

BMS-342G

使用说明书

在使用缝纫机之前请阅读本使用说明书。

请将本使用说明书放在便于查阅的地方保管。

直接驱动式

程序电脑花式机



BEYOUNG®

[2] 安全注意事项

⚠ 危险



打开控制箱盖时，先关闭电源开关并将电源插头从插座上拔下后，至少等待 5 分钟后，再打开控制箱盖。触摸带有高电压的区域将会造成人员受伤。

⚠ 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确操作。



缝纫机可以在电源电压的波动范围小于额定电压的 $\pm 10\%$ 以内的环境下使用。

电压大幅度的波动会影响缝纫机的正确操作。



电源容量应大于缝纫机的消耗电量。电源容量不足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可能会导致缝纫机的操作不正常。



环境温度应在 $5^{\circ}\text{C}\sim 35^{\circ}\text{C}$ 的范围内使用。低温或高温会影响缝纫机的正确操作。



相对湿度应在 $45\%\sim 85\%$ 的范围内，并且设备内不会形成结露的环境下使用。干燥或多湿的环境和结露会影响缝纫机的正确操作。



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。



请委托购买商店或电气专业人员进行电气配线。



缝纫机质量约为 160kg。

请使用吊车或起重机等，来安装缝纫机和调整工作台面的高度。

如果由人工来搬运的话，易引起腰痛等及产生受伤的原因。



安装完成前，请不要连接电源。

如果误踩了脚踏开关，缝纫机动作会导致受伤。



缝纫机头倒下或竖起时，请用双手进行操作。

另外在缝纫机头倒下的状态下，请不要用力压缝纫机。如缝纫机失去平衡，缝纫机头滑落到地上是造成受伤或缝纫机损坏的原因。



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，不要过度弯曲电缆或用卡钉固定得过紧。



会引起火灾或触电的危险。



请在机头上及马达上安装安全罩壳。



如果使用带小脚轮的工作台，则应该固定小脚轮，使其不能移动。



工作台的高度请使用 84cm 以下的工作台，如果工作台过高一旦失去平衡缝纫机倒下，是造成受伤或缝纫机损坏的原因。












使用润滑油及黄油时，务必戴好保护眼镜和保护手套等，以防润滑油及黄油落入眼中或沾在皮肤上，这是引起发炎的原因。

另外，润滑油及黄油不能饮用，否则会引起呕吐和腹泻。

将油放在儿童拿不到的地方。

⚠ 注意










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其他用途。
-  使用缝纫机时必须戴上保护眼镜。
如果不戴保护眼镜，断针时就会有危险，机针的折断部分可能会弹入眼睛并造成伤害。
-  发生下列情况时，请切断电源。
否则误踩了脚踏开关时，缝纫机动作会导致受伤。
 - 机针穿线时
 - 交换梭芯和机针时
 - 缝纫机不使用，或人离开缝纫机时
-  如果使用带小脚轮的工作台，则应该固定小脚轮使其不能移动。
-  为了安全起见，在使用本缝纫机之前，请安装保护装置。
如果未安装这些安全装置就使用缝纫机，会造成人身伤害及缝纫机损坏。
-  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，或听到异常的噪音或闻到异常的气味，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。



清 洁

-  清洁前请关闭电源开关。
否则如果误踩了脚踏开关，缝纫机动作会导致受伤。
-  使用润滑油及黄油时，务必戴好保护眼镜和保护手套等，以防润滑油及黄油落入眼中或沾在皮肤上，这是引起发炎的原因。
另外，润滑油及黄油不能饮用，否则会引起呕吐和腹泻。
将油放在儿童拿不到的地方。

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、保养和检查请委托购买商店或电气专业人员进行。
-  发生下列情况时，请关闭电源。并拔下电源线插座。
否则误踩了脚踏开关时，缝纫机动作会导致受伤。
 - 检查、调整和维修
 - 更换旋梭等易损零部件
-  在检查、调整和修理任何使用气动装备之前，请先断开气源，并等压力表指针下降到“0”为止。
-  缝纫机头倒下或竖起时，请用双手进行操作。
另外在缝纫机头倒下的状态下，请不要用力压缝纫机。如缝纫机失去平衡，缝纫机头滑落到地上是造成受伤或缝纫机损坏的原因。
-  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。
-  更换零件或安装可选附件时，请务必仅使用正品 Brother 零件。
Brother 将不承担由使用非正品零件而造成的任何事故或故障责任。
-  取下的安全保护装置，必须要安装回去。且请务必安装在原位上，并检查能否正常的发挥作用。
-  为了防止发生事故及故障，请勿擅自改造本缝纫机。
Brother 将不承担由改造本缝纫机而造成的任何事故或故障责任。

重要事项

-  缝纫机内不允许进入任何液体，否则会引起烟雾或火灾。
-  如果缝纫机内（机头或控制箱）进入任何液体，请立即关闭电源，并将电源插头从插座上拔出，然后联系销售商或资深技术人员。

[3] 警告标签

缝纫机上有下列警告标签。

当使用缝纫机时，请遵守标签上的说明。如果标签脱落或模糊不清，请和购买商店联系。

1



2a



注意：

缝纫机上可显示 2a 或 2b 标签。

*安全保护装置

护眼板, 护指器, 挑线杆防护罩, 马达盖, X 方向马达盖,
松线电磁铁罩, 内盖, 外盖, 中间盖, 固定盖, 后盖

2b



注意

活动部位,有可能造成工伤。

请在**使用安全保护装置***的基础上,进行缝纫操作。

请在关闭电源后,再进行穿线、更换机针、梭芯、剪线刀、钩梭等零件及实施清扫、调整等作业。

3



请注意别让运动部夹住您的手指。

4

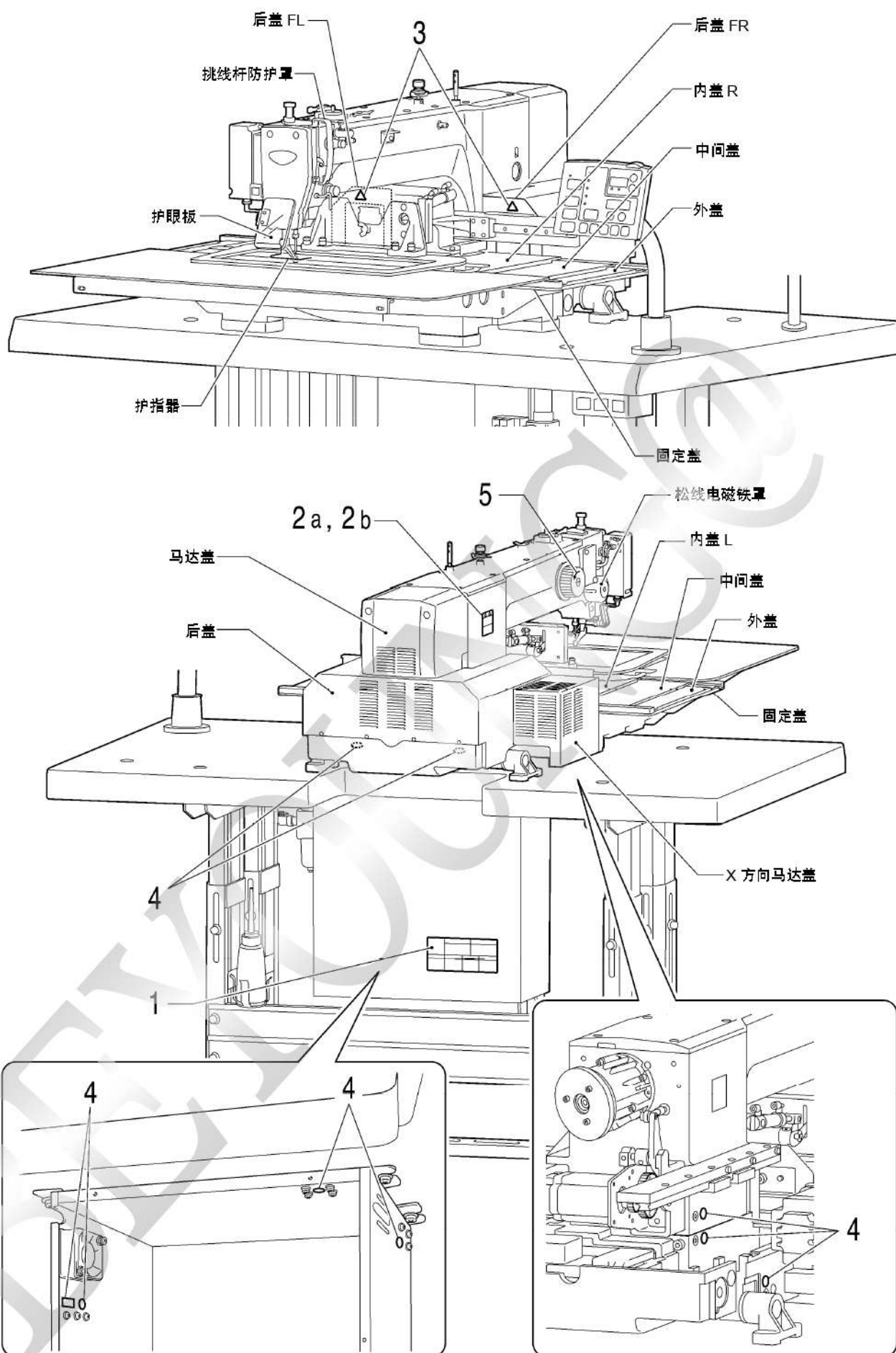


必须保证接地。如果接地不可靠，很有可能受到严重电击，操作也可能出现问题。

5



表示转动方向



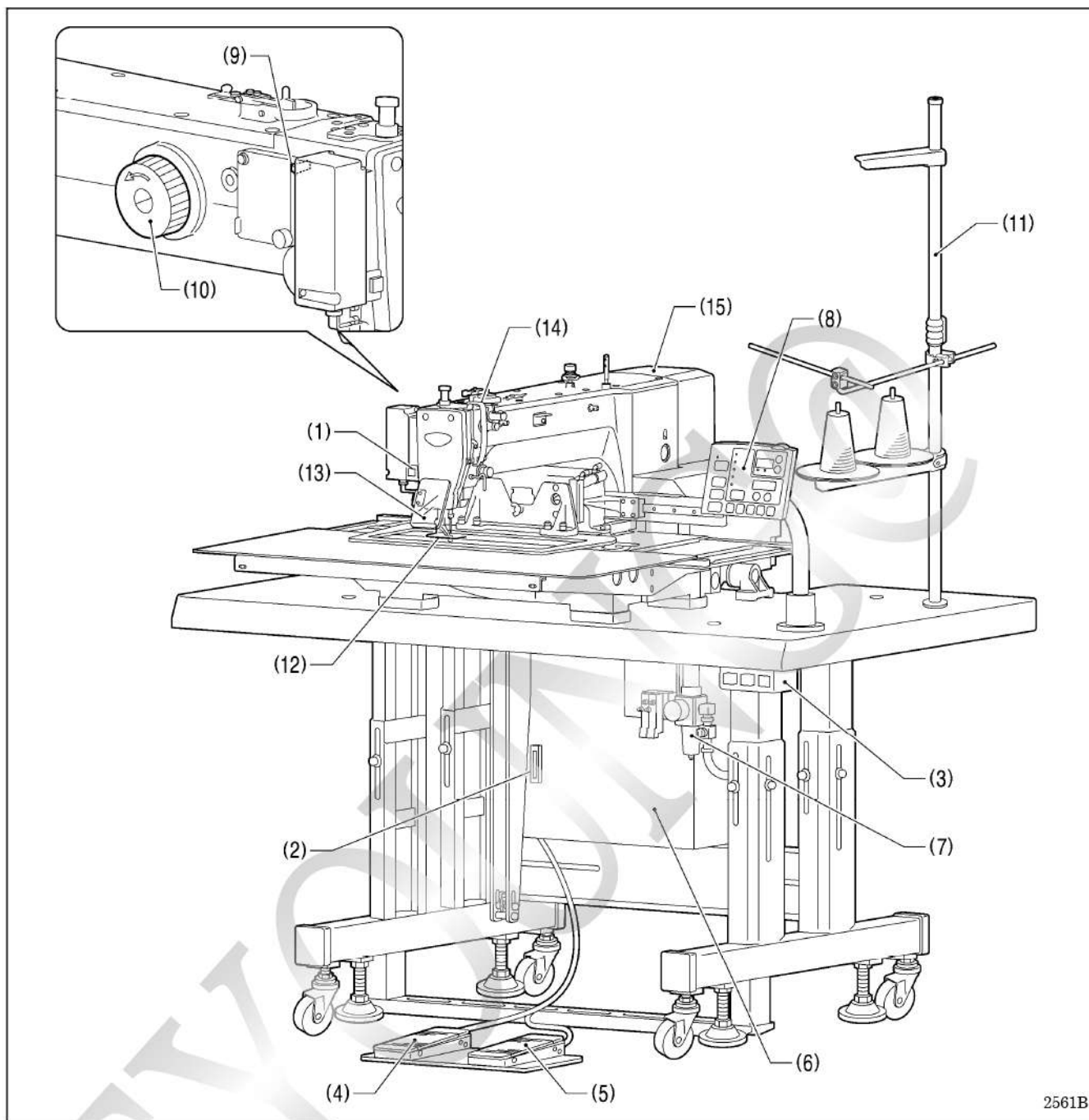
2560B

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1. 主要零部件的名称



2561B

- (1) 暂停开关
- (2) CF 卡插入口
- (3) 电源开关
- (4) 压脚开关
- (5) 启动开关
- (6) 控制箱
- (7) 电磁阀
- (8) 操作盘
- (9) 扫线用开关
- (10) 手轮
- (11) 线架

安全保护装置

- (12) 护指器
- (13) 护眼板
- (14) 挑线杆防护罩
- (15) 马达罩

CF™ 是 SanDisk Corporation 的商标。

2. 规格

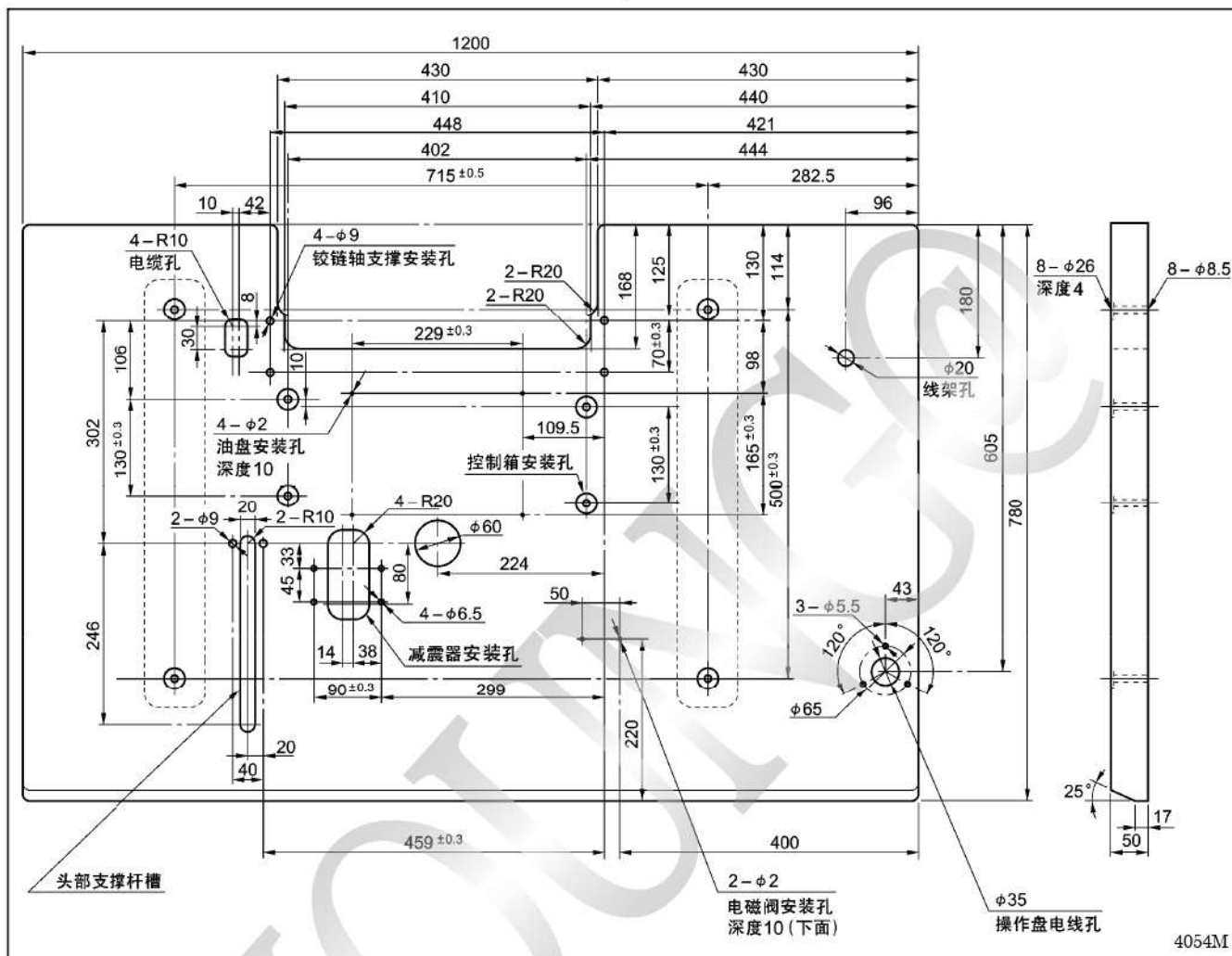
使用的缝纫机	平缝花样缝缝机(带大旋梭)
线迹形式	单针平缝
最高缝纫速度	2,700 sti/min
缝纫尺寸(X×Y)	最大 300×200mm
送布驱动方式	间歇送布(脉冲马达驱动)
针迹节距	0.05~12.7mm
针数	内存 500,000 针(※1)
最大针数	20,000 针(1 个程序)
存储可能缝纫的数据	内存: 512 种类(※1), CF 卡: 900 种类
抬压脚方式	空压式
压脚上升量	最大 30mm
2 段压脚	左右一体式压脚
间歇压脚上升量	22mm
间歇压脚行程	2~4.5mm, 4.5~10mm 或 0 (出厂时 3mm)
使用的旋梭	半回转 2 倍旋梭(标准旋梭另买)
扫线装置	标准装备
切线装置	标准装备
数据存储方式	内存(快擦写存储器), CF 卡(32MB~2GB) 3.5 软盘 2HD/1.44MB, 2DD (※2)
用户程序数	50
循环程序数	9
马达	AC 伺服马达 550W
质量	头部: 约 160kg, 操作盘: 约 0.6 kg 控制箱: 14.2~16.2 kg(根据电压不同而不同)
电源	单相 220V, 3 相 220V / 380V / 400V 500VA
空气压力	0.5 MPa 1.8 l/min

(※1) 根据各个程序的针数的不同, 能够存储的缝纫数据和针数也有所不同的。

(※2) 与 3.5 英寸软盘相关的供应部件已停用。(然而此机制仍能正常运行。)

3. 工作台板加工图

- 工作台板的厚度应达 50mm，能够承受缝纫机的重量，并经受得起缝纫机的震动。
- 如使用脚轮时，请使用能够承受缝纫机重量的脚轮。
- 请确认控制箱应离开机脚 10mm 以上。如果控制箱过于靠近机脚，则可能会引起缝纫机的误动作。



4. 安装方法

⚠ 注意

- ⊘ 请让受过培训的技术人员来安装缝纫机。
- ❗ 请委托购买商店或电气专业人员进行电气配线。
- ❗ 缝纫机质量约为 160kg。
请使用吊车或起重机等，来安装缝纫机和调整工作台面高度。
如果由人工来搬运的话，易引起腰痛等及产生受伤的原因。
- ⊘ 安装完成前，请不要连接电源。
如果误踩了脚踏开关，缝纫机动作会导致受伤。
- ❗ 如果使用带小脚轮的工作台，则应该固定小脚轮，使其不能移动。
- ⚠ 工作台的高度请使用 84cm 以下的工作台，如果工作台过高一旦失去平衡缝纫机倒下，是造成受伤或缝纫机损坏的原因。
- ⚠ 缝纫机头倒下或竖起时，请用双手进行操作。
另外在缝纫机头倒下的状态下，请不要用力压缝纫机。如缝纫机失去平衡，缝纫机头滑落到地上是造成受伤或缝纫机损坏的原因。
- ❗ 所有电缆应固定在离活动部件至少 25mm 以外处。
另外，不要过度弯曲电缆或用卡钉固定得过紧。
会引起火灾或触电的危险。
- ⊘ 必须接地。
接驳地线不牢固，是造成触电或误动作的原因。
- ❗ 请在机头上及马达上安装安全罩壳。

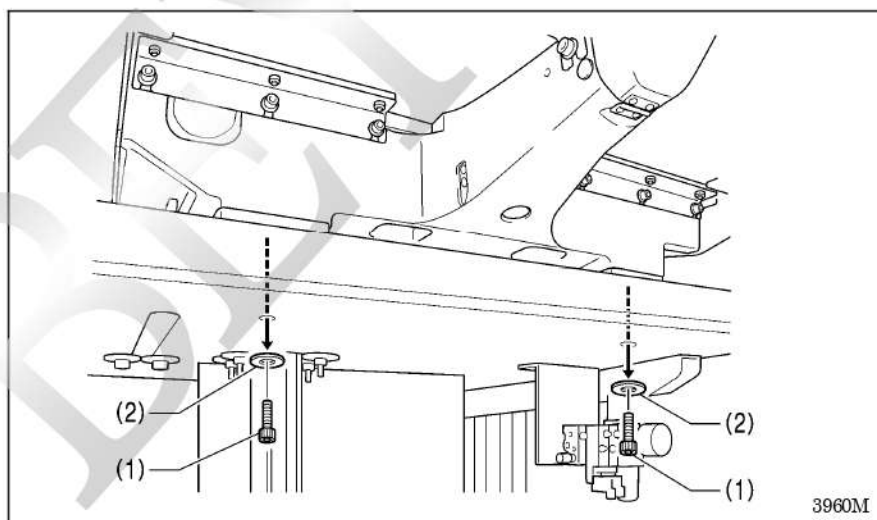
未安装在缝纫机工作台上的情况

请参考下一页的「4-2. 控制箱的安装方法」的顺序进行。

已安装在缝纫机工作台上后交货的情况

请按标题后的[1]到[15]项目号的顺序进行。

4-1. 头部固定用螺栓的拆除方法 [1]



对于缝纫机已安装在工作台上后交货的规格，先将头部固定用螺栓(1)[2个]和垫圈(2)[2片]拆下。

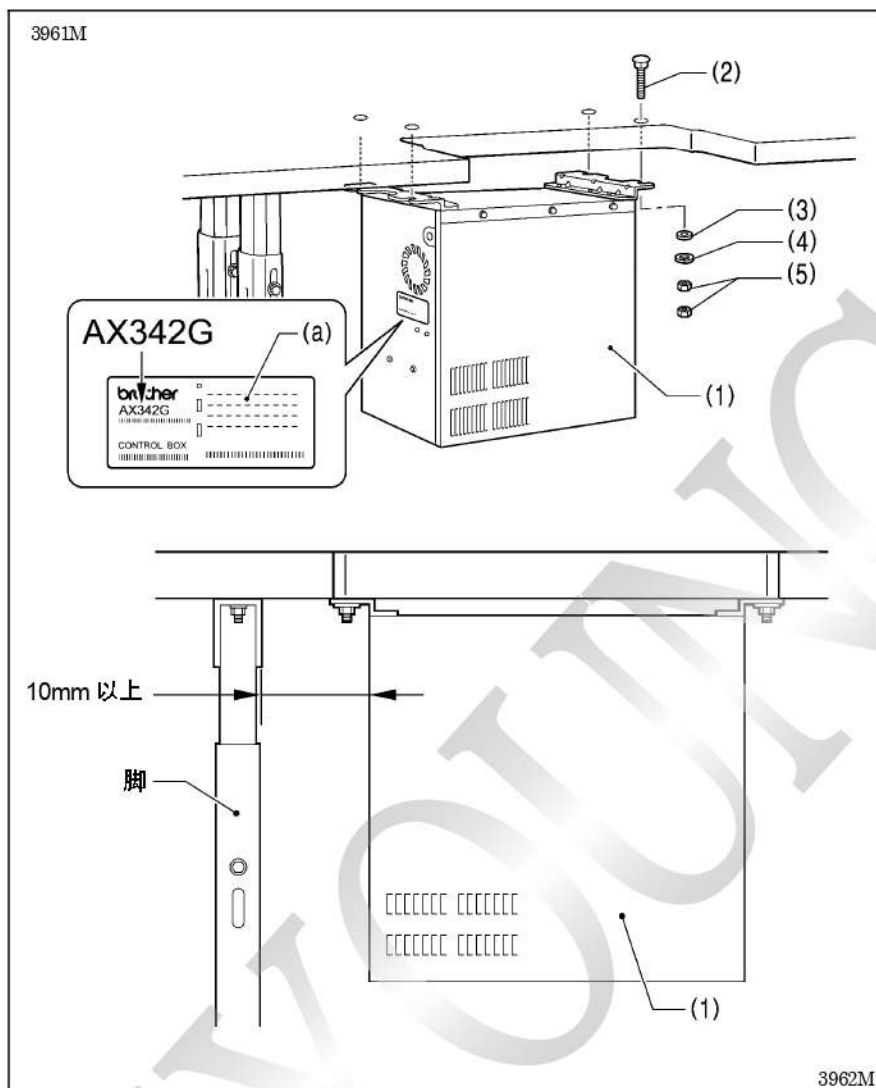
4-2. 控制箱的安装方法 [2]

! 注意

因为控制箱很重，安装工作必须由两人以上来完成。

另外，请注意不可使控制箱滑落。

会砸伤自己的脚以及会造成控制箱故障的原因。



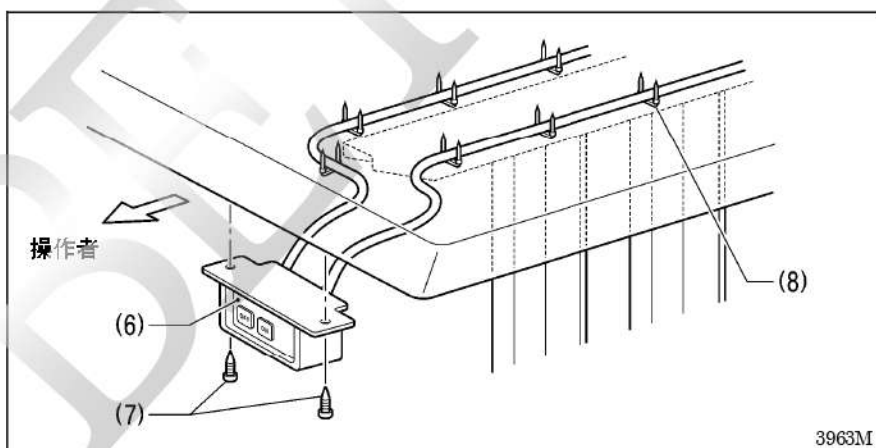
在安装前请先确认控制箱(1)上的型号板(a)上的机种名称及表示缝纫机BAS-342G用的控制箱<AX342G>。

* 如果缝纫机已安装在工作台上时，倒下缝纫机头。
(具体参考「4-5. 缝纫机头的倒下及竖起的方法」)

- (1) 控制箱
- (2) 螺栓[4个]
- (3) 垫圈[4片]
- (4) 弹簧垫圈[4片]
- (5) 螺母[8个]

[注意]

请确认控制箱(1)应安装在离台脚10mm 以上处。控制箱(1)离台脚太接近的话，易使缝纫机产生错误动作。

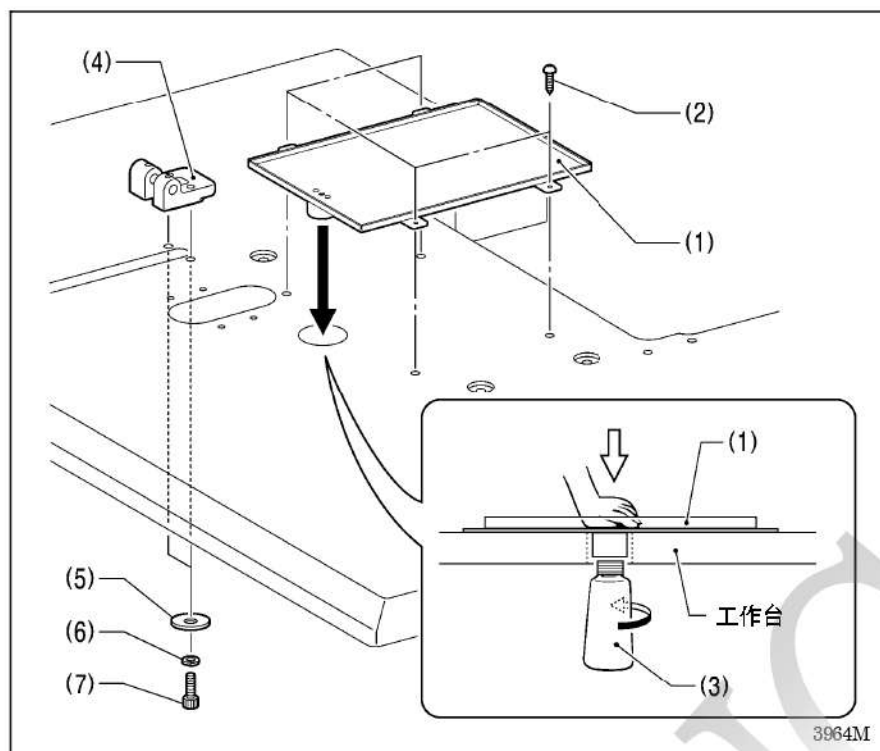


- (6) 电源开关
- (7) 木螺钉[2个]
- (8) U形卡钉[7个]

[注意]

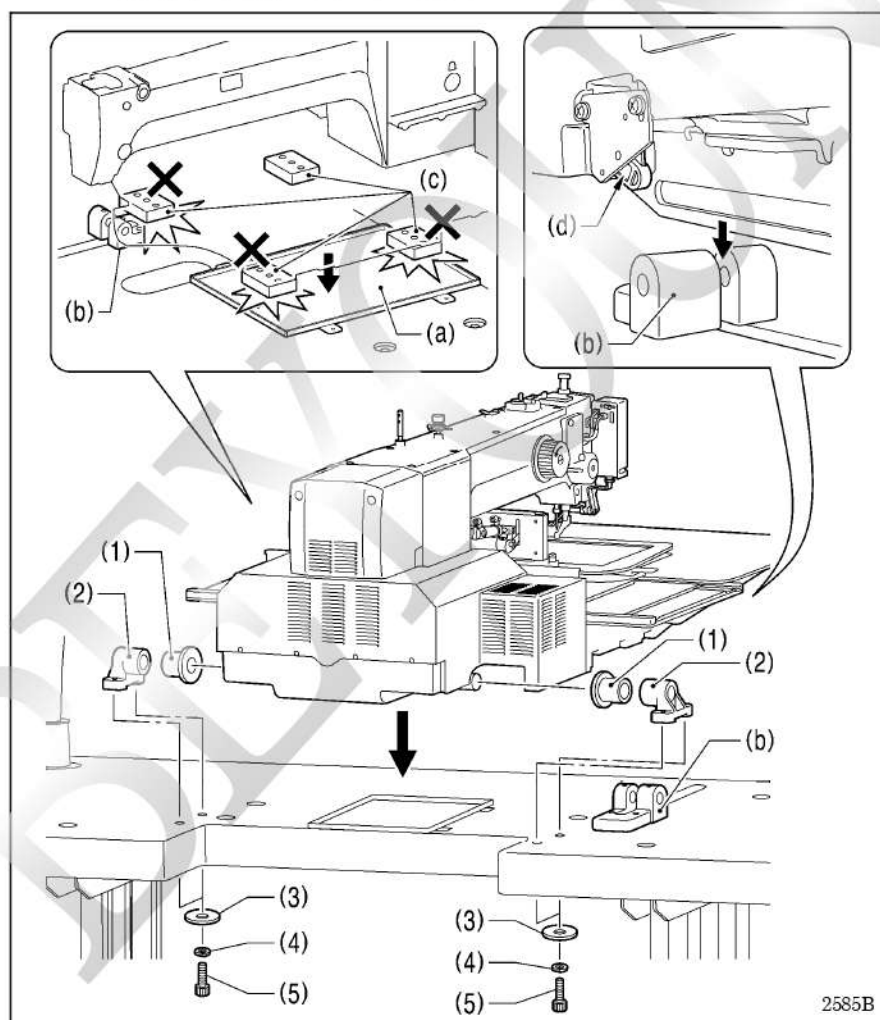
请注意钉入U形卡钉(8)时，不可穿通电线，或钉破电线。

4-3. 油盘和缝纫机头部支撑座的安装方法



- (1) 油盘
- (2) 木螺钉[4个]
- (3) 油壶
- (4) 头部支撑座
- (5) 垫圈[2片]
- (6) 弹簧垫圈[2片]
- (7) 螺栓[2个]

4-4. 缝纫机头部的安装方法



1. 将缝纫机安装到工作台上。

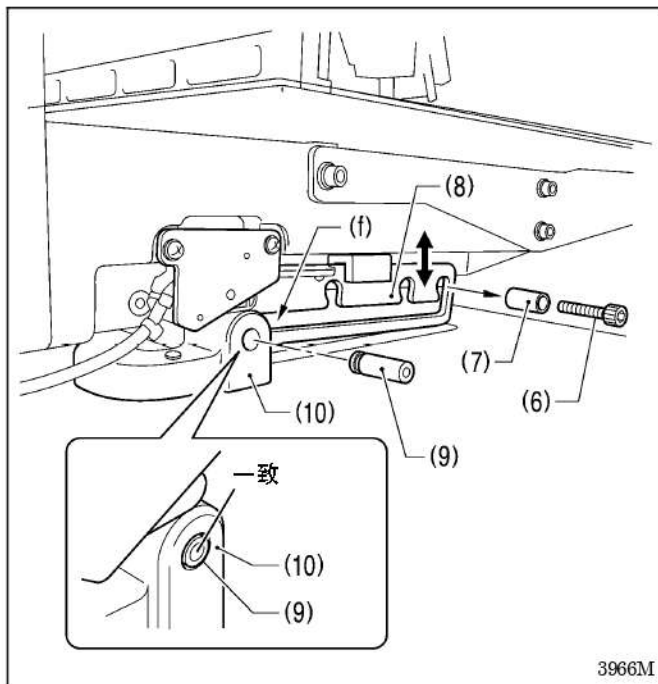
【注意】

- 请使用吊车或起重机等，来安装缝纫机。
- 将缝纫机头部放到工作台上时，请注意下列事项。
 - ！ 缝纫机头部和工作台之间不可夹住电缆线之类。
 - ！ 不可将缝纫机头部的防震垫(c)撞到或放到油盘(a)及缝纫机头部支撑座(b)的上面。
 - ！ 安全开关杆的侧面(d)不可撞到缝纫机头部支撑座(b)。

- (1) 橡皮轴套[2个]
- (2) 铰链轴支架[2个]
- (3) 垫圈[4片]
- (4) 弹簧垫圈[4片]
- (5) 螺栓[4个]

(下一页继续)

4. 安装方法



2. 缝纫机安装到工作台上后，拆下螺栓(6)和垫圈(7)。

* 取下的螺栓(6)和垫圈(7)在固定头部支撑杆(8)时还要使用的，所以必须妥善保管。

3. 头部支撑杆轴(9)穿过头部支撑座(10)的孔和头部支撑杆(8)的槽(f)，并一直压到和头部支撑座(10)的表面一致为止。

* 如果头部支撑杆轴(9)不能穿进头部支撑杆(8)的槽(f)时，可将头部支撑杆(8)的一端进行上下移动后，再穿入头部支撑杆轴(9)。

4-5. 缝纫机头的倒下及竖起的方法

⚠ 注意



缝纫机头倒下或竖起时，请用双手进行操作。

另外在缝纫机头倒下的状态下，请不要用力压缝纫机。如缝纫机失去平衡，缝纫机头滑落到地上是造成受伤或缝纫机损坏的原因。



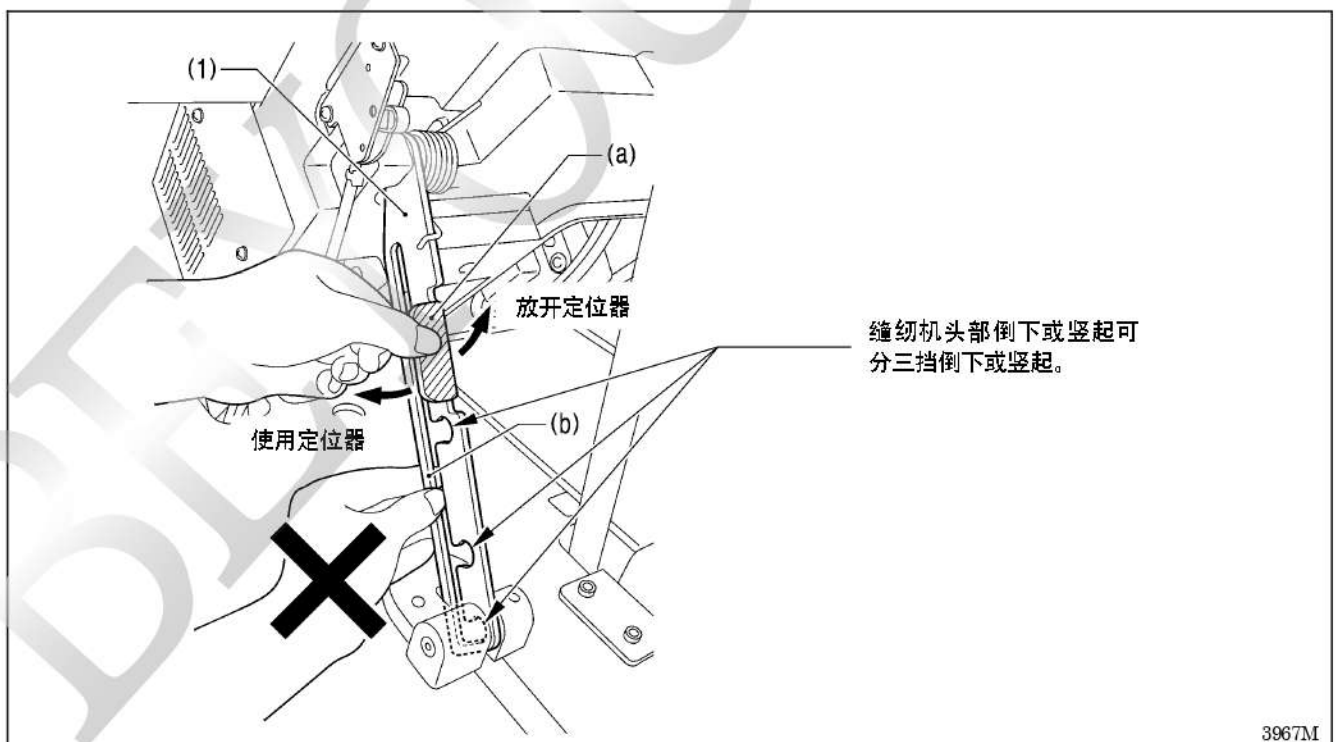
缝纫机头倒下时，必须使用头部支撑杆(1)的定位器。

如果不使用定位器，缝纫机自动复位造成夹伤手指等的原因。

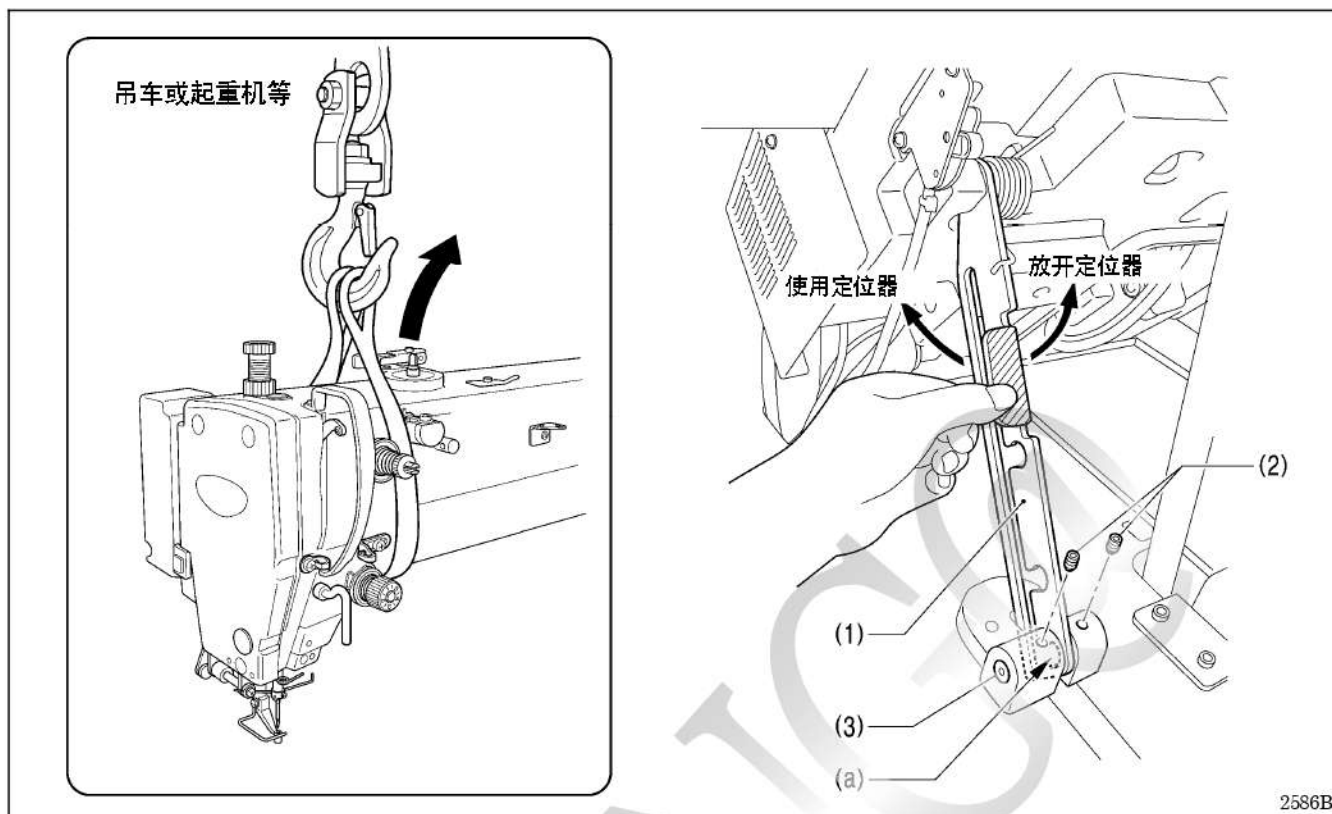


放开定位器时，请一定要抓住捏手部(a)。

如果捏住(b)部的话，缝纫机头部竖起时头部支撑杆(1)和工作台会夹住手指，成为受伤的原因。



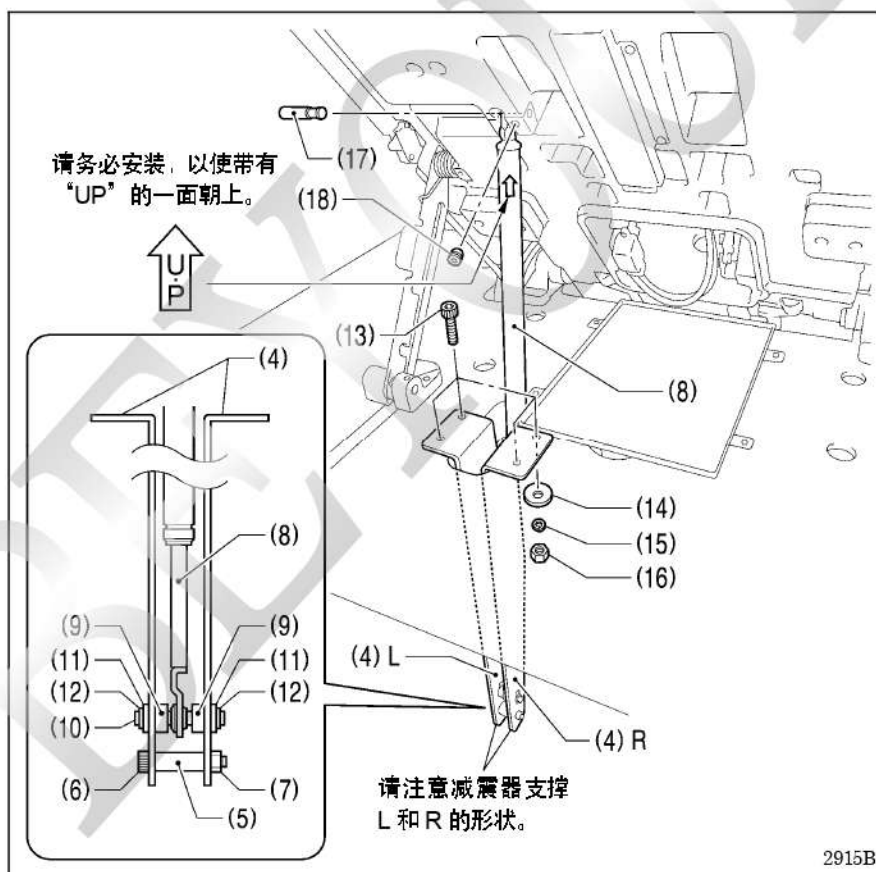
4-6. 减震器的安装方法



1. 倒下缝纫机头部，并使用头部支撑杆(1)将其固定在定位器(a)的位置。
(参考「4-5. 缝纫机头的倒下及竖起的方法」)

【注意】缝纫机头倒下时，请使用吊车或起重机等。

2. 拧紧螺钉(2)[2个]，固定头部支撑杆轴(3)。

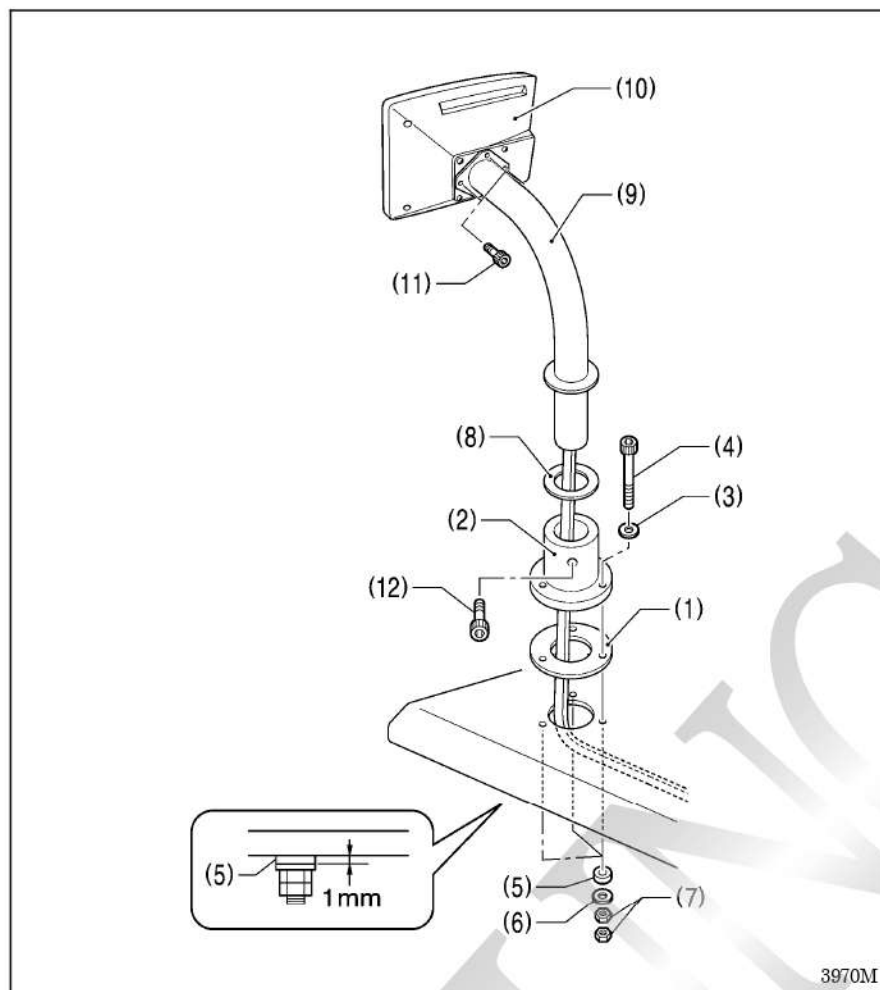


3. 安装减震器(8)。

- (4) 减震器支撑[L 和 R]
- (5) 垫圈
- (6) 螺栓
- (7) 螺母
- (8) 减震器
- (9) 轴套[2个]
- (10) 减震器轴 D
- (11) 垫圈[2片]
- (12) 挡圈 E[2片]
- (13) 螺栓[4个]
- (14) 垫圈[4片]
- (15) 弹簧垫圈[4片]
- (16) 螺母[4个]
- (17) 减震器轴 U
- (18) 螺钉

* 安装完减震器(8)后，将缝纫机头部慢慢竖起。
(参考「4-5. 缝纫机头的倒下及竖起的方法」)

4-7. 操作盘的安装方法 [3]



- (1) 防震垫 A
- (2) 操作盘底座
- (3) 垫圈(中) [3 片]
- (4) 螺栓 [3 个]
- (5) 防震垫 B [3 片]
- (6) 垫圈(大) [3 片]
- (7) 螺母 [6 个]

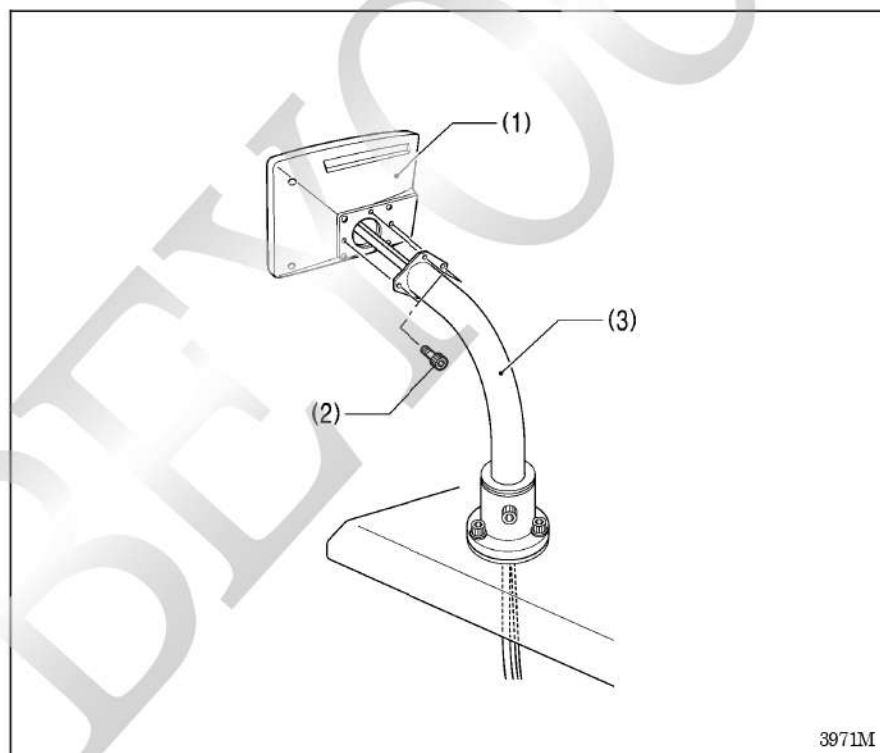
* 拧紧到防震垫 B(5) 的厚度为 1mm 左右为止。

- (8) 橡皮垫
- (9) 操作盘支柱
- (10) 操作盘

* 操作盘(10)的电线穿过操作盘支柱(9)通到工作台的下面。

- (11) 螺栓 [3 个]
- (12) 螺栓

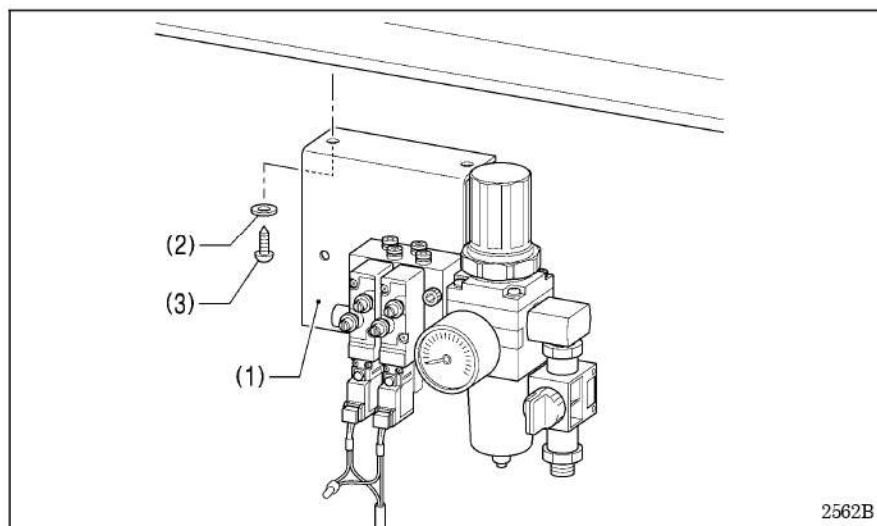
<对于缝纫机已安装在工作台上后交货的规格>



- (1) 操作盘
- (2) 螺栓 [3 个]

* 操作盘(1)的电线穿过操作盘支柱(3)通到工作台的下面。

4-8. 电磁阀门组的安装方法



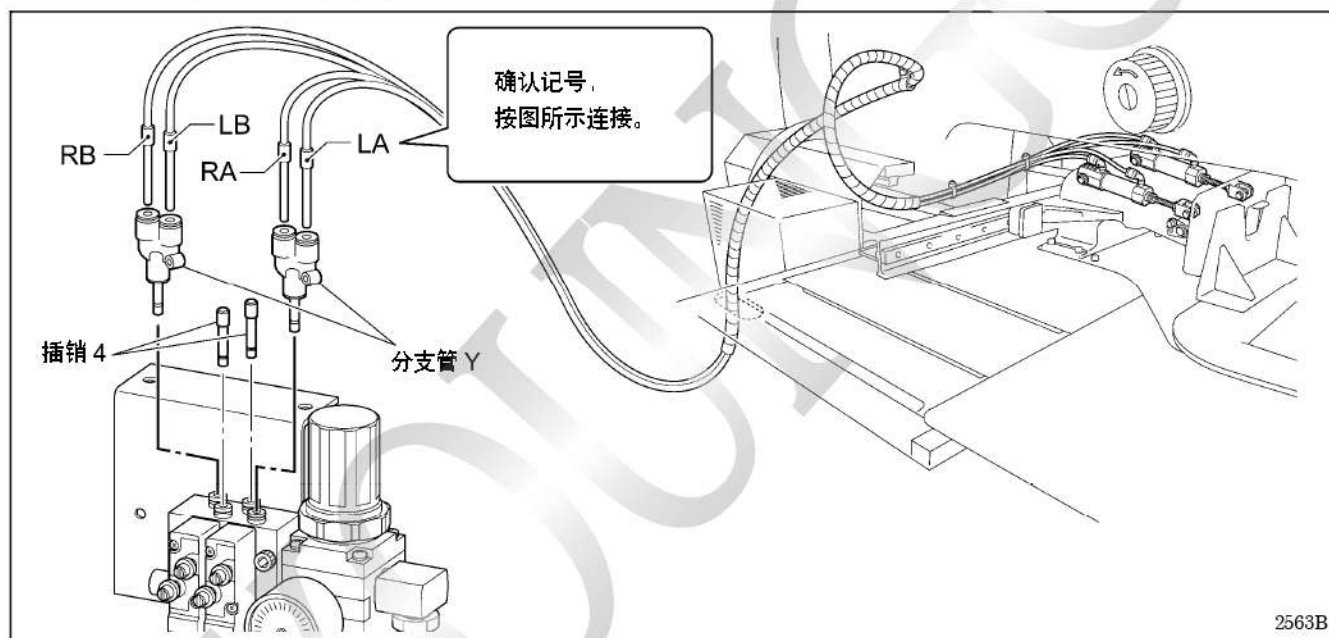
电磁阀门组安装在工作台的下面。(关于安装位置具体请参考「3. 工作台板加工图」)

- (1) 电磁阀门组
- (2) 垫圈[2 片]
- (3) 木螺钉[2 个]

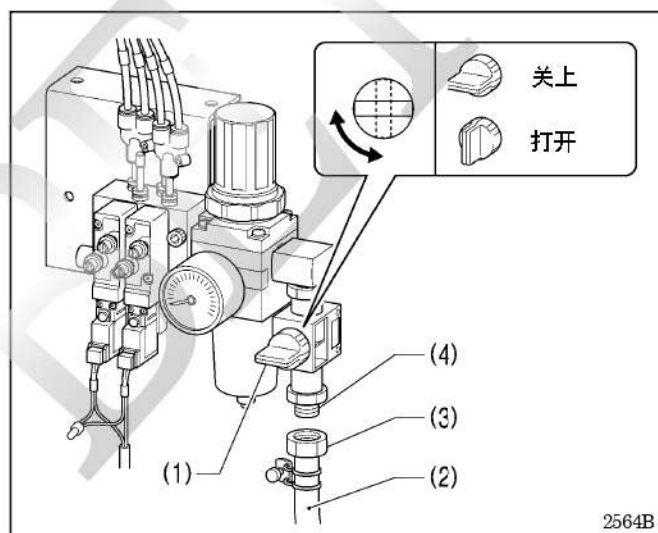
[注意]

电磁阀门组不可碰到控制箱和工作台脚。

4-9. 空气管的连接 [4]



4-10. 皮管的安装方法 [5]



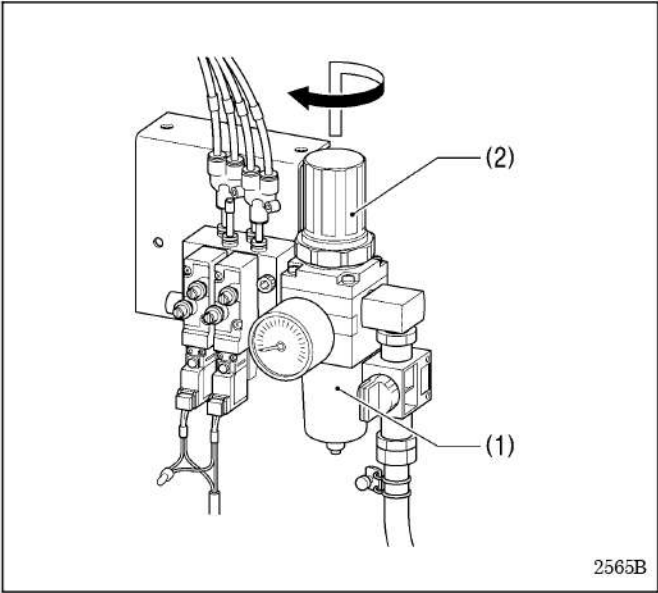
1. 关上空气阀(1)。
2. 回转皮管(2)前端的螺母(3)，将其与阀(4)连接。
3. 打开空压机侧的空气阀。
* 请确认阀(4)和皮管(2)的连接部处不可有空气泄漏。
4. 打开空气阀(1)。
(表上的指针按顺时针方向回转。)

[注意]

请将空气阀(1)慢慢打开。

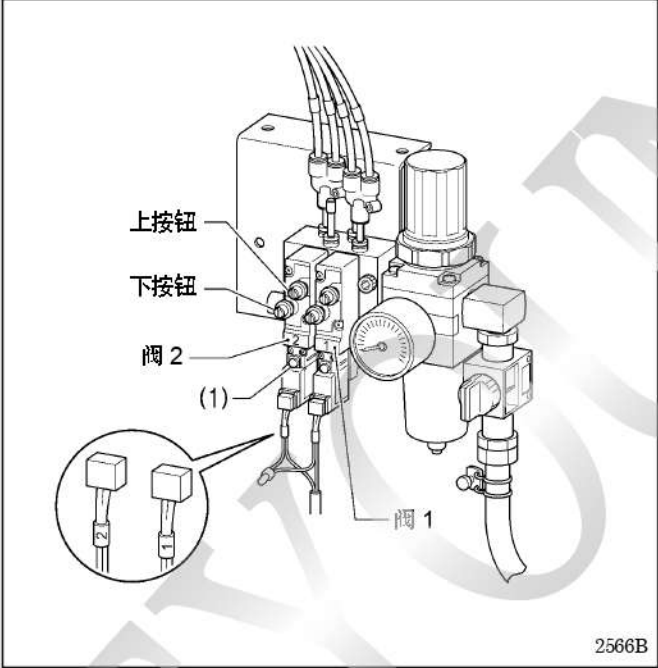
5. 调节空气压力。(参考下一页)

4-1 1. 气压的调节 [6]



先向上拉起调节器(1)的旋钮(2)后，回转旋钮(2)，将气压调整到0.5MPa。
调整完了后将旋钮(2)压下锁住。

4-1 2. 速度控制的调整 [7]



使用阀门的按钮可以调整压脚板的上升和下降的速度。

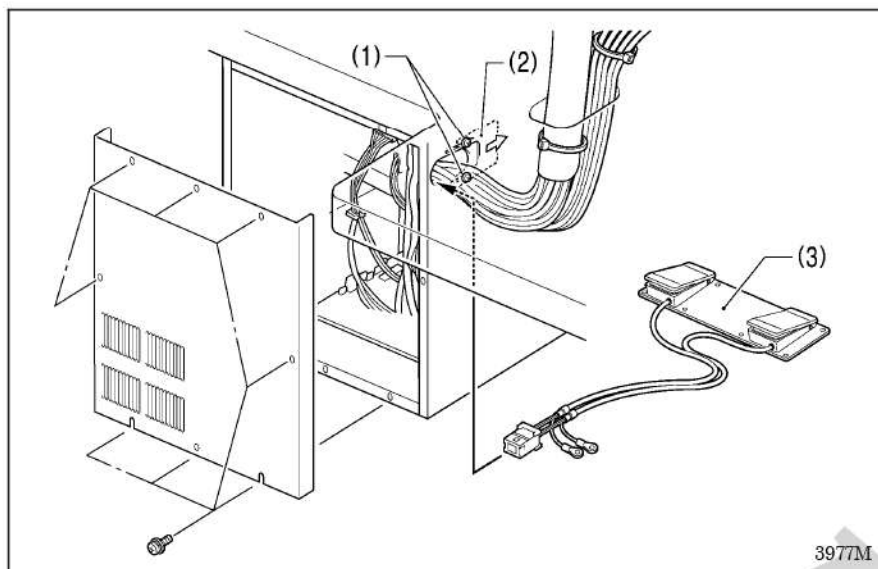
- 旋紧上按钮，压脚的上升速度会变缓慢。反之，如旋松上按钮，压脚的上升速度会变快。
- 旋紧下按钮，压脚的下降速度会变缓慢。反之，如旋松下按钮，压脚的下降速度会变快。

参考调整

阀 1	上按钮	旋紧
	下按钮	旋紧后，再旋回(旋松)8 圈
阀 2	上按钮	旋紧后，再旋回(旋松)5 圈
	下按钮	旋紧

在切断电源的状态下，如按下手动按钮(1)，能使压脚板运动。

4-1 3. 线缆的连接 [8]



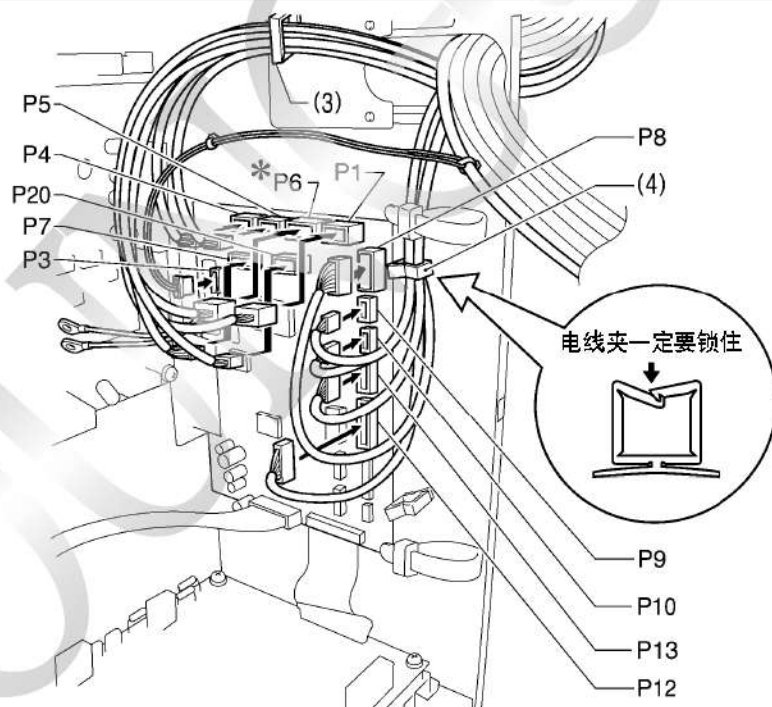
1. 取下控制箱的盖。
2. 拧松固定螺钉(1)[2个], 将电线压板(2)按箭头方向拉开。
3. 将缝纫机头部的电线束穿过工作台板上的孔, 和下述的电线一起穿入到控制箱上的孔中
 - 2 连脚踏开关(3)
 - 操作盘(地线不可穿过孔)
 - 电磁阀门组
4. 按下表所示将插头插入。

<主基板>

[注意]

- 请注意插头的插入方向, 要一直插到确实被锁定为止。
- 用捆束夹和电线夹固定电线时, 应注意不要过紧拉伸电线插头。

* 请一定要接地线。
(参考「4-14. 地线的连接」)

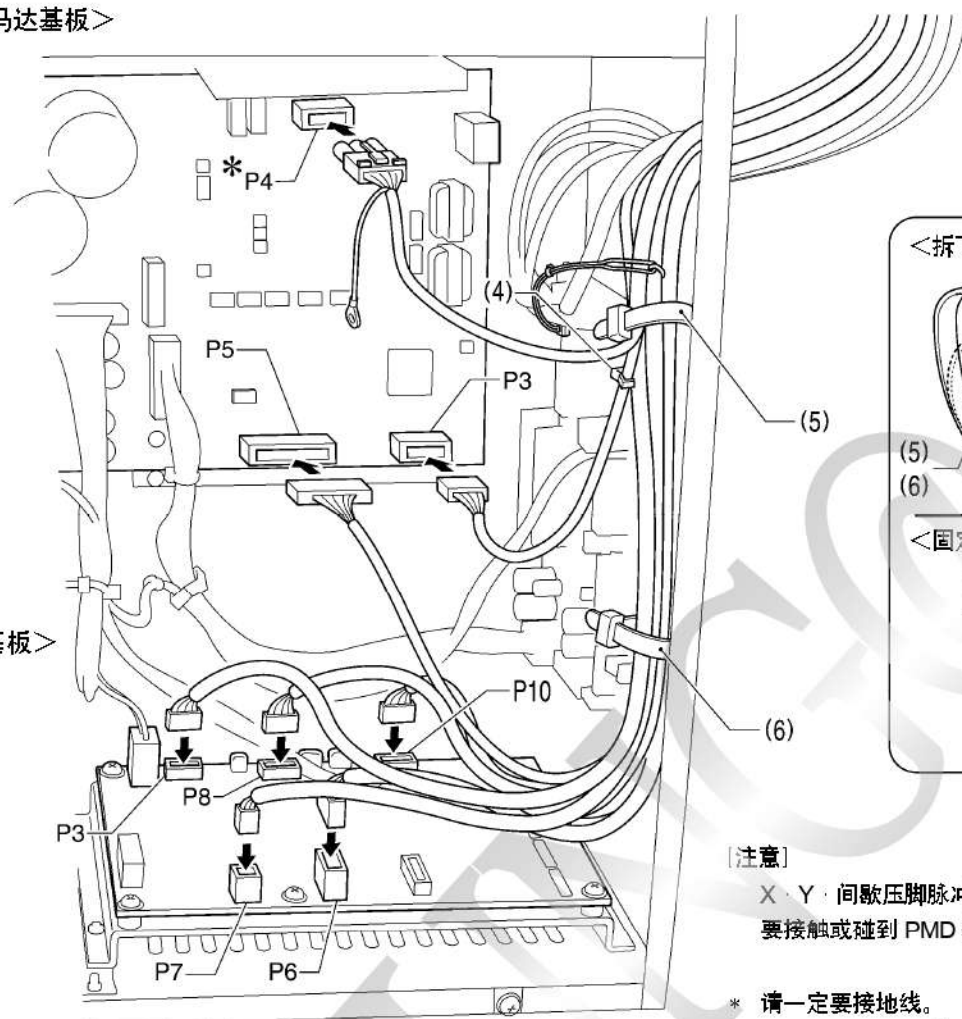


插头	主基板上的插座 位置表示	电线夹
X 脉冲马达编码器 5 针 白色	P20 (X-ENC)	(3)
Y 脉冲马达编码器 5 针 蓝色	P4 (Y-ENC)	(3)
间歇压脚脉冲马达编码器 5 针 黑色	P5 (P-ENC)	(3)
脚踏开关 10 针	P6 (FOOT)	(3)
操作盘 8 针	P1 (PANEL)	(3)
安全开关 3 针	P9 (HEAD-SW)	(4)
原点感应组件 12 针	P8 (SENSOR1)	(4)
暂停开关 6 针	P13 (HEAD)	(4)
阀门配线 12 针	P12 (AIR1)	(4)
程序中继电器 8 针	P7 (PRG)	(3)
风扇 6 针	P10 (SENSOR2)	(4)
4 针电磁阀选择线束	P3 (CUTTER)	-

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<电源马达基板>

<PMD 基板>



【注意】

X・Y・间歇压脚脉冲马达接线在配线时请不要接触或碰到 PMD 基板。

* 请一定要接地线。
(参考「4-14. 地线的连接」)

插头	电源马达基板上的插座 位置表示	电线夹 / 捆束夹
机头存储器 7 针	P3 (HEAD-M)	(4)
上轴马达 3 针	P4 (UVW)	(5)
同步器 14 针	P5 (SYNC)	(5), (6)
插头	PMD 基板上的插座 位置表示	捆束夹
压脚脉冲马达 4 针 黑色	P3 (PPM)	(5), (6)
切线电磁铁 6 针	P6 (SOL1)	(5), (6)
松线电磁铁 4 针	P7 (SOL2)	(5), (6)
Y 脉冲马达 4 针 蓝色	P8 (YPM)	(5), (6)
X 脉冲马达 4 针 白色	P10 (XPM)	(5), (6)

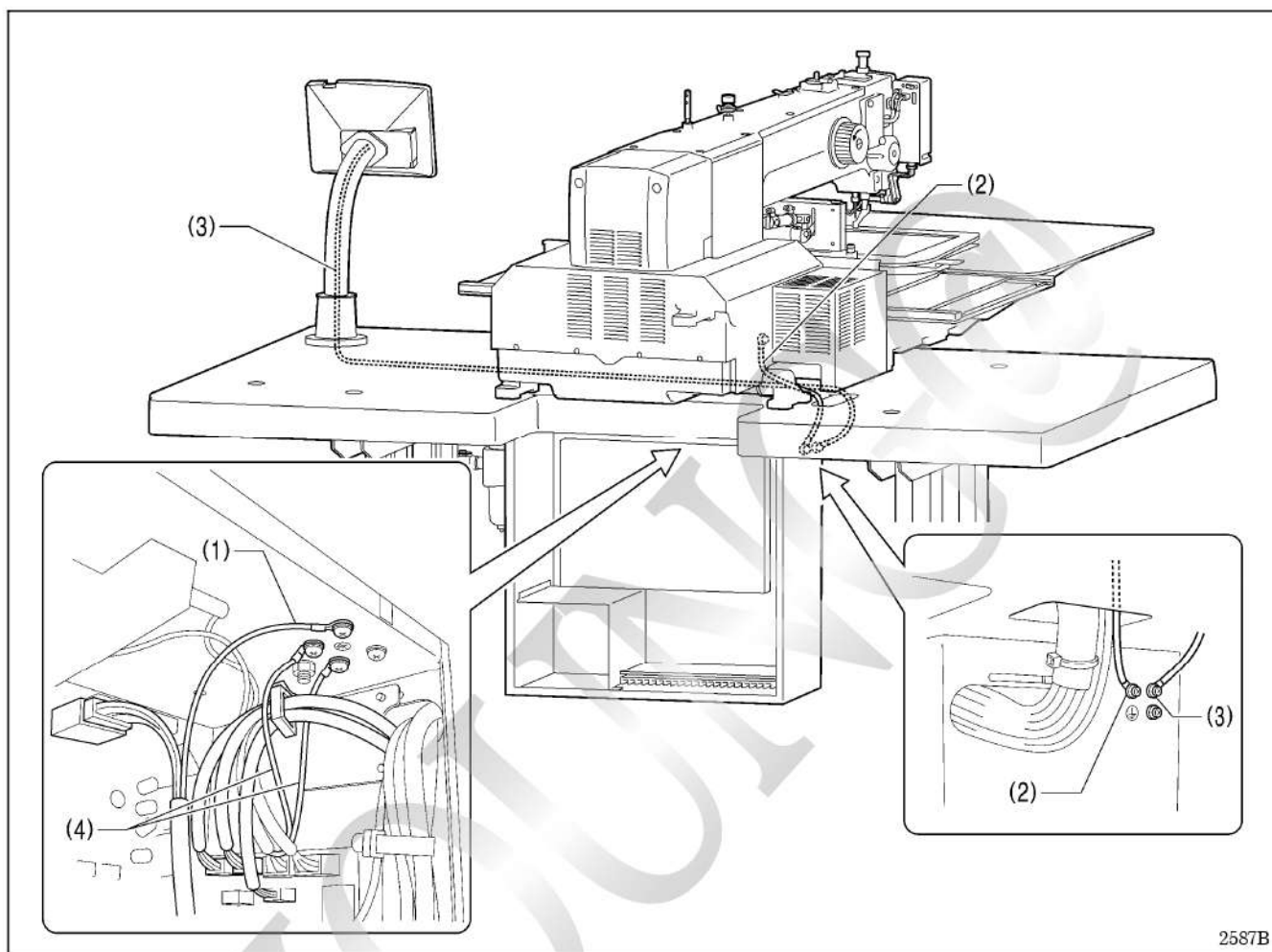
2568B

4-1 4. 地线的连接 [9]

! 注意

必须接地。

接驳地线不牢固，是造成触电或误动作的原因。

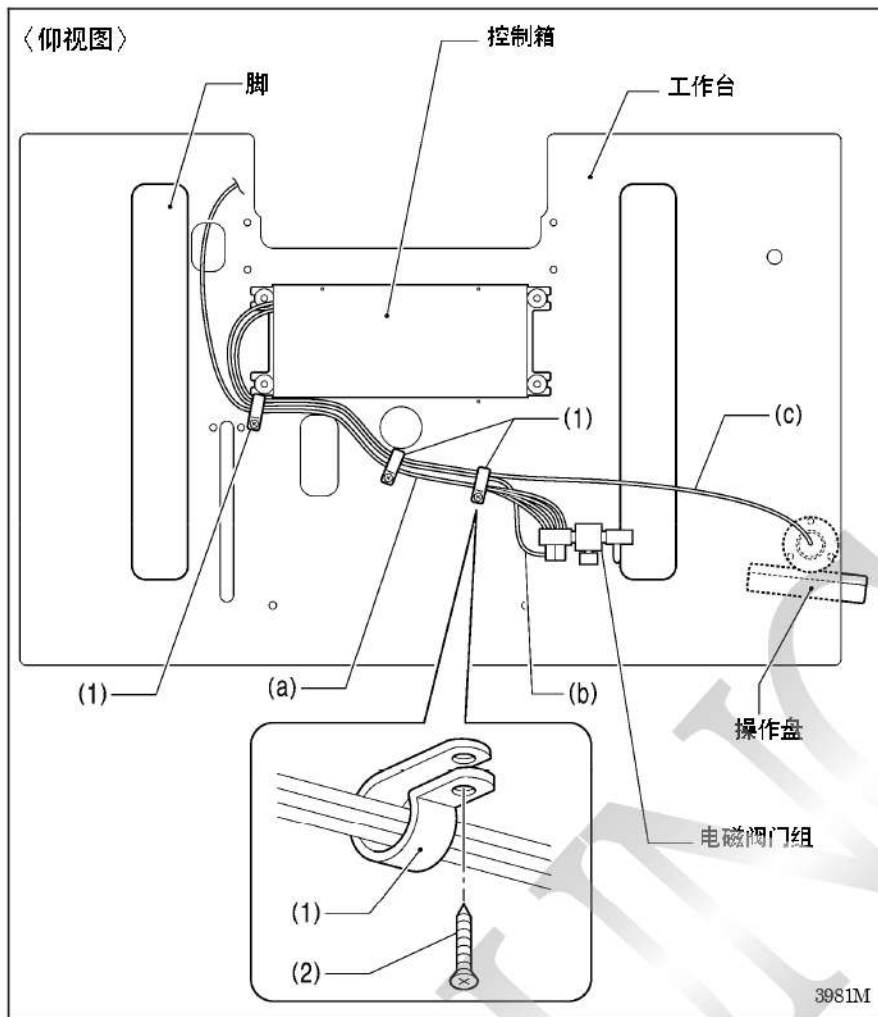


2587B

- (1) 上轴马达配线中的接地线
- (2) 来自缝纫机头的接地线
- (3) 来自操作盘处的接地线
- (4) 2 连脚踏开关配线中的接地线[2 根]

[注意] 为了确保安全，请确认地线应可靠接地。

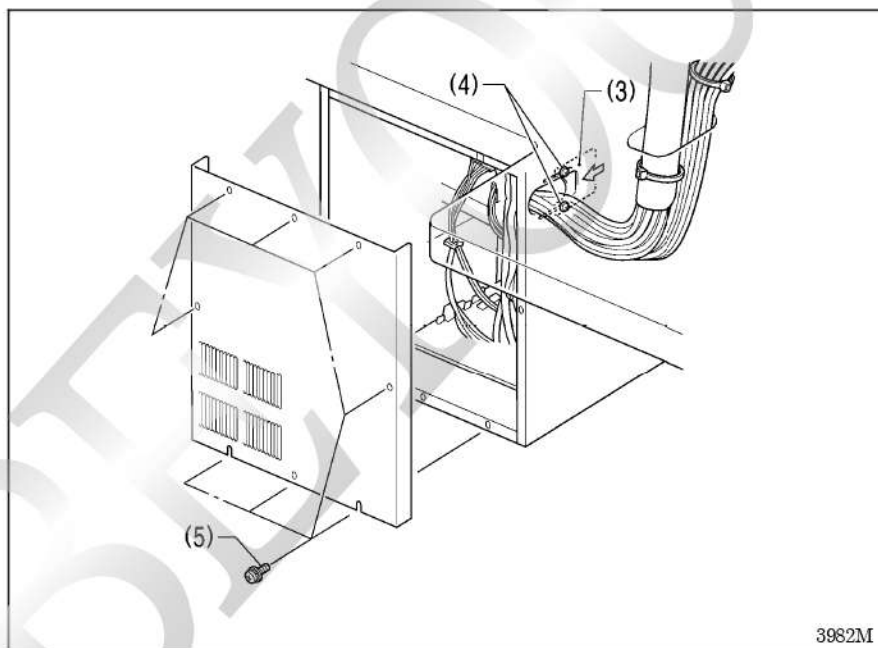
4-1 5. 线缆和空气管的固定方法 [10]



使用电线夹(1)[3个]将各空气管(a)、电磁阀门组的电线(b),操作盘电线(c)一起固定在工作台的下面。

(1) 电线夹[3个]

(2) 木螺钉[3个]



〈电线的确认〉

1. 慢慢地将缝纫机头部倒下。
(参考「4-5. 缝纫机头的倒下及竖起的方法」)
2. 确认各电线应没有被拉伸情况。
3. 将缝纫机头竖起, 复位。
4. 按箭头方向关闭电线压板(3), 然后拧紧固定螺钉(4) [2个]。

〔注意〕

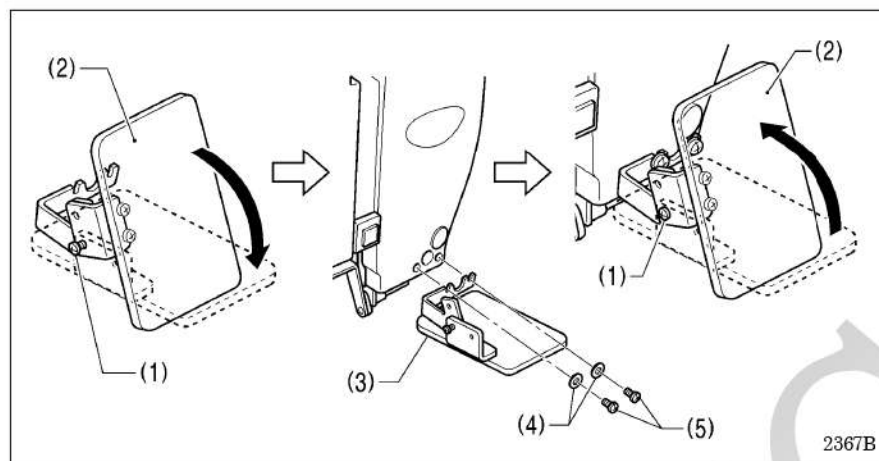
安全关闭电线压板(3), 以防止异物、昆虫或小动物进入控制箱内。

5. 安装上控制箱的盖, 使用固定螺钉(5) [8个] 拧紧。此时请确认电线类等应没有被盖子夹住。

4-1 6. 护眼板的安装方法 [11]

! 注意

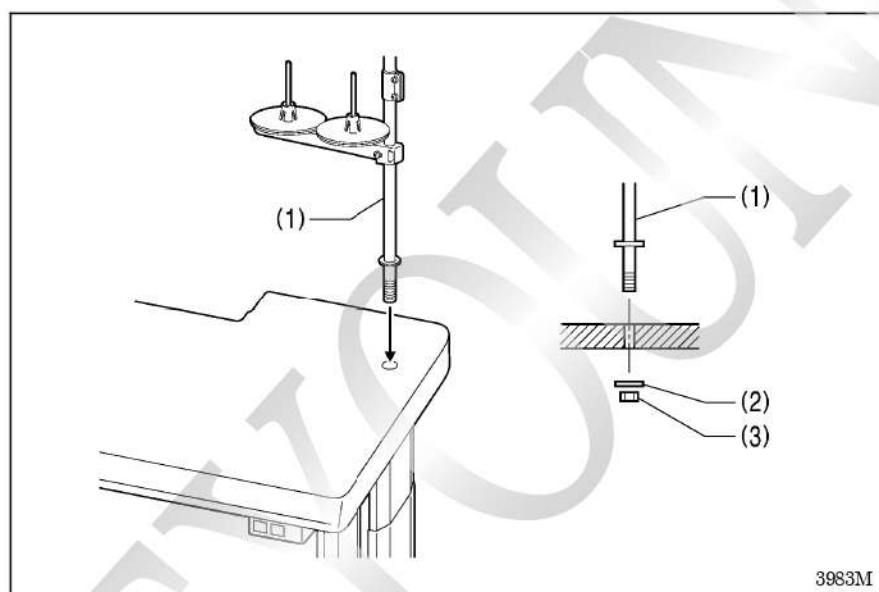
为了安全起见，在使用本缝纫机之前，请安装保护装置。
如果未安装这些安全装置就使用缝纫机，会造成人身伤害及缝纫机损坏。



- (1) 螺钉(拧松)
- (2) 护眼板(向前倾斜)
- (3) 护眼板组件
- (4) 垫圈 [2 片]
- (5) 螺钉 [2 个]

安装护眼板组件(3)之后，恢复护眼板(2)的原始角度，然后拧紧螺钉(1)妥善固定。

4-1 7. 线架的安装方法 [12]



- (1) 线架

[注意]

安装上垫圈(2)，请拧紧螺母(3)使线架完全不能移动。

4-1 8. 供油 [13]

! 注意

在加油未完成前，请勿插上电源。

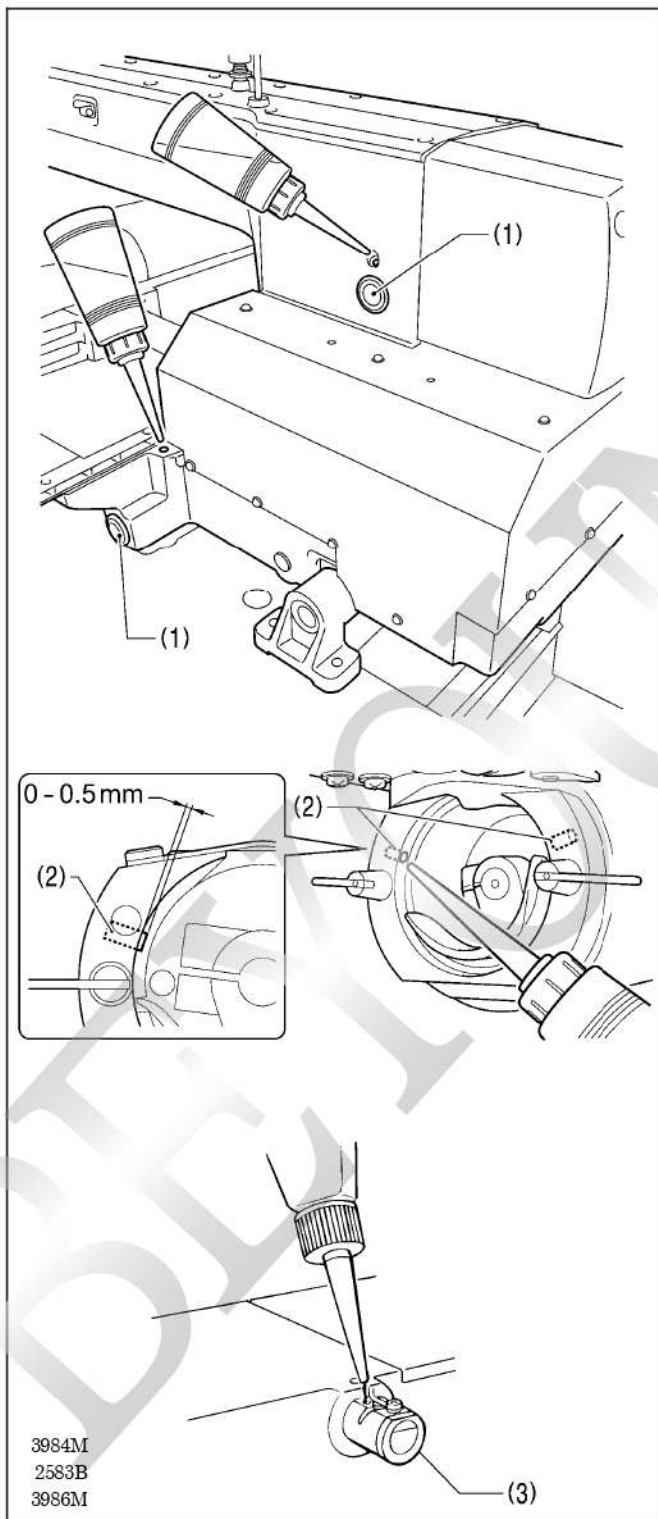
如果误踩脚踏开关，缝纫机动作会导致受伤。



使用润滑油及黄油时，务必戴好保护眼镜和保护手套等，以防润滑油及黄油落入眼中或沾在皮肤上，这是引起发炎的原因。

另外，润滑油及黄油不能饮用，否则会引起呕吐和腹泻。

将油放在儿童拿不到的地方。



· 第一次使用缝纫机或长时间未使用缝纫机时，必须要补充机油。

· 请使用兄弟公司指定的缝纫机润滑油（吉坤日矿日石能源的缝纫机润滑油 10N; VG10）。

* 如果难于买到，作为推荐机油请使用（Exxon Mobil 公司的 ESSOTEX SM10; VG10）。

1. 向机壳侧面的油箱和底板侧面的油箱注油。

[注意]

当油面下降到油面指示窗(1)的 1/3 左右时，请务必加注机油。如果油面下降到油面指示窗(1)的 1/3 以下，则可能会成为机器烧伤等故障的原因。

2. 给大旋梭本体组件的 2 个孔注入机油，使毛毡(2)上含有微量的机油。

[注意]

· 正常情况下两片毛毡(2)应当从旋梭滑槽中突出 0 到 0.5mm。请注意在加润滑油时不要推入毛毡(2)。

· 如果大旋梭本体组件的毛毡(2)上没有机油，则可能会造成缝纫故障。

3. 如果使用冷却液槽(3)时，请在槽中注入硅油 (100mm²/s)。

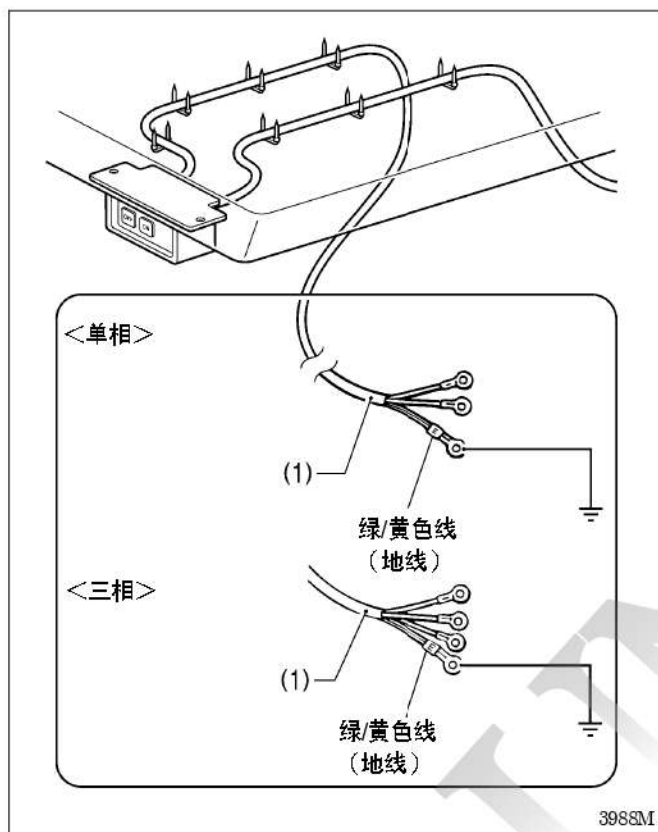
(冷却液槽(3)的使用方法参考「5-3. 面线的穿法」)

4-1 9. 电源线的连接 [14]

⚠ 注意

必须接地。

接驳地线不牢固，是造成触电或误动作的原因。



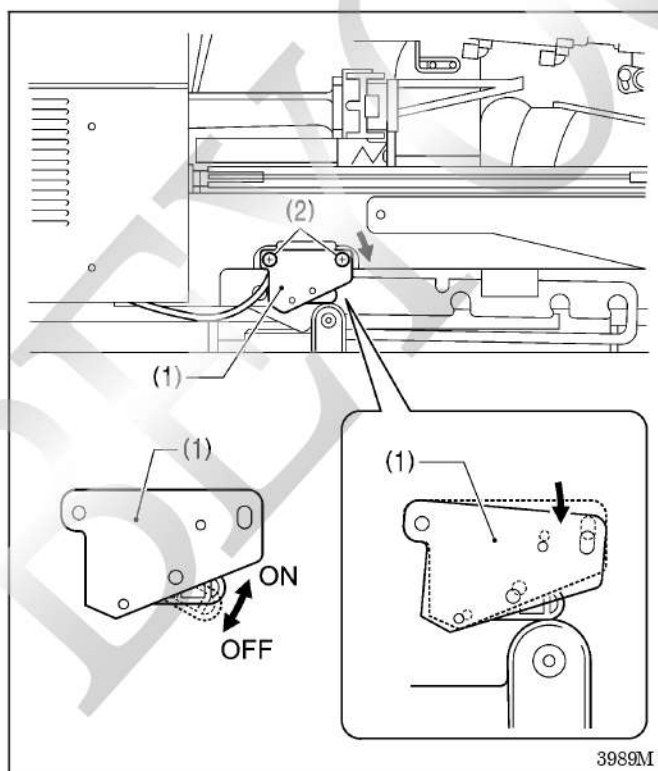
1. 将电源线(1)上加装适当的插头。(绿/黄色线是地线。)
2. 将电源插头插入有接地的 AC 插座。

* 控制箱内部使用的是单相。

[注意]

- 接驳地线不牢固，是造成触电或误动作以及基板等电装品故障的原因。
- 请不要使用延长线，会成为缝纫机错误动作的原因。

4-2 0. 安全开关的确认 [15]



1. 如果缝纫机头是倒着的，可慢慢地将缝纫机头竖起，复位。(参考「4-5. 缝纫机头的倒下及竖起的方法」)
2. 接通电源。
3. 确认操作盘上没有表示错误 No.。

<如果表示了错误 No.[E050]，[E051]，[E055]时>

如果安全开关(1)没有 ON 时会发生错误 No. [E050]，[E051]，[E055]。

请调整安全开关(1)的安装位置。

1. 关闭电源。
2. 松开螺钉(2)[2个]。
3. 在安全开关(1)的右侧被按下使得安全开关(1)变成 ON 的位置后，拧紧螺丝(2)[2个]。
4. 接通电源，确认是否已没有错误 No. 的表示。

5. 缝纫前的准备

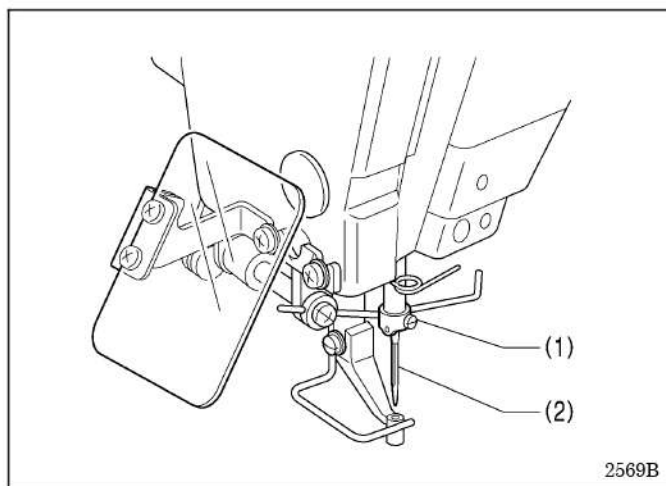
5-1. 机针的安装方法

⚠ 注意



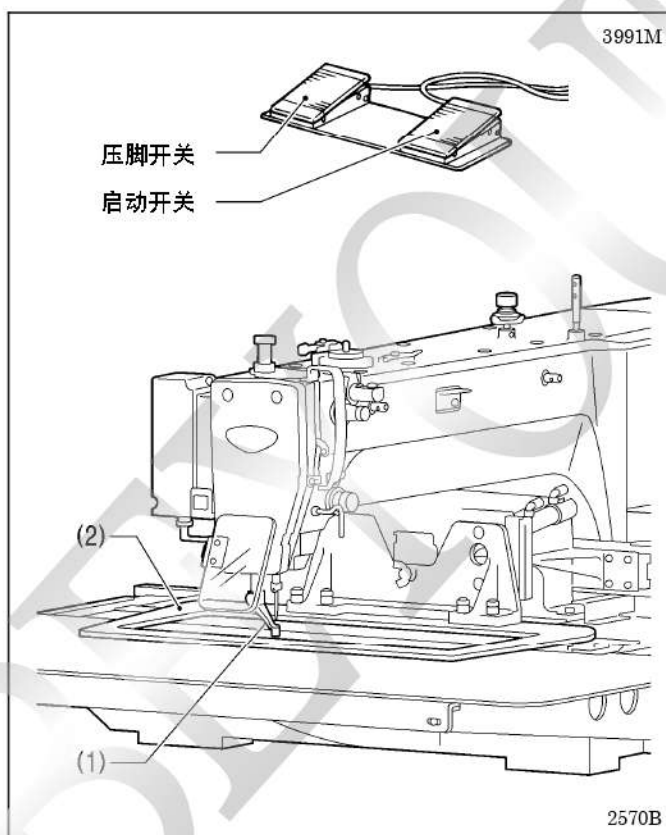
安装机针时，请切断电源。

当误踩下脚踏开关时，缝纫机动作会导致人员受伤。



1. 松开螺钉(1)。
2. 机针(2)的长槽朝着正面，笔直插到底并用力拧紧螺钉(1)。

5-2. 2 连脚踏开关的操作方法



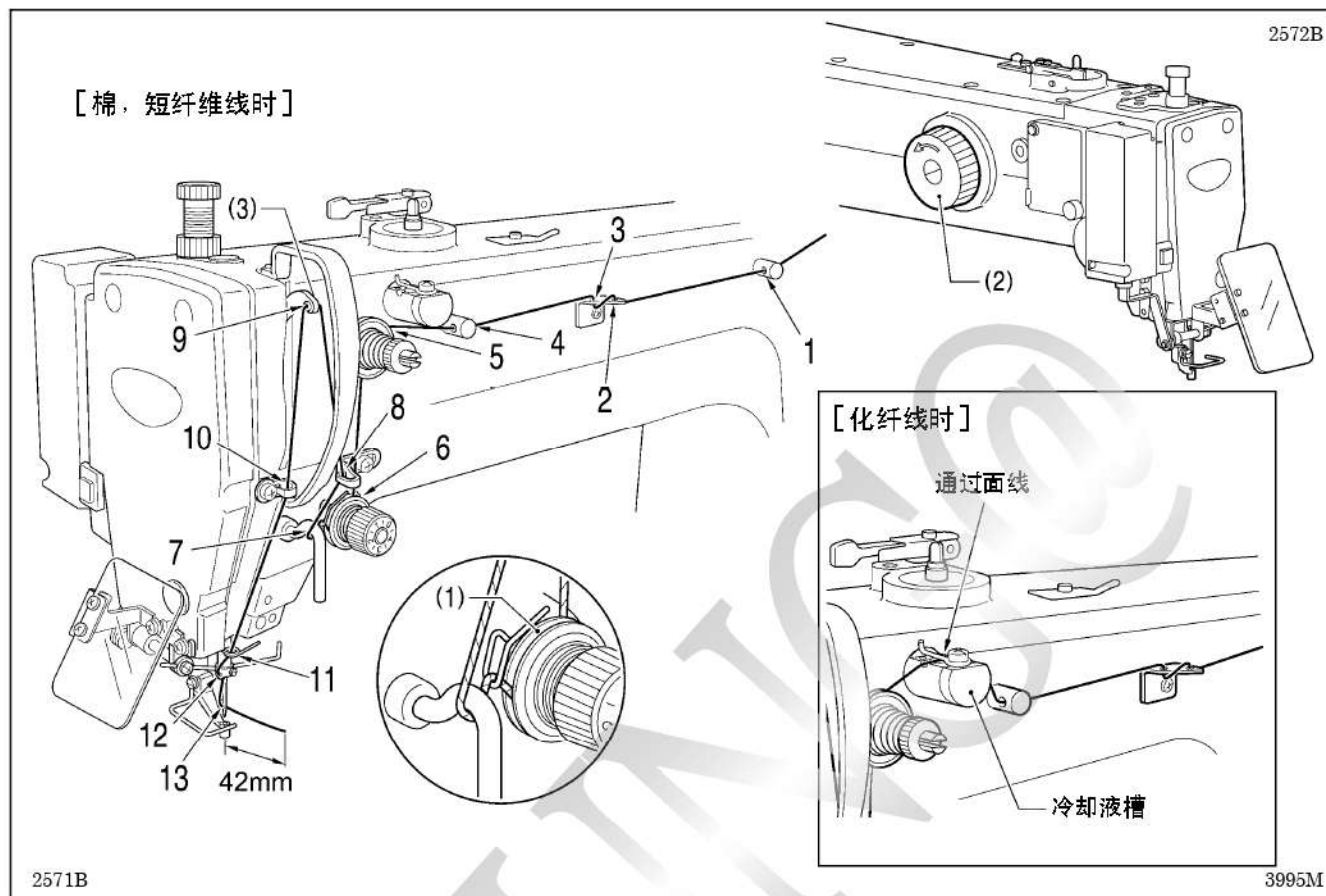
当踩下压脚开关(左侧)时压脚(1)和压脚板(2)下降，当踩下启动开关(右侧)时缝纫机启动。

* 压脚板(2)的放下方法，使用存储器开关 No. 002 可以改变。(参考「7-3. 存储器开关一览表」)

5-3. 面线的穿法

请按下图所示序号正确地穿面线。

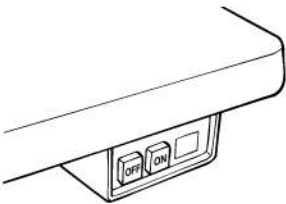
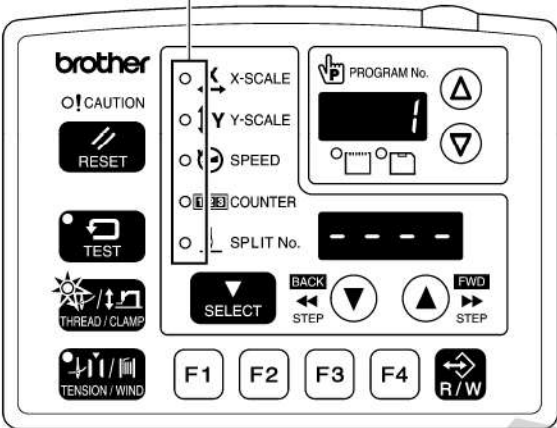


*如果在穿线模式下进行穿线时，夹线盘(1)将变成打开状态，缝线就更加便于穿过。(参考下一页)



- 回转缝纫机手轮(2)，请将挑线杆(3)调到最高点后, 进行穿线。
(容易穿线，且可防止开始缝纫时的脱线。)
- 在线穿过机针后，从机针孔处留出线的长度为42mm左右。
如留出的线过长有可能会打结。

<穿线模式>

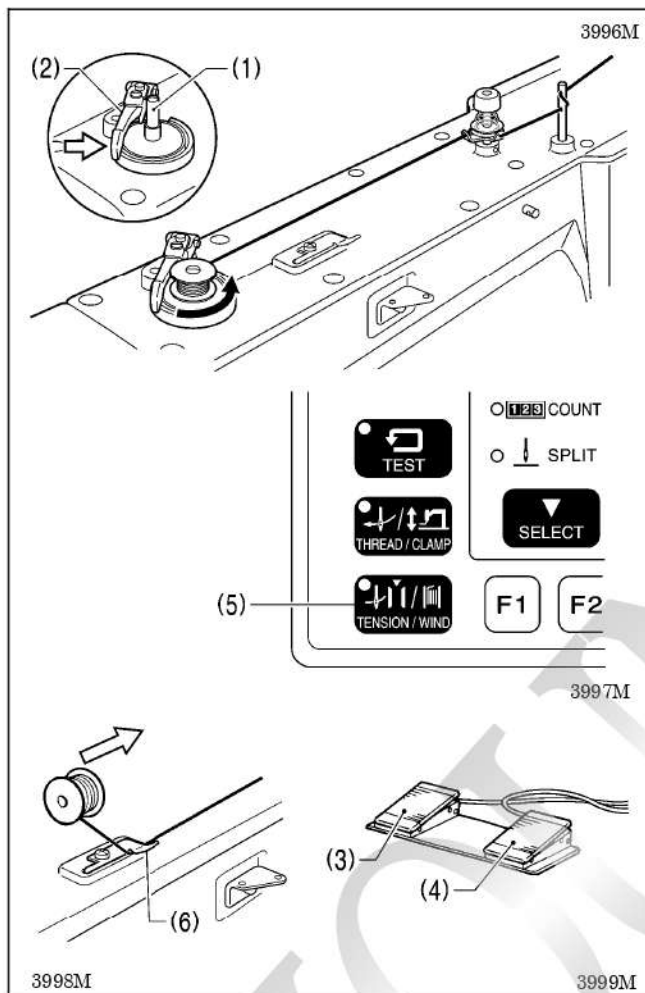
在穿线模式下，即使踩下脚踏开关，缝纫机也不会启动，所以非常安全。

1	 <p>接通电源。</p>	4421Q
2	<p>全部熄灭</p>  <p>按下 THREAD/CLAMP 键。</p>  <ul style="list-style-type: none"> · 降下压脚板和间歇压脚。 · 夹线盘呈打开状态。 <p>THREAD/CLAMP 灯点亮 菜单灯熄灭</p>	4427Q
3	<p>进行穿线</p> <ul style="list-style-type: none"> · 过 5 分钟后蜂鸣器鸣响，夹线盘关闭。 <p>* 如果存储器开关 No. 564 设定为[2]时，过 1 分钟后蜂鸣器鸣响，夹线盘关闭。</p>	
4	<p>穿线模式结束</p>  <p>按 THREAD/CLAMP 键。</p> <ul style="list-style-type: none"> · 压脚板和间歇压脚返回到进入穿线模式前的状态。 <p>THREAD/CLAMP 灯熄灭</p>	

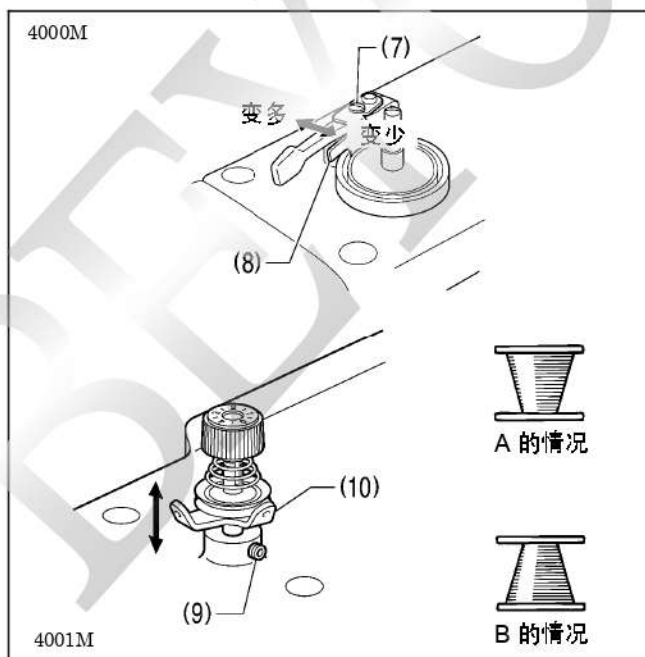
5-4. 底线的绕线方法

! 注意

在卷线过程中，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。



1. 将梭芯嵌入卷线轴(1)上。
2. 按图示进行穿线，将线在梭芯内绕几圈，然后压上梭芯压臂柄(2)。
3. 接通电源。
4. 先踩下压脚开关(3)，放下压脚板后，再踩下启动开关(4)。
(进行原点检出。)
5. 确认机针不碰到压脚板。
6. 再一次踩下压脚开关(3)，压脚板降下。
7. 然后一边按着 TENSION/WIND 键(5)，一边踩下启动开关(4)。
8. 缝纫机开始运转后放开 TENSION/WIND 键(5)，并继续踩着启动开关(4)直到绕线结束为止。
(如果在中途放开了启动开关(4)时，则请再次一边按着 TENSION/WIND 键(5)，一边踩下启动开关(4)，可重新开始绕线。)
9. 当绕线量达到一定的数量(梭芯外径的 80% ~ 90%) 时应停止绕线，梭芯压臂柄(2)将自动返回。
10. 取下梭芯，将线钩在切刀(6)上，朝箭头方向拉梭芯，将线割断。

**梭芯绕线量的调节**

拧松螺钉(7)，移动梭芯压杆(8)进行调节。

绕线不均匀的调节

松开螺钉(9)，上下移动卷线器夹线组件(10)进行调节。

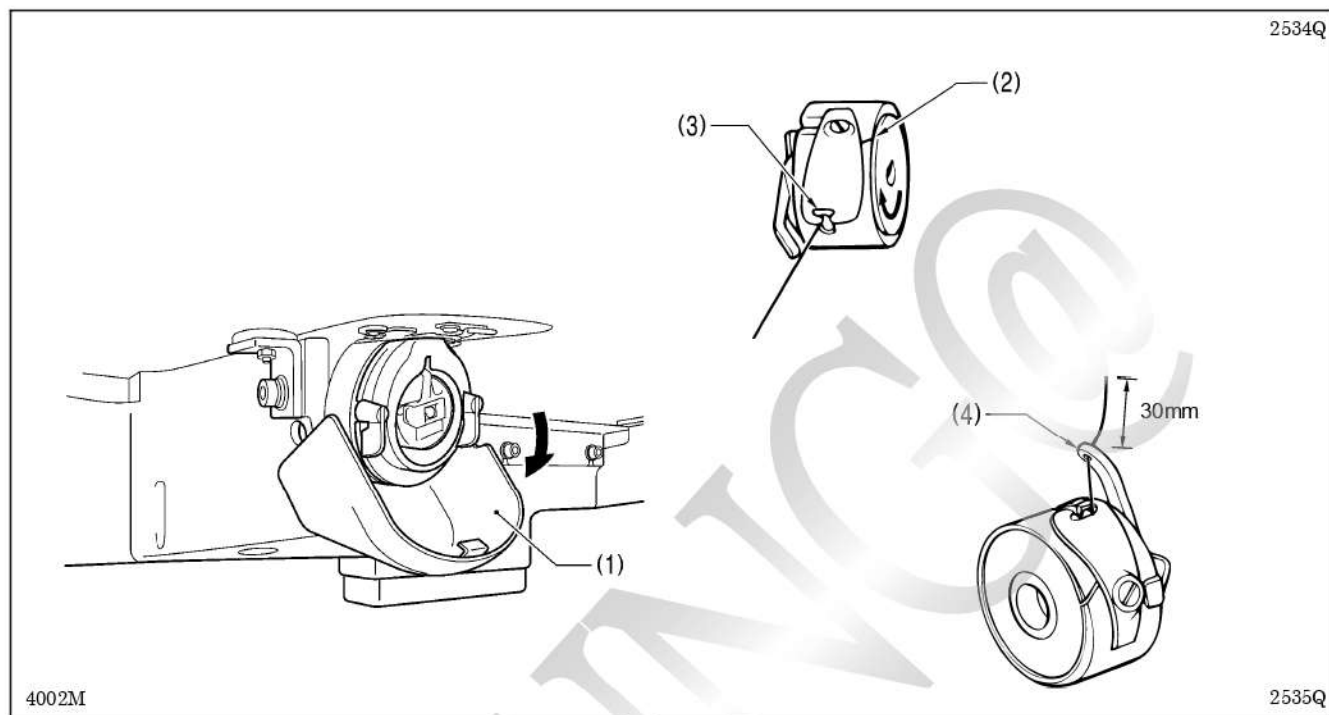
* A 的情况，将卷线器夹线组件(10)向下移动，B 的情况，正好相反，向上移动。

5 - 5. 梭芯套的装取方法

! 注意



在安装梭芯套时，请切断电源。
当误踩下脚踏开关时，缝纫机动作会导致人员受伤。



1. 向下拉大旋梭盖(1)将其打开。
2. 按底线向右卷绕的方向握住梭芯，然后将梭芯插入梭芯套。
3. 将底线穿过线槽(2)，然后从导线部(3)中拉出。
4. 当拉出底线后，检查梭芯是否按箭头方向转动。
5. 将线穿过套柄上的线孔(4)，使线端长出 30 mm 左右。
6. 拿住梭芯套上的抓手，将梭芯套插入旋梭。

5-6. 缝纫张力

参考线张力

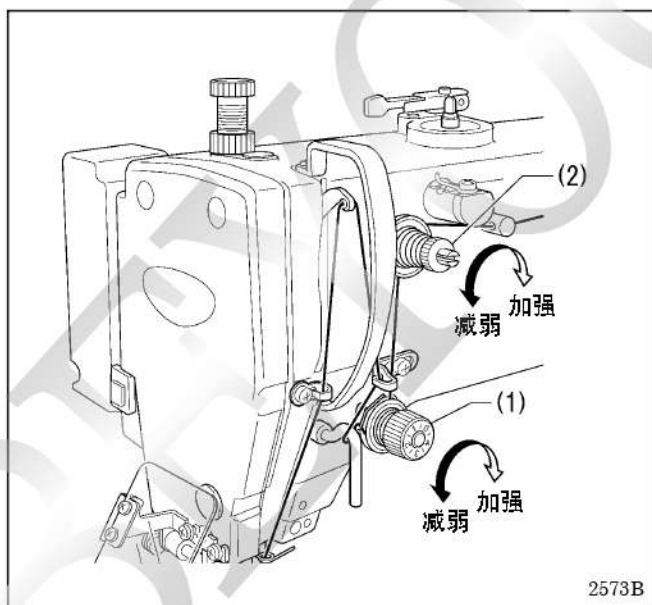
面线	相当#20号
底线	相当#20号
面线的张力(N)	1.4~1.8
底线的张力(N)	0.3~0.4
预张力(N)	0.2~0.4
机针	DP×17#19

5-6-1. 底线的张力



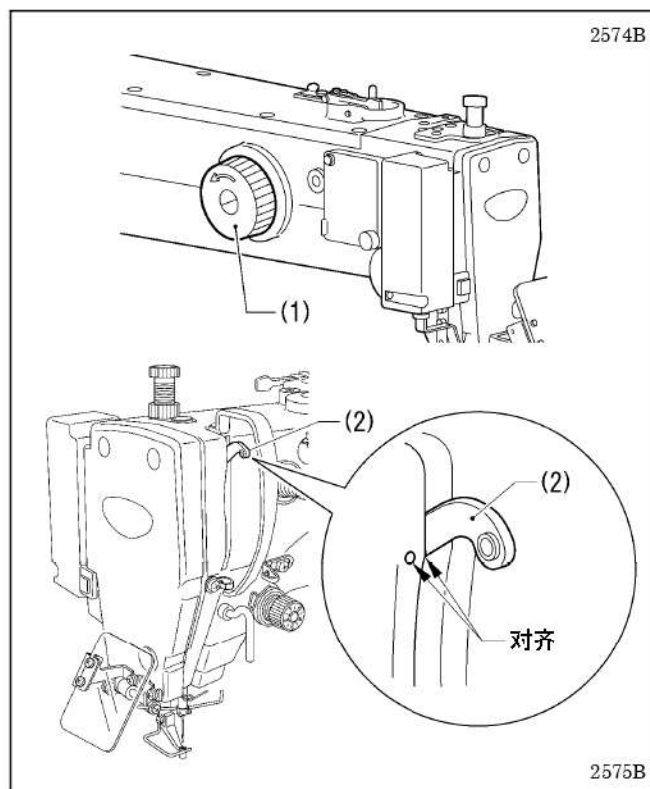
转动调节螺钉(1)来调节底线的张力，将张力调节到当用手握住线端时梭芯套靠它的自重不会滑落的程度，尽可能调弱张力。

5-6-2. 面线的张力



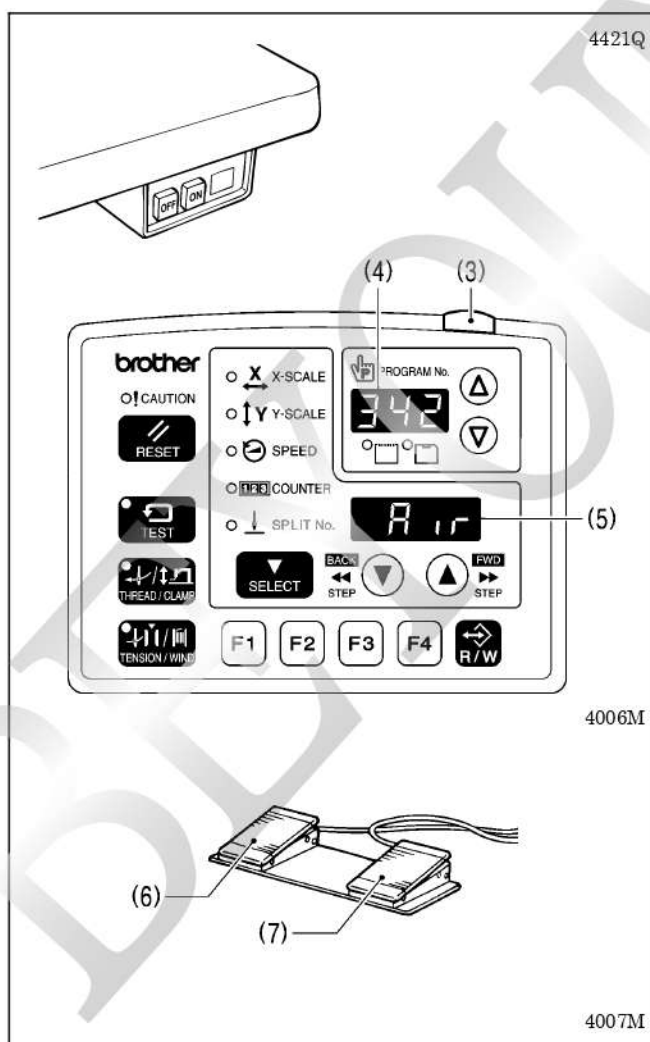
1. 转动夹线螺母(1)(主夹线器)，根据缝制品进行张力的调节。
2. 用夹线螺母(2)(副夹线器)进行调节，使面线残留量在42mm左右的范围内。

5-7. 原点检测



在开始原点设定前，请先确认机针是否处于针上停止位置。

回转手轮(1)，使挑线杆(2)的下侧的棱线和缝纫机壳上的加工记号(○)一致。



1. 接通电源。

电源指示灯(3)点亮，程序号(No.)表示(4)将显示出机型名[342]，菜单表示(5)将显示出[Air]。



然后，程序号(No.)表示(4)所显示的程序号变成闪烁。

2. 踩下压脚开关(6)，压脚板降下后，再踩下启动开关(7)。

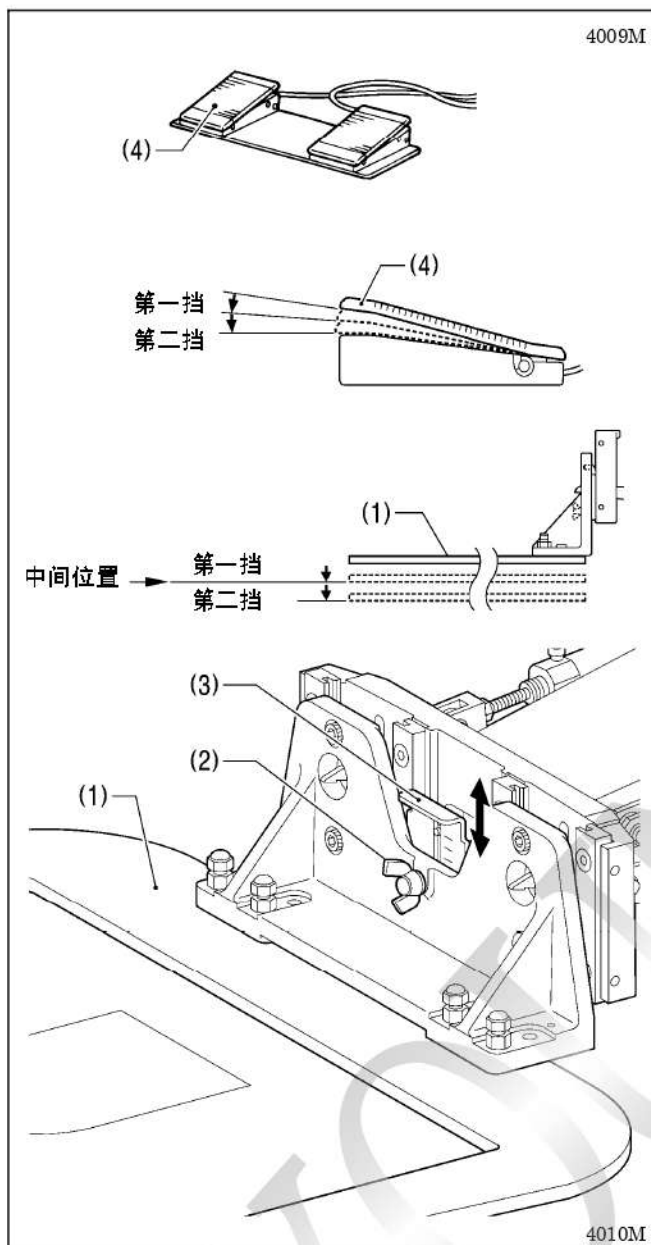
(进行原点检出后，压脚板向缝纫开始点移动并上升。)

* 如果是针数很多的程序时，原点检出后，在蜂鸣器鸣响之后，压脚板向缝纫开始点移动。

[注意]

如果踩下启动开关(7)时出现了错误[E110]时，请向回转方向回转手轮(1)，可解除错误表示。

5-8. 二档压脚的设定方法

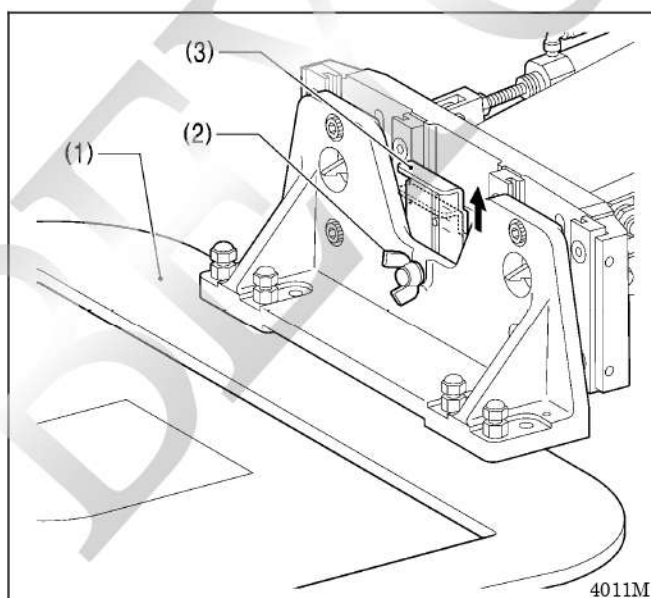


在进行该设定时，可以将压脚板(1)分为二挡来下降。

1. 将存储器开关 No.002 设定为[1]。
(参考「7-2. 存储器开关的设定方法」)
2. 在压脚板(1)升起的状态下，松开碟式螺钉(2)。
3. 试将压脚定位板(3)上下移动后定在中间位置后，拧紧碟式螺钉(2)。
4. 踩下压脚开关(4)的第一挡，确认是否在中间位置。
5. 踩到压脚开关(4)的第二挡时，压脚板完全降下。

* 二挡压脚必须在存储器开关 No.002 设定为[1]时才有效。

* 不可将存储器开关 No.002 设定为[2]。

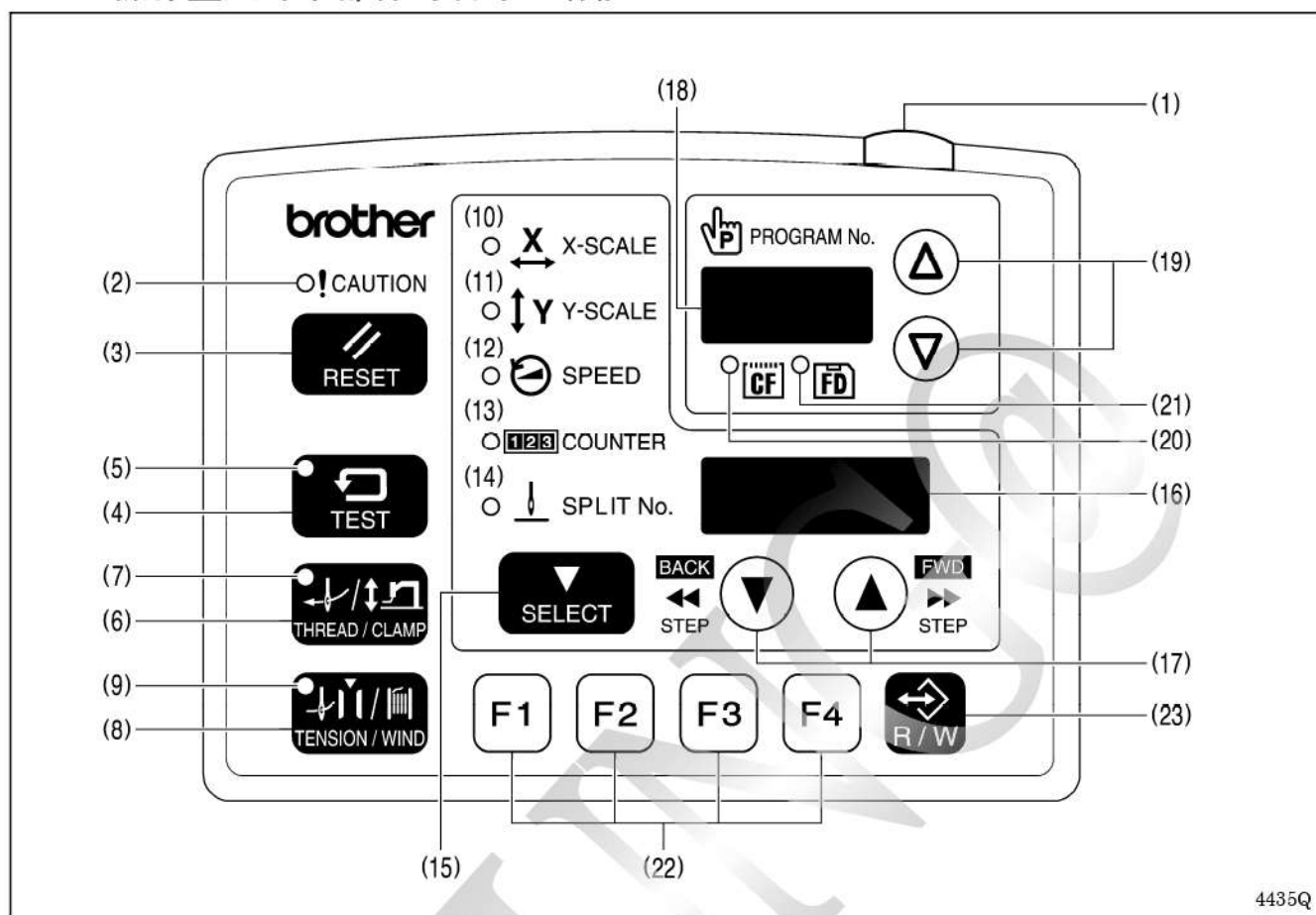


<一档压脚复位时>

1. 将存储器开关 No.002 设定为[0]。
(参考「7-2. 存储器开关的设定方法」)
2. 在压脚板(1)升起的状态下，松开碟式螺钉(2)。
3. 试将压脚定位板(3)升到最高位置时，拧紧碟式螺钉(2)。

6. 操作盘的使用方法（基本操作）

6-1. 操作盘上每个部件的名称和功能



(1) 电源指示灯

当接通电源开关时此灯点亮。

(2) CAUTION（警告）灯

当发生错误时，此灯点亮。

(3) RESET（再设定）键

用于解除错误。

(4) TEST（试验）键

要进入试验模式时，使用此键。

(5) TEST 灯

如果按 TEST 键(4)则此灯点亮。

(6) THREAD/CLAMP（穿线和压脚高度）键

要进入穿线模式或压脚高度设置模式时，使用此键。

(7) THREAD/CLAMP 灯

如果按 THREAD/CLAMP 键(6)则此灯点亮。

(8) TENSION/WIND（张力和卷底线）键

要卷绕底线时，使用此键。

(9) TENSION/WIND 灯

在装有数码式张力器(选购装置)时使用。

(10) X-SCALE (X-尺度) 灯

当用 SELECT 键 (15) 切换到横向倍率时, 此灯点亮。

(11) Y-SCALE (Y-尺度) 灯

当用 SELECT 键 (15) 切换到纵向倍率时, 此灯点亮。

(12) SPEED (速度) 灯

当用 SELECT 键 (15) 切换到缝纫速度时, 此灯点亮。

(13) COUNTER (计数器) 灯

当用 SELECT 键 (15) 切换到底线计数器/生产量计数器时, 此灯点亮。

(14) SPLIT No. (分割 No.) 灯

当存在分割数据 (用于在程序执行中途指令暂停执行的数据) 时, 如果用 SELECT 键 (15) 切换到分割状态, 则此灯点亮。

(15) SELECT (选择) 键

用于切换菜单 (横向, 纵向倍率, 缝纫速度, 计数器)。

(16) 菜单表示

用于显示菜单的设定值, 存储器开关的内容和错误代码等。

(17) 设置键 ▼ ▲

要变更菜单表示 (16) 所显示的数值时, 使用此键。

或者, 要使中途停止的机针位置的前进 / 后退时, 使用此键。

(18) 程序号表示

显示程序号等。

(19) 设置键 ▽ △

要变更程序号 No. 表示 (18) 所显示的数值时, 使用此键。

(20) CF 显示灯

在接通电源, 如果插入了 CF 卡 (外部媒体) 时, 此灯点亮。

(21) FD 显示灯

在接上外部媒体装置 FDD (选购件) 时, 此灯点亮。

(22) 功能键 [F1, F2, F3, F4]

用于用户程序的选择、循环程序的设置和选择。

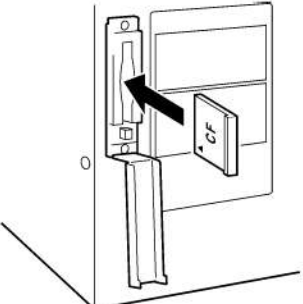
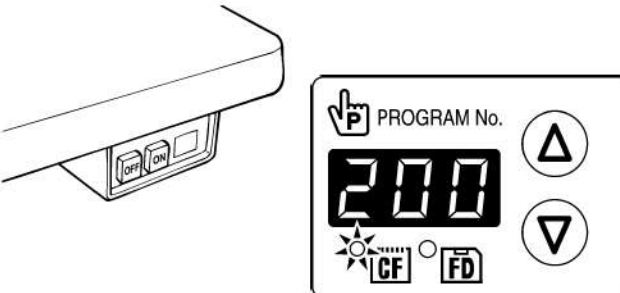
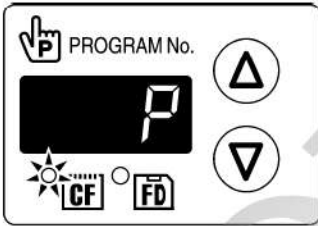

(23) R/W (读写) 键

要读写外部媒体时使用此键。

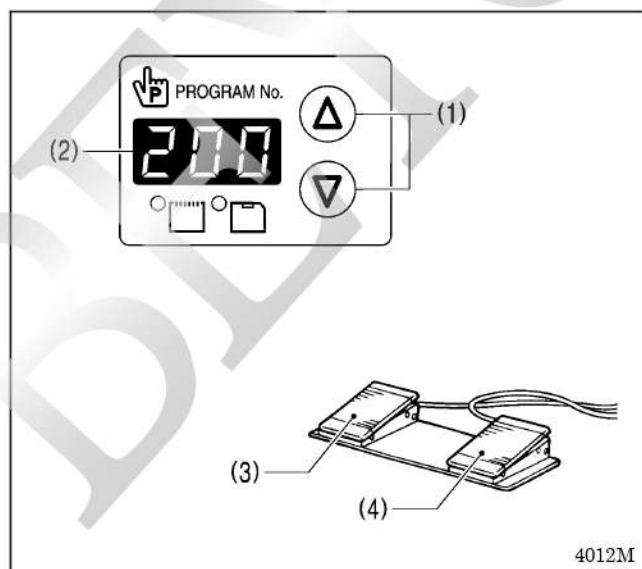
CF™ 是 SanDisk Corporation 的商标。

6-2. 缝纫数据的读取方法

关于 CF 卡，请阅读「8-1. CF 卡(市场上销售产品)使用上的注意事项」。

1		<p>在电源开关关闭的状态下，将 CF 卡插入 CF 插入口。</p> <p>【注意】</p> <ul style="list-style-type: none"> · 请注意 CF 卡的插入方向。 · 除了在插入或拔出 CF 卡以外，请一定将盖子盖上。因灰尘等的进入是造成故障的原因。
2	 <p>CF 显示灯点亮</p>	<p>接通电源开关。</p> <p>按Δ键或∇键来选择程序号(100~999)。</p> <p>*该 [— — —] 表示是送布原点确认用的。</p>
3	 <p>在读取中</p>	<p>按 R/W 键。</p>  <ul style="list-style-type: none"> · 蜂鸣器鸣响，从 CF 卡读取并向内部存储器复制所选择的缝纫数据。
4	<p>读取完了</p> <p>程序号(No.)表示将从 [— — — P] 变为所选择的程序号。</p> <p>切断电源开关，请取出 CF 卡后盖上 CF 槽的盖子。</p>	

6-3. 程序号的设置方法

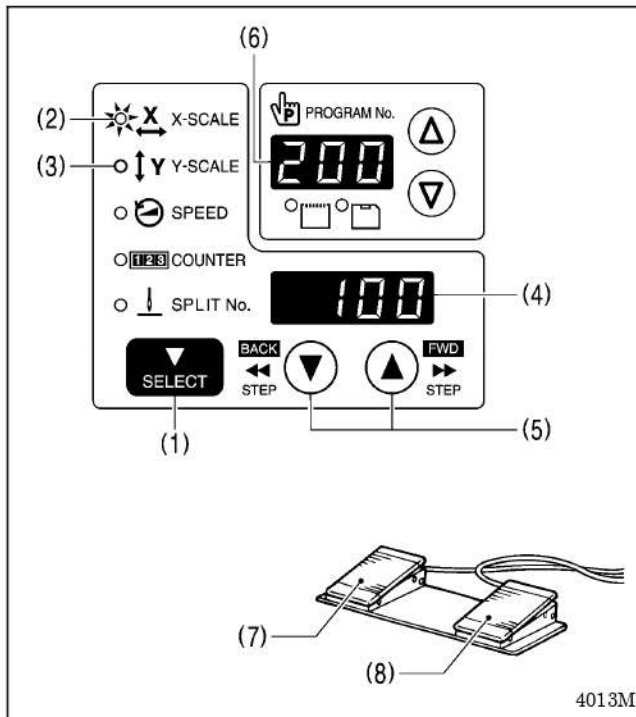


1. 按 Δ 键或 ∇ 键(1)来选择读取内存的程序 No.。
 - 程序 No. 表示(2)所显示的程序 No. 将闪烁。
 - 出厂时的表示是 [— — —]。(送布原点确认用)
2. 踩下压脚开关(3)，压脚板降下后，踩下启动开关(4)。
 - 压脚板向缝纫开始点移动，确定程序 No.。
 - 程序 No. 从闪烁变成点亮。

【注意】

设置完了后，请务必进行「6-6. 缝纫图案的确认」，并确认落针位置是否正确。

6-4. 横向倍率/纵向倍率的设置方法



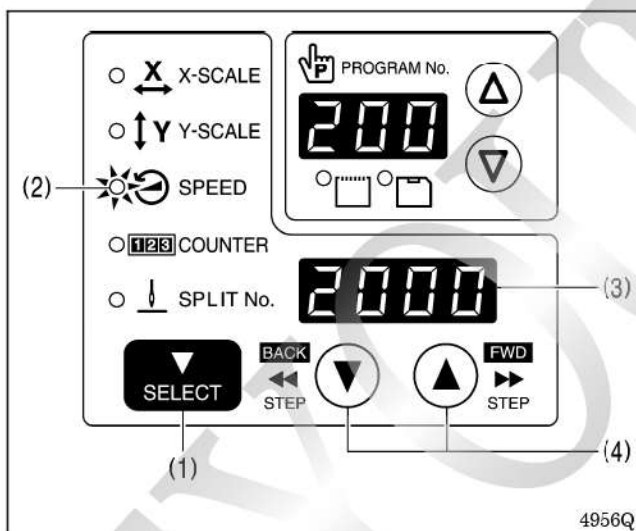
出厂时倍率被设置在 100(%)。

1. 按下 SELECT 键(1), 使横向倍率的 X-SCALE 指示灯(2), 纵向倍率的 Y-SCALE 指示灯(3) 点亮。
 - 菜单表示(4)将显示设置值(%)。
 - * 当存储器开关 No. 402 位于 ON 时, 数值以 mm 表示。
2. 按下▲键或是 ▼ 键(5), 来设置倍率(0~400)。
 - 程序 No. 表示(6)所显示的程序 No. 将闪烁。
3. 踩下压脚开关(7)压脚板降下后, 再踩下启动开关(8)。
 - 压脚板向缝纫开始点移动, 确定倍率。
 - 程序 No. 从闪烁变成点亮。

[注意]

设置完了后, 请务必进行「6-6. 缝纫图案的确认」, 并确认落针位置是否正确。

6-5. 缝纫速度的设置方法


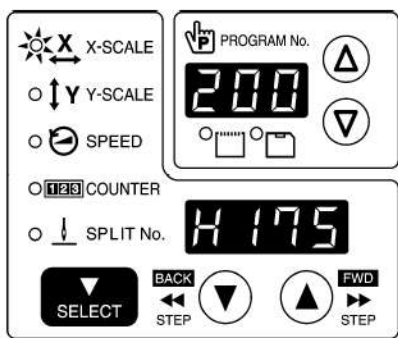
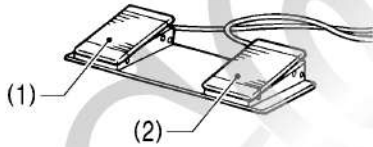
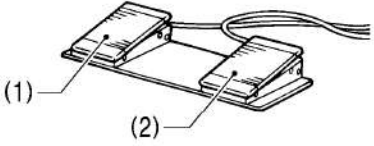



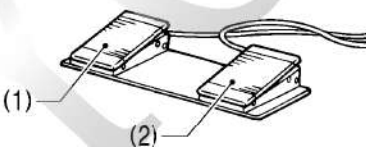



出厂时缝纫速度被设置在 2000(sti/min)。

1. 按下 SELECT 键(1), 使 SPEED 指示灯(2) 点亮。
 - 菜单表示(3)将显示设置值(sti/min)。
2. 按▲键或是▼键(4), 来设置缝纫速度。
(缝纫速度设定值: 400~2700)

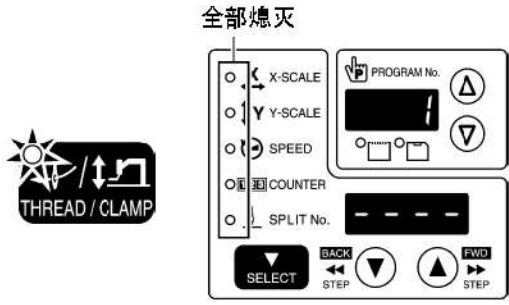
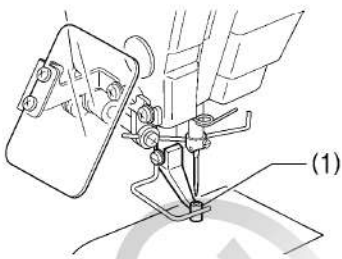
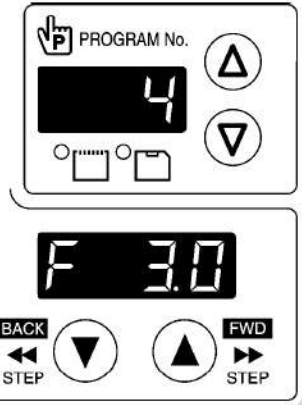

6-6. 缝纫图案的确认

利用试送布模式，仅使压脚板移动来确认运针情况。
请确认针板的针孔应不超出压脚板框的范围。

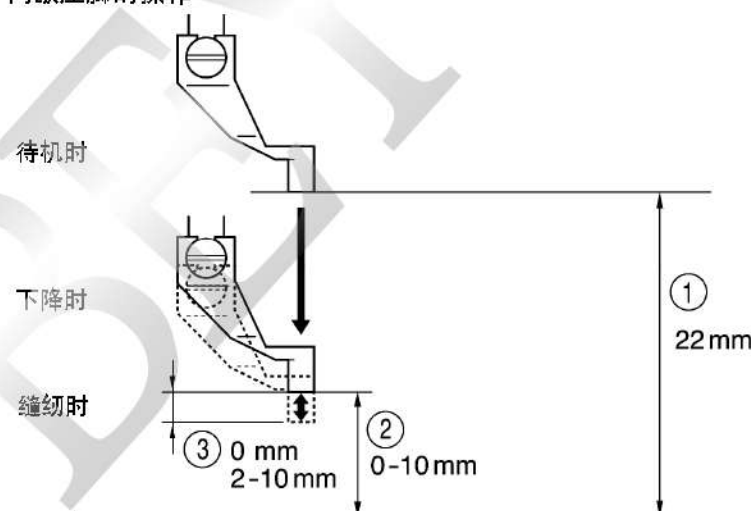
1	 <p>TEST 灯点亮</p>	按下 TEST 键。
2	 <p>COUNTER 灯点亮</p>	<p>选择想确认的程序 No.，设定横向倍率，纵向倍率。</p> <ul style="list-style-type: none"> 程序 No. 闪烁。 <p>踩下压脚开关(1)压脚板降下后，再踩下启动开关(2)。</p> <ul style="list-style-type: none"> 压脚板向缝纫开始点移动，程序 No. 从闪烁变成点亮。 在菜单表示处表示针数。  <p>4957Q 4014M</p>
3	<p>连续试送布模式开始</p> 	<p>踩下压脚开关(1)压脚板降下后，再踩下启动开关(2)后，又放开。</p> <ul style="list-style-type: none"> 压脚板开始 1 针接 1 针连续移动。 <p>[快送布试验模式] 如果在移动压脚板中踩下压脚开关(1)时，则在踩着期间可以加快送布速度。</p> <p>4443Q 4014M</p>
	<div>  <p>TEST 灯点亮</p> </div> <div>  <p>如果按▲键，压脚板应前进 1 针，如果按▼键，压脚板就后退 1 针。（如果连续按着不放，就快速送布。）</p> </div> <div>  <p>TEST 灯熄灭</p> </div> <div>  <p>要从试送布中途开始缝纫时，请按 TEST 键使 TEST 灯熄灭。 如果踩下启动开关(2)，就开始缝纫。</p> <p>4014M</p> </div>	
4	 <p>TEST 灯熄灭</p>	<p>试送布如进行到最后一针时，压脚板向缝纫开始点移动后就停止。</p> <p>按下 TEST 键。</p>

6-7. 间歇压脚高度的设定

可以用操作盘更改间歇压脚高度的设定值。

1	 <p>全部熄灭</p> <p>THREAD/CLAMP 灯点亮 菜单灯熄灭</p>	<p>按 THREAD/CLAMP 键。 进入穿线模式。</p> <ul style="list-style-type: none"> 程序 No. 表示显示[1], 间歇压脚(1)下降。  <p>4445Q 2576B</p>
2	 <p>按下▲ 键。 进入间歇高度设定模式。</p> <ul style="list-style-type: none"> 程序 No. 表示处显示[4], 间歇压脚(1)一直上升到菜单表示所显示的设定值为止。 (间歇高度设定值为: 0.0~10.0) 按▲ 键或是▼键来设定间歇高度。 间歇压脚(1)将根据设定的高度值进行上升和下降。 <p>[注意] 设定完了后, 请一定要用手转动手轮一周, 确认间歇压脚不能碰到针杆。</p> <p>5225Q</p>	<p>按下▲ 键。 进入间歇高度设定模式。</p> <ul style="list-style-type: none"> 程序 No. 表示处显示[4], 间歇压脚(1)一直上升到菜单表示所显示的设定值为止。 (间歇高度设定值为: 0.0~10.0) 按▲ 键或是▼键来设定间歇高度。 间歇压脚(1)将根据设定的高度值进行上升和下降。 <p>[注意] 设定完了后, 请一定要用手转动手轮一周, 确认间歇压脚不能碰到针杆。</p> <p>4016M</p>
3	<p>设定模式完了</p>  <p>THREAD/CLAMP 灯熄灭</p>	<p>按 THREAD/CLAMP 键。</p> <ul style="list-style-type: none"> 储存设定值。 间歇压脚(1)回复到进入设定模式前的状态。

间歇压脚的操作



① 间歇压脚上升量

② 间歇高度

使用上述的操作可以设定。

但是, 如果设定了间歇高度比间歇压脚行程小时, 为了防止与针板相碰间歇压脚不下降。(参考第 63 页)

③ 间歇压脚行程

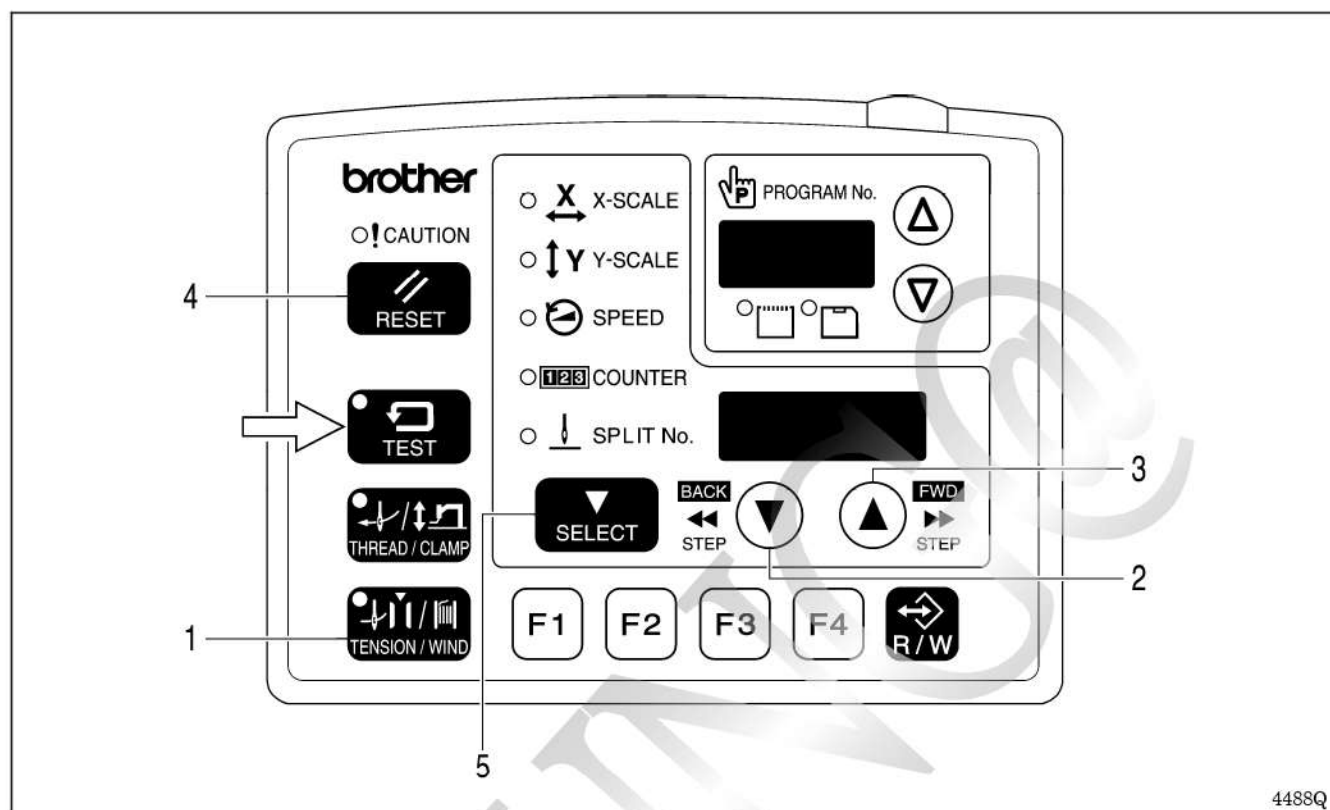
调整请参考「11-13. 间歇压脚行程的变换」。

5033Q

7. 操作盘的使用方法（上级操作）

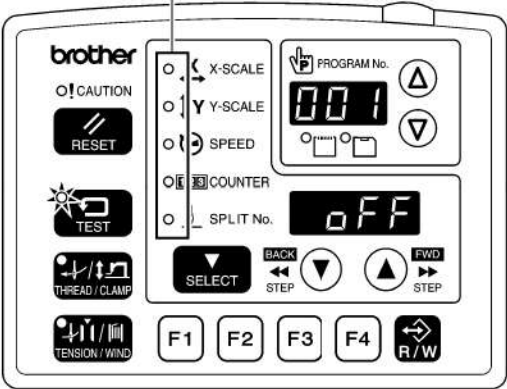



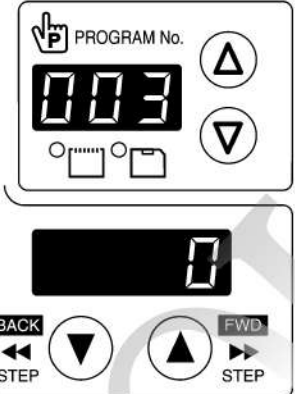


7-1. 实用功能一览

在按着 TEST 键的同时，再按各相关的键。



1	 + 	存储器开关设定模式 参考「7-2. 存储器开关的设定方法」	4489Q
2	 + 	底线计数器设定模式 参考「7-4. 底线计数器的使用方法」	4490Q
3	 + 	生产量计数器设定模式 参考「7-5. 生产量计数器的使用方法」	4491Q
4	SPEED 灯点亮时  + 	生产量计数器一时显示功能 参考「7-5. 生产量计数器的使用方法」	4492Q
5	 + 	用户程序设定模式 参考「7-7. 用户程序的使用方法」	4493Q

7-2. 存储器开关的设定方法

1	<p>全部熄灭</p>  <p>按着 SELECT 键的同时，接通电源开关。 * 在显示机型名称后，请一直按着 SELECT 键直至蜂鸣器发出“啵—”的响声。</p> <p>或者</p> <p>在电源接通的状态下，同时按 TEST 键和 TENSION/WIND 键。</p>    <p>· 程序号(No.)表示将显示存储器开关号码，菜单表示将显示该号码的设定值。</p> <p>菜单灯熄灭，TEST 灯点亮 4449Q 4421Q</p>
2	 <p>按▲键或是 ▼键来选择存储器开关号码。 (参考下一页的「7-3. 存储器开关一览表」)</p> <p>按▲键或是▼键来更改设定值。</p> <p>要想只显示从初始值中被变更的存储器开关号码时</p>  <p>在按 SELECT 键的同时按▲键或是▼键。</p> <ul style="list-style-type: none"> · 依次显示从初始值起所变更的存储器开关号码。 · 如果没有从初始值起变更存储器开关号码时，显示不变并且蜂鸣器发出“啵—啵—”的鸣响声。 <p style="text-align: right;">4961Q 4452Q</p>
3	<p>设定模式结束</p>  <p>按下 TEST 键。</p> <ul style="list-style-type: none"> · 变更内容被存储，成为等待原点检测的状态。 <p style="text-align: right;">TEST 灯熄灭</p>



- 想要将一个存储器开关的设定值作为初始值时，请在显示该存储器开关号码的状态下按 RESET 键。
- 想要将所有存储器开关的设定值作为初始值时，请按着 RESET 键保持 2 秒钟以上直到蜂鸣器发出“啵—”的鸣响声。

7-3. 存储器开关一览表

号码	设定范围	设定内容	初始值
001	缝纫结束后的压脚上升时间		ON
	OFF	在最后一针的位置上升	
	ON	在移动到缝纫开始点后上升	
002	左右一体压脚的下降动作		0
	0	第一挡下降	
	1	第二挡下降 (*1)	
	2	请不设定	
100	起始速度		OFF
	OFF	缝纫开始时 1~5 针的速度将根据存储器开关 No.151~155 的设定状况而定。 (关于存储器开关 No.151~155, 请参考调整说明书。)	
	ON	第 1 针为 400 sti/min、第 2 针为 400 sti/min、第 3 针为 600 sti/min、 第 4 针为 900 sti/min、第 5 针为 2,000 sti/min	
200	1 针试送布		OFF
	OFF	试送布随着踩下启动开关而开始, 并自动前进到最后一针为止	
	ON	试送布 · 每踩一次压脚开关就会前进 1 针 · 如一直踩着启动开关时, 会连续前进 · 用手回转手轮一针一针前进	
300	生产量计数器显示		OFF
	OFF	底线计数器显示	
	ON	生产量计数器显示	
400	用户程序		OFF
	OFF	无效	
	ON	用户程序模式变为有效	
401	循环程序		OFF
	OFF	无效	
	ON	在使用用户程序缝纫时, 将按预先设置的程序顺序进行缝纫	
402	放大缩小率的 mm 表示(*2)		OFF
	OFF	以 % 表示	
	ON	以 mm 表示	
403	分离模式的选择		0
	0	连续分离(在分离数据检出前分离菜单无效)	
	1	连续分离(分离菜单通常有效)	
	2	单独分离	
900	仅适用于 BAS-342G PS 规格 (未按标准规格操作)		0
	0~200		

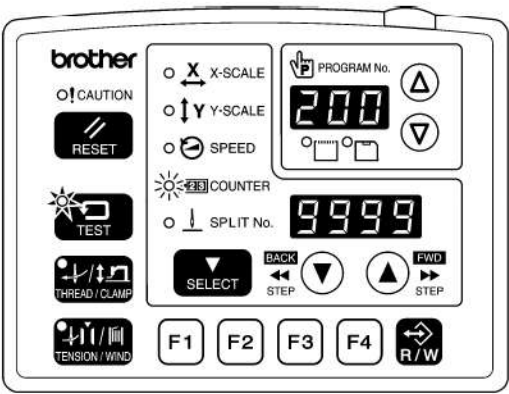







(*1) 必须决定压脚定位板的位置。(参考「5-8. 二档压脚的设定方法」)

(*2) 显示尺寸(mm)可能与实际的缝纫尺寸有所差异。

7-4. 底线计数器的使用方法

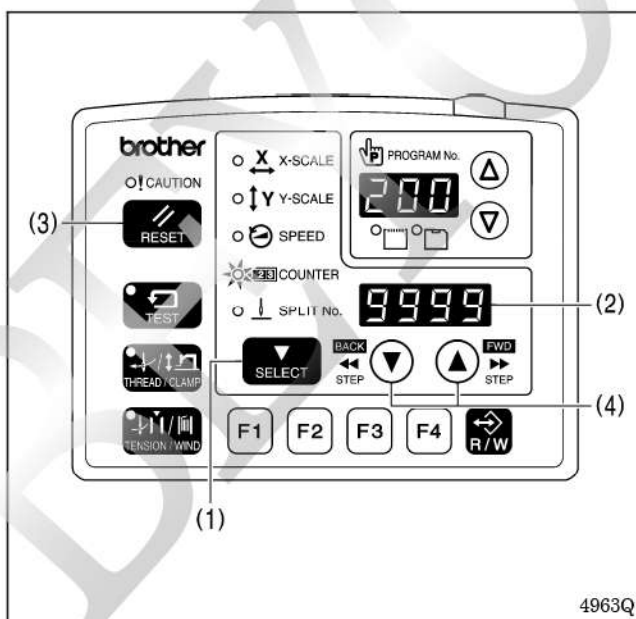
如果根据梭芯内的缝线量预先将能够缝制的片数设定于底线计数器，这样就能防止在缝制中途底线用完的情况。

<初始值的设定>

1		<p>在按着 TEST 键的同时按▼键。</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <ul style="list-style-type: none"> 菜单表示将显示以前所设定的初始值。 <p style="text-align: right;">4962Q 4455Q</p>
2	 <div style="display: flex; justify-content: space-around; align-items: center;">   </div> <p>4456Q</p>	<p>按▲键或▼键来设定初始值。</p> <ul style="list-style-type: none"> 初始值可设定在 1 片 [0001] ~ 9999 片 [9999] 的范围内。 如果将数值设为 [0000]，底线计数器将不工作。 如果在设定模式中按 RESET 键，数值就变成 [0000]。 <div style="border: 1px dashed black; padding: 5px; margin-top: 10px;">  <p>如果在设定模式中按下 R/W 键时，则显示中的程序 No. 将被作为初始值保存，还能够使用别的缝纫数据来设定底线计数器。</p> </div>
3	<p>设定模式结束</p>  <p style="text-align: center;">TEST 灯熄灭</p>	<p>按下 TEST 键。</p> <ul style="list-style-type: none"> 初始值被存储。

<底线计数器的操作>

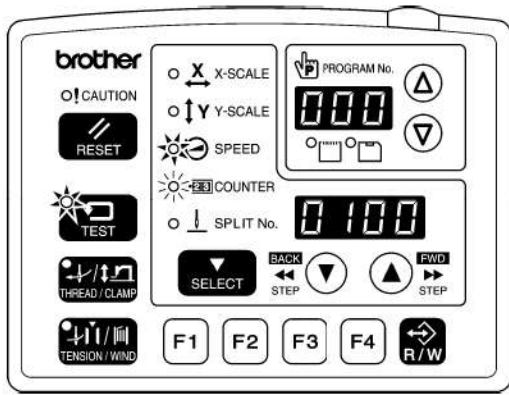

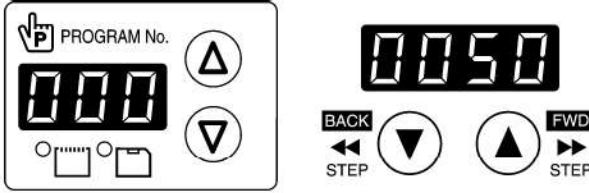

当存储器开关 No. 300 被 OFF 时，如果按 SELECT 键(1)以选择计数器显示菜单，COUNTER 灯就点亮，菜单表示(2)将显示底线计数器。



1. 每结束一次缝纫，菜单表示(2)所显示的数值就减小 1。
2. 当底线计数器变成 [0000] 时，电子蜂鸣器就连续鸣响。这时，即使踩下脚踏开关缝纫机也不工作。
3. 如果按 RESET 键(3)，电子蜂鸣器就停止鸣响，菜单表示(2)将显示底线计数器的初始值，变成可缝纫的状态。
 - 当没有设置初始值时，则显示 [0000]。
- * 按▲键或是▼键(4)时，可任意设置底线计数器值。但是，这个数值不能作为初始值被存储。
- * 如果设定了底线计数器，即使不在底线计数器显示状态，计数器也照常进行计数动作。

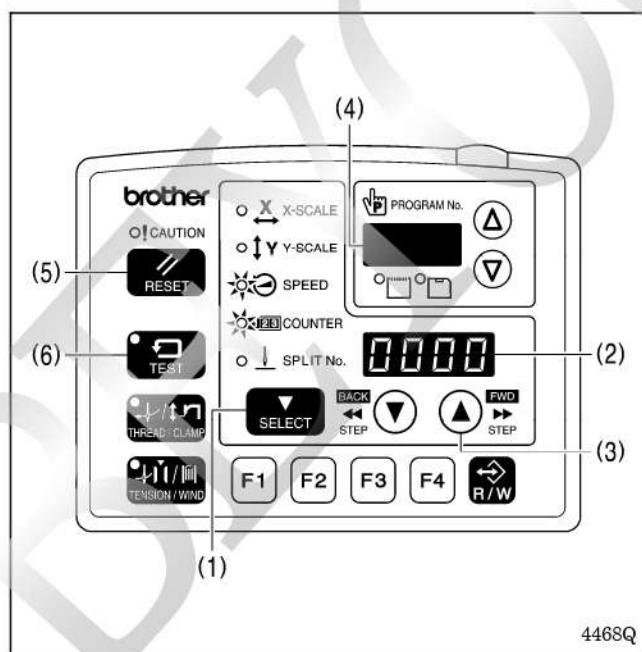
7-5. 生产量计数器的使用方法

<计数值的设定>

1	 <p>TEST 灯和 SPEED 灯点亮 COUNTER 灯闪烁</p>	<p>在按着 TEST 键的同时按▲键。</p>  <ul style="list-style-type: none"> 在程序 No. 表示和菜单表示处以 7 位数显示以前设定的计数值。
2		<p>按▲键或是▼键来设置计数值。</p> <ul style="list-style-type: none"> 计数值可设定在 [000] [0000] ~ [999] [9999] 的范围内。 如果在设定模式中按了 RESET 键，数值就变成 [000] [0000]。
3	<p>设定模式结束</p>  <p>TEST 灯熄灭</p>	<p>按 TEST 键。</p> <ul style="list-style-type: none"> 计数值被存储。

<生产量计数器操作>

存储器开关 No. 300 为 ON 时，如果按 SELECT 键 (1) 以选择计数器显示菜单，则 SPEED 和 COUNTER 灯点亮，菜单表示 (2) 将显示生产量计数器。



1. 每结束一次缝纫，菜单表示 (2) 所显示的数值就增大 1。
2. 在按着▲键 (3) 的期间中，程序 No. 表示 (4) 将显示 3 位的数值，显示位合计为 7 位数。
3. 如果按着 RESET 键 (5) 保持 2 秒钟以上，计数器的值就复位到 [0000]。

一时显示功能

在底线计数器显示中，可以显示一时性的生产量计数器。

当 SPEED 指示灯点亮时，如果在按下 TEST 键 (6) 的同时按 RESET 键 (5)，则菜单表示 (2) 将显示生产量计数器。通过按 TEST 键 (6) 或使用 SELECT 键 (1) 切换菜单，可以恢复原来的菜单表示。

*也可以在一时显示的状态下，进入缝纫操作。

7-6. 分离号码(No.)的设定方法



图形号码 1



图形号码 2



图形号码 3

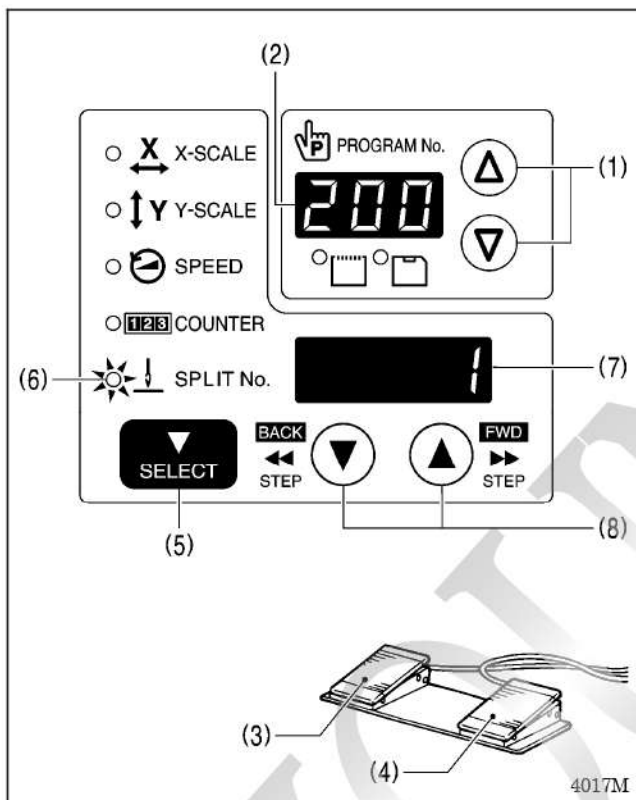
如果在 1 个程序中有分离数据(中途停止数据)的存在时, 根据分离数据表示被断开的图形号码称为分离号码(No.)。

图形号码 1: 分离号码 No.1

图形号码 2: 分离号码 No.2

图形号码 3: 分离号码 No.3

4964Q



1. 按下 Δ 键或是 ∇ 键(1), 选择包含分离数据在内的程序 No.。
 - 程序号(No.)表示(2)所显示的程序 No. 将闪烁。
2. 踩入压脚开关(3), 压脚板下降后, 再踩下启动开关(4)。
 - 压脚板向缝纫开始点移动, 程序 No. 被确定。
 - 程序 No. 从闪烁变成点亮。
3. 按下 SELECT 键(5), SPLIT No. 指示灯(6)点亮。
 - 在菜单表示(7)处分离号码(No.)被表示。
4. 按下 Δ 键或是 ∇ 键(8)分离号码 No. 被设定。

根据存储器开关 No. 403 的设定, 可以切换分离模式。

[连续分离]

存储器开关 No. 403=0 (在分离数据检出后分离菜单才有效)

存储器开关 No. 403=1 (分离菜单通常有效)

- 每个缝制的分离号码(No.)按此 1→2→3→1 (例如: 分离数据有 2 个时)的顺序前进。

[单独分离]

存储器开关 No. 403=2

- 只单独缝制被表示的分离号码(No.)的图形。

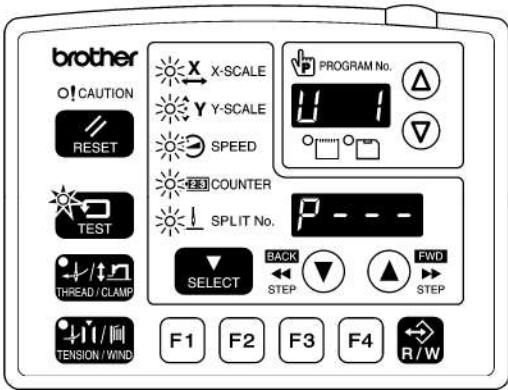

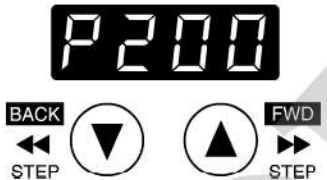
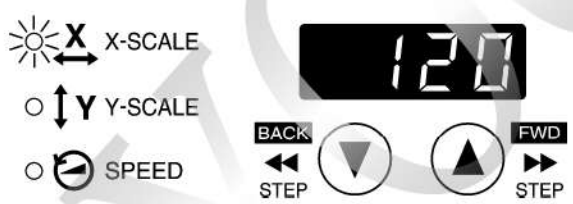

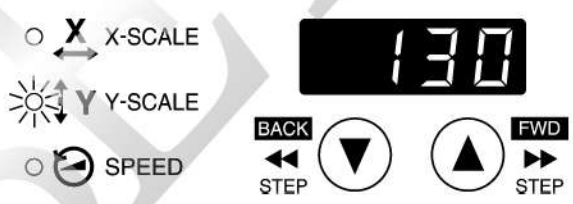

7-7. 用户程序的使用方法















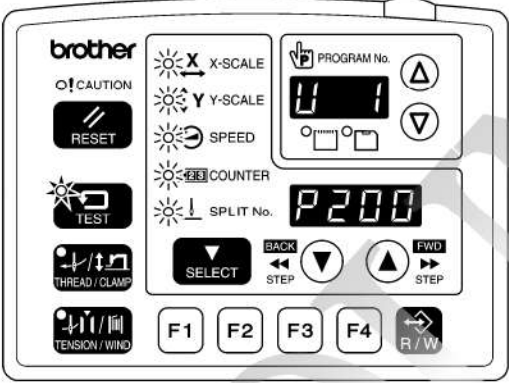

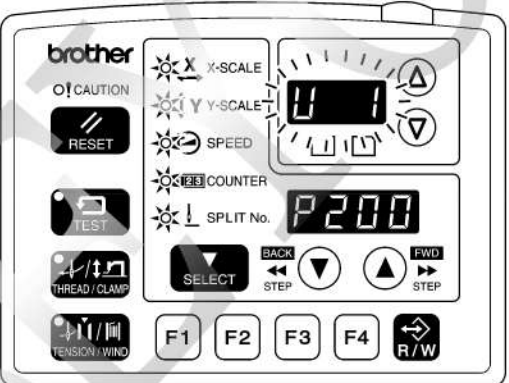


能够登录程序号(No.)、横向倍率、纵向倍率、缝纫速度、间歇高度等最多 50 种(U1~U50)参数。

要切换所决定的缝纫图案加以使用时，如果预先登录到用户程序则使用时会更为方便。

用户程序在存储器开关 No.400 为 ON 时有效。

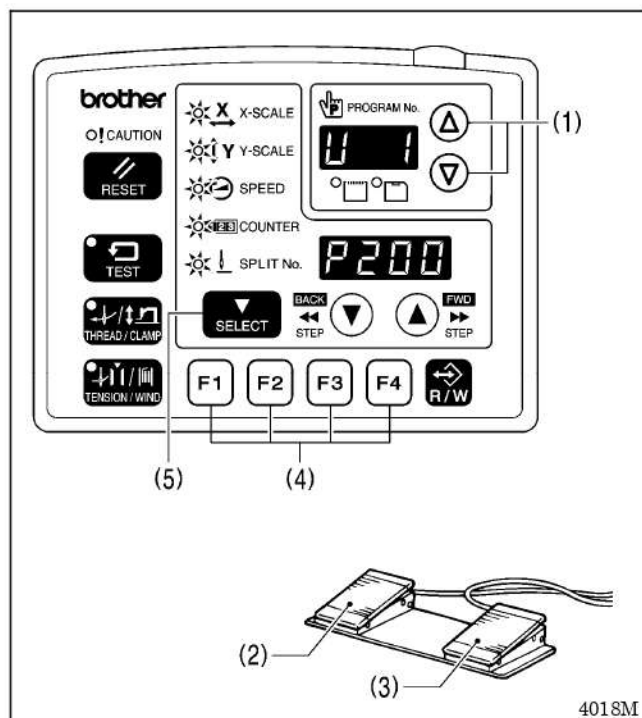
<登录方法>

1	<p>选择用户程序号</p>  <p>TEST 灯点亮，菜单灯闪烁</p>	<p>在按 TEST 键的同时按 SELECT 键。</p>  <ul style="list-style-type: none"> · 进入用户程序登录模式。请确认菜单灯应闪烁。 · 在程序号(No.)表示将显示用户程序号，在菜单表示将显示 [P---]。 <p>按▲键或▼键来选择用户程序号。</p> <p>4469Q</p>
2	<p>首先设定程序 No.</p> 	<p>按▲键或是▼键，设定要登录的程序 No.。</p> <p>[注意]</p> <p>请选择已被内存了的程序 No.。不能在媒体上指定程序 No.。</p> <p>4966Q</p>
3	<p>接着设定横向倍率</p>  <p>X-SCALE 灯闪烁</p>	<p>按 SELECT 键。</p>  <p>按▲键或是▼键，设定要登录的横向倍率。</p> <p>4470Q</p>
4	<p>然后设定纵向倍率</p>  <p>Y-SCALE 灯闪烁</p>	<p>按 SELECT 键。</p>  <p>按▲键或是▼键，设定要登录的纵向倍率。</p> <p>4472Q</p>

5	<p>然后进一步设定缝纫速度</p> <p> <input type="radio"/> X X-SCALE <input type="radio"/> Y Y-SCALE  SPEED </p> <p>      </p>	<p>按 SELECT 键。</p> <p></p> <p>按▲键或是▼键，设定要登录的缝纫速度。</p> <p>SPEED 灯闪烁 4474Q</p>
6	<p>最后再设定间歇高度</p> <p>       </p>	<p>按 SELECT 键。</p> <p></p> <p>按▲键或是▼键，设定要登录的间歇高度。</p> <p>THREAD/CLAMP 灯闪烁 4969Q</p>
7	<p>按 SELECT 键。</p> <p></p> <p>TEST 灯点亮，菜单灯闪烁 4970Q</p>	<p>按 SELECT 键。</p> <p></p> <ul style="list-style-type: none"> 要继续设定其他的用户程序时，请选择用户程序号并重复操作步骤 2. ~ 7.。
8	<p>结束用户程序登录模式</p> <p>   </p> <p>TEST 灯熄灭，菜单灯点亮 4971Q</p>	<p>按 TEST 键。</p> <p></p> <p>到此，用户程序已被登录。</p> <ul style="list-style-type: none"> 程序 No. 表示所显示的用户程序号闪烁。

(下一页继续)

<使用方法>



1. 按△键或是▽键(1)，选择要缝纫的用户程序 No.。
 - 当用户程序号闪烁时，如果踩下压脚开关(2)压脚板下降后再踩启动开关(3)。(压脚板向缝纫开始点移动。)
 - 可以用功能键 F1～F4(4)直接选择用户程序 U1～U10。(参考「7-9. 直接选择的方法」)
2. 确认落针位置是否正确，然后进行缝纫。(参考「6-6. 缝纫图案的确认」)

- 如果按 SELECT 键(5)，就可以确认所显示的用户程序的内容(横向倍率、纵向倍率、缝纫速度等)。

<删除方法>

1		<p>在按 TEST 键的同时按 SELECT 键。</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">TEST</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">SELECT</div> </div> <ul style="list-style-type: none"> • 进入用户程序登录模式。请确认菜单灯应闪烁。 • 程序 No. 表示将显示用户程序号，菜单表示将显示程序 No.。 <p>按△键或是▽键，选择要删除的用户程序号。</p>
2		<p>按 RESET 键。</p> <ul style="list-style-type: none"> • 蜂鸣器鸣响，所选择的用户程序被删除。 <p>[注意]</p> <p>被删除的用户程序如果已登录在循环程序中，则该用户程序所登录的程序框将成为空置状态。没有删除循环程序。</p> <p>按住 RESET 键 2 秒钟以上。</p> <ul style="list-style-type: none"> • 蜂鸣器鸣响，所有的用户程序都被删除。 <p>[注意]</p> <p>如果已登录了循环程序，则循环程序也被全部删除。</p>

用户程序全部删除

7-8. 循环程序的使用方法

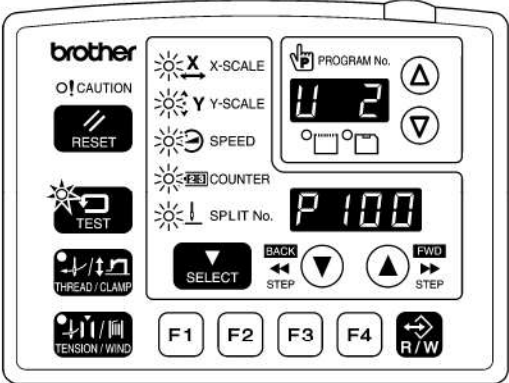

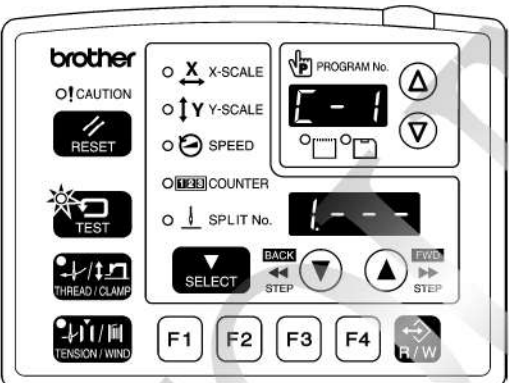

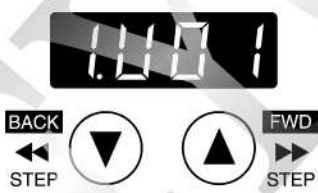

可以将已登录在用户程序中的缝纫图案登录到最多可登录 9 种 (C-1~C-9) 的循环程序中。


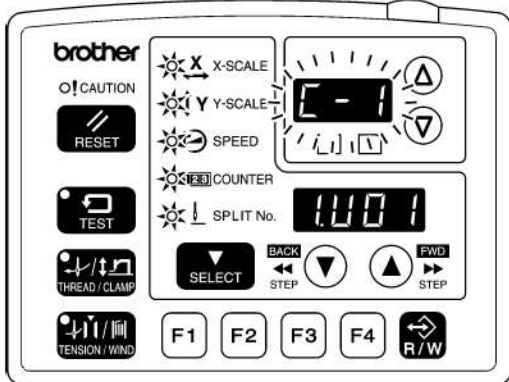
1 个循环程序最多可以设置 15 个程序步。

要依次缝纫已决定的缝纫图案时，如果预先登录在循环程序中则更为方便。

循环程序只有在存储器开关 No.400 和 No.401 为 ON 时才有效。

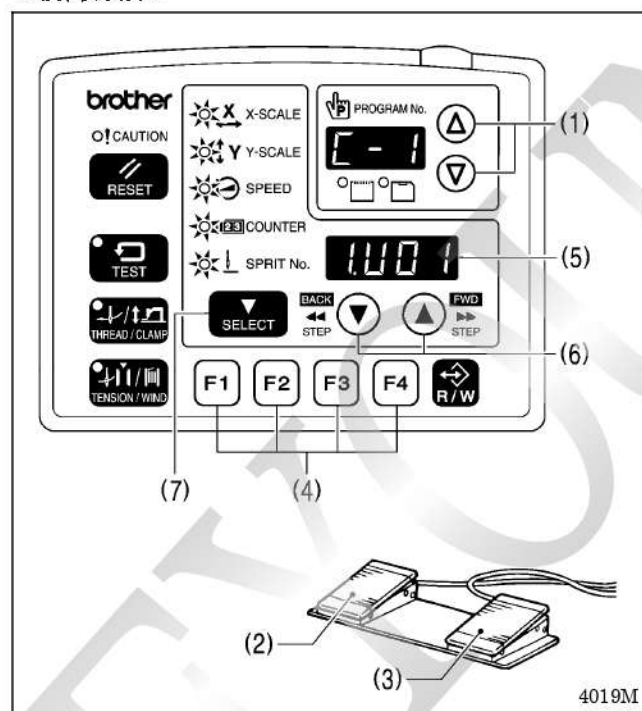
<登录方法>

<p>1 进入用户程序登录模式</p>  <p>TEST 灯点亮，菜单灯闪烁</p>	<p>在按 TEST 键的同时按 SELECT 键。</p>  <ul style="list-style-type: none"> · 请确认菜单灯应闪烁。 · 程序 No. 表示将显示用户程序号，菜单表示将显示程序 No.。 <p>把要登录在循环程序中的缝纫图案登录在用户程序中。</p> <p>4973Q</p>
<p>2 进入循环程序登录模式，选择循环程序号</p>  <p>菜单灯熄灭</p>	<p>按功能键 F1~F4 中的任意一个键。</p>  <ul style="list-style-type: none"> · 程序 No. 表示将显示循环程序号 C-1~C-4，菜单表示将显示 [1. ---]。 <p>按功能键 F1~F4 或是按 Δ/∇ 键来选择循环程序 No.。</p> <p>4428Q</p>
<p>3 设置程序步 1</p> 	<p>按 Δ 键或是 ∇ 键，设置要登录的用户程序号。</p> <p>按 SELECT 键。</p>  <p>4444Q</p>
<p>4 程序步 2 以后也同样进行设置。</p> <p>程序步 9 以后将以 [A. ---] [b. ---] [c. ---] [d. ---] [E. ---] [F. ---] 的顺序显示。</p> <p>要在设置中返回到前一程序步时</p> <p>〈循环程序 C-1~C-4 的情况〉</p> <ol style="list-style-type: none"> 1. 如果分别按功能键 F1~F4，就返回到程序步 1 的显示。 2. 按 SELECT 键直至达到所需的程序步。 <p>〈循环程序 C-5~C-9 的情况〉</p> <ol style="list-style-type: none"> 1. 按 Δ 键或 ∇ 键来切换循环程序号。 2. 再次选择所需的循环程序号时，按 SELECT 键直至达到所需的程序步。 	

5	要继续登录其他的循环程序时，请重复操作步骤 2~4。	
6	结束循环程序登录模式	<p>按 TEST 键。</p>  <p>在此，循环程序已被登录。</p> <ul style="list-style-type: none"> 程序 No. 表示处显示的循环程序号闪烁。  <p>TEST 灯熄灭，菜单灯点亮</p>

4439Q

<使用方法>



4019M

- 按▲键或是▼键(1)，选择要使用的循环程序号。
 - 当循环程序号闪烁时，如果踩下压脚开关(2)压脚板下降后再踩启动开关(3)。(压脚板向缝纫开始点移动。)
 - 可以用功能键 F1~F4(4)直接选择循环程序号。(参考「7-9. 直接选择的方法」)
- 确认落针位置是否正确，然后进行缝纫。(参考「6-6. 缝纫图案的确认」)
- 所登录的用户程序将按照程序步依次执行，当最后的程序步结束时，菜单表示(5)就返回到程序步 1 的显示。

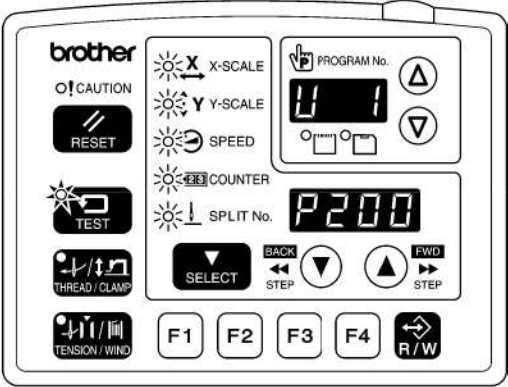
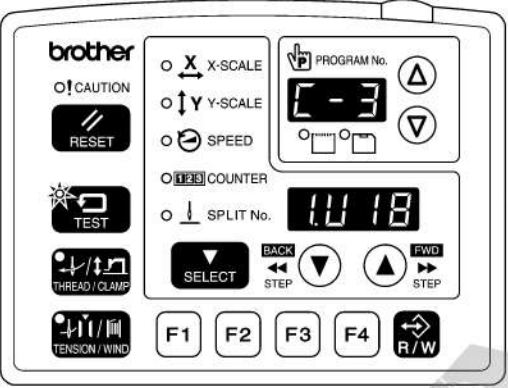

- 如果按▲键或是▼键(6)时，就可以返回到前一个程序步或跳到下一个程序步。
- 如果按 SELECT 键(7)，就可以确认所显示程序步的用户程序内容(横向倍率，纵向倍率，缝纫速度等)。但是，不能进行更改。

【注意】

在循环程序缝纫模式(存储器开关 No.401 为 ON)时，如果没有被登录的循环程序，就以用户程序的号码依次进行缝纫。

此时，程序号(No.)表示中将显示 [C-0]。

<删除方法>

1	 <p>在按 TEST 键的同时按 SELECT 键。</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">TEST</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">SELECT</div> </div> <ul style="list-style-type: none"> 进入用户程序登录模式。请确认菜单灯应闪烁。 <p style="text-align: right;">4970Q</p>
2	 <p>TEST 灯点亮，菜单灯闪烁</p> <p>按功能键 F1~F4 中的任意一个键。</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <ul style="list-style-type: none"> 进入循环程序登录模式。 <p>按功能键 F1~F4 或是 $\Delta \nabla$ 键，选择要删除的循环程序 No.。</p> <p style="text-align: right;">4450Q</p>
3	 <p>按 RESET 键。</p> <ul style="list-style-type: none"> 蜂鸣器鸣响，所选择的循环程序被删除。 <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>循环程序全部删除</p> <p>按住 RESET 键 2 秒钟以上。</p> <ul style="list-style-type: none"> 蜂鸣器鸣响，所有的循环程序都被删除。 </div> <p>[注意] 如果在循环程序登录后执行用户程序的全部删除，则所登录的循环程序也被全部删除。</p>

7-9. 直接选择的方法 (组合表)

使用功能键可以直接选择用户程序号或循环程序号。

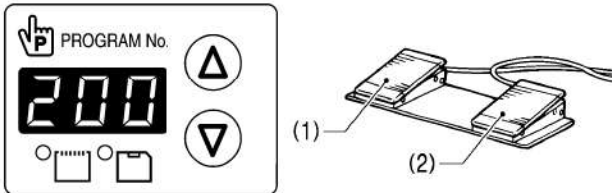
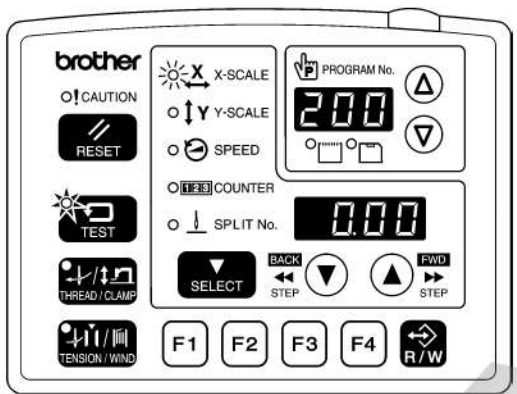

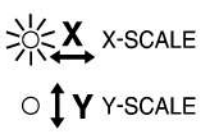





使用功能键 F1~F4 可以选择 U1~U4、C-1~C-4。

同时按几个组合的功能键 F1~F4 (加法组合) 可以选择 U5~U10、C-5~C-9。

U5 / C-5	U6 / C-6	U7 / C-7
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">或是</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">或是</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">或是</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>
U8 / C-8	U9 / C-9	U10
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="font-size: 24px;">+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>

7-10. 缝纫图案的 X·Y 平行移动

送布装置向任意位置移动，已程序化的缝纫图案可上下左右平行移动。

1		<p>1. 按下 Δ 键或是 ∇ 键，选择程序 No.。</p> <p>2. 踩下压脚开关 (1) 压脚板降下后，再踩启动开关 (2)。</p> <ul style="list-style-type: none"> 压脚板向缝纫开始点移动。
2	踩下压脚开关 (1) 压脚板下降。	
3		<p>按下 TEST 键的同时，按下 ∇ 键。</p>  <ul style="list-style-type: none"> 平行移动量在菜单上以 mm 为单位显示的。 <p>TEST 灯亮起，X-SCALE 灯闪烁</p>
4	<p>X 轴平行移动模式</p>  <p>Y 轴平行移动模式</p>    	<p>如果按下 SELECT 键，X-SCALE 灯和 Y-SCALE 灯交替闪烁。可任选其一。</p> <p>4560Q 每按一次 Δ 键或是 ∇ 键，压脚板移动 0.05mm。（超过 10mm 的移动则以 0.1mm 为单位。）</p> <ul style="list-style-type: none"> X 轴平行移动模式时，按 Δ 键则机针相对向右，按 ∇ 键则向左移动。 Y 轴平行移动模式时，按 Δ 键则机针相对向后，按 ∇ 键则向前移动。 <p>4561Q</p>
5	<p>平行移动模式结束</p>  <p>TEST 灯熄灭</p>	按下 TEST 键。

[注意]

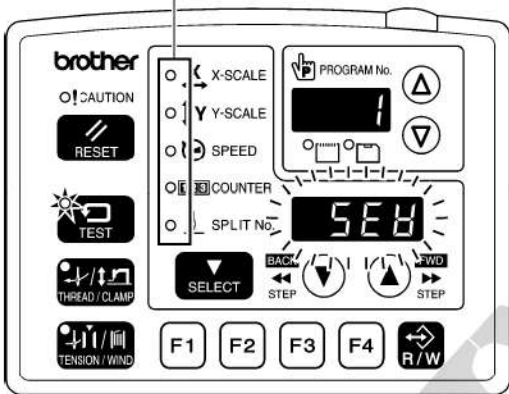
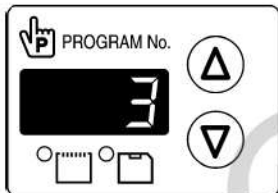
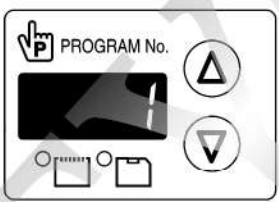


- 缝纫图案超过缝制区域则不能移动。
- 如果程序 No. 和横向倍率及纵向倍率被变更时，移动量的记忆将被清除。
- 还有，如果切断过电源的话，移动量的记忆也将被清除。但是，如果存储器开关 No. 465 为 ON 时，移动量被记忆，即没被清除。（关于存储器开关 No. 465 请参考调整说明书。）

7-1 1. 存储数据的清除(初始化)

正常情况下缝纫机不能工作的原因有可能是存储器开关等的存储数据设定不正确。此时按照下表进行操作，将存储数据进行初始化就能恢复至正常工作状态。

参数编号	内容
1	[SEW] 缝制程序的全部消除 [— * * *] 缝制程序的个别消除
2	[MEM] 存储器开关的初始化
3	[ALL] 全存储数据(缝制程序，存储开关，用户程序，循环程序，扩充选购输出数据)的消除或初始化
4	[USE] 用户程序，循环程序的消除
5	[EoP] 扩充选购输出数据的消除

*有关扩充选购输出请参考程序装置的使用说明书。

1	 <p>全部熄灭</p> <p>按下 RESET 键的同时，接通电源开关。 ※ 机种名显示后，请按住 RESET 键直到蜂鸣器响起“哔”声。</p> <p>程序 No. 显示器上显示参数编号及菜单显示器上闪烁该内容。</p> <p>TEST 灯亮起，菜单灯熄灭</p> <p>4562Q 4421Q</p>
2	 <p>按▲键或是▼键，选择需要初始化的项目的参数编号。</p> <p>4557Q</p> <p>缝制程序的个别选择</p>  <p>如果参数编号为 [1] 时按下 ▼ 键，显示从 [SEW] 变为 [— * * *]。(* * * 为缝制程序 No.)</p> <p>按下 ▲ 键或是 ▼ 键，选择要消除的缝制程序 No.。</p> <p>4563Q</p>
3	 <p>按住 RESET 键 2 秒以上。</p> <ul style="list-style-type: none"> 响起“哔-”音的同时，已选择项目的存储数据被初始化。 仅初始化的项目，其内容由闪烁显示变为亮起。
4	<p>数据初始化模式结束</p>  <p>按下 TEST 键。</p> <p>TEST 灯熄灭</p>

8. CF 卡的使用方法

8-1. CF 卡(市场上销售产品)使用上的注意事项

- 请使用 32、64、128、256、512MB、1GB 及 2GB 的 CF 卡。
(超过 2GB 以上容量的 CF 卡本产品不能使用。)
- 请勿拆卸或改装。
- 请勿强行弯曲，摔跌，损伤，以及在卡上压重物。
- 请勿让卡沾上水，油，溶剂及饮料等液体。
- 请在无强静电，电器噪音的环境下使用和保管。
- 请勿在有振动及冲击，阳光直射，布满线屑等灰尘，高温多湿，温差较大，以及靠近扬声器等强磁体的地方使用和保管 CF 卡。
- 在进行数据读取和写入时，如有振动及冲击，请勿将 CF 卡从缝纫机中取出。
- CF 卡中的数据会因错误操作及事故等消失和破损。因此建议请将重要的数据备份。
- 请务必在缝纫机电源切断的状态下插入或拔出 CF 卡。
- 由于购入时 CF 卡就已经格式化，因此请勿再次格式化。
- 推荐的 CF 卡为 San Disk, Hagiwara SYS-COM 的市场上销售产品。其它厂商的产品也可使用，但有可能会因格式不同而发生无法读写的情况。

其它请参阅所购 CF 卡附带的使用说明书。

* 本产品对应于 CF 卡的 FAT16 格式，不对应 FAT32 格式。

* CF™ 为 San Disk 公司的商标。

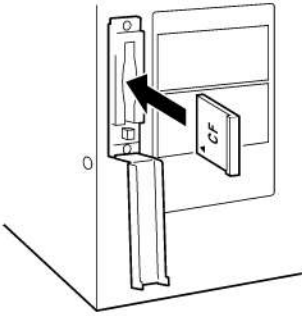
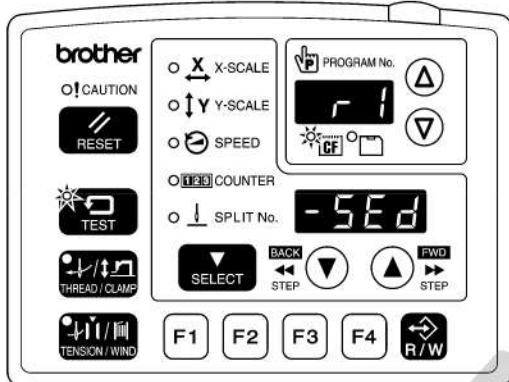

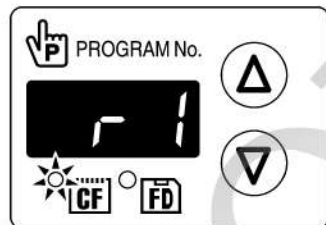
* 本说明书记载的公司名及产品名为各公司的商标或登记商标。但是正文中没有明确标明 TM 等标记。

8-2. CF 卡文件夹的构成

\BROTHER\ISM\ISMSYS\ISM05MN.MOT	: 控制程序
\BROTHER\ISM\ISMDB00\ISMMSW.SEW	: 存储开关数据
(*1) \ISMUPG.SEW	: 用户程序数据
\ISMS0100.SEW	: 缝制数据 P No = 100
\ISMS0101.SEW	: 缝制数据 P No = 101
\ISMS0102.SEW	: 缝制数据 P No = 102
⋮	⋮

(*1) 缝制数据的文件夹 \BROTHER\ISM\ISMDB00 因是根据存储开关 No. 752 的数值的变更而改变有下线的号码，文件名也可由此改变。想把不同缝纫机的缝制数据保管在同一张 CF 卡中时，请改变文件夹名称。(关于存储器开关 No. 752，请参照调整说明书。)

8-3. 数据的读写模式

1	 <p>在电源开关断开状态下，将 CF 卡插入 CF 槽中。</p> <p>[注意]</p> <ul style="list-style-type: none"> · 请注意 CF 卡的插入方向。 · 除了插入或拔出 CF 卡时，请务必将盖子关闭。如果有灰尘等进入，会引起故障。 · 如不能找到有效数据时，CF 灯不点亮。 <p>4453Q</p>	
2	接通电源开关	
3	<p>进入数据读写模式</p>  <p>按下 TEST 键的同时，按下 R/W 键。</p>  <ul style="list-style-type: none"> · 程序 No. 显示器上显示模式 No.，菜单显示器上显示该内容。 · 初始模式为缝制数据读取模式。（参照读写模式一览） <p>TEST 灯和 CF 灯点亮</p> <p>4574Q</p>	
4	 <p>按下 Δ 键或是 ∇ 键，选择模式。</p> <p>4575Q</p>	

[读写模式一览]

程序 No. 显示器	菜单显示器	内容
r 1	[-SEd]	从 CF 卡读取缝制数据(*1)
w 2	[SEd-]	将缝制数据写入 CF 卡
r 3	[-MEM]	从 CF 卡读取存储开关的设定
w 4	[MEM-]	将存储开关的设定写入 CF 卡
r 5	[-UPG]	从 CF 卡读取用户程序的设定
w 6	[UPG-]	将用户程序的设定写入 CF 卡
r 7	[-SyS]	从 CF 卡读取控制程序，并将版本升级
w 8	[LoG-]	将错误记录数据写入 CF 卡
r 9	[-Fdd]	从软盘读取缝制数据(*2)(*3)
w 10	[Fdd-]	将缝制数据写入软盘(*2)
r 11	[-EoP]	从 CF 卡读取扩充选购输出数据(*4)
w 12	[EoP-]	将扩充选购输出数据写入 CF 卡
r 13	[oPFd]	从软盘读取扩充选购输出数据(*2)

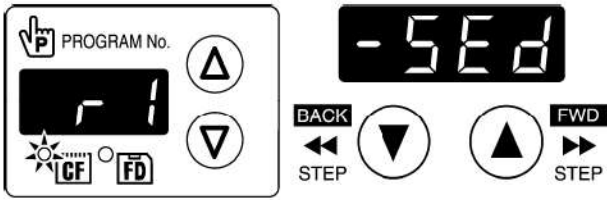


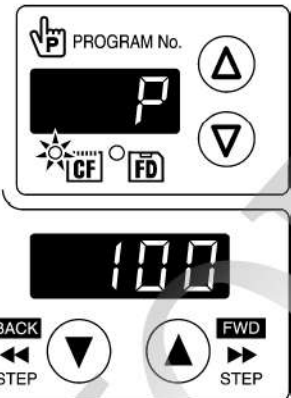

(*1) 本产品上可使用的缝制数据是专用于 BAS-300G 系列而制作的数据。

(*2) 只有在使用选购的软盘装置时才有效。

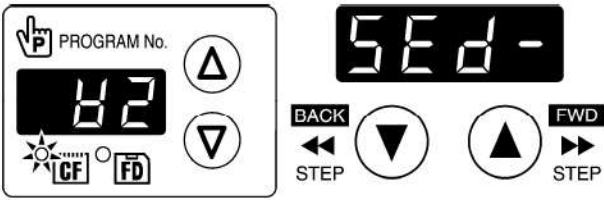
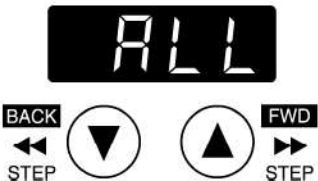

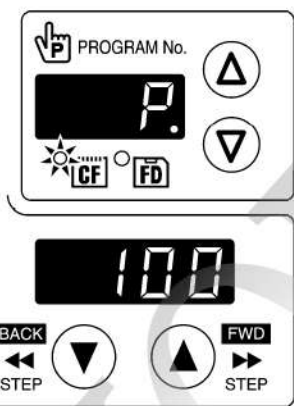


(*3) 能够读取 BAS-300 系列，BAS-300A 系列，BAS-300E/F 系列的缝制数据。

(*4) 有关扩充选购输出请参考程序装置的使用说明书。

8-3-1. 从 CF 卡一次性读取全部的缝制数据

1	<p>在数据读写模式下选择 [r 1] 。</p>  <p>4576Q</p>
2	<p>按下 R/W 键。</p>  <p>· [-SEd] 变为 [ALL] 。</p> <p>* 在这里按下 ▲ 键或是 ▼ 键，选择想要读取的程序 No.。如进行以下的操作，也能个别读取被选择了的缝制数据。</p> <p>4577Q</p>
3	<p>按下 R/W 键。</p>  <p>· 蜂鸣器被鸣响，全部的缝制数据从 CF 卡读取并拷贝到内存上。</p> <p>· 在菜单显示上会表示正在被读取中的程序 No.。</p> <p>* 当 CF 卡存有大量的缝制数据时，要花很多时间读取。如果中途想停止时，请按暂停键。此后如要继续时，按 RESET 键时显示 [ALL] 后会继续读取。</p>  <p>读取中</p> <p>4976Q</p>
4	<p>读写模式结束</p> <p>按下 TEST 键。</p> <p>切断电源，拔出 CF 卡，请务必用盖子将 CF 槽关闭。</p>  <p>TEST 灯熄灭</p>

8-3-2. 将全部的缝制数据一次性写入 CF 卡

1		在数据读写模式下选择 [w 2] 。	4578Q
2		按下 R/W 键。  · [SED-] 变为 [ALL] 。 * 在这里按下 ▲键或是 ▼键，选择想要写入的程序 No.。使用以下的操作，也能个别写入被选择的缝制数据。	4577Q
3		按下 R/W 键。  · 蜂鸣器被鸣响，全部的缝制数据从内存中写入到 CF 卡上并被拷贝。 · 在菜单显示上表示正在被写入中的程序 No.。 * 当内存中有大量的缝制数据时，要化很多时间写入。如果中途想停止时，请按暂停键。此后如要继续时，按 RESET 键时在显示 [ALL] 后会继续写入。	4977Q
4		按下 TEST 键。 切断电源，拔出 CF 卡，请务必用盖子将 CF 槽关闭。	
	TEST 灯熄灭		

有关其他的读写模式请参考调整说明书。

9. 缝纫

⚠ 注意



发生下列情况时，请切断电源。

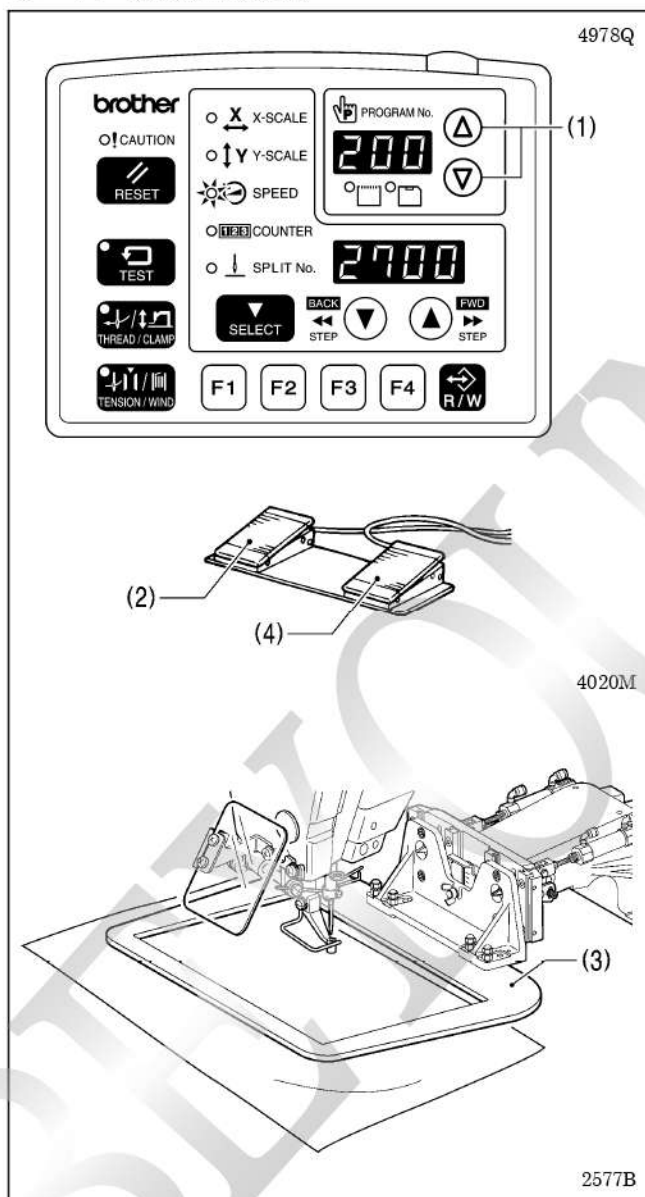
当误踩脚开关时，缝纫机动作会导致受伤。

- 机针穿线时
- 更换机针或梭芯时
- 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活动部件或将物件靠在运动部件上，因为这会导致受伤或缝纫机损坏。

9-1. 缝纫的方法



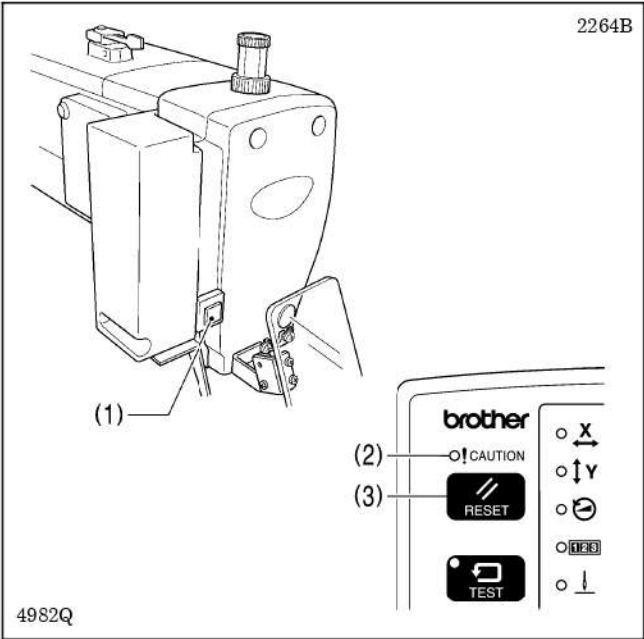
1. 打开电源。
2. 按△键或是▽键(1)，选择要缝纫的程序 No.。
 - * 从 CF 卡读取缝制数据的方法请参考「6-2. 缝纫数据的读取方法」。
3. 踩下压脚开关(2)压脚板(3)降下后，再踩下启动开关(4)。
 - 压脚板向缝纫开始点移动。
 - 在接通电源开关后马上进行原点检出。
4. 将布料放在压脚板(3)的下面
5. 踩下压脚开关(2)。
 - 压脚板(3)下降。
6. 再踩下启动开关(4)。
 - 缝纫机起动。
7. 缝纫一结束就剪线，然后压脚板(3)上升。

请使用能确保缝制布料不偏移的压脚板和送布板。

如使用标准的压脚板和送料板而缝制布料偏移时，请使用压脚板和送料板不能滑动的措施。

9-2. 暂停开关的使用方法

在缝制中或是试送布中，如果按了暂停开关(1)，CAUTION 指示灯(2)会点亮，缝纫机立即会停止。


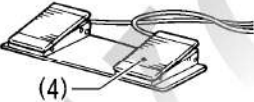


<解除方法>

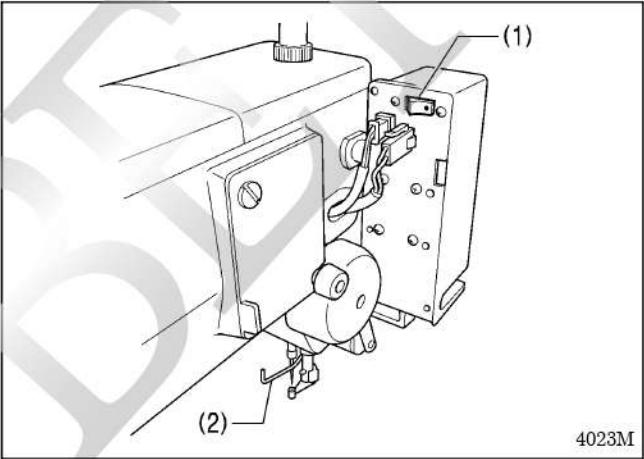
1. 按 RESET 键(3)。
 - 切线动作完了后，CAUTION 指示灯(2)熄灯，电子蜂鸣器鸣响后停止。
2. 当不能接着进行缝制时，请再按一次 RESET 键(3)。
 - 程序 No. 将闪烁。请进入下面的缝纫准备。

<接着缝制的方法>

在缝纫中，当出现断线或是底线用完等情况时，按下了暂停开关(1)后，还是可以在出现断线的位置处继续接着缝制工作的。

1		按 RESET 键。 <ul style="list-style-type: none">· 切线动作完了后，CAUTION 指示灯熄灯，电子蜂鸣器鸣响后停止。
2		按着▼键，压脚板回到要接着缝制的位置处。 <ul style="list-style-type: none">· 如果按▼键一次，压脚板就后退 1 针；如果按▲键一次，压脚板就前进 1 针。(如果连续按着不放，就快速后退或前进。)
3		踩下启动开关(4)。 <ul style="list-style-type: none">· 缝纫机起动，缝纫开始。

9-3. 扫线用开关的使用方法



使用扫线用开关(1)，可以切换扫线杆(2)的开和关(ON, OFF)。

10. 保养

⚠ 注意



在开始清洁作业前，请切断电源。

如果误踩了脚开关，缝纫机动作会导致人员受伤。

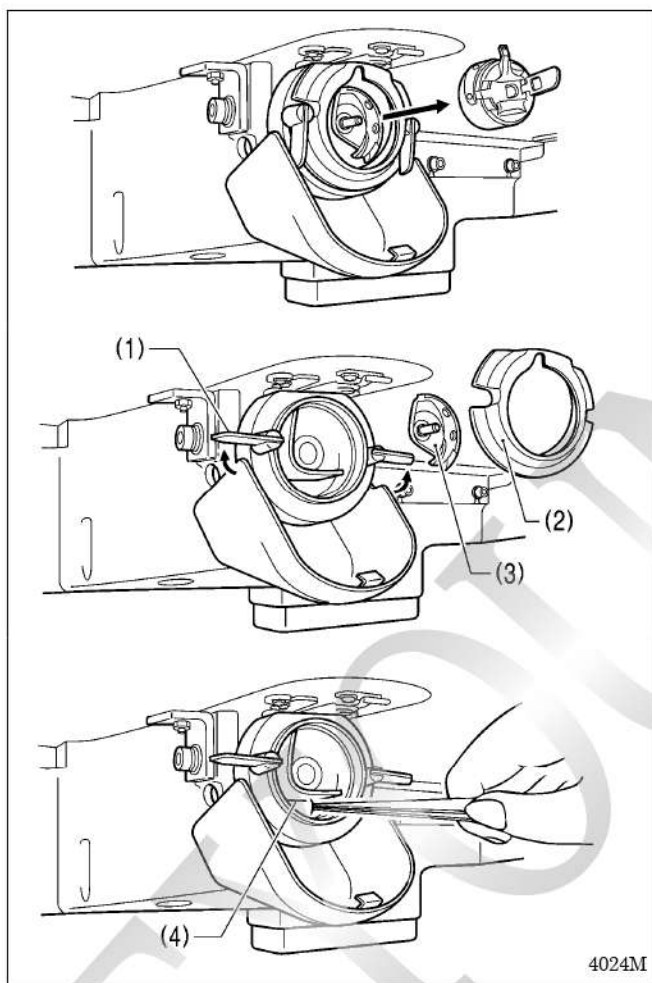


使用润滑油和黄油时，务必戴好保护眼镜和保护手套等，以防润滑油落入眼中或沾在皮肤上，这是引起发炎的原因。

另外，润滑油或黄油不能饮用，否则会引起呕吐和腹泻。

将油放在儿童拿不到的地方。

10-1. 旋梭的清扫

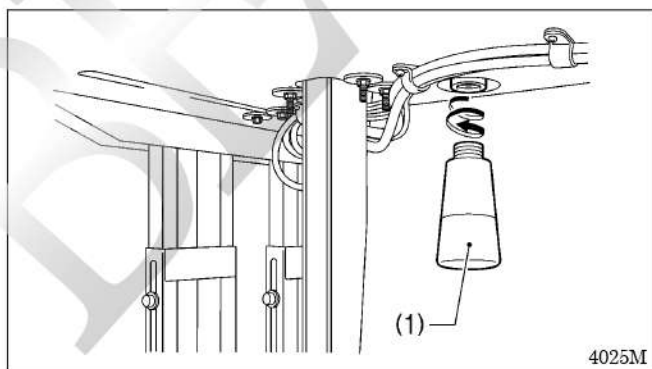


1. 将大旋梭盖向下拉开，取出梭芯盒。

2. 将大旋梭固定柄(1)朝箭头方向打开，取出大旋梭(2)和中旋梭(3)。

3. 将梭托(4)的四周，旋梭线导向上部及旋梭边缘的棉尘和线屑等清除干净。

10-2. 废油

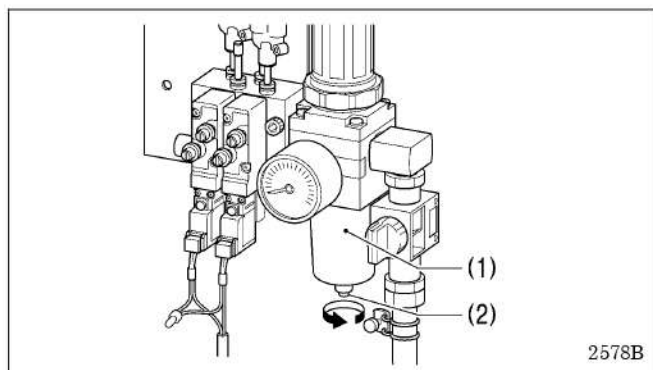


1. 当油壶(1)内积满了废油时，请拆下油壶(1)，并清除里面的废油。

2. 清除完后，将油壶(1)拧回到原来位置。

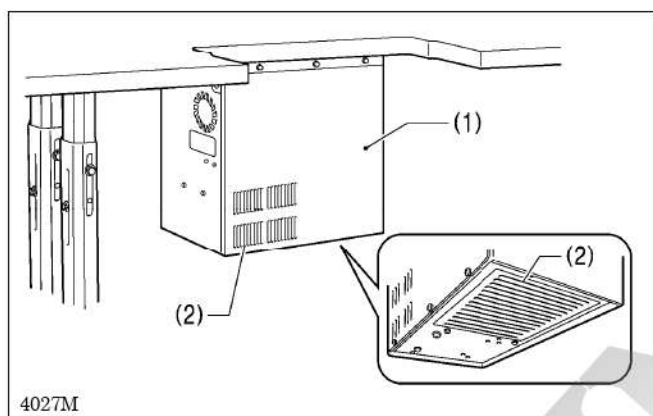
* 请遵守废油处理法规，正确处理废油。

1 0-3. 调节器的点检



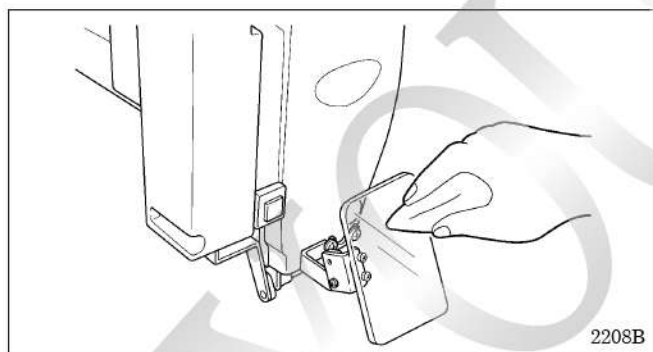
1. 在调节器(1)内的瓶中如有积水时，排泄阀(2)按箭头方向回转来排泄积水。
2. 排泄完了后拧紧排泄阀(2)。

1 0-4. 控制箱进气口的清扫



请每月一次左右用吸尘器清洁控制箱(1)的进气口(2)处的滤网。

1 0-5. 护眼板的清洁

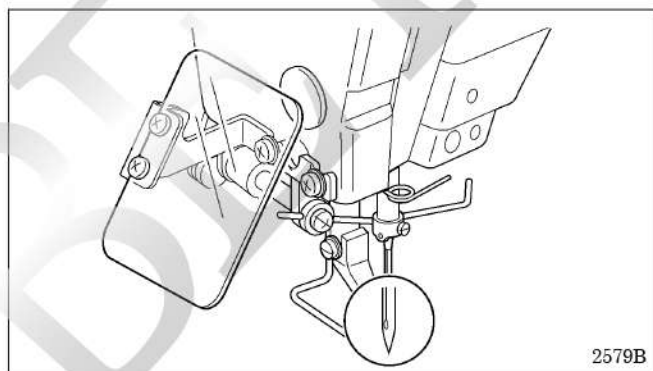


护眼板污秽时，请用软布将其擦拭干净。

[注意]

请勿使用有机溶液如汽油或稀释剂清洁护眼板。

1 0-6. 机针的检查



缝纫开始前先确认针头有否断裂，机针有否弯曲。

1 0-7. 加油

参考「4-18. 供油」所述，添加机油。

1 1. 标准调整

⚠ 注意

- ⊘ 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、保养和检查请委托购买商店或电气专业人员进行。

⚠ 发生下列情况时，请关闭电源。并拔下电源线插座。

否则误踩下脚踏开关时，缝纫机动作会导致受伤。

 - 检查、调整和维修
 - 更换旋梭等易损零部件

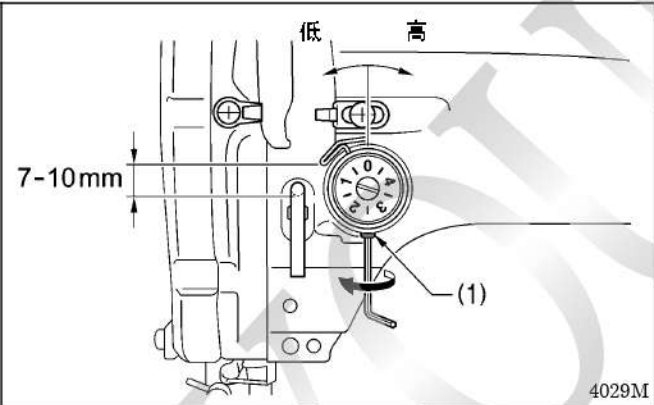
⚠ 在检查、调整和修理任何使用气动装备之前，请先断开气源，并等压力表指针下降到“0”为止。

⚠ 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。
- ⚠ 缝纫机头倒下或竖起时，请用双手进行操作。另外在缝纫机头倒下的状态下，请不要用力压缝纫机。如缝纫机失去平衡，缝纫机头滑落到地上是造成受伤或缝纫机损坏的原因。

⊘ 使用润滑油及黄油时，务必戴好保护眼镜和保护手套等，以防润滑油及黄油落入眼中或沾在皮肤上，这是引起发炎的原因。另外，润滑油及黄油不能饮用，否则会引起呕吐和腹泻。将油放在儿童拿不到的地方。

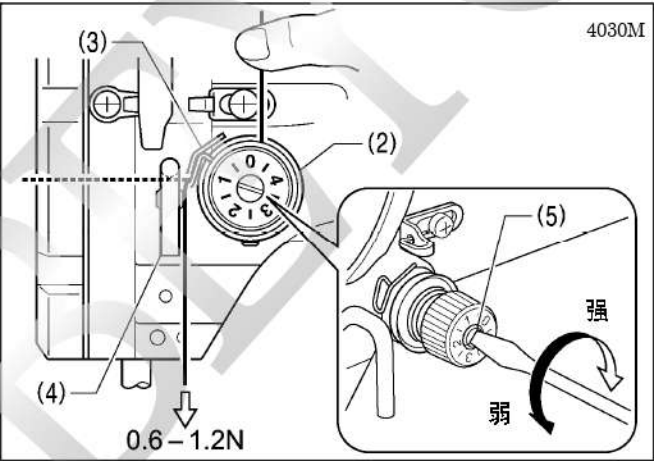
❗ 取下的安全保护装置，必须要安装回去。且请务必安装在原位上，并检查能否正常的发挥作用。

1 1-1. 挑线簧的调整



挑线簧高度(mm)	7~10
挑线簧强度(N)	0.6~1.2

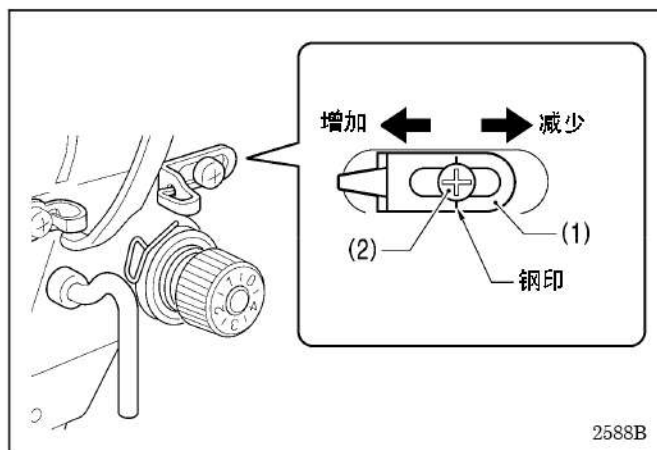
<挑线簧高度>
松开固定螺钉(1)，转动调节器全体进行调节。



<挑线簧强度>
1. 在张力器基座(2)的稍稍上方，用手指压着面线使面线不能放出。
2. 将面线向下拉，使挑线簧(3)和机壳线钩(4)的底面呈一样高度的状态下，测试挑线簧(3)的强度。
3. 用螺丝刀转动夹线杆(5)进行挑线簧强度的调节。

[注意]
如果对挑线簧(3)不能正确地进行调整，那么每次剪线后，面线的残留量有可能会长短不一致。

1 1-2. 机壳线导向 R 的调整

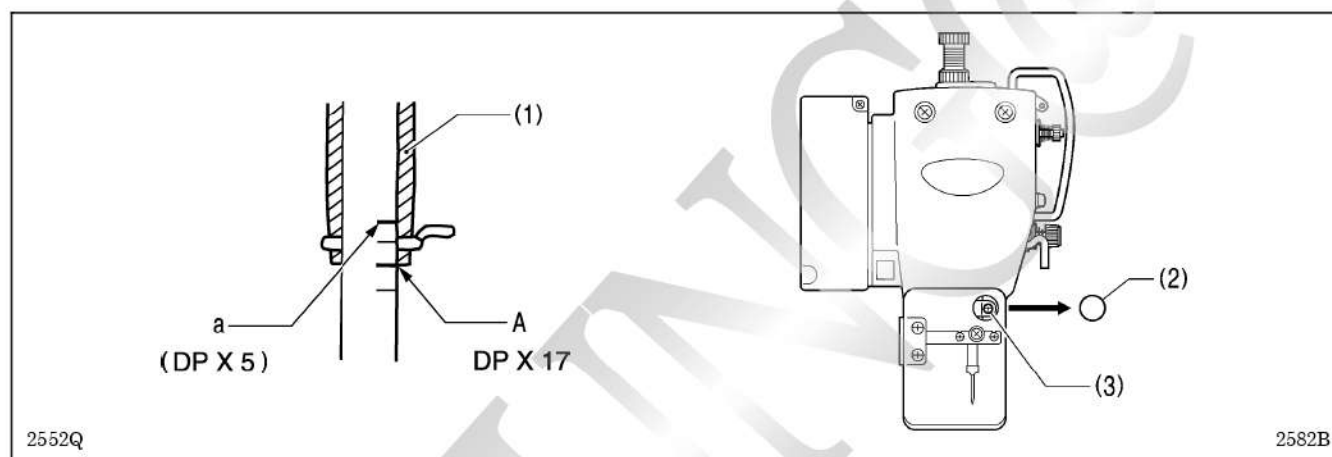


机壳线导向 R (1) 的位置，当螺钉 (2) 被固定在钢印的位置时为标准位置。

松开螺钉 (2)，移动机壳线导向 R (1) 进行位置的调节。

- 当缝纫厚料时，向左移动机壳线导向 R (1)。(挑线量增加。)
- 当缝纫薄料时，向右移动机壳线导向 R (1)。(挑线量减少。)

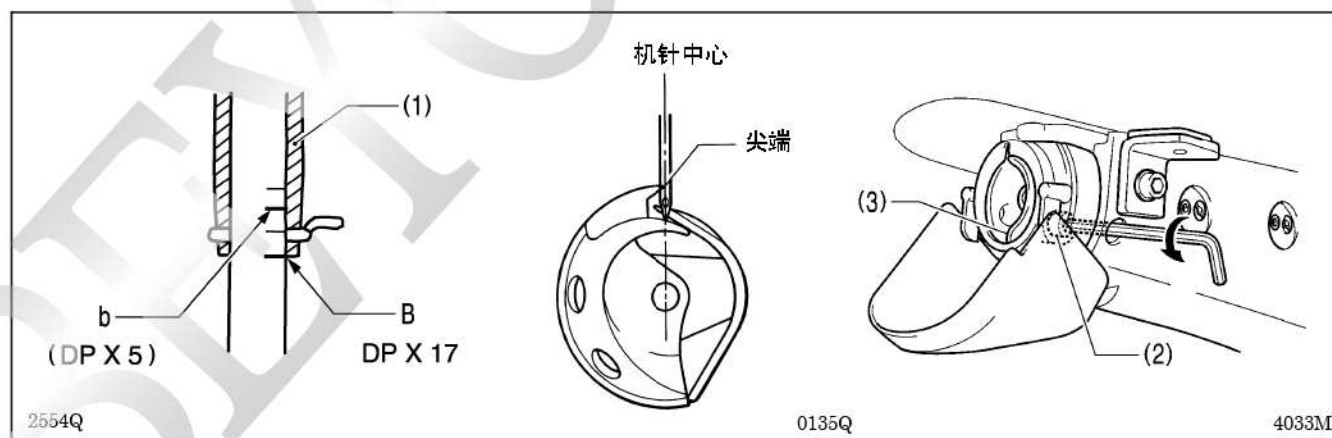
1 1-3. 针杆高度的调整



转动手轮使针杆降至最低点时，将针杆下方的第二根基线 A 与针杆轴套 (1) 下端对齐，卸下橡皮栓 (2) 并松开螺钉 (3)，上下移动针杆进行调整。

*使用 DP × 5 的机针时，应与最上方的基线 a 对齐。

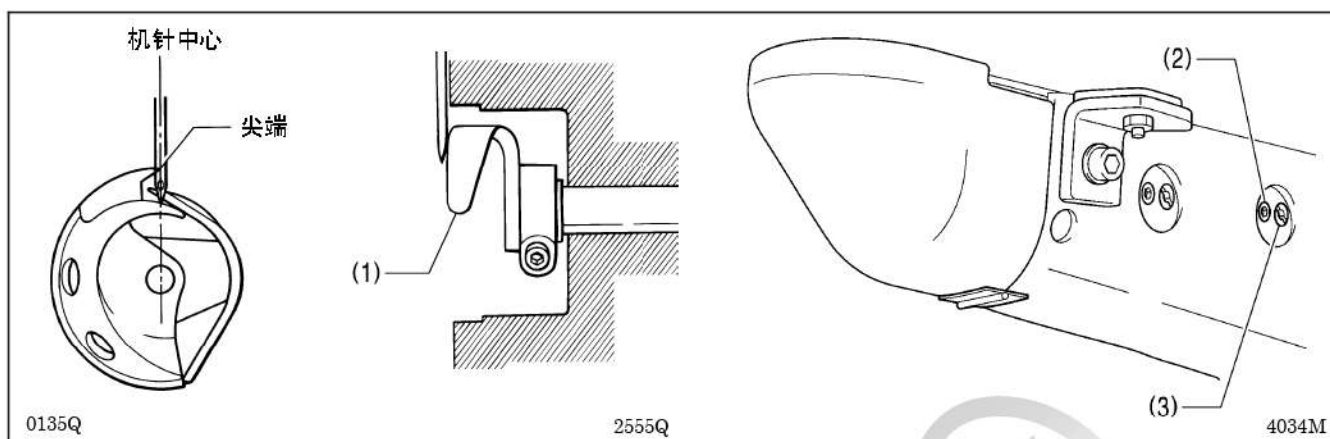
1 1-4. 针杆上升量的调整



转动手轮使针杆从最低点开始上升，当针杆最下方的基线 B 与针杆轴套 (1) 下端对齐时，旋梭尖端应与机针中心对齐一致，松开螺栓 (2)，移动梭托 (3) 进行调整。

*使用 DP × 5 的机针时，应与从上方开始的第二根基线 b 对齐。

1 1-5. 梭托导针部的调整



转动手轮使旋梭尖端与机针中心对齐时，梭托导针部(1)好象要与机针接触似的，松开螺钉(2)，转动旋梭调节轴(3)进行调整。

【注意】

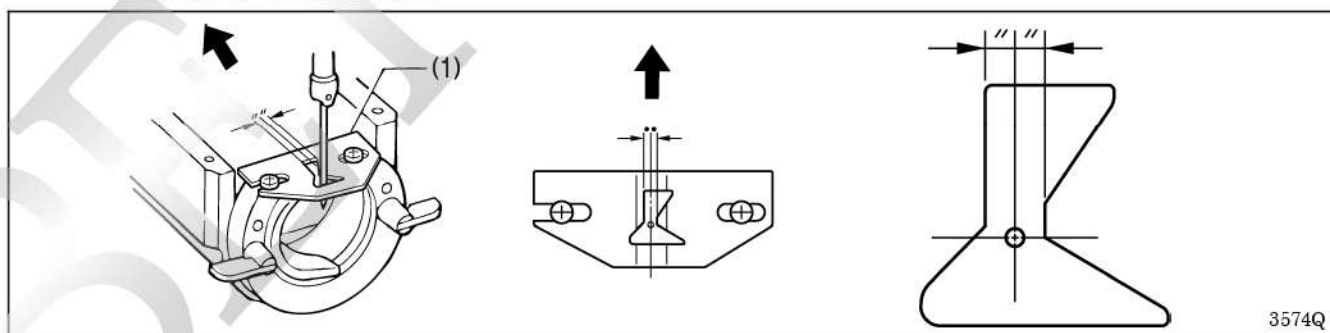
如果导针部的过度导入会使机针的负担加重，还会引起夹线不良。此外，如果导针部不导入，则中旋梭的梭尖端会和机针相接触，会产生跳针的原因。

1 1-6. 针隙的调整



转动手轮使旋梭尖端与机针中心对齐时，机针和旋梭尖端之间的间距为 0.01~0.08mm，并松开螺钉(1)，转动旋梭调节轴(2)进行调整。

1 1-7. 旋梭导线器的调整



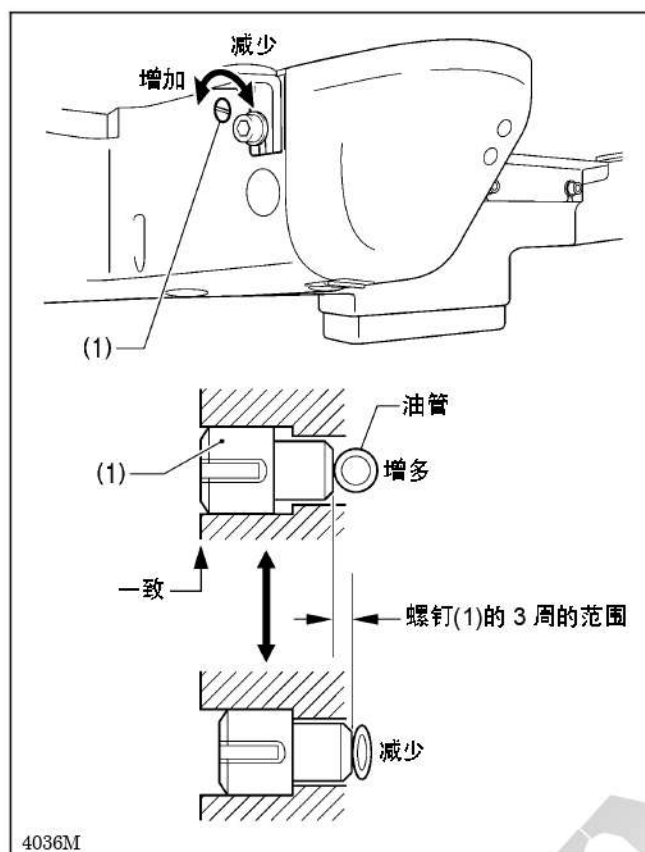
左右位置是将旋梭导线器(1)的针槽作为机针中心的分配位置，前后位置是将旋梭导线器(1)按箭头方向压上并安装的位置。

【注意】

如果旋梭导线器(1)的位置不佳，则会导致断线，缝线受污或是线被缠绕。

旋梭导线器的位置(1)在出厂时已作调整完。请尽可能不作改动。

1 1-8. 旋梭供油量的调整

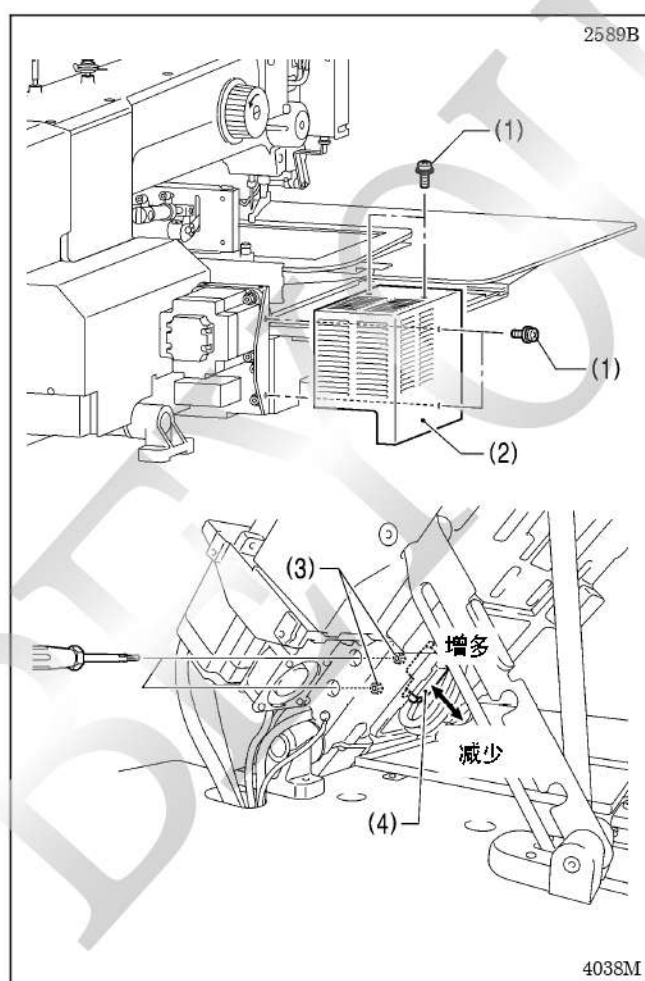


<根据油管的压入量进行调整>

螺钉(1)的头部和底板的端面呈一致状态时为适量的位置。供油量的调节,可从该位置起向右旋转 3 周的范围内进行调节。

- 螺钉(1)向右旋转时供油量减少。
- 螺钉(1)向左旋转时供油量增加。

* 如果想要比螺钉(1)的头部和底板的端面呈一致状态时更多的供油时,请使用下述方法进行调整。

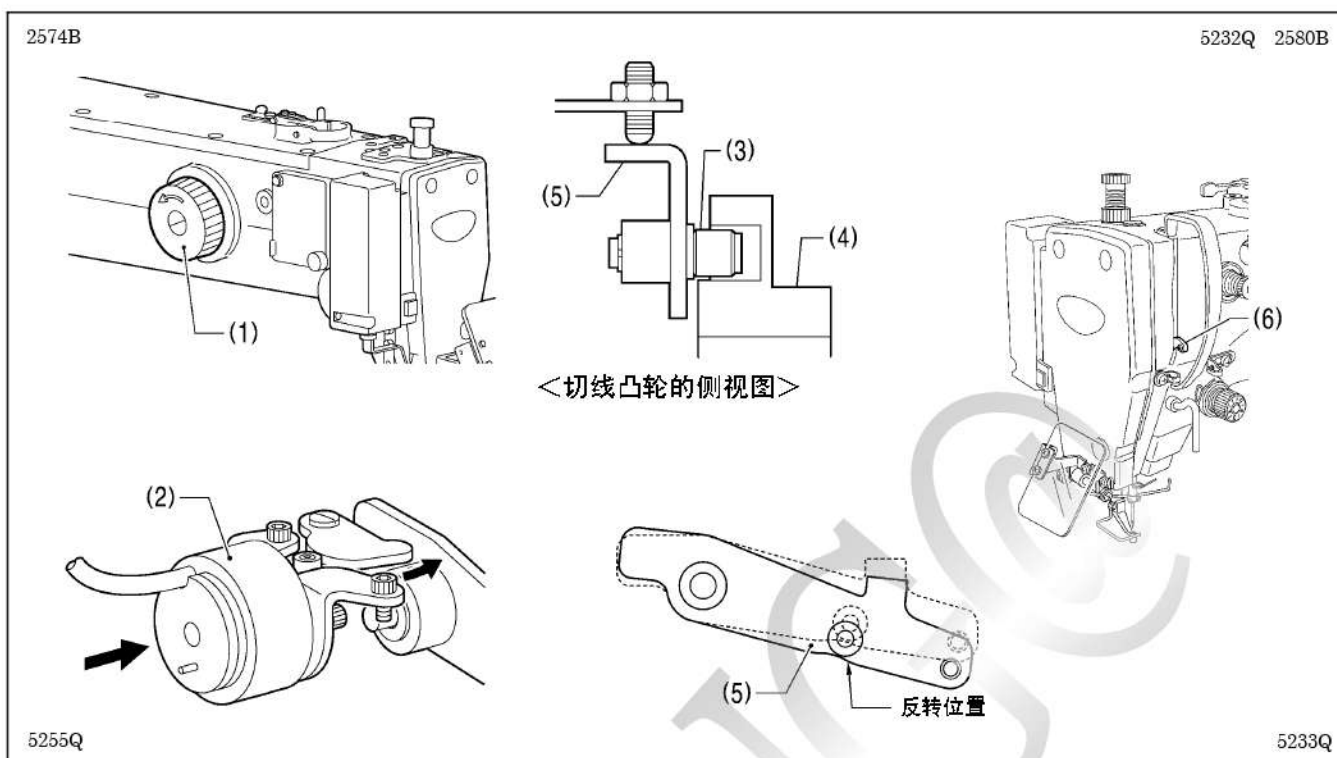


<调整副油罐的供油量>

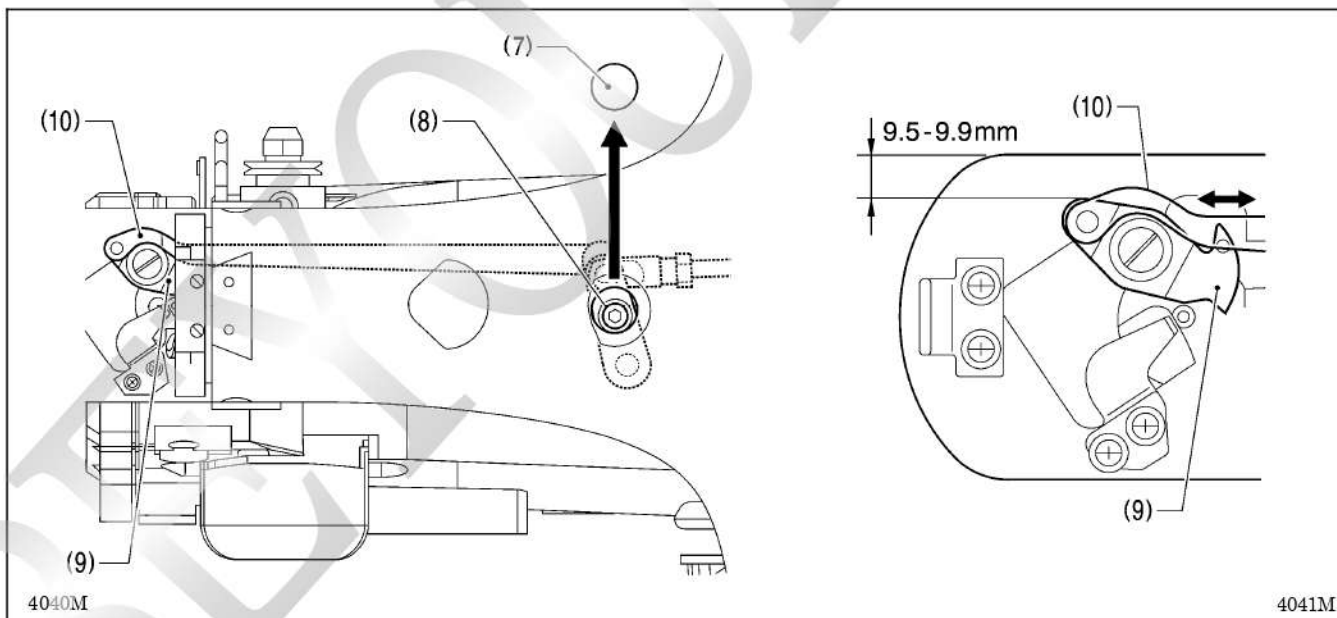
1. 旋下螺钉(1)[4个],取出X马达罩(2)。

2. 将缝纫机头倒下。
3. 从缝纫机机壳的左侧面的孔中用起子将螺栓(3)[2个]松开。
4. 上下移动副油罐(4)进行位置调整后,拧紧螺栓(3)[2个]。
 - 副油罐(4)的位置向上移动,供油量增加。
 - 副油罐(4)的位置向下移动,供油量减少。
5. 将缝纫机头竖起。
6. 使用螺钉(1)[4个],将X马达罩(2)安装上。

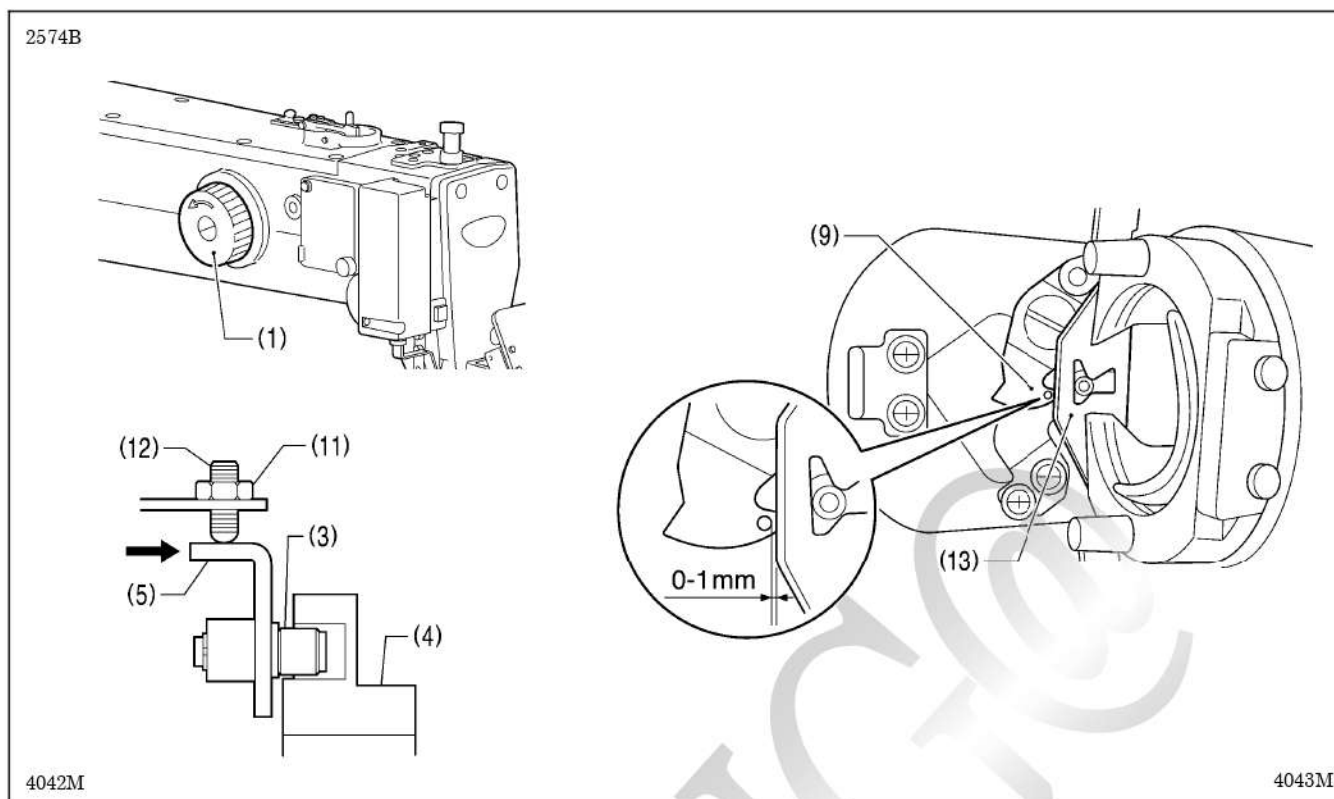
11-9. 动刀的位置调整



1. 取下上盖，将机头放倒。
2. 用手转动手轮(1)使针杆在最低位置后，将切线电磁铁(2)完全压到底。
3. 在切线滚轮(3)嵌入切线凸轮(4)的槽中的状态下，用手回转手轮(1)，使切线驱动杆(5)在反转位置(挑线杆(6)处于最低位置附近)。

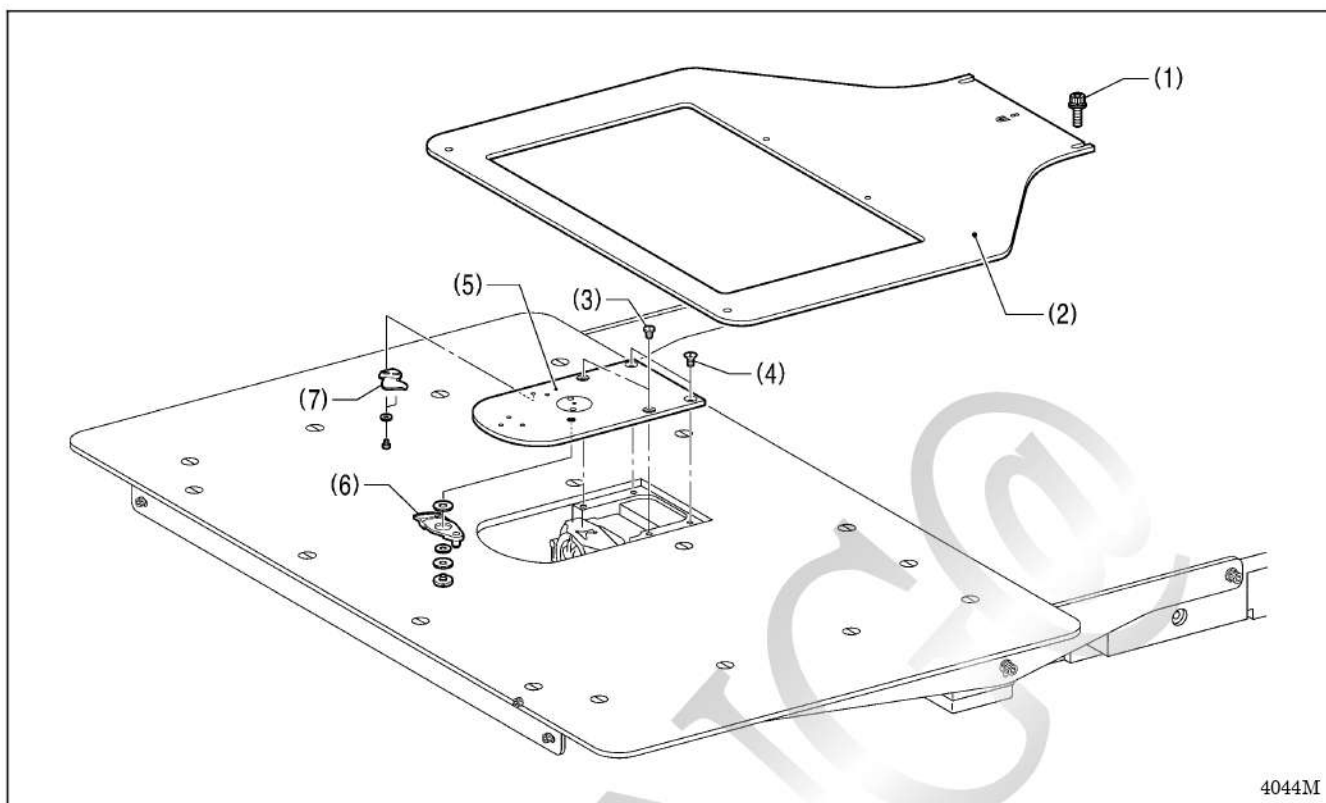


4. 取下橡皮塞(7)。
5. 松开螺栓(8)。
6. 将针板右侧的棱线到动刀(9)的棱线之间的距离保持在9.5~9.9 mm，前后移动动刀连杆(10)来进行调整。
7. 拧紧螺栓(8)后，再次确认上述的位置。

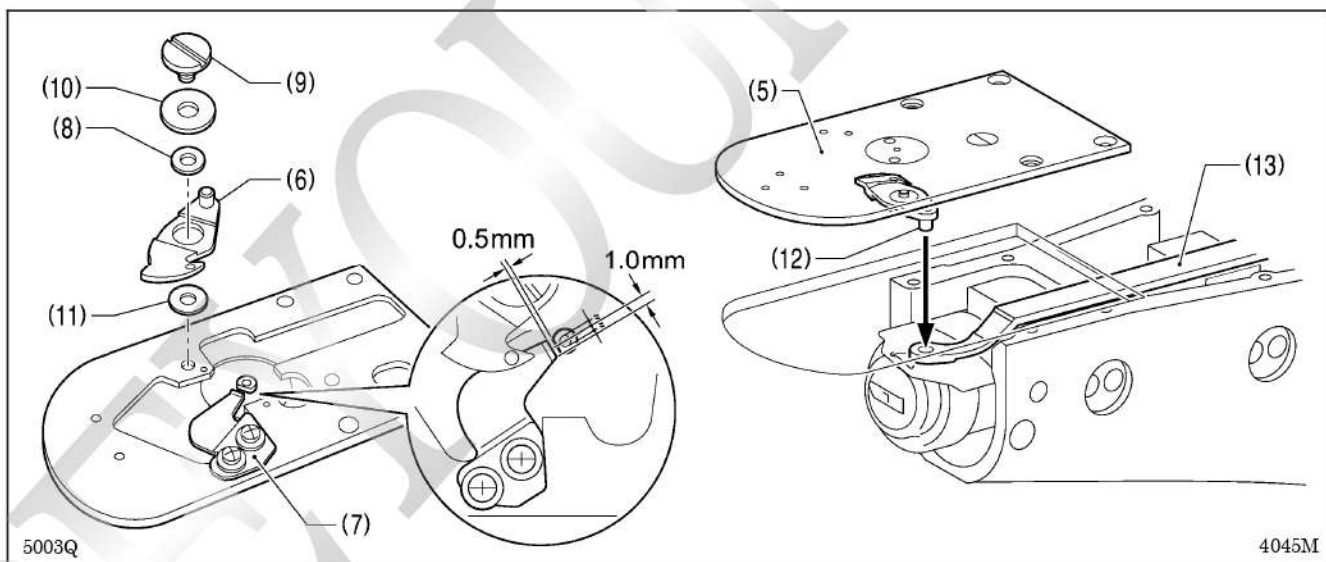


8. 用手转动手轮(1)使针杆置于最低位置。
9. 松开螺母(11)，将嵌入切线凸轮(4)槽中的切线滚轮(3)在碰到其内侧为止后旋紧螺钉(12)，再从此开始将其按逆时针方向回转约 1/4 转。
10. 旋紧螺母(11)，确认切线滚轮(3)不能接触到切线凸轮(4)的内侧。还有，用手将切线驱动杆(5)推向切线凸轮侧，切线滚轮(3)嵌入到切线凸轮(4)的槽中后，当松开手后确认切线驱动杆(5)应能顺畅地复位。
11. 动刀(9)的孔的外周和旋梭线导向(13)的棱线，在没有空隙的状态下确认其范围在 0~1mm 之间。

1 1-10. 动刀和定刀的更换方法

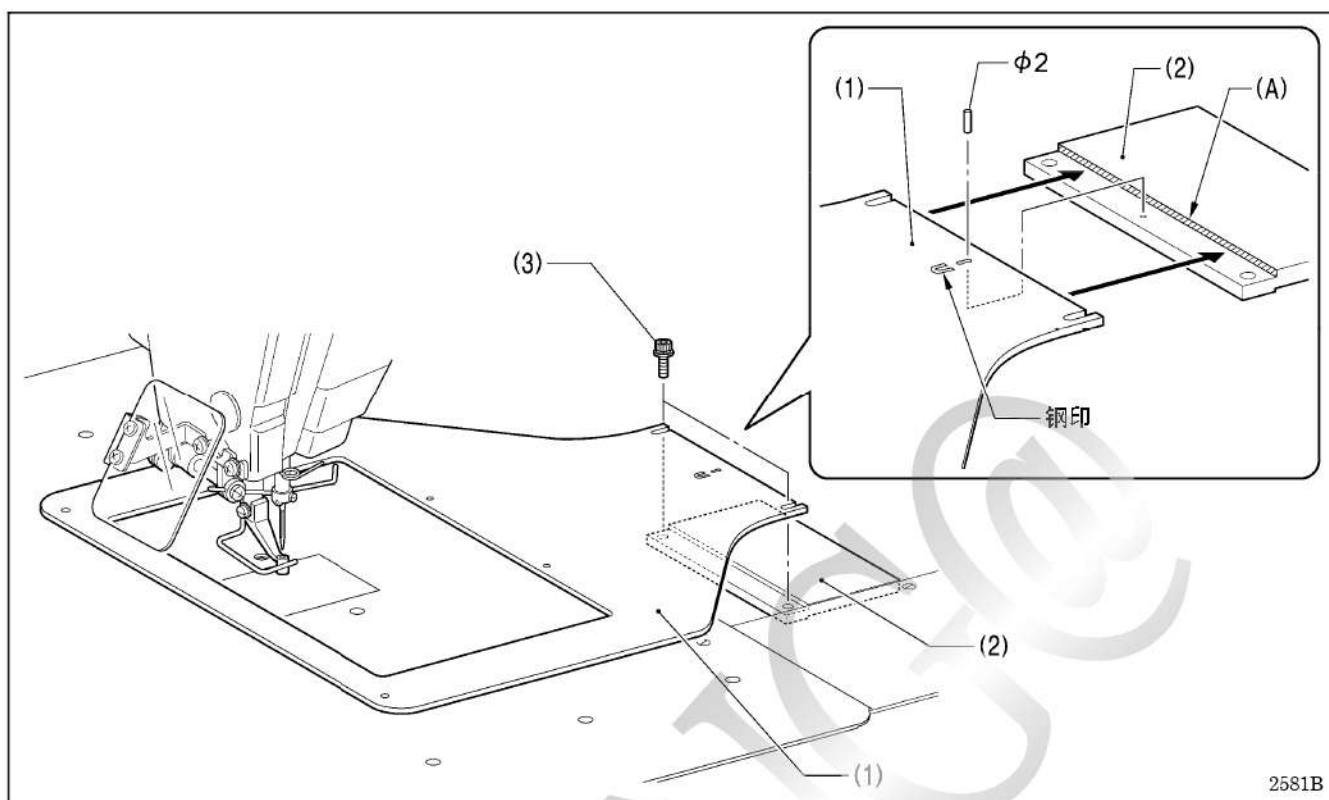


1. 松开螺栓(1)[2个], 拆下送料板(2)。
2. 打开大旋梭盖, 旋下螺钉(3)[2个]和螺钉(4)[2个], 拆下针板(5)。
3. 拆下动刀(6)和定刀(7)。



4. 在如图所示位置安装新的定刀(7)。
5. 在动刀圈套(8)的外周部和段螺钉(9)处涂上润滑脂, 和轴向垫圈(10)及动刀之间的垫片(11), 再加上新的动刀(6)一起安装。
6. 确认动刀(6)和定刀(7)在切线时的锋利度。为了能很好的切线使用附属的动刀之间的垫片(厚度 $t=0.2, 0.3, 0.4$) 来进行调整。
 - *当刃压很低, 不能完全切断缝线时, 请使用薄的动刀之间的垫片。
 - *当刃压很高, 动刀(1)的回转很重时, 请使用厚的动刀之间的垫片。
7. 在动刀的销(12)处涂上润滑脂嵌入动刀连杆(13)的孔中, 然后安装针板(5)。
8. 确认针孔中心和机针对齐。
9. 安装上送料板(2)。(参考下一页)

1 1-1 0-1. 送料板的安装方法

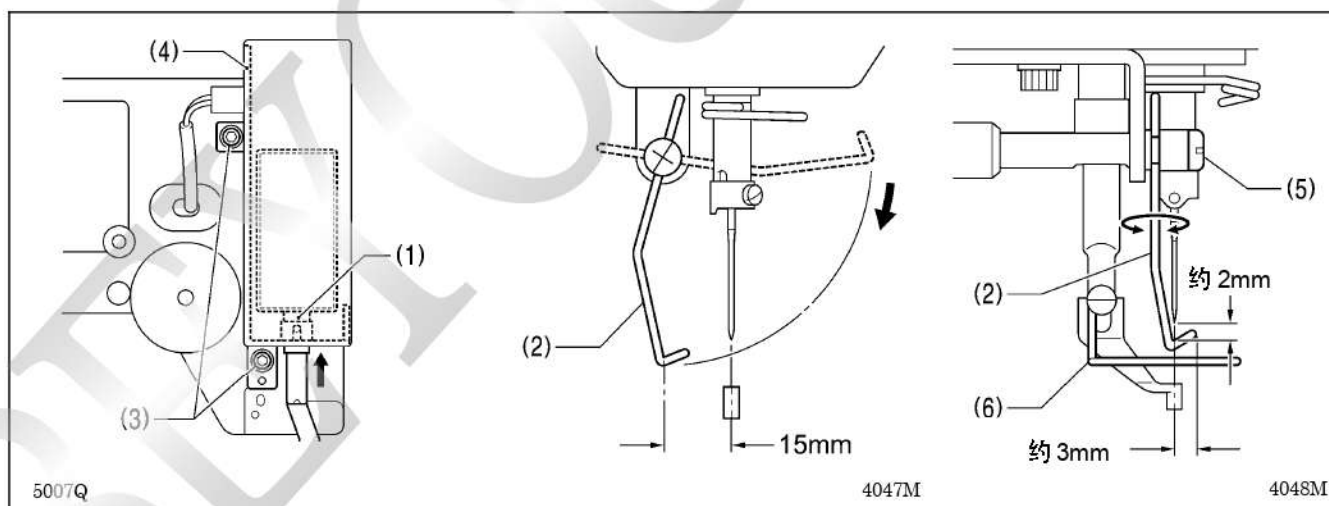


【注意】

安装送料板(1)时, 请将有钢印的面向上。

送料板(1)的后端刚好碰到Y基板(2)的段差部(剖面线(A)面), 送料板(1)的孔和Y基板(2)上的孔插入直径 $\phi 2$ 的孔用销(或机针的针柄)使其一致状态后, 再使用螺栓(3)[2个]将其拧紧。

1 1-1 1. 扫线器的调整

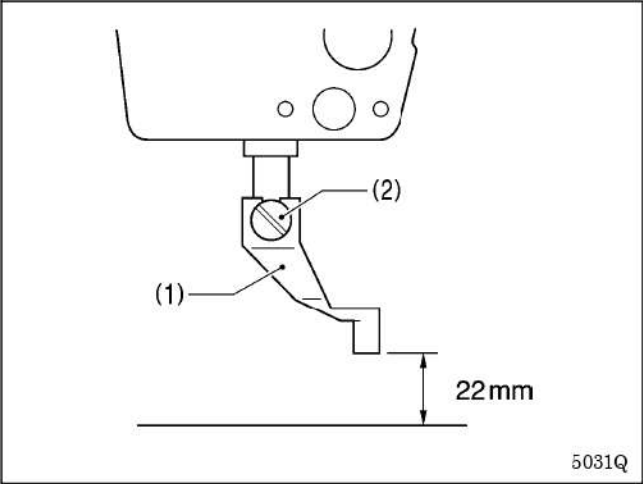


1. 扫线器的电磁铁插棒(1)被拉到最大时, 为使扫线杆(2)能扫过机针中心向前 15mm 处, 将螺钉(3)[2个]松开, 电磁铁安装板(4)整体上下移动来进行调整。
2. 操作扫线杆(2) 为了使其在通过机针的下面时, 扫线杆(2)和机针的尖端之间的间隙约为 2mm 左右, 扫线杆(2)的尖端到机针中心约为 3mm 左右, 松开螺钉(5)调整扫线杆(2)的位置。

【注意】

请确认扫线杆(2)不可碰到护指器(6)。

1 1-1 2. 间歇压脚的安装位置

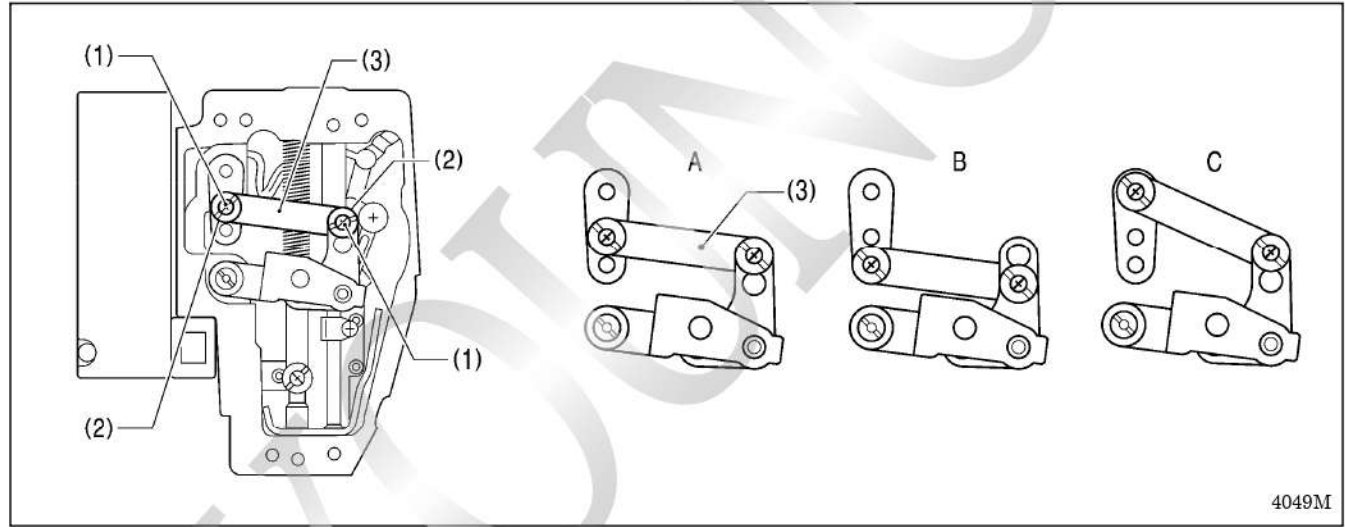


缝纫机在停止位置处间歇压脚(1)呈上升状态时，从间歇压脚(1)的底部到针板表面的距离为 22mm 时将螺钉(2)装上拧紧。

1 1-1 3. 间歇压脚行程的变换

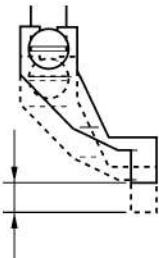
根据间歇压脚连杆的位置调整、及间歇连杆 A 的安装位置的更改，可以在 2~10mm 之间更改间歇压脚的行程。

<间歇连杆 A 的安装位置的更改>



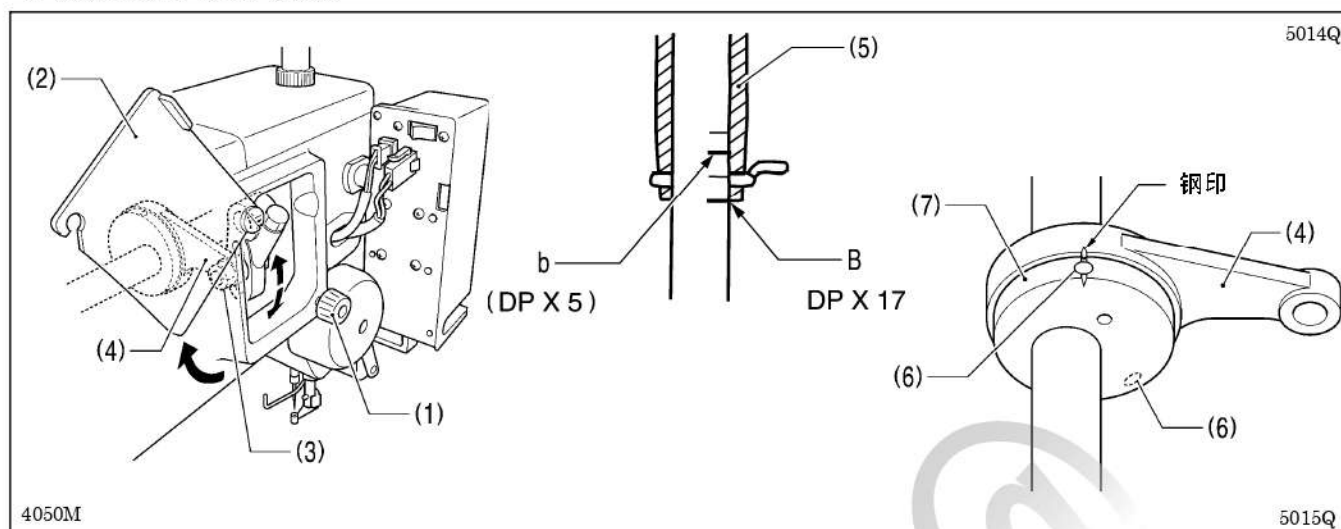
- 1. 拆下面板。
- 2. 取出螺钉(1)[2 个]和段螺钉(2)[2 个]，拆下间歇连杆 A(3)。
- 3. 间歇连杆 A(3)的安装位置可更改成在上述的 A~C 中的任何位置。

在各个不同的安装位置处，如下表所示，当对间歇连杆的位置进行调整时，间歇压脚的行程在下表所示的范围内可进行调整。(参考下一页)

安装位置	间歇压脚行程的范围	
A	2~4.5mm	
B	4.5~10mm	
C	0mm (间歇压脚不能上下移动)	

5012Q

<间歇压脚连杆的位置调整>



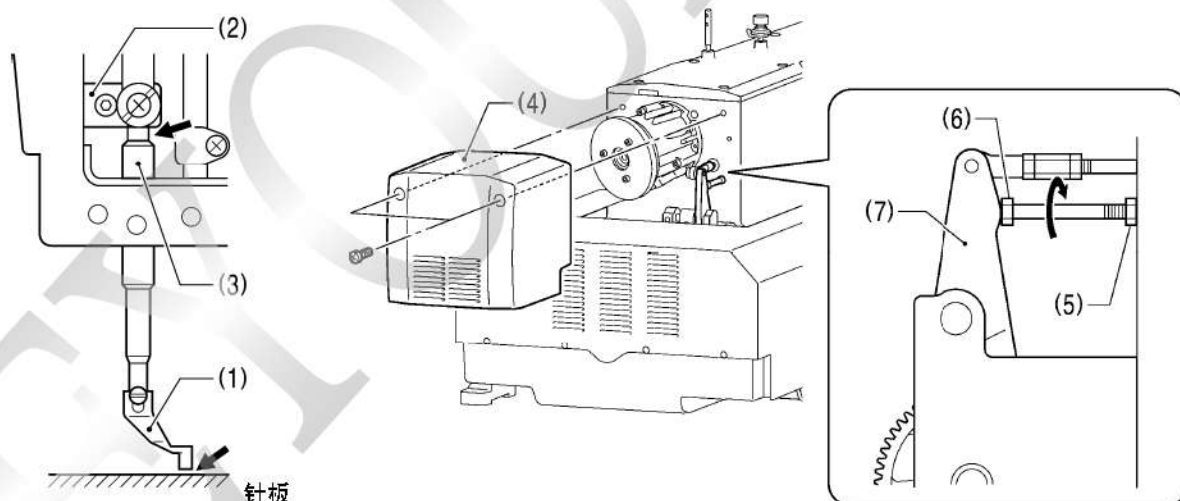
1. 松开螺钉(1)，打开间歇盖板(2)。
2. 旋松螺母(3)，调整间歇压脚连杆(4)的位置。
 - 如将间歇压脚连杆(4)向上去的位置时，间歇压脚行程变大。
 - 如将间歇压脚连杆(4)向下去的位置时，间歇压脚行程变小。

下面是针杆和间歇压脚操作时应同步。

3. 回转手轮让针杆从最下点向上升，使针杆的最下面的基线和针杆轴套(5)的下端面一致对齐。(如果是使用 DP × 5 的机针时，请与从上往下数第二条的基线 b 一致对齐。)
4. 拆下上盖，旋松螺钉(6)[2个]。
5. 使间歇压脚凸轮(7)和间歇压脚连杆(4)的钢印一致后，拧紧螺钉(6)。

间歇压脚的行程变更之后，请进行以下的确认。

5016Q 4051M



1. 在间歇压脚(1)呈下降状态，回转手轮使间歇压脚(1)降到最下点。
2. 确认间歇压脚(1)是否没碰到针板，还有压杆抱箍(2)是否也没碰到压杆轴套(3)。

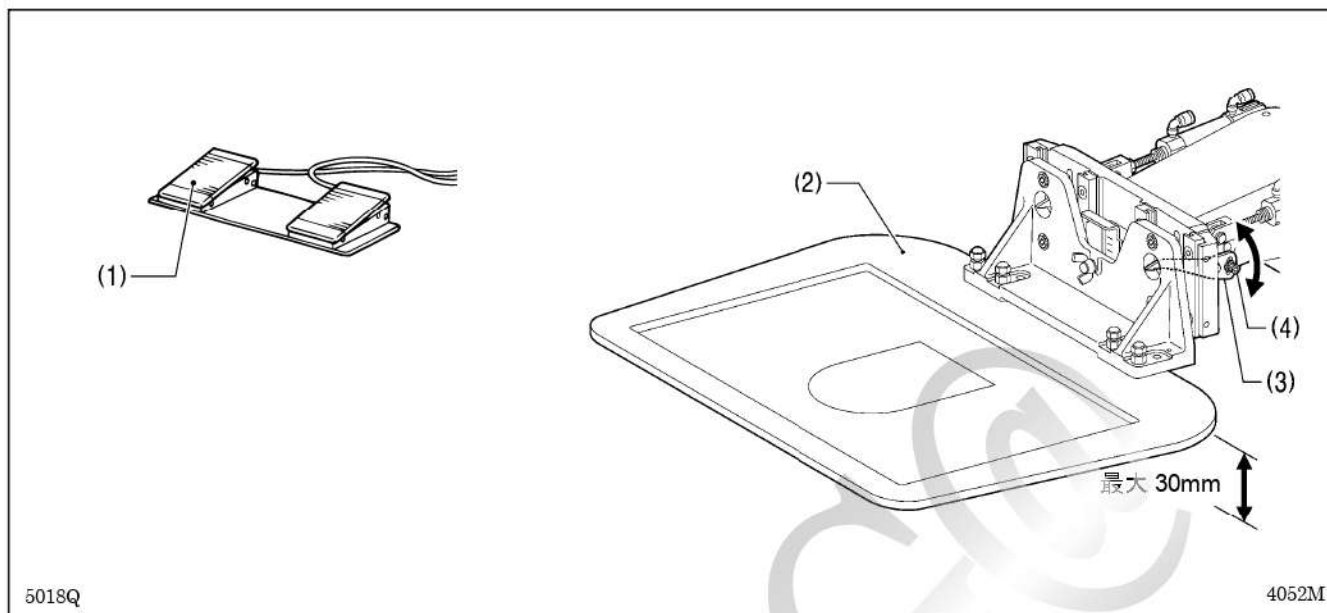
<如果有碰到时>

拆下马达盖(4)。

旋松螺母(5)，回转螺栓(6)使其推动间歇驱动杆(7)来调整，直到上述 2 处不被碰到为止。

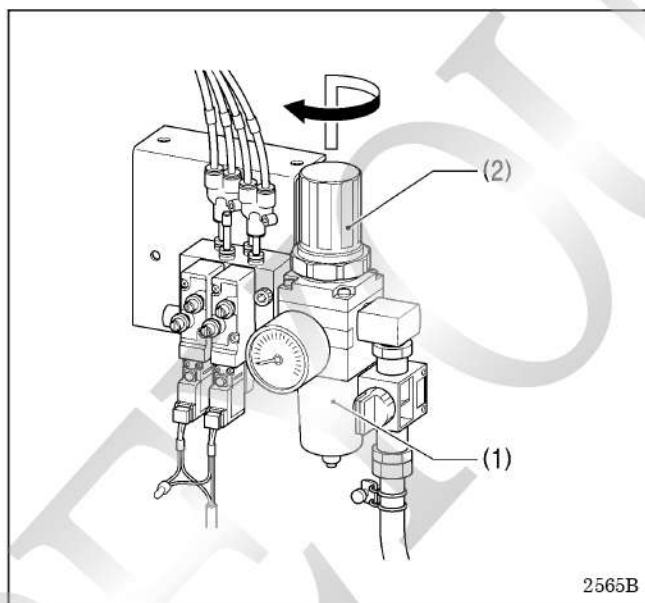
1 1-1 4. 压脚上升量的调整

压脚板(2)的最大上升量为从针板向上 30mm。



1. 送入气压，接通电源开关。
2. 踩下压脚开关(1)，压脚板(2)上升。
3. 旋松压脚臂杆(3)的螺栓(4)[2个]，上下移动压脚臂杆(3)来进行调整。

1 1-1 5. 空气压力的调整



将调节器(1)的手轮(2)向上拨起后再回转，使空气压力调整到 0.5MPa。

调整完了后，按下手轮(2)并锁住。

1 2. 误码表

危险



打开控制箱盖时，先关闭电源开关并将电源插头从插座上拔下后，至少等待 5 分钟后，再打开控制箱盖。
触摸带有高电压的区域将会造成人员受伤。

万一机器发生故障时，蜂鸣器鸣响，显示窗上会显示错误代码。

请按照处理方法来排除导致故障的原因。

开关方面的故障

错误代码	原因和解决方法
E010	按了暂停开关。 请按RESET键解除错误。
E011	按了暂停开关。 请按RESET键解除错误。 按此▼键移动压脚板，可移动到要继续缝纫处继续被中断的缝纫。
E015	是否一直被按着暂停开关？或是暂停开关接触不良。 关闭电源，请确认主基板上的插头P13的插入状况。
E016	暂停开关接触不良。 关闭电源，请确认主基板上的插头P13的插入状况。
E025	一直踩着启动开关同时将电源按上，或是没放下压脚板而踩了起动开关。 如果是一直踩着启动开关同时将电源按上的情况时，请先关闭电源，确认启动开关。 如果是没放下压脚板而踩了启动开关的情况时，请先踩下压脚开关，放下压脚板。
E035	一直踩着压脚开关。 关闭电源，请确认压脚开关。
E036	是因为连接了和规格不符的脚开关？或是压脚操作模式没能正确的被设定。 选择和机种规格一致的脚踏开关的种类，或是请对存储器开关进行初始化。
E050	在接通电源后，被检出了缝纫机头倒下着。 关闭电源，请竖起缝纫机头。 请确认主基板上的插头P9的插入状况。
E051	缝纫机在起动中，被检出了缝纫机头倒着。 关闭电源，请确认主基板上的插头P9的插入状况。
E055	在接通电源时，被检出了缝纫机头倒着。 关闭电源，请竖起缝纫机头。 请确认主基板上的插头P9的插入状况。
E065	在接通电源时，操作盘的按键处于一直被按着状态或按键不良。 关闭电源，请确认操作盘。

上轴马达方面的故障

错误代码	原因和解决方法
E110	针上停止位置的出错。 请回转手轮，直到错误代码正好消失为止。
E111	缝纫机停止时上轴没有在针上位置停止。 请回转手轮，直到错误代码正好消失为止。
E120	针下信号不能确认。 关闭电源，请确认同步器的接续情况。
E121	线没有被完全切断。 关闭电源，请确认定刀、动刀的刀刃部是否已经消磨或有损伤。
E130	缝纫机马达被异常停止，或是同步器不良。 关闭电源，转动手轮请确认缝纫机是否被锁住了。 请确认电源马达基板上的插头P4、P5的插入状况。

(下一页继续)

12. 误码表

错误代码	原因和解决方法
E131	同步器接续不良。 关闭电源，请确认电源马达基板上的插头P5的插入状况。
E132	检出了缝纫机马达的异常回转。 关闭电源，请确认电源马达基板上的插头P4的插入状况。
E133	缝纫机马达的停止位置不良。 关闭电源，请确认电源马达基板上的插头P5的插入状况。
E150	缝纫机马达的异常发热或是温度传感器不良。 关闭电源，请确认缝纫机马达。 (如果反复缝纫(短循环运转)短的针数(15针以下)的缝纫数据时,可能会发生上轴马达过热而出现错误代码[E150]。)

送布方面的故障

错误代码	原因和解决方法
E200	不能检测X轴送布马达的原点。是X轴送布马达异常或是X轴原点传感器的连接不良。 关闭电源，请确认PMD基板上的插头P10和主基板上的插头P20的插入状况。
E201	X轴送布马达异常停止了。 关闭电源，请确认X轴送布方向是否有异常。
E202	X轴送布马达或Y轴送布马达的原点调整数据异常。 请重新调整原点。
E204	在缝纫中，X轴送布马达异常停止了。 关闭电源，请确认X轴送布方向是否有异常。
E205	在向缝纫开始点移动中，X轴送布马达异常停止了。 关闭电源，请确认X轴送布方向是否有异常。
E206	在试送布中，X轴送布马达异常停止了。 关闭电源，请确认X轴送布方向是否有异常。
E207	在程序中，X轴送布马达异常停止了。 关闭电源，请确认X轴送布方向是否有异常。
E210	不能检测Y轴送布马达的原点。是Y轴送布马达异常或是Y轴原点传感器的连接不良。 关闭电源，请确认PMD基板上的插头P8和主基板上的插头P4的插入状况。
E211	Y轴送布马达异常停止了。 关闭电源，请确认Y轴送布方向是否有异常。
E214	在缝纫中，Y轴送布马达异常停止了。 关闭电源，请确认Y轴送布方向是否有异常。
E215	在向缝纫开始点移动中，Y轴送布马达异常停止了。 关闭电源，请确认Y轴送布方向是否有异常。
E216	在试送布中，Y轴送布马达异常停止了。 关闭电源，请确认Y轴送布方向是否有异常。
E217	在程序中，Y轴送布马达异常停止了。 关闭电源，请确认Y轴送布方向是否有异常。

压脚方面的故障

错误代码	原因和解决方法
E300	不能检测压脚原点。是压脚马达异常或是压脚原点传感器的连接不良。 关闭电源，请确认PMD基板上的插头P3和主基板上的插头P5的插入状况。
E301	不能检测间歇压脚的上升和下降。 关闭电源，请确认间歇压脚的上下方向是否有异常。
E303	压脚马达的原点调整数据异常。 请重新调整原点。

通讯或存储器方面的故障

错误代码	原因和解决方法
E401	在接通电源时，检出了和电源马达基板连接的通信错误。 关闭电源，请确认电源马达基板上的插头P6和主基板上的插头P17的插入状况。
E402	在接通电源时，检出了和程序器的连接错误。 关闭电源，请确认主基板上的插头P7的插入状况。
E403	在接通电源时，检出了和PMD基板的连接错误。 关闭电源，请确认PMD基板上的插头P1的插入状况。
E410	检出了和主基板的通信错误。 关闭电源，请再一次重新接通电源。
E411	检出了和电源马达基板的通信错误。 关闭电源，请再一次重新接通电源。
E412	检出了和程序器的通信错误。 关闭电源，请再一次重新接通电源。
E413	检出了和PMD基板的通信错误。 关闭电源，请再一次重新接通电源。
E420	没有插入CF卡。
E421	因程序内容不正确而不能使用，或是没有数据。 请确认在CF卡或是软盘上，是否有该程序号的数据。
E422	在读取CF卡或是软盘时出错了。 请确认CF卡或是软盘上的数据。
E424	CF卡的容量不足，或数据无法写入软盘。 请使用别的CF卡。 请确认软盘是否被设定为禁止存入或是容量不足。
E425	在存入CF卡或是软盘上时出错了。 请使用指定的CF卡。 请确认软盘是否被设定为禁止存入或是容量不足。
E426	没有按下R/W键。 请按R/W键，进行数据读取。
E427	在CF卡或是软盘上，没有该程序号的数据。 请确认程序号。 从内部存储器上读取过一次的数据，即使不再按R/W键也能使用。
E430	不能向主基板上复制数据。 关闭电源，请再一次重新接通电源。
E440	主基板上的数据存储异常。 关闭电源，请再一次重新接通电源。
E450	不能从机头存储器中读取机型选择数据。 关闭电源，请确认电源马达基板上的插头P3的插入状况。
E451	不能将数据存储到机头存储器中。 关闭电源，请再一次重新接通电源。
E452	机头存储器没有被接续。 关闭电源，请确认电源马达基板上的插头P3的插入状况。
E474	内存容量不足，不能复制。 请删除缝纫数据。

数据编辑方面的故障

错误代码	原因和解决方法
E500	由于放大设定，缝纫数据超出了可缝纫范围。 请重新设定放大倍率。
E501	读取了超出缝纫机可能缝纫的范围的缝纫数据。 请确认缝纫数据的尺寸。
E502	由于放大设定，节距数据超出了最大节距值12.7mm。 请重新设定放大倍率。
E510	缝纫数据中有无效号码。 请重新从CF卡或是软盘上读取数据。
E511	缝纫数据中没有输入終了号码。 请输入終了号或是更改程序号。
E512	超出了使用可能的针数。
E520	扩大选择输出的号码有重复了，请更改扩大选择输出的号码。 如果不使用扩大选择输出时，请使用数据初始化操作来删除扩大选择输出数据。
E530	程序号被禁止更改。

基板方面的故障

错误代码	原因和解决方法
E700	电源电压异常升高。 关闭电源，请确认输入电压。
E701	缝纫机的驱动电压的异常升高。 关闭电源，请确认电压。
E705	电源电压异常下降。 关闭电源，请确认输入电压。
E710	检出了缝纫机马达的异常电流。 关闭电源，请确认缝纫机是否有异常。
E711	检出了X轴送布马达的异常电流。 关闭电源，请确认X轴送布方向是否有异常。
E712	检出了Y轴送布马达的异常电流。 关闭电源，请确认Y轴送布方向是否有异常。
E713	检出了压脚马达系列的异常电流。 关闭电源，请确认X轴送布、Y轴送布和抬压脚是否有异常。
E730	检出了外部错误输入(AIRSW)。 关闭电源，请确认空气压力。
E740	控制箱内的冷却风扇不工作。 关闭电源，请确认是否被线屑等缠住了。 请确认主基板上的插头P22的插入状况。
E741	X轴送布马达用的冷却风扇不工作。 关闭电源，请确认是否被线屑等缠住了。 请确认主基板上的插头P10的插入状况。
E742	Y轴送布马达用的冷却风扇不工作。 关闭电源，请确认是否被线屑等缠住了。 请确认主基板上的插头P10的插入状况。

如果上述误码以外的错误出现了或是出现了上述误码也按上述处理方法处理了仍然不能解决问题时，请向经销商咨询。

13. 故障检修

- 请您在要求维修或服务前，先检查以下各项。
- 如果以下方法仍然不能解决问题，关闭电源开关，向受过训练的技术人员或经销商咨询。

注意



在作业之前，请先关闭电源开关。并将电源插头从插座上拔下。
如果误踩脚踏开关，缝纫机动作会导致受伤。

在参考页栏目中带有“*”记号的只能由合格的受过训练的技术人员来进行检查。

现 象	原 因	措 施	参 照
压脚板不能上升 压脚板不能下降	压脚动作很重	在压脚滑块的运动部分涂敷适当的润滑脂	*
	抬压脚汽缸的空气接管的弯曲，破损	修正弯曲了的空气接管或更换新的空气接管	*
压脚上升量不正确	压脚臂杆的位置不对	调整压脚臂杆的位置	P. 65
压脚板不能上升到最高点	压脚汽缸接头的位置不对	调整压脚汽缸接头的位置	*
扫线器动作不好	扫线器和机针有干扰	调整扫线器的高度	P. 62
		调整扫线器的运动量	P. 62
	扫线器的位置不对	调整扫线器的运动量	P. 62
底线绕线时被卷在一边	卷线夹线器组的高度不对	调整卷线夹线器组的高度	P. 22
底线被卷的线量不恰当	梭芯压杆的位置不对	调整梭芯压杆的位置	P. 22
脱线	在缝纫开始时有脱线	请参考「跳针」一览	P. 71
	面线的残余量不稳定，偏差很大	调整副夹线器	P. 24
	旋梭导线器的位置不对	调整旋梭导线器的位置	P. 57

现 象	原 因	措 施	参 照
面线断线	面线张力太强	调整面线张力	P. 24
	机针的安装方法不正确	正确的方向安装机针	P. 19
	和机针相比线太粗	选择使用符合机针的线	P. 24
	挑线簧的强度和高度不正确	调整挑线簧的强度和高度	P. 55
	旋梭, 针孔板和机针等有碰伤, 划伤和毛刺	分别将这些零部件的伤痕和毛刺研磨或更换	*
	因发热断线(化纤线)	使用冷却液槽	P. 20
	穿线不正确	在线道上正确穿线	P. 20
底线断线	底线张力太强	调整底线张力	P. 24
	针孔板, 和梭芯盒的角部有碰伤, 划伤	分别将这些零部件的伤痕研磨或更换	*
跳针	机针和旋梭尖端的间隙过大	调整机针的间隙	P. 57
	机针和旋梭的相遇不正确	调整针杆的上升量	P. 56
	梭托过度的(必要以上)导入了机针	调整梭托导针部	P. 57
	机针弯曲	更换机针	
	机针的安装方法不正确	正确的方向安装机针	P. 19
断针	机针和旋梭尖端的间隙过大	调整机针的间隙	P. 57
		调整针杆的上升量	P. 56
	机针弯曲	更换机针	
	进针时机针被拉偏	选择符合缝纫条件的机针 降低回转数	P. 24 P. 30
	机针太细	选择符合缝纫条件的机针	P. 24
咬线	挑线簧的强度和高度不正确	调整挑线簧的强度和高度	P. 55
	机针和旋梭的相遇不正确	调整针杆的上升量	P. 56
	旋梭导线器没能分线	调整旋梭导线器的位置	P. 57

现 象	原 因	措 施	参 照
面线未切断	动刀的刀锋不利	更换新的动刀	P. 61
	定刀的刀锋不利	磨快定刀或是 更换新的定刀	P. 61
	动刀勾不住面线	调整旋梭导线器的位置	P. 57
		调整针杆的上升量	P. 56
	最后一针因跳针，动刀勾不住面线	请参考「跳针」一览	P. 71
	动刀的位置不正确	调整动刀的位置	P. 59
	副夹线器的张力太弱	回转夹线螺母进行调整	P. 24
布料的背面缝纫针迹不良	旋梭导线器不能完全分线	调整旋梭导线器的位置	P. 57
	面线不够紧密	调整面线张力	P. 24
	面线的残余量不稳定，偏差很大	调整副夹线器	P. 24
线不够紧密	面线张力太弱	调整面线张力	P. 24
	底线张力太弱	调整底线张力	P. 24
	挑线簧的强度和高度不正确	调整挑线簧的强度和高度	P. 55
	机壳线导向 R 的位置不正确	调整机壳线导向 R 的位置	P. 56
面线的残余量不稳定，偏差很大	挑线簧的强度和高度不正确	调整挑线簧的强度和高度	P. 55
	副夹线器的张力太弱	回转夹线螺母进行调整	P. 24
	定刀的刀锋不利	磨快定刀或是 更换新的定刀	P. 61
接通电源，即使踩下脚踏开关缝纫机也不启动	安全开关不起作用	确认安全开关的电源线是否脱开着	P. 12
		调整安全开关的位置	P. 18
		如果安全开关有故障的话 更换新的开关	*

1 4.7 程序段数据表示一览

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

BEYOUNG@

BEYOUNG®



使用说明书



本佳牌工业用缝纫机

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BMS-342G

INSTRUCTION MANUAL

Please read this manual before using the machine.
Please keep this manual within easy reach for quick reference.

DIRECT DRIVE

PROGRAMMABLE ELECTRONIC PATTERN SEWER



BEYOUNG®

[2] Notes on safety

DANGER



Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the cover of the control box. Touching areas where high voltages are present can result in severe injury.

CAUTION

Environmental requirements



Use the sewing machine in an area which is free from sources of strong electrical noise such as electrical line noise or static electric noise.

Sources of strong electrical noise may cause problems with correct operation.



Any fluctuations in the power supply voltage should be within $\pm 10\%$ of the rated voltage for the machine.

Voltage fluctuations which are greater than this may cause problems with correct operation.



The power supply capacity should be greater than the requirements for the sewing machine's power consumption.

Insufficient power supply capacity may cause problems with correct operation.



The pneumatic delivery capability should be greater than the requirements for the sewing machine's total air consumption.

Insufficient pneumatic delivery capability may cause problems with correct operation.



The ambient temperature should be within the range of 5°C to 35°C during use.

Temperatures which are lower or higher than this may cause problems with correct operation.



The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices.

Excessively dry or humid environments and dew formation may cause problems with correct operation.



In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet.

Lightning may cause problems with correct operation.

Installation



Machine installation should only be carried out by a qualified technician.



Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.



The sewing machine weighs approximately 160 kg. Use equipment such as a crane or hoist when installing the machine head and adjusting the height of the table.

If you try to lift the machine head yourself, it may cause injuries such as back injury.



Do not connect the power cord until installation is complete. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



Hold the machine head with both hands when tilting it back or returning it to its original position.

In addition, do not subject the machine head to extra force while it is tilted back. If this is not observed, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.



Install the safety covers to the machine head and motor.



If using a work table which has casters, the casters should be secured in such a way so that they cannot move.



Use a table with a height of 84 cm or less. If the table is too high, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.












Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.

Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.

Keep the oil out of the reach of children.

CAUTION










Sewing

-  This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
-  The sewing machine should not be used for any applications other than sewing.
-  Be sure to wear protective goggles when using the machine.
If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.
-  Turn off the power switch at the following times. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
 - When threading the needle
 - When replacing the bobbin and needle
 - When not using the machine and when leaving the machine unattended
-  If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
-  Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
-  Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
-  If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.
-  If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.

Cleaning

-  Turn off the power switch before carrying out cleaning. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
-  Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.
Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.
Keep the oil out of the reach of children.

Maintenance and inspection

-  Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
-  Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
-  Turn off the power switch and disconnect the power cord before carrying out the following operations. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
 - Inspection, adjustment and maintenance
 - Replacing consumable parts such as the rotary hook
-  Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
-  Hold the machine head with both hands when tilting it back or returning it to its original position.
In addition, do not subject the machine head to extra force while it is tilted back. If this is not observed, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.
-  If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
-  Use only the proper replacement parts as specified by Brother.
-  If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
-  Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

[3] Warning labels

The following warning labels appear on the sewing machine.

Please follow the instructions on the labels at all times when using the machine. If the labels have been removed or are difficult to read, please contact your nearest Brother dealer.

1

	⚠ 危険 高電圧部分にふれて、大けがをする ことがある。電源を切り、5分たつて からカバーをはずすこと。	⚠ 危険 触摸高压电部分，会导致受伤。 在切断电源5分钟后， 再开启盖罩。
⚠ DANGER Hazardous voltage will cause injury. Turn off main switch and wait 5 minutes before opening this cover.	⚠ GEFAHR Hochspannung verletzungsgefahr! Bitte schalten sie den hauptschalter aus und warten sie 5 minuten, bevor sie diese abdeckung öffnen.	⚠ PELIGRO Un voltage non adapte provoque des blessures. Eteindre l'interrupteur et attendre 5 minutes avant d'ouvrir le capot.

2

	⚠ 注意 触摸运动部分，易造成受伤。所以在装 上安全保护装置后，再进行缝纫操作。 在切断电源后，进行穿线，更换梭芯， 机针和做清扫，调整工作。
⚠ CAUTION Moving parts may cause injury. Operate with safety devices. Turn off main switch before threading, changing bobbin and needle, clearing etc.	

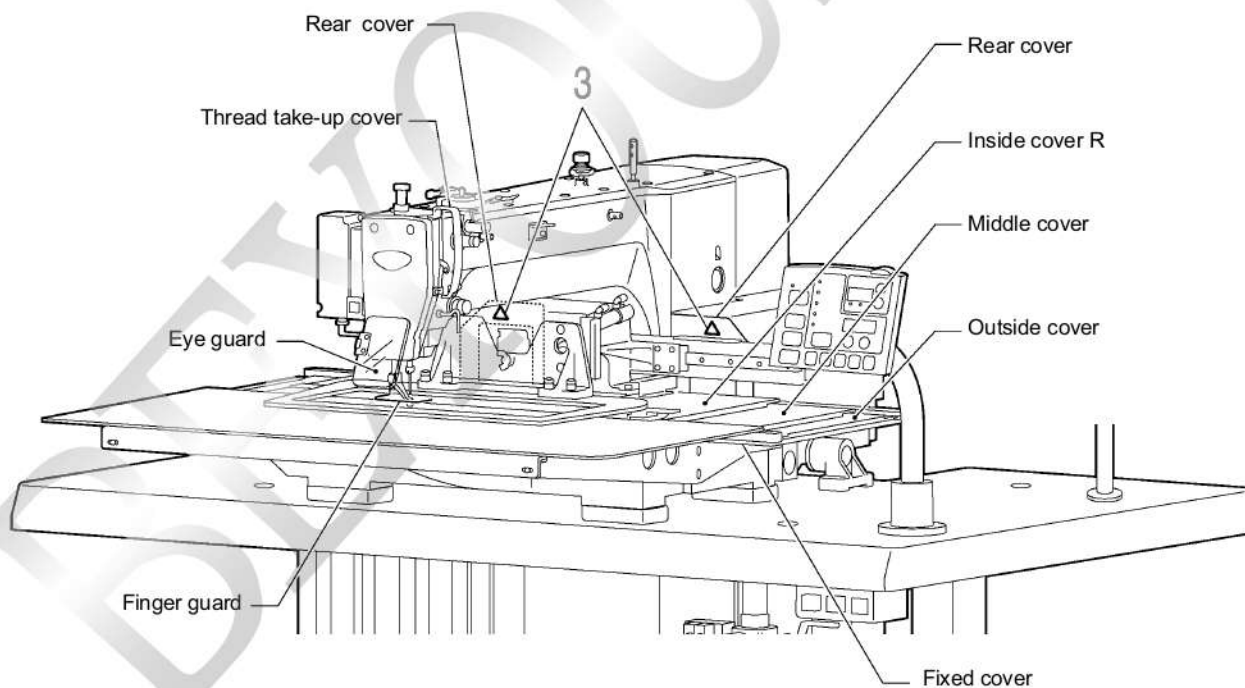
3 Be careful to avoid getting hands caught in sliding parts.

4 Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.

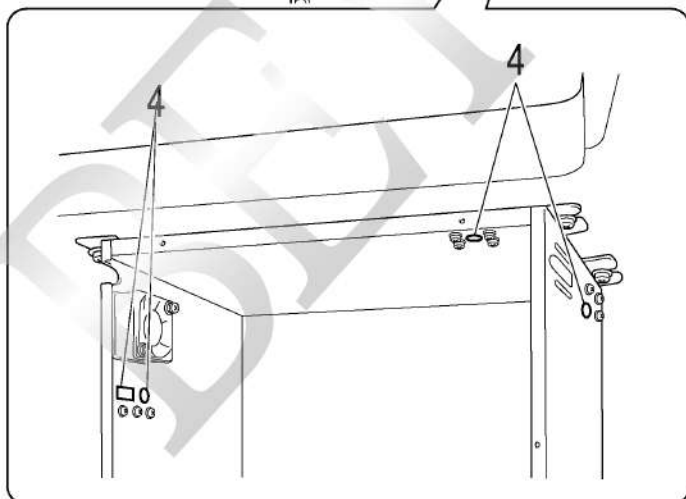
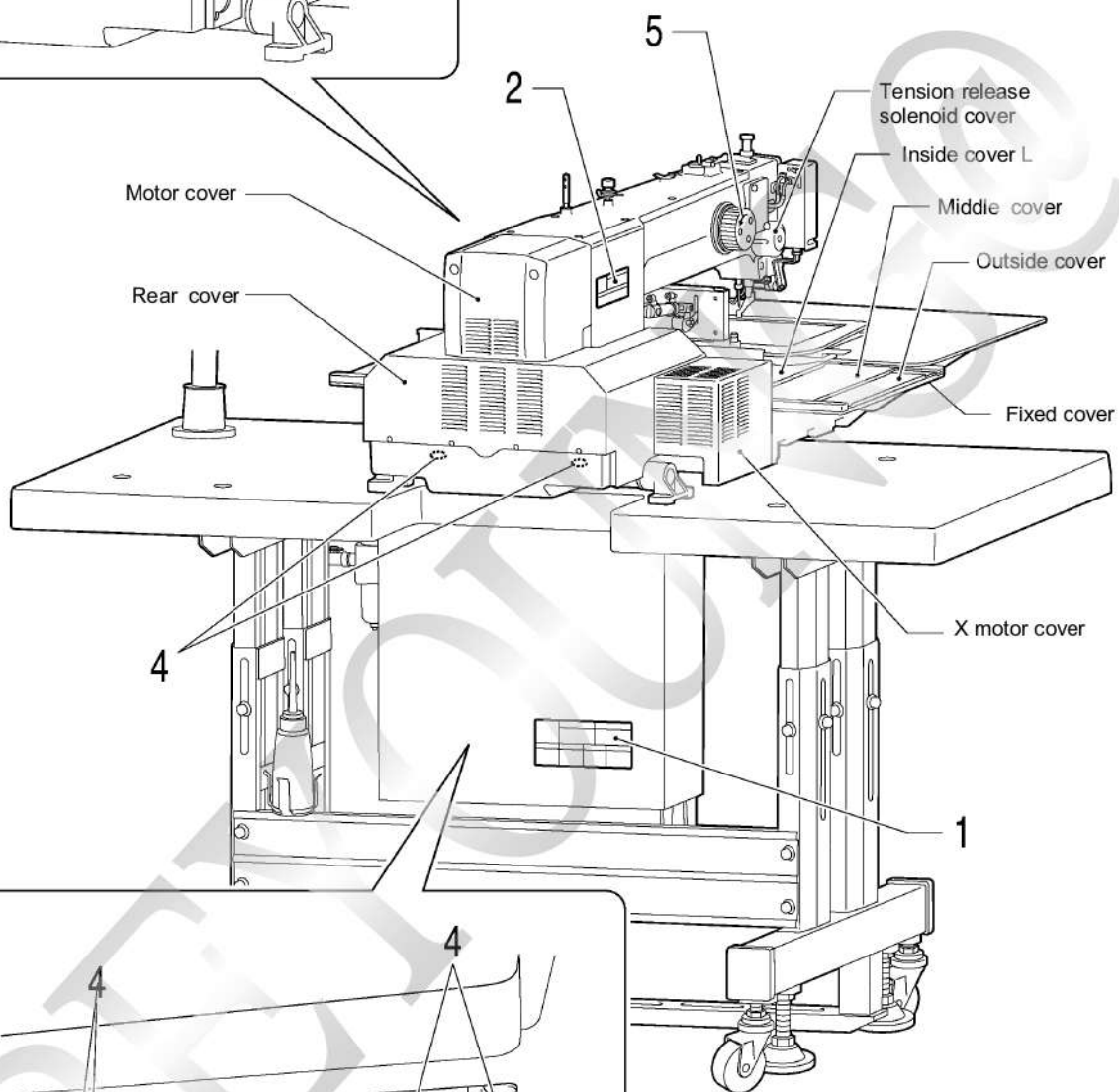
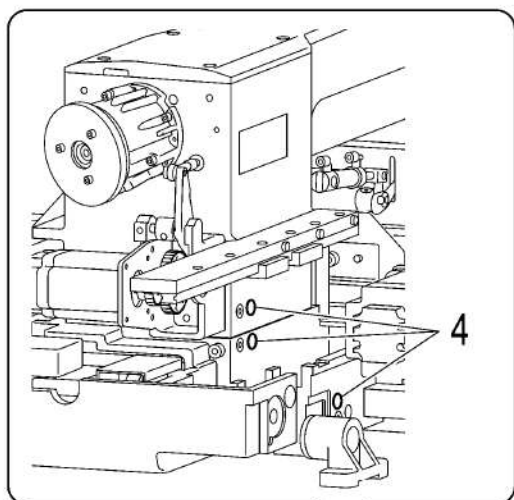
5 Direction of operation

Safety devices:

Devices such as eye guard, finger guard, thread take-up cover, motor cover, X motor cover, tension release solenoid cover, inside cover, outside cover, middle cover, fixed cover and rear cover



3956M



3957M

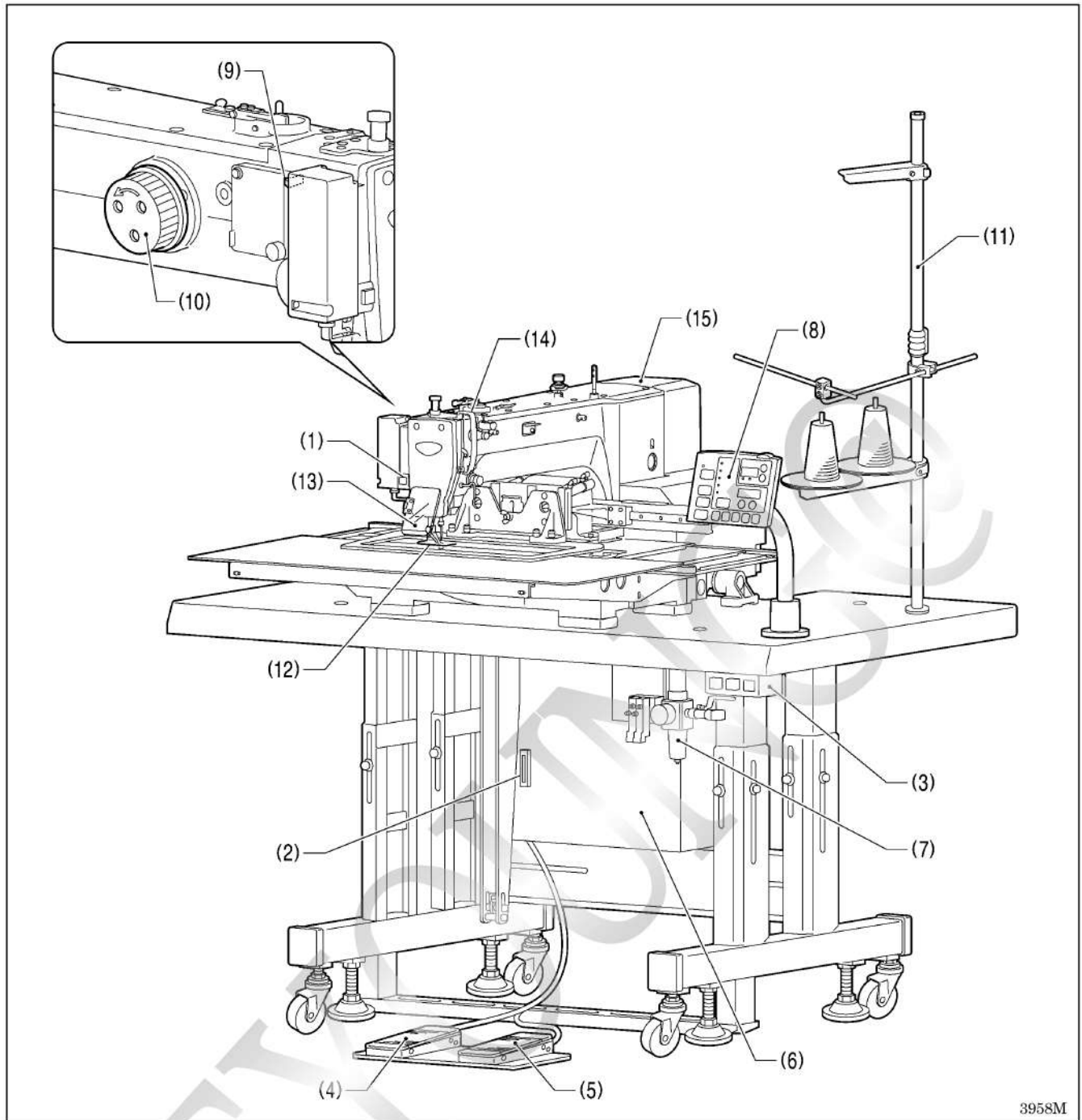
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1. NAMES OF MAJOR PARTS



3958M

- (1) STOP switch
- (2) CF slot
- (3) Power switch
- (4) Work clamp switch
- (5) Start switch
- (6) Control box
- (7) Solenoid valve
- (8) Operation panel
- (9) Thread wiper switch
- (10) Pulley
- (11) Cotton stand

Safety devices:

- (12) Finger guard
- (13) Eye guard
- (14) Thread take-up cover
- (15) Motor cover

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2. SPECIFICATIONS











Sewing machine	Lock stitch, pattern tacking sewing machine (with large shuttle hook)
Stitch formation	Single needle lock stitch
Max. sewing speed	2,700 rpm
Sewing area (X x Y)	Max. 300 x 200 mm
Feed mechanism	Intermittent feed, pulse motor drive
Stitch length	0.05 – 12.7 mm
No. of stitches	500,000-stitch internal memory (*)
Maximum no. of stitches	20,000 stitches (per program)
No. of sewing data items that can be stored	Internal memory: 512 (*), CF card: 900
Work clamp lift method	Pneumatic method
Work clamp height	Max. 30 mm
2-step work clamp	Integrated-type work clamp
Intermittent presser foot lift amount	22 mm
Intermittent stroke	2 – 4.5 mm, 4.5 – 10 mm or 0 (Default setting 3 mm)
Rotary hook	Double-capacity shuttle hook (standard shuttle hook sold separately)
Wiper device	Standard equipment
Thread trimmer	Standard equipment
Data storage method	Internal memory (Flash memory), CF card (32 MB – 2 GB) [Option] 3.5 floppy disk 2HD/1.44MB, 2DD
User programs	50
Cycle programs	9
Motor	550 W AC servo motor
Weights	Machine head approx. 160 kg, operation panel approx. 0.6 kg Control box 14.2 – 16.2 kg (Differs depending on destination)
Power supply	Single-phase 220 V, Three-phase 220 V/380 V/400 V 500 VA
Air pressure	0.5 MPa 1.8 l/min.

* The number of data items and stitches that can be stored will vary depending on the number of stitches in each program.

-
- Technical drawing of the front view of a control panel (4053M). The drawing includes the following dimensions and features:
- Overall Dimensions:**
 - Width: 1200
 - Height: 780
 - Mounting Holes and Features:**
 - 4 - R10 Cord hole
 - 4 - $\phi 9$ Hinge holder mounting hole
 - 2 - R20
 - 2 - R20
 - 4 - $\phi 2$ Oil pan mounting hole depth 10
 - Control box mounting hole
 - 2 - $\phi 9$
 - 2 - R10
 - 4 - R20
 - $\phi 60$
 - 4 - $\phi 6.5$
 - Gas spring hole
 - Support lever hole
 - 2 - $\phi 2$ Solenoid valve assembly mounting hole depth 10 (Bottom)
 - $\phi 35$ Operation panel cord hole
 - 8 - $\phi 26$ depth 4
 - 8 - $\phi 8.5$
 - $\phi 20$ Cotton stand hole
 - 3 - $\phi 5.5$
 - $\phi 65$
 - 25°
 - 17
 - 50
 - Other Dimensions:**
 - 430
 - 410
 - 448
 - 402
 - 715 ± 0.5
 - 282.5
 - 96
 - 10
 - 42
 - 8
 - 30
 - 106
 - 130 ± 0.3
 - 229 ± 0.3
 - 109.5
 - 168
 - 125
 - 130
 - 114
 - 98
 - 165 ± 0.3
 - 500 ± 0.3
 - 224
 - 50
 - 299
 - 90 ± 0.3
 - 14
 - 38
 - 45
 - 33
 - 80
 - 20
 - 40
 - 459 ± 0.3
 - 400
 - 220
 - 43
 - 120°
 - 120°
 - 180
 - 505
 - 780

4. INSTALLATION

CAUTION

-  Machine installation should only be carried out by a qualified technician.
-  Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.
-  The sewing machine head weighs approximately 160 kg.
Use equipment such as a crane or hoist when installing the machine head and adjusting the height of the table.
If you try to lift the machine head yourself, it may cause injuries such as back injury.
-  Do not connect the power cord until installation is complete.
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
-  If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
-  Use a table with a height of 84 cm or less. If the table is too high, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.
-  Hold the machine head with both hands when tilting it back or returning it to its original position.
In addition, do not subject the machine head to extra force while it is tilted back. If this is not observed, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.
-  All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly staples, otherwise there is the danger that fire or electric shocks could occur.
-  Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.
-  Install the safety covers to the machine head and motor.

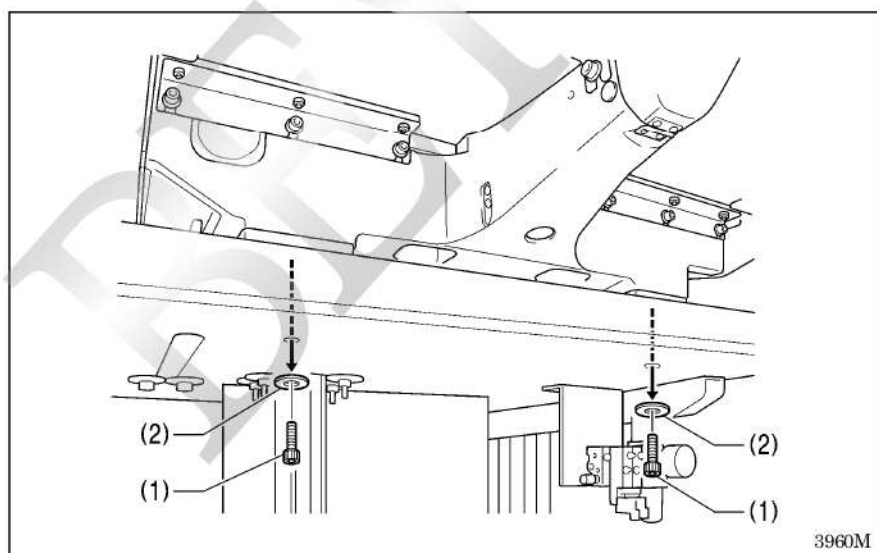
When placing the sewing machine on the table

Carry out the procedure starting from "4-2. Installing the control box" on the next page.

If the sewing machine was already installed to the table when it was delivered

Carry out the procedures indicated by [1] to [15] in the titles in the order of the numbers.

4-1. Removing the machine head fixing bolts [1]



If the sewing machine was already installed to the table when it was delivered, remove the two machine head fixing bolts (1) and the two plain washers (2).

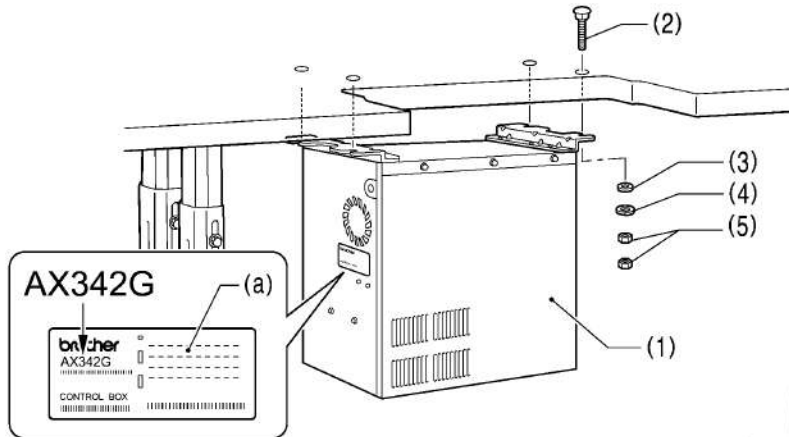
4-2. Installing the control box [2]

CAUTION



The control box is heavy, so installation should be carried out by two or more people. In addition, take steps to make sure that the control box does not fall down. If this is not done, injury to feet or damage to the control box may result.

3961M



Before installing the control box (1), check that the model plate (a) on the control box (1) is "AX342G" to indicate that it is an RX-control box for BAS-342G sewing machines.

* If the sewing machine is installed to the table, tilt back the machine head. (Refer to "4-5. Tilting back and returning the machine head".)

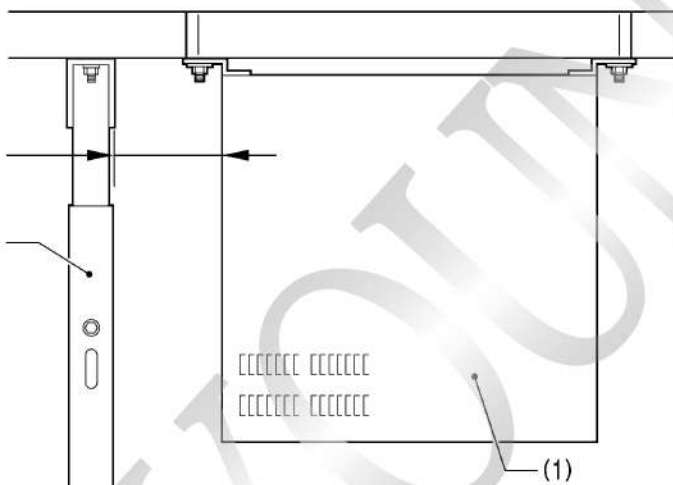
- (1) Control box
- (2) Bolts [4 pcs.]
- (3) Plain washers [4 pcs.]
- (4) Spring washers [4 pcs.]
- (5) Nuts [8 pcs.]

NOTE:

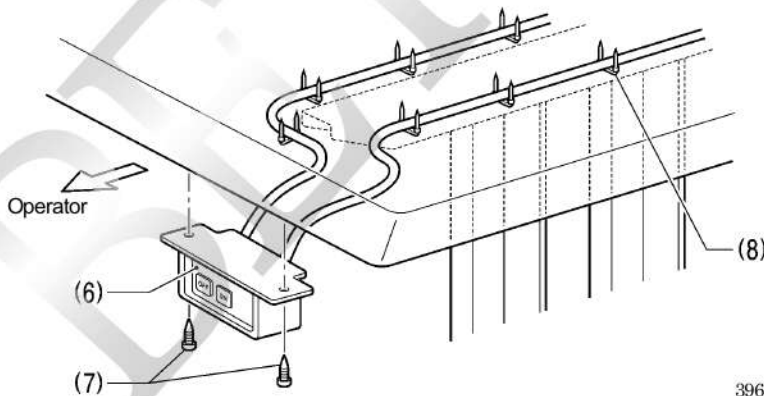
Check that the control box (1) is at least 10 mm away from the leg. If the control box (1) and the leg are too close together, it may result in incorrect sewing machine operation.

10mm or more

Leg



3962M

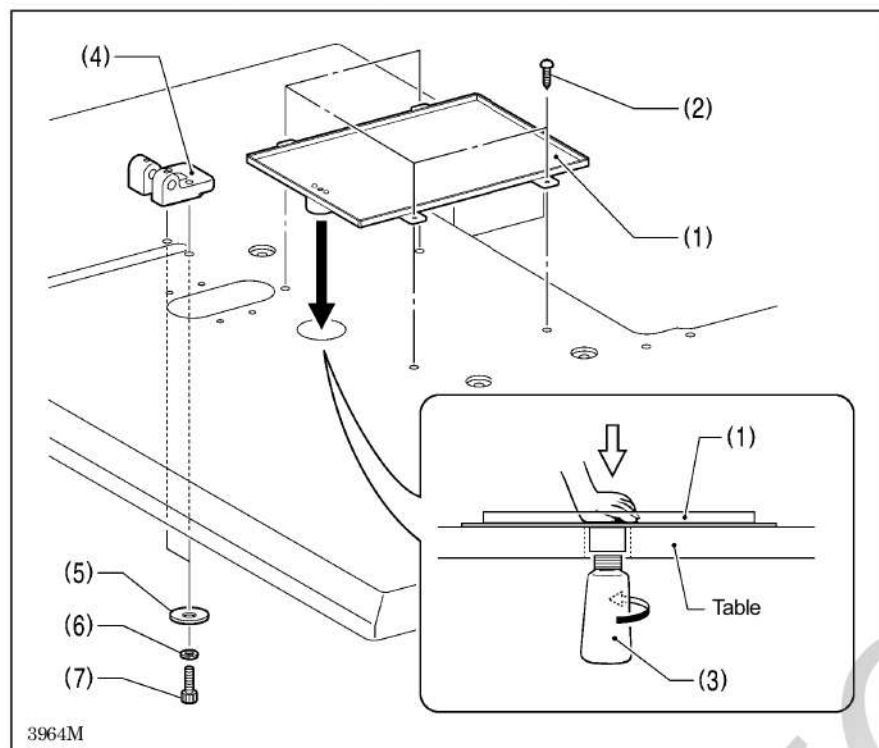


- (6) Power switch
- (7) Wood screws [2 pcs.]
- (8) Staples [7 pcs.]

NOTE:

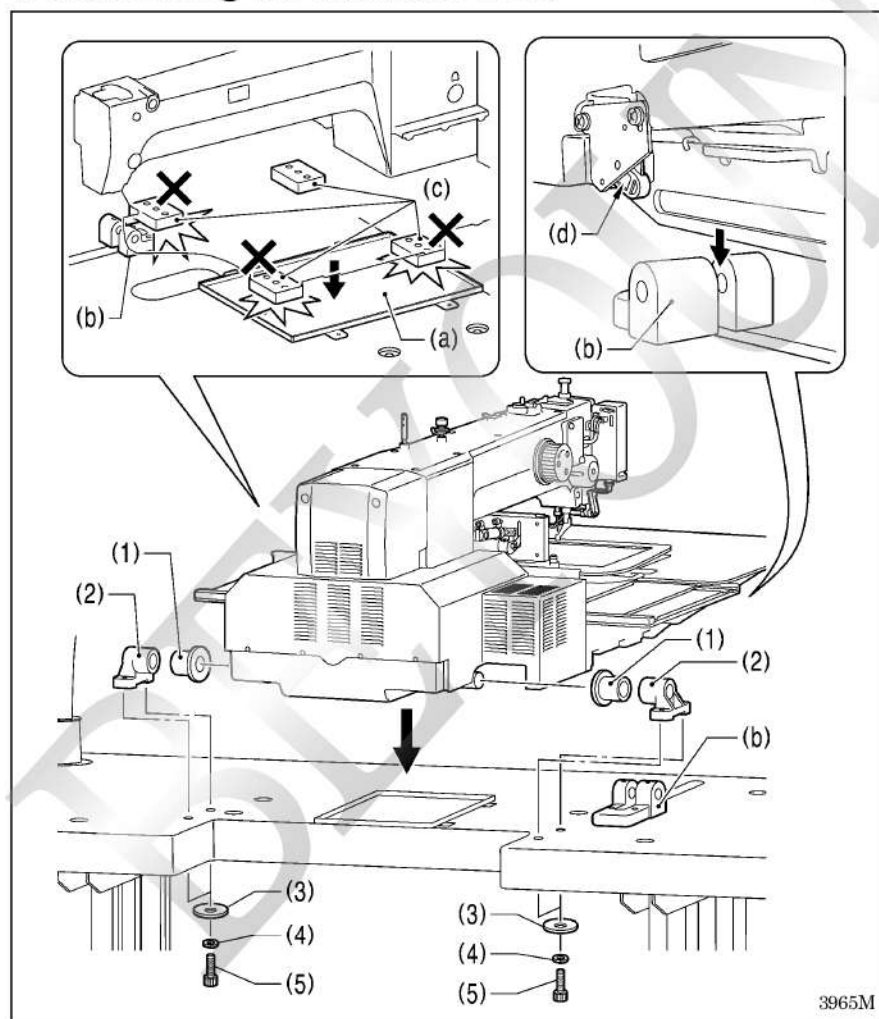
Take care when tapping in the staples (8) to make sure that they do not pierce the power cord.

4-3. Installing the oil pan and support lever base



- (1) Oil pan
- (2) Wood screws [4 pcs.]
- (3) Oiler
- (4) Support lever base
- (5) Plain washers [2 pcs.]
- (6) Spring washers [2 pcs.]
- (7) Bolts [2 pcs.]

4-4. Installing the machine head



1. Place the machine head onto the table.

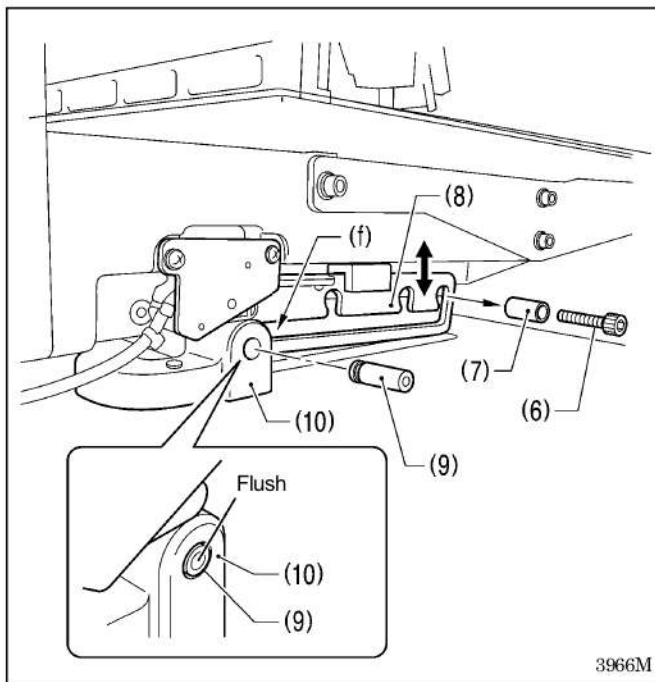
NOTE:

- Use a crane or hoist to install the sewing machine.
- Be careful of the following when lowering the machine head onto the table.
 - ! Do not let any cords get clamped between the machine head and the table.
 - ! Do not place the machine head cushion (c) on top of the oil pan (a) or the support lever base (b).
 - ! Do not let the side (d) of the safety switch lever touch the support lever base (b).

- (1) Rubber bushes (2 pcs.)
- (2) Hinge holders (2 pcs.)
- (3) Plain washers [4 pcs.]
- (4) Spring washers [4 pcs.]
- (5) Bolts [4 pcs.]

(Continued on next page)

4. INSTALLATION



2. After placing the machine head onto the table, remove the bolt (6) and the spacer (7).

* The bolt (6) and the spacer (7) are necessary for securing the support lever (8) when the machine head is removed from the table, so keep them in a safe place.

3. Pass the support lever shaft (9) through the hole in the support lever base (10) and through the groove (f) in the support lever (8), and push it in until it is flush with the surface of the support lever base (10).

* If it is difficult to pass the support lever shaft (9) through the groove (f) in the support lever (8), move the end of the support lever (8) up and down while passing the support lever shaft (9) through.

4-5. Tilting back and returning the machine head

CAUTION



Hold the machine head with both hands when tilting it back or returning it to its original position.

In addition, do not subject the machine head to extra force while it is tilted back. If this is not observed, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.



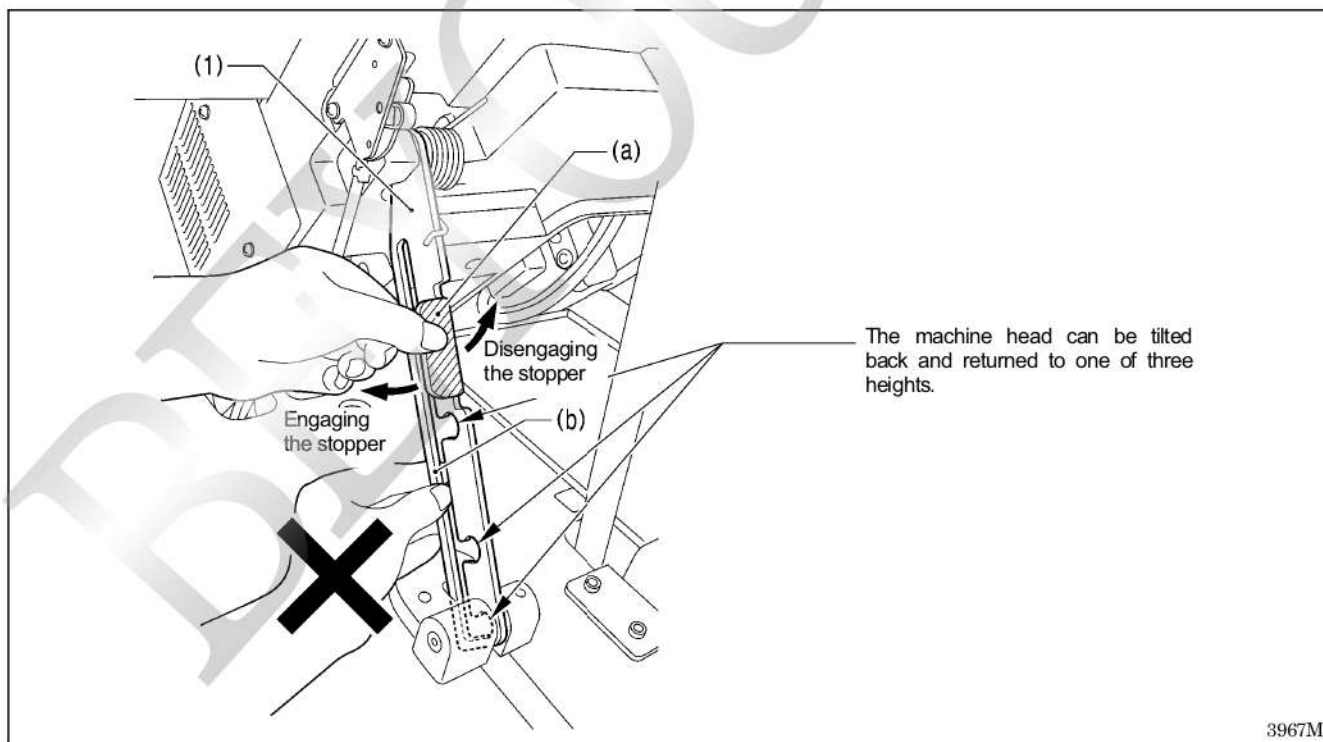
Always be sure to engage the stopper of the support lever (1) when tilting back the machine head.

If the stopper is not engaged, the machine head may return to its original position and your hands may get caught and injury may result.

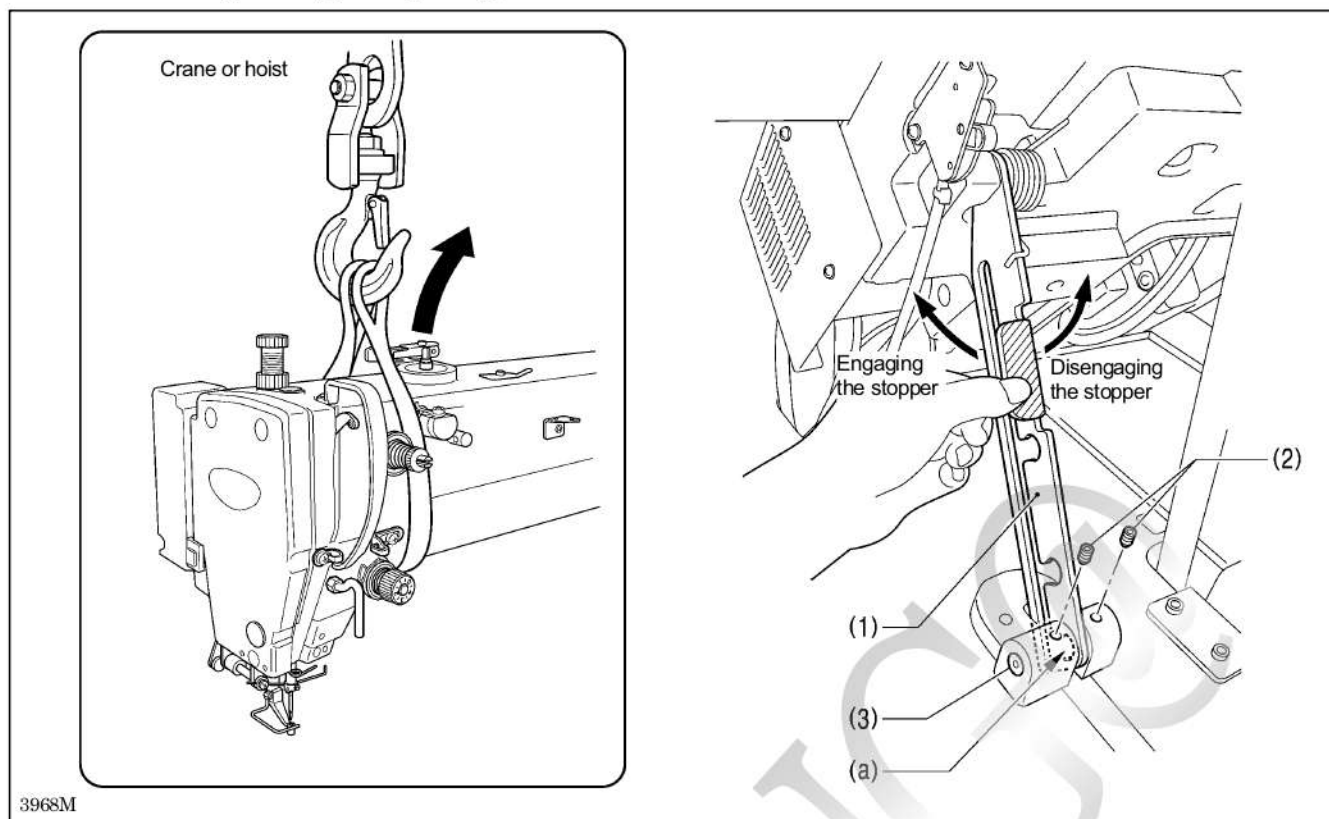


When disengaging the stopper, hold it by the knob (a).

If you hold at the place indicated by (b), your hand will get caught between the support lever (1) and the table when the machine head is returned to its original position and injury will result.



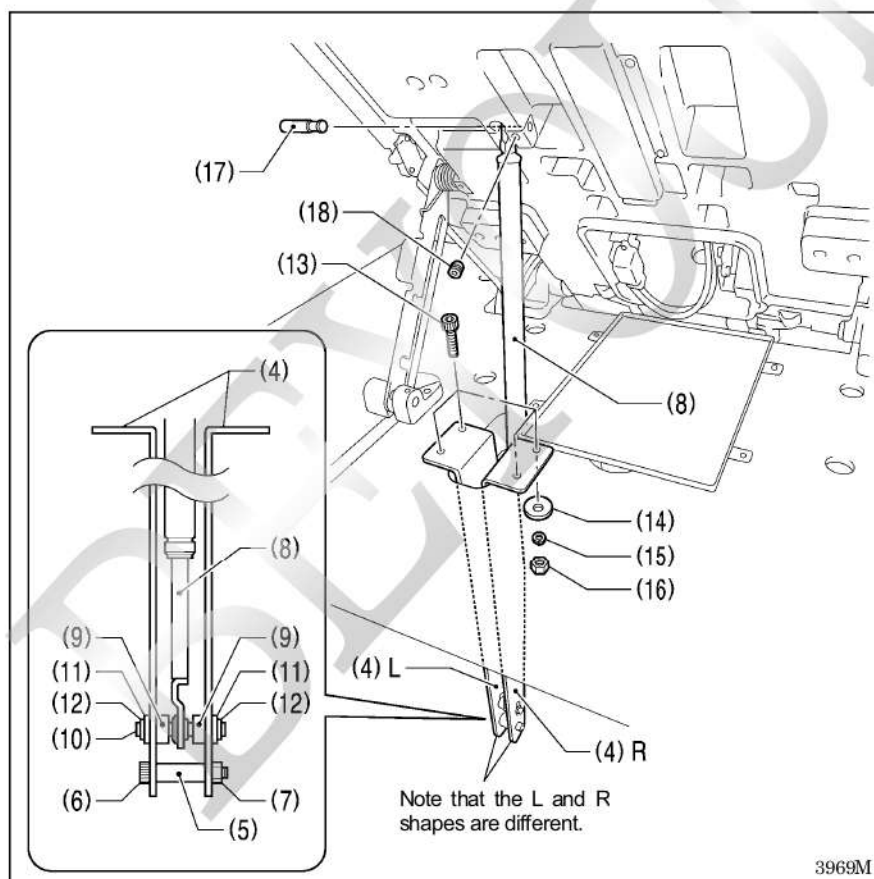
4-6. Installing the gas spring



1. Tilt back the machine head, and then secure the support lever (1) at stopper position (a). (Refer to "4-5. Tilting back and returning the machine head".)

NOTE: Use equipment such as a crane or hoist to tilt back the machine head.

2. Tighten the two set screws (2) to secure the support lever shaft (3).

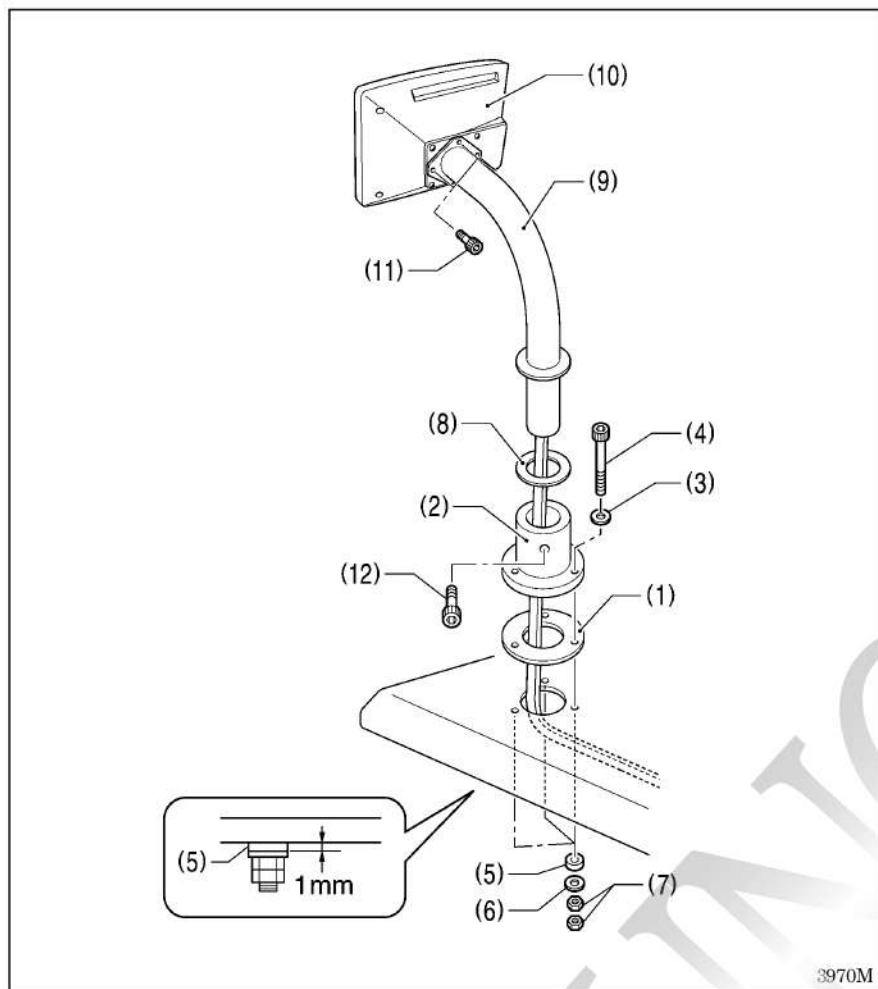


3. Install the gas spring (8).

- (4) Gas spring holders [L and R]
- (5) Spacer
- (6) Bolt
- (7) Nut
- (8) Gas spring
- (9) Shaft collars [2 pcs.]
- (10) Gas spring shaft D
- (11) Plain washers [2 pcs.]
- (12) Retaining rings E [2 pcs.]
- (13) Bolts [4 pcs.]
- (14) Plain washers [4 pcs.]
- (15) Spring washers [4 pcs.]
- (16) Nuts [4 pcs.]
- (17) Gas spring shaft U
- (18) Set screw

* After installing the gas spring (8), gently return the machine head to its original position. (Refer to "4-5. Tilting back and returning the machine head".)

4-7. Installing the operation panel [3]



- (1) Cushion A
- (2) Operation panel base
- (3) Plain washers (medium) [3 pcs.]
- (4) Bolts [3 pcs.]
- (5) Cushions B [3 pcs.]
- (6) Plain washers (large) [3 pcs.]
- (7) Nuts [6 pcs.]

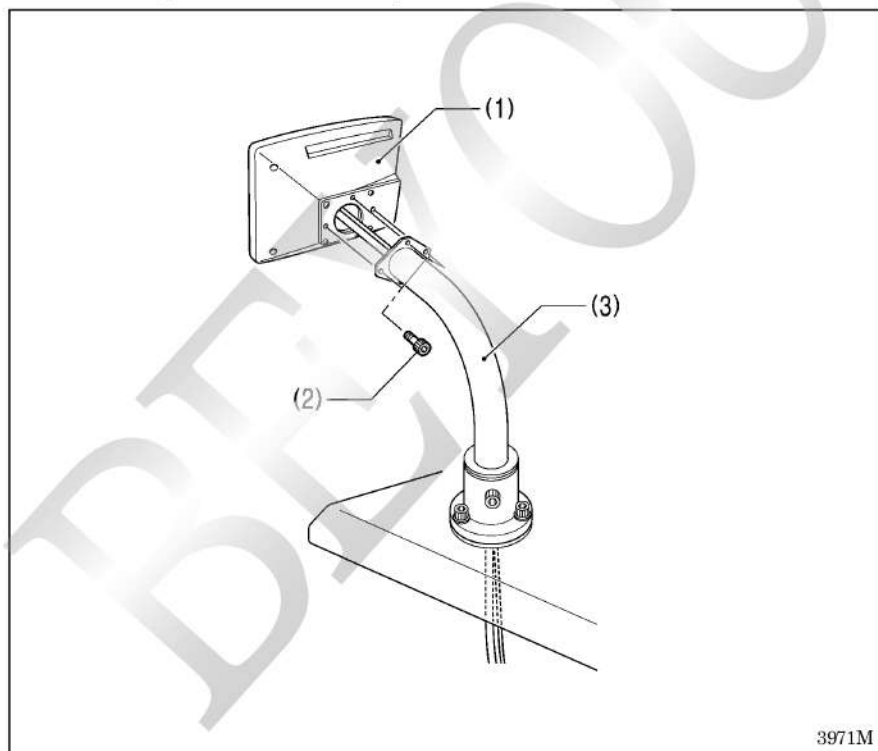
* Tighten until the thickness of cushion B (5) is about 1 mm.

- (8) Rubber seat
- (9) Operation panel stand
- (10) Operation panel

* Pass the cords of the operation panel (10) through the operation panel stand (9) and under the table.

- (11) Bolts [3 pcs.]
- (12) Bolt

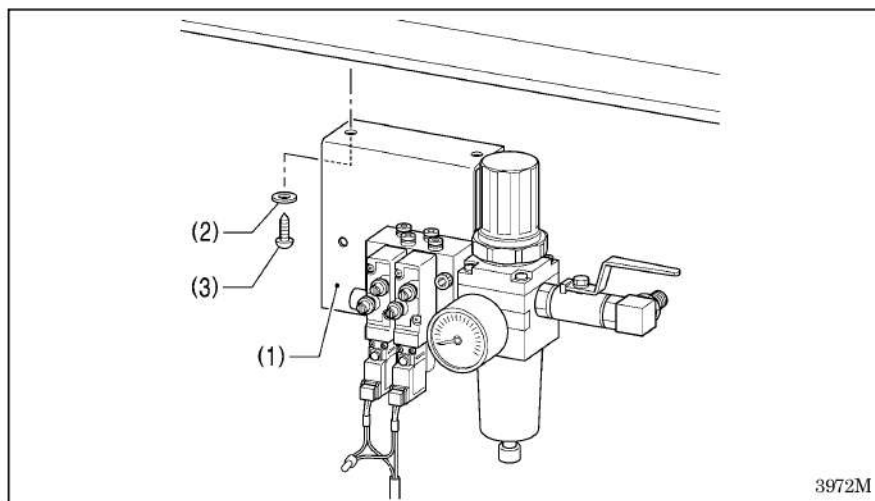
< If the sewing machine was already installed to the table when it was delivered >



- (1) Operation panel
- (2) Bolts [3 pcs.]

* Pass the cords of the operation panel (1) through the operation panel stand (3) and under the table.

4-8. Installing the solenoid valve assembly



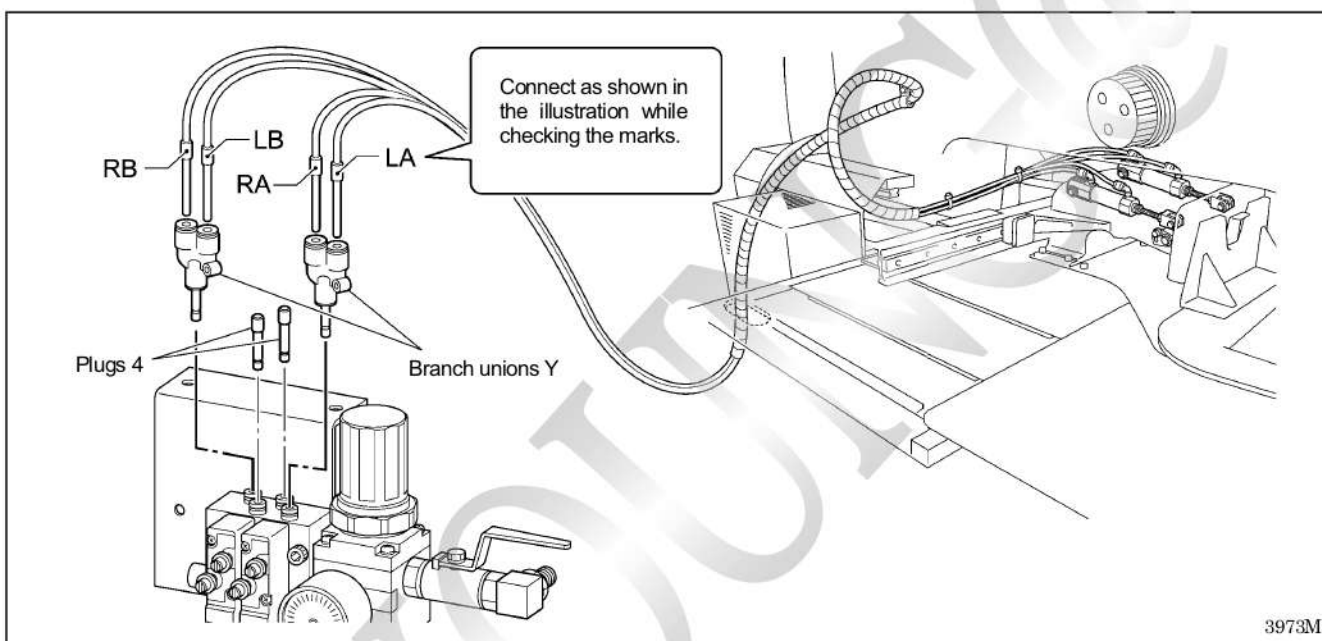
Install underneath the work table. (Refer to "3. Table processing diagram" for the installation positions.)

- (1) Solenoid valve assembly
- (2) Washers [2 pcs.]
- (3) Wood screws [2 pcs.]

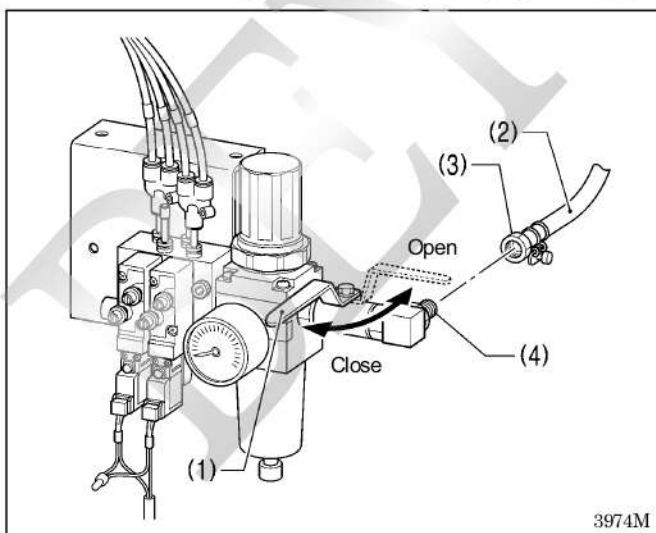
NOTE:

Make sure that the solenoid valve assembly does not touch the control box or the leg of the table.

4-9. Connecting the air tubes [4]



4-10. Installing the air hose [5]



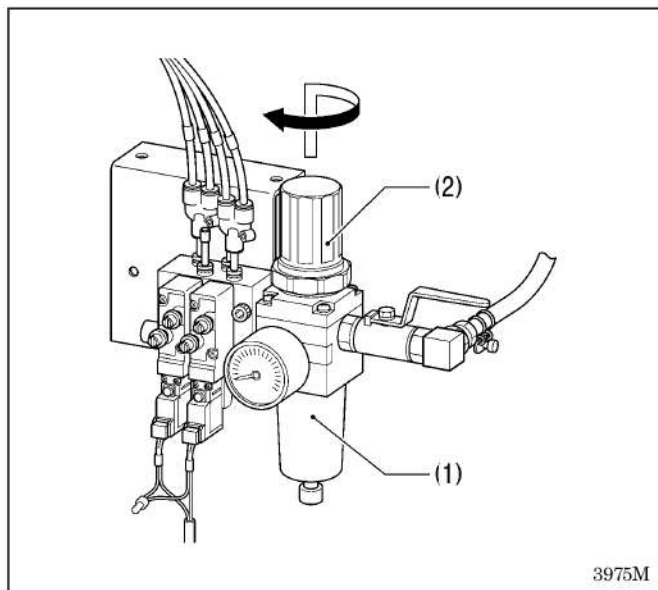
1. Close the cock (1).
2. Turn the nut (3) at the end of the air hose (2) and connect it to the valve (4).
3. Open the cock at the compressor.
* Check that no air is leaking from the connection of the valve (4) and air hose (2).
4. Open the cock (1).
(The meter pointer will turn clockwise.)

NOTE:

Turn the cock (1) gently to open it.

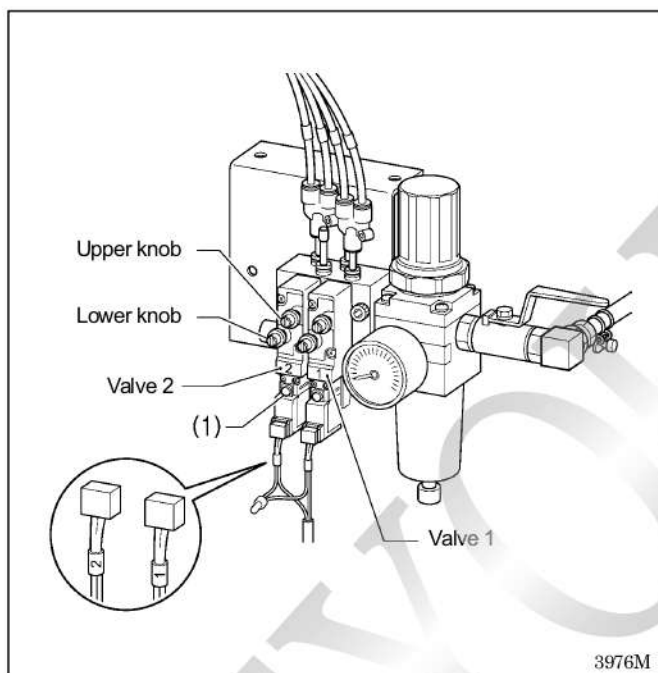
5. Adjust the air pressure. (Refer to the next page.)

4-11. Adjusting the air pressure [6]



Lift up the handle (2) of the regulator (1) and then turn it to adjust the air pressure to 0.5 MPa. After adjustment is complete, push the handle (2) downward to lock it.

4-12. Adjusting the speed controller [7]



You can adjust the lifting and lowering speeds for the work clamp using the knobs on the valves.

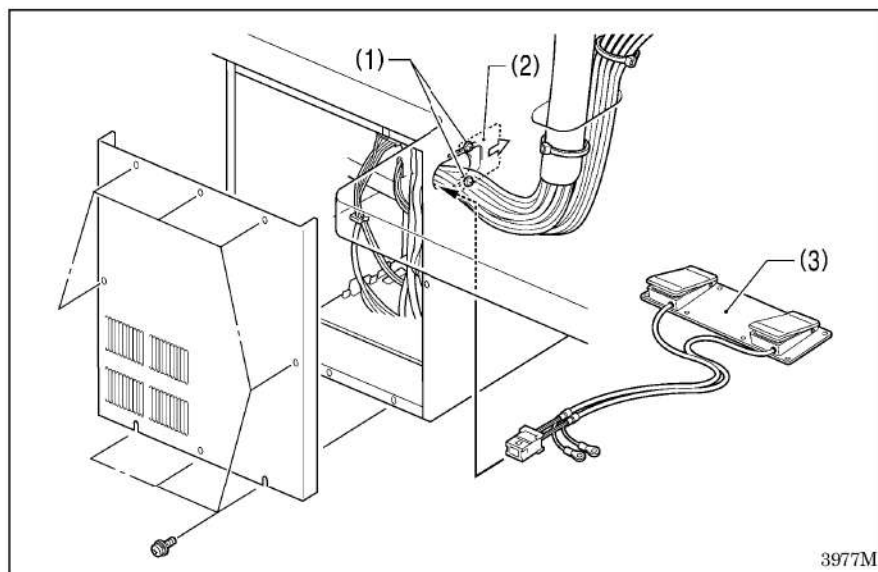
- When the upper knob is tightened, the lifting speed becomes slower. When it is loosened, the lifting speed becomes faster.
- When the lower knob is tightened, the lowering speed becomes slower. When it is loosened, the lowering speed becomes faster.

Reference adjustments

Valve 1	Upper knob	Fully tighten
	Lower knob	Fully tighten and then loosen by 8 turns
Valve 2	Upper knob	Fully tighten and then loosen by 5 turns
	Lower knob	Fully tighten

You can operate the work clamp when the power is turned off by pressing the manual buttons (1).

4-13. Connecting the cords [8]



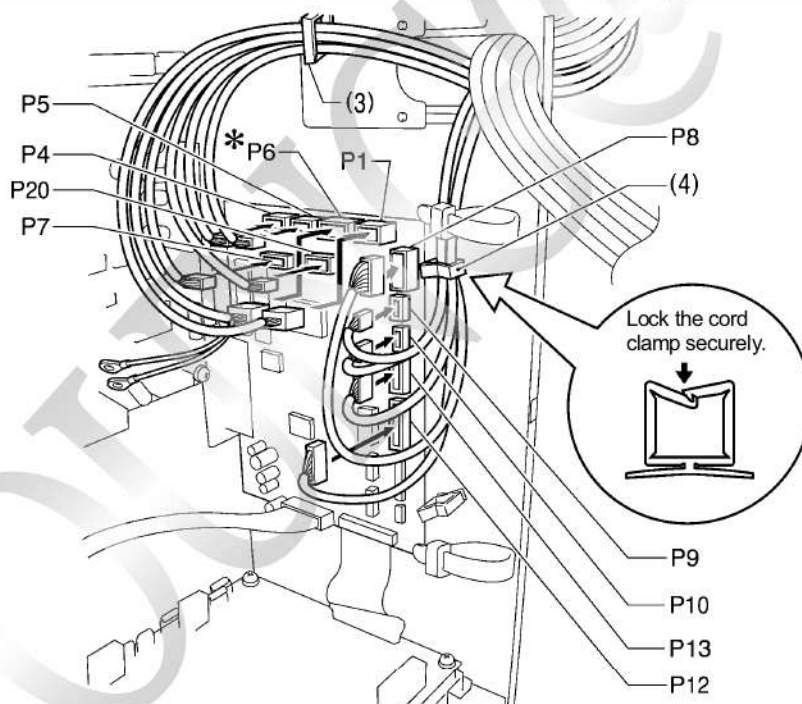
1. Remove the cover of the control box.
2. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the arrow.
3. Pass the bundle of cords from the machine head through the hole in the table, and then pass it through the hole in the control box together with the following cords.
 - Tow-pedal foot switch (3)
 - Operation panel (Do not pass the ground wires through the hole.)
 - Solenoid valve assembly
4. Securely connect the connectors as indicated in the table below.

<Main P.C. board>

NOTE:

- Check that the connector is facing the correct way, and then insert it firmly until it locks into place.
- Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.

* Be sure to make the ground connection. (Refer to "4-14. Connecting the ground".)

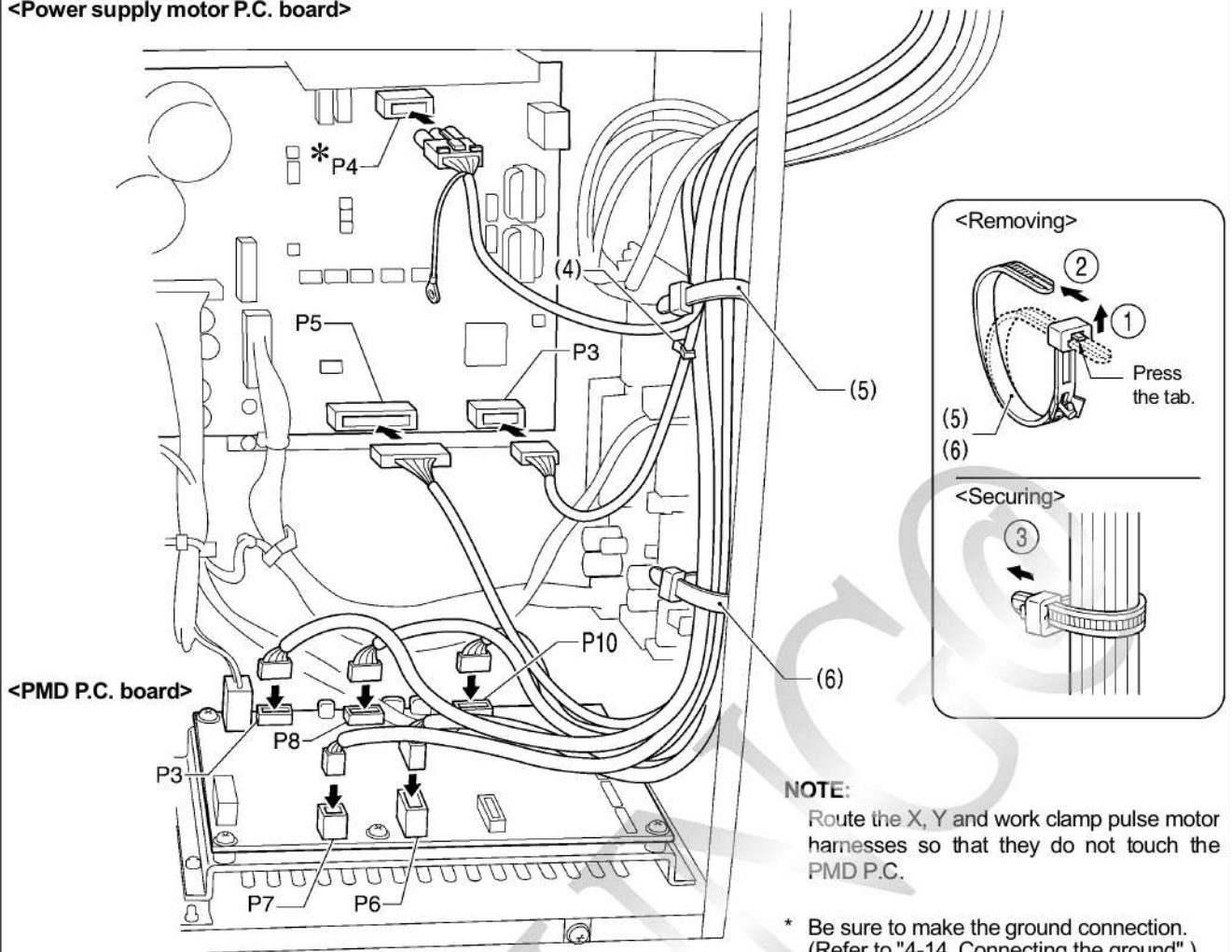


Connector	Connection location on main P.C. board	Cord clamp
X pulse motor encoder 5-pin white	P20 (X-ENC)	(3)
Y pulse motor encoder 5-pin blue	P4 (Y-ENC)	(3)
Intermittent presser foot pulse motor encoder 5-pin black	P5 (P-ENC)	(3)
Foot switch 10-pin	P6 (FOOT)	(3)
Operation panel 8-pin	P1 (PANEL)	(3)
Safety switch 3-pin	P9 (HEAD-SW)	(4)
Home position sensor assembly 12-pin	P8 (SENSOR1)	(4)
STOP switch 6-pin	P13 (HEAD)	(4)
Valve harness 12-pin	P12 (AIR1)	(4)
Programmer relay harness 8-pin	P7 (PRG)	(3)
Fan 6-pin	P10 (SENSOR2)	(4)

3978M

(Continued on next page)

<Power supply motor P.C. board>



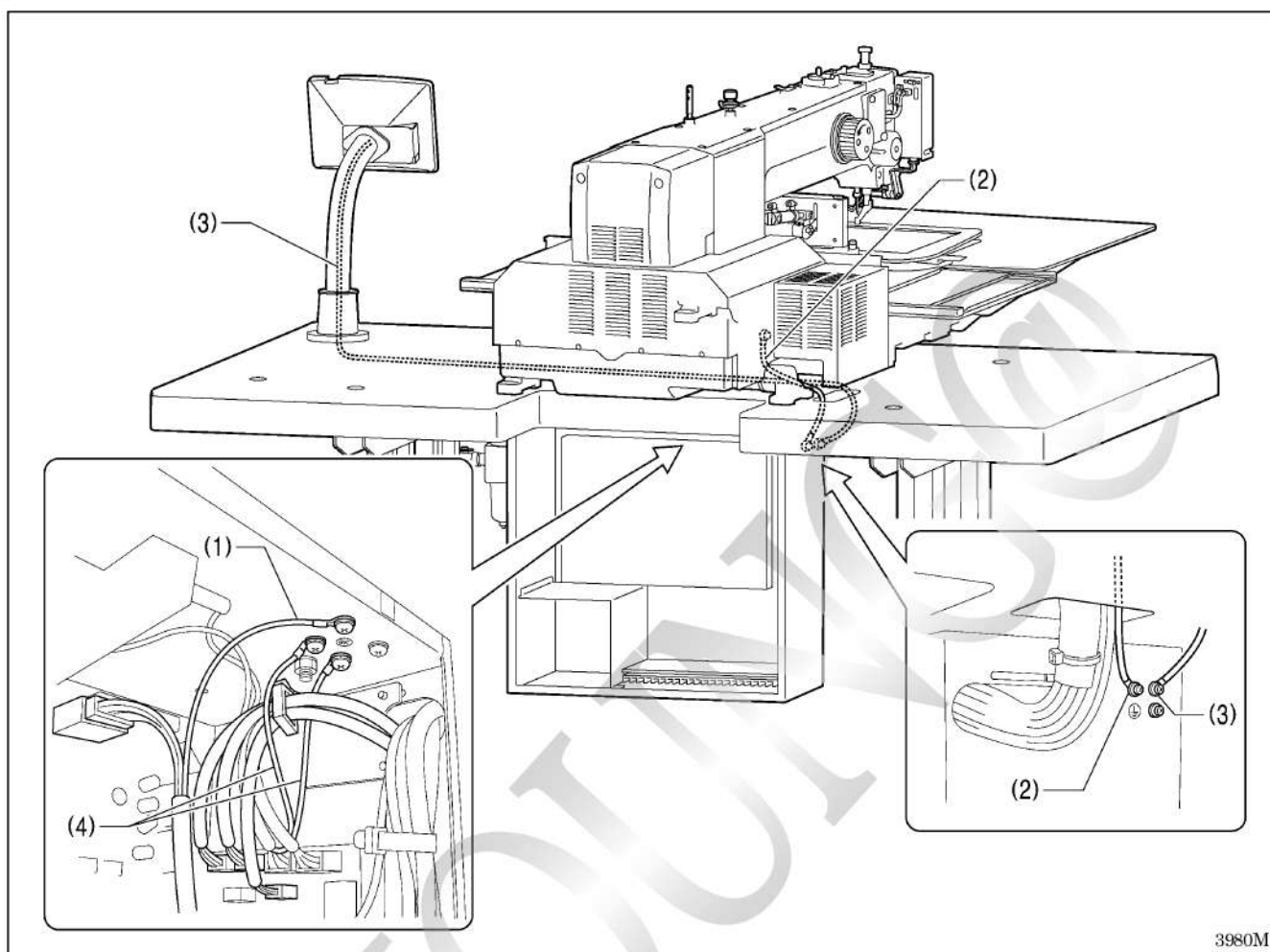
Connector	Connection location on power supply motor P.C. board	Cord clamp/cable tie
Machine head memory 7-pin	P3 (HEAD-M)	(4)
Upper shaft motor 3-pin	P4 (UVW)	(5)
Synchronizer 14-pin	P5 (SYNC)	(5), (6)
Connector	Connection location on PMD P.C. board	Cable tie
Work clamp pulse motor 4-pin black	P3 (PPM)	(5), (6)
Thread trimmer solenoid 6-pin	P6 (SOL1)	(5), (6)
Tension release solenoid 4-pin	P7 (SOL2)	(5), (6)
Y pulse motor 4-pin blue	P8 (YPM)	(5), (6)
X pulse motor 4-pin white	P10 (XPM)	(5), (6)

3979M

4-14. Connecting the ground wire [9]

⚠ CAUTION

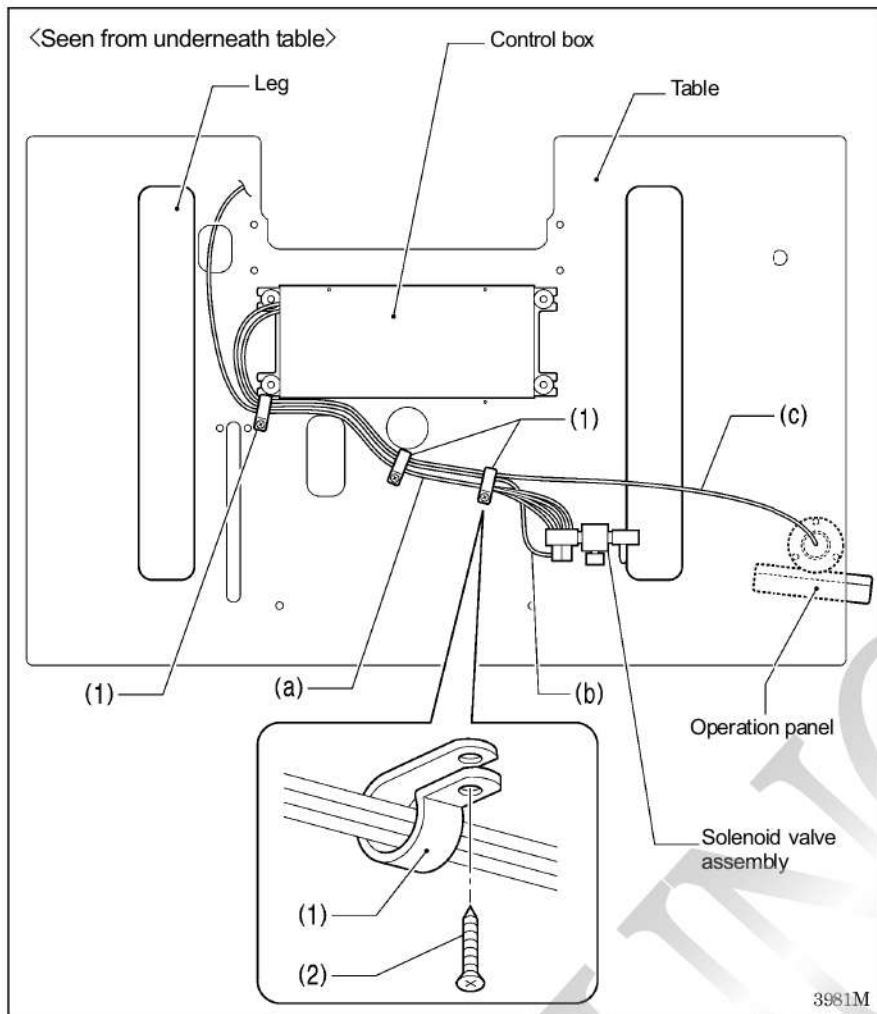
Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



- (1) Ground wire from upper shaft motor harness
- (2) Ground wire from the machine head
- (3) Ground wire from operation panel
- (4) Ground wires from two-pedal foot switch harnesses (2 wires)

NOTE: Make sure that the ground connections are secure in order to ensure safety.

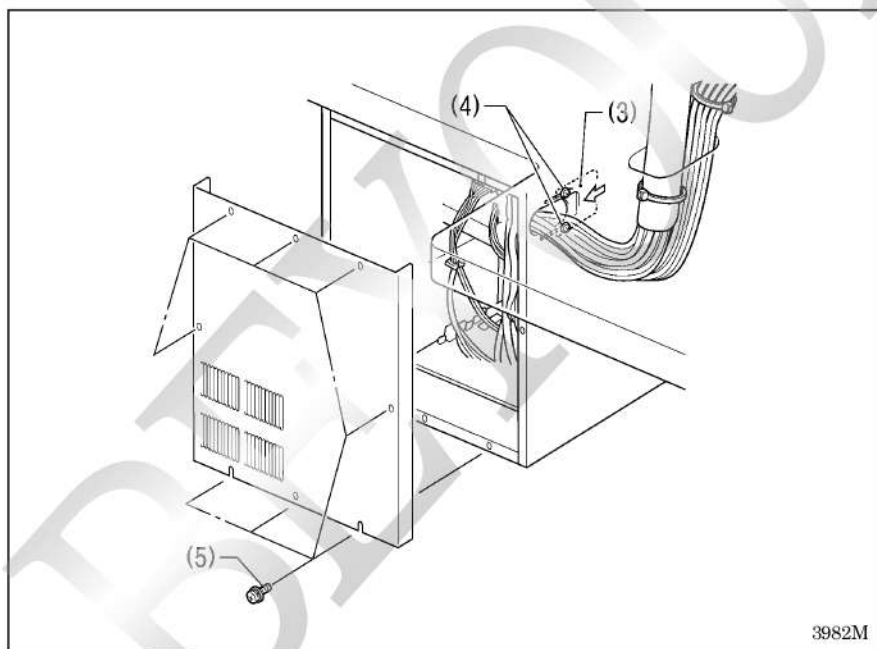
4-15. Securing the cords and air tubes [10]



Secure the air tubes (a), the solenoid valve assembly cord (b) and the operation panel cord (c) together underneath the table with the three cord holders (1).

(1) Cord holders [3 pcs.]

(2) Wood screws [3 pcs.]



<Checking the cords>

1. Gently tilt back the machine head.
(Refer to "4-5. Tilting back and returning the machine head".)
2. Check that none of the cords are being pulled.
3. Return the machine head to its original position.
4. Close the cord presser plate (3) in the direction of the arrow, and secure it by tightening the two screws (4).

NOTE:

Tighten the cord presser plate (3) securely so that no foreign objects or small animals can get inside the control box.

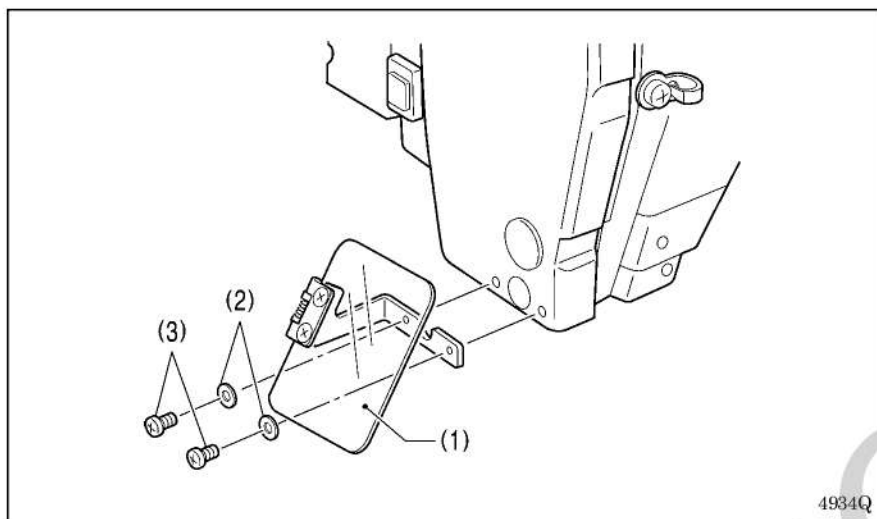
5. Secure the cover of the control box by tightening the eight screws (5).
Check that the cords are not clamped by the cover at this time.

4-16. Installing the eye guard [11]

CAUTION

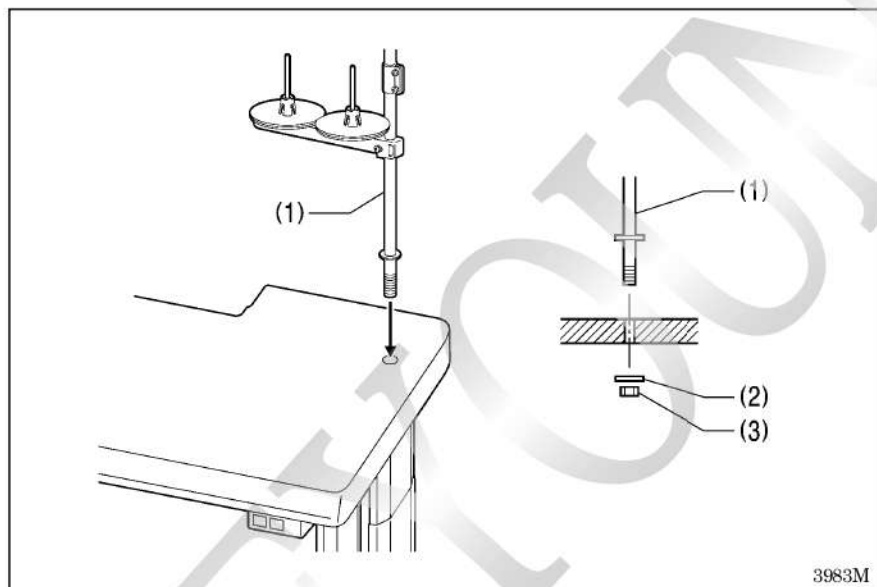


Attach all safety devices before using the sewing machine.
If the machine is used without these devices attached, injury may result.



- (1) Eye guard assembly
- (2) Plain washers [2 pcs.]
- (3) Screws [2 pcs.]

4-17. Installing the cotton stand [12]



- (1) Cotton stand

NOTE:

Fit the washer (2), and then securely tighten the nut (3) so that the cotton stand does not move.

4-18. Lubrication [13]

! CAUTION

Do not connect the power cord until lubrication is complete.

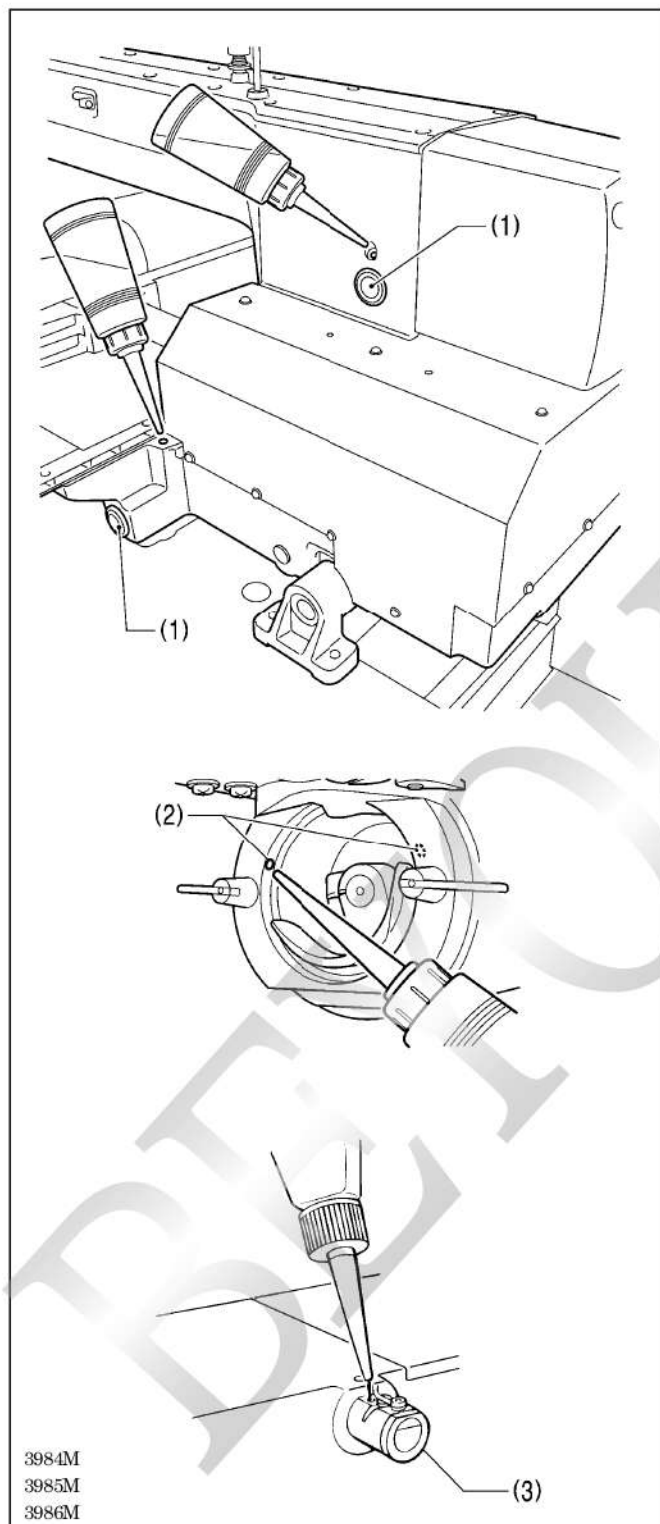
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.

Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.

Keep the oil out of the reach of children.



- The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of non-use.

- Use only the lubricating oil <Nippon Oil Corporation Sewing Lube 10N; VG10> specified by Brother.

* If this type of lubricating oil is difficult to obtain, the recommended oil to use is <Exxon Mobil Essotex SM10; VG10>

1. Fill the arm oil tank and the bed oil tank with oil.

NOTE:

Be sure to add more oil when the oil level drops down to about one-third full in the oil gauge window (1). If the oil drops below the one-third full level in the oil gauge window (1), there is the danger that the sewing machine may seize during operation.

2. Pour oil in through the two holes (2) of the shuttle race base assembly so that the felt is lightly moistened.

NOTE:

If there is no more oil on the felt of the shuttle race base assembly, problems with sewing may result.

3. If using the needle cooler (3), fill it with silicon oil (100 mm²/s).

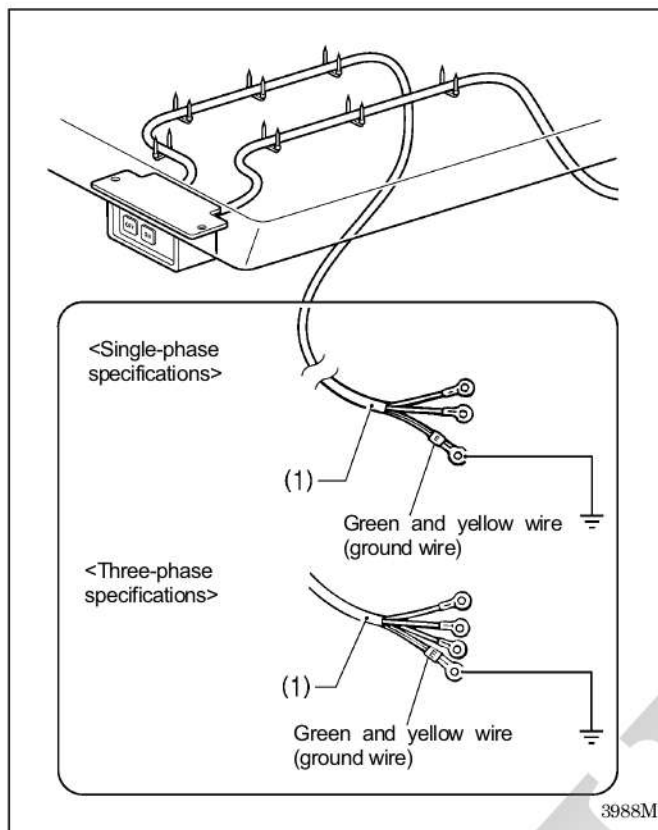
(Refer to "5-3. Threading the upper thread" for details on using the needle cooler (3).)

4-19. Connecting the power cord [14]

CAUTION



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



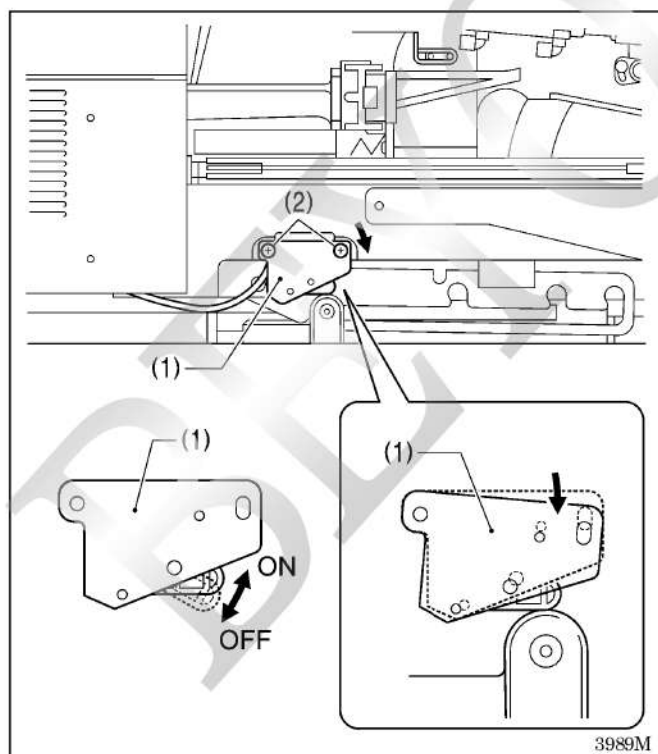
1. Attach an appropriate plug to the power cord (1). (The green and yellow wire is the ground wire.)
2. Insert the plug into a properly-grounded AC power supply.

* The inside of the control box uses single-phase power.

NOTE:

- If the ground connection is not secure, electric shocks, operating errors or damage to electronic components such as P.C. boards may occur.
- Do not use an extension cord. If this is not observed, it may cause problems with correct operation.

4-20. Checking the safety switch [15]



1. If the machine head is tilted back, gently return it to its original position. (Refer to "4-5. Tilting back and returning the machine head".)
2. Turn on the power switch.
3. Check that no error numbers are displayed on the operation panel.

<If error [E050], [E051] or [E055] is displayed >

If the safety switch (1) is not turned on, error [E050], [E051] or [E055] will occur.

Check the installation position of the safety switch (1).

1. Turn off the power switch.
2. Loosen the two screws (2).
3. Push down the right side of the safety switch (1) as far as possible so that the safety switch (1) turns on, and then tighten the two screws (2).
4. Turn on the power and check that no error numbers are displayed.

5. PREPARATION BEFORE SEWING

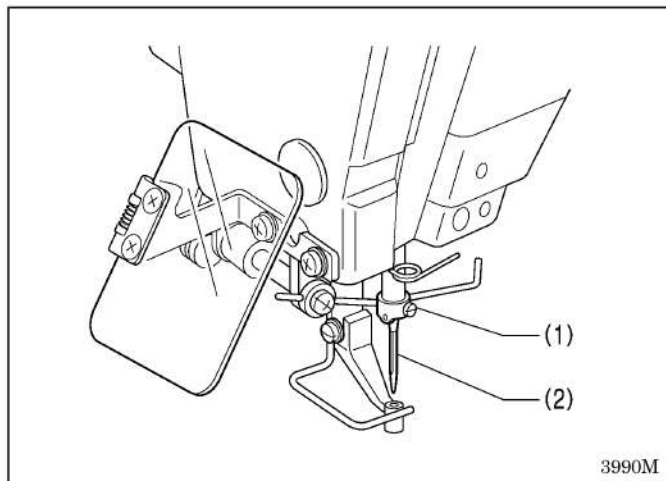
5-1. Installing the needle

⚠ CAUTION



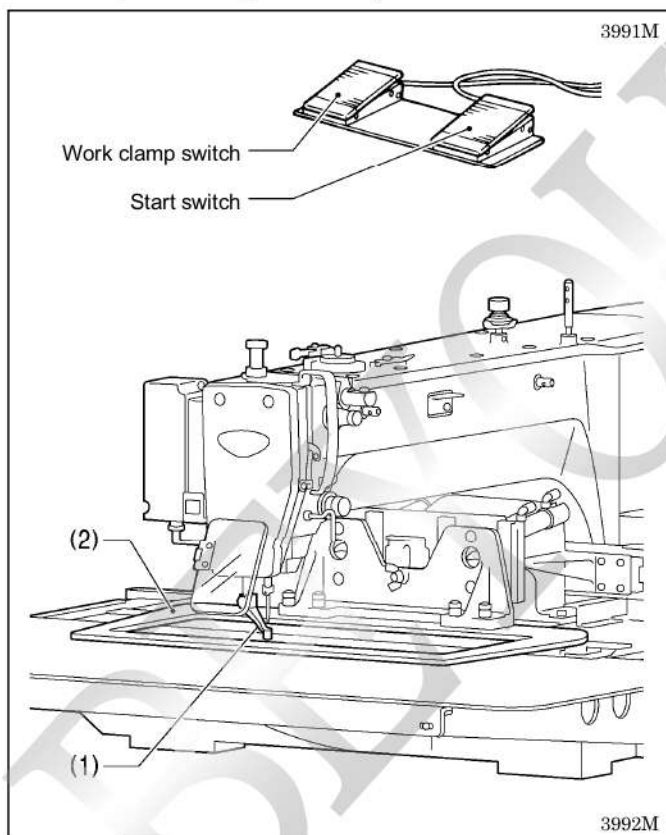
Turn off the power switch before installing the needle.

If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



1. Loosen the set screw (1).
2. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the front, and then securely tighten the set screw (1).

5-2. Operating the 2-pedal foot switch



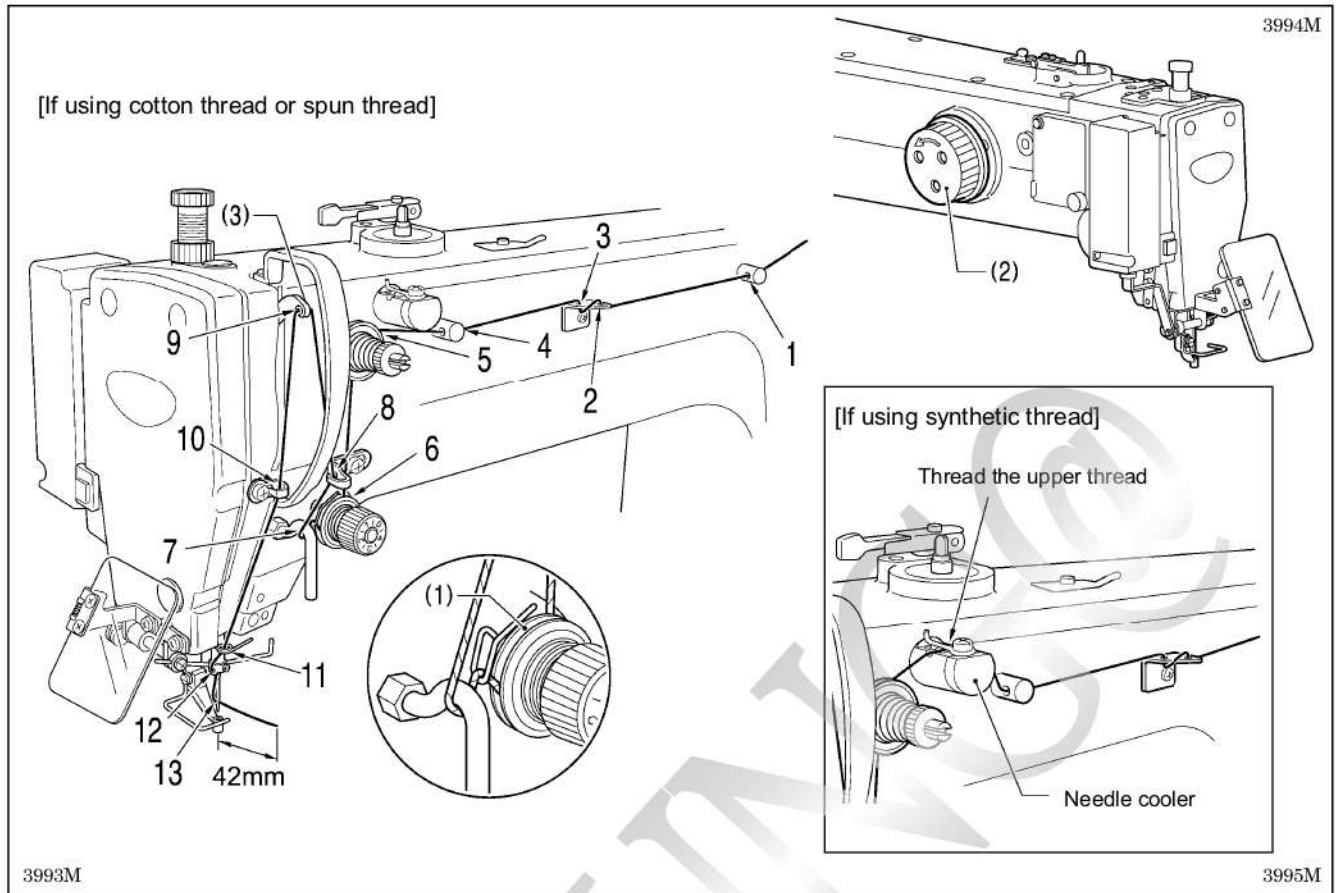
When the work clamp switch (left side) is depressed, the intermittent presser foot (1) and the work clamp (2) are lowered, and when the start switch (right side) is then depressed, the sewing machine starts operating.

* The work clamp (2) lowering method can be changed using memory switch No. 002. (Refer to "7-3. List of memory switch settings.")

5-3. Threading the upper thread

Thread the upper thread correctly as shown in the illustration below.

* When using threading mode for threading, the tension discs (1) will open so that the thread can be threaded more easily.
(Refer to following page.)

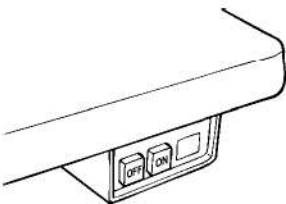
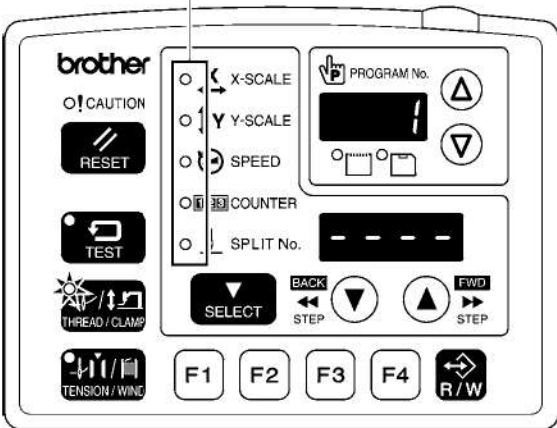



- Turn the machine pulley (2) and raise the thread take-up (3) to its highest position before threading the upper thread. (This will make threading easier and it will prevent the thread from coming out at the sewing start.)
- When threading the thread through the needle, allow a distance of approximately 42 mm between the needle hole and the end of the thread.
If the trailing length of the thread is too long, it may cause the thread to become tangled.

5. PREPARATION BEFORE SEWING

<Threading mode>

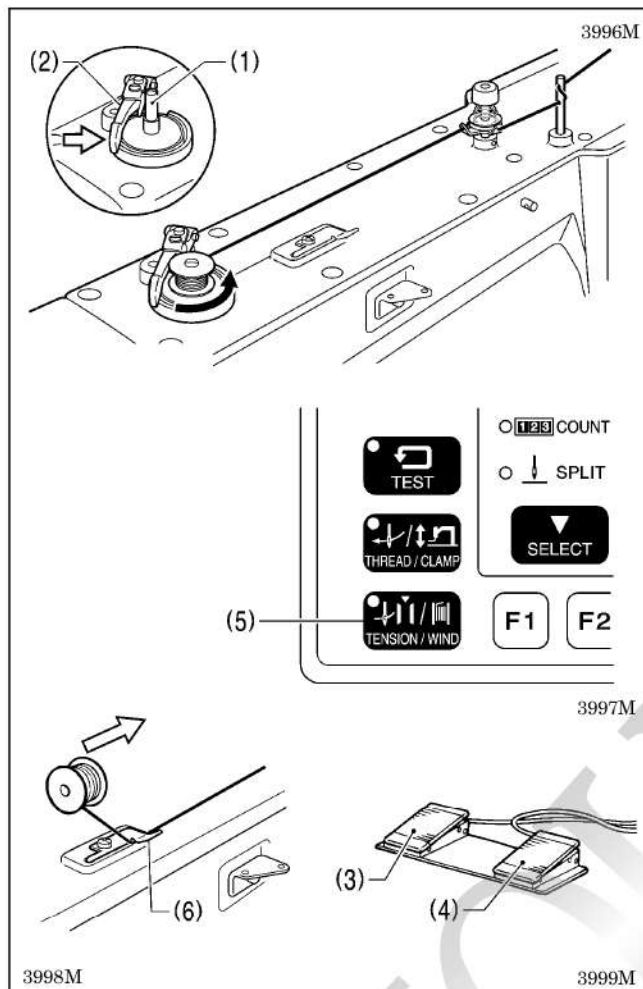
Threading mode is safe because the sewing machine will not start even when the foot switch is depressed.

1	<p>Turn on the power switch.</p>  <p style="text-align: right;">4421Q</p>
2	<p>All indicators switch off</p> <p>Press the THREAD/CLAMP key.</p>  <p style="text-align: center;">THREAD/CLAMP indicator illuminates MENU indicator switches off</p> <p style="text-align: right;">4427Q</p>
3	<p>Threading the thread.</p> <ul style="list-style-type: none"> When 5 minutes have passed, the buzzer will sound and the tension discs will close. <p>* When memory switch No. 564 is set to "2", the buzzer will sound after one minute has elapsed, and the tension discs will close.</p>
4	<p>Ending threading mode</p>  <p style="text-align: center;">THREAD/CLAMP indicator switches off</p> <p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> The work clamp and the intermittent presser foot will return to the position they were at before threading mode began.

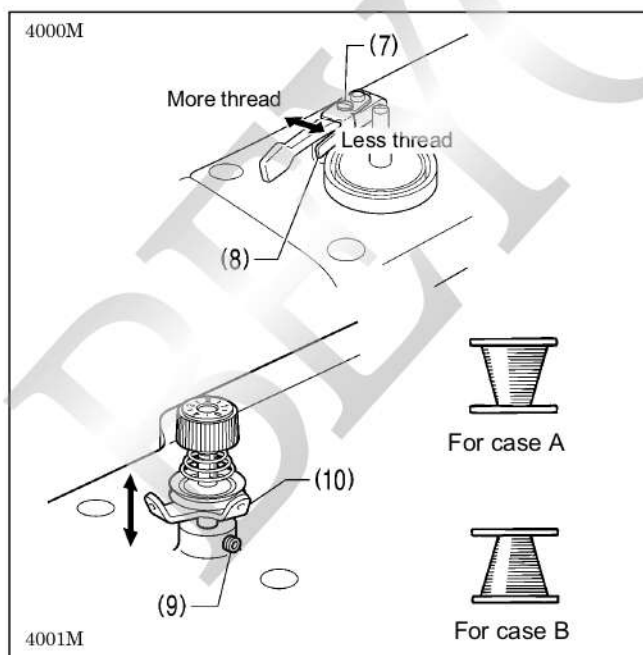
5-4. Winding the lower thread

! CAUTION

Do not touch any of the moving parts or press any objects against the machine while winding the lower thread. Injury or damage to the sewing machine may result.



1. Place the bobbin onto the bobbin winder shaft (1).
2. Thread the thread as shown in the illustration, wind the thread around the bobbin several times, and then press the bobbin presser arm (2).
3. Turn on the power switch.
4. Depress the work clamp switch (3) to lower the work clamp, and then depress the start switch (4). (Home position detection will be carried out.)
5. Check that the needle is not touching the work clamp.
6. Depress the work clamp switch (3) to lower the work clamp.
7. While pressing the TENSION/WIND key (5), depress the start switch (4).
8. Release the TENSION/WIND key (5) after the machine starts operating, and keep depressing the start switch (4) until the lower thread stops being wound onto the bobbin. (If you release the start switch (4) while this operation is in progress, hold down the TENSION/WIND key (5) and then depress the start switch (4) to restart winding of the thread.)
9. Once winding of the set amount of lower thread (80 - 90% of the bobbin capacity) is completed, the bobbin presser arm (2) will return automatically.
10. Remove the bobbin, hook the thread onto the knife (6), and then pull the bobbin in the direction of the arrow to cut the thread.

**Adjusting the bobbin winding amount**

Loosen the screw (7) and move the bobbin presser (8) to adjust.

If the thread winds onto the bobbin unevenly

Loosen the set screw (9) and move the bobbin winder tension assembly (10) up and down to adjust.

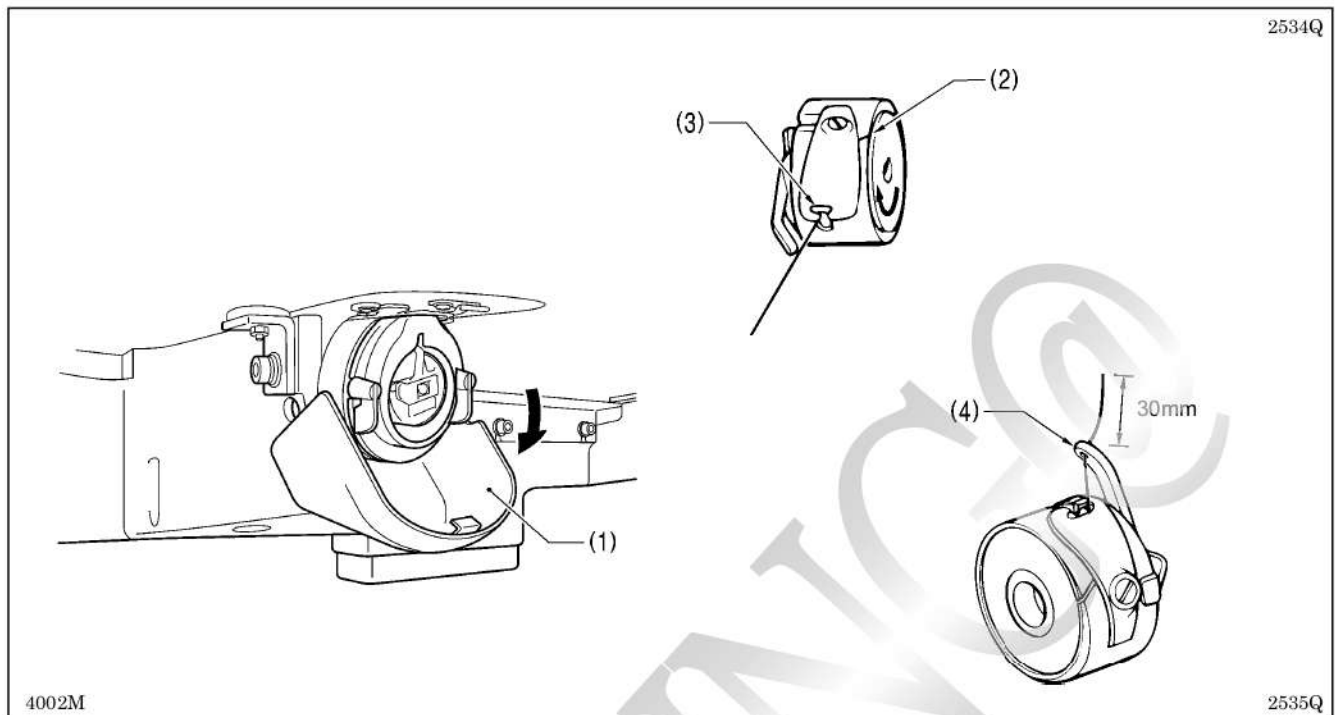
- * For case A, move the bobbin winder tension assembly (10) down, and for case B, move it upward.

5-5. Installing the bobbin case

⚠ CAUTION



Turn off the power switch before installing the bobbin case.
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



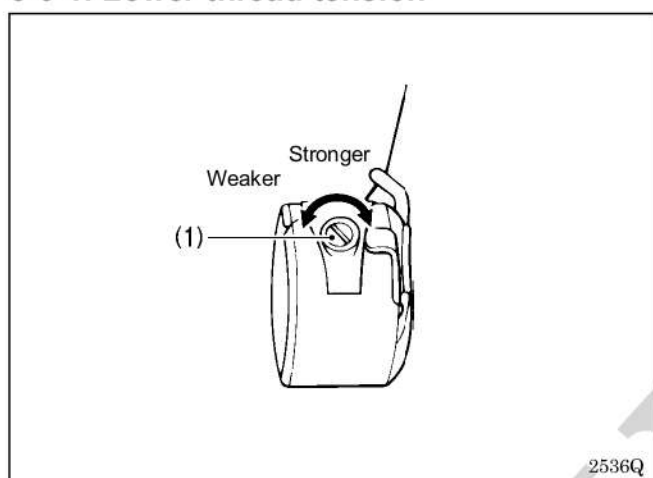
1. Pull the shuttle race cover (1) downward to open it.
2. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
3. Pass the thread through the slot (2) and pull it out from the thread hole (3).
4. Check that the bobbin turns in the direction of the arrow when the thread is pulled.
5. Pass the thread through the lever thread hole (4), and then pull out approximately 30 mm of thread.
6. Hold the latch on the bobbin case and insert the bobbin case into the rotary hook.

5-6. Thread tension

Thread tension reference

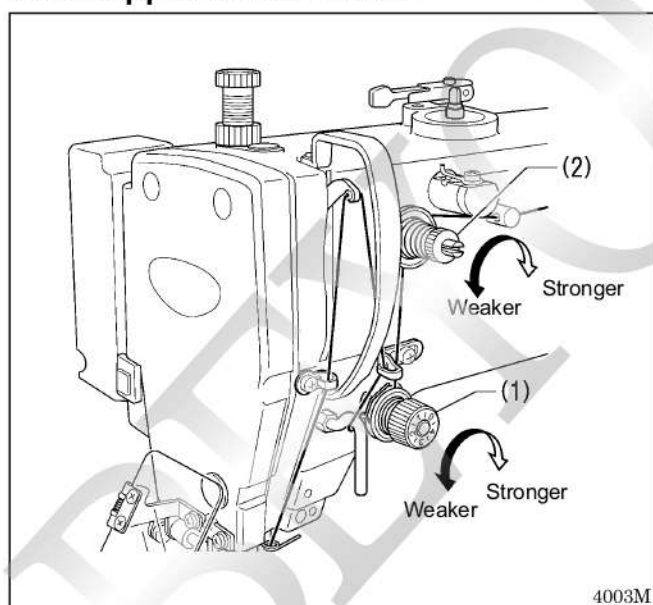
Upper thread	#20 or similar
Lower thread	#20 or similar
Upper thread tension (N)	1.4 – 1.8
Lower thread tension (N)	0.3 – 0.4
Pre-tension (N)	0.2 – 0.4
Needle	DP × 17#19

5-6-1. Lower thread tension



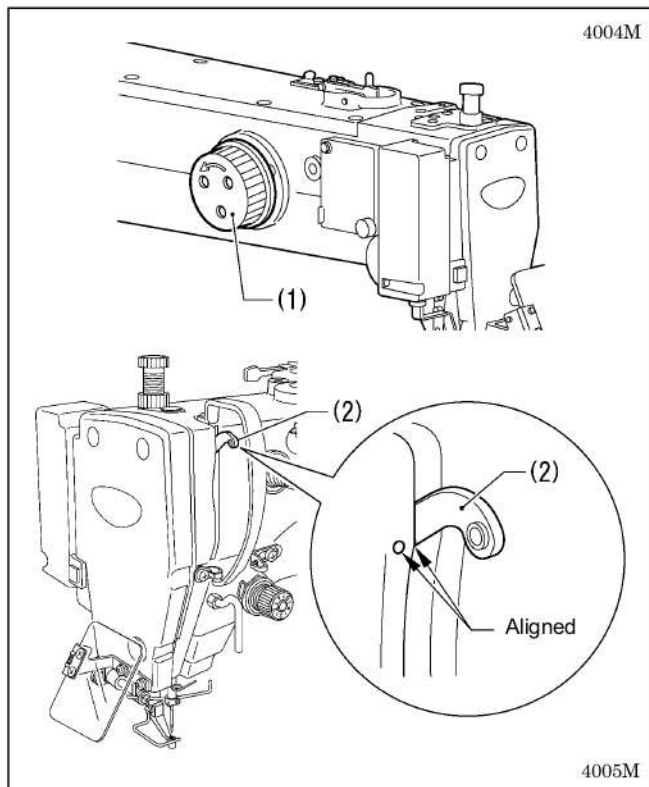
Adjust the thread tension to the weakest possible tension by turning the thread tension nut (1) until the bobbin case will not drop by its own weight while the thread end coming out of the bobbin case is held.

5-6-2. Upper thread tension



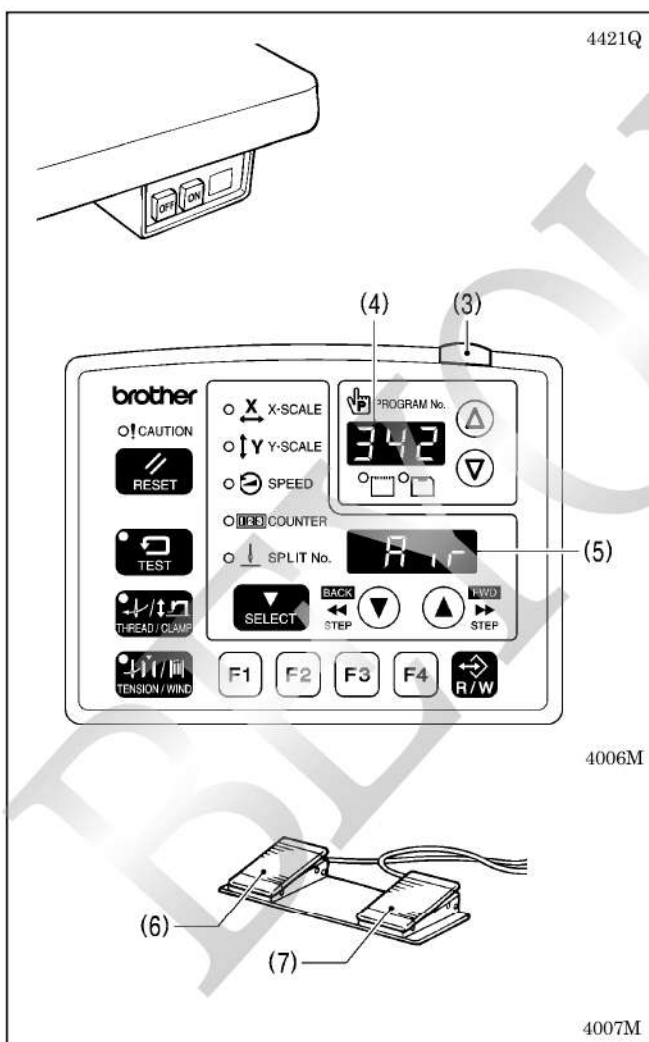
1. Turn the tension nut (1) (main tension) to adjust the tension as appropriate for the material being sewn.
2. Use the tension nut (2) (sub tension) to adjust the upper thread trailing length to about 42 mm.

5-7. Home position detection



Before starting home position detection, check that the needle bar is at the needle up stop position.

Turn the pulley (1) until the ridge at the bottom of the thread take-up (2) is aligned with the O mark on the arm.



1. Turn on the power switch.
The POWER indicator (3) will illuminate, and the model name [342] will appear in the PROGRAM No. display (4) and [Air] will appear in the menu display (5).



After this, the program number will flash in the PROGRAM No. display (4).

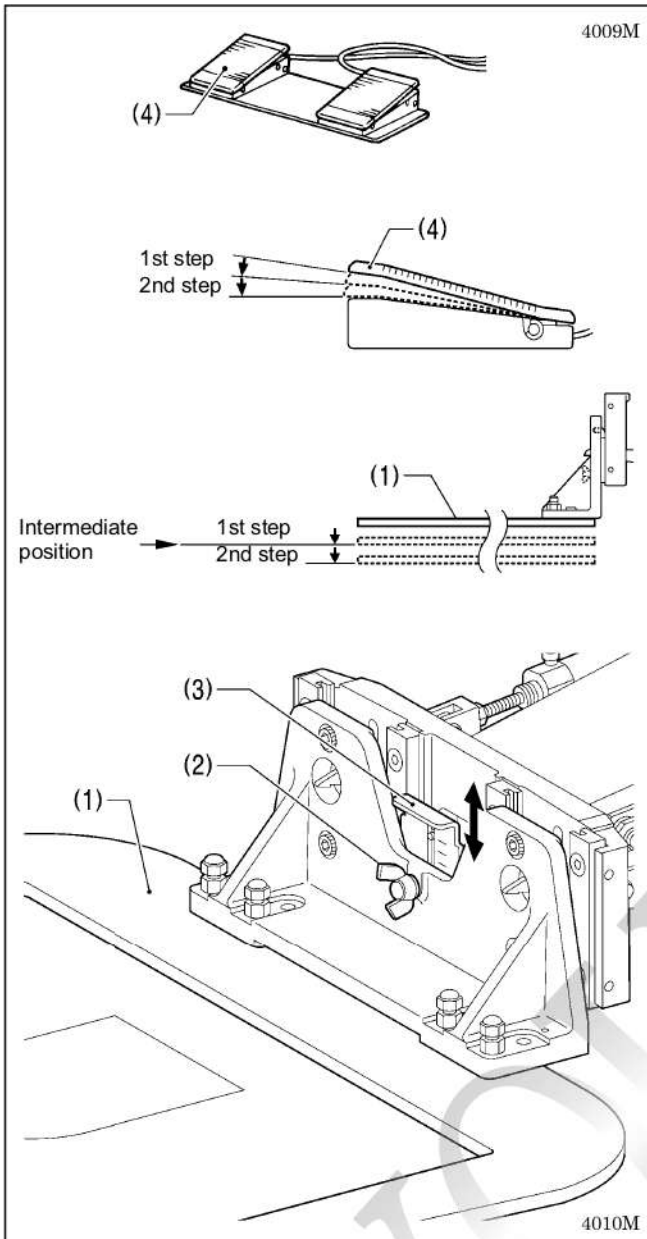
2. Depress the work clamp switch (6) to lower the work clamp, and then depress the start switch (7). (After home position detection is carried out, the work clamp will move to the sewing start position and then it will rise.)

* For programs with a large number of stitches, the buzzer will sound after the home position is detected, and then the work clamp will move to the sewing start position.

NOTE:

If error "E110" is displayed when the start switch (7) is depressed, turn the pulley (1) in the direction of operation to clear the error display.

5-8. Setting 2-step operation for the work clamp

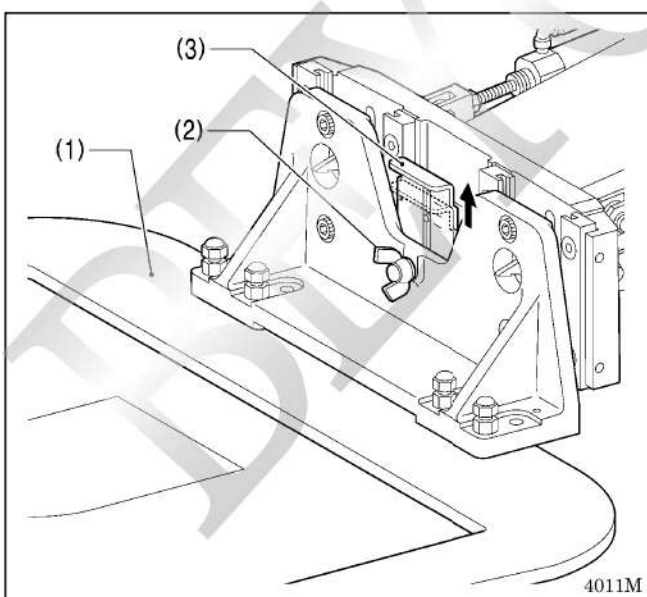


When these settings are made, the work clamp (1) can be lowered in two steps.

1. Set memory switch No. 002 to "1".
(Refer to "7-2. Setting memory switches".)
2. With the work clamp (1) raised, loosen the wing screw (2).
3. Move the work clamp stopper (3) up or down to determine the intermediate position, and then tighten the wing screw (2) to secure the work clamp stopper (3) in place.
4. Depress the work clamp switch (4) to the 1st step and check the intermediate position for the work clamp.
5. Depress the work clamp switch (4) to the 2nd step to fully lower the work clamp.

* 2-step work clamp operation is enabled when memory switch No. 002 is set to "1".

* Do not set memory switch No. 002 to "2".

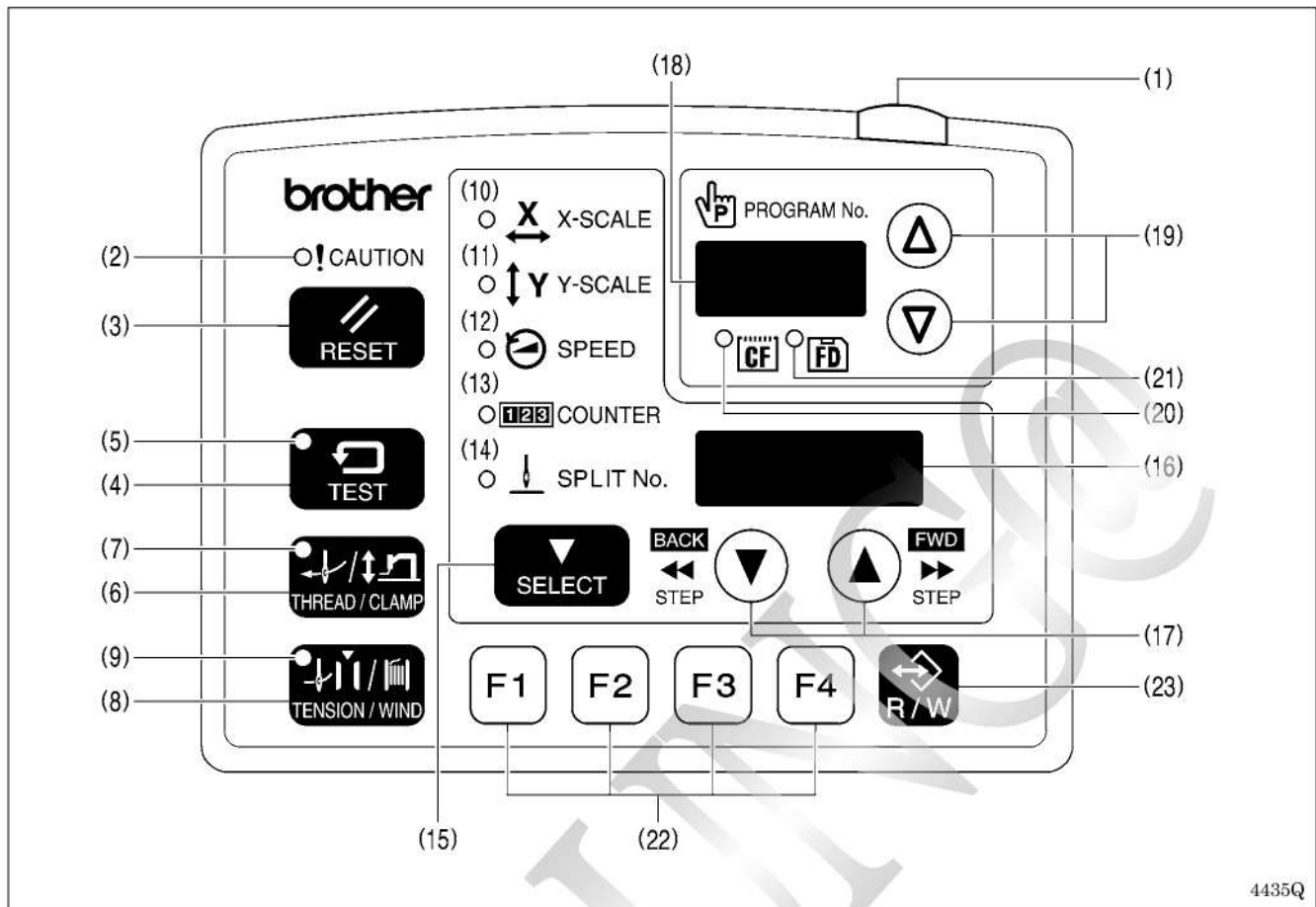


<To return the work clamp to one-step operation>

1. Set memory switch No. 002 to "0".
(Refer to "7-2. Setting memory switches".)
2. With the work clamp (1) raised, loosen the wing screw (2).
3. Move the work clamp stopper (3) to its highest position, and then tighten the wing screw (2) to secure the work clamp stopper (3) in place.

6. USING THE OPERATION PANEL (BASIC OPERATIONS)

6-1. Name and function of each operation panel item



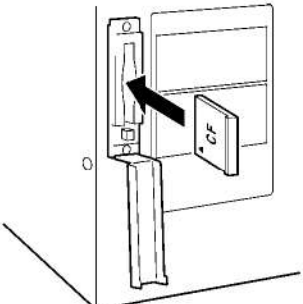
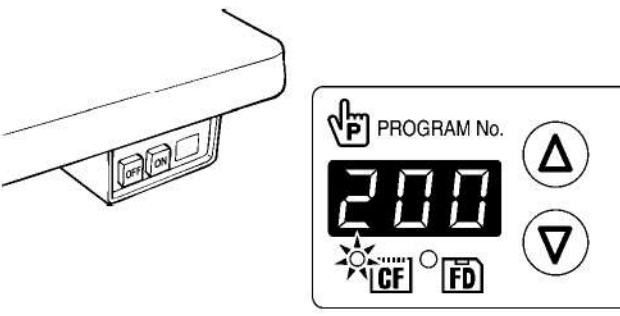
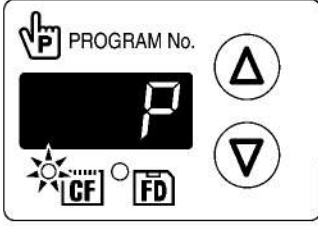

- (1) Power indicator
Illuminates when the power is turned on.
- (2) CAUTION indicator
Illuminates when an error occurs.
- (3) RESET key
Used to reset errors.
- (4) TEST key
Used to start test mode.
- (5) TEST indicator
Illuminates when the TEST key (4) has been pressed.
- (6) THREAD/CLAMP key
Used to start threading mode or work clamp height setting mode.
- (7) THREAD/CLAMP indicator
Illuminates when the THREAD/CLAMP key (6) has been pressed.
- (8) TENSION/WIND key
Used to wind the lower thread.
- (9) TENSION/WIND indicator
Used when the digital tension set (option) is installed.

- (10) X-SCALE indicator
Illuminates when the SELECT key (15) is pressed to shown the X-scale setting.
- (11) Y-SCALE indicator
Illuminates when the SELECT key (15) is pressed to shown the Y-scale setting.
- (12) SPEED indicator
Illuminates when the SELECT key (15) is pressed to shown the sewing speed setting.
- (13) COUNTER indicator
Illuminates when the SELECT key (15) is pressed to shown the lower thread or production counter setting.
- (14) SPLIT No. indicator
Illuminates when the SELECT key (15) is pressed to show the split setting when split data (for specifying a pause while the program is running) exists.
- (15) SELECT key
Used to select a menu (X-scale, Y-scale, sewing speed and counter).
- (16) Menu display
Displays information such as menu setting values, memory switch settings and error codes.
- (17) Setting keys ▼ ▲
Used to change the value which is displayed in the menu display (16).
In addition, it is used to move the needle position forward and back when sewing has been paused.
- (18) PROGRAM No. display
Displays information such as program numbers.
- (19) Setting keys ▼ ▲
Used to change the value which is displayed in the PROGRAM No. display (18).
- (20) CF media indicator
Illuminates when a CF card (external media) is inserted while the power is turned on.
- (21) FD media indicator
Illuminates when the FDD set (option) is connected.
- (22) Function keys [F1, F2, F3, F4]
Used to select user programs and to set and select cycle programs.
- (23) R/W key
Used to read data from and write data to external media.

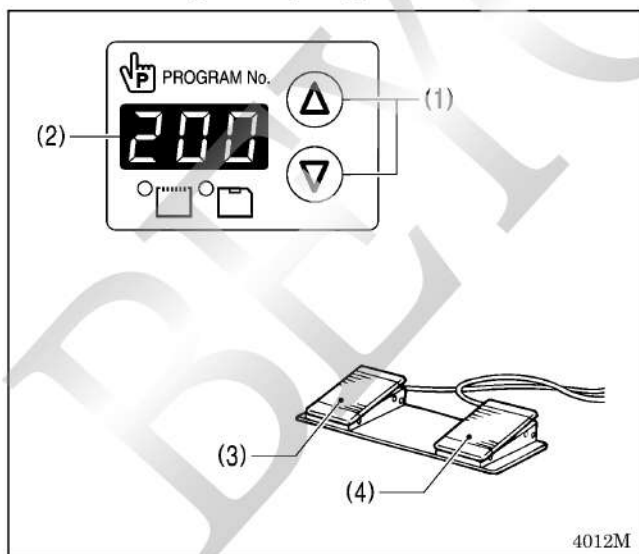
CF™ is a trademark of SanDisk Corporation.

6-2. Loading sewing data

Refer to "8-1. Notes on handling CF cards (sold separately)" for details on using CF cards.

1		<p>With the power turned off, insert the CF card into the CF slot.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Make sure the CF card is facing the correct way when inserting it. • Always be sure to keep the cover closed except when inserting and removing the CF card. If this is not done, dust may get inside and cause problems with operation. <p>4453Q</p>
2	 <p>CF media indicator illuminates</p>	<p>Turn on the power switch.</p> <p>Press the Δ or ∇ key to select the program number (100 – 999).</p> <p>* The "—" display is used to check the feed home position.</p> <p>4421Q 4457Q</p>
3		<p>Press the R/W key.</p>  <ul style="list-style-type: none"> • The buzzer will sound and the selected sewing data will be loaded from the CF card and copied into the sewing machine's internal memory. <p>Loading</p> <p>4498Q</p>
4	<p>Loading complete</p> <p>The PROGRAM No. display will change from " P" to the selected program number.</p> <p>Turn off the power switch, remove the CF card, and then close the cover of the CF slot.</p>	

6-3. Setting the program number

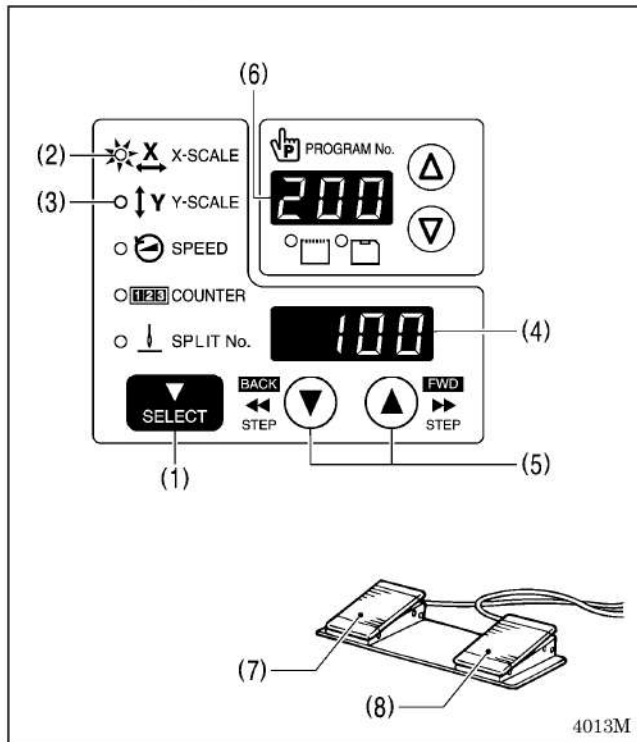


1. Press the Δ or ∇ key (1) to select the program number that is loaded into the internal memory.
 - The program number will flash in the PROGRAM No. display (2).
 - "—" will appear at the time of shipment from the factory. (For checking feed home position)
2. Depress the work clamp switch (3) to lower the work clamp, and then depress the start switch (4).
 - The work clamp will move to the sewing start position, and then the program number will be applied.
 - The program number will stop flashing and illuminate steadily.

NOTE:

After completing the setting, be sure to refer to "6-6. Checking the sewing pattern" to check that the needle drop position is correct.

6-4. Setting the X-scale and Y-scale



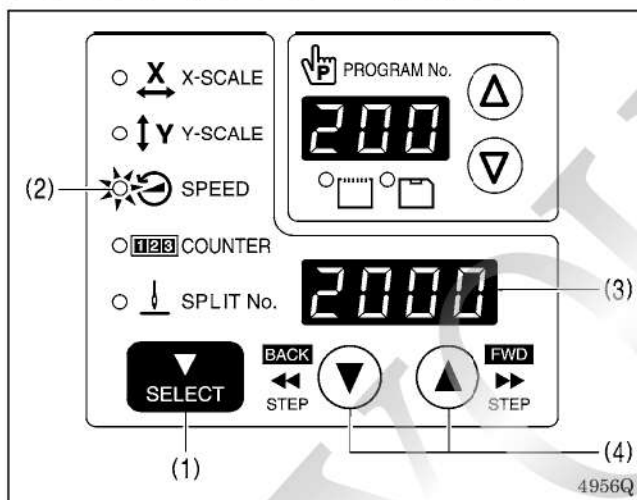
The scales are set to 100 (%) at the time of shipment from the factory.

- Press the SELECT key (1) so that the X-SCALE indicator (2) (for X-scale setting) or the Y-SCALE indicator (3) (for Y-scale setting) is illuminated.
 - The setting value (%) will appear in the menu display (4).
 - When memory switch no. 402 is set to "ON", the settings will be displayed in units of mm.
- Press the ▲ or ▼ key (5) to set the scale (0 – 400).
 - The program number will flash in the PROGRAM No. display (6).
- Depress the work clamp switch (7) to lower the work clamp, and then depress the start switch (8).
 - The work clamp will move to the sewing start position, and then the scales will be applied.
 - The program number will stop flashing and illuminate steadily.

NOTE:

After completing the setting, be sure to refer to "6-6. Checking the sewing pattern" to check that the needle drop position is correct.

6-5. Setting the sewing speed




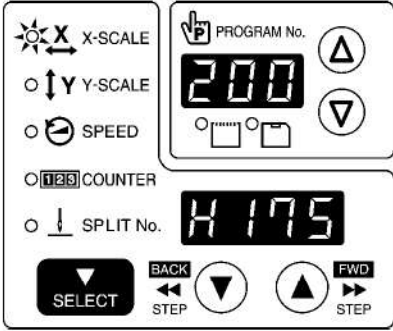
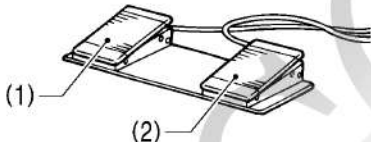
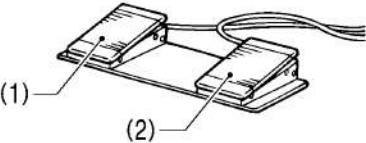



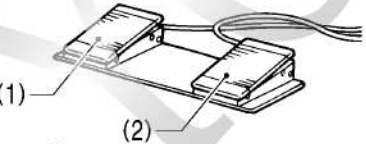

The sewing speed is set to 2000 (rpm) at the time of shipment from the factory.

- Press the SELECT key (1) until the SPEED indicator (2) illuminates.
 - The setting value (rpm) will appear in the menu display (3).
- Press the ▲ or ▼ key (4) to set the sewing speed. (Sewing speed setting: 400 – 2700)

6-6. Checking the sewing pattern


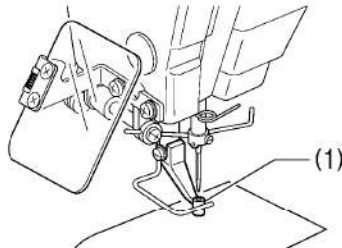
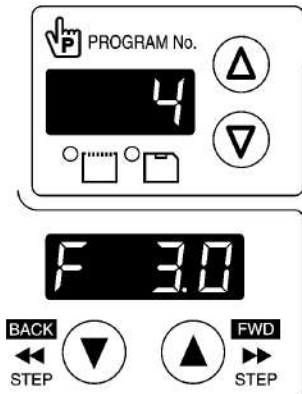


Use test feed mode to check the needle movement with only the work clamp operating.

Check that the needle hole in the needle plate does not come out from the frame of the work clamp.

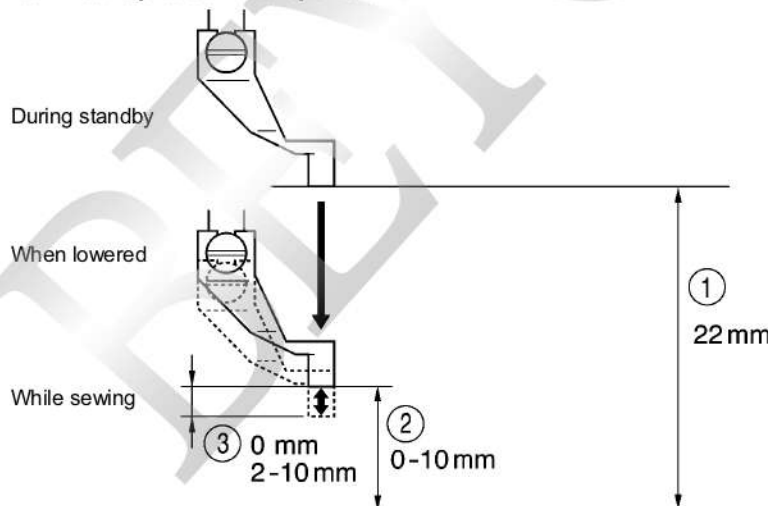
1	 <p>Press the TEST key.</p> <p>TEST indicator illuminates</p>
2	 <p>COUNTER indicator illuminates</p> <p>Select the program number to be checked, and then set the X-scale and the Y-scale.</p> <ul style="list-style-type: none"> The program number will flash. <p>Depress the work clamp switch (1) to lower the work clamp, and then depress the start switch (2).</p> <ul style="list-style-type: none"> The work clamp will move to the sewing start position, and then the program number will stop flashing and illuminate steadily. The number of stitches will appear in the menu display.  <p>4957Q 4014M</p>
3	<p>Starting continuous test feed mode</p>  <p>Depress the work clamp switch (1) to lower the work clamp, and then depress and release the start switch (2).</p> <ul style="list-style-type: none"> The work clamp will start moving continuously one stitch at a time. <p>[Fast-forward test mode] If the work clamp switch (1) is depressed while the work clamp is moving, the feeding speed can be increased while the work clamp switch (1) is depressed.</p> <p>4443Q</p> <div style="border: 1px solid black; padding: 10px;">  <p>TEST indicator illuminates</p>  <p>When the ▲ key is pressed, the work clamp will move forward by one stitch, and when the ▼ key is pressed, the work clamp will move backward by one stitch. (It will move quicker if you keep the key pressed down.)</p>  <p>TEST indicator switches off</p>  <p>If you would like sewing to start while test feeding is in progress, press the TEST key to switch off the TEST indicator. When the start switch (2) is depressed, sewing will start.</p> <p>4014M</p> </div>
4	<p>If test feeding continues until the final stitch, the work clamp will move to the sewing start position and then stop.</p> <p>Press the TEST key.</p>  <p>TEST indicator switches off</p>

6-7. Setting the height of the intermittent presser foot

You can use the operation panel to change the setting value for the intermittent presser foot height.

1	<p>All indicators switch off</p>  <p>THREAD/CLAMP indicator illuminates MENU indicator switches off</p>	<p>Press the THREAD/CLAMP key. The sewing machine will switch to threading mode.</p> <ul style="list-style-type: none"> " 1" will appear in the PROGRAM No. display and the intermittent presser foot (1) will drop.  <p>4445Q 4015M</p>
2		<p>Press the Δ key. The sewing machine will switch to intermittent presser foot height setting mode.</p> <ul style="list-style-type: none"> " 4" will appear in the PROGRAM No. display and the intermittent presser foot (1) will rise to the setting value that appears in the menu display. (Intermittent presser foot height setting: 0.0 – 10.0) <p>Press the \blacktriangle or \blacktriangledown key to set the intermittent presser foot height.</p> <ul style="list-style-type: none"> The intermittent presser foot (1) will be raised or lowered to the height of the new value that has been set. <p>NOTE: After making the setting, be sure to turn the pulley once by hand and check that the intermittent presser foot (1) does not touch the needle bar.</p> <p>5225Q</p>
<p><Changing modes></p>  <p>" 1" Threading mode " 4" Intermittent presser foot height setting mode</p> <p>4016M</p>		
3	<p>Ending setting mode</p>  <p>THREAD/CLAMP indicator switches off</p>	<p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> The setting values will be memorized. The intermittent presser foot (1) will return to the status that it was at before the sewing machine was switched to setting mode.

Intermittent presser foot operation



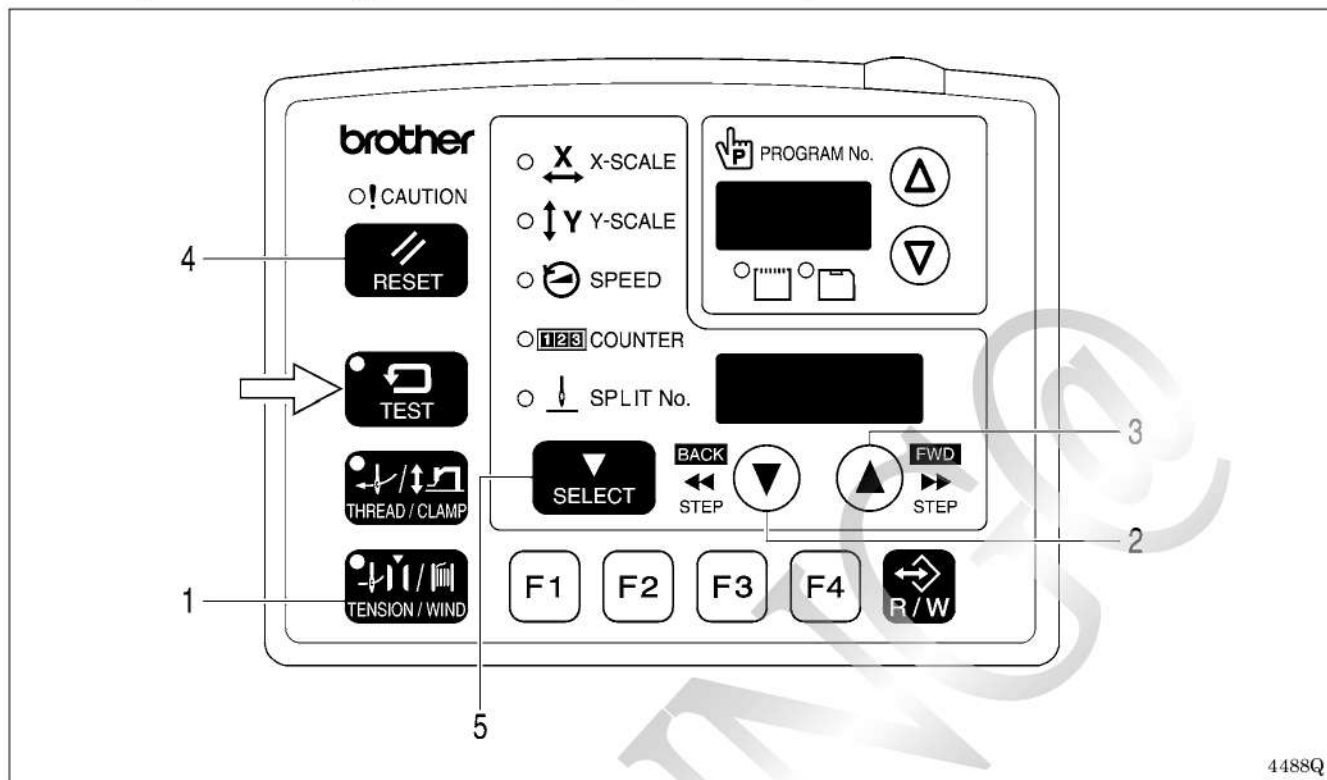
- ① **Intermittent presser foot lift amount**
- ② **Intermittent presser foot height**
The settings can be made by the above operations.
However, if the intermittent presser foot height is set to a smaller setting than the intermittent presser foot stroke, the intermittent presser foot will not drop in order to prevent it from coming into contact with the needle plate. (Refer to page 63.)
- ③ **Intermittent stroke**
Refer to "11-13. Changing the intermittent stroke" when making the adjustment.

5033Q











7. USING THE OPERATION PANEL (ADVANCED OPERATIONS)

7-1. List of advanced functions

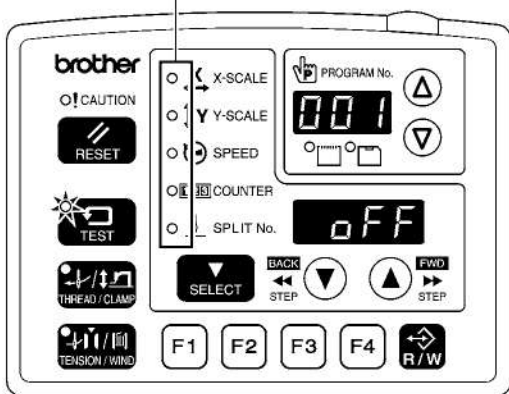
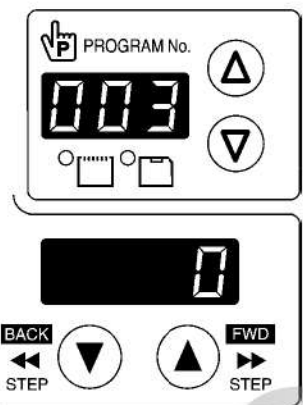
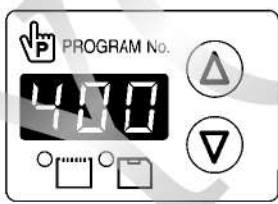

While holding down the TEST key, press the corresponding combination key.



4488Q

1	 + 	Memory switch setting mode Refer to "7-2. Setting memory switches".	4489Q
2	 + 	Lower thread counter setting mode Refer to "7-4. Using the lower thread counter".	4490Q
3	 + 	Production counter setting mode Refer to "7-5. Using the production counter".	4491Q
4	When SPEED indicator is illuminated  + 	Production counter temporary display function Refer to "7-5. Using the production counter".	4492Q
5	 + 	User program setting mode Refer to "7-7. Using user programs".	4493Q

7-2. Setting memory switches

1	<p>All indicators switch off</p>  <p>Menu indicator switches off TEST indicator illuminates</p>	<p>While pressing the SELECT key, turn on the power switch. * Keep pressing the SELECT key until the model name is displayed and the buzzer beeps once.</p> <p>or</p> <p>With the power turned on, press the TEST key and the TENSION/WIND key simultaneously.</p> <p>• The memory switch number will appear in the PROGRAM No. display, and its setting value will appear in the menu display.</p> <p>4449Q 4421Q</p>
2	 <p>If you would like to display only the numbers of memory switches that have been changed from default settings</p> 	<p>Press the Δ or ∇ key to select the memory switch number. (Refer to "7-3. List of memory switch settings" on the next page.)</p> <p>Press the Δ or ∇ key to change the setting.</p> <p>While pressing the SELECT key, press the Δ or ∇ key.</p> <ul style="list-style-type: none"> • The numbers of memory switches that have been changed from default settings will appear in order. • If no memory switches have been changed from their default settings, the display will not change and the buzzer will beep twice. <p>4961Q</p> <p>4452Q</p>
3	<p>Ending setting mode</p>  <p>TEST indicator switches off</p>	<p>Press the TEST key.</p> <ul style="list-style-type: none"> • The changes will be memorized and the sewing machine will switch to home position detection standby.



- If you would like to return the setting for a single memory switch to the default setting, press the RESET key while the number for that memory switch is displayed.
- To return the settings for all memory switches to the default settings, keep pressing the RESET key for two or more seconds until the buzzer makes a long beep.

7-3. List of memory switch settings

No.	Setting range	Setting items	Initial value
001	Work clamp lift timing after sewing is completed		ON
	OFF	Lifts at the final stitch position.	
	ON	Lifts after moving to the home position.	
002	Integrated-type work clamp drop operation		0
	0	Work clamp dropping in one step	
	1	Work clamp dropping in two steps (*1)	
	2	Do not use this setting.	
100	Sewing start speed		OFF
	OFF	The sewing speed for the first 1 – 5 stitches is set by memory switch numbers 151 – 155. (Refer to the service manual for details of memory switch Nos. 151 – 155.)	
	ON	1st stitch at 400 rpm, 2nd stitch at 400 rpm, 3rd stitch at 600 rpm, 4th stitch at 900 rpm, 5th stitch at 2,000 rpm	
200	Single-stitch test feed		OFF
	OFF	Test feed starts when the start switch is depressed, and it continues automatically until the final stitch.	
	ON	Test feeding <ul style="list-style-type: none"> Is carried out one stitch at a time each time the work clamp switch is depressed Is carried out continuously while the start switch is depressed Is carried out one stitch at a time when the pulley is turned by hand 	
300	Production counter display		OFF
	OFF	Lower thread counter display	
	ON	Production counter display	
400	User programs		OFF
	OFF	Disabled	
	ON	User program mode is enabled.	
401	Cycle programs		OFF
	OFF	Disabled	
	ON	When sewing user programs, the set programs are sewn in numeric order.	
402	Maximum reduction ratio (mm display) (*2)		OFF
	OFF	Displayed as %.	
	ON	Displayed as mm.	
403	Split mode selection		0
	0	Continuous split (split menu is disabled before split detection)	
	1	Continuous split (split menu is always enabled)	
	2	Independent split	

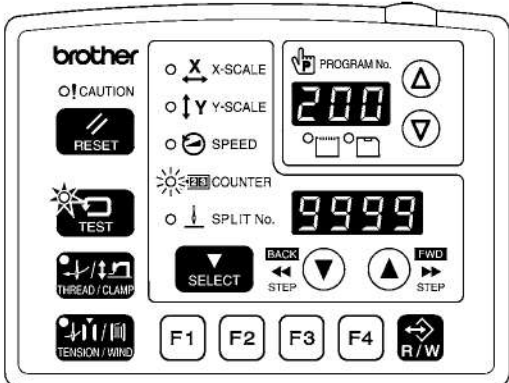


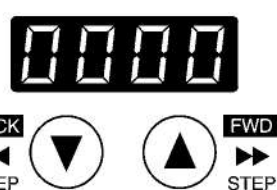


(*1) The position of the work clamp stopper must be set. (Refer to "5-8. Setting 2-step operation for the work clamp".)

(*2) The mm display may differ slightly from the actual sewing size.

7-4. Using the lower thread counter

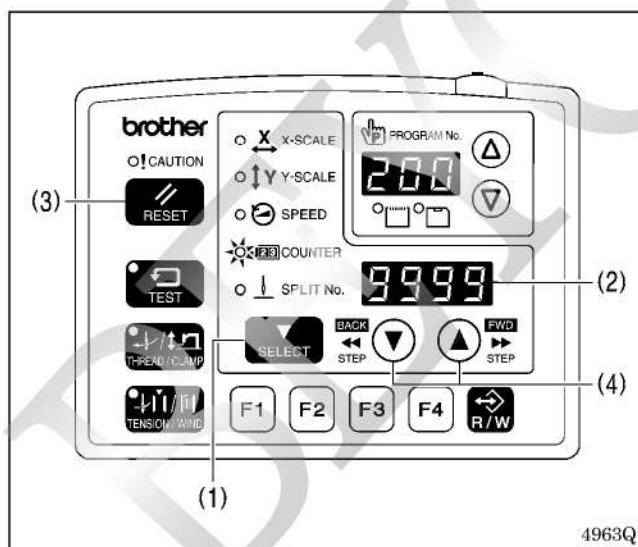
If you use the lower thread counter to set the number of articles which can be sewn with the amount of lower thread available, you can stop the lower thread running out in the middle of sewing a pattern.

<Setting defaults>

1	 <p>While pressing the TEST key, press the ▼ key.</p>   <ul style="list-style-type: none"> The initial value which was set previously will appear in the menu display. <p>TEST indicator illuminates, COUNTER indicator flashes</p> <p style="text-align: right;">4962Q 4455Q</p>
2	 <p>Press the ▲ or ▼ key to set the initial value.</p> <ul style="list-style-type: none"> The initial value can be set from 1 ("0001") to 9999 ("9999"). If the initial value is set to "0000", the lower thread counter will not operate. If you press the RESET key during setting mode, the value will become "0000". <div style="border: 1px dashed black; padding: 5px;">  If you press the R/W key during setting mode, the initial value for the program number being displayed will be stored, and you can set the lower thread counter separately for each item of sewing data. </div> <p>4456Q</p>
3	<p>Ending setting mode</p>  <p>Press the TEST key.</p> <ul style="list-style-type: none"> The initial value will be memorized. <p>TEST indicator switches off</p>

<Lower thread counter operation>

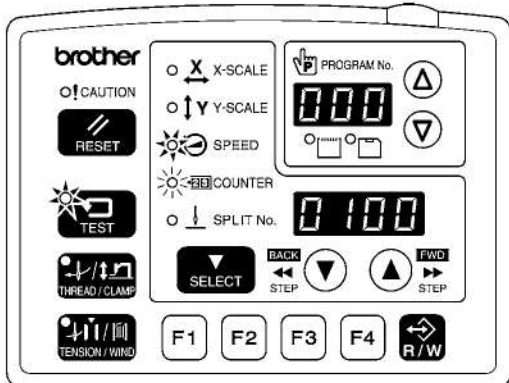


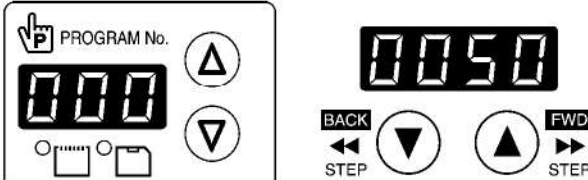

If you press the SELECT key (1) to select the counter display menu when memory switch no. 300 is set to "OFF", the COUNTER indicator will illuminate and the lower thread counter will appear in the menu display (2).



- Each time the sewing of a single article is completed, the value shown in the menu display (2) is reduced by 1.
- When the lower thread counter reaches "0000", the buzzer will sound continuously. The sewing machine will not operate during this time, even if the foot switch is depressed.
- When you press the RESET key (3), the buzzer will stop, the initial value will appear in the menu display (2) and sewing will be possible.
 - If no initial value has been set, the display will be "0000".
- * You can press the ▲ or ▼ key (4) to set the lower thread counter to a desired value. However, this value will not be stored as the initial value.
- * If a lower thread counter value is set, the lower thread counter will operate even if the lower thread counter is not being displayed.

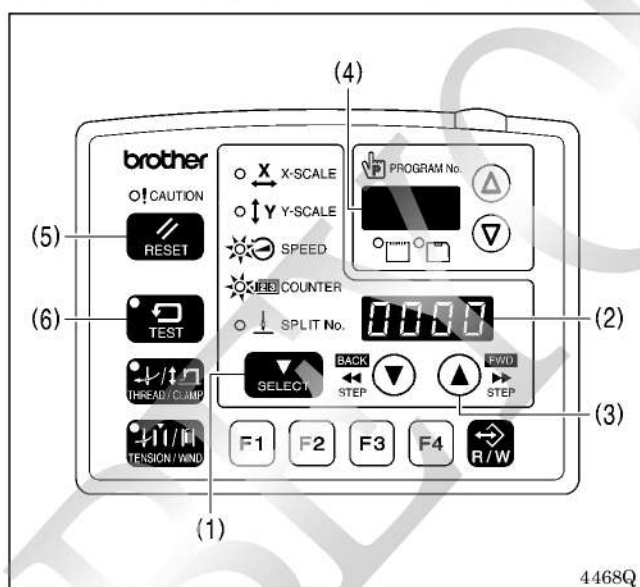
7-5. Using the production counter

<Setting the counter value>

1	 <p>TEST indicator and SPEED indicator illuminate COUNTER indicator flashes</p>	<p>While pressing the TEST key, press the ▲ key.</p>   <ul style="list-style-type: none"> The counter value that was previously set will appear as a 7-digit number in the PROGRAM No. display and the menu display.
2		<p>Press the ▲ or ▼ key to set the counter value.</p> <ul style="list-style-type: none"> The counter value can be set to between "000" "0000" and "999" "9999". If you press the RESET key during setting mode, the value will become "000" "0000".
3	<p>Ending setting mode</p>  <p>TEST indicator switches off</p>	<p>Press the TEST key.</p> <ul style="list-style-type: none"> The counter value will be memorized.

<Production counter operation>

If you press the SELECT key (1) to select the counter display menu when memory switch no. 300 is set to "ON", the SPEED and COUNTER indicators will illuminate and the production counter will appear in the menu display (2).



- Each time the sewing of a single article is completed, the value shown in the menu display (2) is increased by 1.
- While the ▲ key (3) is being pressed, the first three digits will appear in the PROGRAM No. display (4) so that the total number of digits displayed will be seven.
- If you press the RESET key (5) for 2 seconds or more, the counter value will be reset to [0000].

Temporary display function

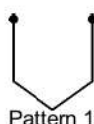
You can display the production counter temporarily while the lower thread counter is being displayed.

When the SPEED indicator is illuminated, hold down the TEST key (6) and then press the RESET key (5) to display the production counter in the menu display (2).

Press the TEST key (6) or the SELECT key (1) to switch the menu back to the normal menu display.

* You can start sewing while the temporary display still appears.

7-6. Setting the split number



Pattern 1



Pattern 2



Pattern 3

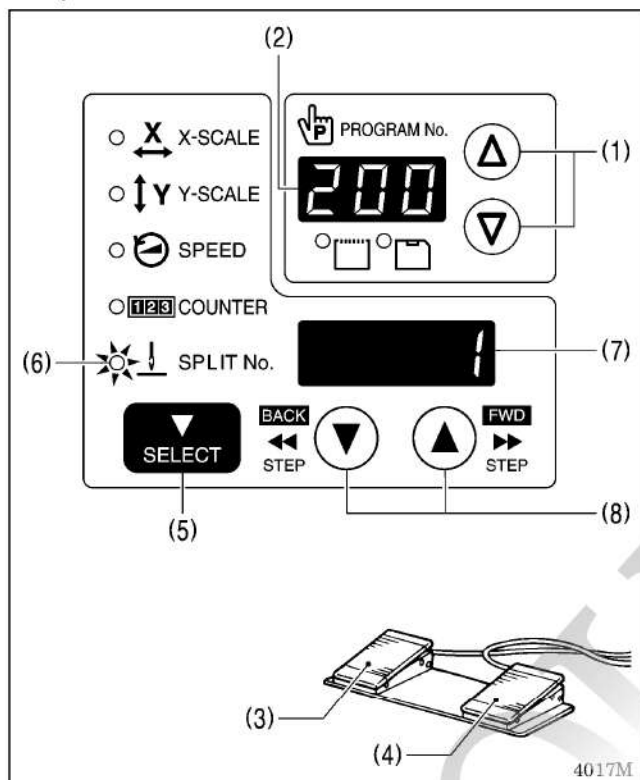
If split data (data that causes sewing to pause) exists within a single program, the numbers that are used to specify the patterns that are separated by split data are called split numbers.

Pattern 1: Split No. 1

Pattern 2: Split No. 2

Pattern 3: Split No. 3

4964Q



1. Press the Δ or ∇ key (1) to select a program number for a program that contains split data.
 - The program number will flash in the PROGRAM No. display (2).
2. Depress the work clamp switch (3) to lower the work clamp, and then depress the start switch (4).
 - The work clamp will move to the sewing start position, and then the program number will be applied.
 - The program number will stop flashing and illuminate steadily.
3. Press the SELECT key (5) so that the SPLIT No. indicator (6) illuminates.
 - The split number will appear in the menu display (7).
4. Press the Δ or ∇ key (8) to set the split number.

The setting for memory switch No. 403 lets you select the split mode.

[Continuous split]

Memory switch No. 403 = 0 (Split mode is enabled after split data is detected)

Memory switch No. 403 = 1 (Split mode is always enabled)

- Sewing is carried out each time in the order of steps 1 → 2 → 3 → 1 (for example, if there are two sections of split data).

[Independent split]

Memory switch No. 403 = 2

- The pattern for the displayed split number is sewn independently.

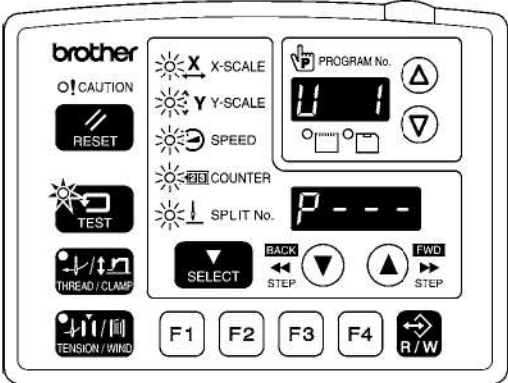


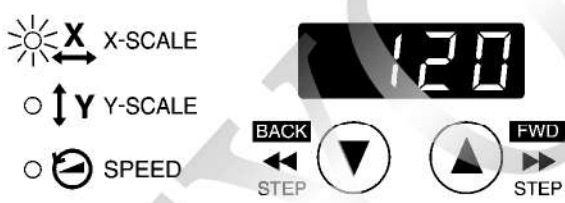

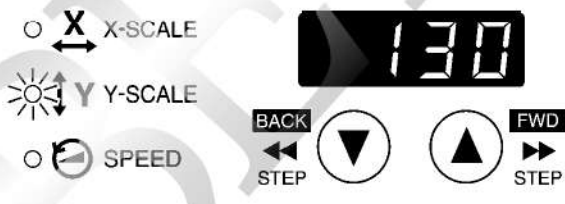

7-7. Using user programs













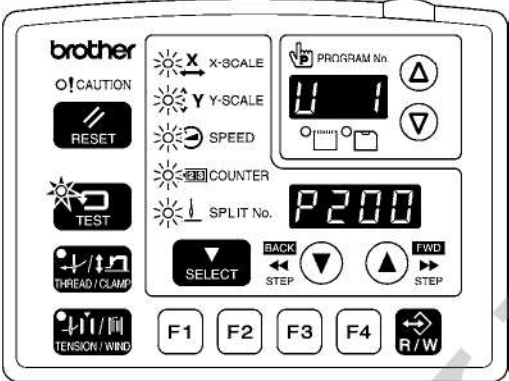

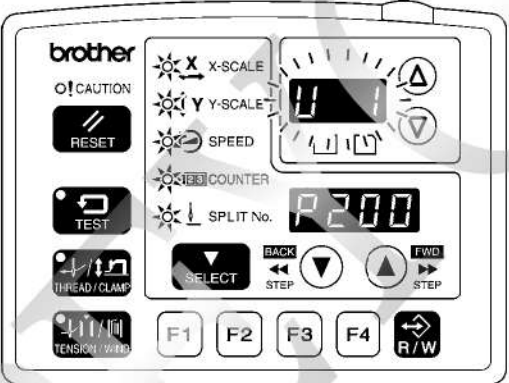

Up to 50 different combinations of settings including program no., X-scale, Y-scale, sewing speed and intermittent presser foot height can be memorized as user programs (U1 to U50).

If you are sewing certain patterns over and over again, it is useful to record the settings for these patterns into a user program.

User programs are enabled when memory switch no. 400 is set to "ON".

<Recording user programs>

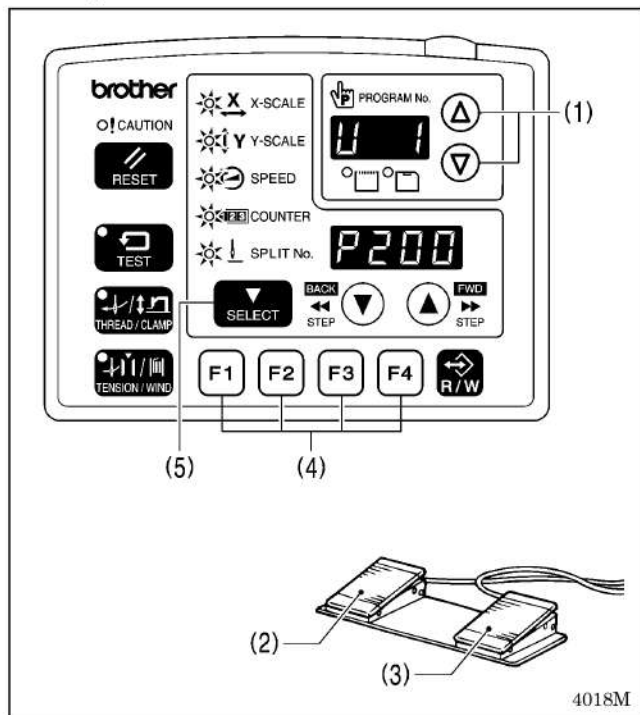
1	<p>Select a user program number.</p>  <p>TEST indicator illuminates, MENU indicator flashes</p>	<p>While pressing the TEST key, press the SELECT key.</p>  <ul style="list-style-type: none"> Switch to user program recording mode. Check that the menu indicators are flashing. The user program number will appear in the PROGRAM No. display, and "P- - -" will appear in the menu display. <p>Press the Δ or ∇ key to select the user program number.</p> <p>4469Q</p>
2	<p>First, set the program number.</p> 	<p>Press the Δ or ∇ key to set the user program number to be recorded.</p> <p>NOTE:</p> <p>Select a program number that is recorded in the internal memory. You cannot specify program numbers on removable media.</p> <p>4966Q</p>
3	<p>Next, set the X-scale.</p>  <p>X-SCALE indicator flashes</p>	<p>Press the SELECT key.</p>  <p>Press the Δ or ∇ key to set the X-scale to be recorded.</p> <p>4470Q</p>
4	<p>Next, set the Y-scale.</p>  <p>Y-SCALE indicator flashes</p>	<p>Press the SELECT key.</p>  <p>Press the Δ or ∇ key to set the Y-scale to be recorded.</p> <p>4472Q</p>

<p>5</p>	<p>Next, set the sewing speed.</p> <p> <input type="radio"/> X X-SCALE <input type="radio"/> Y Y-SCALE  SPEED </p> <p>     </p> <p>SPEED indicator flashes</p>	<p>Press the SELECT key.</p> <p></p> <p>Press the ▲ or ▼ key to set the sewing speed to be recorded.</p> <p>4474Q</p>
<p>6</p>	<p>Next, set the intermittent presser foot height.</p> <p>  </p> <p>     </p> <p>THREAD/CLAMP indicator flashes</p>	<p>Press the SELECT key.</p> <p></p> <p>Press the ▲ or ▼ key to set the intermittent presser foot height to be recorded.</p> <p>4969Q</p>
<p>7</p>	<p></p> <p>TEST indicator illuminates, MENU indicator flashes</p>	<p>Press the SELECT key.</p> <p></p> <ul style="list-style-type: none"> If setting further user programs, select the user program number and then repeat steps 2 to 7. <p>4970Q</p>
<p>8</p>	<p>End user program recording mode.</p> <p></p> <p>TEST indicator switches off, MENU indicator illuminates</p>	<p>Press the TEST key.</p> <p></p> <p>This completes the recording of a user program.</p> <ul style="list-style-type: none"> The user program number will flash in the PROGRAM No. display. <p>4971Q</p>

(Continued on next page)

7. USING THE OPERATION PANEL (ADVANCED OPERATIONS)

<Setting method>



1. Press the Δ or ∇ key (1) to select the user program number that you would like to use.
 - If the user program number is flashing, depress the work clamp switch (2) to lower the work clamp, and then depress the start switch (3). (The work clamp will move to the sewing start position.)
 - User programs U1 to U10 can be selected directly using function keys F1 to F4 (4). (Refer to "7-9. Direct selection".)
2. Check that the needle drop position is correct, and then start sewing. (Refer to "6-6 Checking the sewing pattern".)
 - If you press the SELECT key (5), you can check the settings for the displayed user program (such as X-scale, Y-scale and sewing speed).

<Clearing method>

<p>1</p>	<p>TEST indicator illuminates, MENU indicator flashes</p> <p>4970Q</p>
<p>2</p>	<p>Press the RESET key.</p> <p></p> <p>• The buzzer will sound and the user program with the number selected will be cleared.</p> <p>NOTE: If a cleared user program has been stored as part of a cycle program, the step that involves that user program will become blank. The cycle program itself will not be cleared.</p> <p>Clearing all user programs</p> <p>Press and hold the RESET key for 2 seconds or more.</p> <p>• The buzzer will sound and all user programs will be cleared.</p> <p>NOTE: If any cycle programs have been memorized, all of the memorized cycle programs will also be cleared.</p>

7-8. Using cycle programs

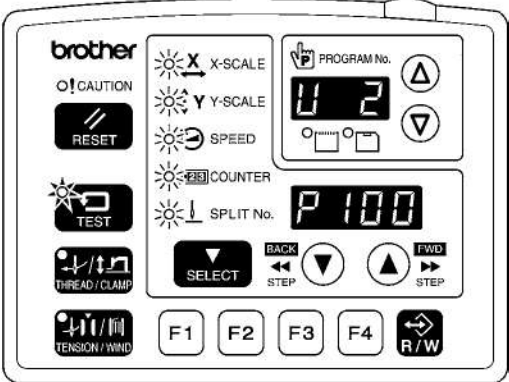

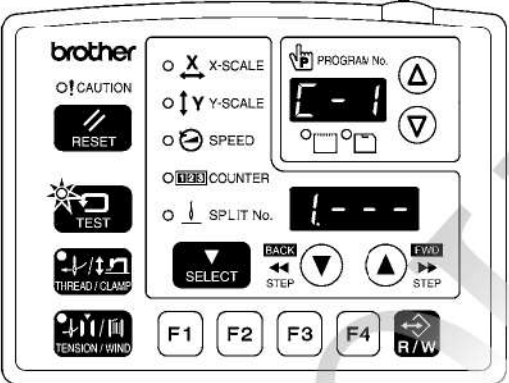



Sewing patterns that have been recorded in user programs can be recorded in up to nine cycle programs (C-1 to C-9).

One cycle program can contain up to a maximum of fifteen steps.

When sewing the sewing patterns in numerical order, it can be useful to record them in a cycle program beforehand.

Cycle programs are enabled when memory switch nos. 400 and 401 are set to "ON".

<Recording method>

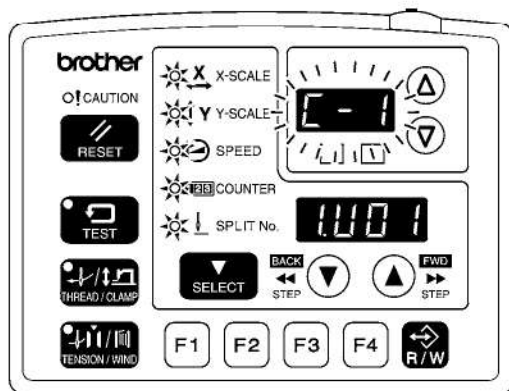
1	<p>Switch to user program recording mode.</p>  <p>TEST indicator illuminates, MENU indicator flashes</p>	<p>While pressing the TEST key, press the SELECT key.</p>  <ul style="list-style-type: none"> • Check that the menu indicators are flashing. • The user program number will appear in the PROGRAM No. display, and the program number will appear in the menu display. <p>Record the sewing pattern that you would like to use in a cycle program into a user program.</p> <p>4973Q</p>
2	<p>Switch to cycle program recording mode, and select the cycle program number.</p>  <p>MENU indicator switches off</p>	<p>Press a function key from F1 to F4.</p>  <ul style="list-style-type: none"> • The cycle program number (C-1 to C-4) will appear in the PROGRAM No. display, and "1---" will appear in the menu display. <p>Press the function key (F1 to F4) or press the Δ or ∇ key to select the cycle program number.</p> <p>4428Q</p>
3	<p>Set step 1.</p> 	<p>Press the Δ or ∇ key to select the user program number that you would like to record.</p> <p>Press the SELECT key.</p>  <p>4444Q</p>
4	<p>Set the rest of the steps in the same way from step 2 onward. From step 9 onward, "A.--", "b.--", "c.--", "d.--", "E.--" and "F.--" will be displayed.</p> <p>If you would like to return to a previous step during the setting procedure</p> <p><For cycle programs C-1 to C-4></p> <ol style="list-style-type: none"> 1. Press the respective function key from F1 to F4 to return to the display for step 1. 2. Press the SELECT key until the desired step is reached. <p><For cycle programs C-5 to C-9></p> <ol style="list-style-type: none"> 1. Press the Δ or ∇ key to switch the cycle program number. 2. Select the desired cycle program number again, and then press the SELECT key until the desired step is reached. 	

7. USING THE OPERATION PANEL (ADVANCED OPERATIONS)

5 To record another cycle program, repeat steps 2 to 4.

6 End cycle program recording mode.

Press the TEST key.



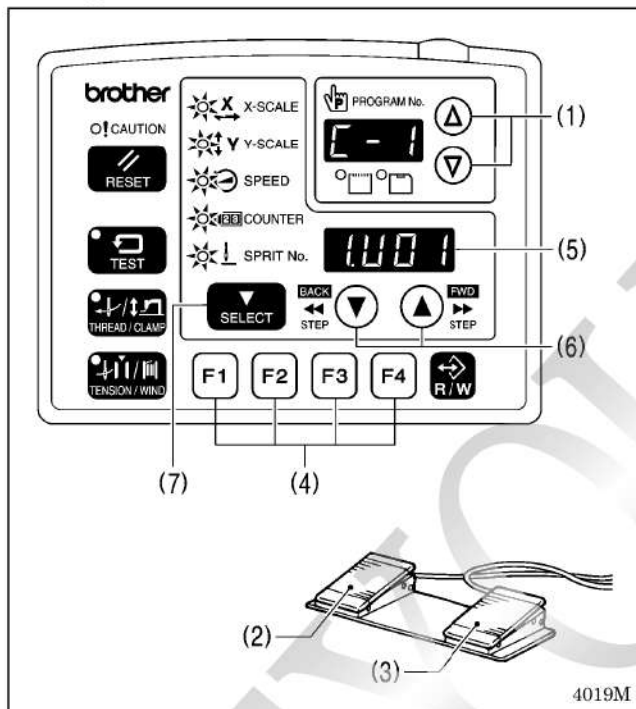
This completes the recording of cycle programs.

- The cycle program number will flash in the PROGRAM No. display.

TEST indicator switches off, MENU indicator illuminates

4439Q

<Setting method>



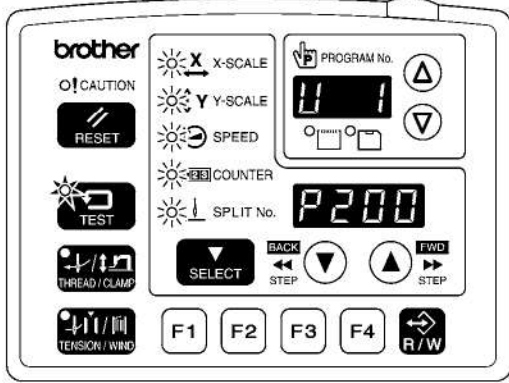


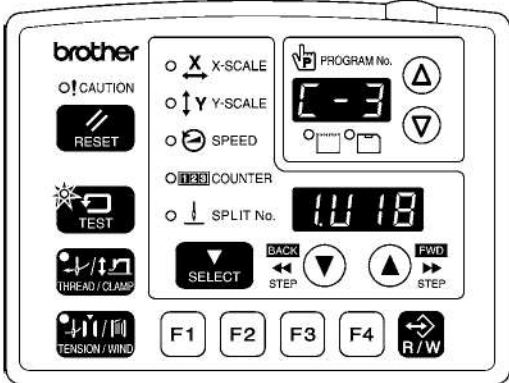

- Press the Δ or ∇ key (1) to select the cycle program number that you would like to use.
 - If the cycle program number is flashing, depress the work clamp switch (2) to lower the work clamp, and then depress the start switch (3). (The work clamp will move to the sewing start position.)
 - The cycle program number can be selected directly by pressing function keys F1 to F4 (4). (Refer to "7-9. Direct selection".)
- Check that the needle drop position is correct, and then start sewing. (Refer to "6-6 Checking the sewing pattern".)
- The recorded user program will be sewn step by step, and when the final step is complete, the menu display (5) will return to showing step 1.

- If you press the Δ or ∇ key (6), you can return to the previous step or skip to the next step respectively.
- If you press the SELECT key (7), you can check the details (such as X-scale, Y-scale and sewing speed) of the user program for the displayed step. The setting cannot be changed at this time.

NOTE:

If cycle program sewing mode is active (when memory switch no. 401 is "ON") but no cycle programs have been recorded, the user programs will be sewn in numeric order.

<Clearing method>

1	 <p>TEST indicator illuminates, MENU indicator flashes</p>	<p>While pressing the TEST key, press the SELECT key.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">  TEST </div> <div style="border: 1px solid black; padding: 5px; text-align: center;">  SELECT </div> </div> <ul style="list-style-type: none"> Switch to user program recording mode. Check that the menu indicators are flashing.
2	 <p>MENU indicator switches off</p>	<p>Press a function key from F1 to F4.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <ul style="list-style-type: none"> Switch to cycle program recording mode. <p>Press the function key (F1 to F4) or press the Δ or ∇ key to select the cycle program number to clear.</p>
3		<p>Press the RESET key.</p> <ul style="list-style-type: none"> The buzzer will sound and the cycle program with the number selected will be cleared. <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Clearing all cycle programs Press and hold the RESET key for 2 seconds or more.</p> <ul style="list-style-type: none"> The buzzer will sound and the all cycle programs will be cleared. </div> <p>NOTE: If you clear all user programs after any cycle programs have been recorded, all recorded cycle programs will also be cleared.</p>

7-9. Direct selection (combination table)

You can use the function keys to directly select user program numbers and cycle program numbers.

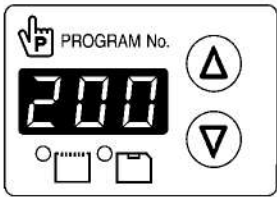
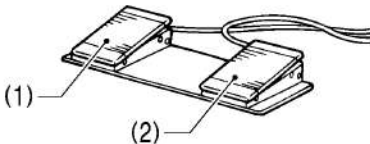
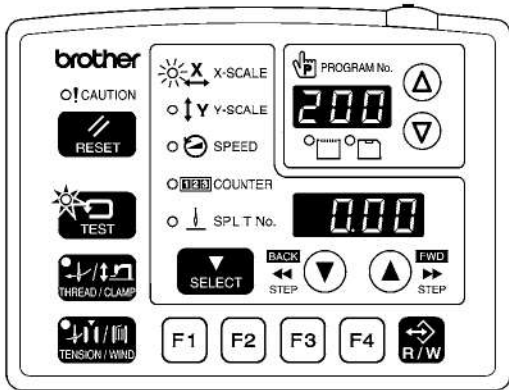

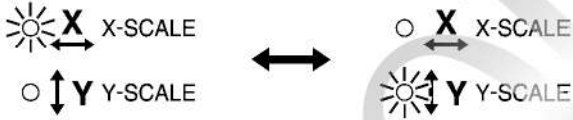


U1 to U4 and C-1 to C-4 can be selected using function keys F1 to F4.

U5 to U10 and C-5 to C-9 can be selected by simultaneously pressing combinations of function keys F1 to F4 (addition).

U5/C-5	U6/C-6	U7/C-7
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">Or</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">Or</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div> <p style="text-align: center;">Or</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>
U8/C-8	U9/C-9	U10
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">F1</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F2</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F3</div> <div>+</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">F4</div> </div>

7-10. X and Y parallel movement of sewing pattern

You can move the feed mechanism to the desired position to move an already-programmed sewing pattern in a parallel direction up, down or to the left or right.

1	  <ol style="list-style-type: none"> Press the Δ or ∇ key to select the program number. Depress the work clamp switch (1) to lower the work clamp, and then depress the start switch (2). <ul style="list-style-type: none"> The work clamp will move to the sewing start position.
2	Depress the work clamp switch (1) to lower the work clamp.
3	 <p>While pressing the TEST key, press the ∇ key.</p>  <ul style="list-style-type: none"> The parallel movement amount will appear in the menu display in units of mm. <p>TEST indicator illuminates, X-SCALE indicator flashes</p>
4	<p>X-scale parallel movement mode Y-scale parallel movement mode</p>   <p>Press the SELECT key to switch between the X-SCALE indicator and Y-SCALE indicator flashing. Select either direction.</p> <p>The work clamp will move by 0.05 mm each time the Δ or ∇ key is pressed. (When the distance reaches 10 mm, the amount of movement will change to 0.1 mm.)</p> <ul style="list-style-type: none"> When using X-scale parallel movement mode, the needle moves the corresponding distance to the right when the Δ key is pressed, and to the left when the ∇ key is pressed. When using Y-scale parallel movement mode, the needle moves the corresponding distance backward when the Δ key is pressed, and forward when the ∇ key is pressed.
5	<p>End parallel movement mode</p>  <p>Press the TEST key.</p> <p>TEST indicator switches off</p>

NOTE:

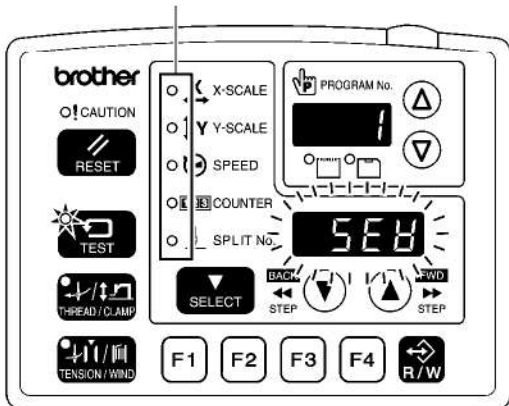


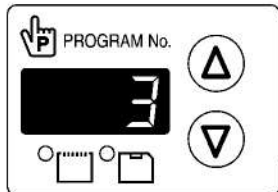
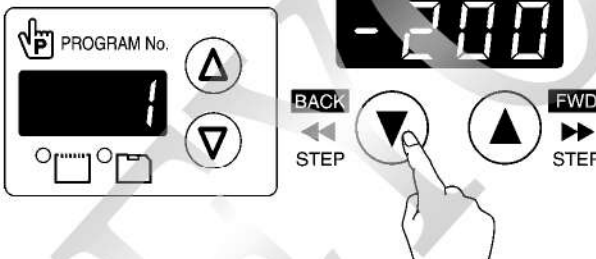


- The feed mechanism will not move to a position that would move the sewing pattern outside the sewing area.
- If you change the program number, X-scale or Y-scale settings, the amount of movement recorded will be reset.
- In addition, the amount of movement will be reset if the power switch is turned off and then back on again. However, memory switch No. 465 is set to "ON", the amount of movement will be recorded and will not be reset. (Refer to the service manual for details on memory switch No. 465.)

7-11. Clearing memory data (reinitialization)

If the sewing machine stops operating normally, the cause may be that an incorrect memory setting may have been made by means of the memory switch, for instance. In such cases, normal operation may be restored if the memory data is reinitialized.

Parameter No.	Setting items
1	[SEW] Clearing all sewing programs [-***] Clearing individual sewing programs
2	[MEM] Reinitializing memory switches
3	[ALL] Clearing or reinitializing all memory data (sewing programs, memory switches, user programs, cycle programs and expansion option output data)
4	[USE] Clearing user programs and cycle programs
5	[EoP] Clearing expansion option output data

* Refer to the instruction manual for the programmer for details of expansion option output.

<p>1</p>	<p>All indicators switch off</p>  <p>TEST indicator illuminates, MENU indicator switches off</p>	<p>While holding down the RESET key, turn on the power switch.</p> <p>* Keep pressing the RESET key until the model name is displayed and the buzzer beeps once.</p>   <ul style="list-style-type: none"> The parameter number will appear in the PROGRAM No. display, and the setting details for that parameter will appear in the menu display. <p>4562Q 4421Q</p>
<p>2</p>	<p>Press the Δ or ∇ key to select the parameter number that you would like to reinitialize.</p>  <p>Selecting individual sewing programs</p> 	<p>For parameter No. 1, press the ∇ key to change the display from " SEW" to "-***". (***) is the sewing program number.)</p> <p>Press the Δ or ∇ key to select the sewing program number that you would like to clear.</p> <p>4557Q</p> <p>4563Q</p>
<p>3</p>	<p>Press and hold the RESET key for 2 seconds or more.</p> <ul style="list-style-type: none"> A long beep will sound and the data for the selected item will be reinitialized. The setting details for only the initialized item will change from flashing to steadily illuminated. 	
<p>4</p>	<p>End data initialization mode</p> <p>Press the TEST key.</p>  <p>TEST indicator switches off</p>	

8. USING CF CARDS

8-1. Notes on handling CF cards (sold separately)

- Use a CF card with a memory capacity of 32, 64, 128, 256, 512 MB, 1GB or 2GB. (CF cards with a capacity of more than 2GB are not supported.)
- Do not disassemble or modify the CF card.
- Do not bend, drop or scratch CF cards or place heavy objects on top of them.
- Avoid contact with liquids such as water, oil, solvents or drinks.
- Use and store CF cards in locations that are free from strong static electricity and electrical interference.
- Do not use or store CF cards in places where they may be subject to vibrations or shocks, direct sunlight, high temperature or humidity or strong magnetic fields from equipment such as speakers, or places which are dusty from thread scraps, etc.
- Do not subject CF cards to shocks or impacts or remove them from the sewing machine while data is being loaded or written.
- The data on the CF cards may become lost or corrupted due to some malfunction or accident. It is recommended that you make a backup of important data.
- CF cards should only be removed after the power for the sewing machine has been turned off.
- CF cards are already formatted when they are purchased, and so you should not reformat them.
- The recommended CF cards are commercially-available ones from SanDisk or HAGIWARA SYS-COM. CF cards from other manufacturers can be used, but different formatting methods may mean that loading from or writing to such cards may not be possible.

For more information, refer to the documentation provided with the CF card.

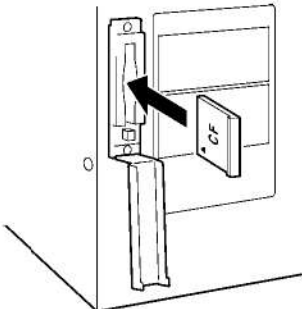
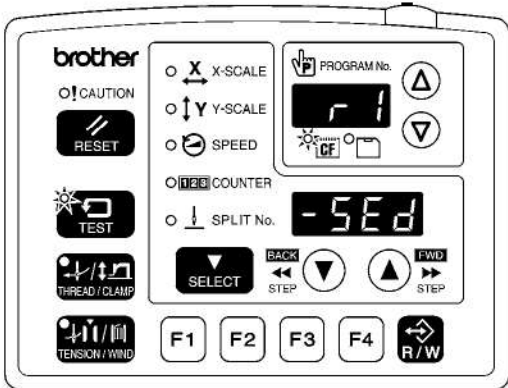

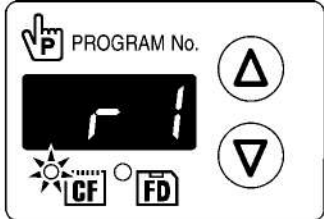
- * This product is compatible with CF cards that have been formatted using the FAT16 method. Cards that have been formatted using the FAT32 method cannot be used.
- * CF™ is a trademark of SanDisk Corporation.
- * Company names and product names appearing in this manual are trademarks or registered trademarks of the respective owners. However, no TM or other similar symbols appear in the main text of this manual.

8-2. Structure of a CF card folder

\\BROTHER\\ISM\\ISMSYS\\ISM05MN.MOT	: Control program
\\BROTHER\\ISM\\ISMDB00\\ISMMSW.SEW	: Memory switch data
*1 \\ISMUPG.SEW	: User program data
\\SMS0100.SEW	: Sewing data P No. = 100
\\SMS0101.SEW	: Sewing data P No. = 101
\\SMS0102.SEW	: Sewing data P No. = 102
⋮	⋮

- *1 The underlined portion of the name of the \\BROTHER\\ISM\\SMDB00 folder for sewing data can be changed by changing the setting for memory switch No. 752 in order to change the folder name. Change the folder name if you would like to store sewing data for different sewing machines on a single CF card. (Refer to the service manual for details on memory switch No. 752.)

8-3. Data read/write mode

1		<p>With the power turned off, insert the CF card into the CF slot.</p> <p>NOTE:</p> <ul style="list-style-type: none"> • Make sure the CF card is facing the correct way. • Always be sure to keep the cover closed except when inserting and removing the CF card. If this is not done, dust may get inside and cause problems with operation. • If no valid data can be found, the CF media indicator will not illuminate.
2	Turn on the power switch.	
3	<p>Switch to data read/write mode.</p>  <p>TEST indicator and CF media indicator illuminate</p>	<p>While pressing the TEST key, press the R/W key.</p>  <ul style="list-style-type: none"> • The mode number will appear in the PROGRAM No. display, and the setting details for that mode will appear in the menu display. • The initial mode is sewing data reading mode. (Refer to the read/write mode list)
4		<p>Press the Δ or ∇ key to select the mode.</p>

[Read/write mode list]

PROGRAM No. display	Menu display	Setting items
r 1	[-SEd]	Sewing data is read from the CF card. (*1)
w 2	[SEd-]	Sewing data is written to the CF card.
r 3	[-MEM]	Memory switch settings are read from the CF card.
w 4	[MEM-]	Memory switch settings are written to the CF card.
r 5	[-UPG]	User programs are read from the CF card.
w 6	[UPG-]	User programs are written to the CF card.
r 7	[-SyS]	Control programs are read from the CF card and used to update the firmware version.
w 8	[LoG-]	Error log data is written to the CF card.
r 9	[-Fdd]	Sewing data is read from the floppy disk. (*2) (*3)
w 10	[Fdd-]	Sewing data is written to the floppy disk. (*2)
r 11	[-EoP]	Expansion option output (*4) data is read from the CF card.
w 12	[EoP-]	Expansion option output data is written to the CF card.
r 13	[oPFd]	Expansion option output data is read from the floppy disk. (*2)

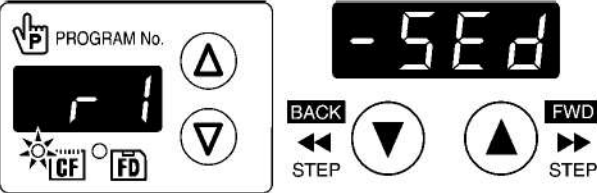
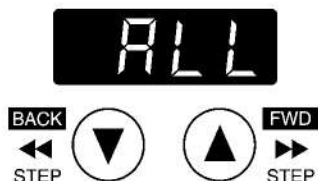

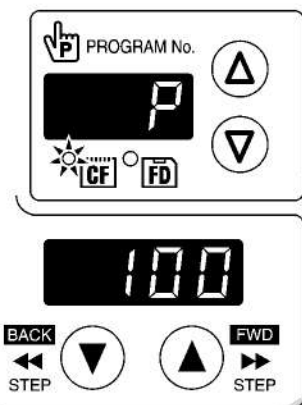


*1 The sewing data that can be used with this sewing machine is data that has been created for the BAS-300G series.

*2 Only valid when using an optional floppy disk drive.

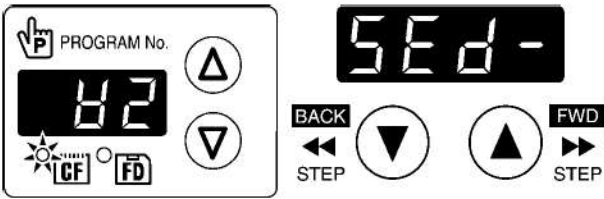
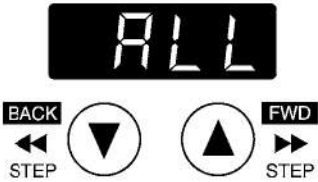

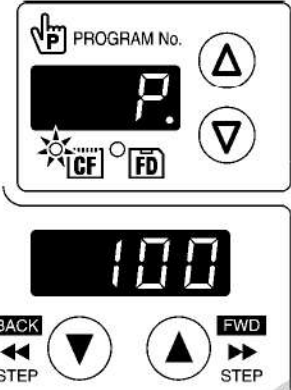


*3 Sewing data for the BAS-300 series, BAS-300A series and BAS-300E/F series can be read.

*4 Refer to the instruction manual for the programmer for details of expansion option output.

8-3-1. Reading all sewing data from the CF card at once

1	 <p>Select the [r 1] data read/write mode.</p> <p>4576Q</p>
2	 <p>Press the R/W key.</p>  <ul style="list-style-type: none"> • [-SEd] will change to [ALL]. * If you press the ▲ or ▼ key to select the program numbers that you would like to read and then continue to carry out the following procedure, you can read the selected sewing data in separate lots. <p>4577Q</p>
3	 <p>Press the R/W key.</p>  <ul style="list-style-type: none"> • The buzzer will sound and all sewing data will be loaded from the CF card and copied into the sewing machine's internal memory. • The program numbers that have been read will appear in the menu display. * If there is a large volume of data in the CF card, it will take some time for all of it to be read. To halt the reading of data, press the STOP switch. If you then press the RESET key, the display will change back to [ALL]. <p>Loading</p> <p>4976Q</p>
4	<p>End data read/write mode</p>  <p>Press the TEST key. Turn off the power switch, remove the CF card, and then close the cover of the CF slot.</p> <p>TEST indicator switches off</p>

8-3-2. Writing all sewing data to the CF card at once

1	 <p>Select the [w 2] data read/write mode.</p> <p style="text-align: right;">4578Q</p>
2	 <p>Press the R/W key.</p>  <ul style="list-style-type: none"> • [SEd-] will change to [ALL]. * If you press the ▲ or ▼ key to select the program numbers that you would like to write and then continue to carry out the following procedure, you can write the selected sewing data in separate lots. <p style="text-align: right;">4577Q</p>
3	 <p>Press the R/W key.</p>  <ul style="list-style-type: none"> • The buzzer will sound and the all sewing data will be copied from the internal memory onto the CF card. • The program numbers that have been written will appear in the menu display. * If there is a large volume of data in the internal memory, it will take some time for all of it to be written. To halt the writing of data, press the STOP switch. If you then press the RESET key, the display will change back to [ALL]. <p style="text-align: center;">Writing</p> <p style="text-align: right;">4977Q</p>
4	<p>End data read/write mode</p>  <p>Press the TEST key.</p> <p>Turn off the power switch, remove the CF card, and then close the cover of the CF slot.</p> <p style="text-align: center;">TEST indicator switches off</p>

Refer to the service manual for details on other read/write modes.

9. SEWING

⚠ CAUTION



Turn off the power switch at the following times.

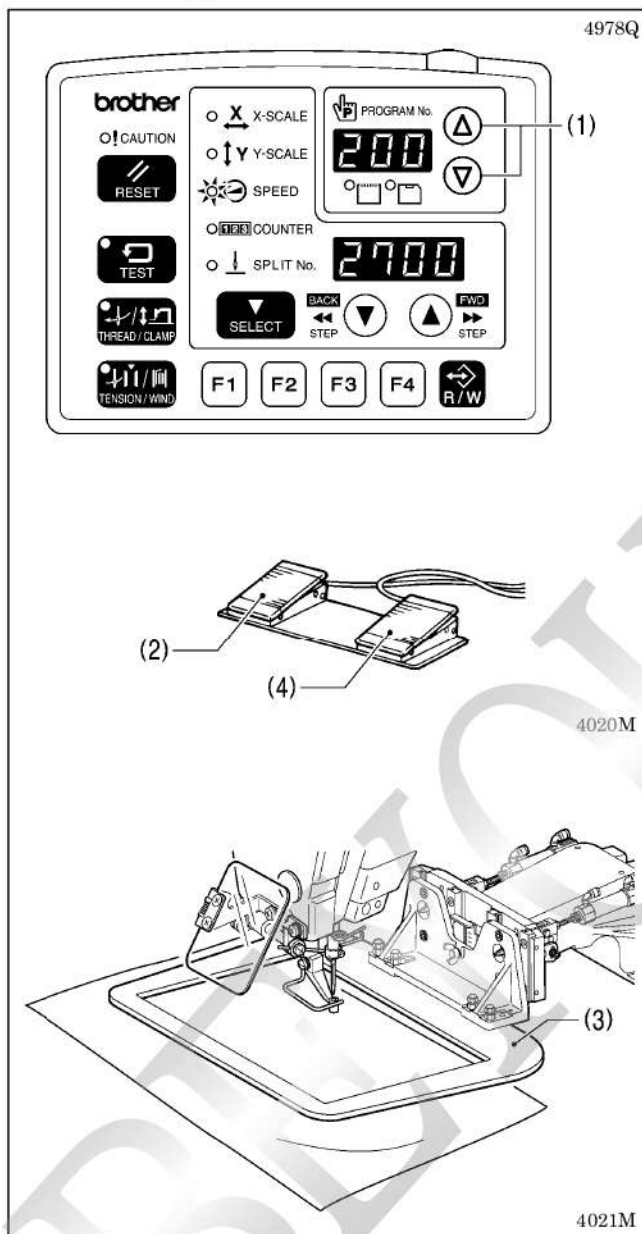
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.

- When threading the needle
- When replacing the bobbin and needle
- When not using the machine and when leaving the machine unattended



Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

9-1. Sewing



1. Turn on the power switch.
2. Press the Δ or ∇ key (1) to select the sewing program number that you would like to use.
 - * Refer to "6-2. Loading sewing data" for details on reading sewing data from a CF card.

3. Depress the work clamp switch (2) to lower the work clamp (3), and then depress the start switch (4).
 - The work clamp will move to the sewing start position.
 - Home position detection will be carried out immediately after the power switch is turned on.

4. Place the article to be sewn underneath the work clamp (3).
5. Depress the work clamp switch (2).
 - The work clamp (3) will drop.
6. Depress the start switch (4).
 - The sewing machine will start sewing.

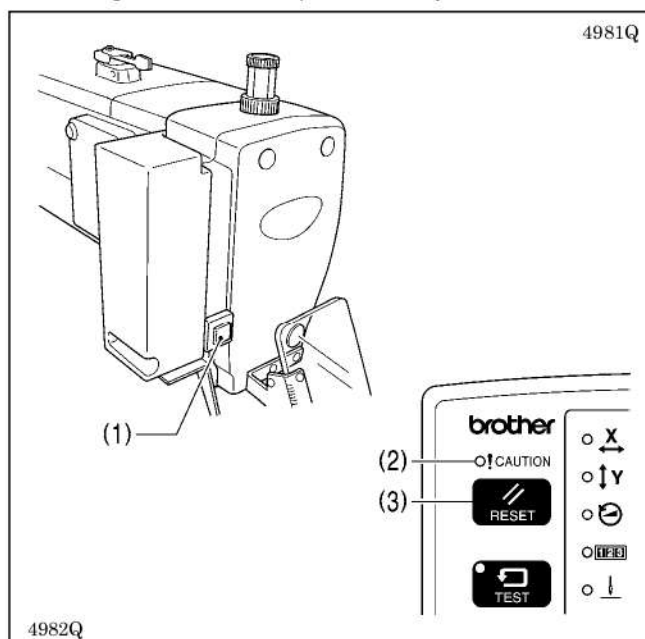
7. When sewing is complete, the thread will be trimmed and the work clamp (3) will rise.

Use a work clamp and a feed plate which will hold the article securely so that it does not slip.

If using the standard work clamp and feed plate and the article being sewn is slipping, take measures to stop the work clamp and feed plate from being slippery.

9-2. Using the STOP switch

If you press the STOP switch (1) while sewing or test feeding is in progress, the CAUTION indicator (2) will illuminate and the sewing machine will stop immediately.




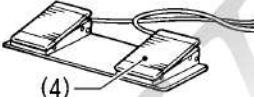


<Clearing>

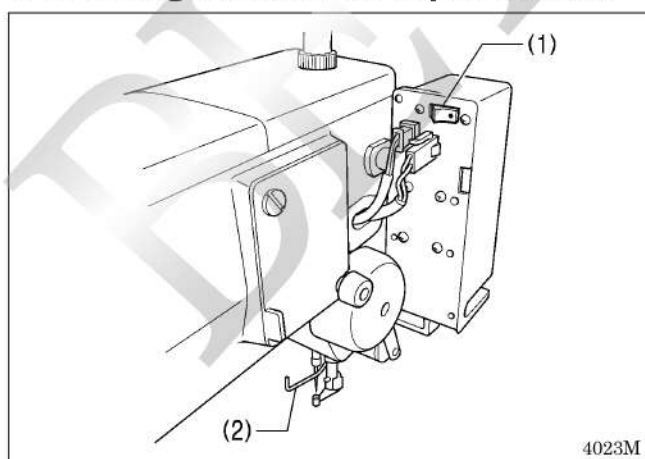
1. Press the RESET key (3).
 - The thread will be trimmed, and then the CAUTION indicator (2) will switch off and the buzzer will stop sounding.
2. If you do not wish to continue sewing, press the RESET key (3) once more.
 - The program number will flash. Carry out preparation for the next sewing.

<Continuing sewing from a stopping point>

If you have pressed the STOP switch (1) at times such as if the thread breaks while sewing or the lower thread runs out, you can resume sewing from the point where the thread ran out.

1		<p>Press the RESET key.</p> <ul style="list-style-type: none"> • The thread will be trimmed, and then the CAUTION indicator will switch off and the buzzer will stop sounding.
2	 	<p>Press the ▼ key to return the work clamp to the position where sewing is to be continued.</p> <ul style="list-style-type: none"> • When the ▼ key is pressed, the work clamp will move backward by one stitch, and when the ▲ key is pressed, the work clamp will move forward by one stitch. (It will move quicker if you keep the key pressed down.)
3		<p>Depress the start switch (4).</p> <ul style="list-style-type: none"> • The sewing machine will start operating and sewing will start.

9-3. Using the thread wiper switch



The thread wiper switch (1) can be used to turn the thread wiper (2) on and off.

10. CLEANING

CAUTION

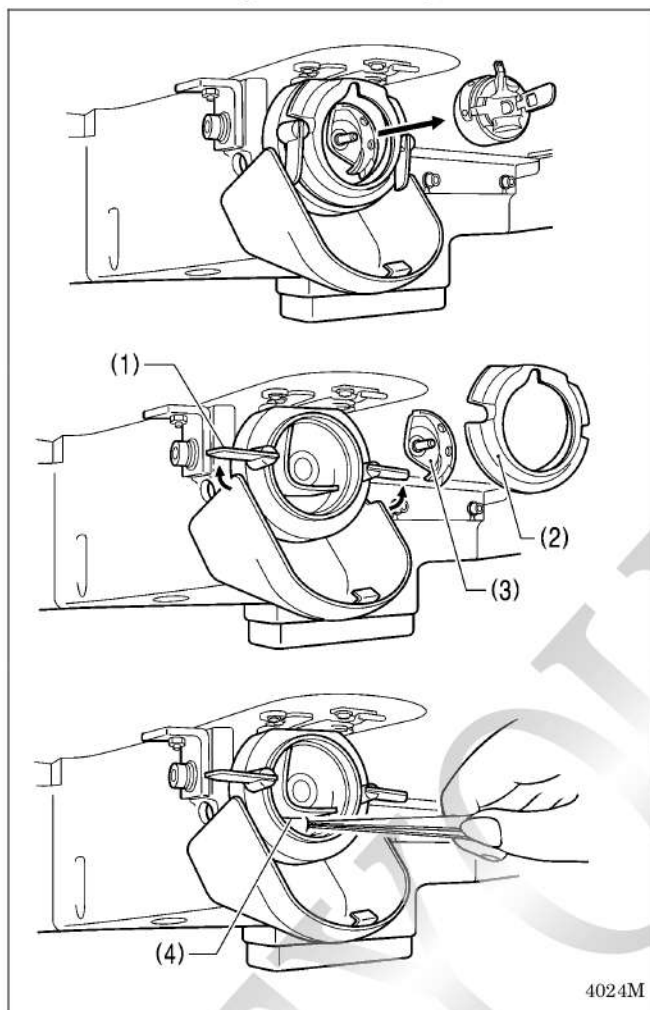


Turn off the power switch before carrying out cleaning.
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result. Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting. Keep the oil out of the reach of children.

10-1. Cleaning the rotary hook

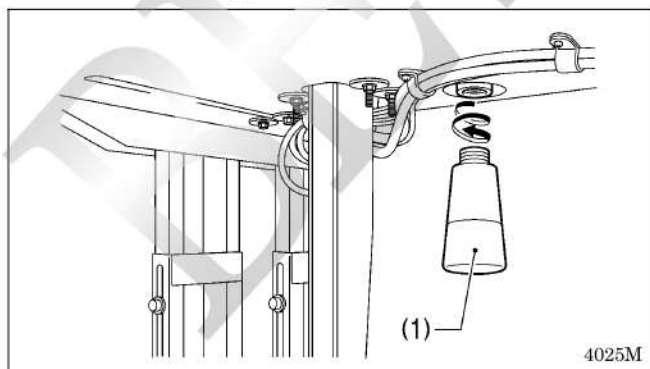


1. Pull the shuttle race cover downward to open it, and then remove the bobbin case.

2. Open the setting claw (1) in the direction indicated by the arrow, and then remove the shuttle race base (2) and the shuttle hook (3).

3. Clean all the dust and thread ends from around the driver (4), the top of the rotary hook thread guide and the shuttle race.

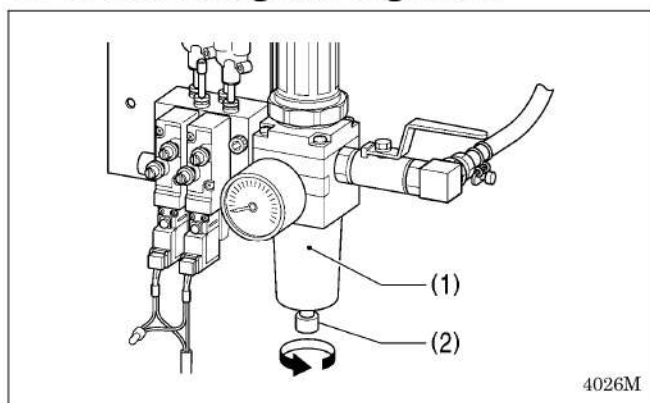
10-2. Draining the oil



1. Remove and empty the oiler (1) whenever it is full.

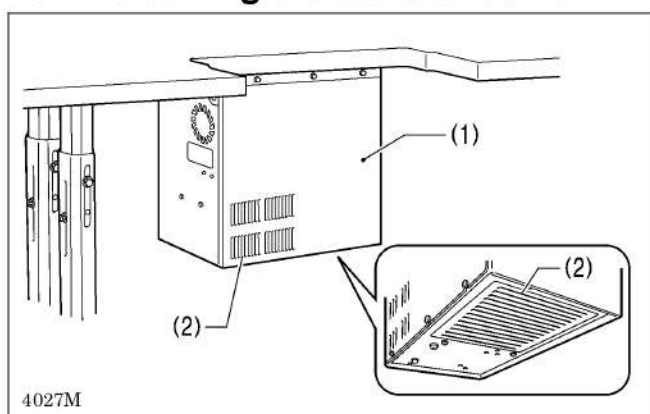
2. After emptying oiler (1), screw it back into its original position.

10-3. Checking the regulator



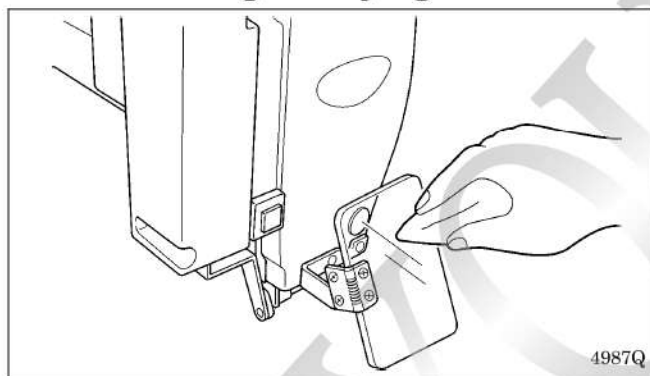
1. If water collects in the bottle of the regulator (1), turn the drain cock (2) in the direction of the arrow to drain the water.
2. After draining the water, tighten the drain cock (2).

10-4. Cleaning the control box air inlet ports



Use a vacuum cleaner to clean the filter in the air inlet ports (2) of the control box (1) at least once a month.

10-5. Cleaning the eye guard

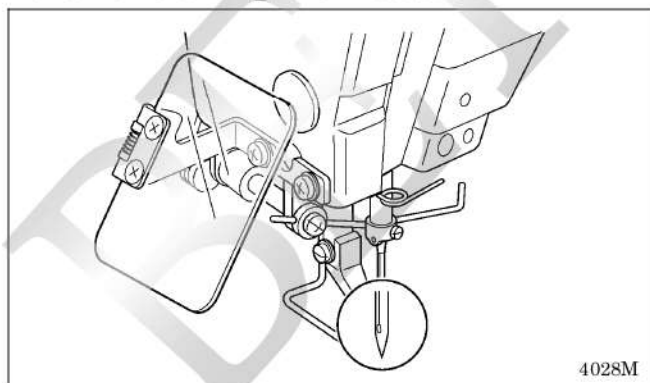


Wipe the eye guard clean with a soft cloth.

NOTE:

Do not use solvents such as kerosene or thinner to clean the eye guard.

10-6. Checking the needle



Always check that the tip of the needle is not broken and also that the needle is not bent before starting sewing.

10-7. Lubrication

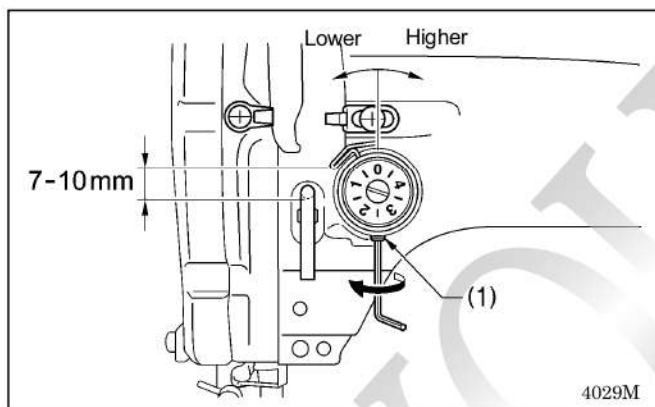
Lubricate the sewing machine while referring to "4-18. Lubrication".

11. STANDARD ADJUSTMENTS

⚠ CAUTION

- ⊘ Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
- ❗ Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
- ⚠ Turn off the power switch and disconnect the power cord before carrying out the following operations. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
 - Inspection, adjustment and maintenance
 - Replacing consumable parts such as the rotary hook
- ⚠ Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
- ⚠ If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
- ⚠ Hold the machine head with both hands when tilting it back or returning it to its original position. In addition, do not subject the machine head to extra force while it is tilted back. If this is not observed, the machine head may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.
- ⊘ Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result. Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting. Keep the oil out of the reach of children.
- ❗ If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.

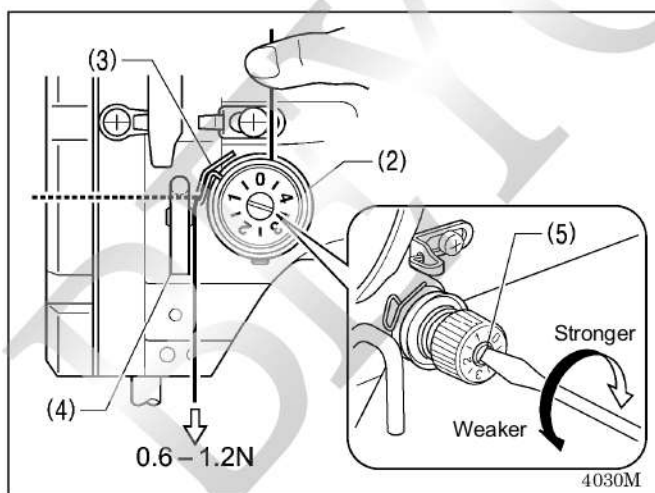
11-1. Adjusting the thread take-up spring



Thread take-up spring height (mm)	7 – 10
Thread take-up spring tension (N)	0.6 – 1.2

<Thread take-up spring height>

Loosen the set screw (1) and turn the adjuster to adjust.



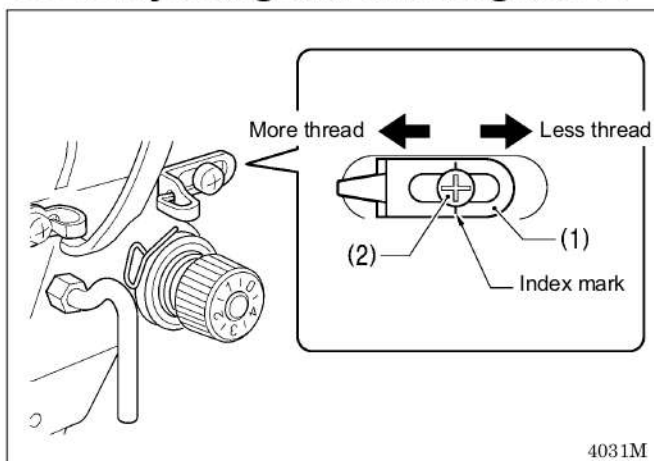
<Thread take-up spring tension>

1. Press the upper thread slightly above the tension bracket (2) with a finger to stop the thread spooling out.
2. Pull the upper thread downward so that the thread take-up spring (3) is extended to the same height as the base of the thread guide arm (4), and then measure the tension of the thread take-up spring (3).
3. Use a screwdriver to turn the tension stud (5) in order to adjust the tension of the thread take-up spring (3).

NOTE:

If the thread tension spring (3) is not adjusted correctly, the upper thread trailing length will be uneven after thread trimming.

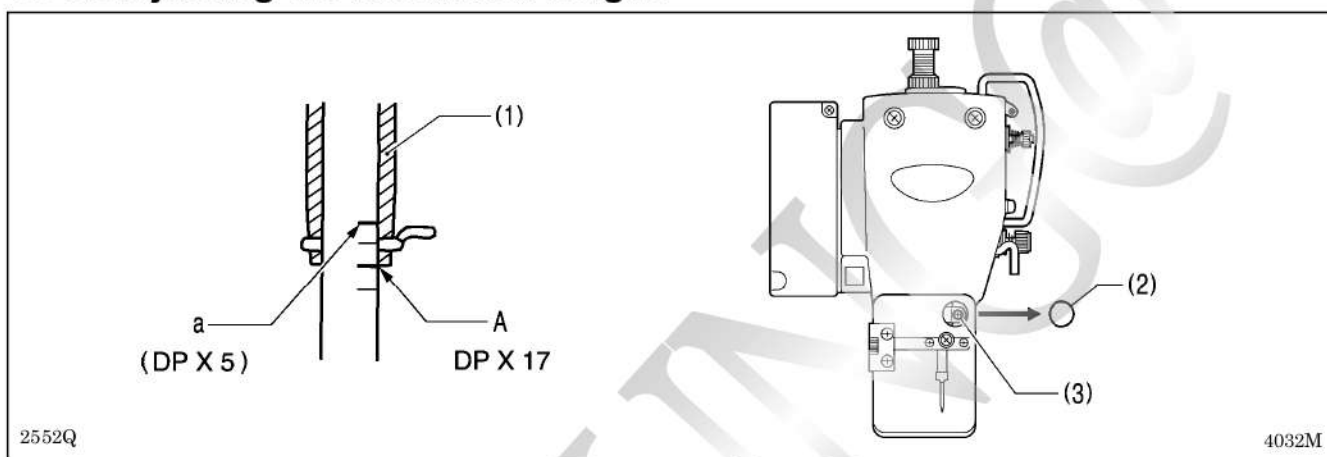
11-2. Adjusting arm thread guide R



The standard position of arm thread guide R (1) is when the screw (2) is aligned with the index mark. Loosen the screw (2) and move arm thread guide R (1) to adjust.

- * When sewing heavy material, move arm thread guide R (1) to the left. (The thread take-up amount will become greater.)
- * When sewing light material, move arm thread guide R (1) to the right. (The thread take-up amount will become less.)

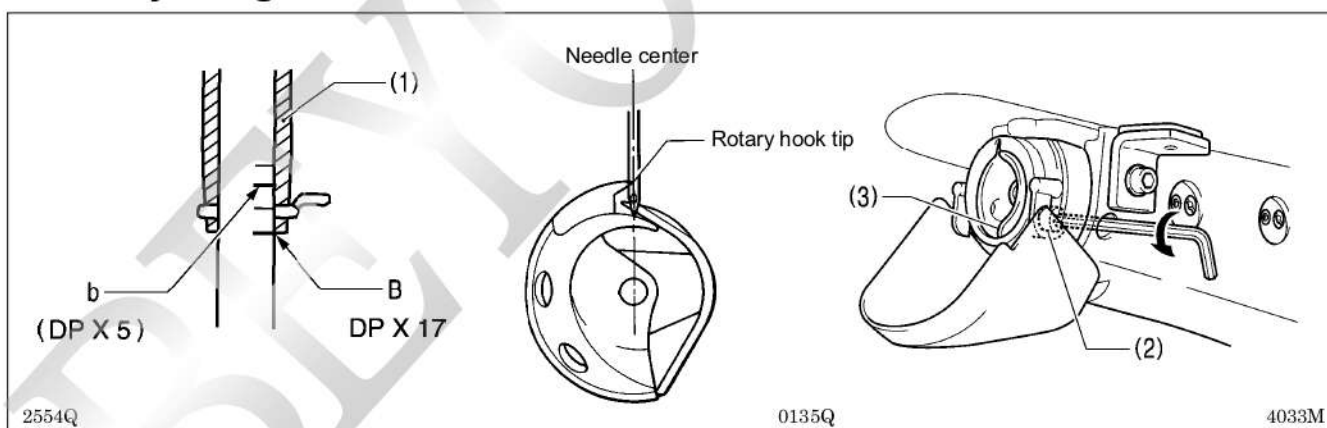
11-3. Adjusting the needle bar height



Turn the machine pulley to move the needle bar to the lowest position. Then remove the rubber plug (2), loosen the screw (3) and then move the needle bar up or down to adjust so that the second reference line from the bottom of the needle bar (reference line A) is aligned with the lower edge of the needle bar bush (1).

- * If using a DP X 5 needle, use the highest reference line (reference line a).

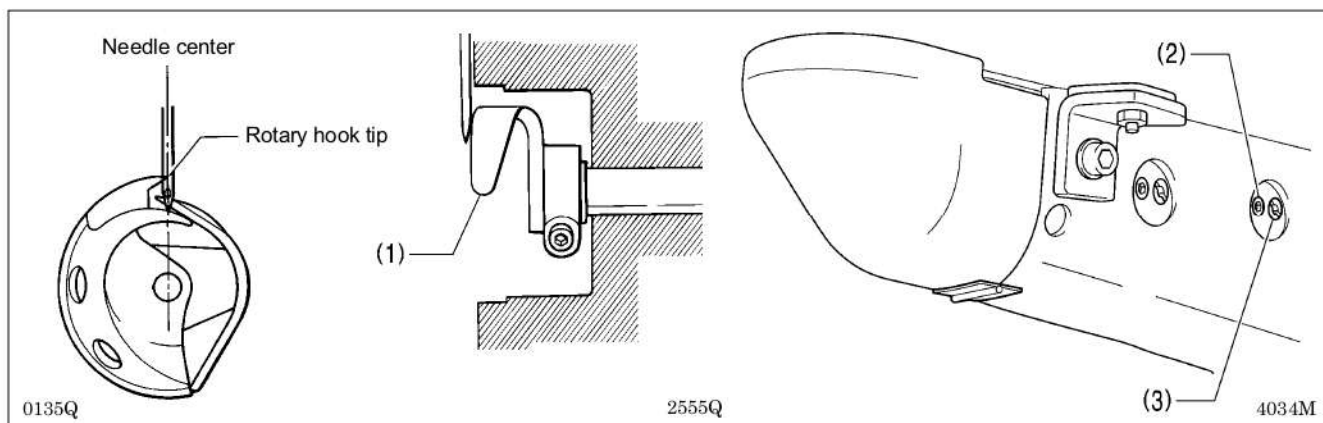
11-4. Adjusting the needle bar lift amount



Turn the machine pulley to raise the needle bar from the lowest position until the lowest reference line on the needle bar (reference line B) is aligned with the lower edge of the needle bar bush (1), and then loosen the bolt (2) and move the driver (3) so that the tip of the rotary hook is aligned with the center of the needle.

- * If using a DP X 5 needle, use the second reference line from the top of the needle bar (reference line b).

11-5. Adjusting the driver needle guard



Turn the machine pulley to align the tip of the rotary hook with the center of the needle, and then loosen the set screw (2) and turn the adjusting stud (3) to adjust so that the driver needle guard (1) is touching the needle.

NOTE:

If it crosses the needle more than necessary, it will place a load on the needle, or it may cause poor thread tension.

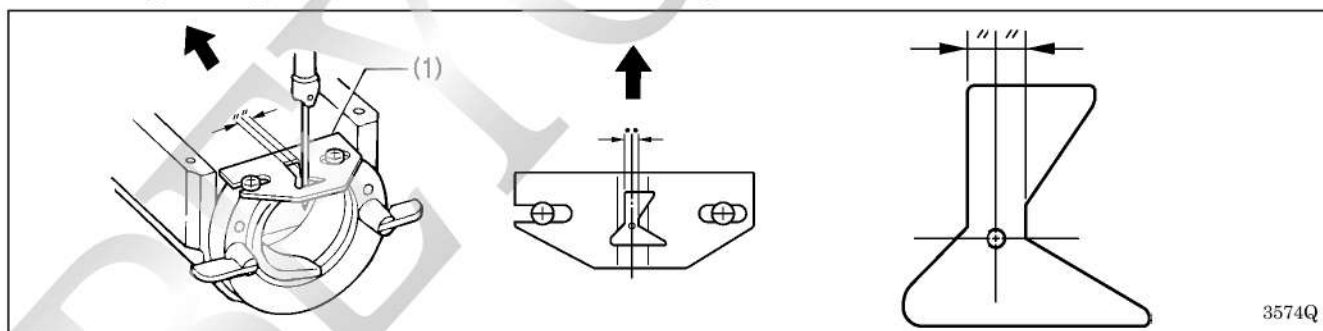
Furthermore, if it does not cross the needle at all, the tip of the rotary hook will interfere with the needle and skipped stitches may occur.

11-6. Adjusting the needle clearance



Turn the machine pulley to align the tip of the rotary hook with the center of the needle, and then loosen the set screw (1) and turn the adjusting stud (2) to adjust so that the clearance between the needle and the rotary hook is 0.01 – 0.08 mm.

11-7. Adjusting the shuttle race thread guide



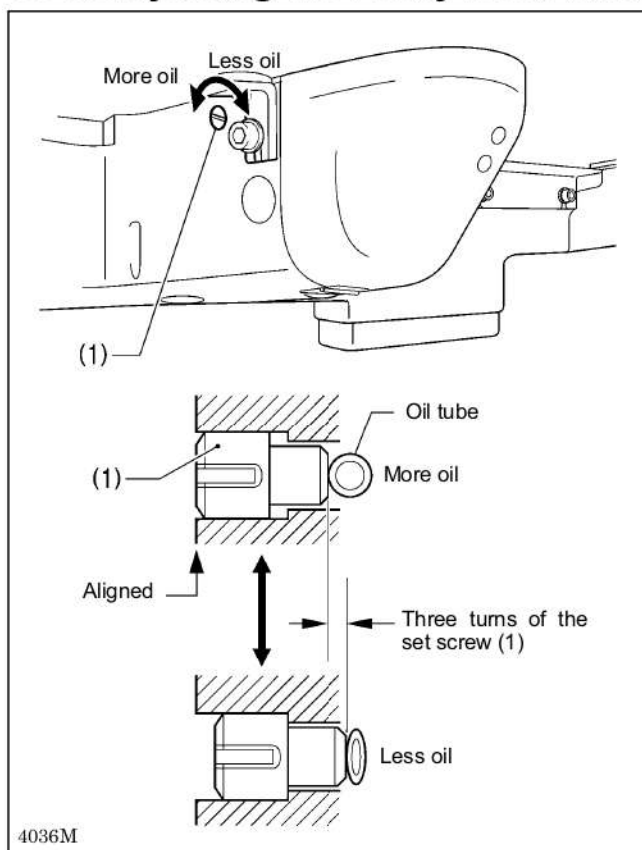
Install the shuttle race thread guide (1) by pushing it in the direction of the arrow so that the needle groove is aligned with the center of the needle plate hole.

NOTE:

If the shuttle race thread guide (1) is in the wrong position, thread breakages, soiled thread or tangling of the thread may occur.

The position of the shuttle race thread guide (1) is adjusted at the time of shipment from the factory. It should not be changed if possible.

11-8. Adjusting the rotary hook lubrication amount

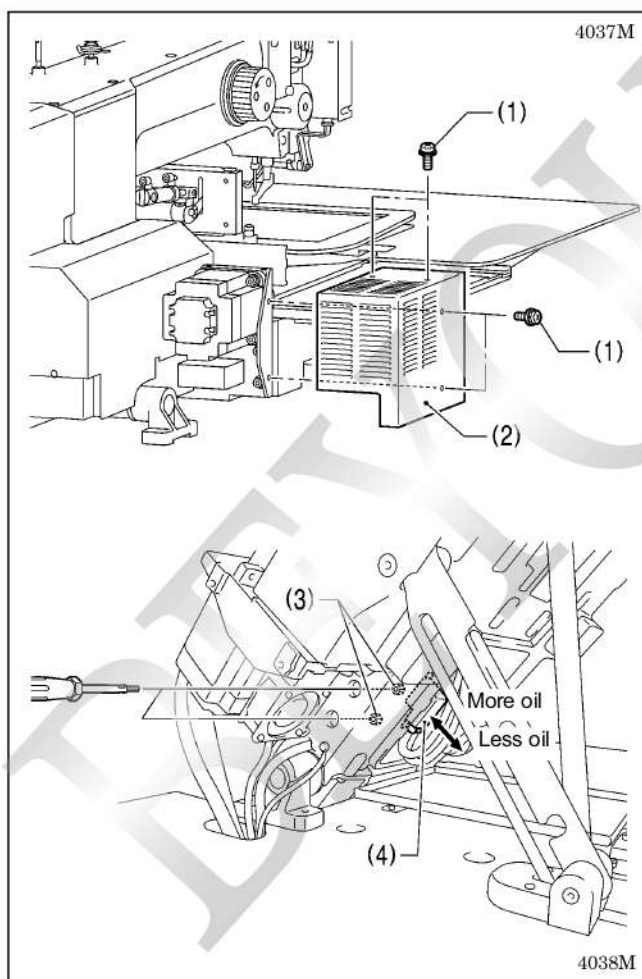


<Adjusting by changing the pressure on the oil tube>

The optimum position is when the head of the set screw (1) is aligned with the edge of the bed. The rotary hook lubrication amount can be adjusted within three turns to the right from that position.

- If the set screw (1) is turned clockwise, the lubrication amount becomes smaller.
- If the set screw (1) is turned counterclockwise, the lubrication amount becomes greater.

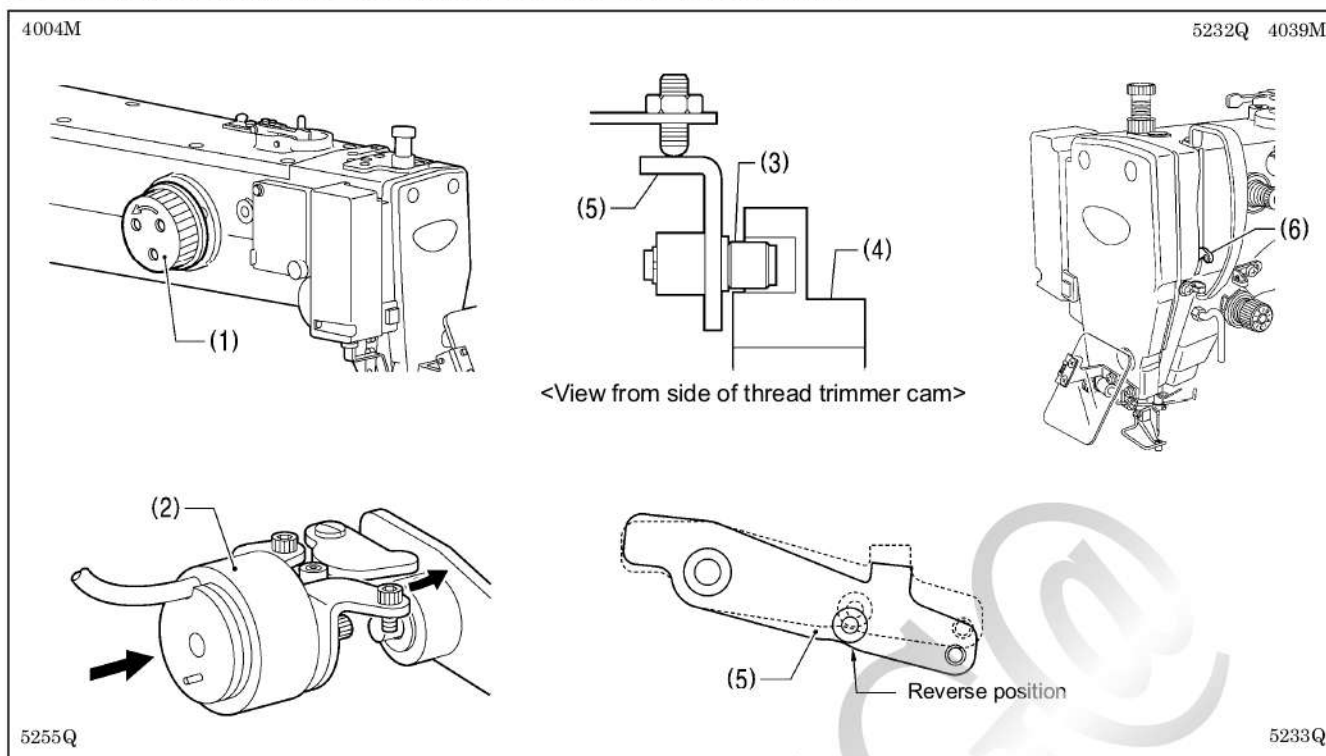
* If you would like the lubrication amount to be increased further from the position the head of the set screw (1) is aligned with the edge of the bed, use the following method to make the adjustment.



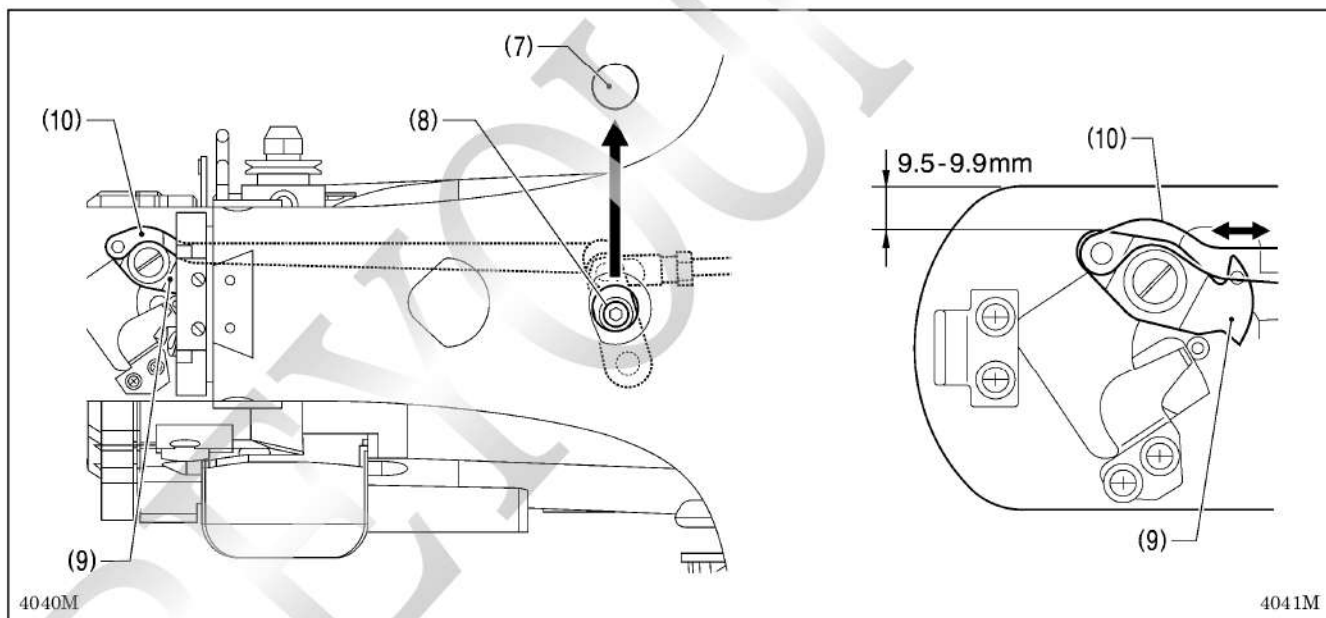
<Adjusting by changing the amount of oil supplied from the sub-tank>

1. Remove the four screws (1), and then remove the X motor cover (2).
2. Tilt back the machine head.
3. Insert a screwdriver into the holes in the left side of the sewing machine bed and loosen the two bolts (3).
4. Move the sub-tank (4) up or down to adjust its position, and then tighten the two bolts (3).
 - If the position of the sub-tank (4) is raised, the lubrication amount will increase.
 - If the position of the sub-tank (4) is lowered, the lubrication amount will decrease.
5. Return the machine head to its original position.
6. Install the X motor cover (2) with the four screws (1).

11-9. Adjusting the position of the movable knife

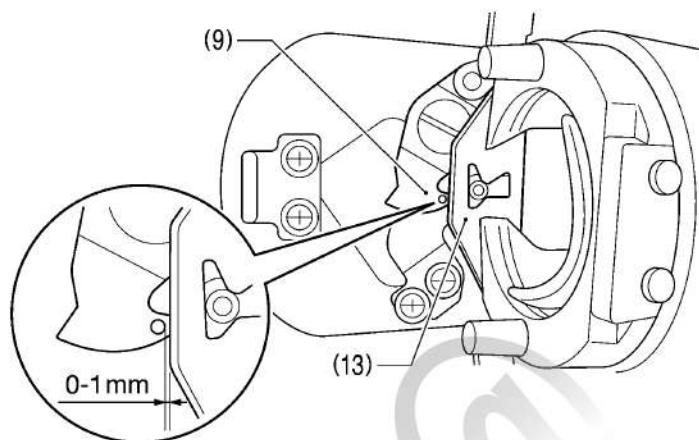
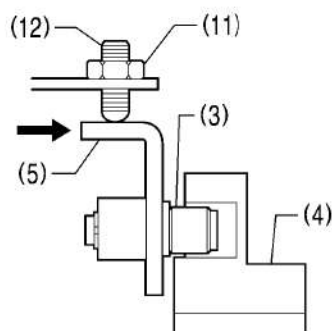
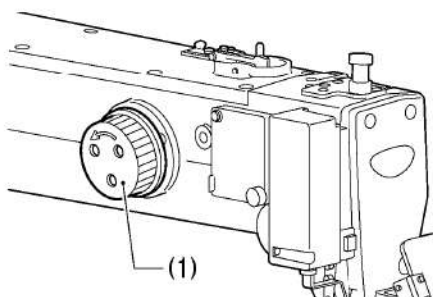


1. Open the top cover and tilt back the machine head.
2. Turn the pulley (1) by hand to lower the needle bar to its lowest position, and push the thread trimmer solenoid (2) as far as it will go.
3. With the collar (3) inserted into the groove of the thread trimmer cam (4), turn the pulley (1) by hand to set the driving lever (5) to the reverse position (when the thread take-up (6) is close to its lowest position).



4. Remove the rubber cap (7).
5. Loosen the bolt (8).
6. Move the movable knife connecting plate (10) back and forth to adjust so that the distance from the ridge on the right side of the needle plate to the ridge on the movable knife (9) is 9.5 to 9.9 mm.
7. After tightening the bolt (8), check the above position once more.

4004M

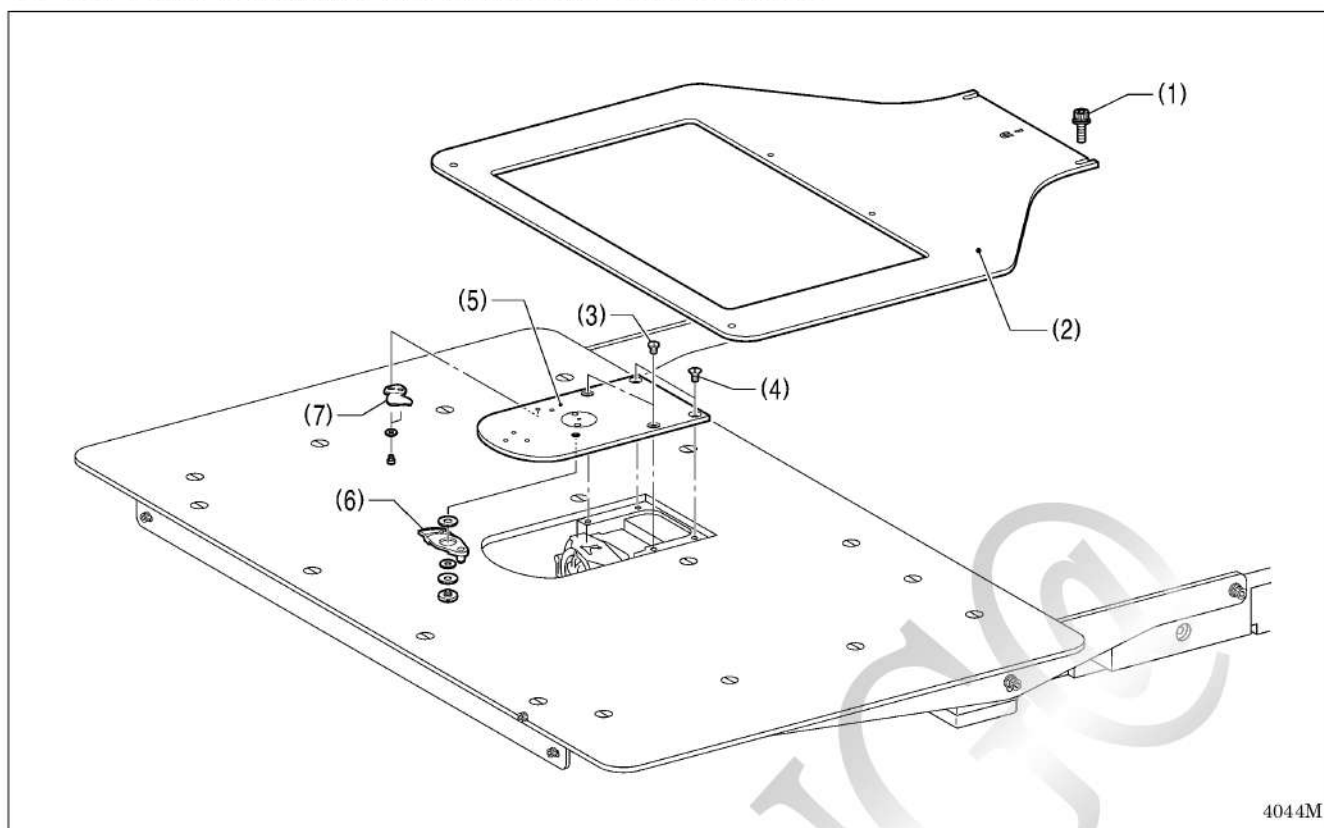


4042M

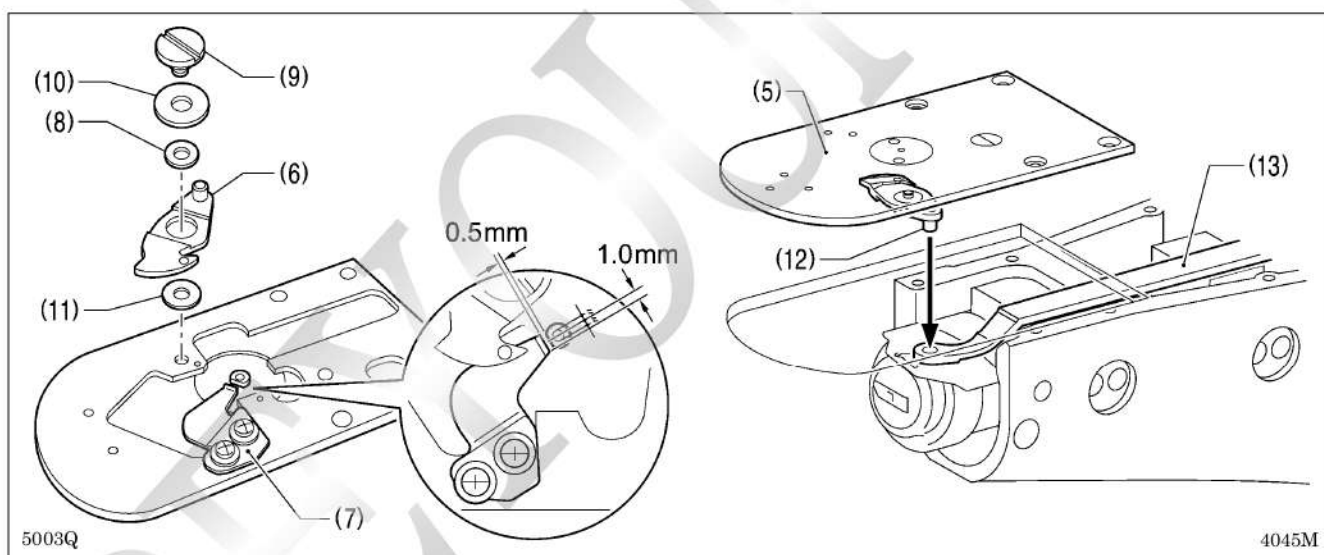
4043M

8. Turn the pulley (1) by hand to move the needle bar to its lowest position.
9. Loosen the nut (11), tighten the set screw (12) until the collar (3) is touching the inside of the groove in the thread trimmer cam (4), and then turn it back in the counterclockwise direction by approximately 1/4 of a turn.
10. Tighten the nut (11), and then check that the collar (3) is not touching the inside of the groove in the thread trimmer cam (4). In addition, push the driving lever (5) by hand toward the thread trimmer cam until the collar (3) touches the groove of the thread trimmer cam (4), and then check that the driving lever (5) returns smoothly to its original position when it is released.
11. Check that there is a gap of about 0 - 1 mm between the outside of the hole in the movable knife (9) and the ridge line on the shuttle race thread guide (13) when there is still play between the parts.

11-10. Replacing the movable and fixed knives

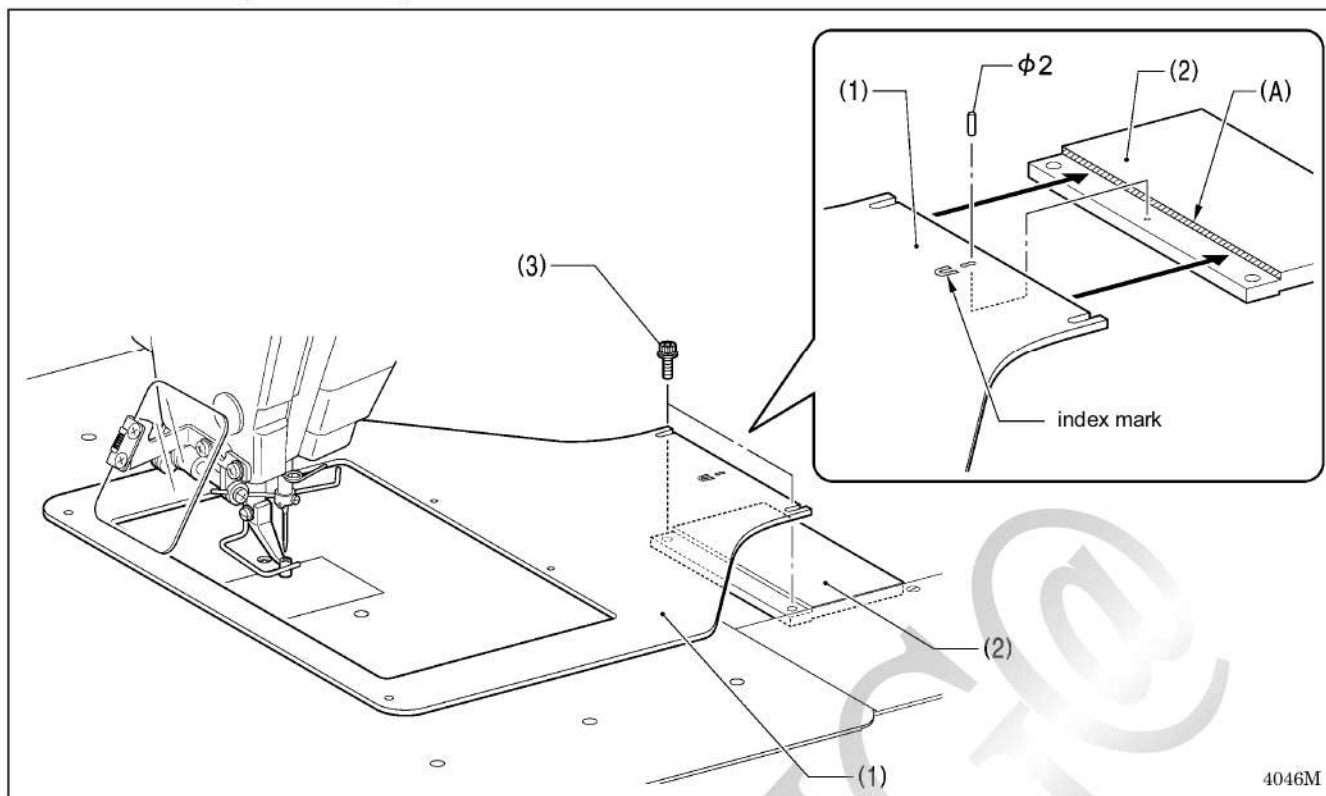


1. Loosen the two bolts (1) and then remove the feed plate (2).
2. Open the shuttle race cover, remove the two screws (3) and the two flat screws (4), and then remove the needle plate (5).
3. Remove the movable knife (6) and the fixed knife (7).



4. Install the new fixed knife (7) in the position shown in the illustration.
5. Apply grease to the outside of the collar (8) and to the shoulder screw (9), and then install the new movable knife (6) together with the thrust washer (10) and the movable knife spacer (11).
6. Check that the movable knife (6) and fixed knife (7) cut the thread cleanly. Replace the movable knife spacer with accessory spacers ($t=0.2, 0.3, 0.4$) so that the knives trim the thread accurately.
 - * If the knife pressure is too weak and the thread is not completely cut, use a thinner movable knife spacer.
 - * If the knife pressure is too strong and the movable knife (1) turns stiffly, use a thicker movable knife spacer.
7. Apply grease to the pin (12), place it into the movable knife connecting plate (13), and install it to the needle plate (5).
8. Check that the needle is aligned with the center of the needle hole.
9. Install the feed plate (2). (Refer to the next page.)

11-10-1. Installing the feed plate

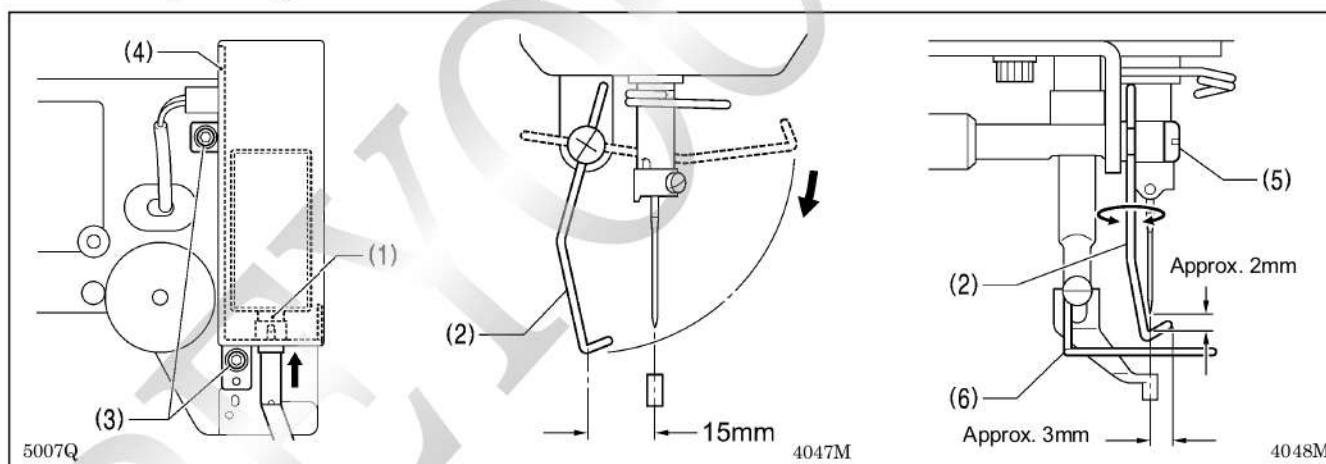


NOTE:

Install the feed plate so that the surface with the index mark is facing upward.

Place the rear edge of the feed plate (1) against the stepped part of base plate Y (2) (hatched shaded section (A)) and use a 2 mm diameter pin (such as a needle) to align the hole in the feed plate (1) with the hole in base plate Y (2); then tighten the two bolts (3).

11-11. Adjusting the thread wiper

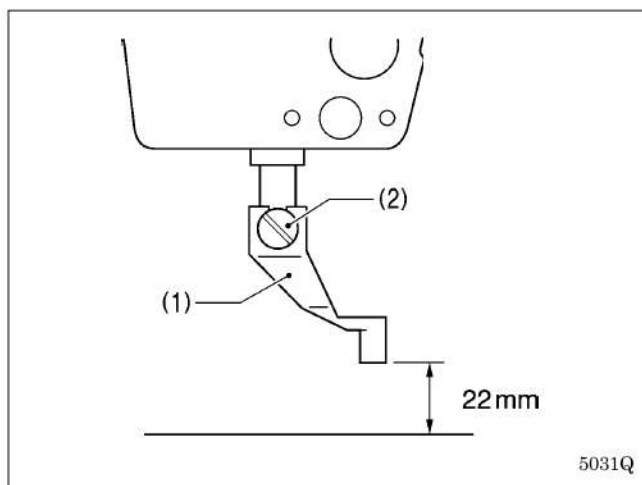


1. Loosen the two screws (3) and shift the entire solenoid setting plate (4) up or down to adjust so that the thread wiper (2) is 15 mm in front of the needle center when the plunger (1) of the thread wiper solenoid is driven to the full stroke.
2. Loosen the screw (5) and adjust the position of the thread wiper (2) so that the distance from the thread wiper to the tip of the needle is approximately 2 mm and the tip of the thread wiper (2) is approximately 3 mm from the center of the needle when the thread wiper (2) passes below the needle during operation.

NOTE:

Check that the thread wiper (2) does not touch the finger guard (6).

11-12. Presser foot installation position

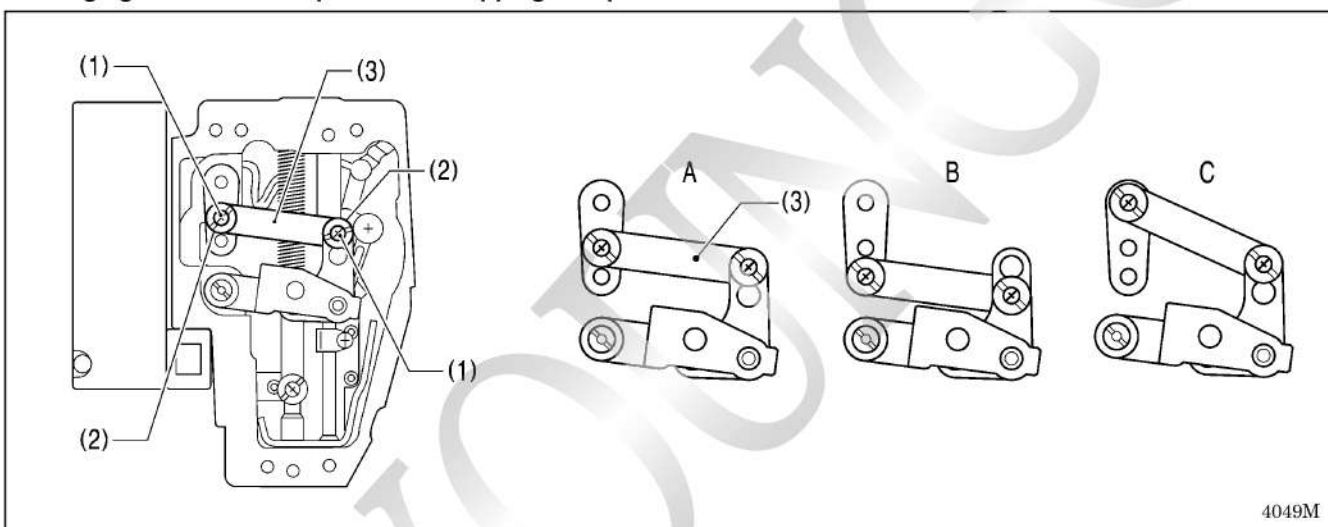


Install the presser foot (1) with the screw (2) so that the distance from the bottom of the presser foot to the top of the needle plate is 22 mm when the sewing machine is stopped and the presser foot (1) is raised.

11-13. Changing the intermittent stroke

The intermittent stroke can be adjusted to within 2 – 10 mm by adjusting the position of the stepping clamp connecting rod and changing the installation position of stepping clamp link A.

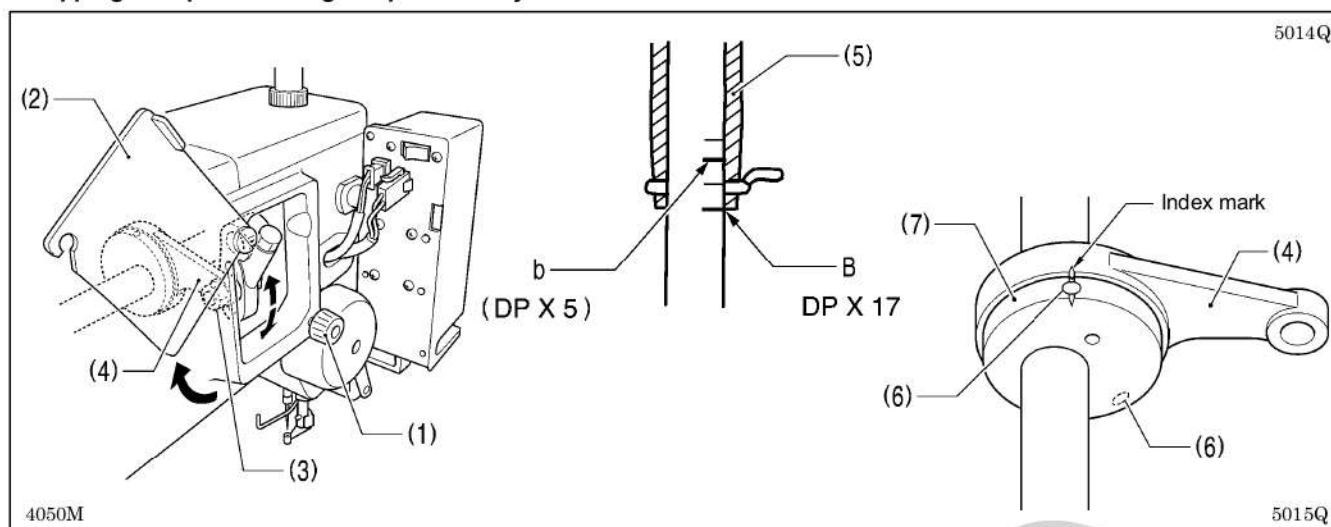
<Changing the installation position of stepping clamp link A>



1. Remove the face plate.
 2. Remove the two screws (1) and the two shoulder screws (2), and then remove stepping clamp link A (3).
 3. Change the installation position for stepping clamp link A (3) to either A, B or C above.
- If the position of the stepping clamp connecting rod is adjusted as described in the following at any one of the installation positions, the adjustment range for the intermittent stroke will as given in the following table. (Refer to the next page.)

Installation position	Intermittent stroke range	
A	2 – 4.5mm	
B	4.5 – 10mm	
C	0 mm (Presser foot does not move up and down)	

<Stepping clamp connecting rod position adjustment>



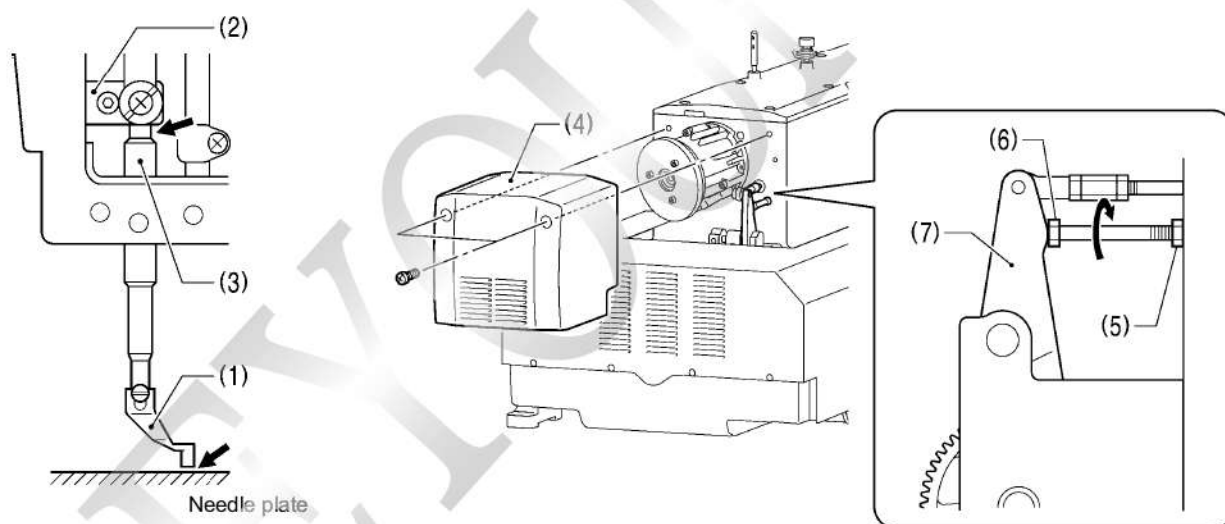
1. Loosen the screw (1), and then open the cover (2).
2. Loosen the nut (3), and then adjust the position of the stepping clamp connecting rod (4).
 - When the stepping clamp connecting rod (4) is raised, the intermittent stroke will increase.
 - When the stepping clamp connecting rod (4) is lowered, the intermittent stroke will decrease.

Next, adjust the needle bar and presser foot timing.

3. Turn the machine pulley to raise the needle bar from the lowest position until the lowest reference line on the needle bar (reference line B) is aligned with the lower edge of the needle bar bush (5).
(If using a DP x 5 needle, align with the second reference line from the top (reference line b).)
4. Open the top cover and loosen the two set screws (6).
5. Align the index marks on the stepping clamp cam (7) and the stepping clamp connecting rod (4), and then tighten the set screws (6).

Check the following after changing the intermittent stroke.

5016Q 4051M



1. With the intermittent presser foot (1) lowered, turn the pulley to move the intermittent presser foot (1) to its lowest position.
2. Check that the presser foot (1) does not touch the needle plate and that the presser bar clamp (2) does not touch the presser bar bush (3).

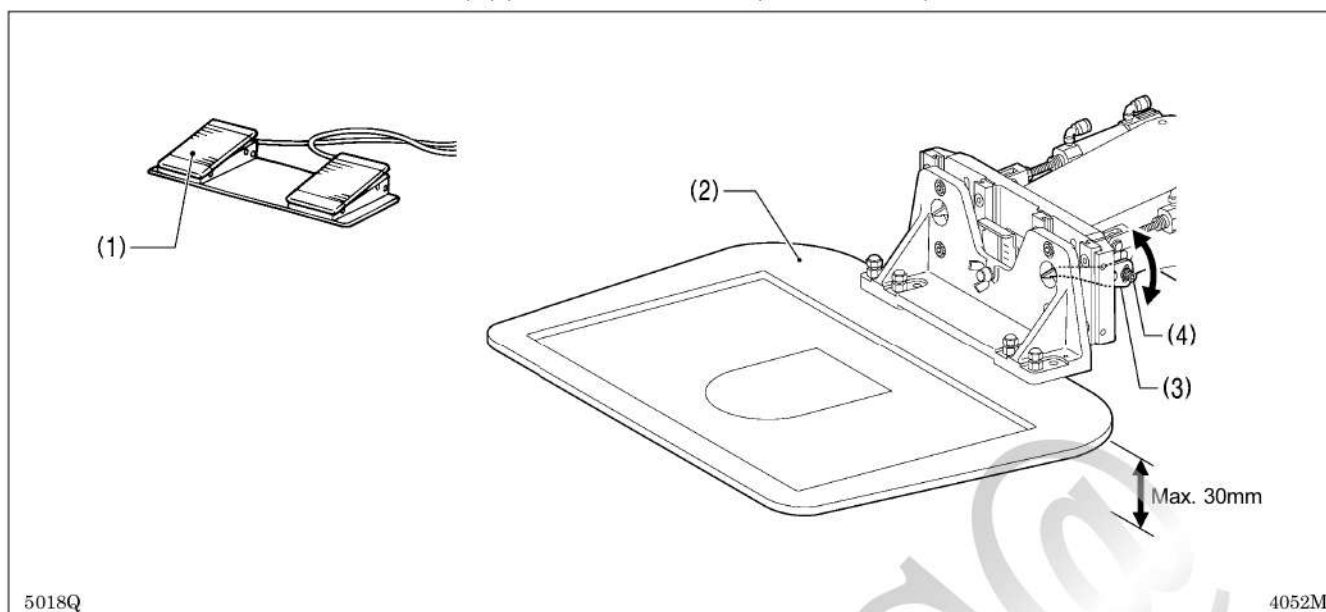
<If they are touching>

Remove the motor cover (4).

Loosen the nut (5), and turn the bolt (6) until it is pressing against the intermittent drive lever (7), and then adjust until the two points mentioned above are not touching.

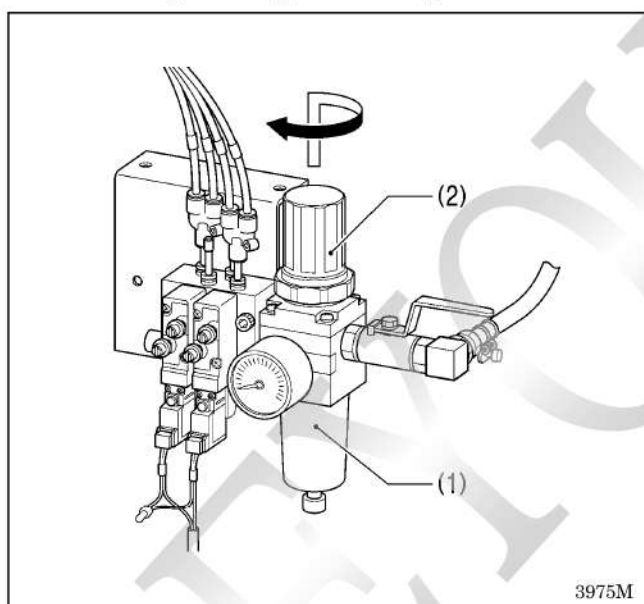
11-14. Adjusting the work clamp lift amount

The maximum lift amount for the work clamp (2) is 30 mm above the top of the needle plate.



1. Turn on the air, and then turn on the power switch.
2. Depress the work clamp switch (1) to raise the work clamp (2).
3. Loosen the two bolts (4) of the work clamp lifter lever (3), and then move the work clamp lifter lever (3) up or down to adjust the lift amount.

11-15. Adjusting the air pressure



Lift up the handle (2) of the regulator (1) and then turn it to adjust the air pressure to 0.5 MPa. After adjustment is complete, push the handle (2) downward to lock it.

12. TABLE OF ERROR CODES



Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the cover of the control box. Touching areas where high voltages are present can result in severe injury.

If a malfunction should occur with the sewing machine, a buzzer will sound and an error code will appear in the display window. Follow the remedy procedure to eliminate the cause of the problem.

Switch-related errors

Code	Cause and remedy
E010	Stop switch was pressed. Press the RESET key to clear the error.
E011	Stop switch was pressed. Press the RESET key to clear the error. Press the ▼ key to move the work clamp so that you can continue sewing.
E015	The stop switch was still being pressed, or there is a problem with the stop switch connection. Turn off the power, and then check that connector P13 on the main P.C. board is properly connected.
E016	Problem with the stop switch connection. Turn off the power, and then check that connector P13 on the main P.C. board is properly connected.
E025	The power was turned on while the start switch was still being depressed, or the start switch was depressed without the work clamp being lowered. If the power has been turned on while the start switch was still depressed, turn off the power and check the start switch. If the start switch was depressed without lowering the work clamp, depress the work clamp switch to lower the work clamp.
E035	The work clamp switch is depressed. Turn off the power, and then check the work clamp switch.
E036	A foot switch that does not match specifications is connected, or work clamp mode has not been set correctly. Use a foot switch that matches specifications, or initialize the memory switch settings.
E050	Machine head tilting was detected after the power was turned on. Turn off the power, and then return the machine head to its original position. Check that connector P9 on the main P.C. board is properly connected.
E051	Machine head tilting was detected while the sewing machine was operating. Turn off the power, and then check that connector P9 on the main P.C. board is properly connected.
E055	Machine head tilting was detected when the power was turned on. Turn off the power, and then return the machine head to its original position. Check that connector P9 on the main P.C. board is properly connected.
E065	An operation panel key was still being pressed when the power was turned on, or key is faulty. Turn off the power and check the operation panel.

Upper shaft motor-related errors

Code	Cause and remedy
E110	Needle up stop position error. Turn the machine pulley until the point where the error display disappears.
E111	Upper shaft did not stop at the needle up stop position when the sewing machine stopped. Turn the machine pulley until the point where the error display disappears.
E120	Needle drop signal could not be detected. Turn off the power, and then check the synchronizer connection.
E121	Thread trimming was not completed. Turn off the power, and then check if the cutting edges of the fixed knife and movable knife are damaged or worn.

(Continued on next page)

12. TABLE OF ERROR CODES

Code	Cause and remedy
E130	Sewing machine motor stopped due to a problem, or synchronizer is faulty. Turn off the power, and then turn the machine pulley and check if the sewing machine has locked up. Check that connectors P4 and P5 on the power supply motor P.C. board are properly connected.
E131	Synchronizer is faulty. Turn off the power, and then check that connector P5 on the power supply motor P. C. board is properly connected.
E132	Problem detected with sewing machine motor operation. Turn off the power, and then check that connector P4 on the power supply motor P.C. board is properly connected.
E133	Sewing machine motor stopping position is incorrect. Turn off the power, and then check that connector P5 on the power supply motor P.C. board is properly connected.
E150	Sewing machine motor is overheating, or temperature sensor is faulty. Turn off the power, and then check the sewing machine motor. (When sewing data with a small number of stitches (15 stitches or less) is sewn repeatedly (short cycle operation), the upper shaft motor may overheat and the "E150" error code may be generated.)

Feed mechanism-related errors

Code	Cause and remedy
E200	X-feed motor home position cannot be detected. Problem with X -feed motor or poor X home position sensor connection. Turn off the power, and then check that connector P10 on the PMD P.C. board and connector P20 on the main P.C. board are properly connected.
E201	X-feed motor stopped due to a problem. Turn off the power, and then check if there are any problems in the X-feed direction.
E202	Problem with X-feed motor or Y-feed motor home position adjustment data. Re-adjust the home position.
E204	X feed motor stopped abnormally during sewing. Turn off the power, and then check if there are any problems in the X-feed direction.
E205	X feed motor stopped abnormally while moving to the sewing start position. Turn off the power, and then check if there are any problems in the X-feed direction.
E206	X feed motor stopped abnormally during test feeding. Turn off the power, and then check if there are any problems in the X-feed direction.
E207	X feed motor stopped abnormally during programming. Turn off the power, and then check if there are any problems in the X-feed direction.
E210	Y-feed motor home position cannot be detected. Problem with Y-feed motor or poor Y home position sensor connection. Turn off the power, and then check that connector P8 on the PMD P.C. board and connector P4 on the main P.C. board are properly connected.
E211	Y-feed motor stopped due to a problem. Turn off the power, and then check if there are any problems in the Y-feed direction.
E214	Y feed motor stopped abnormally during sewing. Turn off the power, and then check if there are any problems in the Y-feed direction.
E215	Y feed motor stopped abnormally while moving to the sewing start position. Turn off the power, and then check if there are any problems in the Y-feed direction.
E216	Y feed motor stopped abnormally during test feeding. Turn off the power, and then check if there are any problems in the Y-feed direction.
E217	Y feed motor stopped abnormally during programming. Turn off the power, and then check if there are any problems in the Y-feed direction.

Work clamp-related errors

Code	Cause and remedy
E300	Work clamp home position cannot be detected. Problem with work clamp motor or poor work clamp home position sensor connection. Turn off the power, and then check that connector P3 on the PMD P.C. board and connector P5 on the main P.C. board are properly connected.
E301	Intermittent presser foot raised or lowered position cannot be detected. Turn off the power, and then check if there are any problems in the intermittent presser foot vertical direction.
E303	Problem with work clamp motor home position adjustment data. Re-adjust the home position.

Communication and memory-related errors

Code	Cause and remedy
E401	Connection communication error with power supply motor P. C. board detected when power was turned on. Turn off the power, and then check that connector P6 on the power supply motor P.C. board and connector P17 on the main P.C. board are properly connected.
E402	Communication error with programmer detected when power is turned on. Turn off the power, and then check that connector P7 on the main P.C. board is properly connected.
E403	Connection error with PMD P. C. board detected when power was turned on. Turn off the power, and then check that connector P1 on the PMD P.C. board is properly connected.
E410	Communication error with main P. C. board detected. Turn off the power, and then turn it back on again.
E411	Communication error with power supply motor P. C. board detected. Turn off the power, and then turn it back on again.
E412	Communication error with programmer detected. Turn off the power, and then turn it back on again.
E413	Communication error with PMD P. C. board detected. Turn off the power, and then turn it back on again.
E420	No CF card is inserted.
E421	Program contents are incorrect and cannot be used, or no data. Check that the CF card or floppy disk contains data with this program number.
E422	Error occurred while reading the CF card or floppy disk. Check the data on the CF card or floppy disk.
E424	Insufficient free space on CF card. Use a different CF card.
E425	Error occurred while writing to the CF card or floppy disk. Use the specified type of CF card. Check if the floppy disk is write-protected and if it has enough free space.
E426	R/W key has not been pressed. Press the R/W key to load the data.
E427	CF card or floppy disk does not contain any data with this program number. Check the program number. Data that has already been loaded into internal memory can be used without having to press the R/W key again.
E430	Data cannot be backed up to main P.C. board. Turn off the power, and then turn it back on again.
E440	Data memory error on main P.C. board. Turn off the power, and then turn it back on again.
E450	Model selection cannot be read from the machine head memory. Turn off the power and check that connector P3 on the power supply motor P.C. board is properly connected.
E451	Data cannot be backed up to machine head memory. Turn off the power, and then turn it back on again.
E452	Machine head memory is not connected. Turn off the power, and then check that connector P3 on the power supply motor P.C. board is properly connected.
E474	Internal memory is full and copying is not possible. Clear the sewing data.

12. TABLE OF ERROR CODES

Data editing-related errors

Code	Cause and remedy
E500	The enlargement ratio setting caused the sewing data to extend outside the sewing area. Set the enlargement ratio again.
E501	Sewing data that exceeds the sewing machine's sewing area was loaded. Check the size of the sewing data.
E502	The enlargement ratio caused the data pitch to exceed the maximum pitch of 12.7 mm. Set the enlargement ratio again.
E510	Invalid code in sewing data. Reload the data from the CF card or floppy disk.
E511	No end code has been input into sewing data. Input an end code, or change the program number.
E512	Number of stitches exceeds allowed maximum.
E520	Extended option output number already exists. Change the extended option output number. If not using the extended option output, initialize the data to clear the extended option output data.
E530	Changing program number is prohibited.

P.C. board-related errors

Code	Cause and remedy
E700	Abnormal rise in power supply voltage. Turn off the power and check the input voltage.
E701	Abnormal rise in sewing machine motor drive voltage. Turn off the power, and then check the voltage.
E705	Abnormal drop in power supply voltage. Turn off the power and check the input voltage.
E710	Abnormal current detected in sewing machine motor. Turn off the power, and then check if there are any problems with the sewing machine.
E711	Abnormal current detected in X-feed motor. Turn off the power, and then check if there are any problems in the X-feed direction.
E712	Abnormal current detected in Y-feed motor. Turn off the power, and then check if there are any problems in the Y-feed direction.
E713	Abnormal current detected in work clamp motor. Turn off the power, and then check if there are any problems with the X-feed mechanism, Y-feed mechanism or work clamp lifter.
E730	External error input (AIRSW) detected. Turn off the power, and then check the air pressure.
E740	Control box cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that connector P22 on the main P.C. board is properly connected.
E741	X-feed motor cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that connector P10 on the main P.C. board is properly connected.
E742	Y-feed motor cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that connector P10 on the main P.C. board is properly connected.

If an error code that is not listed above appears or if carrying out the specified remedy does not solve the problem, contact the place of purchase.

13. TROUBLESHOOTING

- Please check the following points before calling for repairs or service.
- If the following remedies do not fix the problem, turn off the power switch and consult a qualified technician or the place of purchase.



CAUTION



Turn off the power switch and disconnect the power cord before carrying out troubleshooting.
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.

Problem	Cause	Remedy	Reference
Work clamp does not lift.	Work clamp moves stiffly.	Apply a suitable amount of grease to the sliding parts of the work clamp slider.	
Work clamp does not drop.	Air tube of presser lifter cylinder is bent or damaged.	Straighten the bend in the tube or replace the tube.	
Work clamp lift amount is incorrect.	Work clamp lifter lever position is incorrect.	Adjust the position of the work clamp lifter lever.	P. 65
Work clamp does not lift to the maximum height.	Cylinder joint position is incorrect.	Adjust the position of the cylinder joint.	
Thread wiper does not operate correctly.	The thread wiper is obstructing the needle.	Adjust the height of the thread wiper.	P. 62
		Adjust the stroke of the thread wiper.	P. 62
	Thread wiper position is incorrect.	Adjust the stroke of the thread wiper.	P. 62
Lower thread winds to one side.	Bobbin winder tension assembly height is incorrect.	Adjust the height of the bobbin winder tension assembly.	P. 22
Lower thread winding amount is incorrect.	Bobbin presser position is incorrect.	Adjust the position of the bobbin presser.	P. 22
Thread slips out of the needle.	Stitches being skipped at the sewing start.	Refer to "Skipped stitches occur".	P. 71
	Upper thread trailing length is uneven.	Adjust the sub-tension.	P. 24
	Position of shuttle race thread guide is incorrect	Adjust the position of the shuttle race thread guide.	P. 57

Problem	Cause	Remedy	Reference
Upper thread breaks.	Upper thread tension is too strong.	Adjust the upper thread tension.	P. 24
	Needle is incorrectly installed.	Install the needle correctly.	P. 19
	Thread is too thick for the needle.	Select a thread that matches the needle.	P. 24
	Thread take-up spring tension and height are incorrect.	Adjust the tension and height of the thread take-up spring.	P. 55
	Damage or burring of the rotary hook, needle hole plate or needle.	Repair or replace the problem part.	
	Thread breaking from heat (Synthetic thread)	Use a cooling tank.	P. 20
	Thread is threaded incorrectly.	Thread the thread correctly.	P. 20
Lower thread breaks.	Lower thread tension is too strong.	Adjust the lower thread tension.	P. 24
	Damage to corners of needle hole plate or bobbin case.	Repair or replace the problem part.	
Skipped stitches occur.	Clearance between needle and rotary hook tip is too great.	Adjust the needle clearance.	P. 57
	Needle and rotary hook timing is incorrect.	Adjust the needle bar lift amount.	P. 56
	The driver is covering the needle more than necessary.	Adjust the driver needle guard.	P. 57
	Needle is bent.	Replace the needle.	
	Needle is incorrectly installed.	Install the needle correctly.	P. 19
Needle is broken.	Clearance between needle and rotary hook tip is too great.	Adjust the needle clearance.	P. 57
		Adjust the needle bar lift amount.	P. 56
	Needle is bent.	Replace the needle.	
	Needle deflection	Select a needle that is suitable for the sewing conditions. Reduce the sewing speed.	P. 24 P. 30
	Needle is too thin.	Select a needle that is suitable for the sewing conditions.	P. 24
Thread jamming.	Thread take-up spring tension and height are incorrect.	Adjust the tension and height of the thread take-up spring.	P. 55
	Needle and rotary hook timing is incorrect.	Adjust the needle bar lift amount.	P. 56
	Shuttle race thread guide is not separating the threads.	Adjust the position of the shuttle race thread guide.	P. 57

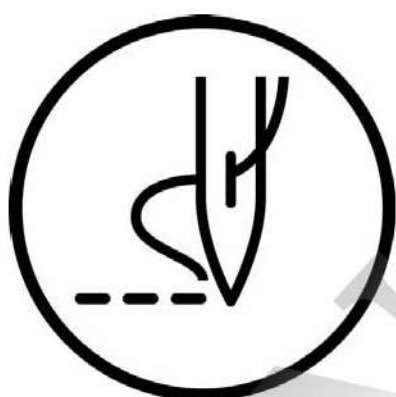
Problem	Cause	Remedy	Reference
Upper thread is not trimmed.	Movable knife is not cutting cleanly.	Replace with a new one.	P. 61
	Fixed knife is not cutting cleanly.	Sharpen the fixed knife or replace it with a new one.	P. 61
	Movable knife is not picking up the upper thread.	Adjust the position of the shuttle race thread guide.	P. 57
		Adjust the needle bar lift amount.	P. 56
	Movable knife is not picking up the upper thread because the last stitch is being skipped.	Refer to "Skipped stitches occur".	P. 71
	Movable knife position is incorrect.	Adjust the position of the movable knife.	P. 59
	Sub-tension is too weak.	Turn the sub-tension nut to adjust the tension.	P. 24
Poor stitch finish on underside of material.	Shuttle race thread guide is not separating the threads enough.	Adjust the position of the shuttle race thread guide.	P. 57
	Incorrect tightening of the upper thread	Adjust the upper thread tension.	P. 24
	Upper thread trailing length is uneven.	Adjust the sub-tension.	P. 24
Incorrect tightening of the thread	Upper thread tension is too weak.	Adjust the upper thread tension.	P. 24
	Lower thread tension is too weak.	Adjust the lower thread tension.	P. 24
	Thread take-up spring tension and height are incorrect.	Adjust the tension and height of the thread take-up spring.	P. 55
	Position of arm thread guide R is incorrect.	Adjust the position of arm thread guide R.	P. 56
Upper thread trailing length is uneven.	Thread take-up spring tension and height are incorrect.	Adjust the tension and height of the thread take-up spring.	P. 55
	Sub-tension is too weak.	Turn the sub-tension nut to adjust the tension.	P. 24
	Fixed knife is not cutting cleanly.	Sharpen the fixed knife or replace it with a new one.	P. 61
Sewing machine does not operate when the power is turned on and the foot switch is depressed.	Safety switch does not work.	Check if the safety switch cord is disconnected.	P. 12
		Adjust the position of the safety switch.	P. 18
		If the safety switch is malfunctioning, replace it with a new one.	

14. 7-SEGMENT DISPLAY

0	1	2	3	4	5	6	7	8	9
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				

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INSTRUCTION MANUAL



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