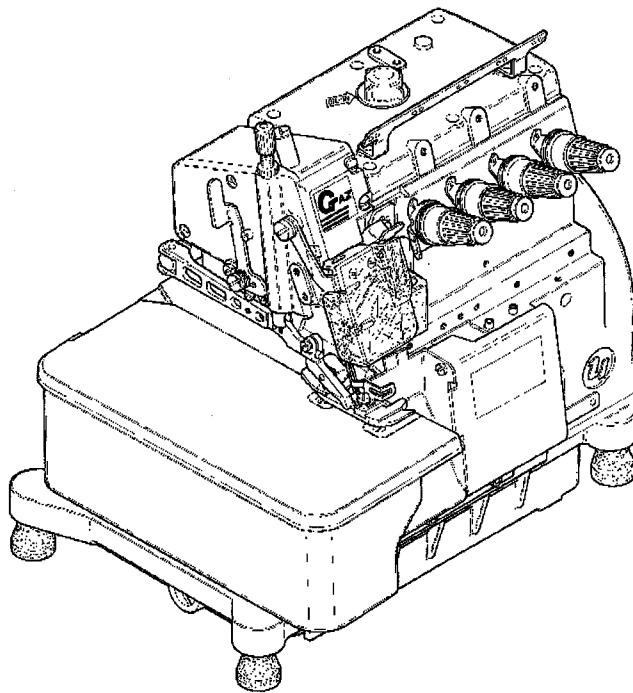


# ***Yamato***<sup>®</sup>

## **Instruction Manual**

Super high speed overlock & safety stitch machine

**AZ8000G class**  
**AZ8500G class**



Thank you for having purchased the Model AZ8000G/8500G class.

Before using your AZ8000G/8500G class, please read the instruction manual and understand the contents well.

After reading the instruction manual, please keep it in a location where it is easily accessible to the operator.




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## Attention

◇ This instruction manual is designed mainly for technicians, but it is advisable that also operators read the instructions with  mark to use the machine properly.

◇ The numbers in lower left corners of figures are figure numbers. We use them in texts as needed for your reference.

## Attention

The description in this instruction manual is subject to change for improvements of the commodity without notice.



# Safety instructions



## 1. To ensure safe use

Always observe the following instructions to ensure the safe use of the industrial sewing machines and devices.

### 1-1 Application and purpose

The sewing machine is designed to improve productivity in the sewing industry and must not be used for other applications and purposes. Do not use this sewing machine until it can be confirmed that safety measures for the drive units have been taken.

### 1-2 Before use

Read all instruction manuals thoroughly before starting the use of this machine and follow them.

Also, read the instruction manual for the installed drive unit.

### 1-3 Working environment

DO NOT WORK IN THE FOLLOWING ENVIRONMENTS:

- Place where atmosphere temperature and humidity give a bad influence the performance of sewing machines.
- Outdoors and place where the sewing machines are exposed to sunlight directly.
- Atmosphere containing dust, corrosive gases or flammable gases.
- Place where voltage fluctuation exceeds u} 10 % of the rated voltage.
- Place where power capacity necessary for the used motor specifications cannot be secured.
- Place where strong electric or magnetic fields are generated such as near large-output high frequency transmitters or high frequency welding machines.

### 1-4 Unpacking and transportation

- (1) Unpack from the top.
- (2) Never hold the parts near the needle or threading parts when removing the sewing machine head from the buffer of box.
- (3) When carrying the sewing machine head, have an assistant.
- (4) Pay attention not to get excessive impact or shock when moving the sewing machine

head with a pushcart.

## 2. Installation and preparation

### 2-1 Instruction and training

Operators and workers, who supervise, repair or maintain the machine head and machine unit, are required to have the adequate knowledge and operation skills to do the job safely. In order to establish such necessary conditions, it needs for the employer to plan and enforce the safety education and training to those workers.

### 2-2 Sewing table and motor

- (1) Prepare a machine table that has enough strength to withstand the weight of the sewing head and any reaction while operating.
- (2) Maintain a comfortable working environment with considering the lighting and the arrangement of sewing machine so that the operators can work smoothly.
- (3) When installing the control box and the related parts on the sewing machine, take care about the posture of the worker.
- (4) Install the drive unit correctly according to the instruction manual.

### 2-3 Wiring

- (1) Never connect the plug for power supply until assembly is finished.
- (2) Fix the connectors securely to the sewing machine head, motor, and electric apparatus.
- (3) Do not apply excessive force to the connection cords.
- (4) Connect the cords away from the driving parts.
- (5) Place the ground wire securely to the designated position on the machine head.

### 2-4 Before operation

- (1) Take care not to attach lubricant, silicone oil, and grease on the eyes or skin.



# Safety instructions



Keep them away from children.

- (2) Be sure to fill or drop lubrication oil before operating the sewing machine.  
Use the Yamato SF oil as specified.
- (3) Never put your hand under the needle or near the moving parts of the machine when turning on power supply switch.
- (4) When operating a new sewing machine, make sure the rotating direction of pulley agrees with the rotating-direction mark.

## 2-5 During operation

- (1) Be sure to operate the sewing machine with the safeguards such as belt cover, finger guard, and eye guard.
- (2) Never place the finger, hair or objects under the needle or close to the moving parts while operating the sewing machine.
- (3) Be sure to turn off the power supply switch when threading or replacing the needles.
- (4) Never place your hands close to the knives when operating the sewing machine with the trimming devices.
- (5) Be sure to turn off the power supply switch when terminating the sewing work or leaving the sewing machine.
- (6) If the sewing machine malfunctions, abnormal sound or smell something unusual while operating, be sure to turn off the power supply switch.

## 2-6 Removal

- (1) Turn off the power supply switch if removed or replaced any parts or during adjustment of sewing machine.
- (2) Do not pull the cord when removing the plug. Be sure to hold the plug itself.
- (3) A high voltage is applied inside the control box. Turn off the power supply switch and wait more than 5 minutes before opening the cover.

## 3. Maintenance, inspection, and repair

- (1) Follow the instruction manuals for maintenance, inspection, and repair.
- (2) Entrust the maintenance, inspection, and repair to specially trained personnel.
- (3) Be sure to turn off the power supply switch and make sure the sewing machine and motor completely stop before the maintenance, inspection, and repair. (IF using a clutch motor, take care that the motor keeps turning for a while even after turning off the power supply switch.)
- (4) Do not modify the sewing machine by the customer's judgment.
- (5) Be sure to use original replacement parts for repairs or maintenance.

## 4. Caution signs and alert pictorial markings

This instruction manual contains the following caution signs and alert pictorial markings to prevent you from injuring yourself or the sewing machine from being damaged.

Please follow the instructions.

### 4-1 Meanings of caution signs

**WARNING** indicates potentially hazardous situations which, if not heeded, could result in death or serious injury to you and others.

**Caution** indicates hazardous situations which, if not heeded, may result in minor or moderate injury to you and others, or may result in machine damage.

**NOTE** is used to emphasize essential information.



# Safety instructions



## 4-2 Alert pictorial markings



This mark indicates the warning which, if not heeded, could result in death or Serious injury.



This mark indicates the caution for high temperature.



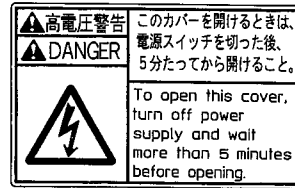
This mark indicates the warning which, if not heeded, could result in death or Serious injury.



High-voltage applies in the control box. This label indicates that electric shock may be caused.



This mark indicates the caution which, if not grounded, the machine or device could malfunction and could result in personal injury.



High-voltage applies in the control box. This label indicates that electric shock may be caused.



This label is affixed on the safeguards. Considering the operation, it is not affixed on the finger guard and eye guard. Be sure to operate with the finger guard and eye guard in position.

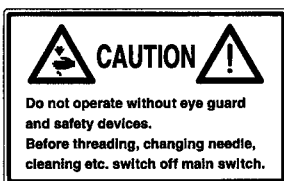


Stepping motor and solenoid may overheat if used continuously. To prevent a burn, take care not to touch.

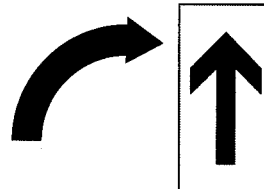


If not connected earth line, static electricity may be generated and inflict injury on person. In addition, the malfunction of electric system may cause injury to person.

## 5. Warning labels on sewing machines



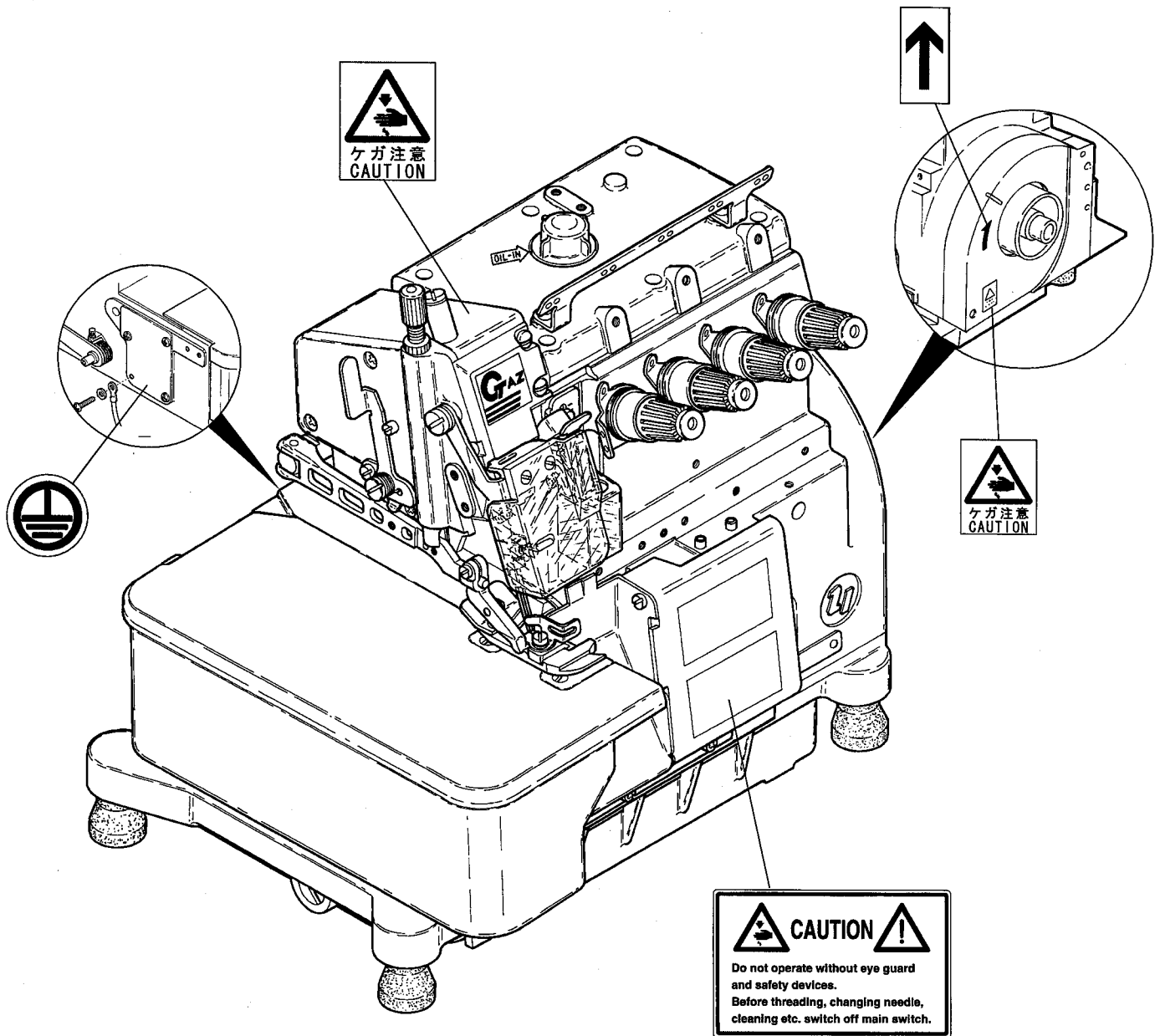
This label indicates that removal of the safeguards and works except for sewing performance while the power supply switch is on are prohibited. (For details, see the next page.)



Check the rotating direction of machine pulley agrees with 'ROTATING-DIRECTION SYMBOL'.

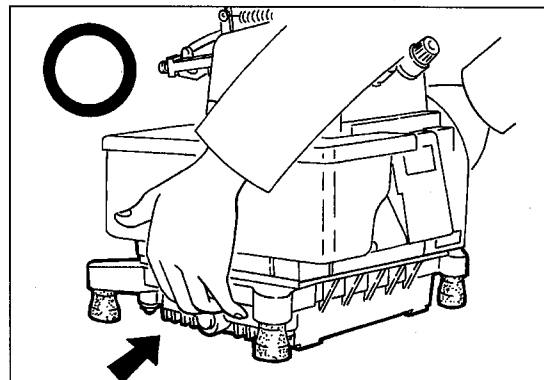
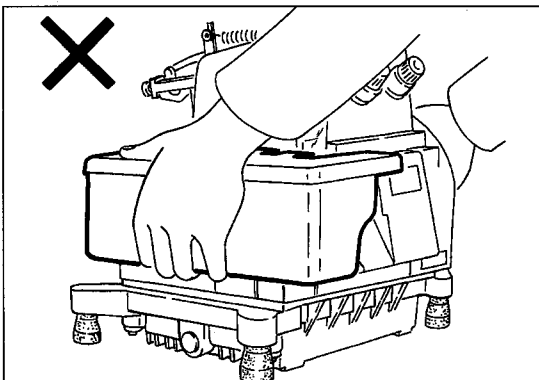


# Safety instructions



## 6 . Handling the machine

When handling the machine, do not handle under the cloth plate cover.



# 1. Name of each part

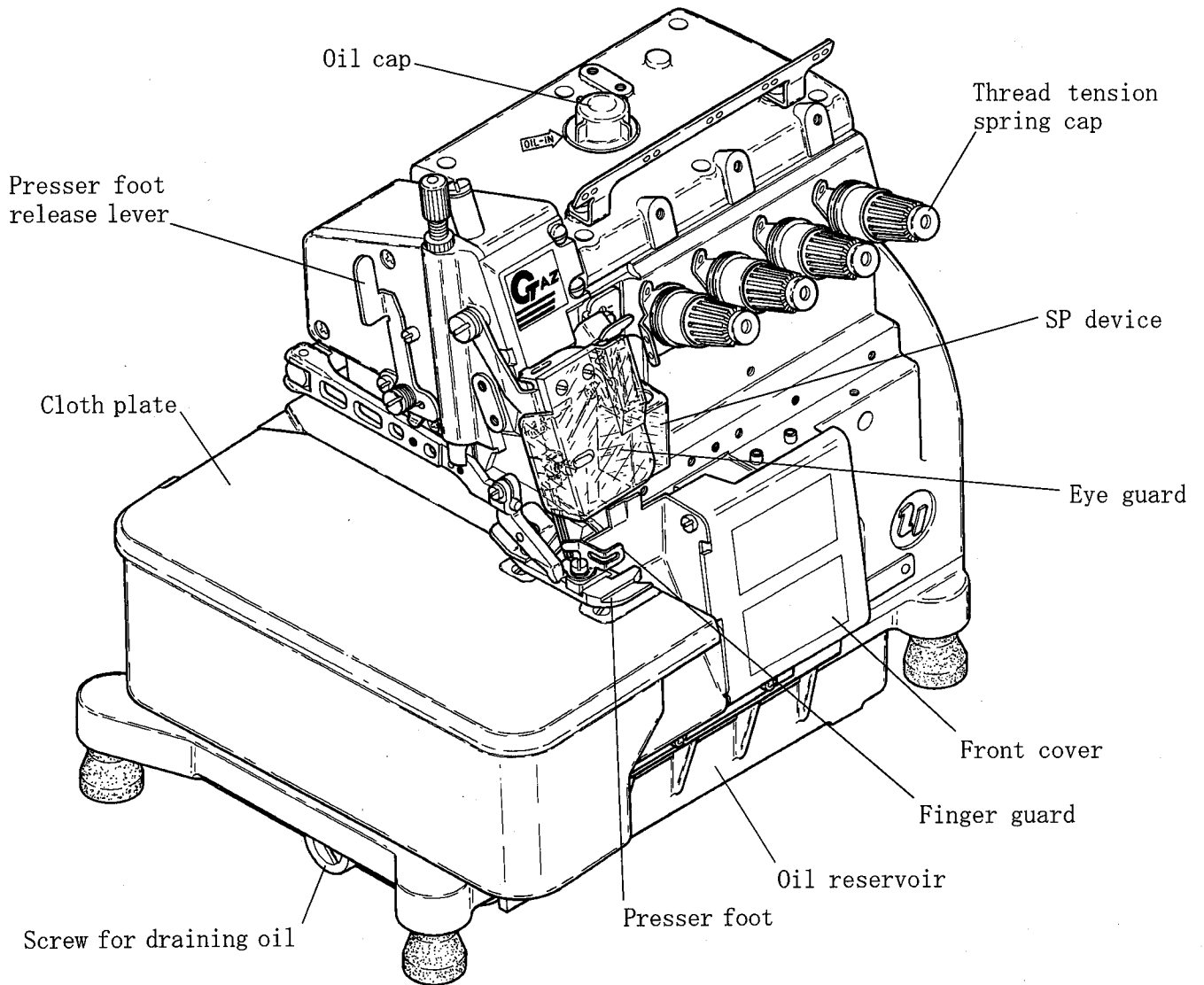


Fig. 1



# 2. Installation

## 2.1 Installation for semi-submerged type

### 2.1.1 Table cutting diagram

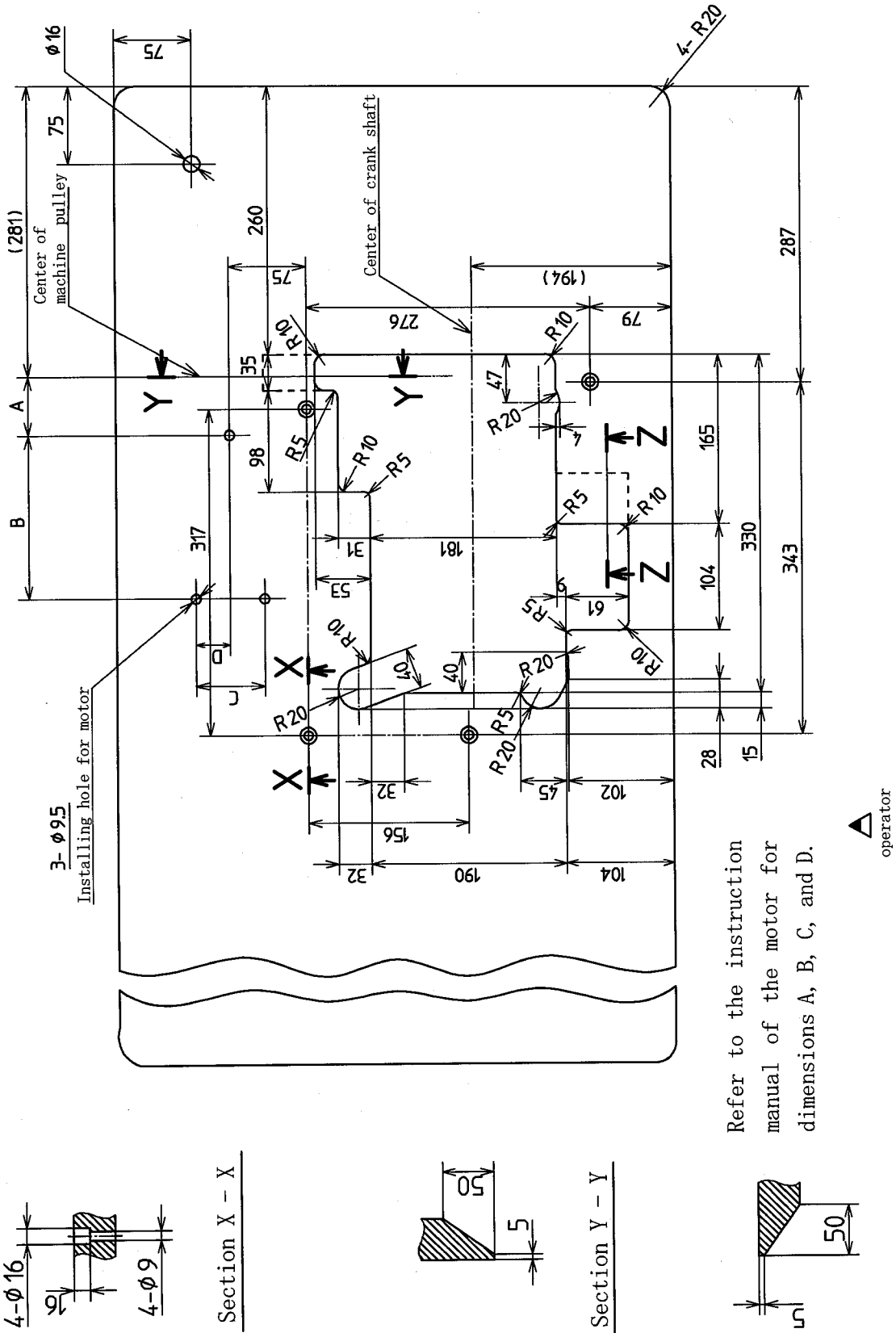


Table dimensions 1200 × 540 × 40

Fig. 2

2.1.2 Installation

Install the machine correctly referring to Figs. 3 and 4.

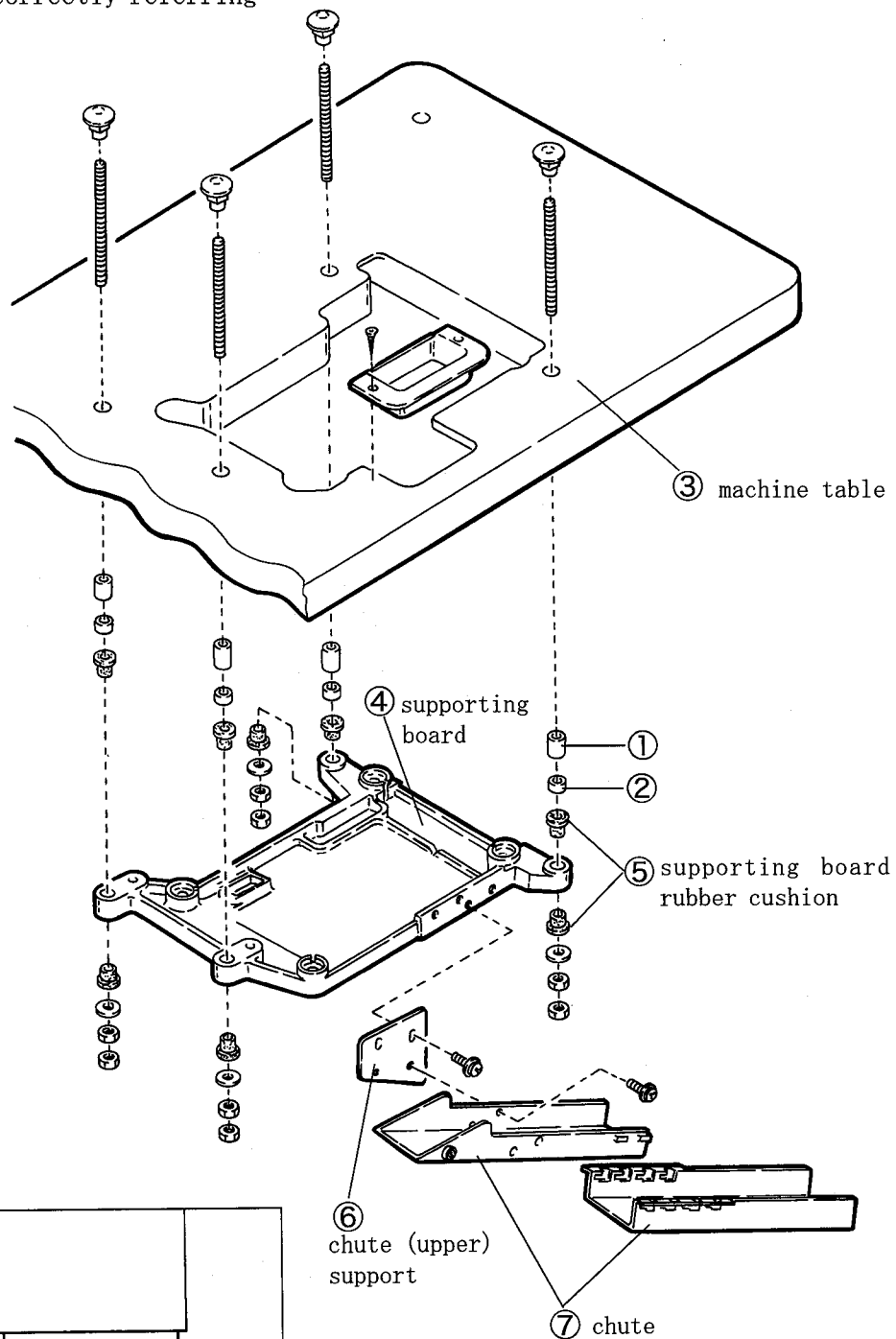


Fig. 3

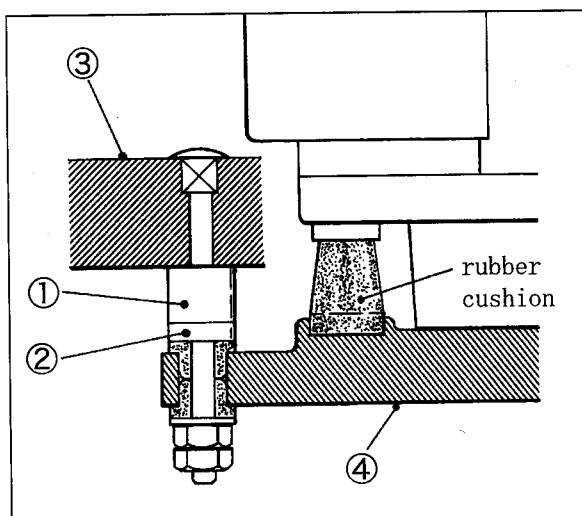


Fig. 4

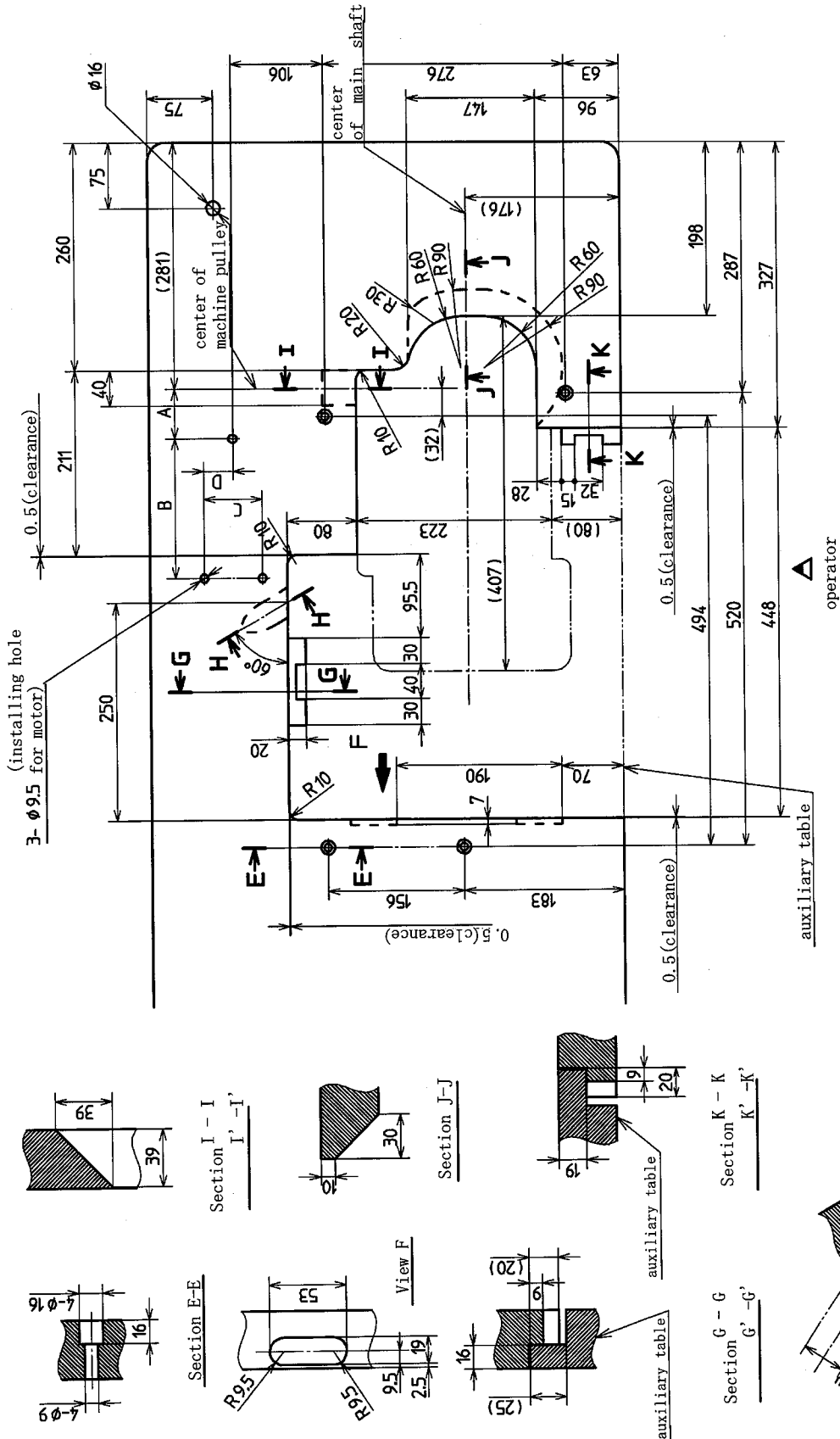
Table 1 The number of spacers ① and ②

Thickness of table	pcs. of ①	pcs. of ②
40mm	4	4
45mm	4	not necessary

Size of spacers : ①=15mm ②=5mm

## 2.2 Installation for fully-submerged type

### 2.2.1 Table cutting diagram



Refer to the instruction manual of the motor for dimensions A, B, C, and D.

Table dimensions 1200 × 540 × 40

Fig. 5

Cutting diagram of auxiliary table

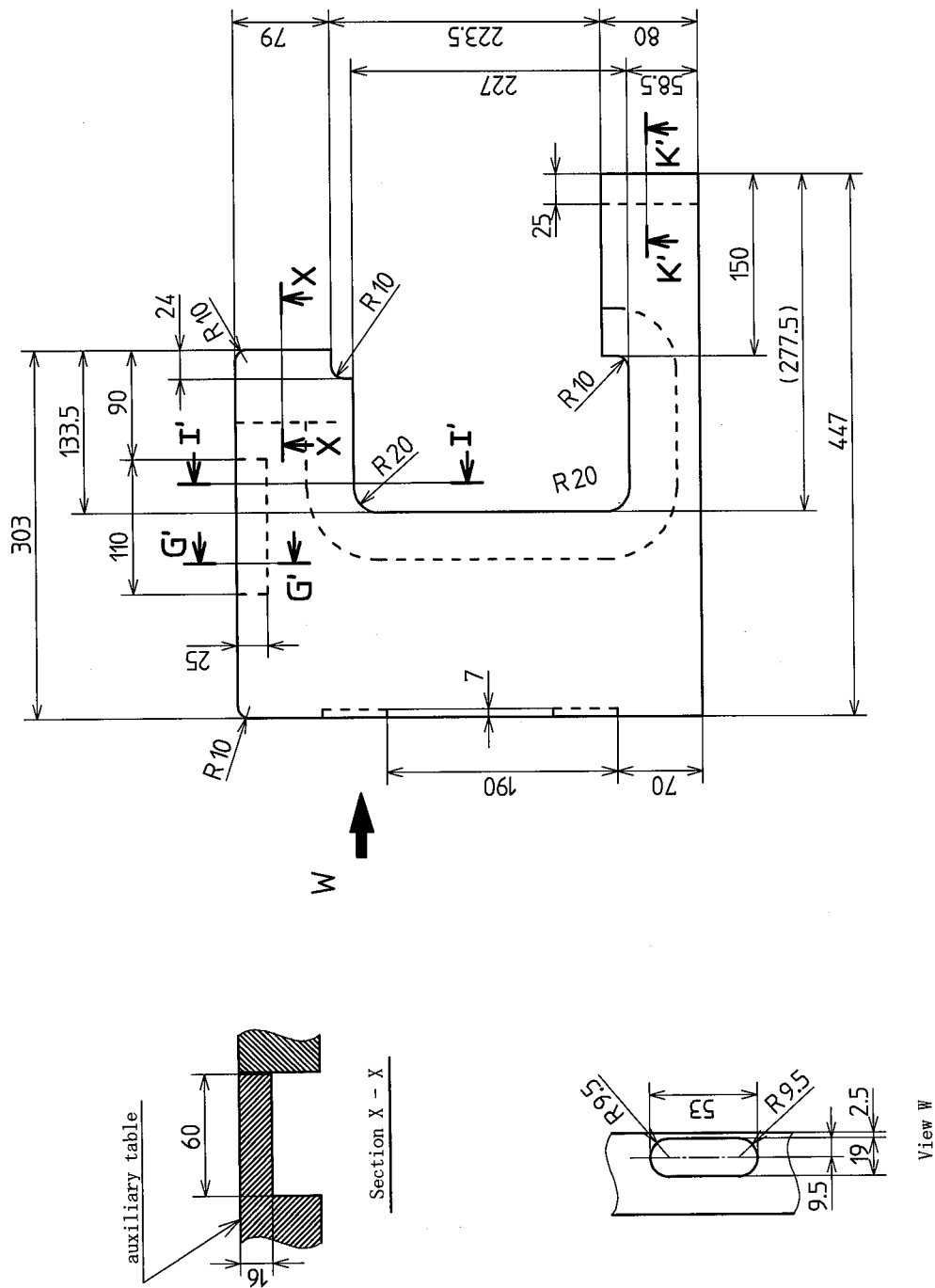
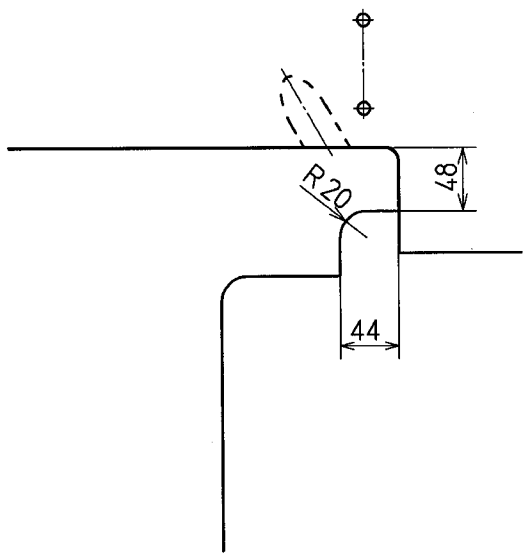


Fig. 6

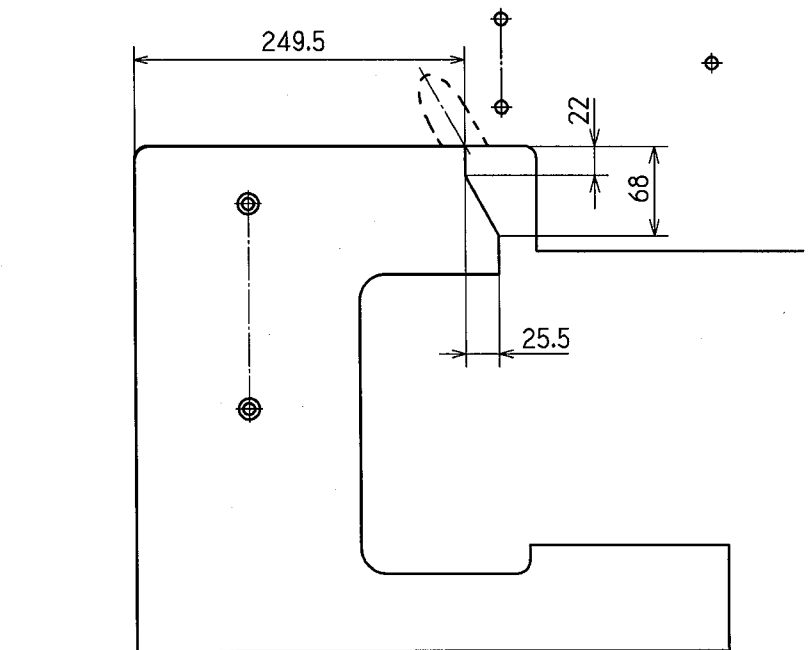
## 2.Installation

### 2.2.2 Table cutting diagram for fully-submerged type with a device

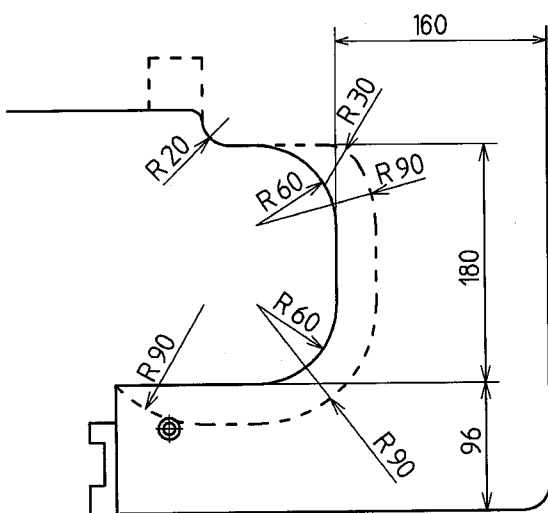
To set up the machine with a device, install the device with below dimensions referring to "2.2.1 Table cutting diagram" (Figs. 5 and 6).



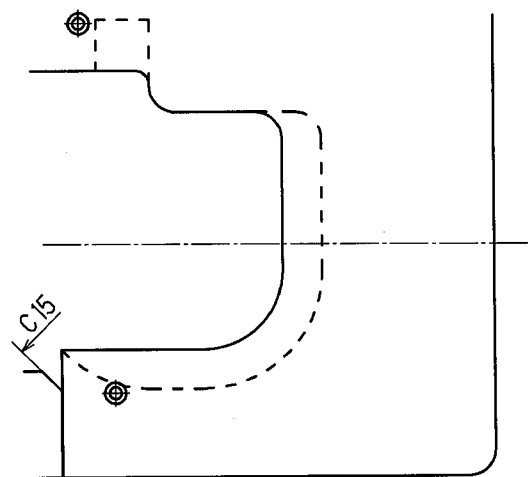
AZ8500G class with K1 device



AZ8000G class with K2 device



Using a servo motor



AZ8045G with ruffling device  
AZ8505G

Fig. 7

2.2.3 Installation

Install the machine correctly referring to Figs. 8 and 9.

Adjust the position of supporting board so that the machine is set horizontally and the cloth plate is set on the same height with the machine table or higher slightly than it.

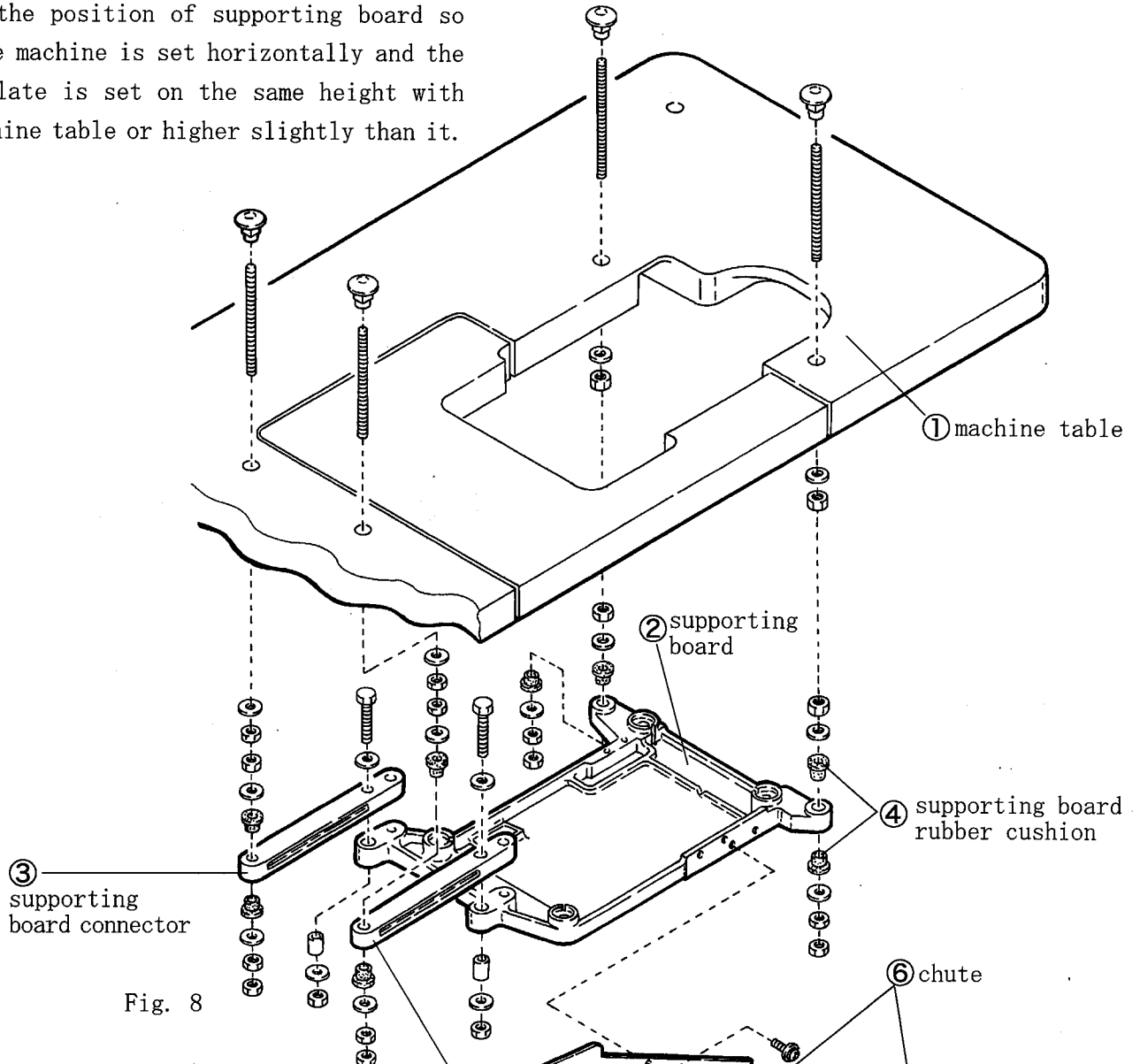


Fig. 8

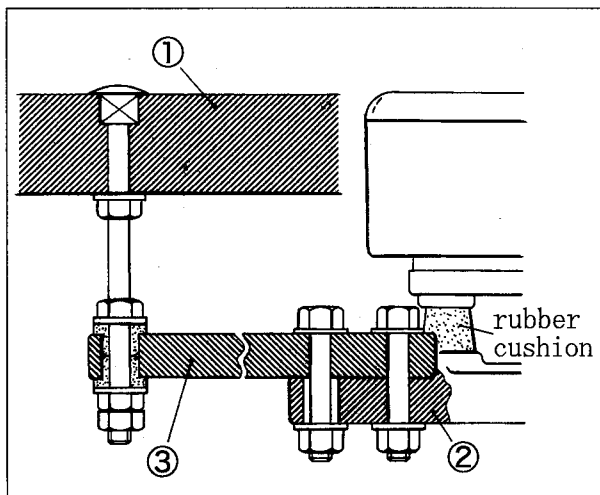


Fig. 9

## 2. Installation

### 2.3 Motor and belt

See the instruction manual for the motor to be used and install the motor properly.

To install the clutch motor, align the center of the machine pulley with that of the motor pulley when the motor pulley shifts to the left with toeing down the pedal.

NOTE: Table 2 shows the outside diameter of the motor pulley, rpm of the machine, and size of the belt when using the clutch motor of 3-phase, 2-pole, 400W(1/2HP).

The outside diameter on the table shows the nearest size to the calculated values based on the commercial pulleys at intervals of 5 mm.

#### ⚠ CAUTION

Use only those motor pulleys applicable to the machine. If not, the sewing speed will be over maximum and it can cause the machine to damage.

### 2.4 Hanging belt

#### ⚠ WARNING

Before hanging belt, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

Use the M-type of V-belt.

- (1) Hang the belt ① on the machine pulley ②, and then on the motor pulley ③ while rotating the machine pulley.
- (2) Adjust the belt tension so that the belt has 10 – 20 mm slack when its center is pushed with 10N(1.02kgf).
- (3) Lock the belt with the nut ④.

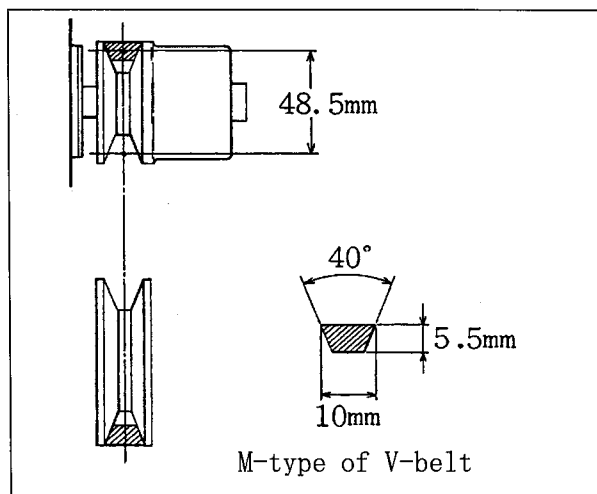


Fig. 10

Outside diameter of pulley (mm)	rpm of machine		Size of belt	
	50Hz	60Hz	Semi-submerged	Fully-submerged
100		6700	M35	M30
105		7000	M35	M30
110		7200	M35	M31
115		7500	M35	M31
120	6700	7700	M35	M32
125	6850	8000	M35	M32
130	7000		M35	M32
135	7300		M35	M33
140	7500		M35	M33
145	7800		M35	M34
150	8000		M35	M34

Table 2

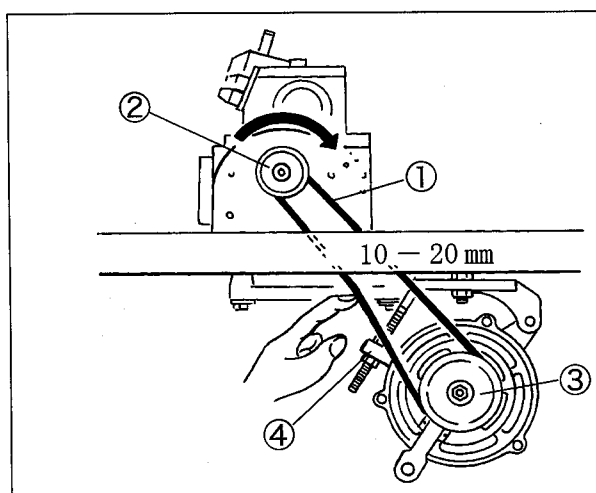


Fig. 11

## 2.5 Installing belt cover

### WARNING

Be sure to install belt cover to prevent you from injuring and a material from being caught by the belt.

- (1) Install the auxiliary belt cover① as shown in the figure.
- (2) Install the belt cover② as shown in the figure.

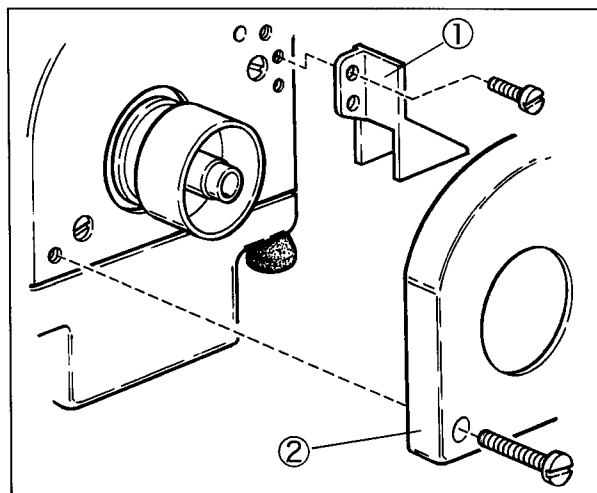


Fig. 12

## 2.6 Installing eye guard and finger guard

To ensure safe use, ALWAYS install the eye guard③ and the finger guard④ on the prescribed position when operating.

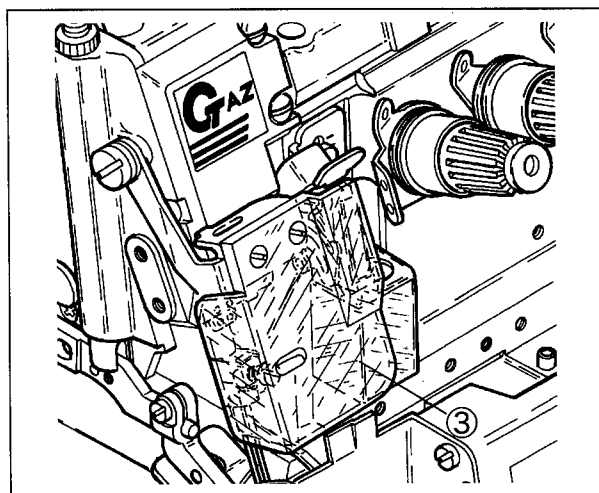


Fig. 13

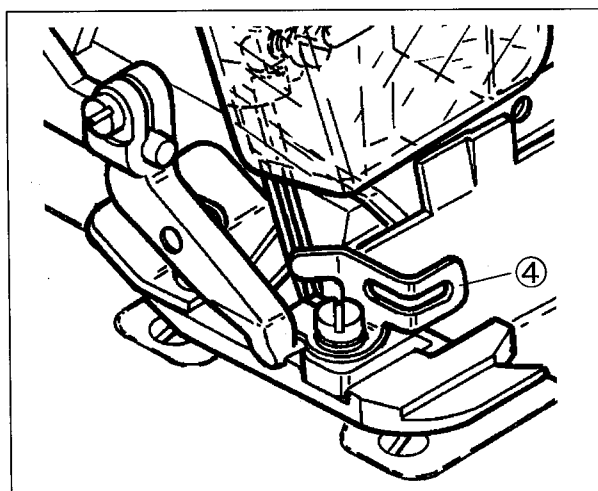


Fig. 14



# 3. Sewing speed and rotating direction of pulley

The maximum sewing speed is shown in Table 3.  
Run the new machine with rpm lowered 15 - 20% of maximum sewing speed during the first 200 hours (for about one month) so that the machine can offer a long service life in good condition.

The rotating direction of the motor pulley ① and the machine pulley ② is clockwise as shown in the figure.

## ⚠ CAUTION

If rotating in reverse direction, oil can not be supplied properly. It can cause the machine to damage.

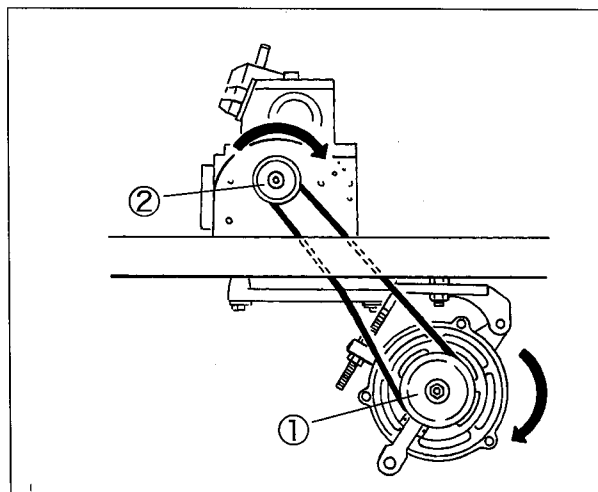


Fig. 15

Model	Max. sewing speed (rpm)
AZ8000G class (excluded below)	8000
AZ8032G, 8035G class	7000
AZ8045G class	7500
AZ8500G class (excluded below)	7500
AZ8505G class	7000
AZ8520G class	7500

Table 3

# 4. Lubrication

## 4.1 Lubricating oil

Use YAMATO SF OIL No. 28.

### ⚠ CAUTION

NEVER add additives to the oil.

If added, it can cause the deterioration of the oil and the damage to the machine.

## 4.2 Lubricating

When using a new machine or a machine which has not been run for a while, supply the oil to the needle bar<sup>①</sup> and the looper bar<sup>②</sup> with two or three drops.

Remove the oil cap<sup>③</sup> indicated "OIL-IN" and supply the oil to the upper line of the oil sight gauge<sup>④</sup>.

Check that the oil splashes from the nozzle inside the oil cap<sup>③</sup> with running the machine.

If the oil does not splash from the nozzle, see "4.4 Checking and replacing oil filter" on page 12.

### ⚠ CAUTION

Too much oil or not enough oil can cause oil leakage and machine trouble. Be sure to keep the oil level between the lines. Also too much lubrication can cause the oil to scatter and material to be stained.

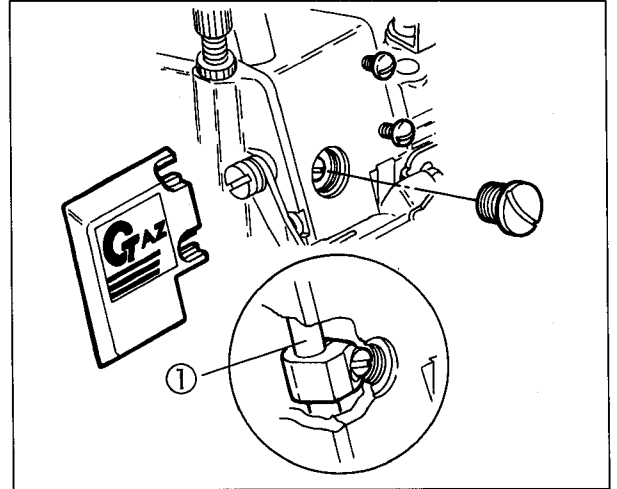


Fig. 16

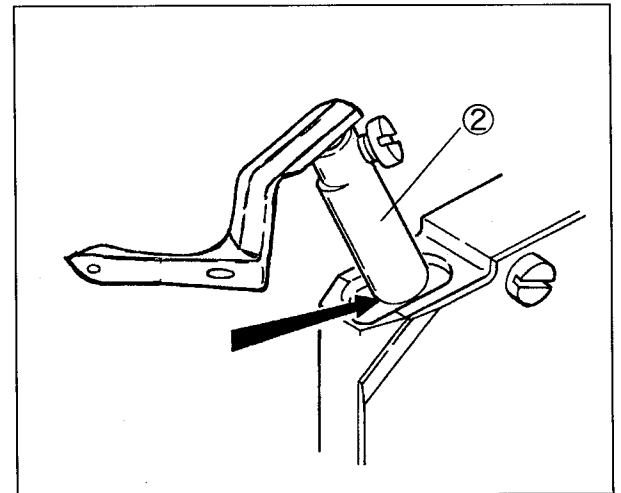


Fig. 17

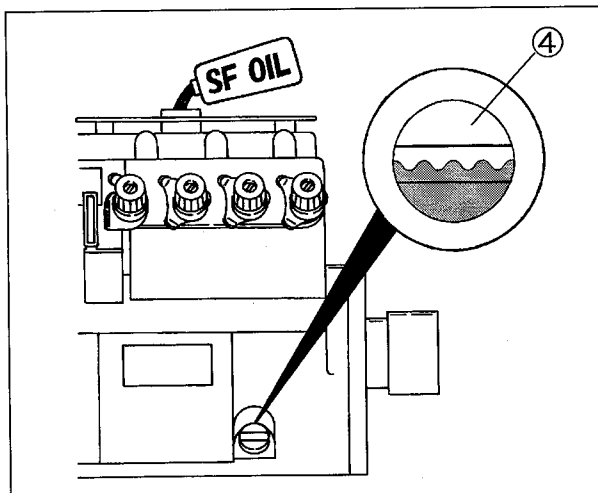


Fig. 18

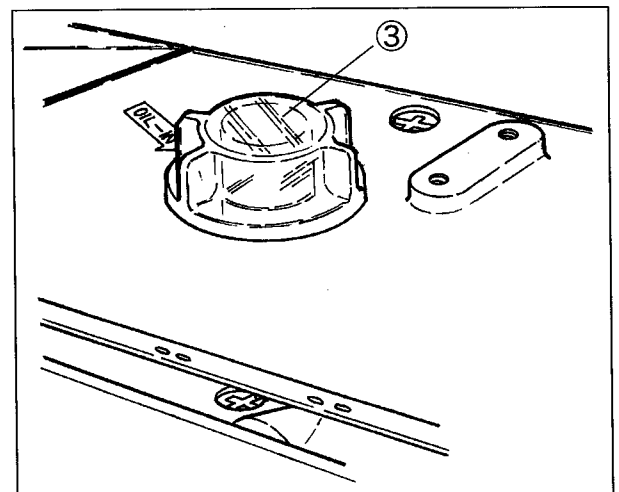


Fig. 19

### 4.3 Changing oil

#### Period of changing:

When using a new machine, change the lubricating oil after running the machine for 250 hours (for about one month). After that, change the oil once or twice a year.

#### Procedure for changing:

- (1) Remove the belt cover. (See page 9)
- (2) Remove V-belt from the motor pulley. (See page 8)
- (3) Remove the machine from the machine table.
- (4) Set a vessel received the oil under the screw ①.
- (5) After removing screw ①, the oil is drained.

#### NOTE

Be careful not to soil the V-belt and the machine pulley with the oil.

- (6) Reset the screw ①.
- (7) Change the oil. (See "4.2 Lubrication" on page 11)
- (8) Reset the machine on the machine table.
- (9) Hang V-belt on the motor pulley and reset the belt cover. (See pages 8 and 9)

### 4.4 Checking and replacing oil filter

- ◆ If the oil filter ② is clogged with dust, lubrication can not be done properly.
- ◆ Remove the oil filter cap ③ and the oil filter ② to check them every six months. If clogged or cracked, clean or replace the oil filter.
- ◆ If the oil is splashed from the nozzle insufficiently or includes many bubbles though the oil is sufficiently kept, check or replace the oil filter.

#### NOTE

Carefully check and replace them without spilling the oil stagnant in the oil filter ② when loosening screw ④.

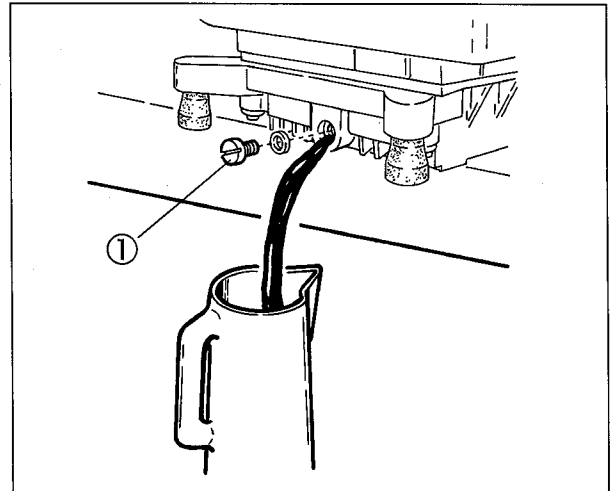


Fig. 20

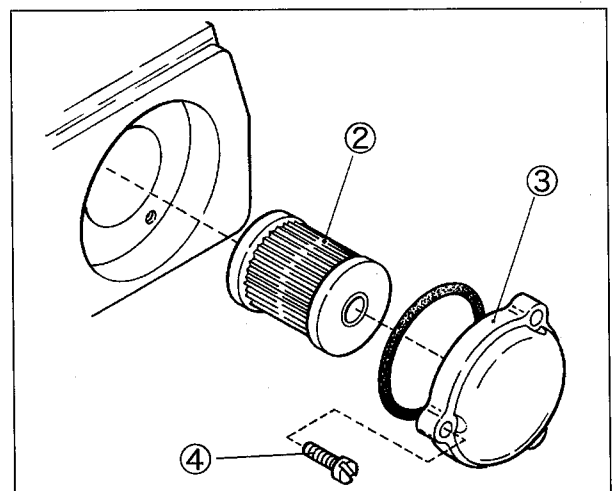


Fig. 21

# 5. Proper operation

## 5.1 Needle system

AZ8000G class : DC × 1(or 81 × 1)

AZ8500G class : DC × 27(or B27, 1886)

AZ8032G, 35G class : DC × 27(or B27, 1886)

Select the proper needle in size depending on the thickness and the type of the material.

Japanese standard	8	9	10	11	12	13	14
Metric standard	60	65	70	75	80	85	90

Table 4

## 5.2 Installing needles



### WARNING

Before installing the needles, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

- (1) Loosen the screw ① with an allen wrench. (Fig. 22)
- (2) Remove the old needle with a pair of tweezers.
- (3) Insert a new needle into the needle clamp ② as far as it will go with facing its scarf to the right back. (Figs. 23 and 24)
- (4) Tighten the screw ① with an allen wrench.

● Accessories include an allen wrench.

### NOTE

The tightening torque of the screw ① is 0.6N·m(6kgf·cm).

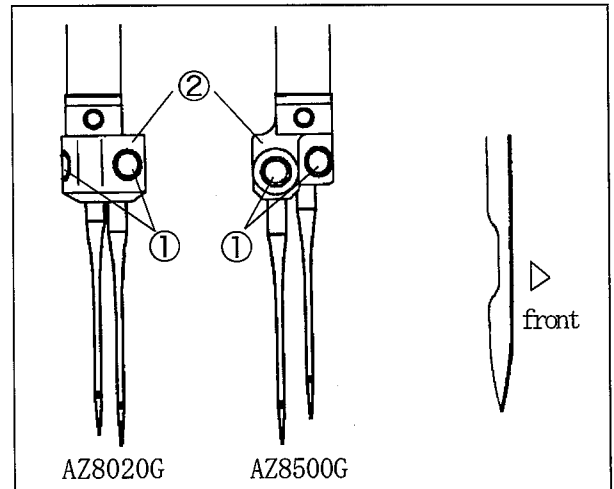


Fig. 22

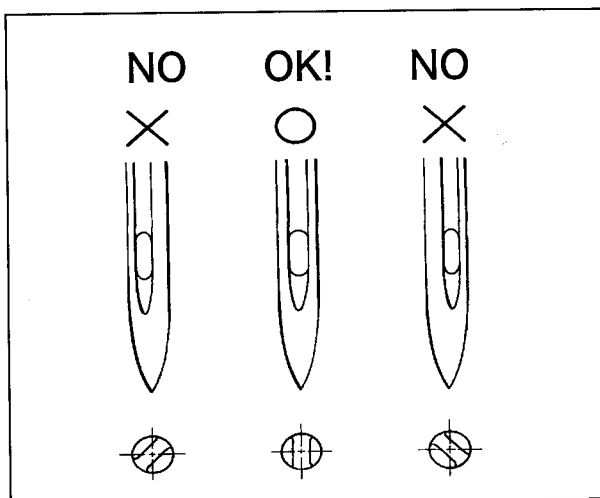


Fig. 23

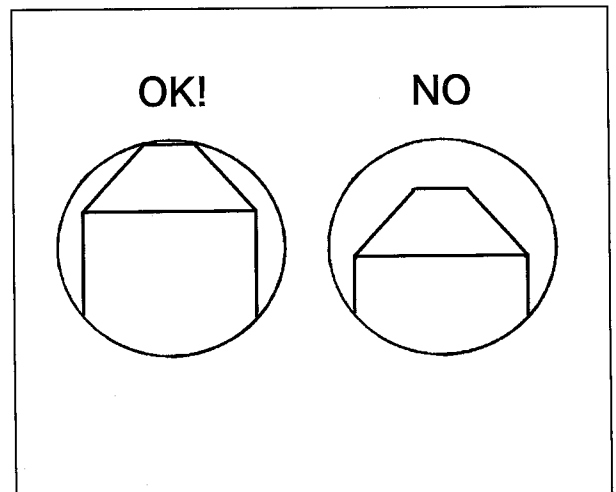


Fig. 24

## 5. Proper operation

### 5.3 Adjusting thread tension



Adjust the thread tension with the thread tension spring caps ① - ⑥ depending on the type of fabric, the type of thread, seam width, stitch length, and other sewing conditions.

- To tighten the thread tension, turn caps clockwise.
- To loosen the thread tension, turn caps counter-clockwise.

Model \ Thread	AZ8000G single needle overlock	AZ8020G 2-needle overlock	AZ8500G 2-needle safety stitch	AZ8520G 3-needle safety stitch
Left needle	①	①	①	①
Right needle		②		②
Double chain needle thread			②	③
Upper looper thread	③	③	③	④
Lower looper thread	④	④	④	⑤
Double chain looper thread			⑥	⑥

Table 5

### Threading

#### ⚠ WARNING

Before threading, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

Run the thread correctly as shown in the threading figure attached inside the front cover.

#### ⚠ CAUTION

Improper threading can cause thread breakage, skip stitch, and uneven stitch.

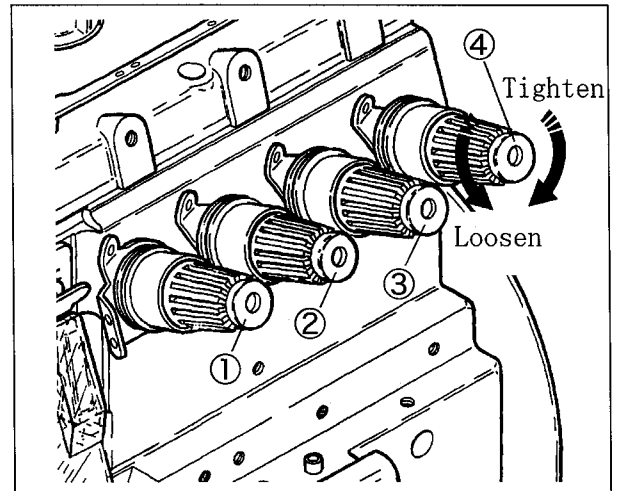


Fig. 25 AZ8020G, AZ8500G

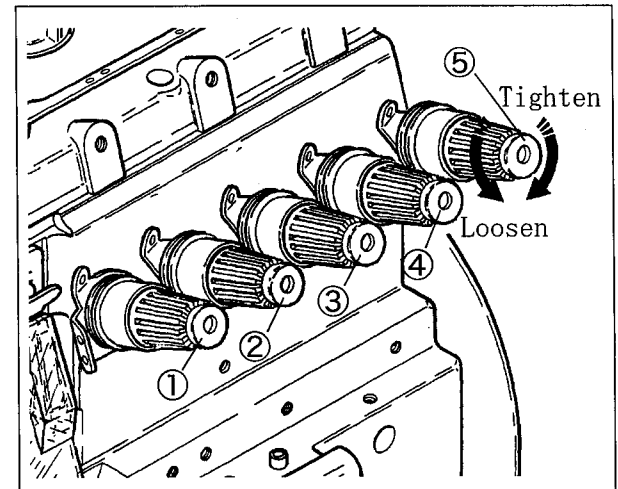


Fig. 26 AZ8520G

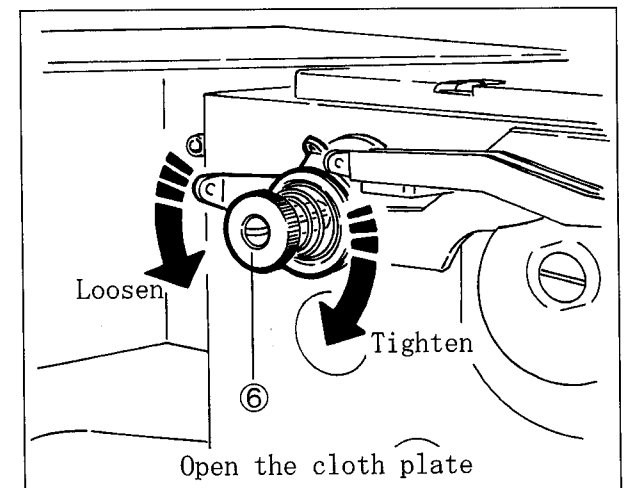


Fig. 27 AZ8500G, AZ8520G

## 5.4 Pressure of presser foot



Loosen the lock nut ① and adjust the pressure of the presser foot with turning the adjusting screw ②.

- To increase the pressure, turn the adjusting screw clockwise.
- To decrease the pressure, turn the adjusting screw counterclockwise.

Keep the pressure as low as possible for stable stitches.

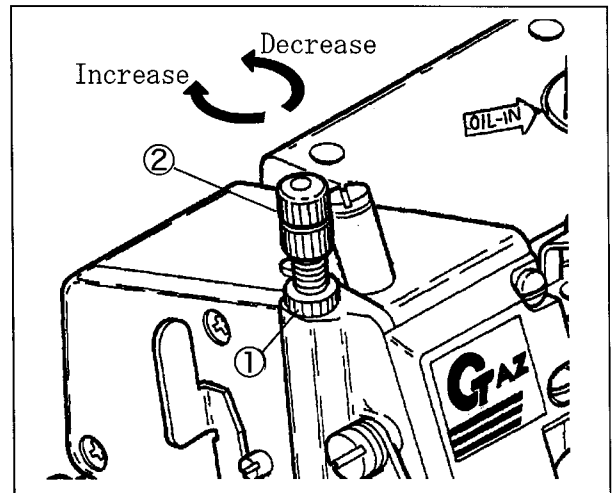


Fig. 28

## 5.5 Releasing presser foot



### ⚠ WARNING

Before adjusting, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

Rotate the machine pulley and position the needle at the highest point. Release the presser foot to the left while pressing the presser foot release lever ③.

To set the presser foot, slide and push the presser foot against to the right side while pressing the presser foot release lever ③. Then release the lever.

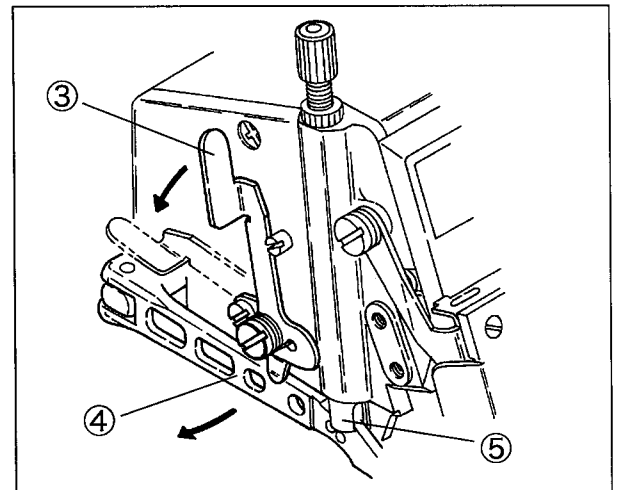


Fig. 29

### ⚠ WARNING

Make sure that the presser arm ④ gets into the groove of the presser bar ⑤.

If not, it can cause breakage to parts and injuries.

## 5. Proper operation

### 5.6 Opening cover



#### Front cover ①

To open the front cover ①, slide it to the right and tilt toward you.

To close it, raise it. Its spring makes it slide to the left.

#### Cloth plate ②

To open the cloth plate ②, shift it to the left while the pushing lever ③.

To close it, shift it to the right. Check that it is locked securely.

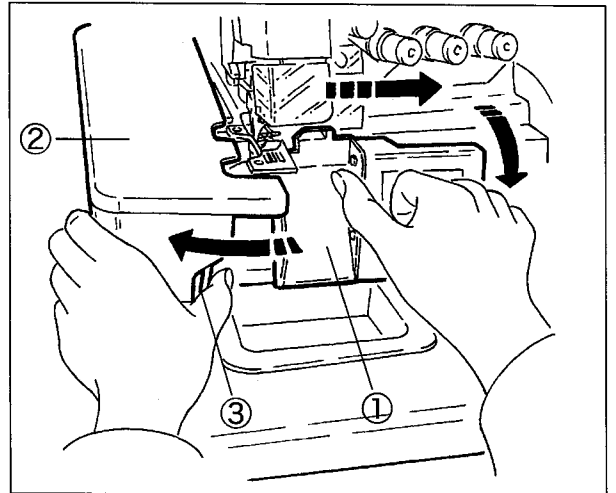


Fig. 30

### 5.7 Adjusting differential feed dog



Loosen the lock nut ④ and adjust the differential feed lever ⑤.

Moving up will make stretching and moving down will make gathering.

Adjust differential feed lever ⑤ securely with turning the screw ⑥.

- To lower the lever, turn the screw clockwise.
- To raise the lever, turn the screw counterclockwise.

Differential ratio up to 1:0.6 - 1:2 or 1:1 - 1:3 is available by internal adjusting mechanism respectively.

Adjust the graduation, differential ratio, and max. stitch length in Table 6.

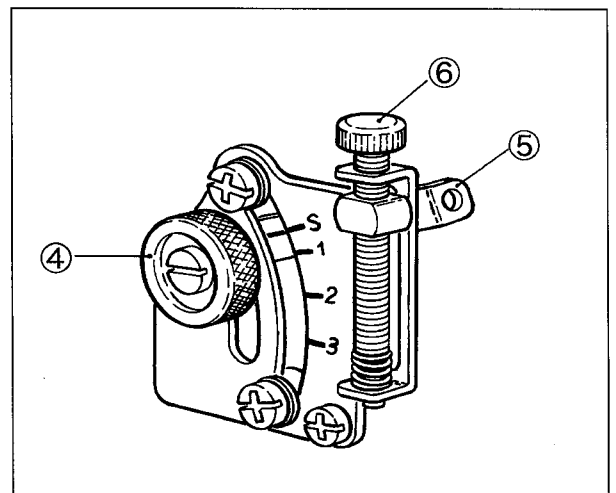


Fig. 31

Model	AZ8000G AZ8500G class (excluded right models)		AZ8019G AZ8039G AZ8069G		AZ8045G AZ8505G	
	Differential ratio	Max. stitch length (mm)	Differential ratio	Max. stitch length (mm)	Differential ratio	Max. stitch length (mm)
S	1:0.7	4	1:0.6	4	1:1	3
1	1:1	4	1:0.9	4	1:1.4	3
2	1:1.6	4	1:1.4	4	1:2.2	3
3	1:2.3	3	1:2	3.5	1:3	2.5

Table 6

## 5.8 Adjusting stitch length



### **WARNING**

Before adjusting, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

Each graduation on the machine pulley indicates the length(mm) for one stitch.

After sewing, the actual stitch length has difference with the length on graduation. It depends on the application, the type and weight of material to be sewn or the differential ratio.

- (1) Rotate the pulley while the pushing push button ①. At the point as far as it will go, again push it securely.
- (2) With keeping that, align desired graduation of the pulley with the mark ② on the belt cover.
- (3) Release the push button ①.

- To shorten stitch length, turn the pulley in the direction "S".
- To lengthen it, turn it in the direction "L".

### **CAUTION**

Check that push button is released completely and the pulley rotates smoothly.

Table 7 shows the adjustable range of stitch length.

Table 8 shows the number of stitches per inch (25.4 mm) and 30 mm converted stitch length.

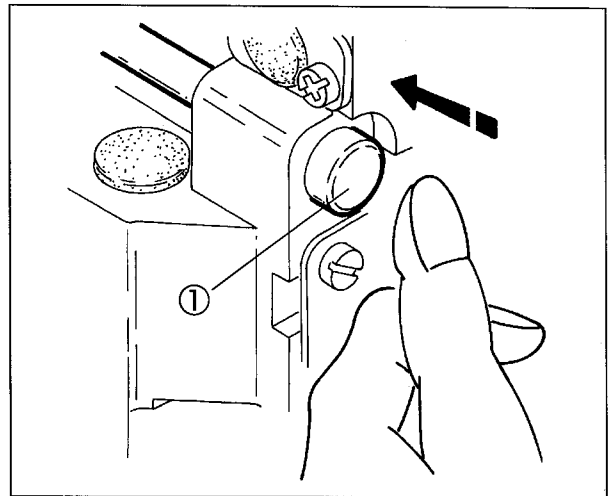


Fig. 32

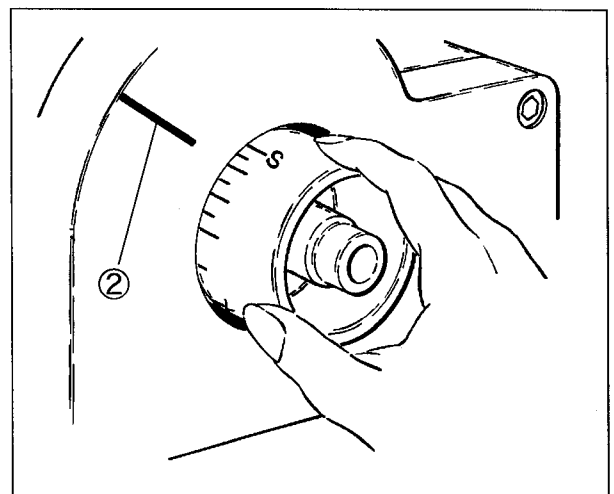


Fig. 33

Model	Stitch length(mm)
AZ8000G, AZ8500G class (excluded below)	1-4
AZ8016G	1-2
AZ8039G, AZ8045G AZ8069G, AZ5079G AZ8505G	1-3

Table 7

Stitch length (mm)	Number of stitch (per 1 inch (25.4 mm))	Number of stitch (per 30 mm)
1	25	30
2	12	15
3	8	10
4	6	7.5

Table 8



### 5.9 SP device and HR device



SP device (needle thread oiling) and HR device (needle point cooling) are equipped as standard to prevent thread breakage and skip stitch when running the machine at high speed or using synthetic thread and/or synthetic fabric.

#### **⚠ CAUTION**

1. When not using SP device and HR device, remove the felts ③ and ⑤. It may occur irregular condition during sewing.
2. If the silicone oil is stuck to the parts other than SP and HR devices, it can cause the machine trouble. Be sure to wipe it away.

Use dimethyl silicone oil.

Check the oil amount in SP tank ①. If not enough, supply the oil into the hole ②.

Check the oil amount after opening the oil container plug ④ of HR device. If not enough, supply the oil.

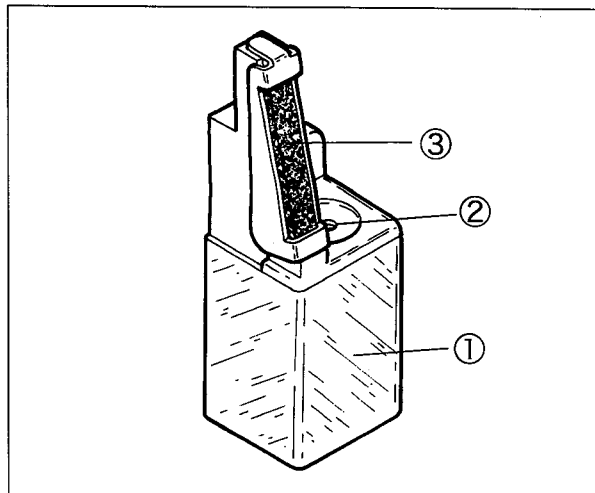


Fig. 34 SP device

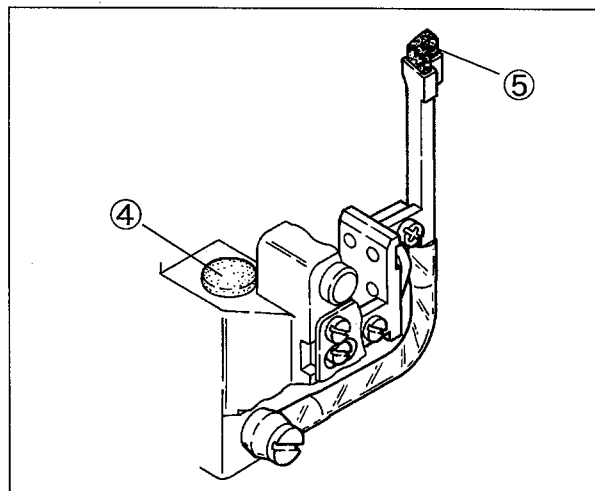


Fig. 35 HR device

## 5.10 Cleaning the machine



### WARNING

Before cleaning, ALWAYS turn the motor switch OFF and check that the motor has already stopped.

Clean waste thread and dust inside the machine at the end of work everyday.

Clean the slots in the stitch plate and the feed dog area once a week.

### CAUTION

Clogged dust can cause breakage to parts and oil leakage.

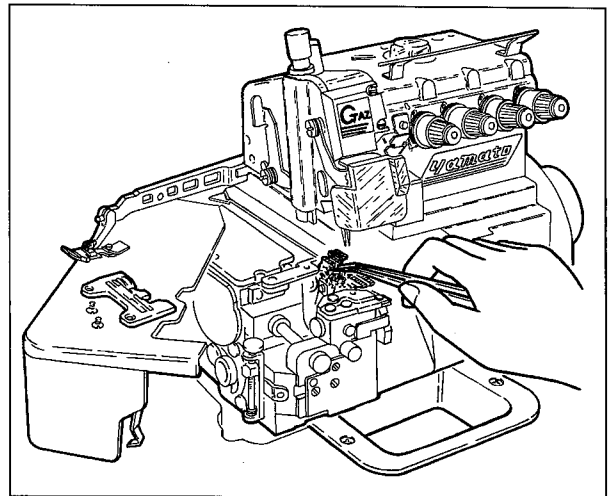


Fig. 36

### Checking of the machine at the sewing factory (by maintenance of technician)

#### Daily maintenance:

- (1) Before operating, remove the machine cover and re-thread correctly without slacking. Check that the thread hanger is right above the soopl seat discs of the thread stands (the thread stands should be fixed securely).
- (2) Check the lubricating and silicone oil amount. Supply them if necessary.
- (3) Check the order of threading.
- (4) Check the bend of needles, damage to tips, and the setting positions respectively.
- (5) Check the sharpness of knives.
- (6) Check the seam by testing sewing of fabric.
  - ◆ stitch length, differential feeding
  - ◆ adjusting knives and thread tension

#### Weekly maintenance:

- (1) On weekends, clean the machine carefully by removing the presser foot and the stitch plate.
- (2) Check the tension of V-belt.
- (3) Replenish the lubricating oil.

# 6. Adjustment of sewing machine

## ⚠ WARNING

Before adjusting, ALWAYS turn the motor switch OFF and check that the motor has stopped.

### 6.1 Needle thread tension for overlock stitch



To set the standard position of needle thread eyelet①, position the center of the screw② between the marks③ and ④.

To set the standard position of the needle thread pull-off⑤, align the portion⑥ with the eye⑦ of the needle thread eyelet(right) when the needle thread pull-off⑤ comes at the extreme front.

Loosen the screw⑧ to adjust it.

- To loosen the needle thread tension, move the needle thread eyelet and the needle thread pull-off in the direction "L".
- To tighten the needle thread tension, move them in the direction "T".

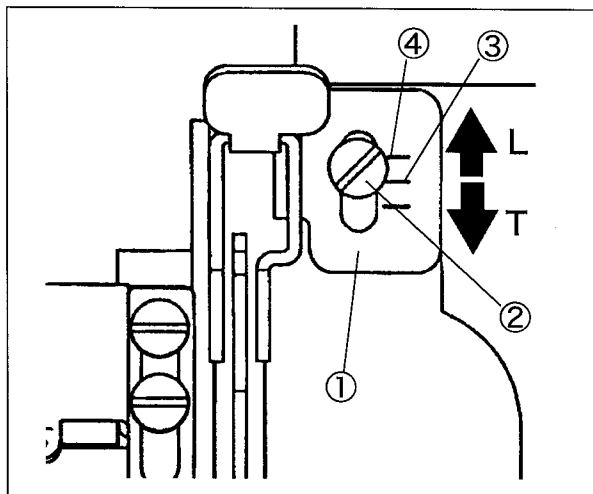


Fig. 37

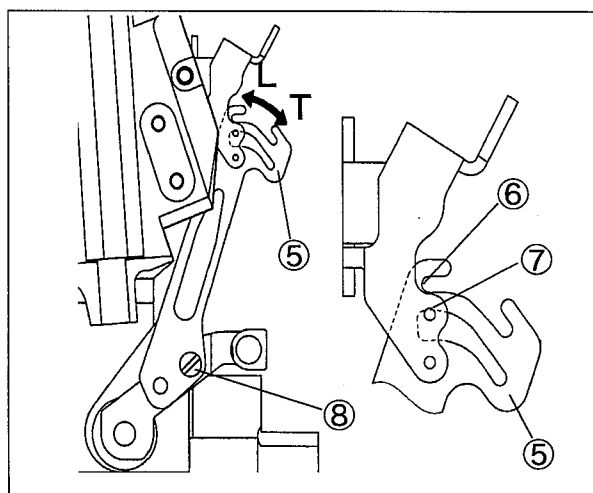


Fig. 38

## 6.2 Loper thread tension for overlock stitch

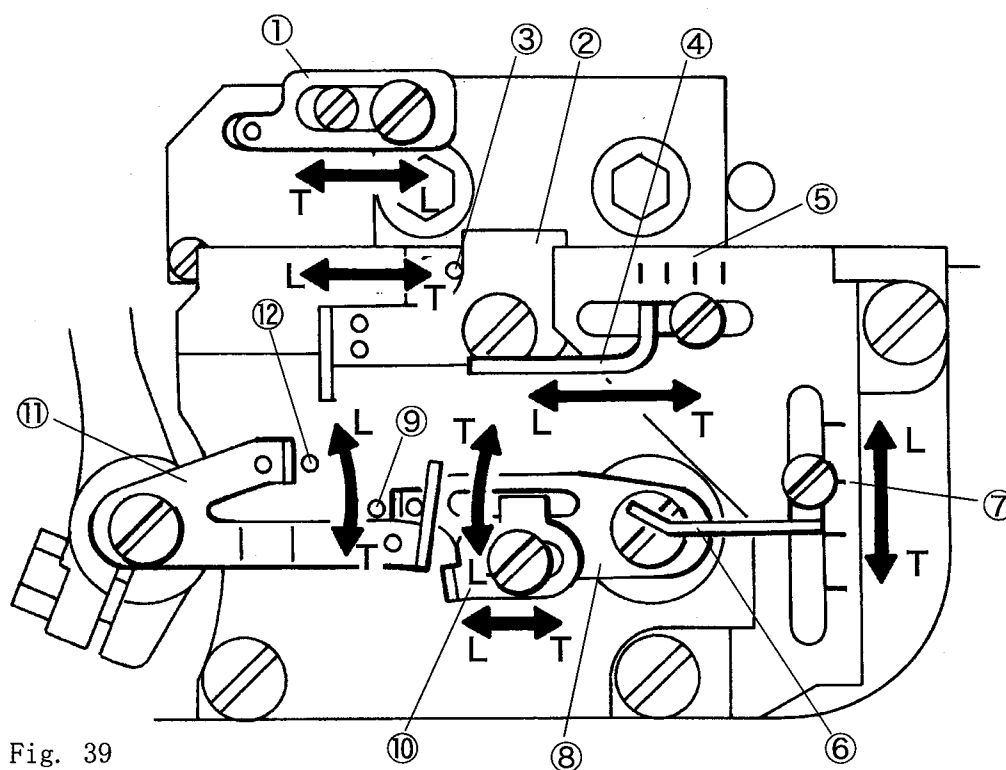


Fig. 39

The standard setting of each needle thread eyelet:

**Upper looper supplementary thread eyelet ①**

Move it to the extreme left.

**Looper thread eyelet ②**

Move it to the mark ③.

**Upper looper thread eyelet ④**

Position the center of the screw with the third line ⑤ from the left.

**Lower looper thread eyelet ⑥**

Position the center of the screw with the second line ⑦ from the top.

**Upper looper thread pull-off ⑧**

Align the eye of the thread pull-off with the mark ⑨ when the lower looper moves to the extreme right.

**Lower looper thread pull-off ⑩**

Tighten it with the screw at the center of the slot.

**Thread pull-off ⑪**

Align the eye of the thread pull-off with the mark ⑫ when the lower looper moves to the extreme right.

- To tighten the thread tension, move each thread eyelet or thread pull-off in the direction "T".
- To loosen the thread tension, move them in the direction "L".

### 6.3 Needle thread tension for double chainstitch



◆ To set the standard position of the needle thread eyelet(left) (double chain) ③, adjust the needle thread of double chain on a level with the eyelet(left) ③ when the needle bar is at the highest point.

Loosen the screw ④ to adjust it.

◆ To set the standard position of the needle thread eyelet holder (double chain) ①, position the center of the slot in the center of the screw ②.

◆ To set the standard position of the needle thread eyelet(right) (double chain) ⑦, align the portion ⑥ with the eye ⑧ of the eyelet(right) ⑦ at the most frontward position of the needle thread pull-off ⑤ when the needle thread eyelet holder (double chain) and the needle thread pull-off are at the standard position.

Loosen the screw ⑨ to adjust it.

● To loosen the needle thread tension, move the needle thread eyelet and the needle thread pull-off in the direction "L".

● To tighten the needle thread tension, move them in the direction "T".

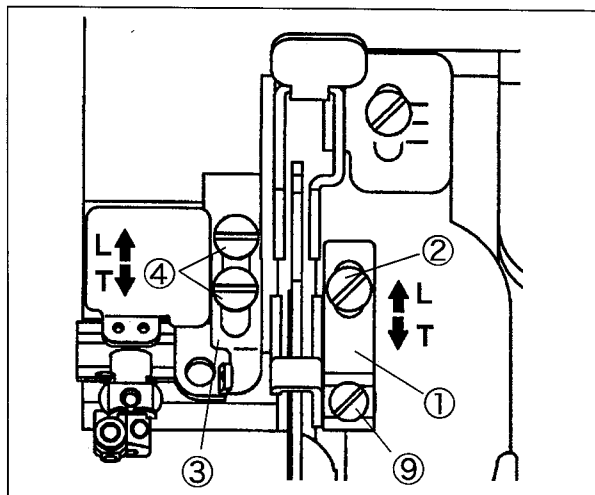


Fig. 40

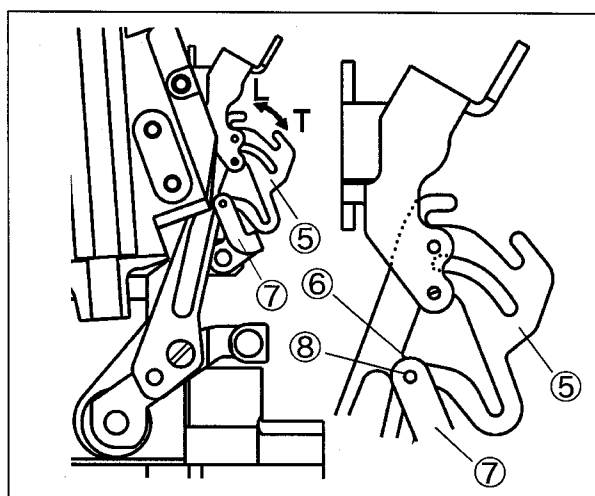


Fig. 41

## 6.4 Loper thread tension for double chainstitch



◆ Align the eye of the double chaining looper thread eyelet③ with the surface② of the double chaining looper thread take-up① when being a level with the straight line A.

Position the thread retaining finger④ on 1 mm above the eye of the looper thread eyelet③.

◆ To set the standard position of the double chaining looper thread eyelet③, position the center of the slot in the center of the screw⑤.

● To loosen looper the thread tension, move the looper thread eyelet in the direction "L".

● To tighten the looper thread tension, move it in the direction "T".

◆ At the standard timing of the looper thread take-up, the looper thread take-up starts taking up the looper thread when the needle starts lowering from the highest point.

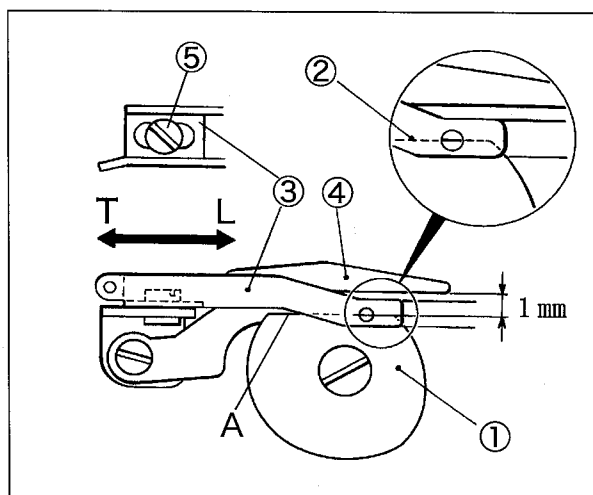


Fig. 42

### NOTE

Set the thread retaining finger in the center of double looper thread take-ups when tightening the screw of it.

### 6.5 Adjusting the width of overedge seam



Before adjusting, set the edge of the upper knife ① 0 – 0.5 mm above the lower knife ②.

#### To make wide overedge seam:

- (1) Loosen the screw ③ on the upper knife holder.
- (2) Tighten the screw ③ securely after moving the holder as desired in the direction “W” .
- (3) Loosen the screw ④ on the lower knife holder.
- (4) The lower knife ② touches the upper knife ① closely with its spring.
- (5) Tighten the screw ④ securely.

#### To make narrow overedge seam:

- (1) Loosen the screw ④ on the lower knife holder.
- (2) Tighten the screw ④ slightly after moving the holder as desired in the direction “N” .
- (3) Loosen the screw ③ on the upper knife holder.
- (4) Tighten the screw ③ with applying the upper knife ① to the lower knife ②.
- (5) Loosen the screw ④.
- (6) The lower knife ② touches the upper knife ① closely with its spring.
- (7) Tighten the screw ④ securely.

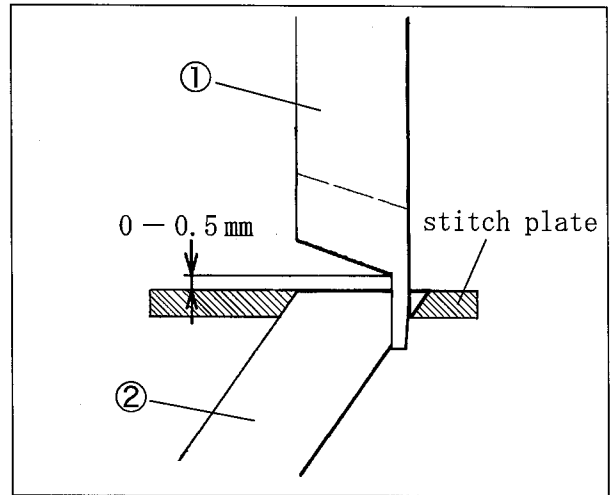


Fig. 43

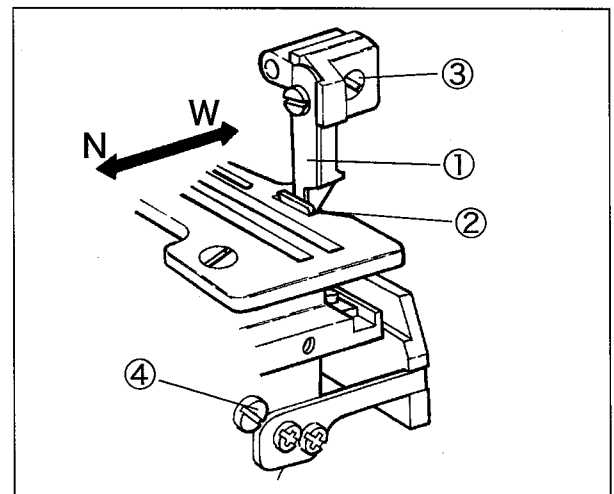


Fig. 44

### NOTE

1. After changing the width of overedge seam, check the sharpness of the blades by setting the thread between the upper and the lower knives with rotating the machine pulley by hand. (See “6.6.4 Sharpness of knives” )
2. Use a stitch plate applicable to the width of overedge seam.  
Adjustable range of overedge seam is within  $\pm 0.5$  mm based on the value indicated the gauge respectively.
3. Dust clogged at the connecting part of the upper knife holder changes the installing angle of the knives. It will make them cut badly. Be sure to clean the parts by loosening the screw ③ .

## 6.6 Adjusting upper and lower knives

### 6.6.1 Height of lower knife

Install the edge of the lower knife ① on a level with the top surface of the stitch plate or 0–0.3 mm lower than it.

Loosen the screw ② to adjust it.

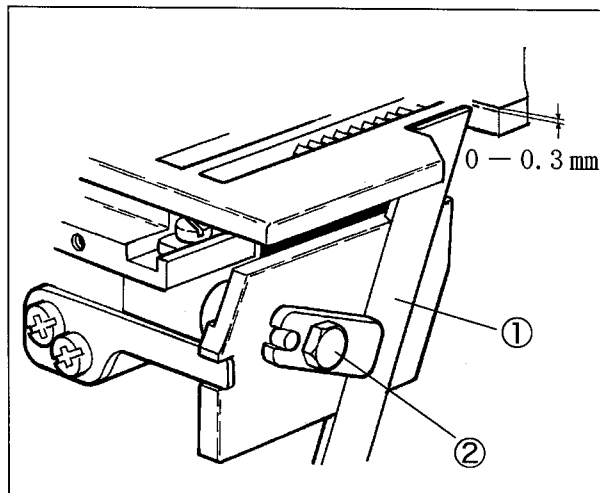


Fig. 45

### 6.6.2 Height of upper knife (flat type)

Adjust the engagement between the upper knife ③ and the lower knife ① to 0.5–1.0 mm when the upper knife is at the lowest point.

Loosen the screw ④ to adjust it.

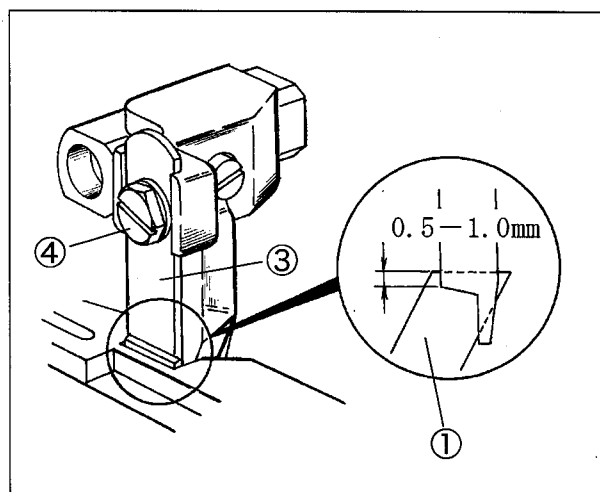


Fig. 46

### 6.6.3 Height of upper knife (angled type)

Loosen the screw ⑦ and apply the upper knife ⑤ to the stopper ⑥ fully. It makes the height automatically.

Then tighten the screw ⑦ securely.

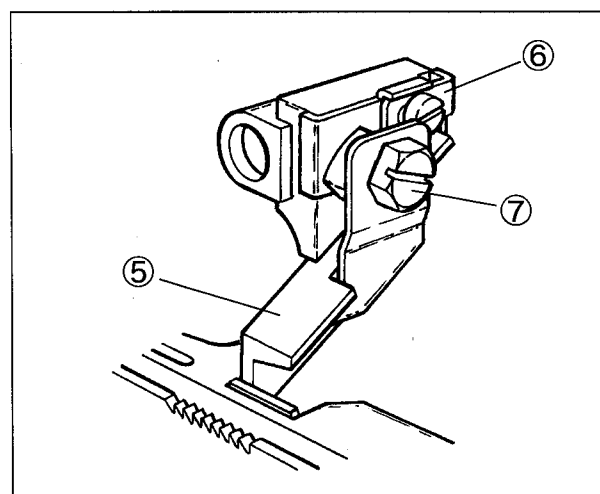


Fig. 47



## 6. Adjustment of sewing machine

### 6.6.4 Sharpness of knives

After adjusting the knives and the width of overedge seam, check the sharpness of the blades by setting the thread between the upper and the lower knives while rotating the machine pulley by hand.

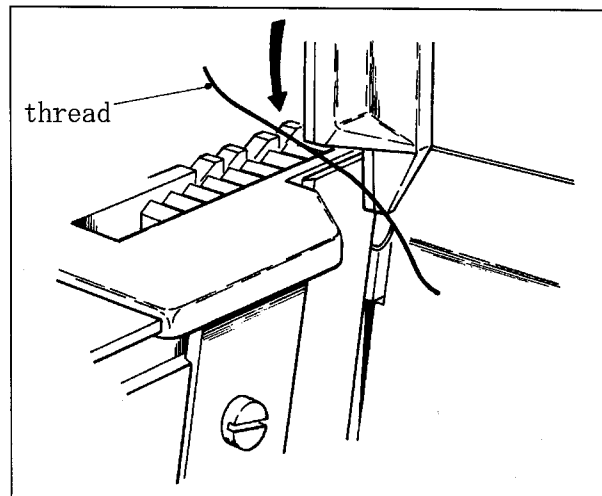


Fig. 48

### 6.6.5 Sharpening knives

If the lower knife cuts badly, re-sharpen it. (See Fig. 49)

The upper knife made of super hard alloy is unnecessary to re-sharpen for about one year and normal grinder is not useful for re-sharpening it. Keep another upper knife for spare. If needed, contact us directly or the dealer for re-sharpening it.

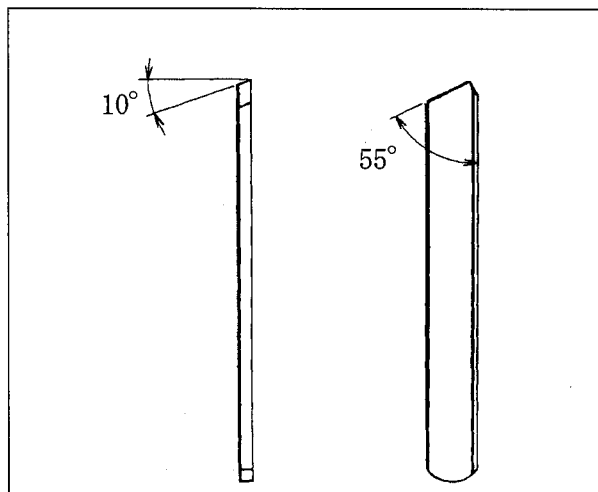


Fig. 49

## 6.7 Height of feed dogs

To set the standard position, set the top surfaces of the main and the differential feed dogs parallel to that of the stitch plate when the top surfaces of the feed dogs are raised and on a level with that of the stitch plate.

Adjust the height between the top surface of the stitch plate and the rear side of the main feed dog ③ to 0.8 mm when the feed dog is at the highest point.

### AZ8000G class (See Table 9) :

Install the auxiliary feed dog ⑤ on 0.5 mm lower than the main feed dog ③.

### AZ8500G class (See Table 9) :

Install the auxiliary feed dog ⑤ on a level with the main feed dog ③.

Adjust the differential feed dog ①, the main feed dog ③, and the auxiliary feed dog ⑤ with loosening the screws ②, ④, and ⑥ respectively.

### NOTE

1. Make sure there is no difference of installing height between the main feed dog ③ and the differential feed dog ①. If different height between them, it can cause the unstable feeding and feed scratch mark.
2. For sewing heavy weight knitted fabric or the material having uneven thickness parts, adjust differential feed dog ① and main feed dog ③ on 1.0 mm higher than standard position respectively.

The difference of installing height between the main feed dog and the auxiliary feed dog :

Model	Difference (mm)
AZ8000G class (excluded below)	0.5 (lower than the main feed dog)
AZ8016G, AZ8019G AZ8032G, AZ8035G AZ8039G	0
AZ8500G class (excluded below)	0
AZ8500G-53	0.5 (lower than the main feed dog)

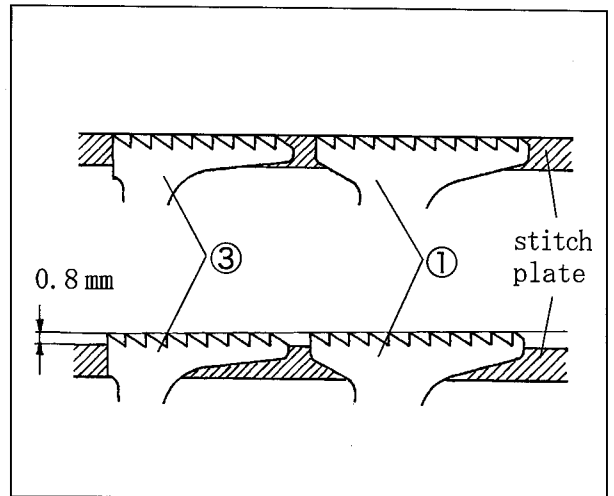


Fig. 50

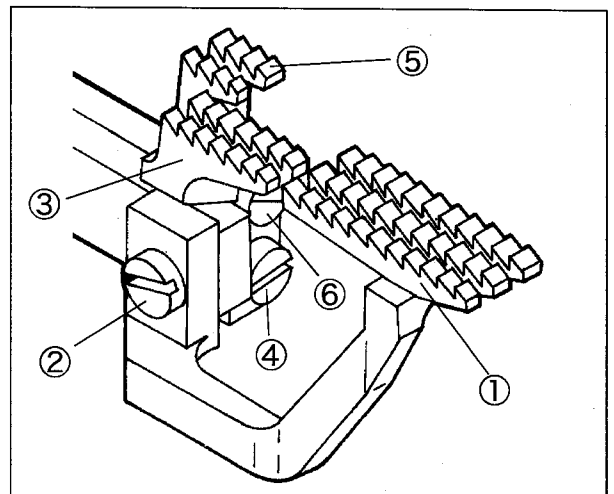


Fig. 51 AZ8000G class

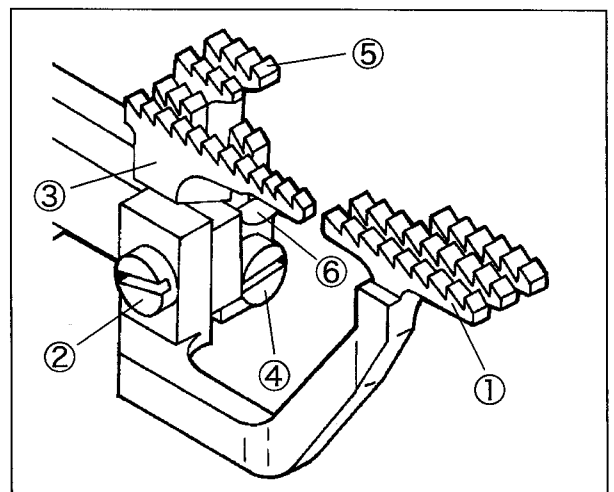


Fig. 52 AZ8500G class

Table 9

### 6.8 Adjusting needles and loopers

Adjust them as follows:

- (1) Height of needle
- (2) Installing angle of lower looper
- (3) Distance between needle and lower looper
- (4) Front-and-rear position of lower looper
- (5) Distance between needle and upper looper
- (6) Front-and-rear position of upper looper
- (7) Timing between lower looper and upper looper

#### 6.8.1 Height of needle

- (1) Loosen the screws① and remove the logo plate ②. (Fig. 53)
- (2) Remove the screw③.
- (3) Raise the needle bar at the highest point while rotating the machine pulley.
- (4) Loosen the screw④ and adjust the needle bar while moving it up and down.

When the needle bar is at the highest point, adjust the height from the top surface of the stitch plate to the tip of needle to the value "N" in Table 10.

Model		Height of Needle "N" (mm)	Fig.
AZ8000G class single needle	excluded below	10-10.3	54-1
	AZ8016G	8.7-8.9	
AZ8020G class 2-needle	excluded below	10-10.3	54-2
	AZ8032G AZ8035G	11.7-12	
AZ8500G class		10-10.3	54-3
AZ8520G 3-needle	AZ8520G AZ8525G	10-10.3	54-4

Table 10

#### NOTE

1. The tightening torque of the screw ④ on the needle bar connecting bracket is 1.5N·m(15kgf·cm).
2. Check the parallel setting of the needles for 2-needle machine and 3-needle machine. (See "6.8.4 Front-and-rear position of lower looper" )
3. Apply the liquid packing to the thread of the screw when tightening it.

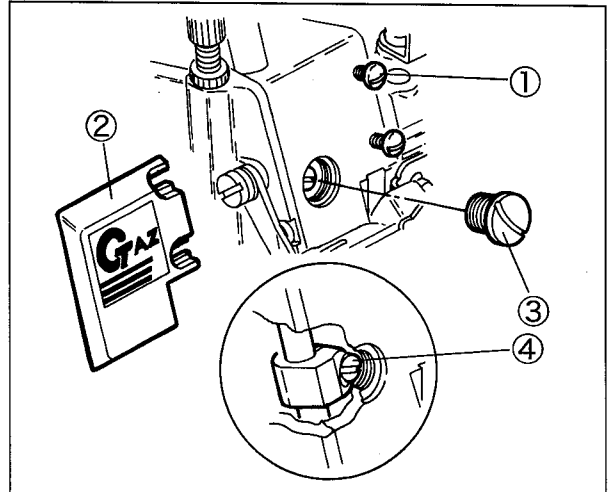


Fig. 53

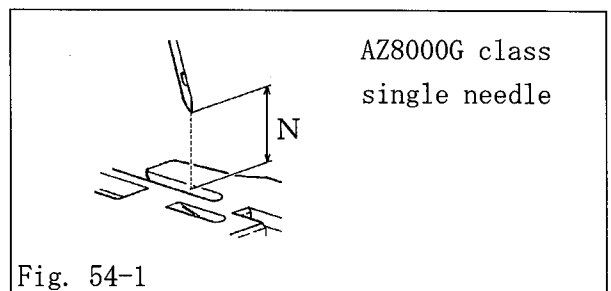


Fig. 54-1

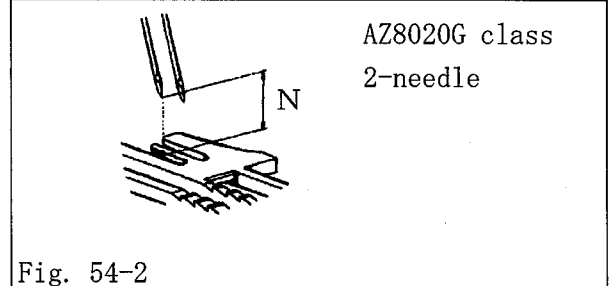


Fig. 54-2

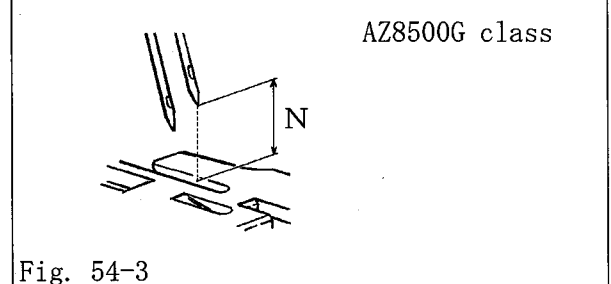


Fig. 54-3

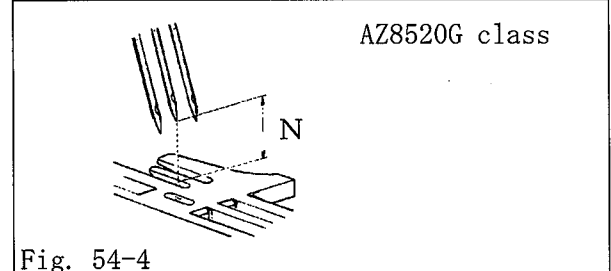


Fig. 54-4

### 6.8.2 Installing angle of lower looper

To set the standard position, install the angle of  $2-3^\circ$  to the lower looper ①.

Adjust rear of the lower looper to  $0.5-1.0$  mm above the tip of the lower looper with loosening the screw ②. (Fig. 55)

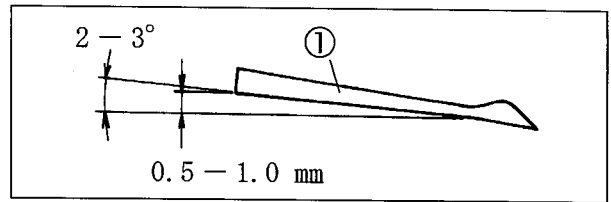


Fig. 55

### 6.8.3 Distance between needle and lower looper

Rotate the machine pulley clockwise and move the lower looper ① to the extreme left. Adjust the distance between the tip of the lower looper and the center of the needle to  $3.3-3.8$  mm.

Loosen the screw ③ on the lower looper holder to adjust it.

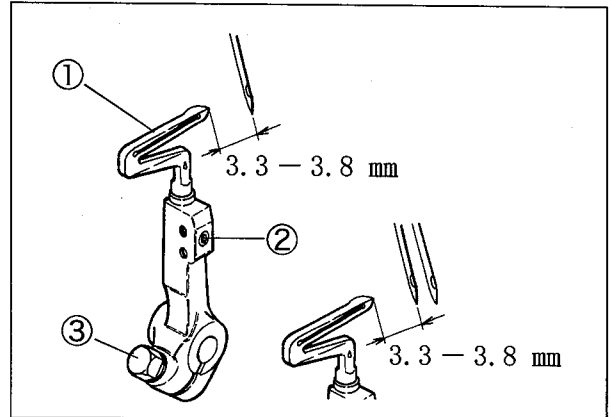


Fig. 56

### 6.8.4 Front-and-rear position of lower looper

**For single needle overlock stitch on AZ8000G and AZ8500G class:**

Adjust the clearance between the tip of the lower looper and the needle to  $0-0.05$  mm with loosening the screw ③.

**For 2-needle overlock stitch on AZ8020G and AZ8520G class:**

- (1) Adjust the clearance between the tip of the lower looper and the left needle to  $0-0.05$  mm with loosening the screw ③.
  - (2) Adjust the clearance between the right needle and the lower looper to  $0-0.05$  mm when they meet with. Loosen the screw ④ and adjust it with turning the needle clamp slightly.
- See "6.8.1 Height of needle" on page 28.

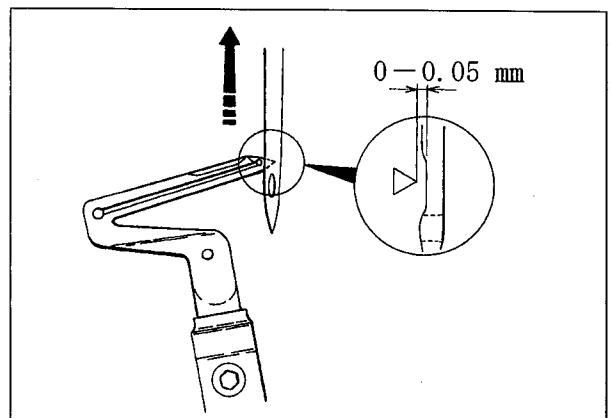


Fig. 57

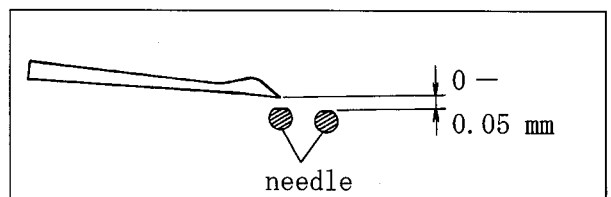


Fig. 58

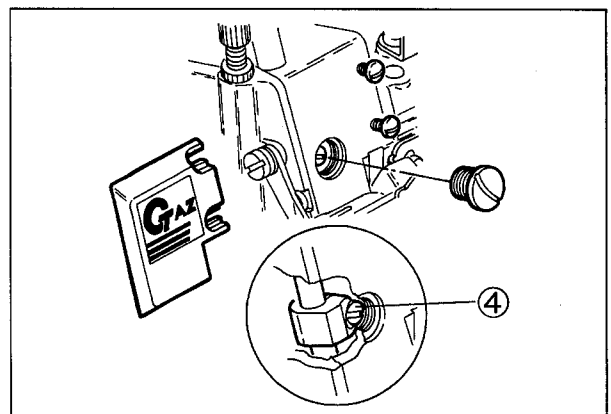


Fig. 59

### NOTE

Tighten the screw ④ after checking the height of needle.  
When adjusting front-and-rear position of the lower looper, tighten the screw ③ after checking the lower looper's distance.

## 6. Adjustment of sewing machine

### 6.8.5 Distance between needle and upper looper

Rotate the machine pulley clockwise and move the upper looper to the extreme left. Adjust the distance between the tip of the upper looper and the center of the needle to the value "U" in Table 11.

- (1) Remove the thread eyelet support, the looper thread eyelet, and the looper holder cover.
- (2) Loosen the screw ② of the upper looper bar crank arm to adjust it.

#### **CAUTION**

Apply the liquid packing to the mounting part of the frame when installing the looper holder cover. If not, it can cause oil leakage.

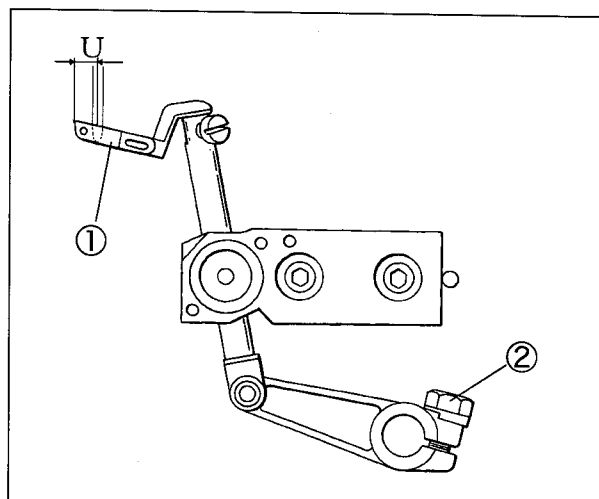


Fig. 60

Model	Distance between needle and upper looper "U"
AZ8000G class AZ8500G class (excluded below)	4.7—5.2
AZ8032G AZ8035G	5—5.5

Table 11

### 6.8.6 Front-and-rear position of upper looper

The thick portion (around eye) of the upper looper closes to the needle when the upper looper moves from the extreme left to the right while rotating the machine pulley clockwise. (For 2-needle machine, it closes to the right needle.)

Adjust the clearance between the back side of the upper looper ① and the needle to 0.05—0.1 mm with loosening the screw ③.

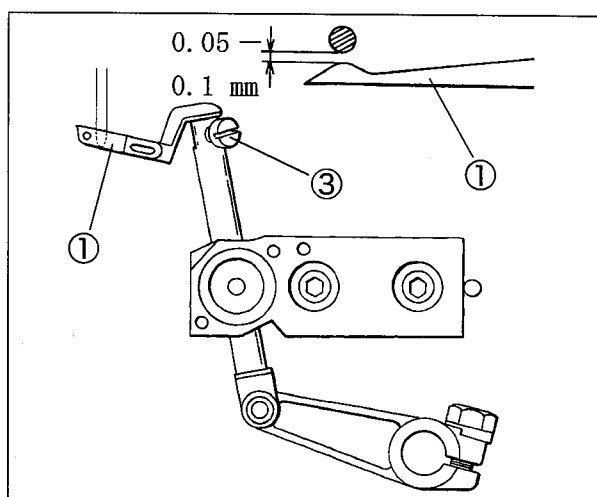


Fig. 61

### 6.8.7 Timing between lower looper and upper looper

Check that the clearance is 0.05–0.1 mm back and forth and 0.05–0.3 mm right and left when the lower looper① meets with the upper looper② while rotating the machine pulley clockwise.

It is correct timing within those clearances.

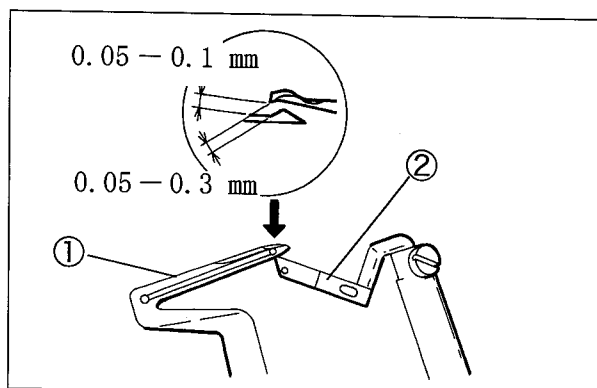


Fig. 62

### 6.9 Needle and double chaining looper

#### Timing:

To set the height, insert the double chaining looper③ into the looper holder until it touches the bottom of the holder.

Adjust the distance between the center of the double chaining needle④ and the tip of the double chaining looper to 2.0–2.2 mm when the double chaining looper③ is at the extreme left with loosening the screw⑤.

Tighten the screw⑥ slightly at approximately 6° angle to the looper. Adjust the distance so that the tip of the looper touches the double chaining needle④ slightly.

#### Front-and-rear position:

Adjust the tip of the looper③ to pass the behind of the needle as closely as possible without touching.

Adjust the needle to pass the behind curved portion of the looper with touching slightly when the looper moves from the right to the left.

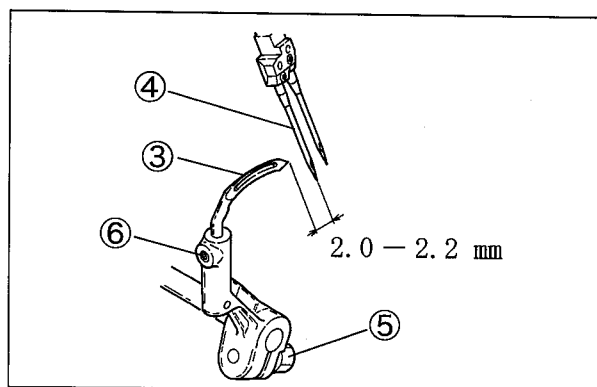


Fig. 63

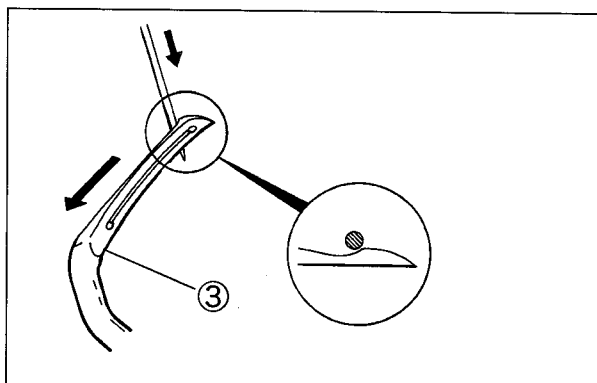


Fig. 64

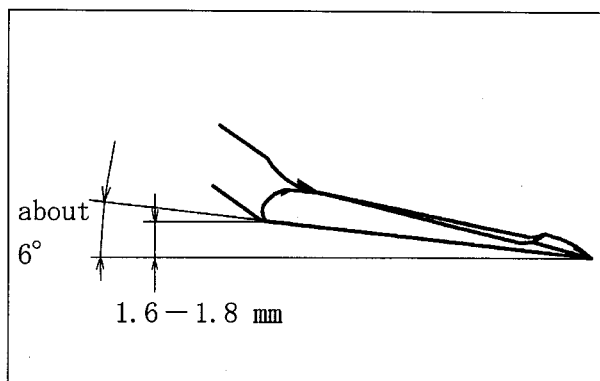


Fig. 65

## 6. Adjustment of sewing machine

### 6.10 Needle and needle guards for AZ8000G class

#### 6.10.1 Needle and needle guard(rear)

The needle guard(rear) ① moving with the lower looper is equipped with this machine.

The needle guard(rear) ① holds the needle at behind it and guard the tip of the lower looper When the needle meets with the tip of the lower looper on elevation from the lowest point.

Adjust the clearance between the tip of the lower looper and the needle to 0—0.05 mm with loosening the screw ②.

For 2-needle machine, adjust it based on the left needle in the same way as single needle machine.

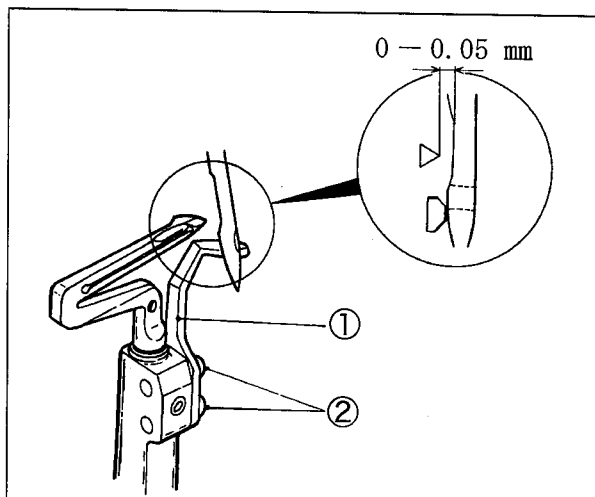


Fig. 66

#### 6.10.2 Needle and needle guard(front)

Adjust the clearance between the needle guard(front) ③ and the needle to 0.02—0.05 mm with loosening the screw ④.

For 2-needle machine, adjust it based on the left needle in the same way as single needle machine.

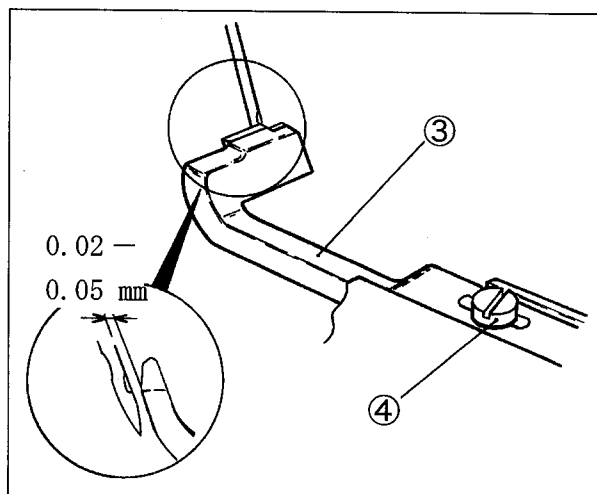


Fig. 67

## 6.11 Needle and needle guards for AZ8500G class

### 6.11.1 Needle and needle guard(rear)

The needle guard(rear) ① moving with the lower looper is equipped with this machine.

The needle guard(rear) ① holds the needle at behind it and guard the tip of the lower looper When the needle meets with the tip of the lower looper on elevation from the lowest point.

Adjust the clearance between the tip of the lower looper and the needle to 0—0.05 mm with loosening the screw ②.

For 3-needle safety stitch machine, adjust it based on the left needle for the overlock seam's needles in the same way as 2-needle overlock machine.

### 6.11.2 Needle and needle guard(front)

Adjust the clearance between the needle and the needle guard(front) ③ to 0.02—0.05 mm with loosening the screw ④.

For 3-needle safety stitch machine, adjust it based on the left needle for the overlock seam's needles in the same way as 2-needle overlock machine.

### 6.11.3 Needle and needle guards for double chainstitch

#### Needle guard(rear) (double chain stitch):

Adjust the clearance between the needle and the needle guard(rear) ⑤ to 0—0.05 mm at the lowest point of the needle with loosening the screw ⑥.

#### Needle guard(front) (double chain stitch):

Adjust the clearance between the needle and the needle guard(front) ⑦ to 0.1—0.2 mm with loosening the screw ⑧.

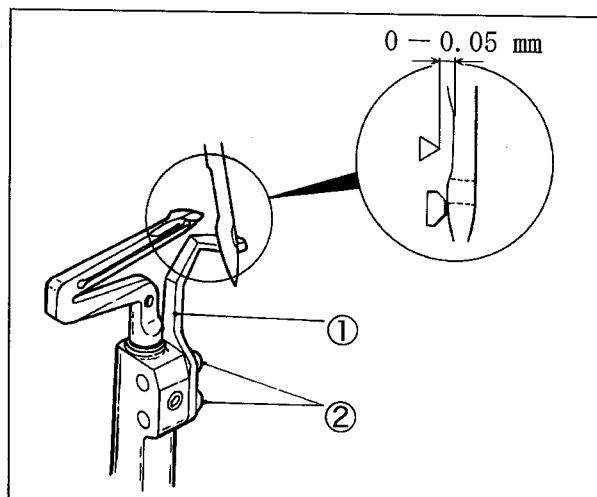


Fig. 68

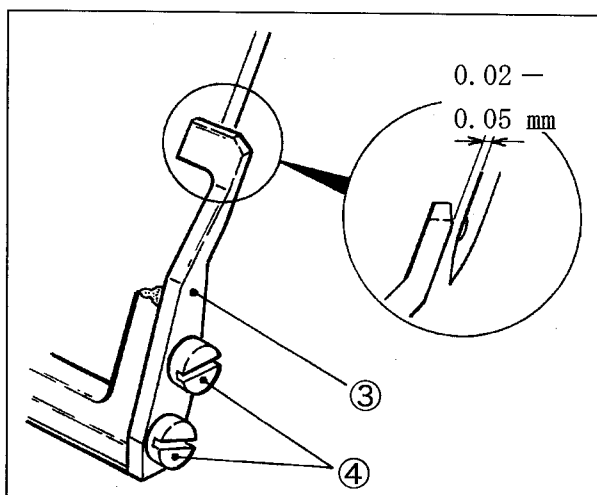


Fig. 69

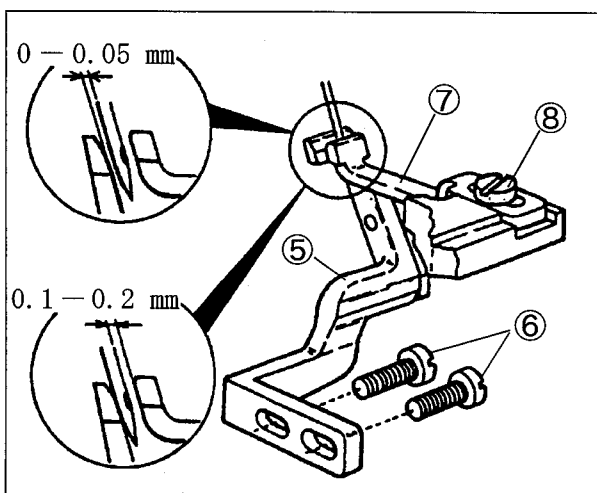


Fig. 70



### 6.12 Adjusting position of presser foot

Install the bottom surface of the presser foot parallel to the stitch plate from the front. Slanted presser foot can cause feed scratch mark.

To set front-and-rear position, adjust the clearance between needle drop of the presser foot and that of the stitch plate to 0.2 – 0.3 mm as shown in Fig. 71.

Loosen the screw ① to adjust it.

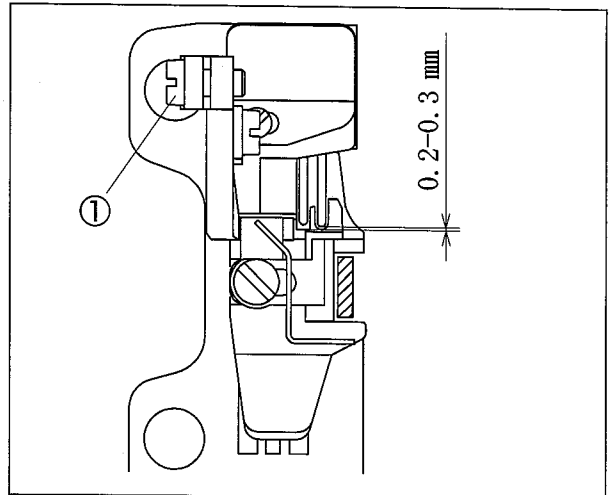


Fig. 71

# 7.SC10 device

## 7.1 Outline

SC10 is a self-cleaning system that can keep a clean and comfortable environment for operators. It eliminates clogged dust around the lower knife holder and under the stitch plate by cutting material during the sewing. And also makes maintenance easily and prevents troubles caused by the lint.

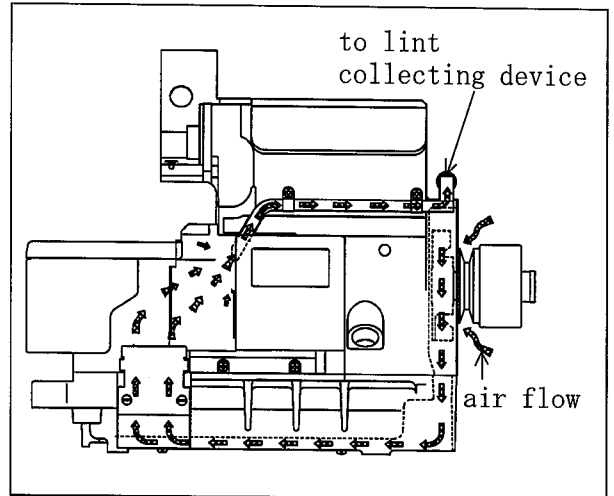


Fig. 72

## 7.2 Adjusting ventilating amount

Select the type of setting by changing the position of the air deflector ① depending on the sewing speed and sewing condition.

To set the standard position, insert the air deflector ① into the guides ② and ③. (See Fig. 73)  
For high speed and less dust during sewing, insert the air deflector ① into the guides ② and ④. (See Fig. 74)

When not using SC10 device, remove the air deflector ①.

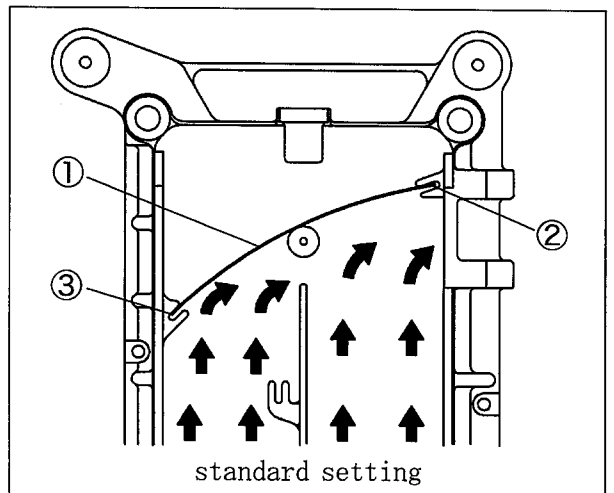


Fig. 73

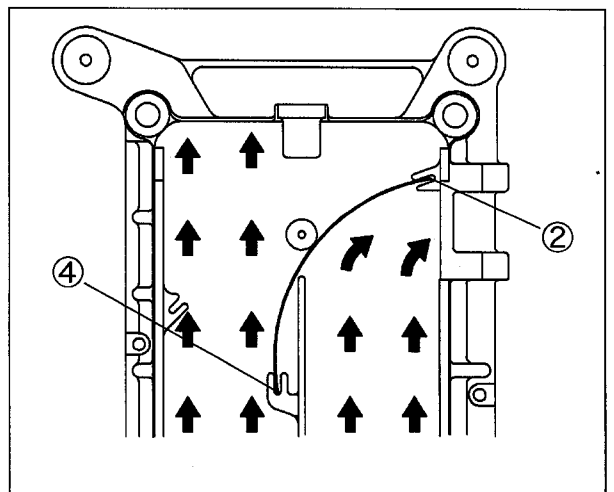


Fig. 74

## 7.3 Installation

### 7.3.1 Installing air deflector

- (1) Drain the oil from the machine.
- (2) Tilt the machine backward.
- (3) Loosen two screws④ and remove the wind guide plate②.
- (4) Install the air deflector③ into the guides⑤ of the oil reservoir① securely.
- (5) Reset the wind guide plate②.
- (6) Raise the machine upright and supply the oil.

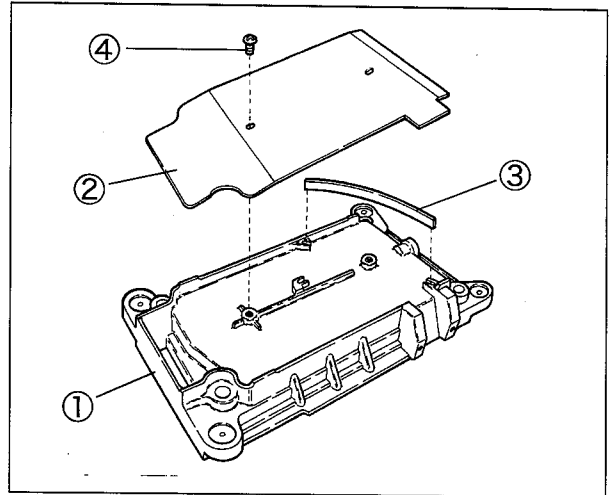


Fig. 75

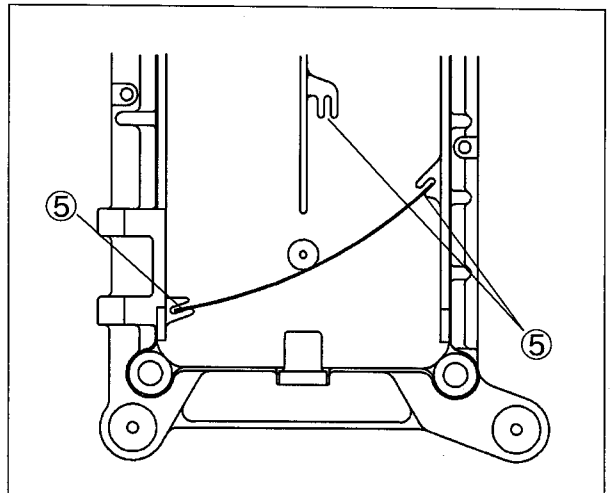


Fig. 76

### 7.3.2 Installing blowing hole screen

- (1) Install the blowing hole screen⑥ on the oil reservoir①.
- (2) Install the wind guide plate(front)⑦ on the oil reservoir① while pressing the blowing hole screen⑥ with two screws⑧.

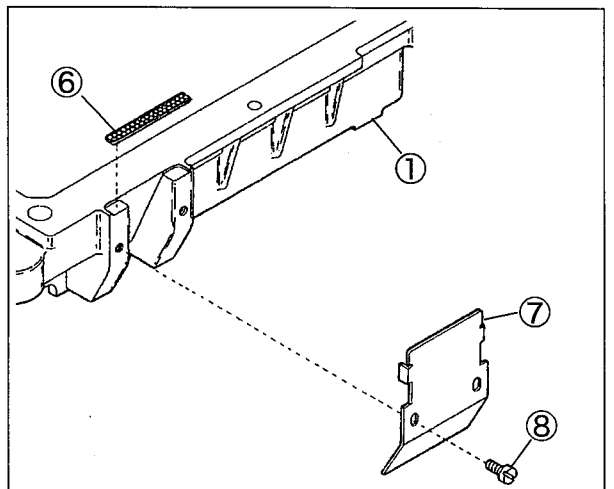


Fig. 77

### 7.3.3 Installing lint removal pipe

- (1) Put two pipe clamps② to the lint removal pipe ①.
- (2) Install the lint removal pipe ① and the pipe clamps② on the machine frame with two screws ③.
- (3) Connect the lint removal pipe ① to the pipe from the lint collecting device.

#### **⚠ CAUTION**

Suction is not enough when connecting another device to one lint collecting device for SC10.

When using ventilation, air pressure should be 0.2Mpa (2kgf/cm<sup>2</sup>) or more.

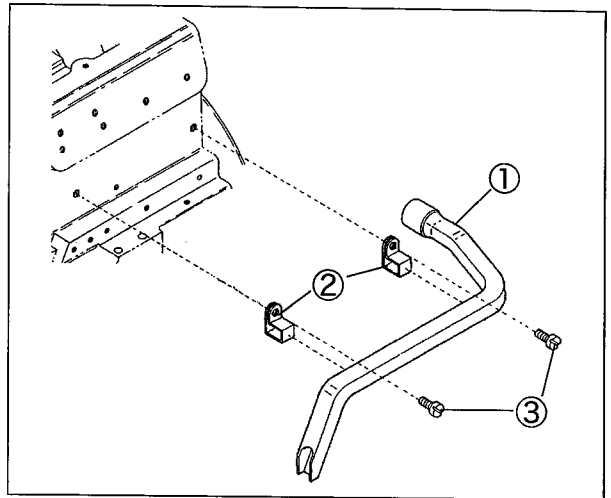


Fig. 78

# 8. Specifications

## 8.1 AZ8000G class

Model	AZ8000G class (excluded right models)	AZ8032G, 8035G
Dimensions	380 (L) × 245 (W) × 310 (H) mm	
Weight	26.5 kg	
Construction	Dust-proof, Oil-tight and completely sealed	
Stitch Type	ISO : 504, 505, 512, 514	ISO : 512, 514
Application	Overlock stitch for knitted or woven fabrics	
Sewing Speed	up to 8000 rpm (see Table 3 on page 10)	up to 7000 rpm
Stitch Length	1.0–4.0 mm (see Table 7 on page 17)	1.0–4.0 mm
Number of stitches per inch (25.4 mm)	6.5–25	6.5–25
per 30 mm	7.5–30	7.5–30
Needle System	DC×1 Size#8~#14(60~90)	DC×27 Size#8~#14(60~90)
Needle Stroke	23.7 mm	25.7 mm
Presser Foot Lift	(see Table 12)	up to 7.0 mm
Feed Regulation	Push button system	
Differential Ratio		
Max. Normal Differential (Gathering)	1:2.3 (see Table 6 on page 16)	1:2.3
Max. Reverse Differential (Stretching)	1:0.7	1:0.7
Max. reverse differential ratio is available up to 1:0.6 by adjusting the position of the lever pin.		
Differential Feed Regulation	Adjustable by moving external lever even during operation Adjustable by Micro adjuster	
Knives for Fabric Cutting	Lower Knife : flat type, made of special steel Upper Knife : flat or angled type, made of super hard alloy	
Lubricating Oil	YAMATO SF OIL No. 28	
Capacity of Oil Reservoir	900 cc	
Lubrication	Oil is fed forcedly by gear pump	
Installation	Fully-submerged type and Semi-submerged type	

Model	Presser Foot Lift (mm)
AZ8000G class (excluded below)	6.0
AZ8016G	3.0
AZ8032G, 8035G	7.0
AZ8079G, 8083G	5.0
AZ8093G	5.5

Table 12

## 8.2 AZ8500G class

Model	AZ8500G class (excluded right models)	AZ8505G	AZ8520G/8525G
Dimensions	380 (L) × 245 (W) × 310 (H) mm		
Weight	27 kg		
Construction	Dust-proof, Oil-tight and completely sealed		
Stitch Type	ISO (504, 401)		ISO (514, 405)
Application	Safety stitch for knitted or woven fabrics		
Sewing Speed	up to 7500 rpm	up to 7000 rpm	up to 7500 rpm
Stitch Length	1.0–4.0 mm	1.0–3.0 mm	1.0–4.0 mm
Number of stitches per inch (25.4 mm)	6.5–25	8–25	6.5–25
per 30 mm	7.5–30	10–30	7.5–30
Needle System	DC×27 (for both sides of overlock stitch and double chainstitch) Size#8~#14(60~90)		
Needle Stroke	23.7 mm		
Presser Foot Lift	up to 6.0 mm	up to 5.5 mm	up to 5.5 mm
Feed Regulation	Push button system		
Differential Ratio			
Max. Normal Differential (Gathering)	1:2.3	1:3	1:2.3
Max. Reverse Differential (Stretching)	1:0.7	1:1	1:0.7
	Max. reverse differential ratio is available up to 1:0.6 by adjusting the position of the lever pin.		
Differential Feed Regulation	Adjustable by moving external lever even during operation Adjustable by Micro adjuster		
Knives for Fabric Cutting	Lower Knife : flat type, made of special steel Upper Knife : flat or angled type, made of super hard alloy		
Lubricating Oil	YAMATO SF OIL No. 28		
Capacity or Oil Reservoir	900 cc		
Lubrication	Oil is fed forcedly by gear pump		
Installation	Fully-submerged type and Semi-submerged type		

***Yamato***

ヤマトミシン製造株式会社

***YAMATO SEWING MACHINE MFG. CO., LTD.***

4-4-12, NISHITENMA, KITA-KU, OSAKA, JAPAN  
TEL : 81-6-6364-1321 FAX : 81-6-6364-1307

〒530-0047 大阪市北区西天満4丁目4番12号  
TEL(06)6364-1321(代) FAX(06)6365-5176