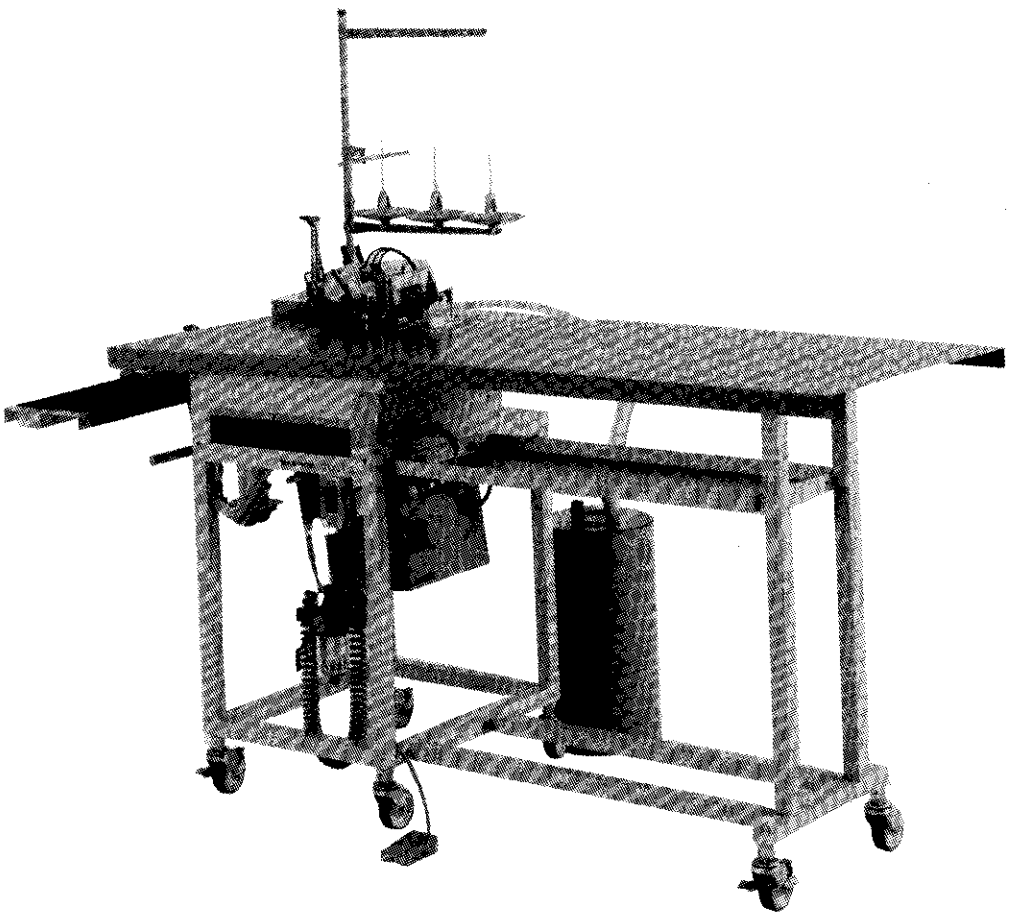
brother

AUTOMATIC SERGING MACHINE

BAS-102

INSTRUCTION MANUAL



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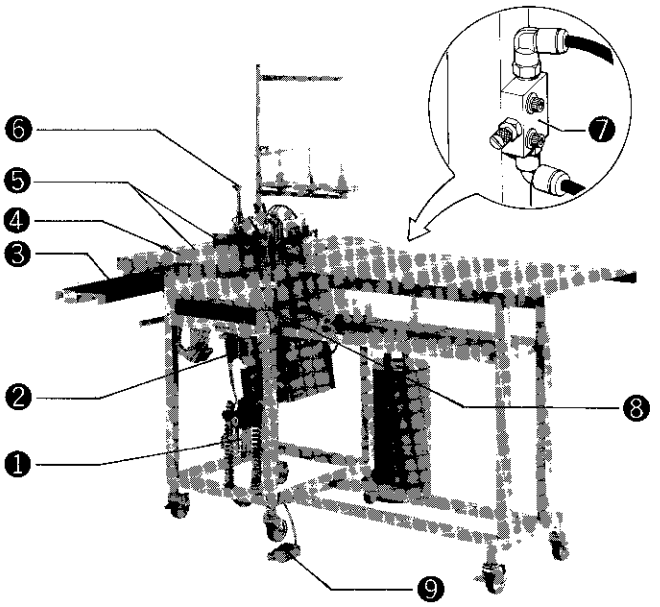
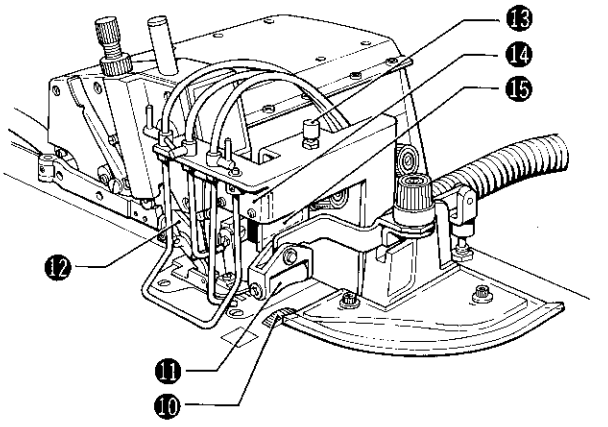
For the description regarding the machine head, refer to the instruction manual for a overlock sewing machine. Some descriptions overlap and in case of overlapping, refer to this manual to use the machine properly.

NAME OF MAJOR PARTS





❶ Air unit
❷ Power switch
❸ Stacker
❹ Table
❺ Table air
❻ Auxiliary presser
❼ Table air valve
❽ "LOW SPEED" switch
❾ Pause switch
❿ Servo roller
⓫ Servo presser
⓬ Chain cutter
⓭ Chain cutter switch
⓮ Start sensor
⓯ Servo sensor

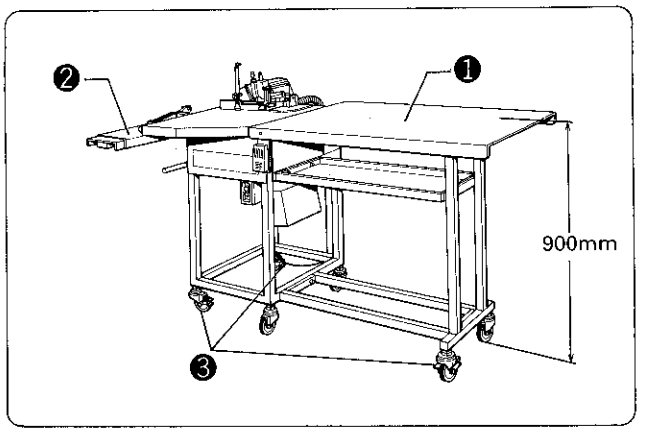
SPECIFICATIONS

Stitch type	No. of Needles (pcs.)	No. of threads (pcs.)	Stitch width (mm)	Max. stitch length (mm)	Differential ratio (mm)	Hight of presser foot (mm)	Feed dog: Pitch (mm)	Feed dog: (Main) (Differential) Shape	Needle size	Max. sewing speed (spm)	Usage	
											Thin & medium-thick materials	
	1	3	3 4 5 6 (Note 1)	5 (Note 2)	0.7~1.5	5.5	1.6		#11	7,500 (Note 2)	One-piece dress Suit Trousers Skirt etc.	Serging

(Note 1)
In case of 6mm stitch width, the high lift spec is adopted. When the stitch width is changed, be sure to adjust the timing of needle and looper.
(Note 2)
Regarding thin materials, the sewing operation should be performed at 3.6mm stitch length and at a sewing speed of 5,500 spm. (Refer to page 6.)

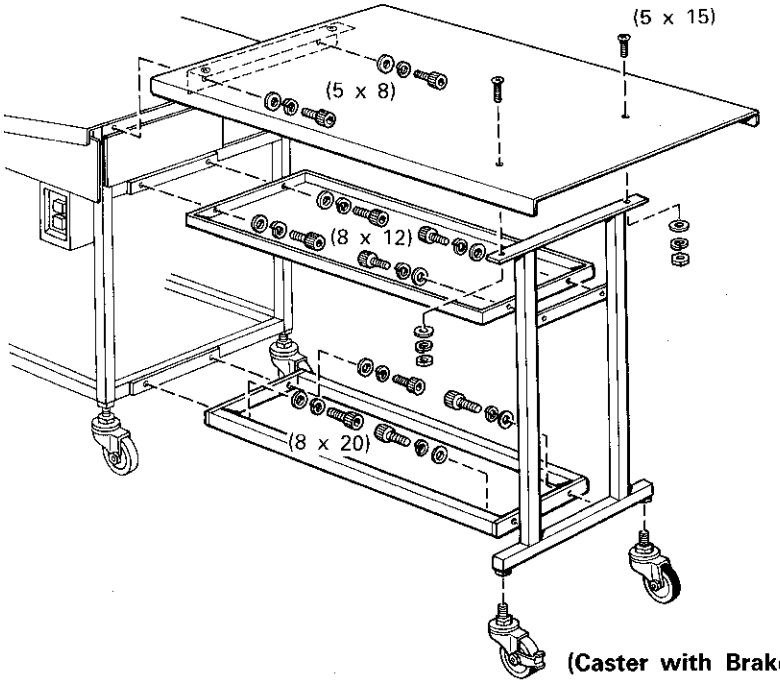
A. SETTING UP

1 Assembling the Motor Mount

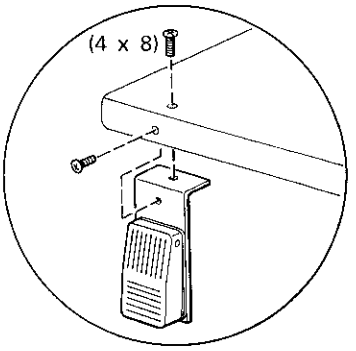


(1) Assemble the auxiliary table ❶ and the stacker ❷, referring to the following figures.
(2) After deciding on the installation position, lock the casters ❸ so that the motor mount does not move.

《 Assembling the Auxiliary Table 》

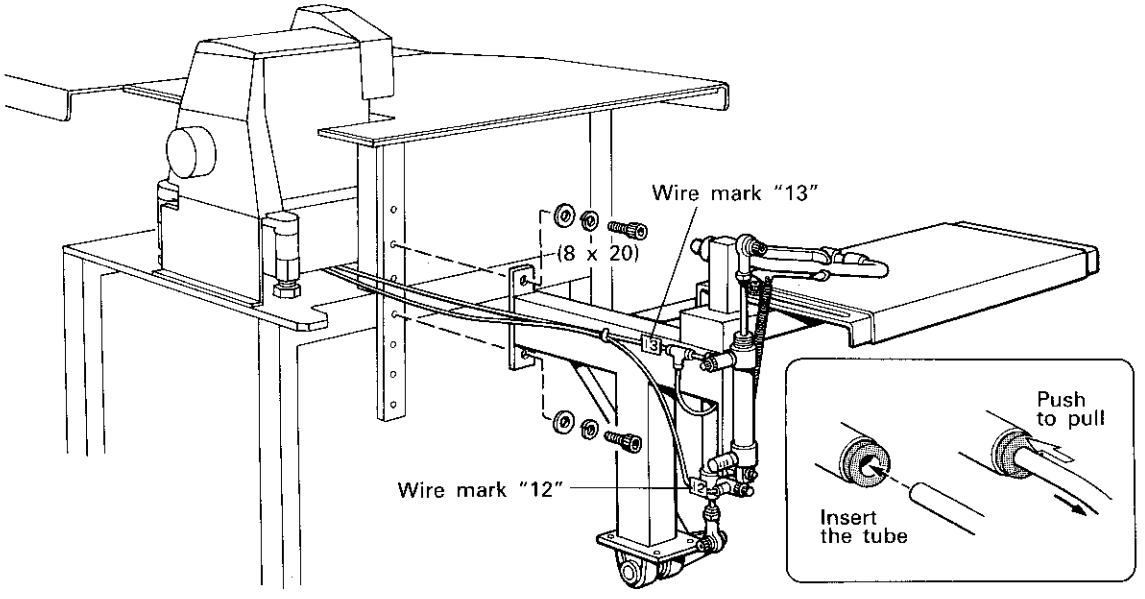


(Caster with Brake)



《 Installing the "LOW SPEED" Switch 》

《 Installing the Stacker 》



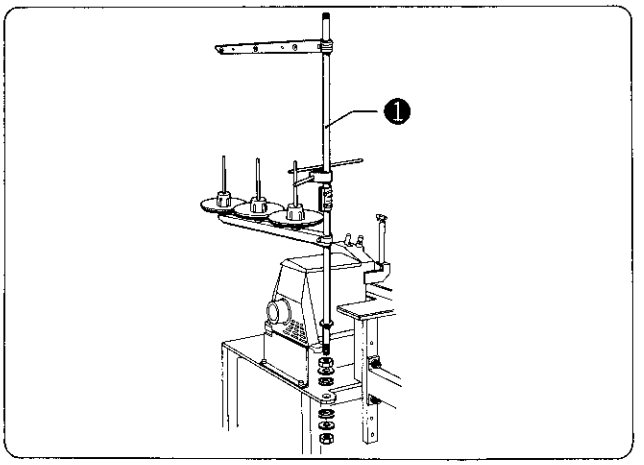
[2] Sewing Speed

The maximum speed of this serging machine is 7,500 spm and it can be controlled, varying from 1,600 to 7,500 spm. With the "LOW SPEED" switch, the sewing speed can be changed within a range from 600 to 6,400 spm. New machines should be operated for a first week at a slower speed (by the degree of one graduation) in order to increase the durability of the machines. (Refer to page 6.)

[3] Motor Pulley and Belt

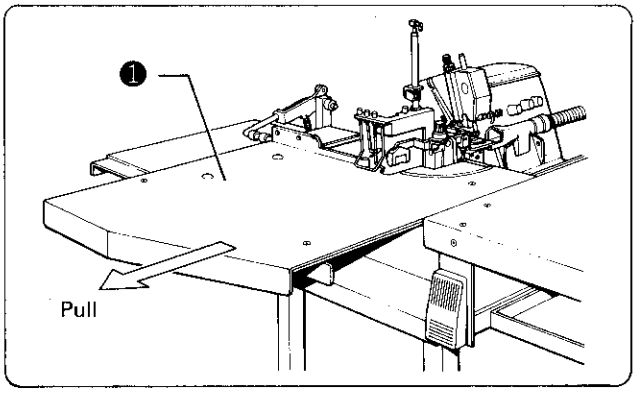
A special DC motor is used for the model BAS-102.
· 3-phase (200V) — MD-812
Use the V-belt, Type M (M35).

[4] Installing the Spool Stand



(1) Install the spool stand ❶ to the frame.

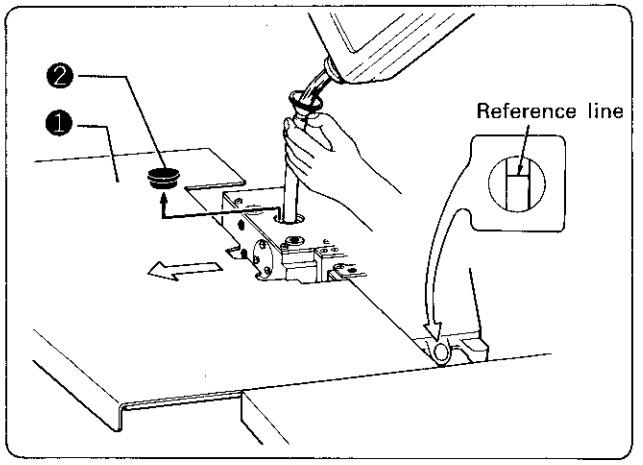
[5] Opening/Closing the Table



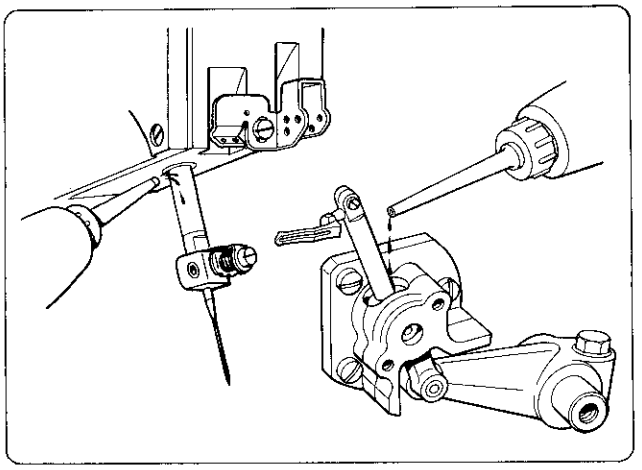
(1) Open the table ❶, pulling it forward by slight force.
*It facilitates threading and repairing the machine head.
(2) Be sure to close the table ❶ securely.
*For safety, the machine does not run unless the table ❶ is closed.

NOTE: Take care not to apply force onto the opened table; otherwise, it will be deformed and it cannot be closed.

[6] Lubrication

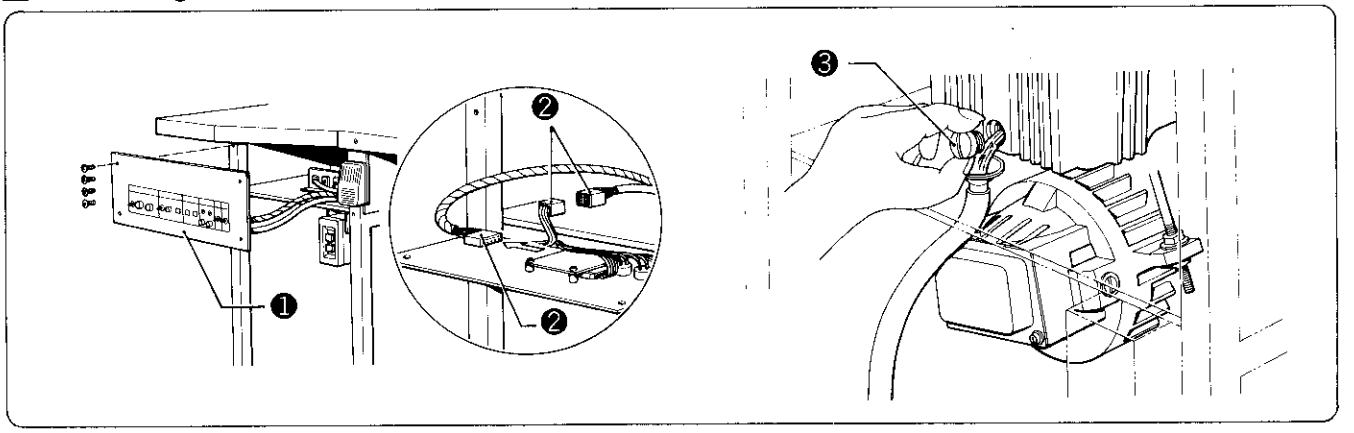


(1) Open the table ❶ and remove the cap ❷.
(2) Supply oil up to the reference line of the oil gauge by using accessory funnel and vinyl hose.



NOTE:
Be sure to drip two of three drops of oil to the needle bar and the over looper holder if the machine is unpacked and used first time or it has not been used for a long time.

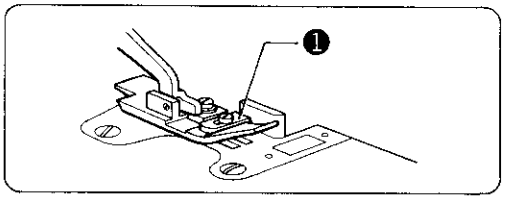
7 Oil Changes



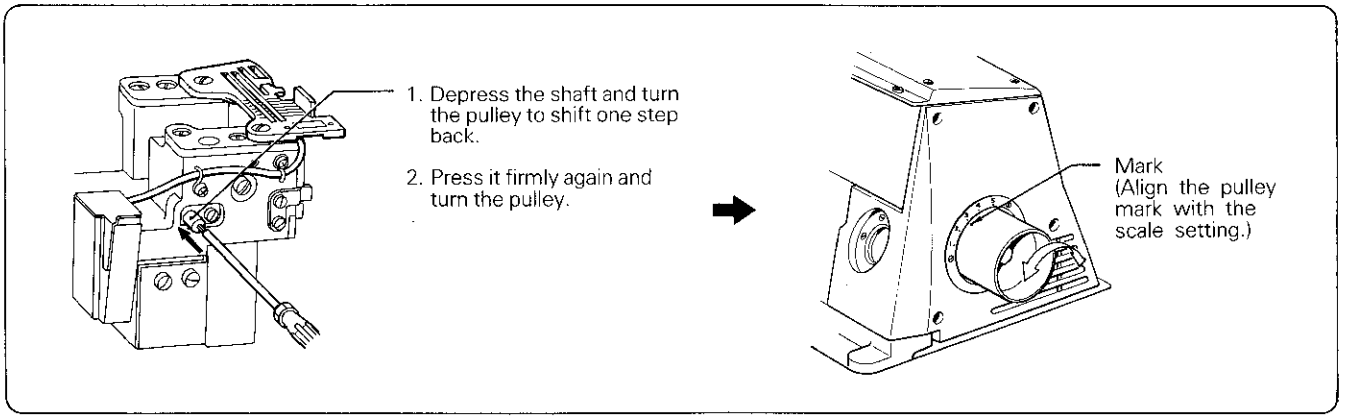
(1) Remove the operation panel ❶ and disconnect the connector ❷.
(2) Loosen the screw ❸ and drain the oil by using accessory funnel and vinyl hose.
Take care that the oil bursts out at the beginning. After confirming the oil securely drains into the funnel, remove the screw ❸.

NOTE: Take care not to splash the oil over the motor.

☆ **Adjustment of stitch width**
When the needle plate of 3mm or 4mm stitch width is used, be sure to remove the presser F ❶.

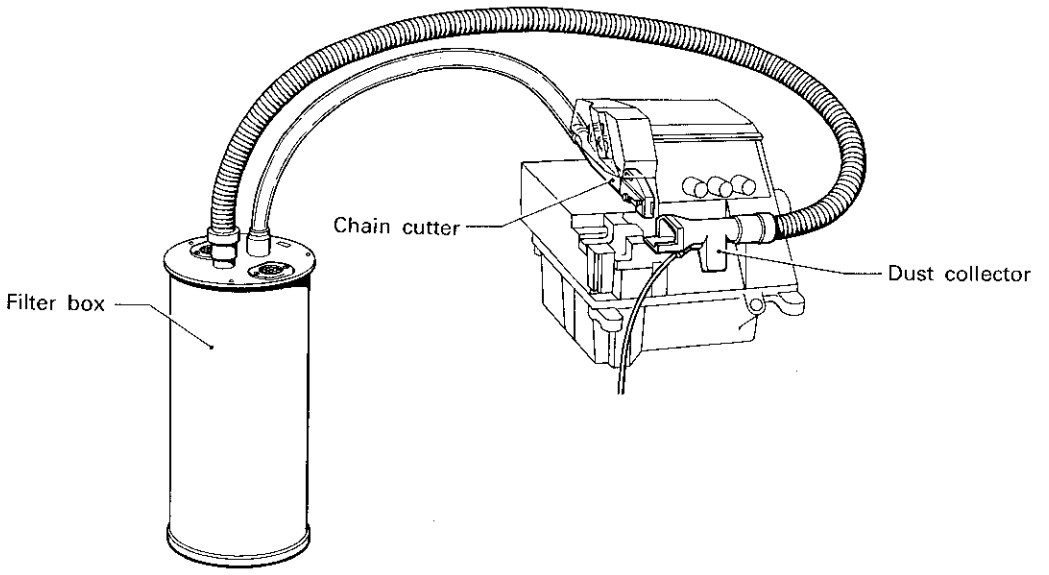


☆ **Adjustment of stitch length**
The stitch length is expressed on the machine scale in increments of one millimeter. The actual stitch length varies, however, in accordance with the type of material being used, the setting of the differential feed, and other factors.
•To adjust the stitch length, use an accessory tool.

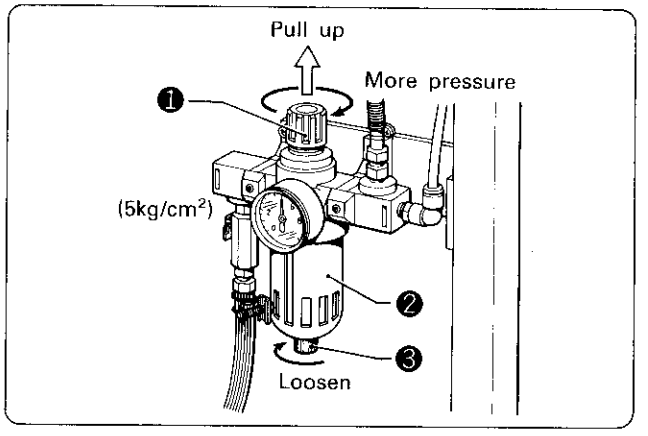


NOTE: Has the shaft fully returned? Push the pulley to see if it will turn.

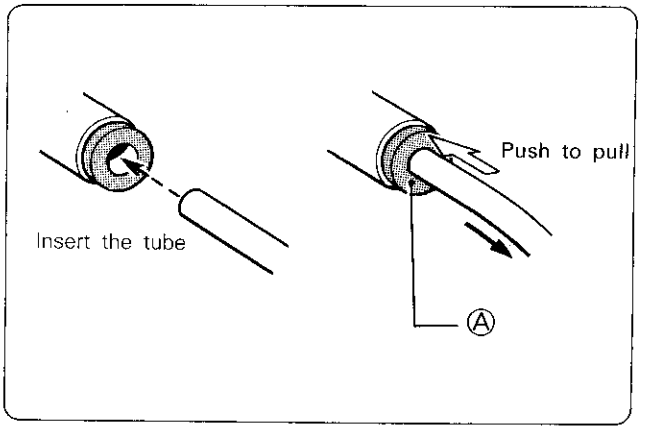
B. PIPING



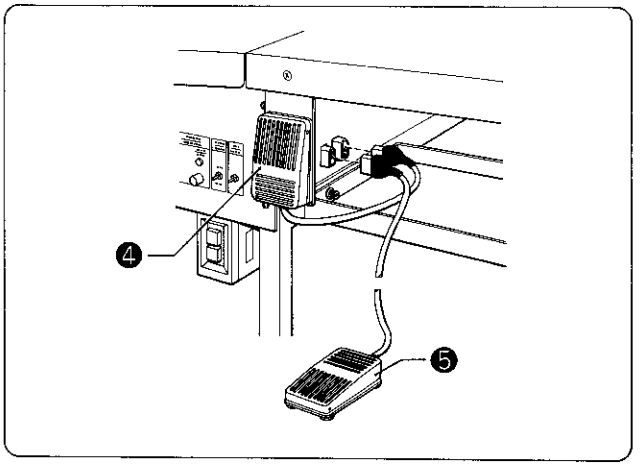
(1) Connect the hose, referring to the above figure.



(2) Set the air pressure at 5kg/cm^2. To adjust the pressure, pull up the handle ❶ then turn it.
(3) If water stay inside the bottle ❷, drain it by loosening the drain cock ❸.



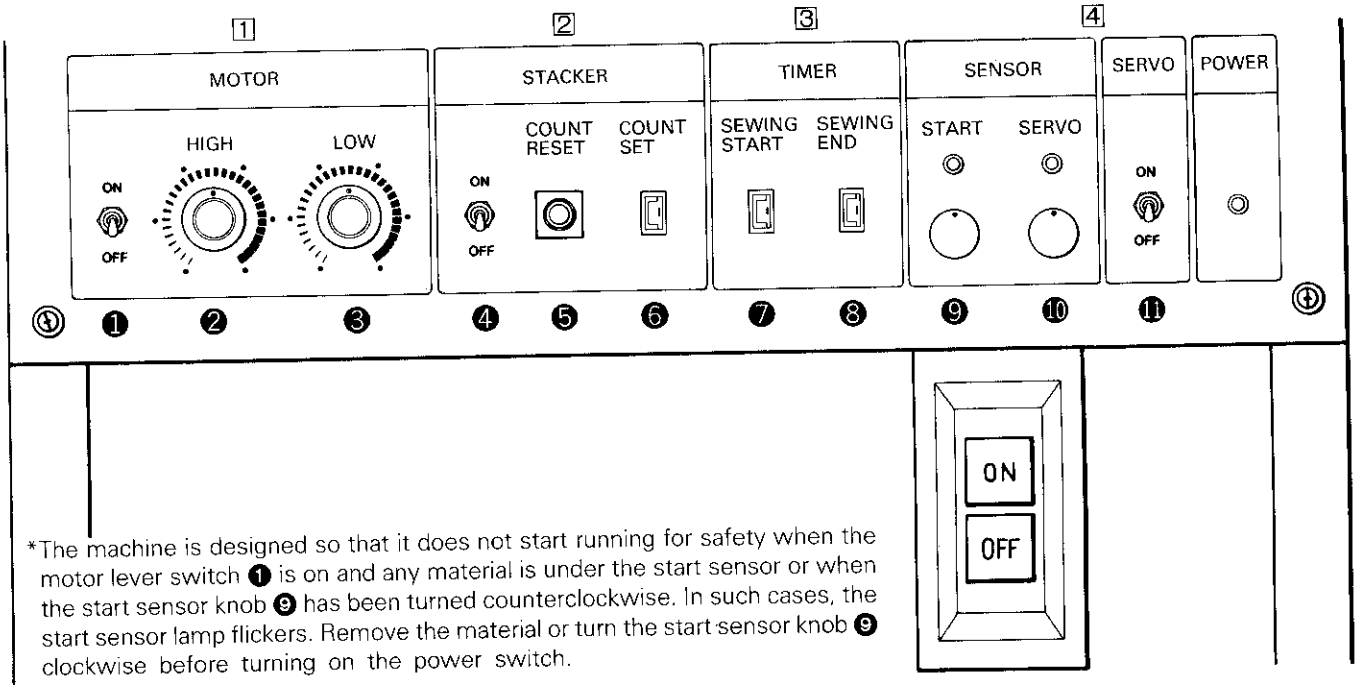
(4) Thrust the tube into the connector. To remove the tube, pull it out while pushing the part Ⓐ.



(5) Connect the "LOW SPEED" switch ❹ and the pause switch ❺, referring to the left figure.

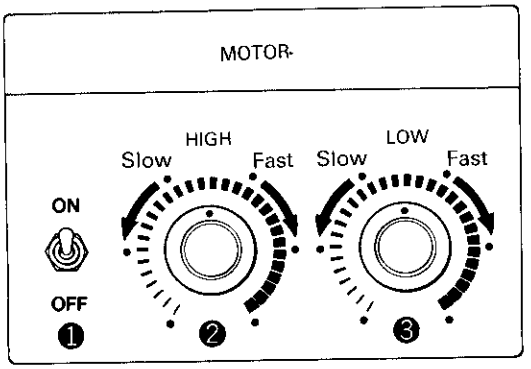
C. OPERATION SWITCHES

◎ Turn on the power switch and open the cock of the air unit. And turn off the lever switch ❶, ❹, and ⓫.

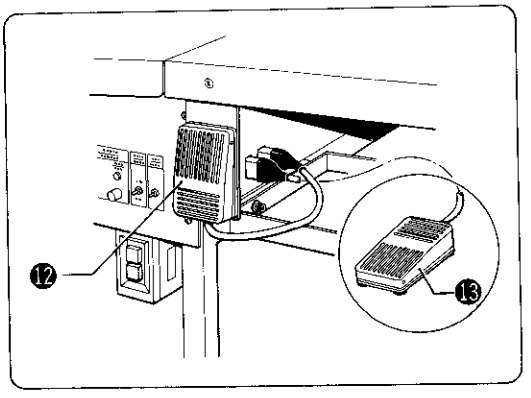


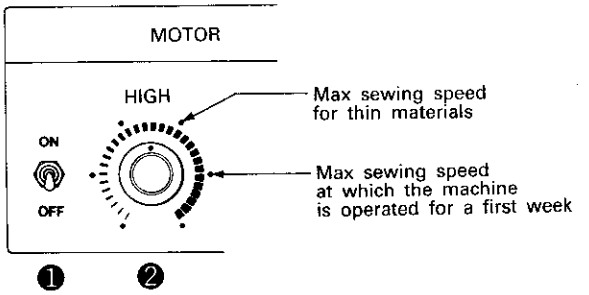
*The machine is designed so that it does not start running for safety when the motor lever switch ❶ is on and any material is under the start sensor or when the start sensor knob ❾ has been turned counterclockwise. In such cases, the start sensor lamp flickers. Remove the material or turn the start sensor knob ❾ clockwise before turning on the power switch.

1 Machine Motor

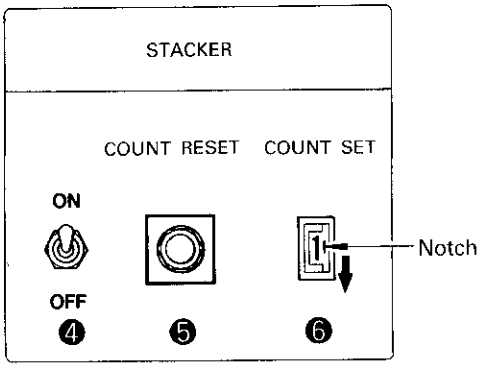


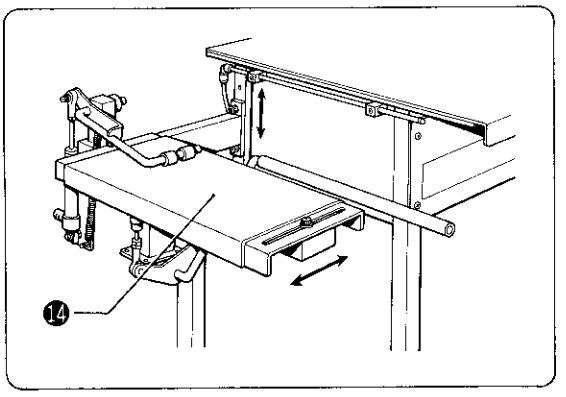
(1) Turn on the lever switch ❶ of the machine motor.
*The sewing machine starts running when the material is placed under the start sensor.
(2) Adjust the standard sewing speed (1,600~7,500 spm) by turning the "HIGH SPEED" knob ❷.
*Turning the knob clockwise increases the sewing speed.
(3) Pressing the "LOW SPEED" switch ⓬ changes the operation speed from "High" to "Low". Low speed sewing can be adjusted from 600 to 6,400 spm by turning the knob ❸.
*Low speed operation is applied when sewing curved stitches or stitches are likely to come off the material.
*To suspend the operation, step on the pause switch ⓭: the sewing machine stops while stepping on it.
The pause switch ⓭ is used when it is difficult to insert the material – for example thin material – under the presser foot.





2 Stacker





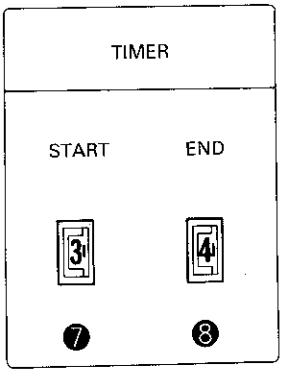
(1) Turn on the lever switch ❹ of the stacker.
(2) Set the counter to the number of operations to which the stacker will correspond.
*Pressing down the notch increases the number.
(3) Read in the number set with the counter ❻ by pressing the count reset switch ❺.
*When the number is changed be sure to press the count reset switch ❺; otherwise, the previously set number is active.

[1] ..... Every time
[2]~[9] ..... At every time specified

*When the stacker ⓮ is not used, be sure to turn off the lever switch ❹.

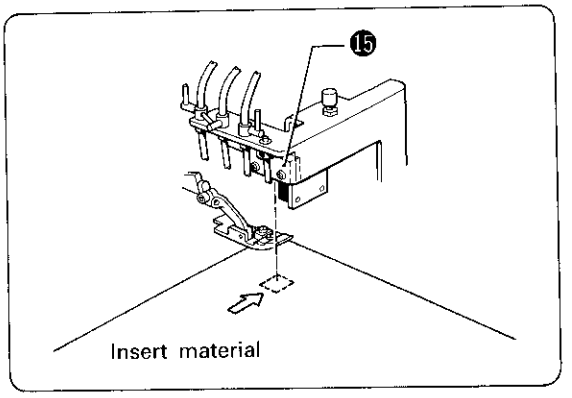
(4) Move the stacker ⓮ vertically and horizontally to adjust its position according to the length of the material used.

3 Timer

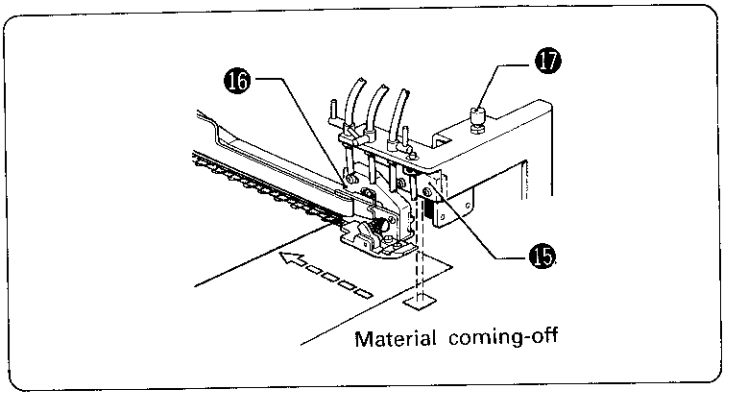


(1) Adjust the counter ❼ to set time which is taken for the sewing machine to start running after the material is inserted under the start sensor ⓯.
*Adjust the sewing start time according to your skill.
*Notice that the sewing machine soon starts running when the number on the counter ❼ is small.
(2) Adjust the counter ❽ to set time which is taken for the sewing machine to stop running after the material comes off the start sensor ⓯.
*When the number on the counter ❽ is small, the sewing machine soon stops running and the chaining-off stitch is too short to cut with the chain cutter ⓰. If the chaining-off stitch has not been cut, press the chain cutter switch ⓱. The machine keeps running while pressing it.

At the beginning

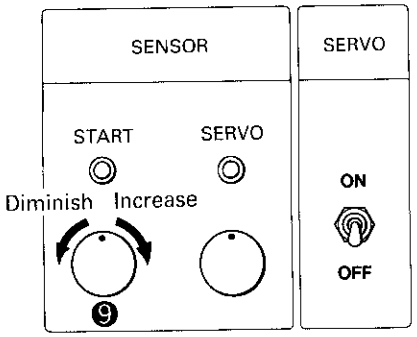


At the end

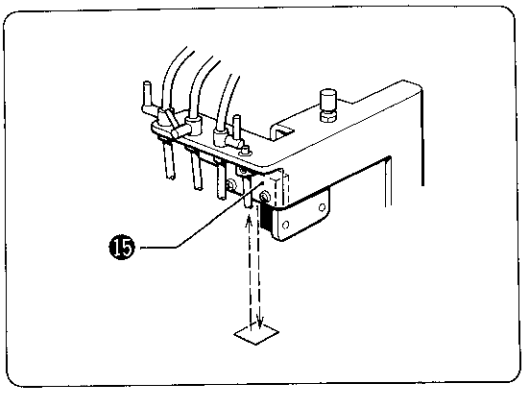


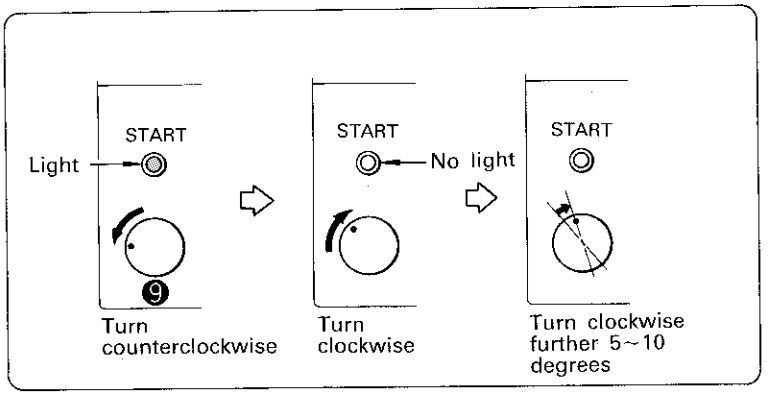
4 Cloth Sensor

1. For Start (Start Sensor)

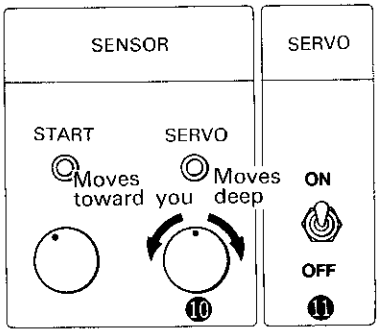


◎ Close the air cock and turn off the lever switch ❶ for the machine motor.
(1) Turn the knob ❾ counterclockwise to light the lamp.
(2) Turn the knob ❾ clockwise gradually to extinguish the lamp.
(3) Turn the knob ❾ clockwise further 5~10 degrees from the position where the lamp goes off.
*Turning the knob ❾ clockwise increases the light of the start sensor ⓯, so that it penetrates and does not detects the material. Do not intensify the light.
(4) Make sure that the lamp comes on when the material is placed under the start sensor ⓯.

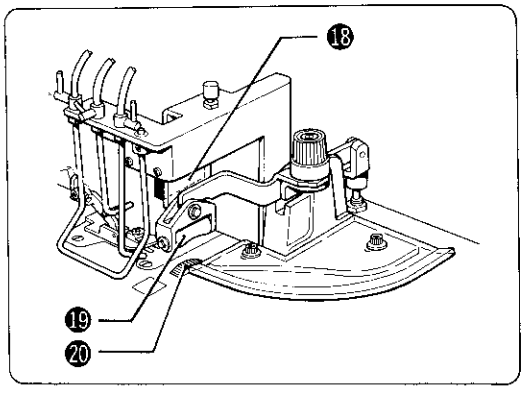


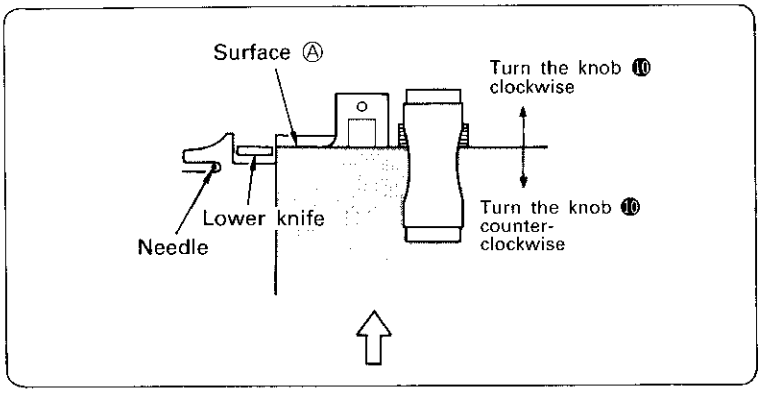


2. For Servo (Servo Sensor)



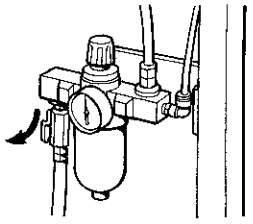
◎ Turn off the lever switch ❶ for the machine motor.
(1) Turn on the lever switch ⓫ of the servo motor.
(2) While stepping on the pause switch ⓲, insert the material under the servo sensor ⓲ and the servo presser ⓳. After insertion, step off and release the pause switch ⓲.
Then the servo presser ⓳ goes down and the servo roller ⓴ starts rotating.
(3) Turn and adjust the knob ❿ so that the material end and the guide surface Ⓐ of the needle plate are aligned.
*The servo sensor ⓲ detects the material end. Turning the knob ❿ clockwise moves the material deep inside and turning the knob counterclockwise moves the material toward you.
(4) After lifting up the servo presser ⓳ by stepping on the pause switch ⓲, remove the material.



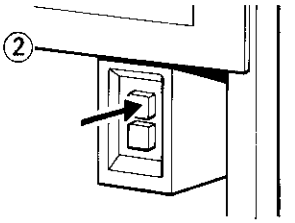


D. CORRECT OPERATION

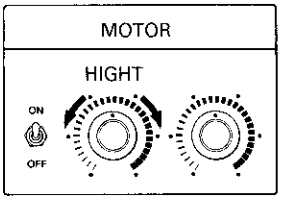
[1] How to Sew

① 

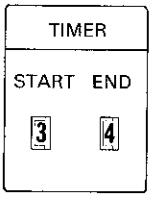
Open the air cock.

② 

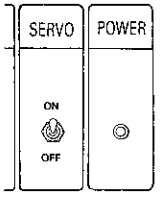
Turn on the power switch.

③ 

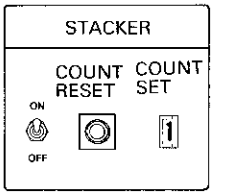
Turn on the lever switch for the machine motor, adjust the sewing speed with the "HIGH SPEED" knob.

④ 

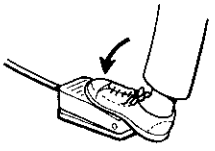
Set the timer for the starting and ending of sewing operation.

⑤ 

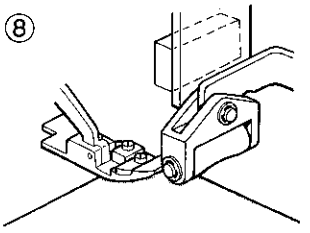
Turn on the lever switch for the servo motor.

⑥ 

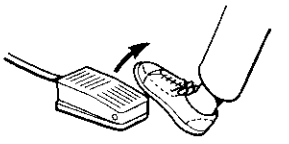
Turn on the lever switch for the stacker, set the counter to the number "1", and press the count reset switch.

⑦ 

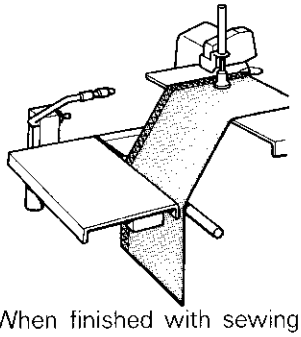
Step on the pause switch.

⑧ 

Insert the material under the presser foot and the servo presser.

⑨ 

Step off the pause switch; then the sewing machine starts running.

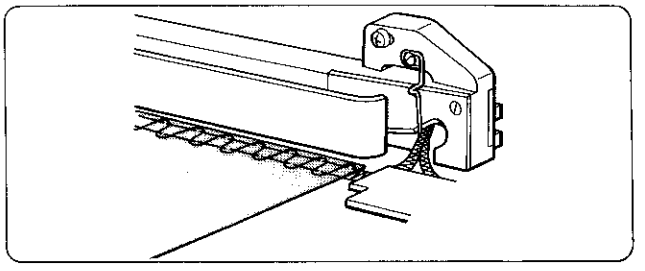
⑩ 

When finished with sewing, the material is automatically fed onto the stacker.

*When the start sensor lamp flickers and the machine does not run at power on, there are two possible causes, that is, any material has been under the start sensor before power on or the start sensor is out of adjustment. In such cases, remove the material or turn the start sensor knob clockwise before turning on the power. (After turning the start sensor knob, be sure to adjust the start sensor, referring to the page 8.)

*You do not need to use the pause switch if you are skilled in the operation. (Above-mentioned procedures ⑦ and ⑨)

《 Suggestion 》

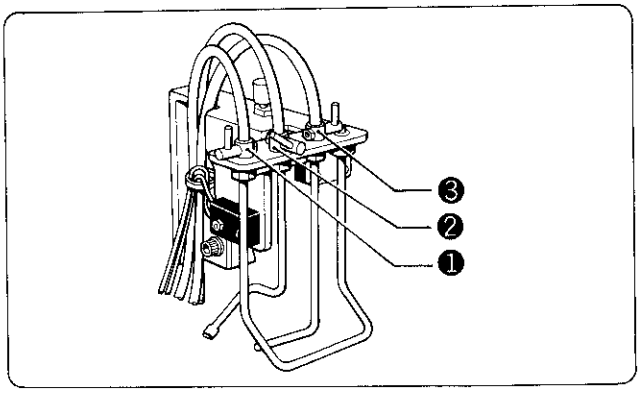


(1) When the stacker is not used at the end of sewing, it is recommended that the sewing end of the material is instantaneously stopped after the presser foot. As a result, the chaining-off stitch becomes so loose that it comes into the chain cutter and it can be cut short.

◎ Regarding adjustments mentioned in the following items [2] through [5], be sure to open the air cock and turn on the power switch. To check the operation of each part, be sure to turn off all the lever switches on the operation panel.

[2] Adjustment of Air Nozzle

Adjustments of the air nozzles are carried out with the material inserted under the start sensor. Regarding the auxiliary feed air and the nap air, be sure to adjust the nozzles concerned while running the machine with the motor lever switch turned on.



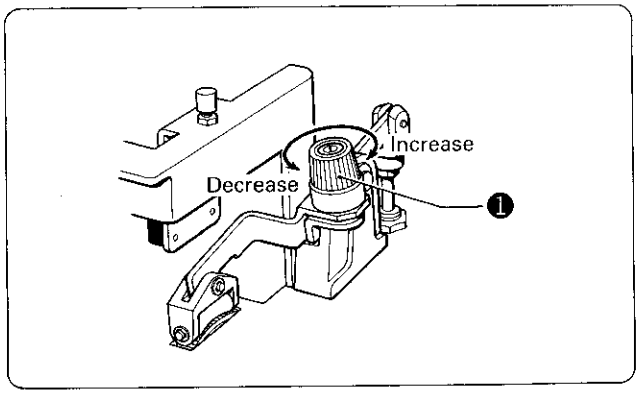
1. **Material Insertion Air**
   Adjust the material insertion nozzle ❶ so that the curled material end are so straight to insert under the presser foot.
2. **Auxiliary Feed Air**
   Adjust the cloth feed nozzle ❷ so that the material is smoothly fed.

   *If the air blows strongly, the suction becomes bad at the chain suction pipe, resulting in poor thread cutting. In such cases, loosen the nut and direct the outlet of the nozzle slightly outward.

3. **Nap Air**
   It is difficult to detect the napped material end because of its nap, so that stitches might come off the material. Adjust the nap nozzle ❸ so that nap is dispersed and the material end can be detected.

[3] Adjustment of Pressure of Servo Presser

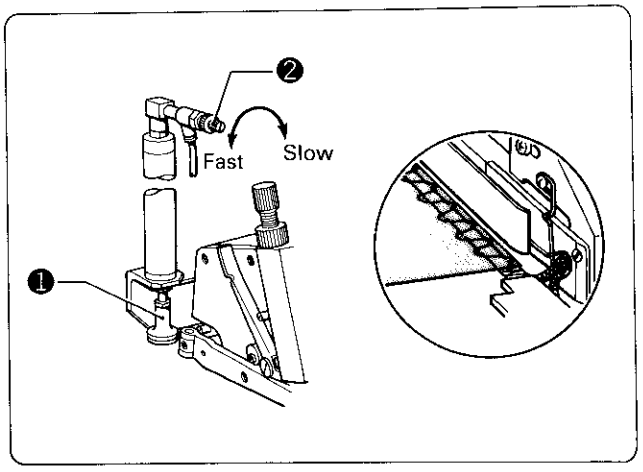
Turn on the lever switch for the servo motor. When the material is inserted under the start sensor and the servo presser, the servo presser is lowered.



(1) For thin and/or stretch material adjust the nut ❶ so that the presser pressure decreases and stitches do not come off the material.
For thick material and/or material having acute outside curve, increase the presser pressure.

[4] Adjustment of Auxiliary Presser

Turn on the lever switches for the machine motor and the stacker. The auxiliary presser functions when the material is inserted under the start sensor and it is removed after running the machine while the stacker is operating.

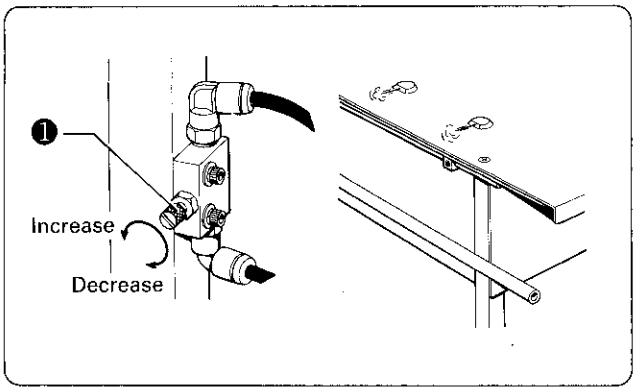


(1) Adjust the down speed of the auxiliary presser ❶ with the knob ❷.

*Unless the material is pressed soon, the loop is not loosened, resulting in miscutting the thread.

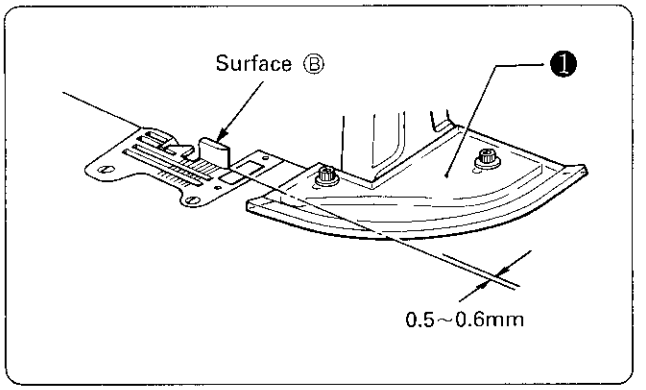
5 Adjustment of Table Air

Turn on the lever switches for the machine motor and the stacker. The air blows from the table while the machine is running with the material kept under the start sensor.



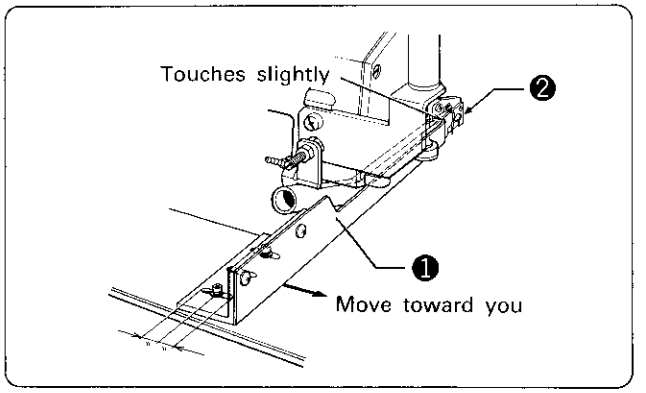
(1) Adjust the air which comes from the table with the knob ❶ so that the material easily moves while sewing.

6 Adjustment of Guide Plate



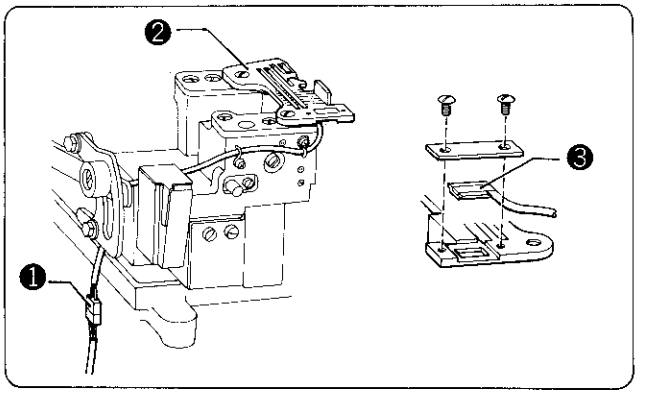
(1) Align the end surface of the guide plate S ❶ and the guide surface Ⓑ of the needle plate.
*Regarding the plate with the small inside curve, place it 0.5~0.6mm apart from the surface Ⓑ.

7 Adjustment of Ruler



(1) Installation position of the ruler ❶ is the center of the adjusting range. The top end of the ruler should be slightly in touch with the chain cutter ❷.
*Regarding wide heavy material, stitches might come off at the end of sewing. In such a case, move the ruler ❶ toward you.

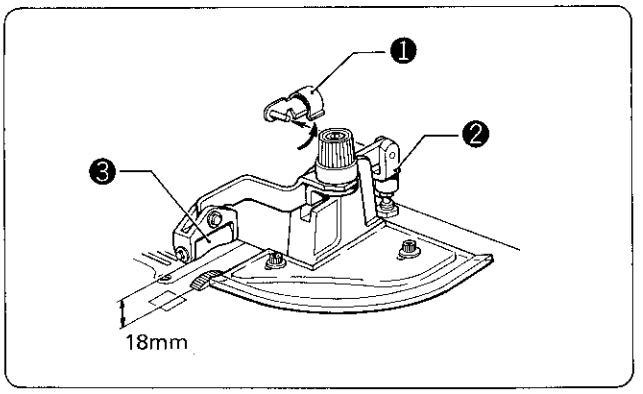
8 Replacement of Needle Plate



(1) Pull out the table.
(2) Disconnect the connector ❶ and pull out the cord toward the needle plate ❷.
(3) Remove the needle plate ❷ and the beam receiver ❸. Then replace the needle plate.

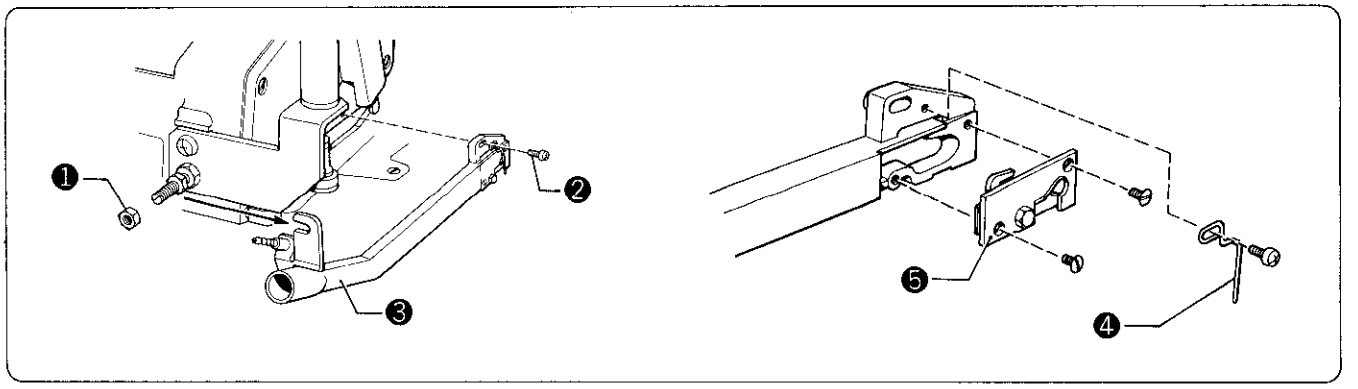
E. STANDARD ADJUSTMENT

1 Height Adjustment of Survo Presser



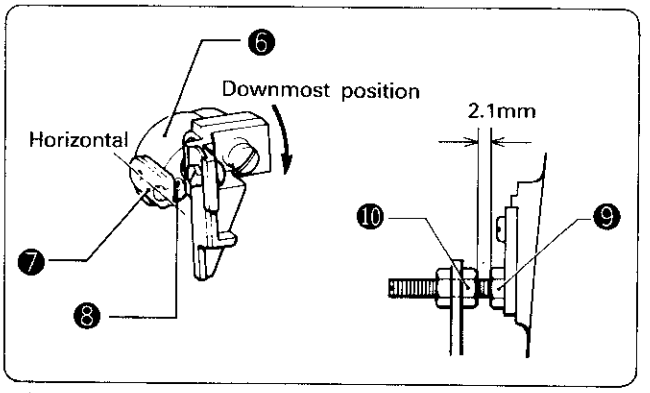
(1) Remove the connecting pin ❶ from the knuckle ❷.
(2) Turn the knuckle ❷ to adjust the distance 18mm from the lower side of the roller ❸ to the top face of the table.

2 Adjustment of Chain Cutter

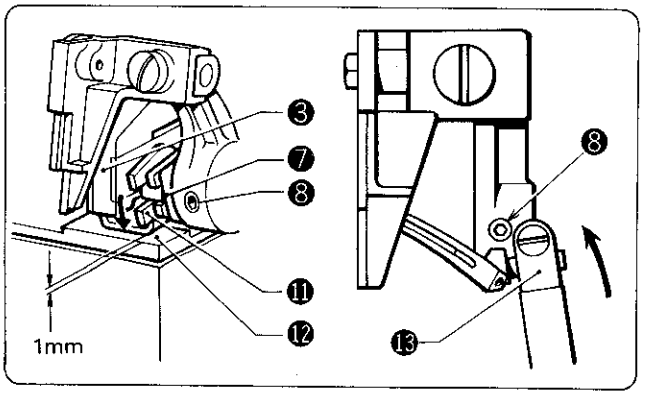


(1) Remove the table by pulling it out.
(2) Loosen the nut ❶ and remove the screw ❷ to detach the chain suction pipe assembly ❸
(3) Remove the chain guide ❹. (Be sure to assemble the chain guide ❹ vertically.)
(4) Replace the blade assembly ❺.

〈**Position Adjustment**〉

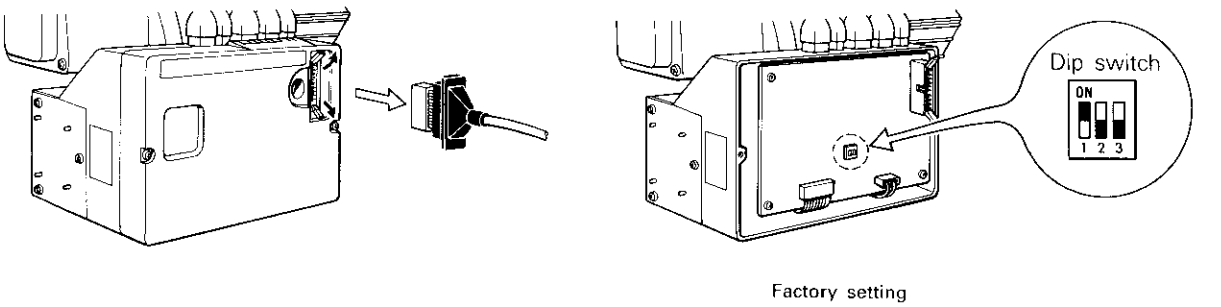


(1) When the upper knife arm ❽ is positioned at the downmost position by turning the pulley, set the blade lever ❼ horizontally and tighten it temporarily with screw ❽.
(2) Install the chain suction pipe assembly ❸ while providing approximately 2.1mm clearance between the stud ❾ and the nut ❿.



(3) Loosen the set screw ❽ and adjust the blade lever ❼ so that the clearance between the upper blade ⓫ and the feed base cover ⓬ becomes 1mm when the upper blade ⓫ is located at the lowermost position. After adjustment, tighten the set screw ❽ temporally.
*Make sure that the upper blade ⓫ is not in touch with the chain suction pipe ❸ when the upper blade ❾ is positioned at the uppermost position.
(4) Turn the pulley to lower the over looper holder ⓭ so that the set screw ❽ can be seen from the leftmost position (where the knife engages). Then loosen the set screw ❽ and adjust the upper blade ⓫ so that the upper blade ⓫ touches the fixed blade just by spring pressure. After adjustment, secure the set screw ❽.
*If not adjusted properly, the blade may be damaged. The proper adjustment is required.

[3] Setting the DIP Switches on the Control PCB

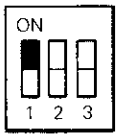


Factory setting

(1) Turn off the power switch.
(2) Open the connector fixer and remove the cord.
(3) Remove the box cover.

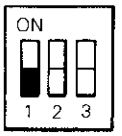
1. DIP Switch No. 1

*To change the down timing of the servo presser



ON — For sewing materials in general

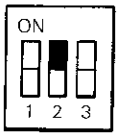
Insert the material under the start sensor. → Time preset with the counter for the beginning of sewing. → The servo presser goes down. → The presser foot goes down. → Starts sewing.



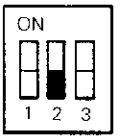
OFF — For sewing thin materials such as lady's wear

Insert the material under the start sensor. → The servo presser goes down. → Time preset with the counter for the beginning of sewing. → The presser foot goes down. → Starts sewing.

2. DIP Switch No. 2



ON — Blows the chain suction air while the sewing machine is running.

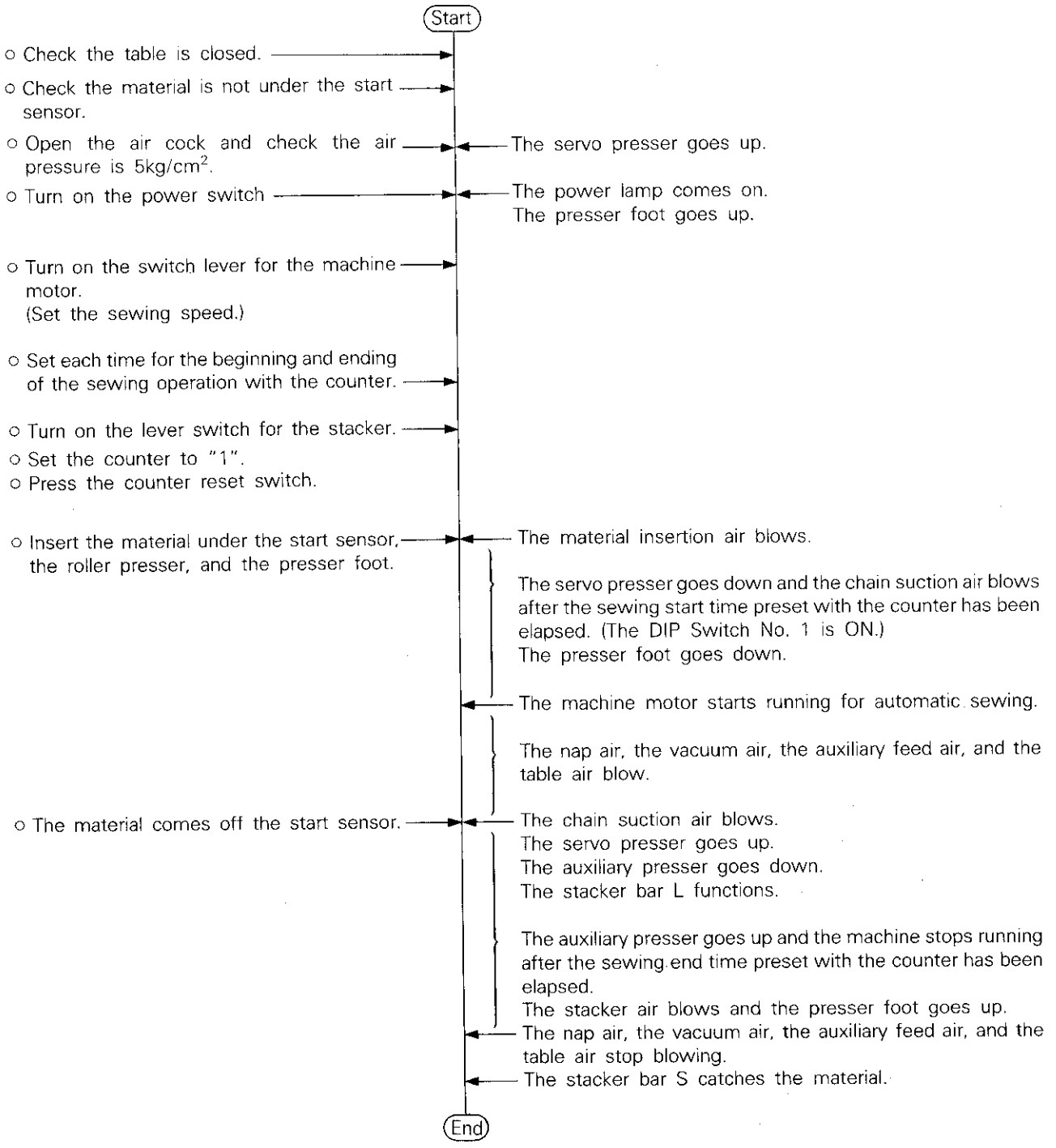


OFF — Blows the chain suction air when the sewing machine starts and stops running.

3. DIP Switch No. 3

*Not used.

OPERATION FLOW CHART



TROUBLESHOOTING

Phenomena	Causes	Countermeasures	Page
The start sensor lamp flickers when the power switch is turned on.	The material is under the start sensor.	Remove the material from under the sensor.	9
	The start sensor is dusty.	Remove dust.	
	The light of the start sensor is too weak. (The material detection signal is sent even if no material exists.)	Adjust the sensitivity of the start sensor.	8
The sewing machine does not start running.	The machine motor switch provided on the operation panel is off.	Turn on the machine motor switch.	6
	The table is not securely closed.	Close the table securely.	3
	The light of the start sensor is intense. (The no-material detection signal is sent even if material exists.)	Adjust the sensitivity of the start sensor.	8
The servo motor does not run.	The servo motor switch provided on the operation panel is off.	Turn on the servo motor switch.	8
The servo motor keeps running in one direction.	The servo sensor is dusty.	Remove dust.	
	Incorrect adjustment of servo sensor sensitivity.	Adjust the sensitivity of the servo sensor.	8
The servo mechanism does not function according to the curve.	Incorrect adjustment of servo sensor sensitivity.	Adjust the sensitivity of the servo sensor.	8
	The sewing speed is too fast to the curve.	Slow down the "HIGH SPEED" operation: turn on the "LOW SPEED" switch to decrease the sewing speed only when sewing acutely curved section.	6
	The table air blows intensely.	Weaken the table air so that the material is not pulled.	11
	The servo presser holds too weak.	Intensify the pressure of the servo presser.	10
	Material end is napped much.	Intensify the nap air.	10
	The guide plate is set extremely toward you.	Adjust the guide plate.	11
	The material is too wide and heavy.	Adjust the ruler.	11
It is difficult to cut the chaining-off stitch.	The auxiliary presser holds too slow (out of timing).	Fast down the pressing motion of the auxiliary presser (good timing).	10
	The chain cutter entrance is clogged with cut chaining-off stitch.	Turn off the power and blow air to the chain cutter entrance with an air gun.	
The chaining-off stitch is too long.	The auxiliary presser holds too slow (out of timing).	Speed up the pressing motion of the auxiliary presser (good timing).	10
	The material is not stopped behind the presser foot when the stacker is not used.	Stop the sewing end section behind the presser foot instantaneously.	9

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