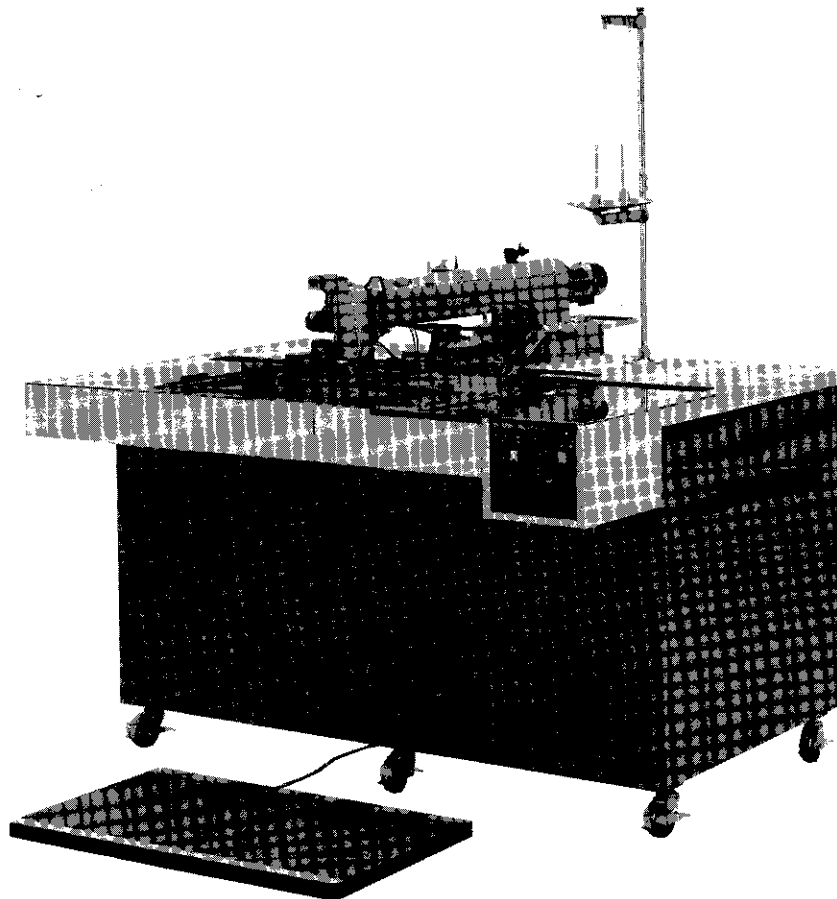


**brother**

# PROGRAMMABLE ELECTRONIC LOCK STITCH SEWING MACHINE PROFILE L

**BAS-361**

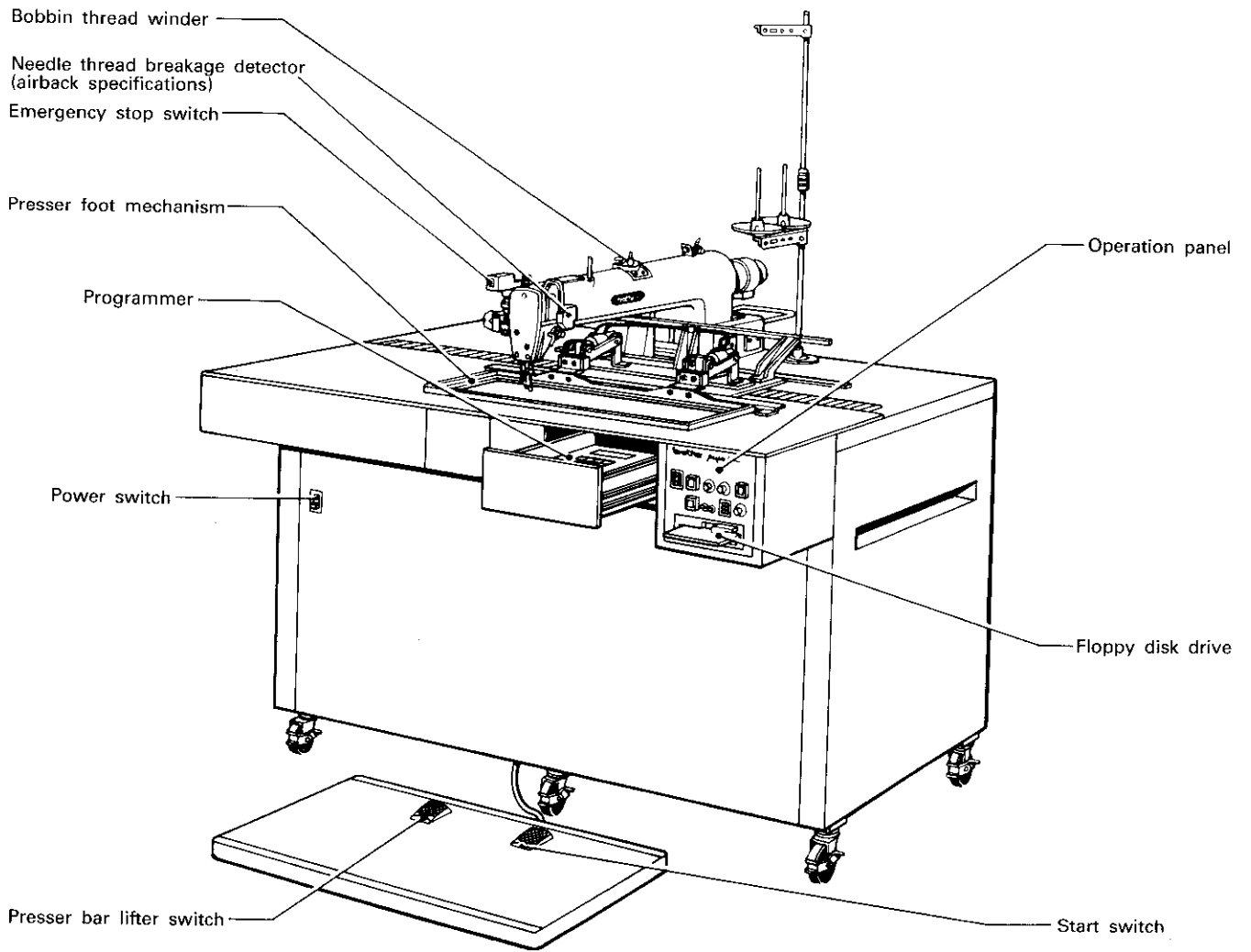
## INSTRUCTION MANUAL



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# MAIN PART NAMES

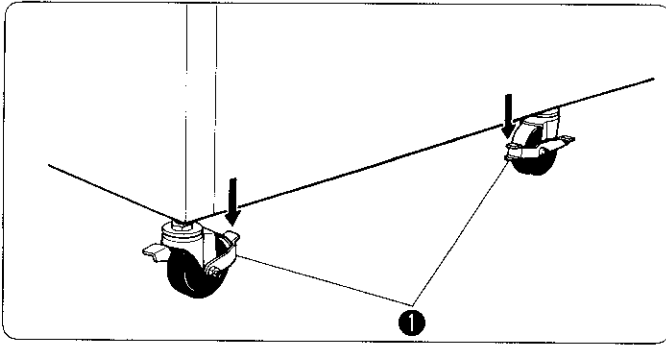


# SPECIFICATIONS

		Standard specifications	Airback specifications
Stitch type		Single needle lock stitch	
Machine used		Lock stitch, double rotary hook, long arm machine	
Maximum pattern size (width × length)		600 × 250 mm	600 × 250 mm
Stitch number		Maximum 10,000	
Feed type		Intermittent feed (driven by pulse motor)	
Stitch pitch and sewing speed	0.1 ~ 2.4 mm	1250 ~ 2000 spm	800 ~ 1400 spm
	2.5 ~ 4.4 mm	1100 ~ 1400 spm	
	4.5 ~ 6.3 mm	500 ~ 800 spm	500 ~ 800 spm
Safety devices		Mid-pattern stop function and automatic stop mechanism enabled by a safety circuit for trouble detection (both functions driven by the thread breakage mechanism)	
Test devices		Built-in operating check function with low speed drive (fast forward function built in)	
Needle thread breakage detector		None	Yes
Feed timing counter		None	None
Machine dimensions		1400 × 1390 × 1200 mm (W × L × H)	
Standard accessories		Floppy disk	
Power supply		200V 600 W	
Air pressure		5 kg/cm <sup>2</sup>	

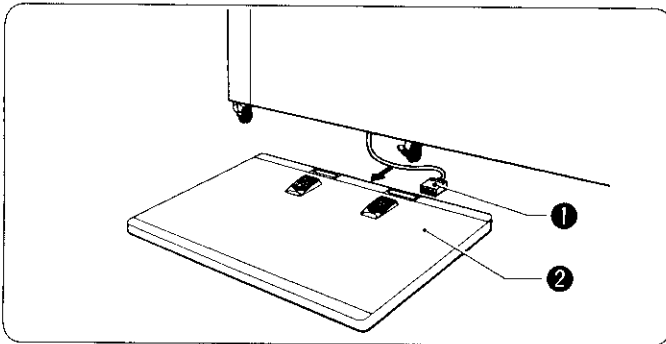
# INSTALLATION

## 1 Locating the machine



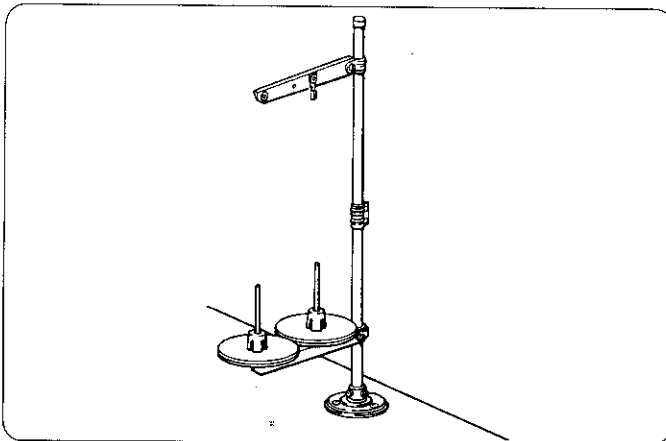
- Once the location of the machine has been decided, lock the casters ① on the legs so that the machine does not move.

## 2 Connecting the foot switches



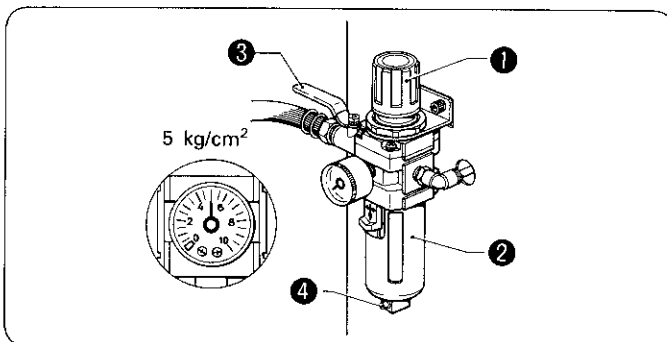
- Connect the plug ① coming from the legs of the machine to the foot switch ② connector.

## 3 Installing the spool stand



- Install the spool stand at the right front corner of the table. Be careful not to install the spool stand too far forward as it may interfere with the feed mechanism.

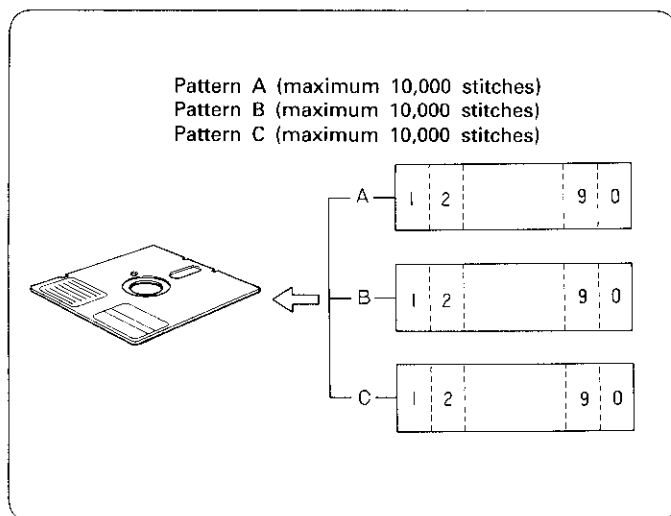
## 4 Air pressure adjustment



- Operate the machine with the air pressure adjusted to 5 kg/cm<sup>2</sup>. To adjust, lift and turn the cap ① on top of the air unit. After adjustment is completed, lower the cap to lock it. If water collects in the bottle ②, close air cock ③, and then press drain cock ④ to drain the water.

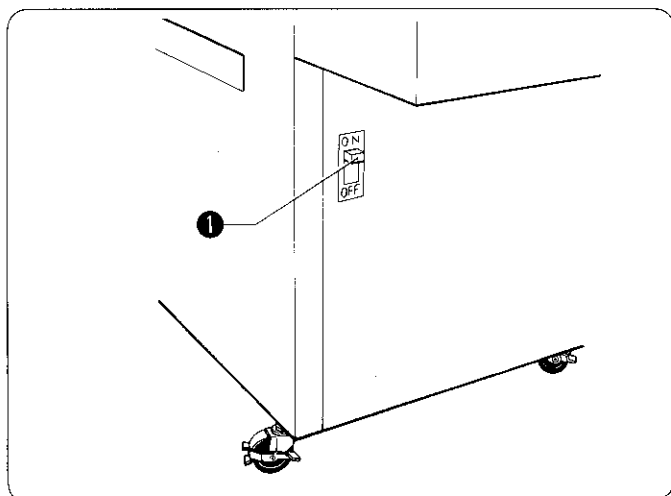
# HANDLING A FLOPPY DISK

## 1 A word about floppy disks

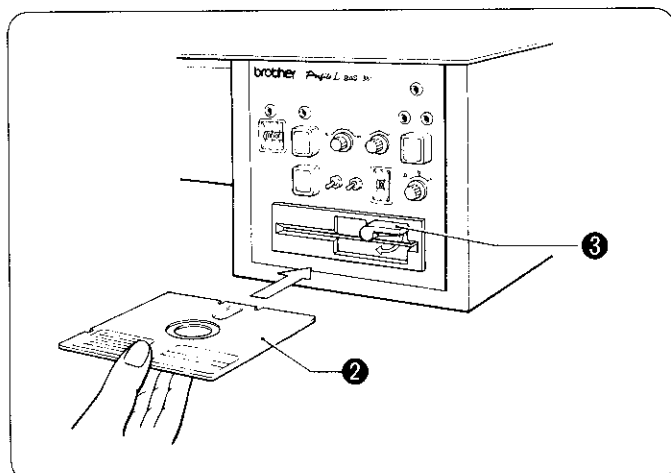


- A single floppy disk can store up to three patterns (A-B-C) each consisting of a maximum 10,000 stitches. Each of these three patterns can also contain up to ten variations for use according to the design of a specific work piece.

## 2 Inserting a floppy disk



- (1) Turn the power switch ❶ on.

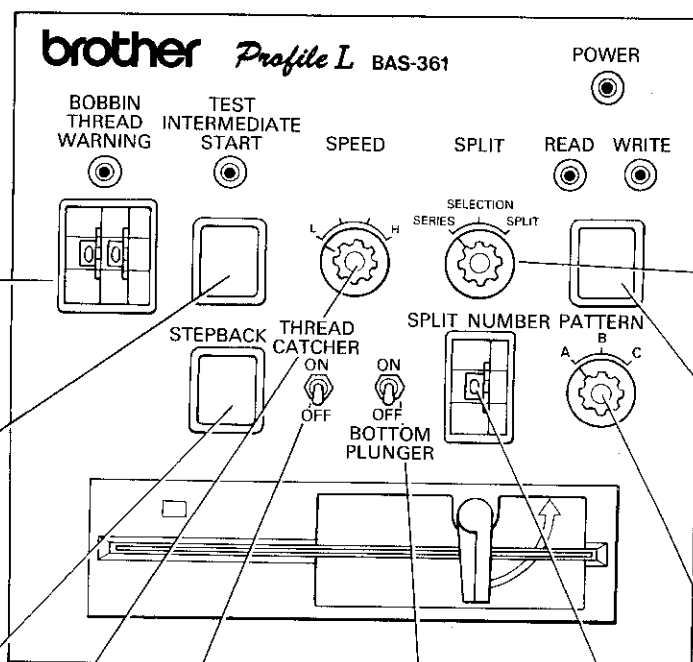


- (2) Insert the disk ❷ containing the stitch pattern to be used into the drive with the label facing up.
- (3) Turn the lever ❸ on the drive so it points down.

※ Be careful handling floppy disks.

Floppy disks are a magnetic storage medium. Be sure to keep them away from magnetic fields and objects, including magnets, radios, televisions, and other electrical equipment that produces a magnetic field. Such magnetic fields could cause the contents of the disk to be erased or damaged.

# SWITCHES (Standard specifications)



## Bobbin thread warning

Set the number of articles or work pieces which can be sewn with a single bobbin load in the bobbin thread warning. (See page 7.)

## Test intermediate start switch

Use to test machine operation. Also used to continue sewing from any desired position in the pattern when sewing is stopped due to thread breakage, an empty bobbin, or other problem. (See page 7, 15, 16.)

## Stepback switch

Press to move the presser foot one stitch back when sewing is stopped due to thread breakage, an empty bobbin, or other problem. (See page 7.)

## Thread catcher switch

Use when the resistance of the sewing material is low, causing thread cast-offs or skipped stitches at the first stitch.

## Speed selector

Use to select form among four preset sewing speeds.

## Bottom plunger

Use to sew a seam at the edge of the presser foot and the material, or then when the sewing margin for the presser foot is narrow and there is a potential problem with the material slipping from the presser.

※ Change the sewing speed only when the machine is stopped.

※ Replace the needle plate with the auxiliary needle plate when using the bottom plunger. (See pages 22, 21.)

**Split switch**

Use to select from series sewing, selection sewing, or split sewing of patterns stored on disk. (See pages 15, 16.)

**Read/write switch**

Press to write a pattern to or read a pattern from a disk. (See page 14.)

**Pattern selector switch**

Use to select one of the three patterns (A, B, C) stored on disk. (See page 14.)

**Split number display**

Use to select the desired variation from among the variations of a single pattern when sewing single pieces. (See page 15.)

If a single pattern is stored as shown below



Series sewing: Pattern variations a, b and c would be sewn continuously.

Selection sewing: Select the pattern to be sewn with the split number display, and sew only that single selected pattern a, b or c.

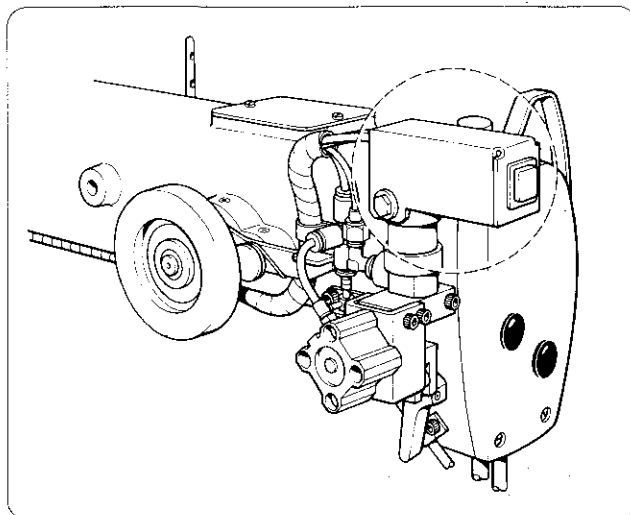
Split sewing: Patterns a, b and c will be sewn, but as sewing of each variation is completed, the machine will stop and the thread will be cut.

※ The following sewing variations are only available when a single pattern has been programmed and stored to disk in a number of variations.

**Emergency stop switch**

The machine can be stopped immediately at any point during testing or any sewing procedure. If a problem develops in machine operation, the emergency stop function will also cause the machine to stop automatically. In either event, pressing the emergency stop switch will cause the emergency stop function to be cancelled and the indicator to go out.

※ When the emergency stop switch is on (the indicator is on), the machine will not operate no matter which foot switch is pressed.





#### <Using the test intermediate start>

- (1) Press the emergency stop switch.
  - All machine operations will stop and the indicator will light.
- (2) Press the emergency stop switch again.
  - The indicator will go out.
- (3) Press the start switch.
  - The presser foot will move automatically to the sewing start position.
- (4) Press the test intermediate start.
  - The green indicator will light.
- (5) Press the start switch.
  - The needle will remain stationary while the presser foot advances one stitch at a time at low speed.
  - ※ The presser foot will fast forward when the presser foot lifter switch is pressed.
- (6) When the presser foot advances to the desired position, press the test intermediate start switch again.
  - The presser foot will stop and the indicator will go out.
  - ※ If the presser foot is stopped too soon, press the test intermediate start switch to continue advancing the presser foot.
- (7) Press the start switch to begin sewing.

#### <Using the stepback switch>

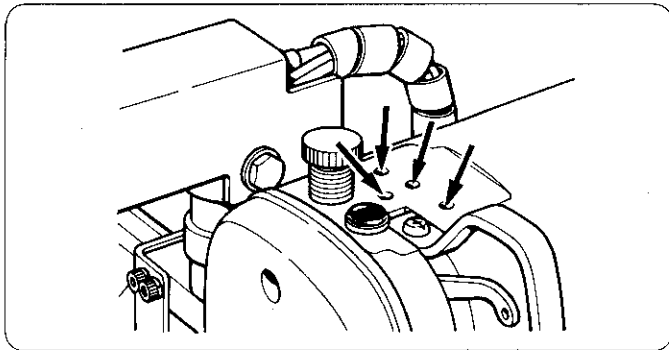
- (1) Press the emergency stop switch.
  - All machine operations will stop and the indicator will light.
- (2) Press the emergency stop switch again.
  - The indicator will go out.
- (3) Press the stepback switch.
  - The presser foot will move one stitch at a time in reverse while the stepback switch is pressed.
- (4) When the presser foot advances to the desired position, release the stepback switch.
- (5) Press the start switch to begin sewing.

#### <Using the bobbin thread warning>

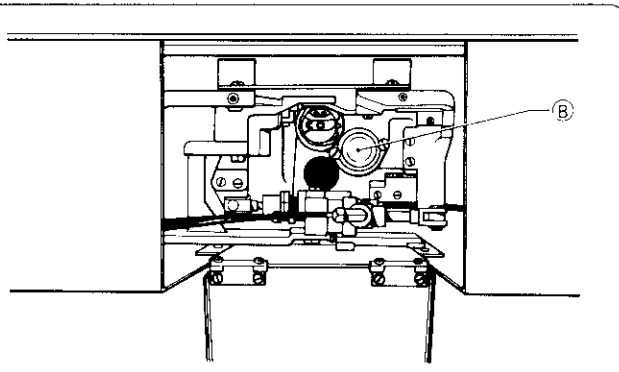
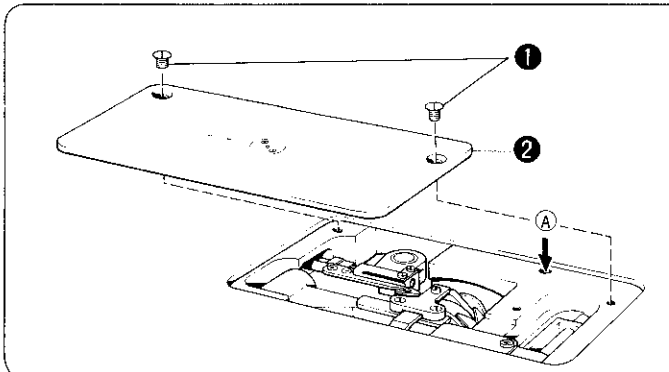
- (1) Set the number of work pieces in the bobbin thread warning.
  - ※ The counter can be set for 01 to 99 pieces.
  - ※ If set to 00, the bobbin thread warning does not function.
- (2) After replacing the bobbin, press the emergency stop switch.
  - ※ When the number of pieces set in the bobbin thread warning is sewn, the bobbin thread warning indicator will light and the machine will not operate even when the start switch is pressed.

## SET-UP

### 1 Lubrication

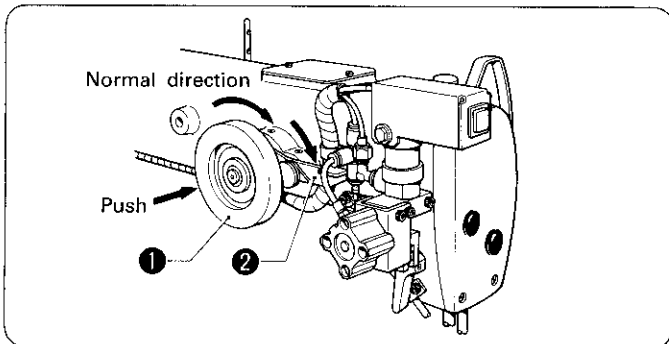


- (1) Add 1 ~ 2 drops of oil at the four oil holes in the machine head daily before use.



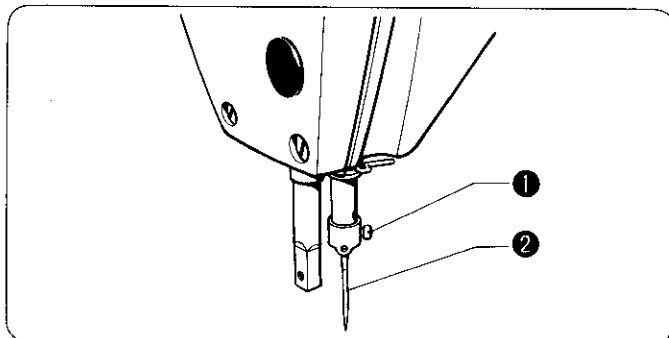
- (2) Once or twice a week, loosen screws ① and remove needle plate ②, and fill rotary hook lubrication oil tank B to approximately  $\frac{2}{3}$  capacity from lubrication oil hole A. If the tank is filled too much, oil could leak from the rotary hook assembly.

### 2 To turn the pulley by hand



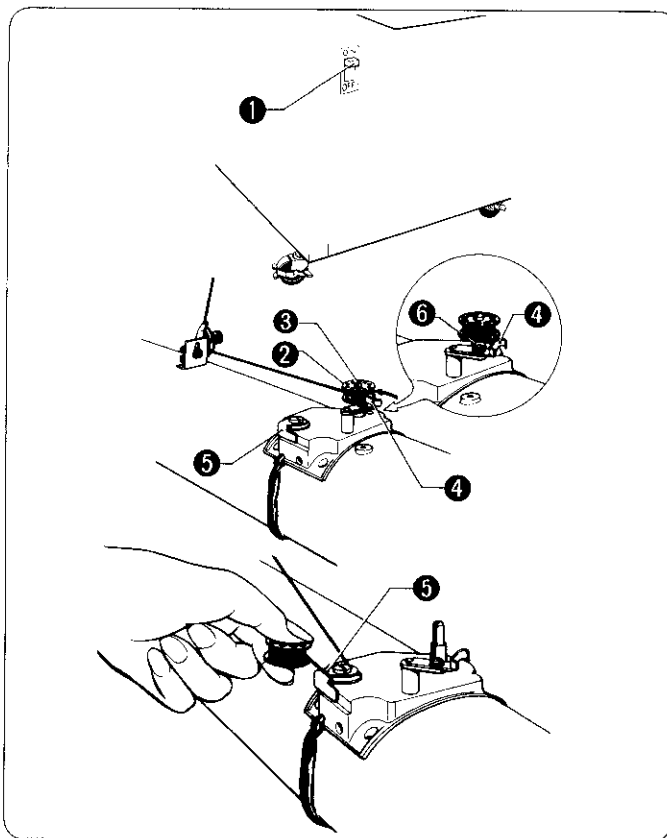
- Simply press in on the pulley ① to turn it by hand. To turn the pulley, press lever ② down.
- ※ After turning the pulley by hand, be sure to press the lever down to return the pulley to the normal operating position.

### 3 Installing a needle



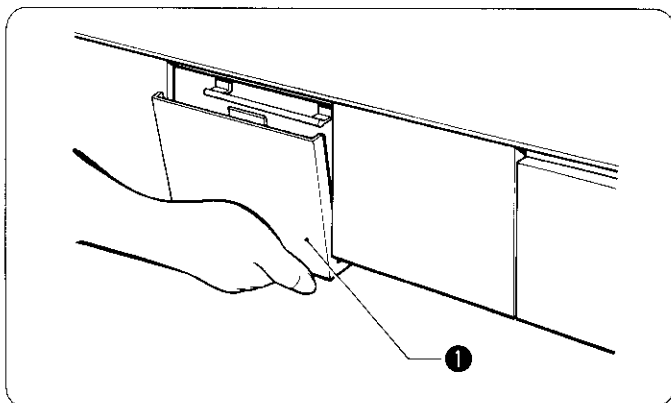
- Loosen screw ① and insert the needle ② as far as it will go with the long groove to the front. Tighten screw ①.

#### 4 Bobbin thread winding

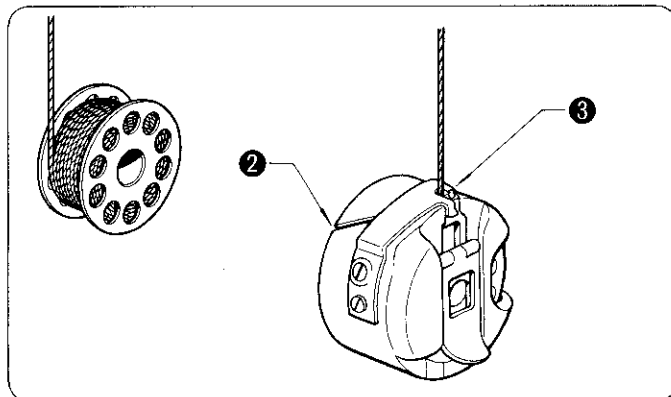


- (1) Turn the power switch **1** on.
- (2) Slide the bobbin **2** all the way onto the bobbin winder shaft **3**.
- (3) Thread the thread as shown in the figure at left, and then wrap the thread several times clockwise around the bobbin **2**.
- (4) Move lever **4** in the direction of the arrow.
  - The switch will automatically turn on, the bobbin winder shaft **3** will turn, and thread will be wound onto the bobbin.
  - When a specific amount of thread is wound onto the bobbin (approximately 80% of the total bobbin capacity), lever **4** will return and the bobbin winder shaft **3** will stop automatically.
- (5) Remove the bobbin **2** from the bobbin winder shaft, wind the thread onto the thread clamp **5**, and cut the thread.
  - ※ To adjust the amount of thread wound onto the bobbin, loosen screw **6** and move the lever **4** right or left.

#### 5 Loading the bobbin case and threading



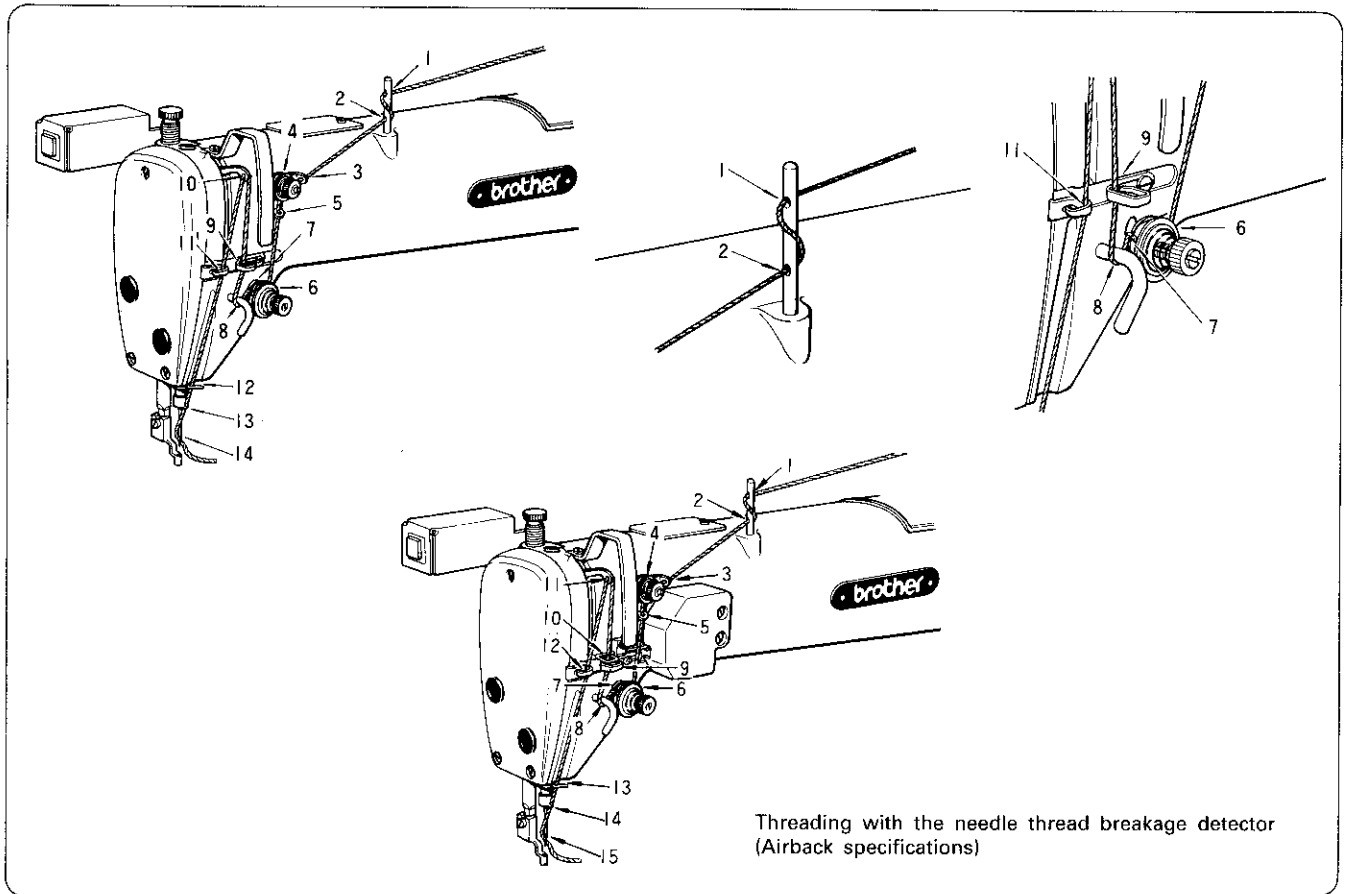
- (1) Open the rotary hook cover **1**, and hold the bobbin case latch to remove the bobbin case.



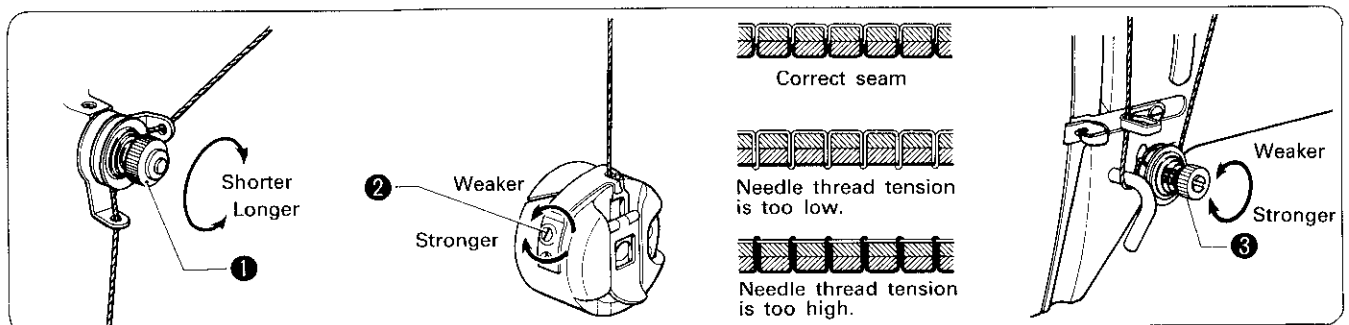
- (2) Insert the bobbin to the bobbin case, pass the thread through the slot **2**, and pull it out from the thread hole **3**.

## 6 Threading the needle thread

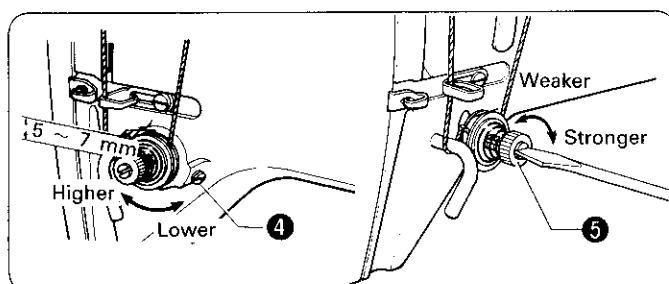
Thread the needle thread in order as shown in the figure below.



## 7 Thread tension

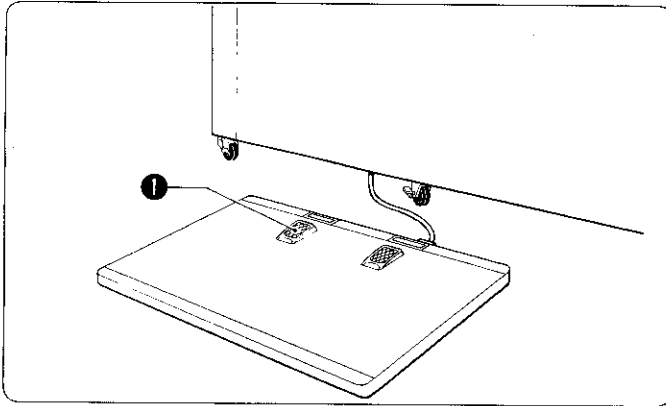


- (1) Turn adjustment screw ① so that the thread remainder from the needle tip after thread trimming is 25 ~ 30 mm.
- (2) The bobbin thread tension should be adjusted so that when the thread is held the bobbin will not descend of its own weight. Turn tension screw ② to adjust.
- (3) Turn tension screw ③ to adjust the needle thread tension.



- (4) Thread take-up spring (standard specifications)
  - The standard operating range for the thread take-up spring is 5 ~ 7 mm. If adjustment is required, loosen screw ④ and turn the needle thread tension adjuster complete.
  - The standard tension of the thread take-up spring is 25 ~ 30 g. If adjustment is required, turn the thread tension control stud ⑤ with a screwdriver.

## 8 Presser foot



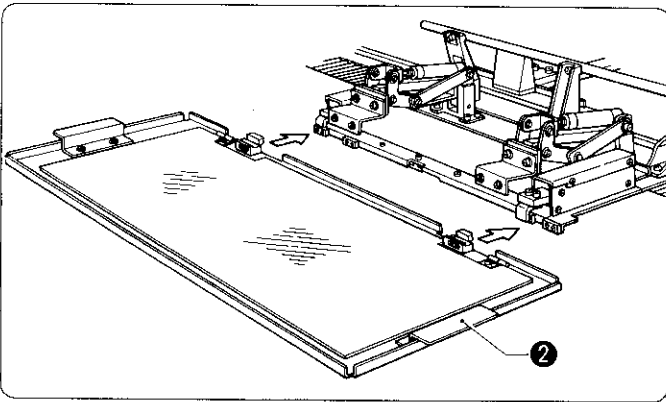
The presser foot can be set using one of two methods, chosen by setting the DIP switches as follows.

### <If DIP switch 6 is ON>

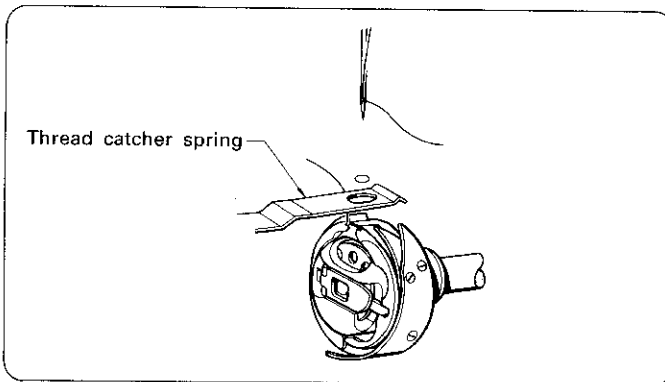
- (1) Press the presser lifter switch ①.
  - The clamp assembly will rise.
- (2) Fit the cassette presser ② in place.
  - The clamp assembly will automatically descend, and the presser will be set.

### <If DIP switch 6 is OFF>

- (1) Press the presser lifter switch ①.
  - The clamp assembly will rise.
- (2) Fit the cassette presser ② in place.
- (3) Press the presser lifter switch ① again.
  - The clamp assembly will descend, and the presser will be set.



## 9 Thread catcher



- When the thread catcher is used, install the thread catcher spring according to the specifications of the model.

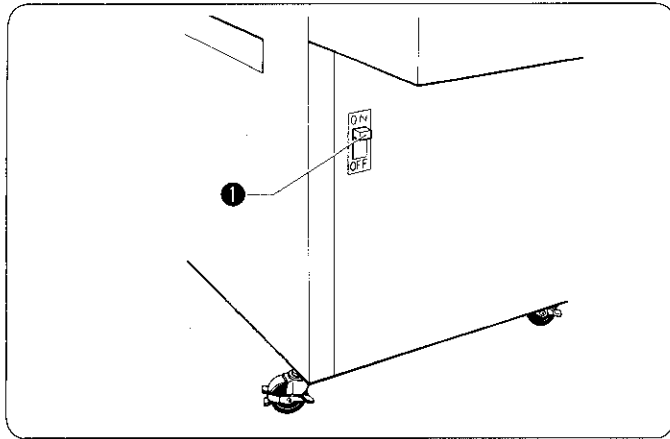
<Standard and airback specifications>

Standard: thread catcher spring A (157790000)

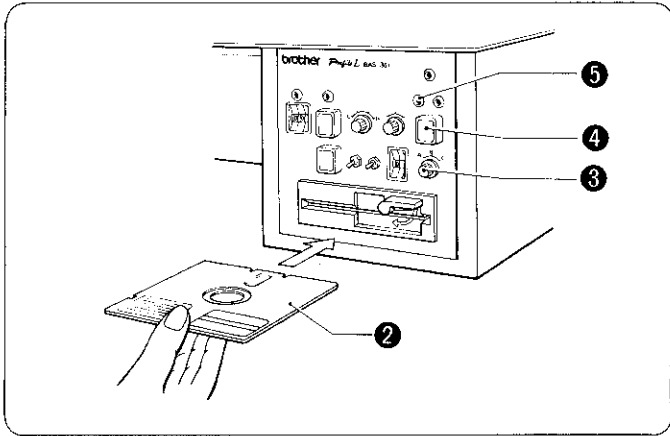
Bottom: thread catcher spring B (157791000)

# SEWING

## 1 Preparations



(1) Turn the power switch **1** on.

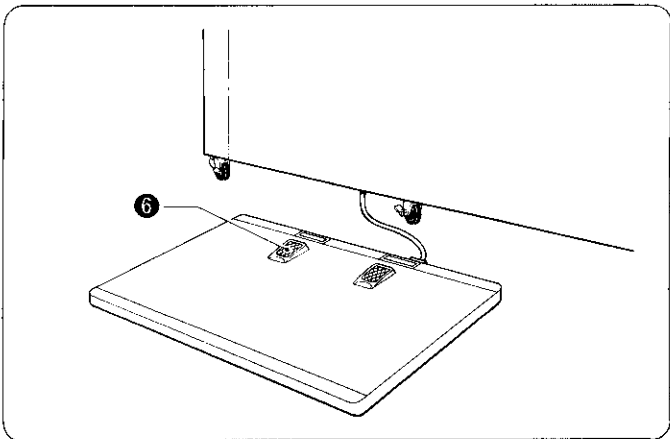


(2) Insert the floppy disk **2**.

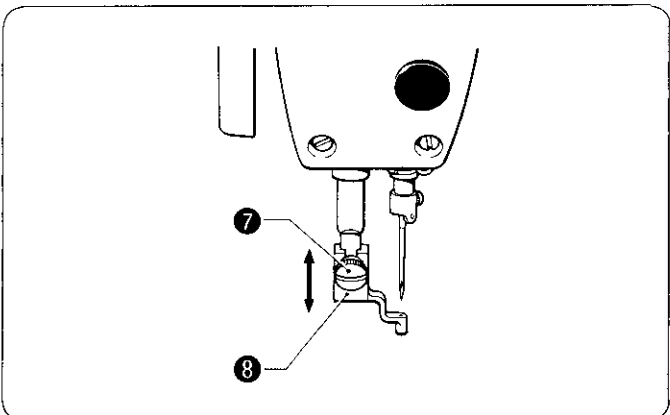
(3) Select the desired pattern with the pattern selector switch **3**.

(4) Press the read/write switch **4**.

- The read/write indicator **5** will light while the disk is being read.

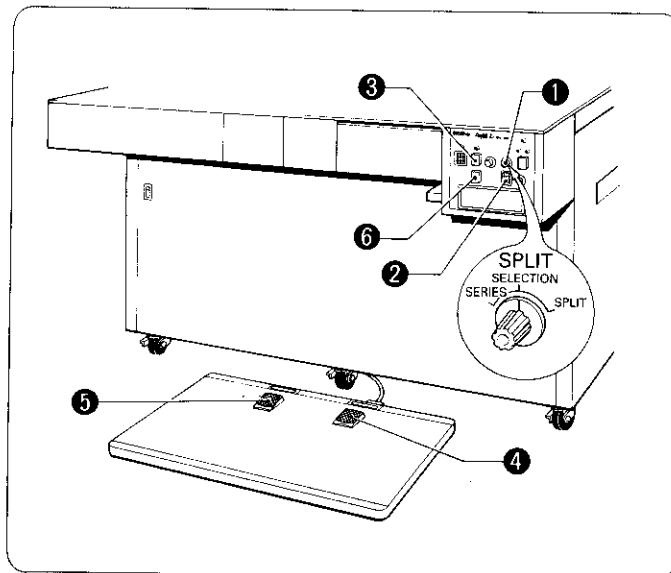


(5) Press the press foot lifter switch **6**, and set the presser and the material.



(6) Loosen screw **7**, turn the pulley to lower the needle bar to the bottom dead center. Raise or lower the presser foot **8** so that the bottom of the presser foot **8** lightly contacts the surface of the material. (See page 18 for presser foot adjustment.)

## 2 Series sewing and selection sewing



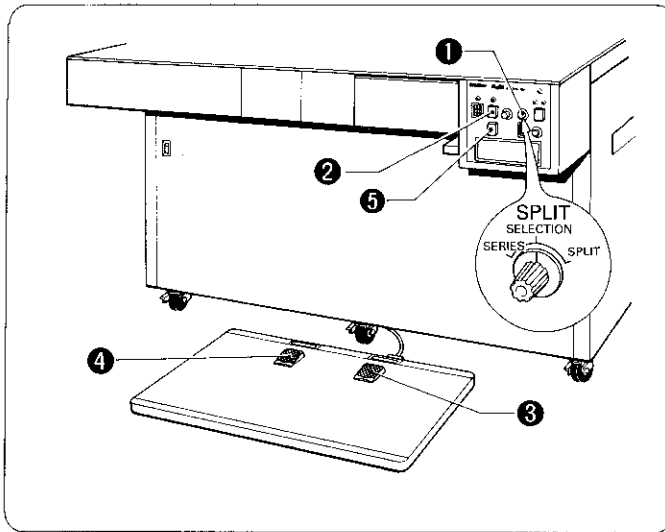
### <Test>

- (1) Set the split switch ① to either series or selection sewing according to the sewing program. If set to selection sewing, select the variation with the counter so that the number is displayed in the split number display ②.
- (2) Press the test intermediate start sewing switch ③.
  - The green indicator will light.
- (3) Press the start switch ④.
  - The presser will advance one stitch at a time with the needle stopped.
  - ※ Press the presser foot lifter switch ⑤ to fast forward the presser.
  - ※ If the stepback switch ⑥ is pressed, the presser will advance by the most direct line to the point in the pattern 100 stitches forward.
- (4) Make sure that the needle traces the pattern as programmed. Also make sure that there is no problem with the presser, presser foot, feed plate, and bottom plunger.
- (5) Check that operation is as programmed, and press the test intermediate start sewing switch ③.
  - The green indicator will go out.

### <Sewing>

- (1) Set the split switch ① to either series or selection sewing according to the sewing program. If set to selection sewing, select the variation with the counter so that the number is displayed in the split number display ②.
- (2) Press the start switch ④.
  - ※ Sewing will start.
- (3) When sewing ends, the presser will move to the sewing start position, and the presser will then rise and stop.
  - ※ If the emergency stop switch is used while sewing, press the emergency stop switch a second time to cancel the emergency stop mode. After cancelling the emergency stop, press the start switch to move the presser to the starting point to continue sewing from mid-pattern.

### 3 Split sewing



#### <Test>

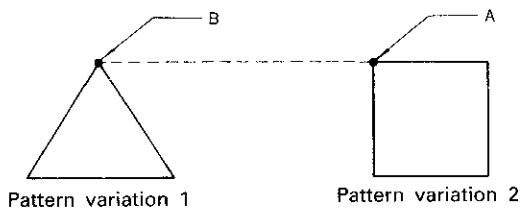
- (1) Set the split switch ❶ to split sewing.
- (2) Press the test intermediate start sewing switch ❷.
  - The green indicator will light.
- (3) Press the start switch ❸.
  - The presser will trace the first pattern variation, then move to starting position A for the second variation. Then the clamp assembly will rise and stop.
  - ※ Press the presser foot lifter switch ❹ to fast forward the presser.
  - ※ If the stepback switch ❺ is pressed, the presser will advance by the most direct line to the point in the pattern 100 stitches forward.

(4) Reset the material according to the design.

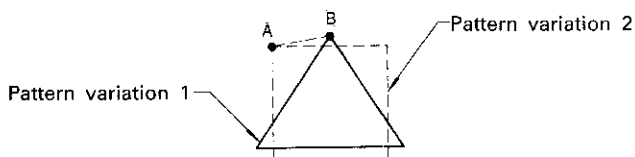
- (5) Press the start switch ❸.
  - The presser will trace the second pattern variation, then stop at starting position B for the first variation.

- (6) After confirming that the presser operates as programmed, press the test intermediate start sewing switch ❷.
  - The green indicator will go out.

#### <Common sewing examples>



#### <Overlapped pattern examples>



#### <Sewing>

- (1) Set the split switch ❶ to split sewing.
- (2) Press the start switch ❸.
  - The presser will sew the first pattern variation, then move to starting position A for the second variation. Then the clamp assembly will rise and stop.
- (3) Reset the material according to the design.
- (4) Press the start switch ❸.
  - After sewing the second pattern variation, the presser will move to starting position B for the first variation and stop.

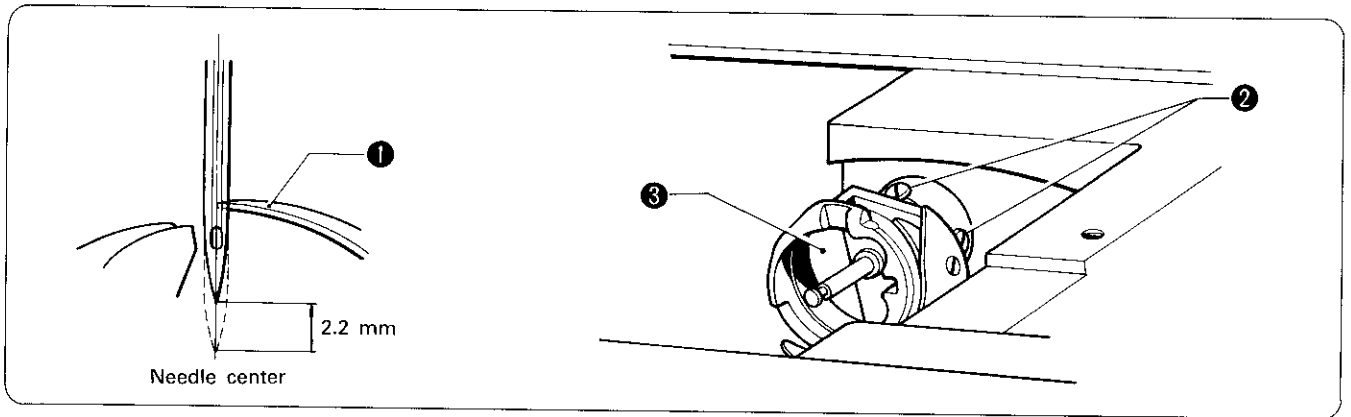
※ If the emergency stop switch is used while sewing, press the emergency stop switch a second time to cancel the emergency stop mode. After cancelling the emergency stop, press the start switch to move the presser to the starting point to continue sewing from mid-pattern.



## STANDARD ADJUSTMENTS

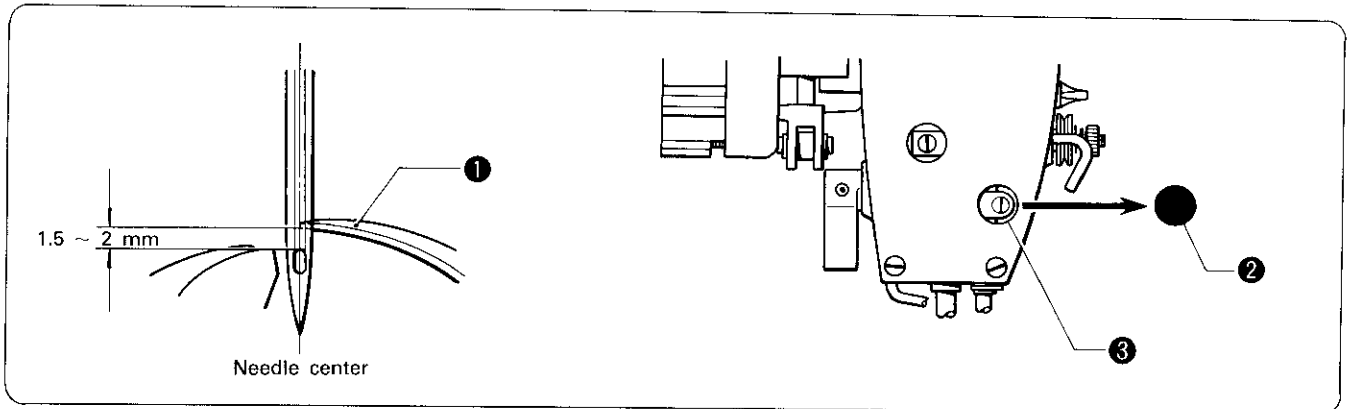
※ See page 10 to turn the pulley by hand, and turn the pulley manually for all adjustments.

### 1 Adjusting the needle bar lift stroke



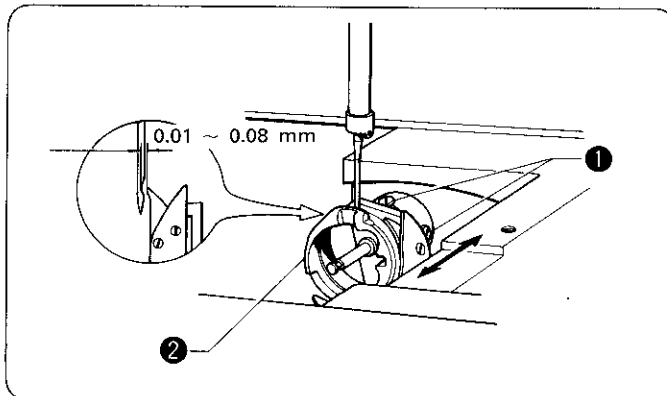
- Turn the pulley so that the needle bar is 2.2 mm above the bottom dead center. Loosen set screw ② and turn rotary hook ③ so that the rotary hook point ① is aligned with the needle center.

### 2 Needle bar height adjustment



- Turn the pulley so that the rotary hook point ① is aligned with the needle center. Remove cap ②, loosen screw ③, and raise or lower the needle bar so that the gap between the top of the needle hole and the rotary hook point ① is 1.5 ~ 2 mm.

### 3 Needle to rotary hook gap adjustment



- Turn the pulley so that the rotary hook point is aligned with the needle center. Loosen screw ① and move rotary hook ② so that the gap between the rotary hook point and needle is 0.01 ~ 0.08 mm.

#### 4 Presser foot adjustment

To adjust the presser foot, first lower the presser foot all the way, and then follow the procedure below.  
※ To lower the presser foot to the bottom position, do the following with the needle in the presser foot.

##### <Before sewing>

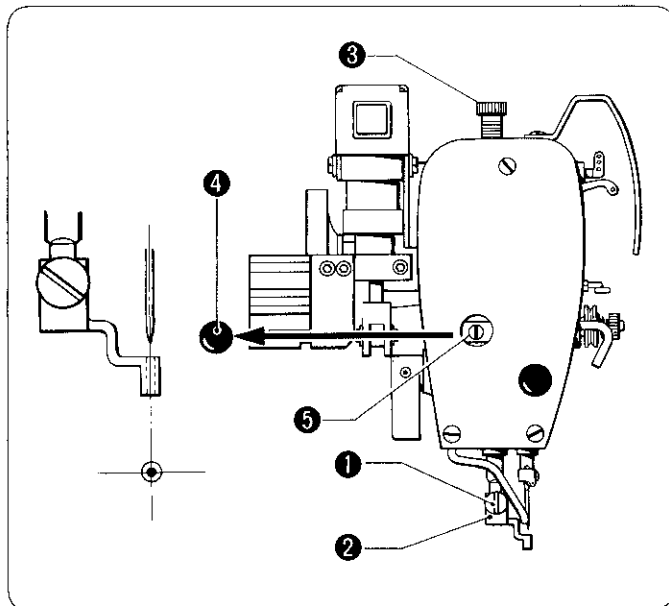
Press the test intermediate start switch, then press the stepback switch. The presser foot will descend to the bottom position.

##### <If the emergency stop switch is pressed while sewing>

Cancel the emergency stop switch and press the stepback switch so that the presser foot is lowered. Press the read/write switch to lower the presser foot to the bottom position.

##### <During test pattern feed>

Cancel the test intermediate start switch and press the read/write switch. The presser foot will descend to the bottom position. Press the test intermediate start switch on again to start feed.

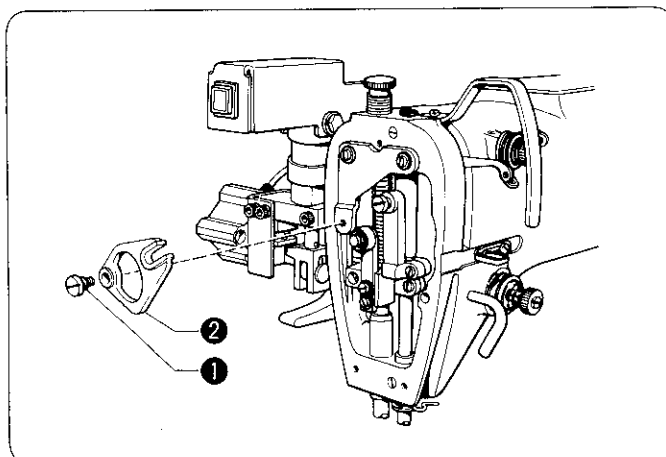


(1) Loosen screw ① and then retighten it with the bottom of the presser foot ② lightly touching the material.

※ When the intermittent presser is not used, lower the presser foot too far will cause the material to shift. Likewise, if it is too high, skipped stitches may occur.

(2) Turn the pulley and check that the needle enters the center of the needle hole in the presser foot. If the needle is not aligned with the center of the needle hole, sufficiently loosen the presser foot set screw ③, remove cap ④, loosen screw ⑤, and move the presser foot to adjust. After adjustment, retighten screws ③ and ⑤.

※ On the airback machines, the lift stroke can be changed from 4 mm to 7 mm by reversing the stepping foot driving cam.



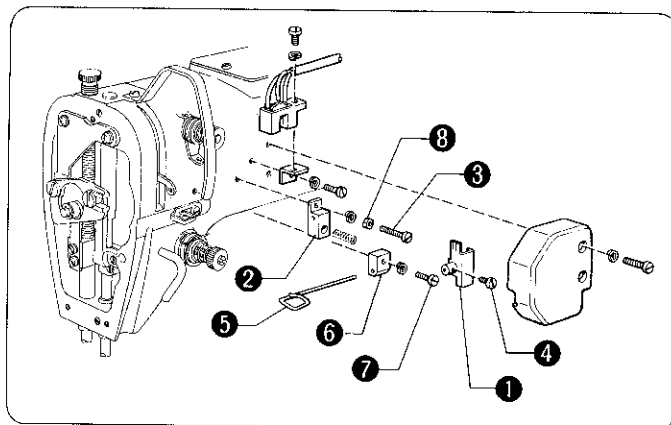
• If the stepping presser foot is not used:  
Release the stepping presser foot with the following procedure when the stepping presser foot is not required.

(1) Remove the face plate.

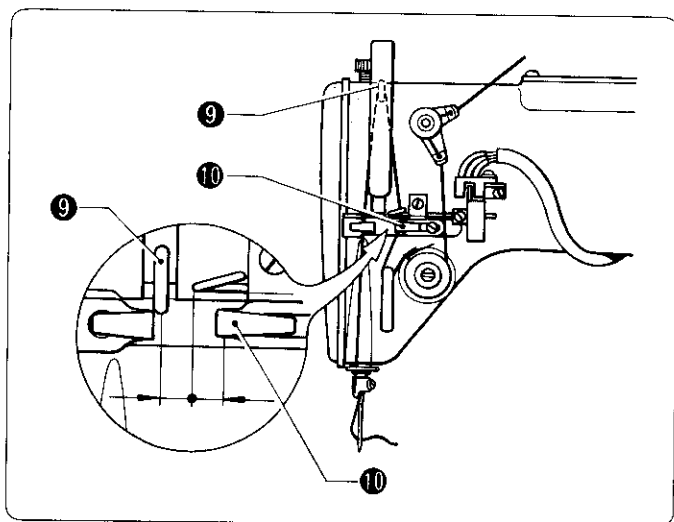
(2) Turn the pulley to position the needle bar at the top dead center.

(3) Remove stud screw ①, and remove the stepping foot driving cam ②.

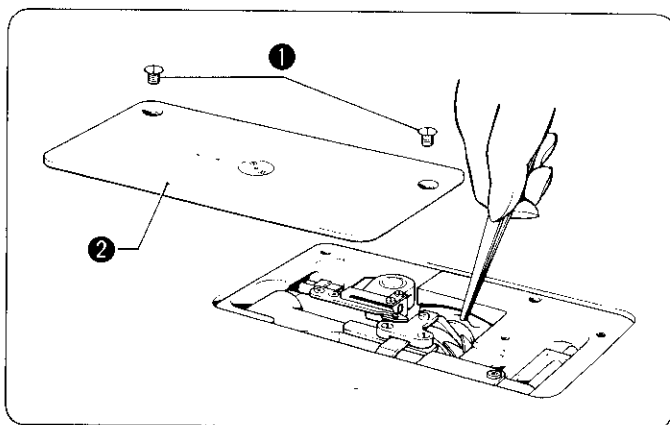
## 5 Needle thread breakage detector adjustment



- (1) Adjust the height of screw 3 so that slit 1 is approximately parallel to shaft support B 2.
- (2) Tighten screw 4. Adjust the bias of shaft support A 6 and shaft support B 2 so that shaft 5 turns smoothly, and then tighten screw 7 and nut 3.
- (3) Loosen screw 4, adjust shaft 5 so that it is midway between take-up 9 and thread guide 10 and the threading surface is raised slightly from level, and then tighten screw 4.

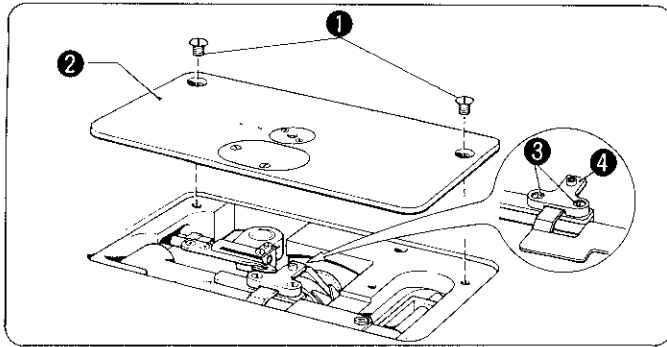


## 6 Cleaning the rotary hook



- (1) Remove the two screws 1, and remove needle plate 2.
- (2) Remove pieces of thread and other foreign matter from around the rotary hook.

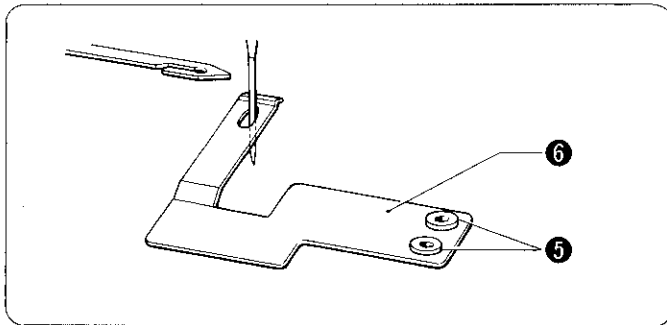
## 7 Removing the bottom plunger



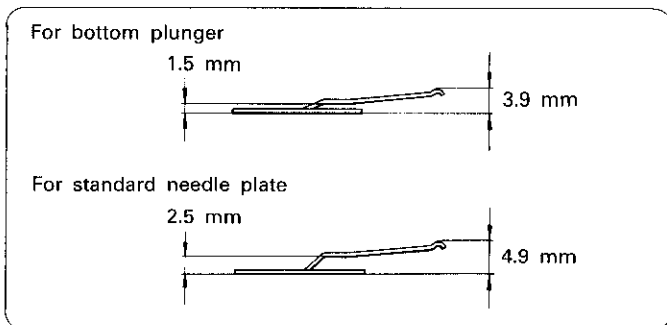
Depending upon the material being sewn, replace the needle plate with the optional needle plate when the bottom plunger is removed. Also replace the thread catcher with the optional thread catcher.

(1) Remove screw **1** and remove the standard needle plate **2**.

(2) Remove screw **3**, and remove the bottom plunger **4**.



(3) Remove screw **5**, and remove the standard thread catcher **6**.

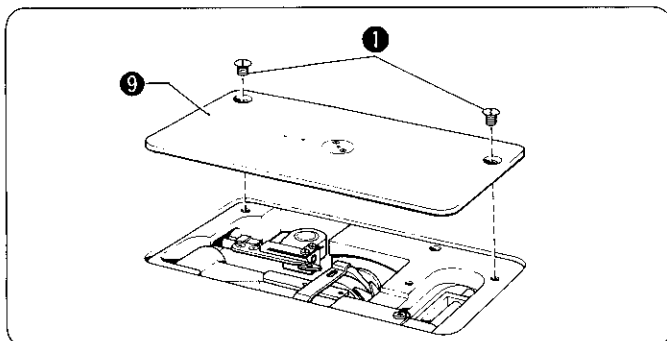
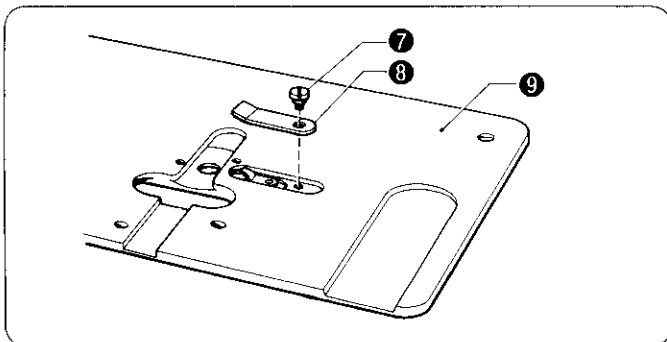


(4) Temporarily install the optional thread catcher with screw **5**.

(5) Turn the pulley to lower the needle bar to the bottom dead center.

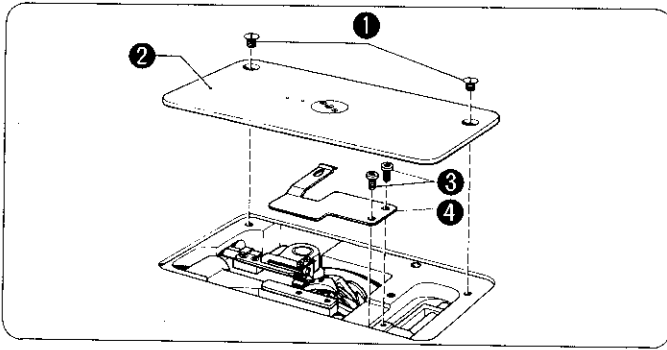
(6) Adjust the right-left position of the optional thread catcher so that the needle is in the center of the oval hole in the thread catcher. Adjust the front-back position of the thread catcher so that the end of the thread catcher does not strike the movable knife. Move the movable knife by hand to check. Tighten screw **5**.

(7) Remove screw **7**, and mount fixed knife **8** on the optional needle plate **9**.



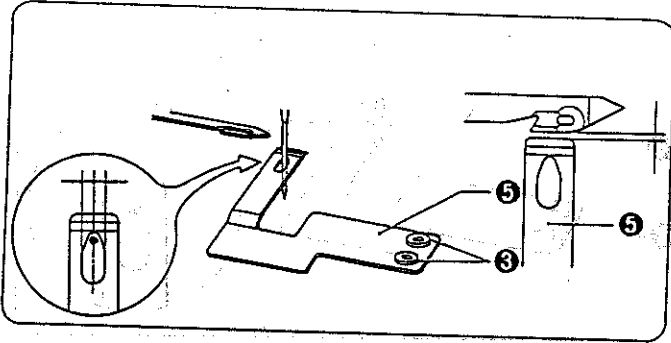
(8) Secure the optional needle plate **9** with screws **1**.

## 8 Bottom plunger installation

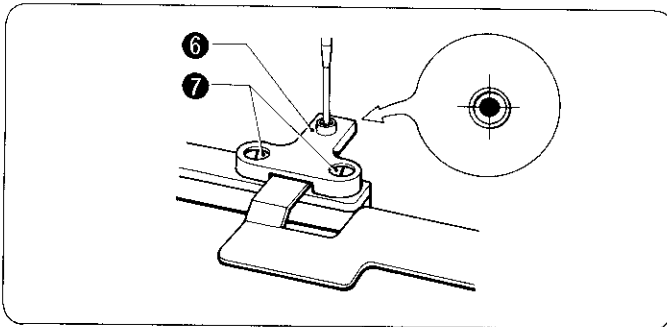


When installing the bottom plunger, replace the needle plate with the optional needle plate. The thread catcher must also be replaced with the thread catcher for the bottom plunger.

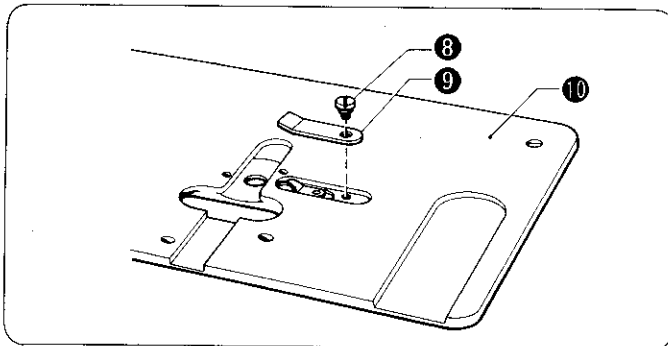
- (1) Remove screw 1 and remove optional needle plate 2.
- (2) Remove screw 3, and remove the optional thread catcher 4.



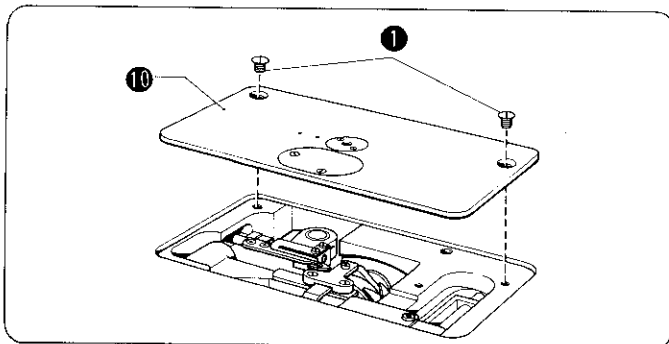
- 3) Temporarily install the provided thread catcher 5 with screw 3.
- 4) Turn the pulley to lower the needle bar to the bottom dead center.
- 5) Adjust the right-left position of the provided thread catcher 5 so that the needle is in the center of the oval hole in the thread catcher 5. Adjust the front-back position of the thread catcher 5 so that the end of the thread catcher 5 does not strike the movable knife. Move the movable knife by hand to check. Tighten screw 3.



- (6) Temporarily install bottom plunger 6 with screw 7.
- (7) Turn the pulley to lower the needle to the bottom dead center.
- (8) Hold up the bottom plunger 6 manually and adjust its position at the center of the hole in the plunger. Tighten screw 7.

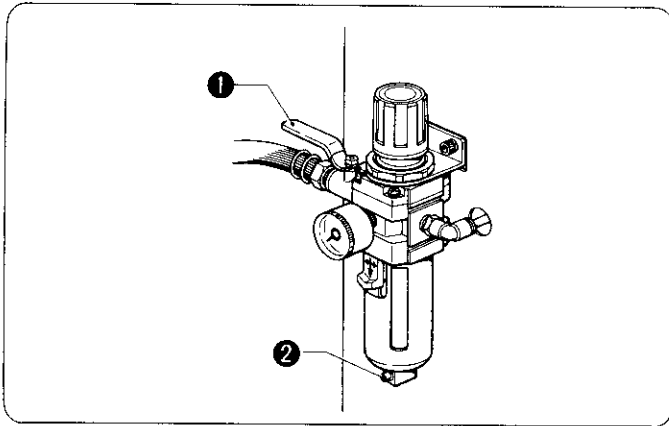


- (9) Remove screw 8, and mount fixed knife 9 on the provided needle plate 10.

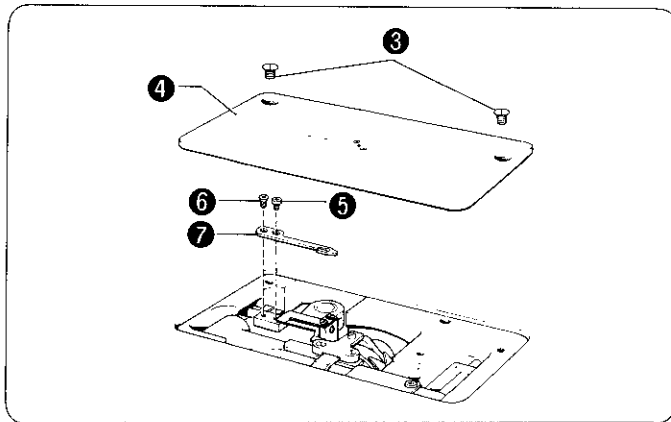


- (10) Secure the provided needle plate 10 with screws 1.

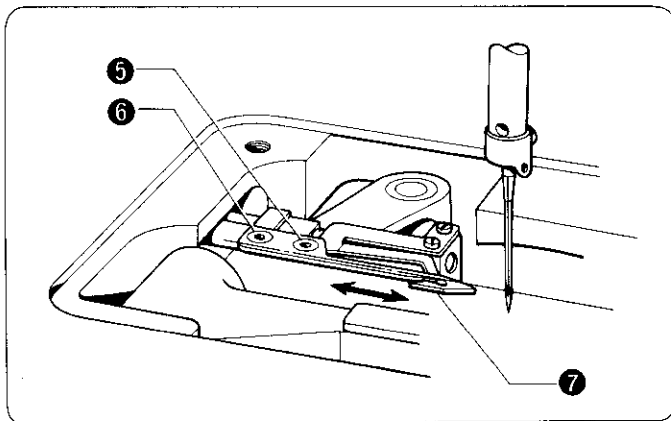
## 9 Replacing the movable and fixed knives



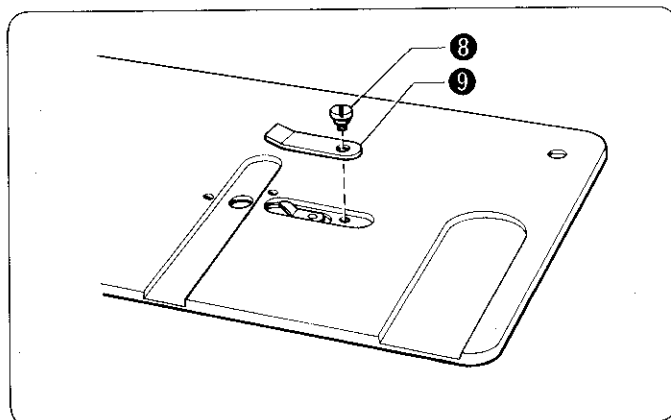
- (1) Close air cock **1**.
- (2) Press drain cock **2** to bleed the air from the lines.



- (3) Remove the two screws **3** and remove the needle plate **4**.
- (4) Remove screws **5** and **6**, replace the movable knife **7** with a new one, and then temporarily tighten screws **5** and **6**.



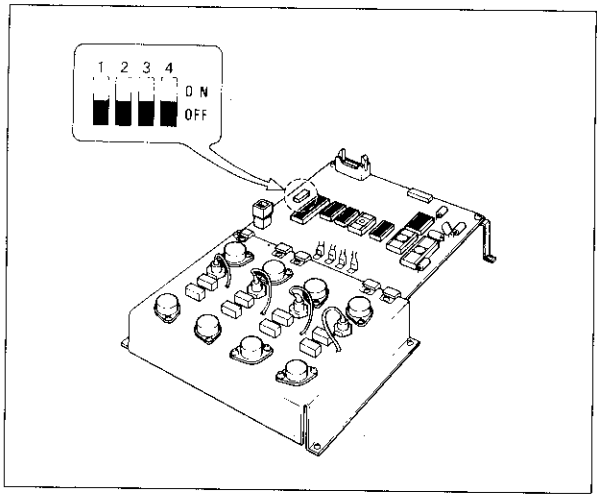
- (5) Turn the pulley and lower the needle. (See page 10.)
- (6) Press the top of the movable knife **7** and slide the movable knife **7** in the direction of the arrow so that the tip of the movable knife **7** is aligned with the center of the needle. Tighten screws **5** and **6**.



- (7) Remove screw **8**, and replace the fixed knife **9** with a new one.

# USING THE DIP SWITCHES

## <DIP switches on the machine motor circuit board>



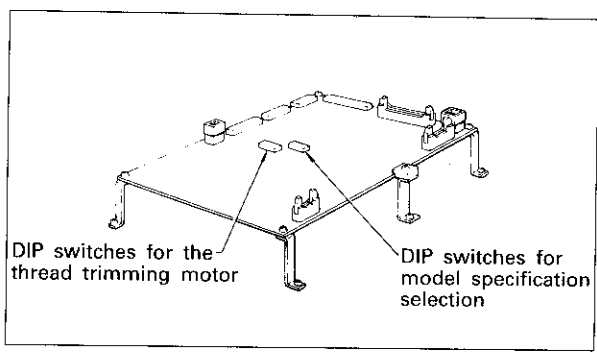
- These switches are for self-diagnostic tests of the machine motor circuit board. They should all normally be OFF.

No.	Machine mode when switch is ON
1	High speed operation
2	Low speed operation (150 spm)
3	Extra-low speed operation (100 spm)
4	Thread trimming

※ Switch priority is from No. 1 ~ 4.

- ※ Speed control in the high speed mode is with the speed selector on the operation panel. To change the speed, first stop the machine and then change the switch setting.
- ※ Thread trimming only functions after the machine has been stopped.
- ※ If the No. 1 switch only is turned on/off, the machine will suddenly stop from the high speed operating mode and the emergency stop switch indicator may light. This is normal.
- ※ Do not use DIP switches No. 5 ~ 8.

## <Control circuit board DIP switches>



### • DIP switches for model specification selection

Switch No.	ON	OFF	Notes
1	Presser down when machine stops	Presser automatically rises when machine stops	
2	Presser lift is simultaneous; descend is left then right	Right and left presser pressers lift and descend simultaneously	No. 3 has priority
3	Presser lift is left then right; descend is simultaneous		
4	Operation is possible without air pressure	Emergency stop if air pressure not greater than 4 kg/cm <sup>2</sup>	Normally OFF
5	—	—	
6	Eject specification	Stepping presser foot specifications	
7	Sewing speed fixed to 500 ~ 800 spm regardless of pitch	Sewing speed changes according to pitch	
8	888[F] is for bobbin thread split sewing	888[F] is for feed without thread trimming	

• **DIP switches for thread trimming timing**

The thread trimming signal is adjusted when the needle bar is down. When the solenoid valve is turned on by the needle bar down signal, the movable knife moves before the needle thread loop is formed and the needle thread is not cut. Select the timing (delay time) at which the solenoid valve becomes ON from the needle bar signals shown in the table below to set the DIP switches.

※ DIP switches No. 5 ~ 8 are not used and should be off.

(1) If the program includes non-sewing feeds and the time (several seconds) from thread trimming to the next thread trimming is short, when compared with a long time (30 sec. or more), thread trimming errors will be fewer with a slower timing.

(2) Relationship between sewing thick and thin materials

- When sewing thick materials, the delay time band tends to increase.
- When sewing thin materials, the delay time band conversely tends to decrease. (When the timing is fast, the delay time is approximately equal. There is greater change with slower timing.)

(3) Relationship with special yarns

The delay time band conversely tends to decrease as it does with thin materials with ANDARIA and other special yarns.

(4) If the thread remainder is short:

It may happen that the movable knife extends and the hook catches the needle thread on the thread remainder side of the loop before the loop can be properly formed and cuts the thread. In this case, the needle thread remainder will be short, and thread cast-offs may occur at the next sewing start. If the needle thread remainder is excessively short, increase the delay slightly so that normal thread trimming occurs.

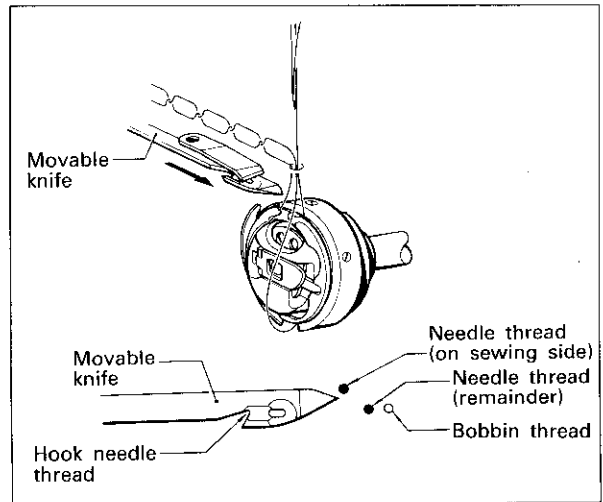
※ If the timing at which no thread trimming errors occurs is 60 ~ 90 ms, set the timing to 70 ms due to potential changes in the timing caused by temperature and humidity.

<Relationship between the time from thread trimming to thread trimming>

Delay time		ms 50	ms 60	ms 70	ms 80	ms 90	ms 100	ms 110
Thread trimming errors (%)	Long time	80	0	0	0	0	5	100
	Short time	100	80	0	0	0	0	70

<Relationship between thick and thin materials>

Delay time		ms 50	ms 60	ms 70	ms 80	ms 90	ms 100	ms 110
Thread trimming errors (%)	Thick materials	100	0	0	0	0	0	20
	Medium-thick materials	80	0	0	0	0	5	100
	Thin materials	20	0	0	0	20	100	100



Delay times set with the DIP switches are shown in the table below.

(ms)

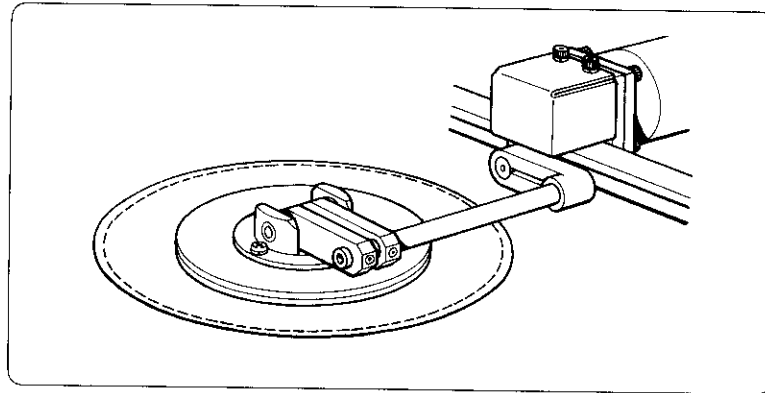
Delay time	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	
DIP switch	1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
	2	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF
	3	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF
	4	ON	ON	ON	ON	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF



## USING OPTIONAL PARTS

### 1 Inner clamp device (airback specifications)

Use to hold the work piece when sewing around the complete circumference.

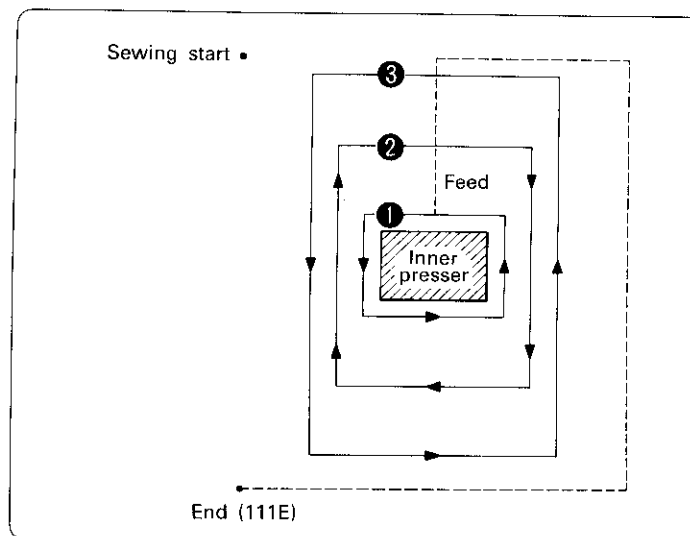


#### <Programming>

Note the following when entering the program with the programmer.

- (1) Set the sewing start point in the area on the left half of the piece.
- (2) Program with a left rotation when sewing an odd number of revolutions, and right when sewing an even number of revolutions.
- (3) Enter a feed between each round.
- (4) Program a feed before ending an odd number of rounds with 111E.

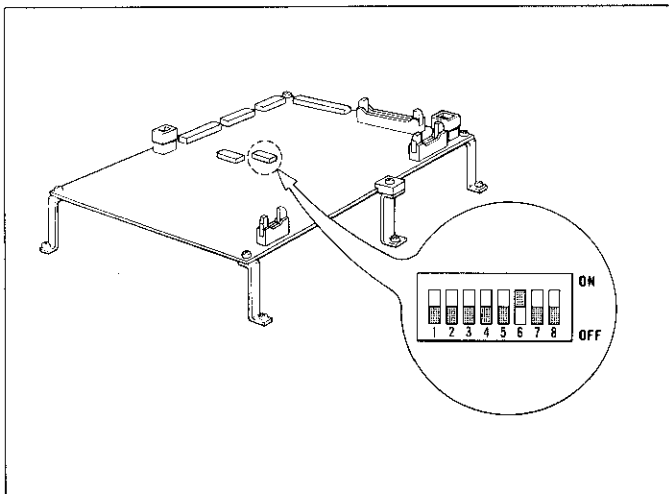
#### <Program sample>



- ※ The inner clamp crank reverses in the middle of each round.
- ※ Returning to the origin will vary with the direction of the inner clamp crank.
- ※ When programming, stop the air flow to the inner clamp and turn it by hand.
- ※ Reversing is possible during testing, but do not attempt to skip feed (in 100 stitch increments).
- ※ If the inner clamp crank does not reverse, turn the pulley to raise the needle since cancelling the emergency stop switch will not enable thread trimming operation.

## 2 Thread breakage detector (airback specifications)

<Airback specifications>

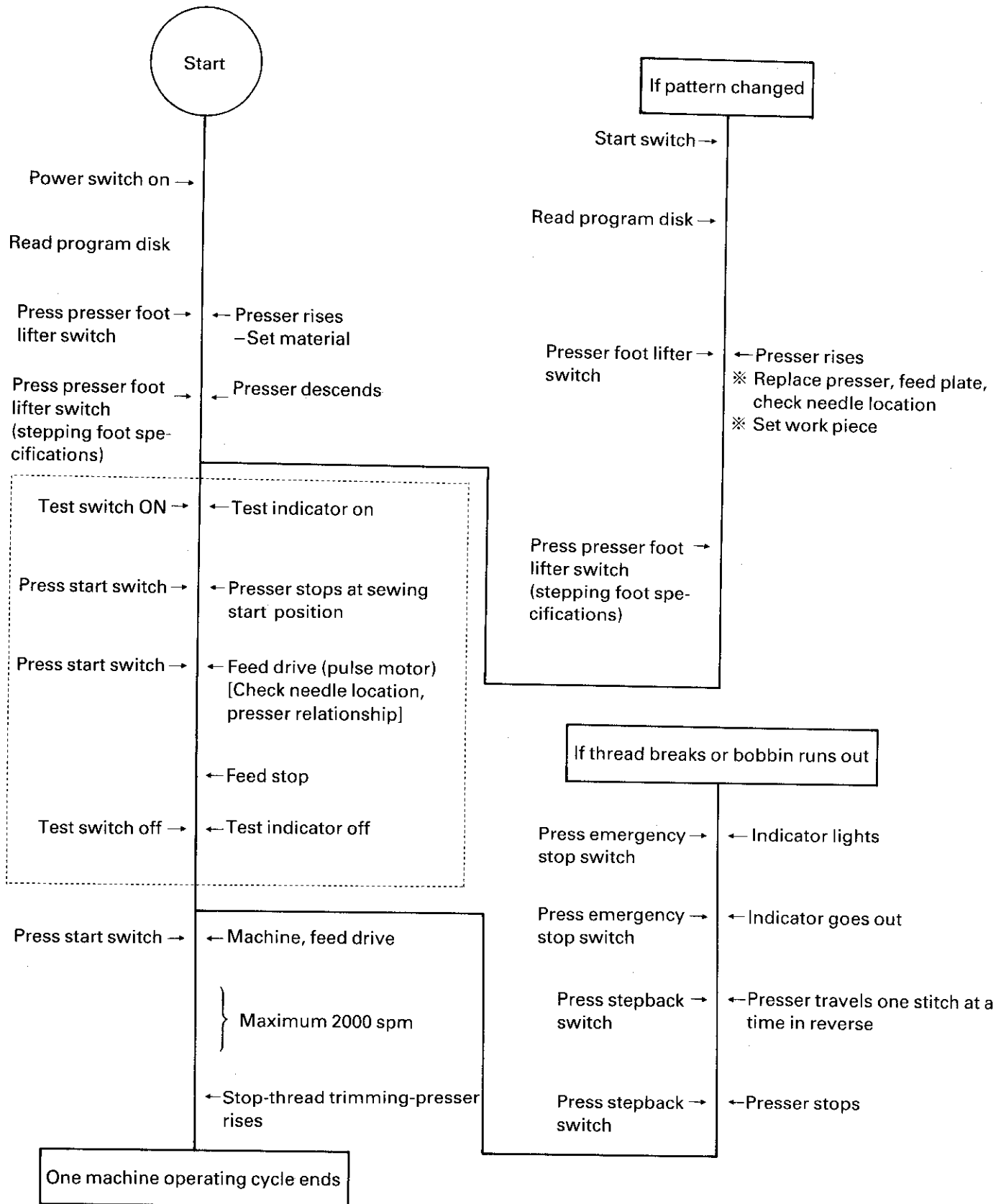


Use DIP switch number 6 in the specifications DIP switch block to set thread breakage detector operation.

DIP switch ON: needle thread breakage detected

DIP switch OFF: needle thread breakage not detected

# OPERATION FLOW CHART



# HOW TO ATTACH THE POLYACETAR SHEETS

1. Using paint thinner or alcohol, clean away any oil or grease adhered to the upper surface of the needle plate **①**, **②**.
2. As shown in Fig. 1, attach both-side tape to the top of the needle plate (large) **①**, **②**.
3. As shown in Fig. 2, attach a polyacetar sheet **③** (medium size) at the machine side of the needle plate (large) **①**.  
Align the right side of the polyacetar sheet **④** (large) and the right side of the needle plate **①** (large). Then open a clearance of 0.5 mm from the side of the polyacetar sheet **③** (medium size) and attach.  
\*(Refer to Fig. 3 for the method of application.)
4. Align with the left side of the needle plate; then cut out the polyacetar sheet **④** (large).  
Make  $\phi 10$ -mm holes ("A", at 12 places) in the polyacetar sheet so that the needle plate **①** (large) installation screws **⑥** can be seen.
5. Make a bottom hole ("D") in the polyacetar sheet.
6. Align with the needle plate (small) **②** and cut out the attached polyacetar sheet.

