

# ***Yamato***<sup>®</sup>

## Instruction Manual

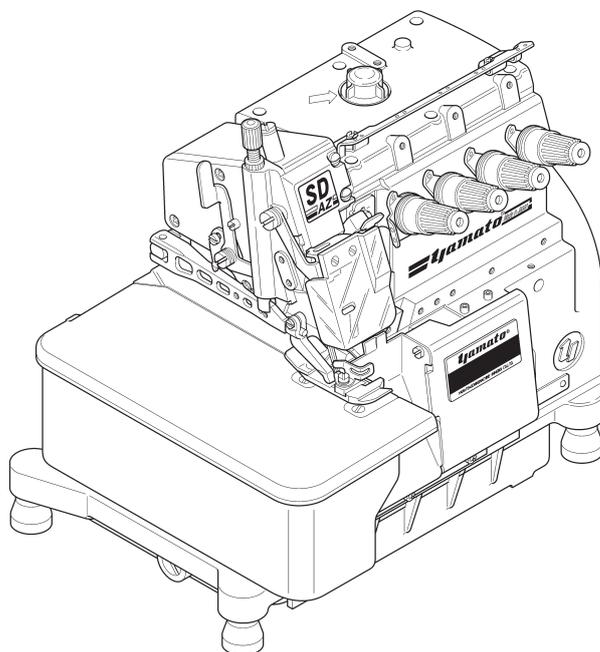
SUPPER HIGH SPEED OVERLOCK MACHINE  
SUPPER HIGH SPEED SAFETY STITCH MACHINE

### **AZ7000SDR-8 class**

AZ7000SDR-8, AZ7003SDR-8, AZ7016SDR-8  
AZ7020SDR-8, AZ7025SDR-8, AZ7120SDR-8, AZ7125SDR-8

### **AZ7500SDR-8 class**

AZ7500SDR-8, AZ7520SDR-8, AZ7525SDR-8  
AZ7500SDR-31, AZ7520SDR-31, AZR7525SDR-31



Thank you for purchasing the AZ7000SDR-8 and AZ7500SDR-8 class. Before using your AZ7000SDR-8 and AZ7500SDR-8 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 parts used for this product are subject to change without notice. If such a change is made, any part of the contents and illustrations of this instruction manual may not conform to this product. In preparing the instruction manual, we have made our best efforts for making it free of any error or omission. If any error or omission should yet be found, it might not be rectified immediately.

# SAFETY INSTRUCTIONS

## 1. Safety Instruction

The sewing machine, automatic machine, and attachments (collectively called “the machine” below) involve sewing operations that require the operator to be near moving parts of the machine. Because of this, there is always a potential danger of unintentional contact with the moving parts. For this reason, the operators who actually use the machine and the maintenance staff who perform maintenance and repair must carefully read “2. Basic precautions” and “3. Precautions to be taken in various operating stage” below and fully understand this information before operating or maintaining the machine.

The information contained in the “Safety Instruction” of this manual also includes items not found in the product specifications.

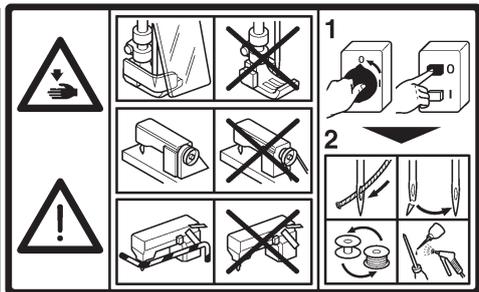
To assist in better understanding this manual and the product warning labels, warning indicators are categorized as shown below. Be sure that you fully understand the contents and carefully follow the instructions.

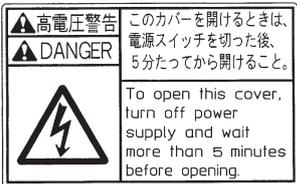
### 1.1 Explanation of risk levels

 <b>DANGER</b>	This indication is given when there is a danger of death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
 <b>WARNING</b>	This indication is given when there is a potential for death or serious injury if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.
 <b>CAUTION</b>	This indication is given when there is a potential danger of medium to minor injury or damage of the sewing machine if the person in charge or any third party mishandles the machine or does not avoid the dangerous situation when operating or maintaining the machine.

### 1.2 Explanation of pictorial warning indications and warning labels

	There is a risk of injury if contacting a moving section.
	There is a risk of a burn if contacting a high-temperature section.
	There is a risk of electrical shock if contacting a high-voltage section.
	Connection of an earth cable is indicated.
	The correct direction is indicated.

	<p><b>Explanation of safety label</b></p> <p>① There is the possibility that slight to serious injury or death may be caused. There is the possibility that injury may be caused by touching the moving part.</p> <p>② Perform sewing work with safety cover. Perform sewing work with safety protection device.</p> <p>③ Be sure to turn the power OFF before carrying out “threading,” “needle changing,” “bobbin changing” or “oiling and cleaning.”</p>
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	<p><b>Explanation of high-voltage warning label</b></p> <p>High voltages are flowing inside the power supply of the control box. This indicates that there is a risk of electrical shock. When it is necessary to open the control box containing electrical parts, be sure to turn the power off, remove the power plug and wait for at least five minutes before opening the cover in order to prevent an accident resulting in electrical shock.</p>
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### 1.3 Explanation of symbols

Explains the symbols used in the instruction manual.

	Failure to follow the instructions can result in an injury or damage to the machine.
	Be sure to follow the instructions when you operate, check, adjust or repair the machine.
	Never do this.
	Be sure to remove the power plug from the source of the power supply, when checking, adjusting and/or repairing the machine or when there is the possibility that lightning may strike.
	Additional explanations and notes, etc., for operation or adjustment

## 2. Basic precautions

1. Be sure to read this instruction manual and all the other explanatory documents supplied with accessories of the machine before using the machine. Always keep the instruction manual where it is easily accessible for the operator and maintenance staff.
2. The content of this section includes items which are not contained in the specifications of your product.
3. Be sure to wear safety goggles to protect against accidents caused by needle breakage.

### 2.1 Applications, purpose

Our industrial sewing machines have been developed in order to increase quality and/or productivity in the sewing industry. Accordingly, never use our products for other than the intended use as described above.

### 2.2 Working environment

The environment in which our industrial sewing machines are used may seriously affect their durability, functions, performance and/or safety. Do not use the machine in the circumstances below.

-  Places of high ambient temperature and/or humidity that seriously affects sewing machines.
-  Outdoors, places of high temperature or in direct sunlight.
-  Environments containing dust, corrosive or flammable gases, or in contact with chemicals.
-  Where the voltage fluctuation range is more than  $\pm 10\%$  of the rated voltage.
-  Location where sufficient power is not available for the power supply capacity of the controllers and motors that is used.
-  Near objects where strong electric or magnetic fields, such as high frequency welding machines which make noise, are generated.
-  As dew condensation may occur when suddenly bringing the machine from a cold environment to a warm place, in order to prevent accidents caused by breakage or malfunction of the electrical components, be sure to turn the power on after waiting for a sufficient period of time until there is no sign of water droplets.

-  When lightning occurs, be sure to stop operation and remove the power plug in order to prevent accidents caused by breakage or malfunction of the electrical components.

### 2.3 Safety devices and warning labels

-  Be sure to operate the machine after verifying that safety device(s) are correctly installed in order to prevent accidents caused by lack of the device(s).  
With regard to safety device(s), please refer to page vi.
-  If any of the safety devices is removed, be sure to replace it and verify that it works normally in order to prevent accidents.
-  Be sure to keep the safety label and/or warning labels attached to the machine clearly visible in order to prevent accidents. If any of the labels has become stained or come unstuck, be sure to replace it with a new one.

### 2.4 Instruction and training

-  Operators and workers, who supervise, repair or maintain the machine head and/or machine unit, are required to have the adequate knowledge and operation skills to do the job safely.
-  The manager should plan and enforce the safety education and training of those operators and workers beforehand.

### 2.5 Modification

-  Never modify and/or alter the machine in order to prevent accident that can result in personal injury or death. Yamato assumes no responsibility for damages or personal injury or death resulting from a machine which has been modified or altered.

**! WARNING**

**2.6 Items for which the power to the machine has to be turned off**

-  Be sure to immediately turn the power off if any abnormality or failure is found or in the case of power failure in order to protect against accidents that can result in personal injury or death.
-  To protect against accidents resulting from abrupt starting of the machine, be sure to carry out the following operations after turning the power off.
  - When threading to the parts such as the needle, looper, spreader, etc., or when changing the bobbin.
  - When changing or adjusting all component parts of the machine.
  - Adjusting the stitch length
  - Adjusting the differential feed ratio
  - When inspecting, repairing or cleaning the machine or leaving the machine.
- Be sure to remove the power plug by holding the plug section instead of the cord section in order to prevent electrical shock, earth-leakage or fire accidents.
- If the machine is using a clutch motor, to protect against accidents resulting from abrupt starting of the machine, be sure to carry out the above operations after verifying that the machine has stopped completely, since the motor continues turning for a while even after turning off the power supply switch.

**3 PRECAUTIONS TO BE TAKEN IN VARIOUS OPERATING STAGES**

**3.1 Unpacking**

-  Be sure to unpack the machine from the top. If the machine is packed in a wooden crate, be careful of the nails. Remove the nails from the board.
-  Never hold the parts near the needle or threading parts when removing the sewing machine head from the buffer of the box.
-  Removing and carrying the sewing machine head should always be carried out by two or more people.
-  Take out the machine very carefully while checking the position of the center of gravity.
-  Preserve the cardboard box and packing material carefully in case secondary transport is needed in the future.

**Disposal of the packaging**

The packaging material of the machine consists of wood, paper, cardboard and polystyrene foam. The proper disposal of the packaging is the responsibility of the customer, and must be properly disposed of in accordance with the locally valid environmental protection regulations.

**Disposal of the machine waste**

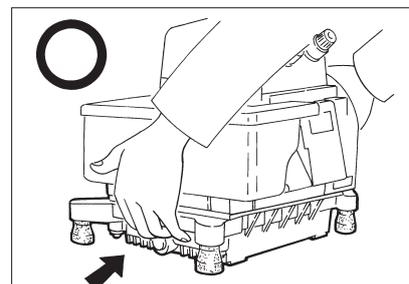
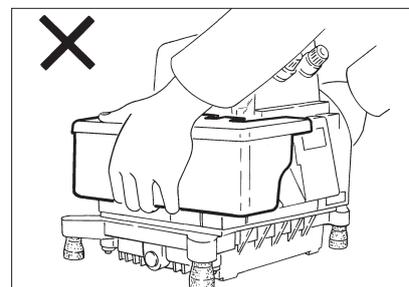
The proper disposal of the machine waste is the responsibility of the customer, and must be disposed of in accordance with the locally valid environmental protection regulations. The materials used in the machines are steel, aluminum, brass and various plastics. A specialist should be commissioned if necessary.

**3.2 Transportation**

-  Be sure to take sufficient safety measures to prevent falling or dropping when lifting or moving the machine.
-  If the machine and/or your hands are stained with oil, the machine may easily fall to the floor. Therefore, wipe off the oil carefully.
-  To prevent accidents during transportation, repackage in the same state as the original delivery packaging.

Be particularly sure to fully wipe off any oil adhering to the machine before repackaging.
-  The machine head should be carried by two or more people.

The machine should be carried by people only when moving to the table or transfer hand truck, and all other transportation operations should use a hand truck. When moving to the table or hand truck, be careful that the machine is not subjected to excessive impact or vibrations. Otherwise the sewing head could fall over.
-  When handling the machine, do not carry the bottom part of the cloth plate cover.



### 3.3 Installation, preparation

#### 3.3.1 Machine table

- ❗ Prepare a machine table (table board and legs) that has sufficient strength to withstand the weight of the sewing head and any reaction while operating.

Securely join the table and legs to ensure sufficient strength to withstand the weight of the sewing head and any reaction while operating.

- Maintain a comfortable working environment with consideration of the lighting and the arrangement of sewing machine to enable the operators to work smoothly.
- Adjust the height of the table according to the posture of the worker.

Also, when installing the control box and the related parts on the sewing machine, make sure not to affect the posture of the worker. If casters are fitted to the table stand, be sure to use high-strength casters with a locking mechanism.

- ⚠ Lock the casters except when moving the machine.

#### 3.3.2 Wiring and grounding

- ⊘ Never connect the plug for power supply until assembly is finished.

Also, be sure to avoid the usage of multiple-outlet extension cords in order to prevent electrical shock, earth-leakage or fire accident.

- ❗ Fix the connectors securely to the sewing machine head, motor, and electric apparatus.

Also, when unplugging the connectors, hold the connector part.

- ❗ When wiring the connection cords, please take care of the following.

- Connect the cords away from the driving parts.
- Do not apply excessive force to the connection cords.
- Do not bend the cords excessively.

- ⊘ Never use staples to fasten the cables. Otherwise it may cause a short circuit and/or fire.

- ❗ Arrange the ground wire securely to the designated position on the machine head.

Also, wire separately from the grounding for other equipment.

#### 3.3.3 Handling machine oil

- ⚠ Keep machine oil out of the reach of children.

- ❗ Be sure to fill or add lubrication oil to sewing machines before operating them. Use “Yamato SF oil 28” as specified.

- ⚠ If machine oil gets in your eyes, it may cause eye inflammation. Always wear protective glasses to prevent the oil from getting in your eyes.

\*Should machine oil get in your eyes, wash them with fresh water for 15 minutes and then consult a medical doctor.

- ⚠ If oil adheres to your eyes or body, be sure to immediately wash it off in order to prevent inflammation or irritation.

- ⚠ If oil is swallowed unintentionally, be sure to consult a medical doctor in order to prevent diarrhea or vomiting.

- ❗ Methods of disposing of waste oil and/or containers are specified by law. Dispose of it properly as required by law. If you have further questions on its disposal, consult the place of purchase.

- ❗ After opening the oil container, be sure to seal it to prevent dust and water from getting into the oil and keep it in the dark to avoid direct sunlight.

- ⊘ Do not store in high-temperature areas or areas exposed to an open flame.

### WARNING

#### 3.4 Before operation

- Never put your hand under the needle or near the moving parts of the machine when turning on the power supply switch.
- When operating a new sewing machine, make sure the rotating direction of the pulley agrees with the rotating-direction mark.
- Before turning the power on, visually check the cables and connectors for conditions such as damage, disconnection and/or loosening.
- If a table stand with casters is used, be sure to secure the table stand by locking the casters or securing the legs with adjusters, if provided, in order to prevent accidents caused by abrupt moving of the machine.

 WARNING

### 3.5 During operation

- Be sure to operate the sewing machine using the safeguards such as belt cover, finger guard, and eye guard.
- Never place your finger, hair or objects under the needle or close to the moving parts while operating the sewing machine.
- Be sure to turn off the power supply switch when threading or replacing the needles.
- Never place your hands close to the knives (upper and lower knives) when operating the sewing machine with the trimming devices.
- Be sure to turn off the power supply switch when terminating the sewing work or leaving the sewing machine.
- In the event of the power failure, be sure to turn off the power.  
Also, if the sewing machine malfunctions, makes abnormal sound or emits unusual odors while operating, be sure to turn off the power supply switch.
- While operating the machine, wear clothing that cannot be caught in the machine.
- Do not put any tools or other unnecessary objects on the machine table while running the machine.
- If a clutch motor type is used, it will continue running for a while even after the power is turned off. Therefore, be careful because the machine could start running by pressing the machine pedal.
- If a servomotor is used, the motor does not produce noise while the machine is at rest. Be sure not to forget to turn the power off in order to prevent accidents caused by abrupt starting of the machine or motor.
- To prevent entanglement accidents in machines with a puller mechanism, keep your hands, hair, and clothing away from the machine.

 WARNING

### 3.6 Maintenance, inspection and repair

- Maintenance, inspection, and repair must be performed by staff that have received special training and fully understand and follow the information in the instruction manual.
- 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 the machine is using a clutch motor, take care that the motor keeps turning for a while even after turning off the power supply switch.)

- Do not attempt to modify the machine at your own discretion. We are not responsible for accidents caused by such modification.
- Use genuine Yamato parts when repairing the machine and/or replacing the parts. We are not responsible for accidents caused by any improper repair/adjustment and substituting other parts for those manufactured by Yamato.
- Turn off the power supply switch if removing or replacing any parts or during adjustment of the sewing machine.
- Be sure to also remove the gasket if the cover is removed for maintenance, inspection, and repair. If the gasket is not removed, the edge of gasket may cause injury.
- Do not pull the cord when removing the plug. Be sure to hold the plug itself.
- A high voltage is applied inside the control box. Turn off the power supply switch and wait for at least five minutes before opening the cover.
- Be sure to replace the safety devices and/or safety covers if removed for maintenance, inspection and repair.
- After performing maintenance, inspection and repair, make sure that turning on the power does not pose any danger to you.  
When operating the machine for the first time after work is performed, run at low speed to check for abnormal sounds or other problems before performing high-speed operation.

### 4. Recommended check points for maintaining machine performance

- (1) Perform regular cleaning of the machine parts by following the instruction manual.
- (2) Perform regular inspection of the lubrication oil by following the instruction manual, and refill or replace the oil as required.
- (3) Because the oil-proof parts use rubber, their oil-proof performance is reduced over time.
  - If the seals or other stationary parts fall off or begin to lose their sealing performance, replace them with new parts.
  - The replacement period for parts used in the movable sections varies depending on the machine operating conditions, environment, maintenance, and oil used, but replacement every several years is recommended.
- (4) For details about the replacement procedure, please contact your local dealer or Yamato.

## 5. Safety devices and warning label affixing locations

### Belt cover

- !** The belt cover prevents entanglement with the belt.
- ⊘** Do not operate with the cover removed.

### Front cover

- !** The front cover prevents contact with the moving parts inside the cover.
- ⊘** Do not operate with the cover opened.

### Eye guard

- !** The eye guard prevents injury to the operator's eyes due to breaking of needles during the sewing operation. This section also houses the needle thread take-up, upper knife, and other moving parts.
- ⊘** Do not operate with the eye guard opened.

### Finger guard

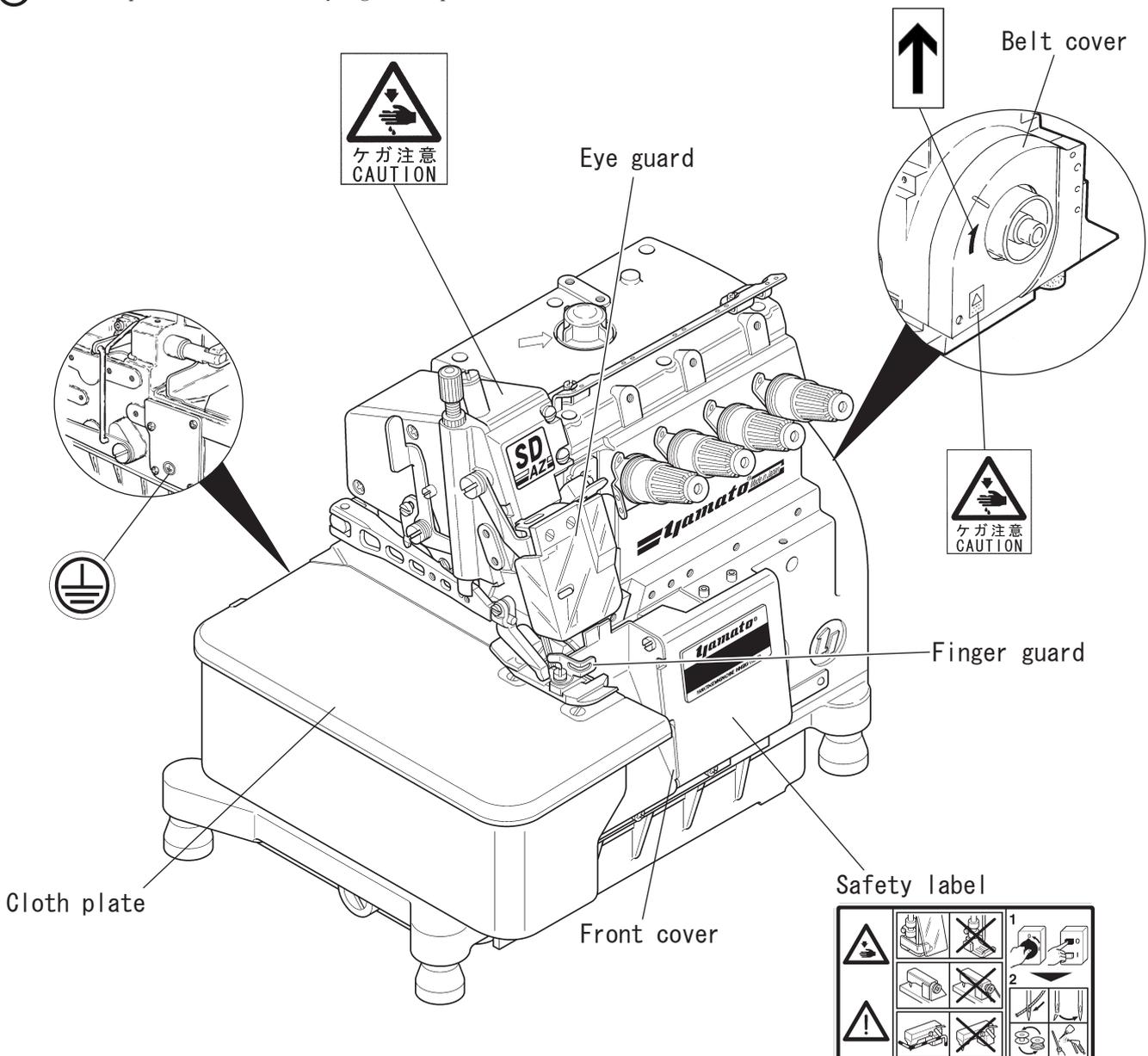
- !** The finger guard prevents the operator's fingers from going under the needle. However, there is some space at the top of the finger guard and other sections, and so there is a risk of finger insertion.
- ⊘** Do not operate when the finger guard is removed.

### Cloth plate

- !** The cloth plate prevents contact with the moving parts inside the cloth plate.
- ⊘** Do not operate when the cloth plate is opened.

### Safety label, warning label

- !** Reaffix the labels if they start peeling off or become dirty and illegible.



## DECLARATION OF INCORPORATION OF PARTLY COMPLETED MACHINERY

We hereby declare that the sewing machine(sewing head) described below;

1. Must not be put into service until the machinery to which it is incorporated has been declared in conformity with the provisions of the Directive 2006/42/EC, and
2. Conforms to essential requirements of the Directive 2006/42/EC, described in the technical documentation, and
3. To be prepared with the above technical documentation compiled in accordance with part B of Annex VII, and
4. Relevant information on wish should be transmitted in response to a reasoned request by the national authorities by the electronic method or other according to the request.

Model : AZ7000SDR-8 and AZ7500SDR-8 class

Serial No. :

Description : Industrial sewing machine

Function : Make stitches and sew

Applied harmonized standards in particular :

EN ISO12100-1, EN ISO 12100-2, EN ISO10821, EN 60204-31

Manufacturer :

YAMATO SEWING MACHINE MFG. CO., LTD.

2-10-3 Hotarugaike Minami-machi Toyonaka

Osaka Japan

# 1. Name of each part

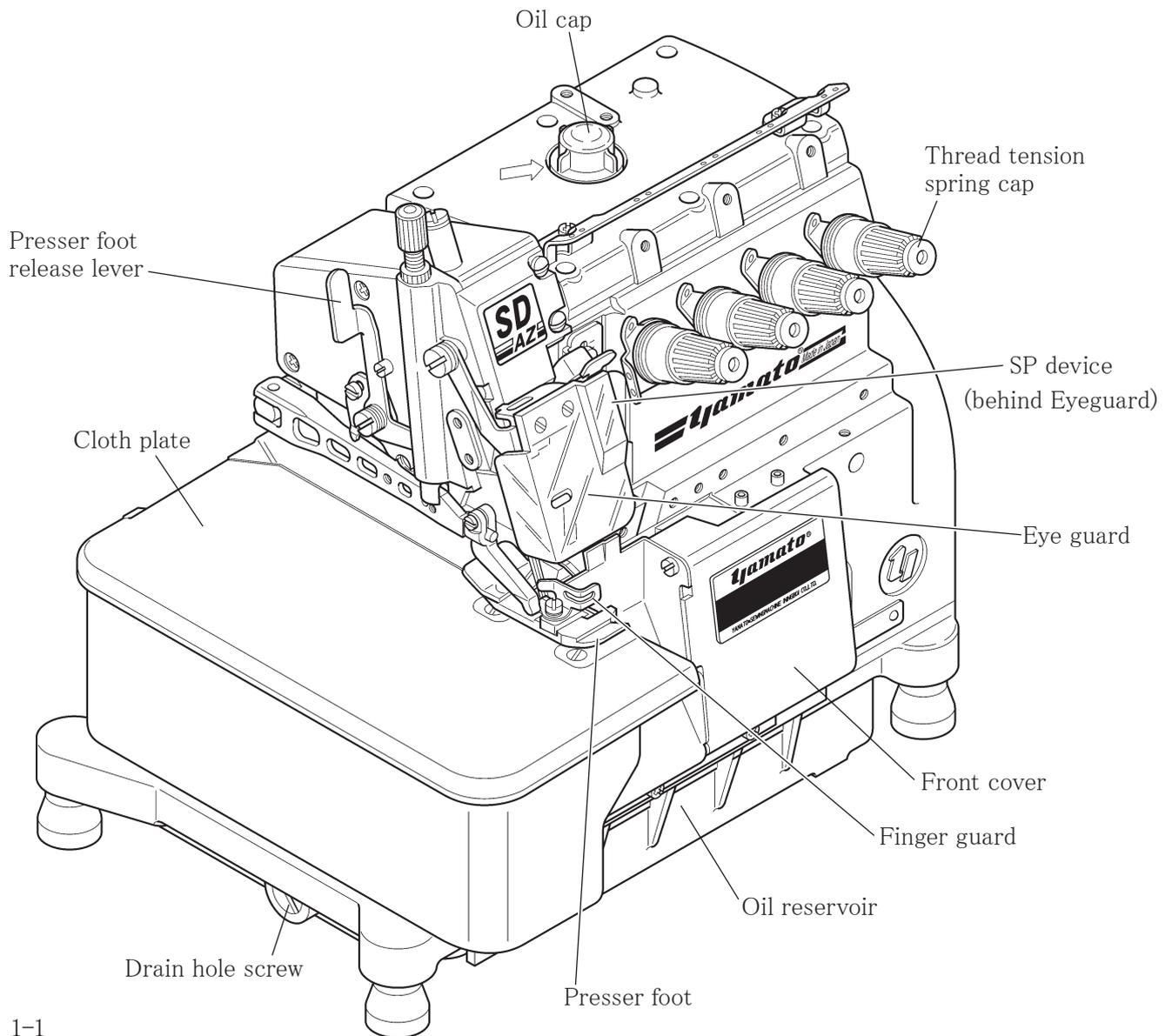


Fig. 1-1

# 2. Installation

## 2.1 Semi-submerged type

### 2.1.1 Table cutting diagram

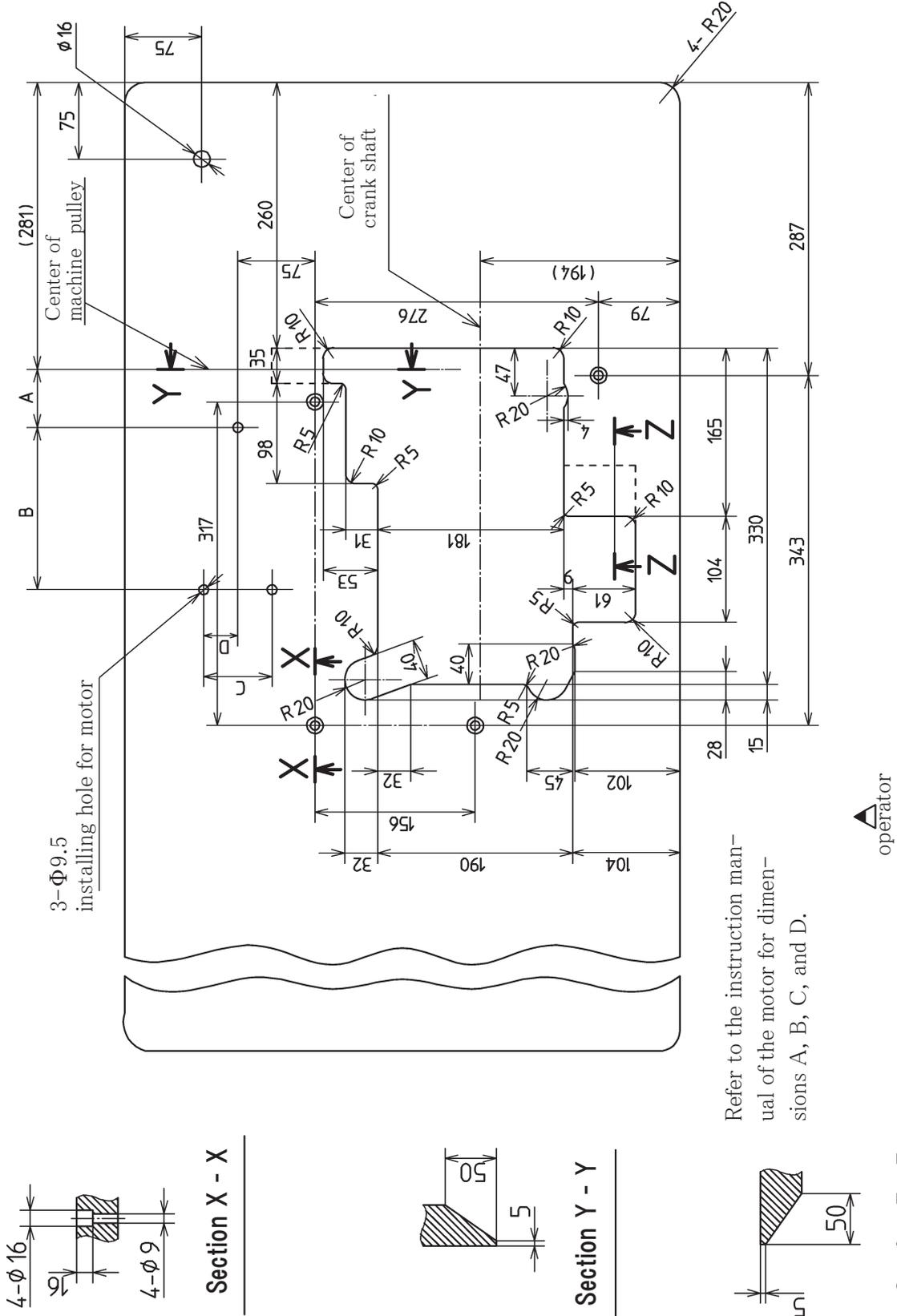


Fig. 2-1

2.1.2 Installation

Install the machine correctly referring to Fig. 2-2 and 2-3.

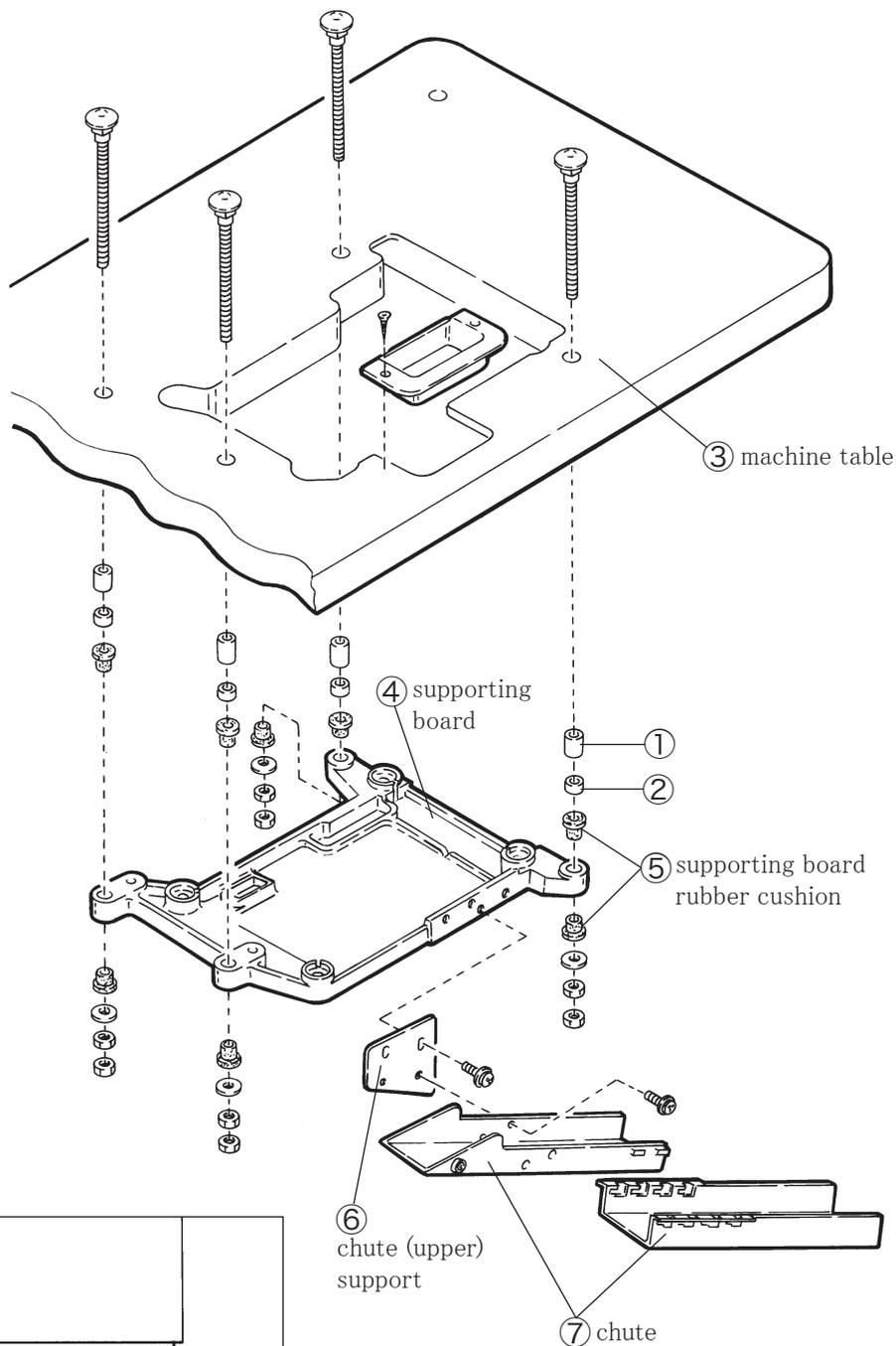


Fig. 2-2

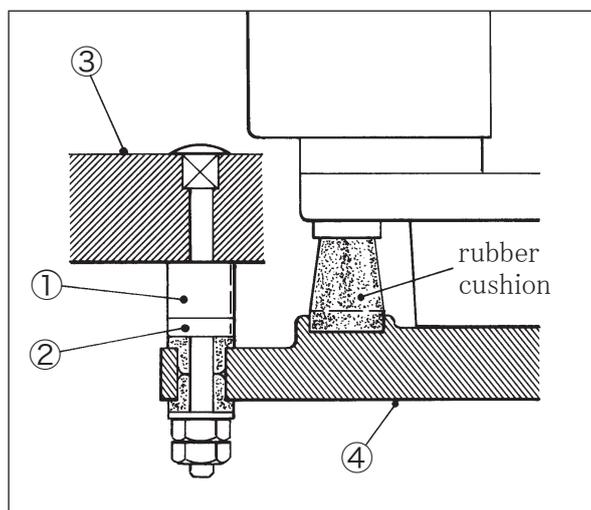


Fig. 2-3

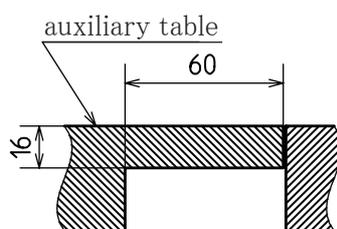
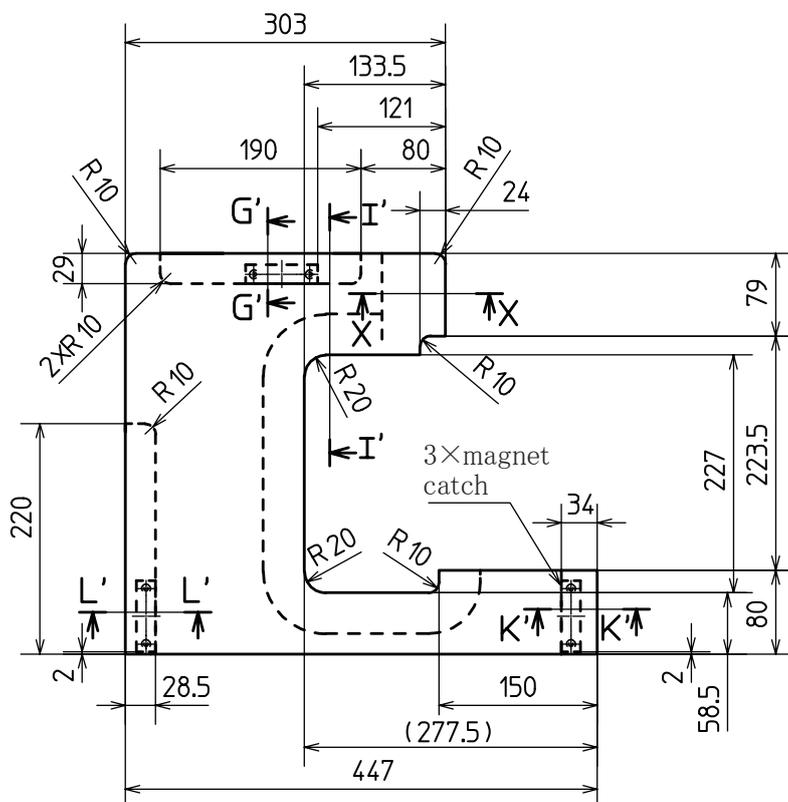
Table 1 The number of spacers ① and ②

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

Size of spacers : ①=15mm ②=5mm



## Cutting diagram of auxiliary table



Section X - X

Note) Indication of magnet and magnet catch plate can be referred to installation position of magnetic catch.

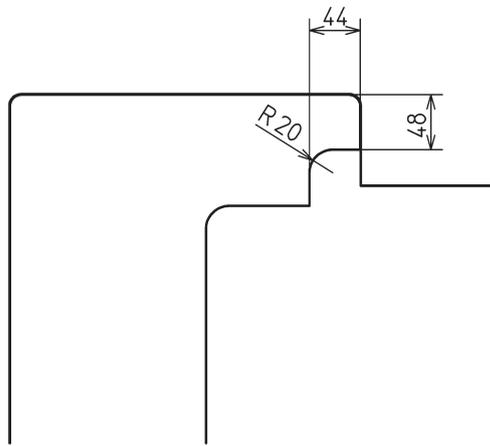
Ref.) Magnetic catch JM-63G-15 and magnetic catch plate AS-68 made by SUGATSUNE KOGYO Co. Ltd.

Fig. 2-5

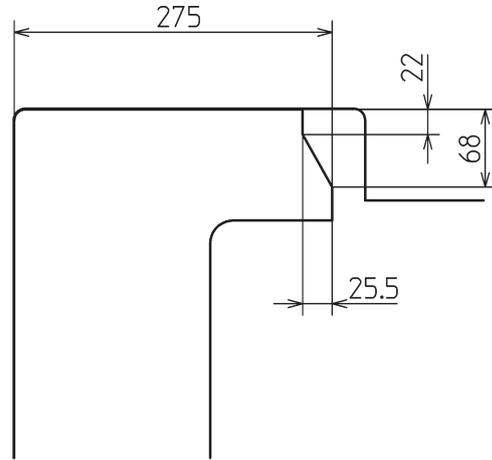
## 2. Installation

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

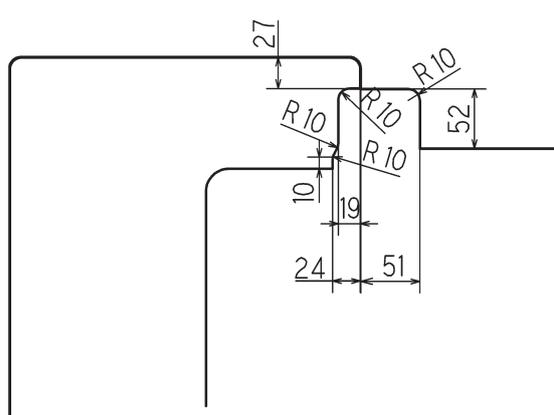
To set up a machine with device, install the device with below dimensions and refer to “2.2.1 Table cutting diagram” (Fig. 2-4, 2-5).



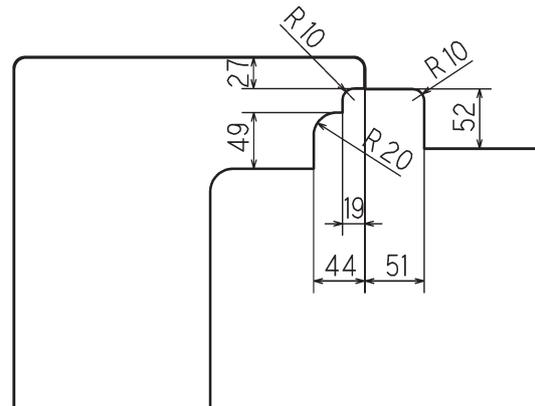
AZ7500SDR-8 class with K1 device



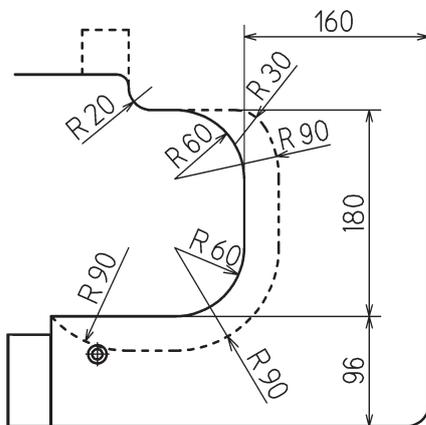
AZ7000SDR-8 class with K2 device



AZ7000SDR-8, AZ7500SDR-8 classes with MT22 device



AZ7000SDR-8, AZ7500SDR-8 classes with MU44, 45 device



Using servomotor

Fig. 2-6

2.2.3 Installation

Install the machine correctly by referring to Fig. 2-7 and 2-8.

Adjust the position of supporting board so that the machine can be set horizontally and the cloth plate can be set on the same height or a little higher than the machine table.

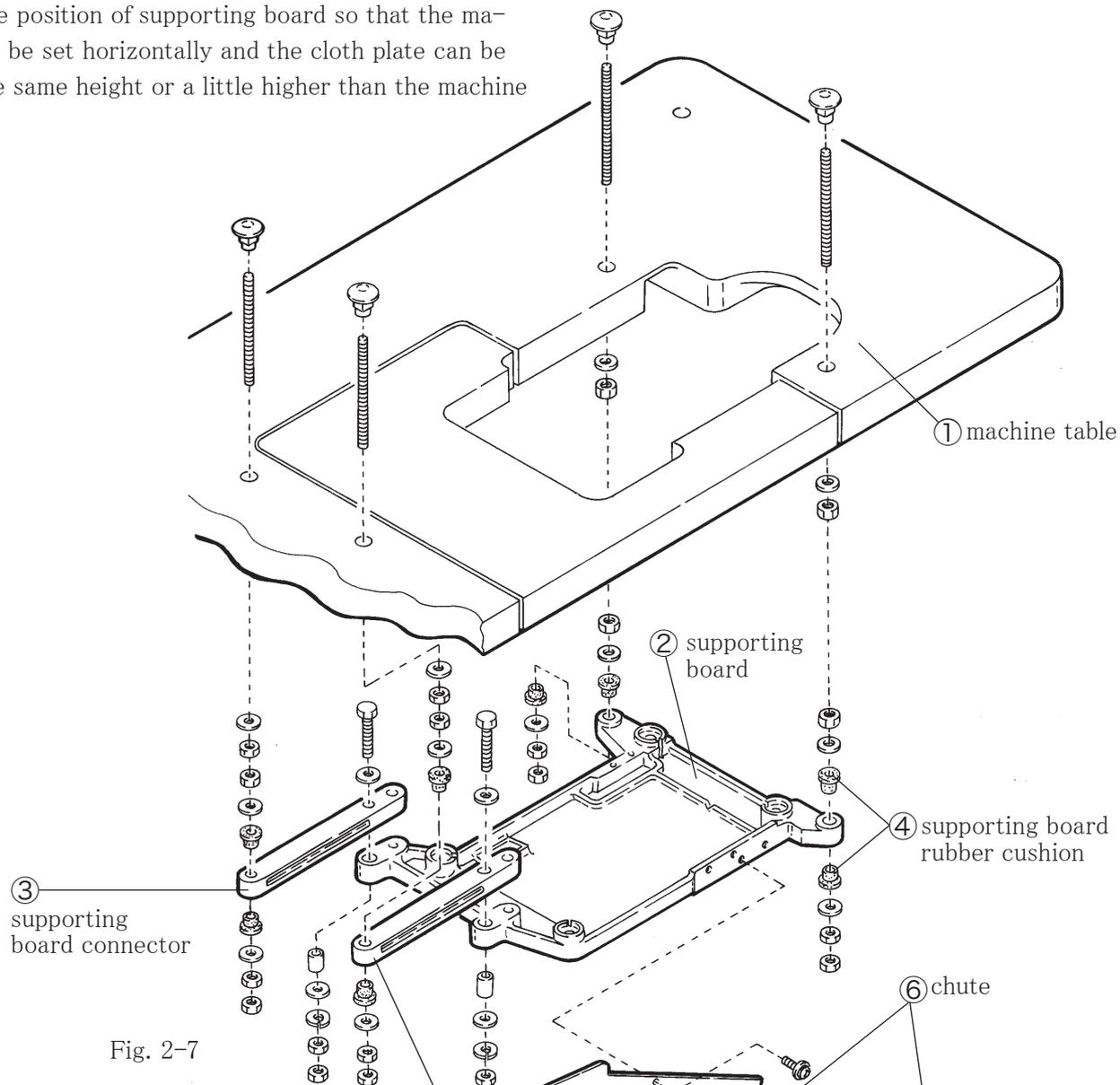


Fig. 2-7

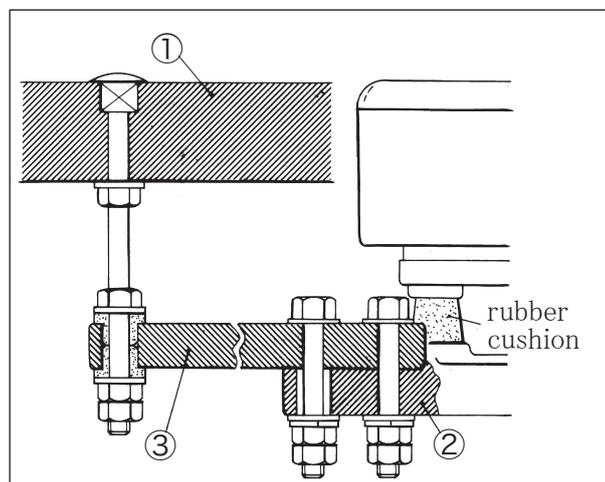


Fig. 2-8

## 2. Installation

### 2.3 Motor, pulley and belt

See the instruction manual for the motor to use 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 by toeing down the pedal.

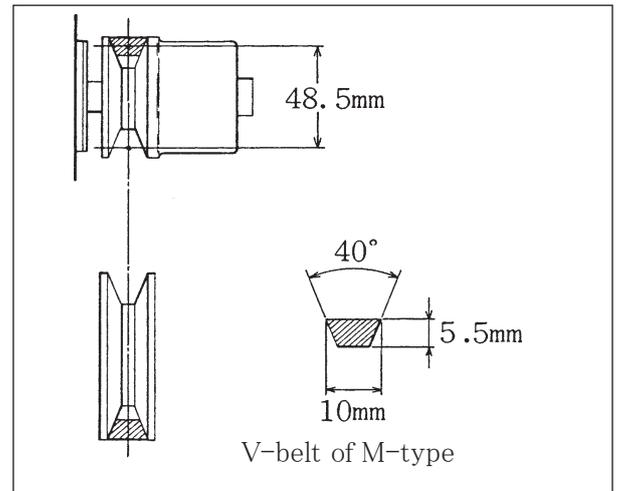


Fig. 2-9

NOTE: Table 2 shows the outside diameter of the motor pulley, sewing speed 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.

outside diameter of pulley (mm)	sewing speed of machine (sti/min)		size of belt	
	50 H z	60 H z	semi-submerged	full-submerged
90	/	6000	M34	M29
95	/	6400	M34	M30
100	/	6700	M35	M30
105	5900	7000	M35	M30
110	6200	7200	M35	M31
115	6500	7500	M36	M31
120	6700	/	M36	M32
125	6850	/	M37	M32
130	7000	/	M37	M32
135	7300	/	M37	M33
140	7500	/	M38	M33

Table 2

#### Servomotor:

Calculate the outside diameter of a motor pulley from the formula as below.

Or see Table 3 to select a proper motor pulley diameter.

$$\text{Outside diameter of motor pulley} = \frac{\text{Usual sewing speed}}{\text{Servomotor speed}} \times 48.5 + 5 \text{ mm}$$

#### Belt

Use a V-belt of M type.

For belt size, refer to Table 2.

sewing speed of machine (sti/min)	outside diameter of motor pulley (mm)	
	speed of servomotor	
	3000 rpm	3600 rpm
6000	102	86
6200	105	89
6500	110	99
6700	113	95
7000	118	99
7200	121	102
7500	126	106

Table 3

## 2.4 Hanging belt

### ⚠ CAUTION

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

Use the V-belt of M-type.

- (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 to 20 mm slack when its center is pressed with 10 N .
- (3) Lock the motor with the adjusting bar ④.

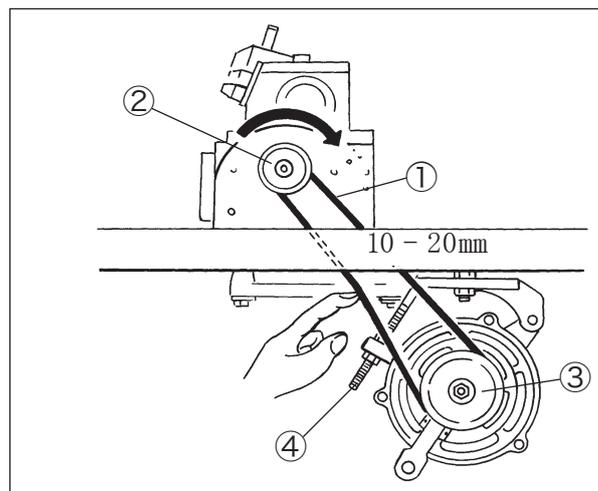


Fig. 2-10

## 2.5 Belt cover

### ⚠ CAUTION

To prevent you from getting injured and a material from being caught by the belt, be sure to install the belt cover.

- (1) Install the auxiliary belt cover ⑤ as shown in the figure.
- (2) Install the belt cover ⑥ as shown in the figure.

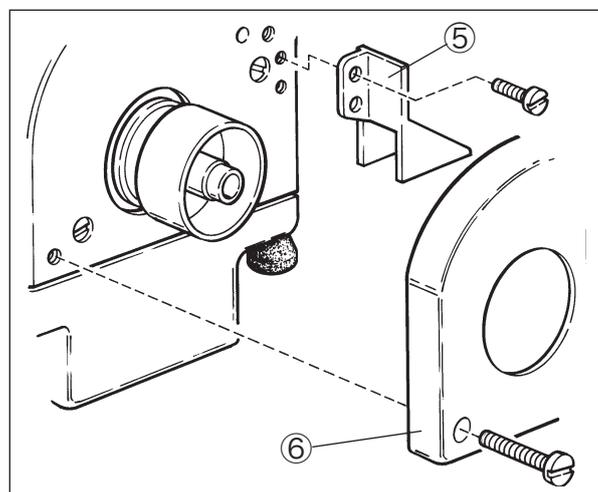


Fig. 2-11

## 2.6 Eye guard and finger guard

To ensure safe use, ALWAYS install the eye guard ⑦ and the finger guard ⑧ on the prescribed position during operation.

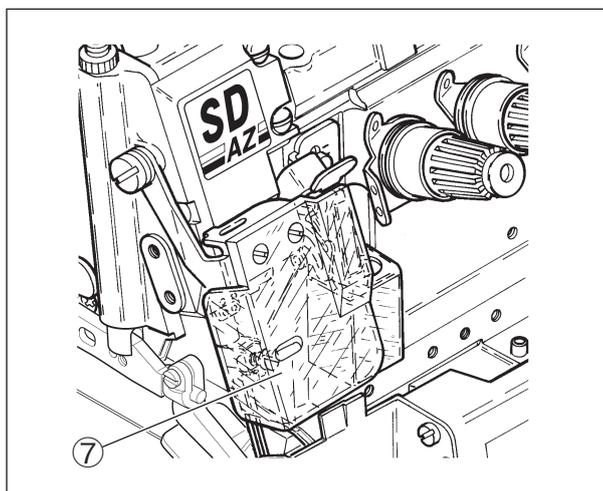


Fig. 2-12

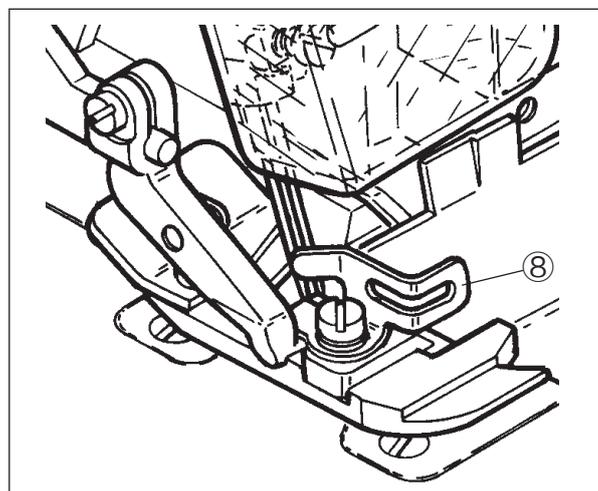


Fig. 2-13

# 3. Sewing speed and rotating direction of pulley

Table 4 shows the maximum sewing speed of each model. Run a new machine at 15 to 20% lower sewing speed of its 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.

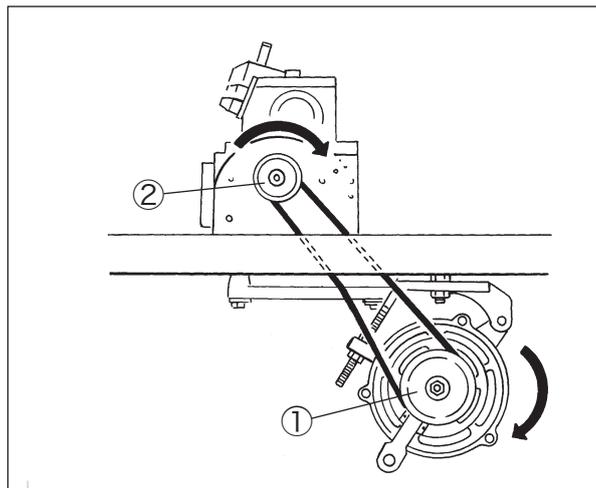


Fig. 3-1

m o d e l	max sewing speed(sti/min)
AZ7000SDR-8 class	7500
AZ7120SDR-8 class	7000
AZ7500SDR-8 class	7500
AZ7500SDR-31, AZ7520SDR-31 class	7000

Table 4

# 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 few drops of oil to the needle bar ① and the looper bar ②.

Remove the oil cap ③ indicated “OIL-IN” and supply oil to the upper line of the oil sight gauge ④.

Make sure that the oil splashes from the nozzle inside the oil cap ③ when running the machine.

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

### ⚠ CAUTION

Too much oil or insufficient 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.

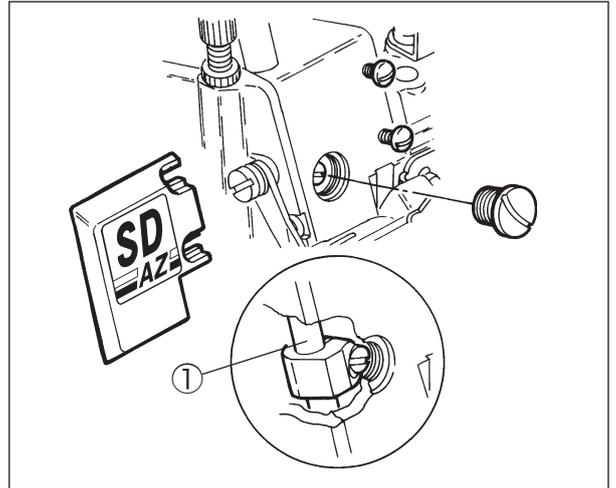


Fig. 4-1

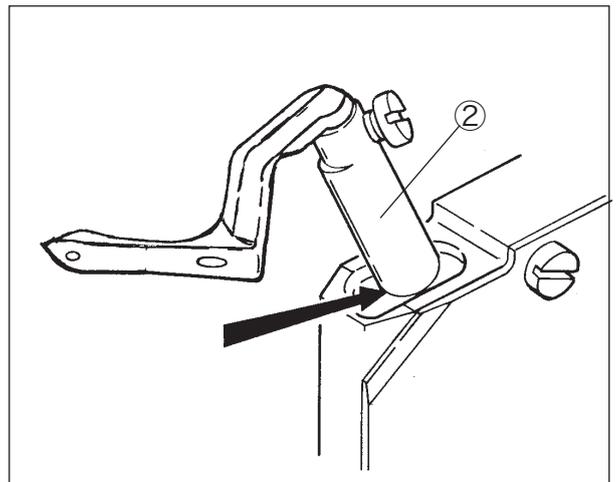


Fig. 4-2

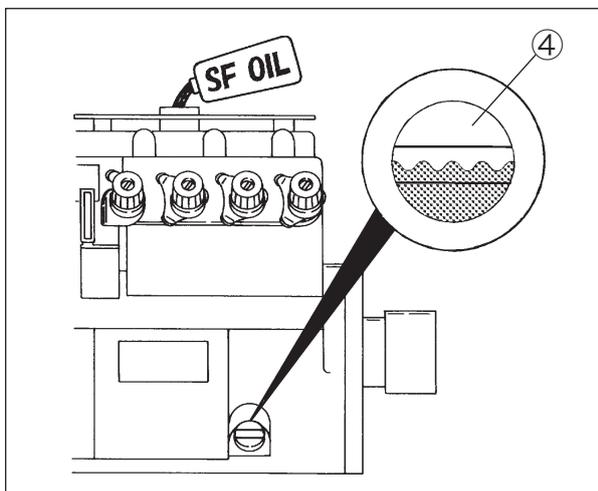


Fig. 4-3

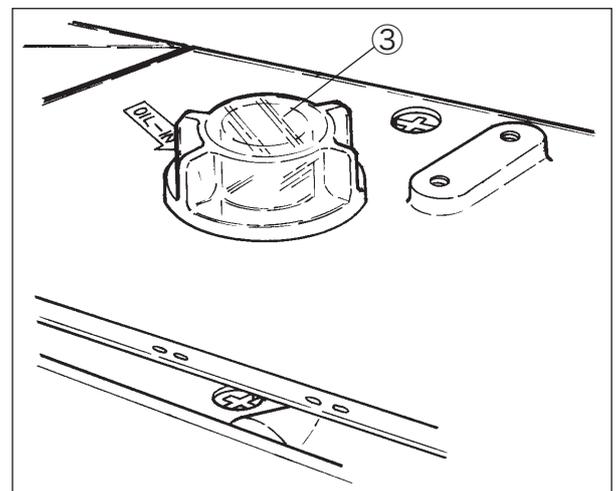


Fig. 4-4

## 4. Lubrication

### 4.3 Changing oil

#### Period :

When using a new machine, change the lubricating oil after running the machine for 200 hours (about one month). After that, change the oil once or twice a year.

#### Procedure :

- (1) Remove the belt cover. (See page 9)
- (2) Remove V-belt from the motor pulley. (See page 9)
- (3) Remove the machine from the machine table.
- (4) Set a container under the screw ① to receive the oil.
- (5) After removing screw ①, the oil will drain out.

### ! ATTENTION

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 Lubricating” on page 11)
- (8) Reinstall the machine on the machine table.
- (9) Hang the V-belt on the motor pulley and reinstall the belt cover. (See page 9)

### 4.4 Checking and replacing oil filter

- ◆ If the oil filter ② is clogged with dust, lubrication cannot 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 splashes from the nozzle insufficiently or includes many bubbles even though oil is sufficiently kept, check or replace the oil filter.

### i NOTICE

Be careful the oil may spill out from the oil filter ②, when loosening the screw ④.

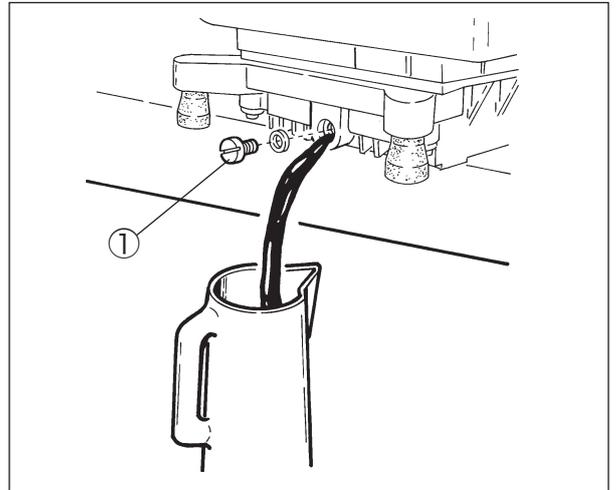


Fig. 4-5

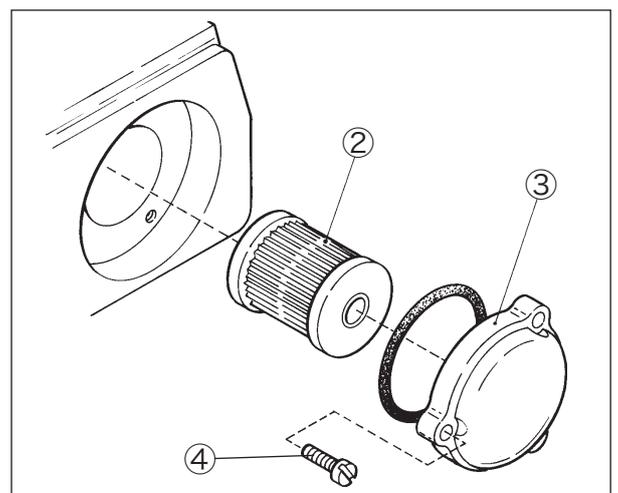


Fig. 4-6

# 5. Proper operation

## 5.1 Needle system

AZ7000SDR-8 : DC×1 ( or 81×1 )  
 AZ7003SDR-8,AZ7020SDR-8,  
 AZ7120SDR-8 class : DC×27 ( or B27, 1886 )  
 AZ7500SDR-8 class : DC×27 ( or B27, 1886 )

Select proper needles in size according to 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 5

## 5.2 Installing needles



### ⚠ CAUTION

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

- (1) Loosen the screw ① with a minus screw driver. (Fig. 5-1)
- (2) Remove the old needle with a pair of tweezers.
- (3) Insert a new needle into the needle clamp ② as far as it goes with facing its scarf to the right back. (Fig. 5-2 and 5-3)
- (4) Tighten the screw ① with the minus screw driver.

● Accessories include the minus screw driver.

### ⚠ ATTENTION

The tightening torque of the screw ① is 0.6 N·m.

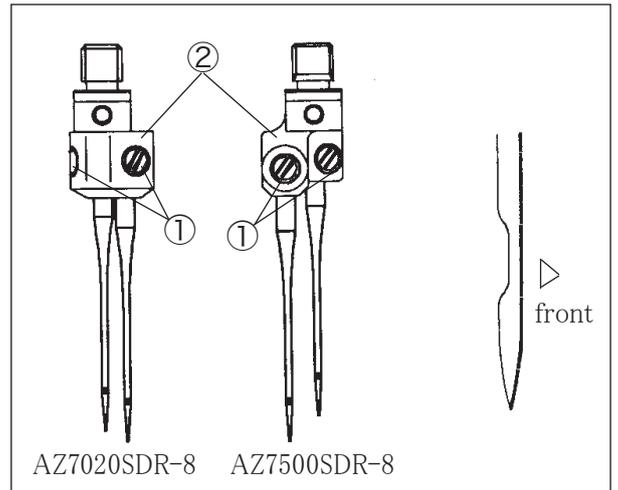


Fig. 5-1

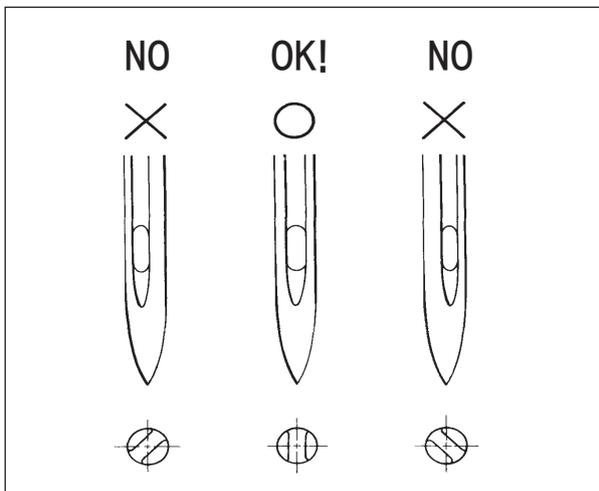


Fig. 5-2

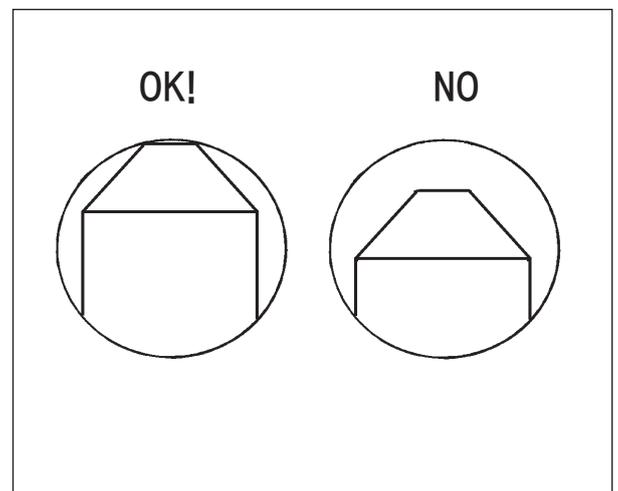


Fig. 5-3

## 5. Proper operation

### 5.3 Adjusting thread tension



Adjust the thread tension with the thread tension spring caps ① to ⑥ according to 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 counterclockwise.

model thread	AZ7000SDR-8 single needle overlock	AZ7020SDR-8 2-needle overlock	AZ7500SDR-8/-31 2-needle safety stitch	AZ7520SDR-8/-31 3-needle safety stitch
left needle thread	①	①	①	①
right needle thread		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 6

### Threading

#### ⚠ CAUTION

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

Threading correctly by referring to the threading figure which is attached on the back of the front cover.

#### ⚠ ATTENTION

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

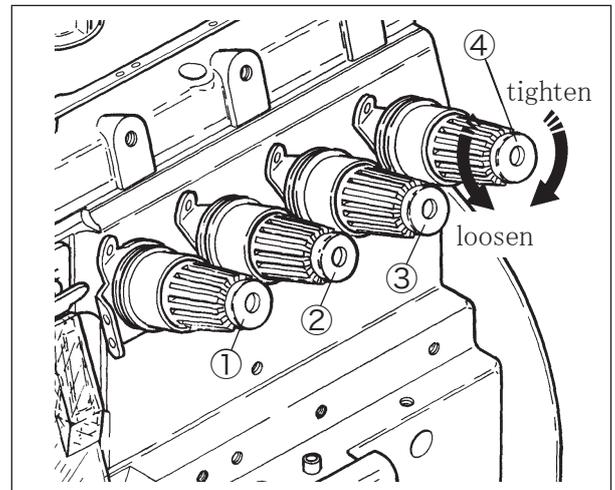


Fig. 5-4 AZ7020SDR-8, AZ7500SDR-8/-31

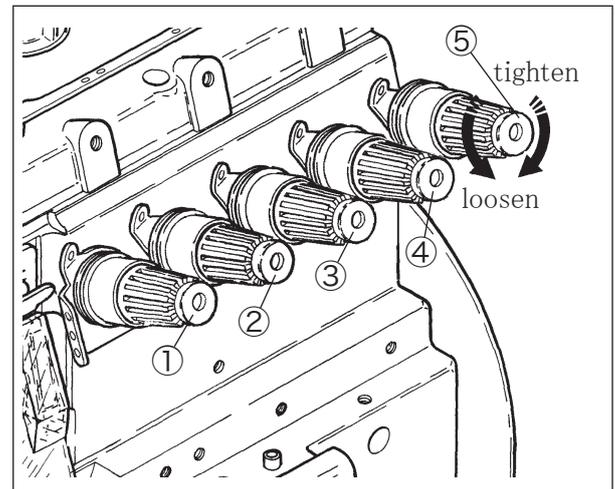


Fig. 5-5 AZ7520SDR-8/-31

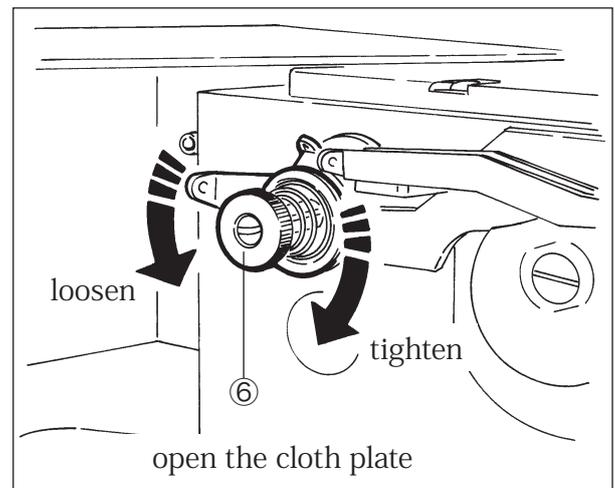


Fig. 5-6 AZ7500SDR-8/-31, AZ7520SDR-8/-31

## 5.4 Pressure of presser foot



Loosen the lock nut ① and adjust the pressure of the presser foot by 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 stitch.

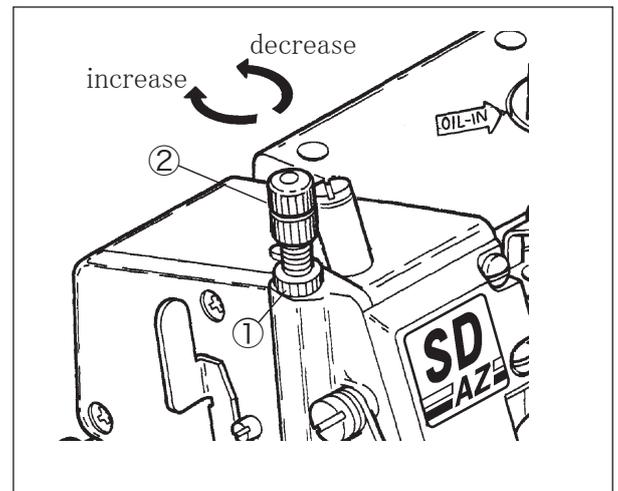


Fig. 5-7

## 5.5 Releasing presser foot



### ⚠ CAUTION

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 press the presser foot to the right while pressing the presser foot release lever ③. Then, release the lever.

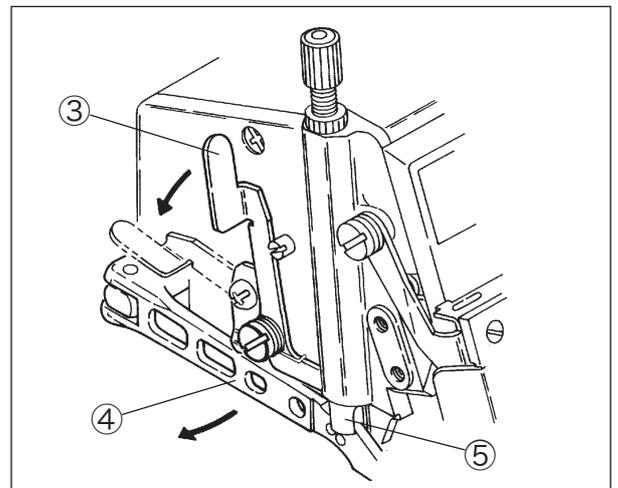


Fig. 5-8

### ⚠ CAUTION

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.

For closing, stand the cover. The spring tension makes it slide to the left.

#### Cloth plate ②

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

For closing, shift it to the right. Make sure that it has been locked securely.

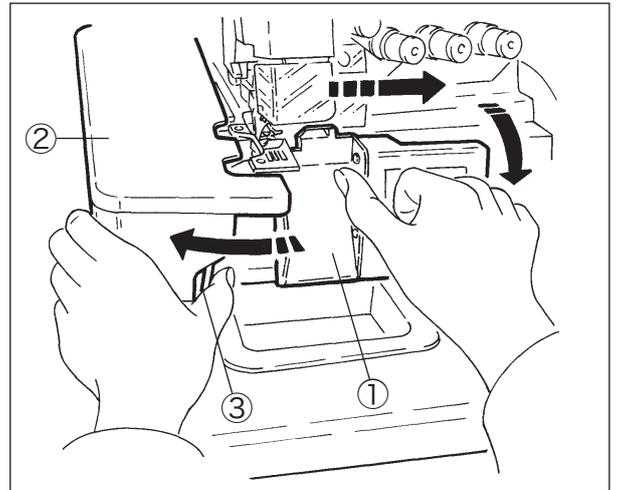


Fig. 5-9

### 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 to 1:2 or 1:1 to 1:3 is available by internal adjusting mechanism respectively.

Adjust the graduation, differential ratio, and max. stitch length according to Table 7.

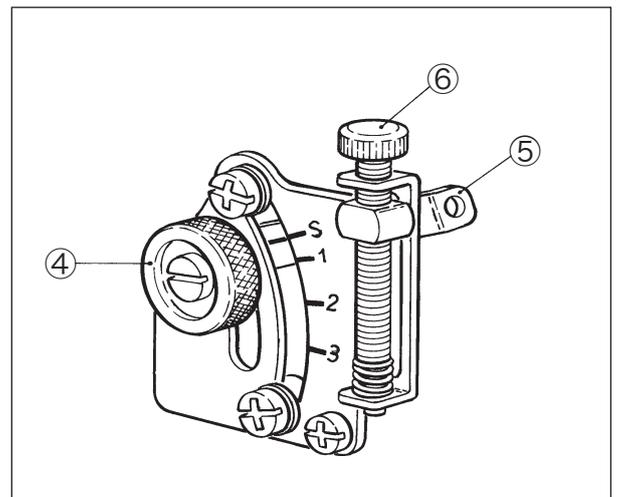


Fig. 5-10

graduation	differential ratio	max. stitch length (mm)
S	1:0.7	5
1	1:1	5
2	1:1.6	4
3	1:2.3	3

Table 7

## 5.8 Adjusting stitch length



### ⚠ CAUTION

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.

Actual stitch length may differ from the length on graduations. It may change depending on the application, type, weight of material or the differential ratio.

- (1) Rotate the pulley while pressing the push button ①. At the point that the push button can go in, press it again strongly.
- (2) Then align the desired graduation of the pulley with the mark ② on the belt cover.
- (3) Release the push button ①.
  - To make stitch length smaller, turn the pulley in the direction “S”.
  - To make stitch length greater, turn it in the direction “L”.

### ⚠ CAUTION

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

The adjustable range of the stitch length is shown in Table 8.

Table 9 shows the number of stitches per inch (25.4 mm) and 30 mm.

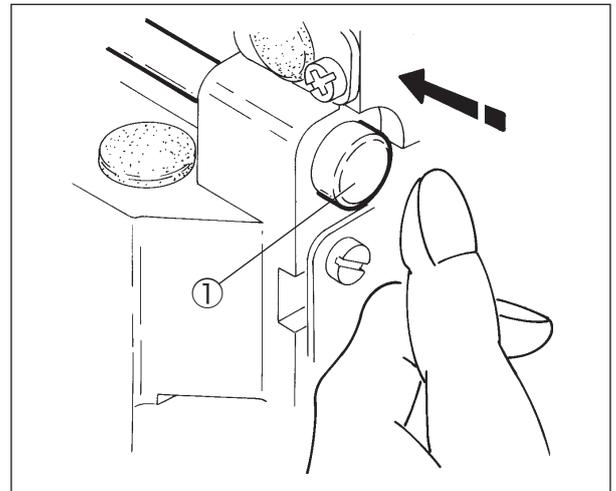


Fig. 5-11

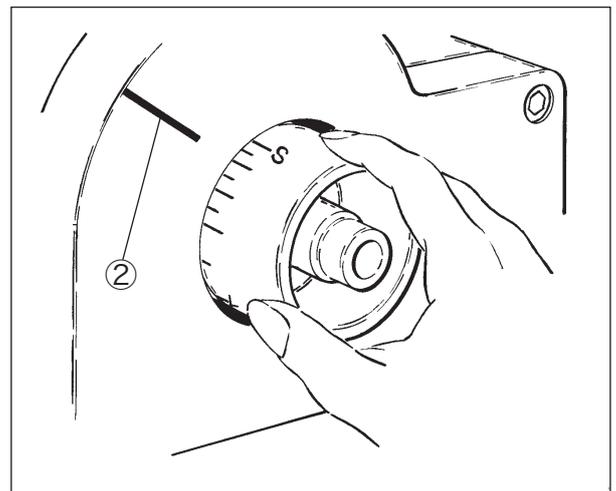


Fig. 5-12

model	stitch length (mm)
AZ7000SDR-8 class AZ7500SDR-8 class (except for below)	1~4
AZ7016SDR-8	0.6~2

Table 8

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

Table 9

### 5.9 Passing tape



Pass a tape ① by referring to Fig. 5-13 for the models of the tape attaching.

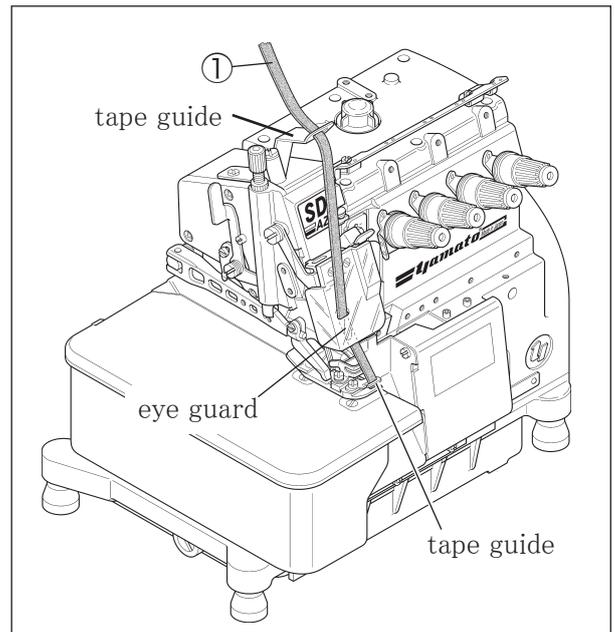


Fig. 5-13

### 5.10 SP device and HR device



The SP device (needle thread oiling) and HR device (needle point cooling) are equipped as standard (excluding some models) 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 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 ②. If not enough, supply the oil into the hole ③.

Open the oil container plug ⑤ of HR device and check the oil amount. If not enough, supply the oil.

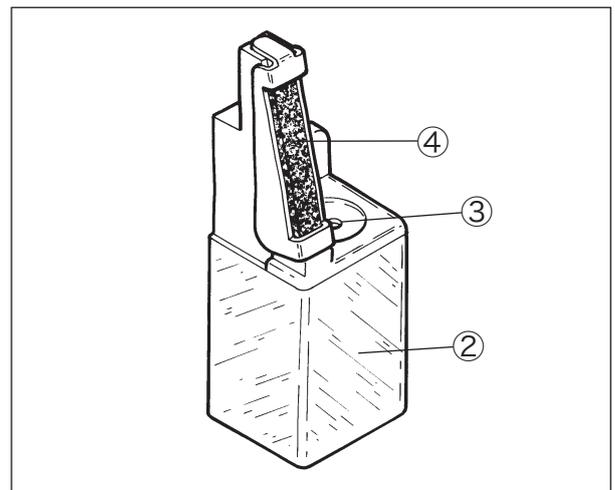


Fig. 5-14 SP device

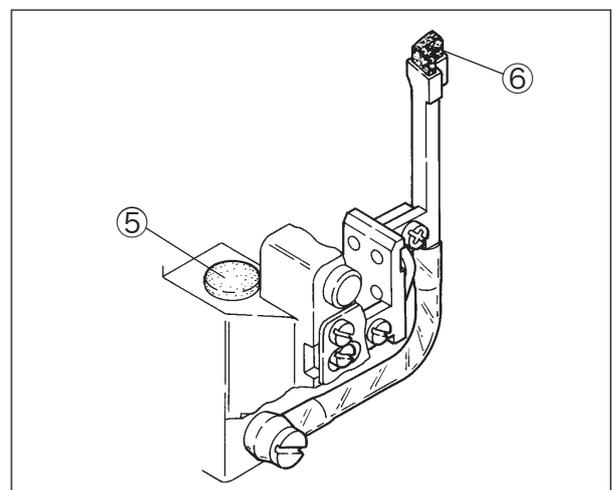


Fig. 5-15 HR device

## 5.11 Cleaning the machine



### ⚠ CAUTION

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

The sewing machine should be cleaned at the end of every working day.

Grooves of stitch plate and the area around feed dogs should be cleaned once a week.

### ⚠ CAUTION

Clogged dust can cause breakage to parts and oil leakage.

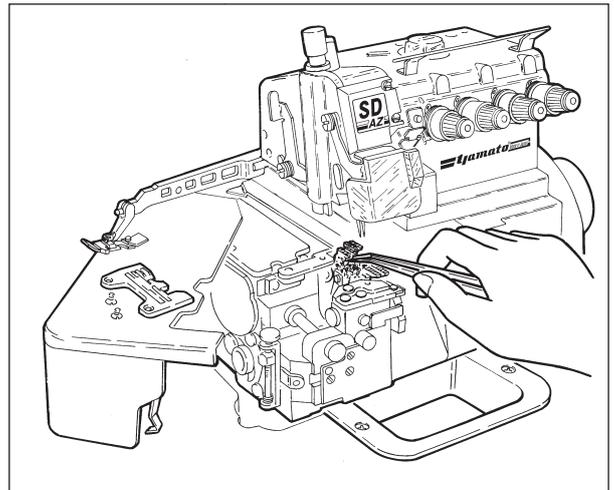


Fig. 5-16

### Checking at sewing factory

(maintenance by technician)

#### Daily maintenance:

- (1) Before operation, remove the machine cover and re-thread correctly. Make sure there is no slack. Check that the thread hanger is right above the spool 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 threads.
- (4) Check bend of needles, damage to tips, and the setting positions respectively.
- (5) Check the sharpness of knives.
- (6) Check the stitches by sewing a test fabric.
  - ◆ stitch length, differential feeding
  - ◆ adjusting knives and thread tension

#### Weekly maintenance:

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

# 6. Adjustment of sewing machine

## ⚠ CAUTION

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 eyelet ①, position the center of the screw ② with the marks ③.

To set the standard position of the needle thread pull-off ④, align the portion ⑤ with the eye ⑥ of the needle thread eyelet (right) when the needle thread pull-off ④ comes to the extreme front.

Loosen the screw ⑦ 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”.

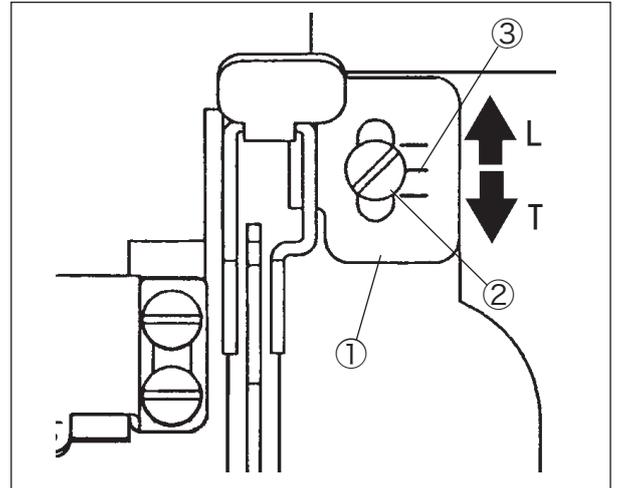


Fig. 6-1

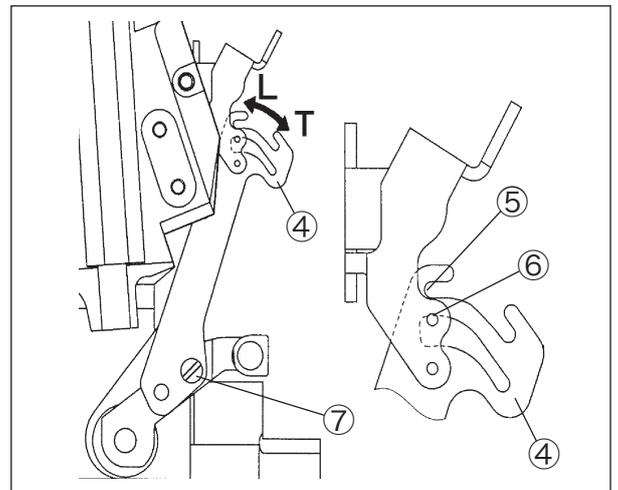


Fig. 6-2

## 6.2 Looper thread tension for overlock stitch

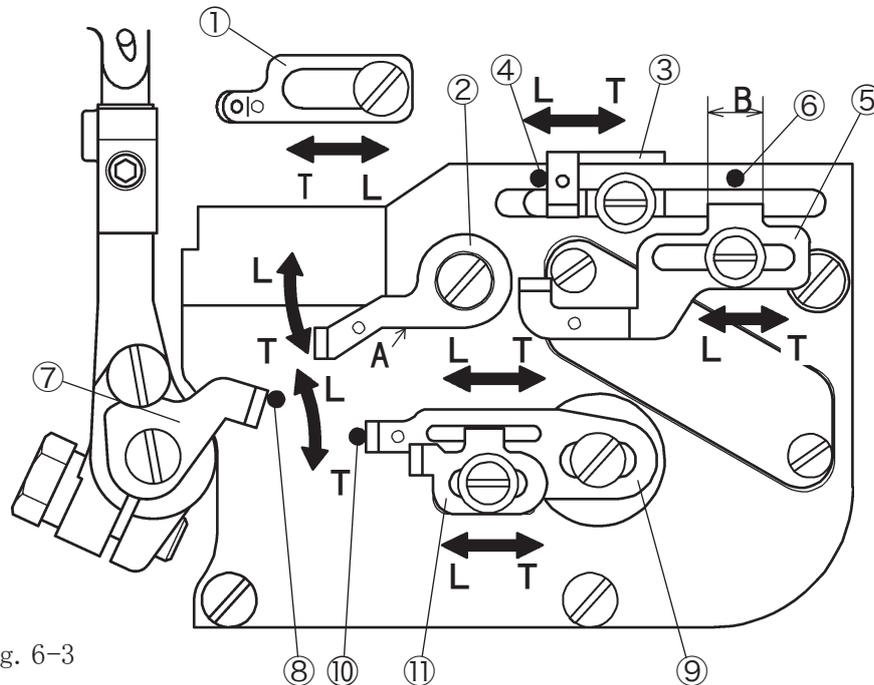


Fig. 6-3

The standard position of each looper thread eyelet:

**Upper looper supplementary thread eyelet ①**

Move it to the extreme left.

**Looper thread eyelet (left) ②**

Position the part A horizontally.

**Upper looper thread eyelet ③**

Move its left end to mark ④.

**Lower looper thread eyelet ⑤**

Position the center of the width B with mark ⑥.

**Looper thread pull-off ⑦**

Move its right end to mark ⑧.

**Upper looper thread pull-off ⑨**

Align the eye of the thread pull-off with the mark ⑩ when the lower looper moves to the extreme right.

**Lower looper thread pull-off ⑪**

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

- 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 screws 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 at the most front 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 make adjustment.
- 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”.

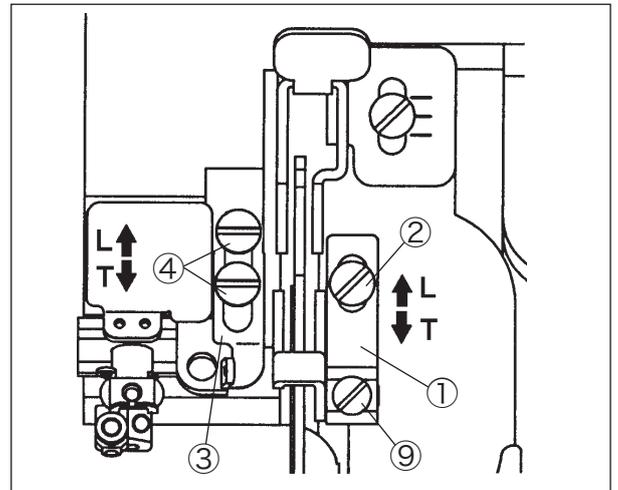


Fig. 6-4

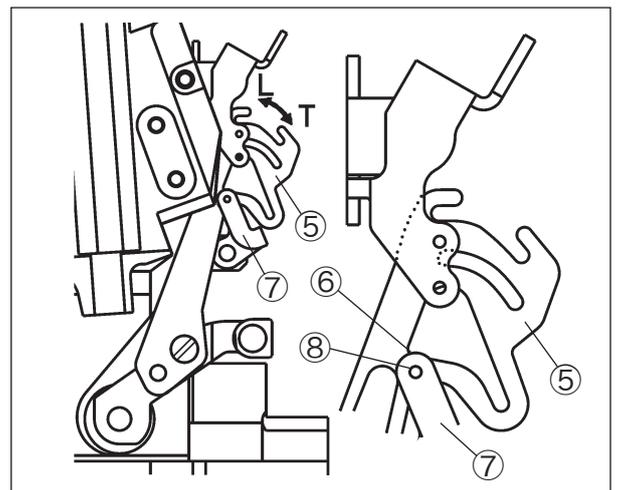


Fig. 6-5

## 6.4 Looper thread tension for double chainstitch



- ◆ Align the eye of the double chain looper thread eyelet ③ with the surface ② of the double chain looper thread take-up ① when being a level with the straight line A.  
Position the thread retaining finger ④ 1 mm above the eye of the looper thread eyelet ③.

- ◆ To set the standard position of the double chain looper thread eyelet ③, position the center of the slot in the center of the screw ⑤.

- 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.

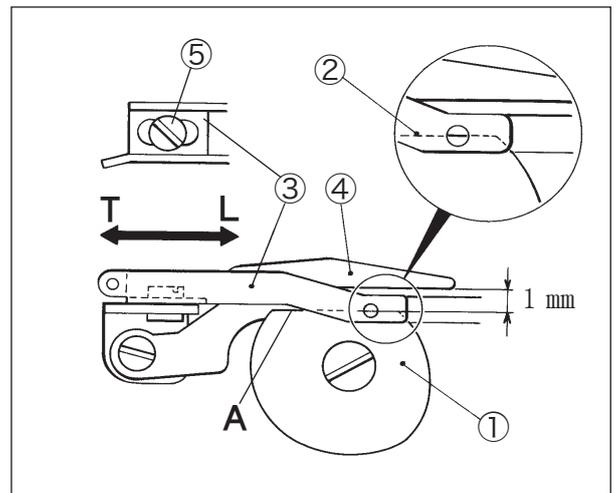


Fig. 6-6

### ! ATTENTION

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

### 6.5 Width of overedge seam



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

#### To make wide overedge seam:

- (1) Loosen the screw ③ on the upper knife holder ⑤.
- (2) Tighten the screw ③ securely after moving the holder ⑤ as desired in the direction “W”.
- (3) Loosen the screw ④ on the lower knife holder ⑥.
- (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.
- (2) Tighten the screw ④ slightly after moving the holder ⑥ as desired in the direction “N”.
- (3) Loosen the screw ③.
- (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.

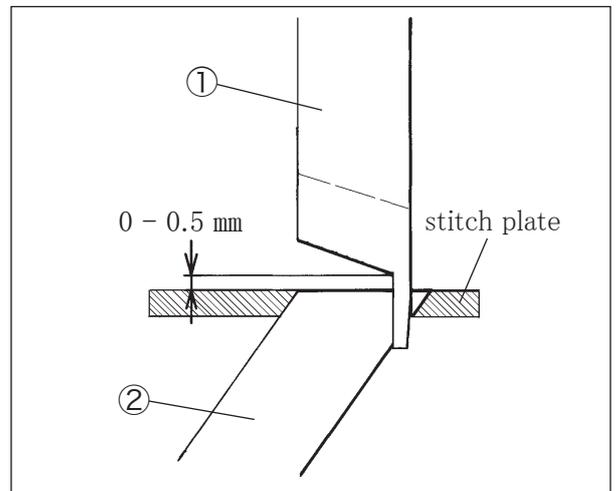


Fig. 6-7

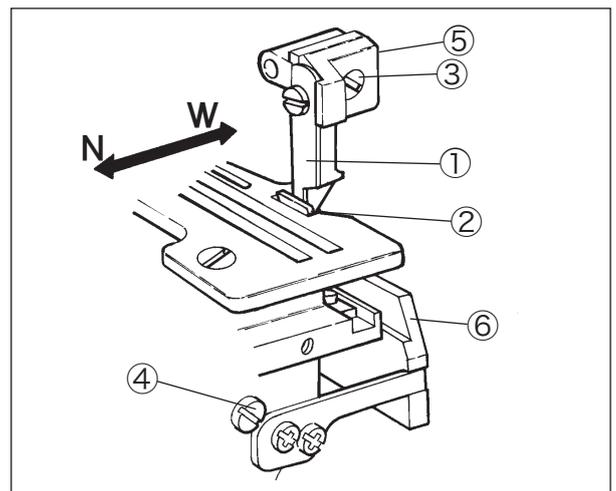


Fig. 6-8

### ! ATTENTION

1. After changing the width of overedge seam, check the sharpness of the blades. (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. However, adjustable range of stitch plate of AZ7120S-DR-Y5-8 is 5 to 5.5mm.
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 Upper and lower knives

### 6.6.1 Height of lower knife

Loosen the screw ② to install the edge of the lower knife ① on a level with the top surface of the stitch plate or 0 to 0.3 mm lower than it.

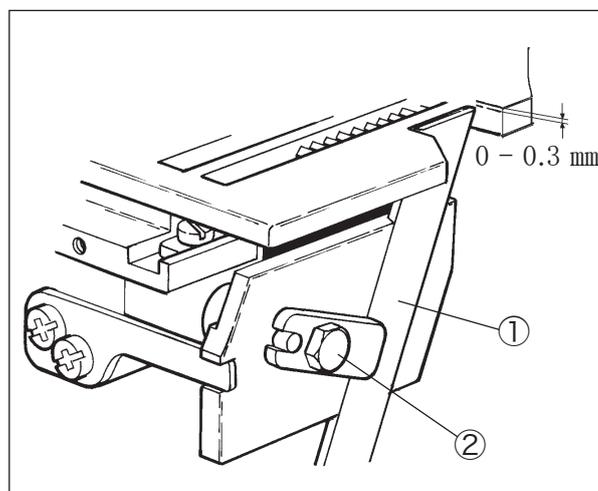


Fig. 6-9

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

Loosen the screw ④ to make the engagement between the upper knife ③ and the lower knife ① to 0.5 to 1.0 mm when the upper knife is at the lowest point.

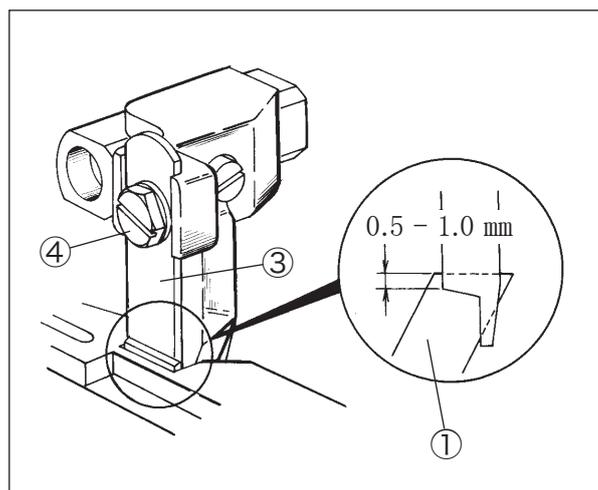


Fig. 6-10

### 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.

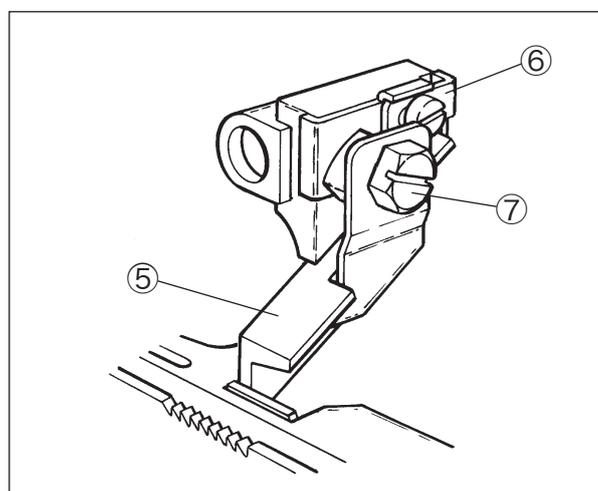


Fig. 6-11

## 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 a thread between the upper and the lower knives while rotating the machine pulley by hand.

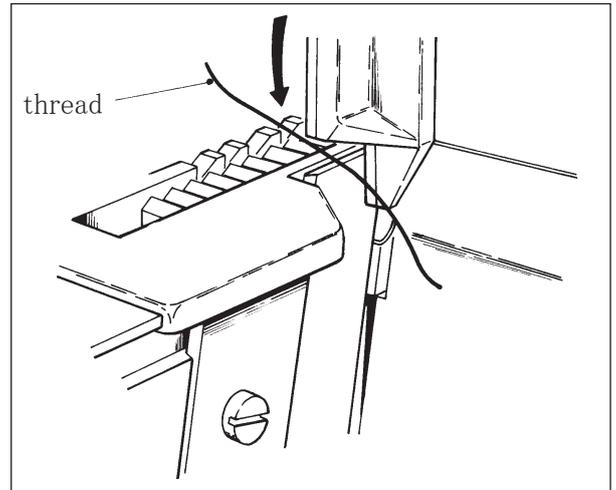


Fig. 6-12

### 6.6.5 Sharpening knives

If the lower knife cuts badly, re-sharpen it.  
(Fig. 6-13)

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 a dealer for re-sharpening.

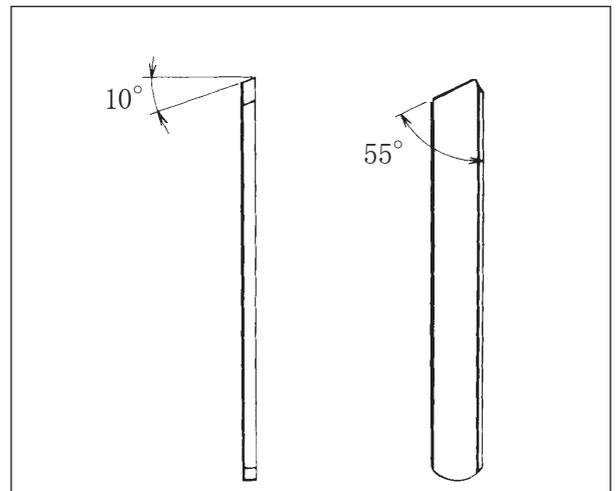


Fig. 6-13

## 6.7 Height of feed dogs

To set the standard position, set the tops of the main ① and differential feed dogs ③ parallel to that of the stitch plate when the tops of the feed dogs are raised and even with that of the stitch plate.

Make the height between the top 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.

Install the auxiliary feed dog ⑤ depending on the machine class as below.

### AZ7000SDR-8 class

#### AZ7020SDR-8 class (Refer to Table 10)

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

#### AZ7500SDR-8 class (Refer to Table 10)

Install the auxiliary feed dog ⑤ even with the main feed dog ③.

Loosen the screws ②④⑥ to adjust the differential feed dog ①, the main feed dog ③, and the auxiliary feed dog ⑤ respectively.

### ADVICE

1. Be sure to make no difference of installing height between the main feed dog ③ and the differential feed dog ①. If different, 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 1.0 mm higher than standard position respectively.

Difference between main feed dog and auxiliary feed dog

model	difference (mm)
AZ7000SDR-8 class ( exclude below )	0.5 ( lower than main feed dog )
AZ7016SDR-8	0
AZ7500SDR-8/-31 class	0

Table 10

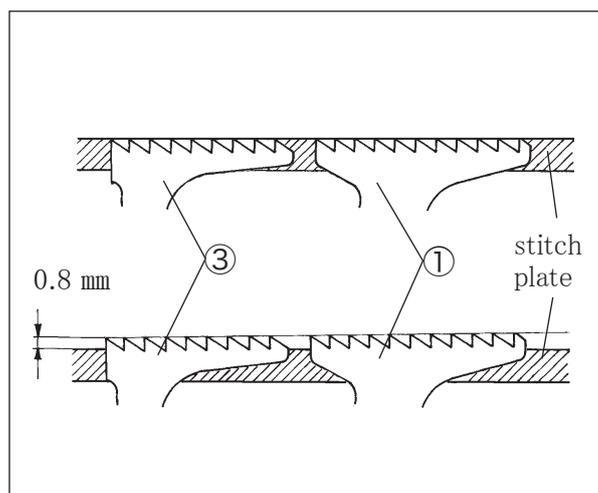


Fig. 6-14

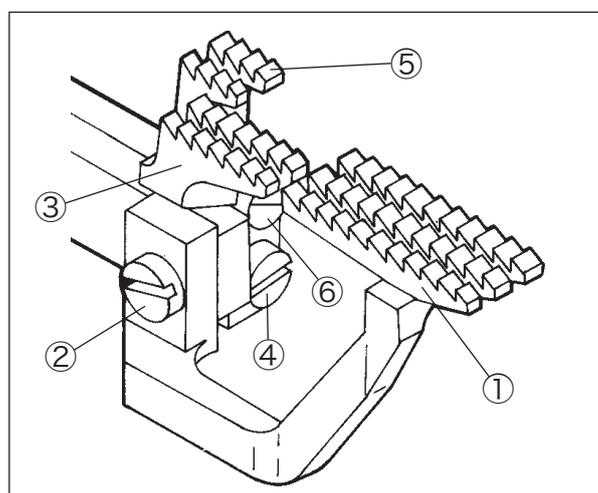


Fig. 6-15 AZ7000SDR-8 class

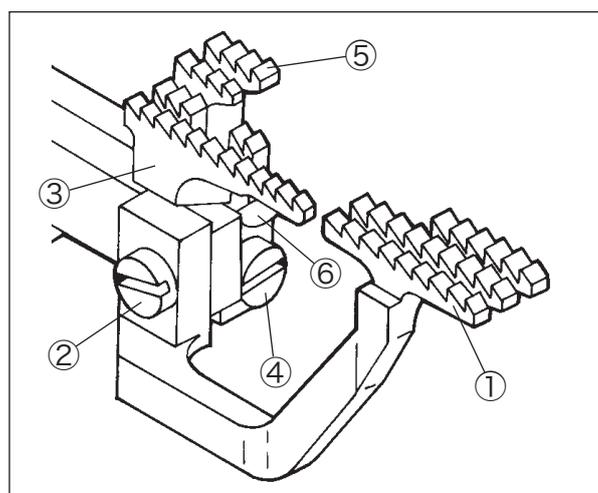


Fig. 6-16 AZ7500SDR-8/-31 class

### 6.8 Tilt of feed dog

Remove the tail cover ① to loosen the screw ②.  
Move the feed bar block (rear) lid ③ to make adjustment.

- To tilt the feed dog forward down , move it up.
- To tilt the feed dog forward up, move it down.

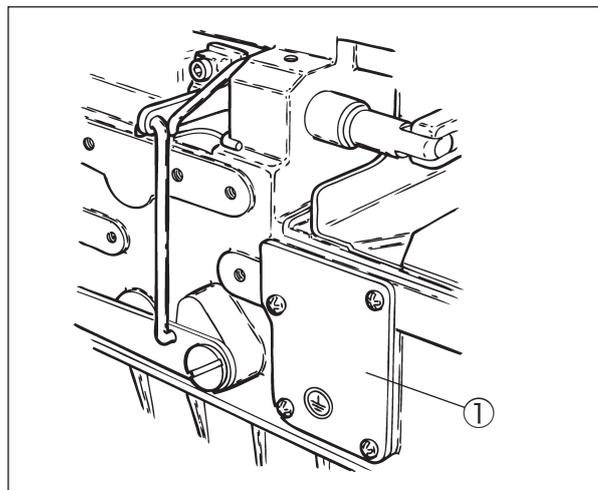


Fig. 6-17

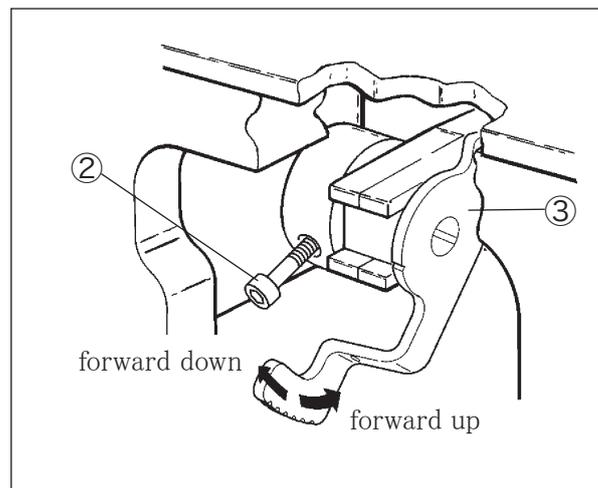


Fig. 6-18

## 6.9 Needles and loopers

Make adjustment by following the steps below:

### In case of 2-needle overlock machines and 3-needle safety stitch machines

- (1) Height of needle
- (2) Installation angle of lower looper
- (3) Fix the distance between needle and lower looper, the back and forth position of lower looper temporarily
- (4) Parallel of needles
- (5) Back and forth position of upper looper
- (6) Distance between needle and upper looper
- (7) Back and forth position of lower looper
- (8) Distance between needle and lower looper
- (9) Timing relation between lower looper and upper looper

### In case of 1-needle overlock machines and 2-needle safety stitch machines

- (1) Height of needle
- (2) Back and forth position of upper looper
- (3) Distance between needle and upper looper
- (4) Installation angle of lower looper
- (5) Back and forth position of lower looper
- (6) Distance between needle and lower looper
- (7) Timing relation between upper looper and lower looper

### 6.9.1 Height of needle

- (1) Loosen the screws ① to remove the logo plate ②.  
(Fig. 6-19)
- (2) Remove the screw ③.
- (3) Rotate the machine pulley to raise the needle bar to the highest point.
- (4) Loosen the screw ④ and adjust the needle bar while moving it up and down.

When the needle bar is at the highest point, make the height "N" from the top of the stitch plate to the needle tip in Table 11.

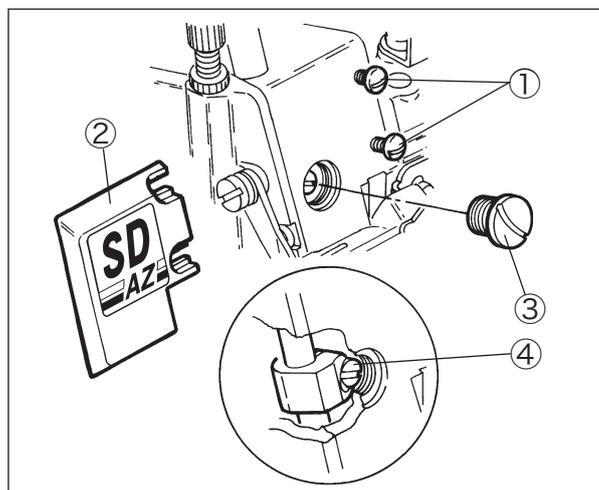


Fig. 6-19

## 6. Adjustment of sewing machine

model	height of needle “N” (mm)	Fig. No.
AZ7000SDR-8 class 1-needle	10.0 - 10.3	6-20-1
AZ7020SDR-8 class 2-needle	10.0 - 10.3	6-20-2
AZ7120SDR-8 class	10.7 - 11.0	
AZ7500SDR-8 class	10.0 - 10.3	6-20-3
AZ7520SDR-8 class	10.0 - 10.3	6-20-4
AZ7500SDR-31	10.7 - 11.0	6-20-3
AZ7520SDR-31	10.7 - 11.0	6-20-4

Table 11

### ! ATTENTION

1. Tighten the screw ④ with a tightening torque of 1.5 N·m.
2. Check the parallel setting of the needles for 3-needle machine (See “6.9.4 Parallel of needles”).
3. Apply the liquid packing to the thread of the screw ③ when tightening it.

### 6.9.2 Installing angle of lower looper

The standard installation angle of lower looper ① is value A in Table 12.

Make adjustment by loosening the screw ② to make the height difference between the rear and the tip of the lower looper to value B in Table 12. (Fig. 6-21)

model	A	B
2-needle overlock machine ( AZ7020SDR-8 class, AZ7120SDR-8 class )	2~4°	0.5 - 1.5 mm
3-needle safety stitch machine ( AZ7520SDR-8/-31 class )		
1-needle overlock machine ( AZ7000SDR-8 class )	2~3°	0.5 - 1.0 mm
2-needle safety stitch machine ( AZ7500SDR-8/-31 class )		

Table 12

### 6.9.3 Distance between needle and lower looper

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

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

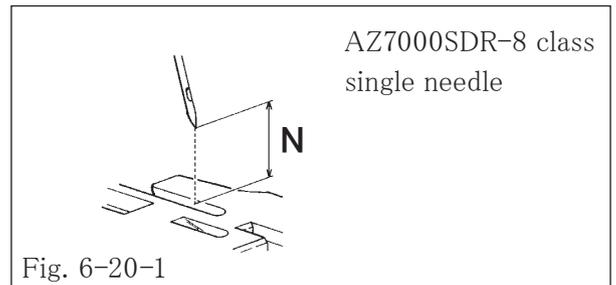


Fig. 6-20-1

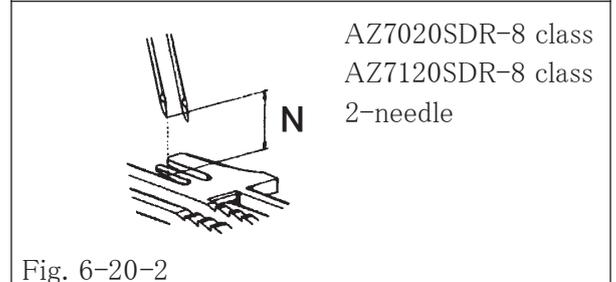


Fig. 6-20-2

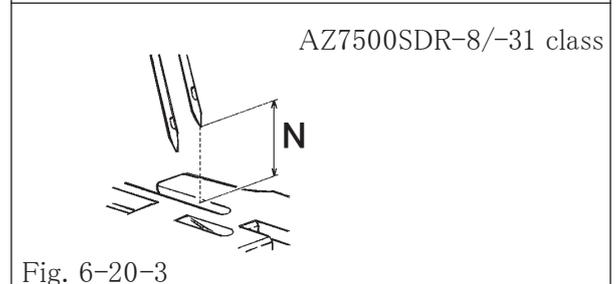


Fig. 6-20-3

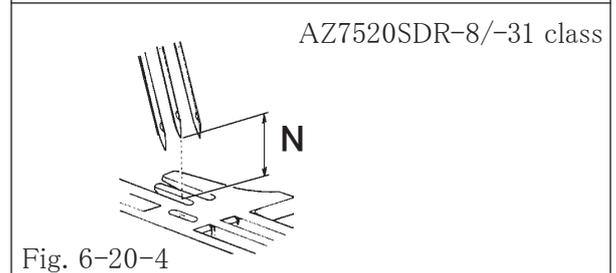


Fig. 6-20-4

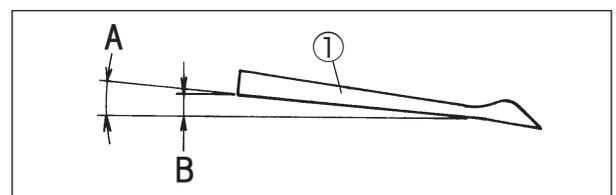


Fig. 6-21

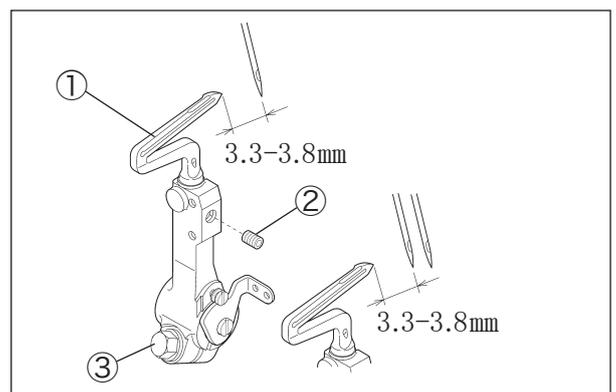


Fig. 6-22

## 6.9.4 Parallel of needles

In the case of 2-needle machines, loosen the screw ④ of the lower looper holder arm and turn the adjusting screw ⑤ clockwise or counterclockwise to adjust the back and forth position of the lower looper so that the clearance between the left needle and lower looper is set to between 0 to 0.05 mm when the lower looper has arrived at the center of the left needle. Then, tighten screw ④ slightly.

Loosen screw ①, turn the needle clamp slightly, and adjust it so that the clearances between the right and the needle on the left are the same. As with the left needle, adjust the clearance to between 0 to 0.05 mm when the right needle and lower looper meet.

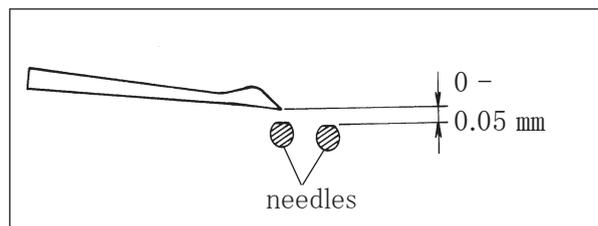


Fig. 6-23

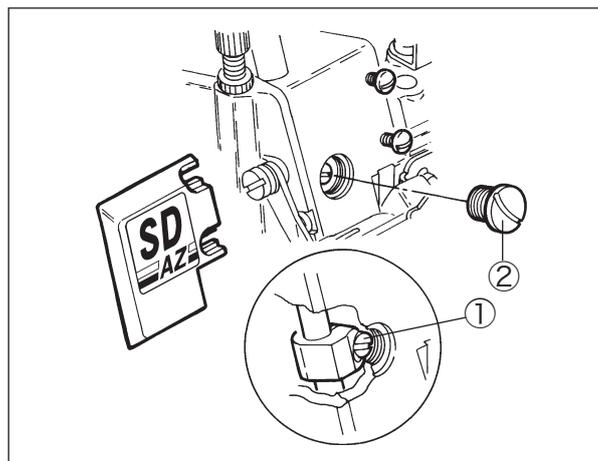


Fig. 6-24

### ! ATTENTION

1. After checking the needle heights, tighten screw ① of the needle bar bracket. Refer to “6.9.1 Height of needle” on page 29.
2. Once the parallelism adjustment has been conducted for the needles, be sure to adjust the back and forth position of the looper.
3. Once the back and forth position of the lower looper has been adjusted, check the distance between the needle and the lower looper, then tighten screw ④ in Fig. 6-25.
4. Apply the liquid packing to the thread of the screw ② when tightening it.

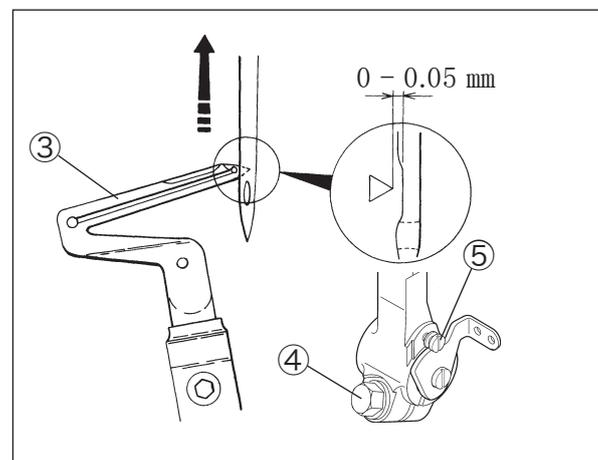


Fig. 6-25

### 6.9.5 Back and forth position of lower looper

#### 1-needle overlock stitch on AZ7000SDR-8 and AZ7500SDR-8 classes:

Adjust so that the lower looper ① tip touches the needle and bends it by no more than 0.03 mm when the lower looper ① meet the center of the needle.

#### 2-needle overlock stitch on AZ7020SDR-8 and AZ7520SDR-8 classes:

- (1) Adjust so that the lower looper ① tip touches the needle and bends it by no more than 0.03 mm, using the left needle as a reference, when the lower looper ① meet the center of the left needle.
- (2) Make sure that the lower looper ③ tip touches the right needle and bends it by no more than 0.03 mm as with the left needle when the lower looper ③ reaches the right needle.

#### Procedure

Loosen the screw ② of lower looper holder arm, and turn the adjusting screw ③ to adjust the position of the lower looper.

- When turn it to the right, the lower looper comes to the front.
- When turn it to the left, the lower looper goes to the rear.

Be sure to tighten the screw ② after adjustment.

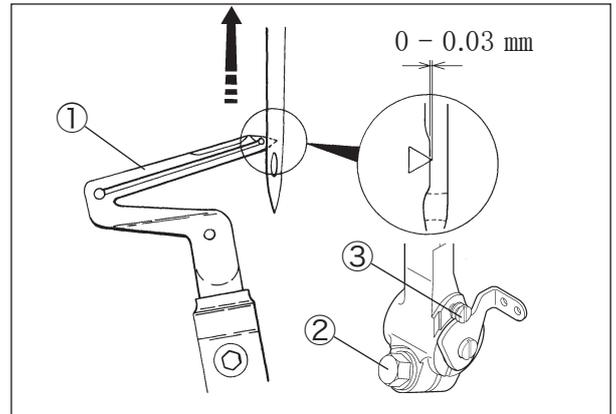


Fig. 6-26

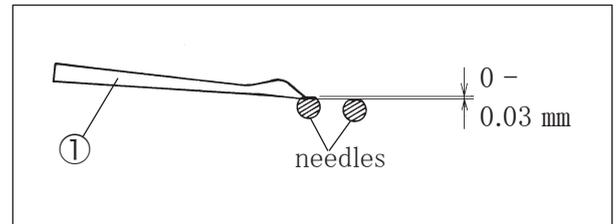


Fig. 6-27

### 6.9.6 Distance between needle and upper looper

Rotate the machine pulley clockwise and move the upper looper to the extreme left. Make the distance between the upper looper tip and the center of the needle to 5.0 to 5.5 mm.

- (1) Loosen the screw ②. (Fig. 6-28)
- (2) Make the looper thread eyelet ③ away from auxiliary looper holder cover ④. (Fig. 6-29)
- (3) Remove the screw ⑤.
- (4) Remove the cover ④.
- (5) Loosen the screw ⑥ to make adjustment. (Fig. 6-30)

#### ! ATTENTION

Tighten the screw ⑥ while pressing it against to the machine, after adjustment.

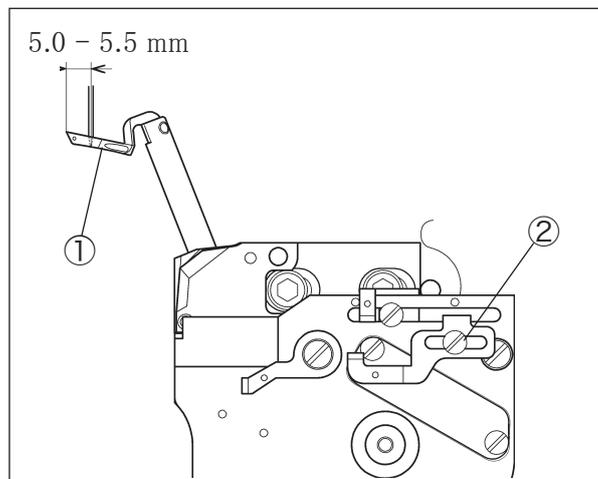


Fig. 6-28

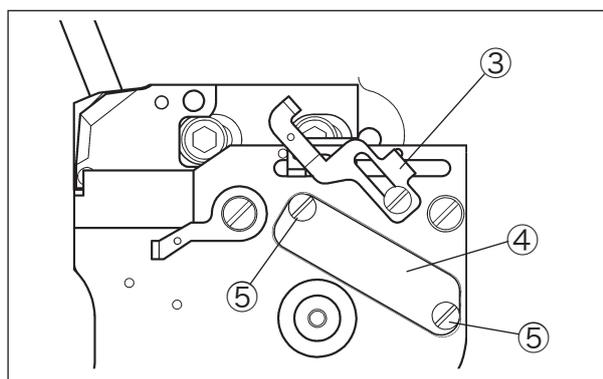


Fig. 6-29

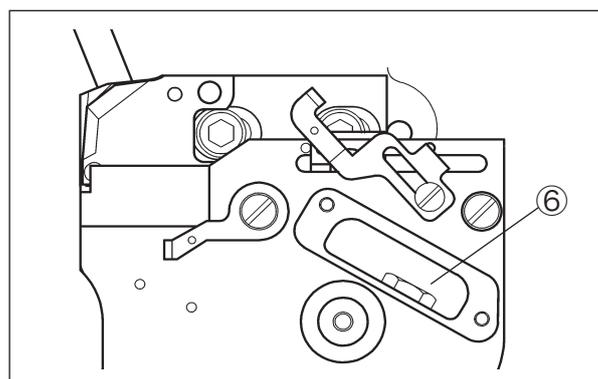


Fig. 6-30

### 6.9.7 Back and forth position of upper looper

The thick portion (around the needle eye) of the upper looper will be very close to the needle when the upper looper moves from the extreme left to the right while rotating the machine pulley clockwise. (In case of 2-needle machine, it will be close to the right needle.)

Loosen the screw ⑦ to make the clearance between the back side of the upper looper ① and the needle to 0.05 to 0.1 mm.

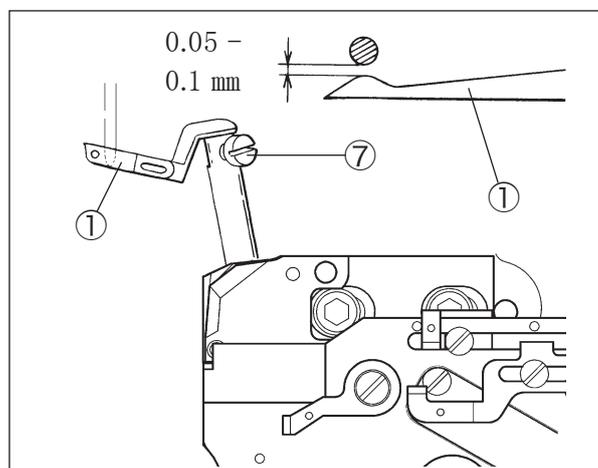


Fig. 6-31

## 6.Adjustment of sewing machine

### 6.9.8 Timing relation between lower looper and upper looper

Make sure that the clearance between the back and forth is 0.05 to 0.1 mm and between the right and left is 0.05 to 0.3 mm when the lower looper ① meets the upper looper ② while rotating the machine pulley clockwise.

Be sure to let clearances in the above mentioned ranges.

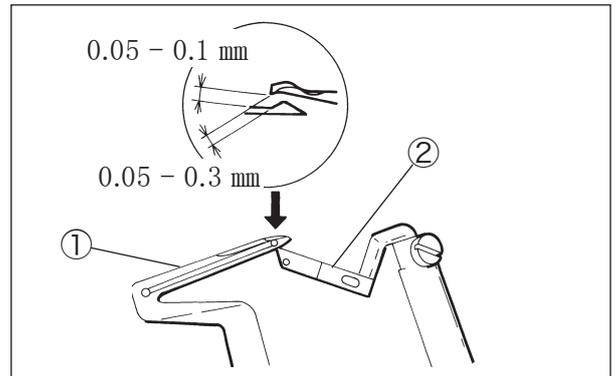


Fig. 6-32

### 6.10 Needle and double chain looper

#### Timing relation:

To set the height, insert the double chain looper ③ into the looper holder until it touches the bottom of the holder.

Make the distance between the center of the double chain needle ④ and the double chain looper tip to 2.0 to 2.2 mm when the double chain looper ③ is at the extreme left. Loosen the screw ⑤ to make adjustment.

Tighten the screw ⑥ temporarily, and make it have an approximately 6° angle to the looper. Adjust the distance so that the looper tip can touch the double chain needle ④ slightly.

#### Back and forth position:

Make the looper ③ tip pass the back of the needle and keep them as close as possible without touching each other.

Make the needle pass the back of the curved portion of the looper and let them touch each other slightly when the looper moves from the right to the left (the needle goes down at the back of looper).

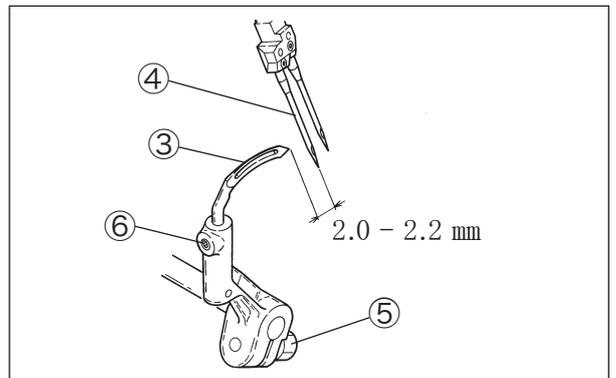


Fig. 6-33

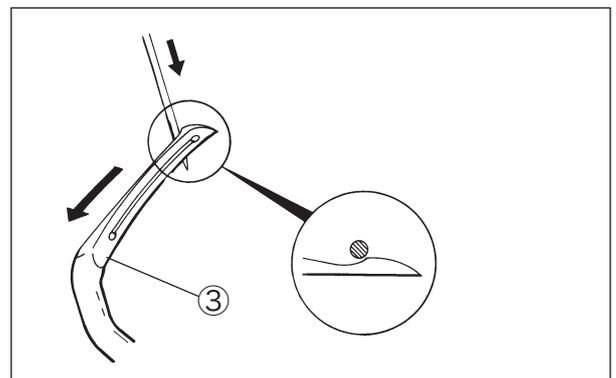


Fig. 6-34

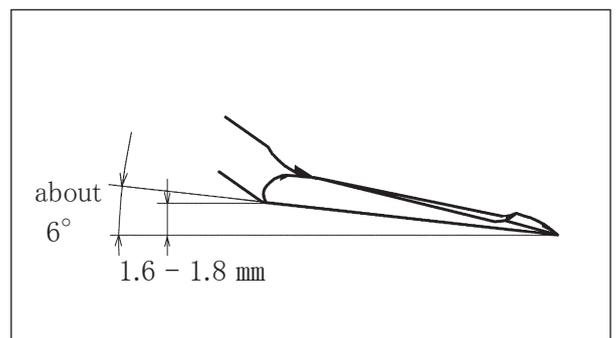


Fig. 6-35

## 6.11 Needle and needle guards for AZ7000SDR-8 class

### 6.11.1 Needle and needle guard (rear)

This machine is equipped with a movable needle guard (rear) ① that is interlocked with the lower looper. The needle guard (rear) ① holds the needle from the rear to protect the lower looper tip when the needle meets the lower looper tip during the upward movement process from the lowest point.

- (1) Move the lower looper from the left to the right, and align the needle with ridge line “a” of the needle guard (rear).
- (2) Loosen screw ②, and adjust so that the clearance between the needle and needle guard (rear) ① is reduced to zero.
- (3) In the case of the 2-needle machine, use the left needle as a reference and perform the same adjustment as with the 1-needle machine.

Check that the clearance between the lower looper tip and needle is 0 to 0.03 mm when the lower looper tip has met the respective centers of the left and right needles.

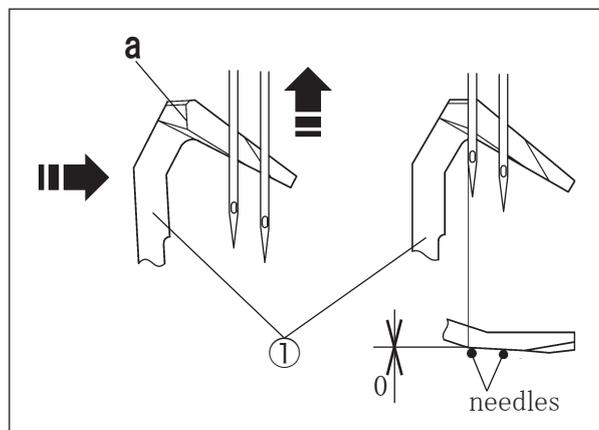


Fig. 6-36

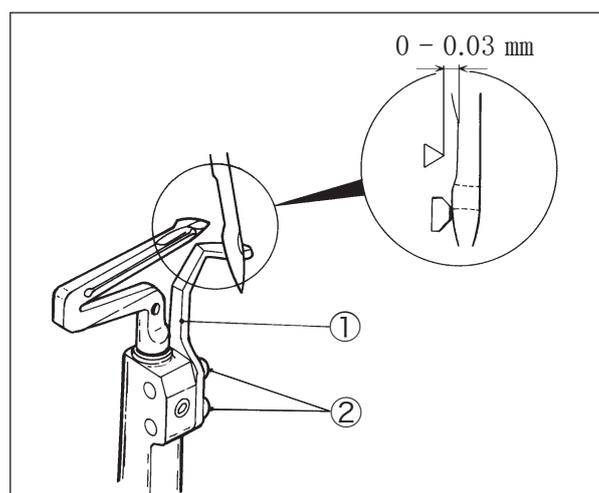


Fig. 6-37

### 6.11.2 Needle and needle guard (front)

Loosen screw ④, and adjust so that the clearance between the needle and needle guard (front) ③ is reduced to zero when the needle is at its lowest point.

In the case of a 2-needle machine, the clearance between the right needle and needle guard (front) ③ is 0.05 to 0.1 mm.

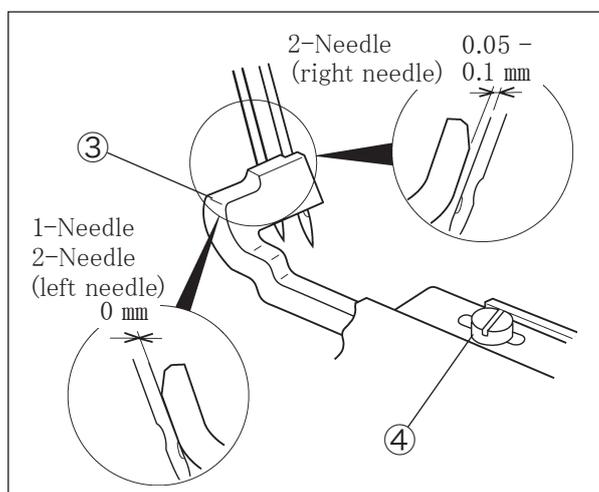


Fig. 6-38

## 6.12 Needle and needle guards for AZ7500SDR-8 class

### 6.12.1 Needle and needle guard (rear)

This machine is equipped with a movable needle guard (rear) ① that is interlocked with the lower looper. The needle guard (rear) ① holds the needle from the rear to protect the lower looper tip when the needle meets the lower looper tip during the upward movement process from the lowest point.

- (1) Move the lower looper from the left to the right, and align the needle with ridge line “a” of the needle guard (rear).
- (2) Loosen screw ②, and adjust so that the clearance between the needle and needle guard (rear) ① is reduced to zero.
- (3) In the case of the 2-needle machine, use the left needle as a reference and perform the same adjustment as with the 1-needle machine.

Check that the clearance between the lower looper tip and needle is 0 to 0.03 mm when the lower looper tip has meet the respective centers of the left and right needles.

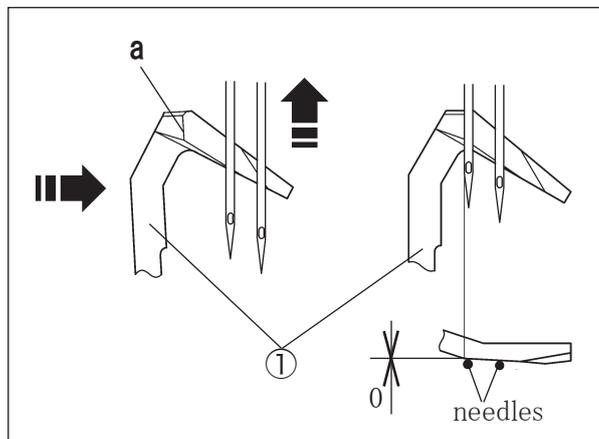


Fig. 6-39

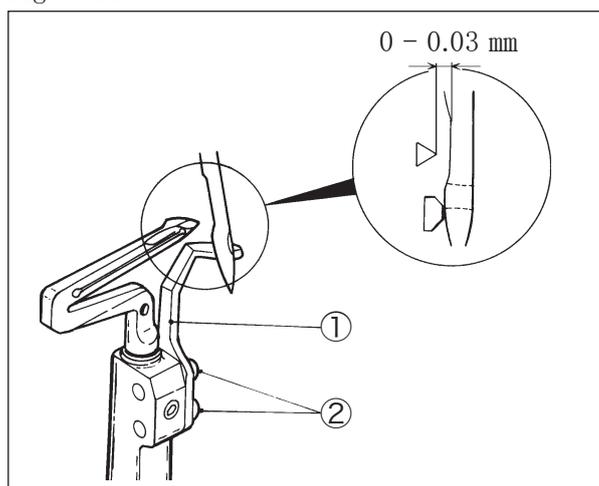


Fig. 6-40

### 6.12.2 Needle and needle guard (front)

Loosen screw ④, and adjust so that the clearance between the needle and needle guard (front) ③ is reduced to zero when the needle is at its lowest point.

In the case of a 2-needle machine, the clearance between the right needle and needle guard (front) ③ is 0.05 to 0.1 mm.

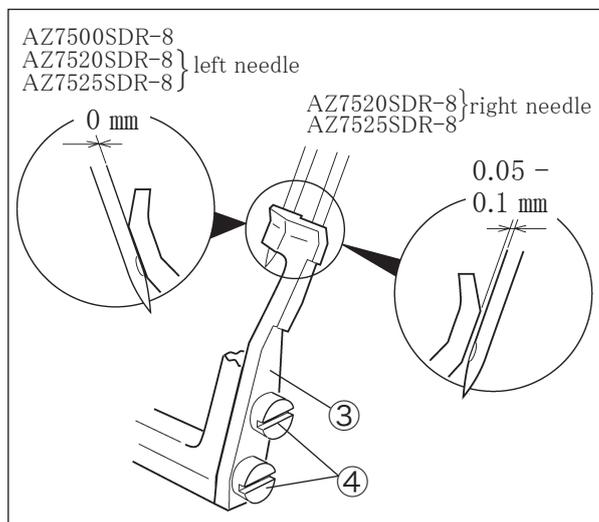


Fig. 6-41

### 6.12.3 Needle and needle guards for double chain stitch

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

Loosen the screw ② to make the clearance between the needle and the needle guard (rear) ① to 0 to 0.05 mm at the lowest point of the needle.

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

Loosen the screw ④ to make the clearance between the needle and the needle guard (front) ③ to 0.1 to 0.2 mm.

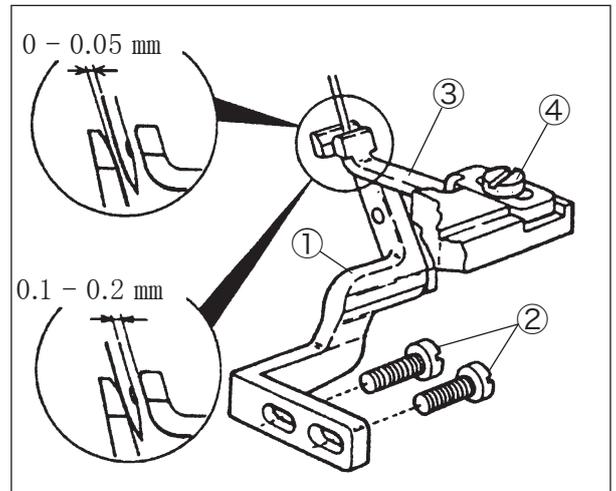


Fig. 6-42

### 6.13 Position of presser foot

Install the bottom surface of the presser foot parallel to the stitch plate when looking from the front.

Slanted presser foot can cause feed scratch mark.

To set back and forth position, adjust the clearance between needle drop of the presser foot and that of the stitch plate to 0.2 to 0.3 mm as shown in Fig. 6-43.

Loosen the screw ⑤ to make adjustment.

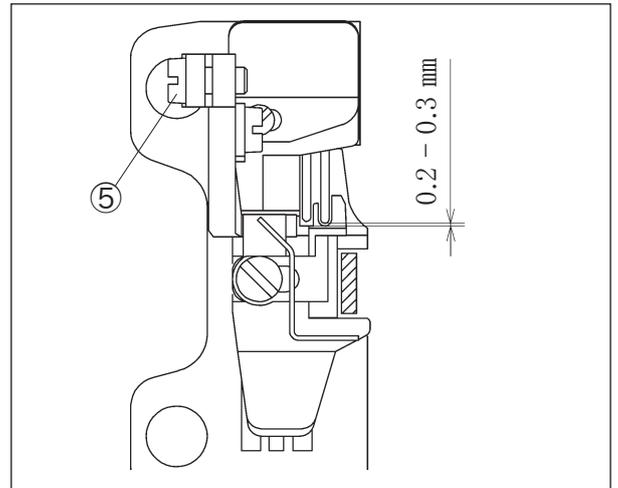


Fig. 6-43

# 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.

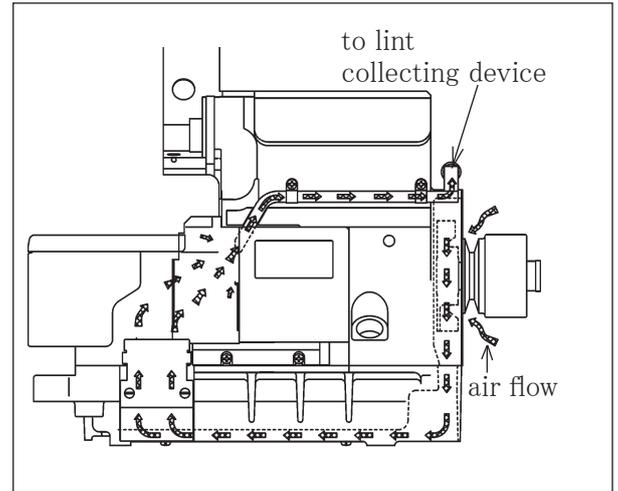


Fig. 7-1

## 7.2 Adjusting ventilating amount

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

To set the standard position, insert the air deflector ① into the guides ②③. (See Fig. 7-2)

For high speed and less dust during sewing, insert the air deflector ① into the guides ②④. (See Fig. 7-3)

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

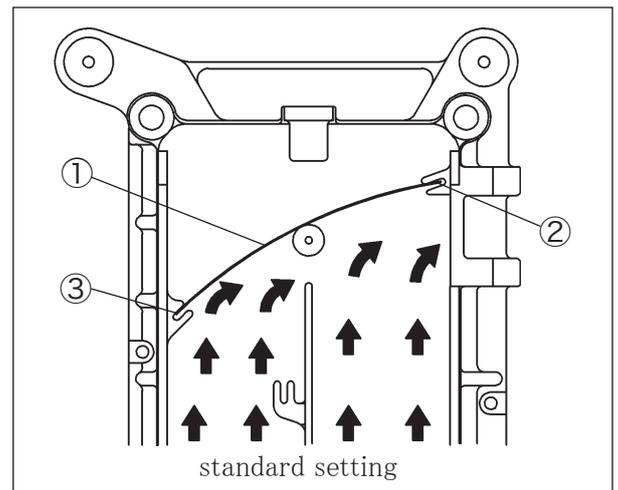


Fig. 7-2

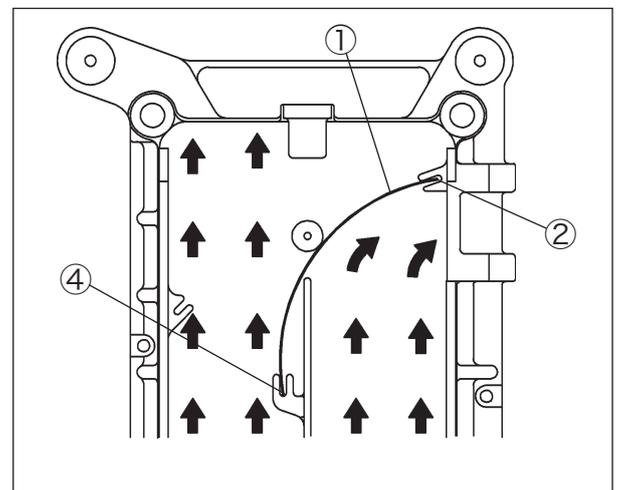


Fig. 7-3

## 7.3 Installation

### 7.3.1 Installing air deflector

- (1) Drain the oil from the machine.
- (2) Tilt the machine backward.
- (3) Loosen two screws ④ and remove the wind guide plate ②.
- (4) Install the air deflector ③ into the guides ⑤ of the oil reservoir ① securely.
- (5) Reinstall the wind guide plate ②.
- (6) Raise the machine upright and supply the oil.

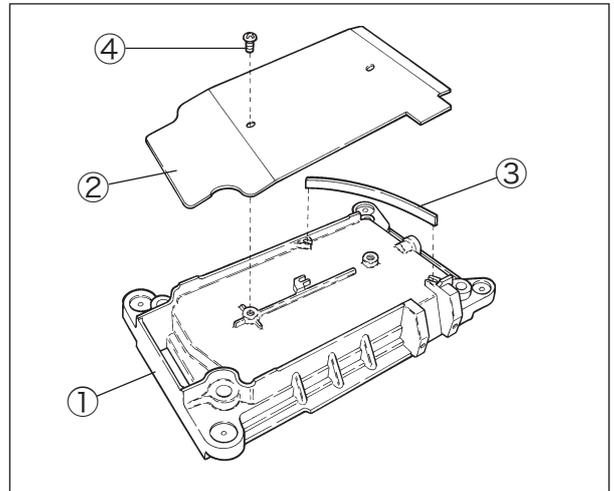


Fig. 7-4

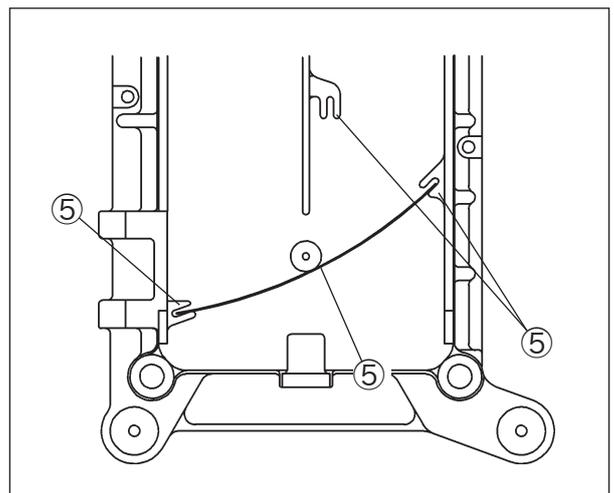


Fig. 7-5

### 7.3.2 Installing blowing hole screen

- (1) Install the blowing hole screen ⑥ on the oil reservoir ①.
- (2) Install the wind guide plate (front) ⑦ on the oil reservoir ① while pressing the blowing hole screen ⑥ with two screws ⑧.

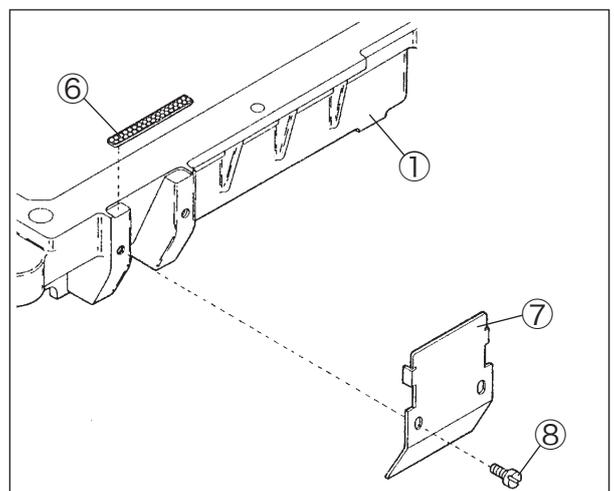


Fig. 7-6

### 7.3.3 Installing lint removal pipe

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

**i** **ADVICE**

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

When using ventilation, air pressure should be 0.2 MPa or more.

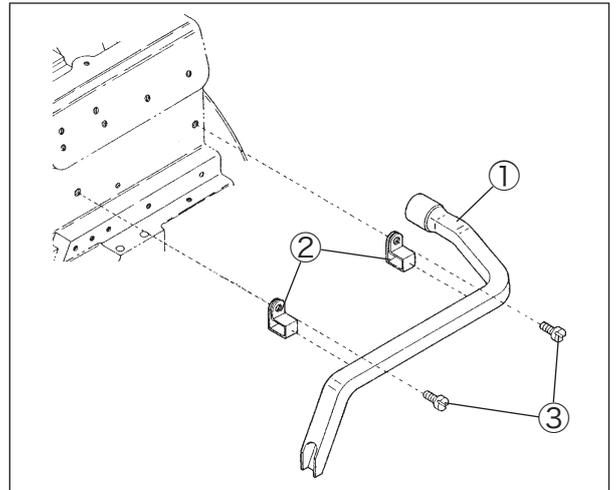


Fig. 7-7

# 8. K2 device

## 8.1 Adjustment for engagement between upper trimming knife and lower trimming knife

### **CAUTION**

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

- (1) Remove the cloth plate spacer ①.
- (2) Remove the Suction pipe cover ②.
- (3) Loosen the screw ③.
- (4) Make the distance between the upper trimming knife ⑤ and the front end point of lower trimming knife ⑥ to 0 to 0.5 mm when the upper knife ④ is at the lowest point.
- (5) Tighten the screw ③ securely.

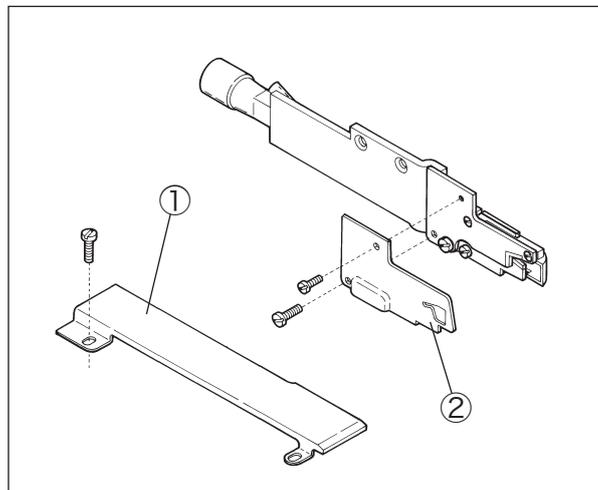


Fig. 8-1

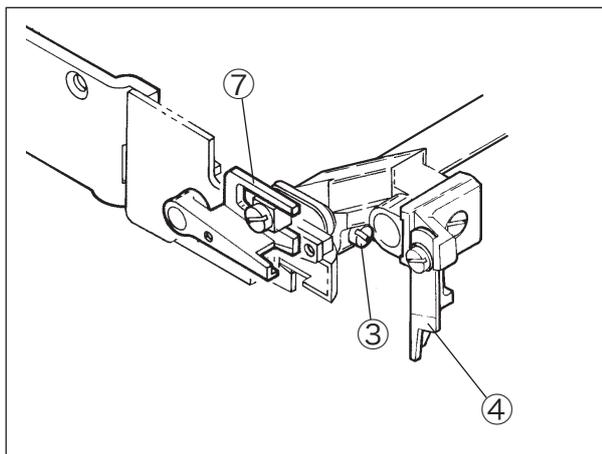


Fig. 8-2

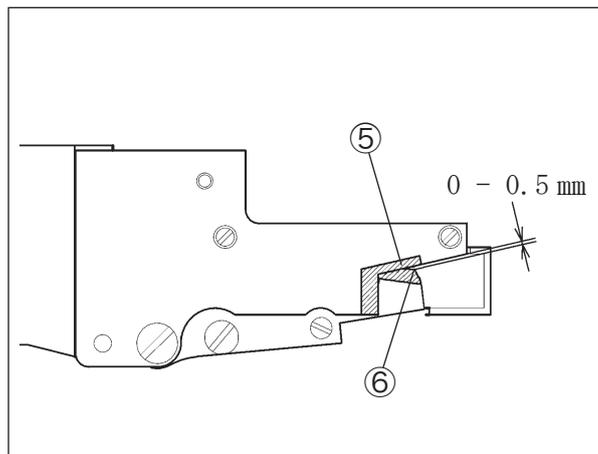


Fig. 8-3

## 8.2 Oiling

Supply with few drops of oil into the oil supply pipe ⑧ by hand once two weeks.

### **CAUTION**

Too much oil can cause oil stain. If insufficient, it can cause unsharpness of the blades of the knives.

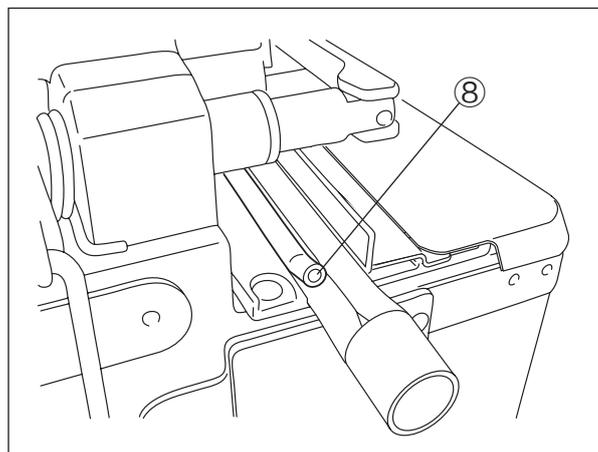


Fig. 8-4

# 9. Specifications

## 9.1 AZ7000SDR-8 class

Model	AZ7000SDR-8	AZ7003SDR-8	AZ7016SDR-8	AZ7020SDR-8 AZ7025SDR-8	AZ7120SDR-8 AZ7125SDR-8
Dimensions	380 (L) × 245 (W) × 310 (H) mm				
Weight	26.5 kg				
Construction	Dust-proof, Oil-tight and completely sealed				
Stitch Type ( ISO standard )	505	504	504	504、514	
Application	hemming for knitted	overlock stitch for knitted or woven fabric	rolled seam for light material	overlock stitch for knitted or woven fabric	
Sewing Speed	up to 7500 sti/min				up to 7000 sti/min
Stitch Length	1.0 - 4.0 mm		0.6 - 2.0 mm	1.0 - 4.0 mm	
Number of stitches per inch(25.4 mm) per 30 mm	6.5 - 25 stitches 7.5 - 30 stitches		12 - 42 stitches 15 - 50 stitches	6.5 - 25 stitches 7.5 - 30 stitches	
Needle System	DC × 1	DC × 27			
	size #8 -#14(60 - 90)				
Needle Stroke	23.7 mm				24.7 mm
Presser Foot Lift	up to 6 mm		up to 5 mm	up to 6 mm	
Feed Regulation	Push button System				
Differential Ratio	Max. normal differential (Gathering) 1 : 2.3 Max. reverse differential (Stretching) 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 type or Angled type, made of super hard alloy				
Lubrication Oil	YAMATO SF OIL No.28				
Capacity of Oil Reservoir	900 ml				
Lubrication	Oil is fed forcedly by trochoid pump				
Compliance With Regulation	Machinery directive, RoHS directive				
installation	Fully-submerged type and Semi-submerged type				
Noise Declaration	$L_{pA} \leq 85\text{db}$ 以下 (7500 sti/min)				$L_{pA} \leq 85\text{db}$ (7000 sti/min)
	Standard complied with: ISO 10821- C6.2 - ISO 11204 GR2				

## 9.2 AZ7500SDR-8 class

Model	AZ7500SDR-8	AZ7520SDR-8	AZ7500SDR-31	AZ7520SDR-31
Dimensions	380 (L) × 245 (W) × 310 (H) mm			
Weight	27 kg			
Construction	Dust-proof, Oil-tight and completely sealed			
Stitch Type ( ISO standard )	(504, 401)	(514, 401)	(504, 401)	(514, 401)
Application	Safety stitch of knitted or woven fabrics for heavy weight materials			
Sewing Speed	up to 7,500 sti/min		up to 7,000 sti/min	
Stitch Length	1.0 - 4.0 mm Number of stitches per inch(25.4 mm) 6.5 - 25 stitches per 30 mm 7.5 - 30 stitches			
Needle System	DC × 27 (for both sides of overlock stitch and double chainstitch) Size #8 - #14 (60 - 90)			
Needle Stroke	23.7 mm		24.7 mm	
Presser Foot Lift	up to 6 mm	up to 5.5 mm	up to 6 mm	up to 5.5 mm
Feed Regulation	Push button System			
Differential Ratio	Max. normal differential (Gathering) 1 : 2.3 Max. reverse differential (Stretching) 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 type or Angled type, made of super hard alloy			
Lubrication Oil	YAMATO SF OIL No.28			
Capacity or Oil Reservoir	900 ml			
Lubrication	Oil is fed forcedly by trochoid pump			
Compliance With Regulation	Machinery directive, RoHS directive			
Installation	Fully-submerged type and Semi-submerged type			
Noise Declaration	$L_{pA} \leq 85$ dB (A) (7500 sti/min)		$L_{pA} \leq 85$ dB (A) (7000 sti/min)	
	Standard complied with: ISO 10821-C6.2, ISO 11204 GR2			





***Yamato***

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