TERRY

JUKI

# Automatic Serging Machine

# ASN-397

# INSTRUCTION MANUAL

Cycle Time. standard panel size 46" long 4 sides would be 15 seconds. 3mm stitch 8.000 Rpm. 1900 panels per 8 HR day.

No. 00
29145703

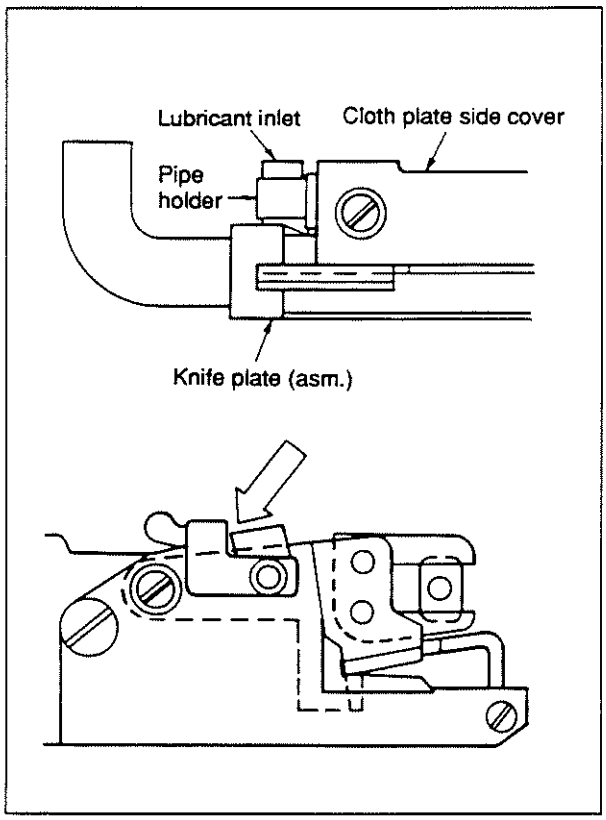
# INTRODUCTION

Congratulations on your purchase of the JUKI ASN-397 Automatic Serging Machine.
Please read this Instruction Manual carefully before using this machine in order to get the most out of it and to enjoy using it for a long time. It is also necessary to keep this Instruction Manual taking care not to lose it.

# OPERATION PRECAUTIONS

1. Prior to operation, be sure that the sewing machine motor rotates in the correct direction. (The motor should rotate clockwise facing the motor pulley.)
2. Keep your hands away from the needle when turning the power switch ON or starting the sewing machine.
3. Do not start the sewing machine with the side cover or eye guard cover removed.
4. During operation, be careful not to allow your or any other person's head or hands to come close to the V belt or motor. Also, do not place anything near the V belt or motor. Doing so may be dangerous.
5. During operation, be careful not to allow your fingers to insert into the face plate cover.

# BEFORE OPERATION




1. Lubrication to chain-off thread trimming device (T038)

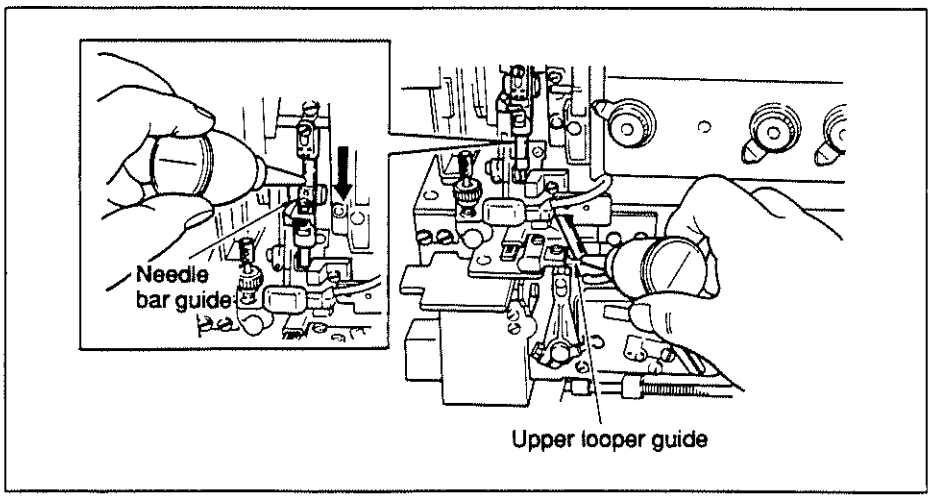
   Supply oil from the lubricant inlet at the back side of the machine. Maximum oil level is just above pipe holder.

   As the oil consumption depends on the operational condition, daily check is recommended.

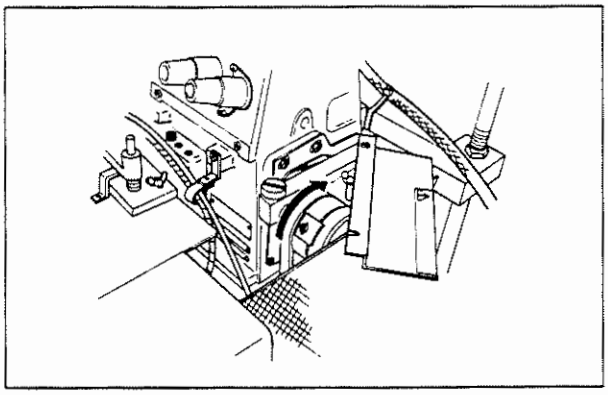
   - In the case of continuous use, supply oil once a day.
   - Under normal operation, supply oil once every 3 to 4 days.

**(Caution) Oil is not supplied at the time of shipment out of the plant. So, make sure to supply oil before use. Since oil is soaked into felt, it may take some time for the oil to reach the machine. Therefore, if you need to operate the machine immediately after lubrication, supply additional oil to the point indicated by arrow.**

**JUKI New Defrix Oil No. 2 is recommended to be used as the lubricant.**




2. Apply two or three drops of oil to the needle bar guide and upper looper guide when operating the machine for the first time after setup or after a long period of disuse.



3. The correct machine running direction is such that the handwheel turns clockwise as viewed from the handwheel's side . Never run the machine in the reverse direction.
(When reverse rotation occurs. an error is indicated and the machine automatically stops.)

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# I . GENERAL

The ASN-397 is an automatic serging machine for slacks, pantalons, one-piece suits, skirts, etc. Serging is automatically done along the cloth outline.

This serging machine mainly consists of a cloth presser guide device unit for contour sewing, high-speed overlock machine with pneumatic side cutter, stacker (optional) and, control unit for them.

## 1. Features

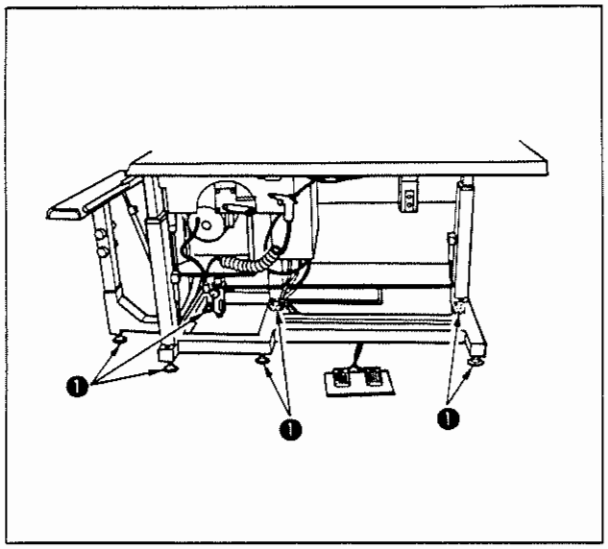
1) Permits high-speed, continuous serging. (Specialized serging machine)
2) The use of microcomputer control system provides extensive control.
3) The time until starting can be set freely by anyone, from a beginner to a skilled operator.
4) Switching between high and low speed can be done with one touch.
5) A photosensor is used to ensure accurate start and stop.
6) A cloth presser guide device makes it possible to sew a wide variety of cloth thicknesses, from light-weight material to heavy-weight material.
7) Provided with an OUT/IN curve sensor which automatically adjusts the speed and differential motion (can be arbitrarily set).
8) The table height is freely adjustable to suit to the height of each operator. (gas spring system)
9) The machine head rises during threading, making the machine very easy to maintain.
10) For safety, when the machine head rises a safety switch acts to make it impossible for the machine to start, and an indication is given on the panel.
11) Cloth control can be selected with a panel switch; the number of stitches can be specified.
12) A powerful stacker (optional) makes it possible to stack anything from light-weight to heavy-weight materials.
13) A large dust collection box is used.
14) The chain-off thread trimmer is powerful.
15) The machine can be stopped temporarily.
16) Provided with a cloth feed blower.
17) The table is teflon-coated, making handling easy.
18) Specifying the number of stitches makes it possible for the machine to be stopped temporarily, either automatically or with a pedal.
19) Specifying the number of stitches makes differential operation switching, either automatically or by pedal, possible.

## 2. Specifications

1) Type of stitch ---------- 504 (USA standard), E13(JIS)
2) Sewing speed ---------- Max 8,000 s.p.m. (The single phase 100V: 7,000 s.p.m.)
3) Stitch length ---------- 0.8 to 4.0 mm
4) Overedging width ---------- 4.0 (E) 4.9 (F standard) 5.6 (G)
5) Lift of presser foot ---------- Max. 7 mm
6) Sewing specifications -------- A. Cutting curve --------- 200R or more (40R or more when cloth control is used; in this case the OUT curve is 4,000 s.p.m. or less.)
   B. Cloth size ---------- Width 400 mm or less
   Length 480 mm or more (length for which stacking is possible)
   C. Number of cloth ----- Limited to 1.
7) Power consumption --------- Control unit: 150 W
   Electronic-stop motor: 550 W
8) Operating air pressure -------- 5 to 6 kgf/cm$^2$ (0.5 to 0.6 MPa)
9) Air consumption ---------- The compressor has output of 2.2 kW (3 horsepower); use air pressure of 7 kgf/cm$^2$ (0.7 MPa) or more.
   Standard 220 ℓ/min. ANR
   Stacker 30 ℓ/min. ANR
10) Control ---------- By microcomputer
11) Synchronizer ---------- Non-contact built-in type
12) Table ---------- Teflon coated
13) Table up/down range -------- 815 to 980 mm
14) Basic exterior dimensions --- Overall length:1,500 mm (1,900 mm when auxiliary table is installed) (1,770 mm when stacker is installed) (with stacker)
   Overall width: 730 mm (Table width 700 mm)
   Height:1,600 mm (Including the thread stand)
   Weight:200 kg (230 kg with stacker)
15) Chain-off thread trimmer ---- T038
16) Sensor ---------- Photosensor
17) Operation box ---------- (Tower on top of table)
18) Casters ---------- Provided with 4 casters
19) Air gun ---------- With air gun having adjustable amount of air blow
20) Memory ---------- When used for 8 hours per day, about 30 days of data can be stored.
21) Stacker (optional) ---------- SS40 (single stacker) - - - No. of workpieces that can be stacked (Cotton gabardine) : Approx. 70
   SS42 (double stacker) - - - No. of workpieces that can be stacked (Cotton gabardine) : Approx. 70 x 2

# Ⅱ. INSTALLATION

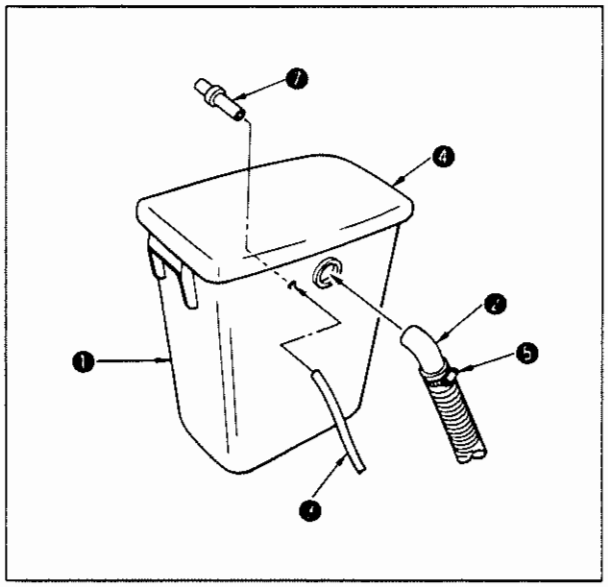
## 1. Installing the main unit



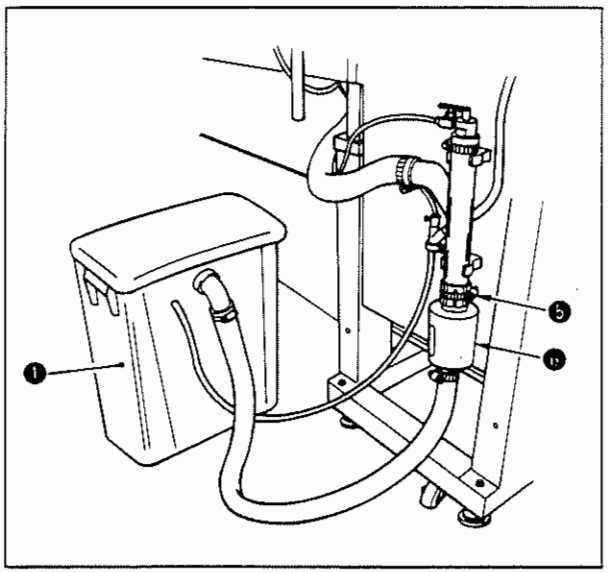
When the installation location is decided, adjust the 7 or 8 adjustable bolts ❶ (including those on the stacker) to stabilize the unit.

**(Caution) The stacker (SS40, -42) is optional.**
**The SS40 has 1 adjustable bolt.**
**The SS42 has 2 adjustable bolts.**

## 2. Installing the dust collector



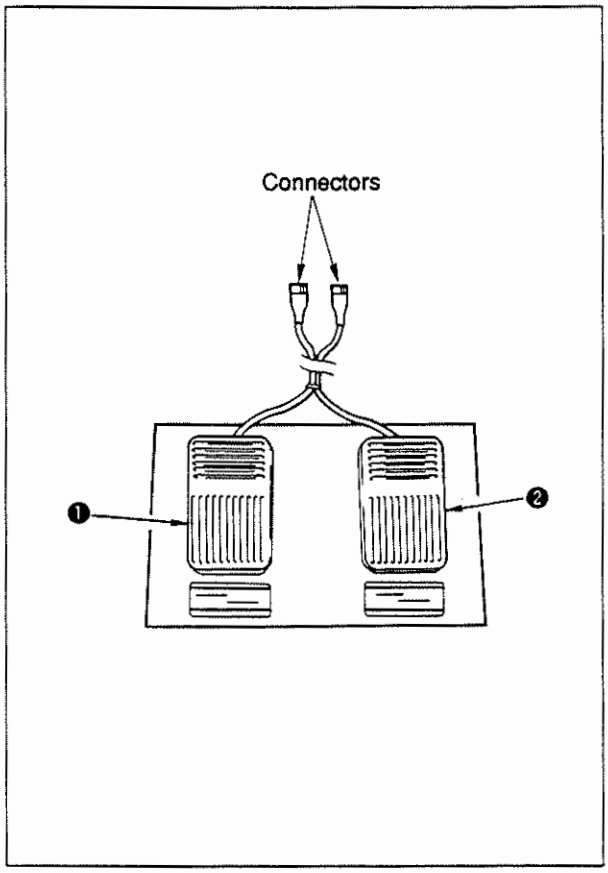
1) Plug the filings blowing hose ❷ and the chain-off thread blowing hose ❸ into the dust collection box (MC-8) ❶.
2) Connect chain-off thread blowing hose ❸ to exhaust duct ❼.
3) Install filter ❹ so that it completely covers the top of the box.



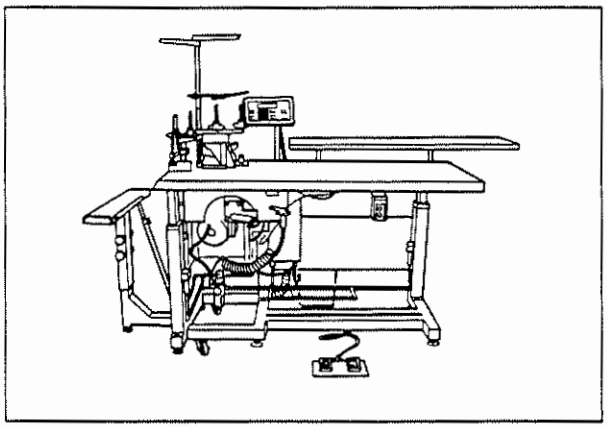
4) Install the dust collection box ❶ to the rear of the main unit, as shown in the figure.

**(Caution) Confirm that the hose mounting bracket ❺ is completely tightened (the same for other mounting hardware). Note that the noise muffler ❻ is optional.**

## 3. Connecting the cord

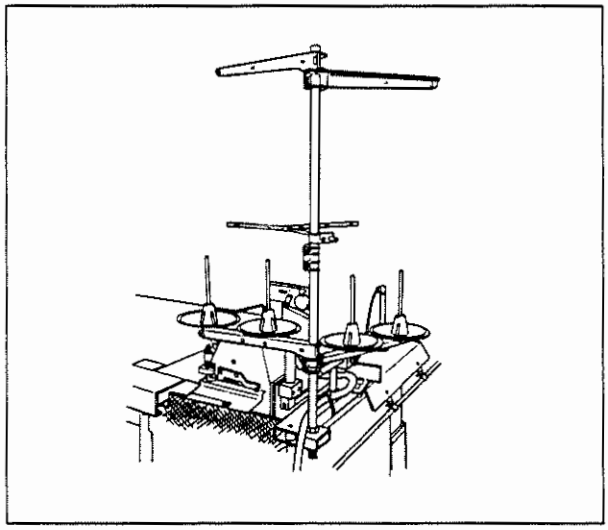



1) Connect the pedal switch connectors to the connectors (numbered) on the rear of the control box.
   - ❶ Low speed - high speed selector switch ---------- CN61
   - ❷ Temporary stop switch ---------- CN63
   - ③ Differential operation switch (optional) ---------- CN64
   - ④ Stacker operation switch (optional) ---------- CN62



2) Install the pedal switches in the position shown in the figure.

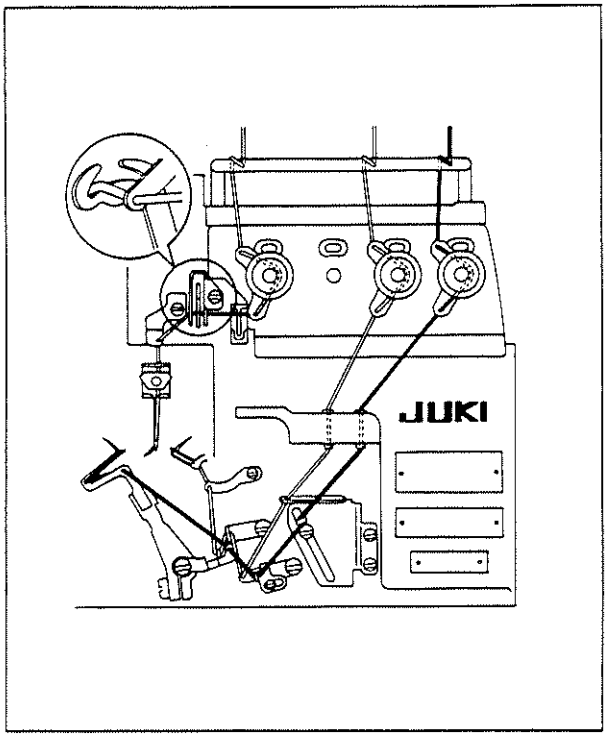
## 4. Installing the thread stand



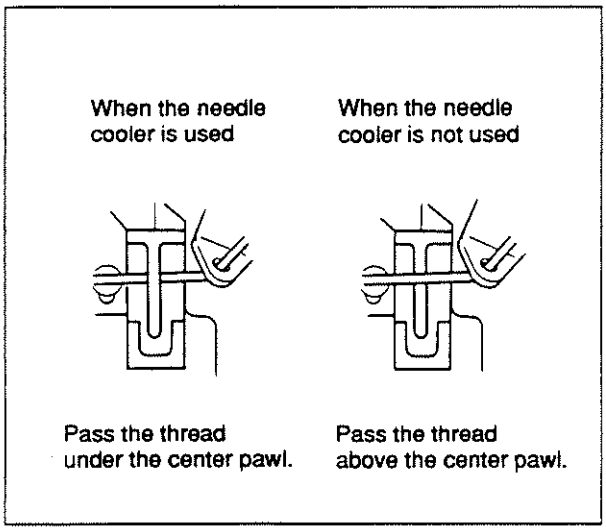
Install the thread stand as illustrated.

# Ⅲ. OPERATION

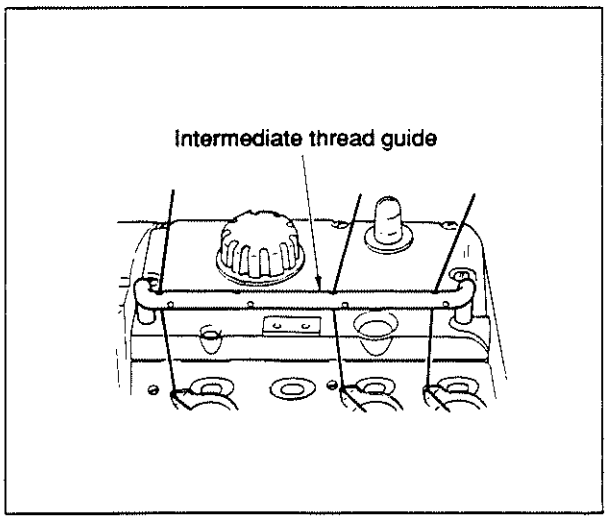
## 1. Threading the machine head




Route the thread as illustrated.
(There is a threading diagram on the inside of the looper cover.)



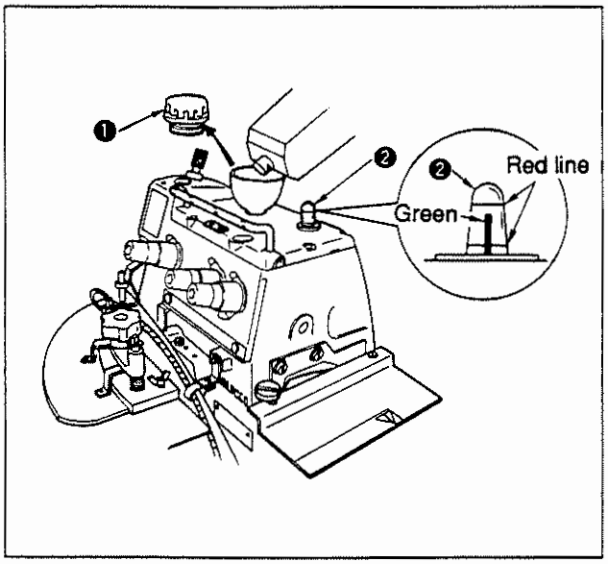

**★Needle thread tank section**




**(Caution) When using an untwisted thread such as wooly nylon thread or weak thread, do not wind it round the intermediate thread guide.**

## 2. Lubrication

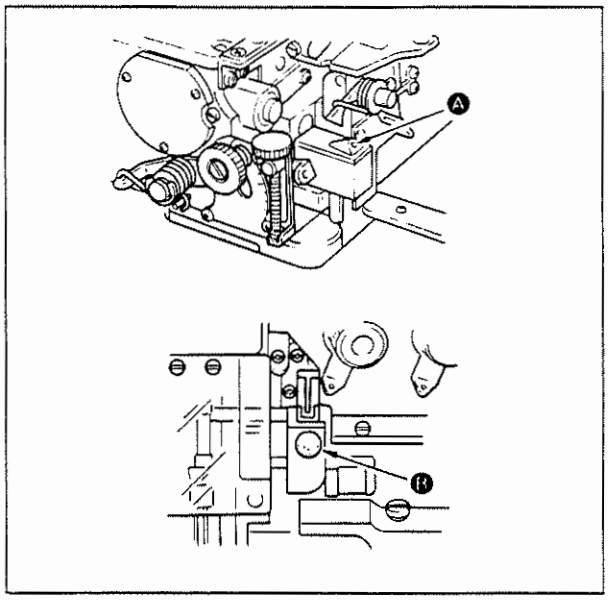
### (1) Oiling the head




1) Remove the lubrication hole cover ❶.
2) Pour JUKI New Defrix Oil No. 2 in.
3) Look at the oil gauge ❷ directly from the side. Keep pouring oil in until the oil gauge needle is just short of the red line.

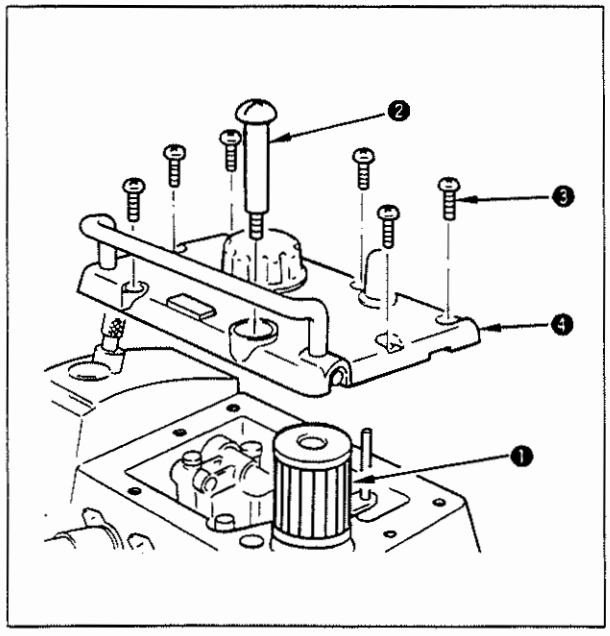
**(Caution) If oil is poured in until the oil gauge needle rises above the upper red line, the amount of oil is too great, which can cause oil leakage, so always stop pouring oil in just short of the upper red line.**

### (2) Oiling the needle cooler




1) Open the cloth plate and pour silicon oil in from Ⓐ.
2) Remove stopper plug Ⓑ, then pour silicon oil in.
3) If the machine is to be used immediately after silicon oil is poured in, also soak the felt in silicon oil.

### (3) Checking the cartridge filter and replacing it




After a long period of usage, cartridge filter ❶ may become clogged with dust. If the machine is left in this state, the dirty oil may fail to pass through cartridge filter ❶, and the machine may wear out abnormally, or a seizure may result.

※ Cartridge filter ❶ should normally be checked once every six months, and cleaned or replaced accordingly.

Checking/replacement procedure

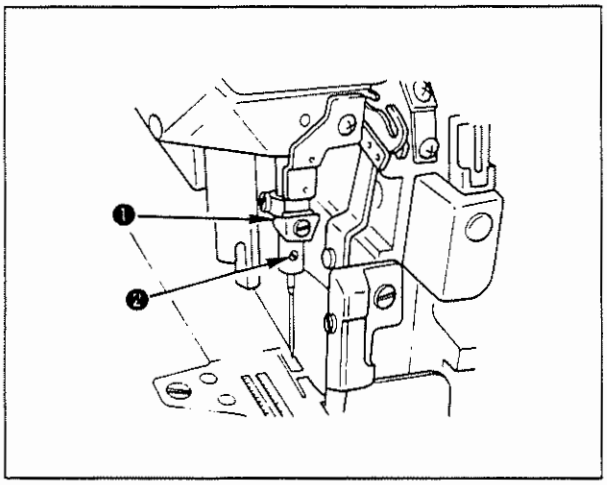
1) First remove the oil drain screw ❷.
2) Remove set screw ❸, then remove the upper cover ❹, pulling it straight upward.

**(Caution) If upper cover ❹ is slid sideways, there is a danger that the oil gauge needle and the filter will be damaged.**

3) Remove cartridge filter ❶ and check it. If the filter is found to be abnormal, clean the relevant components, or replace cartridge filter ❶.
4) Re-insert cartridge filter ❶ into its proper position and install upper cover ❹ using setscrew ❸.
5) Reinstall oil drain screw ❷.

## 3. Attaching needle

The standard needle type is DC x 27 #11. DC x 1 can also be used. but adjustment of gap between looper and needle may become necessary. Use DC x 27 for tough sewing conditions.



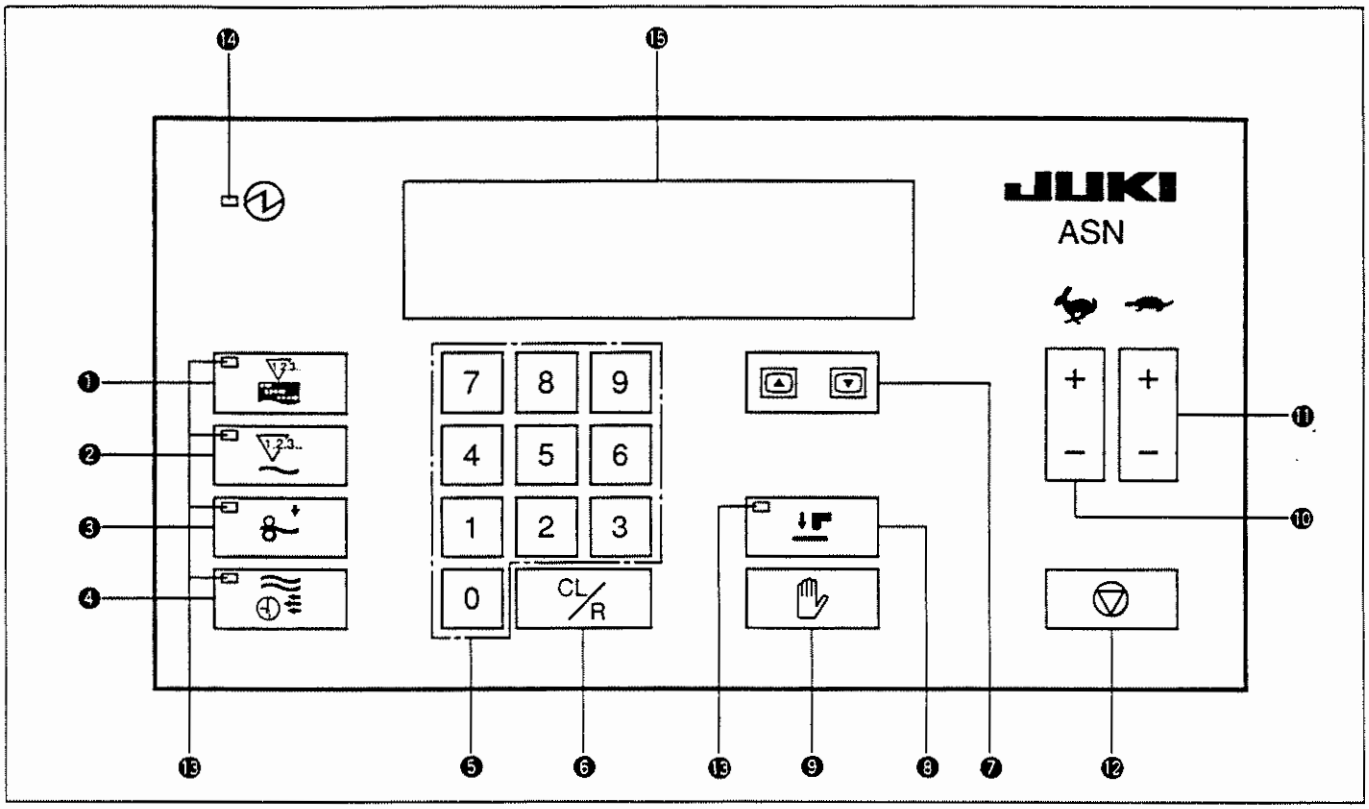

1) Bring needle clamp ❶ to the highest position.
2) Loosen needle clamp screw ❷, and fully insert the needle into the needle clamp hole with the needle recess facing backwards as viewed from the operator's side.
3) Tighten the needle clamp screw ❷.

## 4. Operation panel functions

1) Number of seams----------Can be set 0 to 9 seams.
2) Number of pieces of cloth to be sewn----Can counts from 1 to 999.
3) Stacker presser number of stitches -------Can be set from 0 to 999 stitches (optional).
4) Stacker blow time ----------Can be set from 0 to 9.9 seconds (optional).
5) High/low speed setting ----------Can be set from 2 to 80 (about 200s.p.m. to 8000s.p.m.).
6) Start delay time----------Can be set from 0 to 9.9 seconds.
7) Sewing machine stop timing ----------Can be set from 0 to 999 stitches.
8) Curve detection control ----------The curve detection speed and differential operation switching can be set for each seam.
9) Temporary stop control ----------Can be set from 0 to 999 stitches for each seam.
10) Differential operation control ----------Can be set from 0 to 999 stitches for each seam.
11) High/low speed switching (pedal switch)
12) Temporary stop (pedal switch)
13) Differential operation switching (pedal switch) (optional)
14) Stacker operation (pedal switch) (optional)
15) Stop
16) Manual feed

## 5. Operation panel

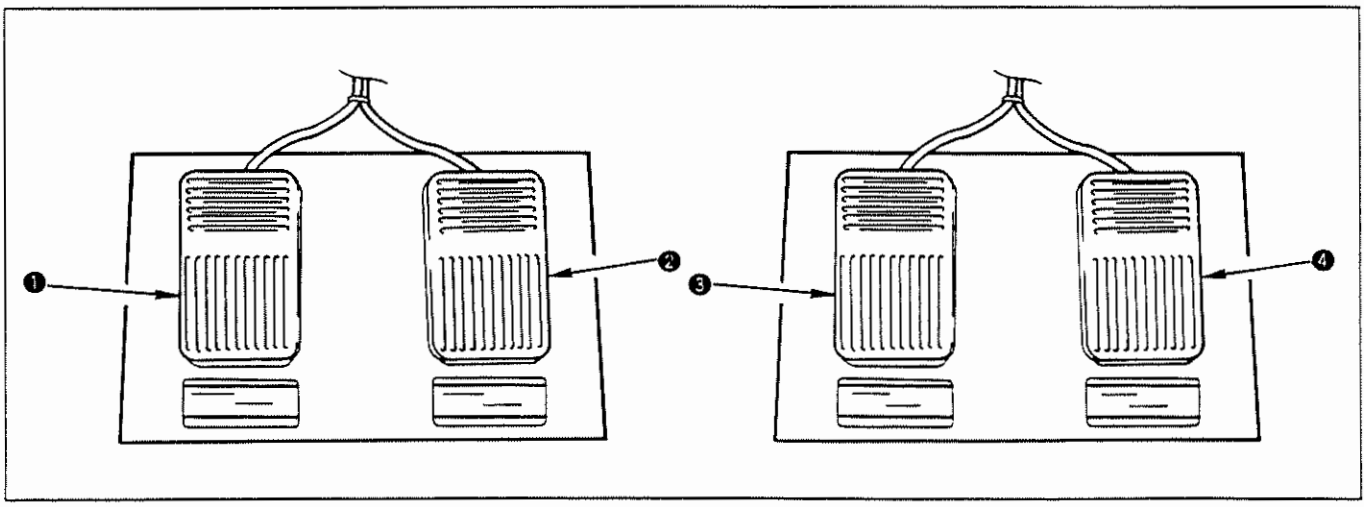
### (1) Description of the operation panel




| Name | Function |
|---|---|
| ❶ Number of seams setting switch | This switch is used to enter the number of seams. The number of seams set and the seam currently being sewn are indicated on the screen.<br>Seam = 4 - 1<br>Seam currently being sewn (Number of seams)<br>Number of seams setting |
| ❷ Number of pieces of cloth to be sewn setting switch | This switch is used to set the number of pieces of cloth to be sewn. |
| ❸ Stacker presser number of stitches switch (options SS40, SS42) | This switch is used to enter the setting for the number of stitches from the start of sewing machine operation until the stacker presser operates. The machine is programmed so that if a work piece is shorter than this, the stacker will operate as soon as the work piece moves out from under the sensor. |
| ❹ Stacker blow time switch (options SS40, SS42) | This switch is used to enter the setting for the time that air is blown during stacking. (Example : 0.3 sec. for cotton gabardine) |
| ❺ Ten key | Used to enter numbers. |
| ❻ CLEAR/RESET switch | 1. This switch is used to clear settings that have been entered. Press the selector switch to select the setting to be cleared, then press this switch to clear the setting all settings).<br>2. When the machine has stopped, pressing this switch releases the stop.<br>3. When this switch is pressed while sewing is in progress, the operation returns to the immediately preceding seam. |
| ❼ Screen feed ▣ , ▣ switch | Used to switch from display of one screen to another. |

| Name | Function |
|---|---|
| ❽ Cloth control selector switch | Selects use of cloth control. |
| ❾ Manual feed switch | This is used to perform chain-off thread trimming and to observe the condition of the work when chain-off thread trimming is performed. While pressing switch ❾, start the sewing machine. |
| ❿ High speed ⊞, ⊟ switch | This switch is used to increase or decrease the high speed setting. |
| ⓫ Low speed ⊞, ⊟ switch | This switch is used to increase or decrease the low speed setting. |
| ⓬ Stop switch | When this switch is pressed, all operations stop. To resume operation, press the CLEAR/ RESET switch ❻. |
| ⓭ Selector switch indicator LED (luminous diode) | This lights up when a selector switch is pressed. |
| ⓮ Power supply indicator LED (luminous diode) | This lights up when power is ON. |
| ⓯ LCD display window | The settings are displayed here. |

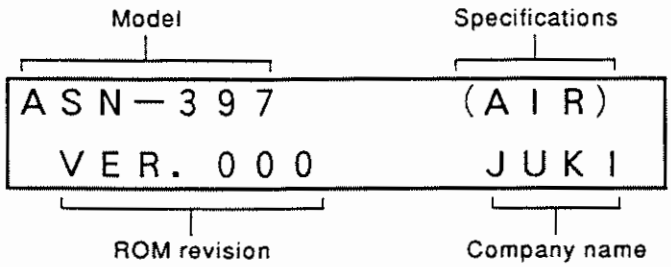
(2) Pedal switches




| Name | Function |
|---|---|
| ❶ Low speed - high speed selector switch | The machine operates at slow speed while this pedal is depressed. |
| ❷ Temporary stop switch | The machine is temporarily stopped while this pedal is depressed (this pedal only works while the machine is in operation). |
| ❸ Differential operation switch (optional) | Differential operation is in effect while this pedal is depressed (this pedal only works while the machine is in operation). |
| ❹ Stacker operation switch (optional) | When this pedal is depressed, operation jumps to the last seam regardless of which seam is being sewn. |

### (3) Display after power is turned ON

When power is turned ON, the following display appears: after a certain time has elapsed the display switches to the basic data screen.

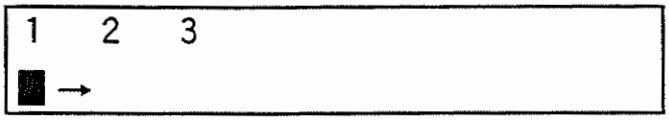



### (4) Operation displays while sewing is in progress

When cloth is set in place, the screen being displayed changes to the current operation screen.

Example) When 3 seams are sewn

When the cloth is set, the following display appears.

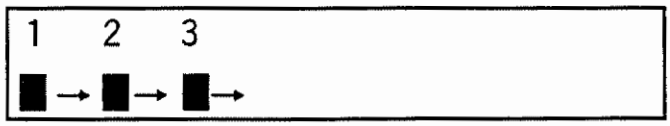



The rightward arrow → flashes to indicate that the 1st seam is being sewn. When sewing of the 1st seam is finished the display changes to the following.


When sewing of the 2nd seam starts, the display changes to the following.


The rightward arrow → flashes between 2 and 3 to indicate that the 2nd seam is being sewn.
When sewing of the 2nd seam is finished, the display changes to the following.


When sewing of the 3rd seam is started, the display changes to the following.




The rightward arrow → flashes to the right of 3 to indicate that sewing of the 3rd seam is in progress.
When sewing of the 3rd seam is finished, the display on the screen changes to the following.

## 6. How to set the sewing specifications

### (1) Basic data settings (the standard screen used when a stacker is used appears)

On the basic data setting screen, the number of seams, number of work pieces to be sewn, number of stitches until stacker presser operates and stacker blow time (stackers SS40 and SS42 are optional) can be set. In addition, the high speed and low speed settings can be changed, and use of cloth control can be selected.

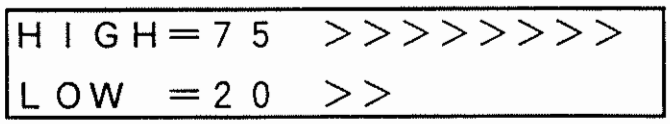

**Basic data setting screen**

1) Press the selector switch ❶❷❸❹ for the specification to be set.
2) Confirm that the LED for the switch that was pressed is lit, then enter the setting with the ten key. After the ten key setting, as soon as the displayed setting changes the new setting is entered into the system.
   To clear the setting, press the CLEAR/RESET switch ❻.

* The stacker blow time can be specified in increments of 0.01 sec. by changing over the DIP switch (SW2-7) mounted inside the control box.

### (2) Speed setting

The high and low speeds can be set on the speed setting screen. In addition, the use of cloth control can be selected.




**Speed setting screen**

1) Press the screen advance switch ❽ or the high or low speed switch ❿ or ⓫ to change the screen display.
2) Pressing the high speed ❿ ⊞ switch increases the high speed setting by 1; pressing ⊟ decreases it by 1. Pressing the low speed ⓫ ⊞ switch increases the low speed by 1; pressing ⊟ decreases it by 1. The settings can be increased or decreased rapidly by pressing the appropriate ⊞ or ⊟ switch continuously.

### (3) Start delay time setting (the standard screen for the case in which a stacker is not used appears)

On the start delay time setting screen, the number of seams, number of stitches and start delay time can be set. In addition, the high speed and low speed can be changed, and the use of cloth control can be selected.


**Start delay time setting screen**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the appropriate value with the ten key. The setting can be cleared with the CLEAR/RESET switch ❻. By selecting the number of seams switch ❶ or the number of work pieces switch ❷, those respective data can be set.

### (4) Sewing machine stop timing setting

On the sewing machine stop timing setting screen, the number of seams, number of work pieces to be sewn, and sewing machine stop timing (in number of stitches) can be set. In addition, the high and low speed settings can be changed, and the use of cloth control can be selected.

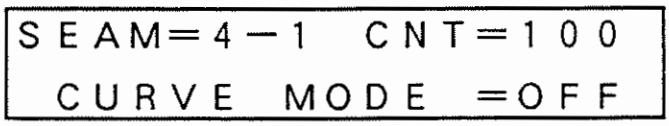

(MACIN:MACHINE)

**Sewing machine stop timing setting screen**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the settings with the ten key. The settings can be cleared by pressing the CLEAR/RESET switch ❻. By selecting the number of seams switch ❶ or the number of work pieces to be sewn switch ❷, the corresponding setting can be changed.

### (5) Curve mode setting

In the curve mode, the speed is changed from high to low speed when an inward or outward curve is detected.
On the curve mode setting screen, the number of seams, number of work pieces to be sewn and curve mode selection can be set. In addition, the high and low speed settings can be changed, and the use of cloth control can be selected.




**Curve mode setting screen**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the setting "0" = OFF or "1" = ON. When ON is set, curve mode can be set for each seam.
When the number of seams switch ❶ or the number of work pieces to be sewn switch ❷ is selected, the corresponding setting can be changed.

**(Caution) Even if curve mode is set to ON, the machine will not run in curve mode unless curve mode is also set for each seam.**

### (5)-1 Curve mode setting for each seam

Set the curve mode setting to ON, then advance the screen to the following. Then curve mode can be set for each seam, up to the number of seams setting.


1) Press the screen advance switch ❽ to switch to the above display.
2) Enter the setting "0" = OFF or "1" = ON.

### (6) Curve differential (curve shrink) operation setting

In curve differential operation, when an inward or outward curve is detected, the machine switches from high to low speed, and differential operation goes into effect.

On the curve differential operation screen, the number of seams and number of work pieces to be sewn, and curve differential operation, can be selected. In addition, the high and low speed settings can be changed, and the use of cloth control can be selected.


**Curve differential operation setting screen**

1) Press the screen advance switch ❽ to switch to the above screen. However, this screen cannot be selected when curve mode is set to OFF.
2) Set "0" = OFF or "1" = ON. Setting ON makes it possible to set curve differential operation for each screen.
   When the number of seams switch ❶ or the number of work pieces to be sewn switch ❷ is selected, the corresponding setting can be changed.

**(Caution) Even if curve differential operation is set to OFF, curve differential operation will not go into effect unless curve differential operation is also set for each seam.**

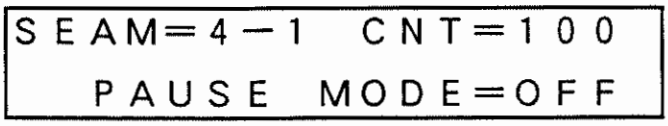
### (6)-1 Setting curve differential operation for each seam

When curve differential operation is set to ON and the screen advance switch is pressed, the display changes to the following. Then curve differential operation can be selected for up to the number of seams that have been set.


1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter "0" = OFF or "1" = ON.

### (7) Stop (pause) mode setting

On the stop mode setting screen, the number of seams, number of work pieces to be sewn and stop mode selection setting can be set. In addition, the high speed and low speed settings can be changed, and cloth control can be selected.




**Stop mode setting screen**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the setting "0" = OFF or "1" = ON.
   By selecting the number of seams switch ❶ or the number of work pieces to be sewn switch ❷, the corresponding setting can be changed.

**(Caution) Even if stop mode is set to ON, it will not operate unless stop mode is also set for each seam.**

### (7)-1 Setting the number of stitches for automatic stop for each seam

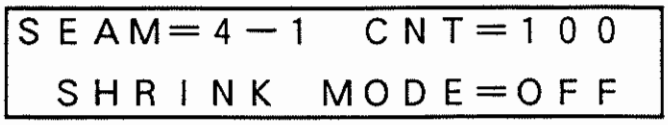
This setting becomes possible when the stop mode setting is ON. This sets the number of stitches at which the machine stops automatically for each seam.


**Screen for setting number of stitches for automatic stop**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the setting with the ten key. The setting can be cleared with the CLEAR/RESET switch ❻.
   When the number of stitches for automatic stop is set to 100, the sewing machine stops automatically after 100 stitches have been sewn after it starts. Then, to resume operation, step on the temporary stop pedal. The sewing machine will not stop if the number of stitches is set to 0 or the stop mode setting is OFF.

### (8) Differential operation (shrink mode) mode setting

On the differential operation mode setting screen, number of seams, number of work pieces to be sewn, and differential operation mode selection can be set. In addition, the high and low speed settings can be changed, and the use of cloth control can be selected.




**Differential operation mode setting screen**

1) Press the screen advance switch ❾ to switch to the above screen.
2) Enter the setting "0" = OFF or "1" = ON.
   If the number of seams switch ❶ or the number of work pieces to be sewn switch ❷ is pressed, the corresponding setting can be changed.

**(Caution) Even if differential operation mode is set to ON, it will not operate unless differential operation mode is set for each seam.**

### (8)-1 Setting of number of stitches for differential operation for each seam

This setting becomes possible when the differential operation mode selection setting is ON. The number of stitches during which differential operation takes place can be set on the screen shown below.


**Screen for setting the number of stitches during which differential operation takes place**

1) Press the screen advance switch ❽ to switch to the above screen.
2) Enter the settings with the ten key. The settings can be cleared with the CLEAR/RESET switch ❻. In addition, start or end can be selected with screen advance switch ❽.
   When the number of stitches at which differential operation starts is set to 50 and the number st which it ends is set to 100, 50 stitches after the sewing machine starts differential operation starts; after it has operated for 100 stitches, the differential operation is released. However, differential operation will not operate if the end number of stitches is set to 0 or the differential operation mode setting is OFF.

## 7. Other settings

### (1) Setting of number of stitches for cloth control

The number of stitches range after the sewing machine starts during which cloth control is applied can be set. If the number of stitches is set to "0", there is no limit.

#### (1)-1 Preparatory operation

With the power OFF, set the Dip switch DSW2 - 5 inside the control box to ON, then turn the power ON. The number of stitches for cloth control is then set (LCDSW1 - 4 is set to 1) in accordance with the utility program LCDSW setting.
Then turn the power OFF, and set Dip switch DSW2 - 5 inside the control box to OFF.

#### (1)-2 How to perform the settings

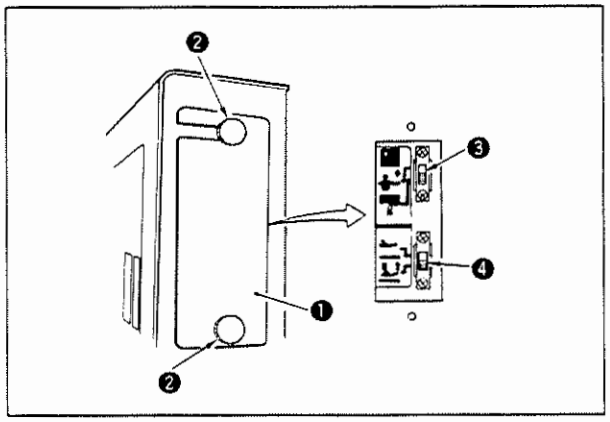
1) When the power is turned ON, the following display appears on the LCD panel.

```
** DATA INPUT **
CLOTH CTRL=100st
```

2) Enter the setting with the ten key.
   After the ten key input, as soon as the display changes the new setting is automatically set in the system. To clear the setting, press the CLEAR/RESET switch ❻.
3) After performing this setting, reset the utility program LCDSW cloth control number of stitches setting selection to undetermined (set LCDSW1 - 4 to 0).

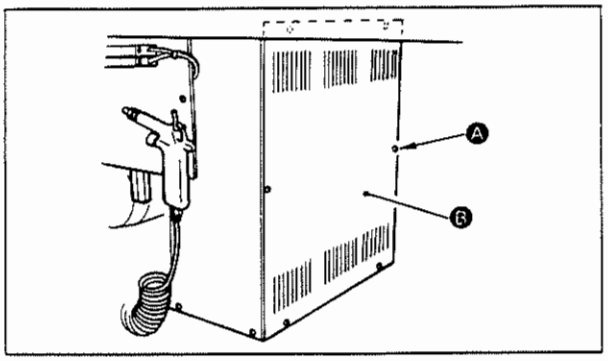
### (2) Slide switches

#### (2)-1 Thread trimmer presser/sewing machine presser timing settings

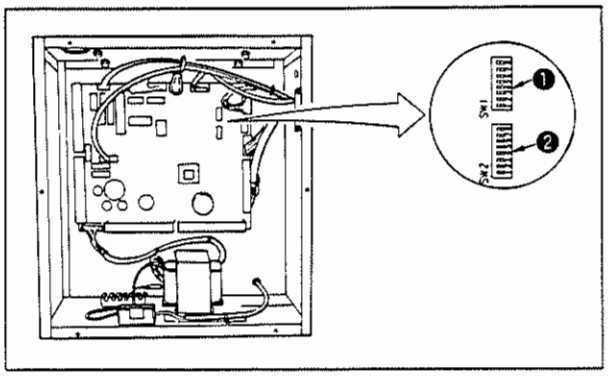


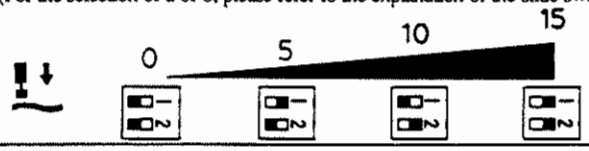
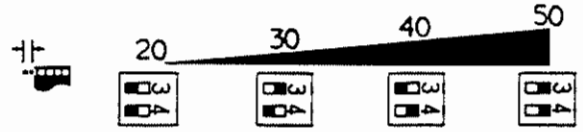
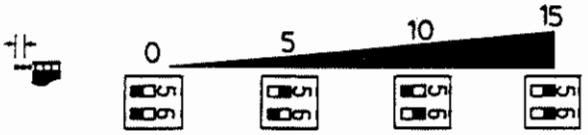
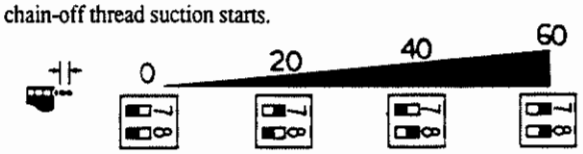

1) Loosen set screw ❷ on cover ❶ to the side of the operation panel/ Then when cover ❶ is opened, slide switches ❸ and ❹ are revealed.
2) When switch ❸ is set to the upper position, after the stacker cloth presser operates, the thread trimmer presser operates after the additional number of stitches given by DSW1-1, 2. When it is set to the lower position, the thread trimmer presser operates after the cloth moves out from under the cloth sensor. (Stackers SS40 and SS42 are optional.)
3) When switch ❹ is set to the upper position, the sewing machine presser goes into its raised standby position; when set to the lower position, it goes into the lowered position.

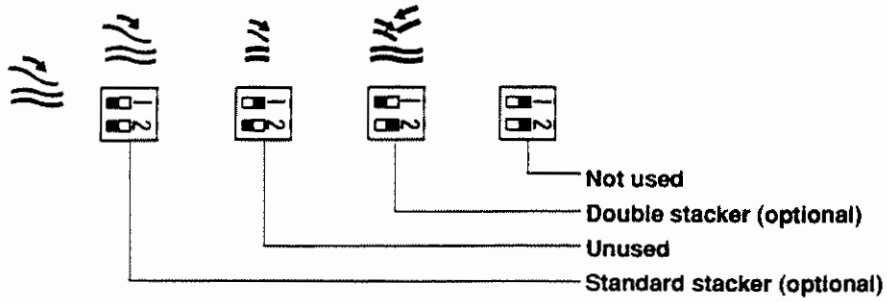
### (3) Dip switch settings




Remove the six screws Ⓐ on the control box under the table, then open cover Ⓑ. Then functions can be changed using the switches on the main circuit board. (Always turn power OFF when setting these switches.)




| Switch No. | Name of switch | Operational function |
|---|---|---|
| DIP switch❶ | SW1-1,2 | · Thread trimmer presser timing setting (optional)<br>a. Setting of the number of settings after the cloth moves out from under the cloth detector sensor until the thread trimmer presser operates; or<br>b. The number of stitches after the stacker presser operates until the thread trimmer presser operates. (For the selection of a or b, please refer to the explanation of the slide switches on page 16.)<br>  |
| | SW1-3,4 | · Number of chain-off thread suction stitches at start of sewing<br>This sets the number of chain-off thread suction stitches at the start of sewing.<br>  |
| | SW1-5,6 | · Number of chain-off thread suction delay stitches at the start of sewing<br>This sets the number of chain-off thread suction delay stitches at the start of sewing.<br>  |
| | SW1-7,8 | · Number of chain-off thread suction delay stitches at the end of sewing<br>This sets the number of stitches after the cloth moves out from under the cloth detector sensor until chain-off thread suction starts.<br>  |

| Switch No. | Name of switch | Operational function |
|---|---|---|
| DIP switch❷ | SW2-1,2 | Selection of stacker use<br>This sets the selection of whether or not to use the stacker, and, in case it is to be used, the type of stacker (standard or double stacker).<br>  <br>**Not used**<br>**Double stacker (optional)**<br>**Unused**<br>**Standard stacker (optional)** |
| | SW2-3 | Temporary stop presser foot UP/DOWN selection<br>This selects whether the presser foot is to be UP or DOWN in case of a temporary stop while sewing is in progress.<br>**(OFF) : Presser foot UP during temporary stop**<br>**(ON) : Presser foot DOWN during temporary stop** |
| | SW2-4 | AI mode selection<br>This selects a mode of operation in which each seam length is stored, and seams are not counted until the stored seam lengths have been sewn.<br>**(OFF) : Standard mode**<br>**(ON) : AI mode** |
| | SW2-5 | Japanese/English language selection<br>This selects the language used on the operation panel.<br>**(OFF) : Japanese**<br>**(ON) : English** |
| | SW2-6 | Utility selection<br>This selection is for the purpose of performing checks of signals related to input and output, and LCD.SW settings.<br>**(OFF) : Not selected**<br>**(ON) : Utility selected** |
| | SW2-7 | The number of figures for the stacker blow time selection<br>This selection is made to set the number of figures under a decimal point to be used when specifying the stacker blow time.<br>**(OFF) : The stacker blow time can be specified in increments of 0.1 sec.**<br>**(ON) : The stacker blow time can be specified in increments of 0.01 sec.** |

## 8. Error messages and remedies

1)


Cause : This appears when cloth is detected by the cloth detector sensor as soon as power is turned ON or immediately after an error condition is released.

Remedy : Remove the cloth from under the cloth sensor.

2)


Cause : This appears when the sewing machine head is raised.

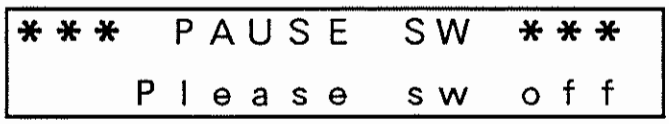
Remedy : Lower the sewing machine head.

3)


Cause : This appears when the STOP switch has been pressed.

Remedy : Press the CLEAR/RESET switch .

4)




Cause : This appears:

a. While the temporary stop pedal switch is depressed during sewing machine operation, or b. When the machine has stopped automatically following sewing of a certain number of stitches.

Remedy : a. Release the temporary stop pedal switch.

b. Press the temporary stop pedal switch.

5)


Cause : This appears when the sewing machine is running in the reverse direction.

Remedy : Change the sewing machine direction.

## 9. Utility

The utility program makes it possible to troubleshoot the unit on the panel and to set the memory switches. The program includes the following.

**· Program contents**

1. LCD check
2. Input signal check①
3. Input signal check②
4. Output signal check
5. LCD SW

The screen switching, settings and releases for the above items are performed with the following switches.

| Name of switch | Function |
|---|---|
| ① Screen advance switch | Changes the screen that is displayed. |
| ② Manual feed switch | Performs item setting. |
| ③CLEAR/RESET switch | Releases a setting. |

### (1) Preparatory operation

With the power OFF, set the indicated Dip switch inside the control box as follows.
DSW2-5 inside main circuit board: ON

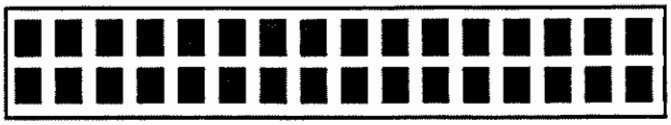
### (2) Operation procedure

### (2)-1 Panel LCD check

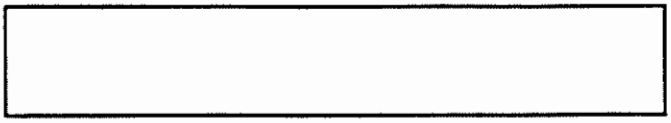
When the panel display is strange, trouble in the LCD components can be checked for.

1) When the power is turned ON, the following screen should appear on the LCD panel.


2) When the manual feed switch is pressed, the system goes into LCD check mode; the display alternates between being lit up completely for 3 seconds and then completely off for 3 seconds.



**completely lit up**



**completely off**

3) When the CLEAR/RESET switch is pressed, screen 1) returns.

### (2)-2 Input signal check 1

This checks ON/OFF operation of the switches at the top of the panel, except for the ( , , , ) switches.

1) When the power is turned ON, "LCD Check" appears on the LCD panel.
2) Then when the screen advance switch is pressed once, the following appears on the LCD.

```
UTILITY PROGRAM
2. INPUT CHECK 1
```

3) When the manual feed switch is pressed, the system goes into input signal check mode, and the following appears on the LCD.

```
Please push key.
KEY=
```

4) Confirm that the indicated display appears when each of the following switches is pressed.

| Key | Message on screen |
|---|---|
| Number of seams | SEAM SW |
| Number of work pieces to be sewn | COUNT SW |
| Number of stitches for stacker presser operation | STK CLP SW |
| Stacker blow time | STK BLW SW |
| 0~9 | 0 SW~9 SW |
| Cloth control | NUNO SW |
| High speed +, − | HSP+SW, HSP−SW |
| Low speed +, − | LSP+SW, LSP−SW |
| STOP | STOP SW |
| Double stacker | WSTK SW (optional) |

5) When the CLEAR RESET switch is pressed, screen 2) returns.

### (2)-3 Input signal check 2

Input signals other than those coming from panel switches (sensors, pedal switches, etc.) are checked.

1) When the power is turned ON, "LCD Check" appears on the LCD panel.
2) Then when the screen advance switch is pressed twice, the following screen appears on the LCD.

```
UTILITY PROGRAM
2. INPUT CHECK 2
```

3) When the manual feed switch is pressed, the system goes into input signal check mode, and a series of 0s and 1s such as the following appears on the LCD.

```
0 1 0 0 0 1 0 0 0 0 1 0 0 0 0 0
0
```

4) Operate each of the switches and sensors in the following table by hand, and confirm that the corresponding 0 on the screen changes to 1 or vice versa.

**<Correspondence between panel switches and LCD display frame>**

```
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
```

| LCD No | Input signal |
|---|---|
| 1 | Needle up position (up position: 0; any other position: 1) |
| 2 | Needle down position (down position: 0; any other position: 1) |
| 3 | Low speed switching (ON: 1; OFF: 0) |
| 4 | Stacker operation (ON: 1; OFF: 0) (optional) |
| 5 | Temporary stop (ON: 1; OFF: 0) |
| 6 | Differential operation (ON: 1; OFF: 0) (optional) |
| 7 | Head raised (up: 0; down: 1) |
| 8 | Outward curve detected (ON: 1; OFF: 0) |
| 9 | Inward curve detected (ON: 1; OFF: 0) |
| 10 | Cloth detected (ON: 1; OFF: 0) |
| 11 | Cloth edge detected (ON: 1; OFF: 0) |
| 12 | 1/24 TG OUT (ON: 1; OFF: 0) |
| 13 | SSTATE (ON: 1; OFF: 0) |
| 14 | Outward curve alarm (ON: 1; OFF: 0) |
| 15 | Inward curve alarm (ON: 1; OFF: 0) |
| 16 | Panel slide switch 1 (thread trimmer presser)<br>(ON → Upper position 1<br>OFF → Down position 0) |
| 17 | Panel slide switch 2 (presser UP/DOWN)<br>(ON → Upper position 1<br>OFF → Down position 0) |

5) When the CLEAR/RESET switch is pressed, screen 2) returns.

### (2)-4 Output signal check

Cylinder, magnet and LED operation are checked for the switches on the panel.

1) When the power is turned ON, "LCD Check" appears on the LCD panel.
2) When the screen advance switch is pressed 3 times, the following screen appears on the LCD.

```
UTILITY PROGRAM
4. OUTPUT CHECK
```

3) When the manual feed switch is pressed, the system goes into output signal check mode, and the following screen appears.

```
Please push key.
OUT=
```

4) Press the switches listed in the following table to operate the cylinders, magnets and LEDs, and check their operation.

| Panel switch | Output signal | Message on display |
|---|---|---|
| 0 | Upper feed blow | FEED BLOW |
| 1 | Presser raise cylinder, magnet | CLAMP UP |
| 2 | Stacker blow (optional) | STACK BLOW |
| 3 | Curl blow | CURL BLOW |
| 4 | Chain-off thread suction | THR DUST |
| 5 | Thread trimmer presser cylinder (optional) | THR CLAMP |
| 6 | Stacker presser cylinder (optional) | STACK CLAMP |
| 7 | Differential operation switching cylinder | SHRINK CHG |
| 8 | Suction of cloth chips | NUNO DUST |
| 9 | Cloth control magnet | NUNO MAGNET |
| | Number of seams LED | SEAM LED |
| | Number of work pieces to be sewn LED | COUNT LED |
| | Stacker presser number of stitches LED | STK CLP LED |
| | Stacker blow time LED | STK BLW LED |
| | Cloth control LED | NUNO LED |
| | Sewing machine operation | MISIN |
| | Double stacker operation (optional) | W STACKER |

### (2)-5 LCDSW settings

LCD switches 1 to 3 can be set with the switches on the panel.

1) When the power is turned ON, "LCD Check" appears on the LCD panel.
2) When the screen advance switch [▣] is pressed 4 times, the following screen appears on the LCD.

```
UTILITY PROGRAM
5. LCD SW SET
```

3) When the manual feed switch [✋] is pressed, the system goes into LCD switch setting mode, and the following screen appears.

```
SW NO      8 7 6 5 4 3 2 1
LCDSW01=0 0 0 0 0 0 0 0
```

4) Referring to the following LCD switch selection items, perform the settings with panel switches [1] to [8]. When a switch is pressed, the number below the number of the switch that was pressed changes to "0" or "1".

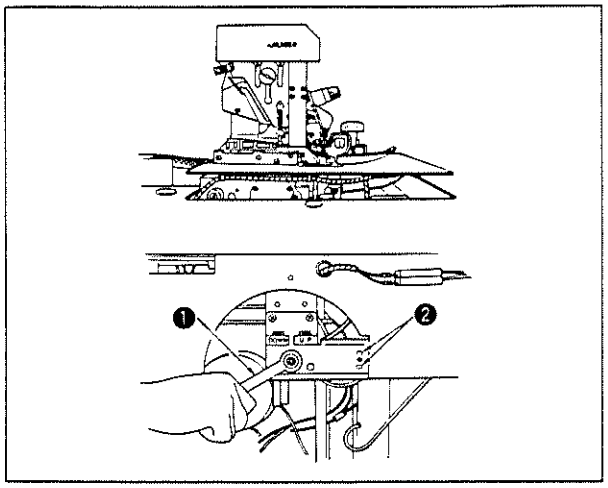
| LCD-SW | Function |
|---|---|
| 1-1,2 | **Function selection**<br>**Performs the unit function setting.**<br>2, 1 — Model<br>0 0 — ASN-397<br>0 1 — ASN-395<br>1 0 — ASN-395T<br>1 1 — Unused |
| 1-3 | **Aging selection**<br>**This detting is for the purpose of performing a continuous opration test.**<br>**0: Not selected.**<br>**1: Selected.** |
| 1-4 | **Cloth control number of stitches setting selection**<br>**This is used to select setting of the number of stitches for which cloth control is performed.**<br>**0: Not selected.**<br>**1: Selected.** |
| 1-5 | **Cloth control use selection**<br>**This selects whether or not cloth control is to be used.**<br>**0: Used.**<br>**1: Not used.** |

## 10. Operation

1) Check whether or not there is oil in the machine head.
2) Connect air and check whether the pressure is 5 to 6kgf/cm$^2$ (0.5 to 0.6MPa).
3) Turn the power ON and confirm that the presser foot rises and air enters. (It is also possible to set a slide switch so that the presser foot stays down.) (The power LED lights up.)
4) Set the sewing specifications.
5) Start out sewing at low speed, then switch to high speed.

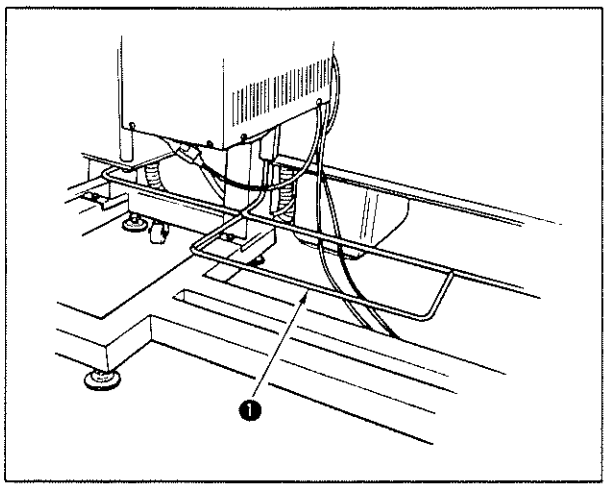
# Ⅳ. ADJUSTMENT OF PARTS

## 1. Up/down adjustment of machine head



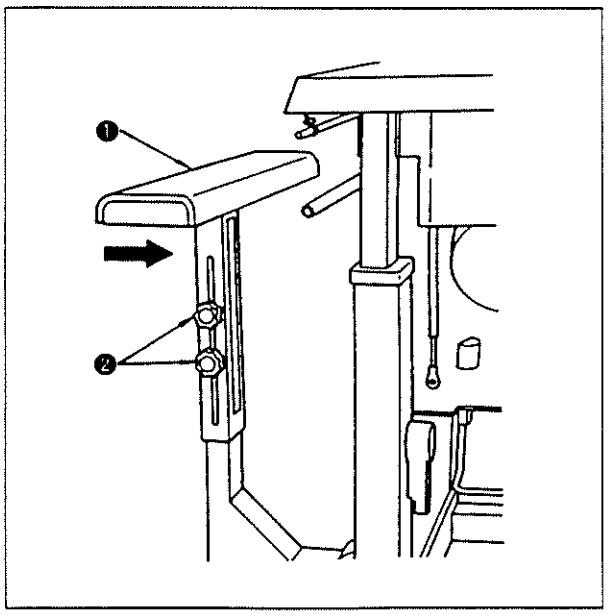

Turning handle ❶ clockwise raises the machine head; turning it counterclockwise lowers the machine head. Always insert the handle pin into lock hole ❷ to stop the up-down motion.

## 2. Up/down adjustment of leg



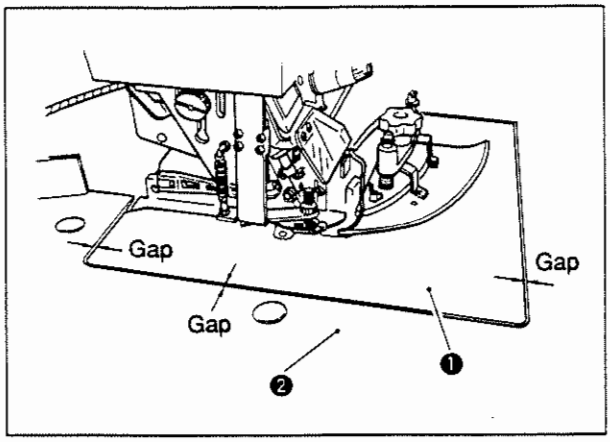

Pull the lock pedal ❶ below the leg with your foot to loosen it; then the table can be moved up and down. After positioning, lock by stepping on the lock pedal.

## 3. Stacker support board adjustment (optional)

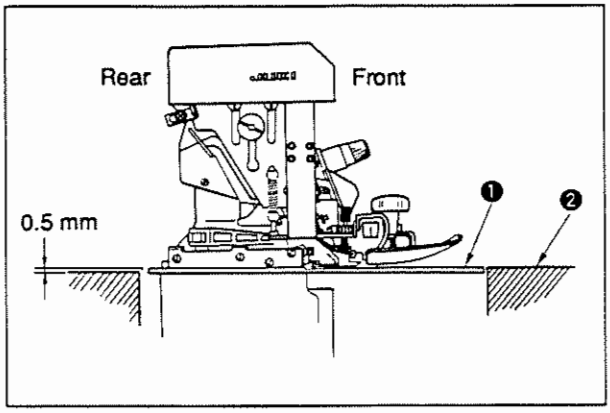



1) Adjust the support board ❶ to match the table height.
2) When handle ❷ is loosened, the support board can be moved up and down. When it is in the correct position, tighten the handle tightly.
3) When short work pieces are to be stacked, loosen two screws below the support board; then it can be moved forward 50mm (Direction shown by arrow). (The shortest length that can be stacked is 480mm.)

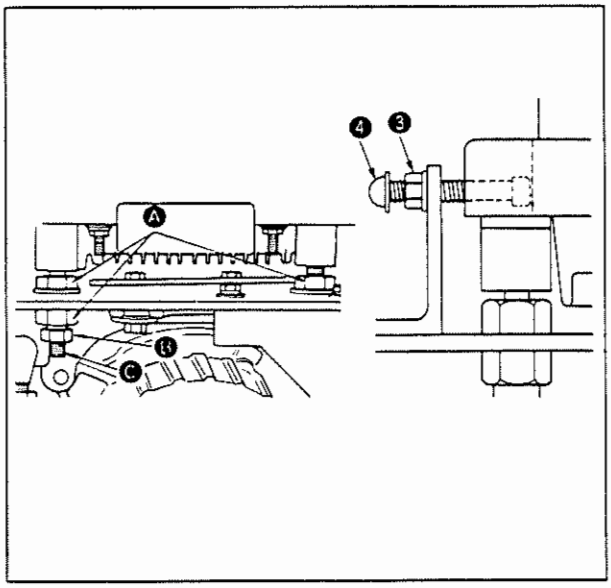
## 4. Adjusting the machine head position




1) Set so that the gap between the machine head cloth plate ❶ and the table ❷ is uniform. (Gap : 1.5±0.8mm ea.)




2) Next, set the machine head so that the cloth plate upper surface ❶ and the table upper surface ❷ are at the same height in front, and the cloth plate upper surface is 0.5mm higher in the rear. Absolutely do not allow it to become lower (0 to 1mm).



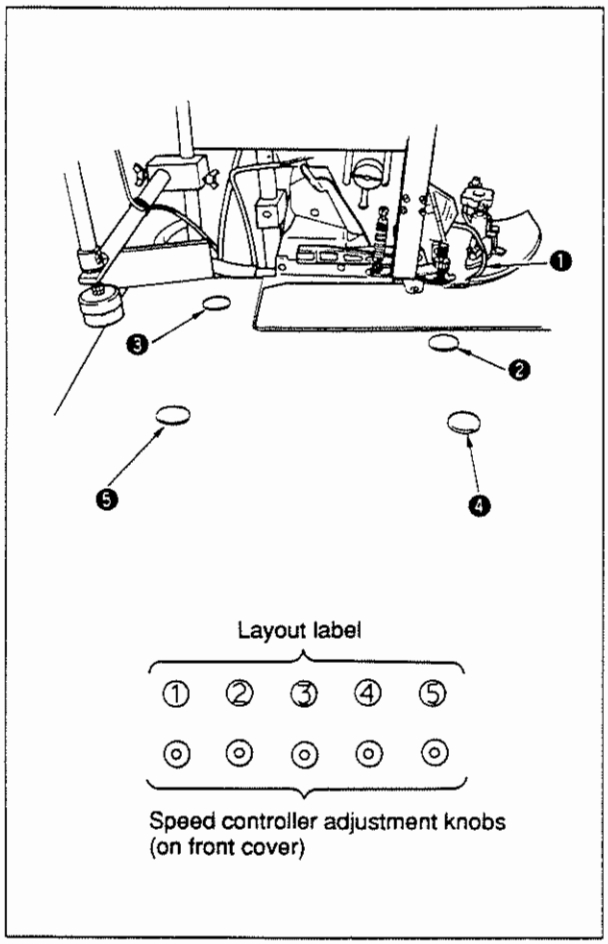

3) How to adjust

a) The left-right and front-rear positions of the machine head can be adjusted by loosening the four upper and lower nuts Ⓐ.

b) Further fine adjustment can be performed with adjustment screw ❹ after loosening lock nut ❸; after adjustment, tighten the lock nut.

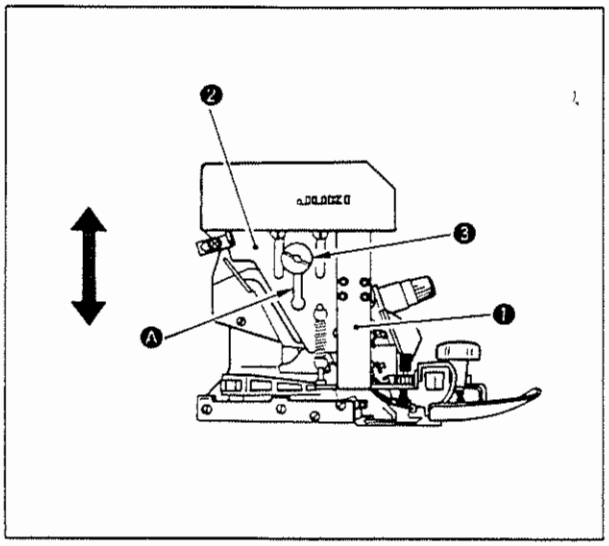
c) Perform the up-down adjustment with shaft Ⓒ after loosening up-down adjustment nut Ⓑ. After adjustment, be sure to tighten nuts Ⓑ and Ⓐ.

## 5. Feed blow adjustment



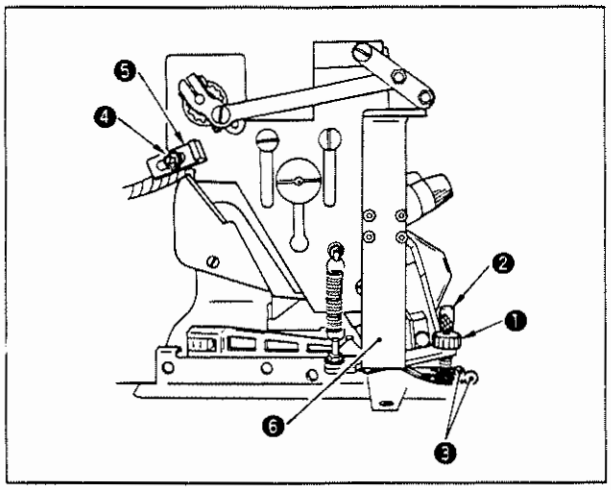

1) Adjust feed blow amounts ❶ to ❺ with the respective speed controllers to match the pattern.
   - ❶ **Curl prevention blow**
   - ❷ **Cloth feed blow**
   - ❸ **Cloth feed blow**
   - ❹ **Cloth feed blow**
   - ❺ **Cloth feed blow**
2) Turning an adjustment knob clockwise causes the corresponding air flow to become weaker.
3) The cloth feed blow direction can be changed when the M4 nut under the table is loosened. After making the change, always be sure to tighten the nut.
   Check whether cord of the speed controller is fully tightened with the cable chip.

## 6. How to slide the cloth control unit



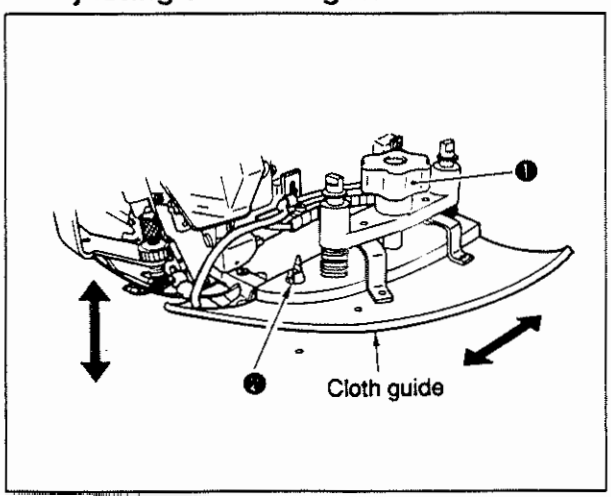
By loosening setscrew ❸ of cloth control slide mounting base ❷, you can slide cloth control unit ❶ within the range of slot Ⓐ. When you do not use cloth control unit ❶, it is advisable to slide it up out of the way. When you use it, slide it down to the lowest point.

## 7. Adjusting the cloth control unit



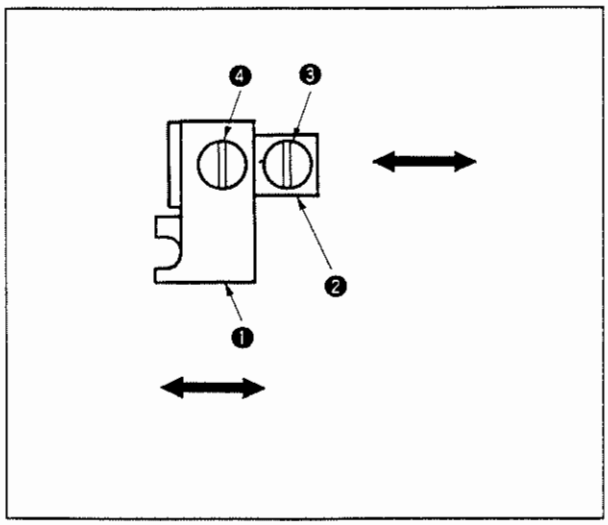

1) Loosen adjust nut ❶.
2) Screw knob ❷ in, and balls ❸ come down and the pressure increases. Screw it out, and balls ❸ go up and the pressure decreases.
3) Loosen screw ❹ in the stopper.
4) Move stopper ❺ to the rightmost position to decrease the descending amount of controller base ❻. This will reduce the pressure applied to balls ❸.
   Move stopper ❺ to the leftmost position to increase the descending amount of controller base ❻. This will increase the pressure applied to balls ❸.
   * The stopper has been factory-set to its rightmost position at the time of delivery.
5) Control the R section so that the ball pressure is strengthened for a small R pattern, weakened for a large R pattern.
6) Vary the ball pressure to match the cloth hardness, length, thickness and pattern.
7) In the case of a straight line pattern, sewing is still possible even with the cloth control switch OFF.
8) In the case of thin cloth, if the ball pressure is too strong the cloth might not advance.
9) In the case of a complicated pattern, turn the cloth control switch OFF and sew using both hands to feed the cloth.
10) In the case of a pattern which can be sewn with a slower sewing machine rpm
    [The high speed/low speed switching pedal is convenient for this type of sewing]
    ① When R is small at the start of sewing
       With the high speed-low speed switching pedal depressed (low speed), let sewing start automatically; when a straight line portion of the pattern is reached release the pedal so sewing can be done at high speed.
    ② When R is small at the end of sewing
       Start automatically (at high speed); when the small R portion of the pattern is reached step on the high speed-low speed switching pedal to go into low speed operation.
11) In the case of cloth in which it is easy for a shine to occur (for example gabardine and dark-colored fabrics), lower the speed to 2,000s.p.m. or less and adjust the cloth control pressure so that a shine does not occur.

## 8. Adjusting the cloth guide



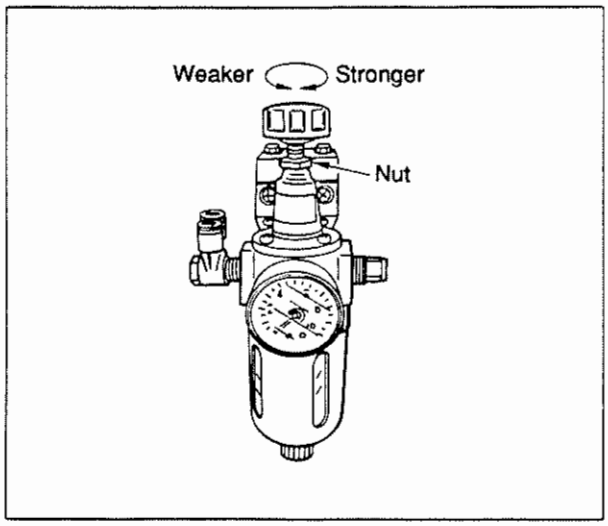

1) By loosening two screws ❷, cloth guide position can be adjusted in the direction shown by arrow.
2) If the knob ❶ is turned to the right, cloth guide is lowered, and if the knob is turned to the left, cloth guide is raised. Make adjustment according to the cloth thickness.

## 9. Adjusting the edge guide



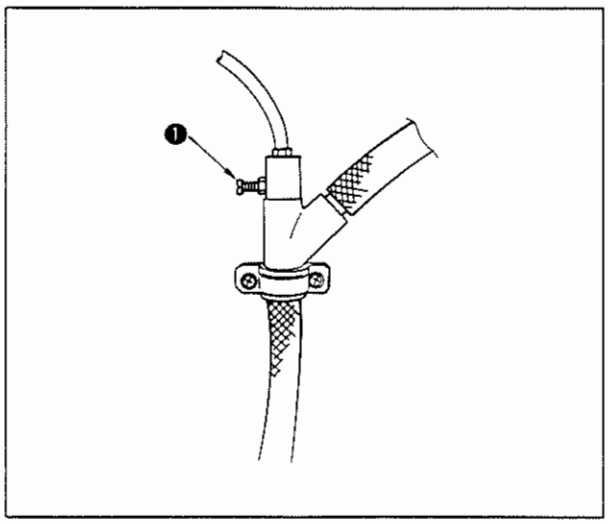

1) Edge guide ❶ is a device to prevent curling at the cloth edge. Its position can be adjusted by screw ❹.
2) Guide ❷ is provided for adjustment of knife cutting width. Adjust screw ❸ according to the length of cloth to be cut.

## 10. Regulator adjustment



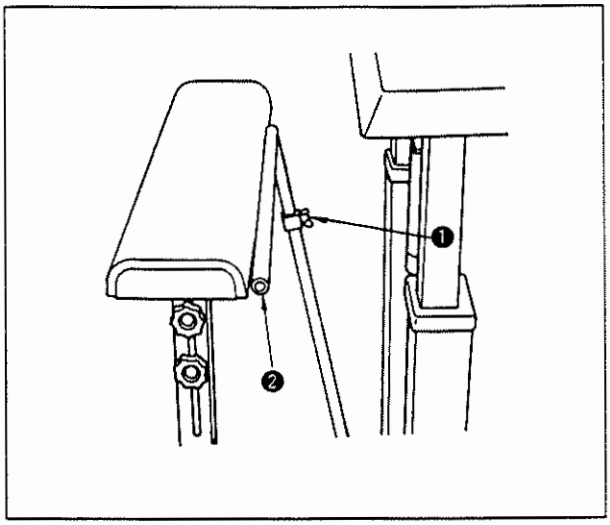

At the time of factory shipment, this is set to 5kgf/cm² (0.5MPa). To readjust, loosen the nut, as shown in the figure, and turn the handle. Keep the adjustment within the limits of 5 to 6kgf/cm² (0.5 to 0.6MPa).

## 11. Chain-off thread suction power adjustment



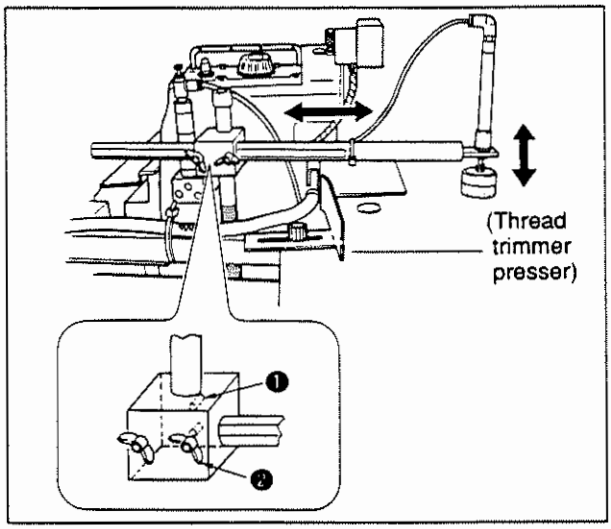

Tightening adjustment screw ❶ weakens the chain-off thread suction power; loosening the screw strengthens it.

## 12. Stacker bar adjustment (optional)



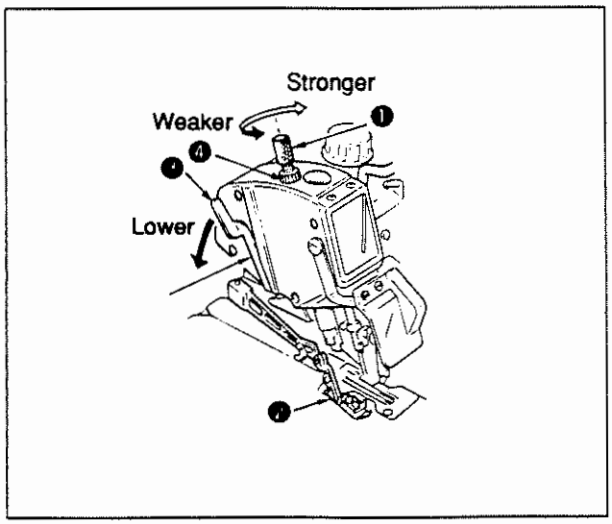

Loosen wing nut ❶, then adjust stacker bar ❷ up or down.

## 13. Thread trimmer presser adjustment (optional)



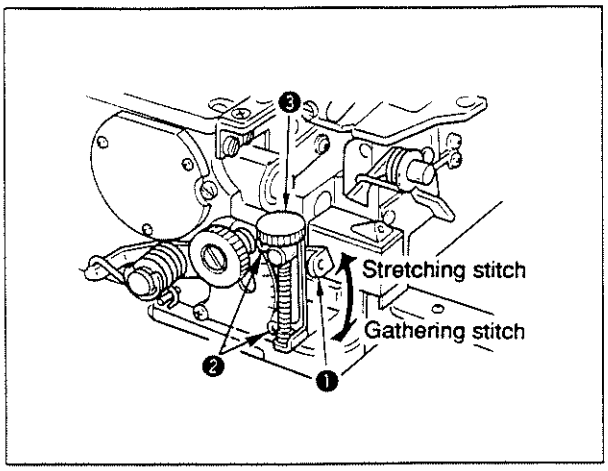

1) Adjust the thread trimmer presser height with the two hexagon socket head cap screw ❶.
2) In the long direction, adjust with wing nut ❷.
3) For reference, the thread trimmer presser should rise approximately 42mm above the top surface of the table.
4) Be sure to fix the thread trimmer presser at a position to allow the presser to press the center of the workpiece in terms of width of the workpiece.

## 14. Presser foot pressure and presser lifter




1) To adjust the presser pressure, loosen nut ❹, then turn presser adjustment screw ❶.
   Turning the screw clockwise strengthens the pressure; turning it counterclockwise weakens the pressure. After adjustment, always tighten nut ❹.
2) Lower presser lifter lever ❸ to open presser foot ❺ to the side.

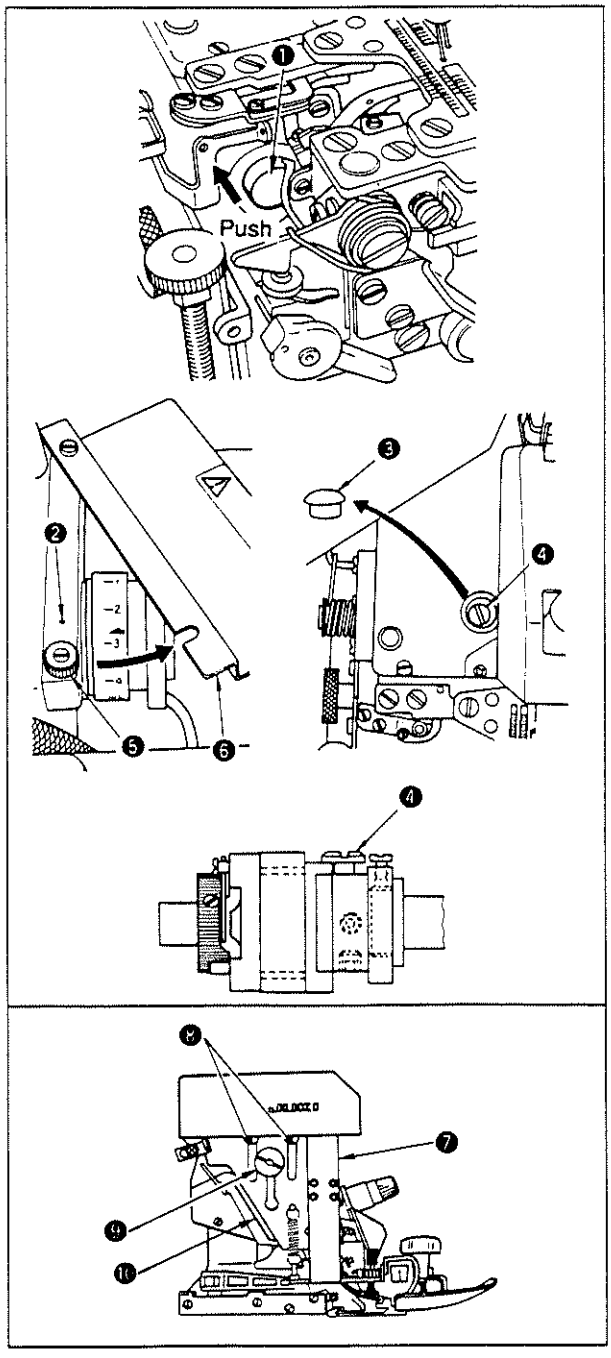
## 15. Differential feed mechanism




1) Move lever ❶ up for stretching stitch or down for gathering stitch.
2) When you want to move the lever ❶ only slightly, use differential feed minute-adjust screw ❸.
3) When the differential feed adjusting lever is set to graduation S, the machine will perform stretching with a differential feed ratio of 1:0.7. When the lever is set to graduation 0, the differential feed ratio between the main feed dog and the differential feed dog will be 1:1.
4) The maximum differential feed ratio for gathering is 1:2 (it can be set to 1:4 depending on the adjustment of the internal mechanism of the sewing machine). The graduations beyond 0 are used as reference.
5) Differential feed can be started either automatically (by program input) or manually (by pedal switch). Adjust the displacement of the differential feed adjustment lever ❶ in advance with screws ❷ (stopper).

**(Caution) At the time of factory shipment, the stopper is fixed in position 0 to 1.**
**Do not change the setting of the differential feed adjusting lever, during sewing, from the "S" (stretching) directly to "3" (shirring) on the scale. Doing so will cause the needle to break.**

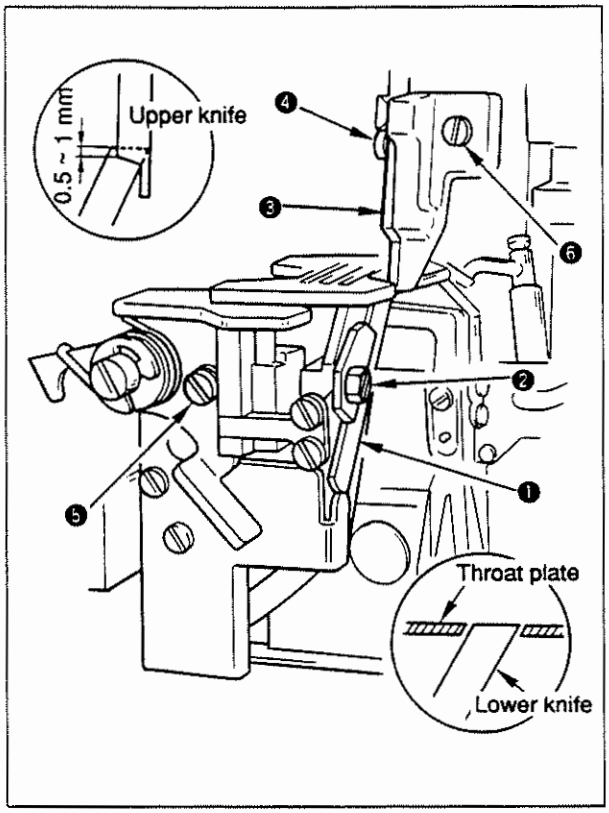
## 16. Adjusting the stitch length




1) Turn the power switch OFF.
2) Loosen screw ❺ and open pulley cover ❻.
3) When you turn the pulley while pressing pushbutton ❶, you will find a point where the pushbutton goes in further.
4) Align the desired stitch length on the pulley with red engraved dot ❷.
5) Release the pushbutton.
6) Align "L" on the pulley with the white engraved dot, and remove rubber cap ❸, then you will see feed cam screw ❹. Tighten the screw to fix the feed cam.

**(Caution) When tightening feed cam screw ❹, a screwdriver comes into contact with cloth control unit ❼. To avoid this, remove cloth control unit ❼. The cloth control unit can be detached by removing hinge screw ❽ and setscrew ❾.**
**Then, remove slide A ❿ by loosening three small screws.**

## 17. Knives and overedge width




### (1) Height of the lower knife

Loosen setscrew ❷ and adjust the height of lower knife ❶ so that its edge is flush with the throat plate surface.

### (2) Height of the upper knife

Loosen setscrews ❹, and perform adjustment so that upper knife ❸ overlaps lower knife ❶ by 0.5 to 1 mm when the upper knife is at its lowest point.

### (3) Overedge width

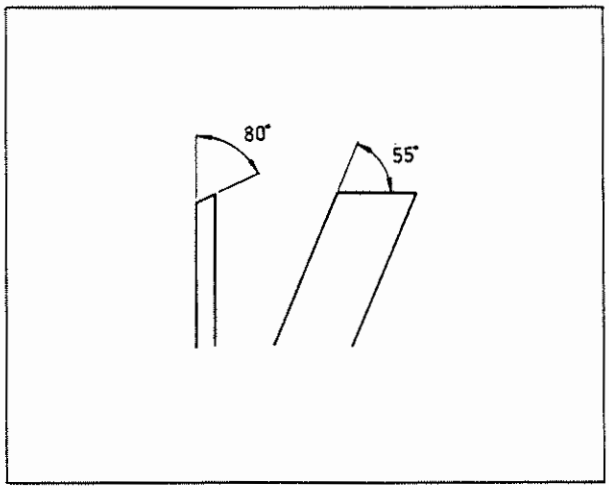
Overedge widths of 4.0 through 5.6 mm are provided by changing the parts. (The overedge width will be slightly larger than the knife cut width.)

To change the overedge width:

1) Loosen setscrew ❺, push lower knife ❶ to the left and fix it.
2) Loosen setscrew ❻ and move upper knife ❸ as required, then fix it.
3) Lower the upper knife to its lowest point and loosen setscrew ❺. Tighten setscrew ❺ when the lower knife comes in contact with the upper knife.

**(Caution)** **1. Be sure to tighten screw ❺ before operating machine.**

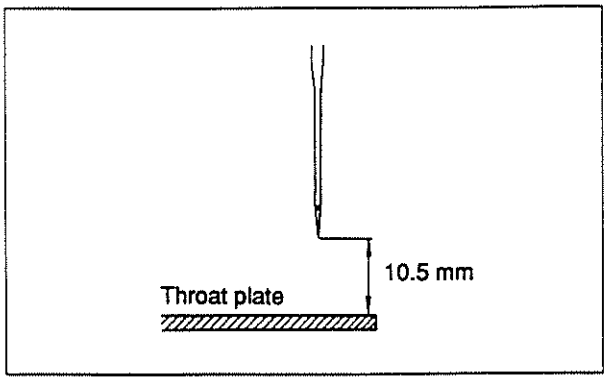
**2. When the knife and overedge width adjustments are completed, check whether the thread is trimmed correctly.**




### (4) Resharpening the lower knife

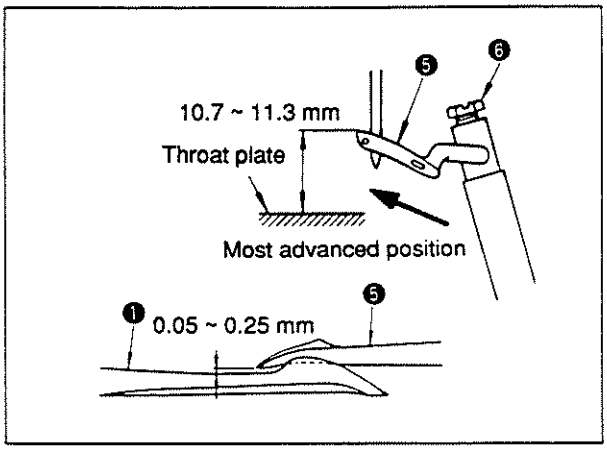
When the lower knife has become dull, resharpen it as shown in the figure.

## 18. Height of needle



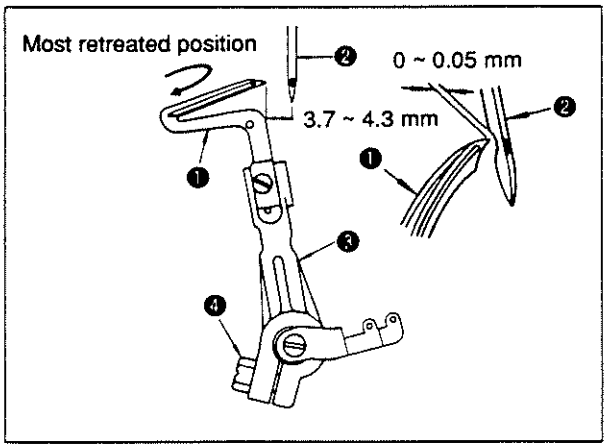

When the needle bar is at the highest point of its stroke, the overlock needle points should be 10.5 mm above the throat plate surface.

## 19. Setting the loopers




### (1) Upper looper

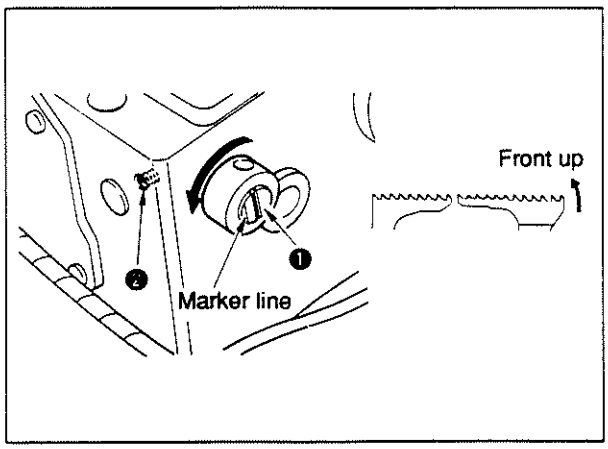
1) When upper looper ❺ has advanced farthest, it should be 10.7 to 11.3 mm above the throat plate surface.
2) The clearance between upper looper ❺ and lower looper ❶ when they are crossed each other should be 0.05 to 0.25 mm.
3) To adjust the clearance the upper and lower loopers, loosen screw ❻ and adjust the upper looper.




### (2) Lower looper

1) When lower looper ❶ has gone back farthest, it should be distanced 3.7 to 4.3 mm from overlock needle ❷.
2) When the lower looper is crossed with the needle, the clearance between them should be 0 to 0.05 mm.
3) To make adjustment, loosen setscrew ❹ and move lower looper holder ❸.

## 20. Feed dog




### (1) Tilt of feed dog

1) Loosen screw ❷, and turn eccentric shaft ❶ in the direction of the arrow to make the feed dog front up or turn it in the reverse direction to set the feed dog front down.
2) The feed dog should be levelled when the marker line engraved on the eccentric shaft faces exactly to the marker line.
   - Marker line is perpendicular to the frame .... feed dog horizontal
   - When marker line is below the frame ..... front up
   - When marker line is above the frame ..... front down

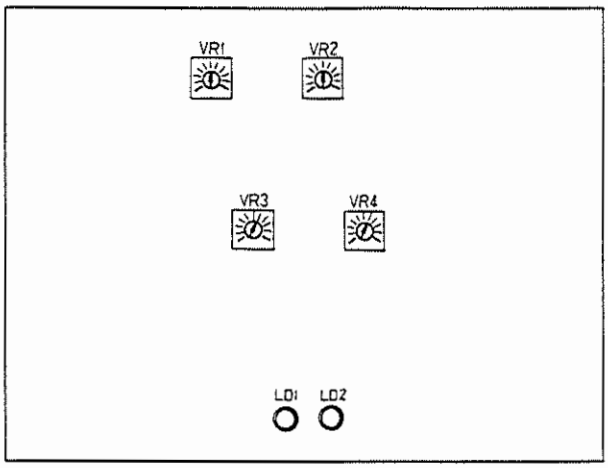
## 21. Sensor adjustment

The sensors have already been adjusted at the time of factory shipment, but if trouble develops or a sensor is replaced, adjust as follows.

### (1) Cloth edge sensor, cloth detector sensor

Open the control box cover, and adjust the preset resistors VR1 to 4. The cloth edge sensor is adjusted by VR1 and VR3, the cloth detector sensor by VR2 and VR4.

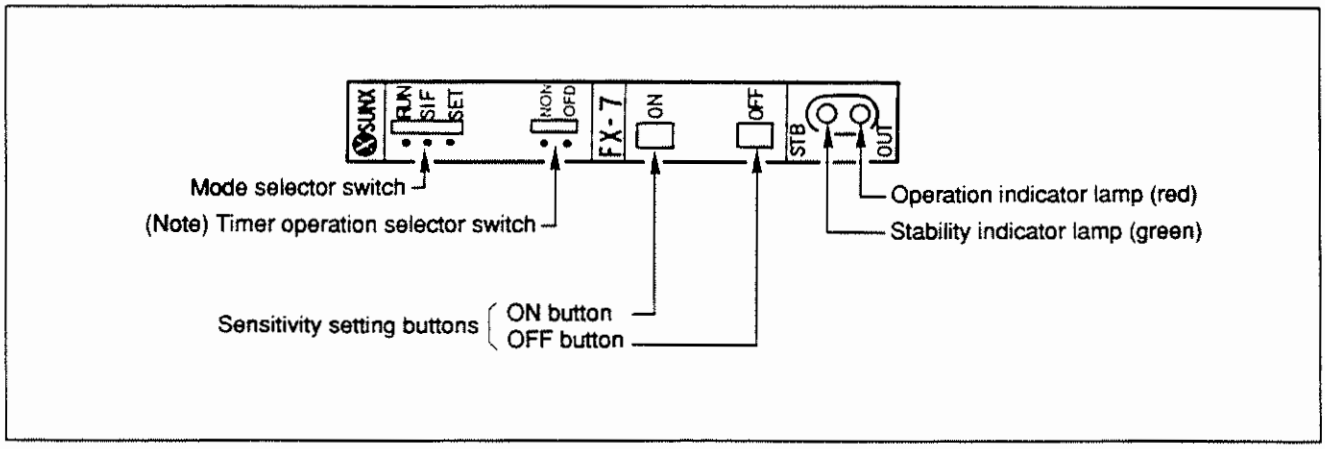
**(Caution) Press the stop switch, so that the sewing machine will not run while these adjustments are being made.**




1) Set VR1 and VR2 to the centers of their scales.
2) Insert a thin cloth which is being used, for example georgette etc., under the sensor, then set VR3 and VR4 to positions where luminous diodes LD1 and LD2 light up.
3) With no cloth under the sensor, set VR3 and VR4 at positions where luminous diodes LD1 and LD2 light up.
4) Next, set VR3 and VR4 to the mid-points between the positions set in steps 2) and 3). This completes the adjustment.

### (2) Outward curve sensor, inward curve sensor

The outward curve sensor is located in front. The amplifier is above it. The inward curve sensor is in the rear; the amplifier is below it.

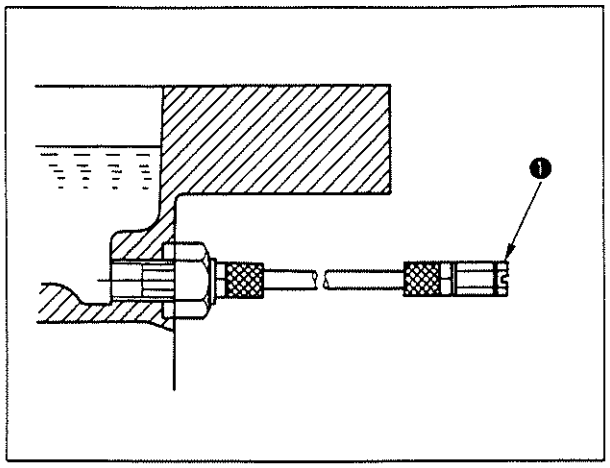



1) Remove the amplifier cover and set the mode selector switch to SET.
2) Adjust the cloth guide height to the thickness of a thin cloth that is actually being used.
3) With cloth inserted, press the ON button. When the machine accepts the ON condition, the stability indicator lamp (green) flashes.
4) With no cloth inserted, press the OFF button. If there is adequate difference between the ON and OFF conditions and stable detection is possible, the stability indicator lamp will flash twice. If it continues to flash, the difference is small but there is no problem in practical use.
5) Set the mode selector switch to SIF.
6) Press the OFF button.
7) Set the mode selector switch to RUN.
8) Reattach the cover and set the amplifier to complete the adjustment.

**(Caution) If the sensor sensitivity is not stable, perform a similar adjustment with a cloth that will actually be used.**

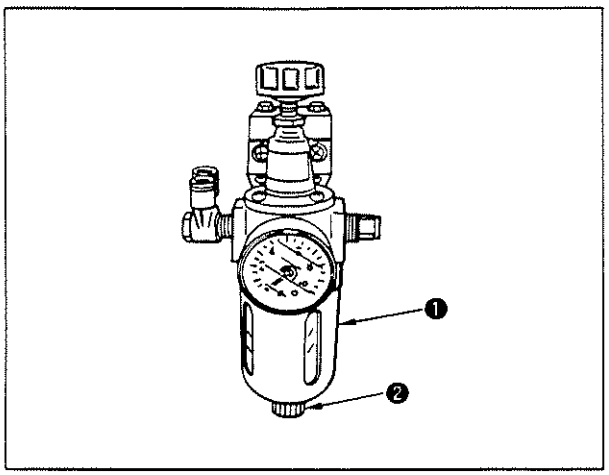
# V. MAINTENANCE

## 1. Oil draining




1) Use JUKI New Defrix Oil No. 2 in the machine head.
2) To change the oil, first drain the oil out by unscrewing screw ❶ on the tip of the oil drain hose connected to the oil pan. At this time, remove the cover from the oil inlet hole on top of the machine head.

## 2. Drainage of filter regulator

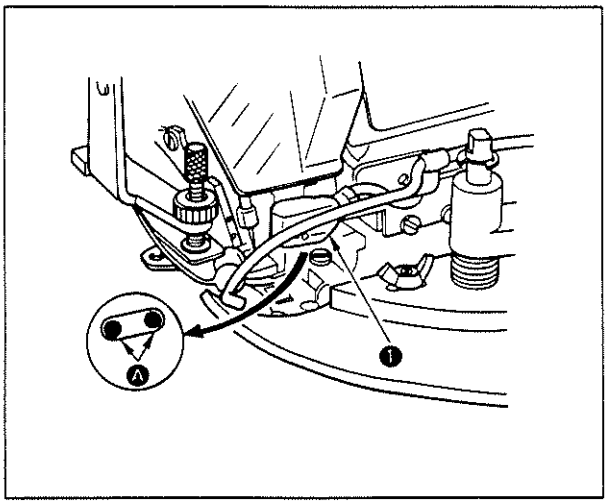



1) Drainage of regulator ❶ must take place before usage, and water must be eliminated.
(Loosen knob ❷, then drain the water.)
2) Be careful about moisture as it is harmful to air control system.

## 3. Dust collector box

1) Throw away waste tips inside the dust collector box once a day.
2) Fine cloth chip adhere to the suction port inside the box; blow them away with an air gun.
3) If a great deal of lint adheres to the intake, the suction power may be reduced.

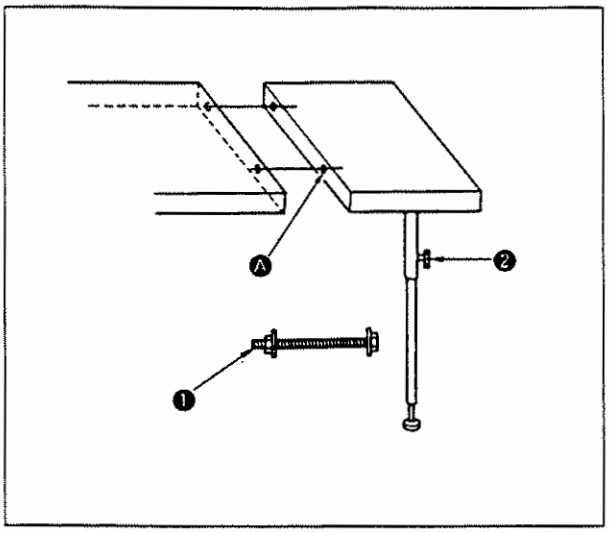
## 4. Cleaning the sensor




Dust gathering in the bottom of light receiving sensor ❶ may hide light receiving part Ⓐ of the sensor.
This dust causes such adverse effects as the machine does not stop, the ball control unit does not operate and others, so wipe light receiving part Ⓐ of the sensor with a soft cloth.

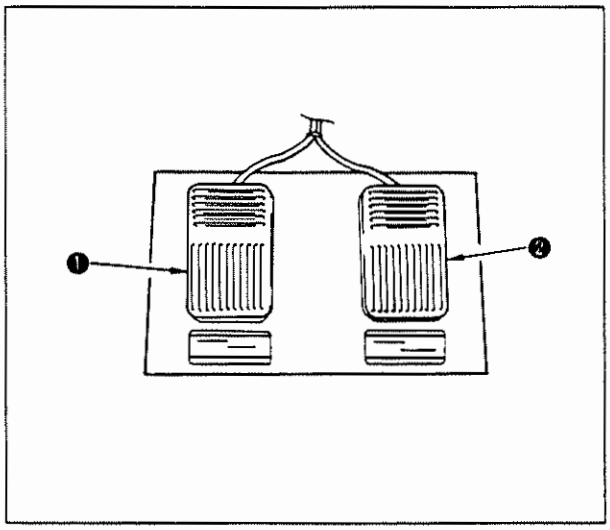
# Ⅵ. OPTIONAL

## 1. Auxiliary table (G54203970A0)



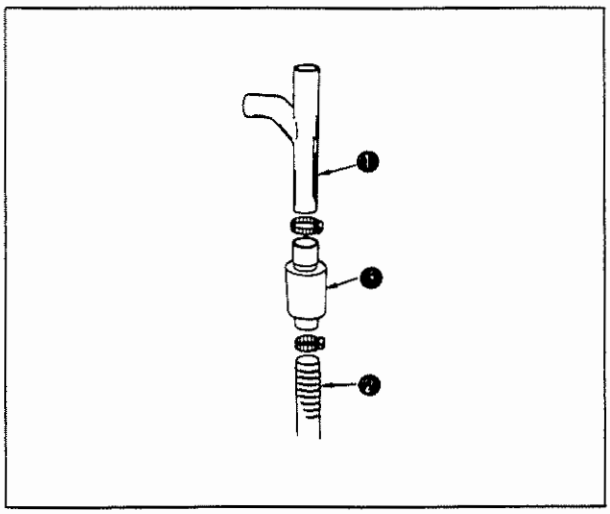

1) In the case of long sized material, the machine is much easier to use with an auxiliary table.
2) To install the auxiliary table, attach two bolts ❶ to the mounting holes Ⓐ in the sides of the main unit table and the auxiliary table.
3) Match the height of the auxiliary table to that of the main unit table with handle ❷.

## 2. Pedal switches (G54223970A0)



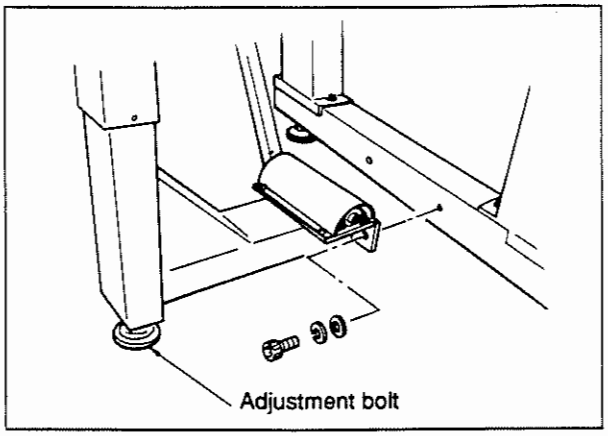

1) Differential operation switch
   Differential operation can be switched ON and OFF with pedal switch ❶.
2) Stacker operation switch
   The stacker starts up when the last seam is reached when this pedal switch ❷ is ON.

## 3. Noise muffler (GMC08042000)

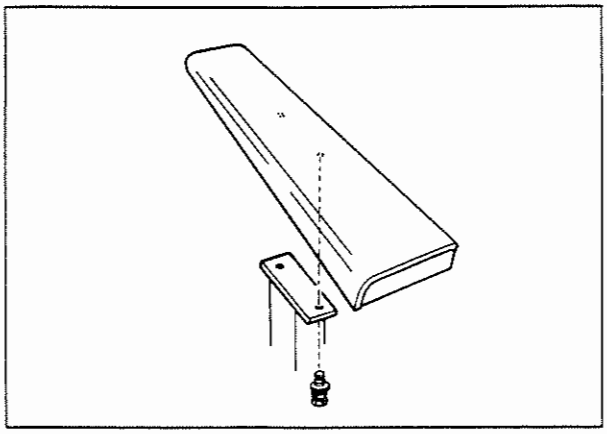



Install the noise muffler ❸ between the chain-off thread suction pipe ❶ and the chain-off thread suction hose ❹.
The muffler reduces noise during chain-off thread suction.

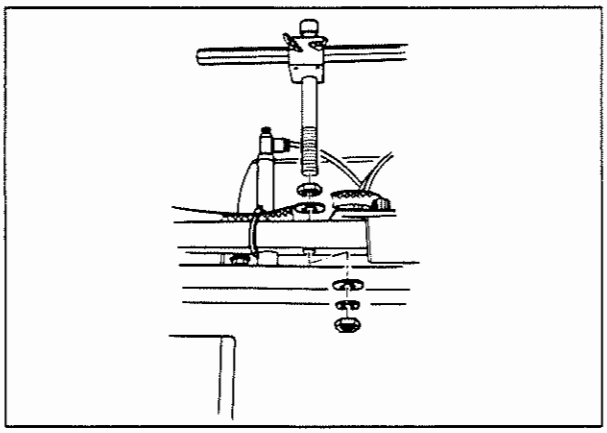
## 4. Stacker (single) (SS40) (GSS400000B0)



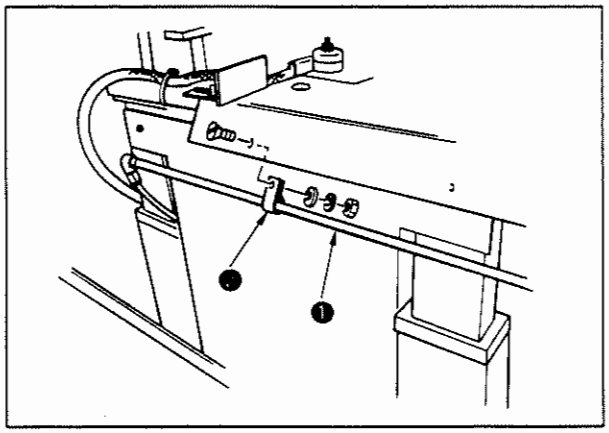

1) Fix the stacker support column to the foot using the two screws (M8,L=30) supplied with the unit.
Also adjust the height with the adjustment bolt.



2) Mount the stacker support board to the stacker support column using the two screws (M8 hexagonal torx) supplied with the unit. There are four mounting positions; mount according to the specification.



3) Mount the thread trimmer presser to the hole on the leg (use the nuts) supplied with the unit.



4) Fix the stacker blower ❶ to the side of the table with clip ❷ and flat head screws.
5) Please refer to "Ⅳ. AIR PIPING DIAGRAM" for the mounting positions of the air piping and the solenoid valve.
6) Please refer to "Ⅶ. CONNECTOR CONNECTIONS" regarding the connector connections.

**(Caution) For instructions for the SS42 double stacker (GSS420010B0), please refer to the Instruction Manual for it provided at the time of ordering.**

# Ⅶ. CONNECTOR CONNECTIONS

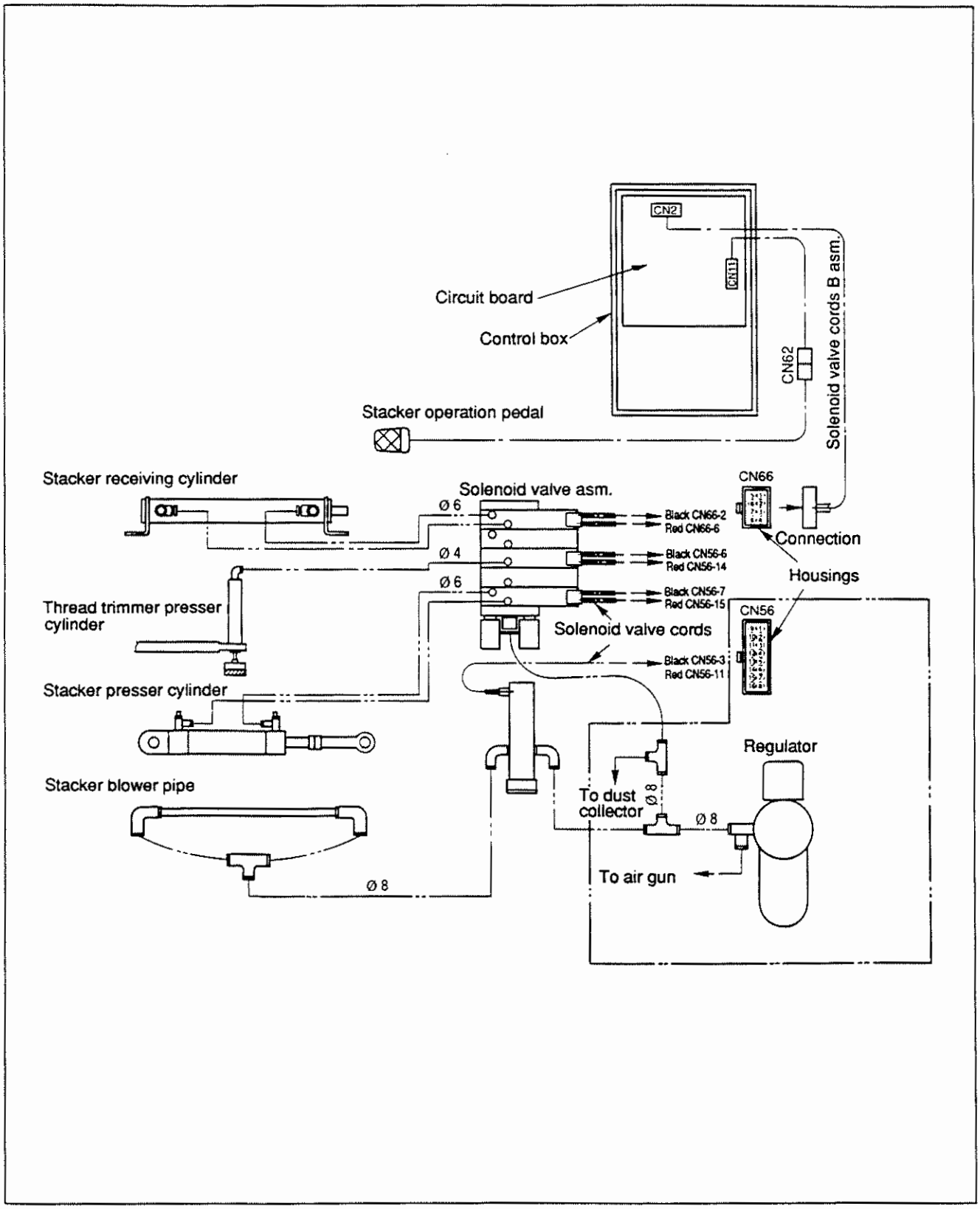
The additional connector connections needed when an optional accessory stacker is used are given here.

## 1. Additional stacker parts

1) Thread trimmer presser cylinder
2) Stacker blower pipe
3) Stacker presser cylinder
4) Stacker operation pedal

After adding these parts, set Dip switches SW2-1 and 2 inside the control box to select use of the stacker.

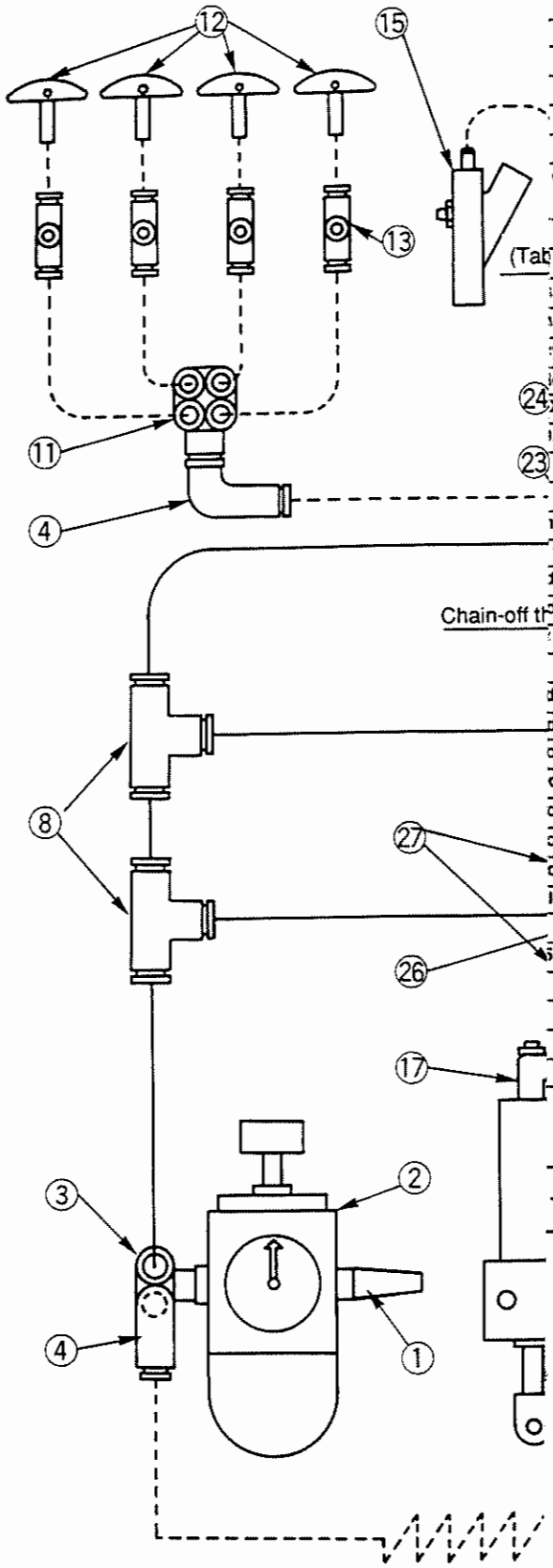
A diagram of connections of the added parts follows.



# Ⅷ. TROUBLES AND CORRECTIVE MEASURES

| TROUBLE | CAUSES | CORRECTIVE MEASURES |
|---|---|---|
| 1. Needle breakage | ①Needle type is wrong.<br>②Needle size is not correct.<br>gauge<br>③Needle is not installed correctly.<br>④Needle is not straight.<br>⑤Needle-to-needle guard relation is bad.<br>⑥Needle-to-looper relation is bad.<br>⑦Differential feed ratio is set to an excessive value. | · Use a specified needle.<br>· Use a needle size suitable to the thread and type of fabrics.<br>· Refer to "Attaching needles."<br>· Use a straight needle.<br>· Refer to "Needle guard."<br>· Refer to "Setting the loopers."<br>· Refer to "Differential feed mechanism." |
| 2. Cloth is not cut | ①Position of the upper and lower knife is inadequate.<br>②Knife blade has worn out. | · Refer to "Knives and overedge width."<br>· Sharpen the lower knife or renew the upper knife. |
| 3. Stitch skipping | ①Needle-to-looper relation is wrong.<br>②Looper blade is blunt.<br>③Needle is threaded with S-twist (left-hand twist) thread.<br>④Thread tension is wrong. | · Refer to "Setting the loopers."<br>· Correct the shape of the looper blade using an oilstone, or replace it.<br>· Use a Z-twist (right-hand twist) thread with the needle.<br>· Adjust the thread tension nut. |
| 4. Thread breakage | ①Quality of the thread is poor.<br>②Thread is too thick for the needle size.<br>③Needle is installed in a wrong way.<br>④Thread tension is too high.<br>⑤There is scratch or bruise on the surface of stone or buffing machine. | · Use a thread of good quality.<br>· Select a suitable needle or thread.<br>· Refer to "Attaching needles."<br>· Adjust the thread tension nut.<br>· Remove scratches and bruises using an oil needle, looper, throat plate or needle guard. |
| 5. Puckering | ①Needle is too thick.<br>②Thread tension is too high.<br>③Pressure applied by the presser foot is too high or too low.<br>④Feed dog comes up too much from the throat plate surface.<br>⑤Knife fails to cut the fabrics sharply.<br>⑥Differential feed mechanism is not set correctly. | · Select a suitable needle size for the thread and materials.<br>· Adjust the thread tension nut.<br>· Adjust the presser adjusting screw.<br>· Lower the feed dog.<br>· Sharpen the lower knife.<br>· Refer to "Differential feed mechanism." |
| 6. Irregular stitching | ①Thread is not supplied smoothly.<br>②Thread tension is too low.<br>③Needle is blunt.<br>④Pressure applied by the presser foot is inadequate.<br>⑤Height of the feed dog is wrong. | · Use smooth thread with even thickness or clean up the thread path.<br>· Increase the thread tension.<br>· Use a new needle.<br>· Adjust the presser adjusting screw.<br>· Refer to "Feed dog." |
| 7. Chain-off threads can not be trimmed. | ①Chain-off thread suction hose is clogged with waste thread.<br>②Cloth chips collected in the dust collector box.<br>③Wearing of T038 bloc.<br>④MC-8 defective solenoid valve.<br>⑤MC-8 inappropriate suction power. | · Clean the hose.<br>· Clean dust collector box.<br>· Replace bloc.<br>· Replace solenoid valve.<br>· Adjust suction power. |

# Ⅸ. PIPING DIAGRAM




| NAME | Q'ty | Remarks |
|---|---|---|
| | 1 | |
| | 1 | |
| | 1 | |
| | 2 | ASN-395 is used. |
| | 1 | |
| | 1 | |
| | 1 | |
| | 4 | Optional stacker; 2 are used. |
| | 3 | Optional stacker; 2 are used. |
| | 1 | |
| of different | 1 | Used only in the ASN-397. |
| | 4 | Used only in the ASN-397. |
| controller | 5 | Used only in the ASN-397. |
| | 1 | Used only in the ASN-397. |
| | 1 | |
| ylinder | 1 | |
| ier | 1 | |
| X 30 | 1 | |
| .8) | 1 | |
| | 1 | |
| | 1 | |
| nt | 1 | |
| 1/4 | 1 | |
| | 1 | |
| d valve | 3 | Only 1 (in the center) is used in the ASN-395. |
| 8 X 1/8 | 1 | |
| | 2 | |
| | 1 | |
| d valve | 1 | For presser lifter |
| d valve | 1 | For differential operation (ASN-395:optional) |
| cing valve | 2 | For differential operation (ASN-395:optional) |
| d valve | 2 | For stacker bar, double stacker (optional) |
| d valve | 1 | For thread trimmer presser (optional) |
| d valve asm. | 2 | Optional stacker; 1 is used. |
| ler | 4 | For optional stacker |
| | 1 | For stacker bar |
| | 1 | |
| | 1 | For thread trimmer presser (optional) |
| | 1 | For optional stacker |
| | 2 | |
| | 1 | Double stacker (optional) |

— BT0800501EB air tube ø8
— BT0800401EB air tube ø6
— BT0800251EB air tube ø4

drawing are the optional parts for the ASN-397.