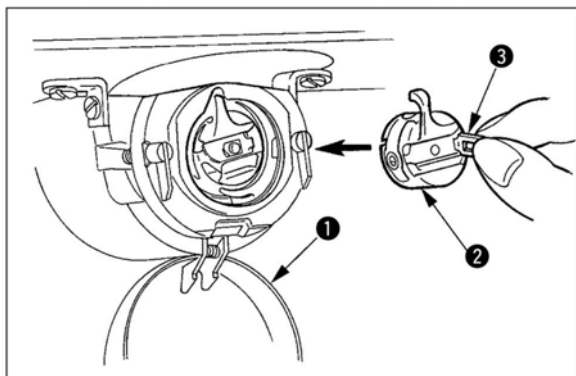


4-4. 梭壳的取下插入



注意

为了防止突然的启动造成人身事故，请关掉电源后再进行。



- 1) 打开旋梭外罩(1)。
- 2) 拔起旋梭壳(2)的抓脚(3)，取出梭壳。
- 3) 放入时，请在放倒旋钮的状态，插到发出“咔嚓”的声音。



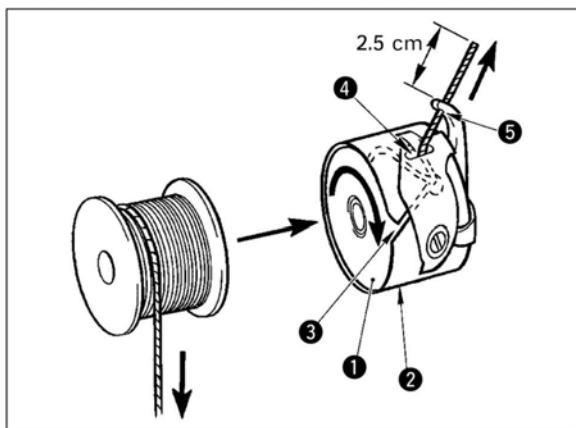
如果没有插到底，缝制途中梭壳(2)就有可能脱落。

4-5. 旋梭的插入方法



注意

为了防止突然的启动造成人身事故，请关掉电源后再进行。

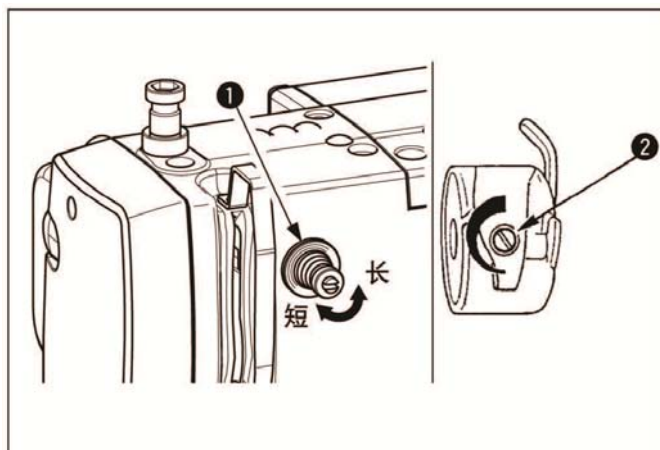


- 1) 把旋梭(1)按图示的方向插入梭壳(2)。
- 2) 把线穿过梭壳(2)的穿线口(3)，然后拉线，把线从线张力弹簧下面的穿线口(4)拉出来。
- 3) 把线从角部的线孔(5)穿出，从线孔约拉出来 2.5cm。



旋梭的旋转方向相反的话，底线拉不稳定。

4-6. 线张力的调整方法



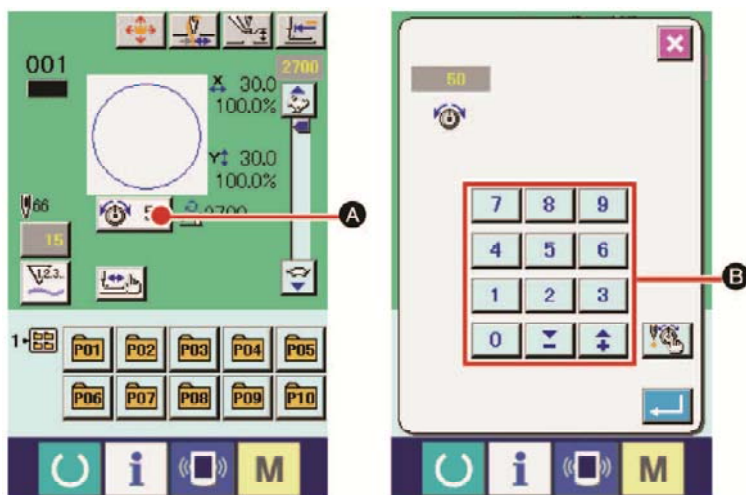
把第一线张力旋钮(1)向右转动，切线后针尖上的残线长度变短，向左转动后变长。

请尽量在不脱线的情况下弄短残线。

在操作盘上调整上线张力，用(2)调整底线张力。

上线张力的调整

[PL-400A-D]



1) 在缝制画面，选择线张力按钮  50 A。

2) 用十数字键 B、设定上线张力。设定范围是 0-200。设定值越大，张力也越大。

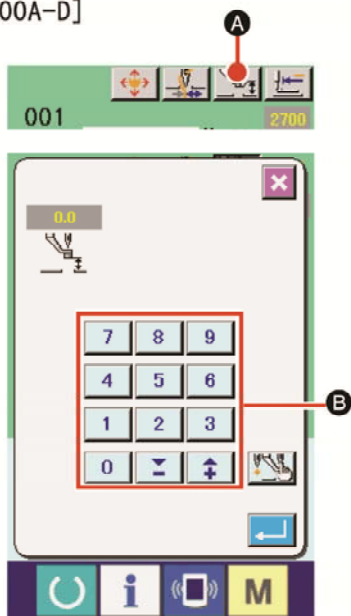
* 标准出货时，设定值为 50 时，H 规格应调整为 2.35N，S 规格应调整为 1.47N (长化纤线#50)。(第 1 线张力盘放开时)

4-7. 中压脚的高度

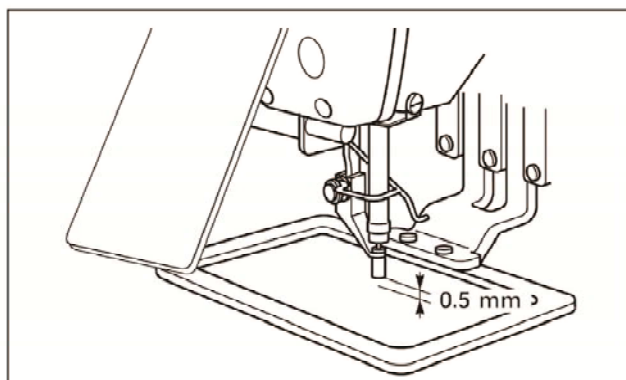


提升中压脚高度后，请用手转动飞轮下降针杆，确认是否不与中压脚相碰。（使用 DP×5 机针时，请在 3.5mm 以下进行使用。）

[PL-400A-D]

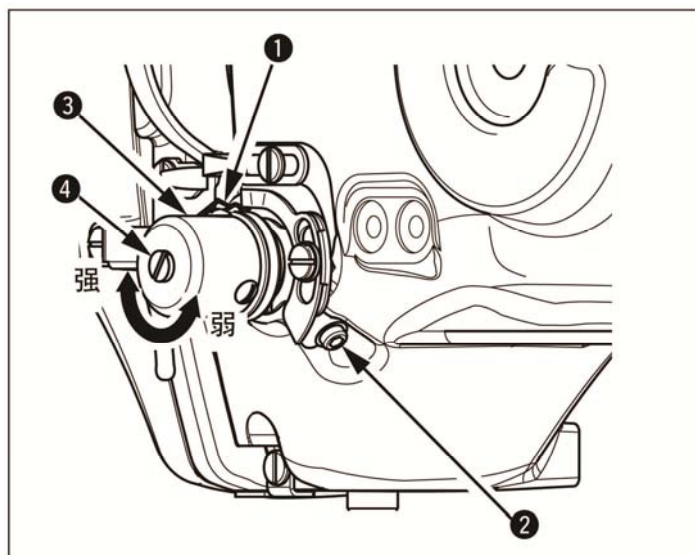


按中压脚设定按钮 A，在机针最下点时，请用十数字键 B 把中压脚下端和布料的间隙调整为 0.5mm（使用线的粗细）。



1. 中压脚的设定最大范围标准为 3.5mm。但是，H 规格等使用 DP×17 机针时，可以用存储器开关 U112 变更设定范围最大至 7mm。
2. 提高中压脚高度之后，或把机针号换成较粗的机针后，请确认与拨线杆的间隙。不能确保间隙时，就不能使用挑线杆。这时，请关闭 (OFF) 拨线杆开关，变更存储器开关 U105 的设定值。

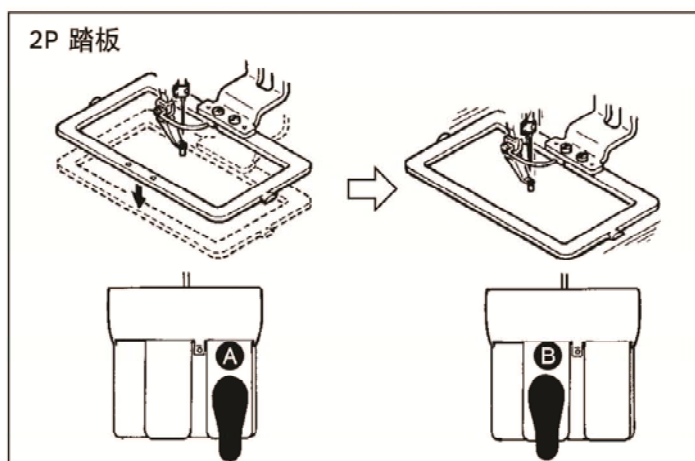
4-8. 挑线弹簧的调节



- 1) 移动量的调节
拧松固定螺丝(2), 转动线张力结合体(3)。向右转动之后, 动作量变大, 拉线量变多。
- 2) 强度的调节
改变挑线弹簧(1)的强度, 请在螺丝(2)拧紧的状态下, 把细螺丝刀插到线张力杆(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。

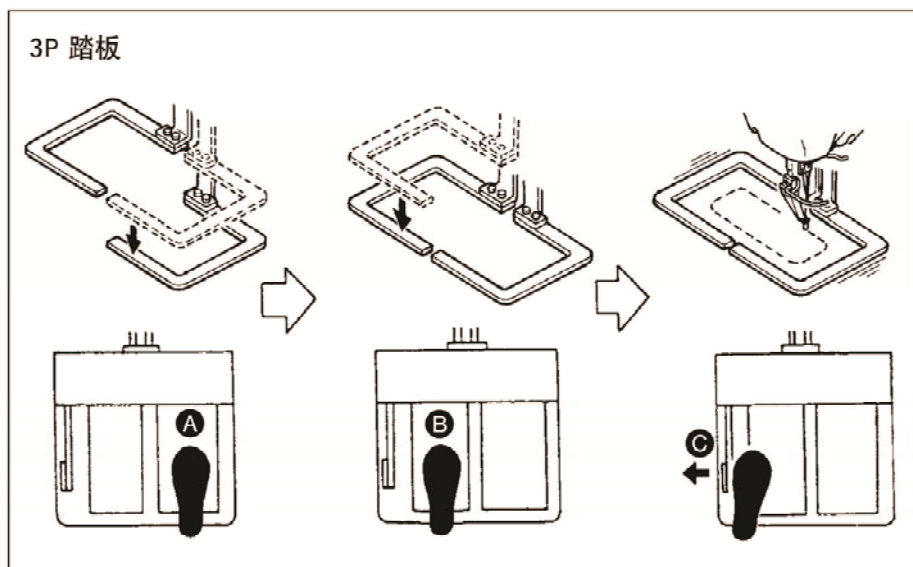
5. 缝纫机的操作

5-1. 缝制



[2P 踏板时]

- 1) 把缝制品放到缝纫机上。
- 2) 把踏板开关踩到踏板 A, 压脚下降。再次踩开关, 则压脚上升。
- 3) 放下压脚后, 把踏板踩到踏板 B, 开始缝制。
- 4) 缝制结束后, 机针返回到缝制开始的位置, 压脚上升。



[3P 踏板时]

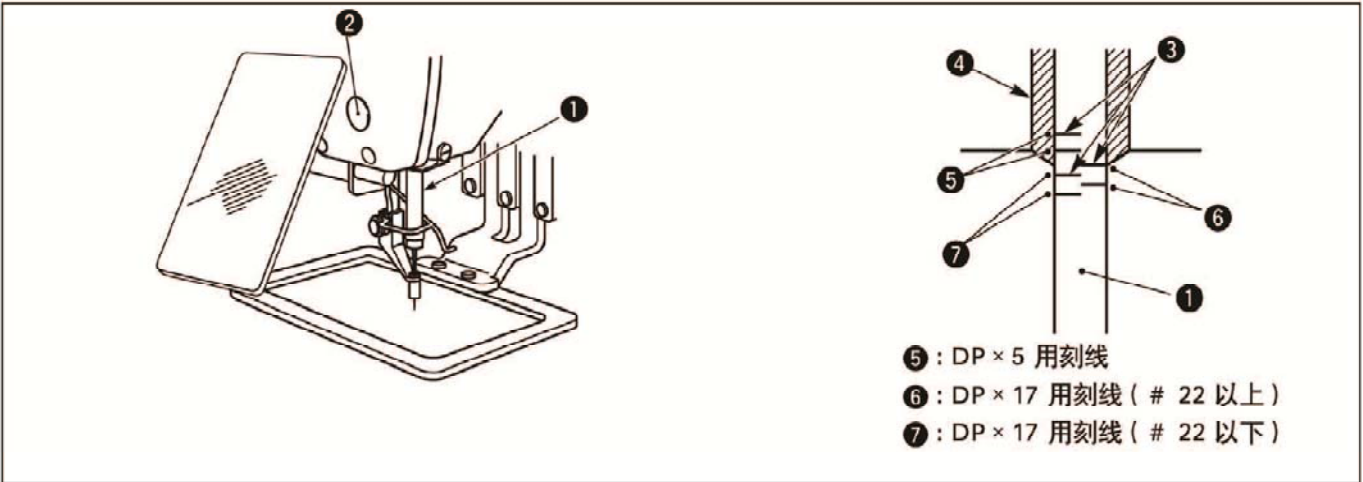
- 1) 把缝制品放倒缝纫机上。
- 2) 踩脚踏板开关 A 之后, 右面的压脚下降, 再次踩脚踏踏板开关之后则上升。踩脚踏踏板开关 B 之后, 左面的压脚下降, 再次踩脚踏踏板开关之后上升。
- 3) 放下压脚后, 把踏板踩到踏板 C, 开始缝制。
- 4) 缝制结束后, 机针返回到缝制开始的位置, 压脚上升。

6. 缝纫机的维修保养

6-1. 针杆高度(改变机针长度)

**注意**

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。



- *请打开一次电源，待中压脚下降之后，再把电源关闭。
- 1) 把针杆(1)降到最下点，拧松针杆套固定螺丝(2)，把针杆上刻线(3)调整对准针杆下端块(4)的下端。
 - 2) 如上图所示，根据机针尺寸改变调节位置。

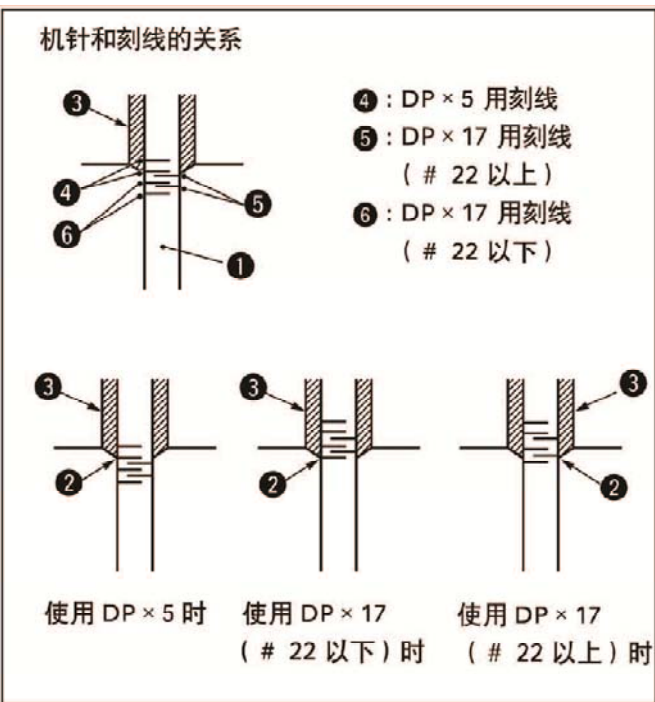
**重要**

调节后请一定确认扭矩不要松弛。

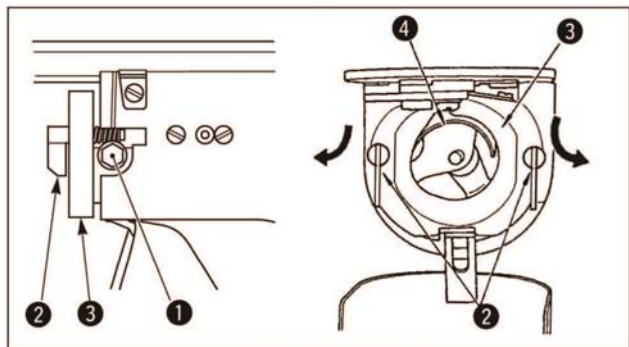
6-2. 机针与旋梭

**注意**

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。



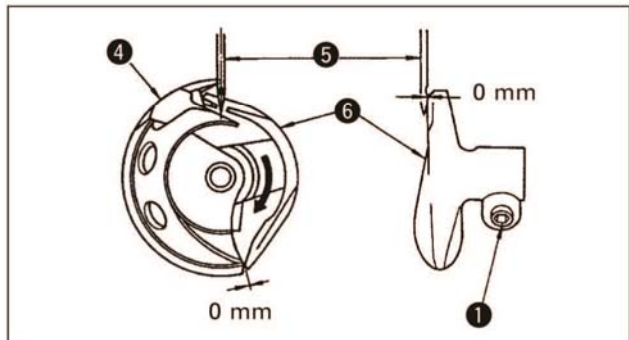
- * 请打开一次电源，待中压脚下降之后，再把电源关闭。
- 1) 用手转动皮带轮，针杆(1)上升时，把下刻线(2)对准针杆下挡块下端。



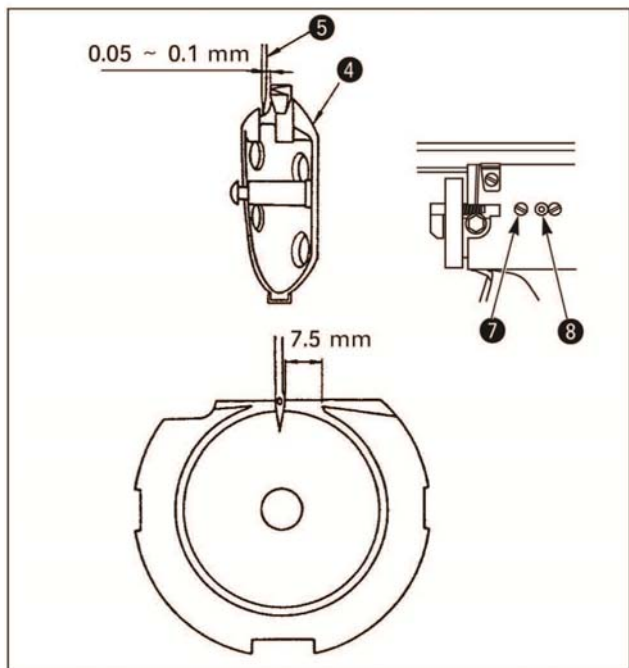
- 2) 拧松驱动固定螺丝(1)，左右打开中梭梭压片(2)，卸下中梭梭压脚(3)。



此时，要注意不要让中梭梭(4)掉下来。



- 3) 为了让中梭梭(4)的梭尖与针(5)的中心一致，同时让驱动器(6)的前端面防止机针弯曲。因此，把机针和驱动器前端面的间隙调节为0mm，后拧紧驱动器固定螺丝。



- 4) 拧松大梭梭固定螺丝(7)，左右转动大梭梭调节轴(8)，调节大梭梭的前后位置，把机针(5)和中梭梭(4)的梭尖的间隙调整为 0.05-0.1mm。

- 5) 调节完大梭梭的前后位置后，机针和大梭梭的间隙应为 7.5mm，然后拧紧大梭梭固定螺丝(7)。

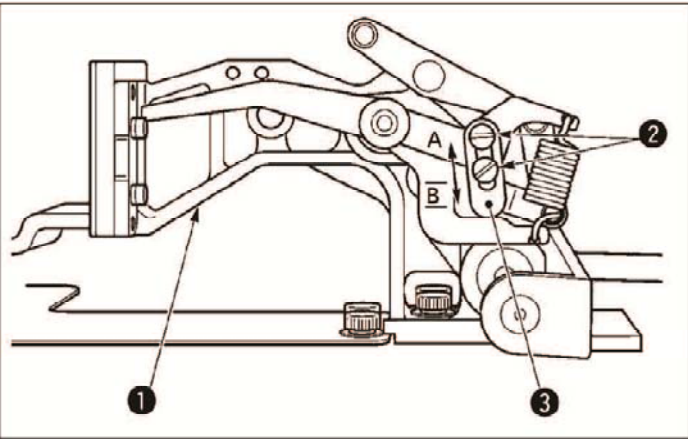


把机针号换成较粗的机针后，请确认机针尖或中压脚和挑线的、杆的间隙。不能确保间隙时，不能使用挑线杆。这时，请关闭(OFF)挑线杆开关。

6-3. 压脚的高度

! 注意

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。

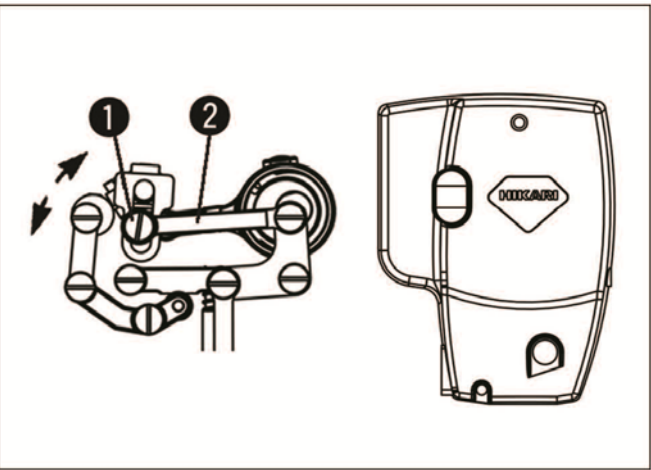


- 1) 拧松送布台(1)左右的固定螺丝(2)，把压布压脚挡块(3)拨到 B 方向，压脚的高度变高。
- 2) 调整了高度后，拧紧固定螺丝(2)。

6-4. 中压脚的上下行程调节

! 注意

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。



- * 请打开一次电源，待中压脚下降之后再把电源关闭。
- 1) 取下面罩。
 - 2) 转动上轮，把针杆移动到下死点。
 - 3) 拧松平头螺丝(1)，把平头螺丝(1)的位置向上方向移动，行程变大。
 - 4) 工厂出货时调节为 4mm，最大行程可达 7mm。

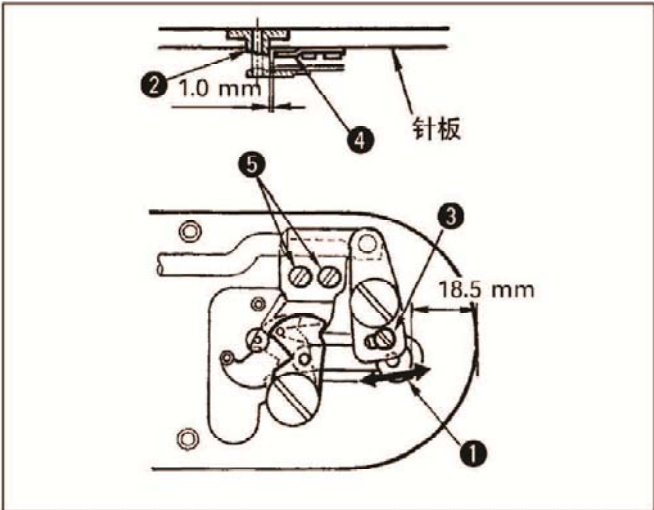
参考

卸下面部护罩的橡胶栓，不用拆卸面部护罩也可以进行调整。

6-5. 移动刀和固定刀

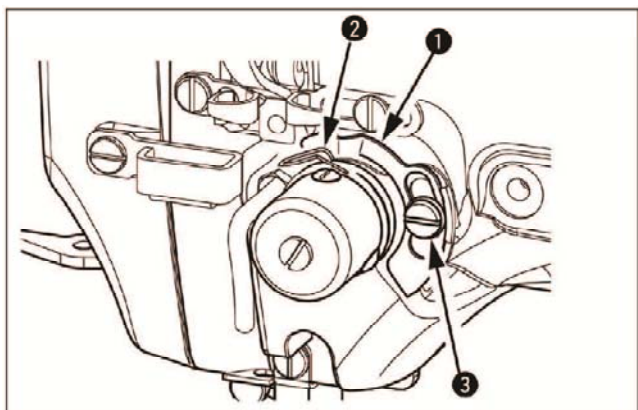
! 注意

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。



- 1) 拧松调节螺丝(3)，向箭头方向移动动刀，把从针板前端到切线小拨杆(1)前端的距离调整为 18.5mm。
- 2) 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 1.0mm。

6-6. 断线检测板

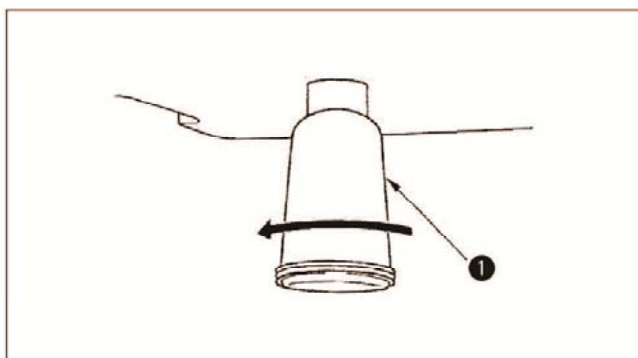


- 1) 没有穿线时, 把断线检测板(1)和挑线弹簧(2)调整成相接触(垂度为 0.5mm)。
- 2) 改变了挑线弹簧(2)的形成后, 请拧松螺丝(3), 再次调整断线检测板(1)。



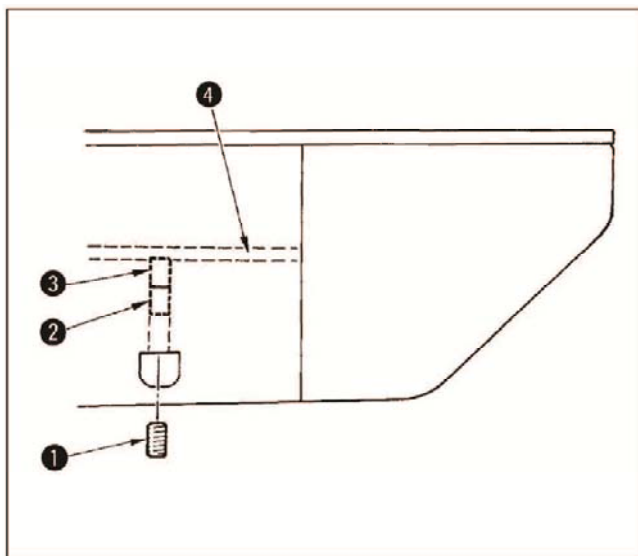
断线检测板(1)除挑线弹簧(2)以外不能与其他金属部件相接触。

6-7. 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。

6-8. 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)的油量被弄小。
- 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(3), 回转 4 圈的位置。
2. 弄小油量时, 不要一次拧紧, 拧紧(3)回转 2 圈, 待半日左右观看一下。拧得过紧的话会磨损旋梭。

6-9. 缝制时的故障、原因和对策

现象	原因	对策	页
1. 始缝时脱线。	(1) 始缝时挑线。	○机针和旋梭的间隙调整为 0.05-0.1mm。	121
	(2) 切线后上线长度短	○设定始缝时软启动。	104
	(3) 底线过短。	○调节第 2 线张力器的浮现量。	22
	(4) 第 1 针的上线张力高。	○把挑线弹簧弄强或把第一线张力盘的张力减弱。	20
	(5) 抓线不稳定(布料容易伸长、线不滑、线粗等)	○减弱底线张力。	124
	(6) 第 1 针的间距小。	○弄大针孔导向器和固定刀的间隙。	
2. 老断线。 化纤线拉断。	(1) 旋梭、驱动器上有伤。	○降低第 1 针的张力。	
	(2) 针孔导向器上有伤。	○降低缝制开始第 1 针的转速。(600-1000rpm 左右)	
	(3) 机针碰布压脚。	○抓线针数增加 3-4 针。	
	(4) 线头进入大旋梭的沟里。	○增长第 1 针的间距。	
	(5) 上线张力过强。	○下降第 1 针的上线张力。	
	(6) 挑线弹簧过强。		
	(7) 化纤线摩擦热而断。		
	(8) 向上拉线时, 把线扎到针尖了。		
3. 常断针。	(1) 针弯了。	○卸下用细磨时或锉刀磨平。	
	(2) 针碰布压脚。	○用锉刀磨, 或换新。	21
	(3) 针过粗。	○调节布压脚的位置。	20
	(4) 驱动器把针弄得过弯。	○卸下中旋梭, 消除线头。	22
4. 线切不断。 (仅限底线)	(1) 固定刀不快。	○减弱上线张力。	
	(2) 针孔导向器和固定刀高低差小。	○减弱挑线弹簧。	
	(3) 刀位置不好。	○使用硅油。	
	(4) 最终针跳线。	○把针杆高度下降刻度的一半。	
	(5) 底线张力低。	○确认针尖是否钝了。	
	(6) 面料缝合不齐。	○使用球点针。	
5. 经常跳针	(1) 针和旋梭调整不好。	○更换机针。	18
	(2) 针和中旋梭的间隙过大。	○调节布压脚。	21
	(3) 针弯了。	○根据缝制物选用适当的机针。	121
	(4) 驱动器把针弄得过弯。	○调整针和旋梭位置。	

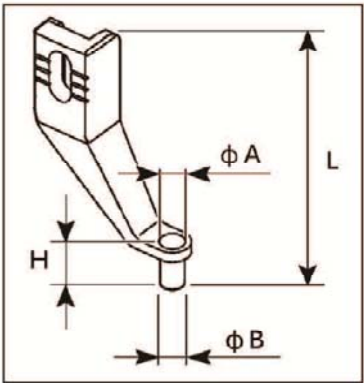
现象	原因	对策	页
6. 上线从布的里侧露出来。	(1) 上线紧线不好。 (2) 线张力盘浮起机构不动作。 (3) 切线后的上线过长。 (4) 针数少。 (5) 缝制长度短时(缝制背面上线头路出。) (6) 针数少。	○加强上线张力。 ○确认缝制中第 2 线张力盘是否浮起。 ○加强第 1 线张力。 ○把抓线装置设定为 OFF。 ○把抓线装置设定为 OFF。 ○使用暗缝式下板。	20 20
7. 在布料表面,第 1 针的线头路出来了。	(1) 第 1 针跳针。 (2) 与中压脚内径相比使用机针和线过粗。 (3) 中压脚与机针不同心。	○调整旋梭同步时间提前 1/2 针。 ○弄大中压脚的内径。 ○调整机针与中压脚的心偏差,让机针落在中压脚中心。	
8. 切线时断线。	(1) 动刀位置不好。	○调节动刀位置。	124
9. 上线缠结在抓线装置上。	(1) 缝制开始的上线长。	○拧紧第 1 线张力器,把机线长度调整正为 40~50mm。	24
10. 机线长度不一致	(1) 条线弹簧的张力低。	○提高挑线弹簧的张力。	22
11. 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。	20 22
12. 缝制开始第 2 针的底线结线部露出来。	(1) 梭芯的空转大。 (2) 底线张力低。 (3) 第 1 针的上线张力过强。	○调整活动刀位置。 ○增强底线张力。 ○下降第 1 针的上线张力。 ○把抓线装置设定为 OFF。	124 20
13. 挑线杆动作不良(返回不良)	(1) 最终针和缝制开始同一落针位置时,线和布料的阻力大。	○移动最终针的落针位置。	

7. 选购品

7-1. 针孔导板一览

使用机针	针孔导向器		
针号	货号	针孔直径	用途
#09-#11	B242621000C	φ 1. 6	针织料 (OP)
#11-#14*1	B242621000A	φ 1. 6	薄料-中厚料 (S 规格)
#14-#18*2	B242621000B	φ 2. 0	中厚-厚料 (H 规格)
#18-#21	B242621000D	φ 2. 4	厚料 (OP)
	B242621000F	φ 3. 0	
#22-#25	B242621000G	φ 3. 0 (带间隙规)	极厚料 (OP)
#18-#25	B242621000H	φ 3. 0 (偏心)	厚料跳针对策用 (OP)

使用机针	针孔导向器	
针号	货号	尺寸 (φ A × φ B φ H φ L)
#09-#11	B1601210D0E (OP)	φ 1. 6 × φ 2. 6 × 5. 7 × 37. 0
#11-#14*1	40023632 (标准)	φ 2. 2 × φ 3. 6 × 5. 7 × 38. 5
#14-#18*2		φ 2. 2 × φ 3. 6 × 8. 7 × 41. 5
#18-#21	B1601210D0FA (OP)	φ 2. 7 × φ 4. 1 × 5. 7 × 38. 5
#22-#25	B1601210D0CA (OP)	φ 3. 5 × φ 5. 5 × 5. 7 × 38. 5
#18-#25		

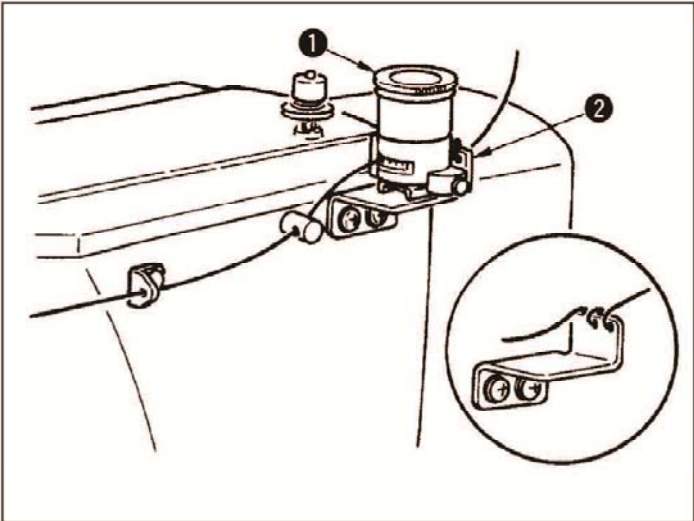


- ※ 1 标准安装机针 (DP×5#14)
- ※ 2 标准装着针 (DP×17#18)
 - S 规格: 试用机线号#80-#20
 - H 规格: 试用机线号#50-#02
 - (OP) 为选项

7-2. 冷却油槽

注意

为了防止意外的启动造成人身事故，请关掉电源后再进行操作。



冷却油槽(1) (MAXAP30EX00) 是用磁力固定的。

参考

1. 用冷却油槽座(2)
 拢线时，请把绕线方向反过来。
2. 固定线冷却器座时，请使用 M4
 的螺丝 (2 个)。

7-3. 拨线器

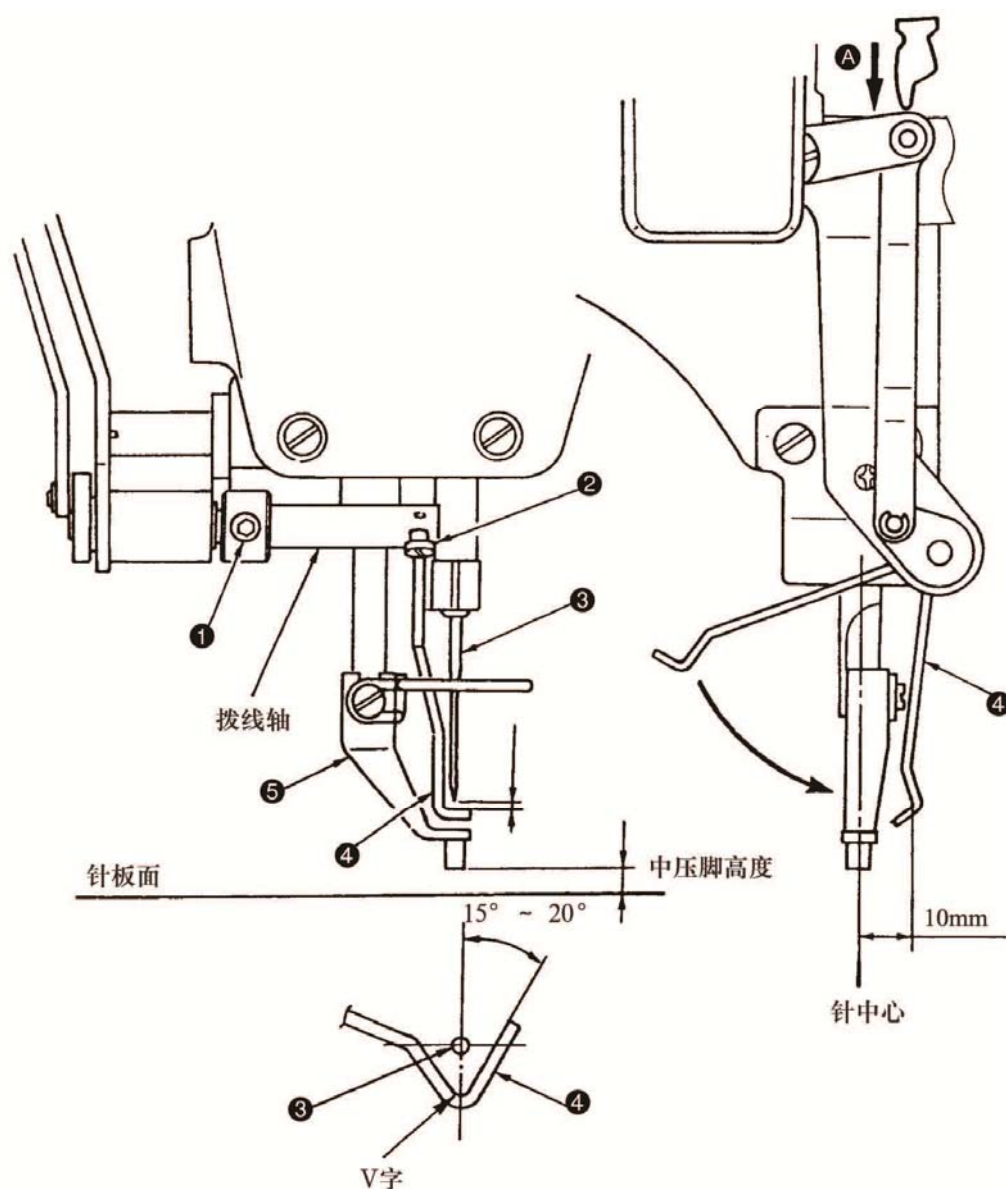


注意

为了防止由于不经意启动而引发事故，因此请切断电源，在即使踩动踏板机器也不启动状态下再进行操作。

拨线器的调整

1. 在切线后的停止位置 (机针(3)离针板上方的高度为 17.7mm) 中下降中压脚时，在按压拨线器连杆部 A 时，将机针(3)的中心与拨线器(4)V 字弯内侧的间隙调整为 10mm。
2. 将拨线器连杆部 A 按到中途，将拨线器(4)来到机针下方时的间隙调整为 1mm。
3. 拨线器(4)前端的打开角度为 $15^{\circ} \sim 20^{\circ}$ 。



(注意) 虽然标准附属的内压脚可以对应 5mm 的布料厚度，但是当不了厚度在 3mm 以上时，拨线器会无法通过针尖和内压脚之间而无法使用。

因此当布料厚度达到 3mm 以上时请关闭拨线器开关。

ENGLISH

**HMS1310 series
INSTRUCTION MANUAL**

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.

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 any time 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), looper, spreader etc. and replacing bobbin.
 - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, 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 specially 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 specially 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. HIKARI assumes 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.



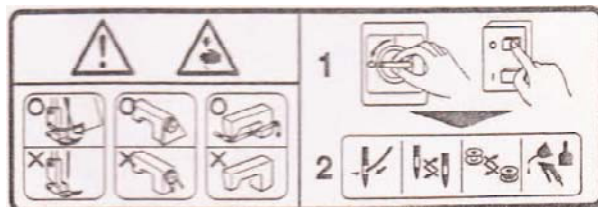
← (1)

← (2)

← (3)

(1) →

(2) →



← (3)

- 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 prevent possible accidents due to electric shocks, neither open the cover of motor electrical box nor touch the component(s) inside the electrical box. 2. Make sure of the needle entry after changing the pattern. Should the pattern protrude from the work clamp check, needle interferes with the work clamp check resulting in the danger of occurrence of needle breakage or the like. In addition, check that the work clamp check which has been set corresponds to that which has been installed on the sewing machine.
	1. In case nothing is displayed in the operation panel even when the power switch is turned ON, turn OFF the power switch and check the power voltage and phase. 2. To avoid personal injury, never put your fingers under the thread take-up lever, cloth presser, cloth cutting knife, or needle when you turn the power switch ON or operate the sewing machine. 3. To protect against possible accidents due to abrupt startup of the machine, turn OFF the power switch before tilting the machine head or removing the motor cover 4. 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 winding the bobbin thread. 5. Feeding frame automatically comes down when pattern is changed, ready key is ON, Presser switch is ON, intermediate presser button is ON and bobbin winder button is ON. To prevent possible accidents caused by abrupt start of the sewing machine, never place your fingers under the feeding frame. 6. To avoid personal injury, never bring your fingers, hair or clothing close to V belt, cloth cutting knife or motor during operation, and never place anything on any of these parts. 7. To avoid personal injury, never operate the machine with the motor cover, eye protection cover, or any other safety devices removed. 8. To avoid personal injury, be careful never to allow your fingers to go inside the machine when tilting or raising the machine head. 9. To prevent possible accidents due to electric shocks or damaged electrical component(s), always turn OFF the power switch before connecting or disconnecting the power plug. 10. During thunder and lightning storms, stop your work and disconnect the power from the outlet to ensure safety and prevent possible accidents due to damaged electrical component(s). 11. If the machine is suddenly moved from a cold place to a warm place, dew condensation may result. If this occurs, be sure to confirm that there are no potentially dangerous water drops in the machine before turning it on in order to prevent possible accidents due to damaged electrical component(s). 12. In the event of a power failure, be sure to turn OFF the power to the machine to protect against damaged electrical components. 13. This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. 14. When the sewing machine is used without a break for many hours, the temperature of a part of the machine body or the rear side of operation panel rises higher by 15°C than the environmental temperature, and you may feel the heat from the part. However, this phenomenon is not abnormal, and does not affect the components or the like. 15. Do not lubricate the machine oil to the places other than the oil tank and the hook section. The grease lubricating system except the hook section is employed for this sewing machine, and the grease flows out when lubricating the machine oil resulting in worn-out of the components. 16. Be careful of handling this product so as not to pour water or oil, shock by dropping, and the like since this product is a precision instrument.

CONTENTS

1. SPECIFICATIONS	1
2. CONFIGURATION	2
3. INSTALLATION	3
3-1. Installing the electrical box	3
3-2. Installing and connecting the power switch	3
3-3. Installation of the sewing machine head	3
3-4. Installing the drain receiver and the head support rubber	4
3-5. Safety switch	4
3-6. Installing the panel	6
3-7. Attaching the pedal chain (For S specification only)	6
3-8. Installing the thread stand	6
3-9. Raising the machine head	7
3-10. Installing the eye protection cover	7
4. PREPARATION OF THE SEWING MACHINE	8
4-1. Lubrication	8
4-2. Attaching the needle	8
4-3. Threading the machine head	8
4-4. Installing and removing the bobbin case	9
4-5. Installing the bobbin	9
4-6. Adjusting the thread tension	10
4-7. Intermediate presser height	11
4-8. Adjusting the thread take-up spring	12
5. OPERATION OF THE SEWING MACHINE	12
5-1. Sewing	12
6. MAINTENANCE OF SAWING MACHINE	13
6-1. Adjusting the height of the needle bar (Changing the length of the needle)	13
6-2. Adjusting the needle-to-shuttle relation	13
6-3. Adjusting the height of the feeding frame	15
6-4. Adjusting the vertical stroke of the intermediate presser	15
6-5. The moving knife and counter knife	15
6-6. Thread breakage detector plate	16
6-7. Draining waste oil	16
6-8. Amount of oil supplied to the hook	16
6-9. Troubles and corrective measures (Sewing conditions)	17
7. OPTIONAL	19
7-1. Table of Needle hole guide	19

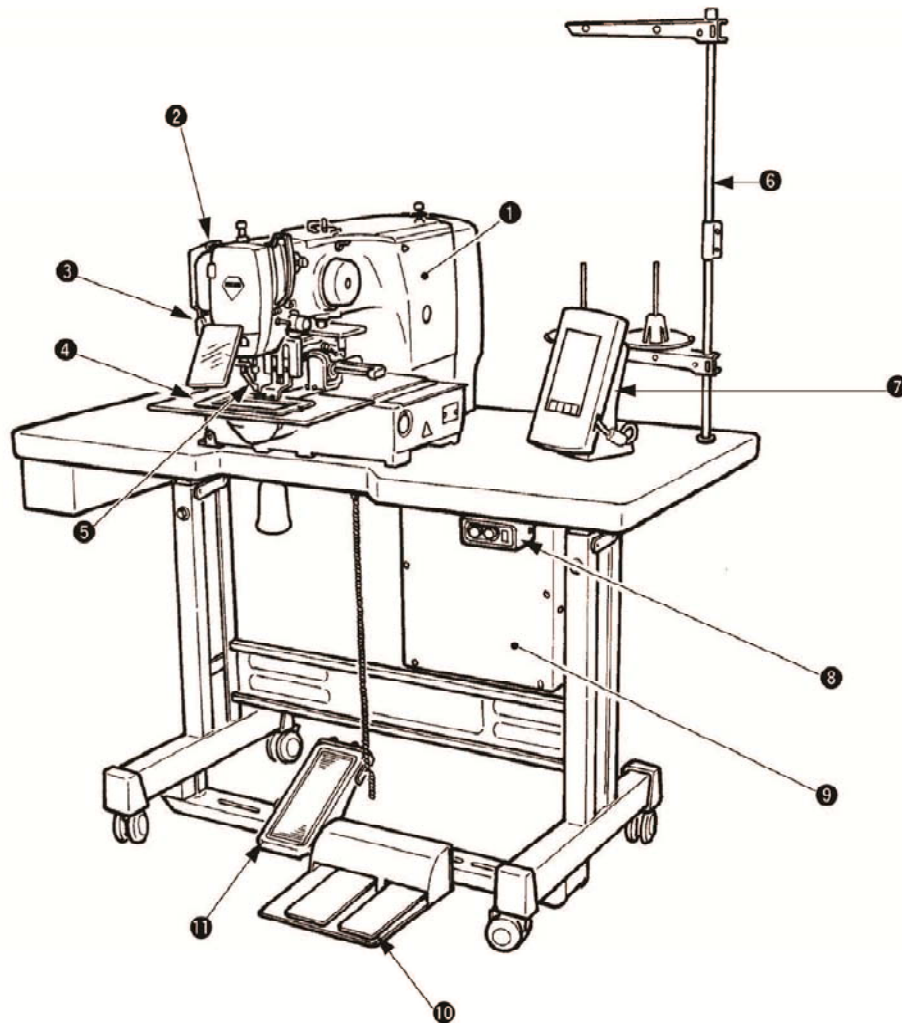
7-2. Silicon oil tank.....19

7-3. 拨线器19

1. SPECIFICATIONS

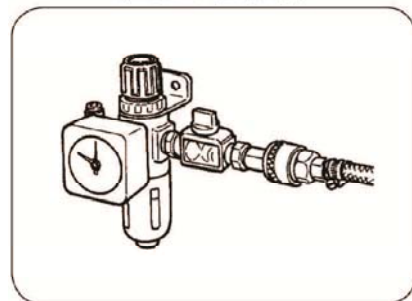
1	Sewing area	X (lateral) direction Y (longitudinal) direction HMS1310:130mm×100mm
2	Max. sewing speed	2700rpm (When sewing pitch is 3 mm or less)
3	Stitch length	0.1 to 12.7 mm (Min. resolution : 0.05 mm)
4	Feed motion of feeding frame	Intermittent feed (2-shaft drive by stepping motor)
5	Needle bar stroke	41.2mm
6	Needle	DP×5、 DP×17
7	Intermediate presser stroke	Max. 25mm (Pneumatic type only Max.30mm)
8	Intermediate presser stroke	4 mm (Standard) (0 to 10 mm)
9	Lift of intermediate presser	20mm
10	Intermediate presser DOWN position variable	Standard 0 to 3.5 mm (Max. 0 to 7.0 mm)
11	Shuttle	Double-capacity semi-rotary hook
12	Lubricating oil	HIKARI New Oil (Supplied by oiler)
13	Memory of pattern data	EEPROM , Media • EEPROM : Max. 200 patterns (Max. 20,000 stitches/pattern) • Media : Max. 999 patterns (Max. 50,000 stitches/pattern)
14	Temporary stop facility	Used to stop machine operation during a stitching cycle
15	Enlarging / Reducing facility	Allows a pattern to be enlarged or reduced on the X axis and Y axis independently when sewing a pattern. Scale : 1% to 400% times (0.1% steps)
16	Enlarging / Reducing method	Pattern enlargement/reduction can be done by increasing / decreasing either stitch length or the number of stitches. (Only increase/decrease of stitch length when pattern button is selected and CP-20 is used)
17	Max. sewing speed limitation	200 to 2,700 rpm (Scale : 100 rpm steps)
18	Pattern selection facility	Pattern No. selection method (EEPROM : 1 to 200, Media : 1 to 999) (CP-20 is the scroll type.)
19	Bobbin thread counter	UP/DOWN method (0 to 9,999)
20	Sewing counter	UP/DOWN method (0 to 9,999) (IP-410 only)
21	Memory back-up	In case of a power interruption, the pattern being used will automatically be stored in memory
22	2nd origin setting facility	Using jog keys, a 2nd origin (needle position after a sewing cycle) can be set in the desired position within the sewing area. The set 2nd origin is also stored in memory. (IP-410 only)
23	Sewing machine motor	Servo-motor
24	Dimensions	1,200mm (W) x 710mm (L) x 1,200mm (H) (Excluding thread stand)
25	Mass (gross mass)	Machine head 69kg, control box 16.5kg
26	Power consumption	500VA
27	Operating temperature range	5°C-35°C
28	Operating humidity range	35 % to 85 % (No dew condensation)
29	Line voltage	Rated voltage ±10% 50 / 60 Hz
30	Air pressure used	Standard 0.35 to 0.4 MPa (Max. 0.55 MPa)(Pneumatic type only)
31	Air consumption	1.8 dm ³ / min (ANR) (Pneumatic type only)
32	Needle highest	After the completion of sewing, the needle can be brought up to its highest position

2. CONFIGURATION



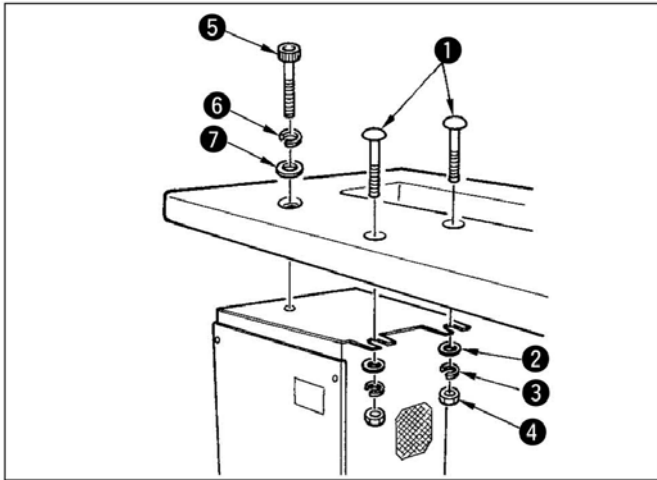
1. Machine head
2. Wiper switch
3. Temporary stop switch
4. Feeding frame
5. Intermediate presser
6. Thread stand
7. Operation panel (IP-410 or CP-20)
8. Power switch
9. Control box
10. Foot pedal
11. Manual pedal (Excluding pneumatic type)

Air regulator
(for pneumatic type only)



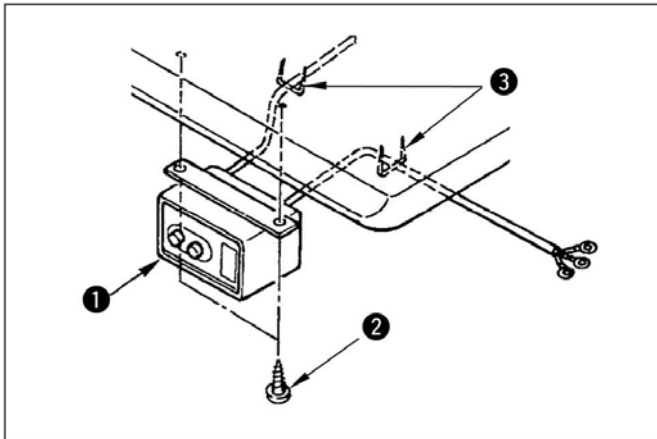
1. INSTALLATION

3-1. Installing the electrical box



Install the electrical box on the underside of the table at the location illustrated using round-head bolt 1, plain washer 2, spring washer 3 and nut 4 supplied with the machine, and using bolt having hexagonal indentation on the head 5 spring washer 6 and plain washer 7 supplied with the machine.

3-2. Installing and connecting the power switch



- 1) Installing the power switch
Fix power switch 1 under the machine table with wood screws 2.
Fix the cable with staples 3 supplied with the machine as accessories in accordance with the forms of use.



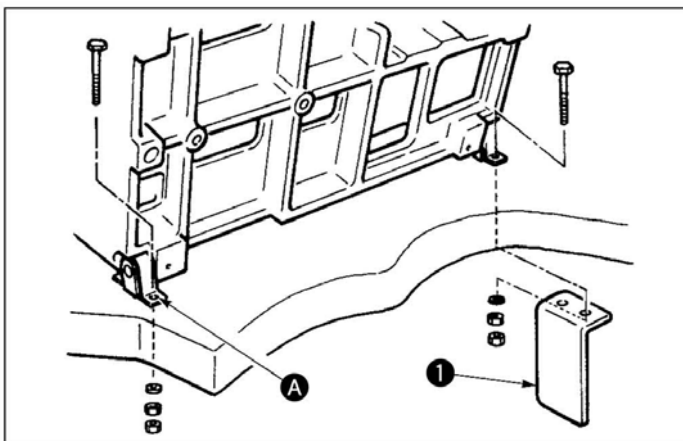
Five staples 3 including the staple
For fixing the operation panel cable
are supplied as accessories.

3-3. Installation of the sewing 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 moved.

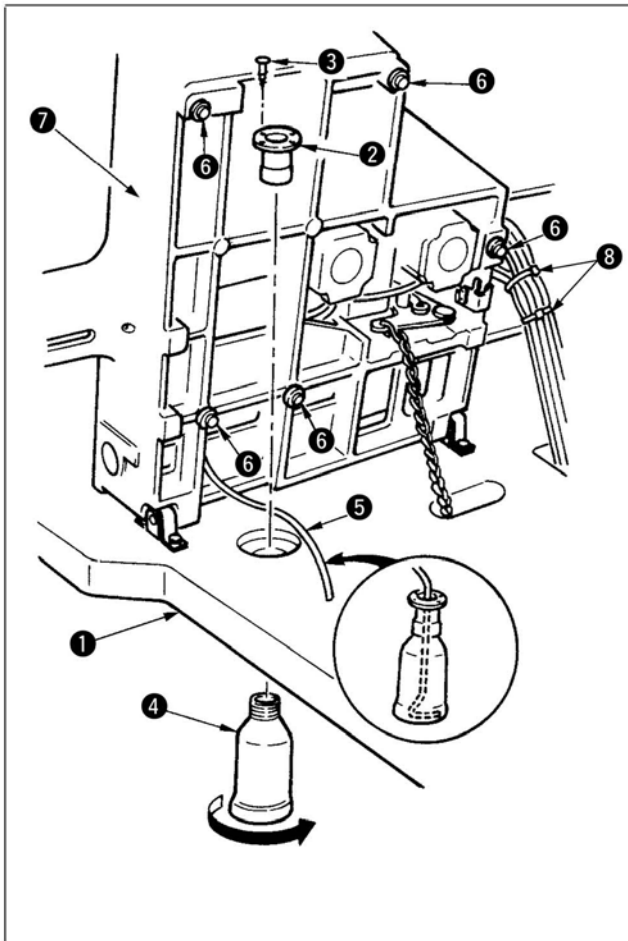


- 1) Fit the holes of hinges A to the holes of table and fix as shown in the figure.



In case of the pneumatic type, fix solenoid valve installing plate 1 as well.

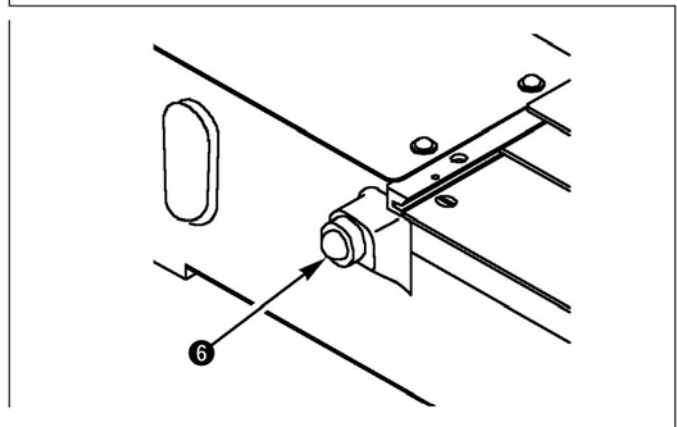
3-4. Installing the drain receiver and the head support rubber



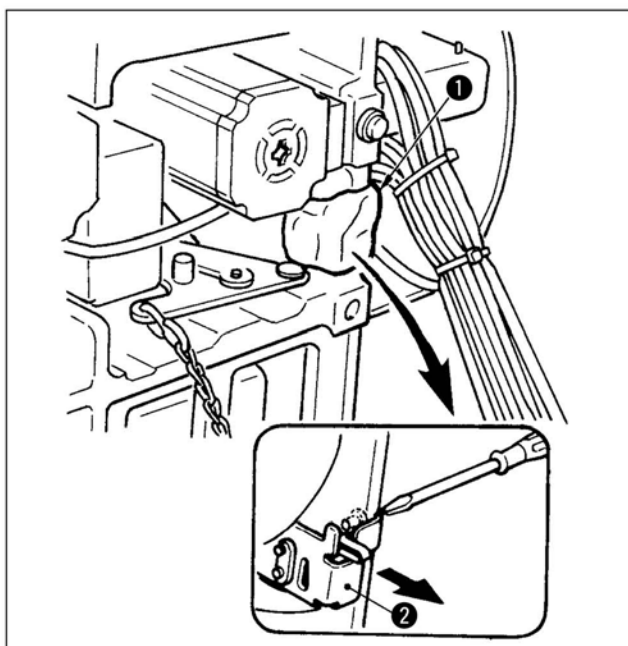
- 1) Fix drain receiver 2 in the installing hole of table 1 with two setscrews 3.
- 2) Screw in drain bin 4 to drain receiver 2.
- 3) Insert sewing machine drain pipe 5 into drain bin 4.
- 4) Insert head support rubbers 6 to machine bed 7.
- 5) Bundle the cables with clip bands 8 as shown in the figure.
(Excluding air tube).



1. Insert drain pipe 5 until it will go no further so that it does not come off drain bin 4 when tilting the machine head.
2. Remove the tape fixing drain pipe 5.



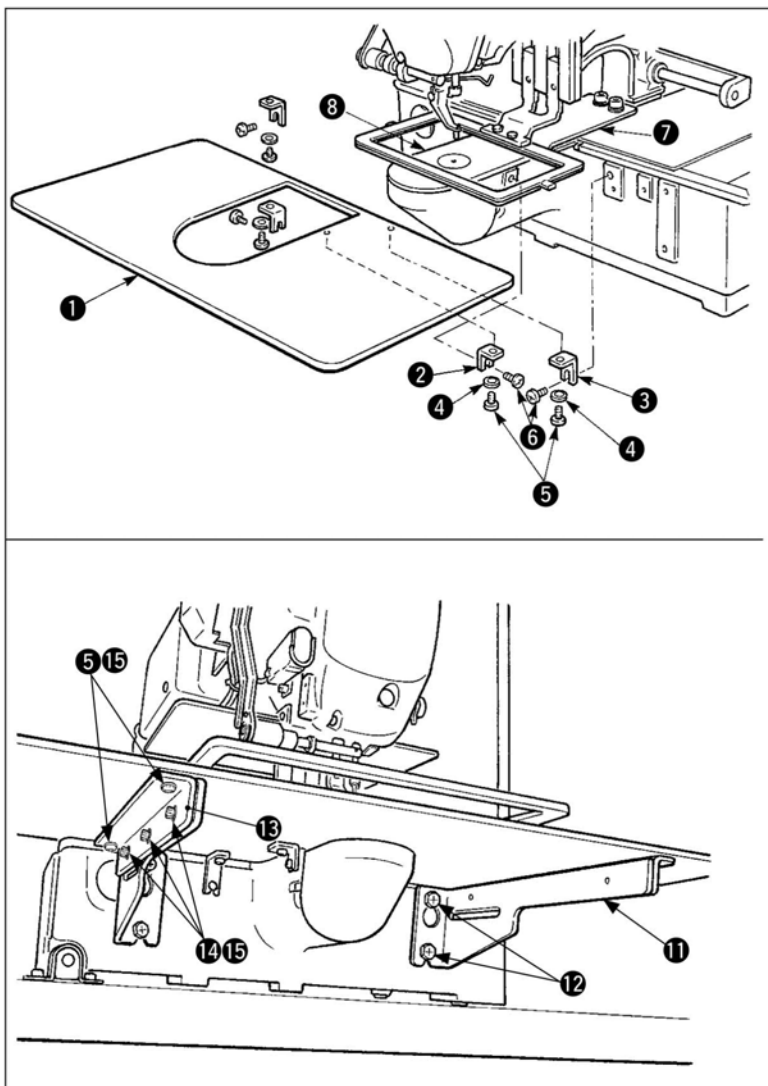
3-5. Safety switch



Remove tape 2 fixing the lever section of safety switch 1.



1. When using the safety switch without removing tape 1, it is very dangerous since the sewing machine works even in the state that it is tilted.
2. In case error 302 occurs when the sewing machine works after setup, loosen the safety switch 2 fitting screw with a screwdriver, and lower the switch to the down-side of the sewing machine.



- 1) Temporarily fix throat plate auxiliary cover supports A 2 and B 3 to the machine bed with setscrews (M5) 6.

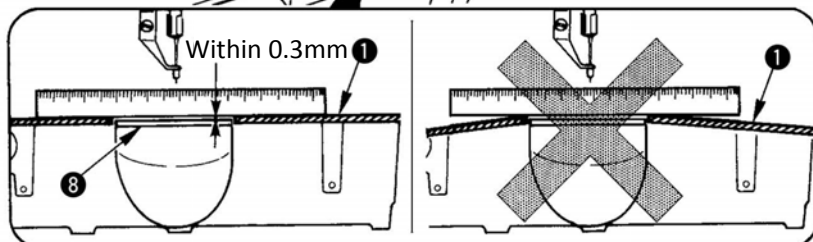
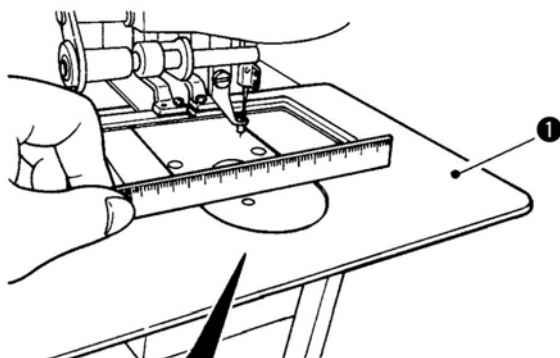


For the screw 6 which tightens the throat plate auxiliary cover support A 2, select the screw which is easier to use between the hexagon socket and the screw with plus and minus slots.

- 2) Move the cloth feed base to the rear, and place throat plate auxiliary cover 1 from between lower plate 7 and throat plate 8. At this time, be careful not to bend lower plate 7.
- 3) Fix throat plate auxiliary cover 1 with throat plate auxiliary cover setscrews 5 and washers 4.
- 4) Temporarily fix throat plate auxiliary cover support 11 to the machine bed with setscrews (M6) 12.
- 5) Temporarily fix throat plate auxiliary cover base 13 to throat plate auxiliary cover support 11 with setscrews 14 and nuts (large) 15.
- 6) Fix throat plate auxiliary cover 1 with throat plate auxiliary cover setscrews 5 and nuts (large) 15.



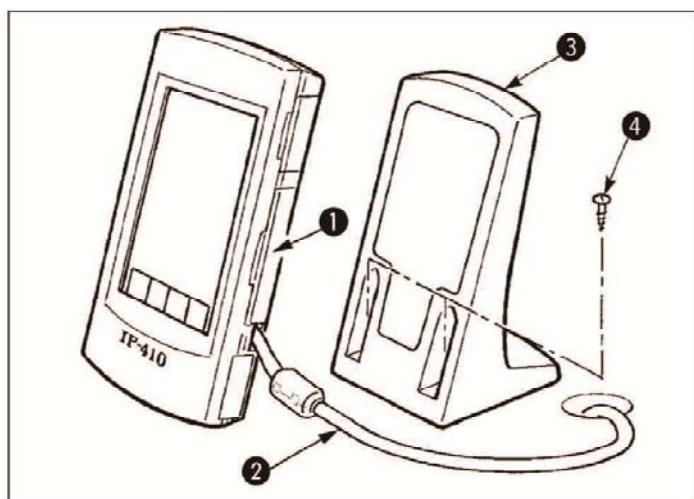
Left-hand and right-hand shapes of throat plate auxiliary cover support 11 are different. So, be careful.



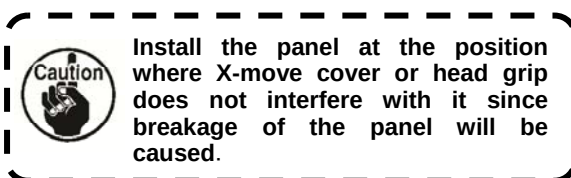
1. Be careful so as not to mistake the direction of throat plate auxiliary cover support.
2. Fix the throat plate auxiliary cover 1 so that it is higher than the throat plate 8 (within 0.3 mm). When it is lower than the throat plate 8, needle breakage or the like due to the defective feed will be caused.
3. Confirm by putting a ruler or the like that the throat plate auxiliary cover 1 is horizontally installed. If not, throat plate auxiliary cover 1 and lower plate 7 come in contact partially with each other, and abnormal worn-out will be caused.

3-6. Installing the panel

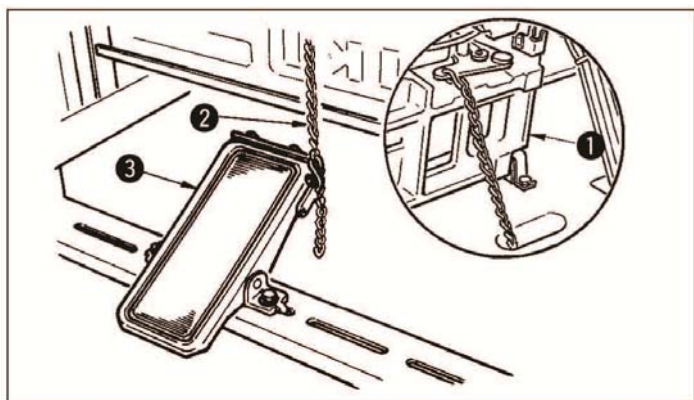
Installing the PL-400A-D



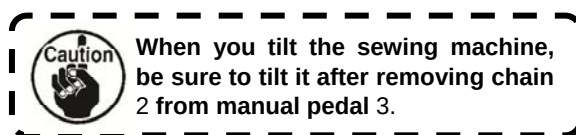
- 1) Open cover 1 and remove cable 2 once. Then connect it again to the panel on the top surface of the table after passing it through the hole in the table.
- 2) Fix operation panel installing plate 3 to an optional place on the table with two wood screws 4.



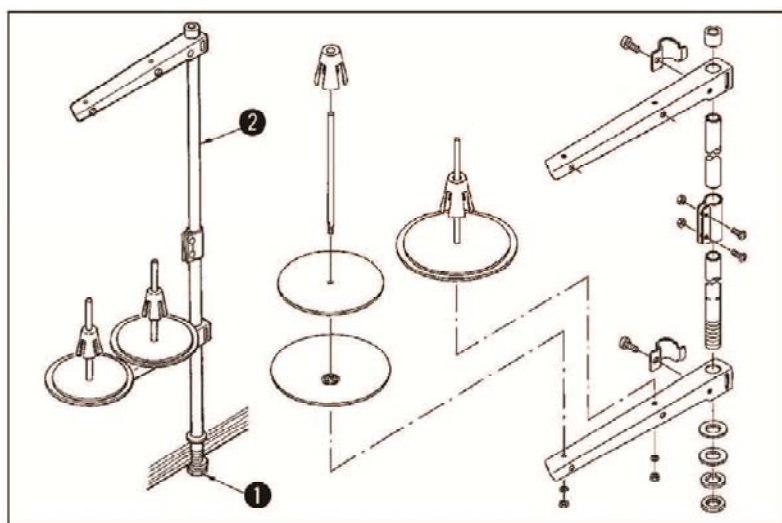
3-7. Attaching the pedal chain (For S specification only)



Connect the machine 1 and manual pedal 3 with chain 2.



3-8. Installing the thread stand



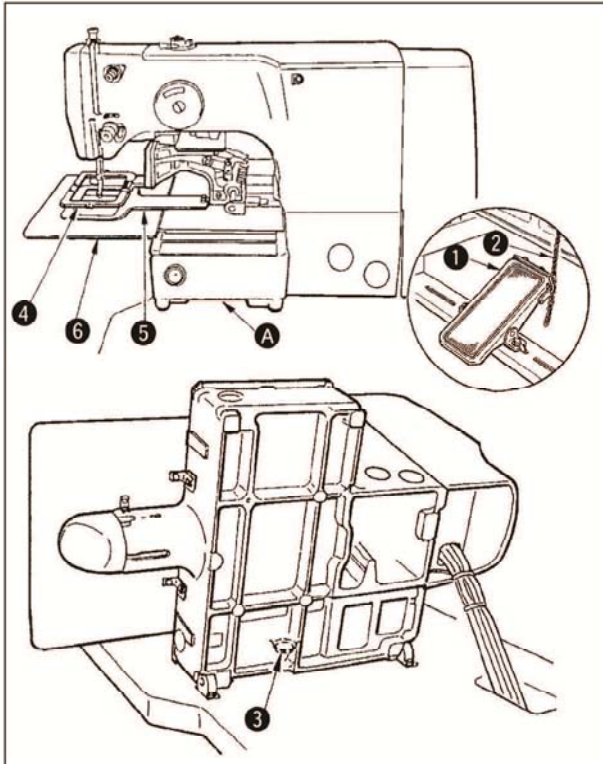
- 1) Assemble the thread stand, and put it in the hole in the top left corner of the machine table.
- 2) Tighten locknut 1 to fix the thread stand.
- 3) When ceiling wiring is possible, pass the power cord through spool rest rod 2.

3-9. Raising the machine head



WARNING

Tilt/raise the sewing machine head with both hands taking care not to allow your fingers to be caught in the head. turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



When raising the sewing machine, hold inserting, section A of the machine bed by hand, and quietly raise it until bed support rubber 3 comes in contact with the table. For the S type, remove chain 2 from manual pedal 1 first, and perform the work.

1. Be sure to raise the machine head at the leveled place so as to prevent the sewing machine from falling.
2. When raising the machine head, move feeding frame 4 before-hand to the right-hand side until it goes no further, and fix it with tape or the like. When the machine head is raised in the state that moving or fixing is insufficient, breakage of X-move cover or X-move rail will be caused. Besides, feeding frame 4 which is tilted to the left-hand side by the self-weight interferes with the intermediate presser or the like and breakage of the components will be caused.



1. Be sure to raise the machine head at the leveled place so as to prevent the sewing machine from falling.
2. When raising the sewing machine without removing throat plate auxiliary cover 6, the throat plate auxiliary cover interferes with the table, bend or breakage of the throat plate auxiliary cover, tilt of the sewing machine, etc. will result.
3. When raising the machine head, move feeding frame 4 beforehand to the right-hand side until it goes no further, and fix it with tape or the like. When the machine head is raised in the state that moving or fixing is insufficient, breakage of X-move cover or X-move rail will be caused. Besides, feeding frame 4 which is tilted to the left-hand side by the self-weight interferes with the intermediate presser or the like and break- age of the components will be caused.

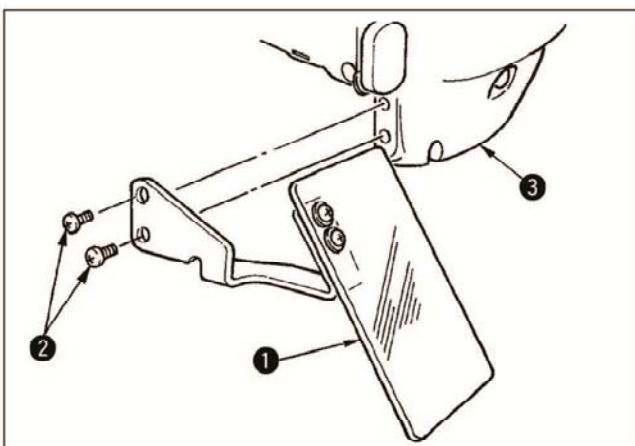


3-10. Installing the eye protection cover



WARNING

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



Use eye protection cover 1 after securely attaching it on face plate cover 3 with screw 2.

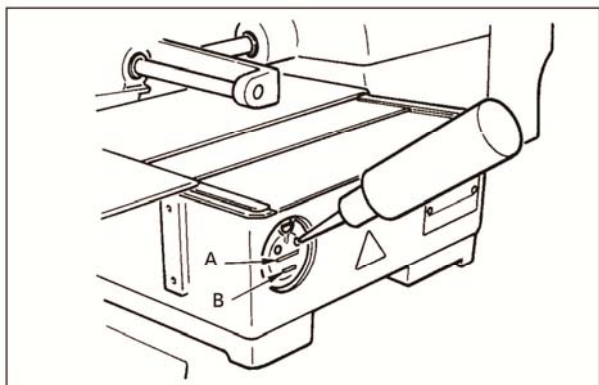
2. PREPARATION OF THE SEWING MACHINE

4-1. Lubrication



WARNING

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



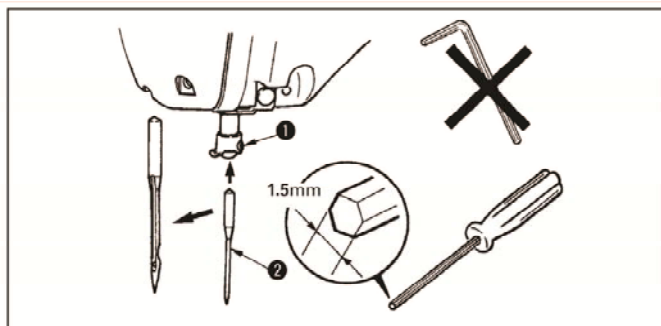
Check that the place between lower line B and upper line A is filled with oil. Fill there with oil using the oiler supplied with the machine as accessories when oil is short.

4-2. Attaching the needle



WARNING

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



Loosen setscrew 1 and hold needle 2 with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew 1.



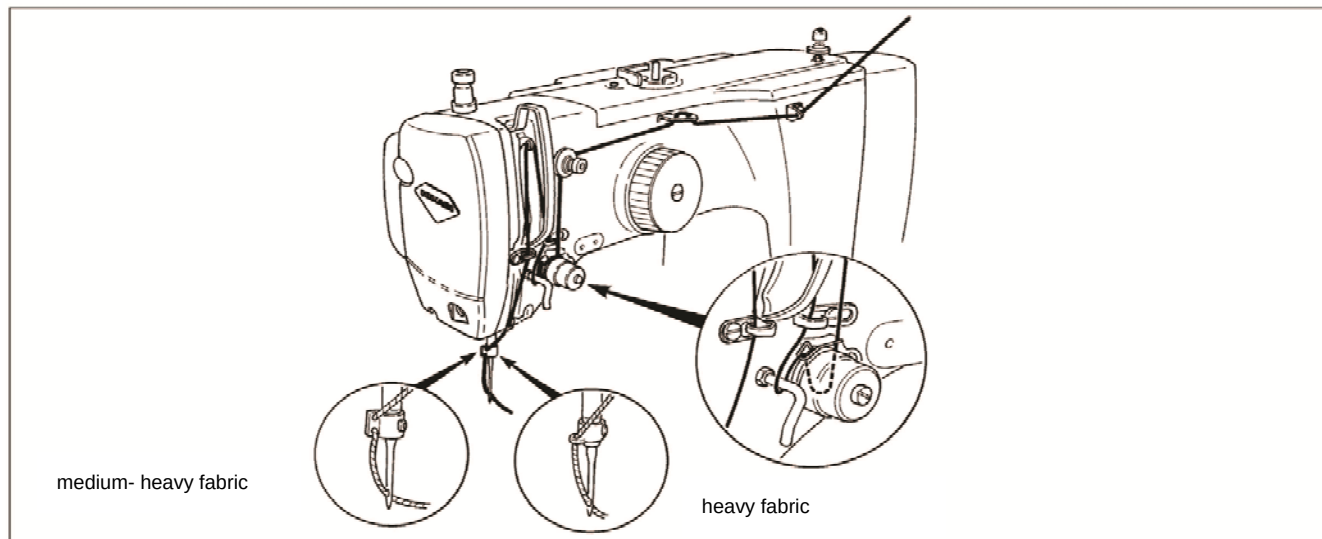
When tightening setscrew 1, be sure to use the screwdriver (Part no. : 40032763) supplied as accessories. Do not use I-shaped hexagon wrench key. there is a danger of breaking setscrew 1.

4-3. Threading the machine head



WARNING

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

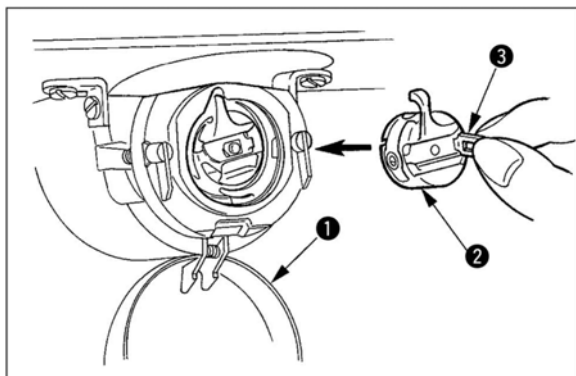


4-4. Installing and removing the bobbin case



WARNING

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



- 1) Open hook cover 1.
- 2) Raise latch 3 of bobbin case 2, and remove the bobbin case.
- 3) When entering bobbin case, insert it with the latch tilted until "click" sounds.



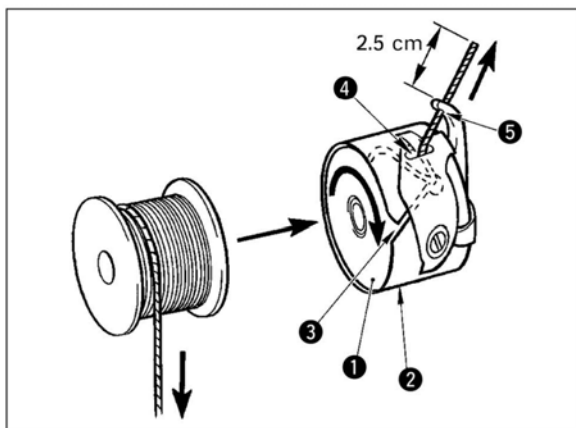
If it is not fully inserted, bobbin case 2 may slip off during sewing.

4-5. Installing the bobbin



WARNING

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

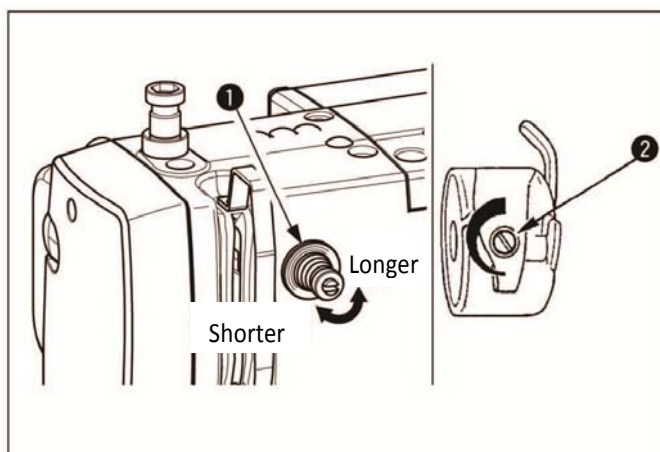


- 1) Set the bobbin 1 into bobbin case 2 in the direction shown in the figure.
- 2) Pass the thread through thread slit 3 of bobbin case 2, and pull the thread as it is. By so doing, the thread will pass under the tension spring and be pulled out from thread hole 4.
- 3) Pass the thread through thread hole 5 of the horn section, and pull out the thread by 2.5 cm 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.

4-6. Adjusting the thread tension



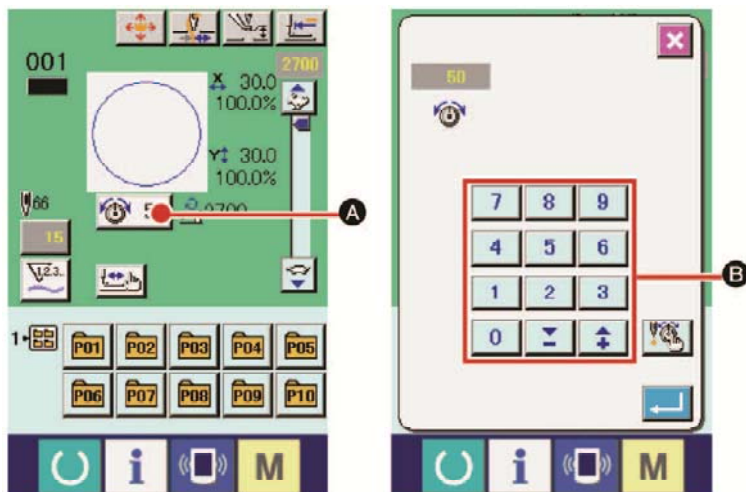
If thread tension controller No. 1 is turned clockwise, the length of remaining thread on the needle after thread trimming will be shorter. If it is turned counterclockwise, the length will be longer.

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

Adjust needle thread tension from the operation panel and bobbin thread tension with 2.

Adjusting the needle thread tension

[PL-400A-D]



1) Select THREAD TENSION button  50 A in the sewing screen.

2) Set needle thread tension with TEN keys B. There is a setting range of 0 to 200. When the set value is increased, the tension becomes higher.

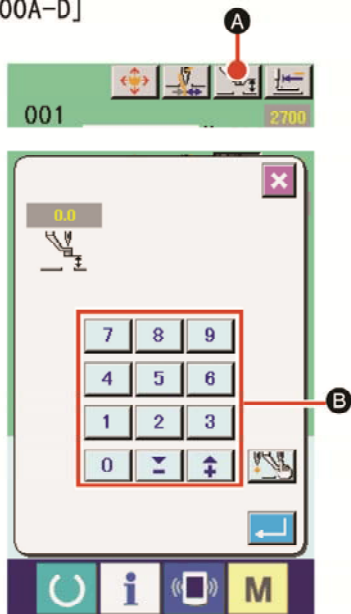
* When the set value is 50 at the time of standard delivery, the thread tension is adjusted so that H type is 2.35N and S type is 1.47N (spun thread #50). (When thread tension No. 1 is released)

4-7. Intermediate presser height

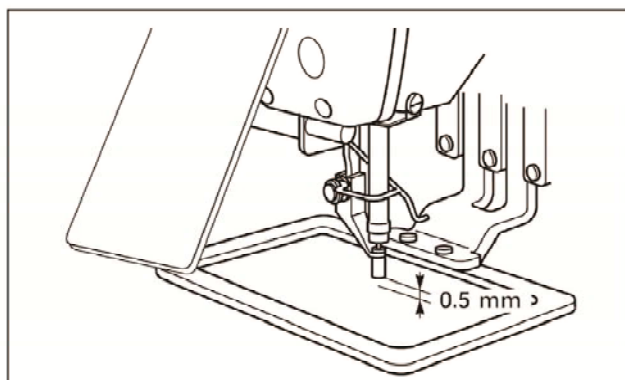


When raising the intermediate presser height, turn the pulley by hand to lower the needle bar, and confirm that the needle bar does not interfere with the intermediate presser. (When using DP X 5 needle, use the sewing machine with the height of 3.5 mm or less.)

[PL-400A-D]

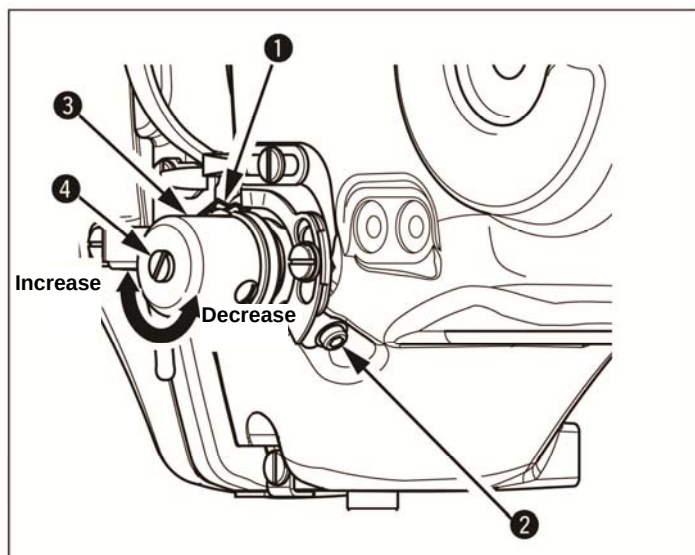


Press INTERMEDIATE PRESSER SETTING button A and adjust with TEN keys B so that the clearance between the bottom end of intermediate presser and the cloth is 0.5 mm (thickness of thread used).



1. Setting range of the intermediate presser is up to the standard of 3.5 mm. However, when using DP X 17 needle for H type or the like, the setting range can be changed up to max. 7 mm with memory switch U112.
2. When increasing the height of intermediate presser or making the needle size thicker, confirm the clearance between the wiper and the components. Wiper cannot be used unless the clearance is secured. In this case, turn OFF the wiper switch, or change the set value of memory switch U105.

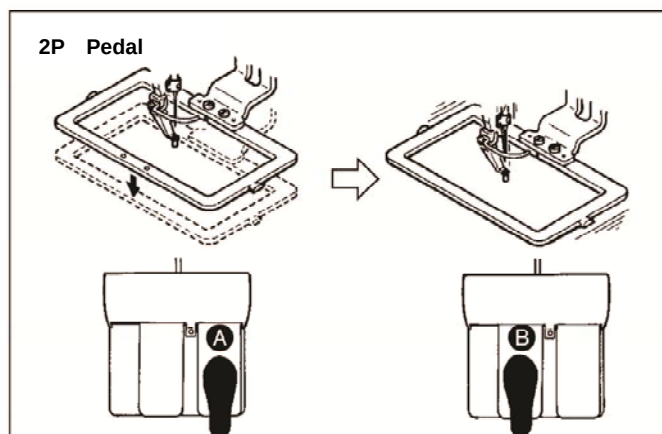
4-8. Adjusting the thread take-up spring



- 1) Adjusting the stroke
Loosen setscrew 2, and turn thread tension asm. 3. Turning it clockwise will increase the moving amount and the thread drawing amount will increase.
- 2) Adjusting the pressure
To change the pressure of the thread take- up spring 1, insert a thin screwdriver into the slot of thread tension post 4 while screw 2 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.

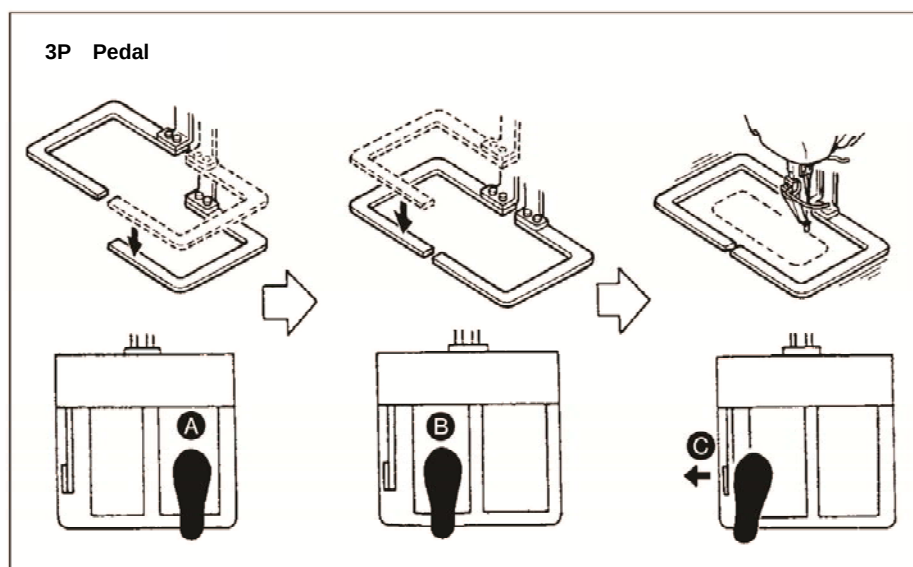
5. OPERATION OF THE SEWING MACHINE

5-1. Sewing



[In case of 2P pedal]

- 1) Set a work piece on the sewing machine.
- 2) Depress the pedal switch A, and the feeding frame will come down. Depress it again, and the feeding frame will go up.
- 3) Depress the pedal switch B after the feeding frame has come down and the sewing machine will start sewing.
- 4) After the sewing machine completes sewing, the needle point will return to the start point and the feeding frame will go up.



[In case of 3P pedal]

- 1) Set a work piece on the sewing machine.
- 2) When pedal switch A is depressed, the right-hand presser comes down and when it is depressed again, the presser goes up. When pedal switch B is depressed, the left-hand presser comes down, and when it is depressed again, the presser goes up.
- 3) Depress the pedal switch C after the feeding frame has come down and the sewing machine will start sewing.

- 4) After the sewing machine completes sewing, the needle point will return to the start point and the feeding frame will go up.

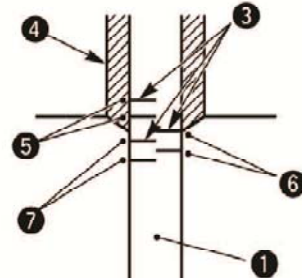
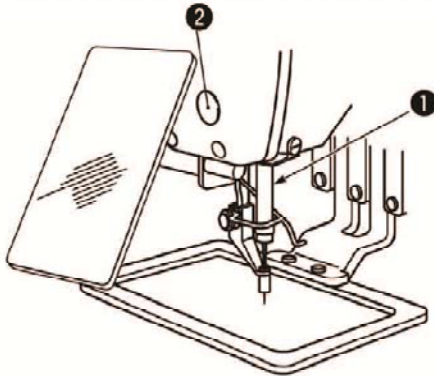
6. MAINTENANCE OF SAWING MACHINE

6-1. Adjusting the height of the needle bar (Changing the length of the needle)



WARNING

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



- 5 : Marker line for DP x 5
- 6 : Marker line for DP x 17
(with needle count higher than #22)
- 7 : Marker line for DP x 17
(with needle count lower than #22)

* Turn ON the power once, and turn OFF the power again after making the intermediate presser in the lowered state.

- 1) Bring needle bar 1 down to the lowest position of its stroke. Loosen needle bar connection screw 2 and adjust so that the upper marker line 3 engraved on the needle bar aligns with the bottom end of the needle bar bushing lower 4.
- 2) As illustrated in the above figure, change the adjusting position in accordance with the needle count.



After the adjustment, turn the pulley to check for an extra load.

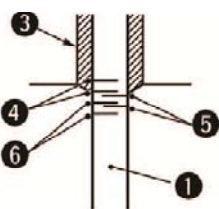
6-2. Adjusting the needle-to-shuttle relation



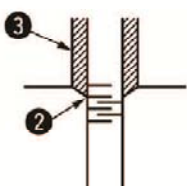
WARNING

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

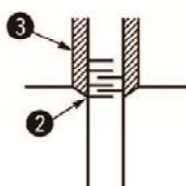
Relation between the needle and the marker lines on the needle bar



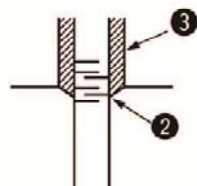
- 4 : Marker line for DP x 5 needle
- 5 : Marker line for DP x 17 needle (with needle count higher than #22)
- 6 : Marker line for DP x 17 needle (with needle count lower than #22)



When a DP x 5 needle is used.



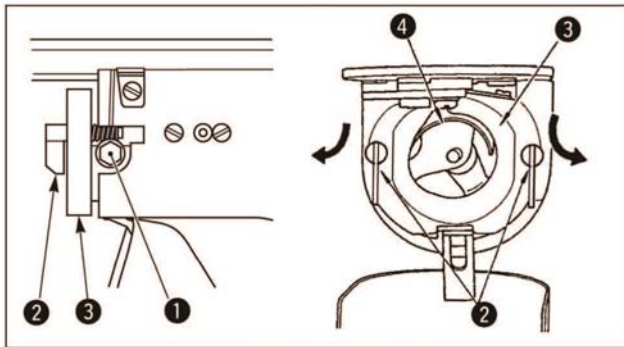
When DP x 17 needle (of which needle count is lower than #22) is used.



When DP x 17 needle (of which needle count is higher than #22) is used.

* Turn ON the power once, and turn OFF the power again after making the intermediate presser in the lowered state.

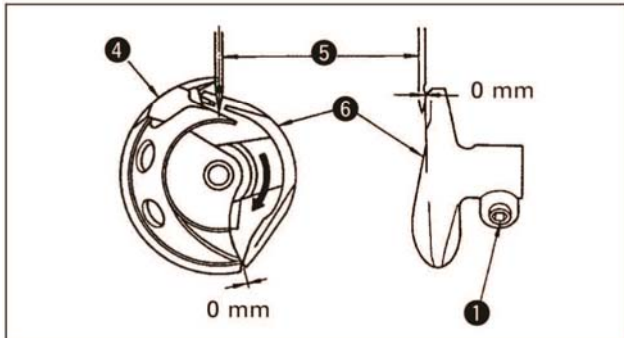
- 1) Turn hand wheel by hand to ascend the needle bar 1. Adjust so that lower marker line 2 on the ascending needle bar aligns with the bottom end of the needle bar bushing lower.



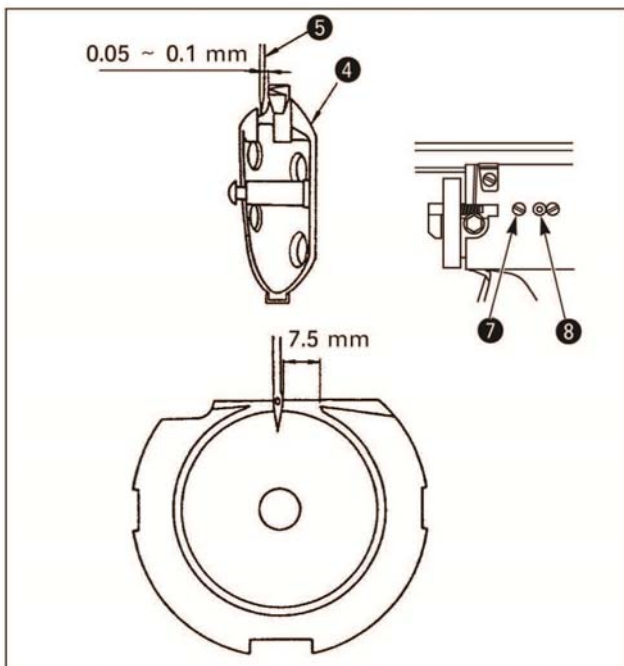
- 2) Loosen setscrew 1 in the driver. Drawing bobbin case opening lever hook 2 toward you, open it to the right and left until bobbin case opening lever 3 comes off.



At this time, be careful not to let shuttle 4 and fall.



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



- 4) Loosen shuttle race screw 7, and adjust the longitudinal position of the shuttle race. To do this adjustment, turn shuttle race adjusting shaft 8 clockwise or counterclockwise to provide a 0.05 to 0.1 mm clearance between needle 5 and the blade point of shuttle 4.
- 5) After adjusting the longitudinal position of shuttle race, further adjust to provide a 7.5 mm clearance between the needle and the shuttle race. Then, tighten screw 7 of shuttle race.



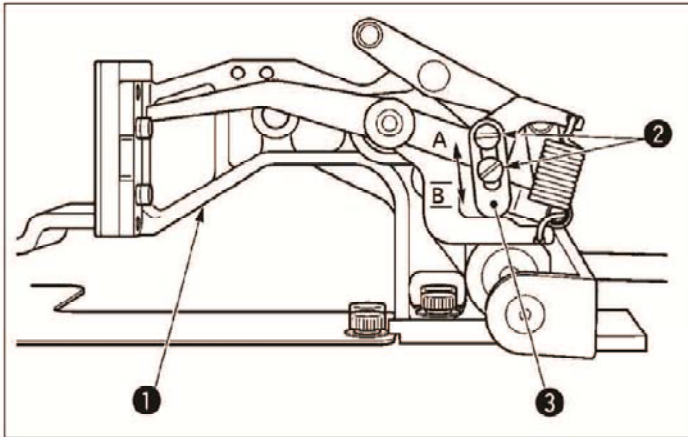
When making the needle size thicker, confirm the clearance between the needle tip or the intermediate presser and the wiper. Wiper cannot be used unless the clearance is secured. In this case, turn OFF the wiper switch, or change the set value of memory switch U105.

6-3. Adjusting the height of the feeding frame



WARNING

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



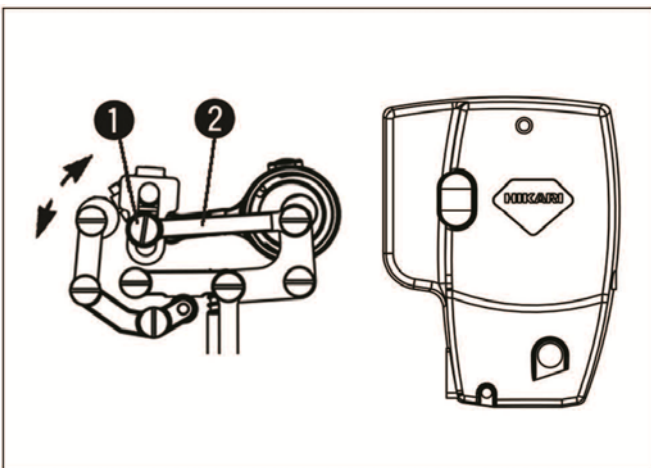
- 1) Loosen screws 2 located on the right and left sides of feed bracket 1. Moving cloth presser stopper 3 to the direction B will increase the height of feeding frame.
- 2) After the adjustment of the height of the feeding frame, securely tighten the screws 2.

6-4. Adjusting the vertical stroke of the intermediate presser foot



WARNING

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



* Turn on the power once, turn off the power again after intermediate presser go down.

- 1) Remove face cover.
- 2) Turn hand wheel to make the needle bar go down to its lowest point.
- 3) Loosen hinge screw(1) and move it to the Way up direction to increase the stroke.
- 4) The factory setting vertical stroke of the intermediate presser is 4mm the maxis 7mm.



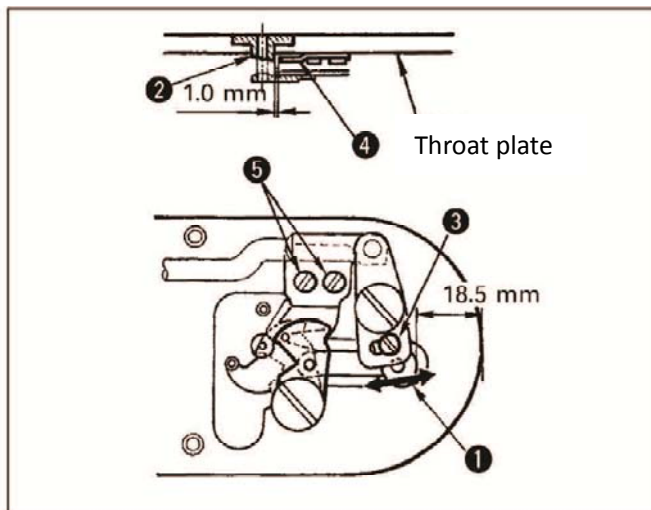
By removing the rubber plug in the face plate cover, adjustment can be performed without removing the face plate cover.

6-5. The moving knife and counter knife



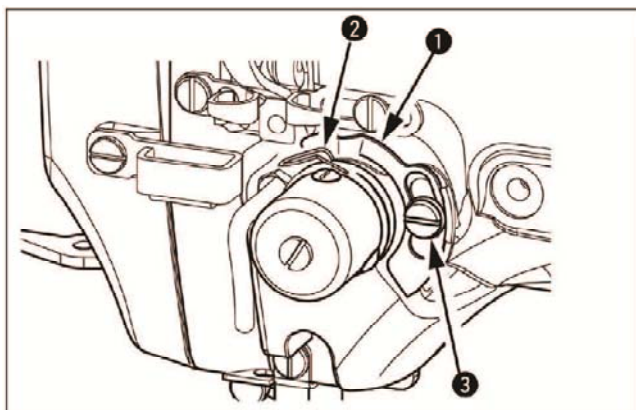
WARNING

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



- 1) Loosen adjusting screw 1 so 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, mall 3. To adjust, move the moving knife in the direction of arrow.
- 2) Loosen setscrew 5 so that a clearance of 1.0 mm is provided between needle hole guide 2 and counter knife 4. To adjust, move the counter knife

6-6. Thread breakage detector plate

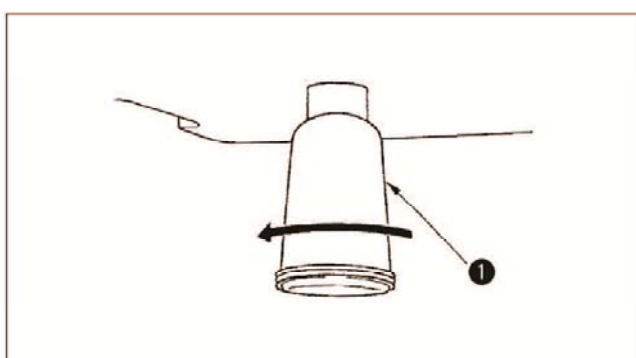


- 1) Adjust so that thread breakage detector plate 1 is always in contact with thread take-up spring 2 in the absence of needle thread. (Slack : approx. 0.5 mm).
- 2) Whenever the stroke of thread take-up spring 2 has been changed, be sure to readjust thread breakage detector plate 1. To make this adjustment, loosen screw 3.



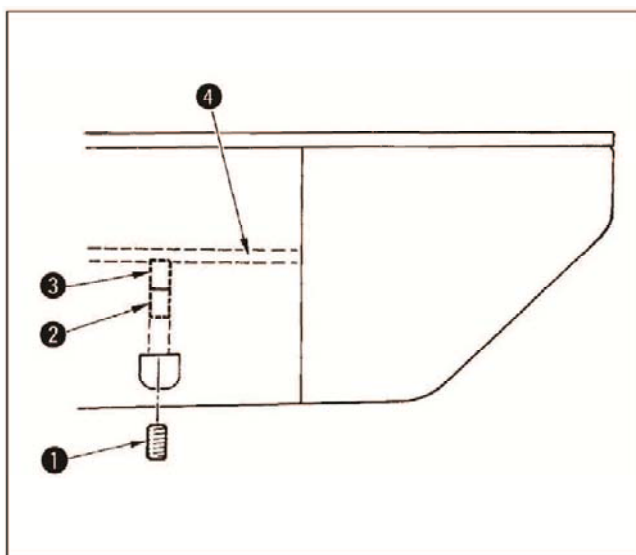
Adjust so that thread breakage detector plate 1 does not touch any adjacent metallic parts other than thread take-up spring 2.

6-7. Draining waste oil



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

6-8. Amount of oil supplied to the hook



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



1. The state of standard delivery is the position where 3 is 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 where 3 is screwed in and returned by 2 turns. If reducing is excessive, worn-out of the hook will result.

6–9. Troubles and corrective measures (Sewing conditions)

Trouble	Cause	Corrective measures	Page
1. The needle thread slips off at the start of bar-tacking.	(1) Stitches are slipped at the start.	○Adjust the clearance between the needle and the shuttle to 0.05 to 0.1 mm.	121
	(2) The needle thread remaining on the needle after thread trimming is too short.	○Set soft-start sewing at the start of bar tacking. ○Correct the thread tension release timing of the thread tension controller No. 2.	104
	(3) The bobbin thread is too short.	○Increase the tension of the thread take-up spring, or decrease the tension of the thread tension controller No. 1.	22
	(4) Needle thread tension at 1st stitch is too high.	○Decrease the tension of the bobbin thread.	20
	(5) Thread clamp is unstable (material is apt to be expanded, thread is hard to slide, thread is thick, etc.)	○Increase the clearance between the needle hole guide and the counter knife.	124
	(6) Pitch at 1st stitch is too small.	○Decrease the tension at 1st stitch. ○Decrease the number of rotation at 1st stitch at the sewing start. (Extent of 600 to 1,000 rpm) ○Increase the number of stitches of thread clamp to 3 to 4 stitches. ○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.	(1) The shuttle or the driver has scratches.	○Take it out and remove the scratches using a fine whetstone or buff.	21
	(2) The needle hole guide has scratches.	○Buff or replace it.	
	(3) The needle strikes the work clamp foot.	○Correct the position of the work clamp foot.	20
	(4) Fibrous dust is in the groove of the shuttle race.	○Take out the shuttle and remove the fibrous dust from the shuttle race.	
	(5) The needle thread tension is too high.	○Reduce the needle thread tension.	22
	(6) The tension of the thread take-up spring is too high.	○Reduce the tension.	
	(7) The synthetic fiber thread melts due to heat generated on the needle.	○Use silicone oil.	
	(8) When taking up thread, thread is pierced with needle tip.	○Lower the needle bar height from the engraved marker line by a half of the line to as much as the line. ○Check the rough state of needle tip. ○Use the ball-pointed needle.	
3. The needle often breaks.	(1) The needle is bent.	○Replace the bent needle.	18
	(2) The needle hits the work clamp foot.	○Correct the position of the work clamp foot.	21
	(3) The needle is too thin for the material.	○Replace it with a thicker needle according to the material.	121
	(4) The driver excessively bends the needle.	○Correctly position the needle and the shuttle.	
4. Threads are not trimmed. (Bobbin thread only)	(1) The counter knife is dull.	○Replace the counter knife.	124
	(2) The difference in level between the needle hole guide and the counter knife is not enough.	○Increase the bend of the counter knife.	
	(3) The moving knife has been improperly positioned.	○Correct the position of the moving knife.	121
	(4) The last stitch is skipped.	○Correct the timing between the needle and the shuttle.	
	(5) Bobbin thread tension is too low.	○Increase the bobbin thread tension.	
	(6) Flopping of cloth.	○Lower the intermediate presser height of the last stitch.	
5. Stitch skipping often occurs	(1) The motions of the needle and shuttle are not properly synchronized.	○Correct the positions of the needle and shuttle.	121
	(2) The clearance between the needle and shuttle is too large.	○Correct the positions of the needle and shuttle.	121
	(3) The needle is bent.	○Replace the bent needle.	18
	(4) The driver excessively bends the needle.	○Correctly position the driver.	121

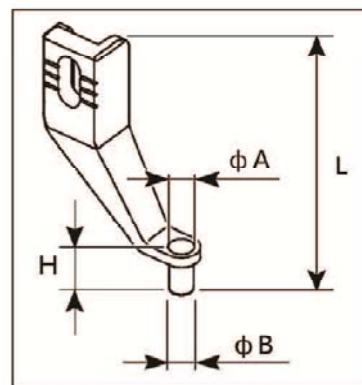
Trouble	Cause	Corrective measures	Page
6. The needle thread comes out on the wrong side of the material.	(1) The needle thread tension is not high enough.	☐ Increase the needle thread tension.	20
	(2) The tension release mechanism fails to work properly. (3) The needle thread after thread trimming is too long. (4) Number of stitches is too few. (5) When sewing length is short (End of needle thread protrudes on the wrong side of sewing product.) (6) Number of stitches is too few.	☐ Check whether or not the tension disc No. 2 is released during bar-tracking. ☐ Increase the tension of the thread tension controller No. 1. ☐ Turn OFF the thread clamp. ☐ Turn OFF the thread clamp. ☐ Use the lower plate, the hole of which is larger than the presser.	20
7. Thread end of the 1st stitch comes out on the right side of the material.	(1) Stitch skipping at the 1st stitch. (2) Needle used and thread used are thick in terms of the inner diameter of the intermediate presser. (3) Intermediate presser is not properly positioned in terms of the needle.	☐ Adjust the hook timing faster by a 1/2 stitch. ☐ Increase the inner diameter of intermediate presser. ☐ Adjust the eccentricity between intermediate presser and needle so that needle enters in the center of intermediate presser.	
8. Threads break at time of thread trimming.	(1) The moving knife has been improperly position.	☐ Correct the position of the moving knife.	124
9. The thread clamp is entangled with needle thread.	(1) The needle thread at the sewing start is too long.	☐ Tighten thread tension controller No. 1 and make the length of needle thread 40 to 50 mm.	24
10. Uneven length of the needle thread	(1) The tension of thread take-up spring is too low.	☐ Increase the tension of the thread take-up spring.	22
11. The length of needle thread does not become short.	(1) The tension of thread tension controller No. 1 is too low.	☐ Increase the tension of thread tension controller No. 1.	20
	(2) The tension of thread take-up spring is too high. (3) The tension of thread take-up spring is too low and motion is unstable.	☐ Decrease the tension of thread take- up spring. ☐ Increase the tension of thread take- up spring and lengthen the stroke as well.	22
12. The knotting section of bobbin thread at 2nd stitch at the sewing start appears on the right side.	(1) Idling of bobbin is large.	☐ Adjust the position of the moving knife.	124
	(2) The bobbin thread tension is too low. (3) The needle thread tension at 1st stitch is too high.	☐ Increase the bobbin thread tension. ☐ Decrease the needle thread tension at 1st stitch. ☐ Turn OFF the thread clamp.	20
13. Wiper fails to work. (Return is defective.)	(1) Needle entry of the last needle is the same as that of the sewing start, and the resistance of thread and cloth is large.	☐ Shift the needle entry point of the last needle.	

7. OPTIONAL

7-1. Table of Needle hole guide

Needle used	Needle hole guide		
Size	Part No.	Needle hole diameter	Application
#09-#11	B242621000C	φ 1.6	For knits (OP)
#11-#14*1	B242621000A	φ 1.6	For light-weight to medium-weight materials (S type)
#14-#18*2	B242621000B	φ 2.0	For medium-weight to heavy-weight materials (H type)
#18-#21	B242621000D	φ 2.4	For heavy-weight materials (OP)
	B242621000F	φ 3.0	
#22-#25	B242621000G	φ 3.0 (with a counter bore)	For extra heavy-weight materials (OP)
#18-#25	B242621000H	φ 3.0 (eccentric hole)	For heavy-weight materials to prevent skip- stitching (OP)

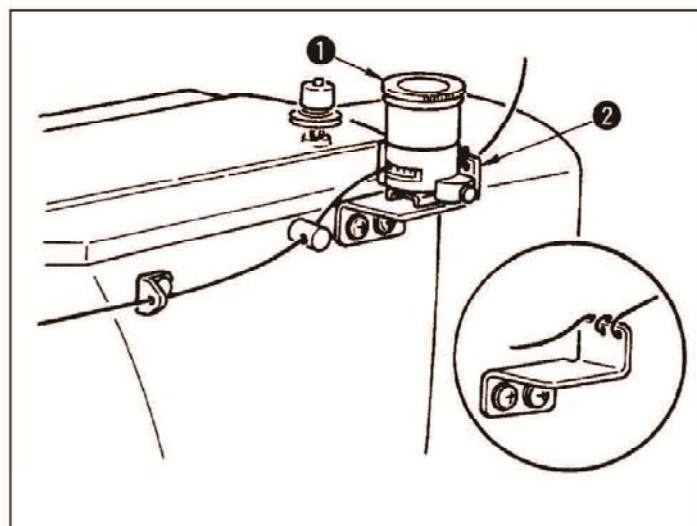
Needle used	Intermediate presser	
Size	Part No.	Size (φ A × φ B φ H φ L)
#09-#11	B1601210D0E (OP)	φ 1.6 × φ 2.6 × 5.7 × 37.0
#11-#14*1	40023632 (Standard)	φ 2.2 × φ 3.6 × 5.7 × 38.5
#14-#18*2	B1601210D0FA (OP)	φ 2.2 × φ 3.6 × 8.7 × 41.5
#18-#21	B1601210D0BA (OP)	φ 2.7 × φ 4.1 × 5.7 × 38.5
#22-#25	B1601210D0CA (OP)	φ 3.5 × φ 5.5 × 5.7 × 38.5
#18-#25		



- ※ 1 Standard installed needle (DP X 5 #14)
- ※ 2 Standard installed needle (DP X 17 #18)
 - S type : Applicable count of thread : #80 to #20
 - H type : Applicable count of thread : #50 to #02
 - (OP) means the optional.

7-2. Silicon oil tank

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



Fix silicon oil tank 1 (MAXAP30EX00) with the magnet.



1. If the thread twists hard on silicon oil tank base 2 (B2535210000), reverse the direction of winding the thread.
2. For fixing the silicon oil tank base, use two M4 screws.
(Part No. of commendable screw : SM4040855SP)

7-3. Thread wiper

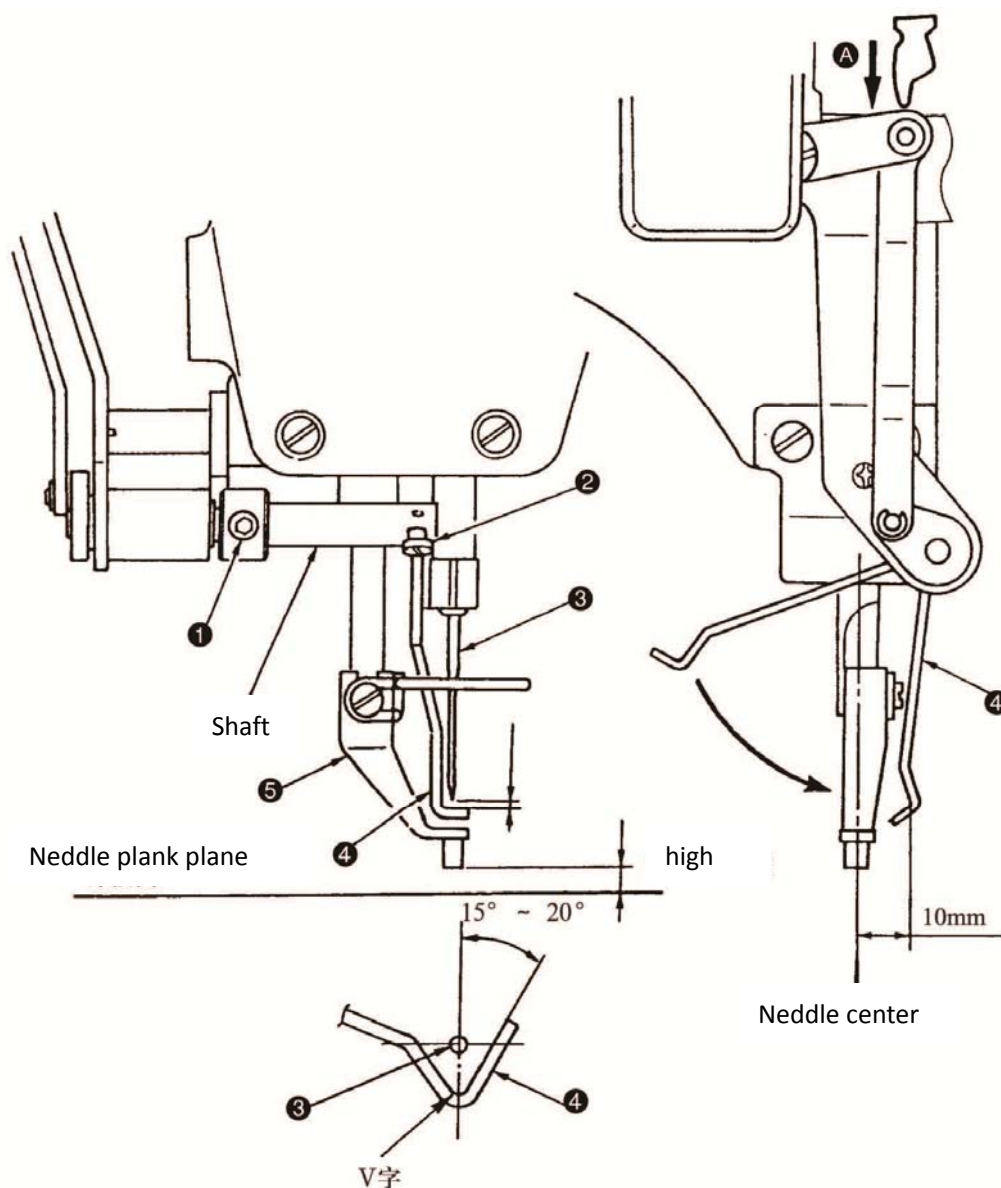


WARNING

Turn off the power to prevent accident caused by abrupt start the sewing machine .Before operation, ensuring the sewing machine does not start even if the foot switch is depressed.

Thread wiper adjusting

1. In lowering the intermediate presser foot at the stop position after trimming (the height between the needle (3) and needle plate upside is 17.7 mm) and pressing connecting rod part A of the wiper, adjust the gap between needle(3)center and the inside of V-shape of wiper to 10mm.
2. Pressing the connecting rod part A of thread wiper(4) to halfway, adjust the Distance between the thread wiper(4) and needle bottom as 1 mm.
3. Open the angle of the thread wiper(4) between 15°-20°.



(Notice) Although standard accessorial inner presser foot correspond to fabric thickness with 5 mm, the thread wiper can't pass through the clearance between the tip of the needle and inner press foot when the fabric is thicker than 3 mm.

Because of that ,if the fabric is thicker that 3 mm, please turn off the thread switch.

HMS1310系列 PATTERN SEWING MACHINE 电脑花样机

零件手册 PARTS BOOK

上海富山精密机械科技有限公司
Hikari(shanghai)precise Machinery Science&technology Co.,Ltd

中国上海市金山区朱泾工业园区中达路800号
NO.800.zhongda Road,jinshan Zone,shanghai,china

电话: (00) 86-21-67311111
TEL: (00) 86-21-67311111
传真: (00) 86-21-67311311
Fax: (00) 86-21-67311311
E-mail:hikari@chinahikari.com
http:www.chinahikari.com



此说明书仅作参考，如有更改恕不另作通知。
This manual is only for reference.
IF there is any modification, we apologize for the changing hence caused.

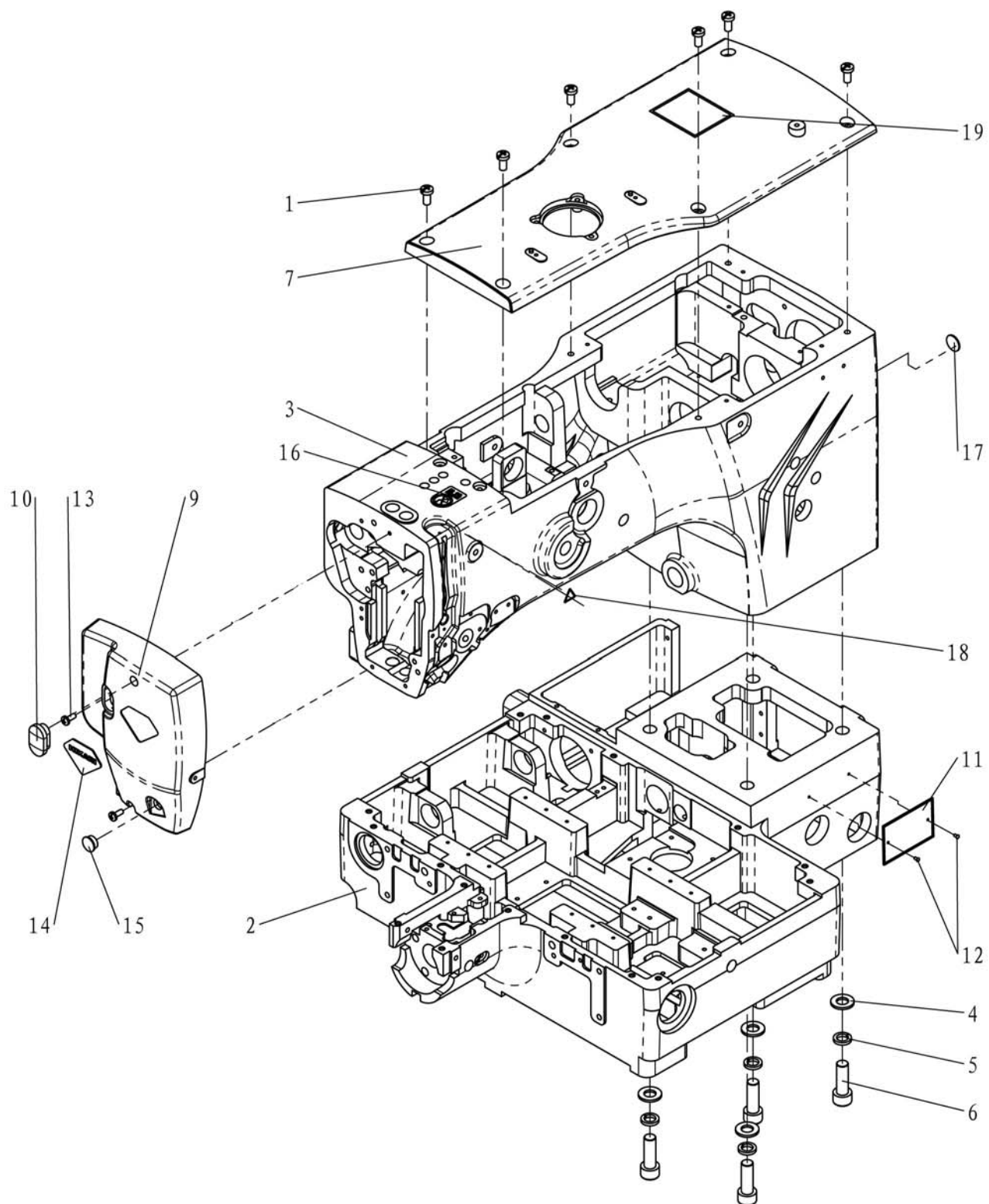


通过 ISO9001:2008
质量管理体系认证

目 录

1、机体部件	1~2
2、上轴部件	3~6
3、可变压脚部件	7~10
4、压盘、手动压力装置	11~14
4A、电机座组件（气动）	15~16
5、下轴部件	17~18
6、剪线部件	19~20
7、自动松夹线装置	21~22
8、手动上轮装置	23~24
10、X、Y 驱动装置	25~28
11、送料台装置	29~30
12、盖板、罩壳部件	31~34
13、绕线器装置	35~36
15、拨线器部件	37~38
17、附件	39~40
19、送料装置（气动）	41~42
20、外压脚部件（导轨式）	43~44
24A、翻转压脚装置（直动式）	45~46
24B、翻转压脚装置（摆动式）	47~48
25B、气动动力源驱动装置（二联阀）	49~50
25C、气动动力源驱动装置（三联阀）	51~52

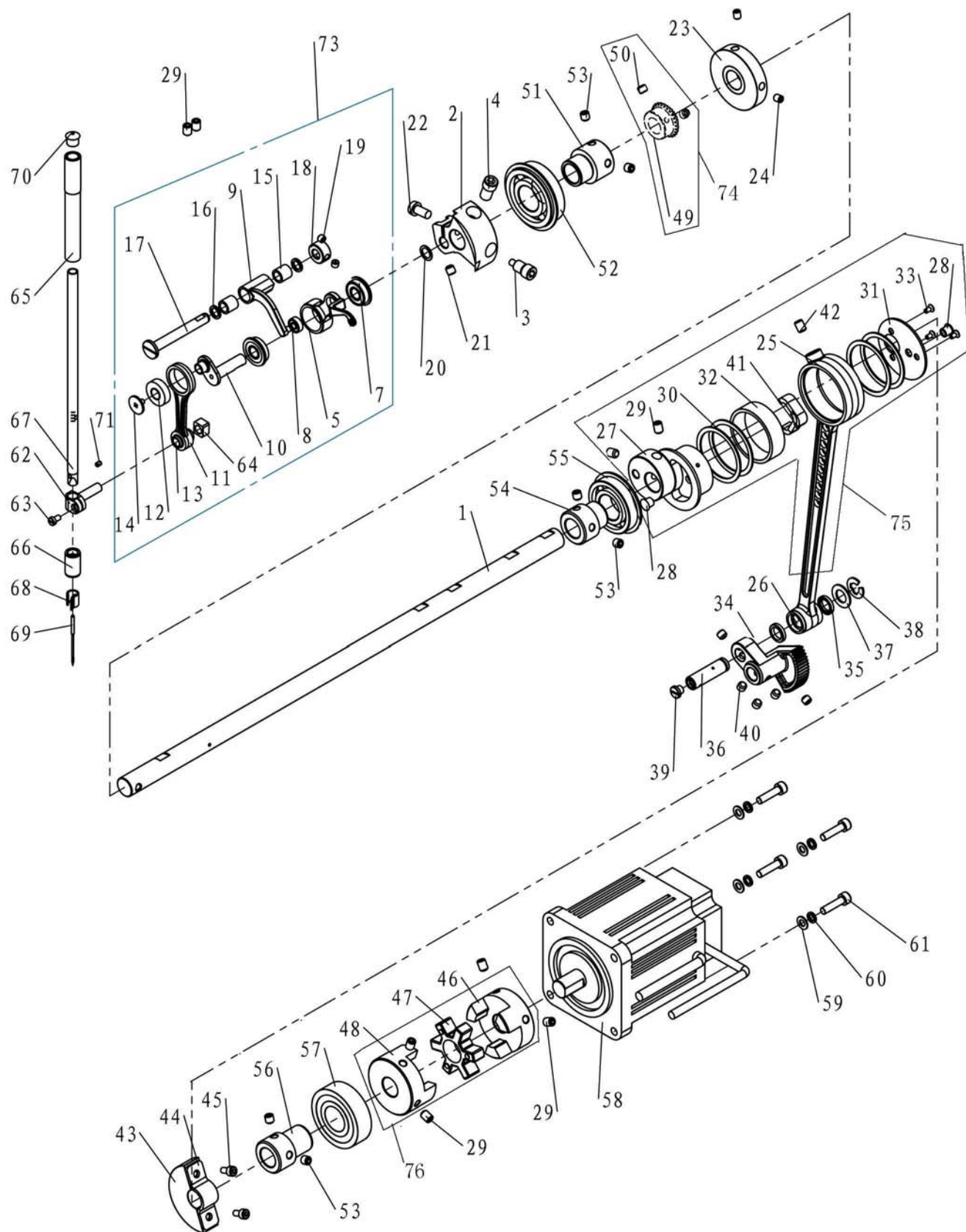
1、机头部件



1、机壳部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	01-406001223-1	十字一字槽盘头螺钉 M6X12	SCREW	6	
2	421.01-02	底座（直线导轨）	MACHINE PLATE	1	
3	421.01-01	机壳	MACHINE HEAD	1	
4	05-105202000-1	平垫圈 10.5	WASHER	4	
5	07-1022626-1	弹簧垫圈 10.2	SPING WASHER	4	
6	01-510003024-1	内六角圆柱头螺钉 M10×30	SCREW	4	
7	421.01-05	上盖	TOP COVER	1	
8					
9	421.01-03	前盖	FACE COVER	1	
10	421.01-06	前盖腰孔塞	RUBBER CAP	1	
11	H0-004	型号牌	MODEL PLATE	1	
12	17-3200500	2MM铆钉	RIVET	2	
13	01-404001223-1	十字一字槽盘头螺钉 M4X12	SCREW	2	
14	H0-001	面板贴(钻石型)蓝色	FACE PLATE STICK	1	
15	22-11505013	橡胶塞 Φ11.5X5	RUBBER CAP	1	
16	421.01-08	禁止注油标识	NO OIL STICK	1	
17	101.01-14	接地指示牌	GROUNDING SIGN	1	
18	311.02-08	安全标识III	WARNING BOARD	1	
19	201.02-10	安全指示牌	WARNING BOARD	1	

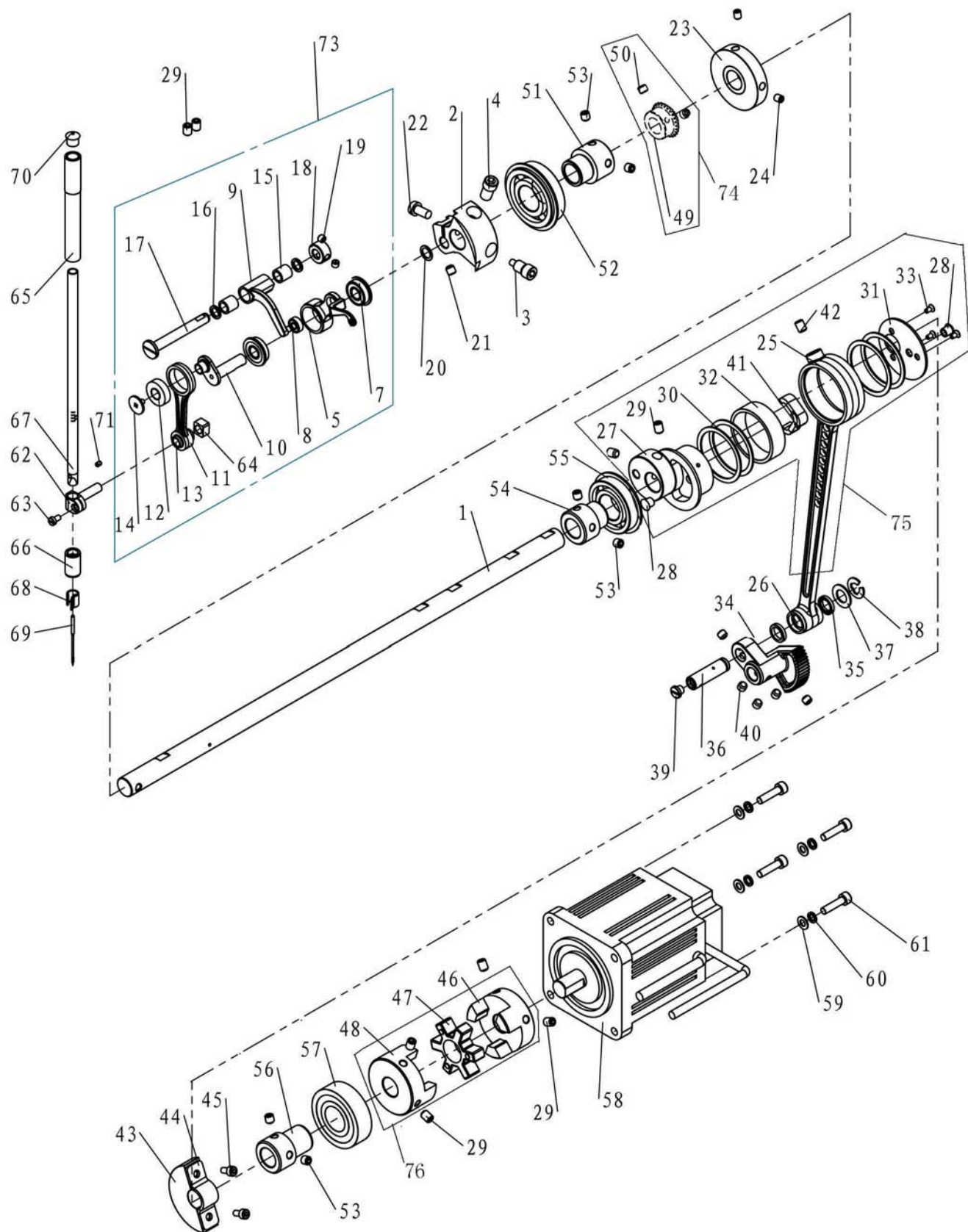
2 上轴部件 (1)



2、上 轴 部 件 （1）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.02-01	上 轴	UPPER SHAFT	1	
2	421.02-09	针杆曲柄	NEEDLE BAR CRANK	1	
3	421.02-32	针杆曲柄定位螺钉	SCREW	1	
4	01-908001214-1	内六角圆柱头螺钉(小头) M8X12	SCREW	1	
5	421.02-10-00	挑线杆	THREAD TAKE-UP LEVER	1	
6					
7	14-F698LB-2Z	凸缘外圈微型轴承 8 (8X19X6)	BEARING	2	
8	14-619/4-2Z	轴承 4 (4x11x4)	BEARING	1	
9	421.02-11	挑线连杆	THREAD TAKE UP CRANK	1	
10	421.02-15	挑线曲柄	NEEDLE ROD CRANK	1	
11	421.02-17-01	针杆连杆	NEEDLE BAR CRANK ROD	1	
12	14-619-8-2Z	轴承 8 (8X19X6)	BEARING	1	
13	421.02-17-02	针杆连杆轴套	NEEDLE BAR CRANK ROD BUSH	1	
14	421.02-16	挑线曲柄左旋螺钉	SCREW	1	
15	14-K71010	滚针轴承 K7X10X10	BEARING	2	
16	421.02-14	挑线连杆垫圈	SUPPORT	2	
17	421.02-12	挑线连杆销	THREAD TAKE UP CRANK SHAFT	1	
18	421.02-13	挑线连杆销挡圈	THRUST COLLAR	1	
19	01-805000414-1	内六角凹端紧定螺钉 M5×4	SCREW	2	
20	421.02-24	挑线曲柄垫圈	NEEDLE ROD CRANK SUPPORT	1	
21	01-806750614-1	内六角凹端紧定螺钉 M6 (0.75) X6	SCREW	1	
22	01-506001221-1	开槽圆柱头螺钉 M6×12	SCREW	1	
23	421.13-02	绕线驱动轮	BTW DRIVING WHEEL	1	
24	01-805000614-1	内六角平端紧定螺钉 M5X6	SCREW	2	
25	421.02-28-01	送料连杆	LEVEL FEED CRANK	1	
26	421.02-28-02	送料连杆销衬套	LEVEL FEED CRANK BUSH	1	
27	421.02-25	送料凸轮	LEVEL FEED ECCENTRIC CAM	1	
28	22-06406009	橡胶塞 Φ6.4X6	RUBBER CAP	2	
29	01-806000814-1	内六角凹端紧定螺钉 M6X8	SCREW	8	
30	421.02-29	送料连杆轴承垫圈	BEARING SUPPORT PLATE	4	
31	421.02-26	送料凸轮盖板	LEVEL FEED WHEEL PLATE	1	
32	14-K384313	滚针轴承 K38X43X13	BEARING	1	
33	01-103000621-1	开槽沉头螺钉 M3X6	SCREW	3	
34	421.02-30	摆动齿轮	OSCILLATOR	1	
35	13-09425140	骨架油封 9.4X2.5X14	OIL SEAL	2	
36	421.02-31	送料连杆销	LEVEL FEED CRANK SHAFT	1	
37	05-102101803-1	平垫圈	WASHER	1	
38	06-0801016-1	E型挡圈8	E-RING	1	
39	421.02-35	送料连杆销端面螺钉	SCREW	1	
40	01-806750514-1	内六角凹端紧定螺钉 M6 (0.75) X5	SCREW	5	
41	421.02-27	送料凸轮油毡	FELT	2	
42	01-806750814-1	内六角凹端紧定螺钉 M6 (0.75) ×8	SCREW	1	
43	421.02-08	平衡块	CRANK BALANCER	1	
44	421.02-07	平衡块安装架	CRANK BALANCER FIX PLATE	1	

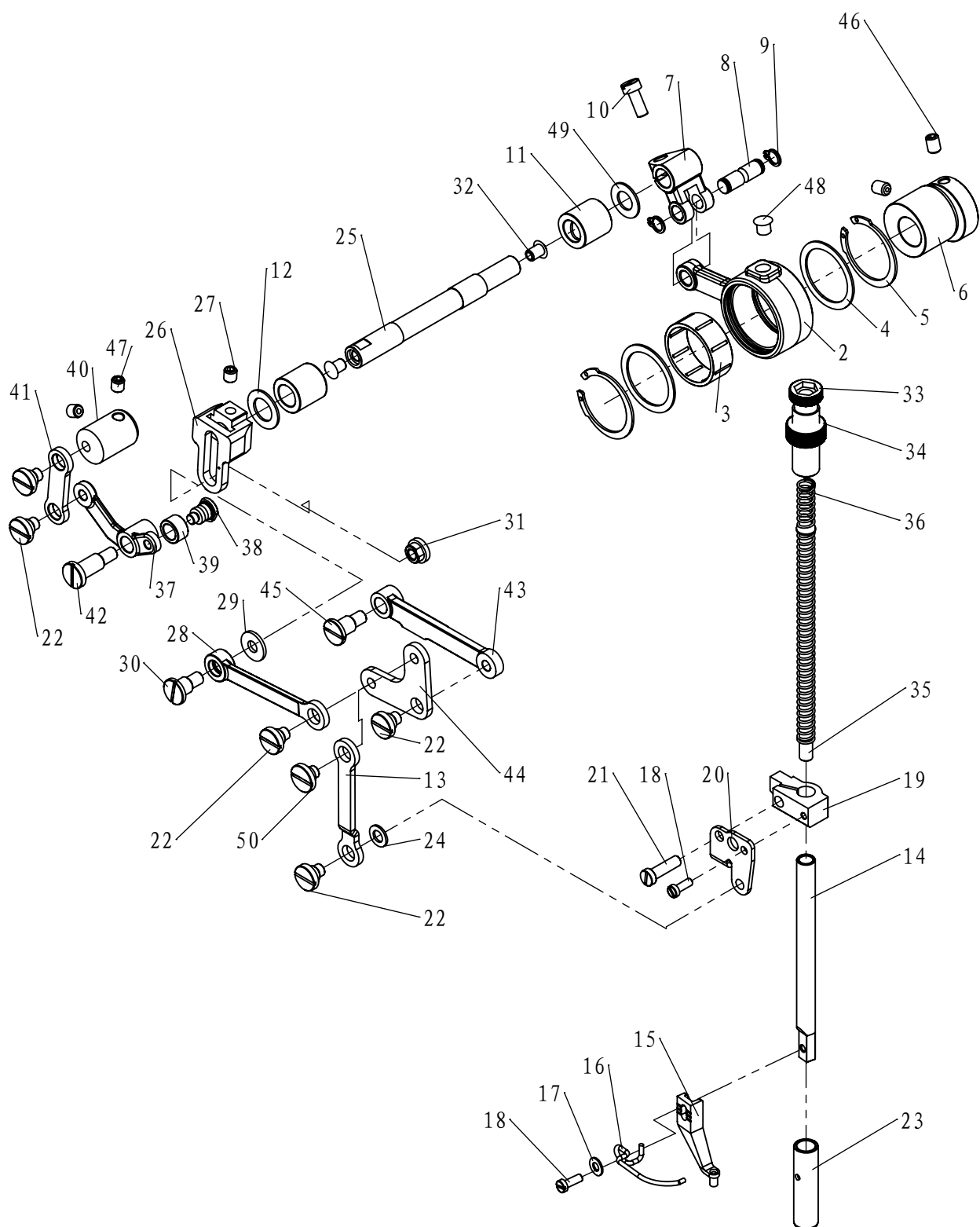
2 上轴部件 (2)



2、上 轴 部 件 （2）

序号	图 号	名 称	NAME OF PARTS	数量	备注
45	01-504001424-1	内六角圆柱头螺钉 M4X14	SCREW	2	
46	421.02-05-01	联轴器 ϕ 14	COUPLING 14	1	
47	421.02-05-03	联轴圈	COUPLING RUBBER	1	
48	421.02-05-02	联轴器 ϕ 15	COUPLING 15	1	
49	421.08-04-01	手轮轴齿轮	GEAR	1	
50	02-811400514-1	内六角凹端紧定螺钉 SM11 / 64X40-5	SCREW	2	
51	421.02-02	上轴前轴套	BEARING BUSH	1	
52	14-6204-2ZNR	轴承 20(20x47x14)（带止动挡圈）	BEARING	1	
53	01-806000614-1	内六角凹端紧定螺钉 M6X6	SCREW	6	
54	421.02-04	上轴中轴套	BEARING BUSH	1	
55	14-6004-2ZNR	轴承 20(20x42x12)（带止动挡圈）	BEARING	1	
56	421.02-03	上轴后轴套	BEARING BUSH	1	
57	14-6204-2Z	轴承 20X47X14	BEARING	1	
58	M0421-E(1310)-01	伺服电机 550W	SERVO MOTOR	1	
59	05-053101000-1	平垫圈 5.3	WASHER	4	
60	07-0521313-1	弹簧垫圈 5	SPING WASHER	4	
61	01-505002024-1	内六角圆柱头螺钉 M5 $\times$ 20	SCREW	4	
62	421.02-18	针杆连接柱	NEEDLE BAR CONNECTING	1	
63	02-509400721-3	开槽圆柱头螺钉 SM9 / 64" $\times$ 40-7	SCREW	1	
64	421.02-19	针杆连接柱滑块	SLIDE BOLCK	1	
65	421.02-22	针杆上套	NEEDLI ROD UPPER METAL	1	
66	421.02-23	针杆下套	NEEDLI ROD LOWER METAL	1	
67	421.02-20	针杆	NEEDLE BAR	1	
68	421.02-21	针杆过线钩(厚料)	NEEDLE BAR THREAD GUIDE	1	
	421.02-33	针杆过线钩(中厚料)	NEEDLE BAR THREAD GUIDE	1	
69	421.02-36	机针 DPx17 #12	NEEDLE	1	
	421.02-37	机针 DPx17 #14	NEEDLE	1	
	421.02-40	机针 DPx17 #22	NEEDLE	1	
70	22-08506511	橡胶塞 ϕ 8.5X6.5	RUBBER CAP	1	
71	01-803000314-1	内六角凹端紧定螺钉 M3X3	SCREW	1	
73	421.02-10-000	挑线杆大组件	SHREAD TAKE-UP LEVER ASM	1套	
74	421.08-04-00	手轮轴齿轮组件	GEAR ASM	1套	
75	421.02-25-00	送料连杆复合件	LEVEL FEED CRANK ASM	1套	
76	421.02-05-00	联轴器 (15-14)	COUPLING ASM (15-14)	1套	

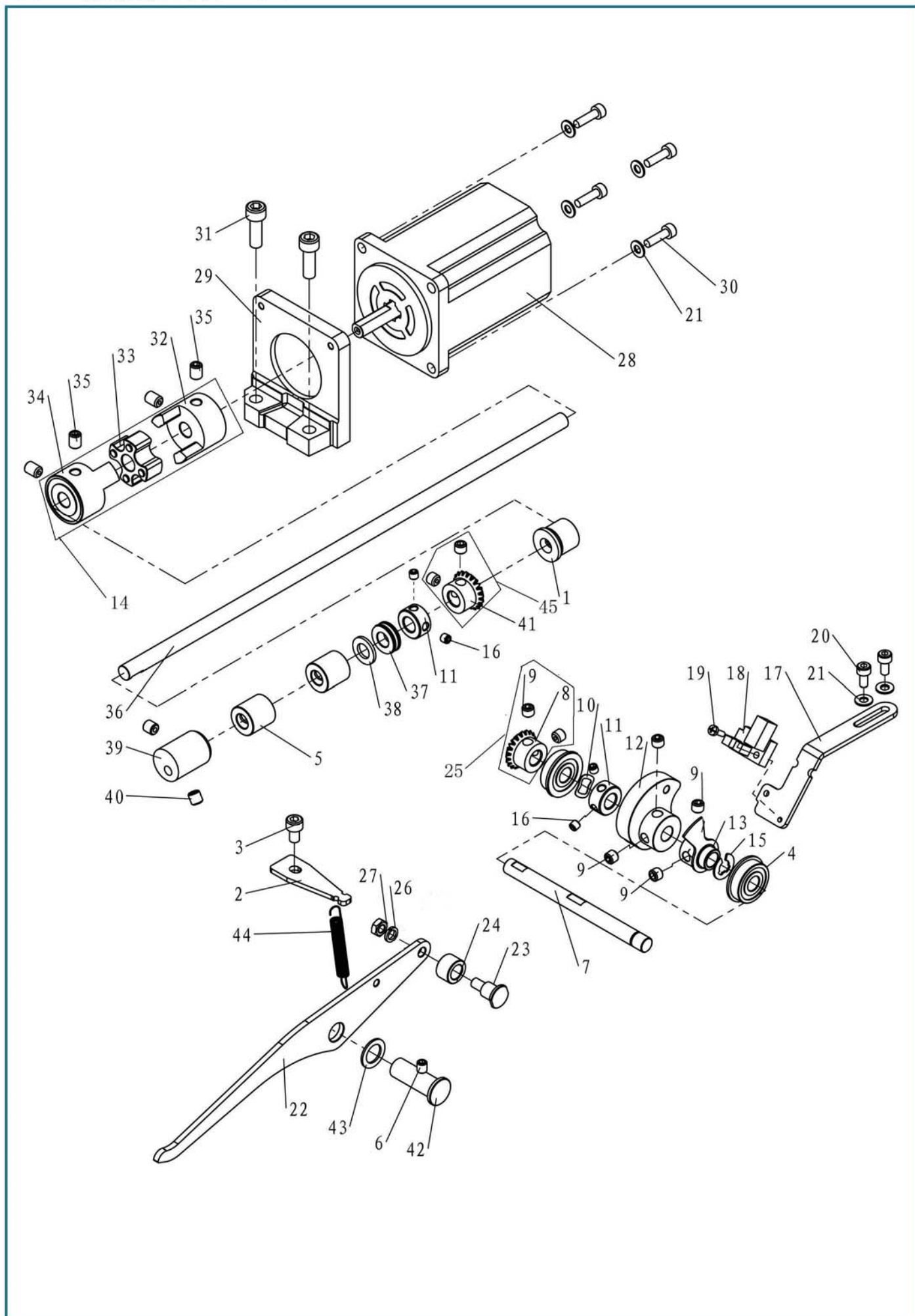
3、 可变压脚部件 (1)



3、可变压脚部件（1）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.01-01	机壳	MACHINE HEAD	1	
2	421.03-09	跳压脚大连杆	CRANK CONNECTING ROD	1	
3	14-K283313	滚针轴承 K28X33X13	BEARING	1	
4	421.03-10	跳压脚大连杆垫圈	SUPPORT	2	
5	421.03-69	跳压脚大连杆挡圈	RING	2	
6	421.03-08	偏心凸轮	ECCENTRIC CAM	1	
7	421.03-12	送料曲柄	FEED BRANCH CRANK	1	
8	421.03-11	送料曲柄销	FEED BRANCH CRANK SHAFT	1	
9	10-0650612-1	轴用弹性挡圈 6 GB894	RING	2	
10	01-506001424-1	内六角圆柱头螺钉 M6X14	SCREW	1	
11	421.03-13	跳压脚轴轴套	SHAFT METAL	2	
12	05-113102003-5	跳压脚轴垫圈	SUPPORT PLATE	1	
13	421.03-74	跳压脚连杆	INTERMEDIATE PRESSER LINK	1	
14	421.03-01	压杆	INTERMEDIATE PRESSER BAR	1	
15	421.03-03 (1.6)	跳压脚 (1.6)	INTERMEDIATE PRESSER	1	
	421.03-03 (2.2)	跳压脚 (2.2)	INTERMEDIATE PRESSER	1	
	421.03-03 (2.7)	跳压脚 (2.7)	INTERMEDIATE PRESSER	1	
16	421.03-04	护针架	FINGER GUARD	1	
17	05-043080900-1	平垫圈	WASHER	1	
18	02-509401021-1	开槽圆柱头螺钉 SM9 / 64"×40-10	SCREW	2	
19	421.03-35	压杆导架	FINGER GUIDE BRACKER	1	
20	421.03-34	跳压脚连杆连接板	LINK CONNECTING PLATE	1	
21	02-511401621-1	一字槽圆柱头螺钉 (英制) SM11/64X40-16	SCREW	1	
22	421.03-31	跳压脚连杆轴位螺钉	SHOULDER SCREW	6	
23	421.03-02	压杆套	PRESSER BUSHING	1	
24	05-062101103-5	平垫圈 6.2	WASHER	1	
25	421.03-14	跳压脚轴	INTERMEDIATE PRESSER SHAFT	1	
26	421.03-73	跳压脚调节器	ADJUSTING ARM	1	
27	02-815280614-1	内六角凹端紧定螺钉SM15/64"×28-6	SCREW	1	
28	421.03-75	跳压脚小连杆	INTERMEDIATE PRESSER LINK	1	
29	421.03-17	跳压脚小连杆垫圈	LING WASHER	1	
30	421.03-18	跳压脚小连杆轴位螺钉	SHOULDER SCREW	1	
31	421.03-16	调节螺母	ADJUSTING NUT	1	
32	22-05507509	橡胶塞 Φ5.5X7.5X9	RUBBER CAP	2	
33	101.04-32	调压螺钉	ADJUSTING SCREW	1	
34	101.04-31	调压螺母	ADJUSTING NUT	1	
35	421.03-05	调压导杆	FINGER GUIDE BAR	1	
36	421.03-07	调压簧	INTERMEDIATE PRESSER SPRING	1	
37	421.03-70	摆杆	INTERMEDIATE PRESSER LINK	1	
38	421.03-80	压轮轴	CAM SHAFT	1	
39	421.03-79	压轮	CAM FOLLOWER	1	
40	421.03-77	压脚可变曲柄	PRESSER VARIABLE ARM	1	
41	421.03-76	压脚可变连杆	PRESSER VARIABLE LINK	1	
42	421.03-78	摆杆轴位螺钉	SHOULDER SCREW	1	
43	421.03-71	固定杆	LINK	1	
44	421.03-72	连接板	CONNECTING PLATE	1	
45	421.03-81	固定杆轴位螺钉	SHOULDER SCREW	1	
46	01-806000814-1	内六角凹端紧定螺钉 M6×8	SCREW	2	
47	01-806000614-1	内六角凹端紧定螺钉 M6×6	SCREW	2	
48	22-06406009	橡胶塞 Φ6.4X6	RUBBER CAP	1	
49	05-098101803-5	平垫圈 9.8X1.0X18	WASHER	1	
50	421.03-33	跳压脚连接板轴位螺钉B	SHOULDER SCREW	1	

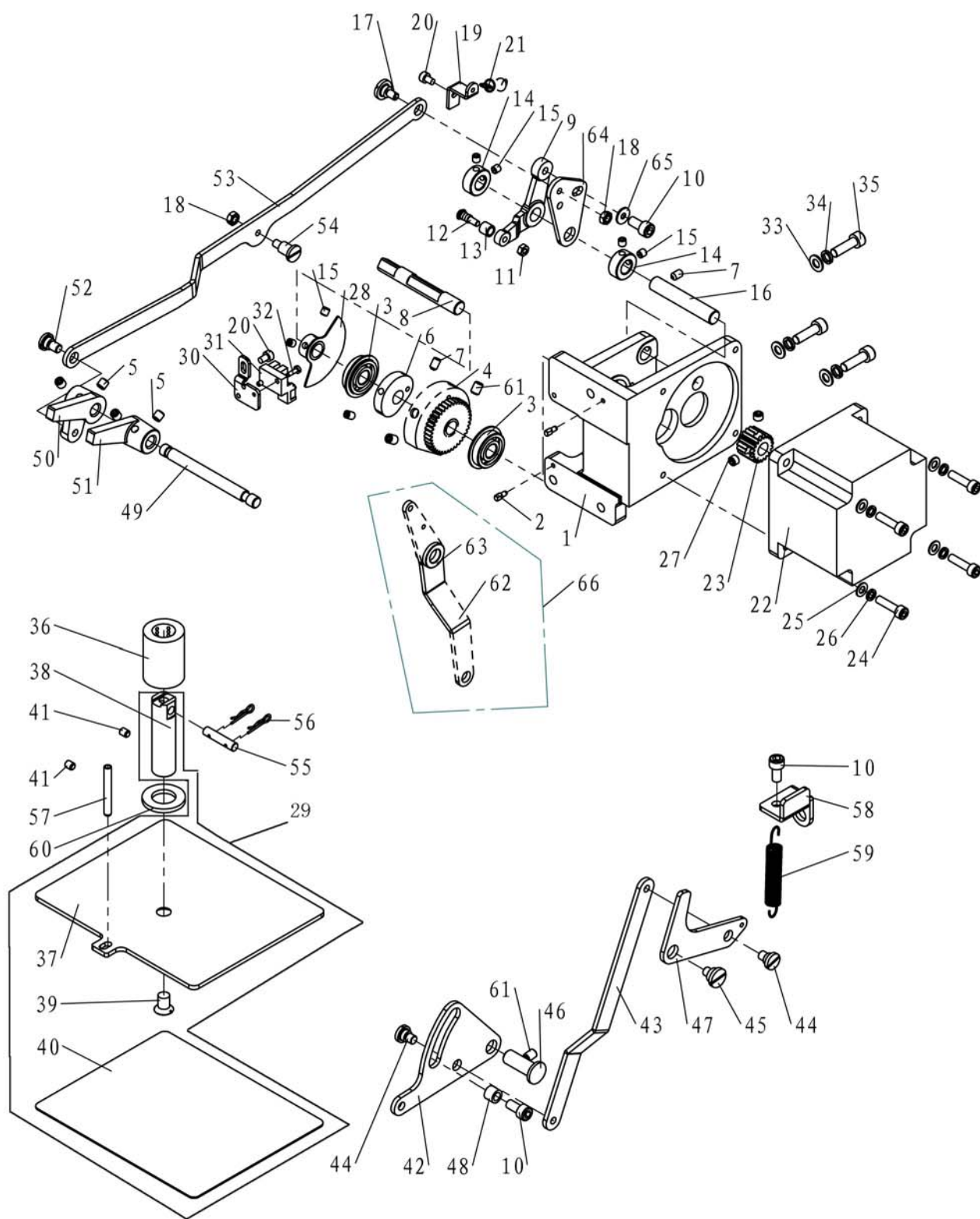
3、 可变压脚部件 (2)



3、可变压脚部件（2）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.03-44	压脚可变轴过渡轴套	BUSHING	1	
2	421.03-62	抬压脚连杆拉簧钩	SPING HOOK	1	
3	01-505000824-1	内六角圆柱头螺钉 M5×8	SCREW	1	
4	14-F608-2Z	凸缘外圈微型轴承 8 GB7218	BEARING	2	
5	421.03-43	压脚可变轴轴套	BUSHING	2	
6	01-805000614-1	内六角平端紧定螺钉 M5X6	SCREW	1	
7	421.03-54	抬压脚凸轮轴	PRESSER LIFT SHAFT	1	
8	421.03-53-02	抬压脚右旋齿轮	GEAR	1	
9	01-806000514-1	内六角凹端紧定螺钉M6×5	SCREW	8	
10	08-0840815	波形弹性垫圈8 GB955	WAVED WASHER	1	
11	421.03-49	压脚可变轴挡圈 φ8	THRUST COLLAR	2	
12	421.03-55	抬压脚凸轮	LIFTING CAM	1	
13	421.03-63-00	抬压脚感应片组件	SENSOR SLIT ASM	1	
14	421.03-52-00	联轴器 φ8组件	COUPLING RUBBER ASM	1套	
15	06-0700814-1	E型挡圈 7	E-RING	1	
16	02-811400414-1	内六角凹端紧定螺钉 SM11 / 64X40-4	SCREW	4	
17	421.03-64-01	抬压脚传感器架	SENSOR INSTALLING BASE	1	
18	CB421-E(1310)-04	光电传感器	PHOTO SENSOR	1	
19	01-403000822-3	十字槽盘头螺钉 M3×8	SCREW	1	
20	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	2	
21	05-043080900-1	平垫圈 4.3	WASHER	6	
22	421.03-56	抬压脚连杆	LIFTING LINK	1	
23	421.03-57-02	滚柱轴	ROLLER SHAFT	1	
24	421.03-57-01	滚柱（φ13）	ROLLER	1	
25	421.03-53-02	抬压脚右旋齿轮组件	GEAR ASM	1套	
26	07-0521313-1	弹簧垫圈 5	SPING WASHER	1	
27	03-605000350-1	六角螺母 M5-3.5	NUT	1	
28	M0421-E（1310）-05	中压脚电机	MOTOR	1	
29	421.03-50	可变压脚电机安装座	PRESSER MOTOR BRACKET	1	
30	01-504001424-1	内六角圆柱头螺钉 M4X14	SCREW	4	
31	01-506001824-1	内六角圆柱头螺钉 M6×18	SCREW	2	
32	421.03-52-01	联轴器 φ8A	COUPLING 8A	1	
33	421.03-52-02	联轴圈 φ8	COUPLING RUBBER	1	
34	421.03-52-03	联轴器 φ8B	COUPLING 8B	1	
35	01-806000814-1	内六角凹端紧定螺钉M6×8	SCREW	4	
36	421.03-42	压脚可变轴	PRESSER VARIABLE SHAFT	1	
37	14-8×16×5	单向推力球轴承 8 GB301	BEARING	1	
38	05-084151503-5	平垫圈	WASHER	1	
39	421.03-77	压脚可变曲柄	PRESSER VARIABLE ARM	1	
40	01-806000614-1	内六角凹端紧定螺钉M6×6	SCREW	2	
41	421.03-53-01	抬压脚左旋齿轮	GEAR	1	
42	421.03-59	抬压脚连杆销	LIFTING LINK SHAFT	1	
43	05-105101603-5	平垫圈 10.5	WASHER	1	
44	421.03-61	抬压脚连杆拉簧	LIFTING LINK SPRING	1	
45	421.03-53-01	抬压脚左旋齿轮	GEAR ASM	1套	

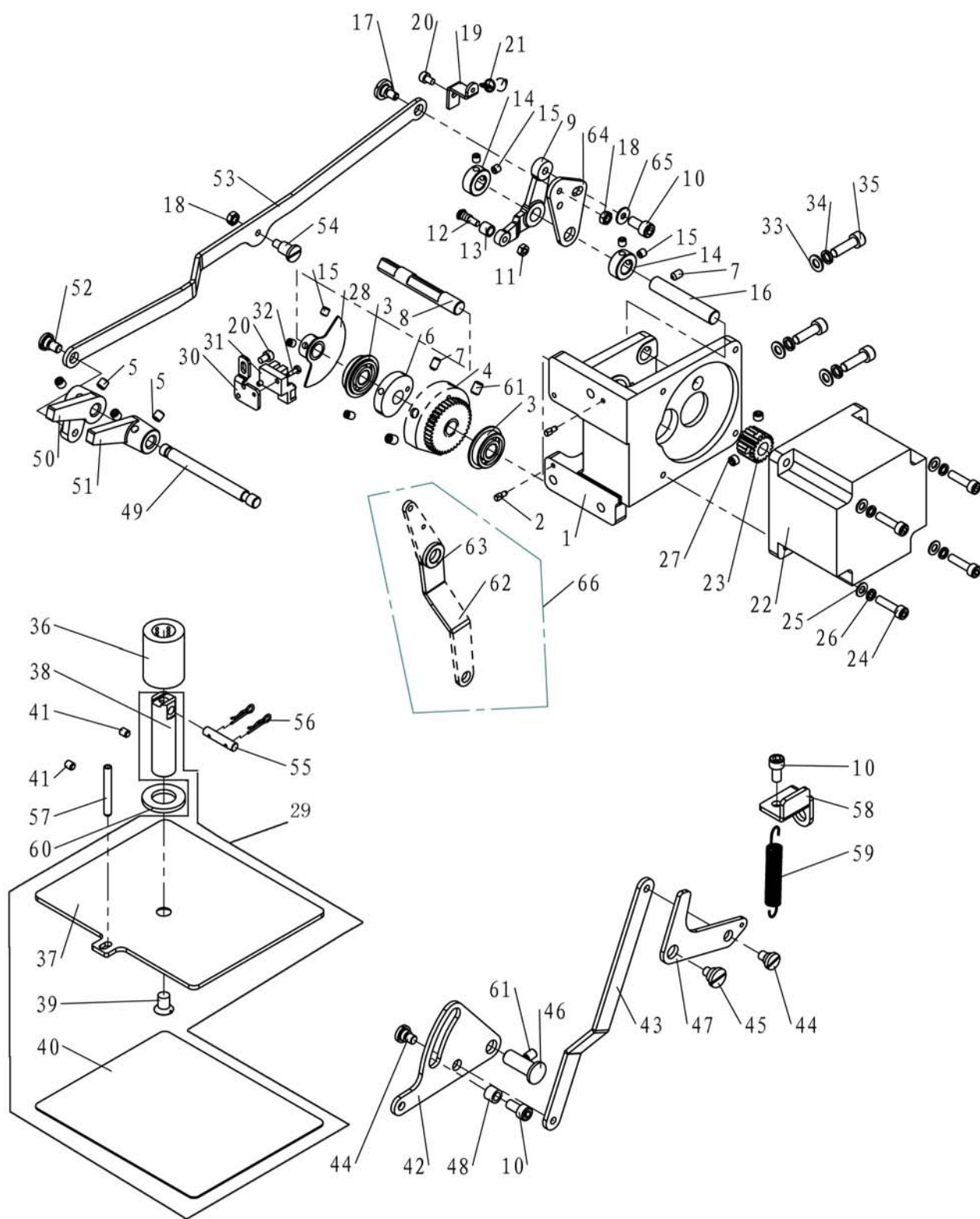
4、压盘、手动压力装置部件 (1)



4、压盘装置部件（1）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.04-01	压脚电机座	MOTOR BASE	1	
2	421.04-28	定位销	GUIDE PIN	2	
3	14-6000-2LSNR	带止动槽轴承 10（10X26X8）	BEARING	2	
4	421.06-21	剪线组合凸轮	THREAD TRIMMER CAM	1	
5	01-806000614-1	内六角凹端紧定螺钉 M6×6	SCREW	4	
6	421.04-03	外压脚凸轮	PRESSER CAM	1	
7	01-805000814-1	内六角凹端紧定螺钉 M5×8	SCREW	3	
8	421.04-02	压脚凸轮轴	PRESSER CAM SHAFT	1	
9	421.04-05	压脚下连杆A	PRESSER LINK A	1	
10	01-506001024-1	内六角圆柱头螺钉 M6×10	SCREW	3	
11	03-604000320-1	六角螺母 M4-3.2	NUT	1	
12	421.06-18	压轮轴	PRESSER CAM ROLLER SHAFT	1	
13	421.06-17	压轮	PRESSER CAM ROLLER	1	
14	421.04-08	挡圈10	COLLAR 10	2	
15	01-805000514-1	内六角凹端紧定螺钉 M5×5	SCREW	6	
16	421.04-04	压脚下轴	PRESSER SHAFT	1	
17	421.04-11	连杆调整轴位螺钉	SHOULDER SCREW	1	
18	03-605000400-1	六角螺母M5-4	NUT	2	
19	421.04-09	下弹簧钩	SPING HOOK	1	
20	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	2	
21	421.04-10	压脚调整拉杆弹簧	PRESSER LINK SPING	1	
22	M0421-E(1310)-04	外压脚电机	PRESSER MOTOR	1	
23	421.06-22	主动齿轮	GEAR	1	
24	01-505002024-1	内六角圆柱头螺钉 M5×20	SCREW	4	
25	05-053101000-1	平垫圈 5.3	WASHER	4	
26	07-0521313-1	弹簧垫圈 5.2	SPING WASHER	4	
27	02-816400514-1	内六角凹端紧定螺钉 SM1 / 4X40-5	SCREW	2	
28	421.04-26-00	剪线感应片铆接件	THREAD TRIMMER SENSOR SLIT ASM	1	
29	421.04-22-00	压脚板胶结组件	PRESSE PLATE ASM	1套	
30	421.04-27	剪线感应器板	SENSOR SLIT PLATE	1	
31	CB421-E(1310)-04	光电传感器	PHOTO SENSOR	1	
32	01-403000822-3	十字槽盘头螺钉 M3×8	SCREW	1	
33	05-063101201-1	平垫圈 6.3	WASHER	3	
34	07-0621616-1	弹簧垫圈 6.2	SPING WASHER	3	
35	01-506002024-1	内六角圆柱头螺钉 M6×20	SCREW	3	
36	14-LB162837-2Z	直线轴承16X28X37	BEARING	1	
37	421.04-22	压脚板	PRESSER PLATE	1	
38	421.04-18	压脚竖轴	PRESSER SHAFT	1	
39	01-108001221-1	开槽沉头螺钉 M8X12	SCREW	1	
40	421.04-23	压脚板垫片	PRESSER PLATE RUBBER	1	
41	01-805000614-1	内六角平端紧定螺钉 M5X6	SCREW	2	
42	421.04-25-05	手控下连接板B	PTESSER CONTROL LOWER PLATE B	1	
43	421.04-25-04	手控连杆	PTESSER CONTROL LINK	1	
44	421.04-25-02	手控下连接板轴位螺钉A	SHOULDER SCREW	2	
45	421.04-25-03	手控下连接板轴位螺钉B	SHOULDER SCREW	1	
46	421.04-25-06	手控连杆轴	PTESSER CONTROL LINK SHAFT	1	
47	421.04-25-01	手控下连接板A	PTESSER CONTROL LOWER PLATE A	1	
48	421.04-25-07	滑动滚轴	ROLLER	1	
49	421.04-17	压脚连接轴	SUPPORT SHAFT	1	

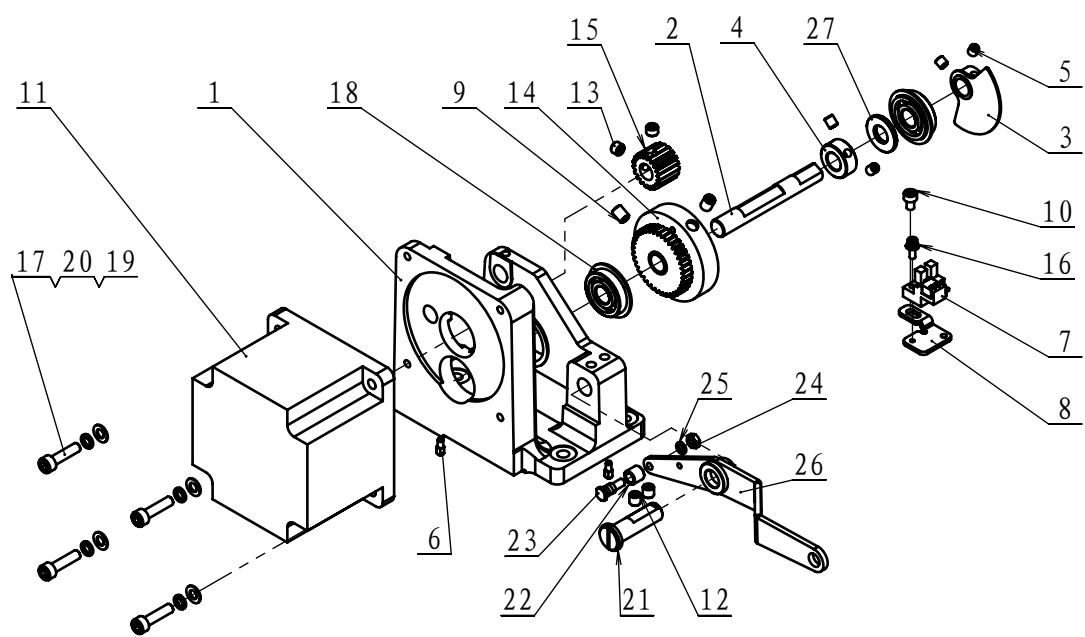
4、 压盘、手动压力装置部件 (1)



4、压盘装置部件（2）

序号	图 号	名 称	NAME OF PARTS	数量	备注
50	421.04-14	压脚连接轴臂A	PRESSER DRIVE ARM A	1	
51	421.04-15	压脚连接轴臂B	PRESSER DRIVE ARM B	1	
52	421.04-16	轴位螺钉	SHOULDER SCREW	1	
53	421.04-12	连杆	LINK	1	
54	421.04-13	连杆轴位螺钉	SHOULDER SCREW	1	
55	421.04-19	销轴	PIN	1	
56	421.04-20	卡簧	SNAP PIN	2	
57	421.04-24	导向销	GUIDE PIN	1	
58	421.04-25-08	弹簧勾	SPING FRAME	1	
59	421.04-25-09	压脚弹簧	PRESSER SPING	1	
60	421.04-21	橡胶垫圈16	RUBBER WASHER	1	
61	01-806000814-1	内六角凹端紧定螺钉M6×8	SCREW	3	
62	421.06-16-01	切线连杆	THREAD TRIMMER LINK	1	
63	421.06-16-02	切线连杆套	THREAD TRIMMER LINK METAL	1	
64	421.04-07	压脚调整拉杆	ADJUSTING LINK	1	
65	05-043101202-1	平垫圈 4.3	WASHER	1	
66	421.06-16-00	切线连杆铆接件	THREAD TRIMMER LINK ASM	1	

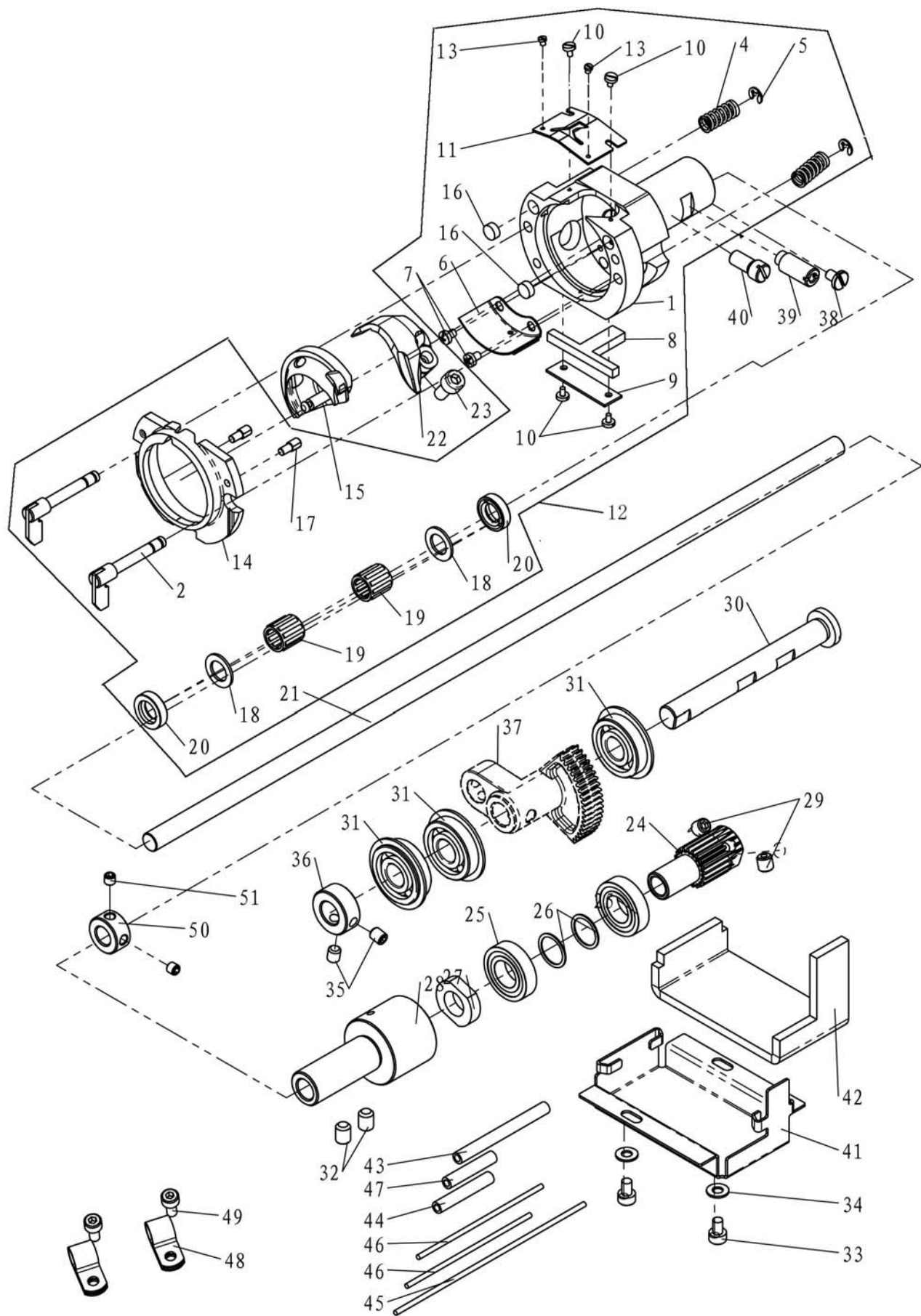
4A、电机座组件（气动）



4A、电机座组件（气动）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.04-01	压脚电机座	MOTOR BASE	1	
2	421.04-02	压脚凸轮轴	PRESSER CAM SHAFT	1	
3	421.04-26-00	剪线感应片铆合件	THREAD TRIMMER SENSOR SLIT ASM	1	
4	421-PZ04-06	挡圈10小组件	COLLAR ASM	1	
5	01-805000514-1	内六角凹端紧定螺钉M5×5	SCREW	2	
6	421.04-28	定位销	PIN	2	
7	421.04-29	传感器	PHOTO SENSOR	1	
8	421.04-27	剪线感应器板	SENSOR SLIT PLATE	1	
9	01-806000814-1	内六角凹端紧定螺钉M6×8	SCREW	2	
10	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	1	
11	M0421-E(1310)-04	外压脚电机	PRESSER MOTOR	1	
12	01-806000614-1	内六角凹端紧定螺钉M6×6	SCREW	2	
13	02-816400514-1	内六角凹端紧定螺钉 SM1 / 4X40-5	SCREW	2	
14	421.06-21	剪线组合凸轮	THREAD TRIMMER CAM	1	
15	421.06-22	主动齿轮	GEAR	1	
16	01-403000822-3	十字盘头螺钉 M3X8	SCREW	1	
17	01-505002024-1	内六角圆柱头螺钉 M5×20	SCREW	4	
18	14-6000-2LSNR	轴承 10（带止动槽深沟球轴承）	BEARING	2	
19	05-053101001-5	平垫圈 5.3	WASHER	4	
20	07-0521313-1	弹簧垫圈5	SPRING WASHER	4	
21	421.06-15	切线轴	THREAD TRIMMING SHAFT	1	
22	421.06-17	压轮	PRESSER CAM ROLLER	1	
23	421.06-18	压轮轴	PRESSER CAM ROLLER SHAFT	1	
24	03-604000320-1	1型六角螺母M4X3.2	NUT	1	
25	07-0421111-1	弹簧垫圈4	SPRING WASHER	1	
26	421.06-16-00	切线连杆铆接件	THREAD TRIMMER LINK ASM	1	
27	05-101202103-5	平垫片 10.1×2.0×21	WASHER	1	

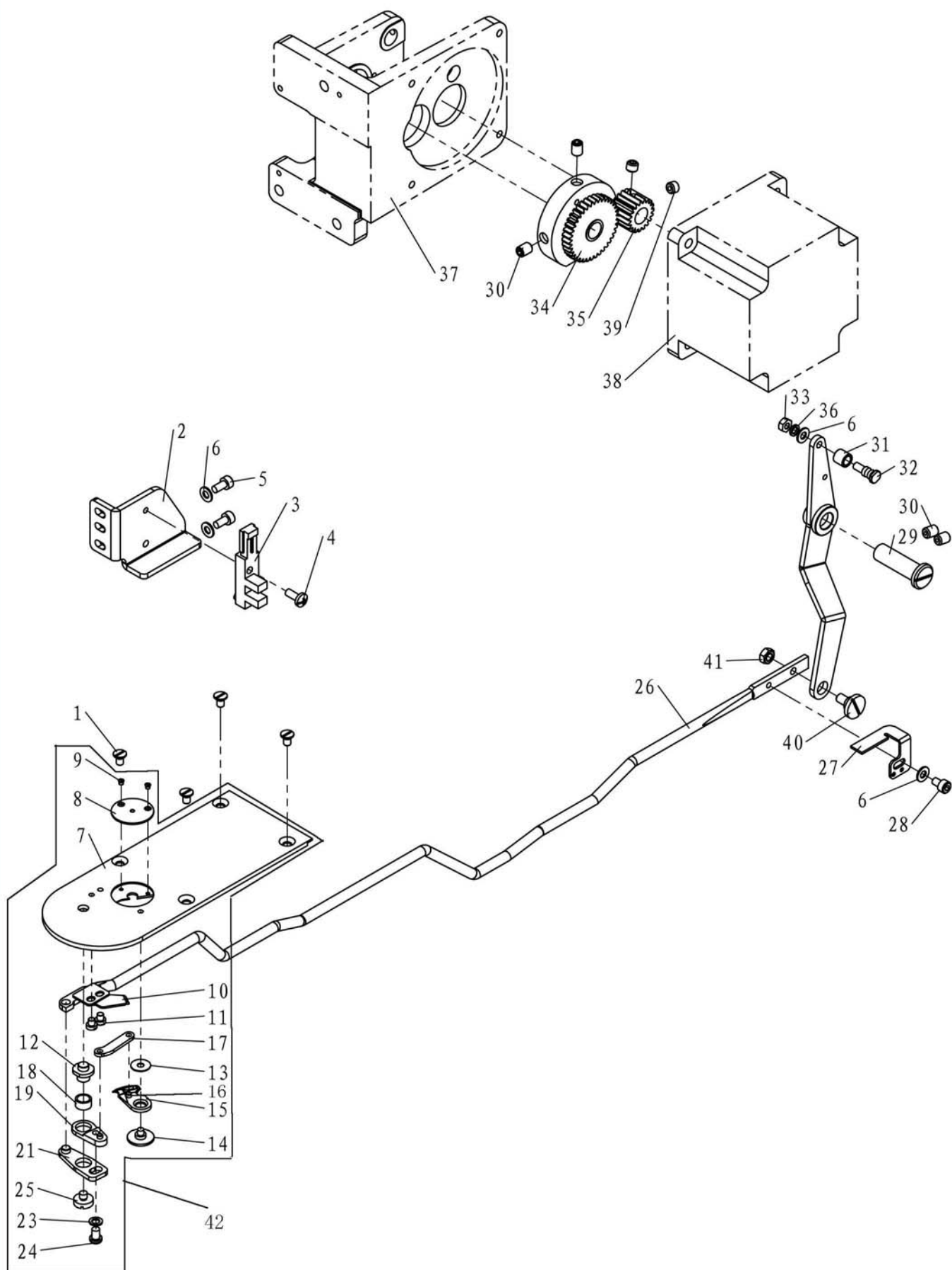
5、 下轴部件



5、下轴部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.05-05-01	摆梭座	SHUTTLE	1	
2	421.05-05-12-01	摆梭压紧杆组件	INNER-HOOK-PRESSER COMPL.	2	
3					
4	421.05-05-13	摆梭压紧弹簧	SPING	2	
5	06-0300607-1	E型挡圈3	E-RING	2	
6	421.05-05-04	摆梭润滑盘	SHUTTLE LUBRICATING PLATE	1	
7	01-403000423-1	十字盘头螺钉 M3x4	SCREW	2	
8	421.05-05-07	油毡	OIL FELT	1	
9	421.05-05-06	油毡夹	OIL FELT PLATE	1	
10	01-502000421-1	开槽圆柱头螺钉 M2X3.5	SCREW	4	
11	421.05-05-02	梭子上弹簧	SHUTTLE UPPER SPING	1	
12	421.05-05-00	摆梭座组件	SHUTTLE ASM	1套	
13	02-505640221-2	开槽圆柱头螺钉 SM5-64x64-2	SCREW	2	
14	421.05-05-10	摆梭盖	INNER-HOOK-PRESSER COMPL. ASM	1	
15	421.05-08	摆梭（大）	SHUTTLE	1	
16	421.05-05-05	摆梭润滑盖	RUBBLE CAP	2	
17	421.05-05-15	摆梭盖定位销	PIN	2	
18	421.05-05-08	旋梭轴垫圈 $\phi 8$	BEARING RING	2	
19	14-K/81212	无内外圈单列滚针轴承 8（8X12X12）	BEARING	2	
20	13-08240150	骨架油封	OIL SEAL	2	
21	421.05-03	下轴	LOWER SHAFT	1	
22	421.05-09	摆梭驱动（大）	SHUTTLE DRIVER	1	
23	01-505001624-1	内六角圆柱头螺钉 M5×16	SCREW	1	
24	421.05-04-01	下轴齿轮	LOWER SHAFT GEAR	1	
25	14-61901-2Z	轴承 12（12X24X6）	BEARING	2	
26	421.05-04-02	下轴齿轮环	LOWER SHAFT GEAR RING	2	
27	421.05-04-03	下轴齿轮螺母	LOWER SHAFT GEAR NUT	1	
28	421.05-04-04	下轴齿轮座	LOWER SHAFT GEAR BASE	1	
29	01-806000614-1	内六角凹端紧定螺钉 M6×6	SCREW	2	
30	421.05-01	震荡器轴	OSCILLALOR SHAFT	1	
31	14-6000-2LSNR	带止动挡圈轴承 10（10X26X8）	BEARING	3	
32	01-806000814-1	内六角凹端紧定螺钉 M6X8	SCREW	2	
33	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	2	
34	05-043080900-1	平垫圈	WASHER	2	
35	01-805000614-1	内六角平端紧定螺钉 M5X6	SCREW	2	
36	421.04-08	挡圈10	COLLAR 10	1	
37	421.02-30	摆动齿轮	SWAY GEAR	1	
38	01-604000821-1	开槽薄帽圆柱头螺钉 M4X8	SCREW	1	
39	421.05-05-11	偏心销轴	ADJUSTING SHAFT	1	
40	421.05-05-14	摆梭锁紧螺钉	SCREW	1	
41	421.05-02-01	齿轮盖	GEAR COVER	1	
42	421.05-02-02	齿轮盖油毡	GEAR OIL FELT	1	
43	421.05-05-16	回油软管 3X500	OIL WICK	1	
44	421.05-05-17	供油软管 3X300	OIL WICK	1	
45	421.05-05-19	回油棉线 2X1070	TUBE	1	
46	421.05-05-20	供油棉线 2X700	TUBE	2	
47	421.05-05-18	供油软管 3X260	OIL WICK	1	
48	331.18-22	气路管夹（中）	CABLE CLIP	2	
49	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	2	
50	421.03-49	压脚可变轴挡圈 $\phi 8$	COLLAR 8	1	
51	02-811400414-1	内六角凹端紧定螺钉 SM11 / 64X40-4	SCREW	2	

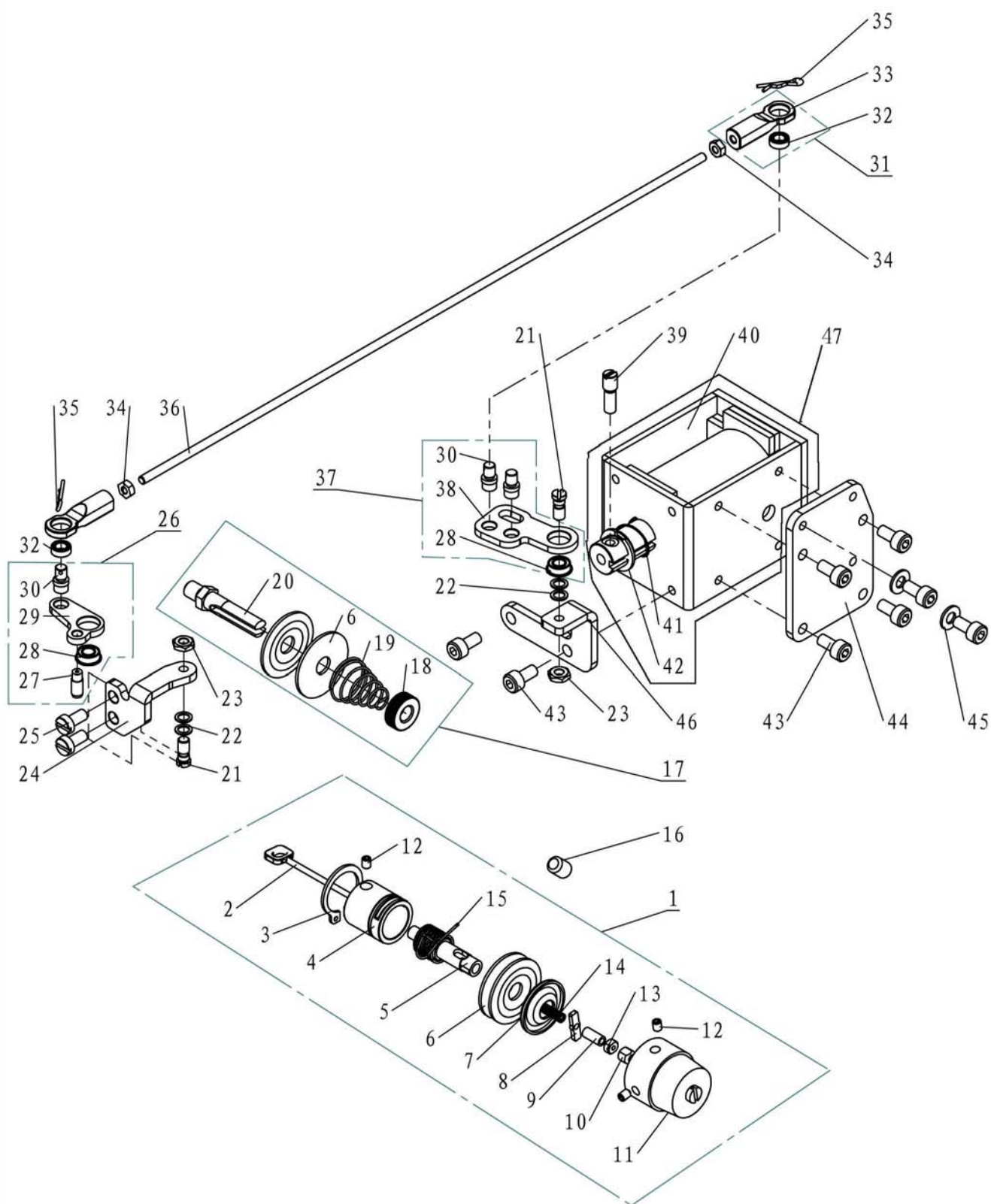
6、剪线部件



6、剪线部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	01-104000721-1	开槽沉头螺钉 M4X7	SCREW	4	
2	421.06-25	切线传感器座	PHOTO SENSOR PLATE	1	
3	CB421-E(1310)-03	切线光电传感器	PHOTO SENSOR	1	
4	01-404001023-1	十字一字槽盘头螺钉 M4X10	SCREW	1	
5	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	2	
6	05-043080900-1	平垫圈 4.3	WASHER	4	
7	421.06-01-01	针板	NEDDLE PLATE	1	
8	421.06-01-02	针孔板 1.6	NEDDLE HOLE GUIDE	1	
	421.06-01-02	针孔板 2.0	NEDDLE HOLE GUIDE	1	
	421.06-01-02	针孔板 2.4	NEDDLE HOLE GUIDE	1	
9	02-106560221-2	开槽沉头螺钉 SM3-32X56-2	SCREW	2	
10	421.06-02	定刀	COUNTER KNIFE	1	
11	02-509400421-1	开槽圆柱头螺钉 SM9 / 64"×40-3.5	SCREW	2	
12	421.06-09	切线扳手轴	THREAD CUTTER LEVER SHAFT	1	
13	421.06-04-01	动刀调整垫片 0.5	ADJUSTING WASHER	1	
14	421.06-05	动刀螺钉	MOVING KNIFE SCREW	1	
15	421.06-03-01	动刀	MOVING KNIFE	1	
16	421.06-03-02	动刀销	MOVING KNIFE PIN	1	
17	421.06-06	动刀连接片	MOVING KNIFE LINK	1	
18	421.06-10	动刀扳手环	THREAD CUTTER LEVER RING	1	
19	421.06-07-00	切线扳手A铆接件	THREAD CUTTER LEVER(A) ASM	1	
20					
21	421.06-08-00	切线扳手B铆接件	THREAD CUTTER LEVER(B) ASM	1	
22					
23	421.06-12	垫圈	WASHER	1	
24	02-411400721-1	开槽盘头螺钉 SM11-64X40-7	SCREW	1	
25	421.06-11	动刀连接固定螺钉	FIX KNIFE SCREW	1	
26	421.06-13	剪线拉杆	THREAD TRIMMER CONNECTING BAR	1	
27	421.06-24	切线传感器片	THREAD TRIMMER SENSOR SLIT	1	
28	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	1	
29	421.06-15	切线轴	THREAD TRIMMER SHAFT	1	
30	01-806000814-1	内六角凹端紧定螺钉M6×8	SCREW	4	
31	421.06-17	压轮	NEEDLE CAM ROLLER	1	
32	421.06-18	压轮轴	ROLLER SHAFT	1	
33	03-604000320-1	六角螺母 M4-3.2	NUT	1	
34	421.06-21	剪线组合凸轮	THREAD TRIMMER CAM	1	
35	421.06-22	主动齿轮	GEAR	1	
36	07-0421111-1	弹簧垫圈 4.2	SPING WASHER	1	
37	421.04-01	压脚电机座	MOTOR BASE	1	
38	MO421-E(1310)-04	外压脚电机	PRESSER MOTOR	1	
39	02-816400514-1	内六角凹端紧定螺钉 SM1 / 4X40-5	SCREW	2	
40	421.04-11	连杆调整轴位螺钉	SHOULDER SCREW	1	
41	03-605000400-1	六角螺母 M5-4	NUT	1	
42	421.06-01-00 (1.6)	针板剪刀组合件 (1.6)	NEDDLE PLATE ASM	1套	
	421.06-01-00 (2.0)	针板剪刀组合件 (2.0)	NEDDLE PLATE ASM	1套	
	421.06-01-00 (2.4)	针板剪刀组合件 (2.4)	NEDDLE PLATE ASM	1套	

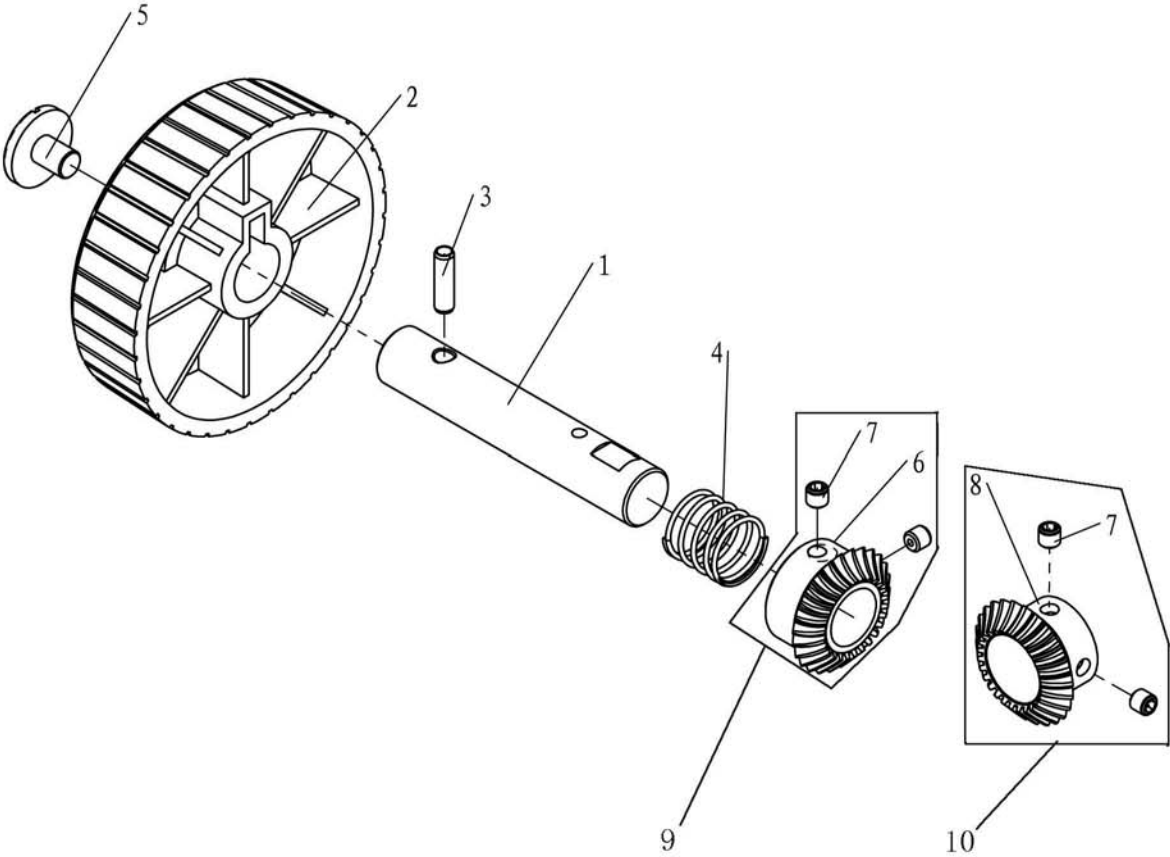
07、自动松夹线部件



07、自动松夹线部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.07-18-00	电子夹线器组件 (0.7)	THREAD TENSION ASM	1	
2	421.07-18-11	夹紧杆	TENSION RELEASE PIN	(1)	
3	10-1571017	轴用弹性挡圈 15.7 GB894	C-RING	(1)	
4	421.07-18-01	挑线簧座	THREAD TENSION BASE	(1)	
5	421.07-18-02	挑线簧轴	THREAD TENSION SHAFT	(1)	
6	101.01-27-05	夹线板	THREAD TENSION DISK	(4)	
7	421.07-18-04	紧线板	STOPPER DISK	(1)	
8	421.07-18-05	夹紧板	STOPPER BAR	(1)	
9	421.07-18-06	夹紧套圈	STOPPER BAR BUSH	(1)	
10	421.07-18-09	锁紧螺母 M2	NUT	(1)	
11	421.07-18-10	调节套	HOLDER CAP	(1)	
12	01-803000414-1	内六角凹端紧定螺钉 M3X4	SCREW	(3)	
13	421.07-18-08	调节螺母 M2	ADJUST NUT	(1)	
14	421.07-18-07	夹紧板复位簧 (0.3)	STOPPING SPING	(1)	
15	421.07-18-03(0.7)	挑线簧(0.7)	THREAD TAKE-UP SPING	(1)	
16	01-806000814-1	内六角凹端紧定螺钉 M6X8	SCREW	1	
17	421.07-17-00	上夹线器组件	THREAD TENSION ASM	1	
18	421.07-17-03	夹线螺母	THREAD TENSION NUT	(1)	
19	421.07-17-02	夹线簧	THREAD TENSION SPING	(1)	
20	421.07-17-01	上夹线螺钉	THREAD TENSION SHAFT SCREW	1	
21	421.07-03	前杠杆轴位螺钉	SHOULDER SCREW	2	
22	421.07-04	接头垫圈	SHOULDER SCREW WASHER	4	
23	03-604000220-1	六角螺母M4-2.2	NUT	2	
24	421.07-01	前杠杆固定架	FRONT LEVER BASE	1	
25	01-504000821-1	开槽圆柱头螺钉 M4×8	SCREW	2	
26	421.07-02-00	前杠杆组件	FRONT LEVER ASM	1	
27	421.07-02-03	松线复位杆连接销	FRONT LEVER	(1)	
28	14-MF84-2Z	凸缘外圈微型轴承 4 GB7218	BEARING	(2)	
29	421.07-02-01	前杠杆	FRONT LEVER	(1)	
30	421.07-02-02	前杠杆接头连接销	FRONT LEVER SHAFT	(3)	
31	421.07-06-00	松线拉杆接头组件	JOINT ASM	2	
32	14-619-4(2.5)-2Z	轴承 4x7x2.5	JOINT BEARING	(2)	
33	421.07-06-01	松线拉杆接头	JOINT	(2)	
34	03-603000240-1	六角螺母 M3-2.4	NUT	2	
35	421.07-05	铰链销	SNAP PIN	2	
36	421.07-07	松线拉杆	CONNECTING BAR	1	
37	421.07-08-00	后杠杆组件	BEHIND LEVER ASM	1	
38	421.07-08-01	后杠杆	BEHIND LEVER	(1)	
39	421.07-10	后杠杆销	BEHIND LEVER SHAFT	1	
40	421.07-14-01	松线电磁铁	SOLENOID	1	
41	421.07-14-02	松线电磁铁复位簧 (0.5)	SPING	(1)	
42	06-0801016-1	E型挡圈8	E-RING	(1)	
43	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	8	
44	421.07-11	松线电磁铁安装板	SOLENOID PLATE	1	
45	05-043080900-1	平垫圈 4.3	WASHER	2	
46	421.07-09	后杠杆支架	BEHIND LEVER BASE	1	
47	421.07-14-00	松线电磁铁配套件	SOLENOID ASM	1套	

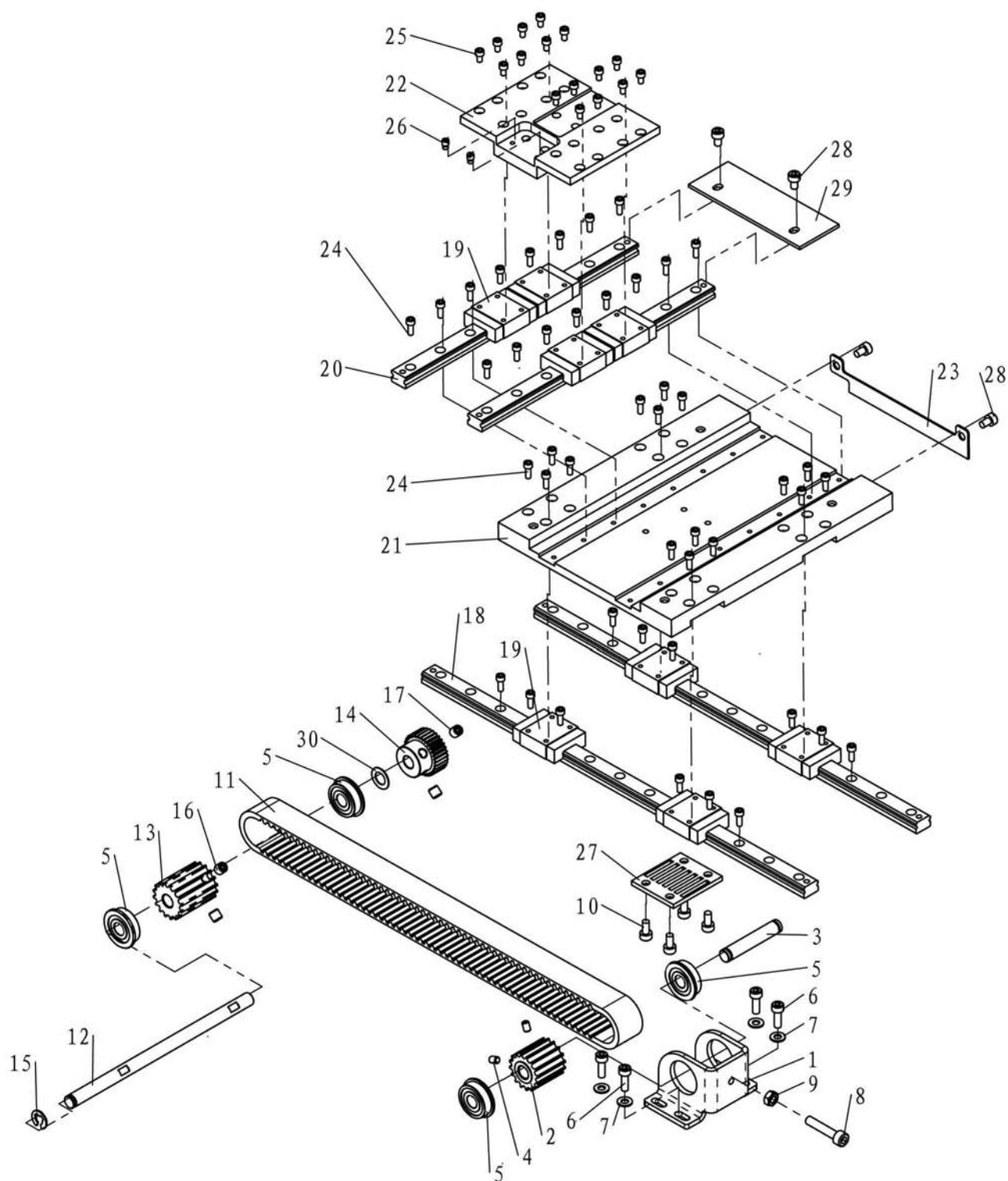
8、手动上轮部件



8、手动上轮部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.08-02	手轮轴	PULLEY SHAFT	1	
2	421.08-01	手轮	PULLEY	1	
3	15-1401405-1	弹性销 4X14 GB897	SPRING PIN	1	
4	421.08-03	手轮复位簧	SPING	1	
5	01-606000821-1	开槽薄帽圆柱头螺钉 M6X8	SCREW	1	
6	421.08-04-01	手轮轴齿轮	PULLEY SHAFT GEAR	1	
7	02-811400414-1	内六角凹端紧定螺钉 SM11 / 64X40-4	SCREW	4	
8	421.08-05-01	上轴手动离合齿轮	GEAR	1	
9	421.08-04-00	手轮轴齿轮组件	PULLEY SHAFT GEAR ASM	1套	
10	421.08-05-00	上轴手动离合齿轮组件	GEAR ASM	1套	

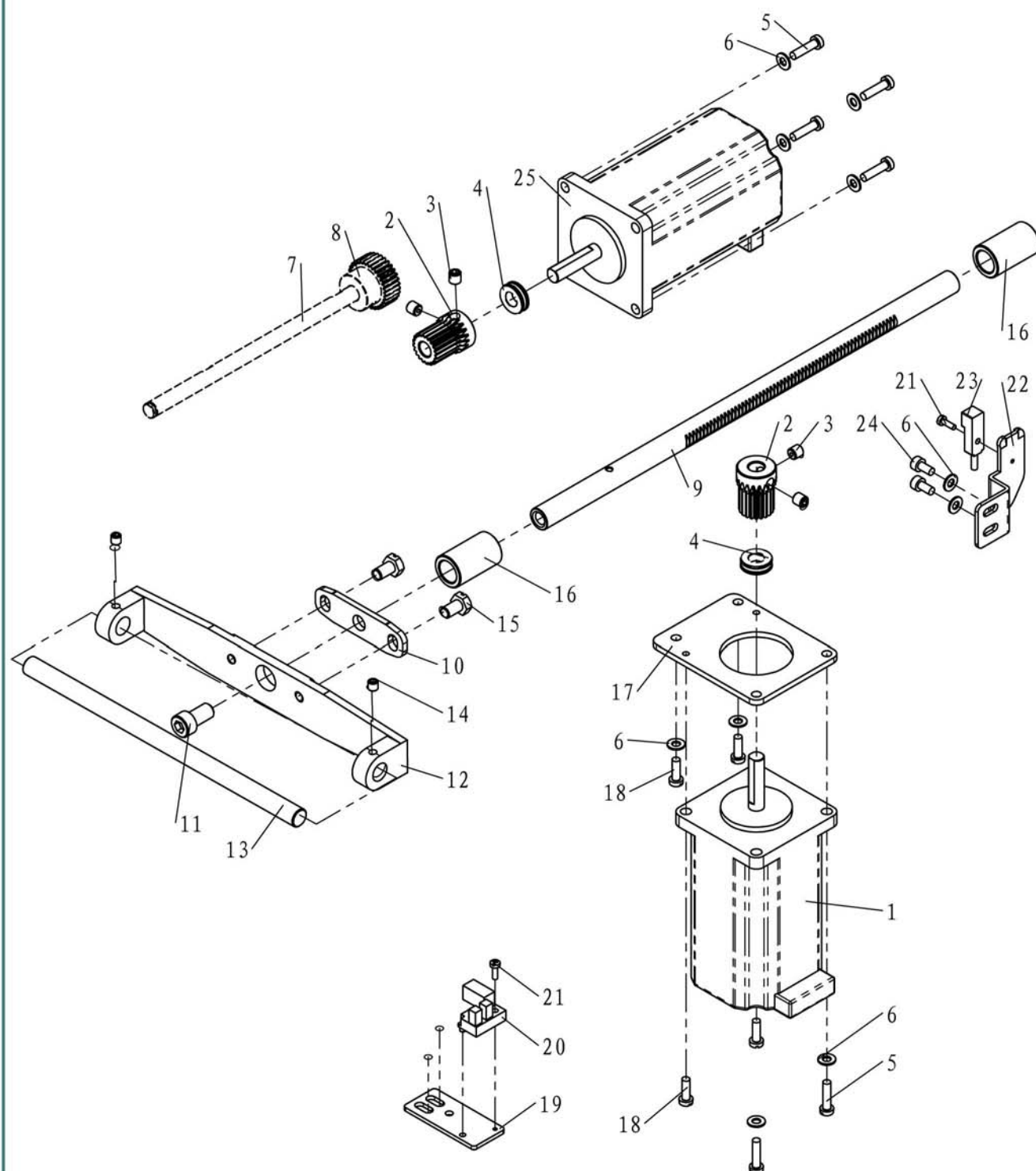
10、 X-Y驱动装置部件(1)



10、X-Y驱动装置部件（1）

序号	图 号	名 称	NAME OF PARTS	数量	
1	421.10-09-03	X轴同步带调整滑台（宽）	X ADJUSTING BRACKET	1	
2	421.10-09-01	X同步带从动轮(宽)	X TIMING SPROCKET	1	
3	421.10-09-02	X送料从动轴	X SPROCKET SHAFT	1	
4	01-804000624-1	内六角平端紧定螺钉 M4X6	SCREW	2	
5	14-F608-2Z	凸缘外圈微型轴承 8（8X22X7）	BEARING	4	
6	01-504001224-1	内六角圆柱头螺钉 M4X12	SCREW	4	
7	05-043080900-1	平垫圈 4.3	WASHER	4	
8	01-505002524-1	内六角圆柱头螺钉 M5×25	SCREW	1	
9	03-605000400-1	六角螺母 M5-4	NUT	1	
10	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	4	
11	421.10-08	x轴同步带（20宽）	X TIMING BELT	1	
12	421.10-16	X向驱动轴	X DRIVING SHAFT	1	
13	421.10-07	X同步带驱动轮（宽）	X DRIVING TIMING SPROCKET	1	
14	421.10-18	X轴从动齿轮	X GEAR	1	
15	06-0600812-1	E型挡圈6	E-RING	1	
16	01-806000614-1	内六角凹端紧定螺钉 M6×6	SCREW	2	
17	01-806750614-1	内六角凹端紧定螺钉 M6（0.75）	SCREW	2	
18	421.10-01-01	X 向导轨	X GUIDE RAIL	2	
19	421.10-01-02	导轨滑台	X GUIDE BRACKET	8	
20	421.10-02-01	Y 向导轨	Y GUIDE RAIL	2	
21	421.10-03	Y 导轨座	Y GUIDE BRACKET	1	
22	421.10-04	送料托架座	FEED BRACKET BASE	1	
23	421.10-06	X 向感应片	X SENSOR SLIT	1	
24	01-503000824-1	内六角圆柱头螺钉 M3X8	SCREW	44	
25	01-503000524-1	内六角圆柱头螺钉 M3X5	SCREW	16	
26	02-908440321-1	锁定螺钉 SM1-8X44-3	FIX SCREW	2	
27	421.10-05	同步带齿形压板	X BELT BASE PLATE	1	
28	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	4	
29	421.12-47	Y向导轨盖板	Y GUIDE BOARD	1	
30	421.10-30	垫圈 8.2X0.5X14	WASHER	1	

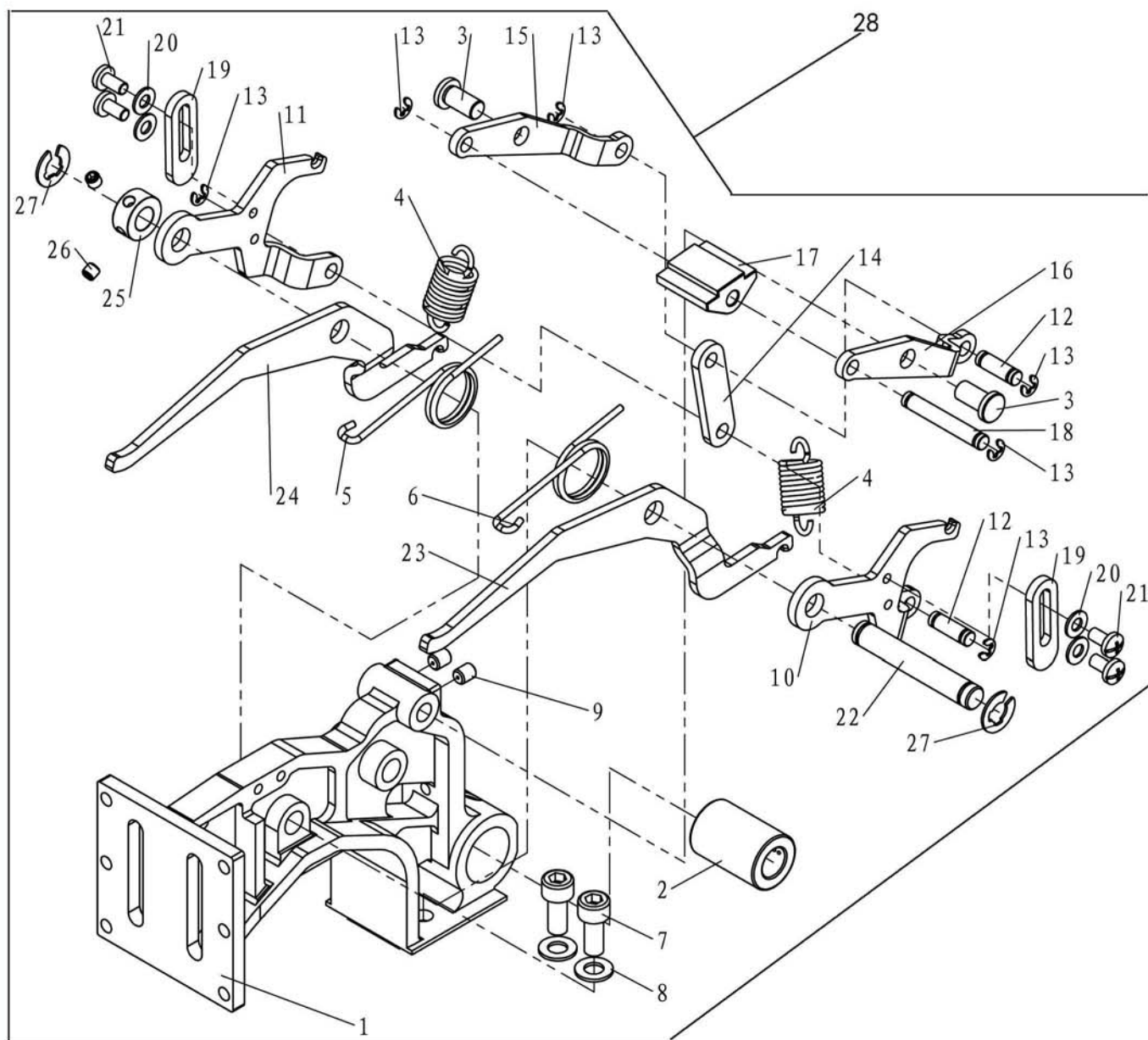
10、 X-Y驱动装置部件 (2)



10、X-Y驱动装置部件（2）

序号	图 号	名 称	NAME OF PARTS	数量	
1	M0421-E(1310)-03	Y轴步进电机	Y MOTOR	1	
2	421.10-19	送料驱动齿轮	DRIVING GEAR	2	
3	02-815280614-1	内六角凹端紧定螺钉 SM15/64"×28-6	SCREW	4	
4	14-8×16×5	单向推力球轴承 8 (8X16X5)	BEARING	2	
5	01-504001621-1	开槽圆柱头螺钉 M4×16	SCREW	6	
6	05-043080900-1	平垫圈 4.3	WASHER	10	
7	421.10-16	X向驱动轴	X DRIVING SHAFT	1	
8	421.10-18	X轴从动齿轮	X GEAR	1	
9	421.10-24	Y送料齿条轴	Y GEAR SHAFT	1	
10	421.10-25	Y导向轴连接板	Y CONNECTING PLATE	1	
11	01-508001524-1	内六角圆柱头螺钉 M8X15	SCREW	1	
12	421.10-23	X导向轴架	X GUIDE FRAME	1	
13	421.10-22	X导向轴	X GUIDE SHAFT	1	
14	01-805000514-1	内六角凹端紧定螺钉 M5×5	SCREW	2	
15	01-706001021-1	六角头部带槽螺栓 M6X10	SCREW	2	
16	421.10-26	Y轴移动套管	Y GUIDE BUSHING	2	
17	421.10-27	Y电机固定板	Y MOTOR FIX PLATE	1	
18	01-504001221-1	开槽圆柱头螺钉 M4×12	SCREW	4	
19	421.10-21-01	X轴传感器基座	X SENSOR PLATE	1	
20	CB421-E (1310) -04	光电传感器	PHOTO SENSOR	1	
21	01-403000822-3	十字槽盘头螺钉 M3×8	SCREW	2	
22	421.10-28-01	Y轴传感器基座	Y SENSOR PLATE	1	
23	CB421-E (1310) -13	Y送布原点检测连接线	Y CABLE ASM	1	
24	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	2	
25	M0421-E(1310)-02	X轴步进电机	X MOTOR	1	

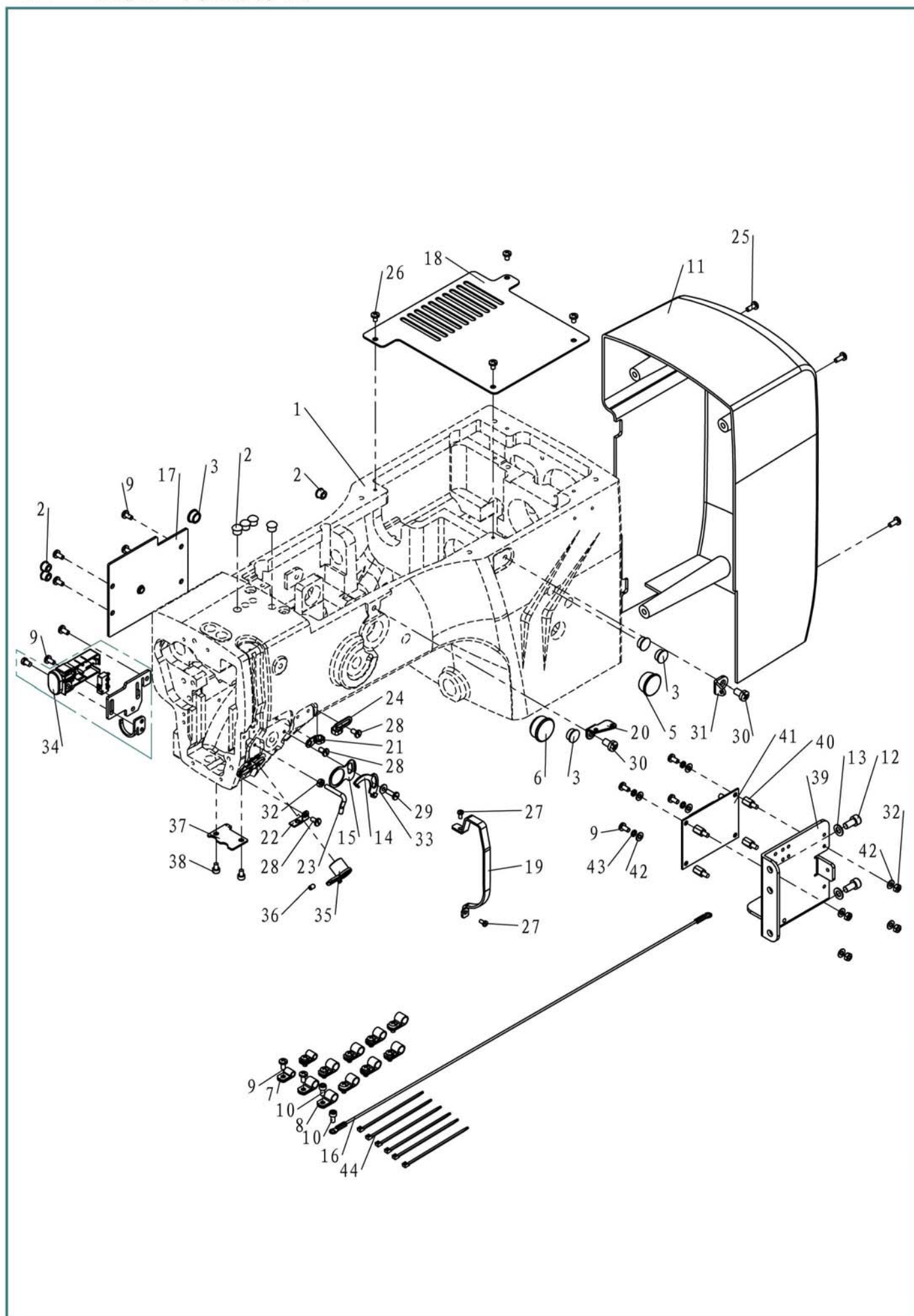
11、送料台装置



11、送料台装置

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.11-01	送料托架	FEED BRACKET	1	
2	14-LB101929-2Z	直线轴承 10X19X29	BEARING	1	
3	421.11-10	上连接杆销	CONNECTING ROD	2	
4	421.11-14(1.6)	弹簧 (1.6)	SPRING	2	
5	421.11-16	左扭簧	LEFT SPRING	1	
6	421.11-17	右扭簧	RIGHT SPRING	1	
7	01-506001424-1	内六角圆柱头螺钉 M6×14	SCREW	2	
8	05-063101201-1	平垫圈 6.3	WASHER	2	
9	01-805000614-1	内六角凹端紧定螺钉 M5×6	SCREW	2	
10	421.11-09	支撑杆（右）	SUPPORT LINK(RIGHT)	1	
11	421.11-08	支撑杆（左）	SUPPORT LINK(LEFT)	1	
12	421.11-07	短销	CYLINDER PIN	2	
13	06-0300607-1	E型挡圈3	E-RING	6	
14	421.11-06	托架连杆	FEED BRACKET LINK	1	
15	421.11-04	上连接杆（左）	FEED BRACKET UPPER LINK(LEFT)	1	
16	421.11-05	上连接杆（右）	FEED BRACKET UPPER LINK(RIGHT)	1	
17	421.11-02	顶块	SLIDER	1	
18	421.11-03	长销	SLIDER SHAFT	1	
19	421.11-13	限位块	LINK STOPPER	2	
20	05-043080900-1	平垫圈 4.3	WASHER	4	
21	01-404000823-1	十字一字槽盘头螺钉 M4X8	SCREW	4	
22	421.11-15	销轴	LIFTING LEVER SHAFT	1	
23	421.11-12	提升杆（右）	LIFTING LEVER (RIGHT)	1	
24	421.11-11	提升杆（左）	LIFTING LEVER (LEFT)	1	
25	421.11-18	挡圈7.94	COLLAR 7.94	1	
26	02-811400414-1	内六角凹端紧定螺钉SM11 / 64X40-4	SCREW	2	
27	06-0700814-1	E型挡圈7	E-RING	2	
28	421.11-00	送料托架组件	FEED BRACKET ASM	1套	

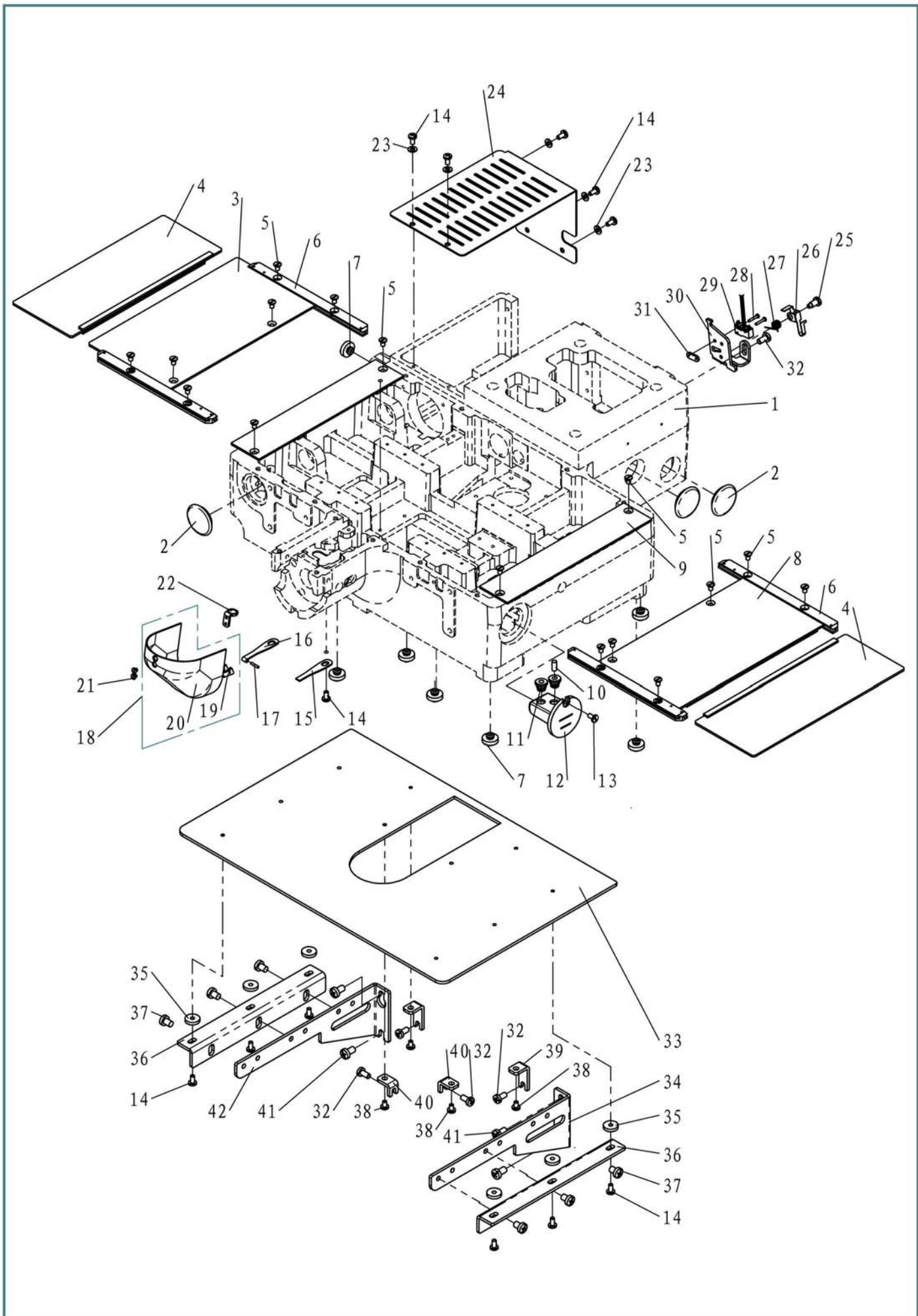
12、 盖板、罩壳部件(1)



12、盖板、罩壳部件（1）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.01-01	机壳	MACHINE HEAD	1	
2	22-08506011	橡胶塞 $\Phi 8.5 \times 6 \times 11$	RUBBER CAP	7	
3	22-11505013	橡胶塞 $\Phi 11.5 \times 5 \times 13$	RUBBER CAP	4	
4	22-12404016	橡胶塞 $\Phi 12.4 \times 4 \times 16$	RUBBER CAP	1	
5	22-20809024	橡胶塞 $\Phi 20.8 \times 9 \times 24$	RUBBER CAP	1	
6	22-23010026	橡胶塞 $\Phi 23 \times 10 \times 26$	RUBBER CAP	1	
7	381.03-11	中继线管夹	CABLE CLIP	2	
8	331.18-22	气路管夹（中）	CABLE CLIP	9	
9	01-404000823-1	十字一字槽盘头螺钉 M4X8	SCREW	20	
10	01-504000824-1	内六角圆柱头螺钉 M4X8	SCREW	2	
11	421.12-07	后盖	MOTOR COVER	1	
12	01-506001224-1	内六角圆柱头螺钉 M6 $\times$ 12	SCREW	2	
13	05-063101201-1	平垫圈 6.3	WASHER	2	
14	421.12-11	导电板	THREAD SENSOR PLATE ASM	1	
15	421.12-12	腰形绝缘垫片	GUIDE PLATE	1	
16	421.12-13	接地线组件	EARTH CODE ASM	1	
17	421.12-23	侧盖板	SIDE PLATE	1	
18	421.12-24	连杆盖板	CRANK ROD COVER	1	
19	421.12-25	挑线杆护罩	THREAD TAKE-UP LEVER COVER	1	
20	421.12-26	导线板	THREAD GUIDE PLATE	1	
21	421.12-27	挑线上过线钩 B	UPPER TAKE-UP THREAD GUIDE B	1	
22	421.12-28	挑线下过线钩（B）	LOWER TAKE-UP THREAD GUIDE B	1	
23	421.12-29	缓线调节钩	THREAD GUIDE BAR	1	
24	421.12-30	右线钩	THREAD GUIDE	1	
25	01-404001023-1	十字一字槽盘头螺钉 M4X10	SCREW	4	
26	01-404000623-1	十字一字槽盘头螺钉 M4X6	SCREW	4	
27	01-403000623-1	十字一字槽盘头螺钉 M3 $\times$ 6	SCREW	2	
28	01-604000821-1	开槽薄帽圆柱头螺钉 M4X8	SCREW	3	
29	01-604001221-1	开槽薄帽圆柱头螺钉 M4X12	SCREW	1	
30	01-406001023-1	十字一字槽盘头螺钉 M6X10	SCREW	2	
31	421.12-31	第一过线钩	THREAD GUIDE NO.1	1	
32	03-604000320-1	六角螺母 M4-3.2	NUT	5	
33	421.12-33	绝缘垫片 $\Phi 4$	WASHER	1	
34	421.09-00	急停开关组件	STOP SWITCH ASM	1	
35	421.21-00	起针夹线器	THREAD TAKE-UP SOLENOID	1	
36	01-804000614-1	内六角平端紧定螺钉 M4X6	SCREW	1	
37	DL16-00	花样机照明灯	LIGHT ASM	1	
38	01-504000624-1	内六角圆柱头螺钉 M4X6	SCREW	2	
39	421.12-18	线路板支架	PCB. BASE	1	
40	421.12-19	M4螺柱	SCREW	4	
41	CB421-E(1310)-02	机头信号转接板	PCB. ASM	1	
42	05-043080900-1	平垫圈 4.3	WASHER	8	
43	07-0421111-1	弹簧垫圈 4.2	SPRING WASHER	4	
44	101.02-22	尼龙扎带 2.4X80	CABLE BAND	6	

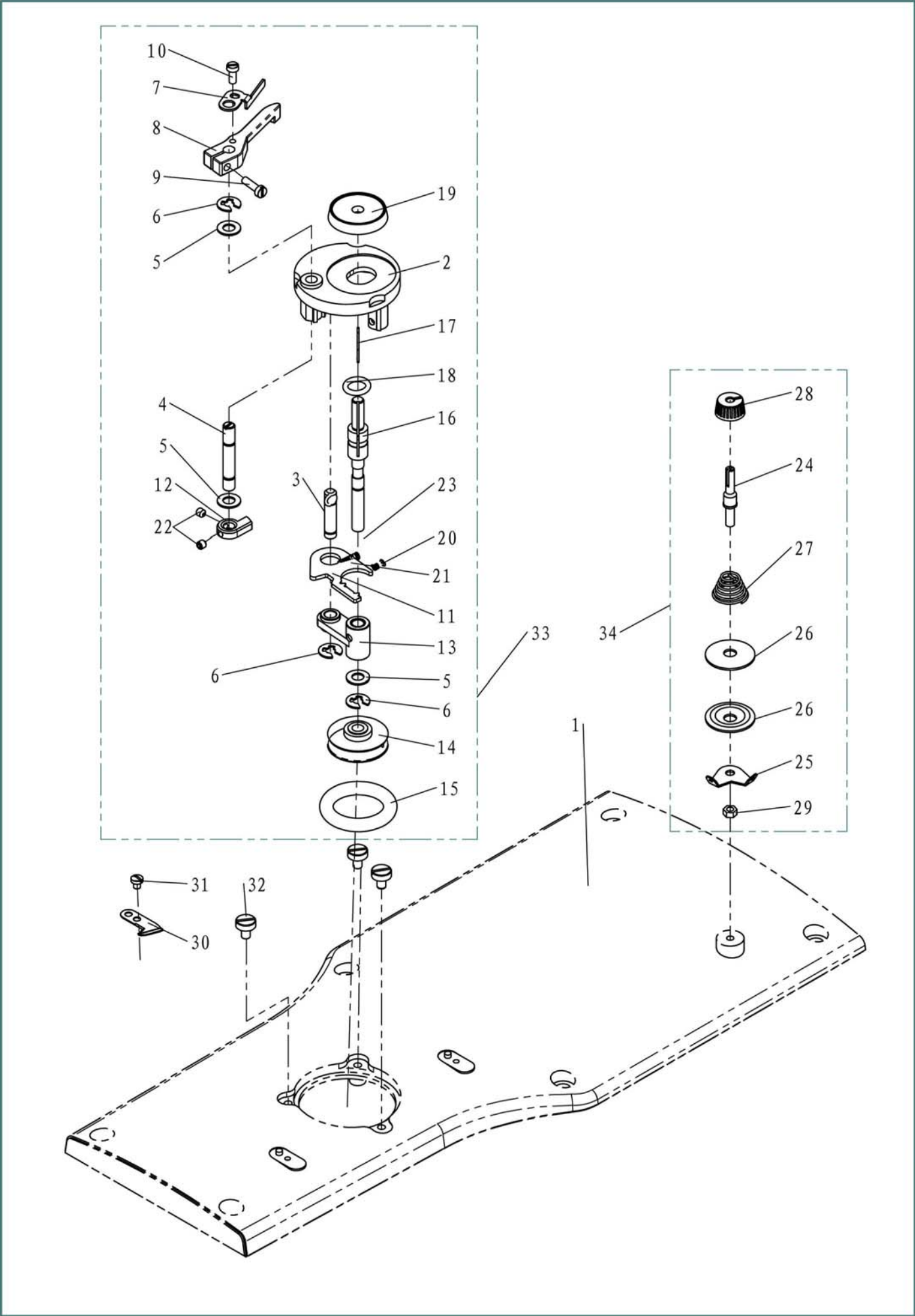
12、 盖板、罩壳部件(2)



12、盖板、罩盖部件（2）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.01-02	底座	MACHINE PLATE	1	
2	22-28404034	橡胶塞 $\phi 28.4 \times 4$	RUBBER CAP	3	
3	421.12-01	X轴运动右上盖	X MOVING UPPER COVER R	1	
4	421.12-03	X轴活动盖板	X MOVING COVER	2	
5	01-104000721-1	开槽沉头螺钉 M4X7	SCREW	16	
6	421.12-04	X轴运动盖栏杆	X MOVING COVER RAIL	4	
7	421.12-22	橡胶垫块	RUBBER BLACK	6	
8	421.12-02	X轴运动左上盖	X MOVING UPPER COVER L	1	
9	421.12-17	送料盖板	FEED COVER	2	
10	421.12-10-03	流量调节栓	OIL ADJUST PIN	1	
11	421.12-10-02	油杯密封圈	RUBBER BUSH	2	
12	421.12-10-01	油杯	OIL TAKE ASM	1	
13	01-604000821-1	开槽薄帽圆柱头螺钉 M4X8	SCREW	1	
14	01-404000823-1	十字一字槽盘头螺钉 M4X8	SCREW	12	
15	421.12-09-05	摆梭罩压簧B	HOOK COVER PRESSER SPRING B	1	
16	421.12-09-04	摆梭罩压簧A	HOOK COVER PRESSER SPRING A	1	
17	421.12-09-03	摆梭罩压簧支架销	PIN	1	
18	421.12-09-01-00	摆梭罩焊接件	HOOK COVER ASM	1	
19	421.12-09-02	摆梭罩压簧支架	HOOK COVER PRESSER SPRING BASE	(1)	
20	421.12-09-01	摆梭罩	HOOK COVER	(1)	
21	01-103000421-1	开槽沉头螺钉 M3X4	SCREW	2	
22	411.01-27	磁钢座组件	MAGNET ASM	1	
23	05-043080900-1	平垫圈 4.3	WASHER	5	
24	421.12-06	X轴电机盖	X MOTOR COVER	1	
25	421.12-08-03	安全开关板簧螺钉	SAFE SWITCH SCREW	1	
26	421.12-08-02	安全开关板簧	SAFE SWITCH PLATE SPRING	1	
27	421.12-08-04	安全开关扭簧	SAFE SWITCH SPRING	1	
28	01-402001222-1	十字槽盘头螺钉 M2X12	SCREW	2	
29	CB421-E(1310)-11	安全开关连接线	SAFE SWITCH CABLE ASM	1	
30	421.12-08-01	安全开关安装板	SAFE SWITCH PLATE	1	
31	421.12-08-05	安全开关固定板	SAFE SWITCH BASE	1	
32	01-405001023-1	十字一字槽小盘头螺钉 M5X10	SCREW	5	
33	421.12-14	针板支撑板	NEEDLE PLATE SUPPORT COVER	1	
34	421.12-36	针板右支架	COVER SUPPORT R	1	
35	421.12-43	托板缓冲垫	RUBBER	6	
36	421.12-37	针板托架	COVER BASE	2	
37	01-406000823-1	十字一字槽盘头螺钉 M6X8	SCREW	6	
38	01-404000623-1	十字一字槽盘头螺钉 M4X6	SCREW	4	
39	421.12-15	针板支架	COVER SUPPORT A	2	
40	421.12-16	针板支架(小)	COVER SUPPORT A	2	
41	01-406001023-1	十字一字槽盘头螺钉 M6X10	SCREW	4	
42	421.12-35	针板左支架	COVER SUPPORT L	1	

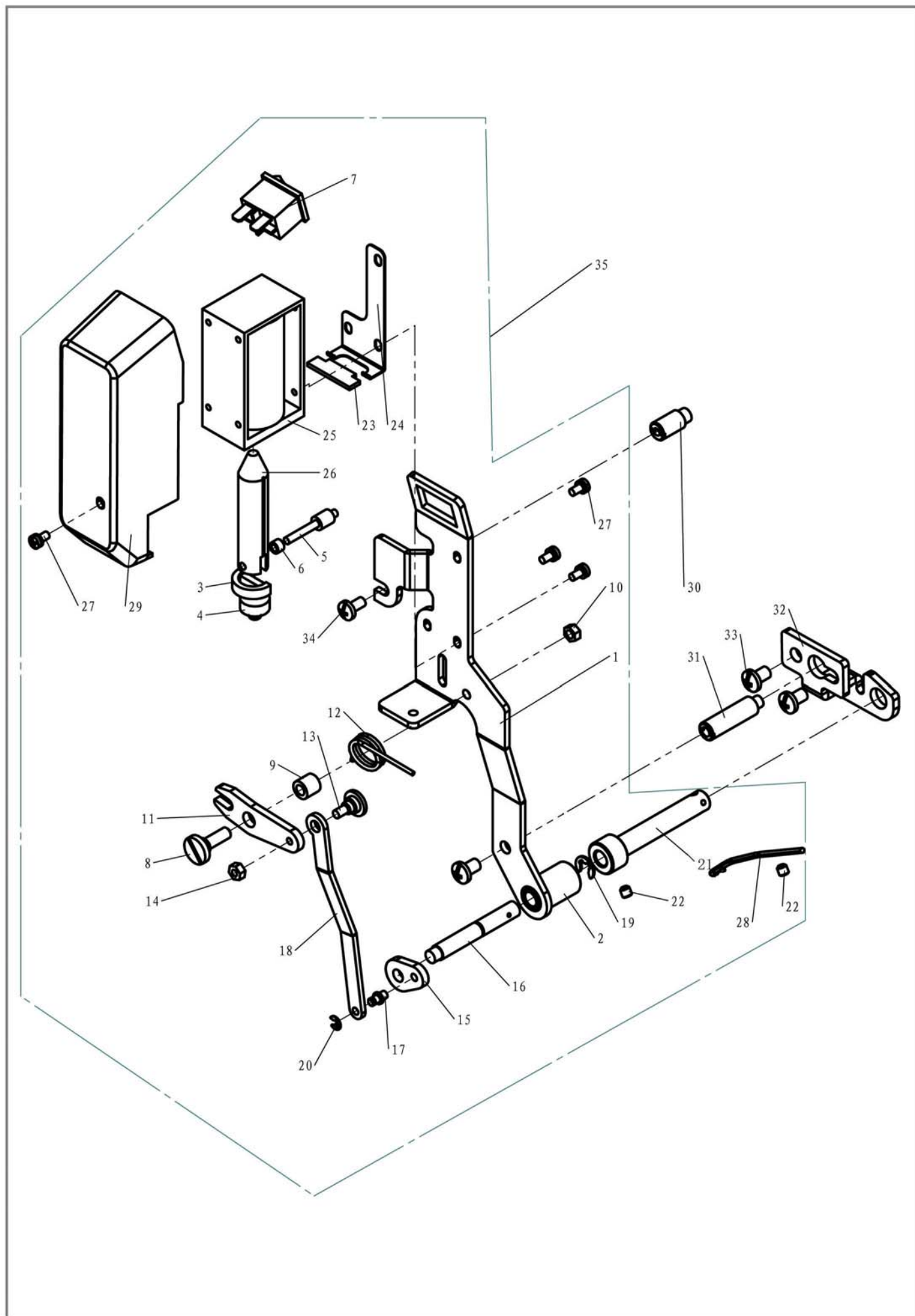
13、 绕线器组件



13、绕线器组件

序号	图 号	名 称	NAMA OF PARTS	数量	备注
1	421.01-05	上盖	TOP COVER	1	
2	102.09-32-01	绕线台	BTW BASE	1	
3	102.09-32-10	杠杆轴	BTW BASE SHAFT	1	
4	102.09-32-15	梭心夹轴	BTW LEVER SHAFT	1	
5	102.09-32-17	平垫圈	WASHER	3	
6	06-0500812-1	E型挡圈5	E-RING	3	
7	102.09-32-22	梭芯夹	BTW LEVER	1	
8	102.09-32-20	手柄	BTW LEVER BAR	1	
9	01-535001221-1	开槽圆柱头螺钉 M3.5X12	SCREW	1	
10	01-535000821-1	开槽圆柱头螺钉 M3.5X8	SCREW	1	
11	102.09-32-12	卷线杠杆	BTW CAM PLATE	1	
12	102.09-32-16	梭心夹凸轮	BTW CAM	1	
13	102.09-32-06	卷线轴基座	BTW CAM LEVER	1	
14	102.09-32-04	卷线轮	BTW WHEEL	1	
15	102.09-32-03	橡皮垫圈	BTW WHEEL RUBBER	1	
16	421.13-01	卷线轴	BTW SHAFT	1	
17	102.09-32-09	梭芯簧	BOBBIN SPRING	1	
18	102.09-32-07	O型圈 10	O-RING	1	
19	102.09-32-24	梭芯座	BTW SPACER	1	
20	102.09-32-14	短弹簧	SHORT SPRING	1	
21	102.09-32-13	长弹簧	LONG SPRING	1	
22	01-804000414-1	内六角凹端紧定螺钉 M4×4	SCREW	2	
23	102.09-32-07	O型圈 10	O-RING	1	
24	102.09-36-02-02	夹线螺钉	THREAD TENSION SHAFT SCREW	1	
25	102.09-36-02-01	调线过线板	BOBBIN THREAD GUIDE PLATE	1	
26	102.09-36-04	夹线板	THREAD TENSION DISK	2	
27	102.09-36-03	夹线簧	THREAD TENSION SPRING	1	
28	102.09-36-01	夹线螺母 SM11-64X40	NUT	1	
29	04-611400300-1	六角螺母 SM11-64X40-3	NUT	1	
30	102.09-34	切刀	KNIFE	1	
31	02-509400421-1	开槽圆柱头螺钉 SM9/64X40-4	SCREW	1	
32	02-312320722-3	开槽平圆头螺钉 SM3 / 16×32-7	SCREW	3	
33	421.13-00	421绕线器组件	BOBBIN WINDER UNIT	1套	
34	102.09-36	夹线器组件	BOBBIN THREAD TENSION ASM	1套	

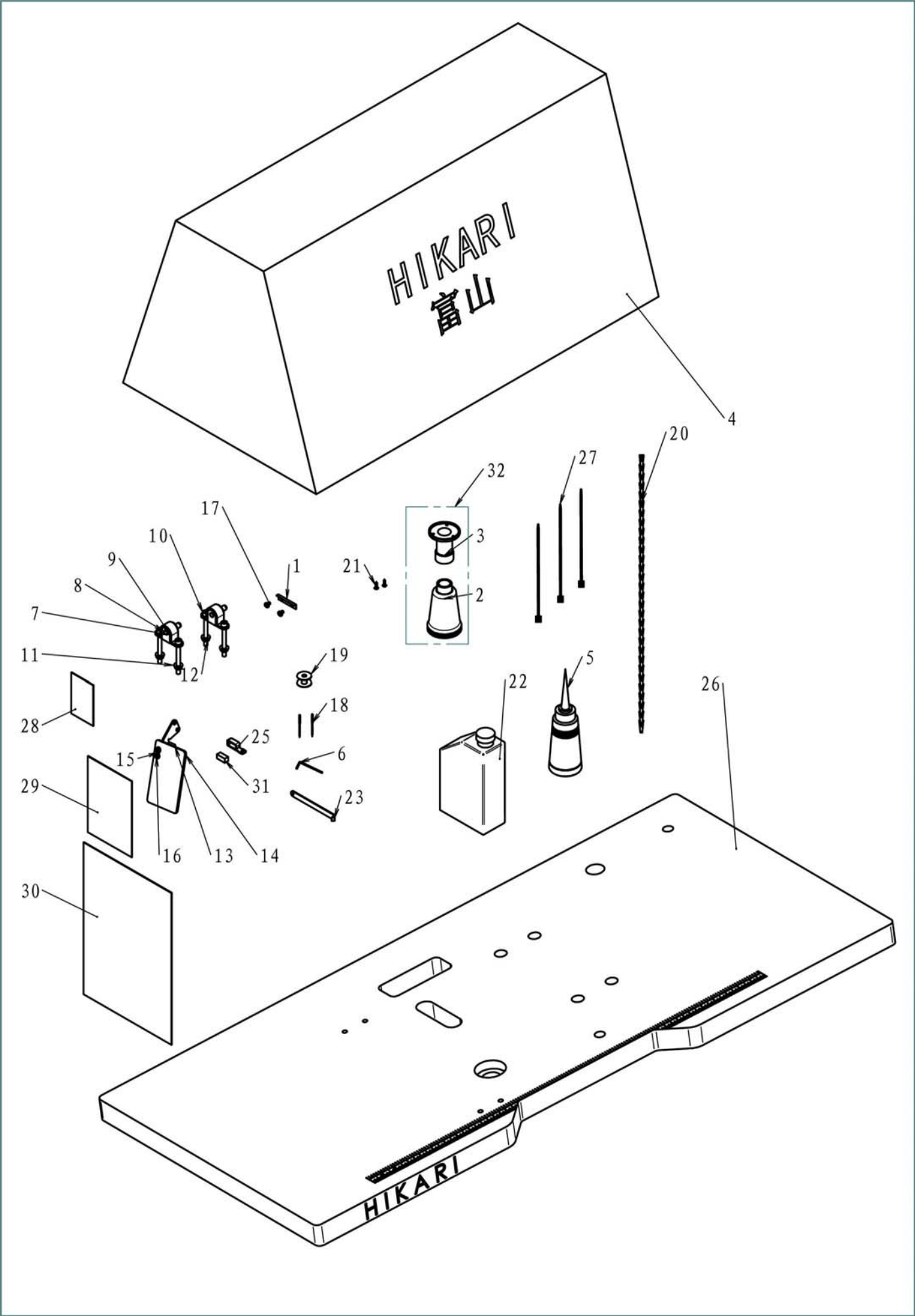
15、拨线器部件



15、拨线器部件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.15-01-04-01	拨线支架	WIPER BASE ASM	1	
2	421.15-01-04-02	拨线支架手柄	WIPER BASE BUSH	1	
3	421.15-01-07	拨线橡皮A	WIPER RUBBER A	1	
4	421.15-01-06	拨线橡皮B	WIPER RUBBER B	1	
5	421.15-01-14	拨线传感器轴	WIPER SOLENOID SHAFT	1	
6	421.15-01-15	拨线传感器轴环	WIPER LINK COLLAR	1	
7	421.15-01-20	开关	POWER SWITCH	1	
8	421.15-01-23	拨线连杆轴位螺钉	SCREW	1	
9	421.15-01-09	拨线连接轴位螺钉套	SCREW COLLAR	1	
10	04-611400300-1	六角螺母（英制）SM11/64X40-3	NUT	1	
11	421.15-01-08	拨线连接A	WIPER LINK A	1	
12	421.15-01-10	拨线弹簧	WIPER SPRING	1	
13	421.15-01-13	拨线连接A螺钉	WIPER LINK A SCREW	1	
14	04-609400300-1	六角螺母（英制）SM9/64X40-3	NUT	1	
15	421.15-01-12-02	拨线驱动轴连杆	WIPER DRIVING LINK	1	
16	421.15-01-12-01	拨线驱动轴	WIPER DRIVING SHAFT	1	
17	421.15-01-12-03	拨线驱动小轴	WIPER DRIVING PIN	1	
18	421.15-01-11	拨线连接B	WIPER LINK B	1	
19	06-0500810-1	E型挡圈 5	E-RING	1	
20	06-0250406-1	E型挡圈 2.5	E-RING	1	
21	421.15-01-02	拨线轴	WIPER SHAFT	1	
22	01-804000414-1	内六角凹端紧定螺钉 M4×4	SCREW	2	
23	421.15-01-17	橡皮	SUPPORT RUBBER	1	
24	421.15-01-16	橡皮夹	RUBBER HOLDER	1	
25	421.15-01-05-01	拨线电磁铁	WIPER SOLENOID	1	
26	421.15-01-05-02	拨线电磁铁芯	WIPER SOLENOID SHAFT	1	
27	19-403000622-1	十字盘头三组合螺钉 M3×6	SCREW	4	
28	421.15-01-01	拨针	WIPER	1	
29	421.15-01-03	拨线盖	WIPER COVER	1	
30	421.15-02	拨线器短立柱	WIPER STUD TOP	1	
31	421.15-03	拨线器长立柱	WIPER STUD BOTTOM	1	
32	421.15-04	拨线轴支架	WIPER SHAFT SUPPORT BRACKET	1	
33	01-405000823-1	十字一字槽盘头螺钉 M5X8	SCREW	3	
34	01-404000823-1	十字一字槽盘头螺钉 M4X8	SCREW	1	
35	421.15-01-00	拨线器组件	WIPER ASM	1	
36	01-404000423-1	十字一字槽盘头螺钉 M4X4	SCREW	1	

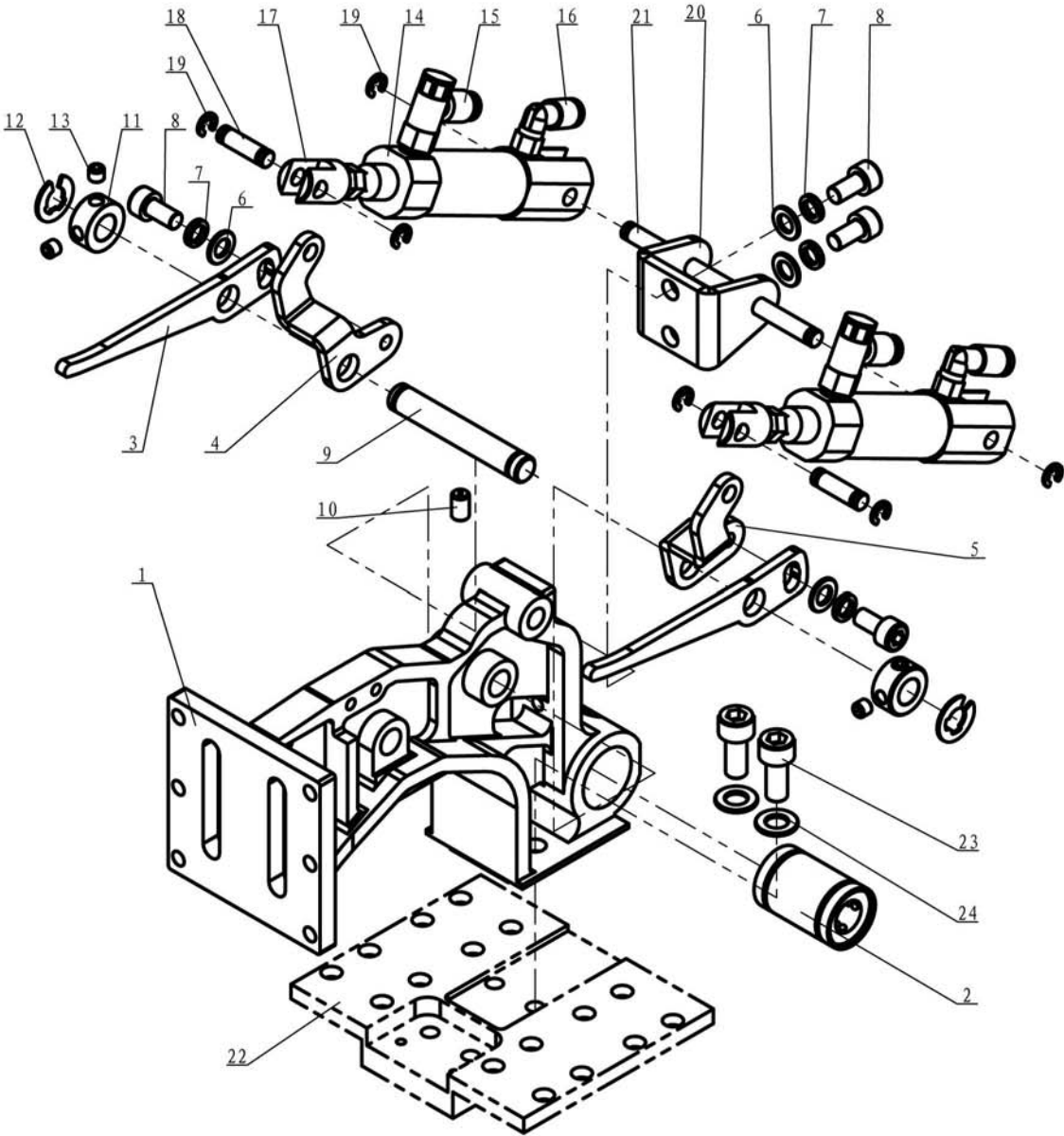
17、 附件



17、附 件

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.17-03	支架	PLASTIC PLATE STOPPER	1	
2	421.17-07-01	回油壶	OIL CAN	1	
3	421.17-07-02	回油壶座	OIL NANAGEMENT	1	
4	421.17-08	机壳罩	VINYL COVER	1	
5	103.20-50	注油壶组件	OILER	1	
6	201.22-07-08-16	有手柄内六角扳手1.5	HEXAGONAL WRENCH	1	
7	421.12-20-01	翻转脚	HINGE RUBBER	2	
8	421.12-20-02	翻转轴	HINGE SHAFT	2	
9	421.12-20-03	翻转脚夹紧圈	BED HINGE	2	
10	01-506006024-1	内六角圆柱头螺钉 M6×60	SCREW	4	
11	05-064121400-1	平垫圈 6.4	WASHER	4	
12	03-606000500-1	六角螺母 M6-5	NUT	4	
13	421.12-21-02	安全板安装架	SAFETY PLATE BASE	1	
14	421.12-21-01	安全板	SAFETY PLAT	1	
15	05-043080900-1	平垫圈 4.3	WASHER	2	
16	01-404000823-1	十字一字槽盘头螺钉 M4X8	SCREW	2	
17	01-404000623-1	十字一字槽盘头螺钉 M4X6	SCREW	2	
18	421.02-37	机针 DPx17 #14	NEEDLE	2	
19	421.05-07	梭芯（大）	BOBBIN	1	
20	201.22-07-08-12	链	CHAIN	1	
21	20-3291032-3	十字盘头自攻螺钉 ST2.9X9.5	SCREW	2	
22	101.14-10	油罐组件(装满白油)	OIL TANK ASSY	1	
23	421.17-06	一字弯头旋具	DRIVER	1	
24	421.02-21	针杆过线钩（厚料）	NEEDLE BAR SHREAD GUIDE H	1	
25	421.12-32	左线勾	THREAD GUIDE L	1	
26	421.17-01-02	台板	TABLE	1	
27	101.02-22	尼龙扎带 2.4X80	CLIP	3	
28	30008960	自封袋 3#（10×7）	BAG 3#	1	
29	30008961	自封袋 6#（12×17）	BAG 6#	1	
30	30024163	自封袋 10#（24×30）	BAG 10#	1	
31	421.12-45	左线钩毛毡	FILT	1	
32	421.17-07-00	回油壶组件	OIL TANK ASM	1	

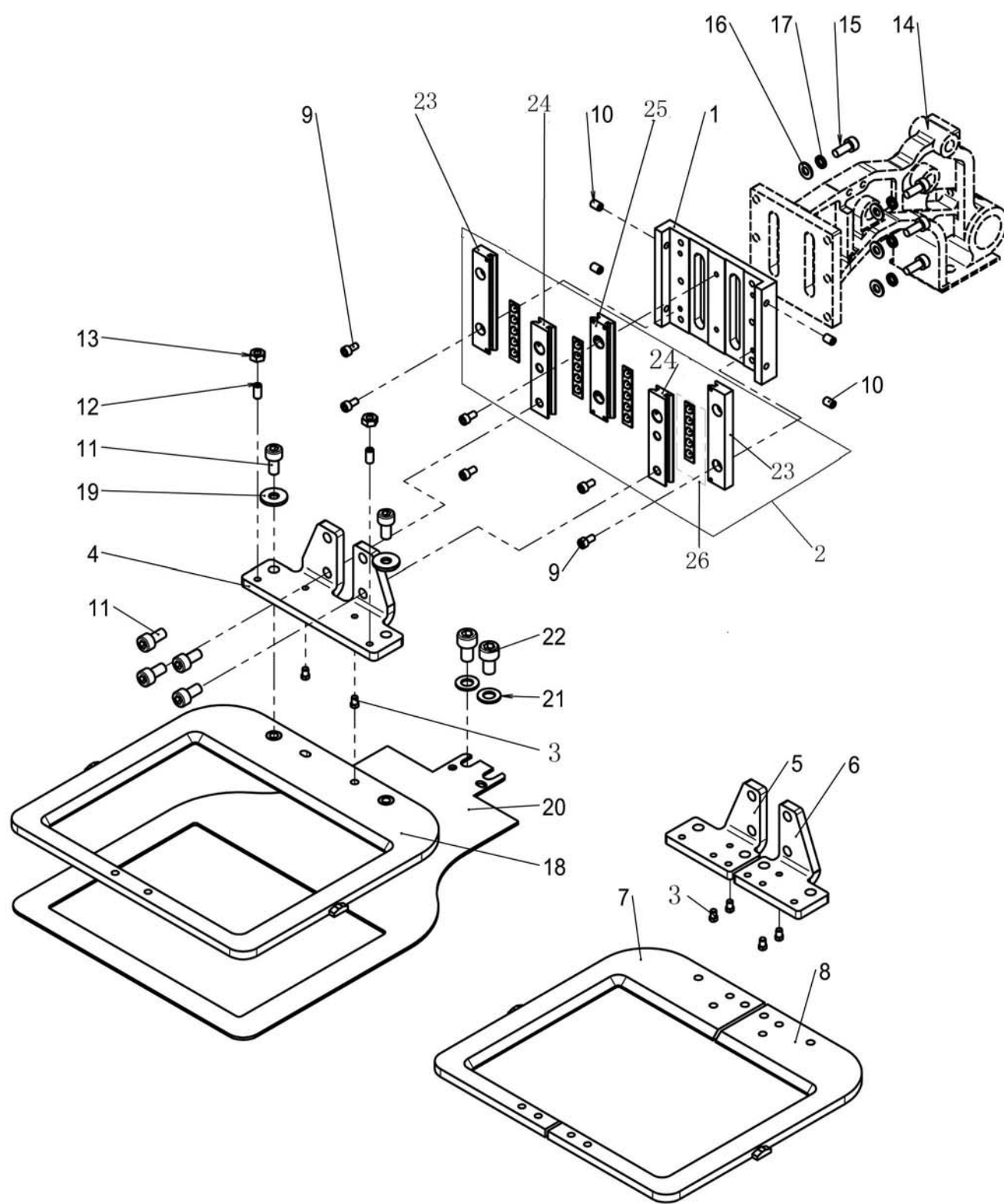
19、送料装置（气动）



19、送料装置（气动）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421. 11-01	送料托架	FEED BRACKET	1	
2	14-LB101929-2Z	直线轴承10X19X29	BEARING	1	
3	421. 19-01	提升杆	LINK PLATE	2	
4	421. 19-02	提升驱动杆（左）	DRIVING LINK L	1	
5	421. 19-03	提升驱动杆（右）	DRIVING LINK R	1	
6	05-053101000-1	平垫片 5.3×1.0×10	WASHER	4	
7	07-0521313-1	弹簧垫圈5	SPRING WASHER	4	
8	01-505001024-1	内六角圆柱头螺钉 M5×10	SCREW	4	
9	421. 11-15	销轴	PIN SHAFT	1	
10	01-805000814-1	内六角凹端紧定螺钉M5×8	SCREW	1	
11	421. 11-18	挡圈7	COLLAR 7	2	
12	06-0700814-1	E型挡圈7	E-RING	2	
13	02-811400414-1	内六角凹端紧定螺钉 SM11 / 64X40-4	SCREW	4	
14	71-CJ2D16-15Z	气缸16-15（标准型）	AIR CYLINDER	2	
15	73-AS1201F-M5-04A	速度控制阀 M5XΦ4	HOSE ELBOW	2	
16	72-KQ2L04-M5A	快换接头（L型）M5XΦ4	HOSE ELBOW L	2	
17	421. 19-05	气缸接头	KNUCKLE	2	
18	421. 19-04	短销 5	SHORT SHAFT	2	
19	06-0400809-1	E型挡圈4	E-RING	6	
20	421. 19-07	气缸支架	CYLINDER BASE	1	
21	421. 19-06	长销 5	LONG SHAFT	1	
22	421. 10-04	送料托架座	FEED BRACKET BASE	1	
23	01-506001424-1	内六角圆柱头螺钉 M6×14	SCREW	2	
24	05-063101201-1	平垫片 6.3×1.0×12	WASHER	2	

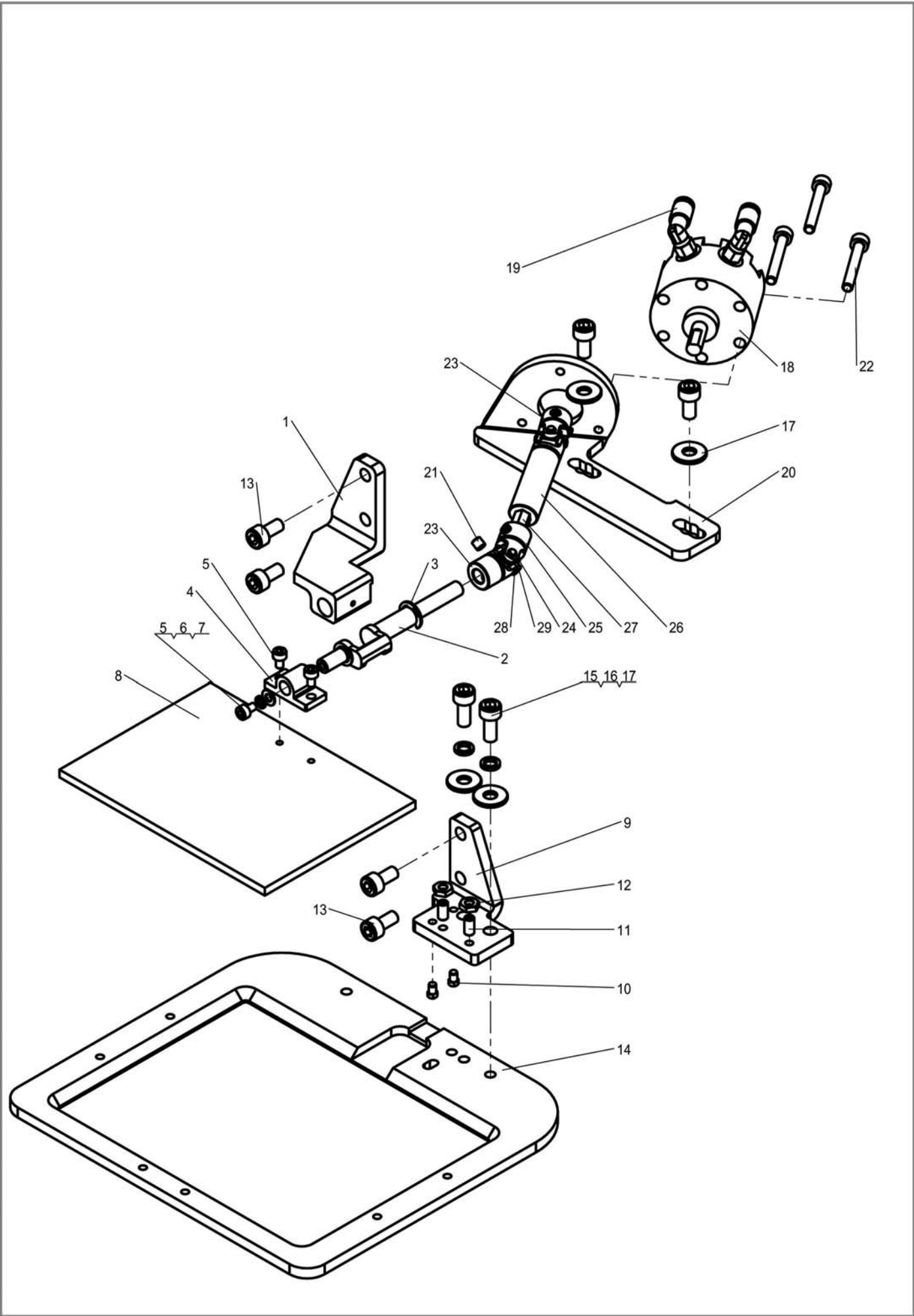
20、外压脚部件 (导轨式)



20、外压脚部件（导轨式）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421. 20-01	导轨座	WORK CLAMP FOOT PLATE	1	
2	421. 20-02-00	外压脚导轨组件	WORK CLAMP FOOT GUIDE ASM	1套	
3	421. 20-03-02	框架定位销	PIN	6	
4	421. 20-03-01	外压脚连接板	WORK CLAMP FOOT	1	
5	421. 20-10-00	外压脚分离连接板（左）组件	WORK CLAMP FOOT ASM L	1	
6	421. 20-11-00	外压脚分离连接板（右）组件	WORK CLAMP FOOT ASM R	1	
7	421. 20-12	分离式上压板（左）	FEEDING FRAME L	1	
8	421. 20-13	分离式上压板（右）	FEEDING FRAME R	1	
9	01-503000624-1	内六角圆柱头螺钉 M3X6	SCREW	6	
10	01-804000614-1	内六角凹端紧定螺钉M4×6	SCREW	4	
11	01-505001024-1	内六角圆柱头螺钉 M5×10	SCREW	6	
12	01-804000814-1	内六角凹端紧定螺钉M4×8	SCREW	2	
13	03-604000320-1	六角螺母 M4-3. 2	NUT	2	
14	421. 11-01	送料托架	FEED BRACKET	1	
15	01-504001024-1	内六角圆柱头螺钉 M4X10	SCREW	6	
16	05-043080900-1	平垫圈 4. 3	WASHER	6	
17	07-0421111-1	弹簧垫圈4	SPRING WASHER	6	
18	421. 20-04	框架上压板（1310X100）	FEEDING FRAME	1	
19	05-052151400-1	平垫圈 5. 2	WASHER	2	
20	421. 20-05	框架下压板	LOWER PLATE	1	
21	05-063101201-1	平垫圈 6. 3	WASHER	2	
22	01-506001024-1	内六角圆柱头螺钉 M6×10	SCREW	2	
23	421. 20-02-01	外压脚导轨A	WORK CLAMP FOOT GUIDE A	2	
24	421. 20-02-02	外压脚导轨B	WORK CLAMP FOOT GUIDE B	2	
25	421. 20-02-03	外压脚导轨C	WORK CLAMP FOOT GUIDE A	1	
26	421. 20-02-04-00	导轨滑条	MOVE BAR	4	

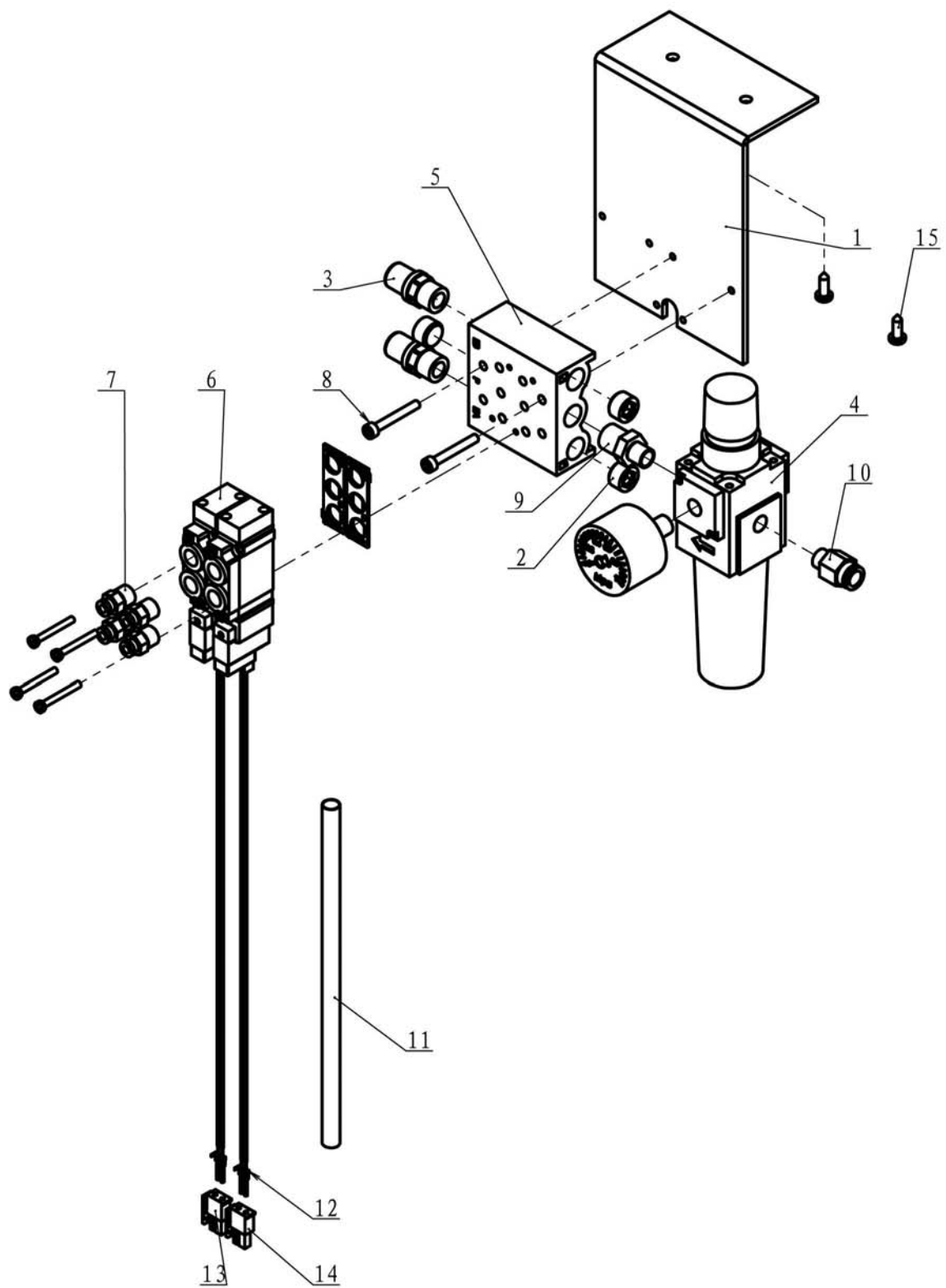
24B、翻转压脚装置 (摆动式)



24B、翻转压脚装置（摆动式）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.24-60-01	翻转压脚连接板（左）	INNER PRESSER SLIDE PLATE L	1	
2	421.24-60-02	翻转轴	TURN AROUND CRANK SHAFT	1	
3	06-0600812-1	E型挡圈 $6 \times 0.8 \times 12$	E-RING	1	
4	421.24-10-04	翻转压板连接块	TURN BASE	1	
5	01-503000524-1	内六角圆柱头螺钉 $M3 \times 5$	SCREW	3	
6	07-0321010-1	弹簧垫圈 $3.2 \times 1.0 \times 1.0$	SPRING WASHER	1	
7	05-032050700-1	平垫片 $3.2 \times 0.5 \times 7$	WASHER	1	
8	421.24-09-01	翻转压板	TURN PLATE	1	
9	421.24-51	翻转压脚连接板（右）	INNER PRESSER SLIDE PLATE R	1	
10	421.20-03-02	框架定位销	PIN	2	
11	01-804000814-1	内六角凹端紧定螺钉 $M4 \times 8$	SCREW	2	
12	03-604000220-4	六角螺母 $M4-2.2$	NUT	2	
13	01-505001024-1	内六角圆柱头螺钉 $M5 \times 10$	SCREW	6	
14	421.24-52	翻转压脚上压板（1310X100）	TURN FEEDING FRAME	1	
15	01-505001224-1	内六角圆柱头螺钉 $M5 \times 12$	SCREW	2	
16	07-0521313-1	弹簧垫圈 $5.2 \times 1.3 \times 1.3$	SPRING WASHER	2	
17	05-052151400-1	平垫片 $5.2 \times 1.5 \times 14$	WASHER	4	
18	71-CRB2BW20-180SE（SMC）	摆动气缸20-180°（标准型）	AIR CYLINDER	1	
19	72-KQ2L04-M5A	快换接头（L型） $M5 \times \Phi 4$	HOSE ELBOW L	2	
20	421.24-54	气缸座	CYLINDER BASE	1	
21	01-804000414-1	内六角凹端紧定螺钉 $M4 \times 4$	SCREW	6	
22	01-504003024-1	内六角圆柱头螺钉 $M4 \times 30$	SCREW	3	
23	421.24-53-01	万向接头 A	JOINT A	2	
24	421.24-53-03	万向传动块	CONNECTING BRACKET	2	
25	421.24-53-07	万向接头 C	JOINT C	1	
26	421.24-53-02	万向接头B	JOINT B	1	
27	421.24-53-04	传动连接轴	CONNECTING SHAFT	1	
28	421.24-53-05	长销 3	LONG PIN	2	
29	421.24-53-06	短销 3	SHORT PIN	4	

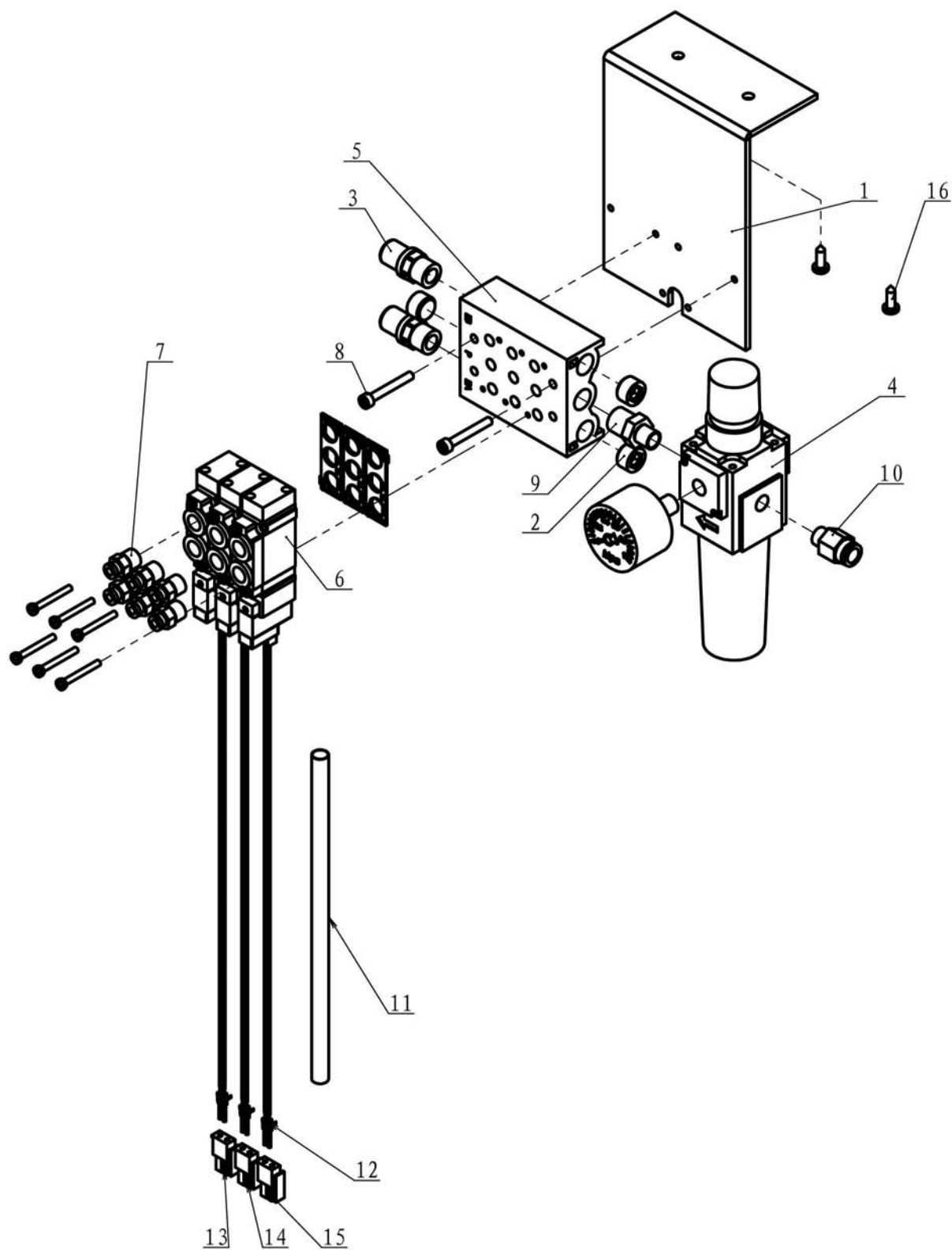
25B、气动驱动源装置（二联阀）



25B、气动动力源驱动装置（二联阀）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.25-01	电磁阀底座支架	SOLENDID VALVE PLATE	1	
2	76-PLUG 1/4	堵头 R1/4'	SCREW	2	
3	79-AN15-02	消音器 R1/4'	SILENCER	2	
4	78-AW20-02BCG (SMC)	空气洁净器（带压力表）R1/4	FILTER REGULATOR ASM	1	
5	75-SS5Y5-20-02 (SMC)	电磁阀底座（二联阀）组件	SOLENDID VALVE BASE	1	
6	74-SYS5120-5GD-01 (SMC)	电磁阀（二位五通）	SOLENDID VALVE	2	
7	72-KQ2H04-01AS	快换接头 R1/8' XΦ4	HOSE ELBOW	4	
8	01-504003024-1	内六角圆柱头螺钉 M4×30	SCREW	2	
9	77-DSTRN-2-2	接头 R1/4' —R1/4'	UNION	1	
10	72-KQ2H08-02S	快换接头 R1/4' XΦ8	HOSE ELBOW	1	
11	30025552	热缩管 Φ7	BUSH	2	
12	CB421-E(1310)-20	MOLEX对接插芯	PIN	4	
13	XP-5557-02R-B (PMOLEX)	对接插头2 (PMOLEX)（蓝）	PLUG	1	
14	XP-5557-02R-R	对接插头2P (MOLEX)（红）	PLUG	1	
15	20-4421332-4	十字槽盘头自攻螺钉 ST4.2×13	SCREW	2	

25C、气动驱动源装置（三联阀）



25C、气动动力源驱动装置（三联阀）

序号	图 号	名 称	NAME OF PARTS	数量	备注
1	421.25-01	电磁阀底座支架	SOLENDID VALVE PLATE	1	
2	76-PLUG 1/4	堵头 R1/4'	SCREW	2	
3	79-AN15-02	消音器 R1/4'	SILENCER	2	
4	78-AW20-02BCG (SMC)	空气洁净器（带压力表）R1/4	FILTER REGULATOR ASM	1	
5	75-SS5Y5-20-03 (SMC)	电磁阀底座（三联阀）组件	SOLENDID VALVE BASE	1	
6	74-SYS5120-5GD-01 (SMC)	电磁阀（二位五通）	SOLENDID VALVE	3	
7	72-KQ2H04-01AS	快换接头 R1/8' XΦ4	HOSE ELBOW	6	
8	01-504003024-1	内六角圆柱头螺钉 M4×30	SCREW	2	
9	77-DSTRN-2-2	接头 R1/4' —R1/4'	UNION	1	
10	72-KQ2H08-02S	快换接头 R1/4' XΦ8	HOSE ELBOW	1	
11	30025552	热缩管 Φ7	BUSH	1	
12	CB421-E(1310)-20	MOLEX对接插芯	PIN	6	
13	XP-5557-02R-B1	对接插头2P (MOLEX) (黑)	PLUG	1	
14	XP-5557-02R-B (PMOLEX)	对接插头2 (PMOLEX) (蓝)	PLUG	1	
15	XP-5557-02R-R	对接插头2P (MOLEX) (红)	PLUG	1	
16	20-4421332-4	十字槽盘头自攻螺钉 ST4.2×	SCREW	2	

SC400 (210E)

电子花样机—触摸屏式

版本号：2013-06

前 言

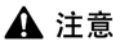
欢迎您使用本公司的特种缝纫机控制系统。

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

安全注意事项

1. 安全操作的标志及含义

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

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

2. 安全注意事项

 危险	
	打开控制箱时，先关闭电源开关并将电源插头从插座上拔下后，等待至少 5 分钟后，再打开控制箱盖。触摸带有高电压的区域会造成人员受伤。
 注意	
使用环境	
	应避免在强电气干扰源（如高频焊机）的附近使用本缝纫机。 强电气干扰源可能会影响缝纫机的正常操作。
	电源电压的波动应该在额定电压的±20%以内的环境下使用。 电压大幅度的波动会影响缝纫机的正常操作，需配备稳压器。
	环境温度应在 5℃~35℃的范围内使用。 低温或高温会影响缝纫机的正常操作。
	相对湿度应在 45%~85%的范围内，并且设备内不会形成结露的环境下使用。 干燥、潮湿或结露的环境会影响缝纫机的正确操作。
	压缩空气的供气量应大于缝纫机所要求的总耗气量。压缩空气的供气量不足会导致缝纫机的动作不正常。
	万一发生雷电暴风雨时，关闭电源开关，并将电源插头从插座上拔下。雷电可能会影响缝纫机的正确操作。
安装	
	请让受过培训的技术人员来安装缝纫机。

	安装完成前，请不要连接电源。 如果误按启动开关，缝纫机动作会导致受伤。
	缝纫机头倒下或竖起时，请用双手操作。不要用力压缝纫机。 如缝纫机失去平衡，缝纫机滑落到地上会造成受伤或机器损坏。
	必须接地。 接驳地线不牢固，是造成触电或误动作的原因。
	所有电缆应固定在离活动部件至少 25mm 以外处。另外，不要过度弯曲或用卡钉固定得过紧。会引起火灾或触电的危险。
	请在机头上安装安全罩壳。

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

目录

1 概要说明.....	1
1.1 概述.....	1
1.2 功能和指标参数.....	1
1.3 标准化.....	2
1.4 操作方式.....	2
2 操作说明.....	3
2.1 通用按键.....	3
2.2 基本操作.....	4
2.3 普通花样操作.....	5
2.4 花样登记.....	8
2.5 花样命名.....	9
2.6 中压脚设置.....	9
2.7 线张力设置.....	10
2.8 绕线.....	11
2.9 花样选择.....	12
2.10 缝纫数据设定.....	14
2.11 P 花样登记.....	15
2.12 试缝操作.....	16
2.13 移框操作.....	18
2.14 计数器操作.....	18
2.15 单针中压脚设置.....	19
2.16 单针线张力设置.....	20
2.17 急停.....	22
3 快捷 (P) 花样操作.....	24
3.1 P 花样数据输入.....	24
3.2 P 花样编辑.....	26
3.3 P 花样复制.....	27
3.4 P 花样选择.....	28
3.5 P 花样缝制.....	29
4 组合 (C) 花样操作.....	32
4.1 C 花样数据输入.....	32
4.2 C 花样编辑.....	33
4.3 C 花样选择.....	35
4.4 C 花样缝制.....	36
5 花样图案编辑.....	38
5.1 进入花样编辑模式.....	38
5.2 花样编辑.....	41
5.3 退出花样编辑模式.....	46
6 信息功能.....	48
6.1 维修检查信息.....	48
6.2 输入维修保养时间.....	49
6.3 警告的解除方法.....	51

6.4 生产管理信息.....	51
6.5 生产信息管理设定.....	53
6.6 显示穿线图.....	57
6.7 报警记录.....	58
6.8 运转记录.....	58
6.9 分期密码设置.....	59
7 通讯功能.....	65
7.1 关于可以处理的数据.....	65
7.2 功能操作.....	66
7.3 花样传输.....	66
7.3.1 U 盘花样导入操作.....	67
7.3.2 操作面板花样导出操作.....	69
7.4 参数传输.....	70
7.5 软件升级.....	71
8 模式和参数设置.....	73
8.1 进入模式和参数设置.....	73
8.2 一级参数设置.....	75
8.2.1 一级参数表.....	77
8.3 二级参数设置.....	83
8.3.1 二级参数表.....	83
8.4 计数器设置.....	86
8.5 变换缝制类型.....	87
8.6 进入花样编辑.....	87
8.7 格式化.....	88
8.8 软件版本查询.....	90
8.9 键盘锁定.....	91
8.10 参数备份还原.....	92
8.11 检测模式.....	93
8.12 花样编辑参数设置.....	101
8.13 字母绣编辑.....	102
8.13.1 字母绣参数设置.....	102
8.13.2 字母绣花样调整.....	108
8.14 气动左右分离压脚.....	112
9 附录 1.....	114
9.1 报警信息一览表.....	114
9.2 信息提示一览表.....	115
10 附录 2.....	120
10.1 电控箱安装尺寸.....	120
10.2 操作箱安装尺寸.....	121
10.3 SC400-2E/X 触摸屏式电子花样机系统框图.....	122
10.4 SC400-2E/X-LE 触摸屏式电子花样机系统框图.....	123
10.5 SC400-2E/B-SM(210E-1510)触摸屏式电子花样机系统框图.....	124
10.6 SC400-2E/B-LM(210E-3020)触摸屏式电子花样机系统框图.....	125

1 概要说明

1.1 概述

SC400 系列工业缝纫机电脑控制系统，主轴电机采用具有世界先进水平的交流伺服控制技术驱动，具有力矩大、效率高、车速稳定和噪音低等特点。操作面板设计多样化可满足不同客户的配套要求；系统采用德国式结构设计，安装和维修方便快捷，系统控制软件可通过远程通讯升级，方便用户不断提高产品性能。

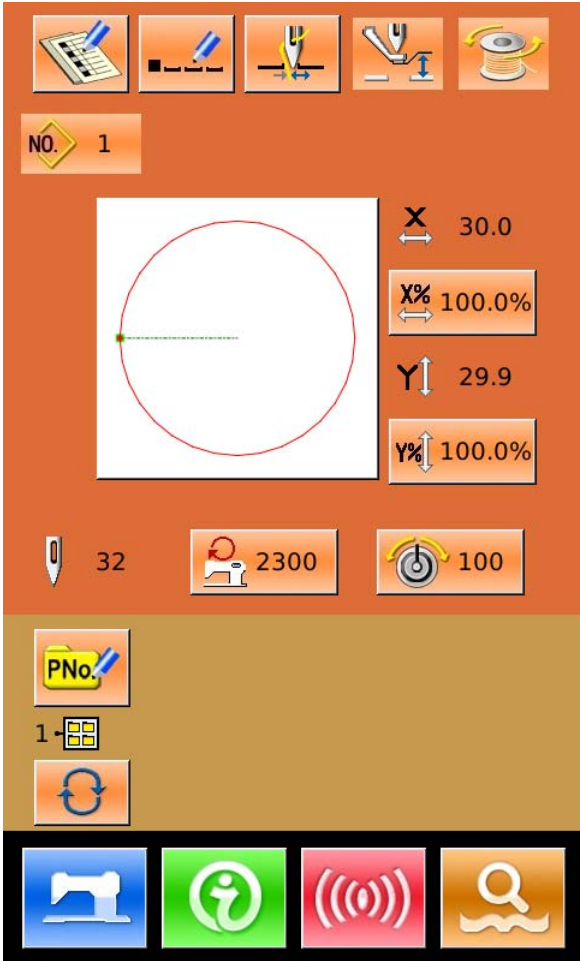
1.2 功能和指标参数

控制器型号	SC400 系列电子花样机		
缝制范围	X(左右)方向		Y (前后方向)
	130	x	60
	150	x	100
	220	x	100
	300	x	200
最高缝纫速度	2800rpm (间距 3mm 以下时)		
缝迹长度	0.1~12.7mm (最小分辨率 0.05mm)		
压脚送布	间断送布 (脉冲马达双轴驱动方式)		
针杆行程	41.2mm		
使用机针	DP×5、DP×17		
外压脚上升量	最大 25mm (气动式最大 30mm)		
中压脚行程	标准 4mm (0~10mm)		
中压脚上升量	20mm		
旋梭	半旋转倍旋梭		
花样数据的记忆	U 盘		
暂停功能	在缝制途中可以让缝纫机停止		
放大、缩小功能	可以选择缝迹缝制花样时，可以独立地放大缩小 X、Y 轴。 1%~400% (0.1%单位)		
放大、缩小方式	增减缝迹长度方式		
缝纫速度限制	200~2800rpm (100rpm 单位)		
花样选择功能	花样号选择方式		
底线计数器	加数计数/减数计数方式 (0~9999)		
缝制计数器	加数计数/减数计数方式 (0~9999)		
第二原点的设定	用微动开关可以把缝制后的针位置移动到缝制范围内的任意位置设定为第 2 原点。		
缝纫机马达	伺服马达		
针杆上死点停止功能	缝制后，可以让针杆返回到上死点位置。		

功率	500W
电源电压	AC220-240V

1.3 标准化

功能按键采用业界公认的图形标识，图形是国际化语言，各国用户都可以识别。



1.4 操作方式

SC400 触摸屏操作面板采用了业界先进的触摸操作技术，友好的界面以及便捷的操控都给用户的日常使用带来革新性的变化。用户可以使用手指或者其他物体点触屏幕，完成相应的操作。用户在使用过程中应该注意避免使用尖锐的物体触碰屏幕，以免对触摸屏造成永久性损伤

2 操作说明

2.1 通用按键

在 SC400 的各界面上进行通用操作的按键如下：

序号	图标	功能
1		取消键 → 退出当前设定界面/数据变更时，取消变更中的数据。
2		确定键 → 确定变更了的数据。
3		加键 → 向上增加数值。
4		减键 → 向下减小数值。
5		复位键 → 解除异常。
6		输入键 → 显示数字键盘，可以进行数字的输入。
7		准备键 → 进行数据输入界面和缝制界面的切换。
8		信息键 → 进行数据输入界面和信息界面的切换。
9		通信键 → 进行数据输入界面和通信界面的切换。
10		模式键 → 进行数据输入界面和各种详细设定界面的切换。

2.2 基本操作

① 打开电源开关

打开电源之后，显示出数据输入界面。

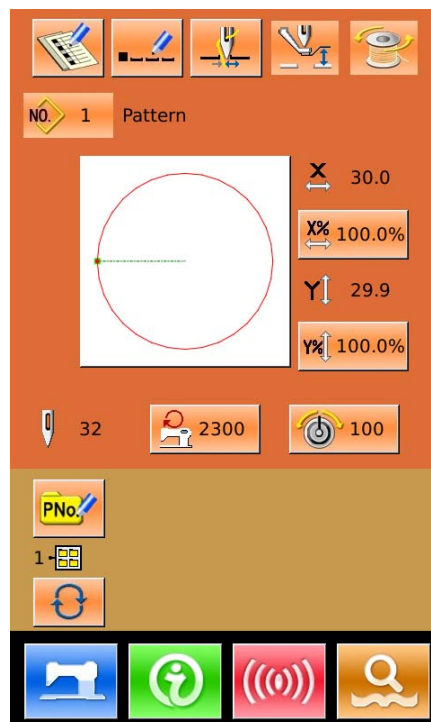
② 选择想缝制的图案 No.

当前界面下会显示出已选择的图案No.，按下花样



显示按键之后可以选择图案No.。

有关花样选择的操作，详见【2.8 花样选择】一节。

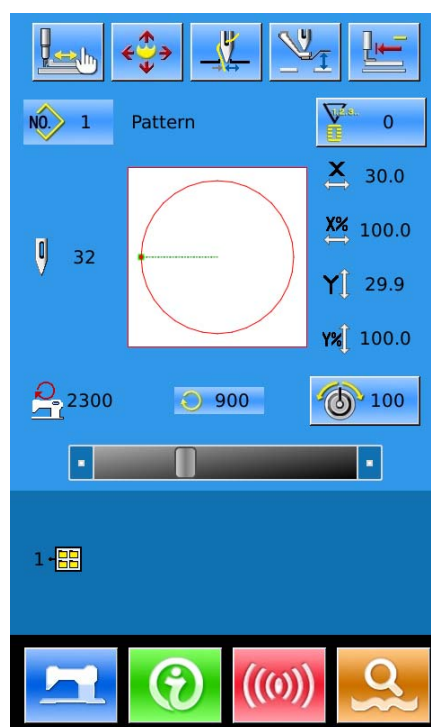


③ 设定成可以缝制的状态

按准备键之后，液晶显示的背景颜色变为蓝色，变成可以缝制的状态。

④ 开始缝制

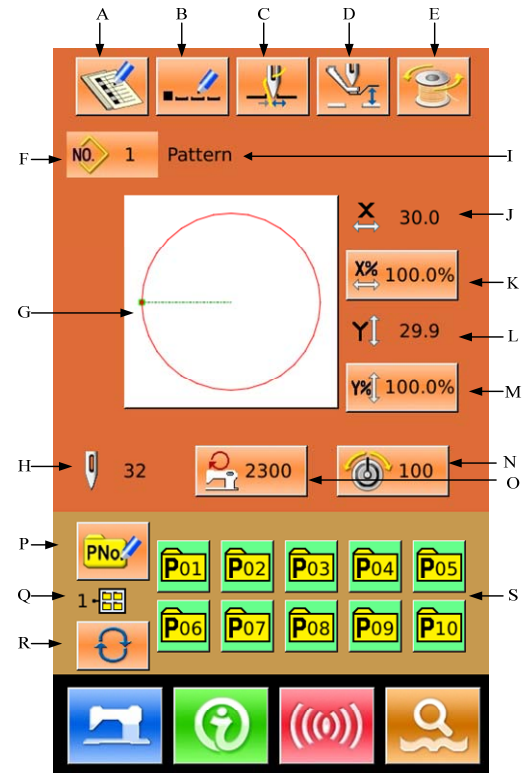
把缝制品安放到压脚部，踩踏板落下压脚，缝纫机启动，开始进行缝制。



2.3 普通花样操作

(1) 缝制数据输入界面

数据输入界面如右图所示，详细功能说明请见功能键说明表。



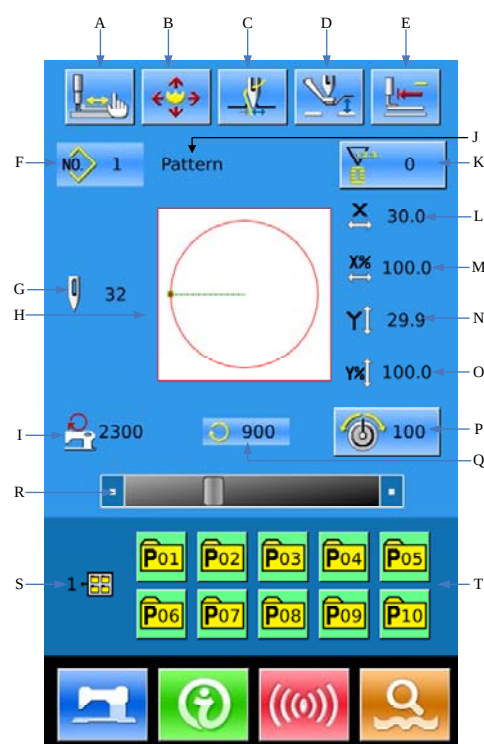
功能说明：

序号	功能	内容
A	花样登记	可以登记 999 个普通花样。
B	花样命名	最多可以输入 14 个字符。
C	抓线按键	选择抓线的有效/无效。受 U35 参数影响。  ：抓线无效（按键凸起）  ：抓线有效（按键凹下）
D	中压脚设定	进入中压脚高度设置界面。 按下一次准备键  之后方可进入。
E	绕线	进入绕线界面。 按下一次准备键  之后方可绕线。
F	花样号码显示	显示当前选择花样号码。
G	缝制形状选择	按键上显示为当前花样缝制形状，按下之后进入花样选择界面。
H	花样针数显示	显示当前选择花样缝纫针数。
I	花样名称	显示当前选择花样名称。
J	X 实际尺寸值显	显示当前选择花样的 X 方向实际尺寸值。

	示	通过参数 U64 可以选择输入实际尺寸，此时显示出 X 实际尺寸值按键。
K	X 放大缩小率设定	按键上显示当前选择花样的 X 方向放大缩小率，按下之后进入设置界面。受参数 U64 和 U88 影响。
L	Y 实际尺寸值显示	显示当前选择花样的 Y 方向实际尺寸值。 通过参数 U64 可以选择输入实际尺寸，此时显示出 Y 实际尺寸值按键。
M	Y 放大缩小率设定	按键上显示当前选择花样的 Y 方向放大缩小率，按下之后进入设置界面。受参数 U64 和 U88 影响。
N	线张力设定	显示线张力的基准值，按下之后进行设置。
O	最高转速限制	显示最高转速限制值，按下之后可进行设置。
P	快捷花样（简称 P 花样）登记	用于登记 P 花样，最多登记 50 个。
Q	P 花样文件夹号码显示	显示当前 P 花样文件夹号码。
R	P 花样文件夹选择	顺序切换 P 花样文件夹号码。
S	P 花样选择	显示出已登记的 P 花样，按下之后进入 P 花样数据输入界面。 初期状态不显示该按键。

（2）缝制界面

按下  进入缝制界面如右图所示。详细功能说明请见功能键说明表。



功能说明:

序号	功能	内容
A	抓线按键	选择抓线的有效/无效。受 U35 参数影响。  : 抓线无效 (按键凸起)  : 抓线有效 (按键凹下)
B	试缝	按下后进入试缝界面, 可以确定花样形状。
C	移框	按下后外压脚下降, 进入花样移动界面。 受参数 U89 影响。
D	中压脚设定	按下之后进入中压脚高度设置界面。
E	原点复位	按下后压脚返回起缝点。
F	花样号码显示	显示当前选择花样号码。
G	花样针数显示	显示当前选择花样缝纫针数。
H	花样形状显示	显示当前选择花样形状。
I	最高转速限制显示	显示最高转速限制值。
J	花样名称	显示当前选择花样名称。
K	计数器设置	按下后可以选择计数器类型和设置当前计数值。  : 缝制计数器  : 计件计数器
L	X 实际尺寸值显示	显示当前选择花样的 X 方向实际尺寸值。
M	X 放大缩小率设定	显示当前选择花样的 X 方向放大缩小率。
N	Y 实际尺寸值显示	显示当前选择花样的 Y 方向实际尺寸值。
O	Y 放大缩小率设定	显示当前选择花样的 Y 方向放大缩小率。
P	线张力设定	显示线张力的基准值, 按下之后进行设置。
Q	缝纫速度显示	显示当前缝纫速度。

R	缝纫速度设置	可以变更缝纫速度。
S	P 花样文件夹号码显示	显示当前 P 花样文件夹号码。
T	P 花样选择	显示出已登记的 P 花样，按下之后进入 P 花样缝制界面。初期状态不显示该按钮。

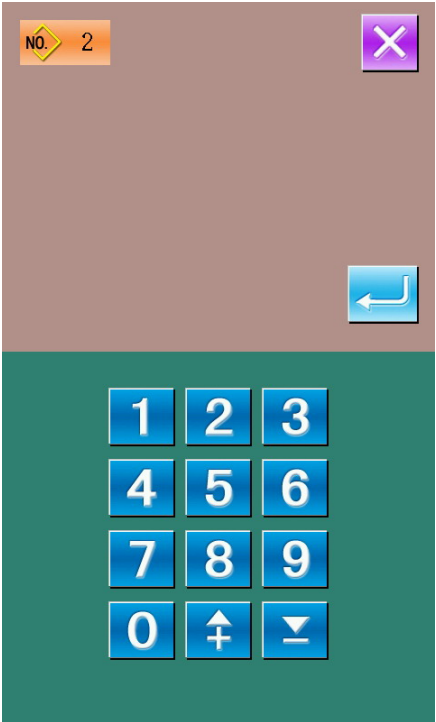
2.4 花样登记

最多可以登记普通花样 999 个。按下  进入花样登记界面（如右图所示）：

① 输入花样号

通过数字键可以选择想要输入的花样号码，如果输入了已经存在的花样号码，界面上方会显示出被登记的缝制形状及相关数据。

通过   键可以检索未登记的花样号码。



② 登记新花样

确定花样号码后按下 ，之前显示花样数据会复制到新登记花样中，操作结束后返回到新登记花样数据输入界面。

如果输入了已经存在的花样号码会提示是否覆盖已存花样。

2.5 花样命名

按下  进入花样命名界面(如右图所示), 最多可以输入 14 个字符。

 : 光标右移键

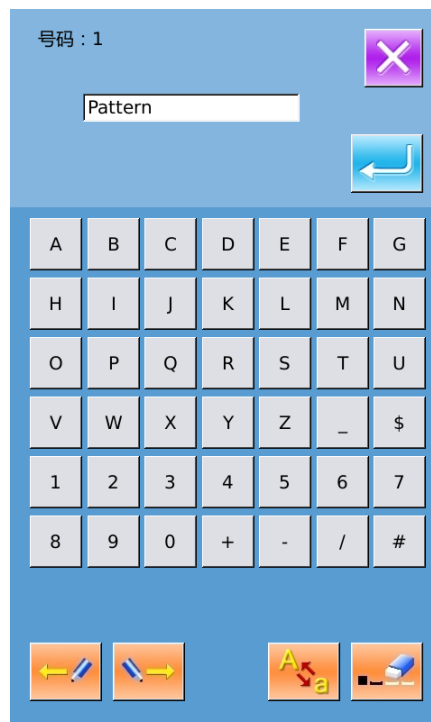
 : 光标左移键

 : 字母大小写切换键

 : 清除键

选择想要输入的字符, 按下  结束花样命名操作。

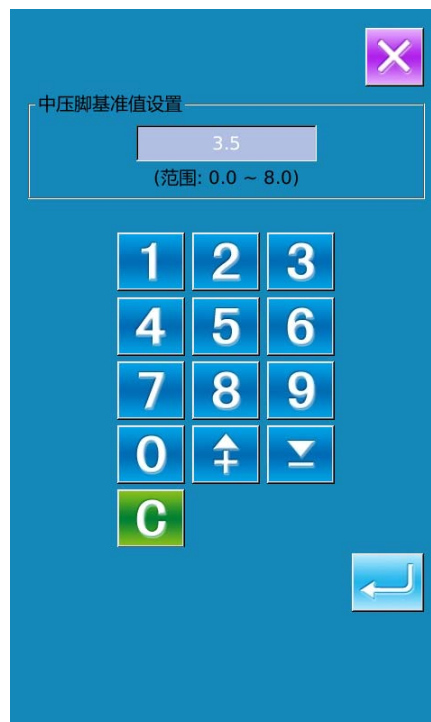
通过移动光标可以确定该字符位置, 清除键可以消除该位置字符。



2.6 中压脚设置

按下  进入中压脚设置界面。

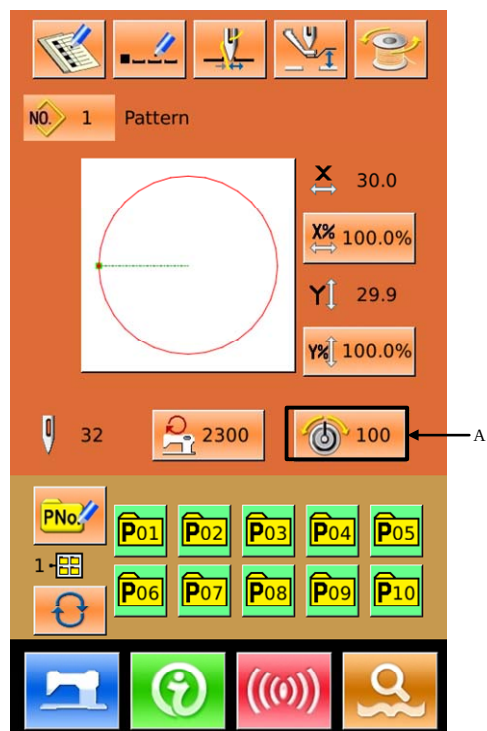
通过  ~  十数字键盘或 、
 键输入目标值, 按下确定键  完成操作返回数据输入界面。



2.7 线张力设置

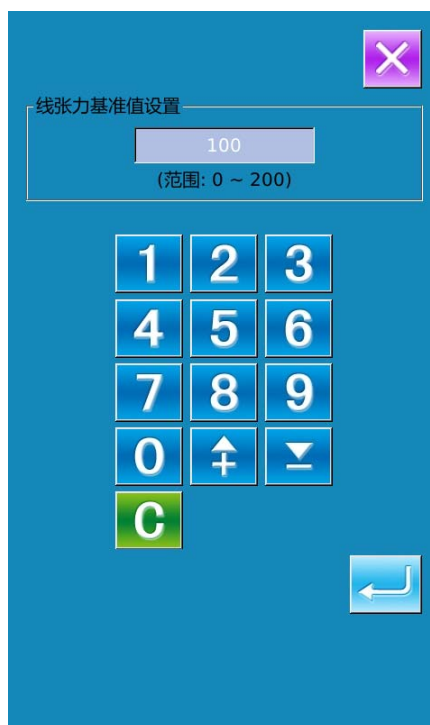
① 进入花样选择界面

数据输入界面（如右图所示），点击 A 键之后进入线张力设置界面。



② 设置线张力值

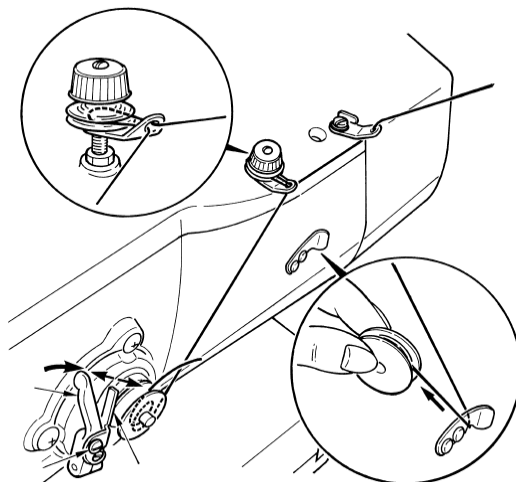
线张力值设定同中压脚设置。



2.8 绕线

① 安装梭芯

把梭芯插进绕线轴。然后，请朝箭头方向按梭芯导向器（如右图所示）。



② 显示底线绕线界面

在数据输入界面上，按了绕线按键



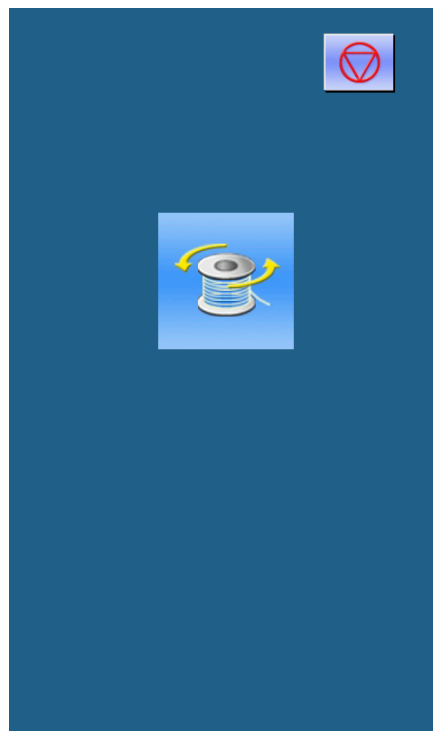
之后，绕线界面被显示出来（如右图所示）。

③ 开始绕线

踩踏启动踏板之后，缝纫机转动，开始卷绕底线。

④ 停止缝纫机

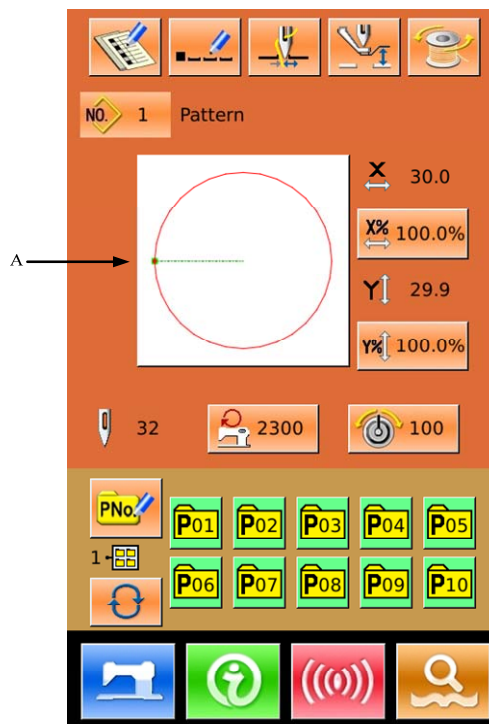
按了停止按键之后，缝纫机停止转动，返回通常模式。另外，在卷绕底线中再次踩踏踏板之后，缝纫机在绕线模式下停止缝纫机，因此再次踩踏启动踏板，可以继续卷绕底线，在卷绕多个梭芯时可以利用此功能。



2.9 花样选择

① 进入花样选择界面

数据输入界面（如右图所示），点击缝制形状 A 之后进入花样选择界面。



花样选择界面上方为当前选择花样的缝制形状，下方为已登记的花样号码。



: 花样预览



: 输入号码查询花样

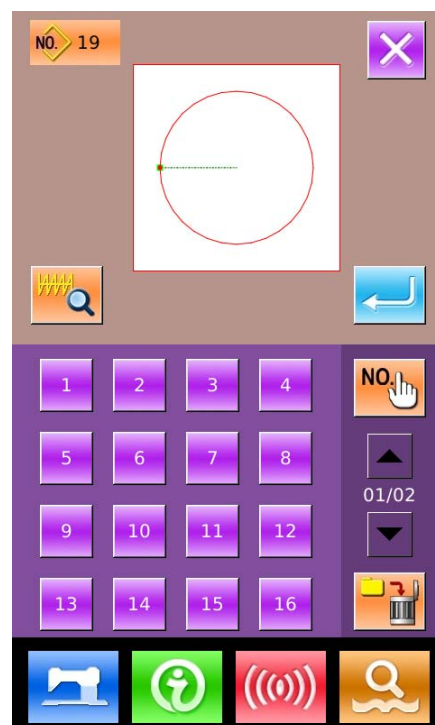


: 花样删除

② 选择花样

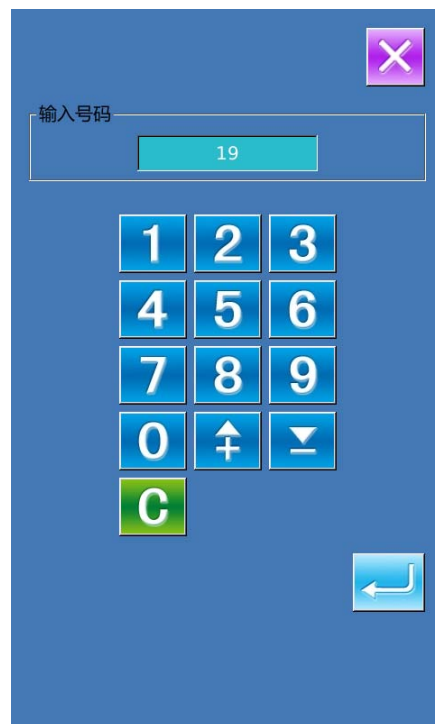
每页可以显示16个花样号码，选中已登记的花样号码时，上方会显示已选择花样内容，按下

完成花样选择操作。



③ 花样查询

按下  键会弹出花样查询界面，通过数字键可以直接输入花样号码。

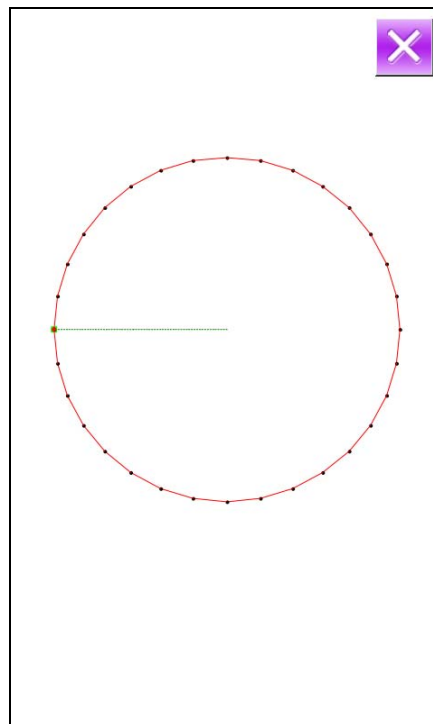


④ 花样删除

选中已登记的花样，按下  键就会删除掉该花样，但是被登记到 P 的花样是不能被删除的。

⑤ 花样预览

按下  键可以全屏预览当前花样形状。



2.10 缝纫数据设定

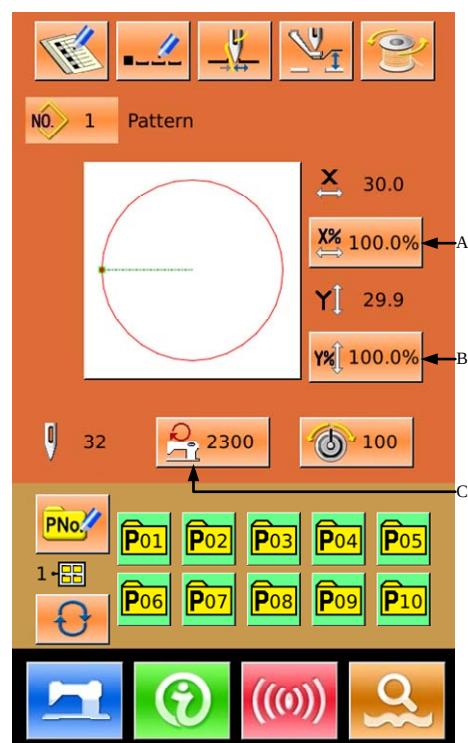
① 进入缝纫数据设定界面

在数据输入界面下相应按下 A、B、C 可分别进入缩放率设置和速度限制设置界面。

	项目	输入范围	初始值
A	X 方向放大缩小率	1.0~400.0%	100.0%
B	Y 方向放大缩小率	1.0~400.0%	100.0%
C	最高速度限制	200~2800rpm	2300rpm

注 1: 参数 U64 可以切换选择设置放大缩小率或实际尺寸值。

注 2: 最高速度限制的最大输入范围和初始值受参数 U01 影响。



② 缩放率设定

右图为放大缩小率设定界面，界面上方为 X 方向设置，下方为 Y 方向设置。

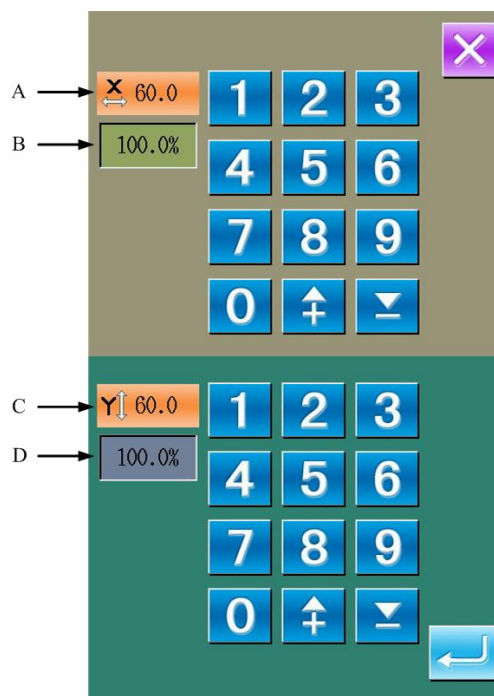
A: X 方向实际值显示

B: X 方向放大缩小率显示

C: Y 方向实际值显示

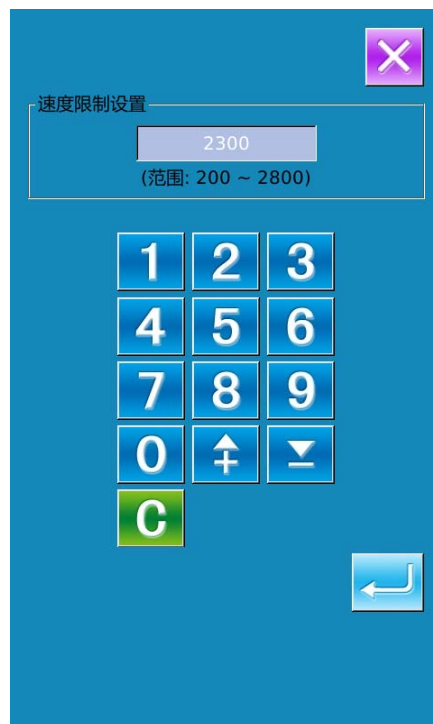
D: Y 方向放大缩小率显示

通过 **0** ~ **9** 十数字键盘或 **↑**、**↓** 键输入目标值，按下确定键 **↩** 完成操作返回数据输入界面。



③ 最高速度限制设定

操作同上。



2.11 P 花样登记

① 进入 P 花样登记界面

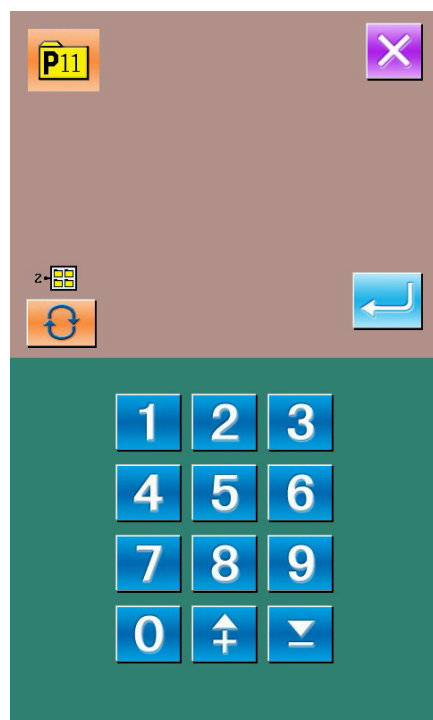
在数据输入界面下按下  进入P花样登记界面，如右图。

② 输入 P 花样号码

通过数字键盘输入想要登记的号码，如果输入了已经登记的花样号码，界面上方会显示出被登记的缝制形状和相关数据，这种情况下是不能登记新花样的。

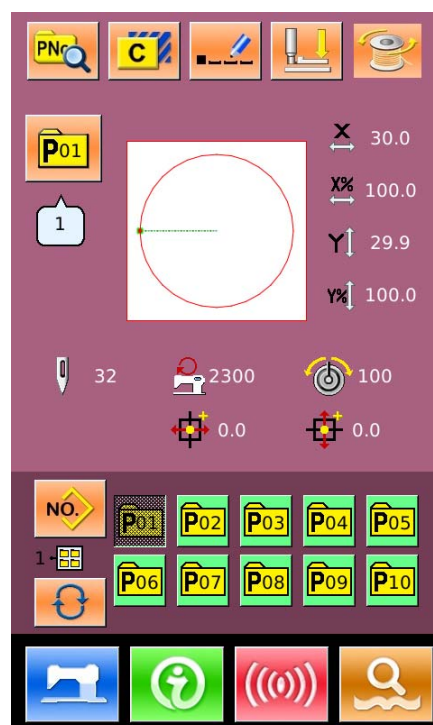
③ 选择文件夹号码

P 花样号码可以登记到 5 个文件夹里，每个文件夹最多保存 10 个 P 花样。文件夹选择键  可以进行顺序选择。



④ 确定花样号码

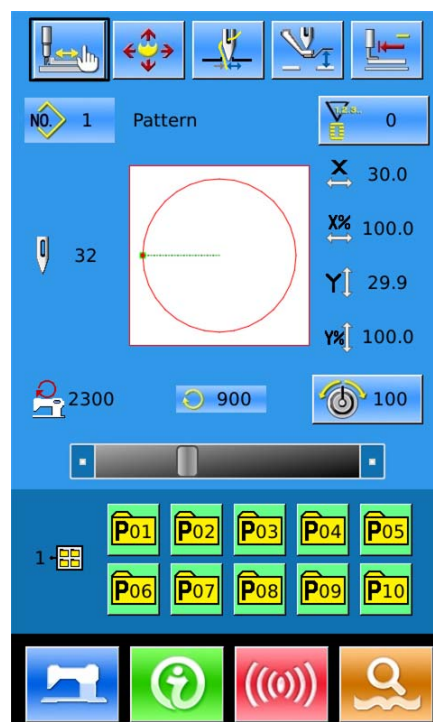
按下确定键之后完成 P 花样登记操作，返回到 P 花样数据数据输入界面。



2.12 试缝操作

① 显示缝制界面

在数据输入界面，按准备键之后，液晶显示的背景颜色变为蓝色，此时进入缝制界面。



② 显示试缝界面

在缝制界面下，按下键后进入试缝界面（如右图所示）：



：返回原点



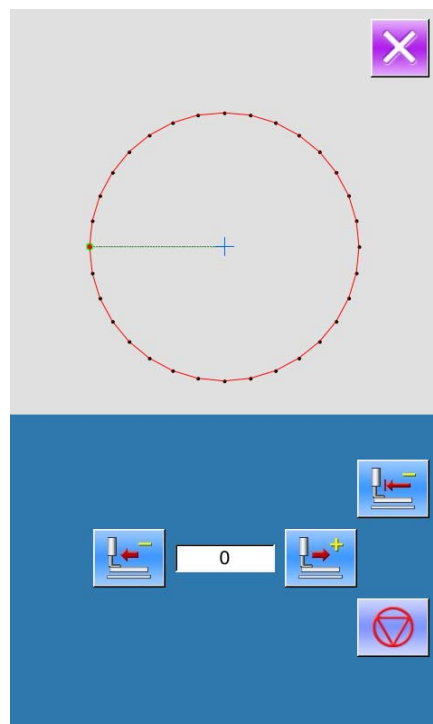
：压脚后退



：压脚前进



：停止



③ 开始试缝

踩下脚踏开关下降压脚，用压脚后退键和压脚前进键确定形状。持续一段时间连续按键后，离开按键后压脚继续移动，想停止时按下键。

按下返回原点键后，机针返回原点且返回到缝制界面。

④ 结束试缝

按了取消键退出试缝界面之后，返回缝制界面。花样形状没有在开始缝制位置或结束缝制位置时，踩脚踏开关后，可以从确认中途进行缝纫。

2.13 移框操作

① 进入移框界面

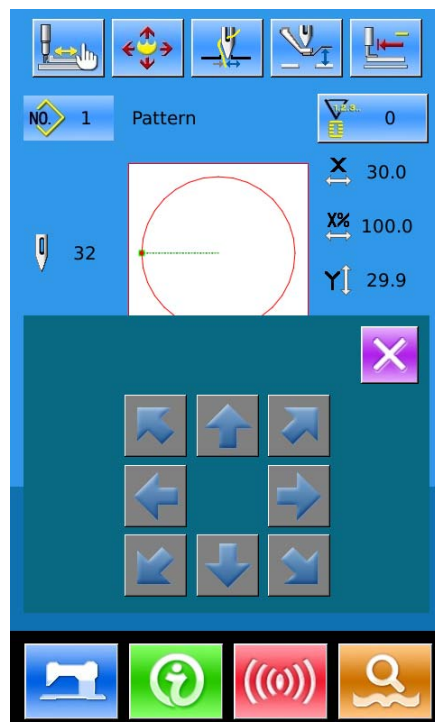
由于机针头的妨碍不好放置缝制物时，可以进入移框操作设置第二原点。

在缝制界面按下移框键之后，可以进入移框界面。

注：受参数 U89 影响，可以禁止该功能。

② 移框操作

压脚下降后，按下方向键可以进行移框操作，按取消键结束操作。



2.14 计数器操作

① 显示计数器界面

在缝制界面中，按了 () 键之后，计数器设定界面被显示出来。



② 选择计数器类型并设定计数值

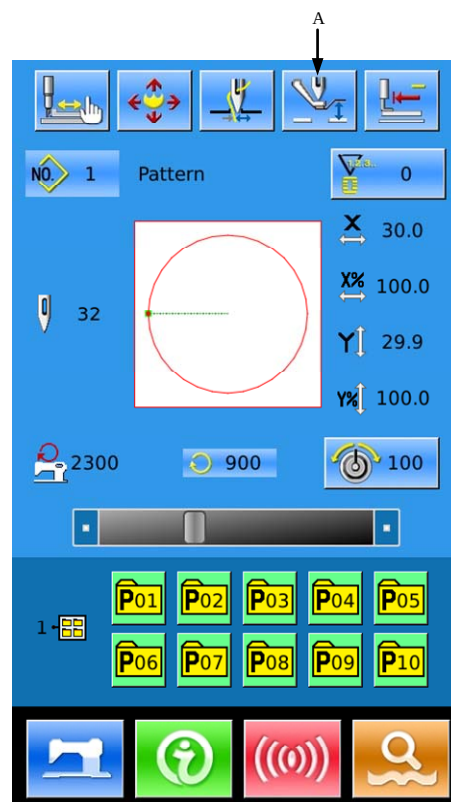
通过选择和可以设置计数器类型，并且设置其当前计数值。



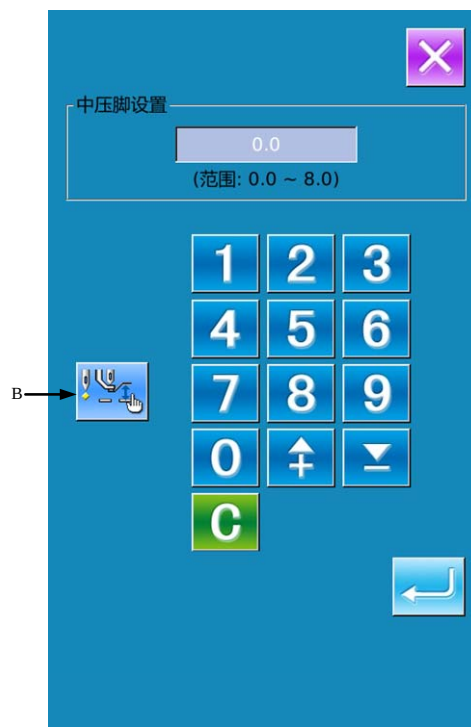
2.15 单针中压脚设置

① 进入单针中压脚设置

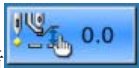
在运行界面(如右图)，点击中压脚设置
(A)进入中压脚设置界面。



在中压脚设置界面(如右图)，点击单针中
压脚设置(B)进入单针中压脚设置界面。



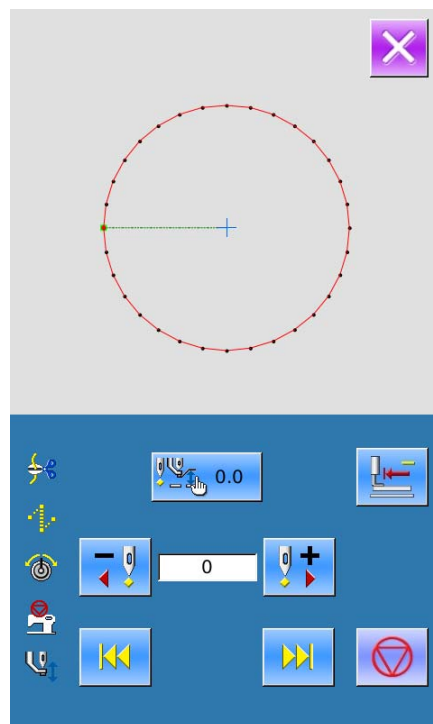
② 单针中压脚值设定

点击之后，进入中压脚设置界面。设置方法同 2.6 节内容。

在外压脚下降的状态下，用和前进或后退一针。用和向后或向前移动到有中压脚命令的落针点。想要停止时，按下。

按下返回原点之后，移动到原点。

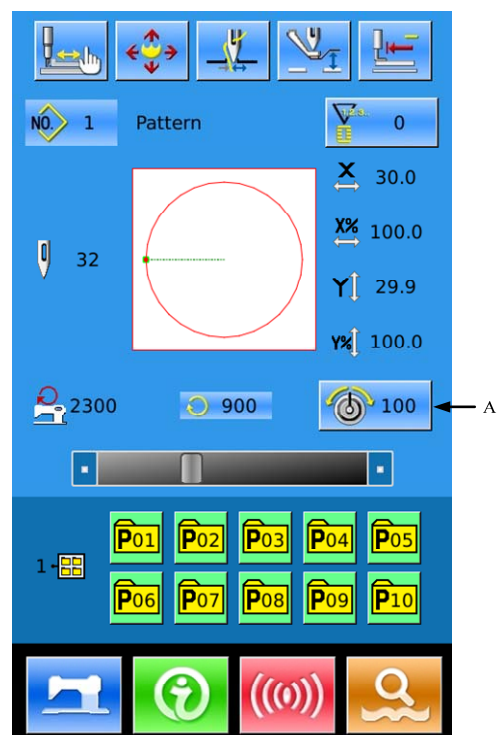
被显示的值为绝对值(中压脚基准值+中压脚增减值)。



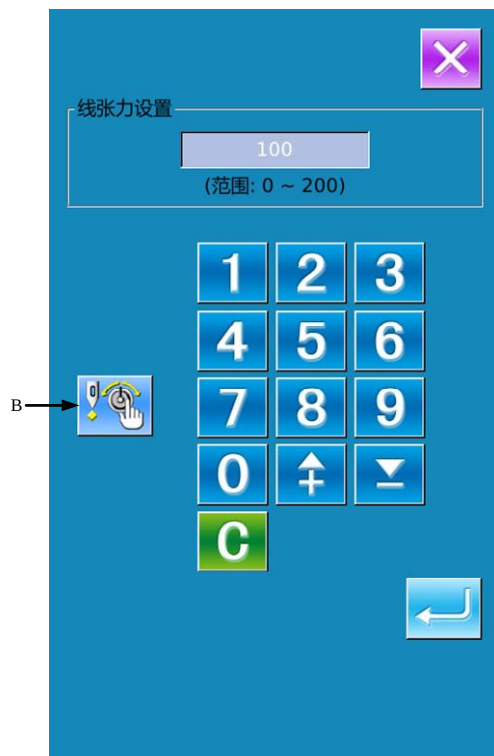
2.16 单针线张力设置

① 进入单针线张力设置

在运行界面(如右图)，点击线张力设定(A)进入线张力设置界面。



在线张力设置界面(如右图)，点击单针线张力设置(B)进入单针线张力设置界面。



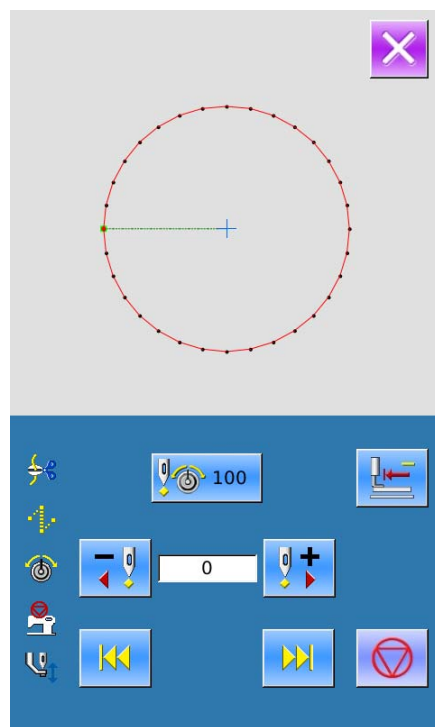
② 单针线张力设定

点击100之后，进入线张力设置界面。设置方法同 2.7 节内容。

在外压脚下降的状态下，用和前进或后退一针。用和向后或向前移动到有线张力命令的落针点。想要停止时，按下.

按下返回原点之后，移动到原点。

被显示的值为绝对值(线张力基准值+线张力增减值)。



2.17 急停

① 解除异常

缝制过程中，按下停止开关后，缝纫机中断缝制，停止转动，此时显示界面如右图所示。

按下  解除异常，进入急停设置界面。



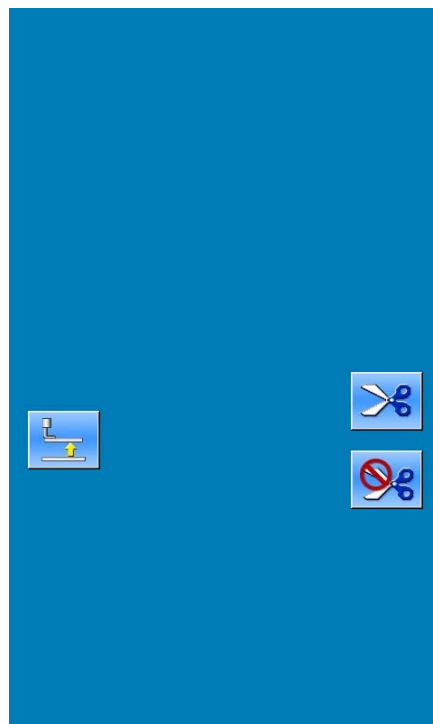
② 进行切线或提升压脚

: 先切线然后进入到步骤设置界面。

: 不切线直接进入到步骤设置界面。

: 压脚上升，以后不能进行操作，必须关闭电源。

注：参数 U97 设为暂停后自动剪线时直接进入步骤设置。



③ 进行步骤设置, 调整压脚到重新缝纫位置



: 中压脚动作



: 后退送布



: 前进送布

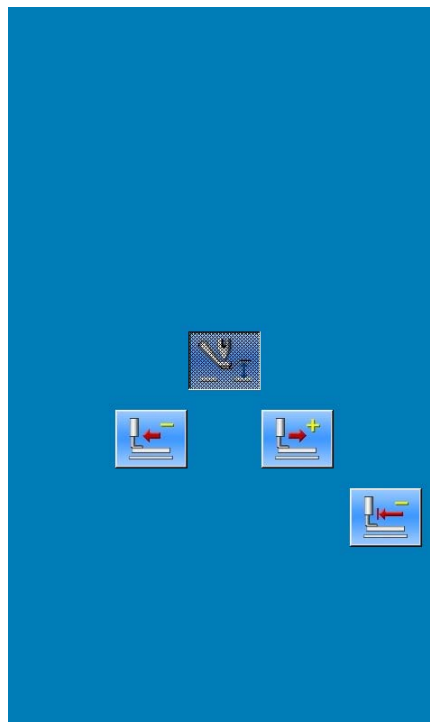


: 原点复位

按下  或 , 移动压脚到重新缝纫位置。

④ 重新缝纫

踩下脚踏板之后, 重新启动缝纫。



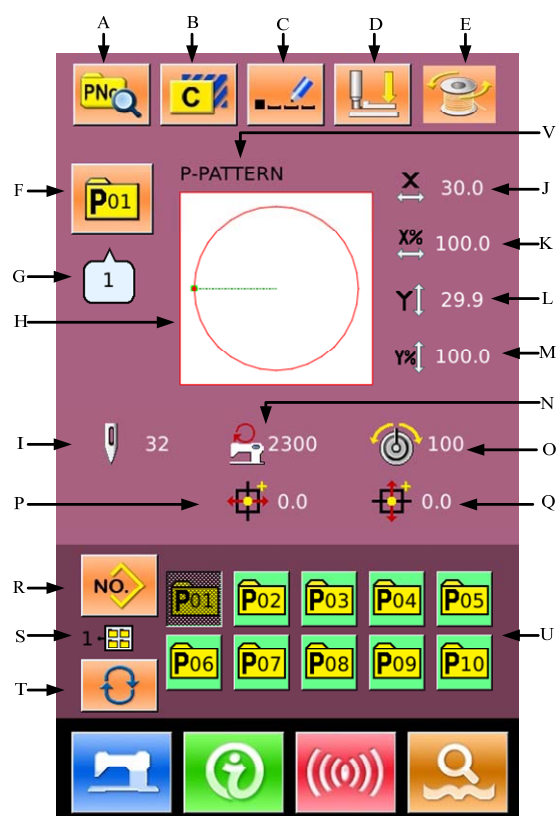
3 快捷（P）花样操作

3.1 P 花样数据输入

快捷花样简称 P 花样，由一个普通花样和相关花样缝制参数（X 缩放率、Y 缩放率、速度限制等）组成。选用 P 花样不需要每次设置相关参数。

P 花样数据输入界面如右图所示。

最多可以登记 50 个 P 花样。



功能说明：

序号	功能	内容
A	P 花样编辑	可以编辑 P 花样内容。
B	P 花样复制	可以复制当前 P 花样内容到一个空花样号码下。
C	花样命名	最多可以输入 14 个字符。
D	穿线	按下之后中压脚下降。
E	绕线	进入绕线界面。 按下一次准备键  之后方可绕线。
F	P 花样号码显示	显示当前选择花样号码。
G	缝纫形状号码显示	显示当前 P 花样下引用的普通花样号码。

序号	功能	内容
H	缝制形状选择	显示为当前花样缝制形状。
I	花样针数显示	显示当前选择花样缝纫针数。
J	X 实际尺寸值显示	显示当前选择花样的 X 方向实际尺寸值。
K	X 放大缩小率设定	显示当前选择花样的 X 方向放大缩小率。
L	Y 实际尺寸值显示	显示当前选择花样的 Y 方向实际尺寸值。
M	Y 放大缩小率设定	显示当前选择花样的 Y 方向放大缩小率。
N	最高转速限制	显示最高转速限制值。
O	线张力值	显示花样的线张力基准值。
P	X 方向偏移量显示	显示当前选择花样的 X 方向偏移量。
Q	Y 方向偏移量显示	显示当前选择花样的 Y 方向偏移量。
R	返回普通花样数据输入	返回到普通花样数据输入界面。
S	P 花样文件夹号码显示	显示当前 P 花样文件夹号码。
T	P 花样文件夹选择	顺序切换 P 花样文件夹号码。
U	P 花样选择	显示出已登记的 P 花样。
V	P 花样名称	显示当前花样名称。

3.2 P 花样编辑

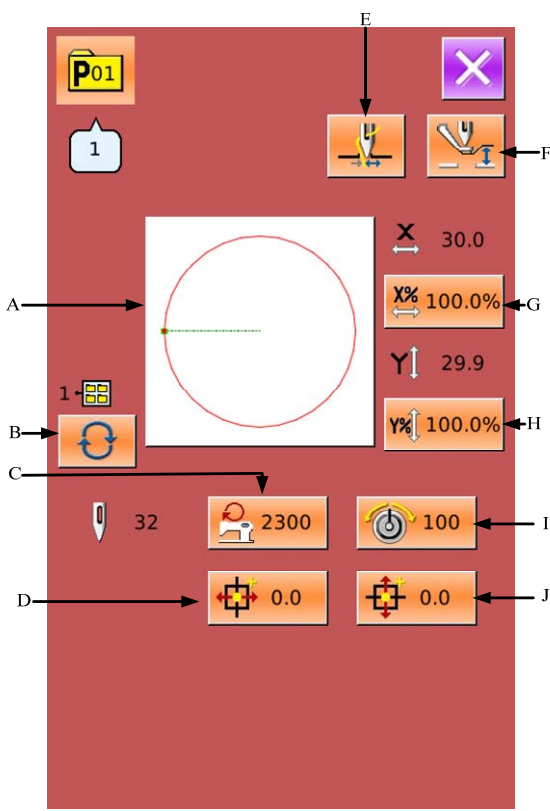
① 进入 P 花样编辑界面

按下  进入P花样编辑界面(如右图所示)。

② 编辑项目数据变更

选择想要变更的项目，设置数值。

	项目	输入范围	初始值
A	缝制形状		
B	文件夹号码	1~5	
C	最高速度限制	200~2800rpm	2300rpm
D	X方向偏移量	-30.0~30.0mm	0
E	抓线开关		
F	中压脚高度	0.0~8.0mm	0
G	X方向放大缩小率	1.0~400.0%	100.0%
H	Y方向放大缩小率	1.0~400.0%	100.0%
I	线张力值	0~200	100
J	Y方向偏移量	-30.0~30.0mm	0

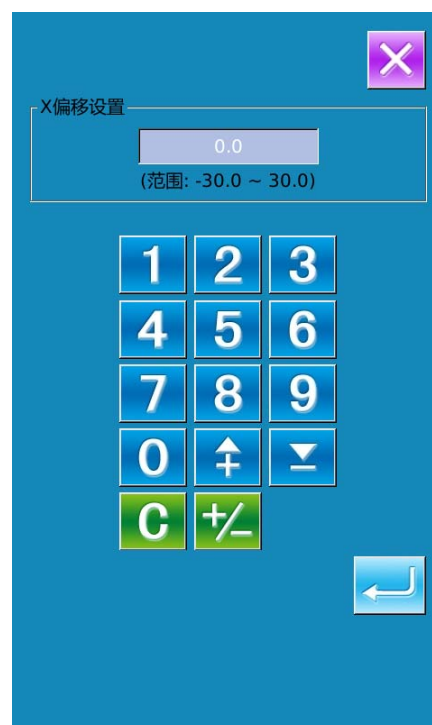


③ 确定数据变更

以设置X方向偏移量为例，通过数字键盘输入数值，按下确定键完成操作。

④ 退出编辑

按下退出键关闭P花样编辑界面，返回数据输入界面。

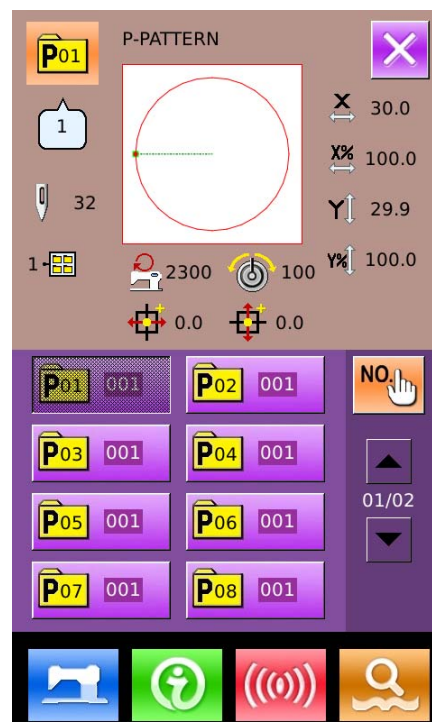


3.3 P 花样复制

① 选择被复制花样

按下进入P花样复制界面（如右图所示）。

在已登记的花样中选择被复制花样号码并按下.

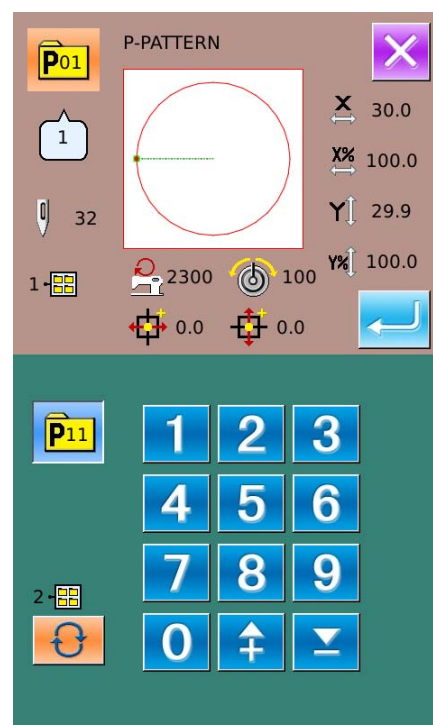


② 输入新登记的花样号码

界面上方显示为被复制花样,通过数字键选择未登记的花样号码,已经登记的花样号码不能重复登记。

文件夹选择键  可以选择保存的文件夹。

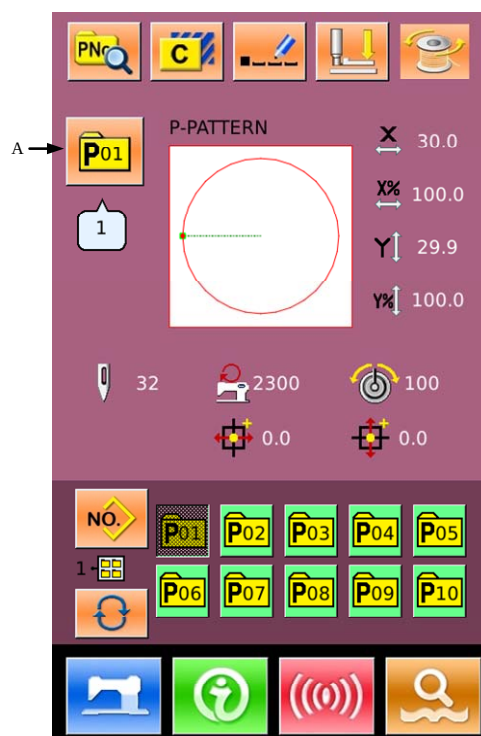
按下确定键  则完成花样复制操作,返回到P花样复制界面。



3.4 P 花样选择

① 进入 P 花样选择界面

如右图所示,按下图标 A,可以进入 P 花样选择界面。

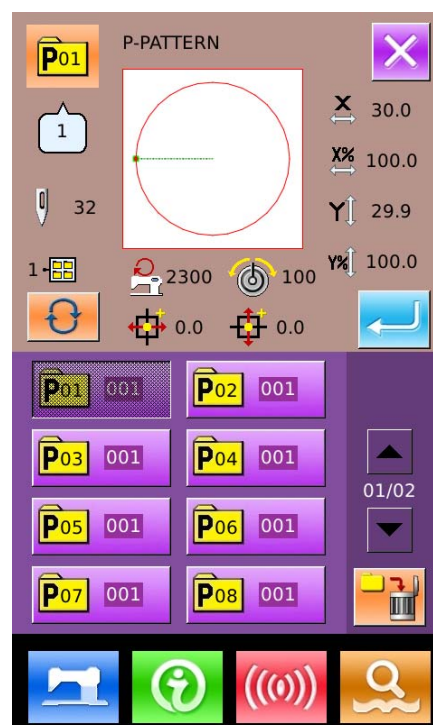


② 选择花样号码

界面上方为当前选择花样信息，当按下文件夹选择键  切换到文件夹号码不显示时，可以把已登记的P花样全部显示出来。

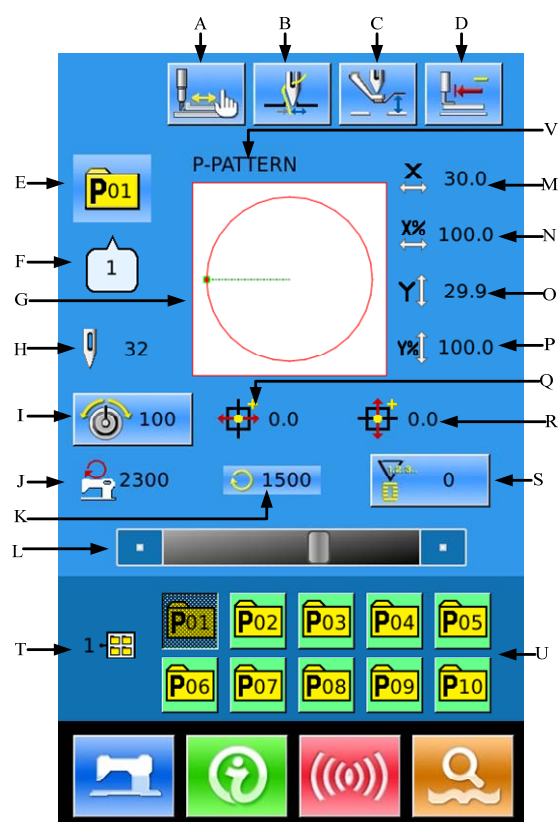
③ 确定花样选择

操作同普通花样选择，按下确定键  结束选择。



3.5 P 花样缝制

在P花样数据输入界面下，按下  进入缝制界面（如右图所示）。



功能说明:

序号	功能	内容
A	抓线按键	选择抓线的有效/无效。受 U35 参数影响。  : 抓线无效  : 抓线有效
B	试缝	按下后进入试缝界面, 可以确定花样形状。
C	穿线	按下之后中压脚下降。
D	原点复位	按下后压脚返回始缝点。
E	P 花样号码显示	显示当前选择花样号码。
F	缝纫形状号码显示	显示当前 P 花样下引用的普通花样号码。
G	花样形状显示	显示当前选择花样形状。
H	花样针数显示	显示当前选择花样缝纫针数。
I	最高转速限制显示	显示最高转速限制值。
J	线张力值设定	按下后进入线张力设置界面。
K	缝纫速度显示	显示当前缝纫速度。
L	缝纫速度设置	可以变更缝纫速度。
M	X 实际尺寸值显示	显示当前选择花样的 X 方向实际尺寸值。
N	X 放大缩小率设定	显示当前选择花样的 X 方向放大缩小率。
O	Y 实际尺寸值显示	显示当前选择花样的 Y 方向实际尺寸值。
P	Y 放大缩小率设定	显示当前选择花样的 Y 方向放大缩小率。
Q	X 方向偏移量显示	显示当前选择花样的 X 方向偏移量。
R	Y 方向偏移量显示	显示当前选择花样的 Y 方向偏移量。
S	计数器设置	按下后可以选择计数器类型和设置当前计数值。

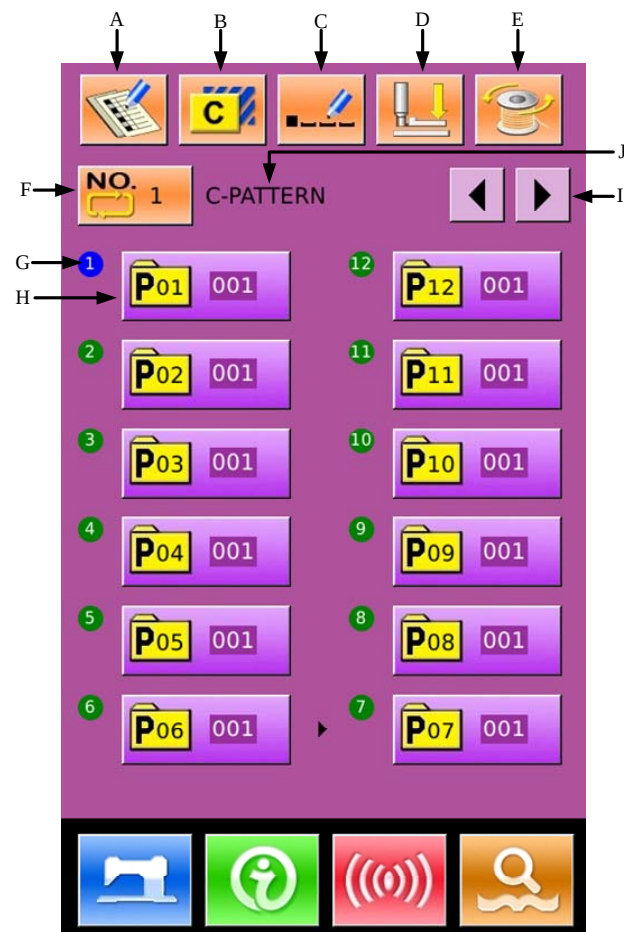
序号	功能	内容
		 ：缝制计数器  ：计件计数器
T	P 花样文件夹号码显示	显示当前 P 花样文件夹号码。
U	P 花样选择	显示出已登记的 P 花样。
V	P 花样名称	显示当前花样名称。

4 组合（C）花样操作

4.1 C 花样数据输入

组合花样简称 C 花样，由一组 P 花样组成，最多可以输入 50 个 P 花样。最多可以登记 50 个 C 花样。

参照【8.5 变换缝制类型】一节内容进入组合花样数据输入界面，如右图所示。



功能说明：

序号	功能	内容
A	C 花样登记	登记一个新组合花样。
B	C 花样复制	可以复制当前 C 花样内容到一个空花样号码下。
C	花样命名	最多可以输入 14 个字符。
D	穿线	按下之后中压脚下降。
E	绕线	进入绕线界面。 按下一次准备键  之后方可绕线。
F	C 花样号码选择	按键上显示当前选择花样号码，按下后进入 C 花样选择界面。

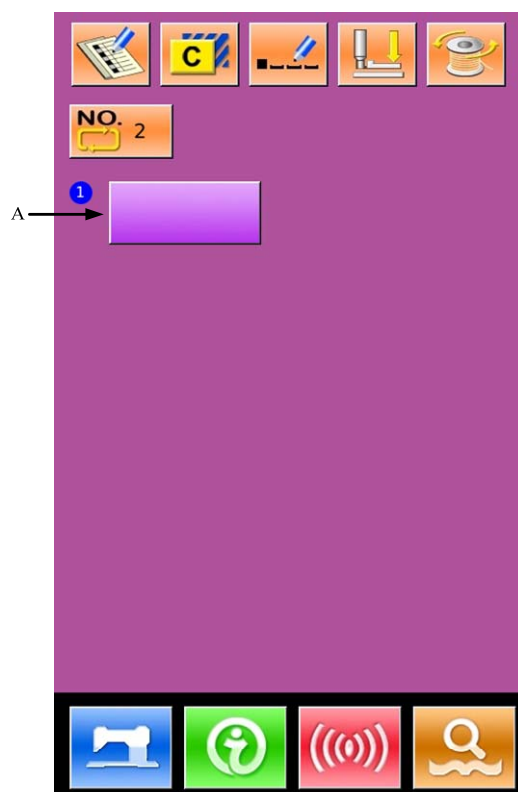
序号	功能	内容
G	缝制顺序显示	显示当前选择花样的缝制顺序，蓝色显示为起始缝制图案。
H	C 花样图案选择	按下后进入 C 花样编辑界面，可以选择输入一个 P 花样。
I	翻页键	C 花样图案最多可以登记 50 个，每页最多显示 12 个图案。
J	C 花样名称	显示 C 花样名称。

4.2 C 花样编辑

① 进入 C 花样编辑界面

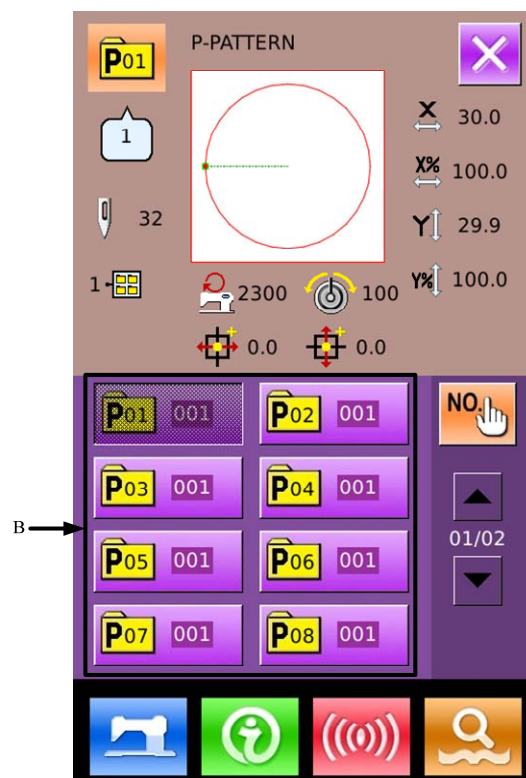
在 C 花样数据输入界面下，按下 A 可以进入 C 花样编辑界面。

在初期状态下，没有登记到 P 花样做为缝制图案，因为第一个图案以空白状态显示。



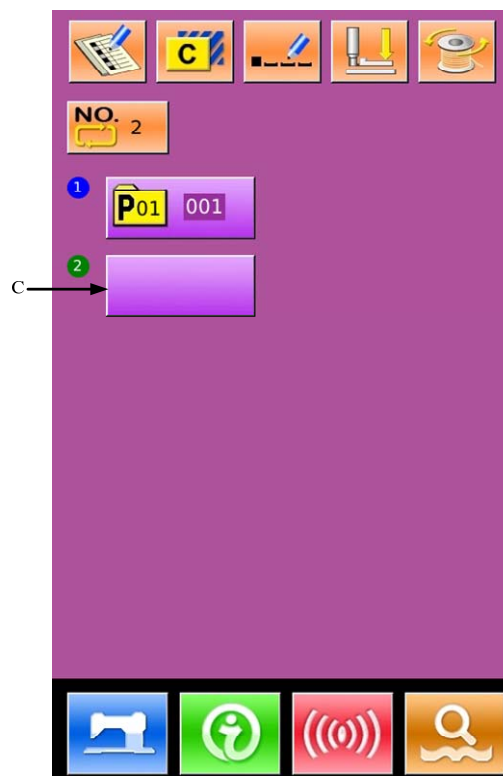
② 选择图案

右图为 C 花样编辑界面，选择想要登记的 P 花样图案 B，按下确定键之后结束选择。



③ 反复登记剩余图案

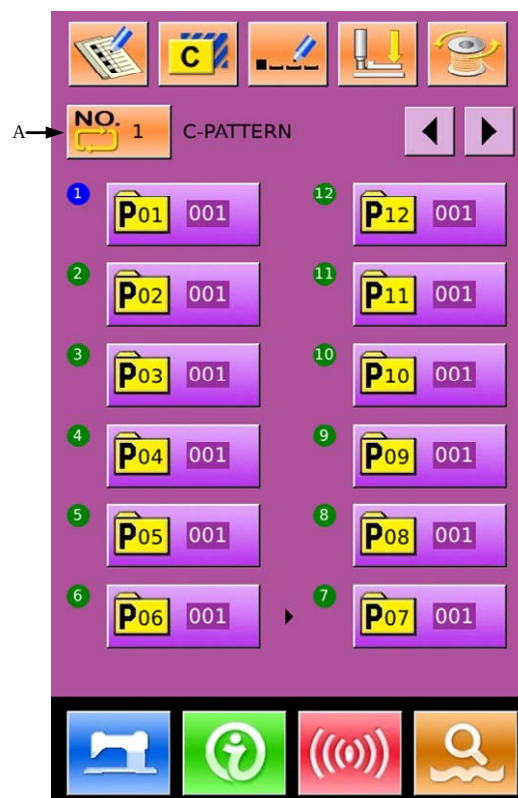
第一个图案登记确定之后，第二个图案选择键 C 被显示出来，操作同上，可以反复登记其它剩余图案。



4.3 C 花样选择

① 进入 C 花样选择界面

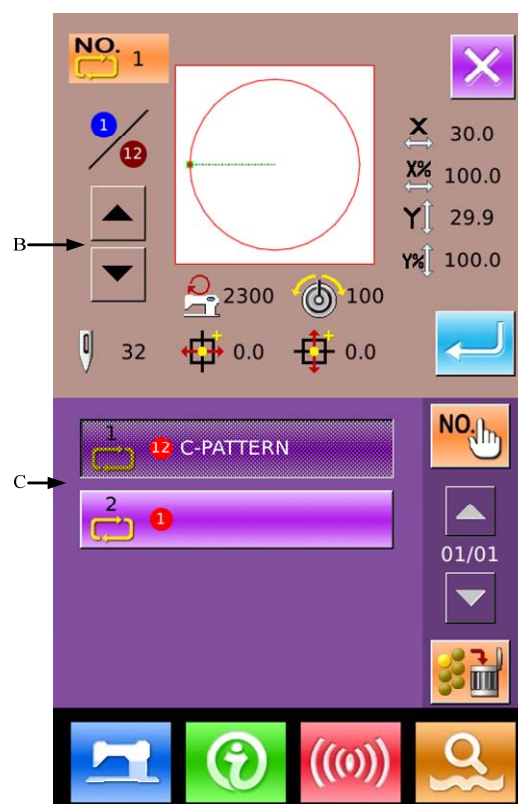
如右图所示，按下图标 A，可以进入 C 花样选择界面。



② 选择 C 花样号码

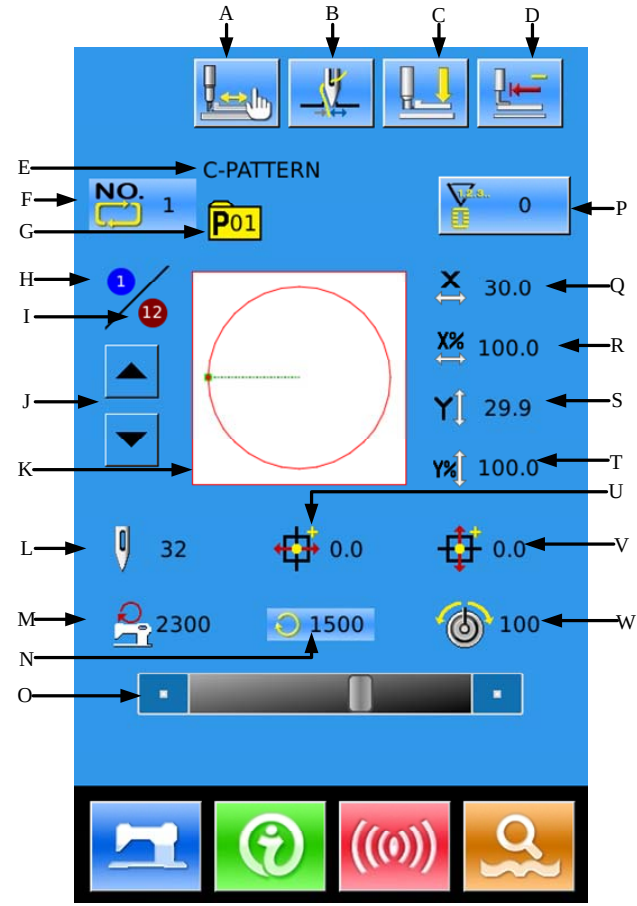
右图为 C 花样选择界面，按下 B 键之后，可以顺序变换当前 C 花样下输入的 P 花样数据信息。

确定要选择的 C 花样号码键 C，按下确定键  之后结束选择。



4.4 C 花样缝制

在C花样数据输入界面下,按下进入缝制界面（如右图所示）。



功能说明:

序号	功能	内容
A	抓线按键	选择抓线的有效/无效。受 U35 参数影响。  : 抓线无效  : 抓线有效
B	试缝	按下后进入试缝界面，可以确定花样形状。
C	穿线	按下之后中压脚下降。
D	原点复位	按下后压脚返回始缝点。
E	C 花样名称	显示当前花样名称。
F	C 花样号码显示	显示当前选择花样号码。

序号	功能	内容
G	缝纫形状号码显示	显示当前 C 花样下登记的缝纫形状号码。
H	缝制顺序显示	显示当前缝制花样中的缝制顺序号。
I	登记总数显示	显示当前缝制花样所登记的图案总数。
J	缝制顺序前进/后退键	可以把缝制图案选择到后一个/前一个。
K	花样形状显示	显示当前缝制所登记的形状。
L	花样针数显示	显示当前缝纫登记形状针数。
M	最高转速限制显示	显示当前缝纫登记形状最高转速限制值。
N	缝纫速度显示	显示当前缝纫速度。
O	缝纫速度设置	可以变更缝纫速度。
P	计数器设置	按下后可以选择计数器类型和设置当前计数值。  ：缝制计数器  ：计件计数器
Q	X 实际尺寸值显示	显示当前缝纫登记形状的 X 方向实际尺寸值。
R	X 放大缩小率设定	显示当前缝纫登记形状的 X 方向放大缩小率。
S	Y 实际尺寸值显示	显示当前缝纫登记形状的 Y 方向实际尺寸值。
T	Y 放大缩小率设定	显示当前缝纫登记形状的 Y 方向放大缩小率。
U	X 方向偏移量显示	显示当前缝纫登记形状的 X 方向偏移量。
V	Y 方向偏移量显示	显示当前缝纫登记形状的 Y 方向偏移量。
W	线张力显示	显示线张力基准值。

5 花样图案编辑

5.1 进入花样编辑模式

按下  可以切换数据输入界面和模式选择界面（如右图所示），在该界面下可以进行一些详细的设置和编辑操作。

有关模式选择界面下的详细操作和设置详见【8 模式和参数设置】。



按下  键切换选择编辑模式和缝纫模式。



: 缝纫模式

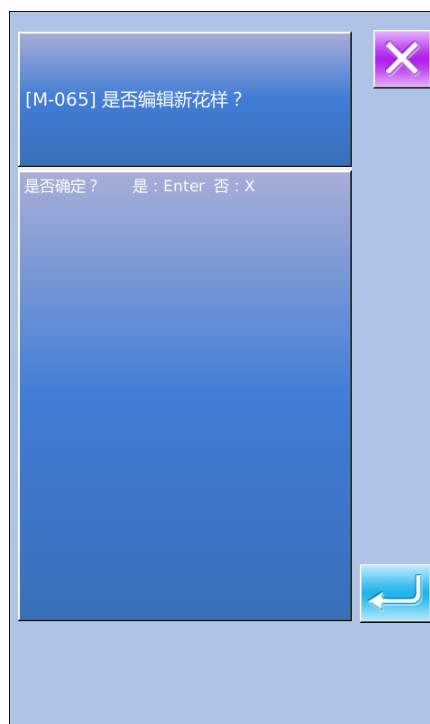


: 编辑模式

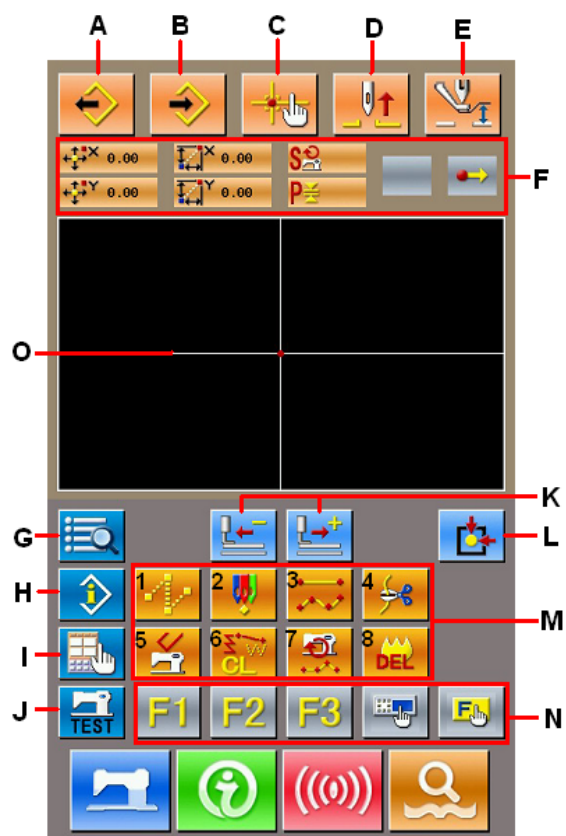
选择编辑模式图标 ，再次按下



键后，退出模式选择界面，系统提示是否进入花样编辑界面。



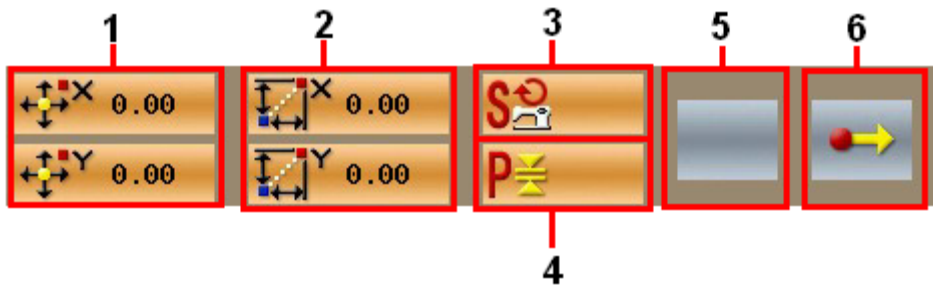
按下后，进入花样编辑标准界面，如右图所示：



功能说明：

序号	功能	内容
A	读取图案	显示图案读取界面
B	写入图案	显示图案写入界面
C	落针点查询	可以快速查询落针点；在编辑花样时可以直接输入缝制点坐标
D	提针	让机针返回到上死点
E	中压脚抬升下降	抬升或下降中压脚
F	当前机针位置信息	这是显示现在的机针位置信息的部分
G	代码一览表	显示所有可操作的编辑功能，详见【编辑功能一览表】
H	信息显示	显示当前编辑花样的详细信息
I	显示设定	可以进行广角设定以及落针点显示设定等
J	试缝	可以对当前编辑的花样进行试缝

序号	功能	内容
K	前进・后退送布	从现在的针位置移动一针（前进  ；后退  ）
L	原点复位	将现在的机针位置返回到原点。
M	功能按钮	可以直接调用各个按钮上的功能
		1  ：空送
		2  ：点缝
		3  ：普通缝
		4  ：剪线
		5  ：消除机械控制命令
		6  ：要素删除
		7  ：缝制速度区间修改
		8  ：删除当前编辑的花样图案
N	功能快捷键	通过功能选择・设定（功能代码 112），可以把需要的功能分配到各按钮，作为功能快捷键使用。功能被分配后，表示功能的图标被显示到相应的按键上。
O	花样图案显示区域	显示花样图案。

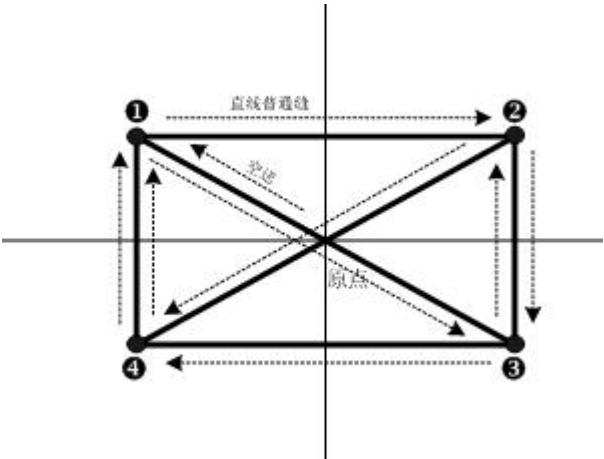


序号	项目	内容
1	绝对坐标	表示从现在的机针位置的原点的绝对坐标。
2	相对坐标	表示现在的机针位置的相对坐标。
3	速度	表示当前点的缝制速度或空送速度。
4	间隔	表示现在的要素缝制针迹长度。(扩大・缩小读取后，扩大缩小前的数值被显示。)
5	要素种类	表示当前的要素种类。缝制数据时，显示该要素种类(空送  、折线  、自由曲线  等)的图标。机械控制命令时，

序号	项目	内容
		显示该机械控制命令的种类(剪线等)的图标。
6	落针种类	表示有关落针位置的种类。
		 图案起点，表示是图案的起点位置(原点)。
		 要素中途，表示是要素内的中途点 (即不是顶点也不是要素终端)
		 顶点，表示是折线的顶点。
		 要素终端，表示是要素的终端位置。
		 图案终端，表示是图案的最终位置。

5.2 花样编辑

使用花样编辑功能，输入如下花样图案。



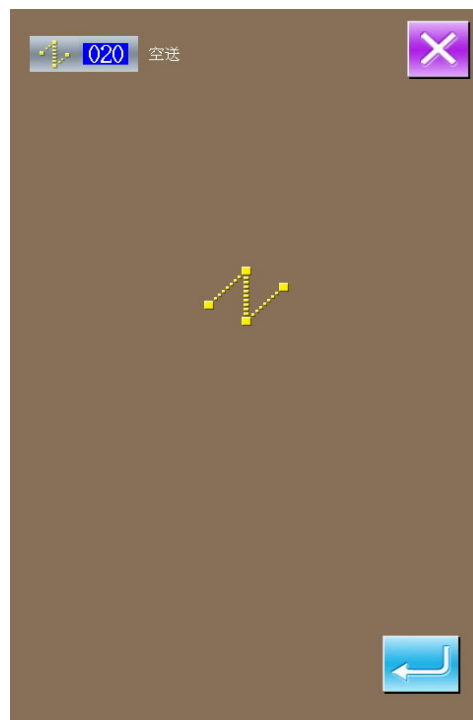
输入点：

	X (mm)	Y (mm)
①	-40.00	25.00
②	40.00	25.00
③	40.00	-25.00
④	-40.00	-25.00

输入次序：如左图中虚线箭头所示。

① 空送的输入

在花样编辑标准界面，按空送按钮，显示空送设定界面：



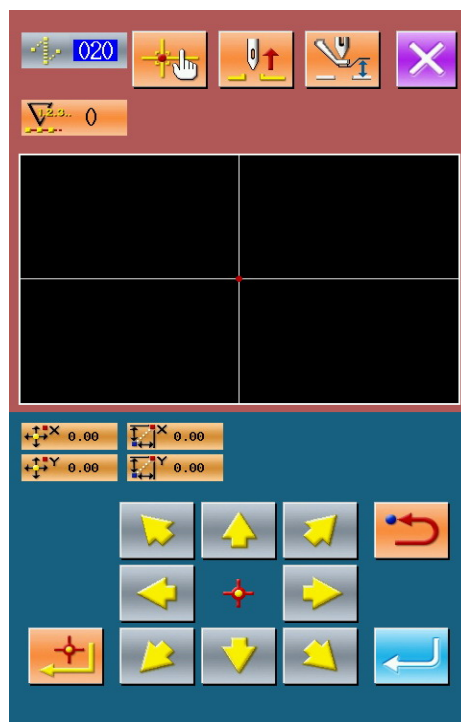
按确认键后，显示出空送位置指定界面：

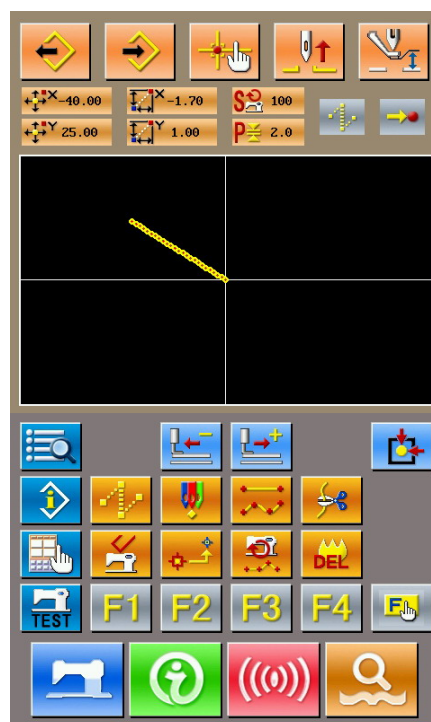
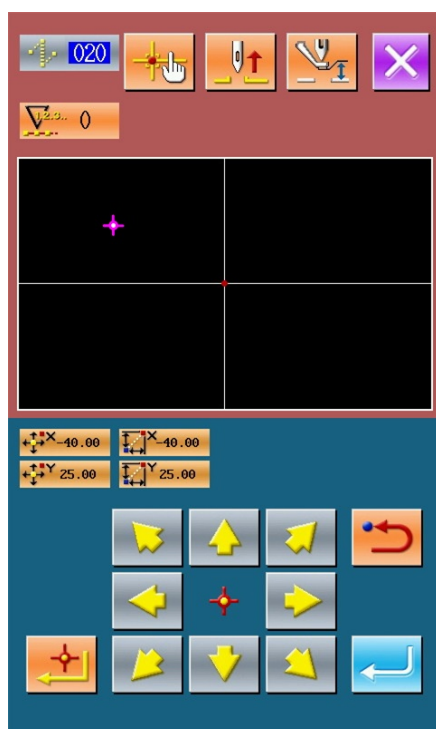
在空送位置指定界面，使用移动键



，移动光标（机针位置）到（-40，25）

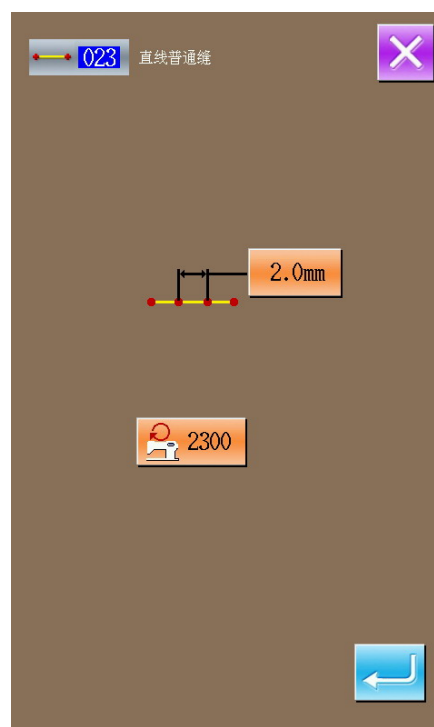
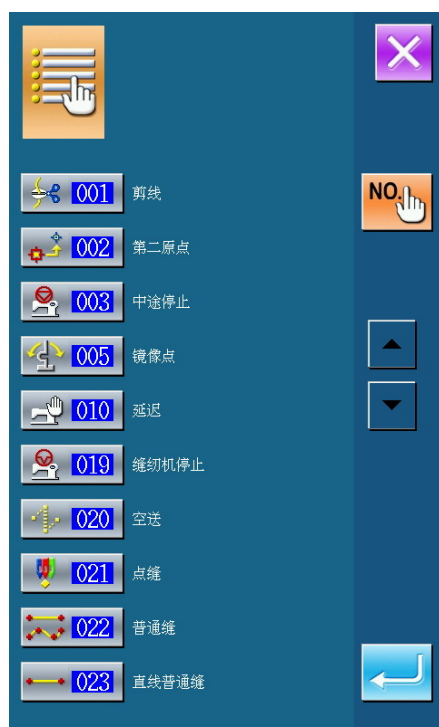
处，按按钮确定后，再按键保存设置，退回到花样编辑标准界面并显示出空送针迹：





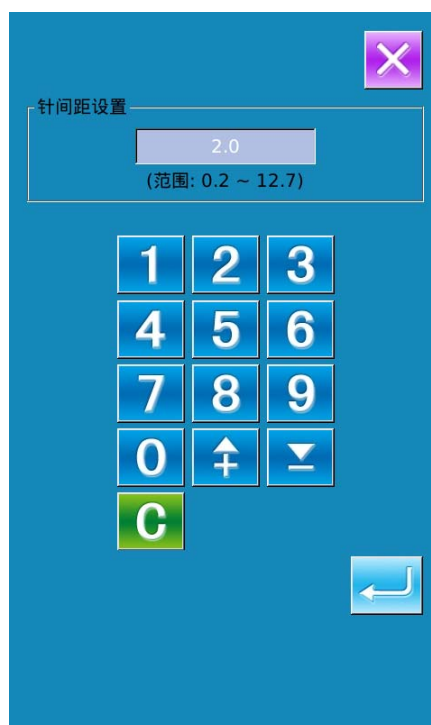
② 直线普通缝的输入

在功能代码一览表里，选择“023 直线普通缝”，然后按确认键后，进入直线普通缝设置界面：



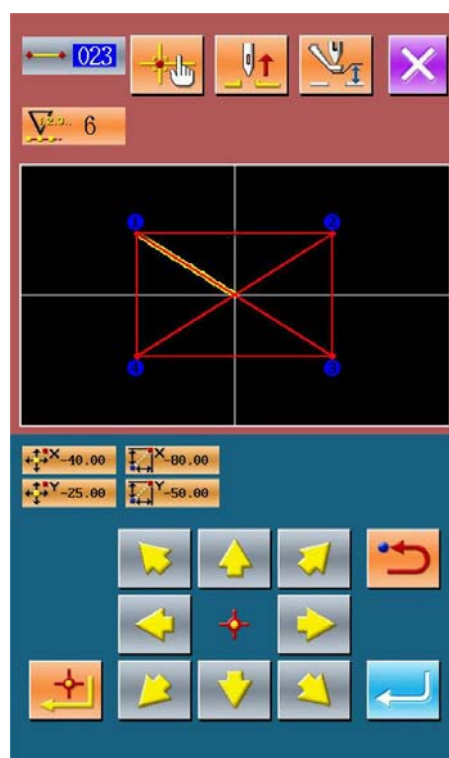
在直线普通缝设置界面下，按缝迹长度设定按钮 ，进入缝迹长度设定界面，如右图所示。

依次按 、 数字键，将缝迹长度变更为“3.0”，按确认键保存并退回到直线普通缝设置界面。

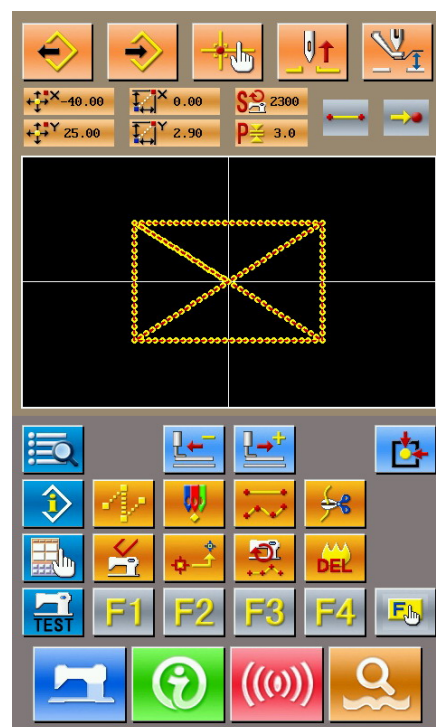


确认缝迹长度设定按钮的显示值为“3.0mm”之后，按确认键 ，进入直线普通缝位置设定界面。

在此界面下，按移动键 ，将光标（机针位置）从①处移动到②处，然后按确定按钮 。反复进行上述移动操作，将光标按照②→③→④→①→③→②→④→①的顺序依次移动，如右图所示。



确认花样图案后，按键生成花样数据并到花样编辑标准界面，显示出花样图案。

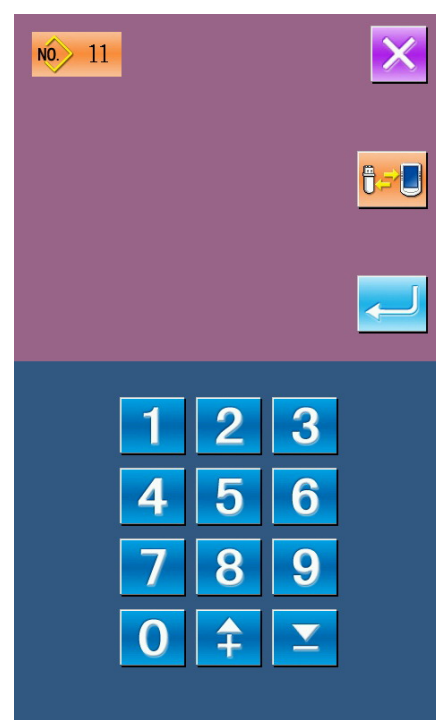


③ 保存花样

按按钮，进入图案花样保存界面，保存编辑好的花样图案，如右图所示。

系统自动设定好样号码，用户也可以通过数字键盘输入希望值。

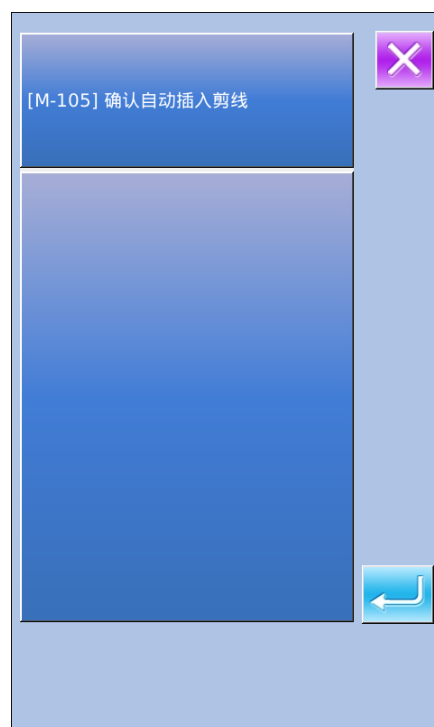
通过按钮，可以选择花样图案的存储位置。用户可以选择将其存储在操作面板存储媒介上，也可以选择存储在 U 盘上。



按键后保存花样图案，系统提示，是否自动插入剪线，如右图所示。

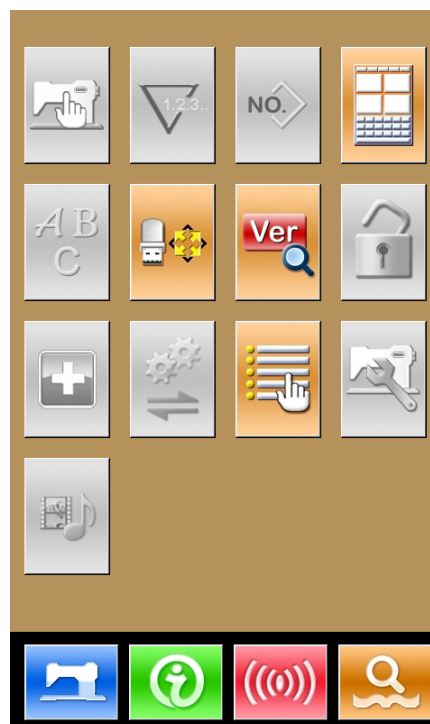
按键自动加入剪线；按键取消自动加入剪线。操作完成后，退回到花样编辑标准界面。

有关花样编辑的具体操作和说明请参照
《SP-510 花样打版使用说明书》。

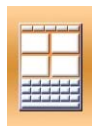


5.3 退出花样编辑模式

在花样编辑标准界面下，按进入模式选择界面，如右图所示。



按下  键会切换编辑和缝纫模式，其中：



：编辑模式



：缝纫模式

再次按下  键后，退出模式选择界面，系统提示是否返回到缝制模式。按  键后，退出花样编辑模式，返回到缝纫模式。



6 信息功能

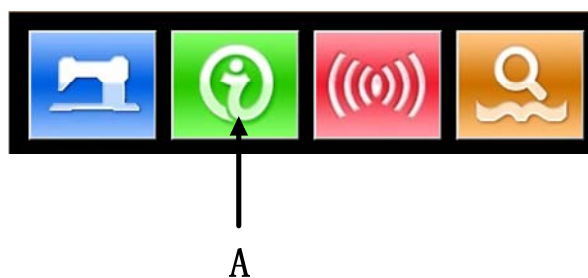
信息功能，有下列3 种功能：

- 1) 可以指定机油更换时期，机针更换时期，清扫时期等，超过了指定事件之后，进行警告通知。
- 2) 利用显示目标值和实际值功能，可以提高生产小组完成目标的意识，可以一目了然地确认进度。
- 3) 显示穿线示意图。

6.1 维修检查信息

① 显示信息界面

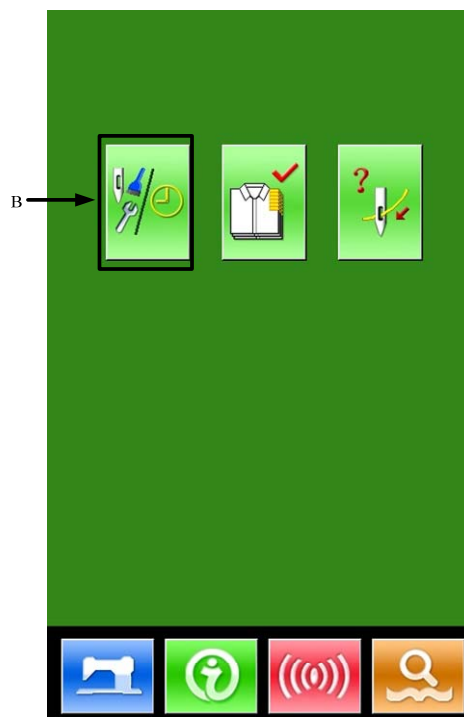
在数据输入界面，按界面下方的信息按键（A）之后，信息界面被显示出来。



② 显示保养维修界面

请按信息界面的保养维修信息界面显示按

键  （B）。



在保养维修信息界面上，有以下3 个项目的信息被显示出来。



：更换机针(千针)



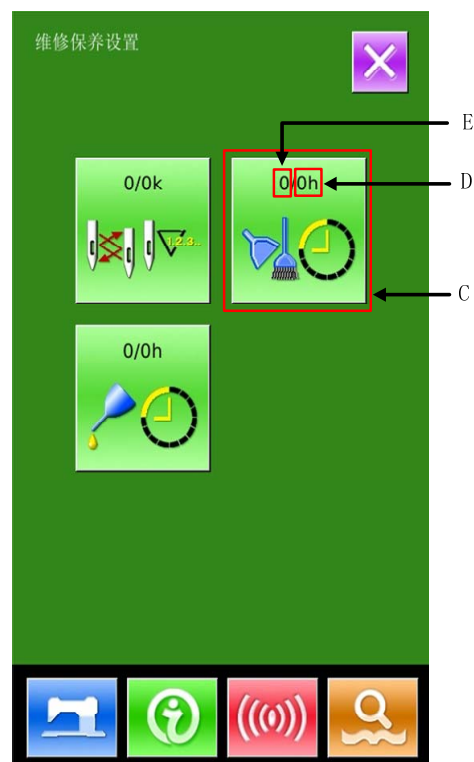
：清扫时间(小时)



：机油更换时间(小时)

各项目显示在按键(C)，通知检修的间隔显示在D，更换的剩余时间显示在E。

另外，还可以清除更换的剩余时间。

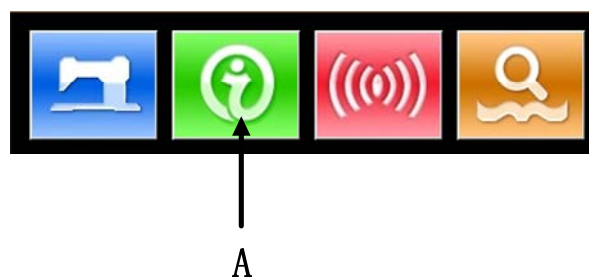


6.2 输入维修保养时间

① 显示信息界面（维修人员等级）

在数据输入界面，按信息按键（A）约3 秒钟之后之后，信息界面（维修人员等级）被显示出来。

维修人员等级时，有6个按键被显示出来。



② 显示保养维修界面

请按信息界面的保养维修信息界面显示按

键（B）。

※ 维修人员等级时，有关下部显示的3 个按钮，说明如下：

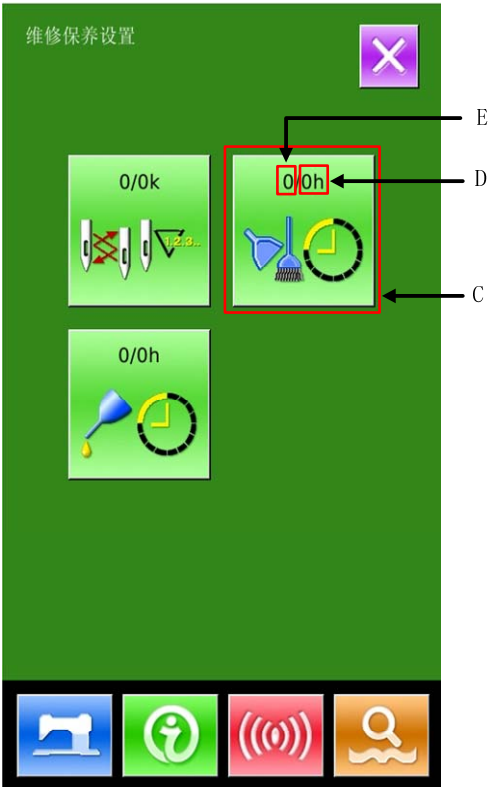
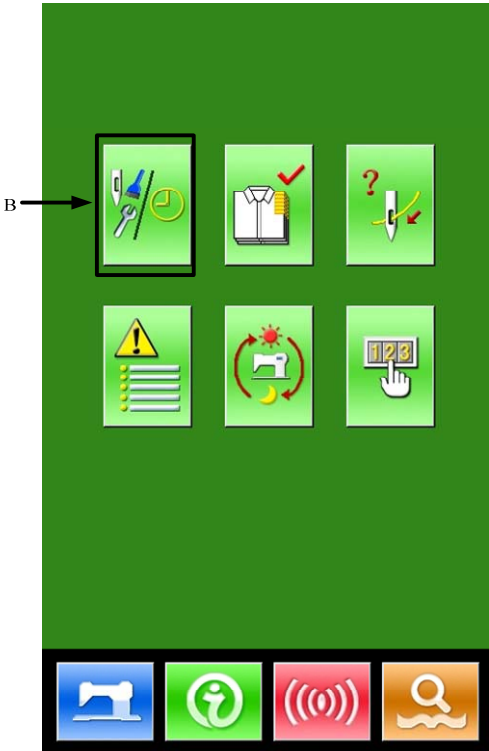
：报警记录

：运转记录

：分期密码

在保养维修信息界面上，显示出与通常的维修保养信息界面一样的信息。按下想变更维修保养时间的项目按钮(C)之后，相关输入界面被显示出来。

比如按下键，则可以设置清扫时间。

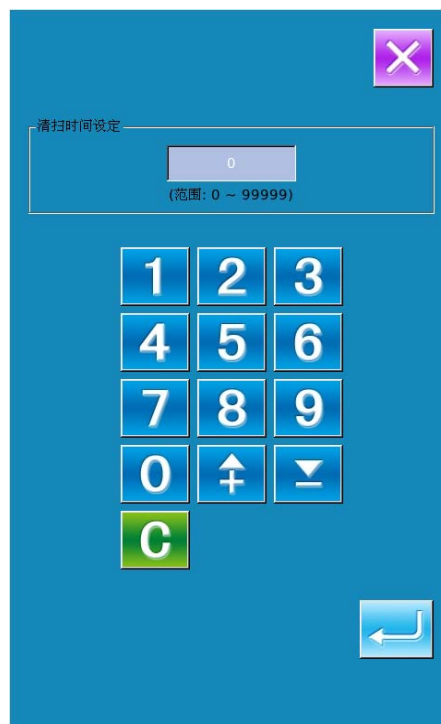


③ 设置维修保养项

把维修保养项设定值设定为0 之后，则停止维修保养功能。

通过数字键盘输入维修保养项的设定值。

按下确定键 确定输入。



6.3 警告的解除方法

到了指定的维修保养时间之后，信息提示界面被显示出来。要清除维修保养时间时，请按确定键清除。在清除维修保养时间之前，每1 缝制结束后显示信息提示界面。

各项目的信息提示号码如下：

- 机针更换：M052
- 清扫时间：M053
- 机油更换时间：M054

6.4 生产管理信息

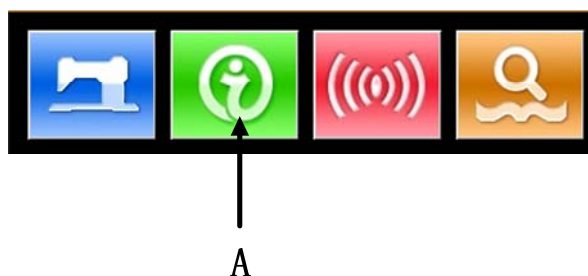
在生产管理界面上可以进行从开始到现在的生产件数，生产目标件数的显示等。生产管理界面的显示方法有以下2 种：

- 从信息界面显示
- 从缝制界面显示

6.4.1 从信息界面显示时

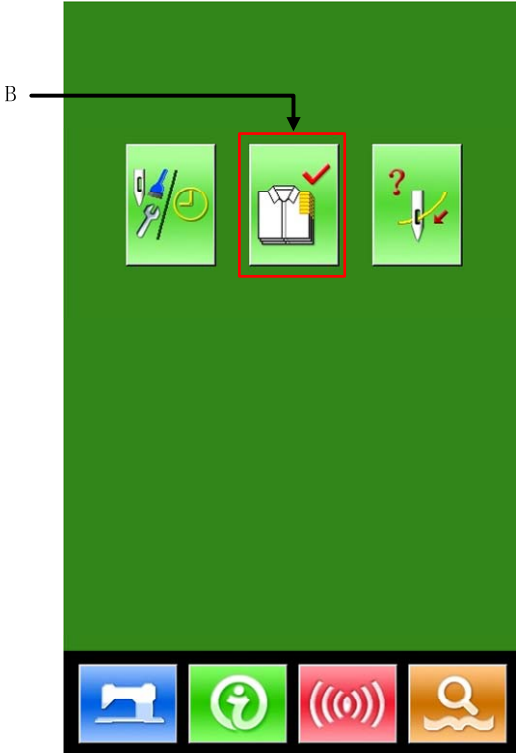
① 显示信息界面。

在数据输入界面按了开关部的信息键（A）之后，信息界面被显示出来。



② 显示生产管理界面

请按信息界面的生产管理界面显示按键（B），生产管理界面被显示出来（如右图所示）。



生产管理界面上显示有下列5 项目的信息。

A：目标值

依照间隔时间自动地显示出截止现在的目标缝制件数。

B：实际值

自动地显示已经缝制的件数。

C：最终目标值

设置最终目标的缝制件数。

D：目标值间隔时间

设置完成一个工序需要的时间（秒）。

E：实际计件间隔

设置实际完成一个工序的间隔。



6. 4. 2 从缝制界面显示时

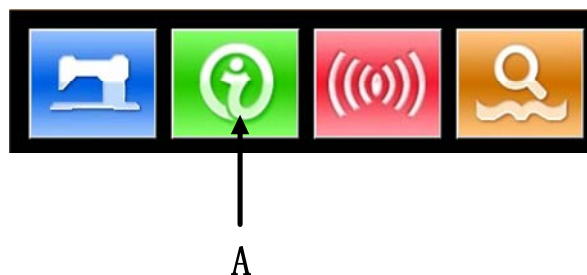
① 显示缝制界面。

在数据输入界面按了准备键之后，缝制界面被显示出来。

② 显示生产管理界面。

在缝制界面，按了信息按键（A）之后生产管理界面被显示出来。

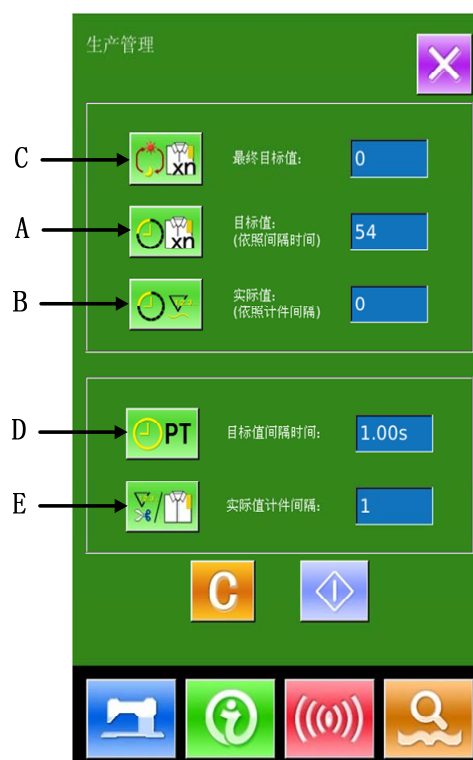
显示内容和功能与上节相同。



6.5 生产信息管理设定

① 显示生产管理界面。

请参照 6.4节 生产管理信息，显示出生产管理界面。



② 输入最终目标值

首先, 请输入从现在开始进行缝制工序的生产目标件数。按了最终目标值按键



(C) 之后, 最终目标值输入界面被显示出来。

请输入目标数值, 然后按下确定按键



③ 输入间隔时间。

然后, 请输入1 工序需要的间隔时间。

按了前页的间隔时间按键  (D) 之后, 间隔时间输入界面被显示出来。

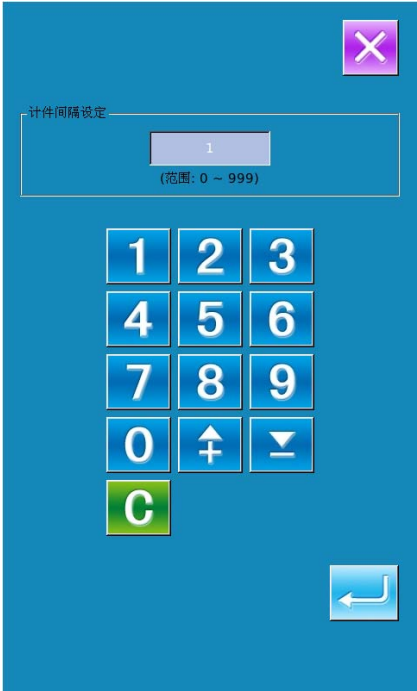
请输入目标数值, 然后按下确定按键



④ 输入计件间隔

然后，请输入平均1 工序的计件间隔。

按了前页的计 次数按钮  (E) 之后，
计件次数的输入界面被显示出来。



⑤ 开始车生产件数的计数。

按  键 (I) 之后，【最终目标值】
【目标值】【实际值】变灰，并开始生产件
数的计数。

最终目标值： 可以作为参考时间

目标值： 目标值按照【目标值间隔】设
定的时长，开始计时，每过一个
时间间隔增1。

实际值： 实际值按照【实际值计件间隔】
设定的值，开始计件，每缝完
一件增1。

通过设置目标值和实际值可以对比每
缝一件的生产效率是提高了还是降低了。

⑥ 停止计数。

计数状态下，停止按钮  被显示出
来。按了停止按钮  之后，停止计数。
停止后，在停止按钮的位置显示出计数按钮
。需要继续进行计数时，请再次按计
数按钮 。



在按了清除按键之前，计数的数值不被清除。

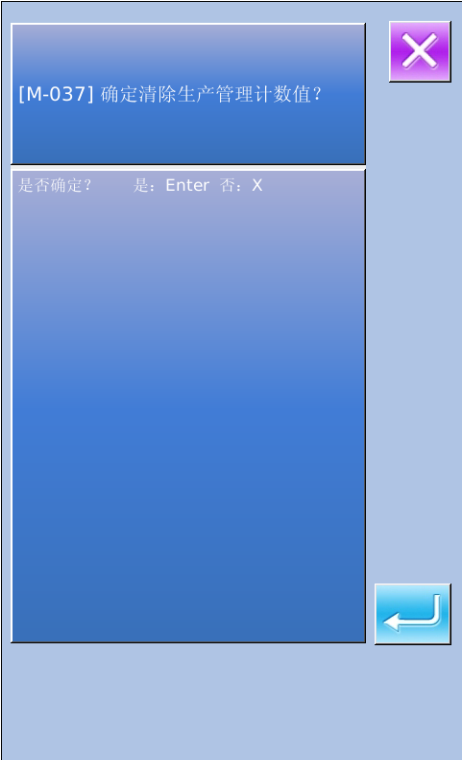
⑦ 清除计数值。

清除计数的值时，需要计数器为停止计数状态，按下清除按键。

可以被清除的值为现在的目标值
和实际值

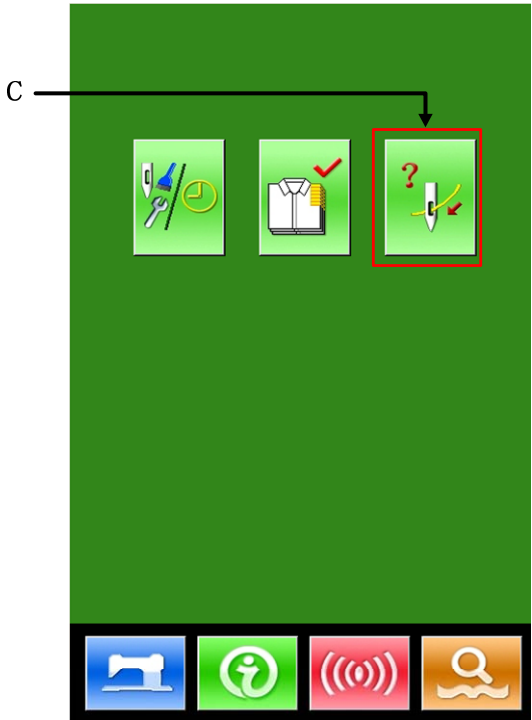
注：仅在停止计数状态时清除按键可以显示。

按下清除按键之后，会显示提示信息如右图所示，按下确定按键确认清除。

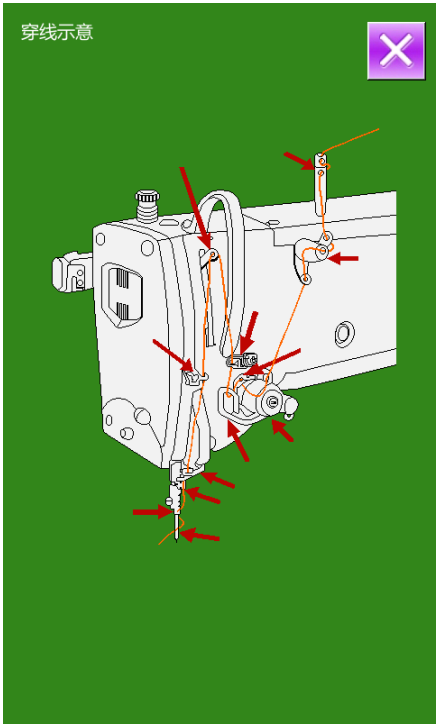


6.6 显示穿线图

信息界面按下穿线按键 (C)
之后，上穿线图被显示出来。



穿线时，请参阅。



6.7 报警记录

 维修人员等级时，按下  可以进入报警记录界面（如右图所示），界面中显示了系统发生的故障信息内容，序号越小表示该故障信息发生的时间越新。

另外还记录了每次报警发生时的生产计数。

可以通过  键或  键进行翻页，查看更多的报错信息。

按下  键会清除掉全部故障信息记录。



6.8 运转记录

 维修人员等级时，按下  可以查询机器的运转信息。

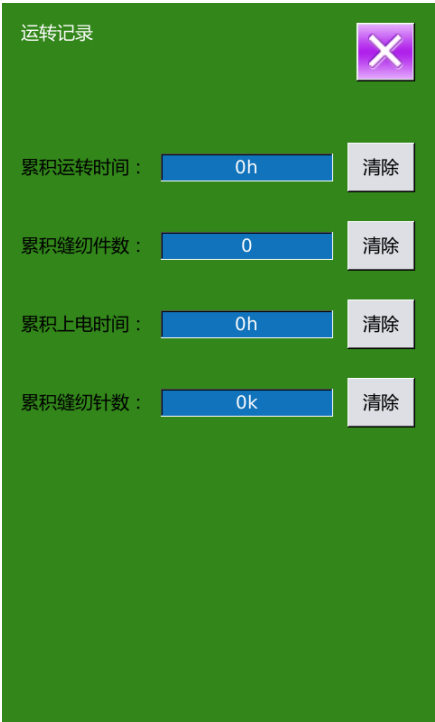
累积运转时间：记录机器累积运转时间（小时单位）

累积缝纫件数：记录机器累积缝制件数

累积上电时间：机器累积上电时间（小时单位）

累积缝纫针数：机器累积针数（1000 针单位）

按下“清除”键可以分别清除记录值。



6.9 分期密码设置

- 1) 维修人员等级时，按下  可以设置分期密码

首先会显示输入用户 ID 界面，输入正确的厂家 ID 后即进入密码管理模式，主要用于用户分期密码的设置和管理。

- 可以最多设置 10 个不同的密码发作日期。
- 系统可以显示厂家设置的密码信息。

- 2) 输入正确的厂家 ID 后，进入密码设置界面
- 设置密码前需要先设置板号和系统时钟。

输入用户ID

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z



厂家

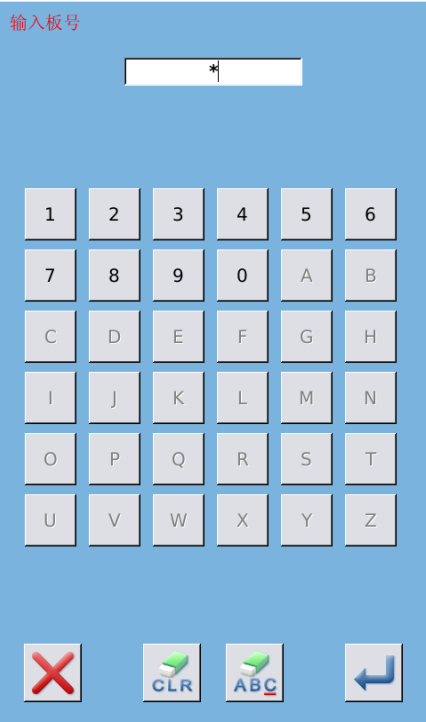
板号



3) 输入板号

按下【板号】键，进入板号输入界面，
输入板号后，按下确定键完成输入。

※ 板号为四位，范围 0~9999



4) 输入系统时钟

按下【时钟】键，进入系统时钟设置界面，确定系统时钟



5) 输入超级密码

按下【超级密码】键，进入超级密码设置界面，输入超级密码

※ 最多可输入 9 位总密码

※ 密码输入要求确认，两次密码必须一致

输入超级密码

输入密码:

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z

6) 输入分期密码

按下【密码-1】键，进入第一期密码设置界面，要求输入第一个有效日期，选择合

适的日期后，按  确认。

十二月 2012

	周日	周一	周二	周三	周四	周五	周六
48	25	26	27	28	29	30	1
49	2	3	4	5	6	7	8
50	9	10	11	12	13	14	15
51	16	17	18	19	20	21	22
52	23	24	25	26	27	28	29
1	30	31	1	2	3	4	5

- 然后进入密码设置界面，输入密码。
- ※ 日期不能小于系统日期
 - ※ 密码输入要求确认，两次密码必须一致

输入密码1

输入密码:

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z



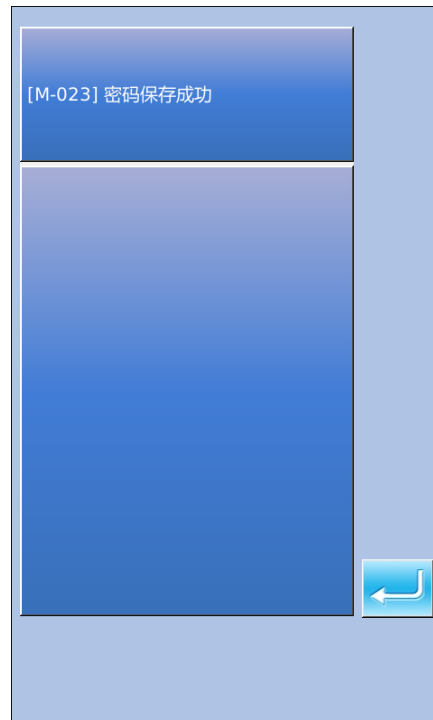
- 7) 输入其他的分期密码
- 其他分期密码的设置和⑦相同，参考⑦的设置
- ※ 下一个有效日期必须大于上一个有效日期

厂家	*****
板号	0001
时钟	2012-12-07 15:05
超级密码	*****
密码-1	2012-12-24
密码-2	



8) 保存密码

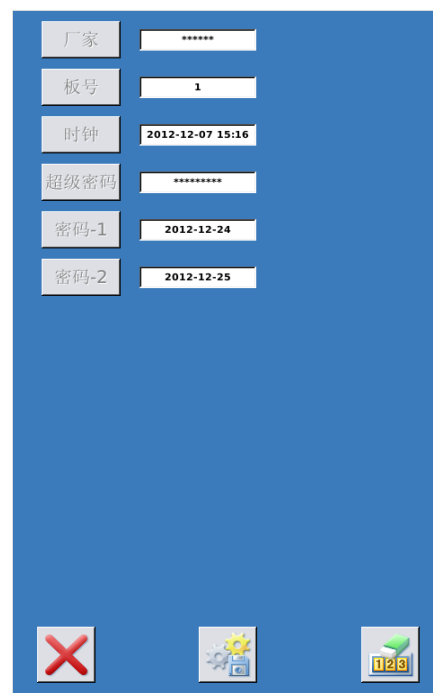
密码输入完成后，按确定键保存。
密码保存成功后，会显示如右图所示提示信息。



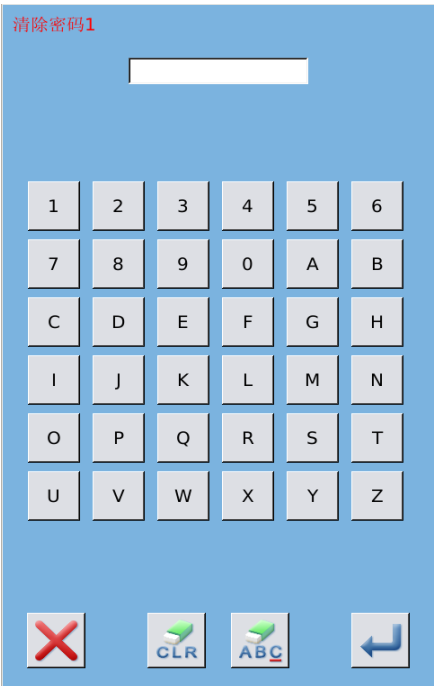
9) 主动清除密码

主动清除密码是指在分期密码发作前主动清除密码的设置。

- A、进入方法同密码设置
- B、输入正确的厂家 ID 后，显示右边的界面
- C、系统显示当前时钟和各个分期密码发作日期
- D、按下，从前向后依次删除分期密码



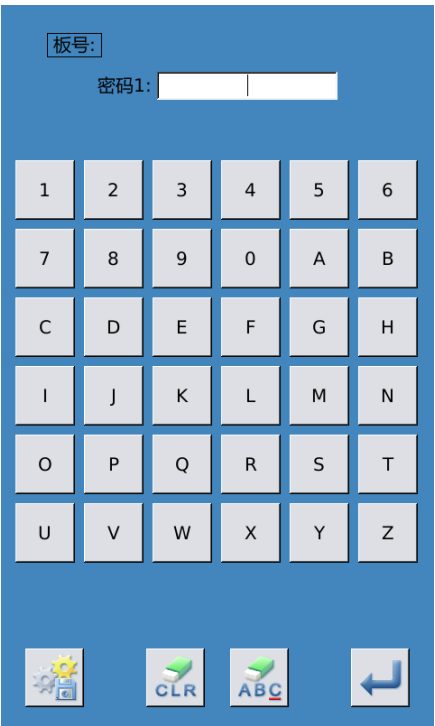
输入正确的分期密码后清除当前期的密码，当输入是超级密码时，则清除全部密码。
密码清除后会以红色文本形式显示，如果全部密码清除完毕，则自动退出，返回到信息主界面。



10) 密码发作

如果系统设置了密码，则使用至密码发作日期时，会遇到密码发作。
此时若继续使用，必须输入有效密码。

- A、有效密码包括当期提示的密码和超级密码。
- B、若输入的是当期密码，则清除当期密码。清除当前密码后，若后面没有密码，则机器不再会出现密码发作的问题。
- C、若输入的是超级密码，则全部清除分期密码。



7 通讯功能

通信功能完成以下几项功能：

- 把其它缝纫机编制的缝制数据或打版软件编制后的缝制数据下载到缝纫机
- 向U盘或计算机里加载缝制数据
- 从U盘加载参数
- 将操作头中保存的参数导入到U盘中
- 操作头软件升级

7.1 关于可以处理的数据

可以处理的缝制数据如下：

数据类型	标准格式
VDT	[0-9][0-9][1-9].vdt
DXF	[0-9][0-9][1-9].dxf
DST/DSB	[0-9][0-9][1-9].dst/ [0-9][0-9][1-9].dsb
B/BA	[0-9][0-9][1-9].(1-599)/ [0-9][0-9][1-9].(600-999)
PAT	[0-9][0-9][1-9].pat

往U盘保存数据时，请保存到DH_PAT文件夹里，否则就不能读取文件。

7.2 功能操作

① 显示通信界面

在数据输入界面，按通信键之后，显示出通信界面。

② 选择相应操作

该界面下可选择的功能，分为三类：

- 花样传输
- 参数传输
- 软件升级

点按相应的图标，进行功能操作。

③ 按通讯键退出通讯功能



7.3 花样传输

① 显示通信界面

A：从U盘向操作面板导入花样

B：将操作面板中保存的花样导出到U盘中

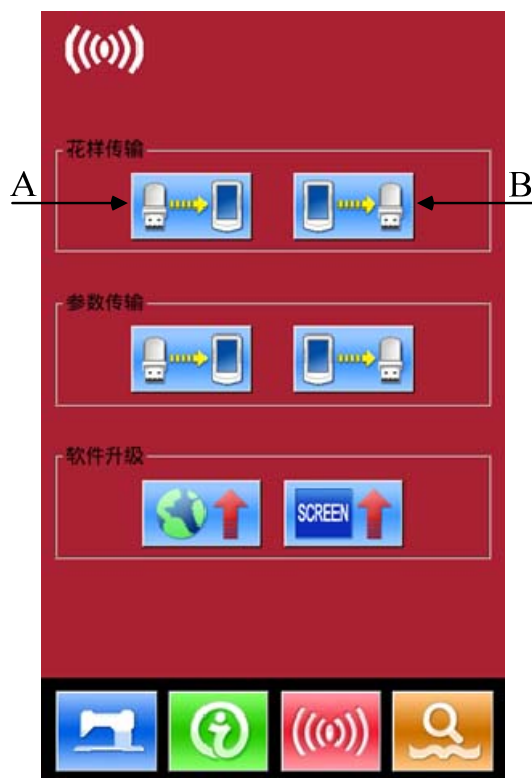
※ 从U盘导入花样时，请将花样文件保存在U盘的DH_PAT目录中

※ 从操作头导出花样时，导出的花样文件保存在U盘的DH_PAT中

U盘中的花样命名方式：

从U盘导入花样时，请遵守下面的规则命名：

文件名：三位数字，001~999



举例：

正确的文件命名：100.vdt、102.dst

其他的命名方式不正确，系统不能识别。

默认情况下，文件名称也就是复制到操作面板后的保存位置。

7.3.1 U 盘花样导入操作

按  (A) 键，进入U盘向操作面板导入花样界面。



: 选择全部花样



: 反选操作



: 输入保存号码（选择一个花样导入时可用）



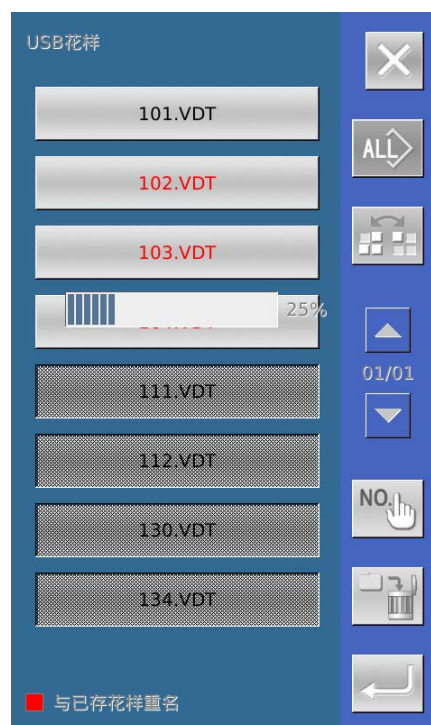
: 删除花样



选中想要导入的花样，按下确定键

 完成导入操作，导入操作面板后的保存位置与选择的花样号一致。

注：不能覆盖已存花样。

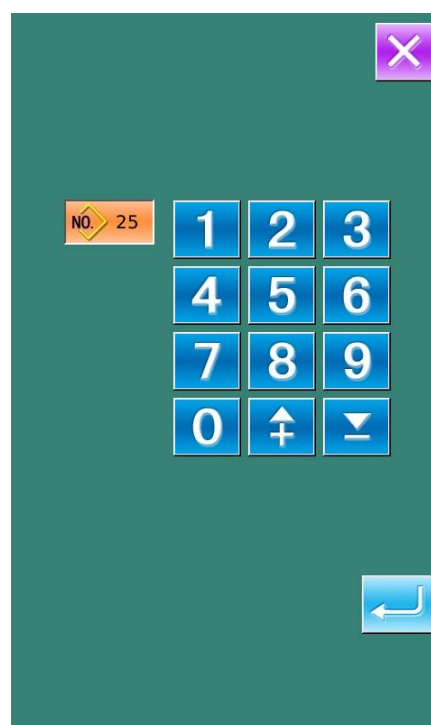


红色名字的花样文件不能导入，因为与操作面板中的已存花样重名，需要手动输入号码进入导入。

按下输入键  进入号码输入界面，默认号码为当前空号，也可以手动输入目标号码，按下确定键后完成保存操作。

注：重名花样只能一个一个导入，选

择多个花样时不能使用  **键。**



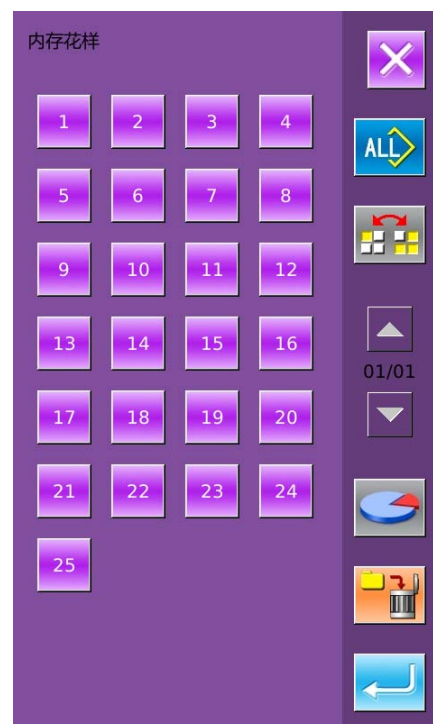
7.3.2 操作面板花样导出操作

按下  (B) 键，进入操作面板
花样导出界面。

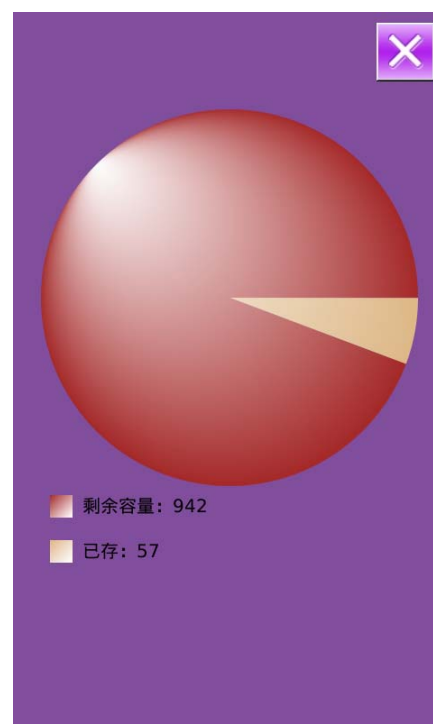
选择想要导出的花样号，按下确定键

 完成操作。

也可以在当前界面下批量删除花样。



在该界面下，按  键可以查询内
存花样剩余空间。



7.4 参数传输

① 显示通信界面

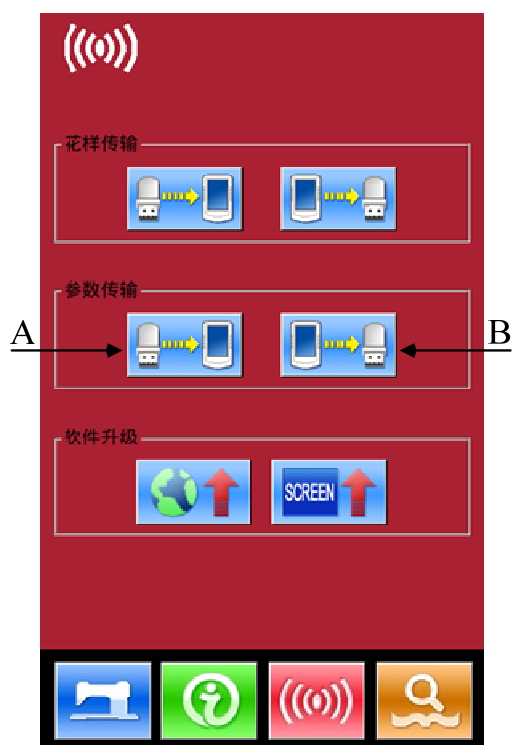
A: 从U盘向操作面板导入参数

B: 将操作头中保存的参数导出到U盘

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

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

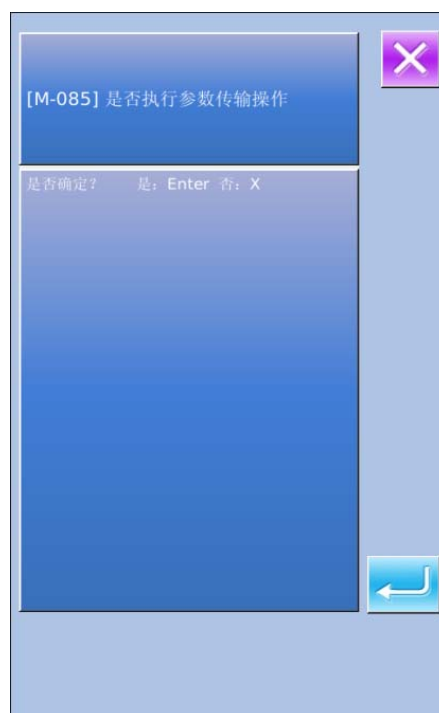
※ 参数文件是二进制文件, 对文件的操作在操作面板上完成, 不要手动修改文件, 以免影响使用。



② 按A键, 完成从U盘向操作头导入参数

A、按确定键完成从 U 盘向操作面板导入参数并退出。

B、按退出键直接退出。



③ 按B键，完成操作面板的参数导出到U盘中

A、按确定键完成从操作面板向U盘导出参数并退出。

B、按退出键直接退出。



7.5 软件升级

1) 显示通信界面

在通讯界面下，按键进入软件升级界面。



2) 升级类型选择

软件升级包括：

- ◆ 操作头程序
- ◆ 图标
- ◆ 显示字库
- ◆ 开机画面

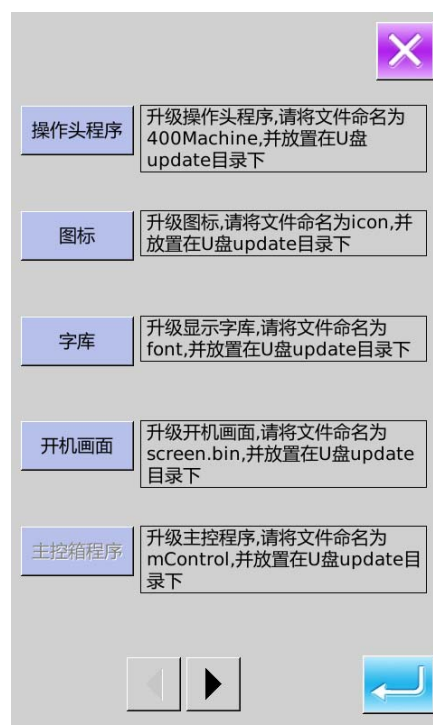
按  和  键进行翻页。

A、按确定键  完成选中功能的升级并退出。

B、按退出键  退出。

C、各个功能键能同时多选，系统顺序执行相应的升级功能。

D、升级完成后，需要关机重启。

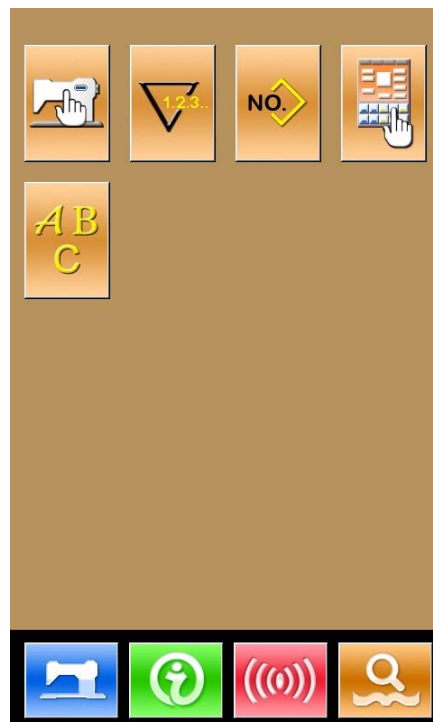


8 模式和参数设置

8.1 进入模式和参数设置

按下  可以切换数据输入界面和模式界面（如右图所示），在该界面下可以进行一些详细的设置和编辑操作。

长按  键 3 秒可以进入设置模式等级 2 状态，长按 6 秒可以进入设置模式等级 3 状态。



设置模式等级 1



设置模式等级 2



设置模式等级 3

功能说明:

序号	图标	功能	内容
1		一级参数设置	进行一级（U）参数设置。
2		计数器设置	可以设置计数器类型、计数值和设定值。
3		缝制类型设置	切换普通花样缝纫和组合花样缝纫。
4		花样编辑	可以进入花样编辑。
5		字母绣编辑	进行字母绣设置。
6		格式化	进入格式化功能。
7		软件版本查询	查询当前软件版本。
8		键盘锁定	可以锁定一些设定项功能。
9		检测模式	针对机器外设和液晶进行检测。
10		参数备份还原	可以对当前参数进行备份和恢复。
11		编辑参数开关	可以对编辑下参数进行打开或关闭操作。
12		二级参数设置	进行二级（K）参数设置。
13		视频播放	播放视频。

8.2 一级参数设置

① 参数设置操作

选择进入一级参数设置界面（如右图所示）。

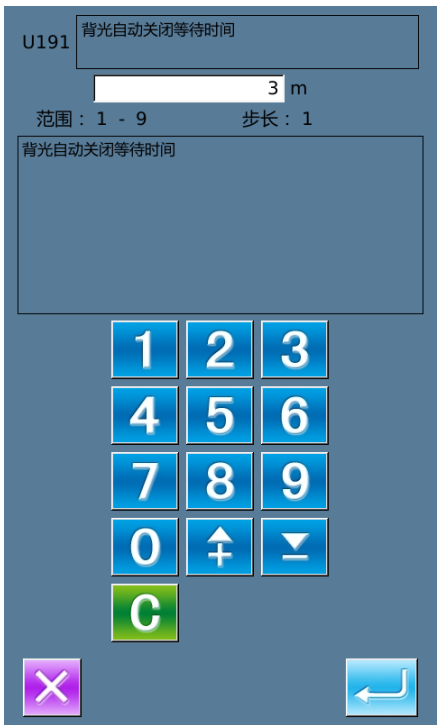
按键退出参数设置界面。

当有参数修改时，在参数设置界面显示【已修改】按键。

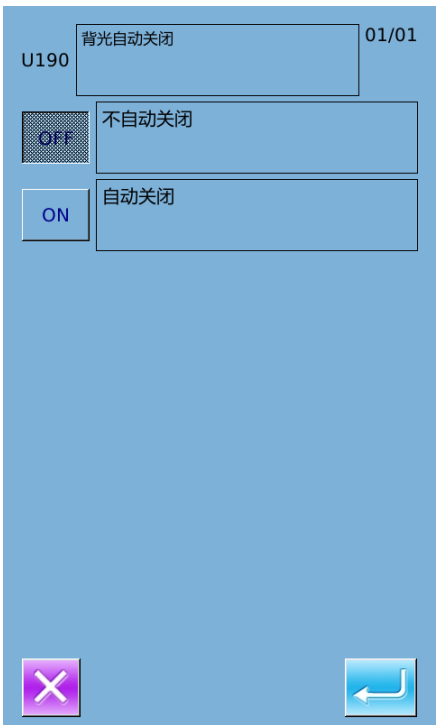
选择想要修改的参数后进入设置状态，参数设置分为输入型和选择型，举例如下：



选择 U191，进入界面（输入型）



选择 U190，进入界面（选择型）



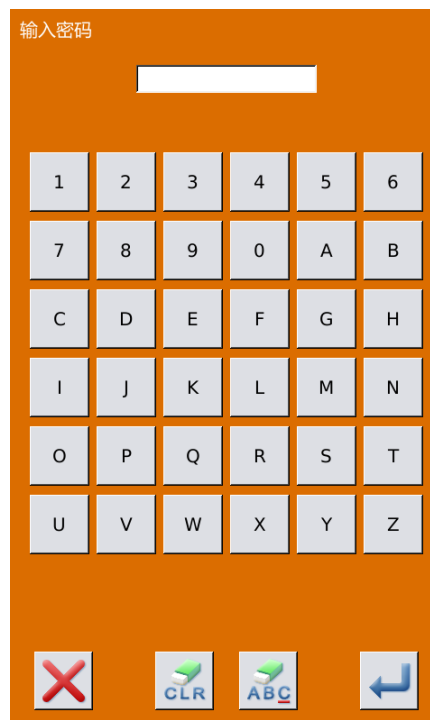
② 参数加密

按【加密】键后，进入密码输入界面。

※ 按  全部清除输入内容。

※ 按  每按一次删除一个字符。

※ 默认密码为厂家 ID。



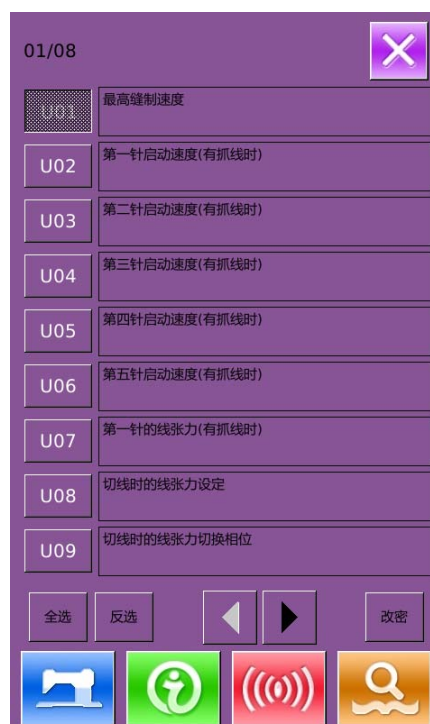
输入正确的密码后，进入参数加密界面。
选择要加密的参数，按下参数号码即可。

※ 按【全选】，全部参数加密。

※ 按【反选】，反向选择参数加密。

※ 按【改密】，修改密码，默认是厂家 ID。

按退出键  退出加密功能。

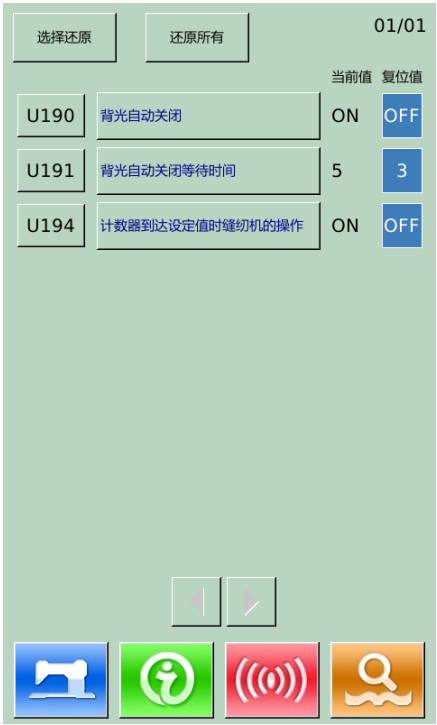


③ 查询已修改参数

如果有参数修改，在参数设置界面会显示【已修改】按键。

在参数设置界面，按下【已修改】按键，可以查询已修改过的参数。

- A、首先要求输入密码，输入正确的密码后进入已修改参数查询界面。
- B、在已修改参数查询界面下，可以查询所有修改过的参数列表。在该界面下：
 - ※ 按【还原所有】按键，将修改参数全部恢复为出厂值。
 - ※ 点按参数名称键，例如【背光自动关闭】，再按【选择还原】将选中的参数恢复为出厂值，支持复选操作。
 - ※ 按参数号码键，例如【U190】，能够进入参数设置界面，可以重新设置参数数值。
 - ※ 按模式键，退出该界面。



8.2.1 一级参数表

序号	参数	设定范围	编辑单位	出厂设置
U01	最高缝制速度	200~2800	100rpm	2700rpm
U02	第一针启动速度 有抓线时	200~2700	100rpm	300rpm
U03	第二针启动速度 有抓线时	200~2700	100rpm	500rpm
U04	第三针启动速度 有抓线时	200~2700	100rpm	1000rpm
U05	第四针启动速度 有抓线时	200~2700	100rpm	1500rpm
U06	第五针启动速度 有抓线时	200~2700	100rpm	2000rpm
U07	第一针的线张力 有抓线时	0~200	1	200
U08	切线时的线张力设定	0~200	1	0
U09	切线时的线张力切换相位	-6~4	1(4°)	0
U10	第一针的启动速度	200~1500rpm	100rpm	200rpm

序号	参数	设定范围	编辑单位	出厂设置
	无抓线时			
U11	第二针的启动速度 无抓线时	200~2700rpm	100rpm	600rpm
U12	第三针的启动速度 无抓线时	200~2700rpm	100rpm	1000rpm
U13	第四针的启动速度 无抓线时	200~2700rpm	100rpm	1500rpm
U14	第五针的启动速度 无抓线时	200~2700rpm	100rpm	2000rpm
U15	第一针的线张力 无抓线时	0~200	1	0
U16	启缝时的线张力切换相位 无抓线时	-5~2	1	-5
U25	缝制计数器计数单位	1~30	1	1
U26	高低段行程时的压脚高度	50~90	1	70
U32	蜂鸣器声音设定 OFF: 禁止蜂鸣器 PAN: 操作盘声音 ALL: 操作盘加报警	0: OFF: 无蜂鸣音 1: PAN: 操作盘音 2: ALL: 操作盘加报警		2
U33	设定抓线的放开针数	1~7	1	2
U34	可推迟抓线器的夹线时相	-10~0	1(4°)	0
U35	抓线开关控制 ON: 允许 OFF: 禁止	0: 允许 1: 禁止动作		0
U36	选择送布动作时相 在收线不良情况下设定一方向	-8~16	1(4°)	3
U37	缝制结束后压脚状态	0: 始缝移动后, 压脚上升 1: 缝制结束后立即上升 2: 始缝移动后, 操作踏板上升		0
U38	自动加工完成后压板抬起	0: ON: 压脚上升 1: OFF: 禁止压脚上升		0
U39	缝制结束后是否检索原点	0: OFF: 无原点检索 1: ON: 有原点检索		0
U40	设定组合缝制时的原点检索	0: OFF: 无原点检索		0

序号	参数	设定范围	编辑单位	出厂设置
		1: PAT: 每一图案结束后 2: CLC: 每一循环结束后		
U41	中途停止命令下可选择停止时的压脚状态	0: 压脚自动上升 1: 通过压脚开关上升		0
U42	机针停止位置	0: UP: 上位置 1: DEAD: 上死点		0
U46	是否允许剪线	0: ON: 允许 1: OFF: 禁止切线		0
U48	设置起缝点复位路径	0: 直线复位 1: 图案返回 2: 原点检索		0
U49	绕线速度设置	200~2700	100rpm	1300rpm
U51	拨线开关	0: OFF: 关闭 1: ON: 打开		1
U64	选择尺寸变更单位	0: %: 输入百分比 1: SIZ: 输入实际尺寸		0
U68	线张力设定时的线张力输出时间	0~20s (0: 无张力输出)	1	0
U69	抓线的弯曲位置	0: S: S 规格 1: H1: H 规格细线(#50~#8) 2: H2: H 规格中间 3: H3: H 规格粗线(#5~#2)	1	0
U70	抓线位置	0: 标准(前方位 置) 1: 后方位置		0
U71	断线检测	0: OFF: 无效 1: ON: 有效		0
U72	断线检测时缝制开始的无效针数	0~15	1	8
U73	断线检测时缝制中途的无效针数	0~15	1	3
U81	外压脚控制-踏板开闭	(电磁压脚) 0: 1 段 1: 2 段行程(通过压脚 SW 压脚最	1	0

序号	参数	设定范围	编辑单位	出厂设置
		下降) 2: 2 段行程(通过启动 SW 压脚最下降启动) 3: 2 段行程(通过压脚 SW1 压脚中间、最下降、上升) 4~99: 1 段 (气动压脚) 0: 一体压脚 1: 左右分离压脚, 无左右优先 2: 左右分离压脚, 从右到左顺序 3: 左右分离压脚, 从左到右顺序 4: 一体行程 5: 左右分离左行程, 无左右优先 6: 左右分离左行程, 从右到左的顺序 7: 左右分离左行程, 从左到右的顺序 8~99: 一体压脚		
U82	外压脚控制-中途停止时开闭	(电磁压脚) 0: 1 段 1: 2 段行程(通过压脚 SW 压脚最下降) 2: 2 段行程(通过启动 SW 压脚最下降启动) 3: 2 段行程(通过压脚 SW1 压脚中间、最下降、上升) 4~99: 1 段 (气动压脚) 0: 一体压脚 1: 左右分离压脚, 无左右优先 2: 左右分离压脚,	1	0

序号	参数	设定范围	编辑单位	出厂设置
		从右到左顺序 3: 左右分离压脚, 从左到右顺序 4: 一体行程 5: 左右分离左行程, 无左右优先 6: 左右分离左行程, 从右到左的顺序 7: 左右分离左行程, 从左到右的顺序 8~99: 一体压脚		
U83	踏板类型选择	0: S: 单踏板 1: D: 双踏板		1
U84	踏板 SW1 锁定	0: OFF: 无 1: ON: 有		1
U85	踏板 SW2 锁定	0: OFF: 无 1: ON: 有		1
U86	踏板 SW3 锁定	0: OFF: 无 1: ON: 有		1
U87	踏板 SW4 锁定	0: OFF: 无 1: ON: 有		1
U88	缩放模式	0: OFF: 禁止 1: PIT: 间隔增减 2: STI: 针数增减		1
U89	移动模式	0: 禁止 1: 平行移动 2: 后设第二原点		2
U91	滚珠轨道补正动作	0: OFF 无 1: ON: 有		0
U94	原点检索时是否选择上死点	0: OFF: 否 1: ON: 是		0
U97	暂停-切线操作	0: AUT: 自动切线 1: MAN: 手动(通过 再将停止 SW 进行切线)		1
U101	主马达 XY 传送同步控制	0: 2700rpm /3.0mm 1: 2200rpm 3.0mm 2: 1800rpm		0

序号	参数	设定范围	编辑单位	出厂设置
		/3.0mm 3: 1400rpm /3.0mm		
U103	中压脚控制	0: 无(下降固定) 1: 有(运转时、通过缝制数据下降) 2: 有(送布前进、后退时下降)		1
U104	中压脚下降同步	0: 缝纫机机头启动之前 1: 与最后的外压脚同步		0
U105	中压脚/拨线器拨线位置	0: 中压脚上拨 1: 中压脚上拨(中压脚最下降位置) 2: 中压脚下拨		0
U108	气动压力检测	0: OFF: 无 1: ON: 有		0
U112	中压脚下降位置设定	0~7.0mm	0.1	3.5
U129	机针冷却有无	0: OFF: 无 1: ON: 有		0
U190	背光自动关闭	0: OFF: 不自动关闭 1: ON: 自动关闭		0
U191	背光自动关闭等待时间	1~9 分钟	1	3
U192	液晶背光亮度调节	20~100	1	100
U193	禁止计数器被修改	0: OFF: 允许修改 1: ON: 禁止修改		0
U194	计数器达到设定值时的缝纫机操作	0: OFF: 停止缝纫 1: ON: 可继续缝纫		0
U195	音量大小	30~63	1	30
U200	语言选择	0: 中文 1: 英文		0

序号	参数	设定范围	编辑单位	出厂设置
U201	开机是否进入语言选择	0: OFF: 否 1: ON: 是		0
U205	剪线模式	0~2	1	0

8.3 二级参数设置

在设置模式等级 3 下，选择  进入二级参数设置界面（如右图所示）。操作方法参照一级参数设置。



8.3.1 二级参数表

序号	参数	设定范围	编辑单位	出厂设置
K02	缝纫机类型选择	0~3	1	0
K03	夹线器类型选择	0: M: 机械夹线器 1: E: 电子夹线器	1	1
K04	动框曲线选择	0~10	1	5
K05	动框角度设定	130~250	1	135
K06	物料类型选择	0: 薄料; 1: 中料; 2: 厚料	1	0
K07	物料厚度选择	0~15	1	0
K31	暂停输入选择	0: 无效 1: 有效		1

序号	参数	设定范围	编辑单位	出厂设置
		2: 暂停后、通过暂停开关来切线或者通过踏板来启动		
K42	切线找原点位置微调	-50~50	1	0
K43	切线速度	0: 400rpm 1: 800rpm		1
K52	电磁拨线器-打开输出时间	10~500ms	10ms	50ms
K53	电磁拨线器-关闭推迟时间	10~500ms	10ms	80ms
K54	上死点停止时的拨线输出时相选择	0: UP: 上位置 1: DEAD: 上死点位置		0
K56	移动界限+X 方向	0~255mm	1	76
K57	移动界限-X 方向	0~255mm	1	76
K58	移动界限+Y 方向	0~255mm	1	51
K59	移动界限-Y 方向	0~255mm	1	51
K60	三级踏板使能	0: OFF: 无效 1: ON: 有效		0
K61	主轴电机停车角度	30~80	1	53
K63	针杆停止上下针停止模式有效无效选择	0: OFF: 无效 1: ON: 有效		1
K67	拨线器输出时的线张力输出	0: OFF: 无输出（保持切线张力） 1: MAX: 最大输出		0
K74	电磁/气动压脚选择	0: MAG: 电磁压脚 1: AIR: 气动压脚		0
K75	气动压脚下降推迟时间	0~1000ms	10ms	100
K92	平时原点检索/原点复位线路选择	0: STD: 标准 1: REV: 反转 2: Y2X: Y 轴→X 轴 3: X2Y: X 轴→Y 轴		0

序号	参数	设定范围	编辑单位	出厂设置
K93	反转时原点检索/原点复位线路选择	0: STD: 标准 1: REV: 反转 2: Y2X: Y 轴 →X 轴 3: X2Y: X 轴 →Y 轴		0
K95	正向切线时相	-10~10	1	0
K96	反向切线时相	-10~10	1	0
K98	空送布命令-顶点休止时间	0~100ms	10ms	20
K100	结束命令-停止控制	0: OFF: 无 1: ON: 有		0
K110	翻转装置和伸缩压脚控制	0: OFF: 无 1: ON1: 有 2: ON2: 伸缩 压脚伸出		0
K110	翻转装置有无	0: OFF: 无 1: ON: 有		0
K111	翻转装置自动翻转 Y 坐标	0~100.0mm	0.1	17.0
K112	伸缩压脚伸出延时	0~255ms	1	0
K113	伸缩压脚抬起延时	0~255 ms	1	0
K114	伸缩压脚下降延时	0~255 ms	1	0
K121	主轴电机类型	0: 550: 550W 电机 1: 750: 750W 电机		1
K131	暂停出错时有无抬压脚	0: OFF: 无 1: ON: 有		0
K200	恢复出厂参数			

8.4 计数器设置



按下  进入计数器设置界面（如右图所示）。

缝制计数器：每缝制 1 件缝制物，计数器加/减 1。

计件计数器：每缝制 1 循环，计数器加/减 1。

计件计数器主要是针对 C 花样计数的，如果使用其他缝纫类型，计件计数器和缝制计数器作用相同。

1) 计数器数值设置



：按下后可以设置计数器当前值。



：按下后可以设置计数器设定值，设定值为 0 时，计数器不起作用。

2) 计数器类型设置



：设置为加计数器类型，当当前值达到设定值时会提示报警。



：设置为减计数器类型，当当前值为 0 时会提示报警。



：关闭计数器功能。

注 1：参数【U193】设置为“禁止修改”时不能够进入该界面。

注 2：参数【U194】设置为“可继续缝纫”时计数器当前值溢出后不报警，会自动恢复为目标值（加计数器恢复为 0，减计数器恢复为设定值）。



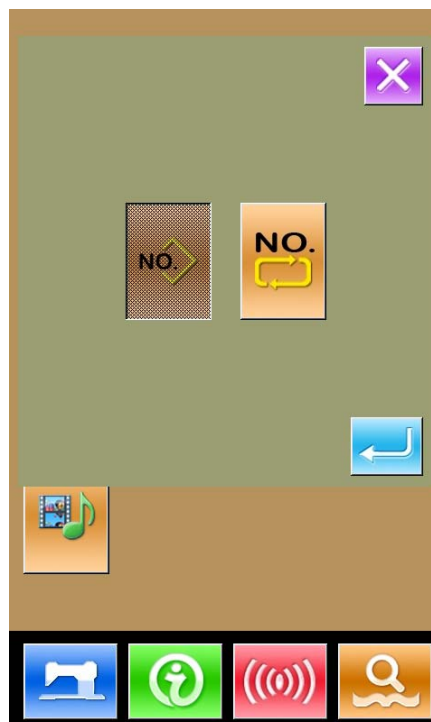
8.5 变换缝制类型

按下  进入缝制类型选择界面（如右图所示）。

 : 普通缝

 : 循环缝

确定缝制类型之后，按下确定键  结束。按  之后，显示出选择的缝制类型的数据输入界面。



8.6 进入花样编辑

按下 ，如下两种图标会互相切换，

选择对应的模式，再按  即可进入花样编辑模式。

具体操作请参照【5 花样图案编辑】内容。

 : 缝纫模式

 : 编辑模式



8.7 格式化



按下  进入格式化功能界面。在该界面下，可以完成：

- A、U 盘格式化
- B、内存花样格式化
- C、自定义格式化
- D、P 和 C 花样格式化

按下相应的功能键，进入相关界面。

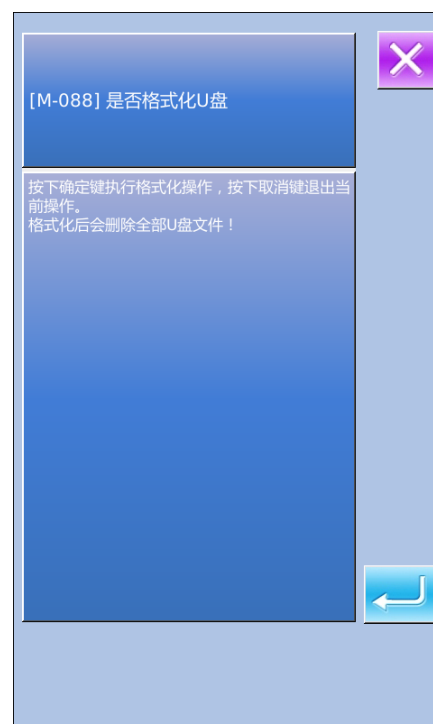


1) 按“USB”键，进入 U 盘格式化

按确定键  格式化 U 盘，按退出键



退出返回。



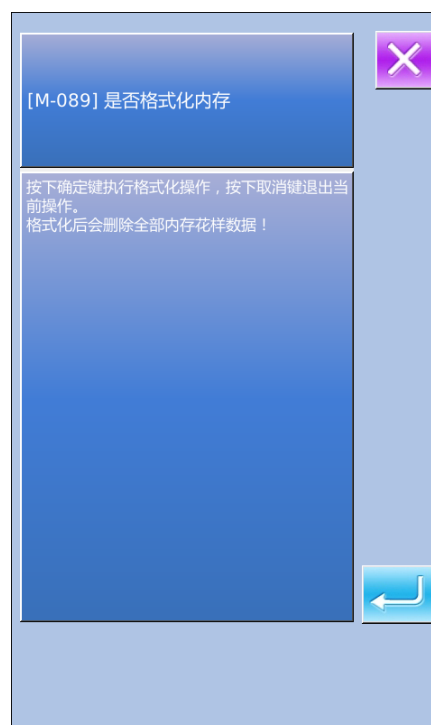
2) 按“内存”按键，格式化内存花样

按确定键  格式化内存，按退出键

 退出返回。

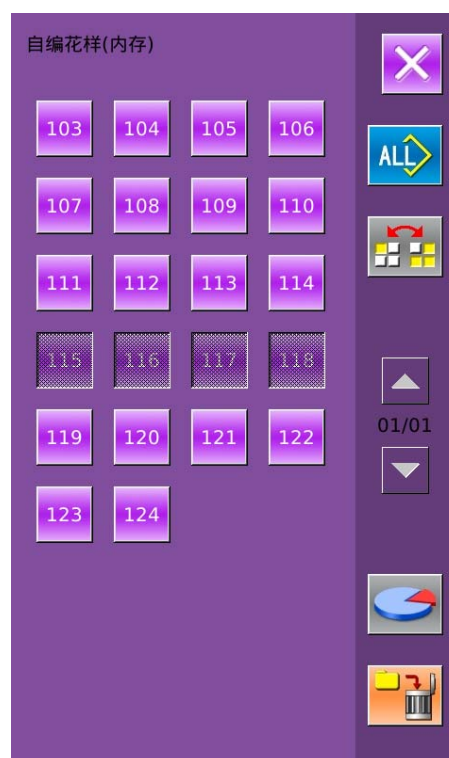
执行格式化内存操作后会删除全部花样，包括 P 花样和 C 花样，然后重新加载出厂花样。

※ 格式化内存花样会将内存中存在的全部花样文件删除，请谨慎操作！



3) 按“自定义”键，进入批量删除功能

在该界面下，会显示操作面板中已保存的所有花样文件，点按相应的按键完成批量删除功能。



4) 按“P 和 C”键，删除全部 P 花样和 C 花样

按确定键  删除全部 P 花样和 C 花

样，按退出键  退出返回。



8.8 软件版本查询

在设置模式等级 2 下，按下  可以查询系统软件版本。

：将当前版本信息保存至 U 盘根目录下。



8.9 键盘锁定

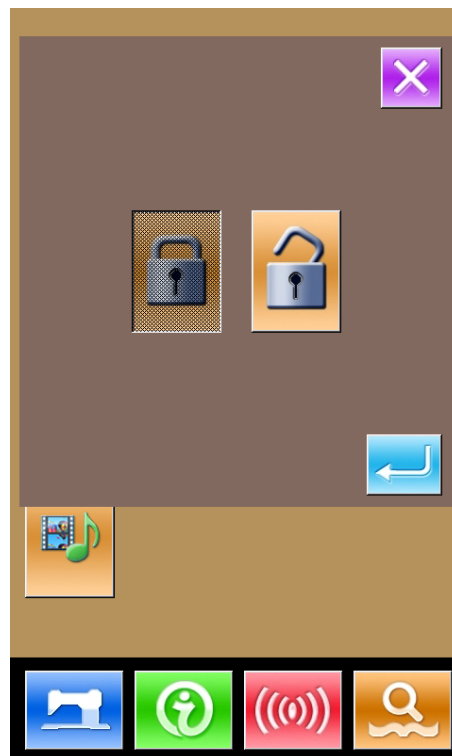
在设置模式等级 2 下，按下  进入键盘锁定设置界面。

1) 键盘锁定操作

：未设定键盘锁定状态

：已设定键盘锁定状态

选择 ，按下确定键  完成键盘锁定操作。



2) 键盘锁定状态显示

关闭参数设置模式界面，返回数据输入界面，如右图所示。可以看到花样号码下方有一个显示键盘锁定状态的图标 。

③ 键盘锁定范围

1、普通缝数据输入界面：

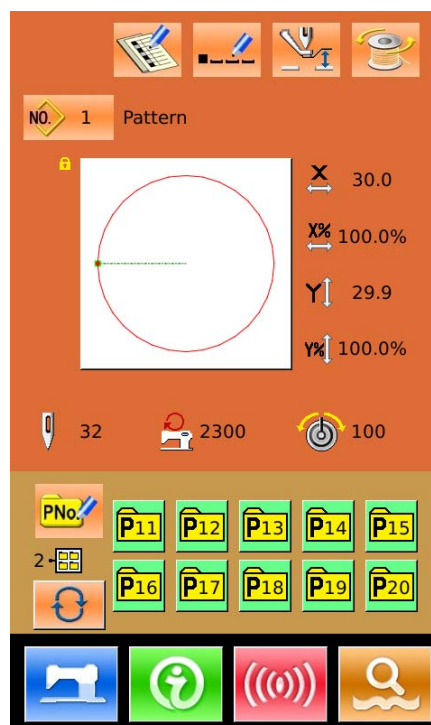
- 花样登记
- 花样命名
- 放大缩小率设置
- 最高转速限制
- P 花样登记

2、普通缝缝制界面：

- 计数器设置
- 线张力设置

3、P 花样输入界面：

- P 花样编辑
- P 花样复制
- P 花样命名



4、P 花样缝制界面：

- 计数器设置

5、C 花样数据输入界面：

- C 花样登记
- C 花样复制
- C 花样命名
- C 花样编辑

6、C 花样缝制界面：

- 计数器设置

7、参数设置模式：

- 参数 1 级
- 参数 2 级
- 计数器编辑
- 检测模式

8.10 参数备份还原



在设置模式等级 3 下，按  键进入参数还原备份界面，如右图所示：

清除键：清除全部已经保存的自定参数

保存键：保存当前参数

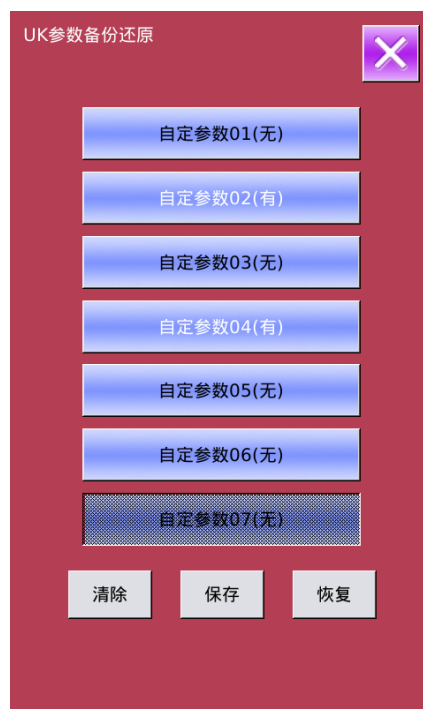
恢复键：恢复当前参数

① 点击  其中任意一键，以确定参数保存位置，然后点击「保存」键进行保存。

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

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

④ 按下「清除」键会清除全部已存参数。



8.11 检测模式

在设置模式等级 2 下，按下



键可以进入检测模式界面

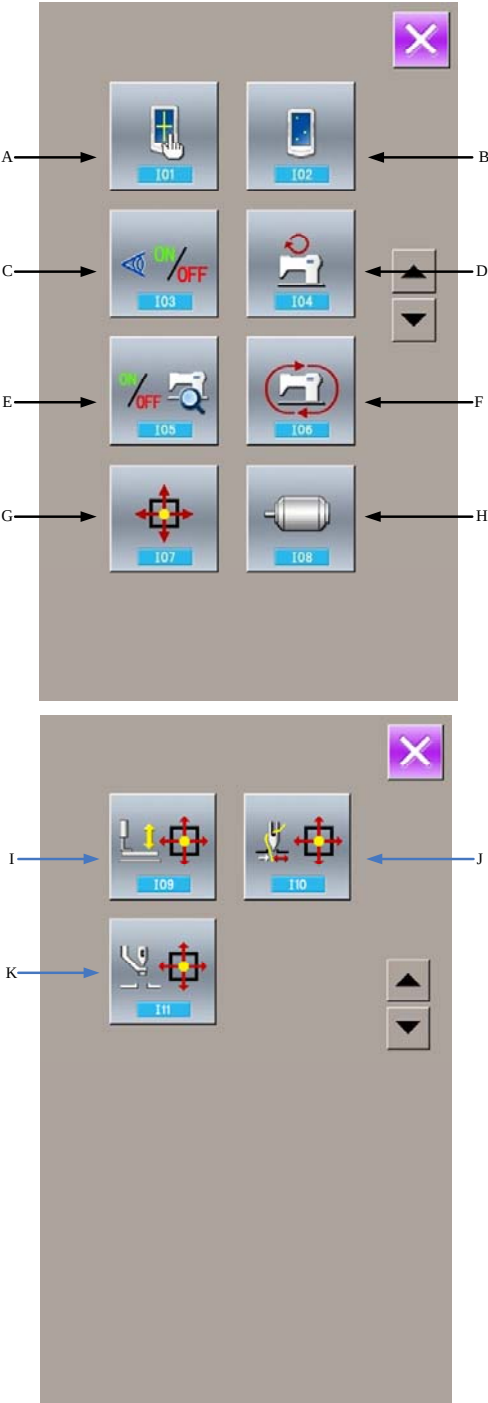
(如右图所示)。通过上下翻页键



翻页。

各图标功能说明详见下表：

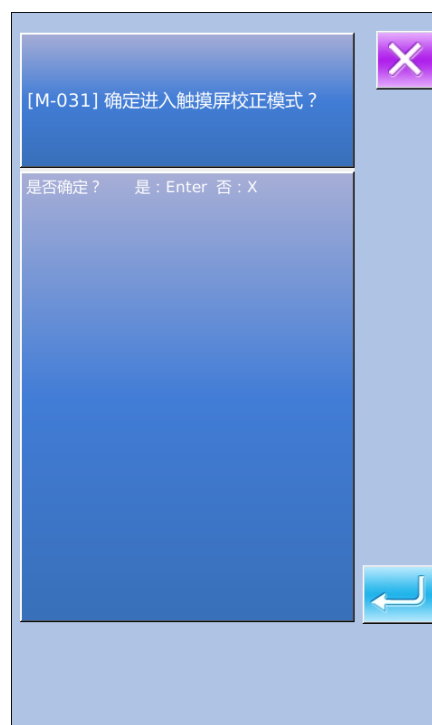
序号	名称
A	I01 触摸屏校正
B	I02 液晶显示检测
C	I03 输入检测
D	I04 转速测定
E	I05 输出检测
F	I06 连续运转
G	I07XY 马达原点检测
H	I08 主轴马达校正
I	I09 压脚 切线马达/原点传感器检测
J	I10 夹线器马达/原点传感器检测
K	I11 中压脚马达/原点传感器检测



1) 触摸屏校正

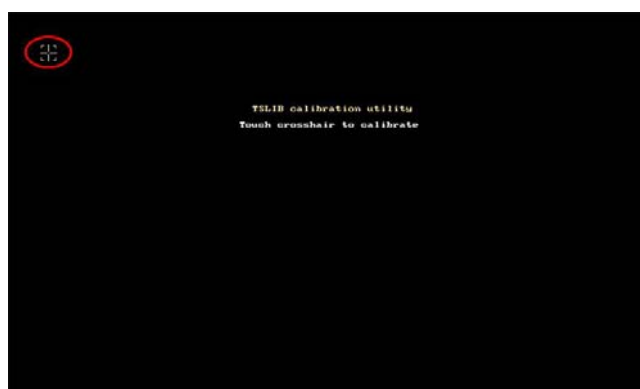
检测模式界面下按下触摸屏校

正键  (IO1 触摸屏校正)，此时会显示「确定进入触摸屏校正模式？」提示信息，按下确定键  进入触摸屏校正功能。



需要进行 5 点的校正，最好采用触摸笔一类工具点击画面中的十字光标，校正结束后会显示提示信息显示本次操作是否成功。

【注】校正过程中请务必按照十字光标指示位置进行确定，否则会导致校正结束后无法正常使用触摸屏。



2) 液晶检测



在检测模式界面按下

(I02 液晶检测) 键进入液晶检测界面(如右图所示), 在该状态下检测液晶是否失色。



3) 输入信号检测方法



在检测模式界面按下

(I03 输入检测) 键进入输入检测界面(如右图所示), 在该界面下可以确认各种开关和传感器的输入状况。

ON: 表示开启

OFF: 表示关闭

- (1) 启动开关 (踏板)
- (2) 压脚开关 (踏板)
- (3) 暂停开关
- (4) 断线检测
- (5) X 马达传感器
- (6) Y 马达传感器
- (7) 压脚电机原点传感器
- (8) 压脚电机传感器
- (9) 抓线电机原点传感器



- (10) 抓线电机传感器
- (11) 中压脚电机原点传感器
- (12) 机头倒置开关

4) 转速测定

① 显示转速测定界面

在检测模式界面按下



(I04 转速测定) 键进入转速测定界面 (如右图所示), 在该界面下可以检测主轴马达转速。

② 转速测定设置

通过  和  可以设置主

轴马达转速, 按下准备键  后, 主轴马达会以已设定的转速旋转。此时, 实际测得的转速会显示在实际转速输入栏。

按下停止键 , 则机器停止运转。

按下退出键  返回到上一级画面。

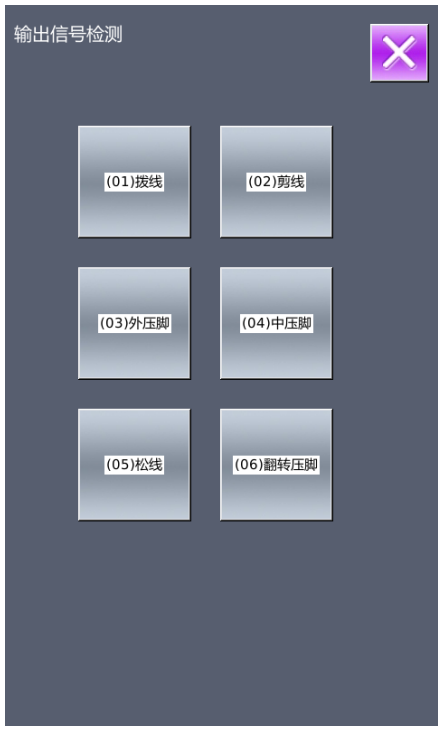


5) 输出检测方法

在检测模式界面按下  (I05 输出检测) 键进入输出检测界面 (如右图所示), 在该界面下可以检测电磁铁的输出状态。

- (1) 拨线
- (2) 剪线
- (3) 外压脚
- (4) 中压脚
- (5) 松线
- (6) 翻转压脚

按下相应图标可以各个外设的输出状况。



6) 连续运转

① 显示连续运转界面

在检测模式界面按下  (I06 连续运转) 键进入连续运转界面 (如右图所示)。

② 连续运转设置

点击动作间隔输入栏或收针原点检测输入栏, 通过数字键盘输入想要设定的数值, 然后按下确定键  并返回到数据输入界面再按下准备键 , 踩下脚踏板即开始连续运转。

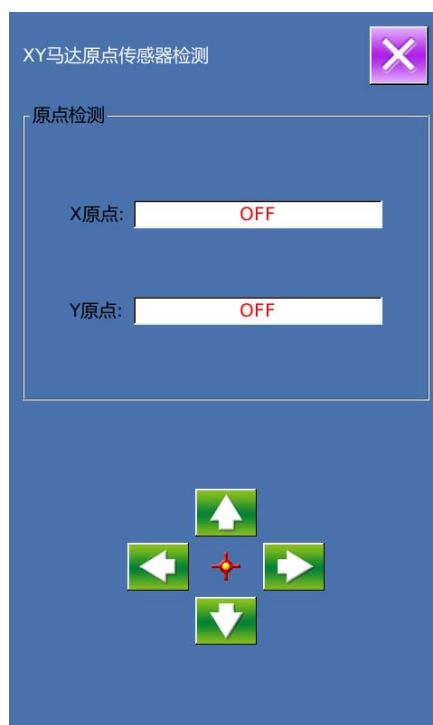


7) XY 马达原点传感器检测



在检测模式界面按下

(I07XY 马达原点检测) 键进入输出检测界面 (如右图所示), 在该界面下通过方向键驱动马达移动, 可以显示出传感器的 ON/OFF 状态。

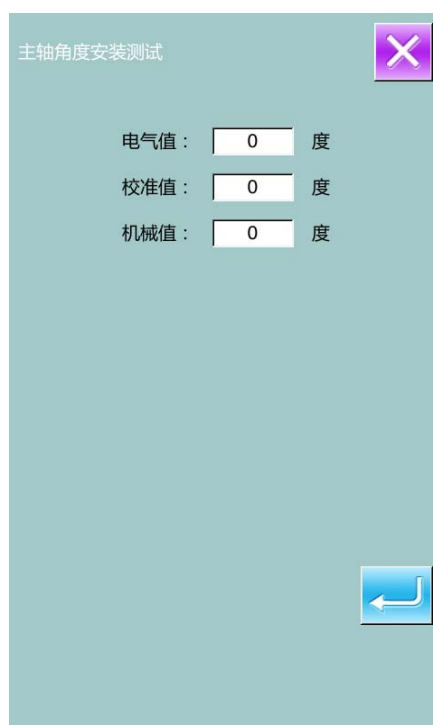


8) 主轴马达校正



在检测模式界面按下 进入主轴马达校正界面, 如右图所示。

在当前界面下拆下主轴马达, 旋转手轮将缝纫机针杆摇到最高点, 用手拧主轴联轴结使显示的电气角度值在 30 度范围内, 重新装好主轴马达, 然后按下确定键。



9) 压脚·切线马达/原点传感器检测

在切线传感器的状态下，A 位置显示切线传感器的 ON/OFF 状态。

根据压脚原点传感器状态，B 位置显示压脚原点传感器的 ON/OFF 状态。

通过  和 ，压脚/切线电机以 1 个脉冲 1 个脉冲进行驱动。

另外，按下  可驱动压脚/切线电机到下述的定位位置，显示该位置的图形为阴影。

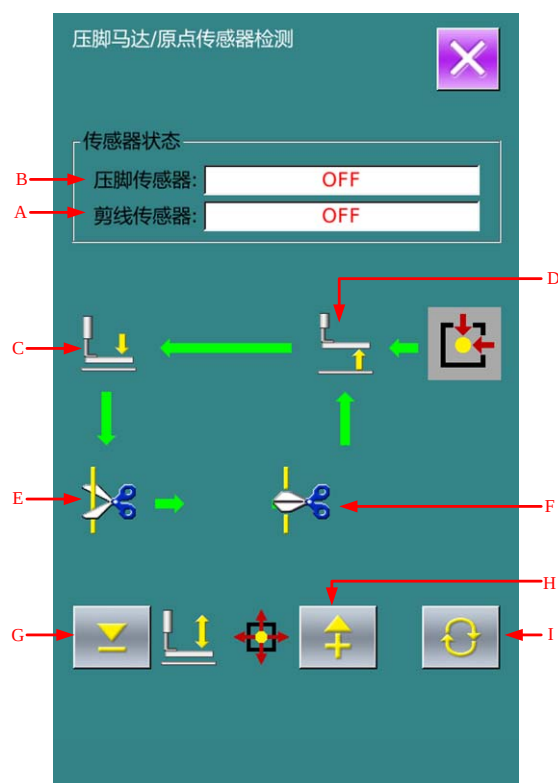
C: 压脚下位置（踏板操作时的下降位置）

D: 压脚上升位置

E: 切线位置

F: 切线下降位置（切线后的下降位置）

注：用启动开关进行压脚·切线电机原点检索之后，变为有效



10) 抓线电机/原点传感器检测

根据抓线原点传感器的状态，
A 位置显示抓线原点传感器的
ON/OFF 状态。

根据抓线传感器状态，B 位置
显示抓线传感器的 ON/OFF 状态。

通过  和 ，压脚/切线
电机以 1 个脉冲 1 个脉冲进行驱动。

另外，按下  可驱动压脚/切线
电机到下述的定位置，显示该位置
的图形为阴影。

C: 待机位置（身前）

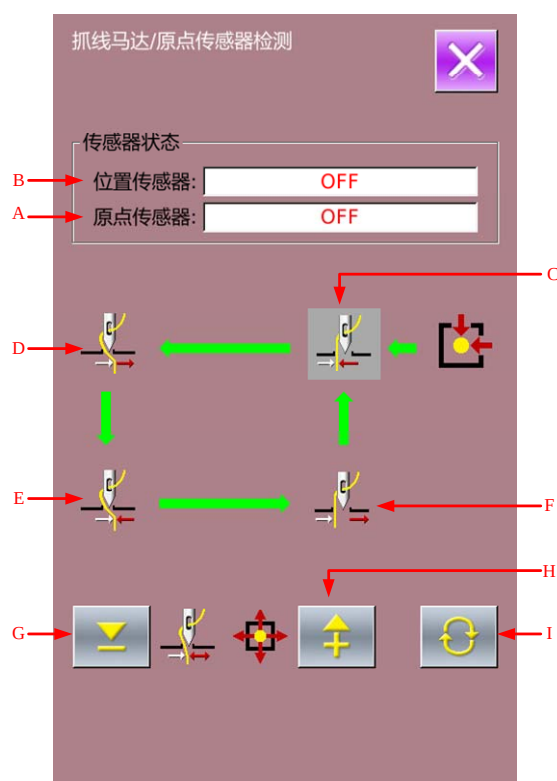
D: 线弯曲位置

E: 夹线位置

F: 退避位置（里侧）

通过启动 SW 进行抓线电机的
原点检索。

注：用启动开关进行抓线电机原点
检索之后，变为有效



11) 中压脚电机/原点传感器检测

根据中压脚原点传感器的状态，A 位置显示中压脚原点传感器的 ON/OFF 状态。

通过  和 ，压脚/切线电机以 1 个脉冲 1 个脉冲进行驱动。

另外，按下  可驱动压脚/切线电机到下述的定位置，显示该位置的图形为阴影。

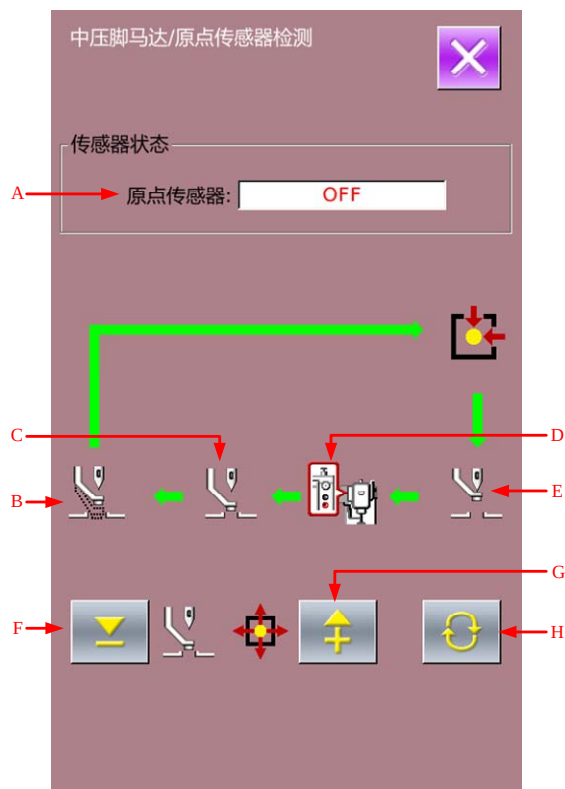
B: 中压脚杆调整位置

C: 下降时的下位置高度=0mm 的位置

D: 相位确认位置

E: 下降时的下位置高度=7mm 的位置

通过启动 SW 进行中压脚电机的原点检索。



8.12 花样编辑参数设置

在设置模式等级 3 下，按下  可以进入花样编辑参数设置界面。

带有阴影效果的凹下图标表示该功能被打开，不带有阴影效果的凸起图标表示该功能被禁止。

根据需要设置编辑参数，按下确定键

 完成设置。



8.13 字母绣编辑

8.13.1 字母绣参数设置

选择进入字母绣参数设置界面，
如图所示。

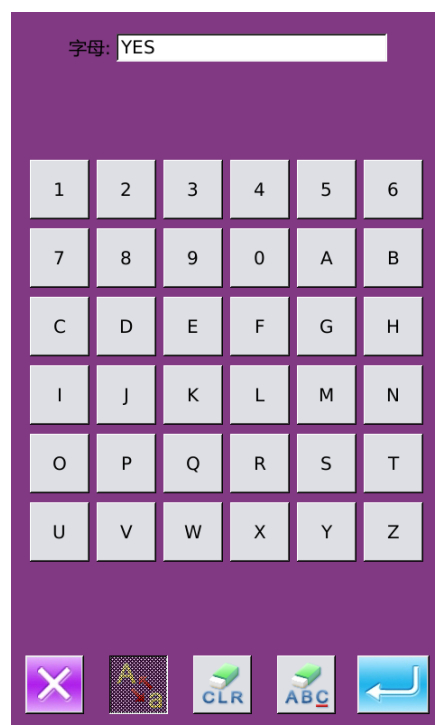


功能说明：

按键名称	功能	内容
输入	字符输入	输入字符，最多可以输入 20 个字符。
字体	选择字体	支持 28 种字体。
排列	排列方式	提供水平、垂直、上玄弧和下玄弧排列方式。
间距	字符间距	设置相邻字符间距。
密度	平包针密度	设置平包针密度，设定值越大平包针越密。
高度	高度缩放	设置字符的高度缩放，范围为 50~200。
宽度	宽度缩放	设置字符的宽度缩放，范围为 50~200。
旋转	旋转/跟随（不跟随）	排列方式为直线（水平、垂直）时，该按键显示内容为旋转，用于设置字符旋转角度； 排列方式为圆弧（上玄弧、下玄弧）时，该按键显示内容为跟随（不跟随），用于设置字符是否跟随圆弧旋转。
剪线	剪线/不剪线	确定是否自动插入剪线。

1、字符输入

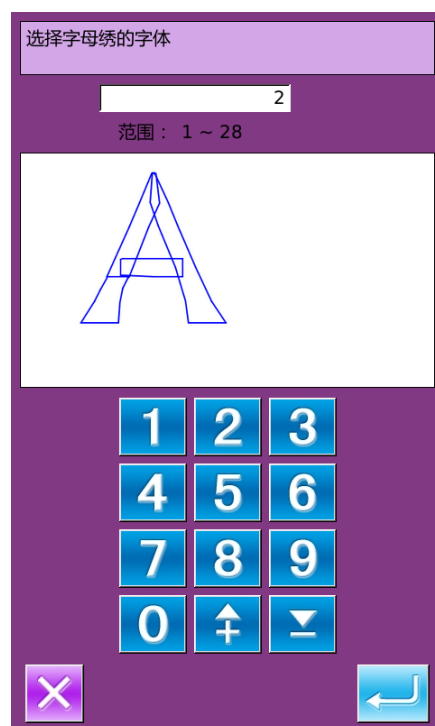
按下「输入」键，进入字符输入界面，需要至少输入一个字符，最多可输入 20 个字符，按下  键保存并退出。



2、选择字体

按下「字体」键，进入字体选择界面，提供 28 种不同的字体，直接输入 1-28 之间的数字进行选择，按下  键保存并退出。

该界面下提供每种字体的形状显示。



3、排列方式

按下「排列」键，进入排列方式设置界面，提供水平直线、竖直直线、上玄弧、下玄弧 4 种字符排列方式，按下  键保存并退出。

选择字母的排列方式

1

范围：1 ~ 4

参数含义：
1.直线排列 - 水平
2.直线排列 - 竖直
3.上玄弧
4.下玄弧

123

456

789

0↑↓

✕

↩

4、字符间距

按下「间距」键，进入字符间距设置界面，水平排列时，表示相邻字符轮廓之间的水平间距。

竖直排列时，表示相邻字符轮廓之间的垂直间距。

圆弧排列时，表示相邻字符轮廓之间在圆弧上的距离。

范围为 0~99.9mm。

设置字母间距

0.0

范围：0.0 ~ 99.9

水平直线排列时，间距为字母间水平方向距离。
垂直直线排列时，间距为字母间垂直方向距离。
圆弧排列时，间距为字母间弧度距离。

123

456

789

0↑↓

✕

↩

5、平包针密度

按下「密度」键，进入平包针密度设置界面，设置的平包针密度在 50~200 之间。

6、高度缩放

按下「高度」键，进入字母高度设置界面，设置字符的高度缩放，范围为 50~200。

7、宽度缩放

按下「宽度」键，进入字母宽度设置界面，设置字符的宽度缩放，范围为 50~200。

设置字母宽度

100

范围：50 ~ 200

字母宽度是在字体原始尺寸的基础上进行缩放调整。

1 2 3
4 5 6
7 8 9
0 ↑ ↓

X Enter

8、旋转角度设定

排列方式为水平排列或者竖直排列时，可以设置字母旋转角度，按下「旋转」键，进入旋转角度设置界面。

旋转方向为逆时针旋转，范围为 0° ~ 359° 。

注：排列方式为上玄弧或下玄弧时，该按键功能为设置是否跟随圆弧旋转。

设置旋转角度

0

范围：0 ~ 359

当字母排列方式为直线时，可通过设置旋转角度来调整字母的排列。

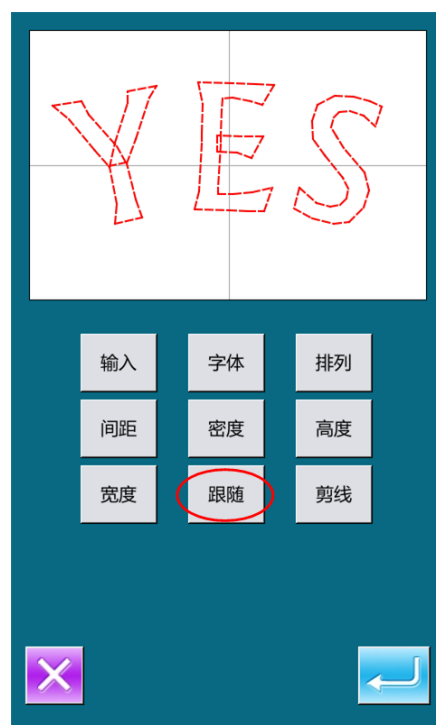
1 2 3
4 5 6
7 8 9
0 ↑ ↓

X Enter

9、跟随/不跟随设定

排列方式为上玄弧或下玄弧时,可以设置字母的角度是否跟随圆弧旋转。按下「跟随」键,可以切换到「不跟随」,反之亦然。

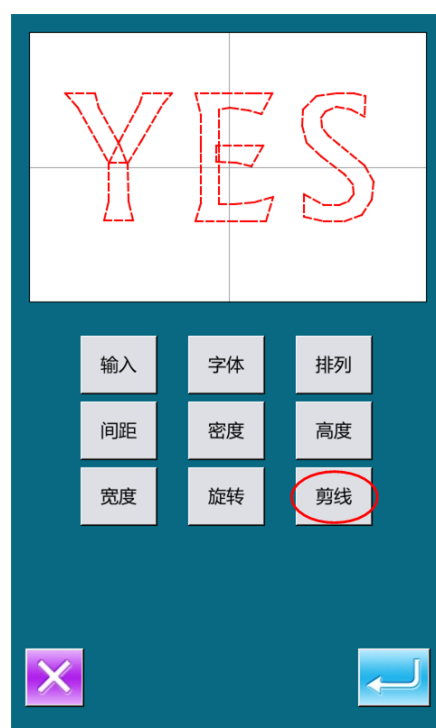
【注】排列方式为水平排列或者竖直排列时,该按键功能为设置旋转角度。



10、是否自动添加剪线

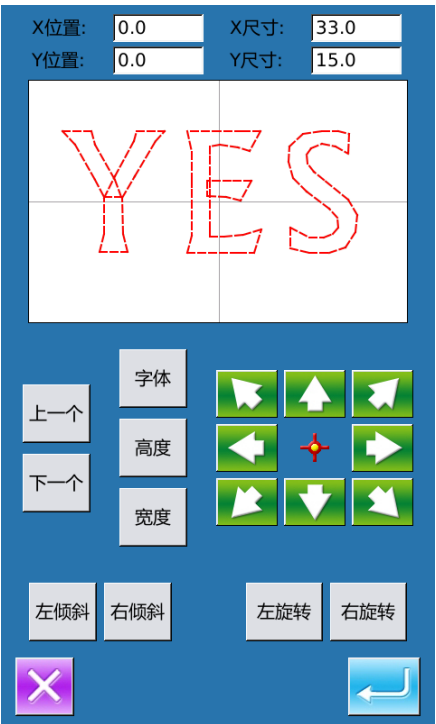
默认情况下是自动添加剪线,也就是在字母绣花样的车缝和空送连接处,以及缝纫最后添加剪线。

按下「剪线」键,可以切换该按键显示为「不剪线」,也同时取消了自动添加剪线的功能。



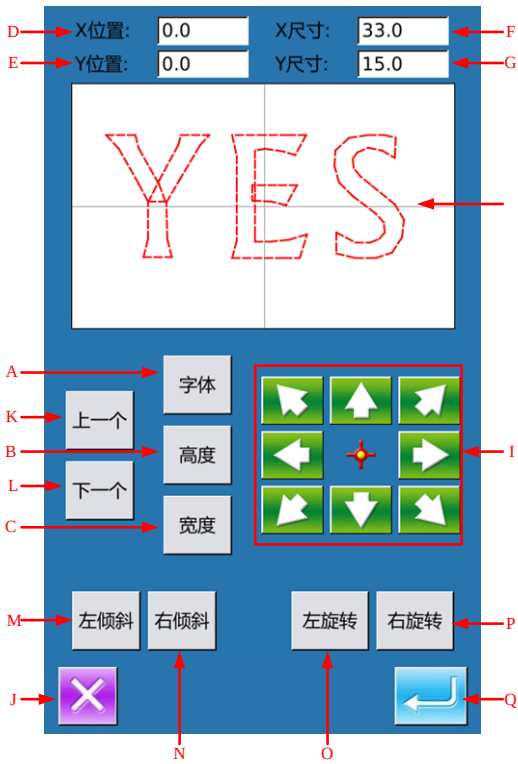
11、确定字母绣花样

设置好要生成的字母绣花样后，按下  键，会进入到字母绣花样调整界面。



8.13.2 字母绣花样调整

字母绣参数设置界面完成了各项参数的设置后，按  键进入字母绣花样调整界面，该界面下可以对花样做进一步的调整。



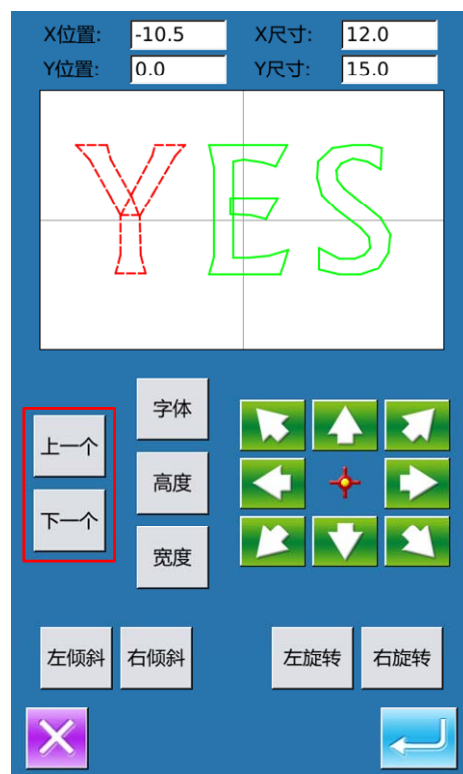
功能说明:

序号	功能	内容
A	字体选择	更改选中字母的字体，设置的方法与参数设置时相同。
B	高度缩放	更改选中字母的高度缩放，设置的方法与参数设置时相同。
C	宽度缩放	更改选中字母的宽度缩放，设置的方法与参数设置时相同。
D	X 位置显示	显示选中字母的中心点 X 坐标。
E	Y 位置显示	显示选中字母的中心点 Y 坐标。
F	X 尺寸显示	显示选中字母的宽度。
G	Y 尺寸显示	显示选中字母的高度。
H	花样显示	显示当前字母绣花样，选中字母颜色为红色，未选中字母颜色为绿色。
I	方向键	选中字母的位置调整。
J	退出键	返回上一级画面。
K	字符选择（从右到左的方向）	向左选择想要调整的字符，选中字符显示为红色。 在选中最后一个字符时向左，会选中全部字符。
L	字符选择（从左到右的方向）	向右选择想要调整的字符，选中字符显示为红色。 在选中最后一个字符时向右，会选中全部字符。
M	左倾斜/小弧度	排列方式为水平排列或竖直排列时，显示为「左倾斜」，按下后会逆时针方向旋转整个花样，旋转以原点为圆心。 排列方式为上玄弧或下玄弧时，显示为「小弧度」，按下后减小整个花样的弧度。 【注】该操作是针对整个花样的。
N	右倾斜/大弧度	排列方式为水平排列或竖直排列时，显示为「右倾斜」，按下后会顺时针方向旋转整个花样，旋转以原点为圆心。 排列方式为上玄弧或下玄弧时，显示为「大弧度」，按下后增加整个花样的弧度。 【注】该操作是针对整个花样的。
O	左旋转	逆时针方向调整选中字符的旋转角度，旋转以各个字符的中心为中心。
P	右旋转	顺时针方向调整选中字符的旋转角度，旋转以各个字符的中心为中心。
Q	确定	按下后会进入花样保存界面。

实例说明:

1、选择单个字母进行调整

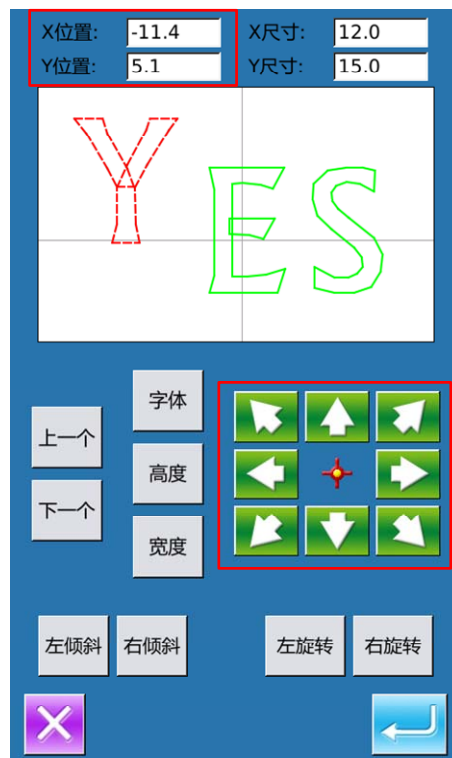
按下「上一个」键或「下一个」键，可以选择单个字母进行编辑，选中字母颜色为红色，未选中为绿色。



2、字母位置调整

按下方向键可以调整选中字母的位置，可以通过「X 位置」和「Y 位置」显示区域观察坐标。

同上操作，继续调整其它字母的位置。



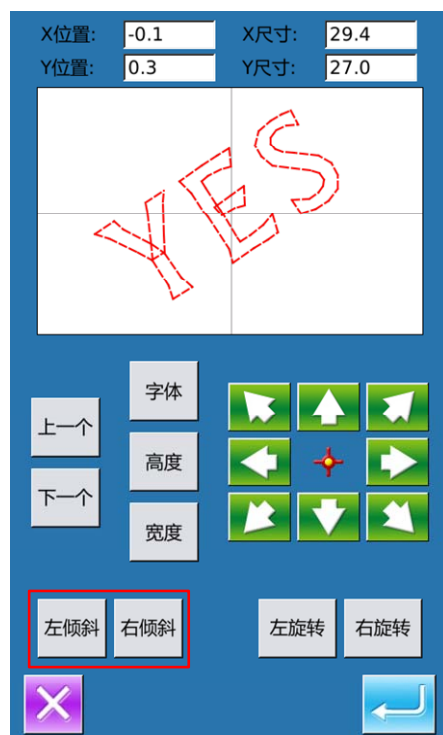
3、整个花样的旋转角度调整

按下「左倾斜」键或「右倾斜」键，
可以调整整个花样的旋转角度。

「左倾斜」：逆时针方向旋转

「右倾斜」：顺时针方向旋转

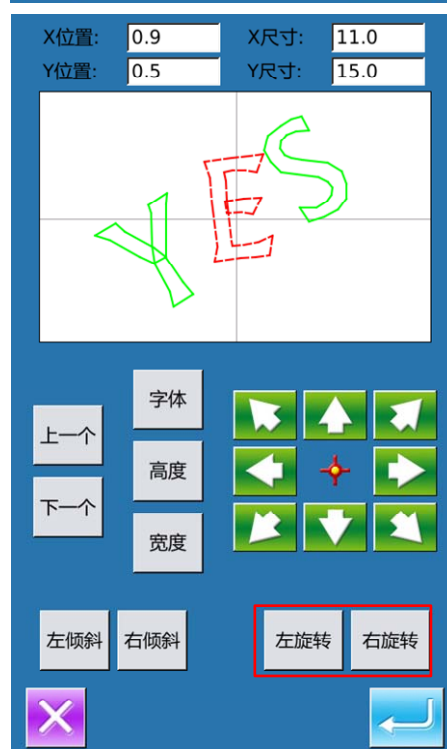
【注】排列方式为上玄弧或下玄弧时，该操作为「小弧度」/「大弧度」，用于调整整个花样的弧度。



4、单个字母旋转角度调整

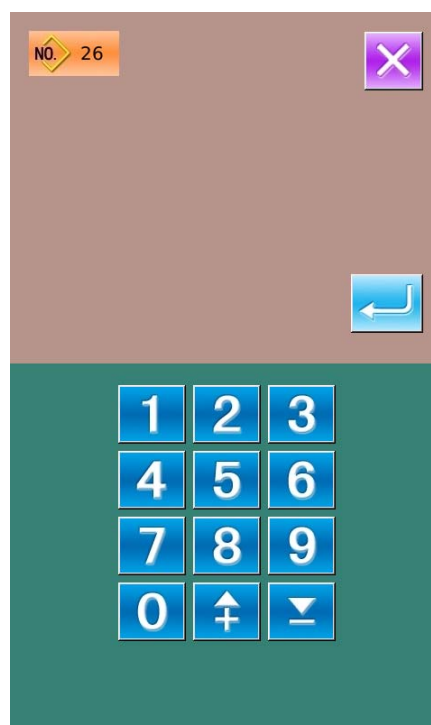
选择一个字母，然后按下「左旋转」键或「右旋转」键，可以调整选中字母的旋转角度。

【注】需要调整旋转角度时，最好先执行整个花样的旋转角度调整，然后再执行单个字母的旋转角度调整。如果先执行了单个字母的旋转角度调整，再执行整个花样的旋转角度调整时会取消之前单个字母的旋转角度。



5、保存花样

调整完毕后，按下键进入保存界面，输入号码后保存花样。

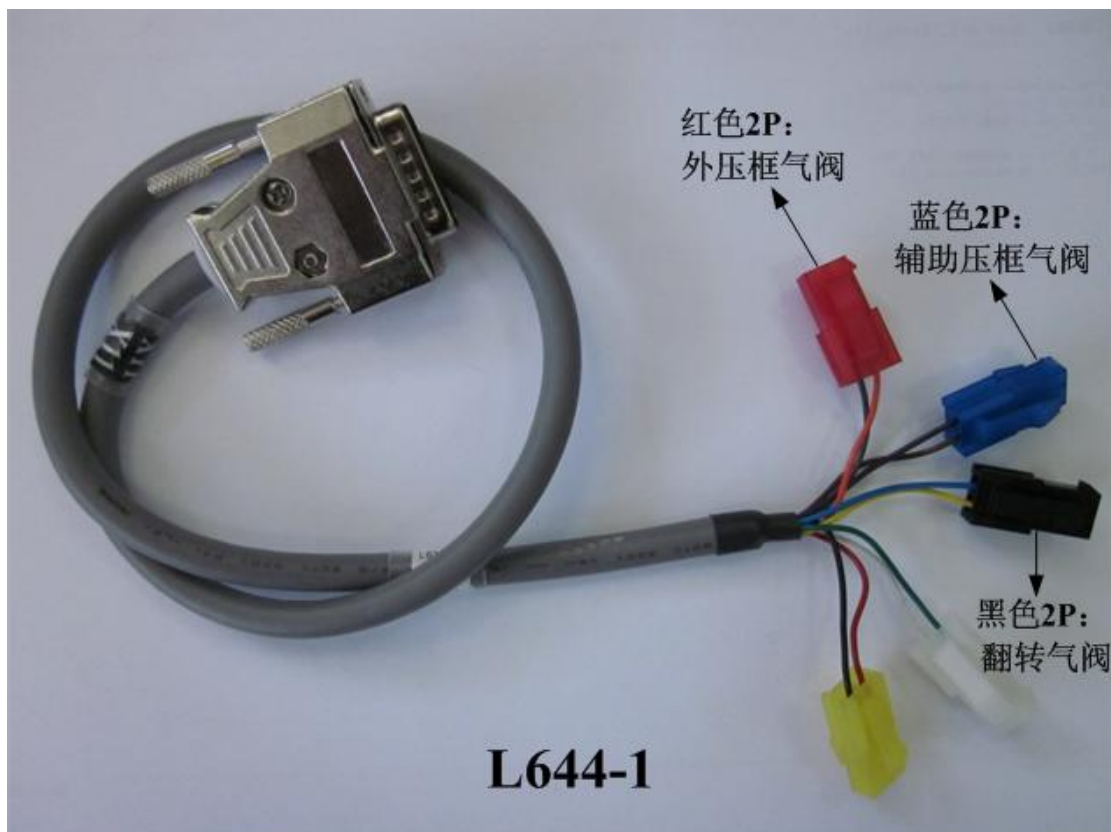


8.14 气动左右分离压脚

用户要使用气动左右分离+翻转功能时，需要进行如下三个步骤：

1. 安装左右分离的外压框和翻转动作机构；
2. 将驱动外压框的电磁阀接入 L644-1(或 L639-1)线缆的红色 2P 插座端，将驱动翻转压脚升降的电磁阀接入 L644-1(或 L639-1)线缆的蓝色 2P 插座端，将驱动翻转动作的气阀接入 L644-1(或 L639-1)线缆的黑色 2P 插座端；若电磁阀线缆区分正负极的话，请按照如下线序接线：1---正极；2---负极；

L644-1(或 L639-1)线缆实务图如下所示：



3. 电控系统上电开机，进入面板二级参数，进入【K74-电磁/气动压脚选择】参数设定界面，选择气动压脚类型；然后将【U81-气动压脚时踏板选择】设定为相应数值，即可实现不同压脚功能，具体设定值代表的气动压脚类型定义如下：

0--气动一体式压脚；

1--左右分离式压脚，踩踏板时，左右压脚同时下落；

2--左右分离式压脚，踩踏板时，右压脚先落下，左压脚后落下；

3--左右分离式压脚，踩踏板时，左压脚先落下，右压脚后落下；

4~99 --气动一体式压脚。

4. 在使用翻转压脚功能时，首先要将 U81 设定为 2 或者 3，然后进入【K110-翻转装置有无】

参数设定界面，选择“有”，即打开翻转压脚功能。设定完成后，退出；按  键进入准备状态，相应参数设置生效，能实现左右分离+翻转压脚功能。

5. 在进行花样打版操作时，如果设定了左右分离压脚功能，在花样编辑界面，使能【K110-翻转装置有无】参数和 U81 参数，安装了某些侧滑或者翻转、伸缩装置时，为了避免花样编辑过程中移框与中压脚、机针等机构的碰撞，可以随时踩踏板，将左右分离压脚抬起、落下或者移开，然后继续进行花样编辑操作。

9 附录 1

9.1 报警信息一览表

故障号	故障名称	复位方法
E001	脚踏板未在中央位置	自恢复错误
E002	机器进入急停状态	按复位键 
E004	主电压（300V）过低	关机
E005	主电压（300V）过高	自恢复错误
E007	IPM 过压或过流	关机
E008	辅助设备电压（24V）过高	关机
E009	辅助设备电压（24V）过低	关机
E010	气阀短路或风扇堵转	关机
E013	编码器故障或未连	关机
E014	电机运行异常	关机
E015	超过缝制区域	关机
E016	针杆上位置异常	按下确定键 
E017	断线检测错误	按下确定键 
E018	剪线刀位置异常	关机
E019	急停开关未在正常位置	自恢复错误
E020	步进版本错误	关机
E023	抓线位置异常	关机
E024	操作盘与缝纫机错误连接	关机
E025	X 原点检测异常	关机
E026	Y 原点检测异常	关机
E027	压脚原点检测异常	关机
E028	抓线原点检测异常	关机
E029	中压脚原点检测异常	关机
E030	步进驱动器通讯异常	关机
E031	步进电机过流	关机
E032	步进驱动电源异常	关机
E034	异常电流	关机
E035	IPM 过流 1	关机
E036	IPM 过流 2	关机
E037	电机堵转 1	关机
E038	电机堵转 2	关机
E039	电机超速	关机
E040	停车过流	关机
E041	电机过载	关机

故障号	故障名称	复位方法
E042	母线电压异常	关机
E254	未定义错误	按下确定键 

9.2 信息提示一览表

信息号	信息名称	子信息内容
M-001	花样数据不存在	请重新读取或打版输入
M-002	设置值太大	请输入范围内数值
M-003	设置值太小	请输入范围内数值
M-004	存储参数异常	请按下确定键恢复出厂设置
M-005	通讯错误	操作头与控制箱通讯异常
M-006	字母绣字库文件读取失败	
M-007	操作头与控制箱类型不符	请核对机型和软件版本
M-008	超出最大针距	
M-009	密码错误	请重新输入
M-010	硬件时钟故障	发现硬件时钟故障，请联系厂家维修
M-011	字母绣花样保存成功	请进入花样选择界面下选择新生成的字母绣花样
M-012	SRAM 初始化	清除掉 SRAM 中全部数据，请断电并将拨码开关位置还原
M-013	关机，再见	
M-014	USB 盘已拔出	
M-015	U 盘中没有发现花样数据	
M-016	至少输入一个字母	字母绣打版需要至少输入一个字母！
M-017	无报警记录	
M-018	输入用户 ID 有误	请重新输入
M-019	确认密码失败	请重新输入密码
M-020	禁止修改系统时间	设置了分期密码，不能修改系统时间
M-021	密码文件写入失败	
M-022	密码文件读取失败	
M-023	密码保存成功	
M-024	清除全部密码失败	密码文件无法被删除
M-025	清除密码失败	清除密码后，文件写入异常
M-026	密码文件被恶意删除	用户设置的分期密码被恶

		意删除，请关机
M-027	用户 ID 文件损坏	
M-028	输入不能为空	请输入密码
M-029	当前密码不符	请重新输入当前密码
M-030	新密码不一致	请重新输入新密码并再次确认
M-031	确定进入触摸屏校正模式	其否确定？是：enter 否：X
M-032	触摸屏校正成功	校正成功，请关闭电源后重启
M-033	触摸屏校正失败	请重新校正
M-034	确定清除报警记录	其否确定？是：enter 否：X
M-035	分期密码不能和总密码相同	请重新输入密码
M-036	花样数据错误	当前花样数据错误，将由出厂花样替换！
M-037	花样信息文件打开失败	恢复出厂花样配置！
M-038	花样个数已满	请删除不用的花样后再执行操作！
M-039	是否覆盖花样	其否确定？是：enter 否：X
M-040	P 花样打开失败	花样文件错误，将会被删除
M-041	C 花样打开失败	花样文件错误，将会被删除
M-042	花样已存在	不能执行覆盖操作
M-043	是否删除花样数据	按下确定键执行删除操作，按下取消键退出当前操作。
M-044	是否删除选中的文件	其否确定？是：enter 否：X
M-045	花样被引用，不能删除！	请在 P 花样或 C 花样中解除引用
M-046	请至少保留一个花样！	最后一个花样不能被删除
M-047	加载出厂花样	内存中没有花样，需要加载出厂花样
M-048	内存中没有花样	按确定键加载出厂花样
M-049	输入号码不存在	请重新输入
M-050	P 花样不存在	请先创建 P 花样
M-051	保存软件版本成功	软件版本已经成功保存到 U 盘根目录下
M-052	更换机针	更换机针设定值已到达，请更换机针

M-053	更换机油	更换机油时间设定值已到达，请更换机油
M-054	清扫机器	清扫机器时间设定值已到达，请清扫机器
M-055	确定清除更换机针计数值	其否确定？是：enter 否：X
M-056	确定清除更换机油计数值	其否确定？是：enter 否：X
M-057	确定清除清扫时间计数值	其否确定？是：enter 否：X
M-058	确定清除生产管理计数值	其否确定？是：enter 否：X
M-059	确定清除累积运转时间？	其否确定？是：enter 否：X
M-060	确定清除累积缝纫件数？	其否确定？是：enter 否：X
M-061	确定清除累积上电时间？	其否确定？是：enter 否：X
M-062	确定清除累积缝纫针数？	其否确定？是：enter 否：X
M-063	确定清除累积过流次数？	其否确定？是：enter 否：X
M-064	确定清除累积停车错误次数？	其否确定？是：enter 否：X
M-065	是否编辑新花样？	其否确定？是：enter 否：X
M-066	是否返回缝制模式？	其否确定？是：enter 否：X
M-067	是否还原所有设定	其否确定？是：enter 否：X
M-068	是否还原选择项目	其否确定？是：enter 否：X
M-069	未选择项目	请选择一个或几个参数项
M-070	缝制计数器达到设定值	请按下确定键清除
M-071	计件计数器达到设定值	请按下确定键清除
M-072	成功	已成功执行当前操作
M-073	失败	当前操作执行失败
M-074	拷贝文件失败	请检查磁盘空间是否已满
M-075	拷贝文件失败	请检查是否拔出了 USB 盘
M-076	文件读写错误	文件读写错误
M-077	升级主控程序时校验失败	
M-078	花样数据不能删除	被选中的缝制数据正在使用

M-079	是否执行参数传输操作	其否确定？是：enter 否： X
M-080	转换花样无法打开	请确认花样文件
M-081	转换花样格式错误	请确认花样文件
M-082	转换花样数据超长	请确认花样文件
M-083	升级成功	升级成功，请重新启动机器
M-084	打开文件失败	U 盘中打开文件失败
M-085	恢复参数成功	恢复参数成功，请重新启动机器
M-086	没有选中升级条目	请选中要升级的条目，至少要选中一个条目
M-087	选中的升级条目中有些不存在	不存在升级文件的条目返回后将会取消选中，如果要升级剩下的条目，请再次确认
M-088	是否格式化 U 盘	按下确定键执行格式化操作，按下取消键退出当前操作。格式化后会删除全部 U 盘文件！
M-089	是否格式化内存	按下确定键执行格式化操作，按下取消键退出当前操作。格式化后会删除全部内存花样数据！
M-090	内存空间不足	
M-091	不能选择该功能	
M-092	制定的形状点重复	
M-093	不能执行回退操作	
M-094	没有下一针缝制数据	
M-095	没有上一针缝制数据	
M-096	花样数据太大	
M-097	运算异常	
M-098	打版通用错误	
M-099	花样不存在	
M-100	超过移动范围	
M-101	超出缝制范围	请确保花样数据在缝制范围以内
M-102	针数超出范围	请减少花样针数
M-103	花样文件数据错误	
M-104	确认点改变	
M-105	确认自动插入剪线	
M-106	删除新编辑花样	确定键确认，退出键取消
M-107	删除要素	确定键确认，退出键取消

M-108	执行，确认吗？	确定键确认，退出键取消
M-109	删除机械控制命令？	确定键确认，退出键取消
M-110	删除落针点	确定键确认，退出键取消
M-111	移动压脚，确认吗？	确定键确认，退出键取消
M-112	删除形状点	确定键确认，退出键取消
M-113	警告：格式化将删除磁盘上的所有数据！	确定键确认，退出键取消
M-114	请关机	当前操作结束，请重新启动机器
M-115	禁止修改计数器	当修改时，请关闭设定
M-116	是否恢复出厂设置	确定键执行操作，取消键退出操作
M-117	是否清除全部自定参数	是否确定？是：enter 否：X
M-118	花样计算错误	
M-119	是否删除全部 P 花样和 C 花样	按下确定键执行格式化操作，按下取消键退出当前操作。
M-120	超出设定值范围	
M-121	外压脚在上	当前操作需要落下外压脚后执行！
M-122	不能进行正确操作	
M-123	USB 盘不存在	请插入包含 mp3 文件的 USB 盘
M-124	没有视频文件 vid.avi	请将 vid.avi 文件存放到盘的 pdat 目录，并进入到升级界面升级视频文件

10 附录 2

10.1 电控箱安装尺寸

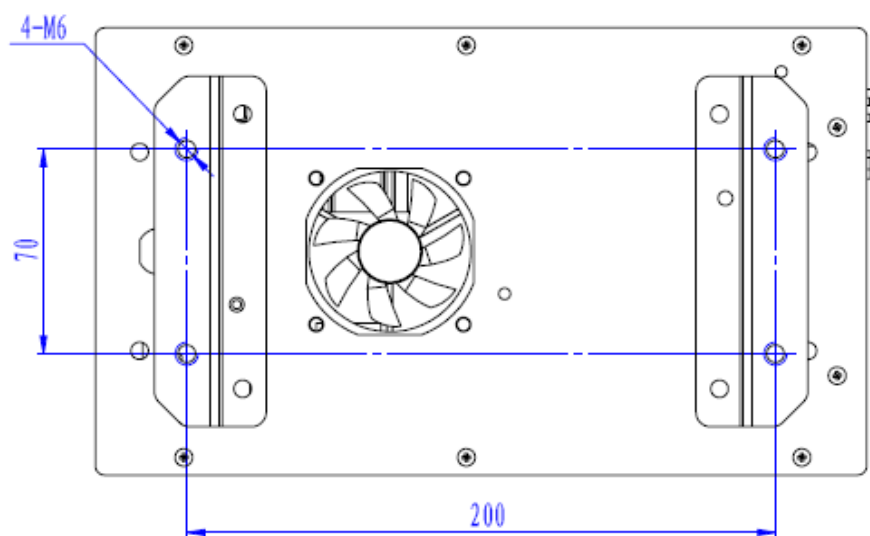


图 1 四孔安装尺寸图

10.2 操作箱安装尺寸

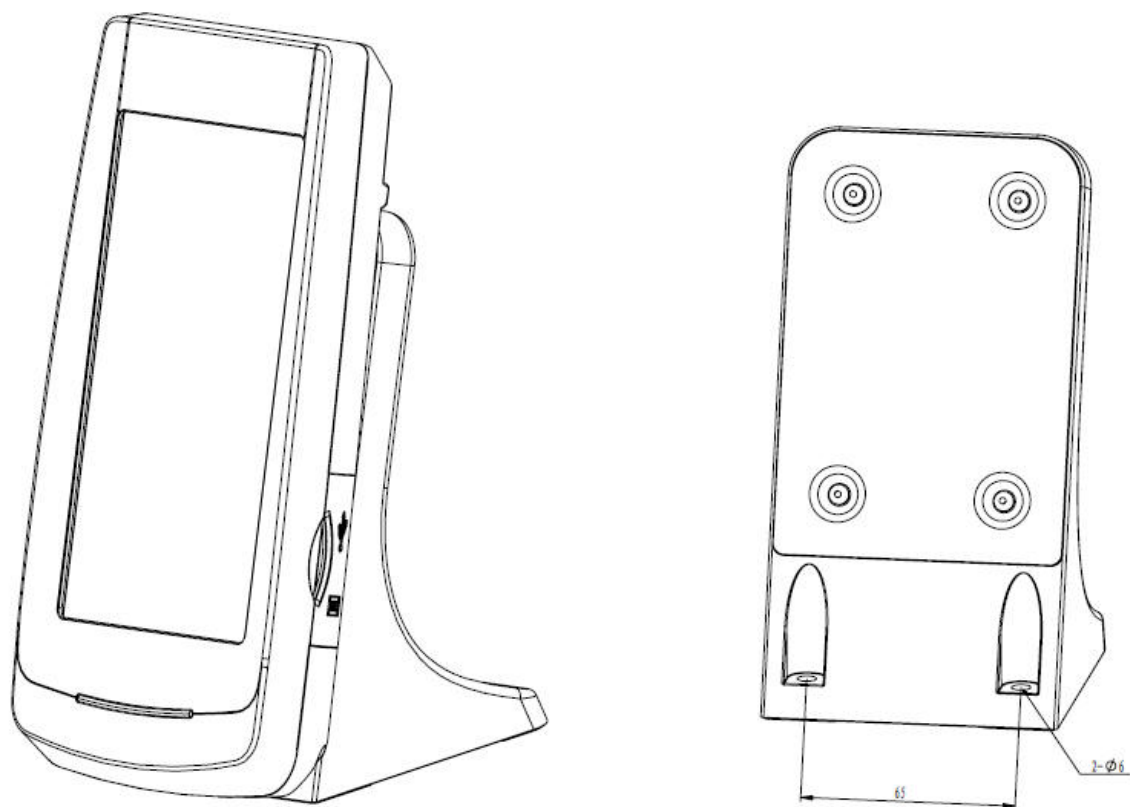
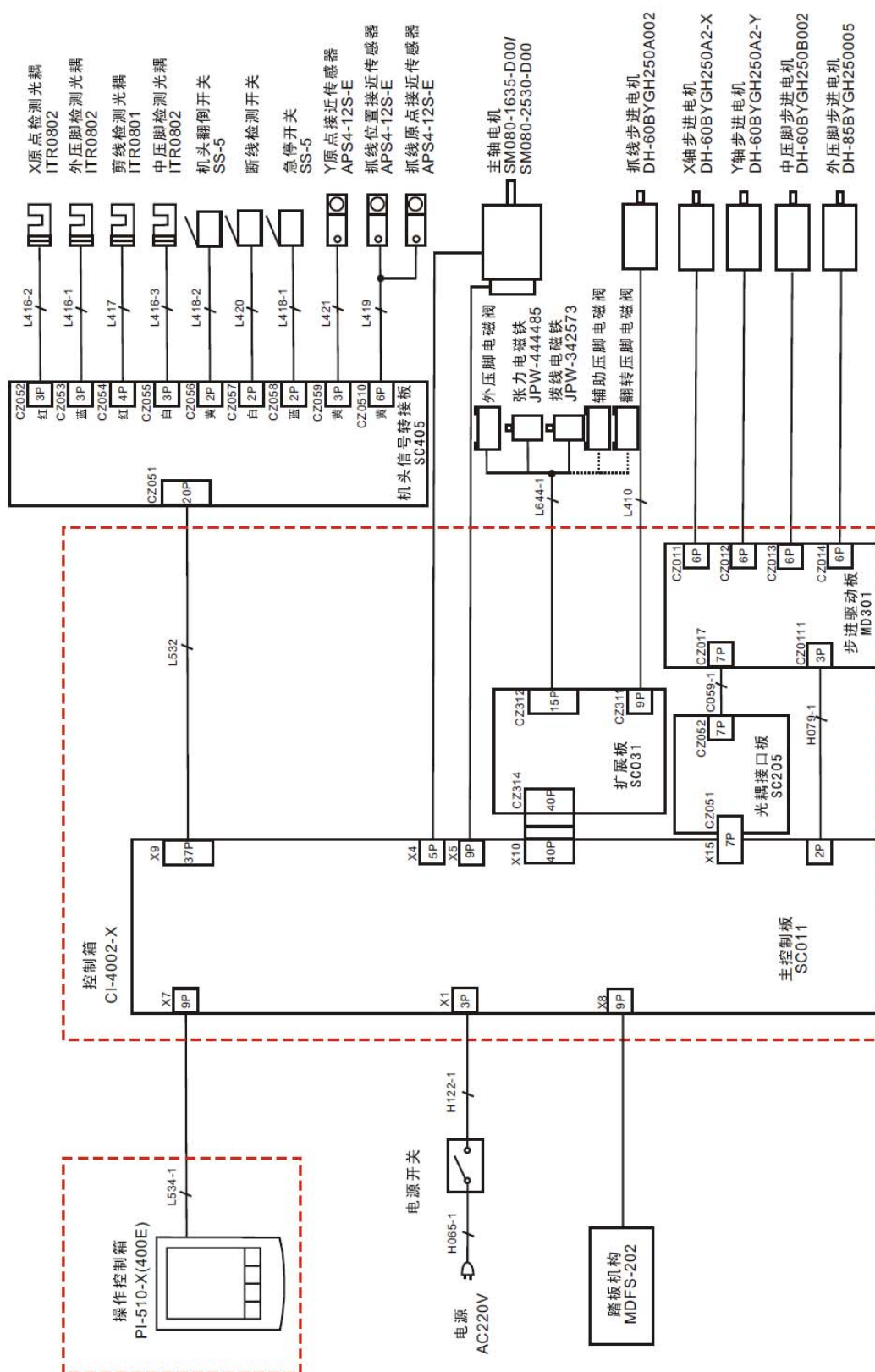
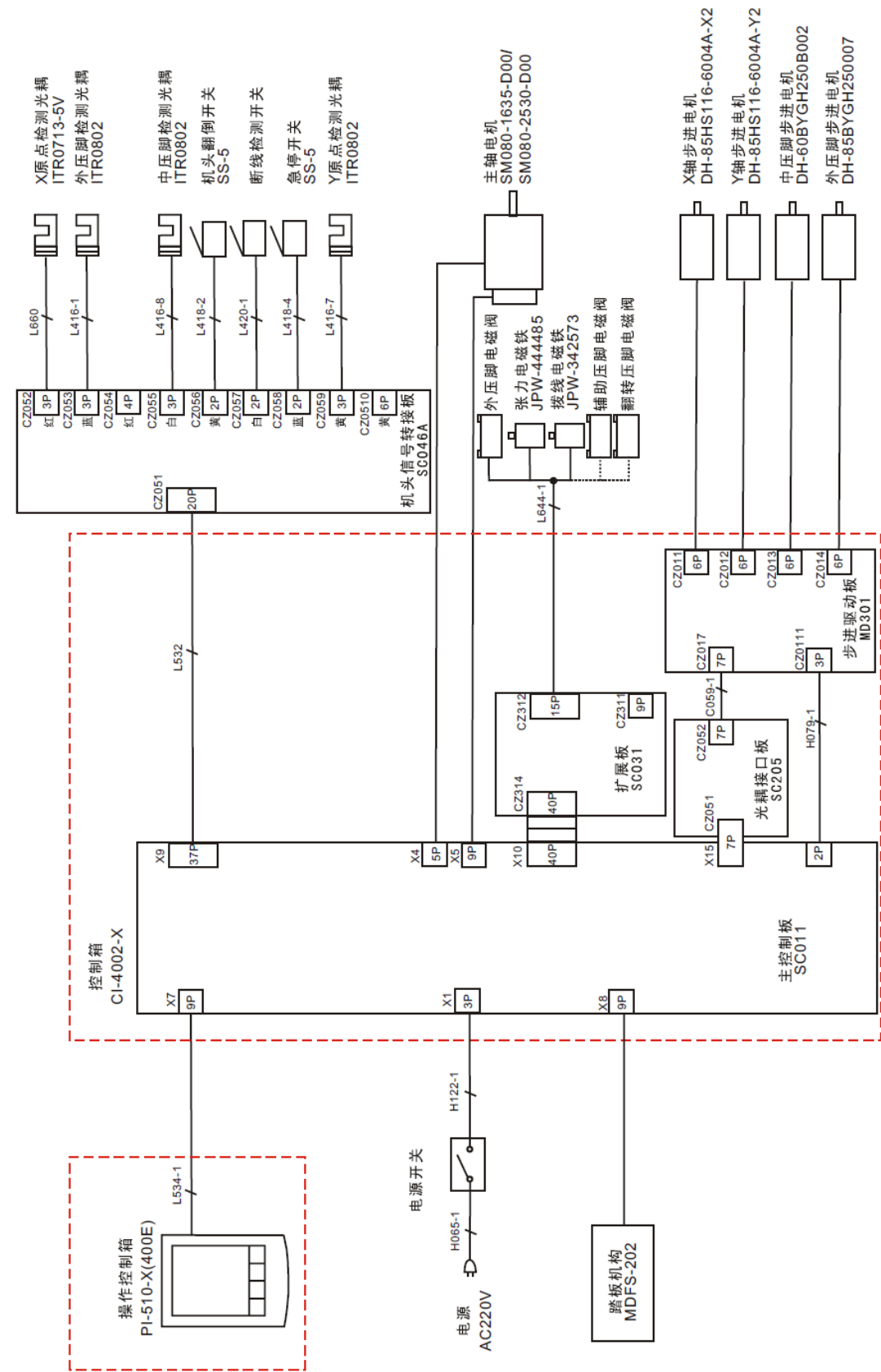


图 2 操作箱安装尺寸图

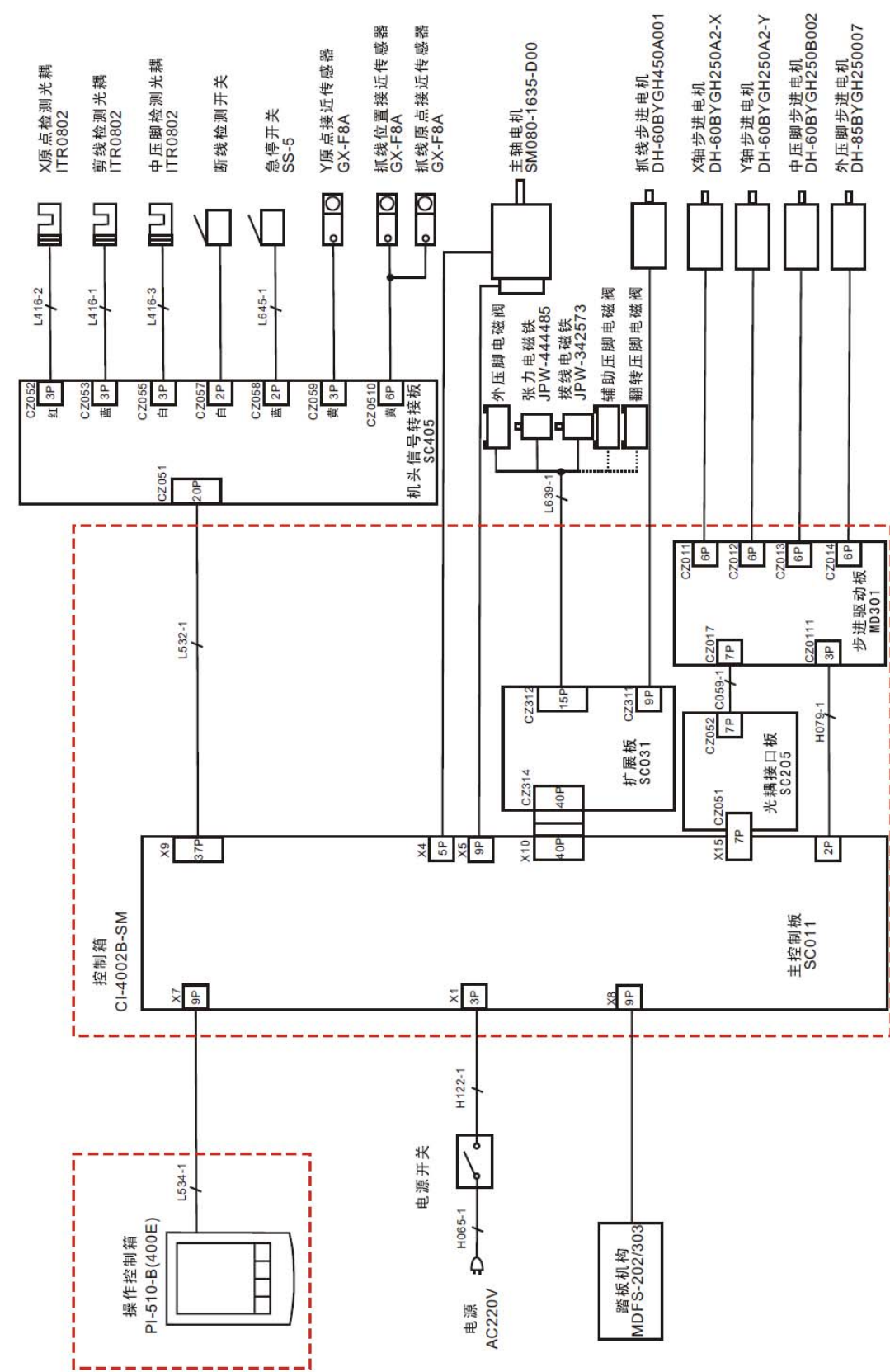
10.3 SC400-2E/X 触摸屏式电子花样机系统框图



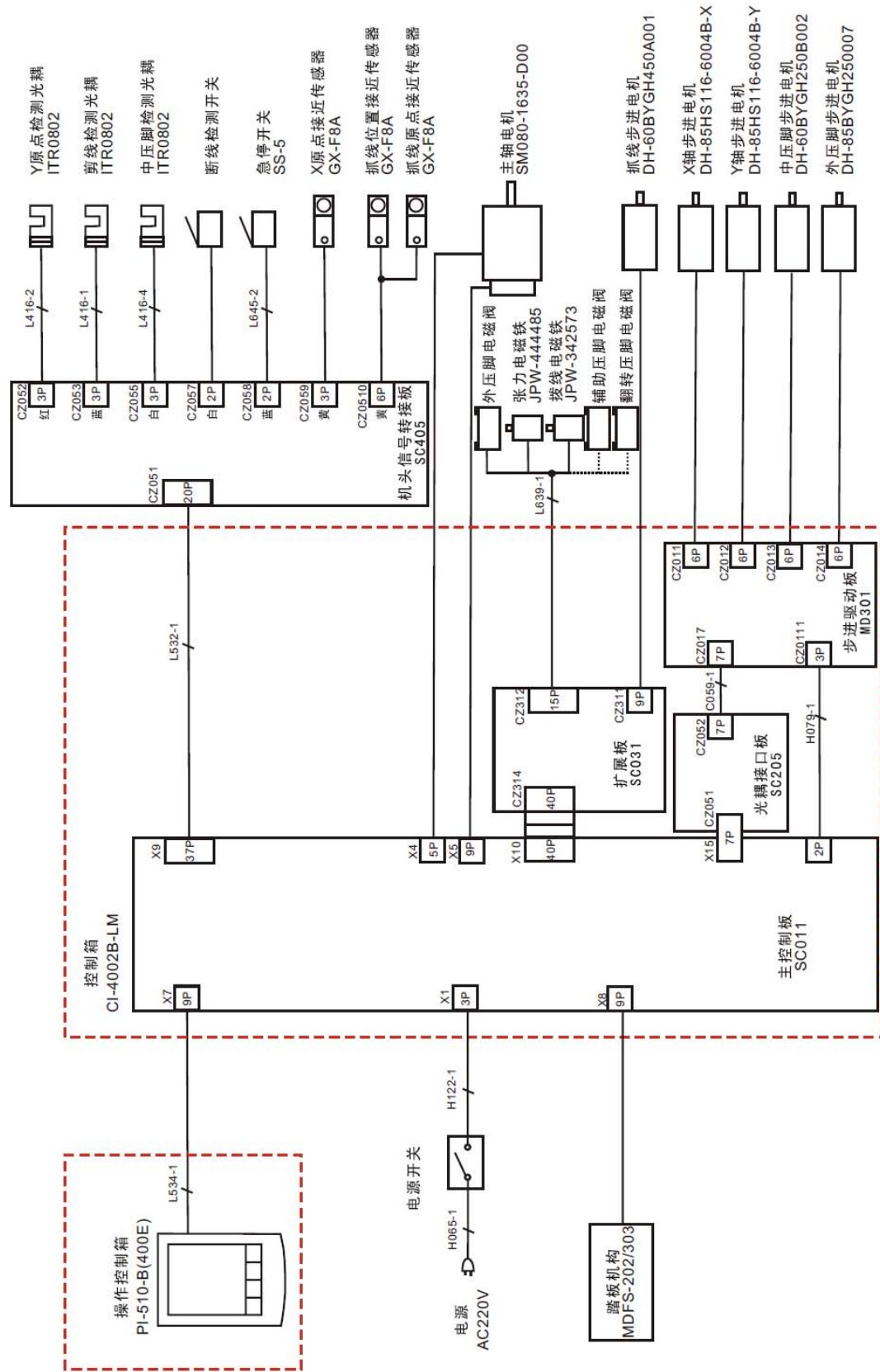
10. 4 SC400-2E/X-LE 触摸屏式电子花样机系统框图



10.5 SC400-2E/B-SM(210E-1510)触摸屏式电子花样机系统框图



10.6 SC400-2E/B-LM(210E-3020)触摸屏式电子花样机系统框图



SC400 (210E)

Computerized Control System for
Pattern Sewing Machine
(Touching Panel Type)

Version: 2014-07



3006029

Foreword

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

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

Safety Matters for Attention

1. Signs & Definitions of Safety Marks

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

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

2. Safety Matters for Attention

 Danger	
	For opening the control box, please turn off the power and take away the plug from socket firstly, and then wait for at least 5 minutes before opening the control box. Touching the part with high voltage will cause the personal injury.
 Caution	
Usage Environment	
	Try not to use this sewing machine near the sources of strong disturbance like high-frequency welding machine. The source of strong disturbance will affect the normal operation of the sewing machine.
	The voltage fluctuation shall be within 20% of the rated voltage. The large fluctuation of voltage will affect the normal operations of sewing machine, Therefore a voltage regulator is needed in that situation.
	Working temperature: 5 °C~35°C. The operation of the sewing machine will be affected by environment with temperature beyond the above range.
	Relative Humidity: 45%~85%(No dew inside the machine), or the operation of sewing machine will be affected.
	The supply of compressed gas shall be over the consumption required by the sewing machine. The insufficient supply of compressed gas will lead to the abnormal action of sewing machine.
	In case of thunder, lightning or storm, please turn off the power and pull plug out the socket. Because these weather factors will have influence on the operation of sewing machine
Installation	
	Please ask the trained technicians to install the sewing machine.

	Don't connect machine to power supply until the installation is finished. Otherwise the action of sewing machine may cause personal injury once the start switch is pressed at that situation by mistake.
	When you tilt or erect the head of sewing machine, please use both of your hands in that operation. And never press the sewing machine with strength. If the sewing machine loses its balance, it will fall into floor thus causes the personal injury or mechanical damage.
	Grounding is a must. If the grounding cable is not fixed, it may cause the electric-shock and mistake-operation of machine
	The entire cables shall be fixed with a distance at 25mm away from the moving component at least. By the way, don't excessively bend or tightly fixed the cable with nails or clamps, or it may cause the fire or electric shock.
	Please add security cover on the machine head.

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

Table of Content

1.1 General.....	4
1.2 Functions & Specifications	4
1.3 Standarization.....	5
1.4 Operation Method	5
2 Operating Instruction	7
2.1 General Keys.....	7
2.2 Basic Operation.....	8
2.3 Normal Pattern Operation	9
2.4 Pattern Registration.....	13
2.5 Pattern Naming	14
2.6 Intermediate Presser Setting.....	15
2.7 Thread Tension Setting.....	15
2.8 Winding.....	16
2.9 Pattern Selection	17
2.10 Sewing Data Setting.....	19
2.11 P Pattern Registration.....	21
2.12 Trial Sewing	22
2.13 Frame-moving Operation	24
2.14 Operation of Counter	24
2.15 Single –stitch Intermediate Presser Setting.....	25
2.16 Single-stitch Thread Tension Setting	27
2.17 Emergency Stop	29
3 Operation of Prompt Pattern (P Pattern)	32
3.1 P Pattern Data Input	32
3.2 P Pattern Edition	34
3.3 Copy P Pattern.....	36
3.4 P pattern Selection.....	37
3.5 P Pattern Sewing	38
4 Operation of Combination Pattern (C Pattern).....	40
4.1 C Pattern Data Input.....	40
4.2 C Pattern Edition.....	41
4.3 C Pattern Selection.....	43
4.4 C Pattern Sewing.....	44
5 Pattern Edition	46
5.1 Have Acces to the Pattern Edition Mode.....	46
5.2 Pattern Edition.....	49
5.3 Quit Pattern Edition Mode	54
6 Information Function	56
6.1 Information for Maintenance & Repair.....	56
6.2 Maintenance & Repair Time Input.....	57
6.3 Alarm Release	59
6.4 Production Control	59

6.5 Setting on Production Control.....	62
6.6 Display of Threading Figure	65
6.7 Alarm Record	66
6.8 Running Records.....	66
6.9 Setting of Periodical Password.....	67
7 Communication Functions	73
7.1 About the Available Data	73
7.2 Operations	74
7.3 Pattern Transfer	74
7.3.1 Input Pattern from U Disk.....	75
7.3.2 Output Pattern to U Disk.....	77
7.4 Parameter Transfer	78
7.5 Software Update.....	80
8 Mode & Parameter Setting.....	81
8.1 Have Access to Mode & Parameter Setting	81
8.2 Level 1 Parameters Setting.....	83
8.2.1 List of Level 1 Parameters	85
8.3 Level 2 Parameters Setting.....	91
8.3.1 List of Level 2 Parameters	91
8.4 Counter Setting	93
8.5 Change Sewing Type.....	94
8.6 Entry to Pattern Edition.....	95
For the specific operation, please refer to 【5 Pattern Edition】	95
8.7 Initialization	95
8.8 Software Version Inquiry	98
8.9 Keyboard Lock.....	98
8.10 Parameter Back-up & Recovery.....	100
8.11 Test Mode.....	101
8.12 Pattern Edition Parameter Setting	108
8.13 Letter Embroidery Editions.....	108
8.13.1 Parameter Setting	108
8.13.2 Adjustment of Pattern at Letter Sewing	115
8.14 Air-driven Separated Presser.....	119
9 Appendix 1	121
9.1 Warning List.....	121
9.2 Hint List	122
10 Appendix 2.....	126
10.1 Installation Size of Control Box.....	126
10.2 Installation Size of Operation Panel.....	127
10.3 Diagram of SC400-2E/X Computerized Control System for Pattern-sewing Machine (Touching Panel).....	128
10.4 Diagram of SC400-2E/X-LE Computerized Control System for Pattern-sewing Machine (Touching Panel).....	129
10.5 Diagram of SC400-2E/B-SM(210E-1510) Computerized Control System for	

Pattern-sewing Machine (Touching Panel) 130

10.6 Diagram of SC400-2E/B-LM(210E-3020) Computerized Control System for
Pattern-sewing Machine (Touching Panel) 131

1 General Information

1.1 General

SC400 Series Computerized Control System for Industrial Sewing Machines: 1) Adopt the world leading AC servo control technology on main shaft motor, which features high torque, good efficiency, stable speed and low noise; 2) Diversified design of control panel can meet the special requirements of users on assembling ; 3) System adopts German style structure, which offers easy installation and repair to users; 4) The control software can be updated through remote communication, which helps users to improve the function of products constantly.

1.2 Functions & Specifications

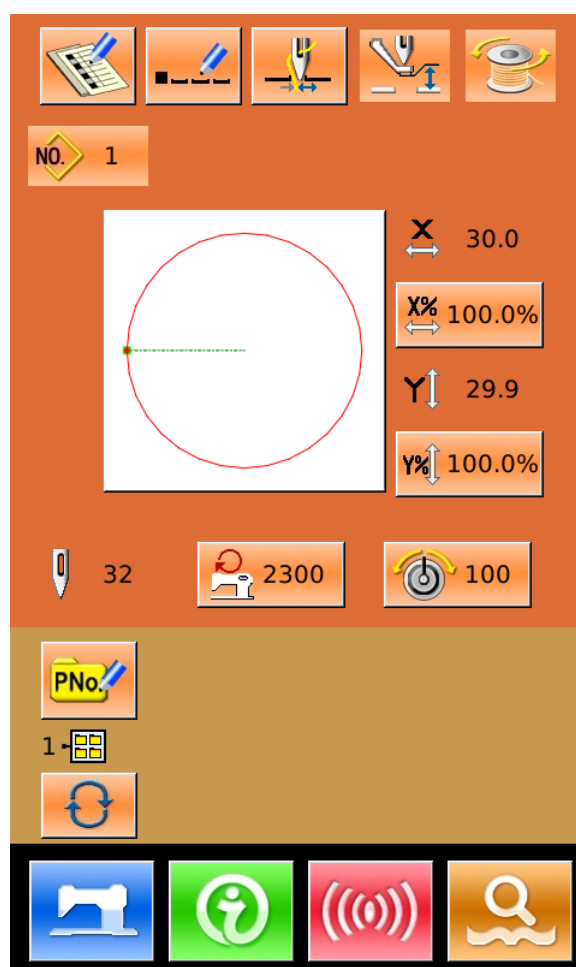
Type of Controller	SC400 Series Computerized Control System for Pattern Sewing Machine		
Sewing Range	X(Left/Right)	Y (Front/Back)	
	130	x	60
	150	x	100
	220	x	100
	300	x	200
Max Sewing Speed	2800rpm (when sewing pitch is below 3mm)		
Stitch Length	0.1~12.7mm (Min. Resolution: 0.05mm)		
Presser Feeding Motion	Intermittent Feed (2-shaft drive by stepping motor)		
Stroke of Needle Bar	41.2mm		
Needles	DP×5、DP×17		
Lift of Feeding Frame	Max 25mm (Pneumatic type: Max 30mm)		
Intermediate Presser Stroke	Standard 4mm (0~10mm)		
Lift of Intermediate Presser	20mm		
Shuttle	Double-capacity semi-rotary hook		
Memory of Pattern Data	U Disk		
Pause Function	Used to stop machine during the sewing		
Scale Function	Enable a pattern to be enlarged or reduced in X or Y direction individually when sewing a pattern Scale: 1%~400% (adjust 0.1% in each step)		
Scale Method	Method for changing the length of each sewing stitch		
Limitation of Sewing Speed	200~2800rpm (change 100rpm in each step)		
Function for Selecting Pattern	Pattern Number Selection Method		
Bottom Thread Counter	Up/Down Method (0~9999)		
Sewing Counter	Up/Down Method (0~9999)		
Setting of 2 nd Origin	Use manual switch to move the needle to a random positon within the		

	sewing range and set that position as 2 nd origin.
Sewing Motor	Servo Motor
Function of stopping needle at highest position	After the completion of sewing, the needle can be brought up to its highest position.
Power	500W
Voltage of Power Supply	AC220-240V

Effective standard for product:QCYXDK004—2012 《Computerized Control System for Industrial Sewing Machine》.

1.3 Standarization

The function keys are using the publicly-known figures, which are recognizable to users at every country.



1.4 Operation Method

By adopting the advanced touching operation technology, user-friendly interfaces and easy operation, the panel of SC400 brings a revolution to the regular usage. Touching the panel with their fingers or other objects, users can finish the corresponding operations. However, during their usage, users should avoid touching the screen with the sharp objects so as to prevent the touching screen

from suffering permanent damage.

2 Operating Instruction

2.1 General Keys

The keys for general operations in each interface of SC400 controller are shown in below:

No.	Figure	Functions
1		Escape → Quit the existing interface. Can terminate the changing data at data changing interface
2		Enter → Confirm the changed data.
3		Plus → Increase the value.
4		Minus → Decrease the value.
5		Reset → Release the error.
6		Number Input → Activate the number keyboard to input number
7		Ready → Shift between data input interface and sewing interface
8		Information → Shift between data input interface and information interface
9		Communication → Shift between data input interface and communication interface
10		Mode → Shift between data input interface and other detail setting interface

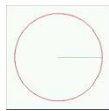
2.2 Basic Operation

① Turn on the Power

Turn on the power to activate the interface for inputting data.

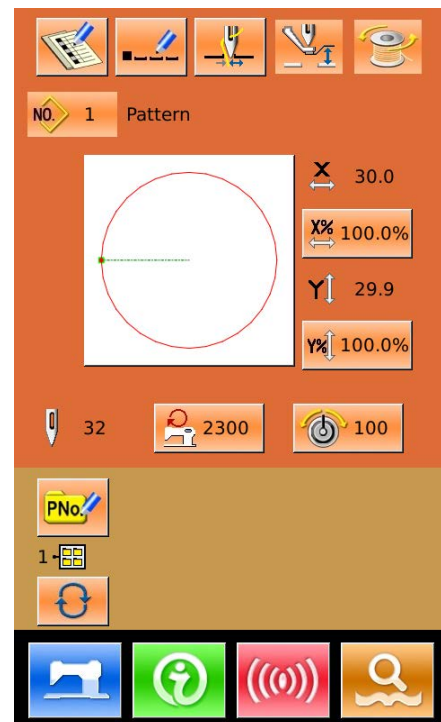
② Select the No. of the Desired Pattern

At the existing interface, the number of the selected



pattern will be displayed. Press to select the pattern number.

For the operations about the pattern selection, please refer to [2.8 Pattern Selection].

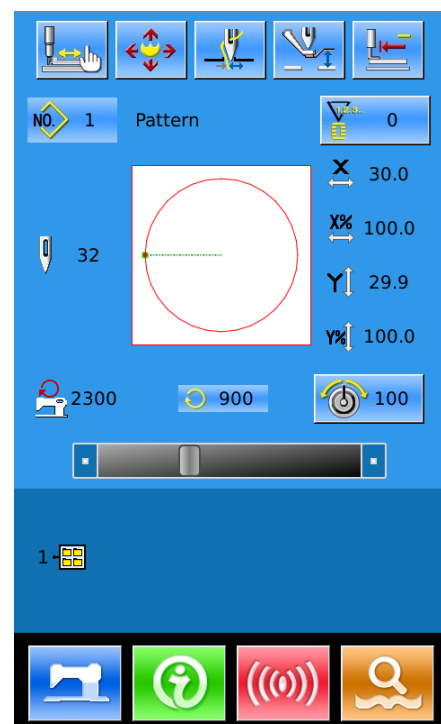


③ Enter the Sewing Ready Status

After  is pressed, the background color of LCD screen will be changed to blue, which means the machine enters the “Sewing Ready” status.

④ Start Sewing

Put the material for sewing to the presser. Step on the pedal to lower the presser and to start the machine for sewing.



2.3 Normal Pattern Operation

(1) Interface for Inputting Sewing Data

The data input interface is shown as the figure at right. For the detailed descriptions on functions, please refer to the Table of Function Keys.

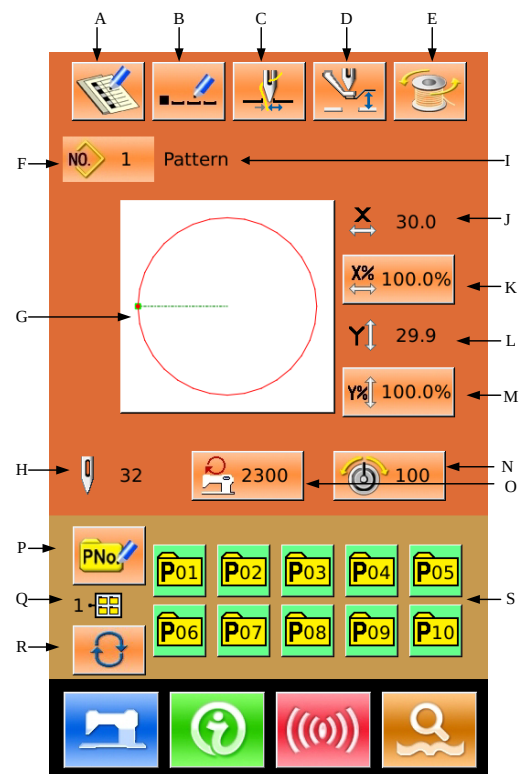


Table of Function Keys:

No.	Functions	Description
A	Pattern Registration	999 normal patterns can be registered.
B	Pattern Naming	14 figures can be inputted at most.
C	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching Ineffective (Displayed in light)  : Thread-catching Effective (Displayed in dark)
D	Intermediate Presser Setting	Press it to have access to the interface for setting the height of intermediate presser. And then press  for entry.
E	Winding	Before winding, user have to press  .
F	Pattern No. Display	Display the number of the pattern selected at present.
G	Sewing Shape Selection	The shape of the existing pattern is displayed on the button. Press this button to have access to the interface for selecting pattern
H	Stitch Number of	Display the stitch number of the pattern sewn at present.

	Pattern Display	
I	Name of Pattern	Display the name of the selected pattern.
J	X Actual Size Display	Display the actual size of the selected pattern in X direction User can input the actual size with the parameter U64, at that time the keys for adjusting the X actual size will be displayed.
K	X Scale Rate Setting	The X scale rate of the selected pattern is displayed on the button. Press it to have access to the interface for setting. This value is affected by parameters U64 and U88.
L	Y Actual Size Display	Display the actual size of the selected pattern in Y direction User can input the actual size with the parameter U64, at that time the keys for adjusting the Y actual size will be displayed.
M	Y Scale Rate Setting	The Y scale rate of the selected pattern is displayed on the button. Press it to have access to the interface for setting. This value is affected by parameters U64 and U88.
N	Thread Tension Setting	Display the basic value of the thread tension. Press that key to set this value.
O	Max. Speed Limitation	Display the Max Speed, which can be set after this button is pressed.
P	Prompt-pattern (P Pattern for short) Registration	Use for registering the P pattern, and 50 P patterns can be registered at most.
Q	P Pattern File Folder Number Display	Display the number of the current P pattern file folder.
R	P Pattern File Folder Selection	Shift the P pattern file folder number orderly.
S	P Pattern Selection	Display the registered P patterns. Press that key to have access to the interface for inputting P pattern data. This button is not displayed at the initial status.

(2) Sewing Interface

Press  to have access to the sewing interface as shown in right. For detailed descriptions on functions please refer to the Table of Function Keys.

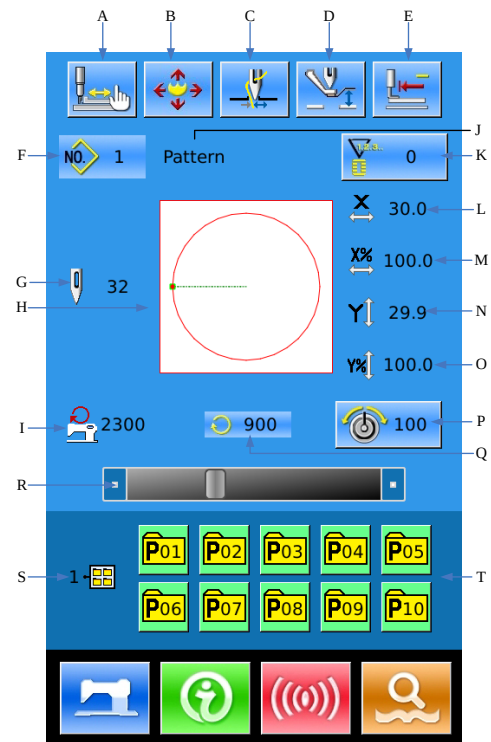


Table of Function Keys:

No.	Functions	Descriptions
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching ineffective (Displayed in light)  : Thread-catching effective (Displayed in dark)
B	Trial Sewing	Press it to have access to the interface of trial sewing. The shape of pattern can be set.
C	Move Frame	Press it to lower the frame, and the pattern moving interface is displayed. This is affected by parameter U89.
D	Intermediate Presser Setting	Press it to have access to the interface for setting the height of intermediate presser.
E	Return to Origin	This button returns the presser to the start sewing point.
F	Pattern No. Display	Display the number of the selected pattern.

G	Pattern Stitch Number Display	Display the total number of the selected pattern.
H	Pattern Shape Display	Display the shape of the selected pattern.
I	Max Speed Limitation	Display the Max Speed.
J	Pattern Name	Display the name of the selected pattern
K	Counter Setting	Press to select the type of counter and set the value of the counters  : Sewing Counter  : No. of pcs. Counter
L	X Actual Size Display	Display the X actual size of the selected pattern.
M	X Scale Rate Setting	Display the X scale rate of the selected pattern.
N	Y Actual Size Display	Display the Y actual size of the selected pattern.
O	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
P	Thread Tension Setting	Display the basic value of the thread tension. User can set this value after pressing this button.
Q	Sewing Speed Display	Display the current sewing speed.
R	Sewing Speed Setting	Change the sewing speed.
S	P Pattern File Folder Number Display	Display the number of the current P pattern file folder.
T	P Pattern Selection	Display the registered P pattern. Press this button to have access to the P pattern sewing interface. This button is not displayed at initial status.

2.4 Pattern Registration

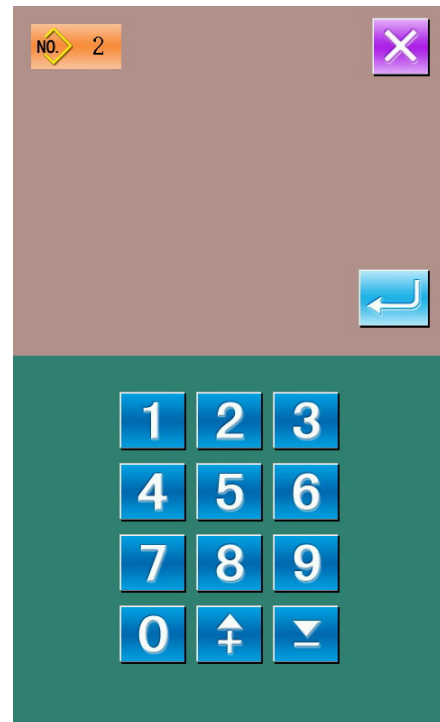
999 normal patterns can be registered at most.

Press  to have access to the pattern registration interface (as shown in right figure):

① Input Pattern Number

Use the number keys to input the desired pattern number. If the existed pattern number is inputted, the upper side of the interface will display the shape and relating data of the

registered pattern. With  & , user can find the unregistered pattern number.



② Register New Pattern

After the pattern number is set, user can press  to copy the displayed pattern data to the newly registered pattern. The system will return to the interface for inputting the data of the newly registered patterns. If the existed pattern number is inputted, the system will ask user whether to replace the saved pattern.

2.5 Pattern Naming

Press  to have access to the interface for naming pattern (as shown in right figure), and at most 14 figures can be inputted to name a pattern.

 : Move icon to right

 : Move icon to left

 : Cap lock

 : Eraser

Select the wanted figure; press  to end the operation of naming pattern.

By moving the icon, user can set the position of the figure. The Eraser is used to clear the figure at that position.

No. : 1


PATTERN


A	B	C	D	E	F	G
H	I	J	K	L	M	N
O	P	Q	R	S	T	U
V	W	X	Y	Z	_	\$
1	2	3	4	5	6	7
8	9	0	+	-	/	#

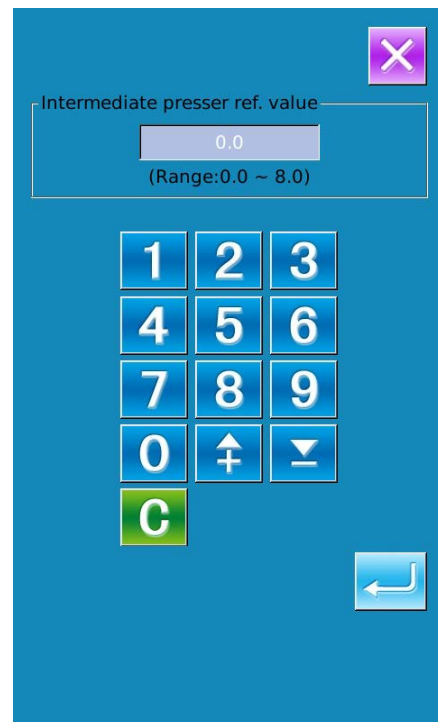





2.6 Intermediate Presser Setting

Press  to have access to the interface for setting the intermediate presser.

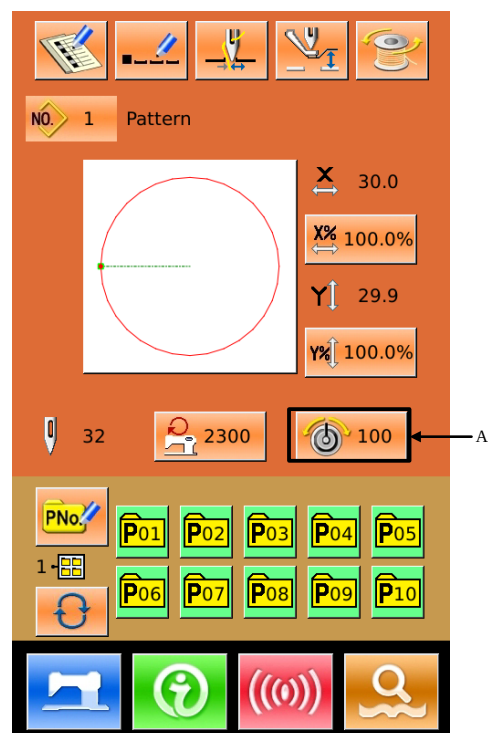
By using the  ~  and number keys or  & , user can input the wanted figure. The inputted number will be placed in the most right position, following the figures inputted formerly. Press  to finish this operation and return to the data input interface.



2.7 Thread Tension Setting

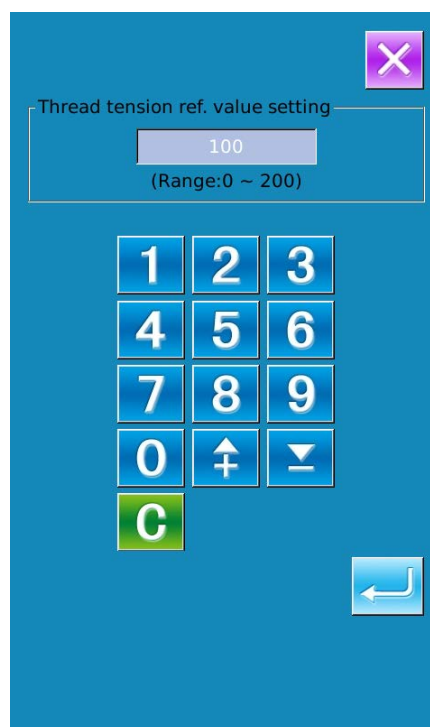
① Have Access to Interface for Selecting Pattern

In data input interface (as shown at right), user can press Key A to have access to the interface for setting thread tension.



② Set Thread Tension Value

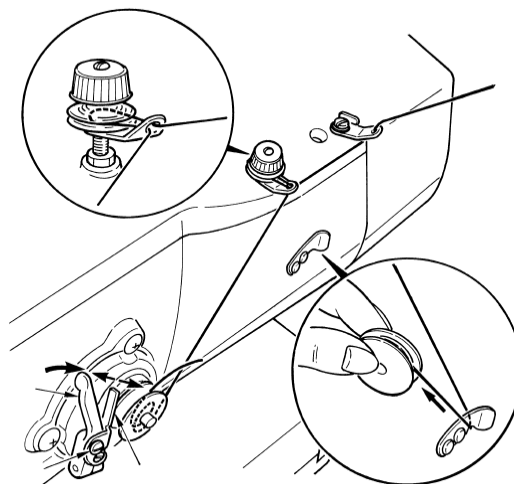
The operation is same to that in the Intermediate Presser Setting.



2.8 Winding

① Installation of bobbin

Put the bobbin onto the winding axis, then press the bobbin guide in the direction of arrow (as shown in right picture).



② Display the Interface for Winding Bottom Thread

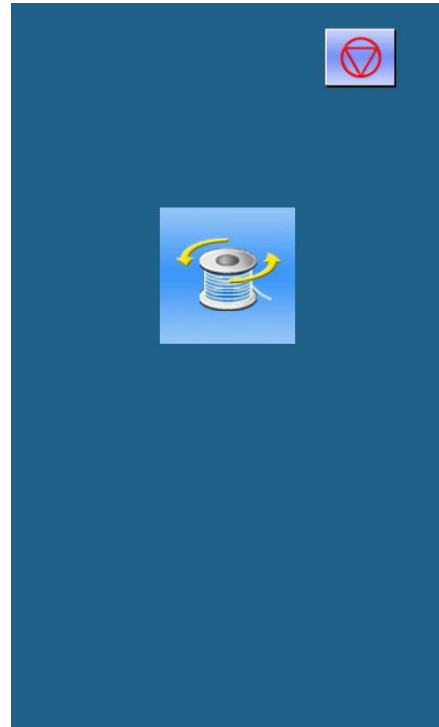
In the data input interface, user can press  to activate the interface for winding (as shown in right) .

③ Start Winding

Press the start pedal to start sewing machine. At this moment, the machine starts to wind bottom thread.

④ Stop Sewing Machine

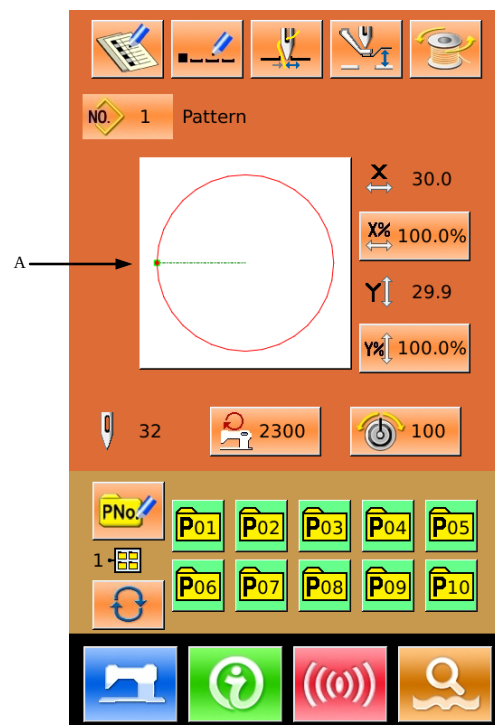
After user presses , the sewing machine will stop and return to normal mode. Additionally, if the pedal is pressed in the process of winding bottom thread, the sewing machine will be stopped in winding mode. Therefore, when user steps the pedal again, the sewing machine will continue winding. This function can be used when several bobbins are wound.



2.9 Pattern Selection

① Have Access to Pattern Selection Interface

Press Sewing Shape (A) in the data input interface (the right picture) to have access the Pattern Selection Interface.



In the pattern selection interface, the upper side is the shape of the selected pattern; the lower side is the registered pattern number.

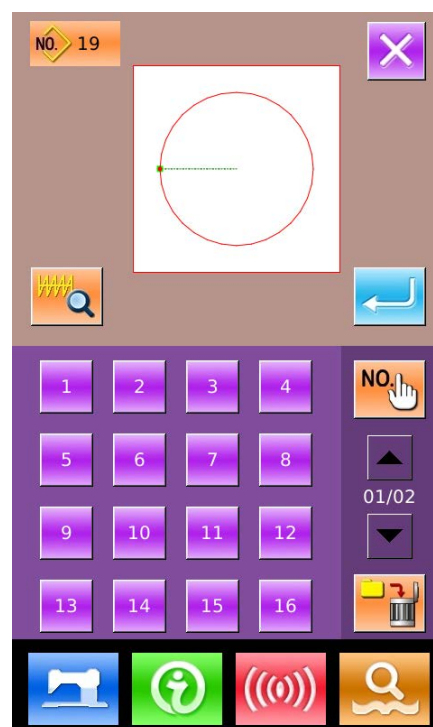
: Preview Pattern

: Inquire Pattern by No.

: Delete Pattern

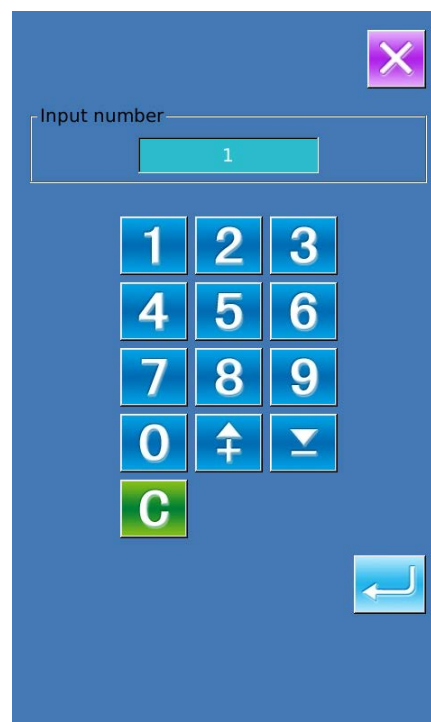
② Pattern Selection

16 pattern codes are displayed in each page. When user selects a registered pattern number, the content of pattern will be displayed at the upper side of screen. Press  to finish the selection



③ Pattern Inquiry

Press  to activate the pattern inquiry interface. Use number keys to input the pattern number directly.

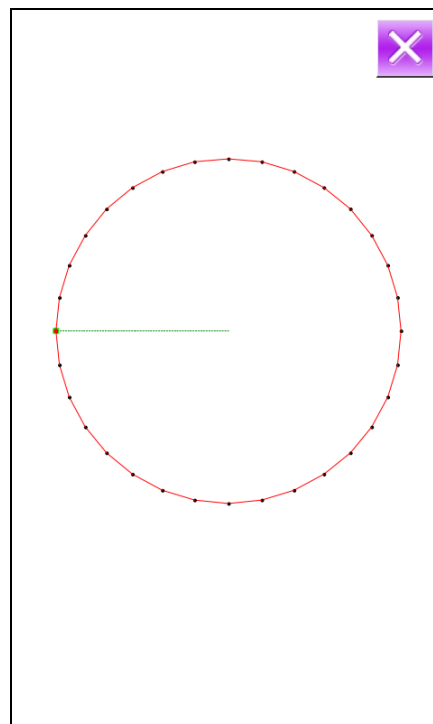


④ Pattern Deletion

Select a registered pattern at first, press  to delete this pattern, however, the patterns registered to P can't be deleted.

⑤ Pattern Preview

Press  to preview the present pattern in full screen.



2.10 Sewing Data Setting

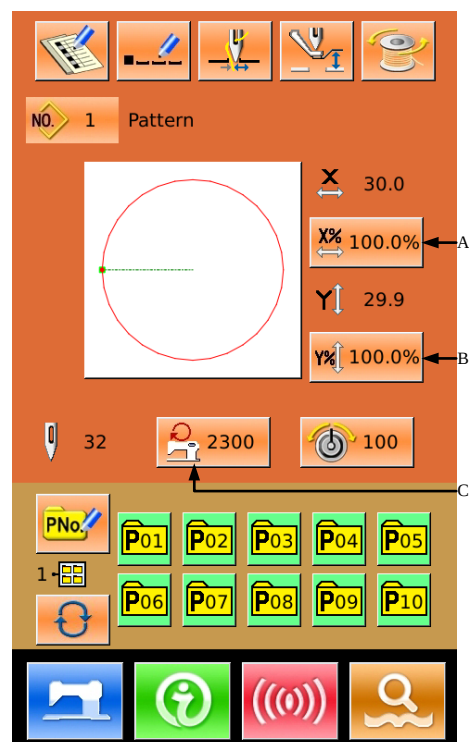
① Have Access to Interface for Setting Sewing Data

Pressing keys A, B or C in the interface of data input to have access to the interface for setting scale rate or the interface for setting the speed limitation respectively

	Item	Input Range	Default
A	X Scale Rate	1.0~400.0%	100.0%
B	Y Scale Rate	1.0~400.0%	100.0%
C	Max Speed Limitation	200~2800rpm	2300rpm

Reference 1: Parameter U64 is used to shift the selection between the scaling rate and actual size.

Reference 2: The input range and initial value of Max speed is affected by the parameter U01.



② Scale Rate Setting

The right figure is the interface for setting the scale rate. The upper side is for setting that in X direction, while the lower side is for Y direction.

A: Actual value in X direction

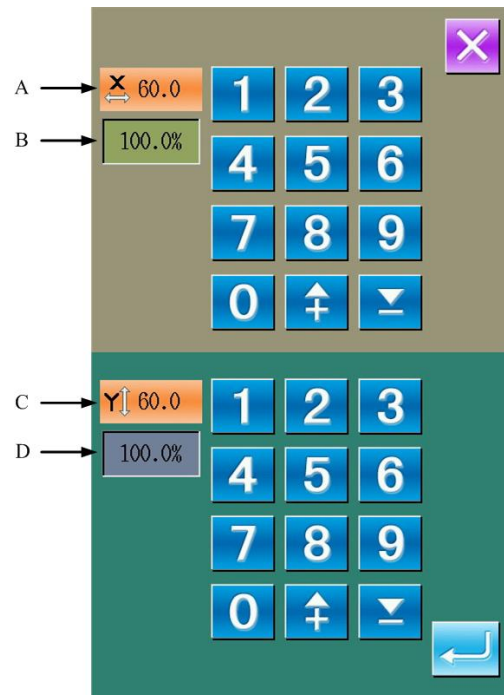
B: Scale rate in X direction

C: Actual value in Y direction

D: Scale rate in Y direction

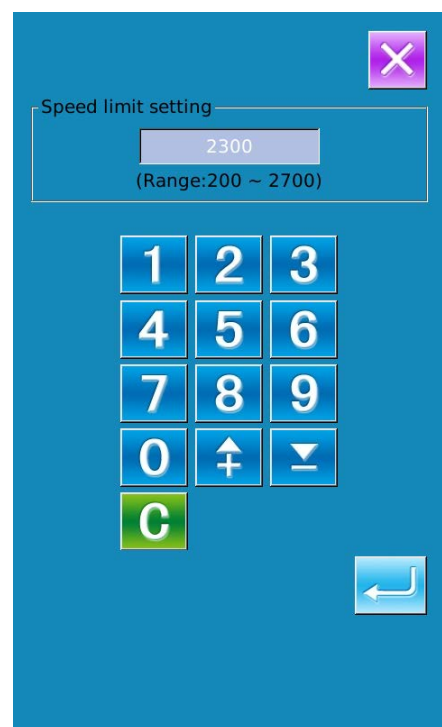
With **0** ~ **9** and number keyboard or

↑、**↓** to input the wanted value. Press **↩** to finish the operation and return to data input interface.



③ Max Speed Limitation Setting

The operation is same to that at above



2.11 P Pattern Registration

① Have Access to P Pattern Registration Interface

In the data input interface, press  to have access to the P pattern registration interface (as shown in right)

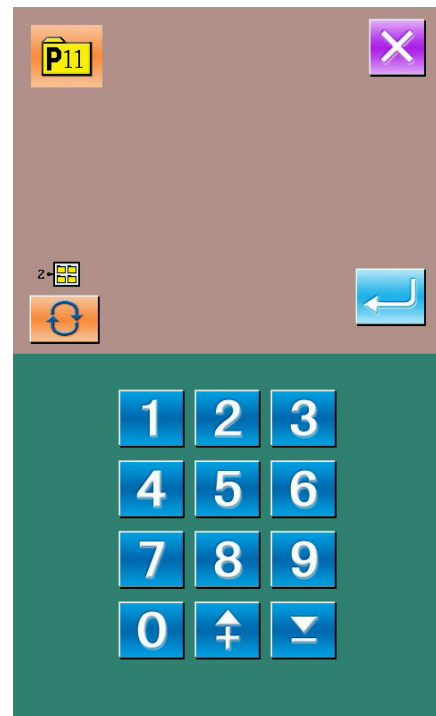
② Input the P Pattern Code

By using the number keyboard, user can input the wanted code. If the inputted pattern code is registered, the upper side of the interface will display the registered sewing shape and relating data. At this moment, no new pattern can be registered

③ Select File Folder Number

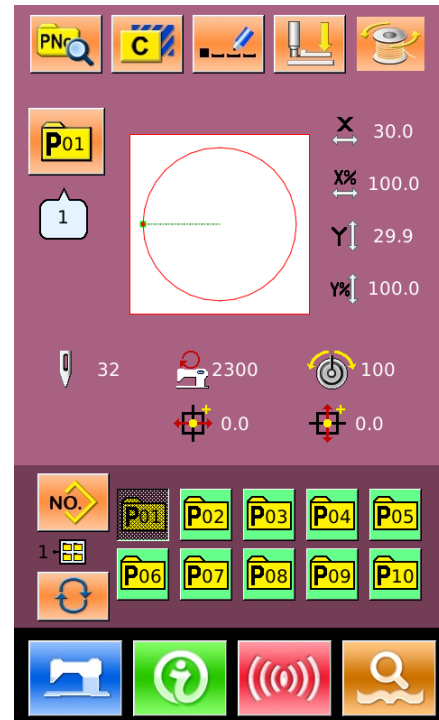
P Pattern number can be registered into five folders, 10 P patterns in each folder at most.

User can use  to select orderly



④ Confirm the Pattern Number

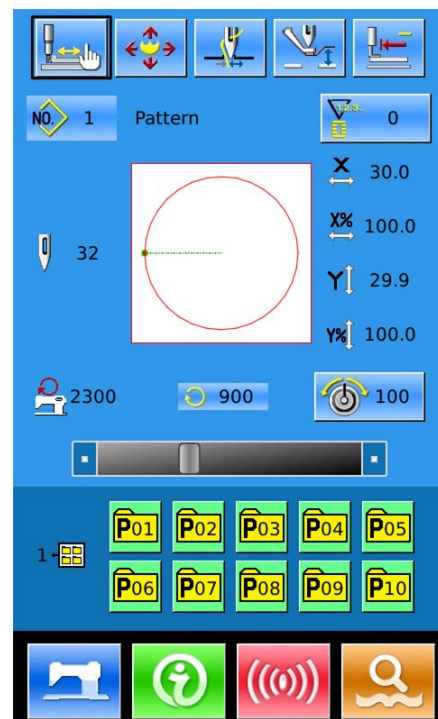
Press  to finish the P patter registration, and the system returns to the interface for inputting the P pattern data



2.12 Trial Sewing

① Display Sewing Interface

In the data input interface, press  to turn the background of LCD to Blue, when the system goes into the sewing interface.



② Display of Trial Sewing Interface

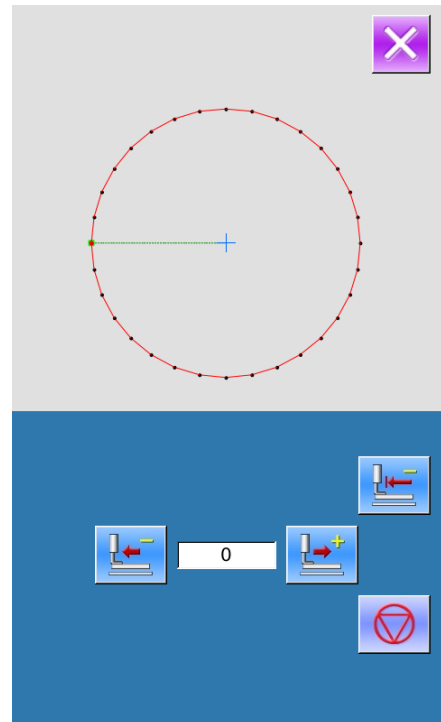
In the sewing interface, press  to the interface of trial sewing (as shown in right):

: Return to Origin

: Presser Fallback

: Presser Forward

: Stop



③ Start Trial Sewing

Press pedal to lower the presser. Use  and  to set the shape. When the button is held for a fixed period of time, the presser will continue to move even when the button is detached. When wanting to stop it, user can press .

When  is pressed, the needle will return to origin and the system return to sewing Interface.

④ End Trial Sewing

User can press  to return to the sewing interface from trial sewing interface. When the pattern is not at the start sewing position or the end position, user can press pedal to start the sewing in the midway.

2.13 Frame-moving Operation

① Have Access to Frame-moving interface

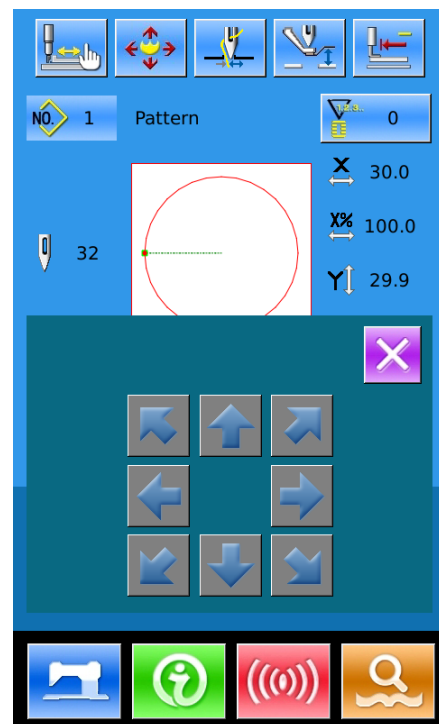
When the sewn material is hard to be placed due to the head needle, user can move the frame to set a 2nd origin.

Press  in the sewing interface, the user can have access to the interface for moving frame.

Reference: This function can be forbidden by the parameter U89.

② Operation of Frame-moving

When the presser is lowered, user can press the direction to move the frame. Pressing  is to end the operation.



2.14 Operation of Counter

① Display Counter Interface

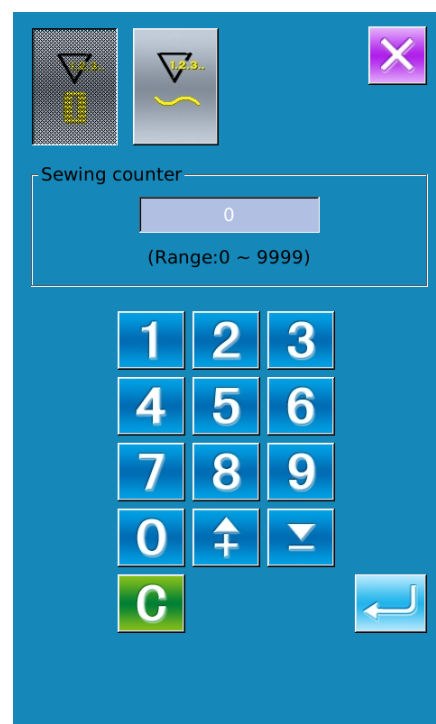
In the sewing interface, press  or  to have access to the interface for setting counters.

 : Sewing Counter

 : No. of Pieces Counter

② Counter Selection & Value Setting

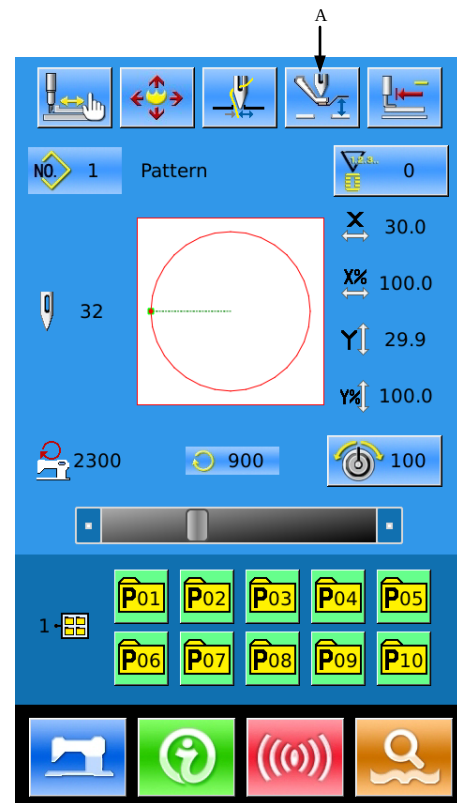
With  & , user can set the type and the value of counter.



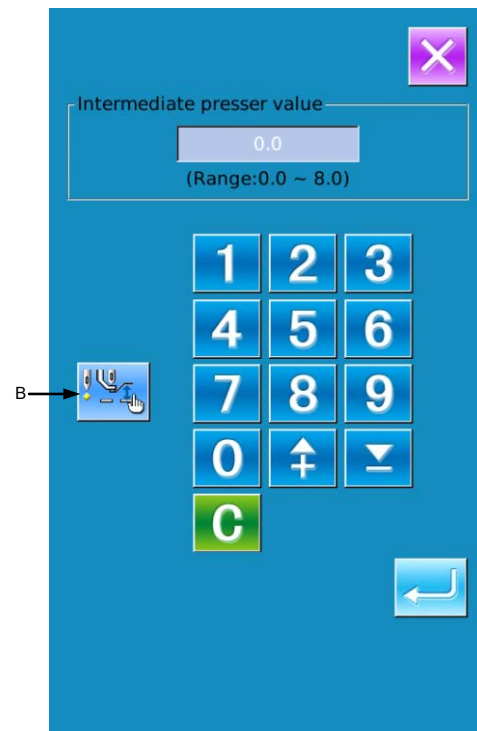
2.15 Single –stitch Intermediate Presser Setting

① Have Access to Interface for Setting Single-stitch Intermediate Presser

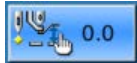
In the sewing interface (the right figure), press Intermediate Presser Setting (A) to have access to the interface for setting the intermediate presser.



In the interface for setting the intermediate presser (the right figure), press the Single-stitch Intermediate Presser Setting to have access to the interface for setting the single-stitch intermediate presser



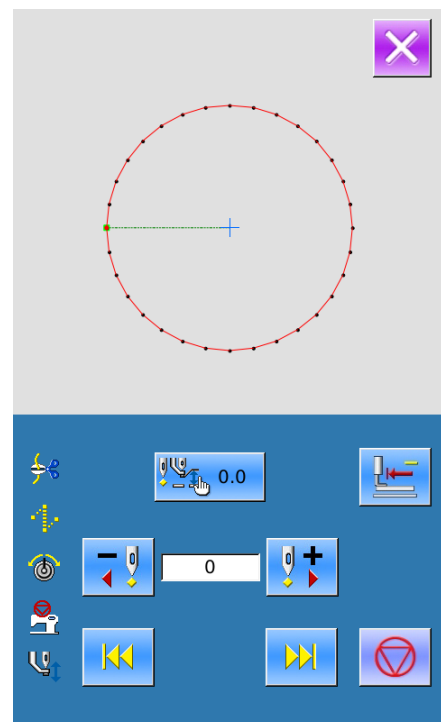
② Set Value of Single-stitch Intermediate Presser

Presser  0.0 to have access to the interface for setting intermediate presser, the setting method is same to that in 2.6.

With  or , the needle moves by one stitch in rear or front when the frame goes down. With  or , needle moves to the needle entry point where the intermediate presser commend locates in front or rear. For stop, please press .

Press  to move to origin

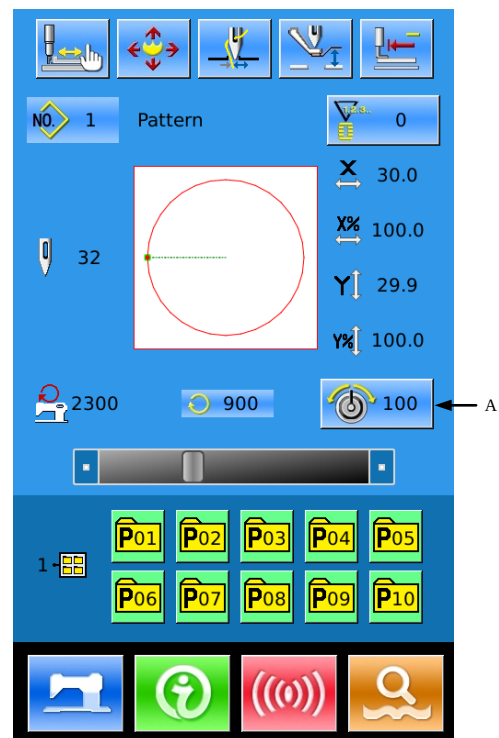
The displayed value is the absolute value (intermediate presser height value + intermediate presser increase/ decrease value)



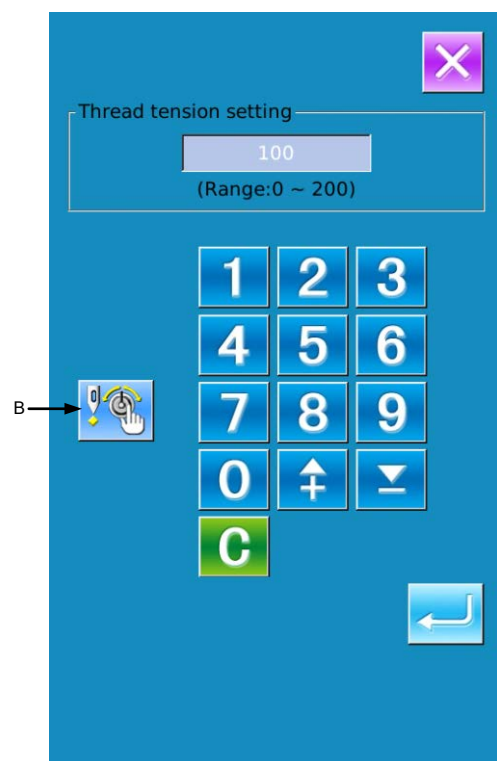
2.16 Single-stitch Thread Tension Setting

① Have Access to Interface for Setting Single-stitch Thread Tension

In sewing interface (the right figure), press Thread Tension Setting (A) to have access to the interface for setting thread tension.



In the interface for setting the thread tension (right figure), press Single-stitch Thread Tension Setting (B) to set the value



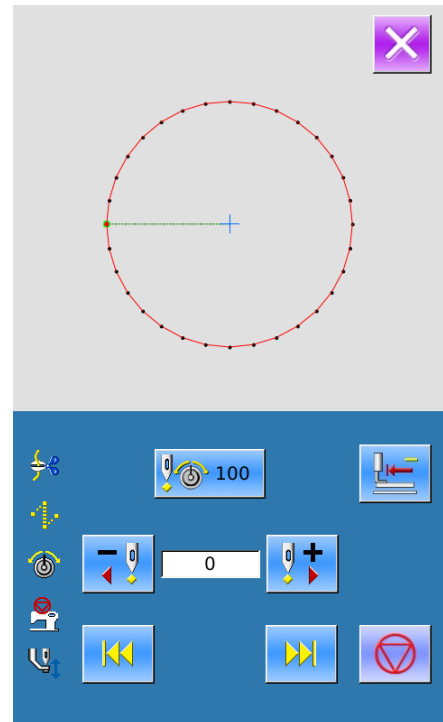
② Set Single-stitch Thread Tension

Press  to have access to the interface for setting thread tension, the setting method is same to that in 2.7.

With  or , the needle moves by one stitch in rear or front when the frame goes down. With  or , needle moves to the needle entry point where the intermediate presser command locates in front or rear. For stop, please press .

Press  to move to origin.

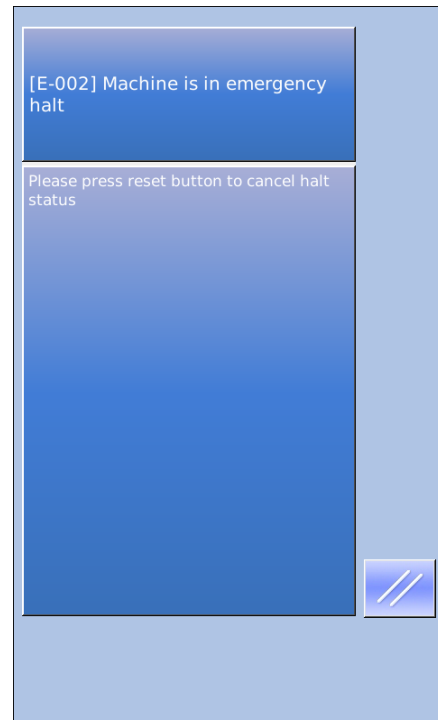
The displayed value is the absolute value (intermediate presser height value + intermediate presser increase/ decrease value).



2.17 Emergency Stop

① Release the Error

During the sewing, press the stop switch to stop the machine. And the screen will display the right interface. Press  to release the error, and then activate the interface for setting the emergency stop.



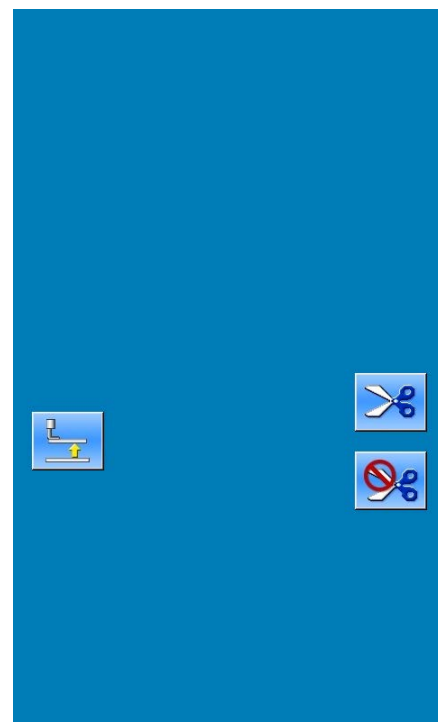
② Trim Thread or Lift Presser

: Cut thread and then enter step setting interface

: Not Cut thread, enter step setting interface directly

: Lift presser. Can not operate any more, please turn off power.

Reference: If the parameter U97 is set as “automatic thread-trimming after stop”, the system will enter Procedure Setting directly.



③ Set procedure & Adjust Presser to Re-sewing Position



: Intermediate Presser Action



: Feeding Backward



: Feeding Forward

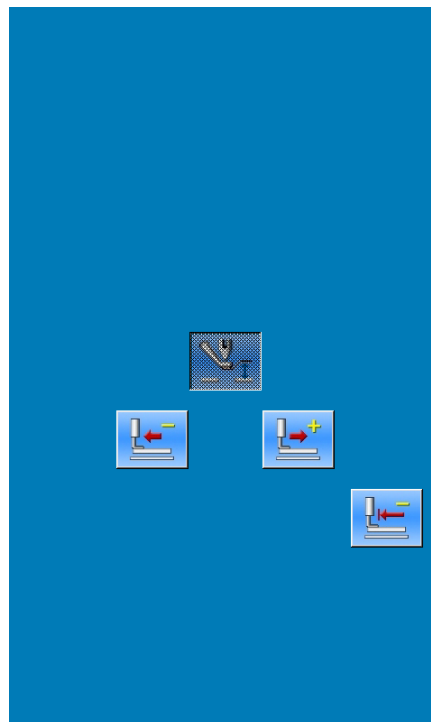


: Return to Origin

Press  or  to move the presser to the very position for starting re-sewing

④ Re-sewing

Press the pedal to restart the sewing



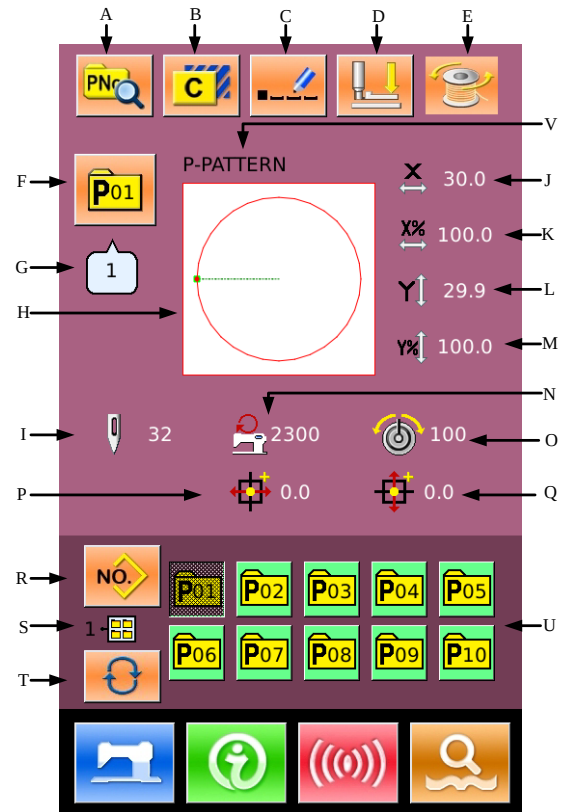
3 Operation of Prompt Pattern (P Pattern)

3.1 P Pattern Data Input

The prompt pattern is called as “P pattern” for short, which consists of a normal pattern and relating sewing parameters (like X Scale Rate, Y Scale Rate, Speed Limitation and so on). User needn’t set the parameter at each time when using P pattern.

Right is the P Pattern Data Input interface

50 P patterns can be registered at most.



Function List:

No.	Functions	Descriptions
A	P Pattern Edition	Edit the content of P pattern.
B	Copy P Pattern	Copy the current P pattern, and save it as a new pattern.
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Press it to lower the intermediate presser
E	Winding	Enter winding interface Press it and  for winding
F	P Pattern Number Display	Display the number of the selected pattern
G	Sewing Shape Number Display	Display the number of the normal pattern quoted in the current P pattern.

No.	Functions	Descriptions
H	Sewing Shape Selection	Display the sewing shape of the current pattern
I	Pattern Stitch Number Display	Display the stitch number of the current pattern.
J	X Actual Size Display	Display the actual size of the current pattern in X direction.
K	X Scale Rate Setting	Display the scale rate of the current pattern in X direction.
L	Y Actual Size Display	Display the actual size of the current pattern in Y direction.
M	Y Scale Rate Setting	Display the scale rate of the current pattern in Y direction.
N	Max Speed Limitation	Display the Max speed
O	Thread Tension Value	Display the basic value of thread tension in this pattern
P	X Travel Amount Display	Display the X travel amount of the current pattern
Q	Y Travel Amount Display	Display the Y travel amount of the current pattern
R	Return to Normal Pattern Data Input	Return to the interface for inputting normal pattern data.
S	P Pattern File Folder Number Display	Display the file folder number of current P pattern
T	P Pattern File Folder Selection	Shift the P pattern file folder number orderly.
U	P Pattern Selection	Display the registered P pattern.
V	P Pattern Name	Display the name of current pattern

Function List:

3.2 P Pattern Edition

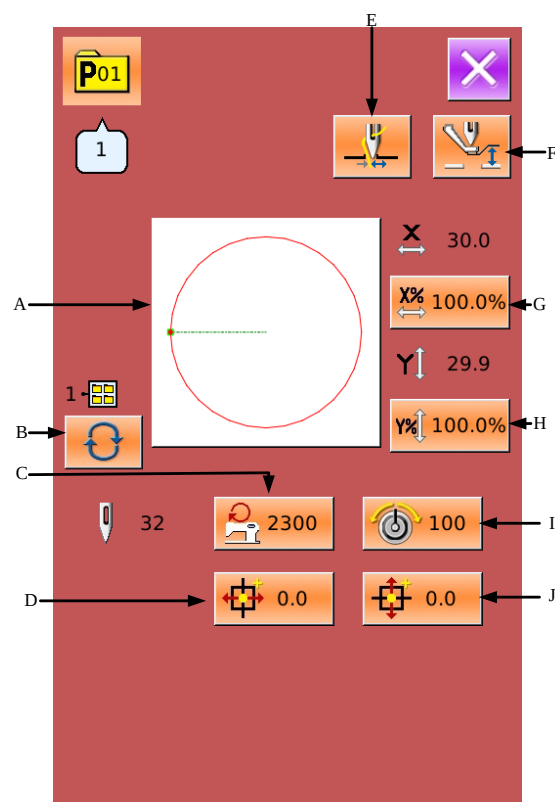
① Have Access to Interface for Editing P Pattern

Press  to have access to the interface for editing P pattern (as shown in right) .

② Edition of Data

Select the item for change and set the value.

	Item	Input Range	Default value
A	Sewing Shape		
B	File Folder Number	1~5	
C	Max Speed	200~2800rpm	2300rpm
D	X Travel Amount	-30.0~30.0mm	0
E	Thread-catching Switch		
F	Intermediate Presser Height	0.0~8.0mm	0
G	X Scale Rate	1.0~400.0%	100.0%
H	Y Scale Rate	1.0~400.0%	100.0%
I	Thread Tension Value	0~200	100
J	Y Travel Amount	-30.0~30.0mm	0

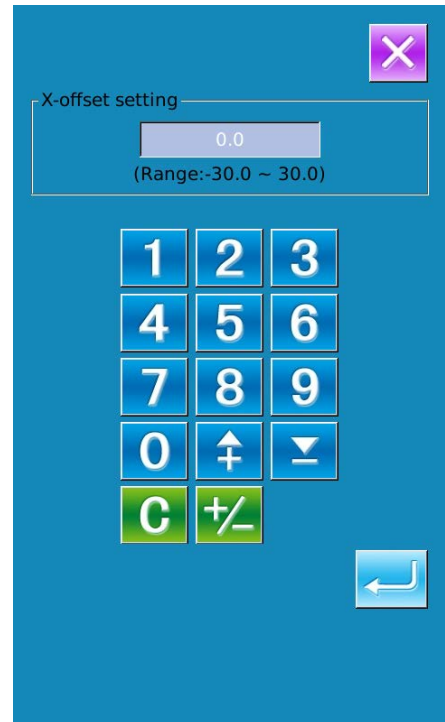


③ Confirmation of Data Change

Take “X Travel Amount” as example, user can input the value with number keyboard. Press  to finish the operation.

④ Quit the Edition Interface

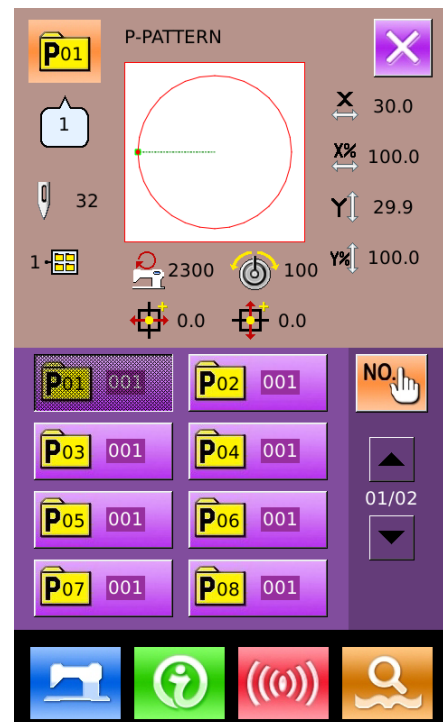
Press  to close the P pattern edition interface and return to data input interface.



3.3 Copy P Pattern

① Select the Pattern for Copy

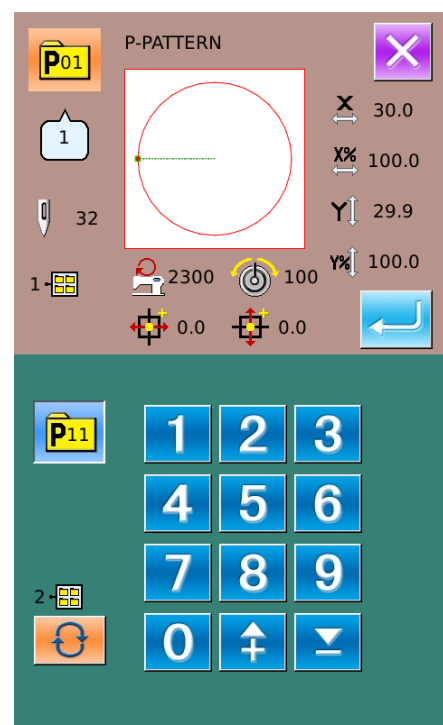
Press  to have access to the interface for copying P pattern (as shown in right). Select the copied pattern number among the registered patterns and press .



② Input the Number for Newly Registered Pattern

At the upper of the interface, it is the copied pattern. User can select an unregistered pattern number for it with the number keys. The registered pattern number can't be registered repeatedly.

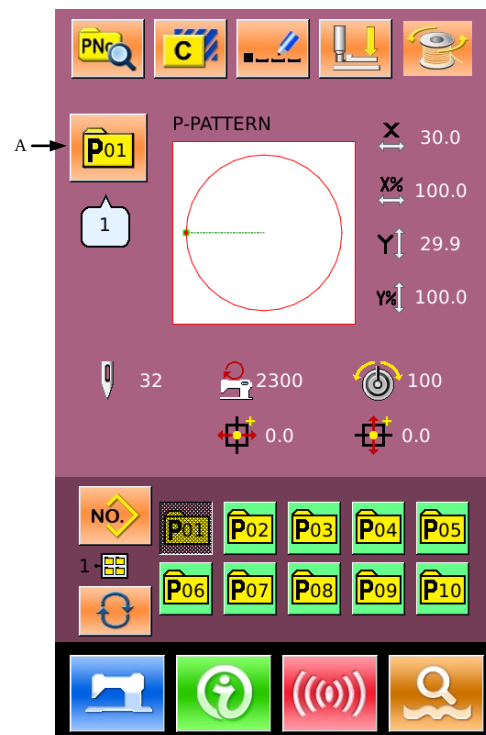
Press  to select the file folder for saving pattern. Press  to finish the operation of copying the pattern and return to the interface for copying the P pattern.



3.4 P pattern Selection

① Have Access to Interface for Selecting P Pattern.

As shown in right figure, press button A to have access to the interface for selecting P pattern.

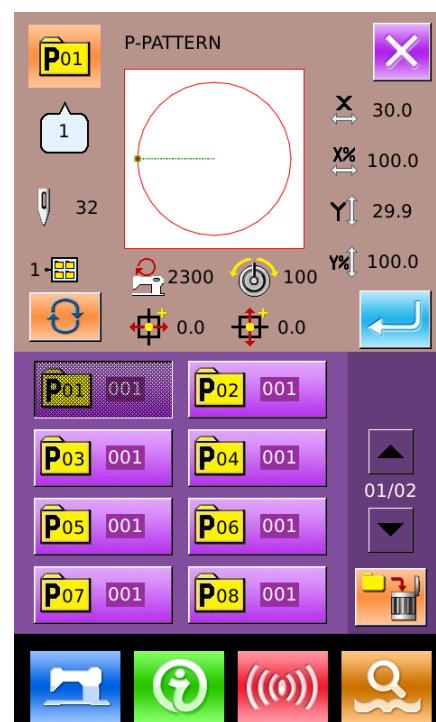


② Selection of Pattern Number

The upper side of the interface is the information of the selected pattern. Press  to hide file folder number. At this moment, the entire registered P pattern will be displayed.

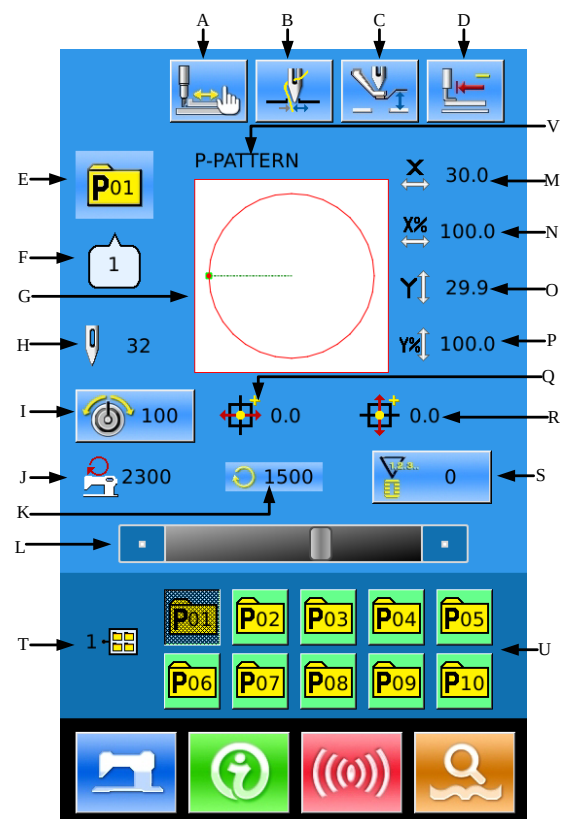
③ Confirm the Pattern Selection

The operation is same to that of the normal pattern selection. Please press  to end the selection.



3.5 P Pattern Sewing

In the interface for inputting P pattern data, user can press  to have access to the Sewing interface (as shown in right).



Function List:

No.	Function	Description
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching Ineffective  : Thread-catching Effective
B	Trial Sewing	Press it to have access to the Trial Sewing interface, where user can confirm the shape of pattern.
C	Threading	Press it to lower the intermediate presser.
D	Return to Origin	This button returns the presser to the start sewing point.
E	P Pattern No. Display	Display the number of pattern selected at present
F	Sewing Shape No. Display	Display the number of the normal pattern that is quoted by the current P pattern.

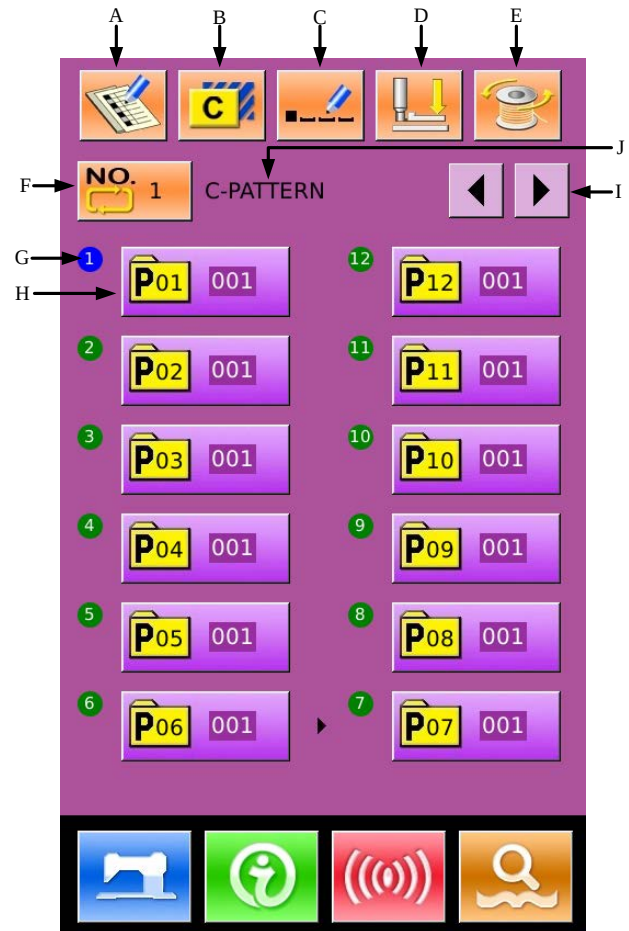
No.	Function	Description
G	Pattern Shape Display	Display the shape of selected pattern.
H	Pattern Stitch Number Display	Display the total number of the selected pattern.
I	Max Speed Limitation	Display the Max speed
J	Thread Tension Setting	User can have access to the interface for setting thread tension after pressing this button.
K	Sewing Speed Display	Display the sewing speed at present.
L	Sewing Speed Setting	Change the sewing speed.
M	X Actual Size Display	Display the X actual size of the selected pattern.
N	X Scale Rate Setting	Display the X scale rate of the selected pattern.
O	Y Actual Size Display	Display the Y actual size of the selected pattern.
P	Y Scale Rate Setting	Display the Y scale rate of the selected pattern.
Q	X Travel Amount Display	Display the X travel amount of the current pattern
R	Y Travel Amount Display	Display the Y travel amount of the current pattern
S	Counter Setting	Press to select the type of counter and set the value of the counters  : Sewing Counter  : No. of pcs Counter
T	P Pattern File Folder Number Display	Display the file folder number of current P pattern
U	P Pattern Selection	Display the registered P pattern.
V	P Pattern Name	Display current pattern name

4 Operation of Combination Pattern (C Pattern)

4.1 C Pattern Data Input

The combination pattern is called as “C Pattern” for short, which consists of a group of P patterns. In a C pattern, 50 P patterns can be inputted at most. And 50 C patterns can be registered in system at most.

Please refer to the content in [8.5 Change Sewing Type] to have access to the interface for inputting C pattern data (as shown in right).



Function List :

No.	Functions	Descriptions
A	C Pattern Registration	Register a new C pattern.
B	Copy C Pattern	Copy the content of current C pattern, and save it as a new pattern
C	Pattern Naming	14 figures can be inputted at most.
D	Threading	Press it to lower the intermediate presser
E	Winding	Enter winding interface. Press it and  for winding
F	C Pattern Number Selection	The number of the selected pattern is displayed on the button. Press it to have access to the interface of C pattern selection.

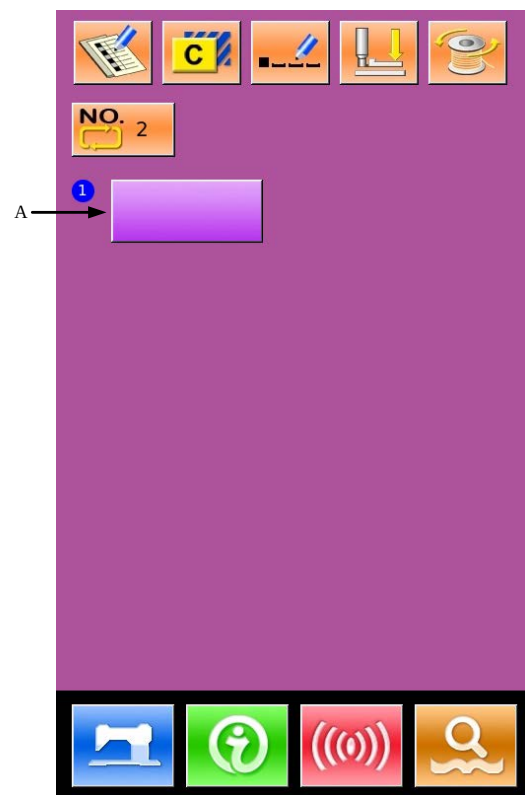
No.	Functions	Descriptions
G	Sewing Sequence Display	Display the sewing sequence of the selected pattern. The one attached the blue number is the initial sewing pattern.
H	C Pattern Shape Selection	Press the button to have access to the C pattern edition interface. User can select a P pattern to input.
I	Page Key	50 shapes can be registered in a C pattern at most. 12 shapes can be displayed in each page.
J	C Pattern Name	Display the name of C pattern.

4.2 C Pattern Edition

① Have Access to C Pattern Edition Interface

In the interface for inputting C pattern data, user can press button A to have access to the C pattern edition interface.

In the initial status, because no P pattern is registered as the sewing shape, the first shape is displayed as blank.

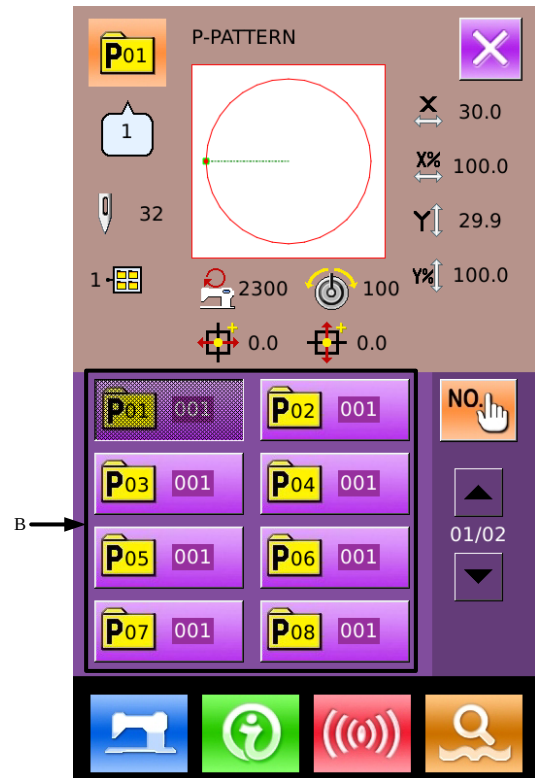


② Select a Shape

The right figure is the interface is C pattern edition. User can select a P pattern (B) which is wanted registering.

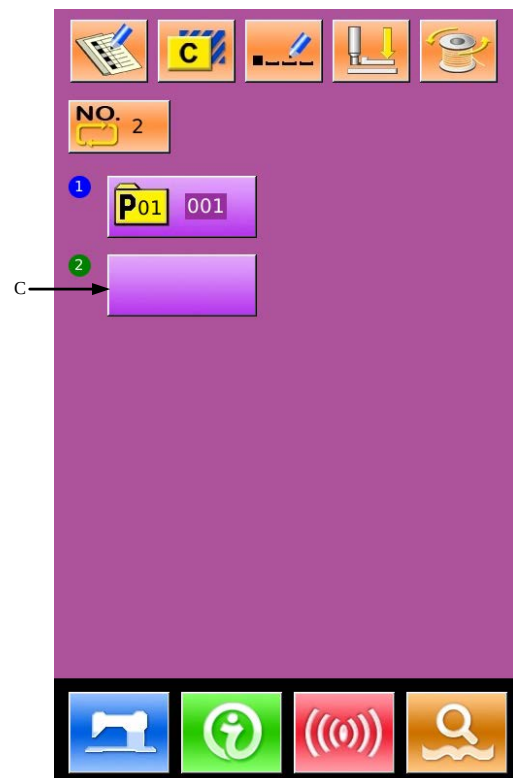


to end the selection.



③ Repeat the Registration of the Rest Shapes

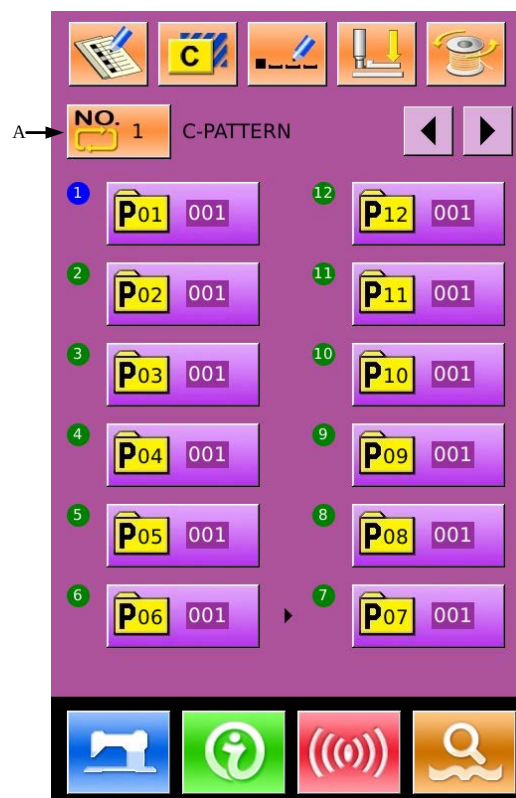
When the first shape is set, the selection key (C) for the second shape is displayed. Repeat the above operation to register the rest shapes.



4.3 C Pattern Selection

① Have Access to Interface for Selecting C Pattern

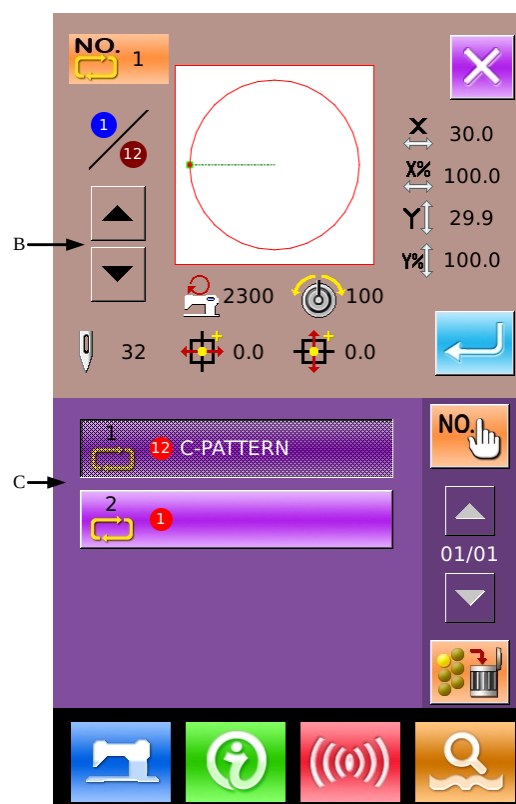
Press the figure A in the right interface to have access to the C pattern selection interface.



② Select the C Pattern Number

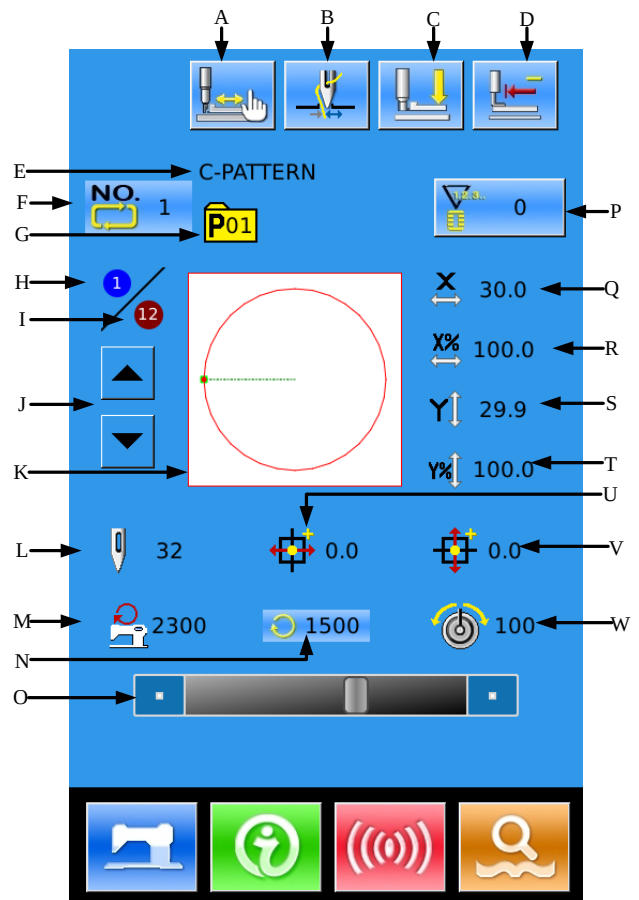
It is the C pattern selection interface at right. After pressing button B, user can orderly change the data of P patterns which are inputted in the current C pattern.

To confirm the selected C pattern number, please press .



4.4 C Pattern Sewing

In the interface of C pattern data input, press  to have access to the sewing interface (as shown in right).



Function List:

No.	Function	Description
A	Thread-catching Button	Select the thread-catching function effective/ineffective. This is affected by parameter U35.  : Thread-catching Ineffective  : Thread-catching Effective
B	Trial Sewing	Press it to have access to the Trial Sewing interface, where user can confirm the shape of pattern.
C	Threading	Press it to lower the intermediate presser.
D	Return to Origin	This button returns the presser to the start sewing point.
E	C Pattern Name	Display the name of current pattern.
F	C Pattern Number Display	Display the number of the selected pattern.

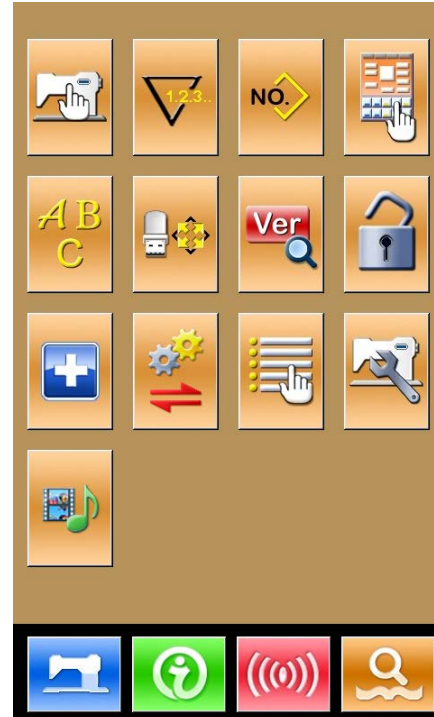
No.	Function	Description
G	Sewing Shape Number Display	Display the sewing shape number registered under the current C pattern.
H	Sewing Sequence Display	Display sewing sequence number in the current C pattern
I	Total Registration Number Display	Display the total number of shapes registered in this current pattern
J	Sewing Sequence Forward /Backward	The sewing shape can be moved forward/ backward by one.
K	Pattern Shape Display	Display the registered shape that is sewn at present.
L	Pattern Stitch Number Display	Display the stitch number of the current registered sewing shape.
M	Max Speed Limitation Display	Display the Max speed of the current registered sewing shape.
N	Sewing Speed Display	Display the current sewing speed
O	Sewing Speed Setting	Change the sewing speed.
P	Counter Setting	Press to select the type of counter and set the value of the counters.  : Sewing Counter  : No. of pcs Counter
Q	X Actual Size Display	Display the X actual size of the registered sewing shape.
R	X Scale Rate Setting	Display the X scale rate of the registered sewing shape.
S	Y Actual Size Display	Display the Y actual size of the registered sewing shape.
T	Y Scale Rate Setting	Display the Y scale rate of the registered sewing shape.
U	X Travel Amount Display	Display the X travel amount of the current registered sewing shape
V	Y Travel Amount Display	Display the Y travel amount of the current registered sewing shape
W	Thread Tension Display	Display the basic value of thread tension.

5 Pattern Edition

5.1 Have Access to the Pattern Edition Mode

Press  to shift the data input interface and the mode selection interface (shown in right). In the mode selection interface, user can do some detailed settings and editions.

For the detailed operations and setting within the mode selection interface, please refer to [8. Mode& Parameter Setting] .



Press  to have access to the interface for selecting the edit mode or sewing mode, as shown in right



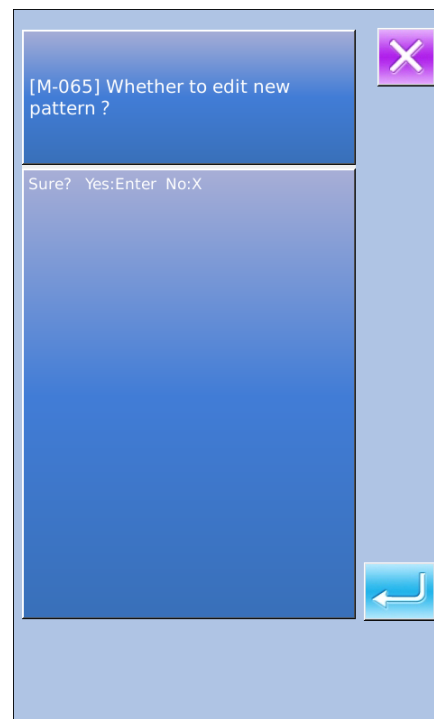
: Sewing Mode



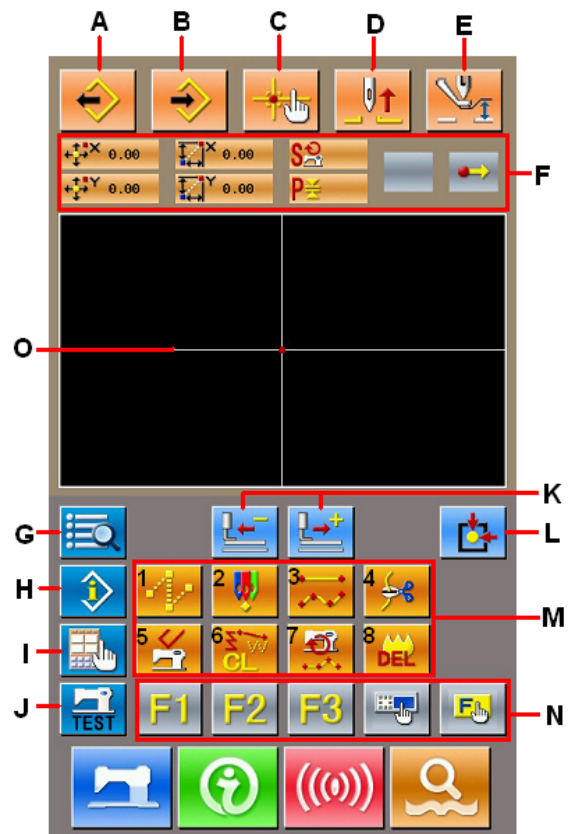
: Edit Mode

Select  and then press 

again, the system will quit from mode selection interface. At this moment, system will ask user whether to enter the pattern edition interface



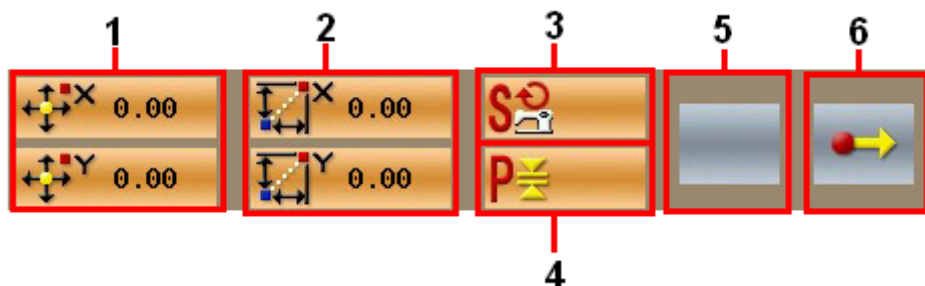
Press  to have access to the pattern edition standard interface, as shown in right:



Function List:

No.	Functions	Descriptions
A	Load Design	Display the interface for loading design
B	Input Design	Display the interface for inputting design
C	Needle Entry Inquiry	Quickly locate the needle entry point; during the pattern edition, user can input the coordinates directly.
D	Needle-lifting	Return the needle to the highest point
E	Intermediate Presser Adjustment	Lift or lower the intermediate presser
F	Current Needle Position Information	This part will show the position information of current needle.
G	Code List	Display the entire available functions on edition, please refer to [Editing Function List]
H	Information Display	Display the detailed information of the pattern edited at present
I	Display Setting	Set wide-angle, display of needle entry point and so on
J	Trial Sewing	Trial sewing on the pattern edited at present

No.	Functions	Descriptions
K	Feeding Forward· Backward	Move one stitch from the current needle position (Forward  ; Backward )
L	Return to Origin	Return the current needle position to the origin
M	Function Buttons	Enable to call the functions on the buttons 1 : Jump Feed 2 : Point Sewing 3 : Normal Sewing 4 : Thread-trimming 5 : Release Mechanical Control Order 6 : Elements Deletion 7 : Modification on Sewing Speed Range 8 : Delete Pattern Edited At Present
N	Function Hot-key	User can use Functional Selection· Setting (Functional code 112) to assign the needed functions to each button, thus uses these buttons as hot keys. After the assignment, the figure standing up for that function will be displayed on that key.
O	Pattern Display Area	Display the pattern.

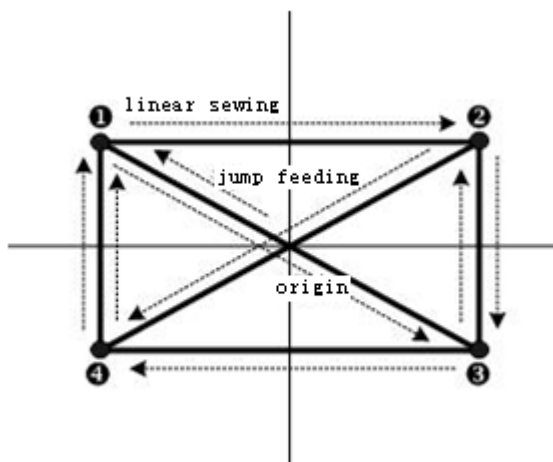


No.	Project	Content
1	Absolute Coordinate	The absolute coordinate of the current needle position
2	Relating Coordinate	The relating coordinate of the current needle position

No.	Project	Content
3	Speed	The sewing speed or jump feed speed of the current point
4	Interval	The length of current element stitch. (If the stitch is scaled, the value before the scaling will be displayed when the value is loaded).
5	Type of Element	Type of present element. For sewing data, the type of element will be displayed (like jump feed  , broken line  , free curve  and so on). For the mechanical orders, the type of the control order will be displayed (like thread-trimming).
6	Type of Needle Entry Position	The types of the needle entry position
		 Start of Design: Start point (origin) of the design
		 Middle Point of Element: the middle point of the element (neither the top point nor the ending point of the element).
		 Top Point: the top point of a broken line.
		 End Point of Element: the ending point of the element
		 End Point of Pattern: the ending of pattern.

5.2 Pattern Edition

By using the pattern editing functions, user can input the following pattern.



Input Points:

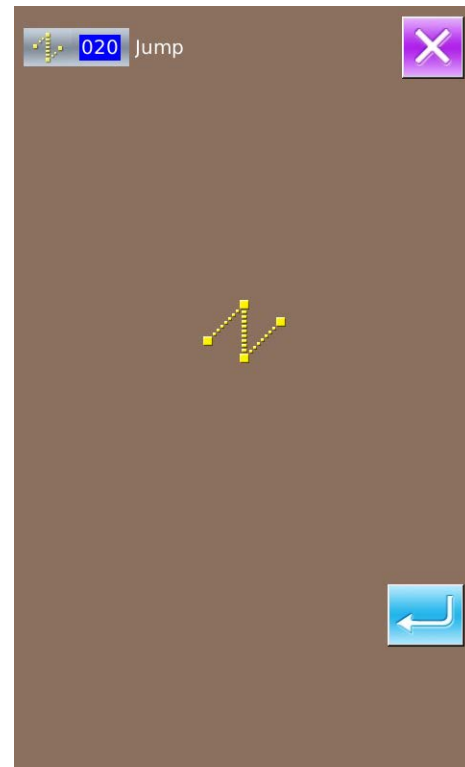
	X (mm)	Y (mm)
①	-40.00	25.00
②	40.00	25.00
③	40.00	-25.00
④	-40.00	-25.00

Input order: It is shown as the dotted arrow in the left.

① Input of Jump Feed

In the standard interface for pattern edition.

Press  to display the interface for setting the jump feeding.



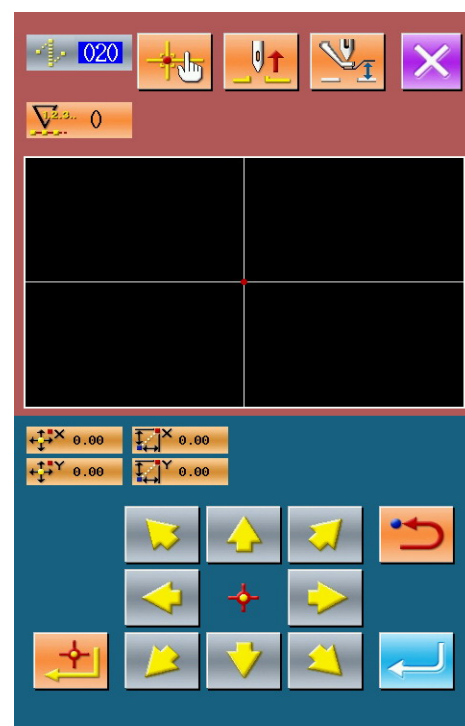
Press  to display the interface for locating the jump feed position;

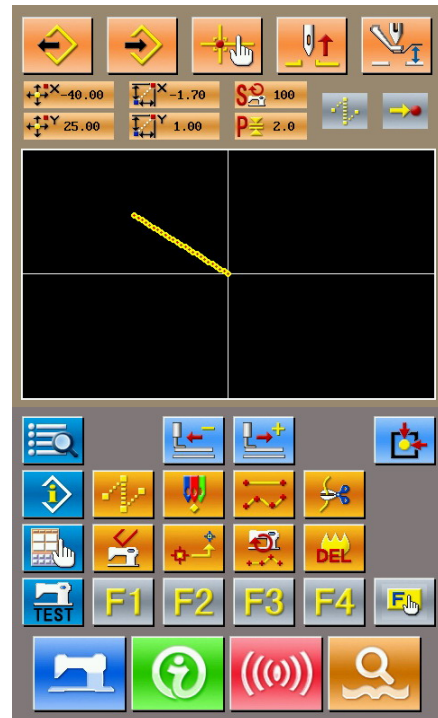
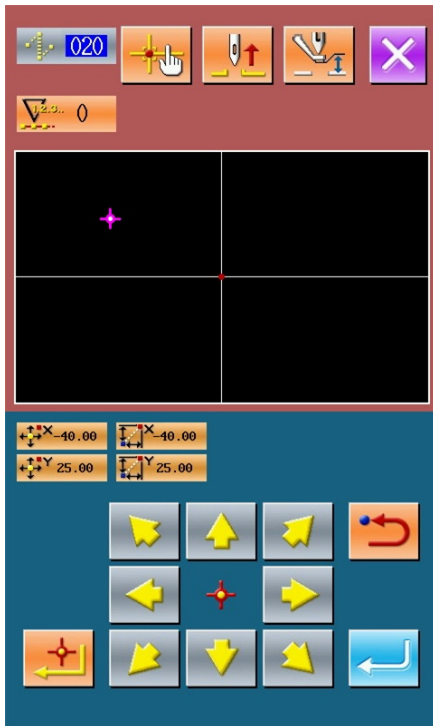
In the jump feed location interface, user can

use  to move icon (needle position) to

(-40, 25). Press  for confirmation, and

then press  for saving. After that the system will return to the standard interface for pattern edition and display the stitch form of jump feed:





② Input of Linear Normal Sewing

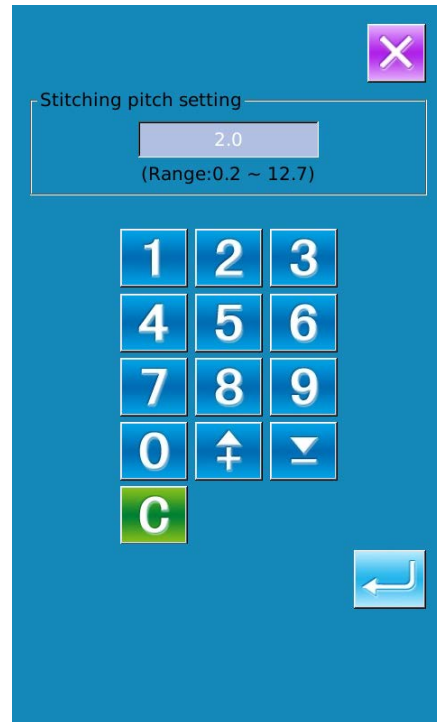
In the “Function Code List”, select the “023 Linear Normal Sewing” and then press  to have access to the interface for setting the linear normal sewing:



In the interface for setting the linear normal

sewing, press  to have access to the interface for setting the stitch length, as shown in right.

Press  &  in sequence, to change the s length to “3.0”. Press “Enter” for saving, and system return to the interface for setting linear normal sewi



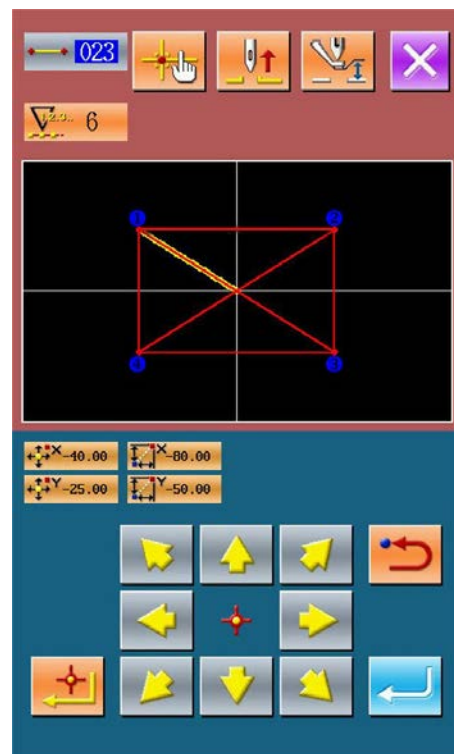
After confirming the value on “Sewing Stitch

Length Button” is “3.0mm”, user can press  to have access to the interface for setting the linear normal sewing.

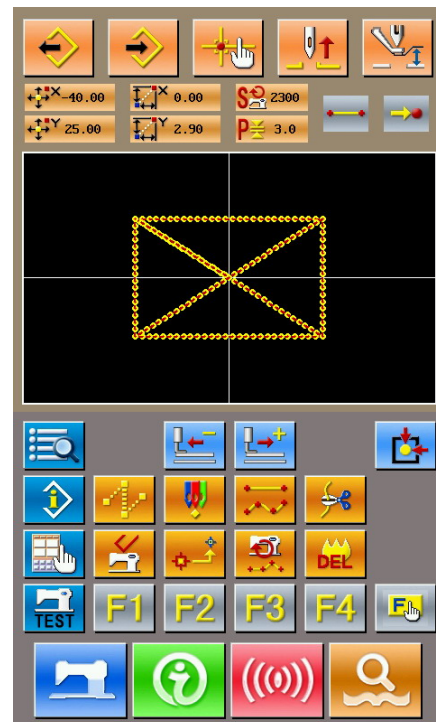
In this interface, press  to move the icon (needle position) from ❶ to ❷, and then press . Repeat the above operation to move the icon in the order of

❷ → ❸ → ❹ → ❶ → ❸ → ❷ → ❹ → ❶,

which is shown in right figure.



After confirming the pattern, user can press the  to create the pattern data. Then the system will return standard interface of the pattern edition and show the shape of pattern

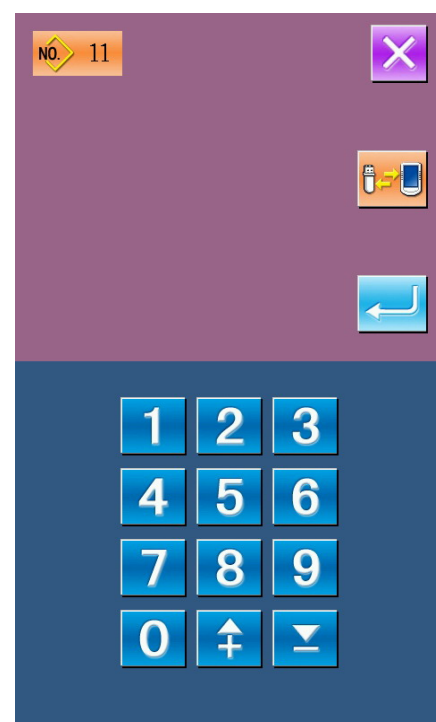


③ Save Pattern

Press  to have access to the interface for saving the pattern, where the edited pattern will be saved, as shown in right .

The system will set the number automatically, the user can also input the wanted number with number keyboard

With , user can select the storage position of the pattern. User can save the pattern at the storage media on operation panel, or save it at a U disk.



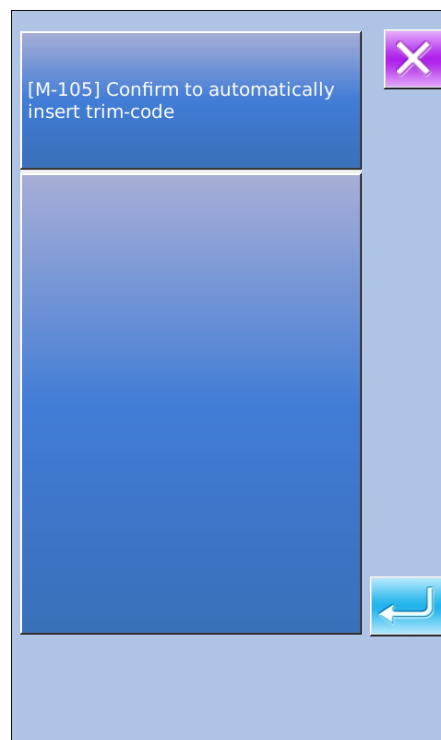
Press  to save the pattern. At the moment, the system will ask the user whether to insert the thread-trimming automatically. The interface at that time is shown as the right picture.

Press  to add the thread-trimming;

Press  to cancel adding the thread-trimming

After the operation, the system will return to the standard interface of pattern edition.

For the specific operations and descriptions on pattern edition, please refer to “SP510 Pattern-making Operation Manual”



5.3 Quit Pattern Edition Mode

In the standard interface for pattern edition, press  to have access to the mode selection interface, as shown in right.





Press  to shift between the sewing mode and edition mode:



: Edition Mode



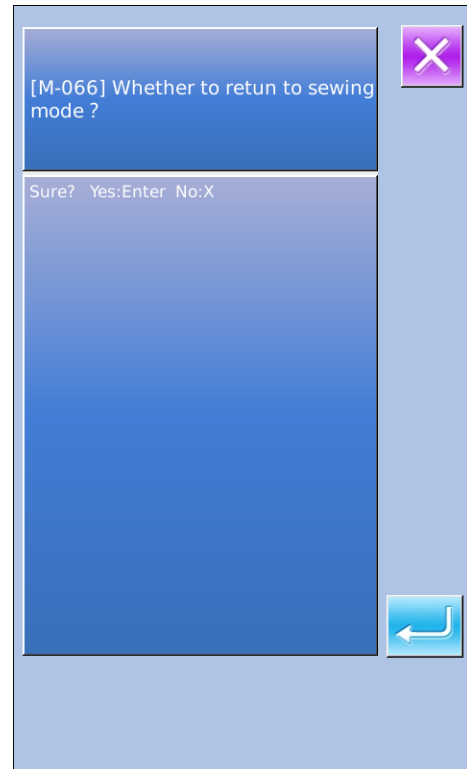
: Sewing Mode



Press  again to quit the interface for mode selection. At this time the system will ask user whether to return to the sewing mode.



Press  to return to the sewing mode from the pattern edition mode.



6 Information Function

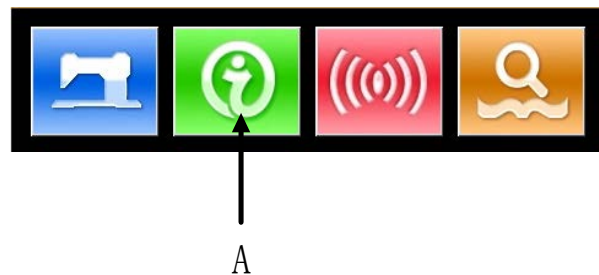
Information Functions contain the following three functions:

- 1) The oil replacement (grease-up) time, needle replacement time, cleaning time, etc. can be specified and the warning notice can be performed after the lapse of the specified time.
- 2) Speed can be checked at a glance and the target achieving consciousness as a line or group is increased as well by the function to display the target output and the actual output.
- 3) Display the threading figure.

6.1 Information for Maintenance & Repair

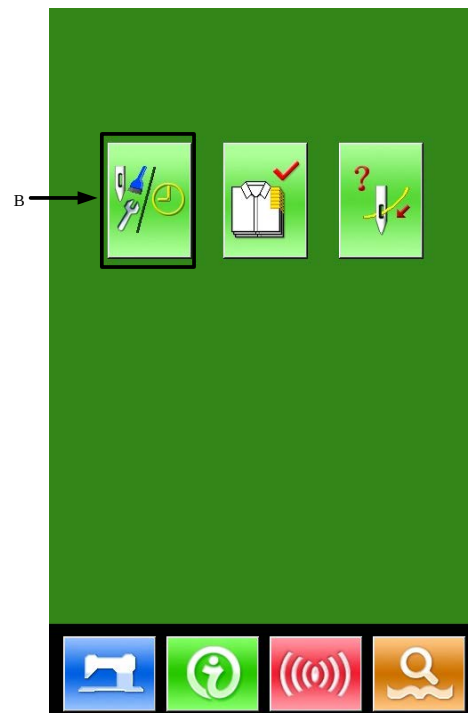
① Display of Information Interface

In data input interface, press the Information Key (A) to activate the information interface.



② Display of Maintenance & Repair Interface

Please press the button  (B) to call the maintenance & repair interface



n the interface for maintenance and repair, the following three items are displayed.

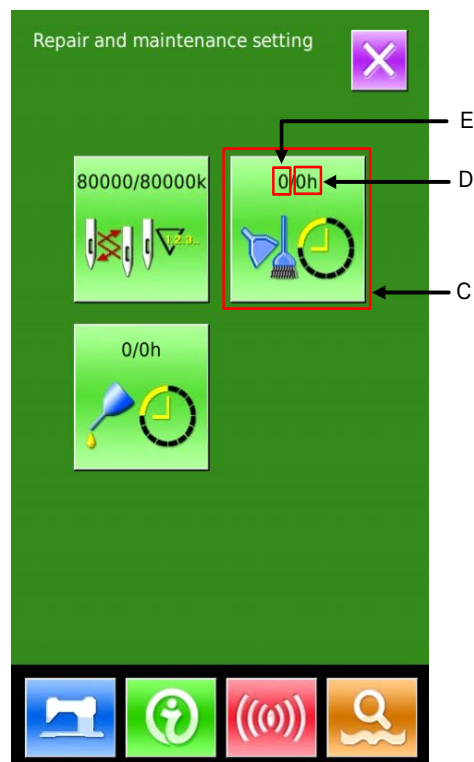
 : Needle replacement (thousand stitches)

 : Cleaning time(hour)

 : Oil replacement time (hour)

The displays of the items are at button C. The interval of repair (maintenance) is at D; the left time for replacement is at E.

Additionally, user can clear the left time for replacement.

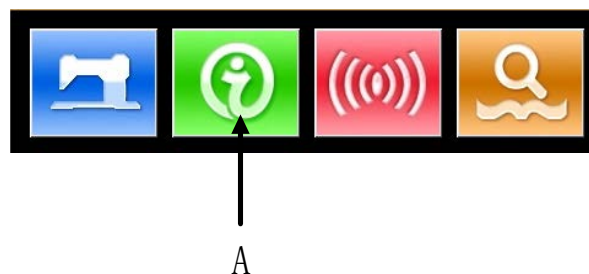


6.2 Maintenance & Repair Time Input

①Display of Information Interface (Levels of Maintenance)

In the interface of data input, hold the Information Key (A) for 3 seconds to activate the interface of information (Maintenance level).

In that interface, there are six keys.



② Display of Interface for Maintenance & Repair

Please press the Maintenance & Repair

Information Key  (B)

※ The descriptions about the three following buttons on the down part of this interface:

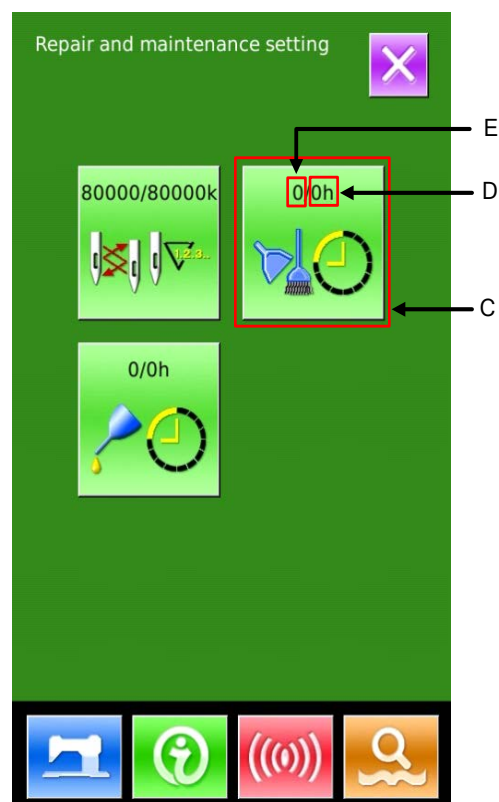
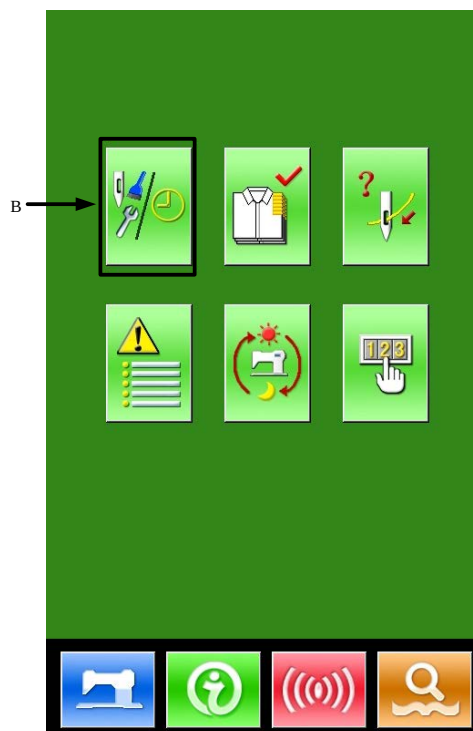
 : Alarm Record

 : Running Records

 : Periodical Password

In the interface of maintenance and repair information, the system displays the content same to that on the ordinary maintenance and repair interface. Press the Item Button C (for changing the repair and maintenance time) to activate the relating input interface.

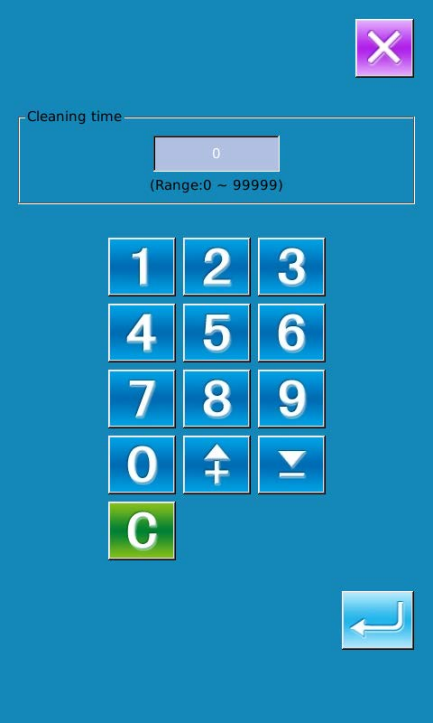
For an example, press  to set the cleaning time.



③ Set Item for Maintenance & Repair

If the value of this item is set at 0, the function for maintenance and repair is stopped.

Use the number keyboard to input the set value of this item, press  to confirm the input.



6.3 Alarm Release

When it comes to the pointed time for maintenance or repair, the system will activate the prompt interface. If user wants to clear the maintenance and repair time, please press Enter. Before the clearance of the maintenance and repair time, the information prompt interface will be displayed after each one sewing task.

The following are the information prompt code for each item:

- Needle Replacement: M052
- Clean Time: M053
- Oil Replacement Time: M054

6.4 Production Control

In the interface of production control, the system will be able to display the amount of products from the beginning to now and the target producing amount. The two methods for displaying the interface of production control are shown at below:

- Via Information Interface
- Via Sewing Interface

6.4.1 Via Information Interface

①Display of Information Interface

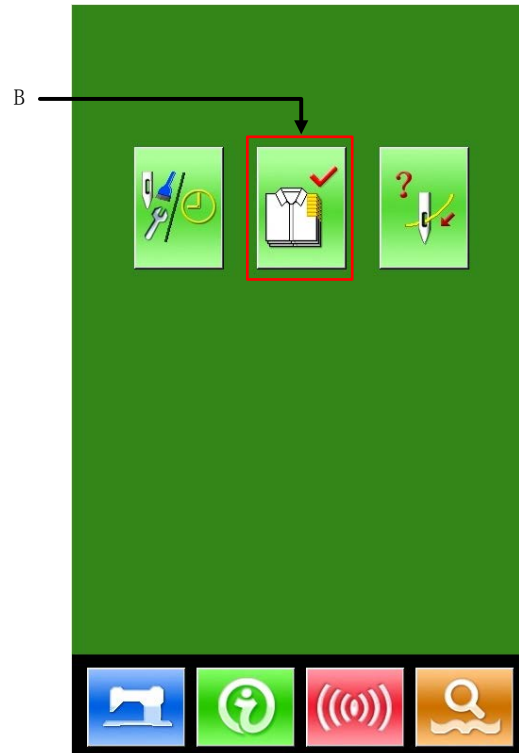
In the interface of data input, please press the information key (A) to activate the interface of information.



A

② Display of Production Control Interface

Press the key (B) in the interface of information to activate the production control interface (as shown in right).



There are five items displayed on the interface of production control.

A : Existing Target Value

According to the pitch time, the target amount of sewing up to now is displayed automatically.

B : Actual Result Value

Automatically display the amount of pieces sewn

C : Final Target Value

Set the final target amount of production

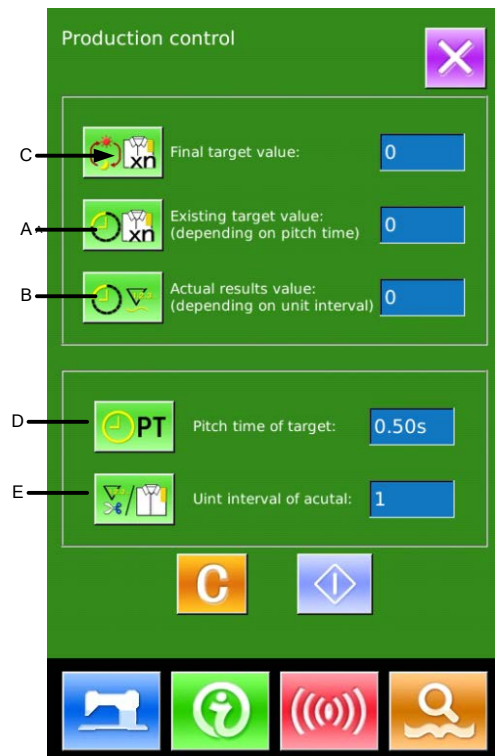
D : Pitch Time of Target

Set the pitch time (Second) among

each working process

E : Unit Interval of Actual

Set the time for completing one process in actual



6.4.2 Via Sewing Interface

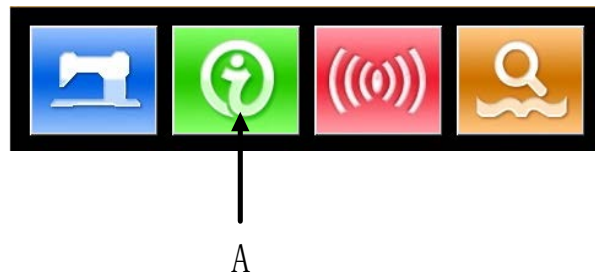
① Display of Sewing Interface

After user presses  in the data input interface, the sewing interface is displayed.

② Display of Production Control Interface

Press Information Key (A) in the sewing interface to activate the production control interface.

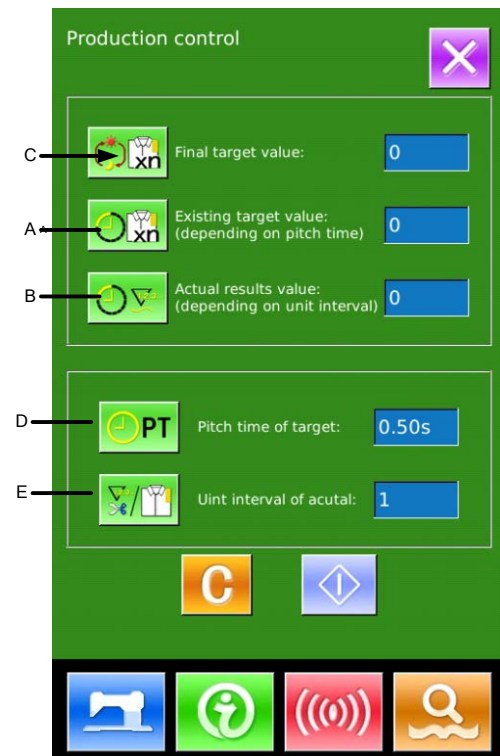
The displayed content and the functions are same to the content at above section



6.5 Setting on Production Control

① Display of Production Control Interface

Please refer to the Chapter 6.4 to have access to the interface of production control.



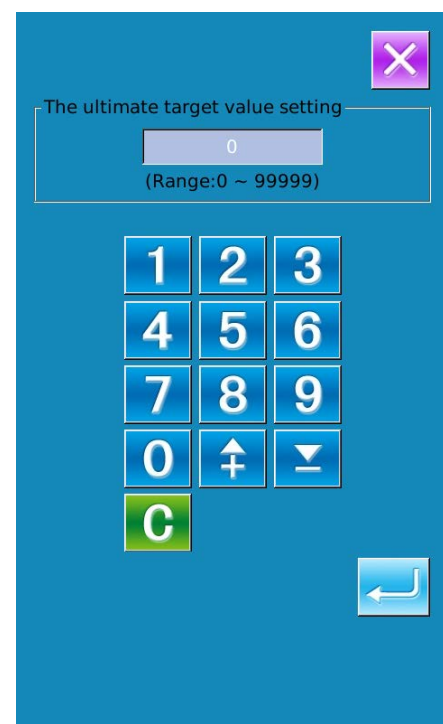
② Input Final Target Value

At first, please input the number of the production target pieces to which the sewing is performed from now on. Press final target value key



(C) to activate the interface of final value input.

After the input of value, please press  for confirmation.

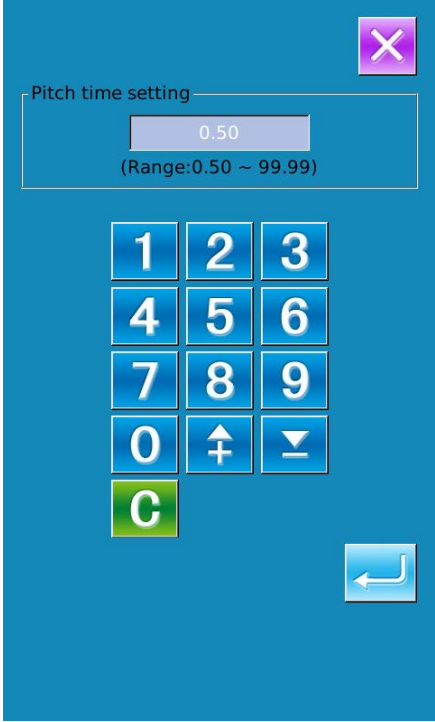


③ Input Pitch Time of Target.

Then, please input the pitch time at each process.

Press the pitch time key  (D) at previous page to activate the interface for inputting the pitch time.

Input the desired figures. After the input, please press  to confirm.



Pitch time setting

0.50

(Range:0.50 ~ 99.99)

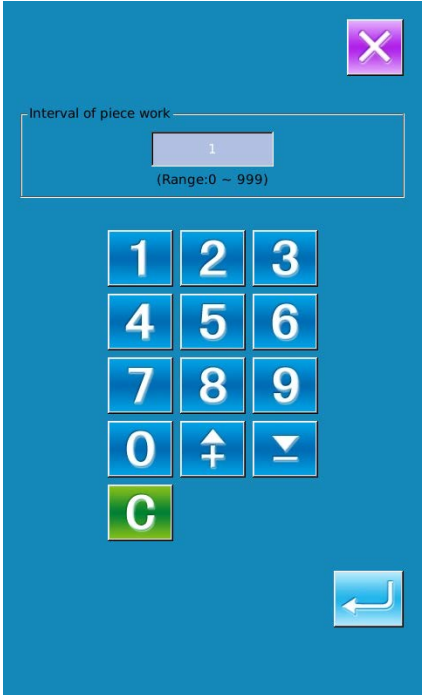
1	2	3
4	5	6
7	8	9
0	↑	↓
C		



④ Input Unit Interval of Target

Then please input the average times interval of piece work. Press the Unit Interval of Target Key

 (E) in previous page to activate the interface for inputting



Interval of piece work

1

(Range:0 ~ 999)

1	2	3
4	5	6
7	8	9
0	↑	↓
C		



Start to Count Amount of Production

Press  (I) to start counting the number of production amount, the [Final Target Value], [Existing Target Value] and [Actual Result Value] will turns to dark.

Final Target Value: Can be used as the time reference

Existing Target Value: The target value adds 1 after each time pitch set [Pitch Time of Target]

Actual Result Value: According to the value set at [Unit Interval of Actual] the system will start count the actual value by adding 1 at finishing each piece

By setting the Target Value and the Actual Result Value, user can find out the change of productivity.

⑤ Stop Counting

In the status of counting, you can see the  displayed on the screen. Press  to stop counting. After stop, the Counting Key  will take the position of . If user wants to continue counting, please press . Without pressing , the value will be kept.

⑥ Clear the Data in Counter

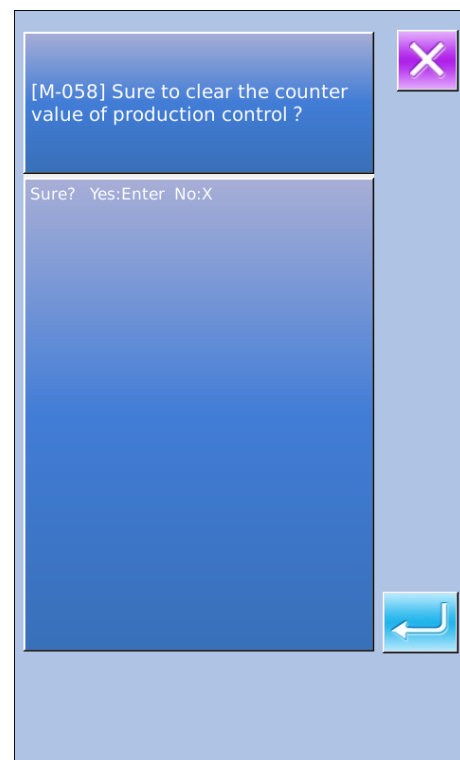
For clearing the value of the counter, the user should stop the counter at first and then press .

The values of  and  can be cleared both.

(Reference: the clear key can only be displayed when the counter is stopped.)

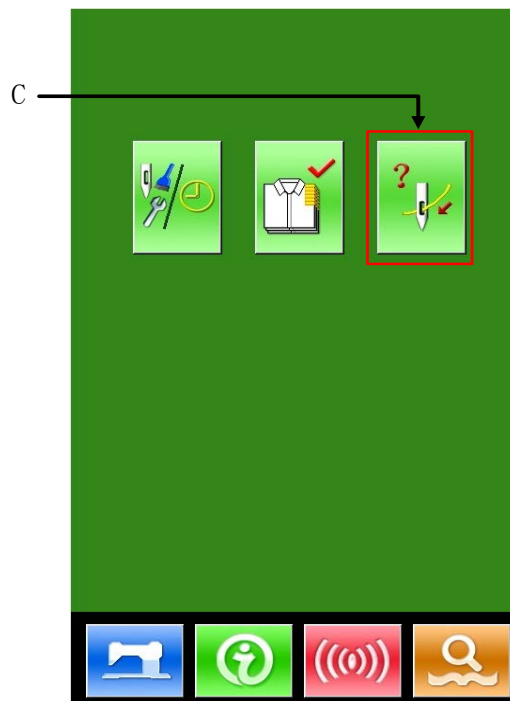
After pressing , the interface for confirming clearance is activated.

In the interface for confirming clearance, user can press  to confirm the clearance.

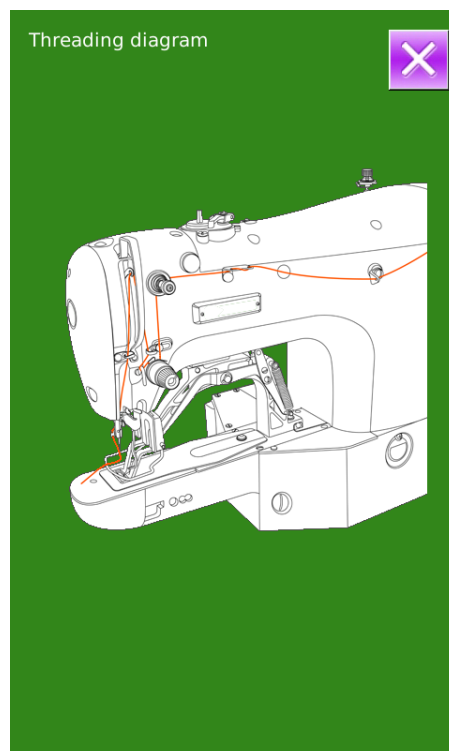


6.6 Display of Threading Figure

In the interface of information, press
threading key  (C) to activate the
threading figure.



User can take reference when
threading



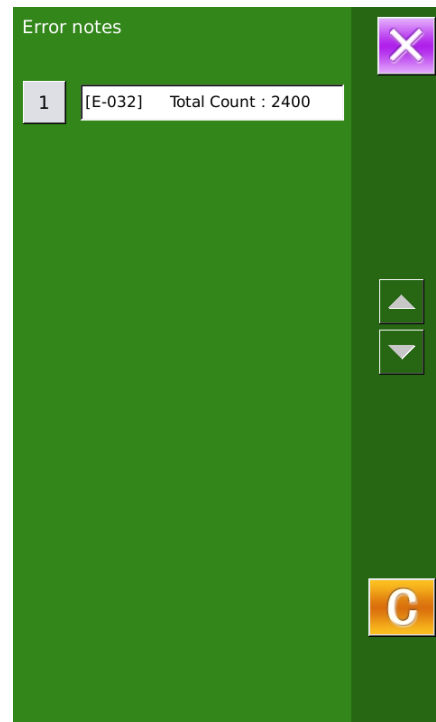
6.7 Alarm Record

At Maintenance Level, press  to enter the alarm record interface (as shown in right). The interface displays the information of the fault occurring at the system. The smaller number means the later occurrence.

Additionally, system also records the production value at each alarm.

User can use  or  to turn the page, so as to check more alarm information.

Press  to clear all the fault record.



6.8 Running Records

In the interface of maintenance level, user can press  to inquire the running information of machine.

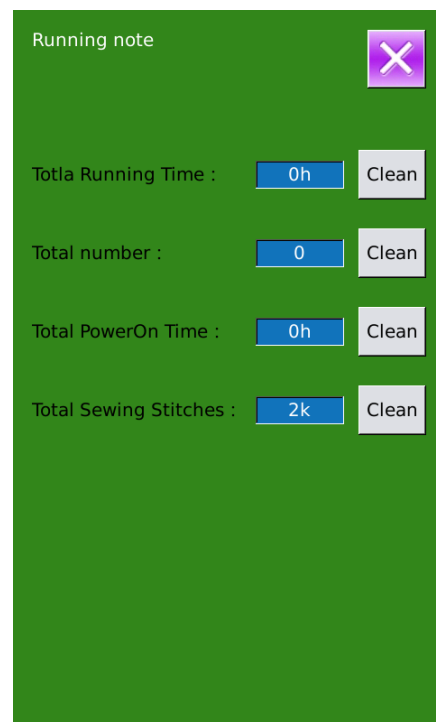
Total Running Time: accumulated running times (hour)

Total Number: accumulated number of sewn pieces

Total Power-on Time: accumulated time of power-on (hour)

Total Sewing Stitches: accumulated number of stitch (1000 stitches as a unit).

Press “Clear” to clear the record value



6.9 Setting of Periodical Password

- 1) In maintenance level, Press  to set periodical password

In this interface, the system will ask user to input the User ID. Input the right manufacturer ID to enter the password management mode, where user can set and manage the periodical passwords.

- ◆ At most ten periodical passwords with different activation dates can be set
- The system will display the information of passwords set by manufacturer.

- 2) **Input the Correct Factory ID to enter the password setting interface**

Before setting the password, user has to set board number and system clock

Input User ID

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z



Factory

No.



3) Input Board Number

Press **【Board Number】** to enter the board number input interface. Input the board number

and press  to finish the input

※ The board is a four-figure number, from 0~9999

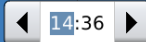
Input Board No.

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z

4) Input System Clock

Press **【Clock】** to enter the interface for setting the system clock. And set the time.

May 2013

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
18	28	29	30	1	2	3	4
19	5	6	7	8	9	10	11
20	12	13	14	15	16	17	18
21	19	20	21	22	23	24	25
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8



5) Input the super password

Press the 【Super Password】 to enter the interface for setting super password

※ At most, nine-figures super passwords can be input

※ At the password confirmation, make sure the two input passwords are same

Input super password

Input password:

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z

6) Input periodical password

Press 【Password-1】 to enter the first password date, where user can input the first date for activation. After selecting the proper

date, user can press  for confirmation.

June 2013

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
22	26	27	28	29	30	31	1
23	2	3	4	5	6	7	8
24	9	10	11	12	13	14	15
25	16	17	18	19	20	21	22
26	23	24	25	26	27	28	29
27	30	1	2	3	4	5	6

Then enter the password setting interface to input the password.

- ※ The date should not be earlier than the system date
- ※ At the password confirmation, make sure the two input passwords are same

Input password 1

Input password:

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z






7) Input other periodical passwords

he setting of other periodical password is same to that in step (to that

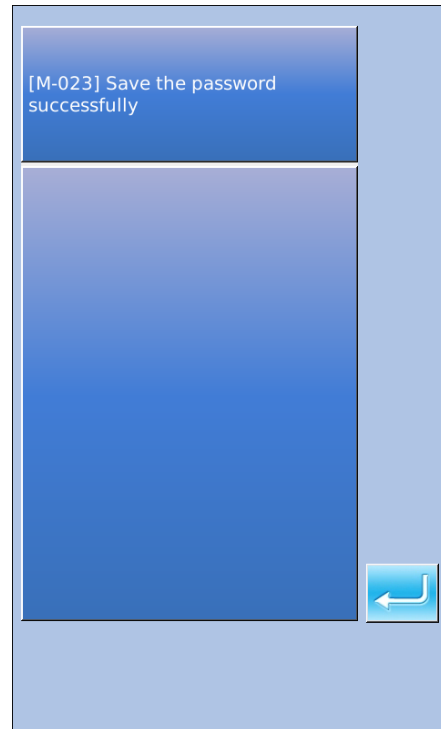
- ※ The next activation date shall be later than the previous date.

Factory	*****
No	0001
Clock	13-06-24 11:15
er passw	**
assword-	2013-06-25
assword-	




8) Save Password

After inputting the password, please press  to save it. After the password is saved, the system will display 【 Save the password successfully】, as shown in right figure.



9) Clear Password before Activation

It is to clear the passwords before its activation.

A、The method for entering the password interface is same to that of the password setting

B、Input the right factory ID to activate the right interface.

C、The system will display current clock and the activation dates

D、Press  to delete the password orderly



Input the right periodical password to clear the current password. If the super password is input, all passwords will be cleared;

After the deletion of the password, the date of that password will be displayed in **red**.

If all the passwords are cleared, the system will automatically quit to the main interface of information.

Clear Password1

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z






10) Clear Password at Activation

If the system has password and that password is still effective, it will be activated at the activation day.

If user wants to use the machine he should input the right password.

A、The effective passwords include current password and super password

B、If the current password is input, the current password will be deleted. After user clears the current password, if it is the last password in machine, no more activation of password will happen in future.

C、If the super password is input, all the periodical passwords will be deleted.

板号:

密码1:

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z






7 Communication Functions

At Communication, user can perform the following functions:

- Download the sewing data made at other sewing machines or produced by the pattern-designing software to the sewing machine;
- Load sewing data to U disk or computer
- Load parameters from U disk
- Input the parameters within the operation panel to U disk
- Update the software within the operation panel

7.1 About the Available Data

The available data is shown at below, as well as the data type:

Data Type	Standard Type
VDT	[0-9][0-9][1-9].vdt
DXF	[0-9][0-9][1-9].dxf
DST/DSB	[0-9][0-9][1-9].dst/ [0-9][0-9][1-9].dsb
B/BA	[0-9][0-9][1-9].(1-599)/ [0-9][0-9][1-9].(600-999)
PAT	[0-9][0-9][1-9].pat

When saving data to the U disk, user needs save it to the DH_PAT folder. Otherwise, the file is unable to be read.

7.2 Operations

① Display the Communication Interface

In the data input interface, press  to display the communication interface.

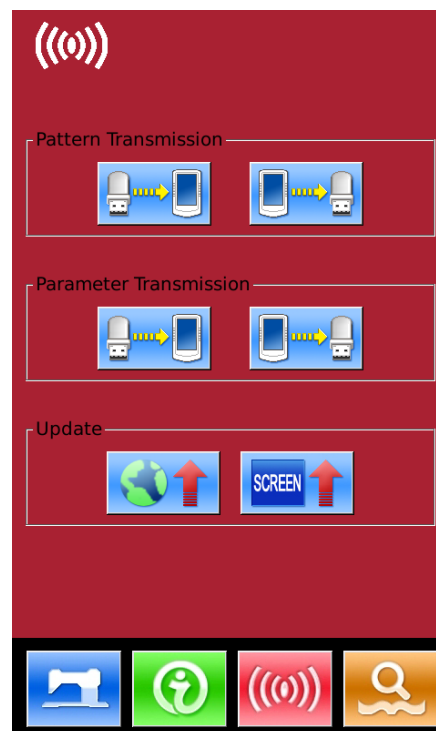
② Select the relating operations

The following three kinds of functions can be selected in this interface:

- Pattern Transfer
- Parameter Transfer
- Software Update

Click the corresponding figure to perform the operations.

③ Press to quit the Communication



7.3 Pattern Transfer

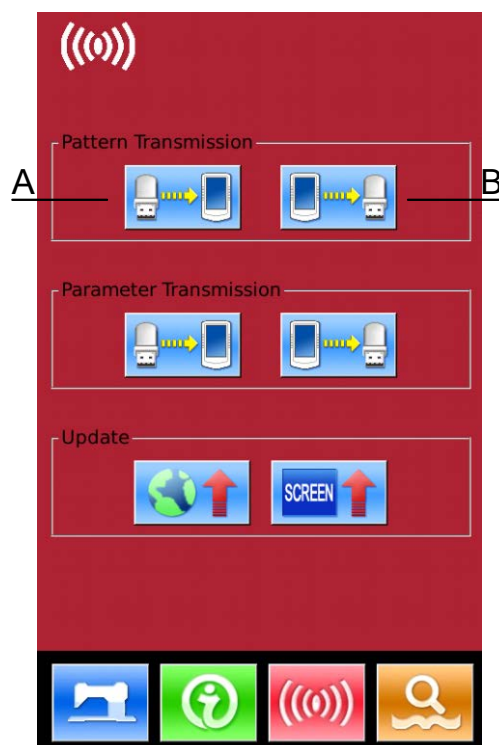
① Display the Communication Interface

A: Input patterns from U Disk to Operation Panel

B: Output patterns from Operation Panel to U Disk

- ※ When inputting patterns from U disk, user has to save the pattern into the DH_PAT in the U disk.
- ※ When outputting patterns from operation panel, user has to save the pattern into the DH_PAT in the U disk

Naming Method of Patterns within U Disk:



When inputting patterns from U disk, user needs follow the naming rule at below::

File Name: 3 figures, 001~999

Example:

Right Names: 100.vdt、102.VDT

Other naming methods are wrong, which can not be recognized by machine

In default condition, the file name is the storage position after the file is copied to operation panel.

7.3.1 Input Pattern from U Disk

Press  (A) to enter the interface for inputting pattern from U disk to panel



: Select All



: Contrary Selection



: Input Saved Number

(Available at selecting one pattern)

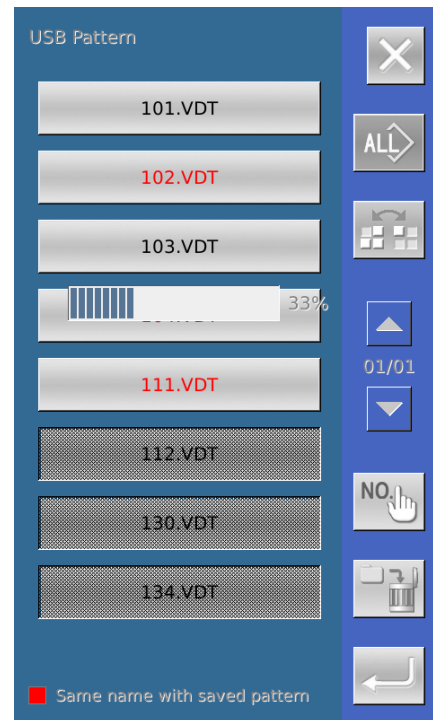


: Delete Pattern



Press  to finish pattern input. At this moment, the saved position in panel is same as the number of the selected pattern.

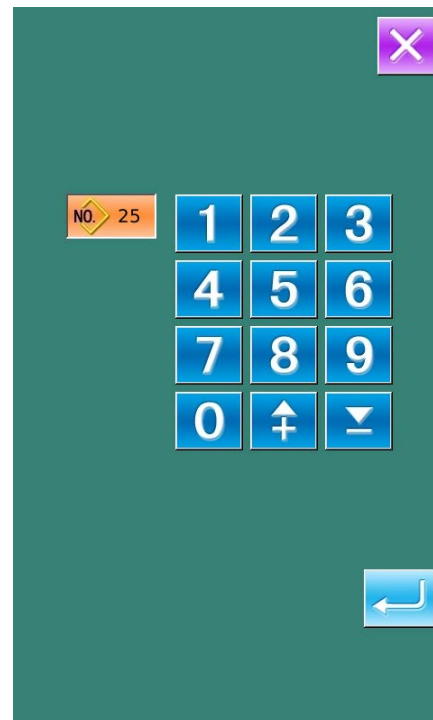
Note: the saved pattern can not be replaced.



The pattern with red name can not be input, because its name is same to the existing pattern with the panel. User has to input number manually.

Press  to enter the number input interface. The default number is the current empty number. User can also input number manually. Press ENTER to finish the operation.

Note: For the patterns with same name, user has to input it one by one. At selecting several patterns, user can not use  key.

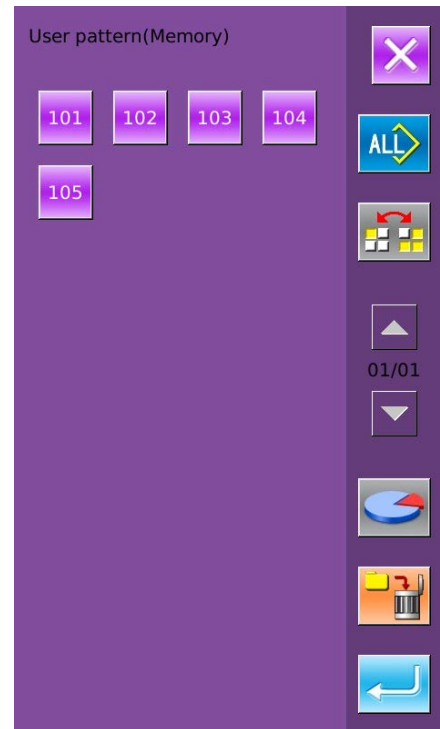


7.3.2 Output Pattern to U Disk

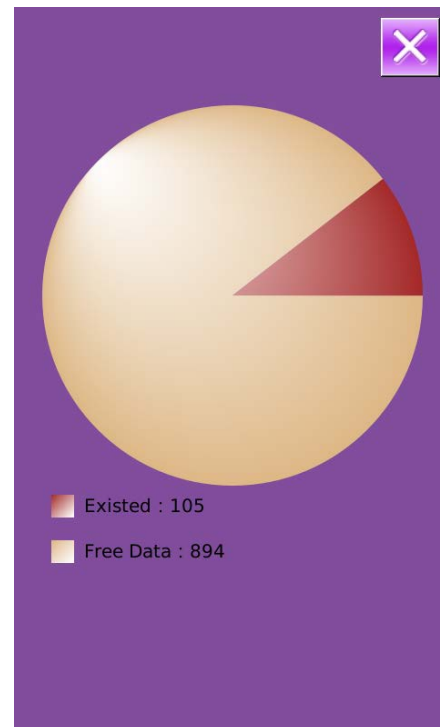
Press  (B) to enter the interface for outputting pattern to U disk.

Select the number and press  to finish the operation.

User can also delete patterns in batch at current interface



In this interface, press  to display the free room of the memory



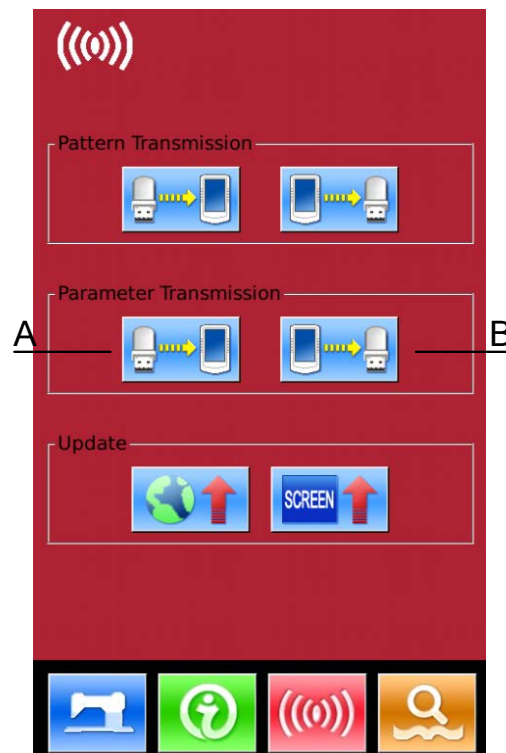
7.4 Parameter Transfer

① Display the Communication Interface

A: Input parameters from U Disk to Operation Panel

B: Output parameters from Operation Panel to U Disk

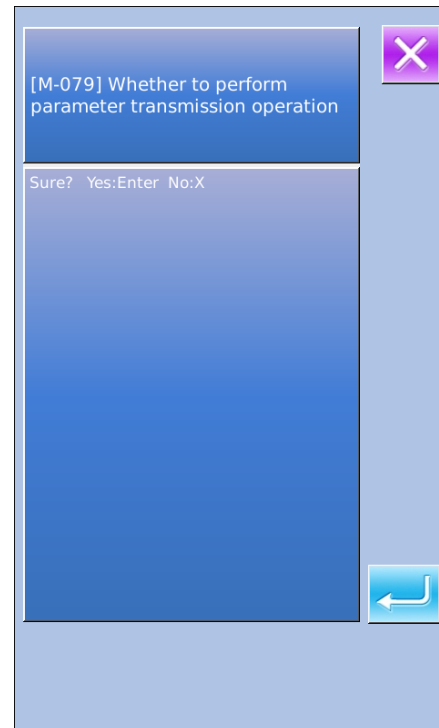
- ※ When inputting patterns from U disk, user has to save the parameters into the DH_PARA in the U disk with name ukParam.
- ※ When outputting patterns from operation panel, user has to save the parameters into the DH_PARA in the U disk with name ukParam.
- ※ The parameter file is the binary file, which is operated on the control panel. User can not change that file manually on PC, or the file may be damaged



② **Press Button A to Input Parameters from U Disk to Operation Panel**

A、Press  to input the parameters and quit

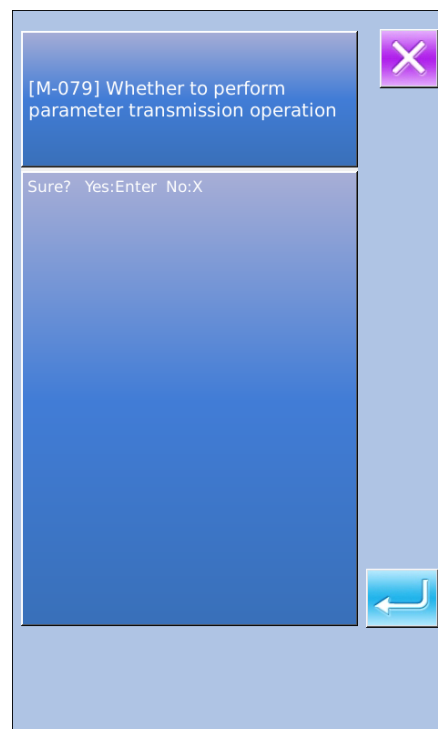
B、Press  to quit directly



③ **Press Button B to Output Parameters to Operation Panel**

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

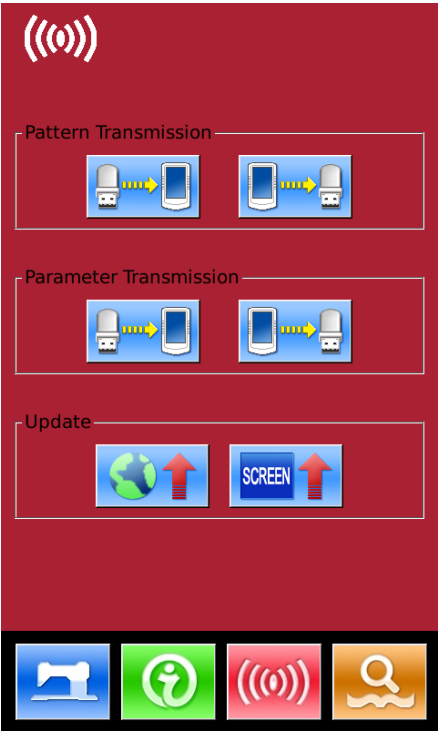
B、Press  to quit directly



7.5 Software Update

1) Display the Interface

In Communication interface, press A to enter Software Update Interface



2) Update Selection

The software update contains:

- ◆ Operation Panel Software
- ◆ Icon
- ◆ Font
- ◆ Power-on Screen

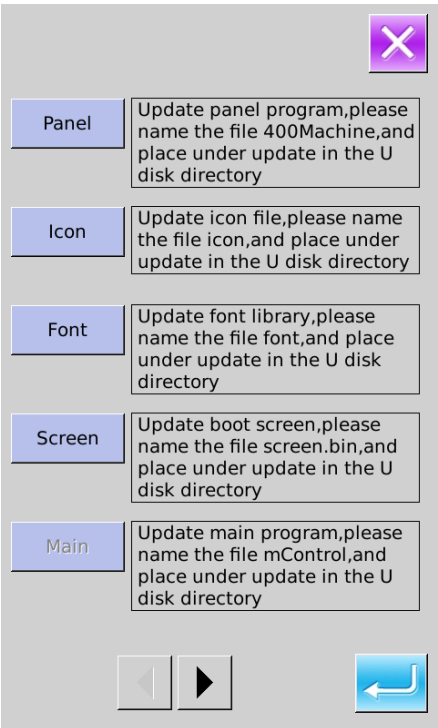
Press  and  to turn the page

A、Press  to finish the selected update and quit

B、press  to quit directly

C、User can select several items for update at same time. The system will perform the update according to the order

D、After the update, please restart the machine.

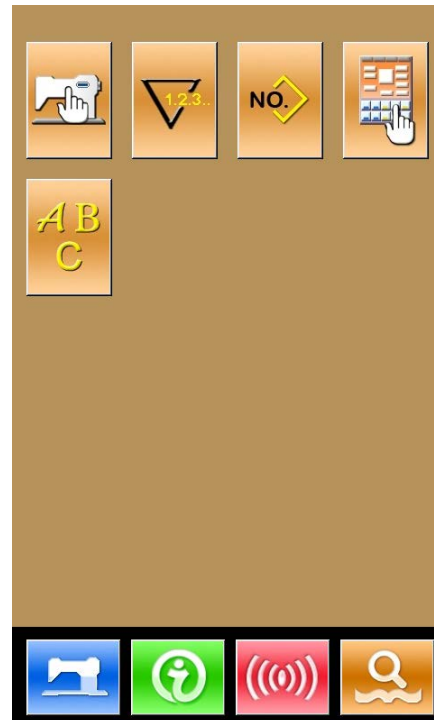


8 Mode & Parameter Setting

8.1 Have Access to Mode & Parameter Setting

Press  to shift between the data input interface and the mode interface (as shown in right), where the detailed settings and editions can be performed..

Hold  for 3 second to have access to Mode Setting Level 2 status; hold that key for 6 second to have access to Mode Setting Level 3 status.



Mode Setting Level 1



Mode Setting Level 2



Mode Setting Level 3

Function List:

No.	Figure	Functions	Description
1		Level 1 Parameter Setting	Set parameters in level 1 (U)
2		Counter Setting	Set type of counter, counting value and default value
3		Sewing Type Setting	Shift between the normal pattern sewing and combination pattern sewing.
4		Pattern Edition	Have access to pattern edition status
5		Letter Sewing Edition	Set letter sewing
6		Initialization	Initialize the system
7		Software Version Inquiry	Inquire the versions of the current panel
8		Keyboard Lock	Lock some functions that can be set.
9		Test Mode	Set the mechanical devices and LCD
10		Parameter Back-up	Backup or recover the current parameters
11		Activate Parameter Edition	Activate or deactivate the edition of parameters
12		Level 2 Parameters Setting	Set the Level 2 (K) parameters
13		Play Video	Play the video

8.2 Level 1 Parameters Setting

① Set Parameter

Select  to enter the interface of Level 1 parameter setting (shown as the figure at right).

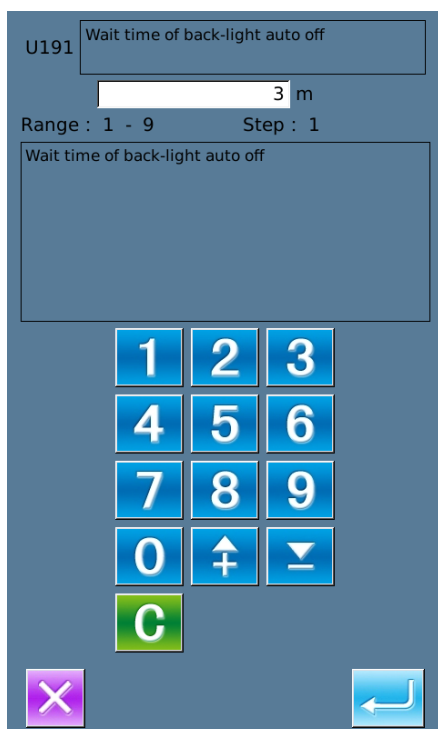
Press  to quit the setting interface. When some parameters are changed, the system will display the “Modified” in the parameter setting interface.

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



Parameter	Description	Value
U01	Max. Speed	2700
U02	Start speed of 1st stitch(with thread clamp)	1500
U03	Start speed of 2nd stitch(with thread clamp)	2700
U04	Start speed of 3rd stitch(with thread clamp)	2700
U05	Start speed of 4th stitch(with thread clamp)	2700
U06	Start speed of 5th stitch(with thread clamp)	2700
U07	Thread tension of 1st stitch(with thread clamp)	200
U08	Thread tension setting at thread trimming	0
U09	Thread tension changeover timing at thread trimming	0

Select U191 and enter the interface below (Input)



U191 Wait time of back-light auto off

3 m

Range : 1 - 9 Step : 1

Wait time of back-light auto off

1 2 3

4 5 6

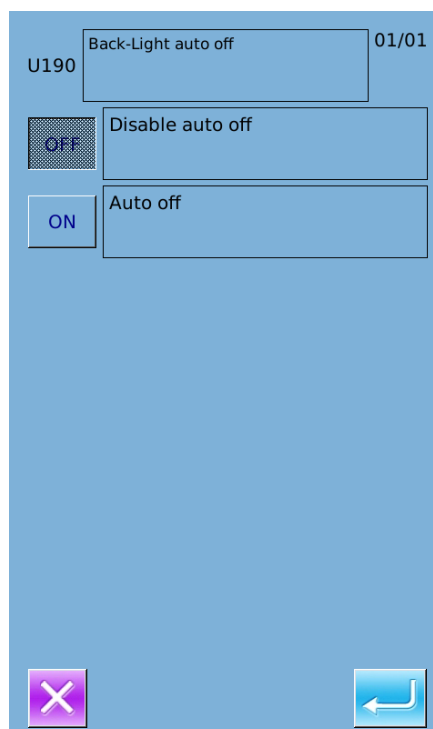
7 8 9

0 ↑ ↓

C

Select U190 and enter the interface below (Selection)



U190 Back-Light auto off 01/01

Disable auto off

Auto off

② Parameter Encryption

Press “Encryption” to enter the password input interface.

- ※ Press  to clear all the content
- ※ Press  to erase one figure at each pressing
- ※ the default password is the manufacturer ID

Input Password

1	2	3	4	5	6
7	8	9	0	A	B
C	D	E	F	G	H
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z






Input the right password to enter the interface for parameter encryption. Select the parameter for encryption.

- ※ Press **【Select All】** to attach password to all the parameters
- ※ Press **【Reverse】** to select parameter for encryption in reverse way
- ※ Press **【Change】** to change the password, the default is the manufacturer ID

Press  to quit the encrypting function

01/08 

U01	Max. Speed
U02	Start speed of 1st stitch(with thread clamp)
U03	Start speed of 2nd stitch(with thread clamp)
U04	Start speed of 3rd stitch(with thread clamp)
U05	Start speed of 4th stitch(with thread clamp)
U06	Start speed of 5th stitch(with thread clamp)
U07	Thread tension of 1st stitch(with thread clamp)
U08	Thread tension setting at thread trimming
U09	Thread tension changeover timing at thread trimming

All Reverse   Modify






③ Check the changed parameter

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

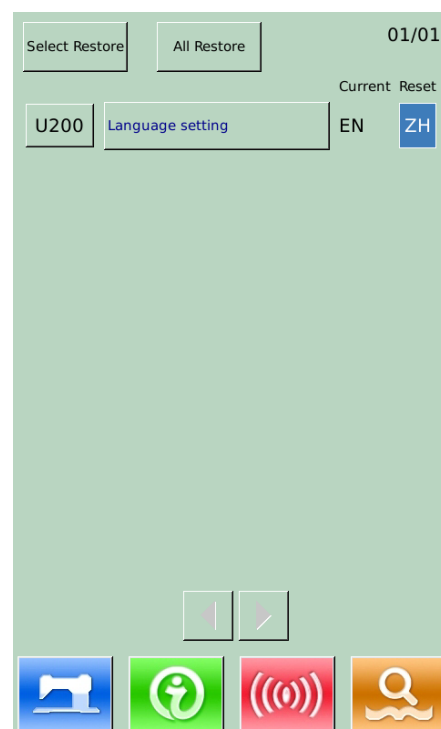
In the parameter setting interface, press **【Modified】** to check the changed parameters.

A、At first, the system will ask user to input the password. After inputting the right password, user can enter the interface for inquiring changed parameters

B、Under the interface of changed parameter inquiry, user can find the list containing all the changed parameters. In that interface:

- ※ Press **【All Rest】** will restore all the changed parameters to their default values
- ※ Click Parameter Name, like **【 Back Light Auto Off】** and then press **【Select Rest.】** to restore this parameter to the default value. User can select several parameters’ name in the interface.
- ※ Press Parameter Number, like **【U190】** to enter the parameter setting interface, where user can reset the parameter value.

- ※ Press  to quit the interface



8.2.1 List of Level 1 Parameters

No.	Parameter	Range	Unit	Default value
U01	Max Sewing Speed	200~2800	100rpm	2700rpm
U02	Start Speed of 1 st Stitch (with thread-catching function)	200~2700	100rpm	300rpm
U03	Start Speed of 2 nd Stitch (with thread-catching function)	200~2700	100rpm	500rpm
U04	Start Speed of 3 rd Stitch (with thread-catching function)	200~2700	100rpm	1000rpm

No.	Parameter	Range	Unit	Default value
U05	Start Speed of 4 th Stitch (with thread-catching function)	200~2700	100rpm	1500rpm
U06	Start Speed of 5 th Stitch (with thread-catching function)	200~2700	100rpm	2000rpm
U07	Thread Tension of 1st Stitch (with thread-catching function)	0~200	1	200
U08	Thread-tension at Thread-trimming	0~200	1	0
U09	Thread Tension Changeover Timing at Thread-trimming	-6~4	1(4°)	0
U10	Start Speed of 1 st Stitch (No Thread-catching)	200~1500rpm	100rpm	200rpm
U11	Start Speed of 2 nd Stitch (No Thread-catching)	200~2700rpm	100rpm	600rpm
U12	Start Speed of 3 rd Stitch (No Thread-catching)	200~2700rpm	100rpm	1000rpm
U13	Start Speed of 4 th Stitch (No Thread-catching)	200~2700rpm	100rpm	1500rpm
U14	Start Speed of 5 th Stitch (No Thread-catching)	200~2700rpm	100rpm	2000rpm
U15	Thread Tension of 1st Stitch (No thread-catching function)	0~200	1	0
U16	Thread Tension Changeover Phase at Sewing Start (No thread-catching function)	-5~2	1	-5
U25	Thread Tension Changeover Timing at Sewing Start Without thread-catching	1~30	1	1
U26	Height of Pressers when 2 step scrolling	50~90	1	70
U32	Buzzer Sound Setting OFF: No Buzzer PAN: Operating Sound ALL: Operating Sound + Alarm	0: OFF: No Buzzer 1: PAN: Operating Sound 2: ALL: Operating Sound + Alarm		2
U33	Number of stitch on which thread clamp is set at releasing	1~7	1	2
U34	Thread Clamp Delay Timing	-10~0	1(4°)	0
U35	Thread clamp control is forbidden? ON : Permitted OFF: Forbidden	0: Permitted 1: Forbidden		0
U36	Selection of feeding Action Timing Set the timing in “-” direction when the thread is not well-tightened	-8~16	1(4°)	3
U37	Presser status at the end of sewing	0: Presser goes up after sewing starts 1: Presser goes up immediately		0

No.	Parameter	Range	Unit	Default value
		after sewing ends 2: Pedal goes up after sewing starts.		
U38	Presser goes up when sewing is ended.	0: ON: Permitted 1: OFF: Forbidden		0
U39	Perform Origin Retrieval at Sewing End?	0: OFF: No Origin Retrieval 1: ON: With Origin Retrieval		0
U40	Set origin search at combination sewing.	0: OFF: Without Origin Search 1: PAT: At Each Pattern Ending 2: CLC: At Each Circle Ending		0
U41	Presser status at Order of Pause	0: Presser goes up automatically 1: Presser goes up with pedal pressed.		0
U42	Needle Stop Position	0: UP: Up Position 1: DEAD: Highest Position		0
U46	Trimming	0: ON: Permitted 1: OFF: Forbidden		0
U48	Set Route for Returning Start Sewing Point	0: Linear Return 1: Reverse Return of Pattern 2: Original Retrieval		0
U49	Winding Speed Setting	200~2700	100rpm	1300rpm
U51	Thread-stirring switch	0: OFF: Off 1: ON: On		1
U64	Select Unit in Changing Size	0: %: Input Percentage 1: SIZ: Input Actual Size		0
U68	Thread Tension Output Time at Setting Thread Tension	0~20s (0: No Tension Output)	1	0
U69	Bend Position for Holding Thread	0: S: S Type 1: H1: H Type Thin Thread (#50~#8) 2: H2: H Type Intermediate 3: H3: H Type Thick Thread (#5~#2)	1	0
U70	Thread-catching position	0: Standard (Front Position) 1: Rear Position		0
U71	Thread –breakage detection	0: OFF: Invalid 1: ON: Valid		0
U72	The number of stitch without thread-breakage detecting at sewing start	0~15	1	8
U73	The number of stitch without thread-breakage detecting at midway of sewing	0~15	1	3
U81	Frame control – pedal on/ off	(Solenoid Presser) 0: 1-step	1	0

No.	Parameter	Range	Unit	Default value
		1: 2-step stroke (Use the presser switch to lower the presser further) 2: 2-step stroke (Re-lowering the presser with the start switch) 3: 2-step stroke(With presser switch 1, control presser to intermediate, lowest and up position) 4~99: 1-step (Air-control Presser) 0: Solid Presser 1: Left/right separated presser (Without priority of right or left) 2: Left/right separated presser(In the order of right to left) 3: Left/right separated presser(in the order of left to right) 4: Solid Stroke 5: Left/right separated left stroke (Without priority of right or left) 6: Left/right separated left stroke (in the order of right to left) 7: Left/right separated left stroke (in the order of left to right) 8~99: Solid Presser		
U82	Frame Control- On/off at Midway Stop	(Solenoid Presser) 0: 1 Stroke 1: 2-step stroke (Use the presser switch to lower the presser further). 2: 2-step stroke (Re-lowering the presser with the start switch) 3: 2-step stroke (With presser switch 1, control presser to intermediate, lowest and up position) 4~99: 1-step (Air-control Presser) 0: Solid Presser 1: Left/right separated presser (Without priority of right or left)	1	0

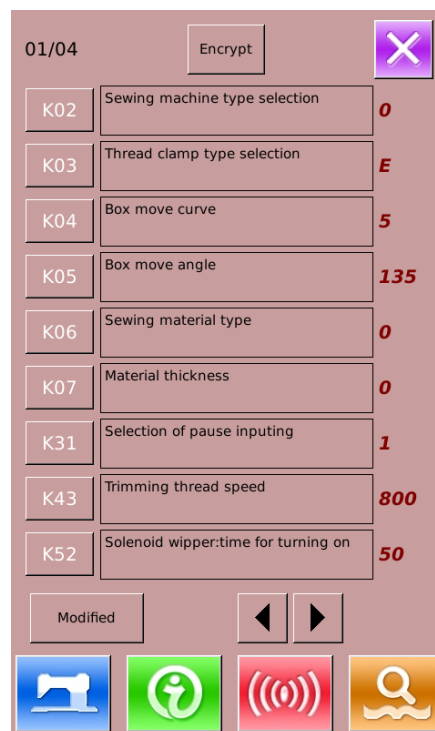
No.	Parameter	Range	Unit	Default value
		2: Left/right separated presser(In the order of right to left) 3: Left/right separated presser(in the order of left to right) 4: Solid Stroke 5: Left/right separated left stroke (Without priority of right or left) 6: Left/right separated left stroke (in the order of right to left) 7: Left/right separated left stroke (in the order of left to right) 8~99: Solid Presser		
U83	Pedal Type Selection	0: S: Single Pedal 1: D: Double Pedal		1
U84	Pedal SW1 Lock	0: OFF: No 1: ON: Yes		1
U85	Pedal SW2 Lock	0: OFF: No 1: ON: Yes		1
U86	Pedal SW3 Lock	0: OFF: No 1: ON: Yes		1
U87	Pedal SW4 Lock	0: OFF: No 1: ON: Yes		1
U88	Scale Mode	0: OFF: Forbidden 1: PIT: Change at Interval 2: STI: Change at Stitch Number		1
U89	Motion Mode	0: Forbidden 1: Parallel Motion 2: Set 2 nd Origin		2
U91	Retainer Compensation Motion	0: OFF: No 1: ON: Yes		0
U94	Select the highest point at origin retrieval	0: OFF: No 1: ON: Yes		0
U97	Pause–Thread-trimming Operation	0: AUT: Auto Thread-trimming 1: MAN: Manual (Thread-trimming by turning Stop SW ON again)		1
U101	Main Motor X/Y Feeding Synchronized Control	0: 2700rpm /3.0mm 1: 2200rpm 3.0mm 2: 1800rpm /3.0mm 3: 1400rpm		0

No.	Parameter	Range	Unit	Default value
		/3.0mm		
U103	Intermediate Presser Control	0: No (Lowering is fixed) 1: Yes (Lowering with sewing data during the operation) 2: Yes (Lowering even at the time of feeding forward/backward)		1
U104	Intermediate Presser Lowering Timing	0: Before the start of the sewing machine head 1: Synchronized with the last frame		0
U105	Intermediate presser /thread-stirring device sweeping position	0: Sweeping above 1: Sweeping above (get to the lowest position). 2: Sweeping below		0
U108	With/ without Air Pressure Detection	0: OFF: No 1: ON: Yes		0
U112	Intermediate Presser Lowering Position Setting	0~7.0mm	0.1	3.5
U129	With/without Needle Cooler Control	0: OFF: No 1: ON: Yes		0
U190	Back Light Auto Off	0: OFF: Not Auto Off 1: ON: Auto Off		0
U191	Back Light Off Wait Time	1~9 min	1	3
U192	Back Light Adjustment	20~100	1	100
U193	Modify the Counter Value	0: OFF: Permit 1: ON: Forbid		0
U194	Operation at Reaching set value of Counter	0: OFF: Stop Sewing 1: ON: Continue Sewing		0
U195	Voice Column	30~63	1	30
U200	Language	0: Chinese 1: English		0
U201	Set Language at Power-on	0: OFF: No 1: ON: Yes		0
U205	Trimming Mode	0~2	1	0

8.3 Level 2 Parameters Setting

In the interface of Mode Setting Level 3,

press  to have access to the interface for setting parameters of Level 2 (as shown in right). For the operation, please take the description in Level 1 Parameter Setting for reference.



8.3.1 List of Level 2 Parameters

No.	Parameter	Range	Unit	Default value
K02	Sewing Machine Selection	0~3	1	0
K03	Thread-holder Selection	0: M: Mechanical 1: E: Electronic	1	1
K04	Frame-moving Curve Selection	0~10	1	5
K05	Frame-moving Angle Selection	130~250	1	135
K06	Material Selection	0: Thin; 1: Middle; 2: Thick	1	0
K07	Material Think Selection	0~15	1	0
K31	Selection of Pause Inputting	0: Ineffective 1: Effective 2: Use Pause Switch to trim thread or start machine when the machine is paused		1
K42	Search Origin Adjustment at trimming	-50~50	1	0
K43	Thread-trimming speed	0: 400rpm 1: 800rpm		1

No.	Parameter	Range	Unit	Default value
K52	Solenoid Sweeper — Time for Turning on	10~500ms	10ms	50ms
K53	Solenoid Sweeper — Time for Turning off	10~500ms	10ms	80ms
K54	Thread-stirring output phase selection when stopping at highest point	0: UP: Upper Position 1: DEAD: Highest Position		0
K56	Move Range +X Direction	0~255mm	1	76
K57	Move Range -X Direction	0~255mm	1	76
K58	Move Range +Y Direction	0~255mm	1	51
K59	Move Range -Y Direction	0~255mm	1	51
K60	3-Level Pedal	0: OFF: Invalid 1: ON: Valid		0
K61	Main Motor Stop Angle	30~80	1	53
K63	Selection on Effectiveness of Needle Bar Stop & Needle Movement Stop	0: OFF: Invalid 1: ON: Valid		1
K67	Thread Tension Output of Thread Sweeper	0: OFF: No Output (Keep the tension at thread-trimming) 1: MAX: Max Output		0
K74	Solenoid/ Air-control Presser Selection	0: MAG: Solenoid Presser 1: AIR: Air-control Presser		0
K75	Time Postponement at Lowering the Air-control Presser	0~1000ms	10ms	100
K92	Selection of Path for Origin Retrieval/ Origin Search at Normal	0: STD: Standard 1: REV: Reverse 2: Y2X: Y Axis→X Axis 3: X2Y: X Axis→Y Axis		0
K93	Selection of Path for Origin Retrieval/ Origin Search at Reverse	0: STD: Standard 1: REV: Reverse 2: Y2X: Y Axis→X Axis 3: X2Y: X Axis→Y Axis		0
K95	Order Thread-trimming	-10~10	1	0
K96	Reverse Thread-trimming	-10~10	1	0
K98	Empty Feeding –Stop Time at Top Point	0~100ms	10ms	20
K100	End Order – Stop Controlling	0: OFF: No 1: ON: Yes		0
K110	Reverse Device and Stretching Presser Control	0: OFF: No 1: ON1: Yes		0

No.	Parameter	Range	Unit	Default value
		2: ON2: Stretch Presser Out		
K110	With Reverse Device?	0: OFF: No 1: ON: Yes		0
K111	Reverse device: auto reversing Y coordinates	0~100.0mm	0.1	17.0
K112	Stretching Presser Out Delay	0~255ms	1	0
K113	Stretching Presser Up Delay	0~255 ms	1	0
K114	Stretching Presser Down Delay	0~255 ms	1	0
K121	Main Motor Type	0: 550: 550W Motor 1: 750: 750W Motor		1
K131	Presser goes up when machine pauses for mistake?	0: OFF: NO 1: ON: Yes		0
K200	Restore Default Parameters			

8.4 Counter Setting

Press  to have access to the Counter Setting Interface (as shown in right picture).

Sewing Counter: The counter adds/decreases 1 at sewing one piece.

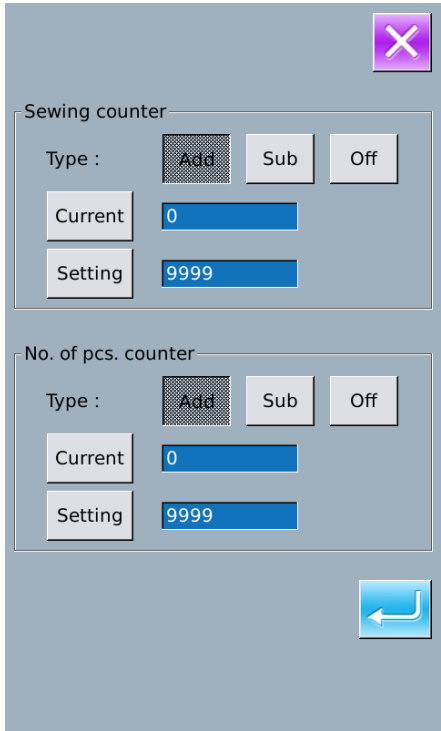
No. of Pcs Counter: The counter adds/decreases 1 at sewing one cycle.

The No. of Pcs Counter is mainly for counting the C Pattern. For any other sewing types, the function of sewing counter and No. of Pcs counter are same.

1) Counter Setting

: Press it to set the Current Value of counter.

: Press it to set the Setting Value of counter. When the Setting Value is 0, the counter can not be used.



1) Counter Type Setting



: Set the counter as Up Counter.
When current value reaches the setting value, the system will give alarm.



: Set the counter as the Down Counter. When the current value is 0, the system will give alarm.



: Turn off Counter

Note 1: When parameter 【U193】 is set at “Forbid”, user can not enter this interface.

Note 2: When parameter 【U194】 is set at “Continue Sewing”, the system will not give alarm when the current value is over the setting value. The current value will return to the target value automatically (Up Counter will return to 0 while down counter will return to the set value).

8.5 Change Sewing Type



Press  to have access to the interface of sewing type selection (as shown in right).



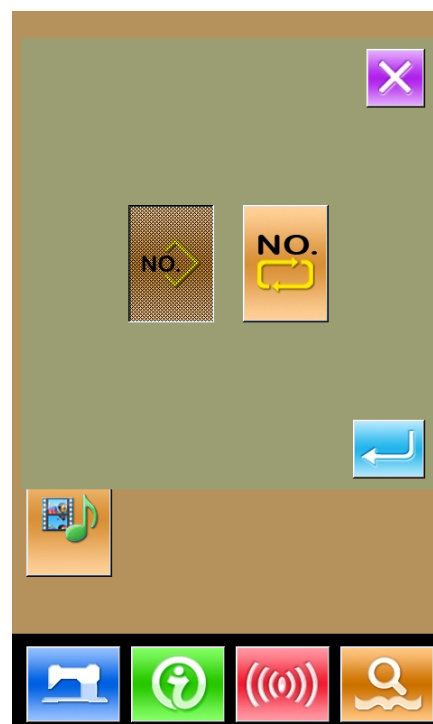
: Normal Sewing



: Combination Sewing

After confirming the sewing type, user can press  to end the operation. And then

press  to activate the interface for inputting data of the selected sewing type.



8.6 Entry to Pattern Edition



Press  to shift between the following two figures. Select the corresponding mode and then press  to enter the pattern edition mode.

For the specific operation, please refer to 【5 Pattern Edition】



: Sewing Mode



: Edition Mode



8.7 Initialization

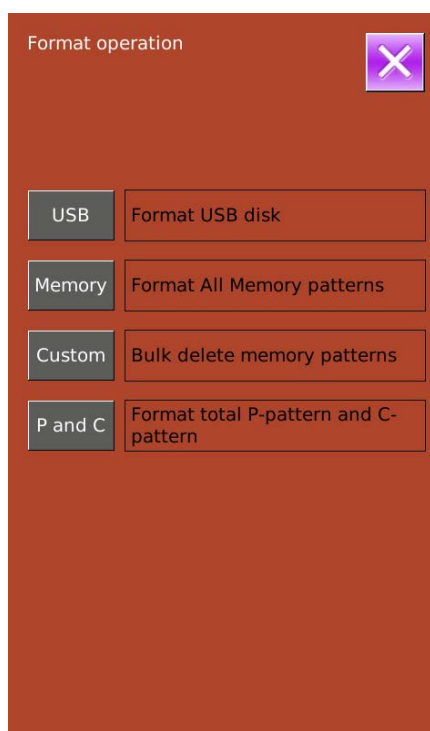


Press  to enter the interface for setting the initialization, where user can do the following operations.

In this interface, user can operate:

- U Disk Initialization
- Memory Initialization
- Customized Initialization
- P and C Pattern Initialization

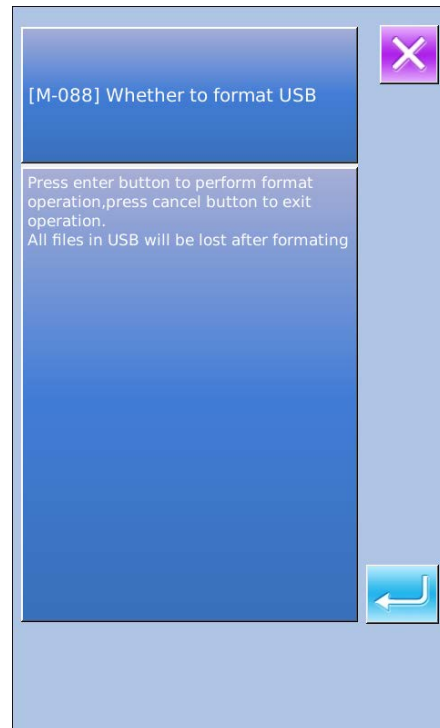
Press the relating functions keys and enter the corresponding interface.



1) Press “USB” to Initialize U Disk File

Press  to initialize all the U disk files

Press  to quit U disk initialization

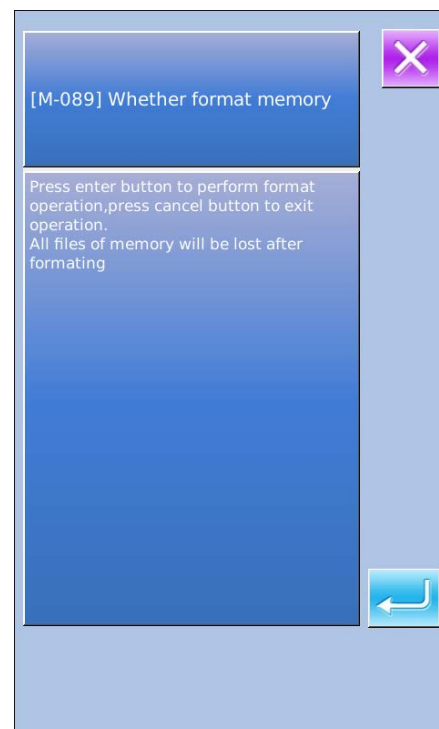


2) Press “Memory” to initialize memory patterns

Press  to initialize memory; Press  to quit

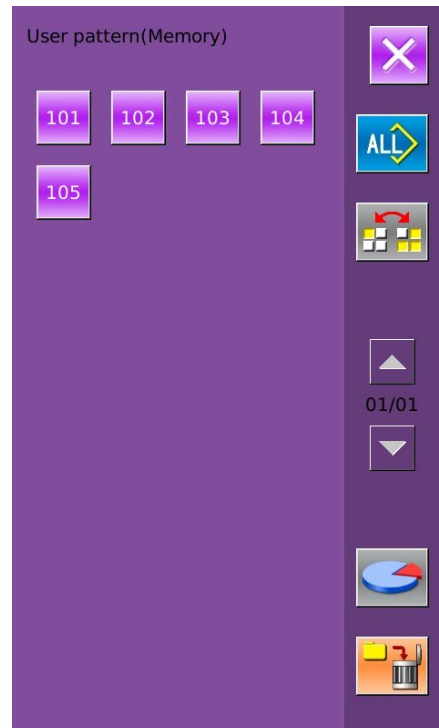
After the initialization of memory, the entire patterns will be deleted, including the C patterns and P patterns. Then the system will load the default patterns again.

※Caution! This operation will delete all the patterns within the memory!



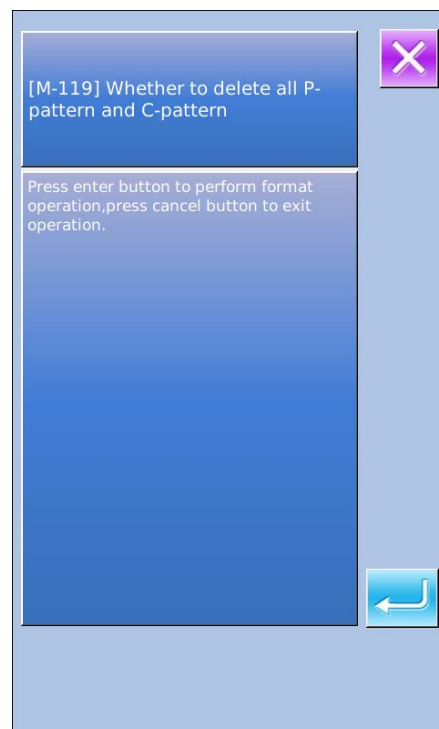
3) **Press “Custom” to perform the batch deletion**

In this interface, the system will display all the pattern files within the memory. Click the corresponding button to perform the batch deletion.



4) **Press “P & C” to delete the entire P patterns and C patterns**

Press  to delete the entire P patterns and C patterns. Press  to quit.

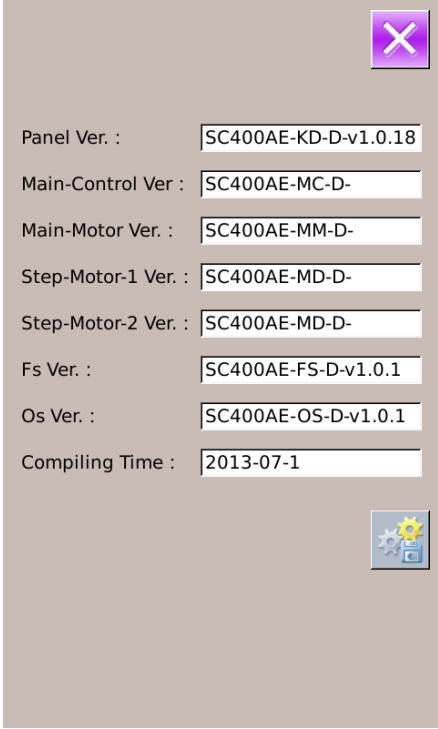


8.8 Software Version Inquiry

At Mode Setting Level 2 Interface, user

can press  to check the software version of system.

 : Save the Current version information to the root directory of U disk.



Panel Ver. :	SC400AE-KD-D-v1.0.18
Main-Control Ver. :	SC400AE-MC-D-
Main-Motor Ver. :	SC400AE-MM-D-
Step-Motor-1 Ver. :	SC400AE-MD-D-
Step-Motor-2 Ver. :	SC400AE-MD-D-
Fs Ver. :	SC400AE-FS-D-v1.0.1
Os Ver. :	SC400AE-OS-D-v1.0.1
Compiling Time :	2013-07-1

8.9 Keyboard Lock

In the interface of setting mode level 2,

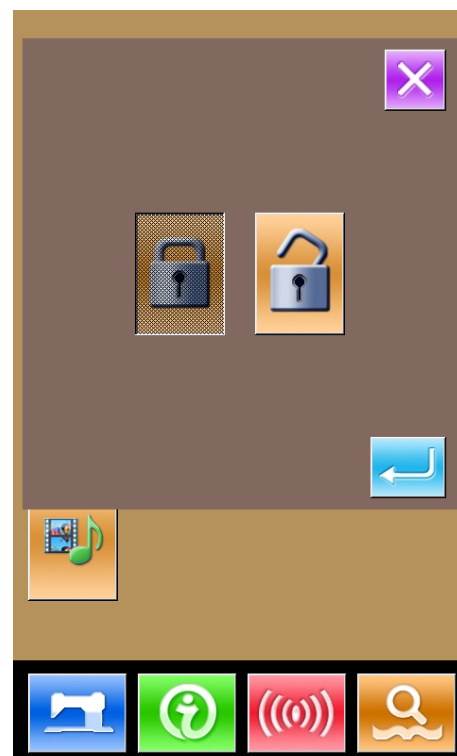
press  to have access to the interface of keyboard lock setting.

1) Operation for Locking Keyboard

 : Keyboard Unlocked

 : Keyboard Locked

Select  and press  to lock keyboard.



2) Display of Keyboard Lock Status

Close parameter setting mode interface and return to data input interface (as shown

in right). We can see a small figure “”, under the pattern number, which means the keyboard is locked.

③ Range of Keyboard Lock

1、Interface of Normal Sewing Data Input:

- Pattern Registration
- Pattern Naming
- Scale Rate Setting
- Max Speed Limitation
- P Pattern Registration

2、 Normal Sewing Interface:

- Counter Setting
- Thread-tension Setting

3、 P Pattern Input Interface:

- P Pattern Edition
- P Pattern Copy
- P Pattern Naming

4、P Pattern Sewing Interface:

- Counter Setting

5、 C Pattern Data Input Interface:

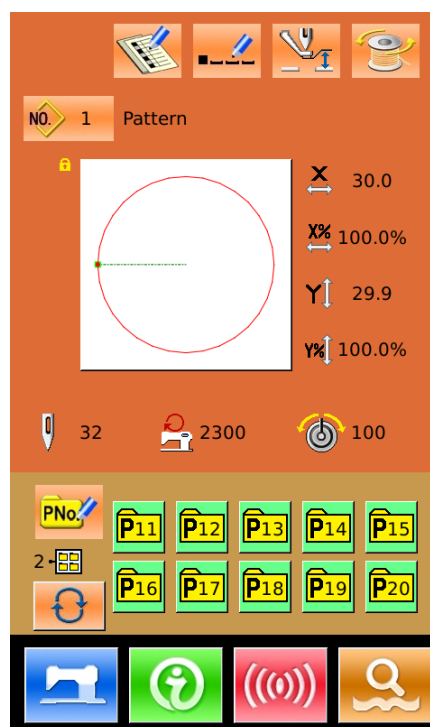
- C Pattern Registration
- C Pattern Copy
- C Pattern Naming
- C Pattern Edition

6、 C Pattern Sewing Interface:

- Counter Setting

7、Parameter Setting Mode:

- Parameter Level 1
- Parameter Level 2
- Counter Edition
- Test Mode



8.10 Parameter Back-up & Recovery



In setting mode level 3, press  to enter the interface of parameter back-up & restoration, as shown in right:

Clear: Clear all the customized parameters that are saved.

Save: Save current parameters

Restore: Restore the current parameters

① Click any key among  ~

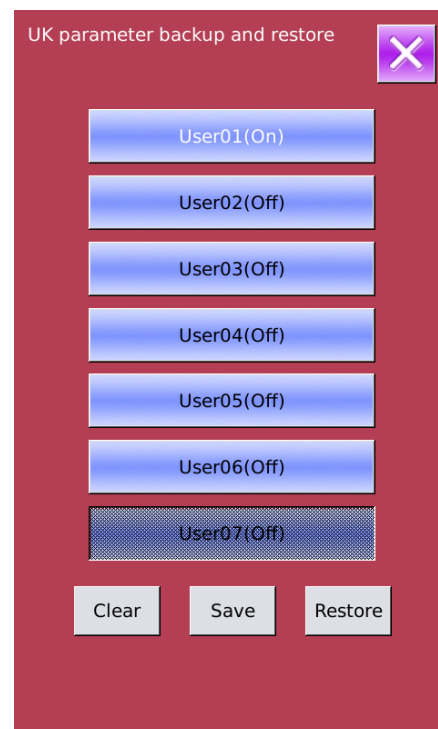
 to set the position for saving the parameter. And then press 「Save」 to save that parameter.

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

.

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

④ Press 「Clear」 to delete all the saved parameters



8.11 Test Mode

In the interface of Setting Mode Level 2, press

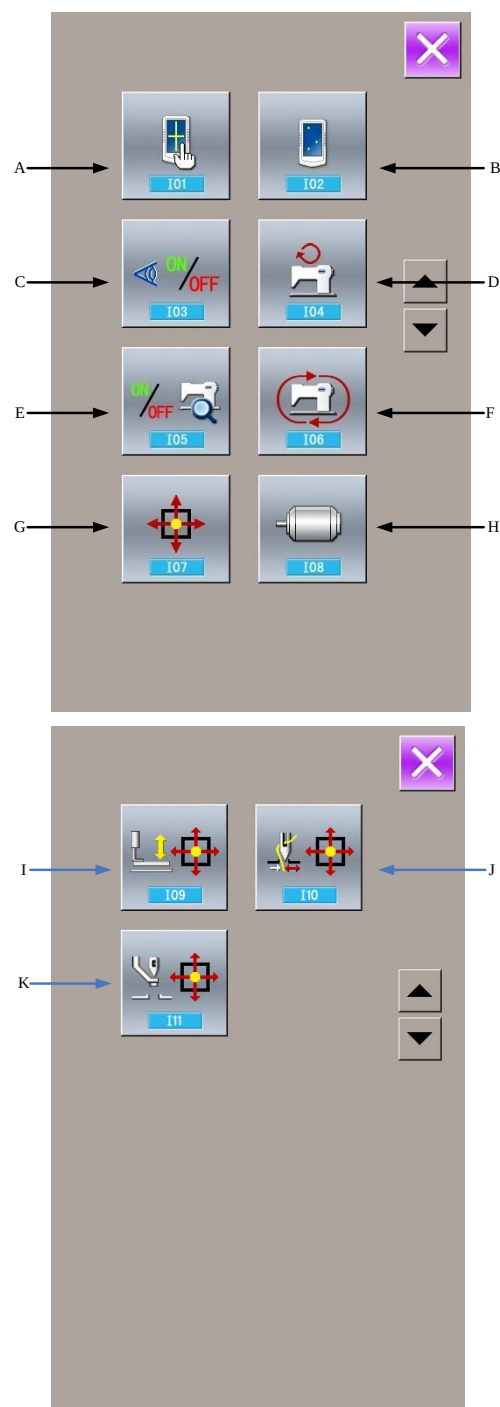


to have access to the interface of testing mode (as

shown in the right figure).by using  &  to turn the page.

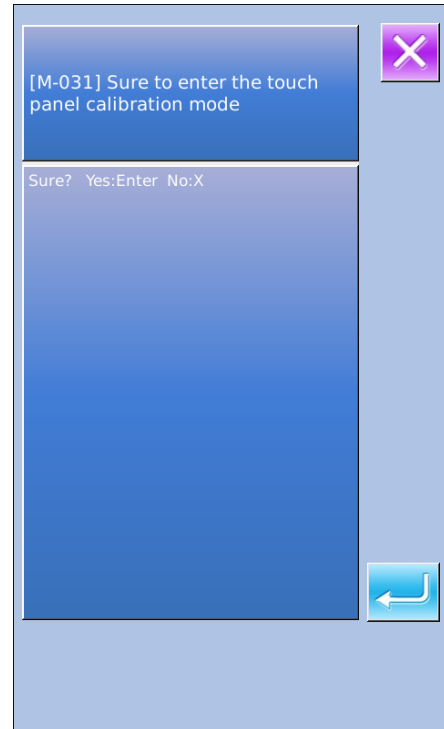
各图标功能说明详见下表:

No.	Name
A	I01 Touching Panel Correction
B	I02 LCD Test
C	I03 Input Test
D	I04 Speed Measurement
E	I05 Output Test
F	I06 Continuous Running
G	I07 XY Motor Origin Test
H	I08 Main-shaft Motor Correction
I	I09 Presser· Thread-trimming Motor/ Origin Sensor Test
J	I10 Thread-holder Motor/ Origin Sensor Test
K	I11 Intermediate Presser Motor/ Origin Sensor Test



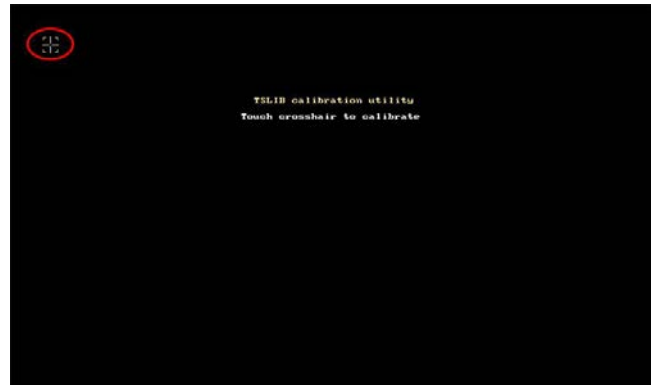
1) Touching Panel Correction

In the interface of test mode, press  (I01Touching Panel Correction). At this moment, the system will display “Sure to enter the touch panel calibration mode?”. Press  to enter the touching panel correction interface.



Because the corrections for five spots are needed, the user had better click the cross icon on the screen with tools like touching pen. After the correction, the system will tell user that this operation is successful or not.

【Note】 During the correction, please do perform the operation according to the positions of crosses. Otherwise, the touching panel will be unable to work normally after the correction.



2) LCD Test



In the interface of testing mode, press  (I02 LCD Test) to have access to the interface for testing LCD (as shown in right), where user can test whether the LCD is OK.



3) Test Method on Inputted Signal

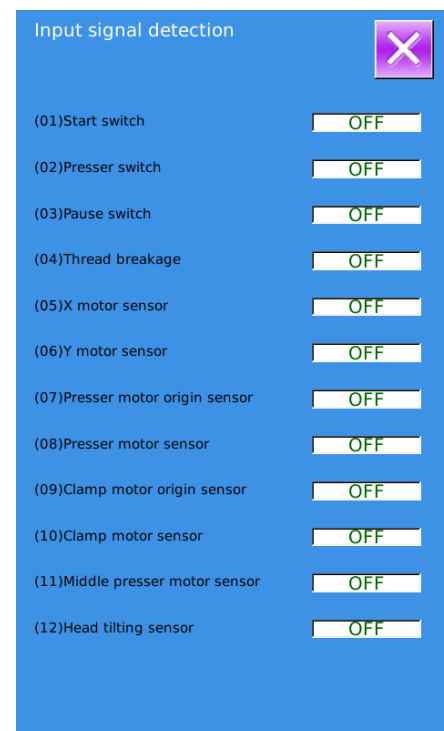


In the interface of testing mode, press  (I03 Input Test) to enter the interface of input test (as shown in right). User can confirm the input status of the various sensors and switches in that interface.

ON: Turn On

OFF: Turn Off

- (1) Start Switch (Pedal)
- (2) Presser Switch (Pedal)
- (3) Pause Switch
- (4) Thread-breakage Detection
- (5) X Motor Sensor
- (6) Y Motor Sensor
- (7) Presser Motor Origin Sensor
- (8) Presser Motor Sensor
- (9) Thread-catching Motor Origin Sensor
- (10) Thread-catching Motor Sensor
- (11) Intermediate Presser Motor Origin Sensor
- (12) Head Tilting Switch



4) Speed Measurement

① Display of Speed Measurement Interface

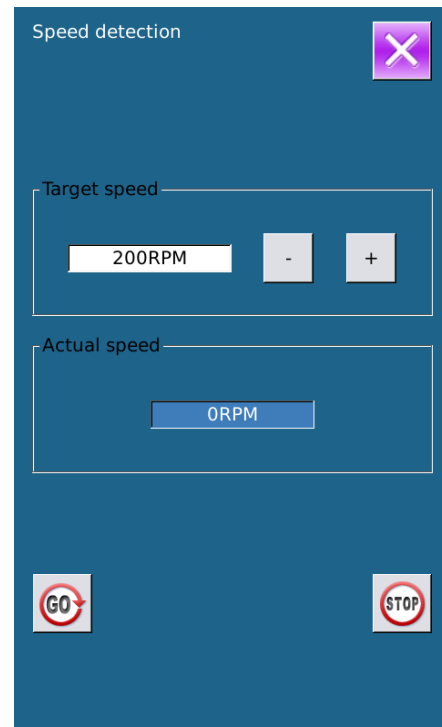
In the interface of testing mode, press  (I04 Speed Measurement) to have access to the interface of speed measurement (as shown in right). Users can test the main motor speed in this interface.

② Speed Measurement Setting

By using  & , user can set the main motor speed. After user presses , main motor will run in the set speed. At this moment, the actually measured speed will be displayed at the input column.

Press  to stop the machine.

Press  to return to the upper interface.

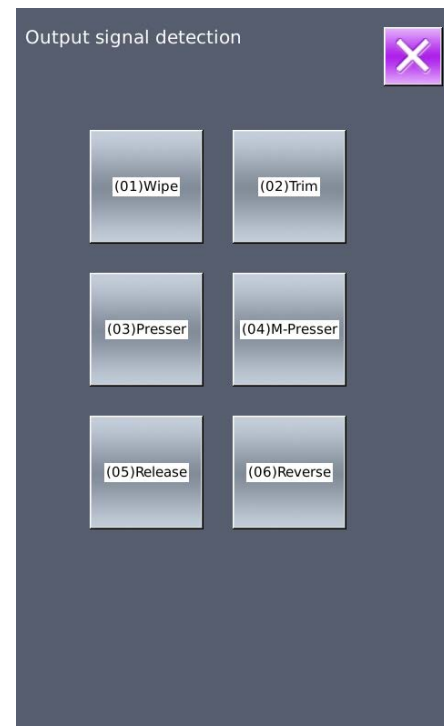


5) Output Test

In the interface of testing mode, press  (I05 Output Test) to have access to the interface of Output Test (as shown in right). In that interface, the output status of the solenoid can be tested.

- (1) Thread-stirring
- (2) Thread-trimming
- (3) Presser
- (4) Middle Presser
- (5) Thread-releasing
- (6) Reverse Presser

Press the corresponding figures to test the output of each external device.



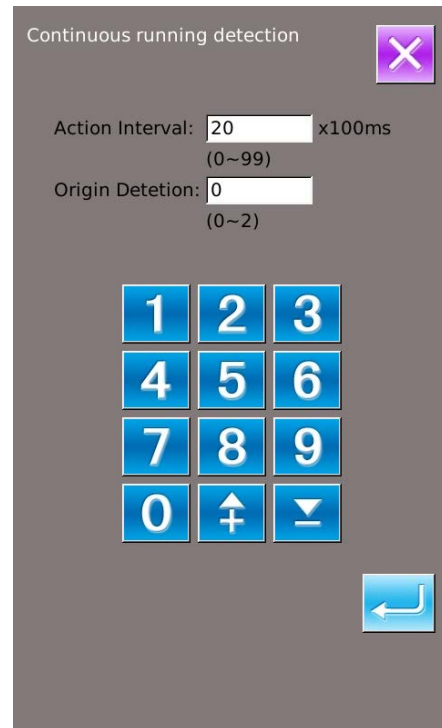
6) Continuous Running

① Display of Continuous Running Interface

In the interface of testing mode, press  (I06 Continuous Running) to have access to the continuous running interface (as shown in right).

② Continuous Running Setting

In the interface of continuous running, press the setting figure to set the action interval and gussetting origin test. Press  to return to the interface for inputting data. Then press  and step the pedal to allow machine to run continuously.



Continuous running detection

Action Interval: x100ms
(0~99)

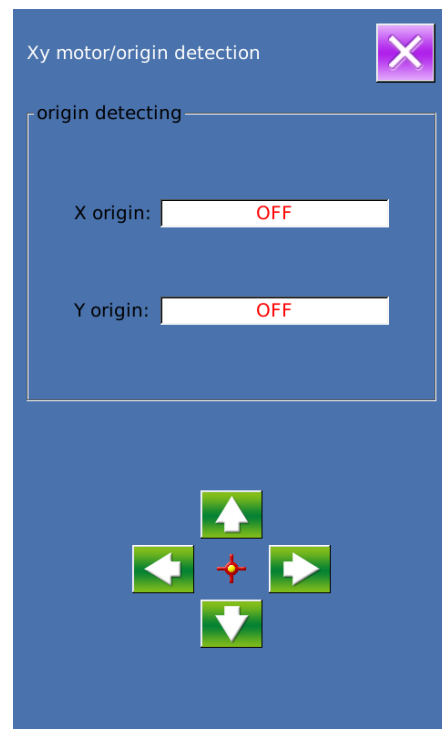
Origin Detetion:
(0~2)

1	2	3
4	5	6
7	8	9
0	↑	↓



7) XY Motor Origin Sensor Test

In the interface of testing mode, press  (I07XY Motor Origin Test) to have access to the output test interface (as shown in right). In that interface, user can drive motor to move by using the direction keys, and the ON/OFF status of sensor can be displayed.



Xy motor/origin detection

origin detecting

X origin:

Y origin:


8) Main-shaft Motor Correction

In the interface of testing mode, press  to have access to the interface of main-shaft motor correction (as shown in right).

In this interface, remove the main motor. Turn the hand wheel on the machine to move the needle bar to the highest position. Then turn the joint linkage of the main shaft to have the electronic angle displayed within 30 degree. Install the main motor again and press .

Main Motor Setting Angle


Electrical value: deg.
Calibration value: deg.
Mechanical value: deg.



9) Presser · Thread-trimming Motor Origin Sensor Test

In the status of thread-trimming sensor, the ON/OFF status of thread-trimming sensor will be displayed at Position A.

According to the status of presser origin sensor, button B will display the ON or OFF of it.

With  & , presser/thread-trimming motor can be driven by each single pulse. In addition, by pressing the , user can drive the presser /thread-trimming motor to the positions at below. The figure of the selected position will be in shadow.

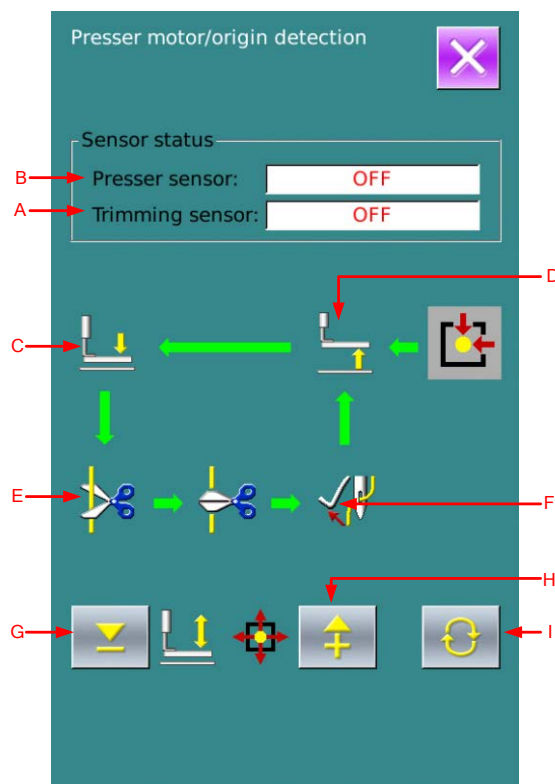
C: Presser Down Position (Lowering position at pedal operation)

D: Presser Up Position

E: Thread-trimming position

F: Thread-trimming Lowering Position (down position after thread-trimming)

Note: Perform the origin search of the presser · thread-trimming motor with start switch, so as to make it effective.



10) Thread-catching Motor/ Origin Sensor Test

According to the status of thread-catching origin sensor, button A will display ON/ OFF of it.

According to the status of thread-catching sensor, button B will display ON/OFF of it.

With  & , presser/ thread-trimming motor can be driven in each single pulse. In addition, by pressing the , user can drive the presser /thread-trimming motor to the positions at below. The figure of the selected position will turn dark.

C: Ready Position (Front)

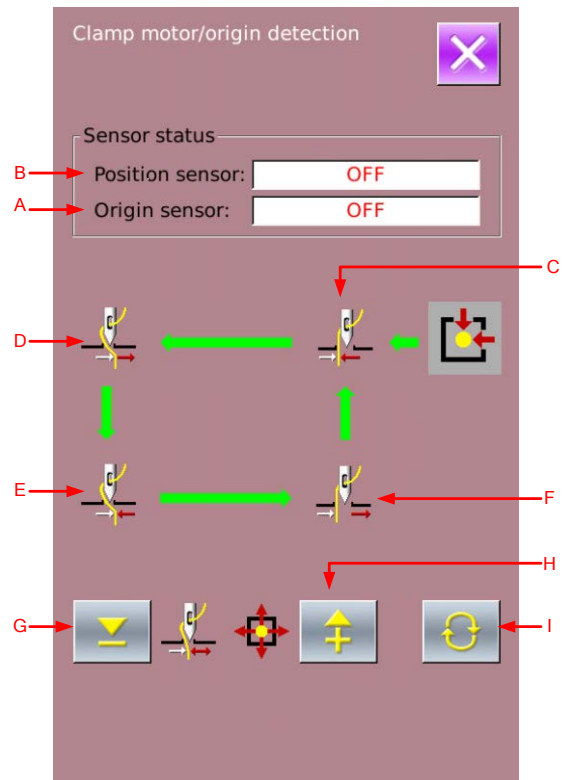
D: Thread-bending position

E: Thread-holding position

F: Retreating position (Inner side)

With start Switch, user can search the origin of thread-catching motor.

Note: Perform the origin search of the thread-catching with start switch, so as to make it effective.



11) Intermediate Presser Motor/ Origin Sensor Test

According to the status of intermediate presser origin sensor, button A will display ON/ OFF of it.

With  & , presser/ thread-trimming motor can be driven in each single pulse. In addition, by pressing the , user can drive the presser /thread-trimming motor to the positions at below. The figure of the selected position will turn dark.

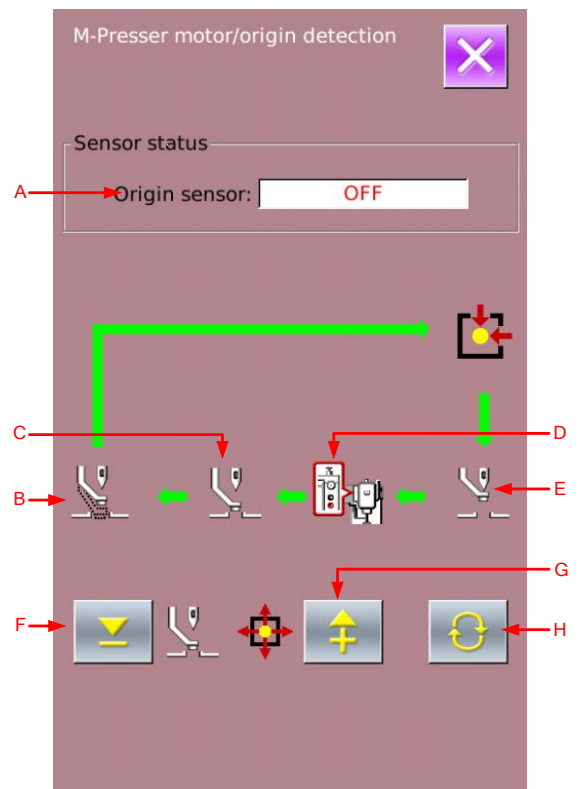
B: Adjusted Position of Intermediate Presser Rod

C: Position that down position height is 0 at lowering

D: Position for Phase Confirmation

E: Position that down position height is 7mm at lowering

Use start switch to search the origin of intermediate presser motor.



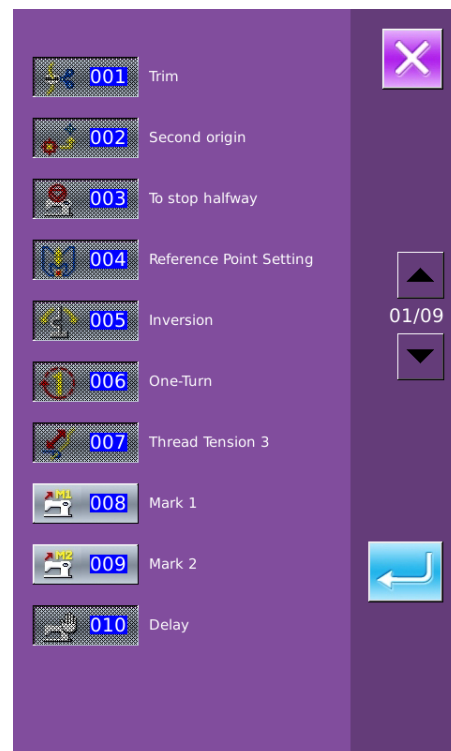
8.12 Pattern Edition Parameter Setting

In the interface of Setting Mode Level 3,

press  to have access to the interface for setting pattern edition parameters.

The figures in dark are the available functions, while the figures in bright are the functions forbidden.

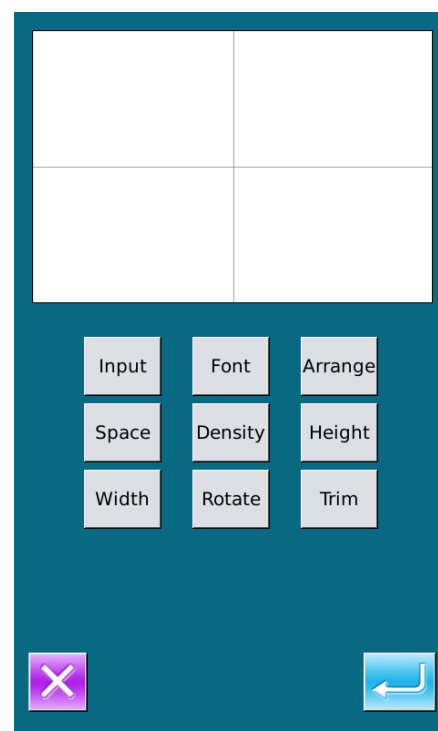
Set the edition parameters according to the needs, press  to finish the settings.



8.13 Letter Embroidery Editions

8.13.1 Parameter Setting

Press  to have access to the interface for setting letter embroidery parameters (as figure 1 at right).



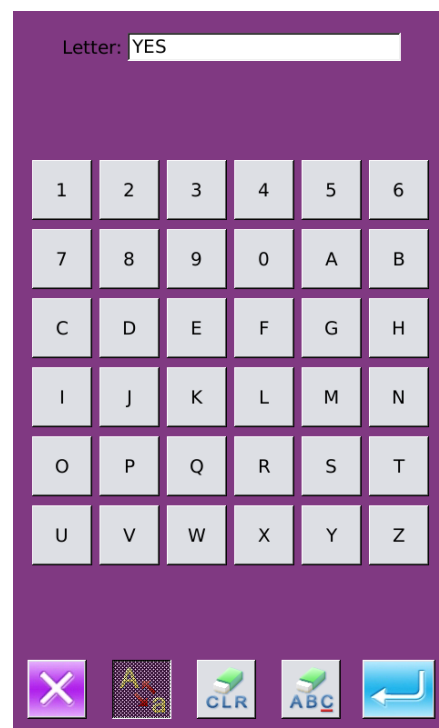
Function List:

Name	Function	Content
Input	Input figure	Input figure. At most, 20 figures can be input.
Font	Select Font	Support 28 kinds of font
Arrange	Method of Array	Four kinds of array method: Horizontal Line, Vertical Line, Convex Arc and Concave Arc
Space	Letter Interval	Set the interval between neighboring letters
Density	Satin Density	Set the density of satin. The larger the set value is, the denser the satin will be.
Height	Height Scaling	Scale the height of letter, range from 50~200.
Width	Width Scaling	Scale the width of letter, range from 50~200.
Rotation	Rotation/Follow (not Follow)	When the array method is line (Horizontal or Vertical), this button will be displayed as Rotation, so that user can use it to set rotating angle of letters; When the array method is arc (Convex Arc or Concave arc), this button will be displayed as Follow (Not Follow), so that user can use it to set whether the figure rotates along with arc.
Thread-trimming	Trim/ No Trim	Make sure whether to insert thread-trimming automatically.

1、 Figure Input

Press 「Input」 to enter the figure input interface. User needs at least input 1 figure, while 20 figures can be input at most.

Press  to save it and quit.



The screenshot shows a purple-themed 'Figure Input' interface. At the top, there is a label 'Letter:' followed by a text input field containing 'YES'. Below this is a 6x6 grid of buttons labeled with numbers 1-6, 7-9, 0, and letters A-Z. At the bottom, there is a row of five icons: a purple 'X' (cancel), a grid pattern icon, a 'CLR' button with a green arrow, an 'ABC' button with a green arrow, and a blue arrow icon (save/quit).

2、Select Font

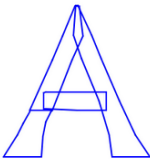
Press 「Font」 to enter the font selection interface. The system provides 28 kinds of font. User can input figure from 1 to 28 to select it. Press  to save it and quit.

In this interface, the shape of font will be displayed.

Select the font of letter sew

2

Range : 1 ~ 28



123

456

789

0↑↓



3、Arrangement Method

Press 「Array」 to enter the interface for setting the array method. In this interface, user can select Horizontal Line, Vertical Line, Convex Arc or Concave Arc. Press  to save it and quit.

Select the arrangement of letter sew

1

Range : 1 ~ 4

Parameter meaning:
1.Straight line-Horizon
2.Straight line-Vertical
3.Convex arc
4.Concave arc

123

456

789

0↑↓



4、Letter Interval

Press 「Interval」 to enter the interface for setting. At horizontal arrangement, the interval is the horizontal distance.

At vertical arrangement, the interval is the vertical distance.

At arc arrangement, the interval is the distance between the letters on the arc.

Range is 0~99.9mm。

Set the letter spacing

0.0

Range : 0.0 ~ 99.9

Horizontal straight line,the spacing of the horizontal distance between letters.
Vertical straight line,the spacing of the vertical distance between letters.
Circular arrangement,the spacing between letters arc distance.

1 2 3
4 5 6
7 8 9
0 ↑ ↓

X ↩

5、Satin Density

Press 「Density」 to enter the interface for setting the satin density. The range of satin density is 50~200.

Set the satin stitch density

100

Range : 50 ~ 200

The Larger setting value,the satin stitch more dense.
The smaller setting value,the satin stitch more thin.

1 2 3
4 5 6
7 8 9
0 ↑ ↓

X ↩

6、Height Scale

Press 「Height」 to enter the interface for setting the letter height. The scale rate of letter height is 50~200.

Set the letter height

100

Range : 50 ~ 200

Letters in the font height on the basis of the original size to adjust the zoom.

123

456

789

0↑↓

×

↩

7、Width Scale

Press 「Width」 to enter the interface for setting the letter height. The scale rate of letter width is 50~200.

Set the letter width

100

Range : 50 ~ 200

Letters in the font width on the basis of the original size to adjust the zoom.

123

456

789

0↑↓

×

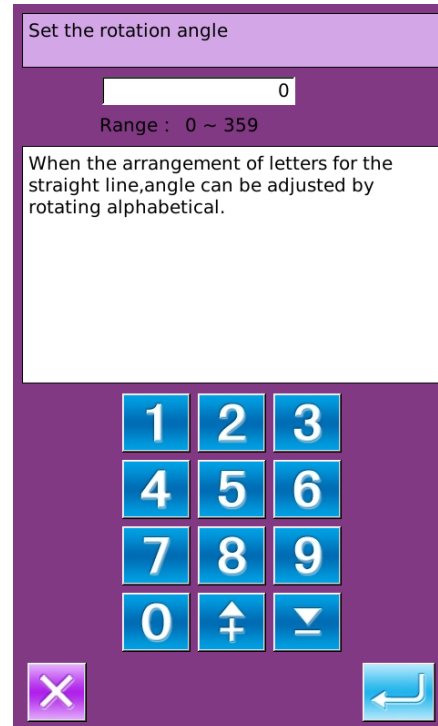
↩

8、Rotation Angle

When the array method is horizontal or vertical arrangement, this button is the rotating angle of letter. Press “Rotation” to enter the interface for setting the rotating angle.

The rotating direction is anti-clockwise, ranging at 0°~359°.

Note: When the arrangement method is convex arc or concave arc, this button will be used to set whether the letter rotates with arc.



Set the rotation angle

0

Range : 0 ~ 359

When the arrangement of letters for the straight line, angle can be adjusted by rotating alphabetical.

1 2 3

4 5 6

7 8 9

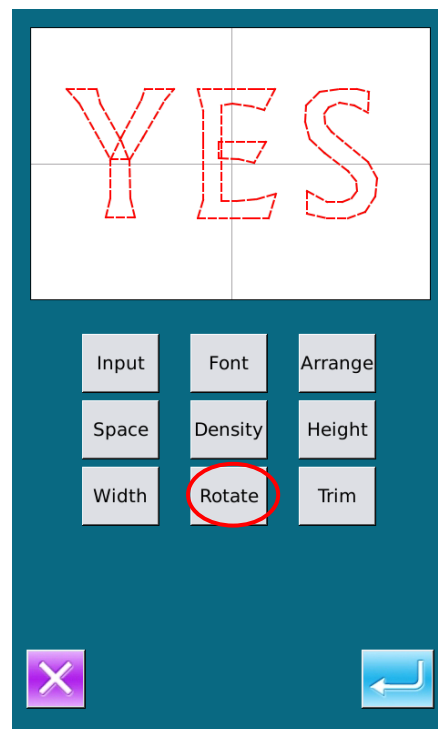
0 ↑ ↓

✕ ↩

9、Follow/ Not Follow

When the arrangement method is convex arc or the concave arc, this button will be used to set whether the letter rotates along with the arc. Press this button to shift between “Follow” and “Not Follow”.

【Note】: When the arrangement method is horizontal line or vertical line, this button is used to set rotating angle.



YES

Input Font Arrange

Space Density Height

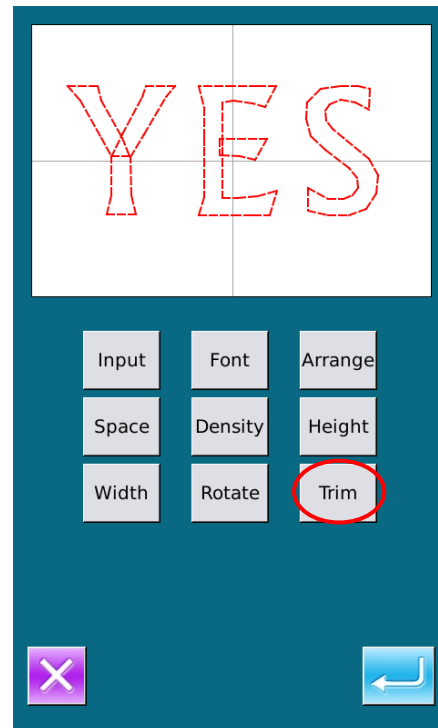
Width Rotate Trim

✕ ↩

10、Auto Insert Trimming

In default condition, the system will add trimming code automatically, which is to add trimming code at the joint between linear sewing and empty feeding at letter sewing, as well as the sewing end.

Press this button to shift between “Trim” and “Not Trim”. “Not Trim” means the system deactivates the functions for adding trimming code automatically.

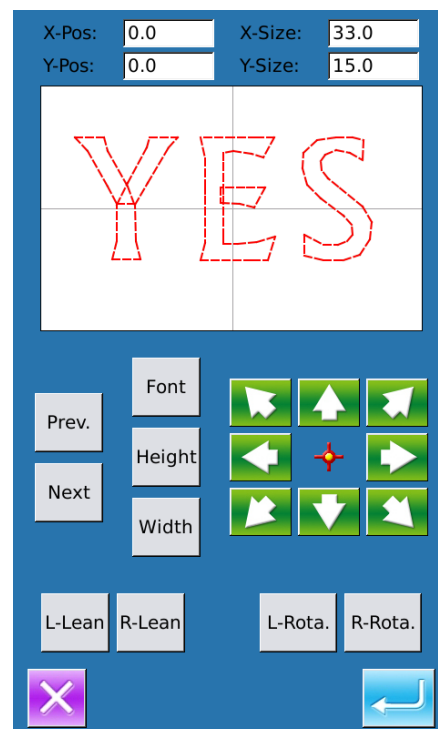


11、Confirm the Pattern

Set the pattern for sewing and press



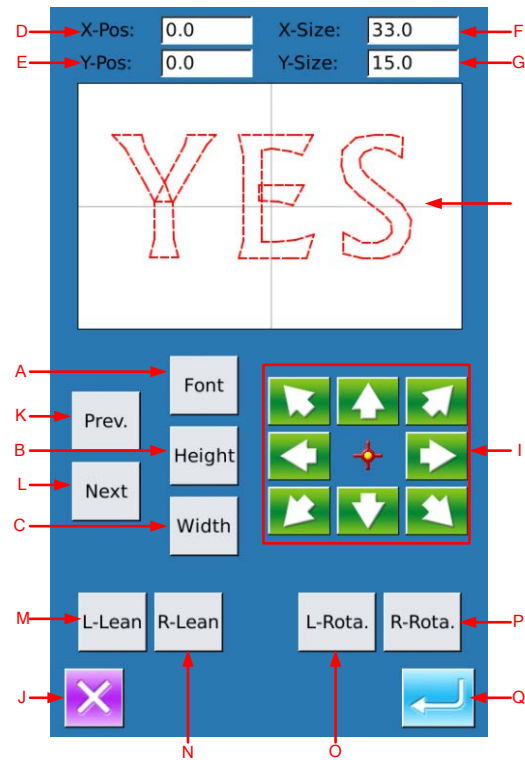
to enter the interface for adjusting the letter sewing pattern.



8.13.2 Adjustment of Pattern at Letter Sewing

In the interface for setting the parameter of letter sewing, user can set each parameter.

Then user can press  to enter the adjustment interface, where user can have the further adjustmetn on the pattern.



Function List:

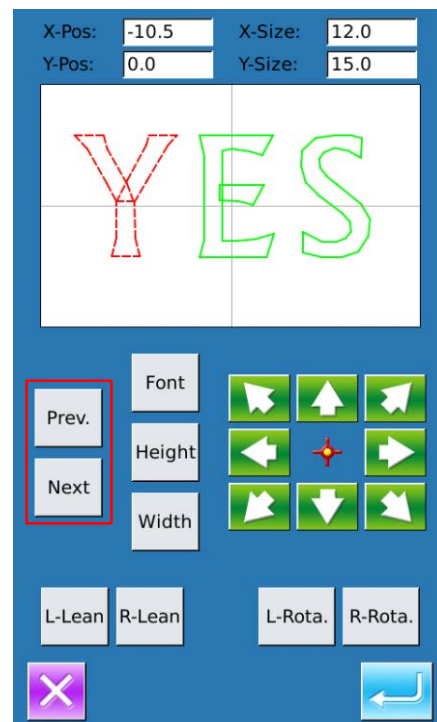
No.	Function	Content
A	Font Selection	Change the font of the selected letter. The setting method is same as setting the parameters.
B	Height Scaling	Change the scale rate of the height of the selected letter. The setting method is same as setting the parameters.
C	Width Scaling	Change the scale rate of the width of the selected letter. The setting method is same as setting the parameters.
D	X Position	Display the X coordinate of the center of the selected Letter
E	Y Position	Display the Y coordinate of the center of the selected Letter
F	X Size	Display the width of the selected letter
G	Y Size	Display the height of the selected letter
H	Pattern	Display the shape of the current pattern. The selected letter is displayed in red, while the unselected letters are displayed in green.
I	Direction Key	Change the position of the selected letter.
J	ESC	Return to the upper interface.
K	Figure Selection (Right to Left)	Select the previous letter for adjustment, the selected letter is displayed in red.

		If user presses it at selecting the last letter, all the letters will be selected.
L	Figure Selection (Left to Right)	Select the next letter for adjustment, the selected letter is displayed in red. If user presses it at selecting the last letter, all the letters will be selected.
M	Left Lean/ Radian Down	When the arrangement method is set as horizontal line or vertical line, this button will be displayed as “Left Lean”. Press it to turn the pattern in counterclockwise as a whole. The origin for the rotation is the circle center. When the arrangement method is the convex arc or concave arc, this button will be displayed as “Radian Down”, press it to decrease the radian of the arc. 【Note】 This operation is for the entire pattern.
N	Right Lean/ Radian Up	When the arrangement method is set as horizontal line or vertical line, this button will be displayed as “Right Lean”. Press it to turn the pattern in counterclockwise as a whole. The origin for the rotation is the circle center. When the arrangement method is the convex arc or concave arc, this button will be displayed as “Radian Up”, press it to increase the radian of the arc. 【Note】 This operation is for the entire pattern.
O	Left Rotation	Adjust the rotating angle of the selected letter in counterclockwise direction. The rotation center is the center of the letter.
P	Right Rotation	Adjust the rotating angle of the selected letter in clockwise direction. The rotation center is the center of the letter.
Q	ENTER	Press it to enter the pattern saving interface.

Example:

1、Select one Letter for Adjustment

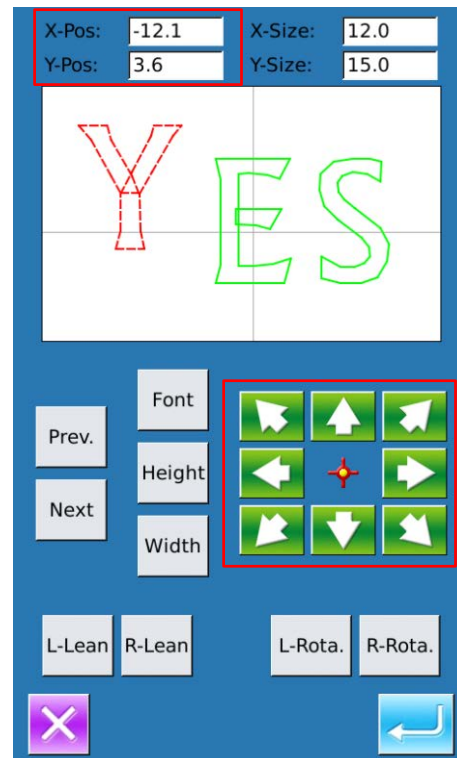
Press 「Previous」 or 「Next」 to select one letter for edition. The selected letter is in red, while the unselected letter is in green.



2、 Letter Position Adjustment

Press the direction key to adjust the position of the selected letter. User can use the Y Position and the X Position to check the coordinates.

With the same operation, user can continue adjusting the position of other letters.



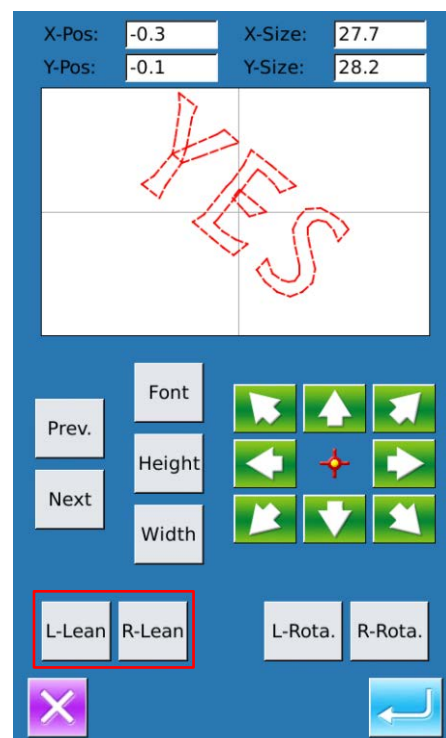
3、 Rotating Angle Adjustment of Entire Pattern

Press 「Left Lean」 or 「Right Lean」 to adjust the rotating angle of the entire pattern.

「Left Lean」 : Counterclockwise Rotation

「Right Lean」 : Clockwise Rotation

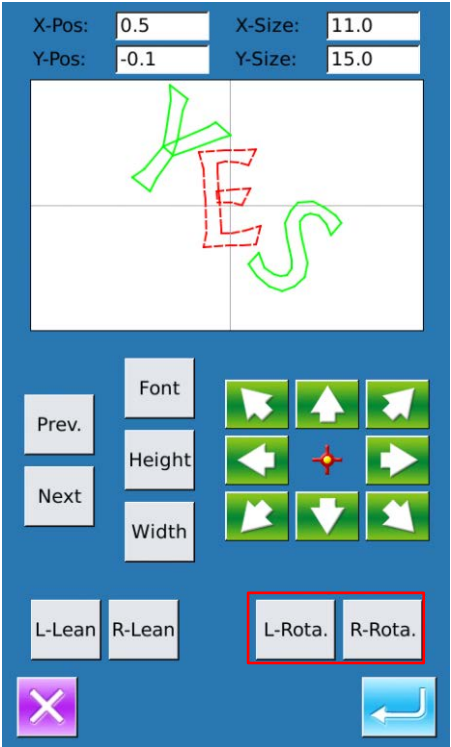
【Note】 : When the arrangement method is convex arc or the concave arc, this button will be turned to “Radian Up”/ “Radian Down”, so as to adjust the radian of the entire pattern.



4、Rotating Angle Adjustment of Single Letter

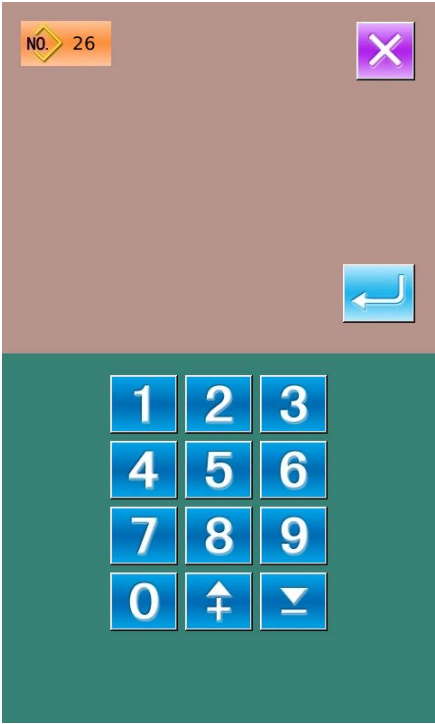
Select a letter then press “Left Rotation” or “Right Rotation” to adjust the rotating angle of the selected letter.

【Note】 : When user needs to adjust the rotating angle, user had better to perform the rotation of the entire pattern, and then adjust the single letter. If user adjust the single letter at first then the entire pattern, the adjustment of the single letter will be cancelled.



5、Save Pattern

After the adjustment, please press  to enter the saving interface. After user inputs the number, the pattern is saved.

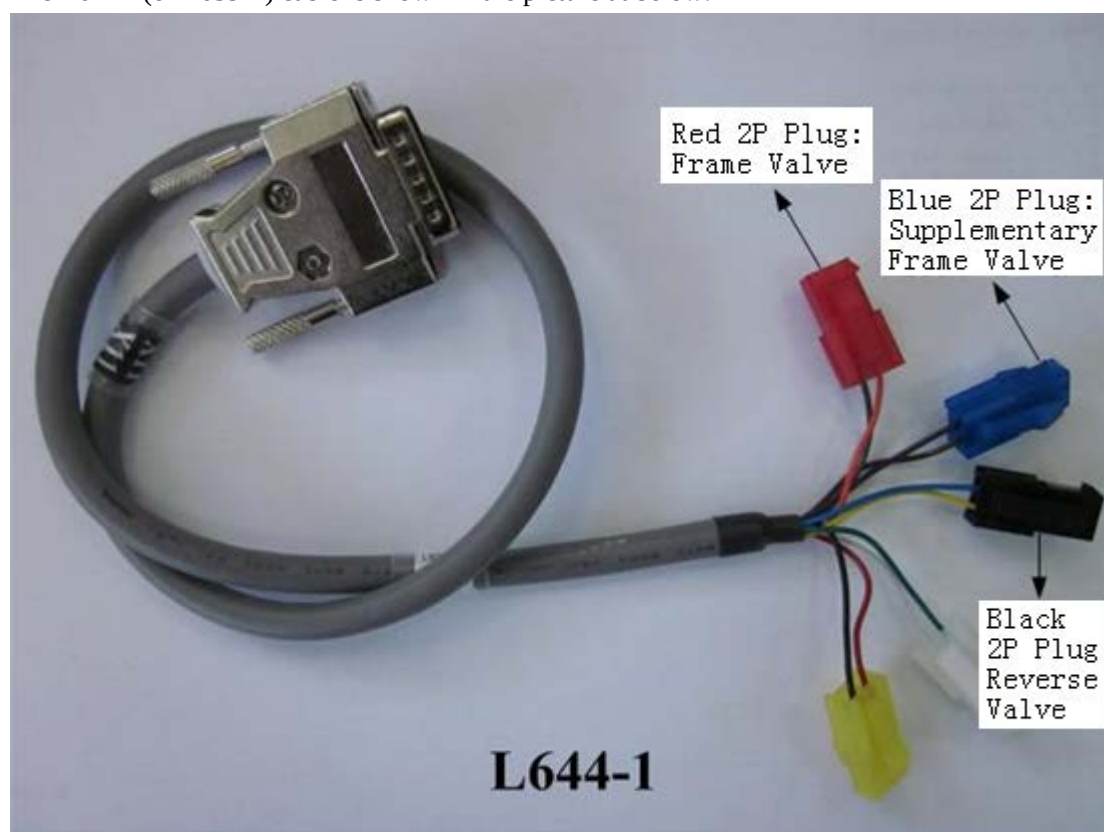


8.14 Air-driven Separated Presser

If user wants to use the Air-driven Separate + Reverse function, he should perform the following three steps:

1. Install the separating frame and the reverse device;
2. Connect the magnet valve for driving the frame to the red 2P socket on L644-1 (or L639-1) cable; connect the magnet valve for controlling the action of reverse presser to the blue 2P socket on L644-1 (or L639-1) cable; and connect the air valve controlling the reverse action to the black 2P socket on L644-1 (or L639-1) cable. If the magnet valve cable is marked with “+” and “-”, please follow the wire order at below: 1 for “+” and 2 for “-”.

The L644-1(or L639-1) cable is shown in the picture at below:



3. Turn on the machine and have access to the Level 2 parameters. Enter the parameter setting interface of [K74- Solenoid/ Air-control Presser Selection] and select the type of air-control presser; then set the corresponding value at [U81- Frame control – pedal on/ off] so as to realize the different presser function. The definition of type of air-control presser are shown as below:
0—Air-control 1 Step Presser ;
1— Left-Right Separate Presser. At stepping pedal, both presser go down at same time;
2-- Left-Right Separate Presser. At stepping pedal, right presser goes down firstly;
3-- Left-Right Separate Presser. At stepping pedal, left presser goes down firstly;
4~99 -- Air-control Integrated Presser.
4. At using the function of the presser reversion, user needs set the parameter U 81 at 2 or 3 and then enter the interface for setting parameter [K110-With Reverse Device?] and set it as “Yes”,
which is to activate the reverse presser function. After setting, please quit and press  to

enter the ready status. In that situation, the parameter setting is activated, and user can use the Left-right Separate + Reverse Presser Function.

5. At making the patterns, if user sets the separate presser function, activates the parameters K110 and U81 and installs some slide or reverse or stretching devices, user will need step the pedal to left, drop or move the presser in order to prevent the crashes between the presser and needles

9 Appendix 1

9.1 Warning List

No.	Name	Method of Release
E001	Pedal is not at the middle position.	Self-recovery
E002	Machine is in emergency stop	Press 
E004	Main voltage is too low(300V)	Turn Off Machine
E005	Main voltage is too high(300V)	Self-recovery
E007	IPM is over-voltage or over-current	Turn Off Machine
E008	Voltage of assistant device(24V) is too high	Turn off Machine
E009	Voltage of assistant device(24V) is too low	Turn off Machine
E010	Valve short connection or fan blocks	Turn off Machine
E013	Encoder is error or unconnected.	Turn off Machine
E014	Motor running abnormal	Turn off Machine
E015	Exceeds sewing area	Turn off Machine
E016	Needle bar upper position abnormal	Press 
E017	Thread breakage detection error	Press 
E018	Knife position abnormal	Turn off Machine
E019	Emergency switch is not at the right position	Self-recovery
E020	Stepping version error	Turn off Machine
E023	Thread-catching position abnormal	Turn off Machine
E024	Wrong connection between operation panel and sewing machine	Turn off Machine
E025	X origin detection abnormal	Turn off Machine
E026	Y origin detection abnormal	Turn off Machine
E027	Presser origin detection abnormal	Turn off Machine
E028	Thread-catching origin detection abnormal	Turn off Machine
E029	Intermediate presser origin detection abnormal	Turn off Machine
E030	Stepping driver communication abnormal	Turn off Machine
E031	Stepping motor over-current	Turn off Machine
E032	Stepping driver power supply abnormal	Turn off Machine
E034	Abnormal current	Turn off Machine
E035	IPM over-current 1	Turn off Machine
E036	IPM over-current 2	Turn off Machine
E037	Motor blockage 1	Turn off Machine
E038	Motor blockage 2	Turn off Machine
E039	Motor over speed	Turn off Machine
E040	Over-current at stop	Turn off Machine
E041	Motor overload	Turn off Machine

No.	Name	Method of Release
E042	Nut Abnormal	Turn off Machine
E254	Undefined Error	Press 

9.2 Hint List

No.	Name	Content
M-001	Can not find pattern data	Please reload or input from design software
M-002	Set value too large	Please input value within range
M-003	Set value too small	Please input value within range
M-004	Parameter save error	Press Enter to recover default setting
M-005	Communication error	Communication error between operation panel and control box
M-006	Fail to load letter sewing file	
M-007	Operation head not match to control box	Please check the model and the software version
M-008	Over Max stitch pitch	
M-009	Wrong password	Input again
M-010	Clock error	The hardware clock is down, please contact manufacturer for repair
M-011	Letter sewing pattern saved successfully	Enter the pattern selection interface and generate new letter sewing pattern
M-012	SRAM initialization	Clear all the data within SRAM, please turn off machine and restore the DIP switch
M-013	Turning off	
M-014	USB is pulled out	
M-015	Can not find pattern in U disk	
M-016	At least input one letter	Periodical password has been set, can not change system time
M-017	No warning record	
M-018	Wrong user ID	Input again
M-019	Fail to confirm password	Input password again
M-020	Can not change system time	Periodical password has been set, can not change system time
M-021	Password file input error	
M-022	Password file load error	
M-023	Password save successful	
M-024	Clear all password failed	Can not delete password file
M-025	Fail to clear password	After clearance of password, the input of

		file has problem
M-026	Password file is deleted without authorization	Password file is deleted without authorization, please turn off machine
M-027	User ID file damaged	
M-028	Can not input blank	Input password again
M-029	Current password not match	Input current password again
M-030	New password not match	Input new password again
M-031	Enter touching panel correction mode	Are You Sure? Yes: enter No: X
M-032	Correction successful	Correction is successful, please restart machine
M-033	Correction failed	Please perform correction again
M-034	Clear warning record	Are You Sure? Yes: enter No: X
M-035	Periodical password is same to super password error	Input password again
M-036	Pattern data error	Current pattern data error, it will be replaced by default patterns
M-037	Pattern information file open failed	Restore to default pattern configuration
M-038	Memory full	Please delete the unused patterns
M-039	Cover the pattern	Are You Sure? Yes: enter No: X
M-040	P pattern open error	Pattern file has mistake, it will be deleted
M-041	C pattern open error	Pattern file has mistake, it will be deleted
M-042	Pattern is existed	Can not replace the pattern
M-043	Delete pattern data	Press Enter to delete; Press ESC to quit
M-044	Delete the selected pattern	Are You Sure? Yes: enter No: X
M-045	Pattern is used, can not delete	Please release the quotation at P or C pattern
M-046	Save at least one pattern	Can not delete last pattern
M-047	Load default patterns	No pattern in memory, please load default patterns
M-048	No pattern in memory	Press Enter to load default patterns
M-049	Pattern number not exist	Please input again
M-050	P pattern not exist	Please create P pattern
M-051	Save software version successful	Software version is saved to the root directory of U disk
M-052	Replace needle	Needle replacement set value is reached, please replace needle
M-053	Replace oil	Oil replacement set value is reached, please replace oil
M-054	Clean machine	Cleaning machine set value is reached, please clean machine
M-055	Clear needle replacement set value	Are You Sure? Yes: enter No: X
M-056	Clear oil replacement set value	Are You Sure? Yes: enter No: X
M-057	Clear cleaning time value	Are You Sure? Yes: enter No: X

M-058	Clear production control value	Are You Sure? Yes: enter No: X
M-059	Clear calculated running time	Are You Sure? Yes: enter No: X
M-060	Clear calculated sewing number?	Are You Sure? Yes: enter No: X
M-061	Clear calculated power-on time?	Are You Sure? Yes: enter No: X
M-062	Clear calculated sewing stitch number?	Are You Sure? Yes: enter No: X
M-063	Clear calculated over-current times?	Are You Sure? Yes: enter No: X
M-064	Clear calculated stop times?	Are You Sure? Yes: enter No: X
M-065	Edit new pattern?	Are You Sure? Yes: enter No: X
M-066	Return to sewing mode?	Are You Sure? Yes: enter No: X
M-067	Restore all the settings	Are You Sure? Yes: enter No: X
M-068	Restore the selected items	Are You Sure? Yes: enter No: X
M-069	Not select an item	Please select one or several parameters
M-070	Sewing counter reaches set value	Please pres Enter to clear it
M-071	No.of pcs counter reaches set value	Please pres Enter to clear it
M-072	Successful	Current operation is successful
M-073	Failed	Current operation is failed
M-074	Copy failed	Check the room of memory
M-075	Copy failed	Check whether the U disk is pulled out
M-076	File I/O error	File I/O error
M-077	Verification failed at updating main software	
M-078	Can not delete pattern data	The selected sewing data is in use
M-079	Perform parameter transfer	Are You Sure? Yes: enter No: X
M-080	Can not open changed pattern	Please confirm pattern file
M-081	Changed pattern format error	Please confirm pattern file
M-082	Changed pattern data is too long	Please confirm pattern file
M-083	Update successful	Update successful, please restart machine
M-084	Fail to open file	Fail to open file
M-085	Parameter restoration successful	Parameter restoration successful, please restart machine
M-086	Not select update item	Please select at least one item for update
M-087	Selected item for update is not existed	If the item has no update file, the system will cancel the selection. If user wants to update the rest, please confirm again
M-088	Initialize U disk	Press Enter to perform operation; Press ESC to quit. The initialization will delete all the files in U disk
M-089	Initialize memory	Press Enter to perform operation; Press ESC to quit. The initialization will delete all the files in memory
M-090	Low memory	
M-091	Fail to select the function	
M-092	Shape point repeated error	

M-093	Can not return	
M-094	Can not find next stitch sewing data	
M-095	Can not find previous stitch sewing data	
M-096	Pattern data is too big	
M-097	Calculation error	
M-098	Pattern-designing error	
M-099	Cannot find the pattern	
M-100	Over moving range	
M-101	Over sewing range	Make sure pattern within sewing range
M-102	Stitch number over range	Reduce stitch number
M-103	Pattern file error	
M-104	Confirm to change point	
M-105	Confirm to insert auto trimming code	
M-106	Delete new pattern?	Press Enter to confirm; Press ESC to quit
M-107	Delete elements?	Press Enter to confirm; Press ESC to quit
M-108	Confirm to perform?	Press Enter to confirm; Press ESC to quit
M-109	Delete mechanical control order?	Press Enter to confirm; Press ESC to quit
M-110	Delete needle entry point	Press Enter to confirm; Press ESC to quit
M-111	Are you sure to move presser?	Press Enter to confirm; Press ESC to quit
M-112	Delete shape point	Press Enter to confirm; Press ESC to quit
M-113	Warning: Initialization will delete entire data in memory!	Press Enter to confirm; Press ESC to quit
M-114	Turn off machine.	Current operation is finished, please restart machine
M-115	Can not modify counter	At modification, please turn off setting
M-116	Restore to default setting?	Press Enter to confirm; Press ESC to quit
M-117	Clear entire custom parameters?	Are You Sure? Yes: enter No: X
M-118	Pattern calculation error	
M-119	Delete all the P and C patterns	Press Enter to confirm; Press ESC to quit
M-120	Over setting range	
M-121	Frame is at up position	Please lower the frame first!
M-122	Can not perform right operation	
M-123	Can not find USB	Please insert U disk containing mp3 file
M-124	No video files in vid.avi	Please put vid.avi file into pdat directory in U disk and then enter the update interface to update video files

10 Appendix 2

10.1 Installation Size of Control Box

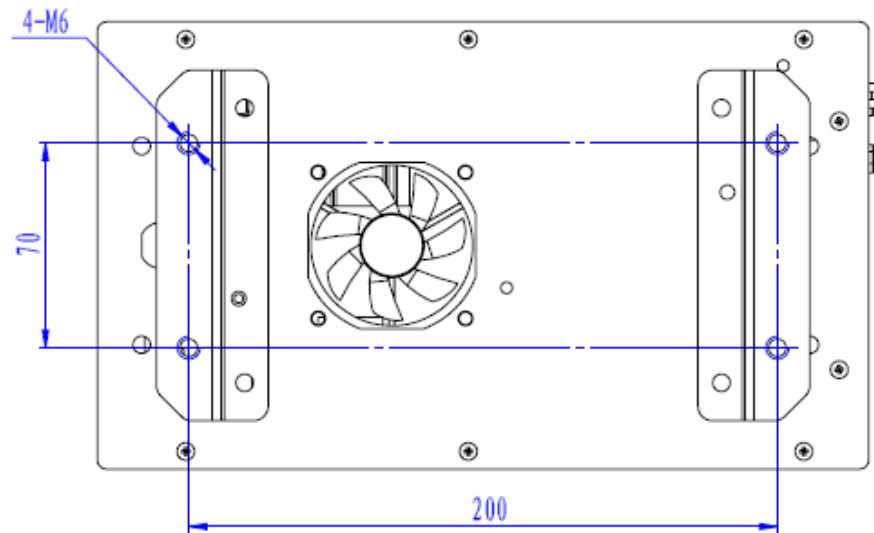


Figure 1 4-hole Installation

10.2 Installation Size of Operation Panel

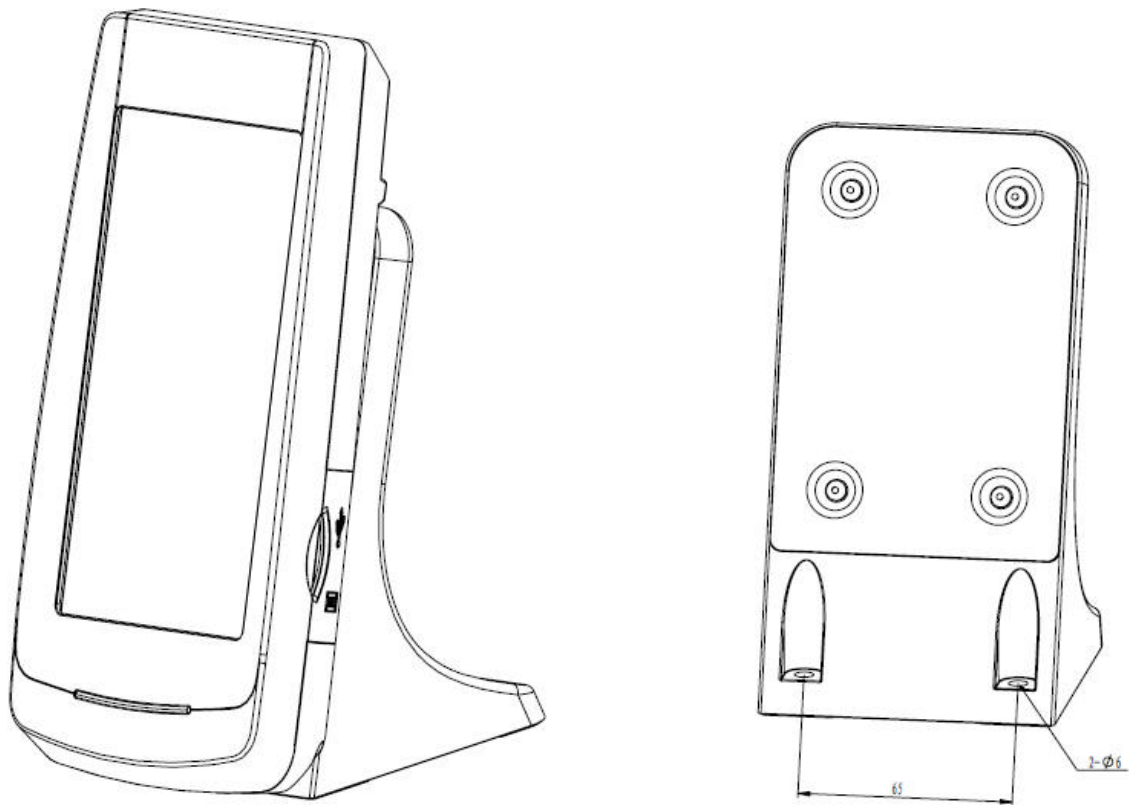
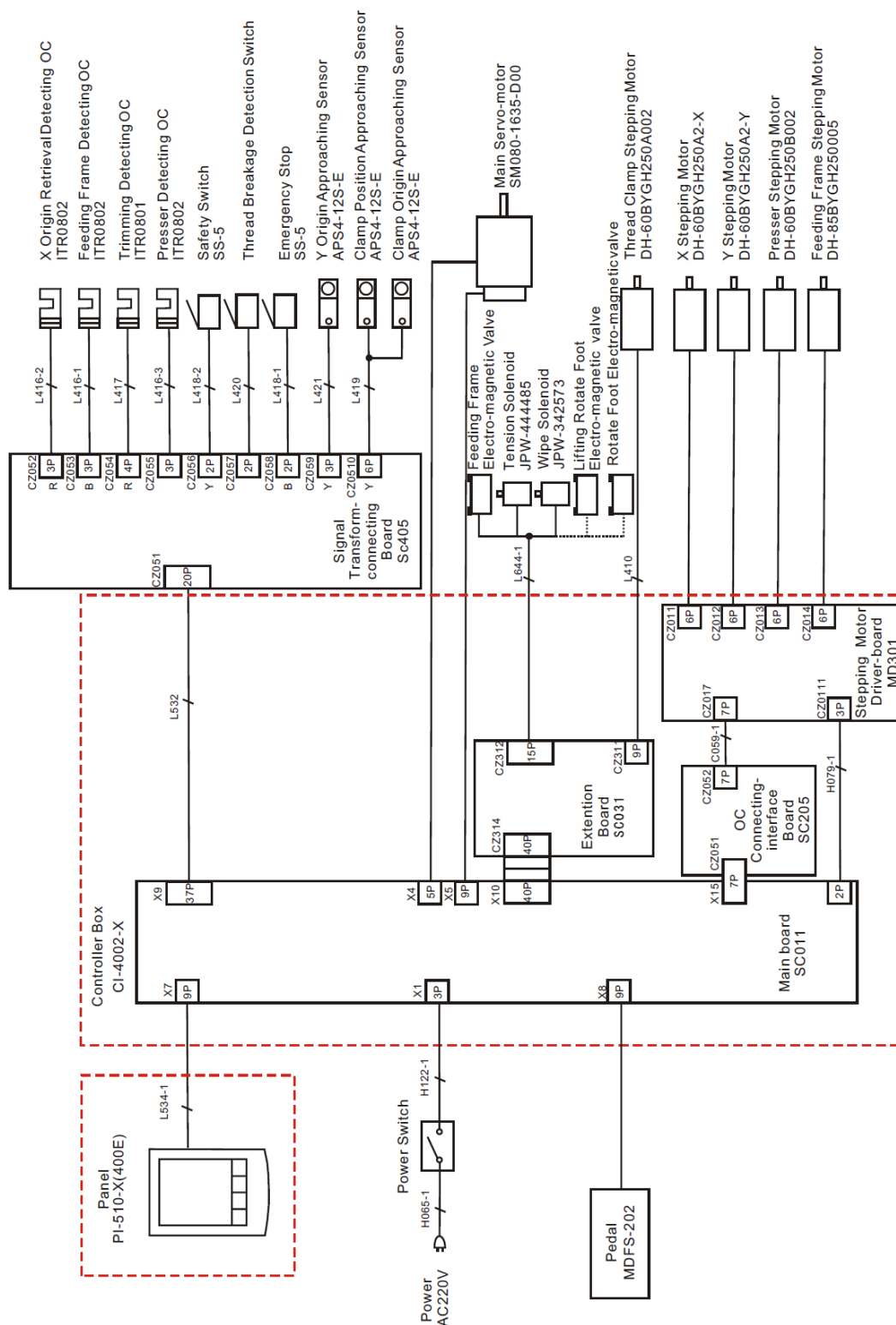
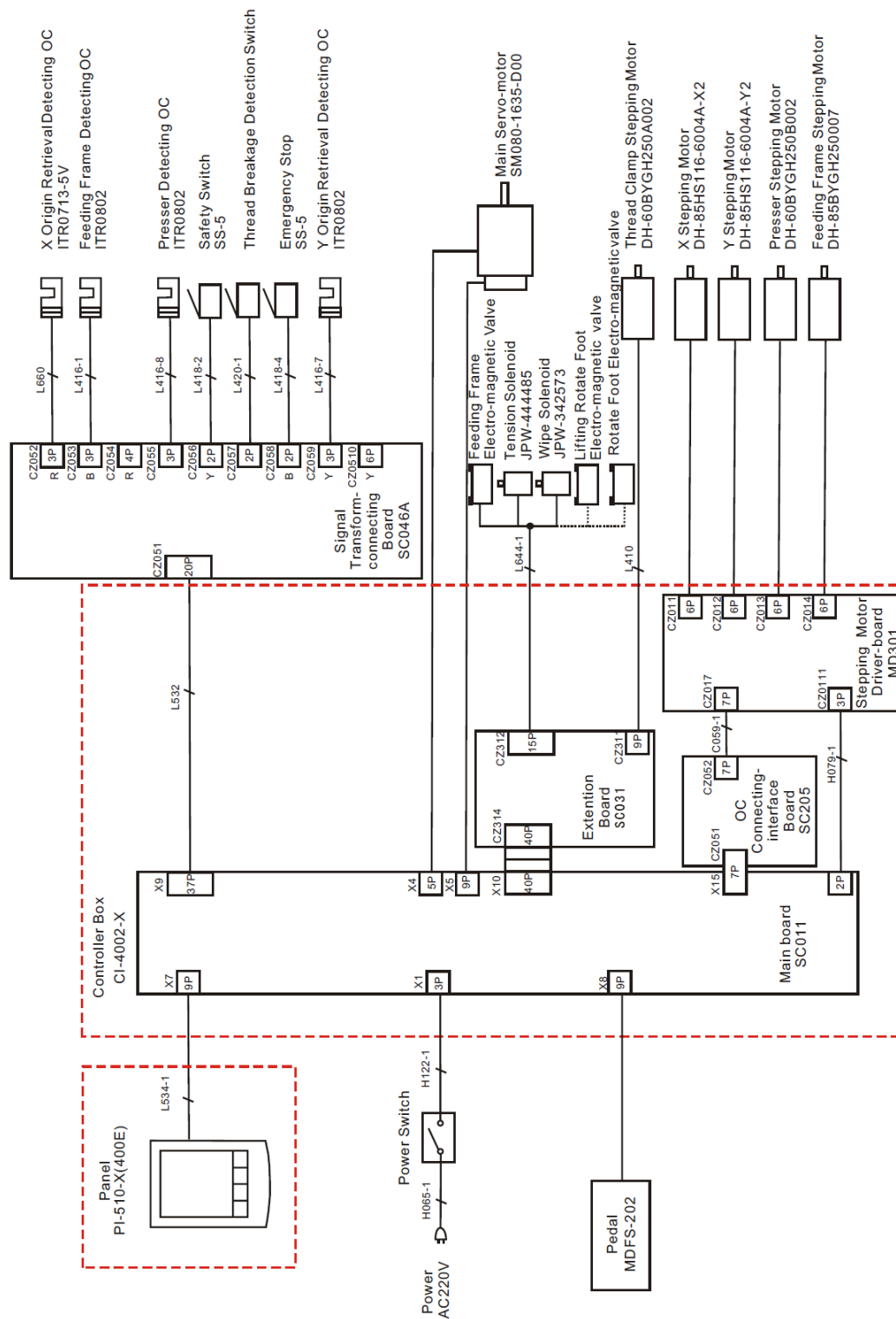


Figure 2 Installation Size of Operation Panel

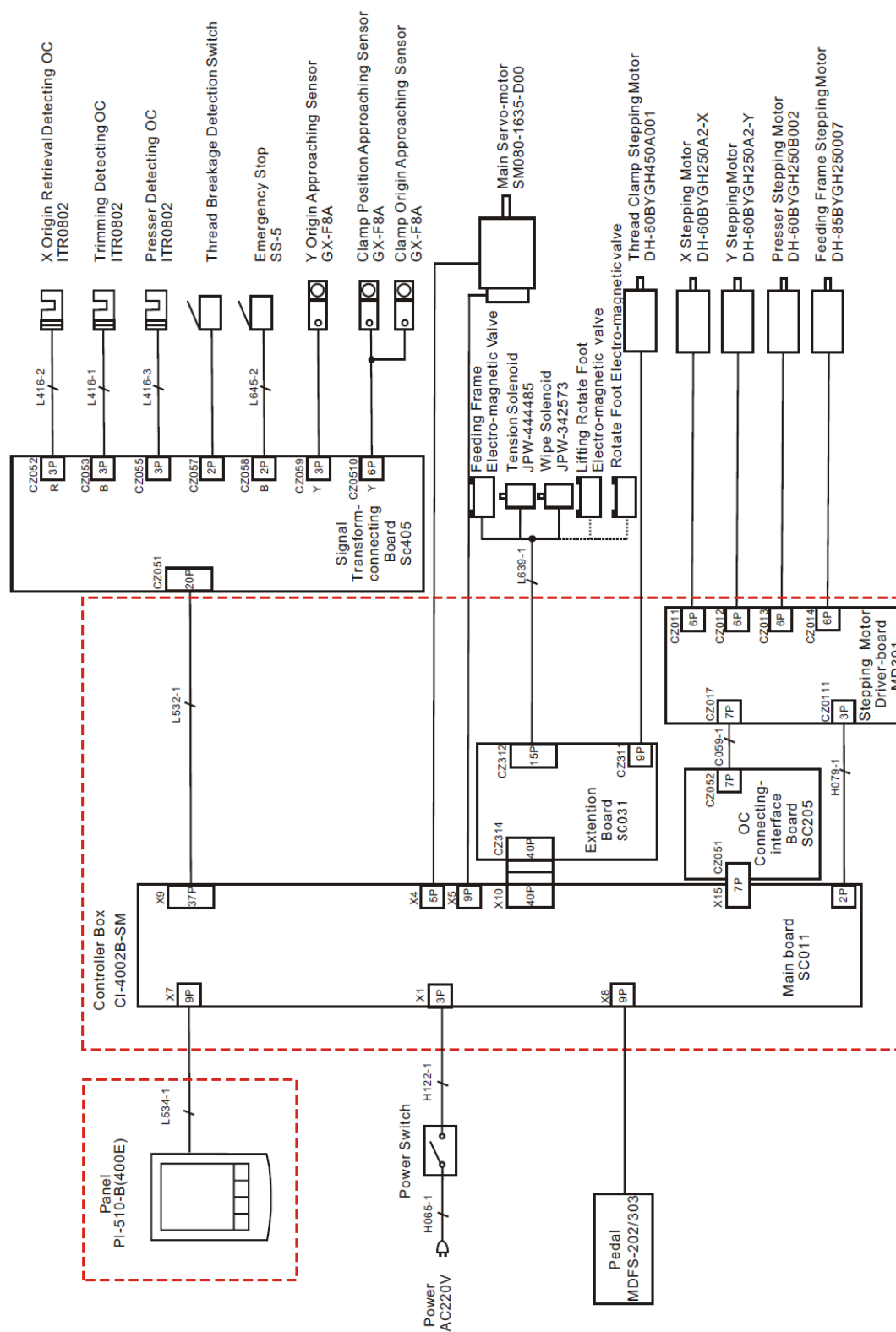
10.3 Diagram of SC400-2E/X Computerized Control System for Pattern-sewing Machine (Touching Panel)



10.4 Diagram of SC400-2E/X-LE Computerized Control System for Pattern-sewing Machine (Touching Panel)



10.5 Diagram of SC400-2E/B-SM(210E-1510) Computerized Control System for Pattern-sewing Machine (Touching Panel)



10.6 Diagram of SC400-2E/B-LM(210E-3020) Computerized Control System for Pattern-sewing Machine (Touching Panel)

