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# Safety instructions



## 1. Safety instruction

Please pay attention to the following items for the safety of industrial sewing machine and utilization of devices.

### 1-1 Usage and purpose

This industrial sewing machine is designed for improving the productivity of sewing operation. Do not use it for other usages and purposes. Do not use this sewing machine before it is confirmed that the safety measures of installed drive devices are exactly conducted.

### 1-2 Before utilization

Before using the sewing machine, each related user instructions shall be carefully read. Use it properly based on the user instructions, and the user instruction of the installed drive devices should be carefully read as well.

### 1-3 Utilization environment

Do not use under the following environments

- ✧ Improper place with environmental temperature and humidity which have adverse effects on the performance of the sewing machine.
- ✧ Outdoors or place exposed to direct sunshine.
- ✧ Environment with dust, erosive gas, and flammable gas.
- ✧ Where the voltage is instable due to variation or exceeds  $\pm 10\%$  of voltage specification
- ✧ Where the necessary power capacity cannot meet the specification of the used motor.
- ✧ Where strong electric wave and magnetic field occur due to high-frequency emitter with larger power or high-frequency welding machine.

### 1-4 Unboxing and transportation

- (1) Conduct unboxing from top in order.
- (2) When the sewing machine head is

taken out of cushion material, never lift the section near the needle or parts related to eyelet.

- (3) Transportation of the sewing machine head should be performed with an assistant together.
- (4) When moving it with trolley, be careful to avoid excessive collision or vibration.

## 2. Installation and preparation

### 2-1 Education and training

Personnel operating the sewing machine head or sewing equipment system, and leaders responsible for instruction of security maintenance must have correct knowledge and skills for operation. Management must have intact planning and implementation of education and training plan for operators and leaders in advance.

### 2-2 Sewing machine foot board and motor

- (1) Use foot board which can endure the own weight of the sewing machine head and rebound stress during operation. (Lift board and foot stand)
- (2) Arrangement of lighting for the sewing machine and operation area should be adequately considered for an environment where operation can be performed smoothly.
- (3) When installing the control box and related parts for the equipped sewing machine, the connection with the work posture of operating personnel must be noticed.
- (4) By installing motor, it should be installed properly according to the user instruction provided by motor manufacturer.

### 2-3 Circuit wiring

- (1) Do not connect the power plug before completing electric wiring.
- (2) The plug connecting sewing machine



# Safety instructions



head, motor and cables of electric devices must be secured firmly.

- (3) For connected cables, do not apply overloaded pressure.
- (4) Safety distance for the cable arrangement should be considered where moving mechanical parts are nearby. Contact or friction with them are not allowed.
- (5) Connect ground wire safely at specified position of the sewing machine head.

## 2-4 Precautions before the sewing machine operation

- (1) By pouring lubricant, silicone oil and grease, be careful to avoid contacting eyes and skin etc. For the storage, they should be away from the location where children can access.
- (2) Oil must be added (or dipped) to the sewing machine before operation. SF lubricant specified by ISAMU must be used.
- (3) As power is turned on, do not put hands near the area under the needle and moving mechanical parts.
- (4) As sewing machine starts its operation, the turning direction of the sewing machine flywheel must be confirmed if it matches the turning mark of the flywheel.

## 2-5 Precautions during the sewing machine operation

- (1) Sewing machine operation must be performed under the safe protection with well installed belt cover, finger guard and eye guard etc.
- (2) During the sewing machine operation, hand and hair should not approach the area below needle and moving parts. Objects should not be placed around.
- (3) For the sewing machine with cutting device, fingers should not reach the cutting area (upper cutter, cutter lower cutter).

- (4) When sewing machine is not used or operators leave the sewing machine, power must be turned off.
- (5) If malfunction, abnormal sound, or odor are found during utilization, power must be turned off immediately.

## 2-6 Disassembly

- (1) Power must be turned off, if any parts are disassembled or replaced, and adjustment is performed.
- (2) Do not pull wires and cables when disconnecting plug. There is high voltage loading within the control box, so it needs to wait more than 5 minutes to open the cover after turning off power.

## 3. Security, inspection & maintenance

- (1) By operation of security, inspection and repair, operations should follow the user instructions.
- (2) Operation of security, inspection and maintenance should be performed by specifically trained personnel.
- (3) Power must be turned off by operation of security, inspection, and maintenance. Operation shall only begin after it is confirmed that needle and motor completely stop. The clutch motor will keep rotating due to rotational inertia after turning off power, it should thus be noticed.
- (4) Customer should not modify needles by his own adjustment.
- (5) Avoid using security maintenance parts which are not specified.

## 4. Warning marks and warning signs

To avoid hazards to users, the following warning marks and signs are described in this user instruction.

### 4-1 Meaning of warning marks

“Warning” indicates potentially dangerous situation which may cause death or severe injury if not noticed.

“Caution” indicates potentially dangerous





# Safety instructions



situation which could cause minor or moderate injury of user or other persons. Damage to needle is also possible.

## 4-2 Warning signs



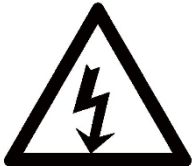
This sign indicates that it may cause death or severe injury if not noticed.



This sign indicates that high temperature should be noticed.



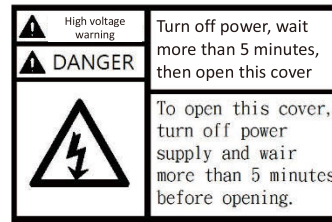
This sign indicates that it could cause minor or moderate injury if not noticed. It also emphasizes that attention must be paid.



This sign warns that high voltage shock must be noticed.



This sign indicates that sewing machine may malfunction or hurt user if not grounded.



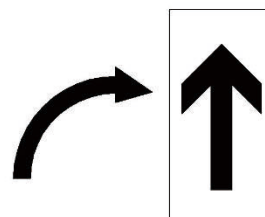
It indicates that there is high voltage within the power control box. There could be risk of electric shock.



It is attached on safety guards for the consideration of operational capability. It is not attached on finger guard and eye guard, but guards must be installed at specified location for backup.

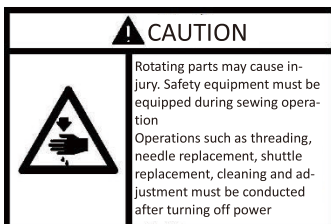


Synchronous motor, solenoid and so on may have overheating issue under long-term continuous usage which may lead to risk of burns. Ensure not to contact it.



Ensure the turning direction of sewing machine flywheel matches the marked direction.

## 4-3 Warning labels attached on needle cylinder machine

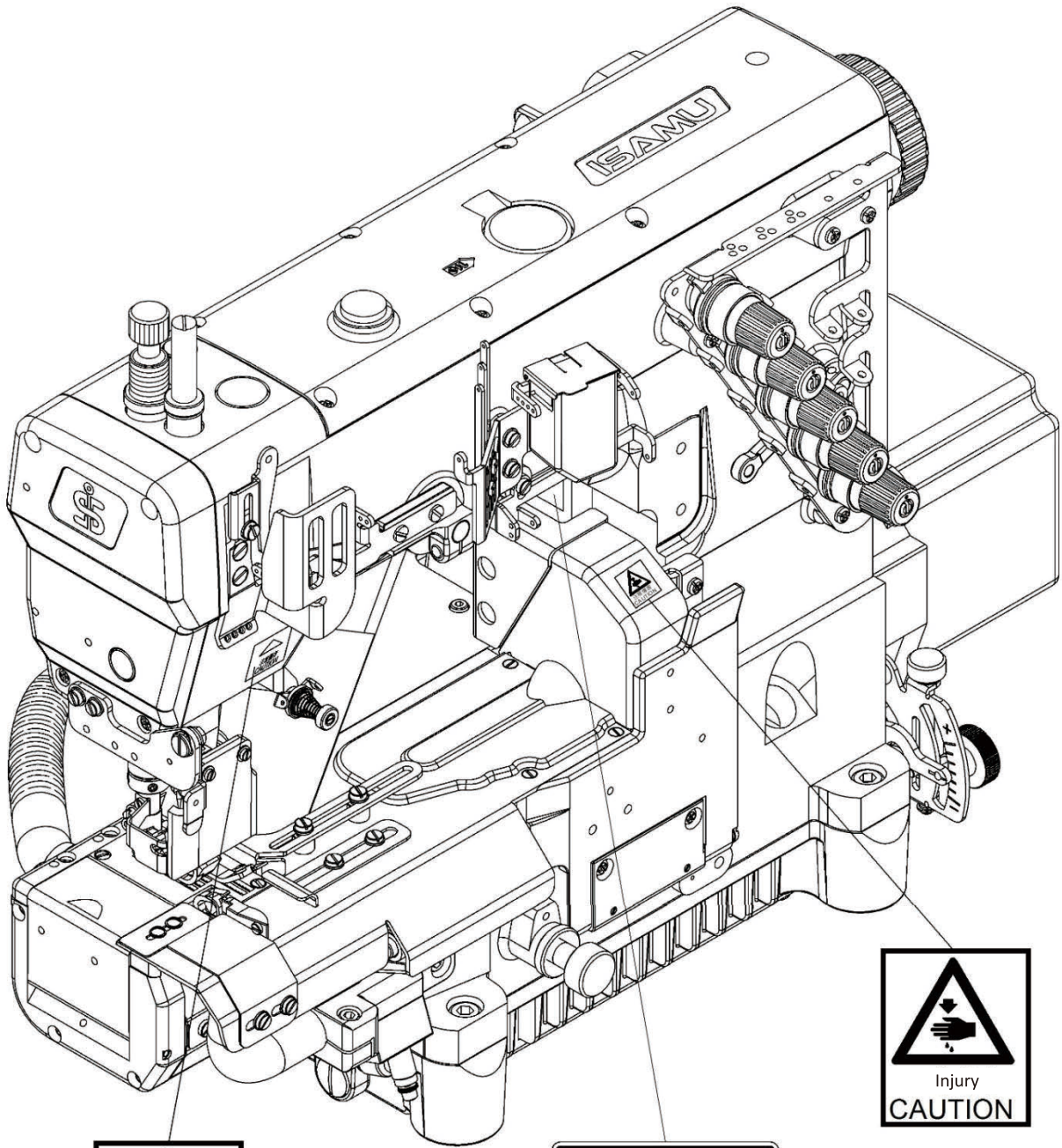


It indicates disassembly of safety guards is prohibited and threading, needle replacement, shuttle replacement,

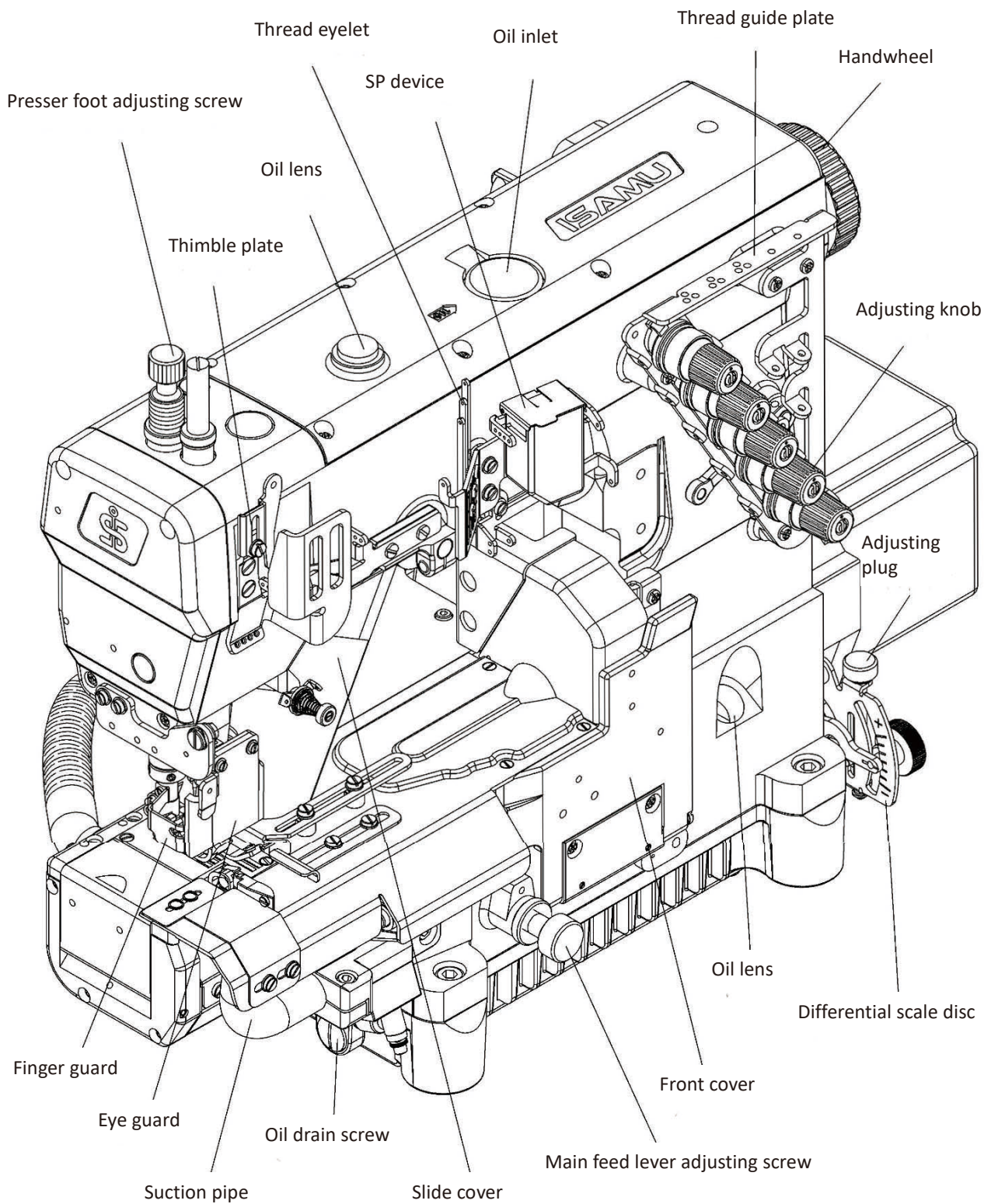
cleaning and adjustment are also prohibited without turning off power.



# Safety instructions



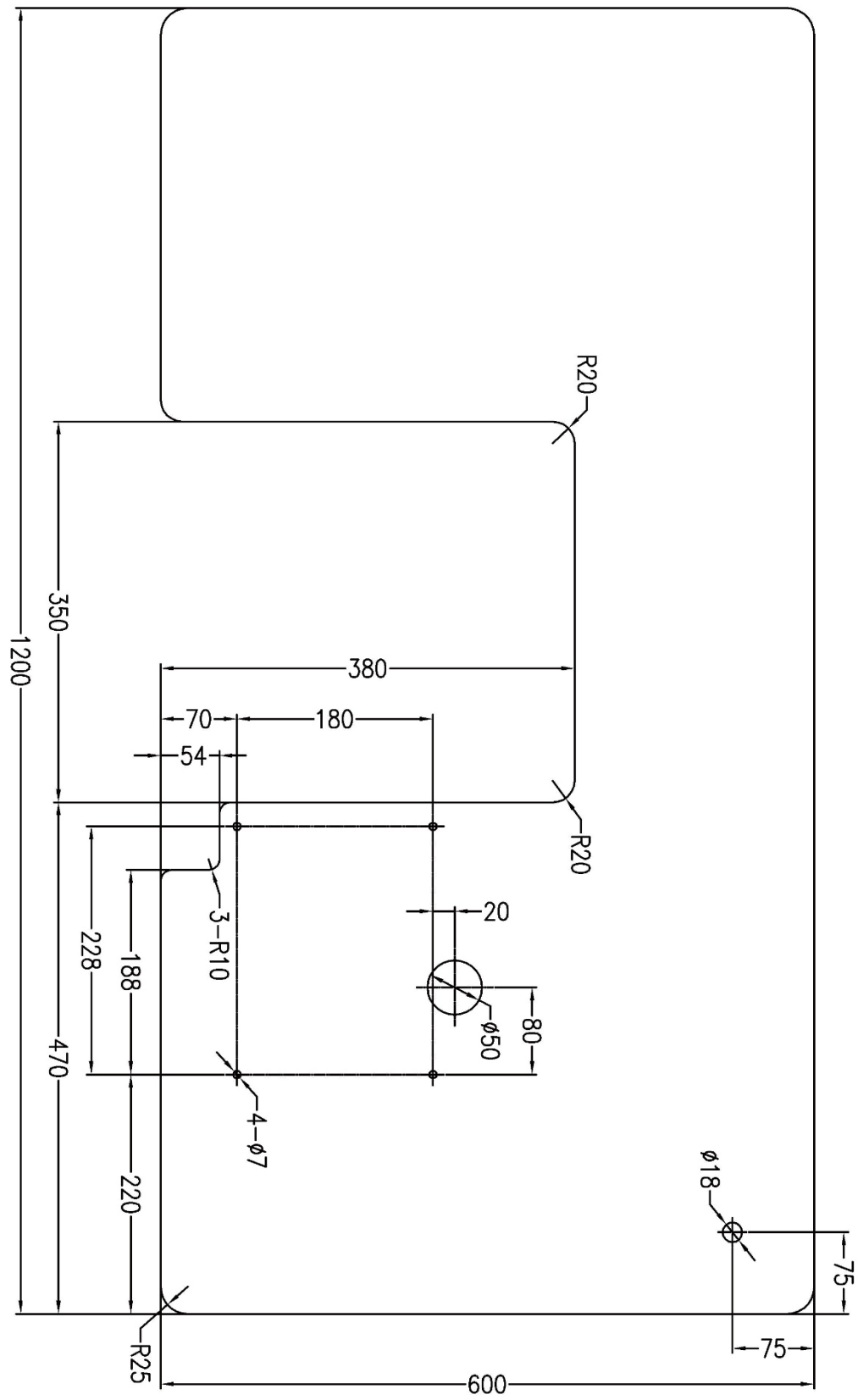
# 1. Item name of Each part



## 2. Installation

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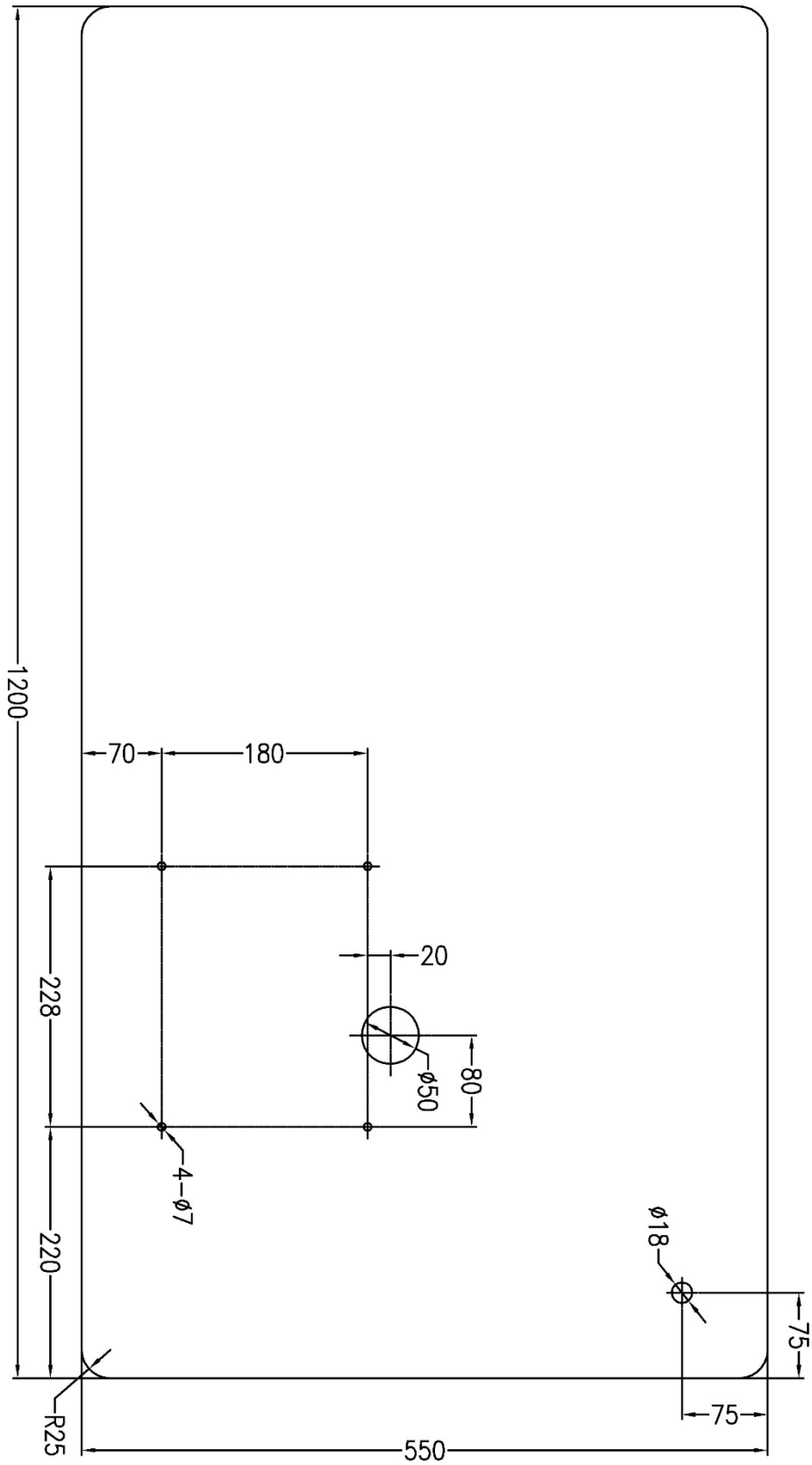
☆ Desktop type A





## 2. Installation

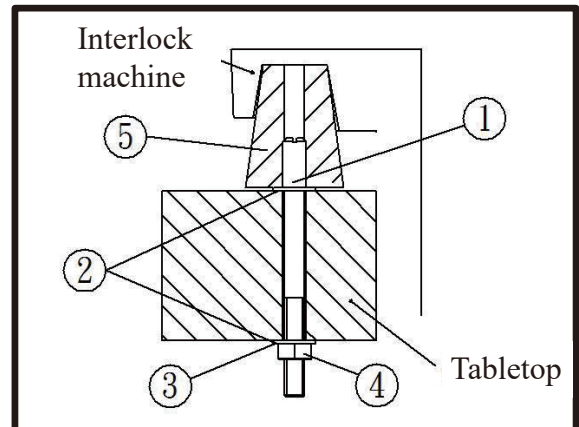
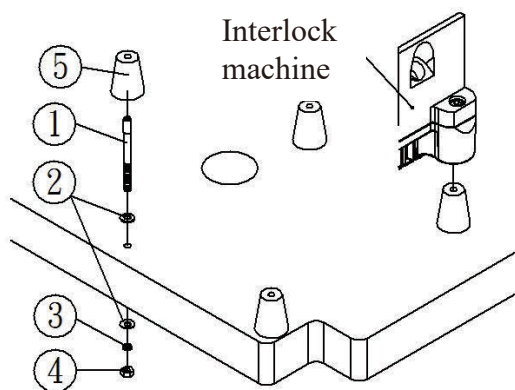
### 2.1 Table Board Diagram



## 2. Installation

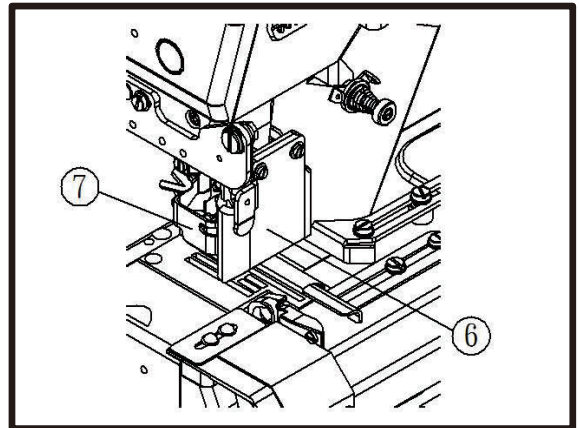
### 2.2 Desktop installation

Install machine based on the figure below



### 2.3 Eye guard and finger guard

To ensure safe utilization, install eye guard ⑥ and finger guard ⑦ at specified position during operation.



# 3. Lubrication

## 3.1 Lubricant

Use OIL No.22.

**! Warning !**

DO NOT add additive into the lubricant which could cause oil degradation and damage to the machine.

## 3.2 Lubrication

When using a new machine or a machine which is idle for a period of time, please add a few drops of oil to the needle bar ① and looper bar ②.

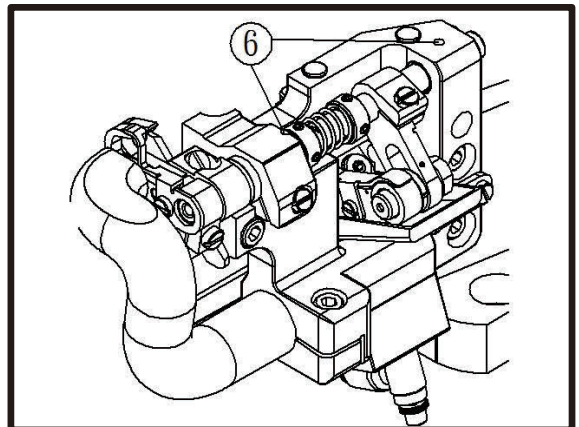
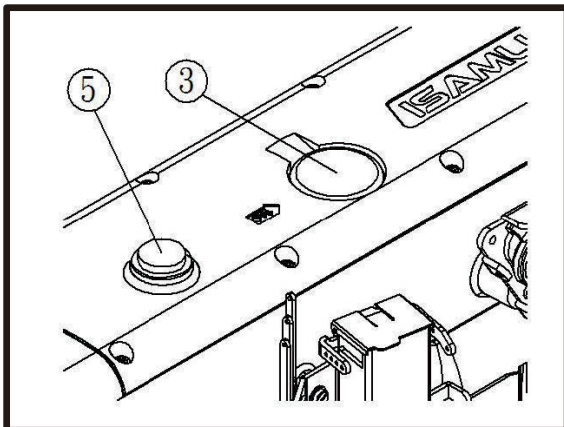
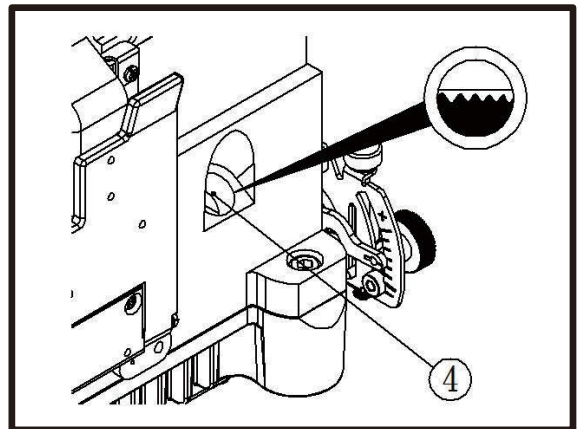
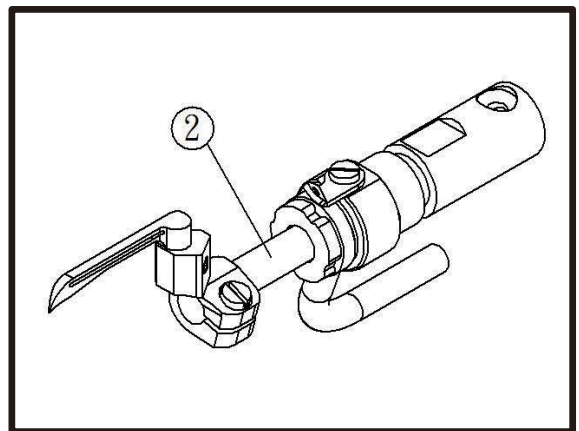
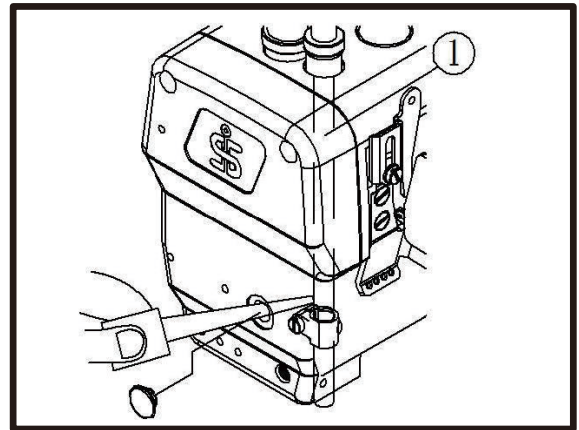
Remove the sealing plug marked with “OIL” ③ and pour lubricant until it reaches the upper line of the oil lens ④.

When the machine is under operation, check whether there is oil splashed from the nozzle within the oil lens ⑤.

If there is no oil splashed from the nozzle, please refer to “3.4 Check and replace oil filter”.

**! Warning !**

- (1) Either excessive oil or insufficient oil will cause oil leakage and machine failure. Be sure to keep the oil level between the lines.
- (2) It is necessary to add a few drops of oil at the hole ⑥ to keep it lubricated.

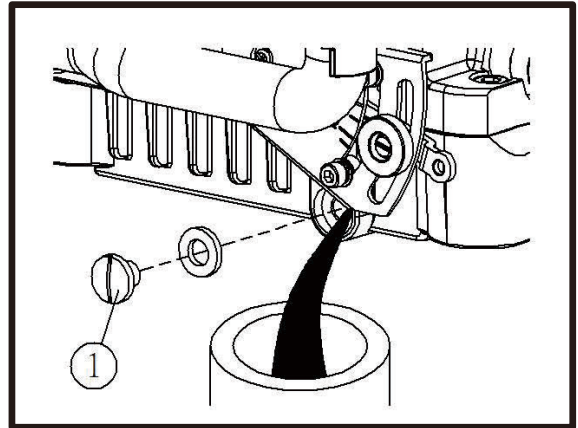


## 3. Lubrication

### 3.3 Oil change

For a new machine, change oil after running for 200 hours (about one month). Change oil once or twice a year afterward.

- (1) Loosen the screw ① and drain the oil.
- (2) Tighten the screw ①.
- (3) Mount the sewing machine back to the work-bench.
- (4) Pour in new Oil No.22.

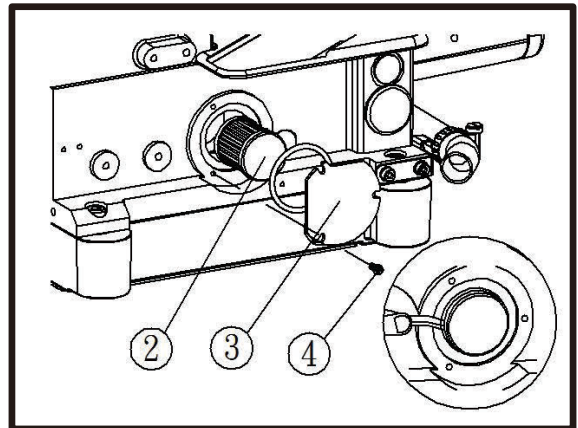


### 3.4 Check and replace oil filter

If the oil filter ② is blocked by dust, it will not be able to perform lubrication properly.

Remove the oil filter cover ③ and the oil filter ② every six months for inspection. If it is blocked or broken, please clean or replace the oil filter.

If the oil splashed from the nozzle is insufficient or has many bubbles when the oil is fully retained, please check or replace the oil filter.



Note: When loosening the screw ④, please check and replace it carefully, do not let the oil in the filter ② splash out.



## 4. Operation method

### 4.1 Needle series

Use needles UY x 128GAS(UY128GAS).  
Select proper needle based on the thickness  
and types of fabric.

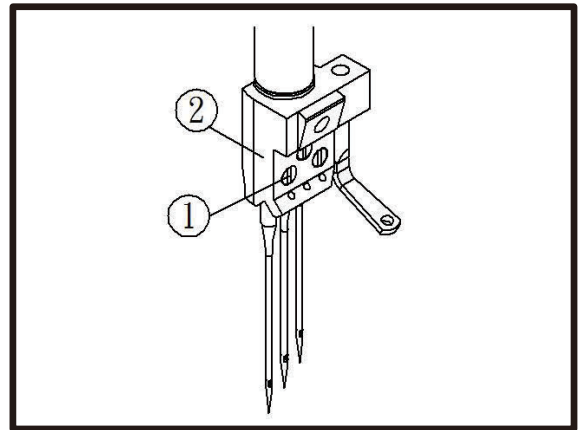
|                |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|
| Japanese spec. | 9  | 10 | 11 | 12 | 13 | 14 |
| Metric spec.   | 65 | 70 | 75 | 80 | 85 | 90 |

### 4.2 Needle installation

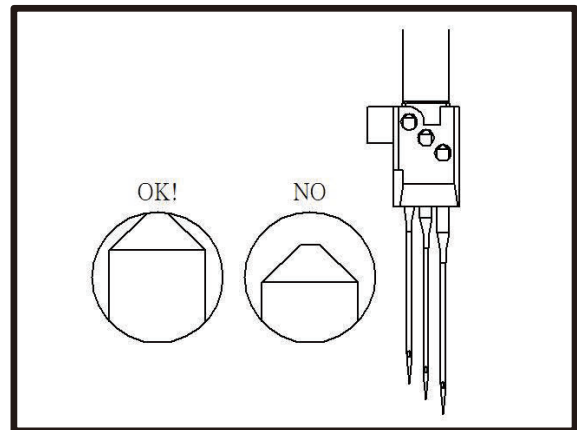
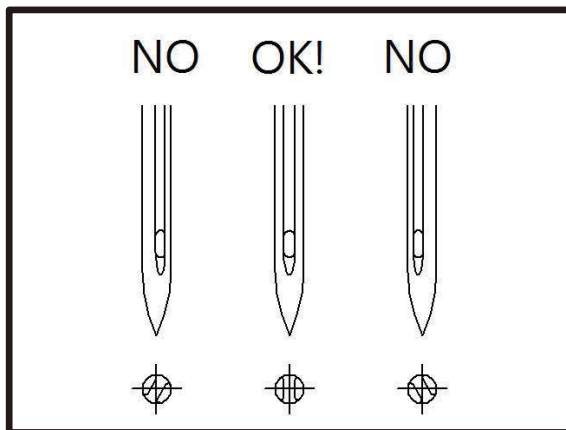
#### ! Warning !

Always turn off the power and check  
whether the machine stops before the in-  
stallation.

- (1) Use screwdriver to loosen the screw ①.
- (2) Use tweezers to take out the old needle.
- (3) Insert a new needle into the needle clamp ②,  
let the groove face toward the rear direction.
- (4) Use screwdriver to tighten the screw ①.



Note: Use a torque of 0.6N-m (6kgf-cm) to tighten the screw ①.



## 4. Operation method

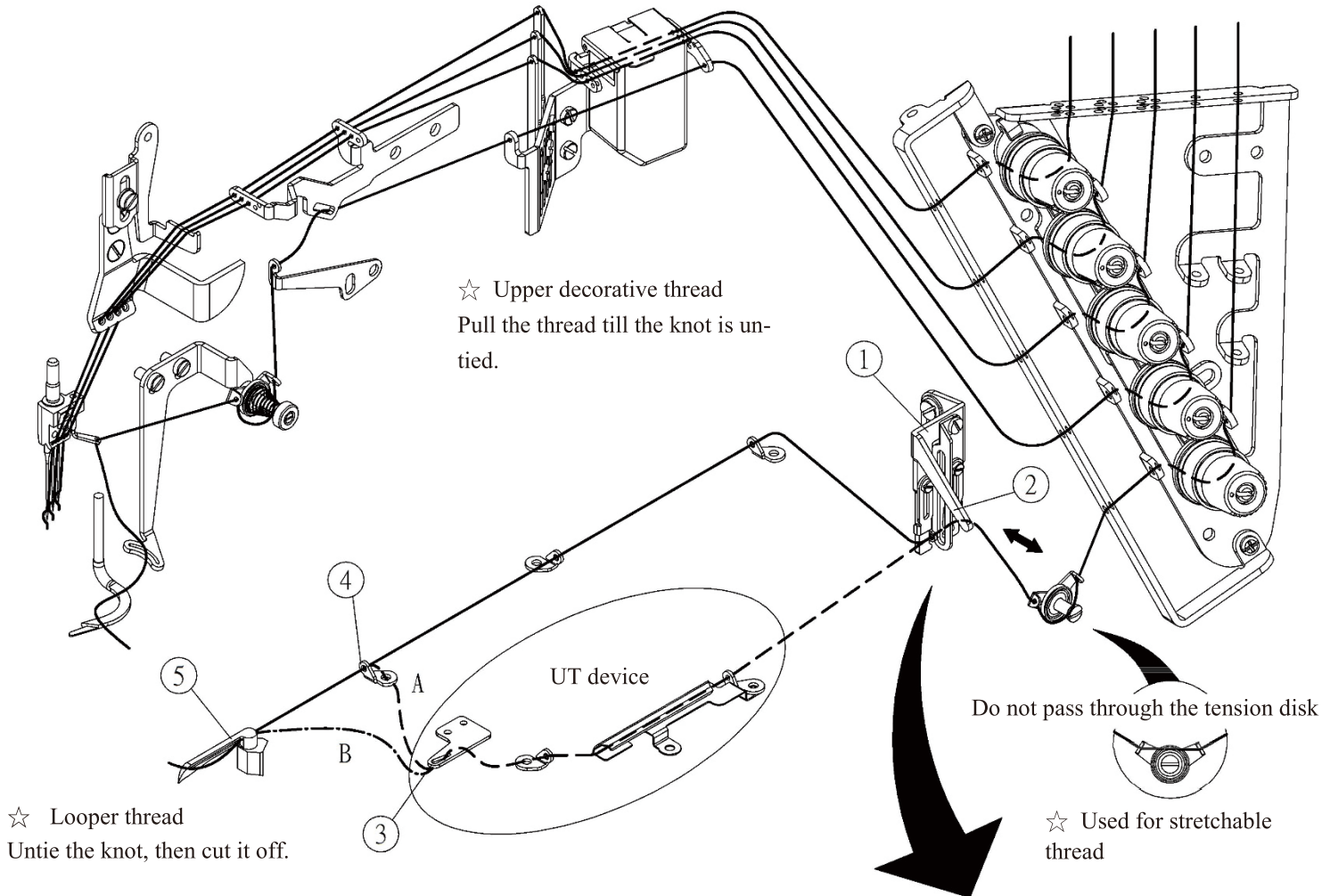
### 4.3 Threading

When the needle is not threaded, follow the figure below to thread.

When the needle is already threaded, bind a new thread, and tie a dead knot, then rethread.

☆ Thread: Pull the thread to the front of the needle, then cut off the knot in front of the needle hole and rethread.

As shown in the figure, thread the left needle correctly in the innermost position.



Note: Threading for the sewing machine with the UT device

- For thread of standard type, pass through the threading release plate ④, then through the crochet threading hole (left) ③. (Thread channel A)
- For cotton thread or fabric thread, pass through the threading release plate ⑤ directly through the looper ③.

Note: To facilitate threading, please pull the rod ① of the thread guide bracket ②.

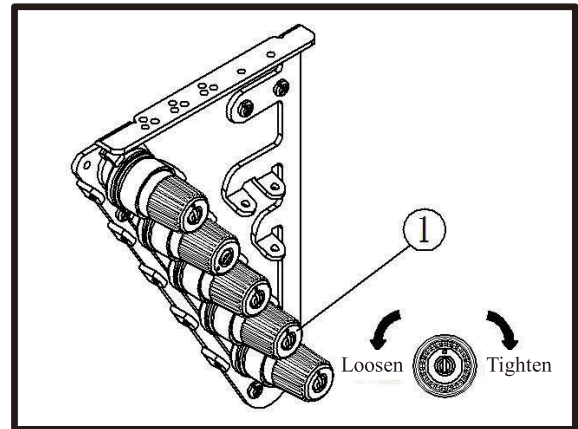
After threading, push the rod ② to reset the thread guide bracket ① to its original position.

## 4. Operation method

### 4.4 Adjusting thread tension

According to Fabric type, thread type, seam width, stitch length and other sewing condition, use thread tension spring cover ① to adjust the thread tension.

- Turn the cover clockwise to tighten the tension.
- Turn the cover counterclockwise to loosen the tension.



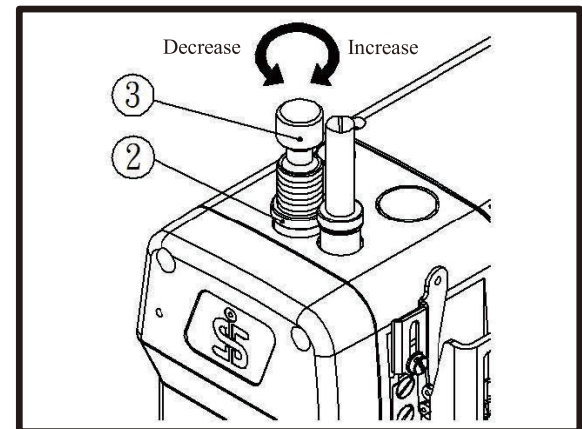
### 4.5 Presser foot pressure

Loosen the nut ②, then turn the adjusting screw ③ to adjust the pressure.

- Turn clockwise to tighten the presser foot pressure.
- Turn counterclockwise to loosen the presser foot pressure.

Keep the pressure at the lowest level to ensure the stable sewing performance.

Supplement: As the presser foot in operation, do not use adjusting screw ③ to adjust the pressure.



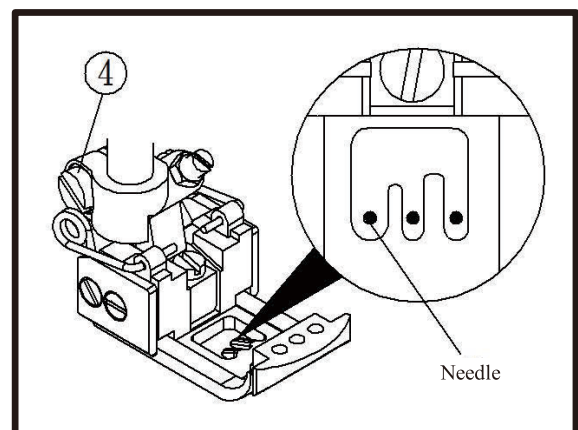
### 4.6 Adjusting the position of presser foot

**! Warning !**

Before adjustment, DO turn off the power switch and check if the machine has stopped.

Adjust the left/right position of the presser foot holes.

- (1) Loosen the screw ④.
- (2) Move the edge of presser foot left and right to locate every needle at the center of the needle hole.
- (3) Tighten the screw ④.



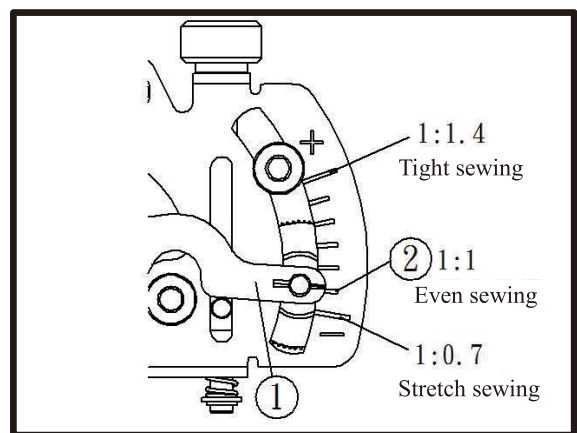
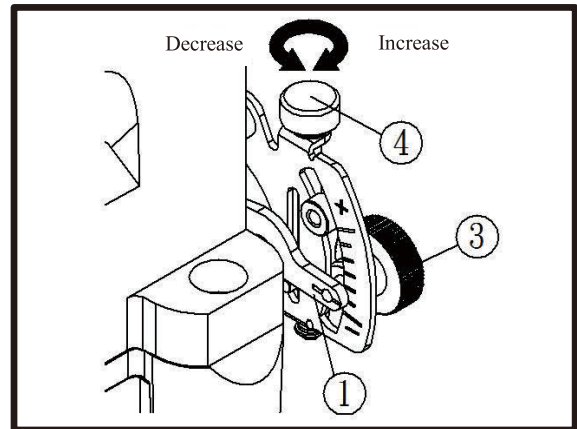
## 4. Operation method

### 4.7 Differential adjustment

The differential ratio is set to at the shipping time out of factory.

When the differential feeding lever ① aligns with the line of the differential feed scale ②, the movement of the differential feed stopper is identical to the movement of the main feeding stopper (differential ration 1:1) which leads to even sewing.

- (1) Loosen the nut ③.
- (2) Turn the adjusting screw ④ to adjust the movement of the differential feeding stopper.
  - Turn clockwise for tight sewing.
  - Turn counterclockwise for stretch sewing.
- (3) Tighten the nut ③.



## 4. Operation method

### 4.8 Stitch length adjustment

Adjustable range of stitch length is 1.4mm to 3.6mm

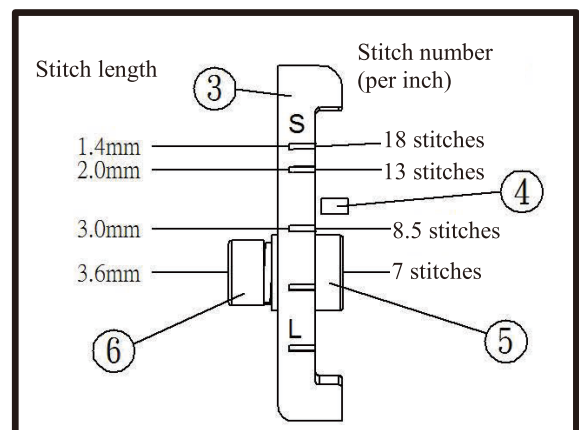
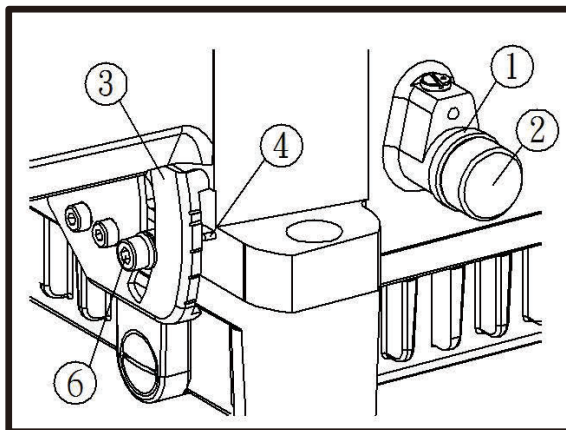
The table presents the stitch number of the corresponding stitch size for each inch or each 30mm. The main feeding handle stopper has set the maximal stitch length of the seam to 3.6mm by using screw ⑥ at the shipping time out of factory.

Adjusting steps:

- (1) Loosen the nut ①.
- (2) Turn the adjusting screw of main feed lever ② for adjustment. Align the end of the main feed handle ④ with the required position on the main feed scale plate ③.
  - Turn clockwise to decrease stitch length.
  - Turn counterclockwise to increase stitch length.

Stitch number for each inch and each 30mm as shown in the table below.

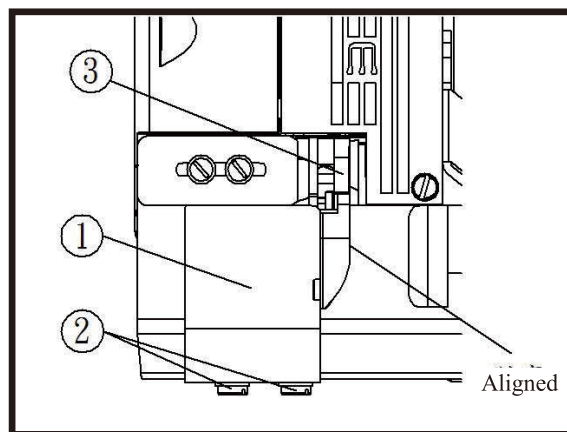
| Stitch length(mm) | Each stitch |    |
|-------------------|-------------|----|
|                   | inch        | Mm |
| 1.4               | 18          | 21 |
| 2.0               | 13          | 15 |
| 3.0               | 8.5         | 10 |
| 3.6               | 7           | 8  |



## 4. Operation method

### 4.9 Fabric guide (left)

- (1) Loosen the screw ② on the fabric guide (left) ①.
- (2) Align the right side of the guide section of fabric guide ① with the upper cutter ③.
- (3) Tighten the screw ②.



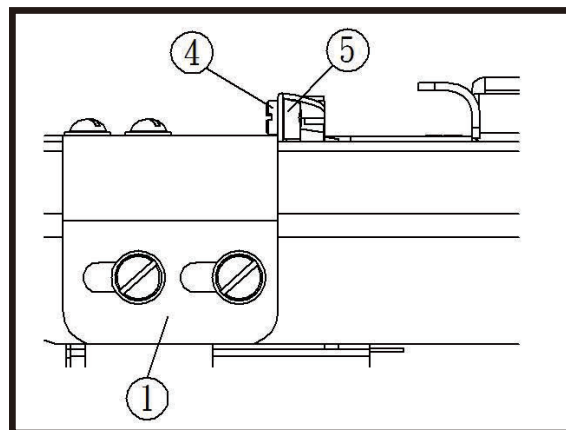
### 4.10 Selvage width of Fabric

Install or remove folder spacer ⑤ in the guide section of the folder (left) ① to change the selvage width of fabric.

By sewing with folder spacer ⑤, the trimming width is 3.0mm.

By sewing without Fabric side stopper ⑤, the trimming width is 5.0mm.

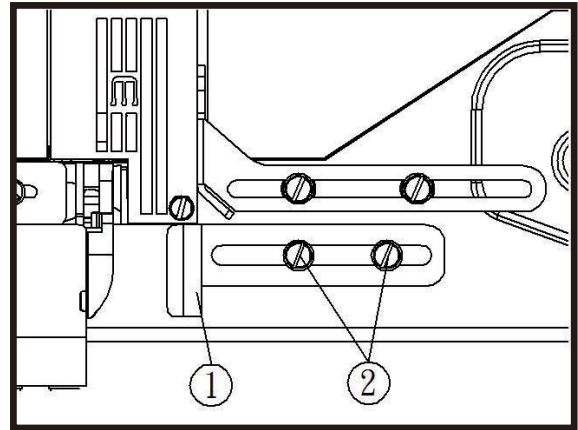
Remove screw ④ to remove Fabric side stopper ⑤.



## 4. Operation method

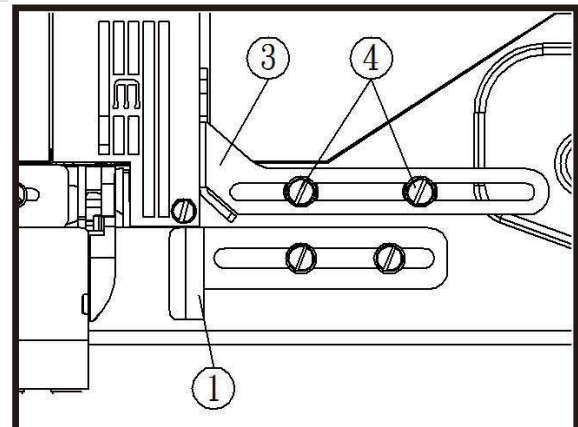
### 4.11 Fabric guide plate (front)

- (1) Loosen the screw ② on the fabric guide (front) ①.
- (2) Align the fabric guide (front) with the right side of the folded Fabric hem width.
- (3) Tighten the screw ②.



### 4.12 Fabric guide plate (rear)

- (1) Loosen the screw ④ on the Fabric guide plate (rear) ③.
- (2) Align the fabric guide (rear) with the guide section of fabric guide (front) ①.
- (3) Tighten the screw ④.

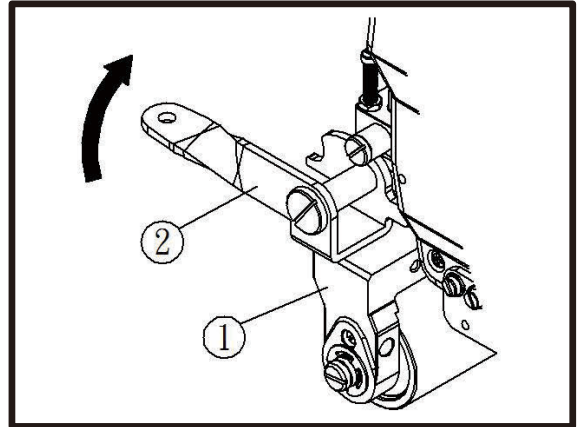




## 4. Operation method

### 4.13 Upper feed roller (puller device)

As pulling out Fabric, either upwards or downwards, move the roller handle ② to raise the upper feed roller ①.

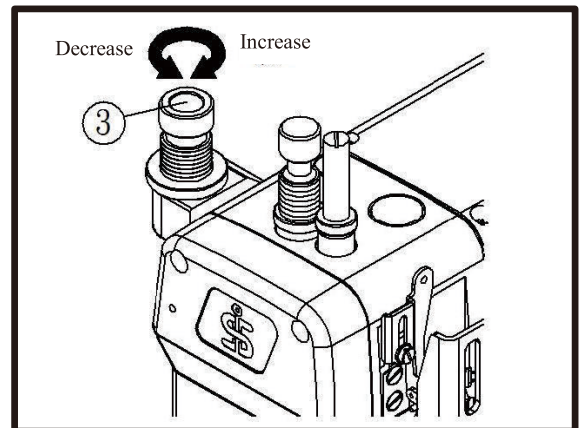


### 4.14 Pressure of upper feed roller

As feeding Fabric between upper and lower rollers, adjust the pressure on the upper roller as low as possible.

Turn the adjusting screw ③ for adjustment.

- Turn clockwise to increase pressure.
- Turn counterclockwise to decrease pressure.





## 4. Operation method

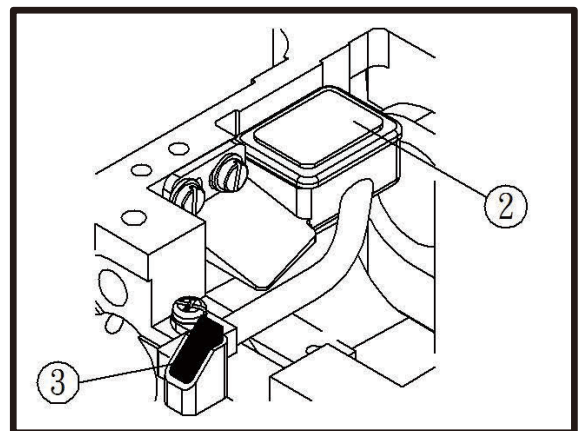
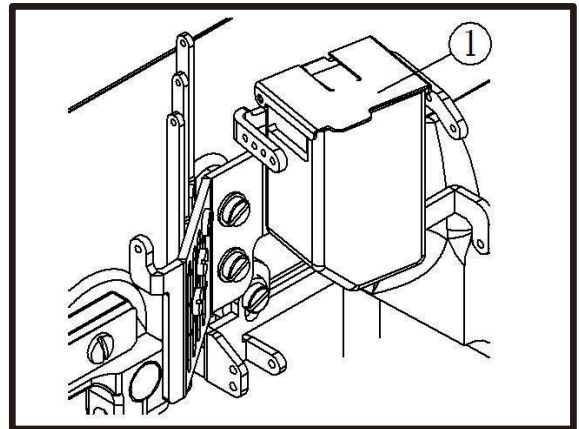
### 4.15 SP device and HR device

For high-speed machine operation or using synthetic threads and synthetic fibers, please use the standard SP device (oiled needle and thread) to prevent thread breakage and skipped stitches.

HR device can be used additionally (cooling needle head).

Use dimethyl silicone oil.

Open the cover of the SP container ① and the cover of HR container ② to check the oil level.



#### ! Caution !

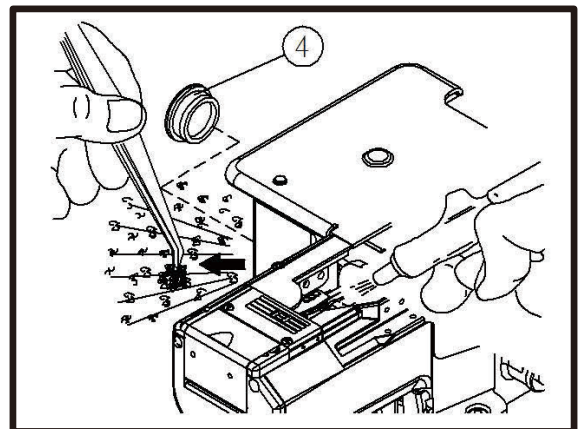
- (1) If SP device and HR device are not used, please remove the felt. In case it is not removed, irregular situation may occur during sewing.
- (2) If silicone oil is adhered to parts out of SP device and HR device, it may cause machine failure. It should be wiped clean.

### 4.16 Cleaning the machine

As daily work completes, please clean waste threads and dust within the machine.

Remove the sealing plug ④ on the back side of the machine weekly, and clean throat plate, feed dog area and oil filter area.

Note: If the oil filter is blocked by dust, the oil in the cylinder will not return to oil canister which may cause oil leakage.



## 5. Adjusting device

**! Warning !**

Before adjustment, ensure to turn off power switch and check if the machine has stopped.

### 5.1 Thread tension

#### Positions of thread holes:

The standard position of each thread hole is shown in the figure.

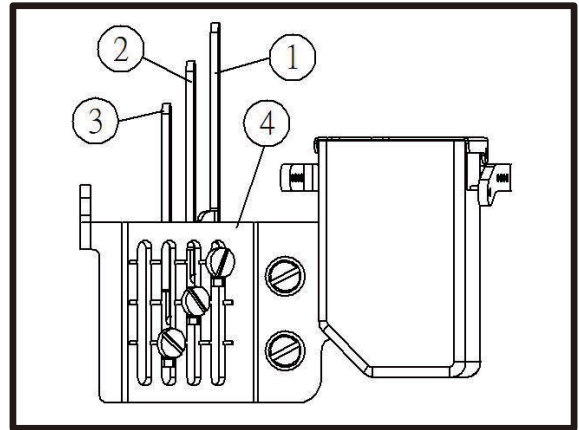
Be sure to align the center of the screw with the thread hole bracket ④.

Right thread hole ①: upper thread.

Middle thread hole ②: middle thread.

Left thread hole ③: lower thread.

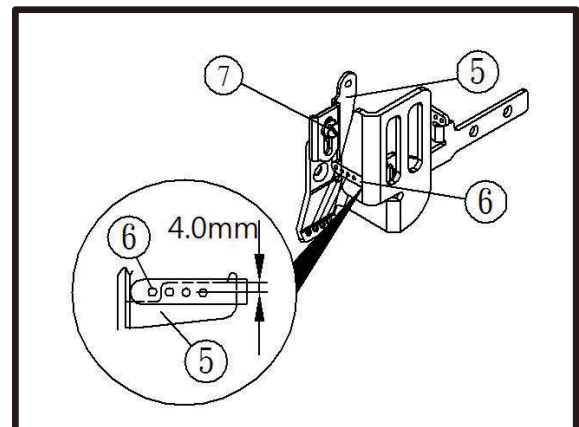
- To tighten the thread, raise the thread hole.
- To loosen the thread, lower the thread hole.



#### Needle thread guide:

When the thread take-up lever ⑥ is at the bottom, its standard position is that the thread hole center of the take-up lever ⑥ is 4.0mm away from the top of the Needle thread guide ⑤.

- To enlarge the thread loop or use a stretchable thread, please loosen the screw ⑦ and raise the Needle thread guide ⑤.
- To shrink the thread loop, please loosen the screw ⑦ and lower the Needle thread guide ⑤.

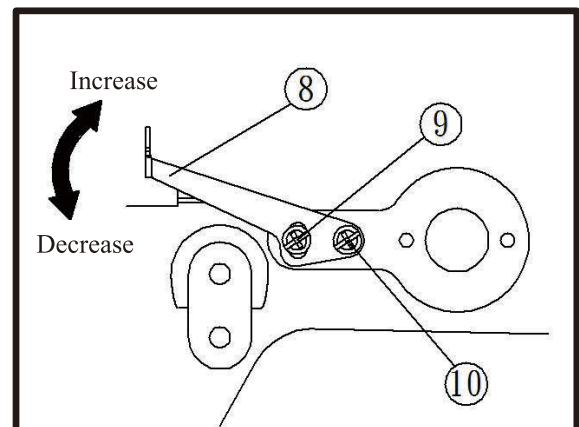


### 5.2 Upper decorative thread tension

Align the center of the groove of the eyelet lever for the upper decorative thread (upper) ⑧ with the center of the screw ⑨.

Loosen the screws ⑨, ⑩ for adjustment.

- To increase the thread feeding, raise the eyelet lever for the upper decorative thread (upper) ⑧.
- To decrease the thread feeding, lower the eyelet lever for the upper decorative thread (upper) ⑧.



Note: When using stretchable thread such as wool, adjust the eyelet lever for the upper decorative thread (upper) ⑧ until it is higher than the standard value.

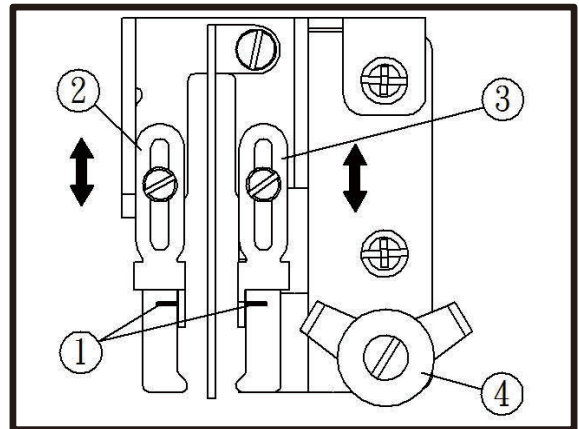
## 5. Adjusting device

### 5.3 Looper thread tension

Align the thread guide holes (left) ② and (right) ③ with the marking line ① on the thread guide bracket as the benchmark.

Loosen two screws for the thread guide holes for adjustment.

- To tighten the looper thread tension, raise the thread guide holes (left) ② and (right) ③.
- To loosen the looper thread tension, lower the thread guide holes (left) ② and (right) ③.

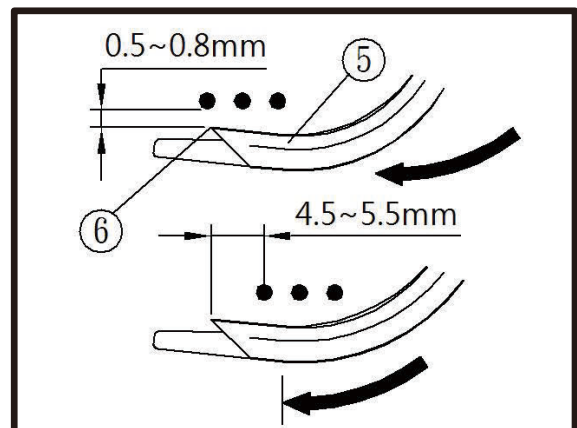


Note: When using stretchable threads, move the thread guide holes ② and ③ to the lowest point. Do not lead the thread through the top cover tension disk ④.

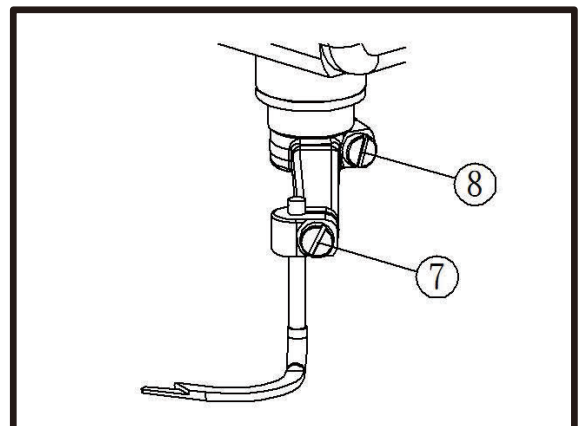
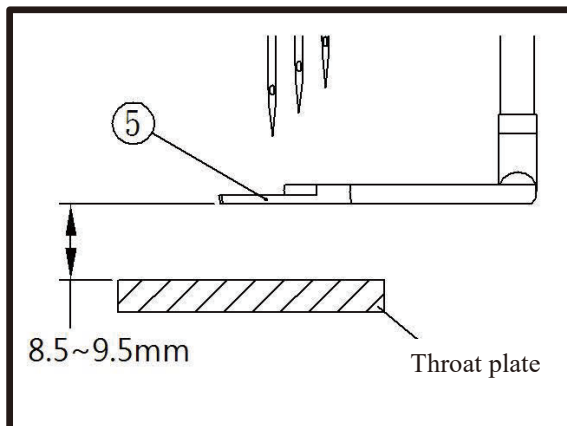
### 5.4 Needle and upper decorative thread looper

#### 5.4.1 Installation of looper for upper decorative thread

- (1) Loosen the screws ⑦, ⑧ on the looper bracket.
- (2) Set the distance between the left needle and the needle tip ⑥ on the looper ⑤ to be from 0.5mm to 0.8mm.
- (3) When the crochet needle ⑤ is at the leftmost end, set the distance between the center of the left needle and the looper tip ⑥ to be from 4.5mm to 5.5mm, then tighten the screw ⑧.
- (4) Set the distance of the throat plate surface and the bottom of the looper ⑤ to be from 8.5mm to 9.5mm. Then tighten the screw ⑦.



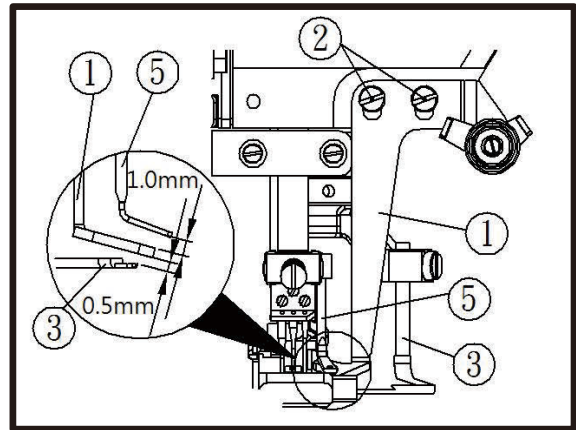
Note: Adjust the height of the looper for the upper decorative thread, based on the stitch length within the adjustable range, let the upper decorative thread pass through the rear side of the right needle and hooked by the left needle.



## 5. Adjusting device

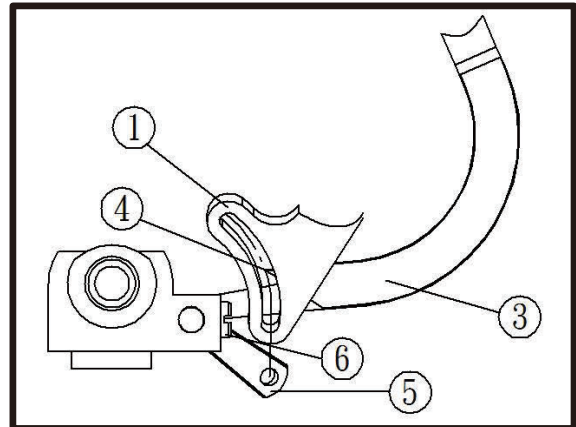
### 5.4.2 Installation of thread guide plate for upper decorative thread

- (1) Loosen the screw ② on the guide hole plate for the upper decorative thread ①.
- (2) Set the distance between the top of looper for the upper decorative thread ③ and the bottom of the thread guide plate for the upper decorative thread ① to be 0.5mm
- (3) When the looper for the upper decorative thread ③ is at the rightmost end, place the looper tip ④ in the middle of the thread groove of the thread guide plate for the upper decorative thread ①, then tighten the screw ②.



### 5.4.3 Installation of guide hole for upper decorative thread

- (1) Loosen the screw ⑥ on the guide hole for the upper decorative thread ⑤.
- (2) When the needle bar is at the lowest point, set the distance between the top of the thread guide plate ① and the bottom of the guide hole for the upper decorative thread ⑤ to be 1.0mm.
- (3) Set the guide hole for the upper decorative thread ⑤ along the thread extending from the groove of the guide plate for the upper decorative thread ①.
- (4) Tighten the screw ⑥.



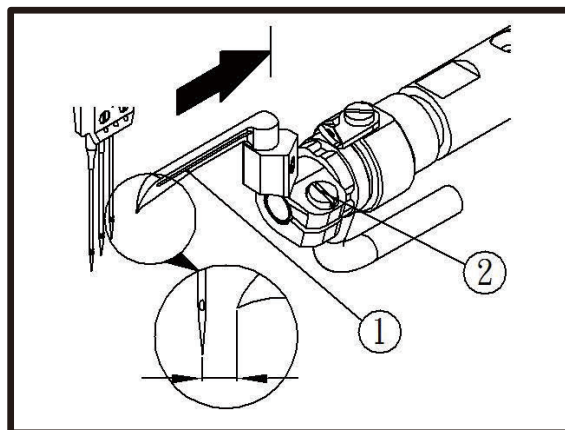
## 5. Adjusting device

### 5.5 Distance between needle and looper

The distance between the looper tip and the center of the right needle depends on the distance between the needle at its lowest point and the looper ① at the rightmost end.

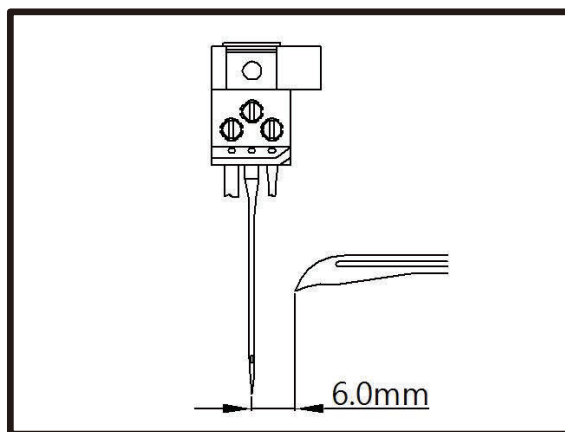
After referring to the table, loosen the screw ② of the looper bracket to adjust the distance.

Note: Even if the stitch length changes, the distance between the center of the needle bar and the looper tip ① is still 6.0mm.



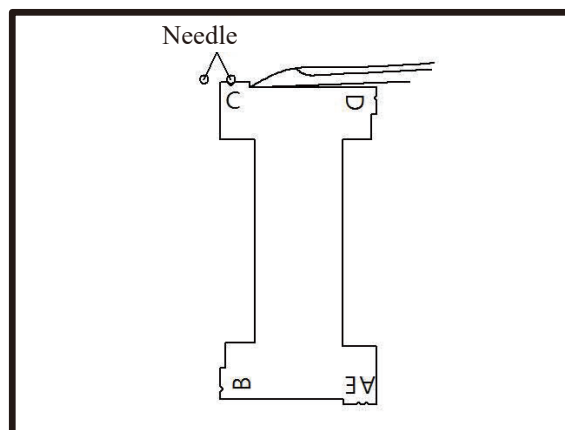
| Stitch length (mark) | Measurement mark | Looper distance |
|----------------------|------------------|-----------------|
| 3.2mm (32)           | A                | 4.4mm           |
| 4.0mm (40)           | B                | 4.0mm           |
| 4.8mm (48)           | C                | 3.6mm           |
| 5.6mm (56)           | D                | 3.2mm           |
| 6.4mm (64)           | E                | 2.8mm           |

Use a gauge to ease the distance adjustment.



### 5.6 Use of gauge

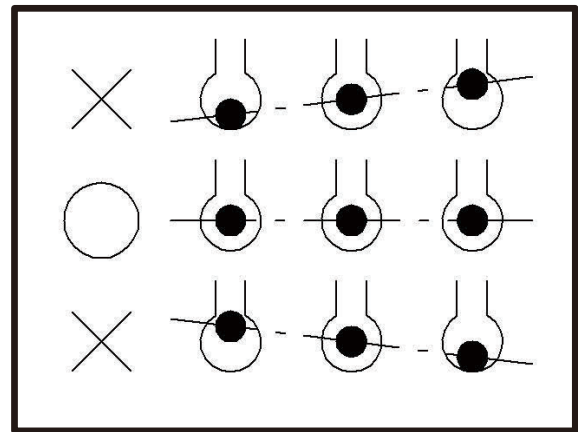
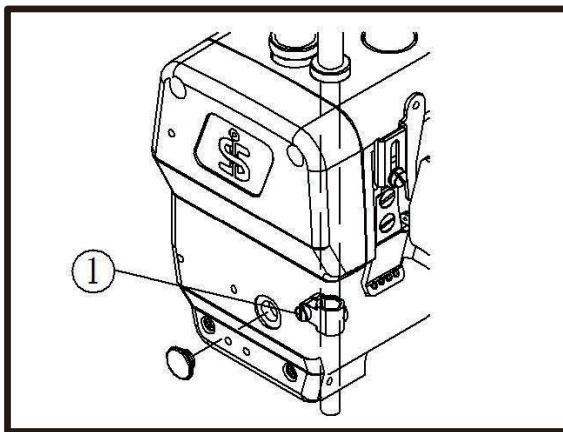
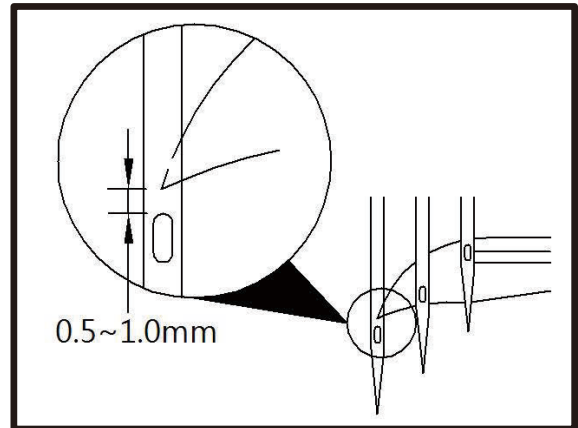
The gauge has marks (A, B, C, D, E) of different specifications for each stitch length, which is applicable for the adjustment of different stitch length. Move the looper to the rightmost end, place the right needle in the V-groove of the corresponding stitch length and move the looper tip to the edge of the gauge.



## 5. Adjusting device

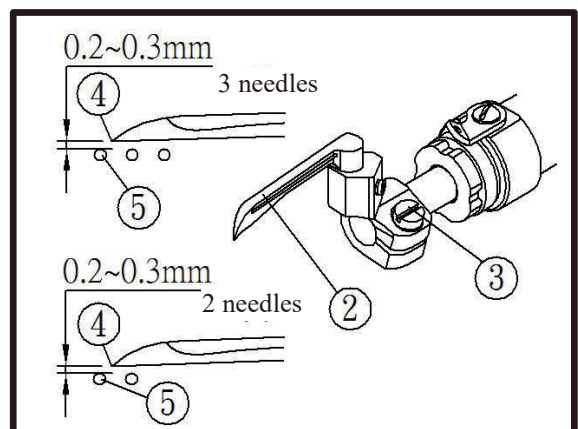
### 5.7 Needle height

- (1) Install the needle into the left hole of the needle clamp.
- (2) Check whether the looper is fully inserted into the looper bracket.
- (3) Turn the handwheel, until the looper tip meets the center of the left needle.
- (4) Loosen the screw ① of the needle bar bracket, then move the needle bar up and down to keep the looper tip away from the top of the needle eye for 0.8mm to 1.3mm.
- (5) Tighten the screw ①, and check whether the needles are in the middle of the holes on the throat plate respectively.



### 5.8 Front and rear positions of needle and looper

- (1) Turn the handwheel, until the looper tip ④ moves to the center of the left needle ⑤.
- (2) Loosen the screw ③, and move the looper holder to keep the distance between the back side of the left needle ⑤ and the looper tip to be from 0.2mm to 0.3mm, then tighten the screw ③.



Note: After tightening the screw ③, the looper position in the front/rear direction may shift. Check its position after tightening.

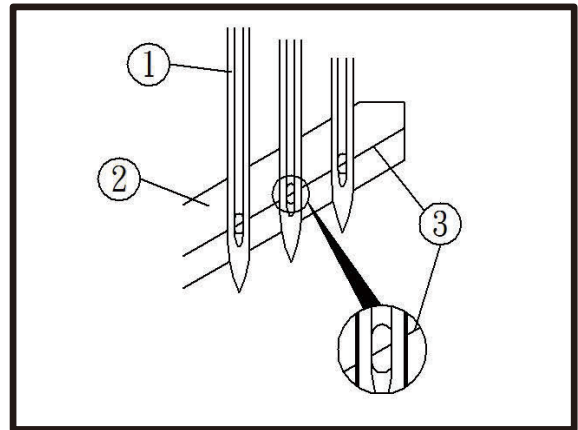


## 5. Adjusting device

### 5.9 Needle and needle guard (rear)

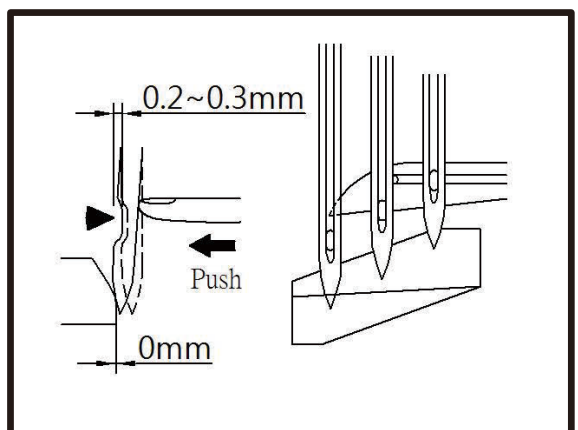
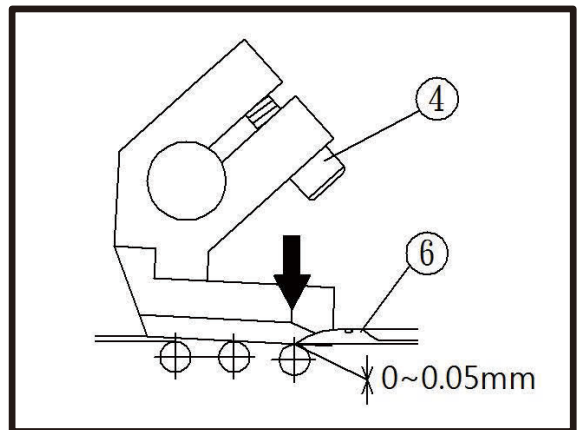
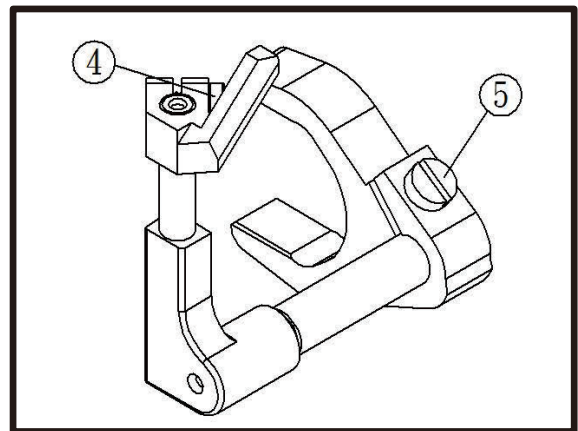
Height of the needle guard (rear)

- (1) Turn the handwheel, until the needle reaches its lowest point.
- (2) Loosen the screw ④.
- (3) Adjust the needle guard (rear) ① to align the line behind the needle guard ② with the center of the thread hole for the rightmost needle.
- (4) Tighten the screw ④ temporarily.



☆ The positions in front/rear direction and angle between needle guard (rear) and needle.

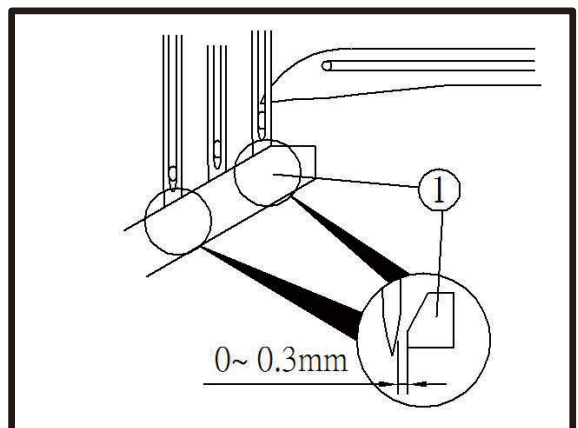
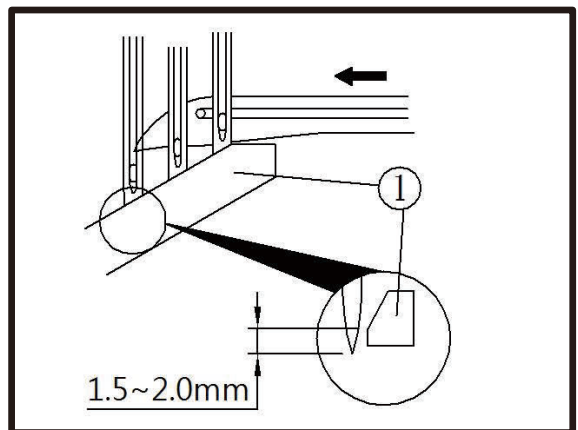
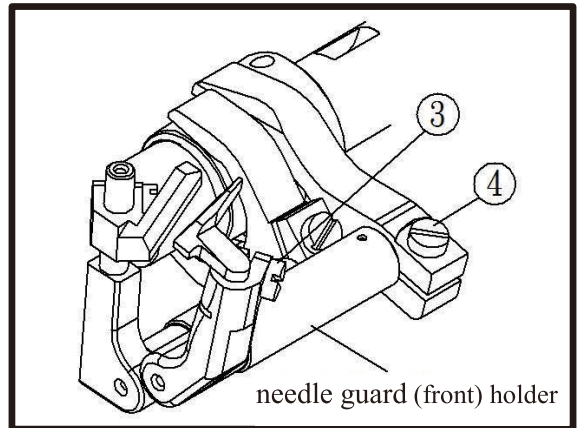
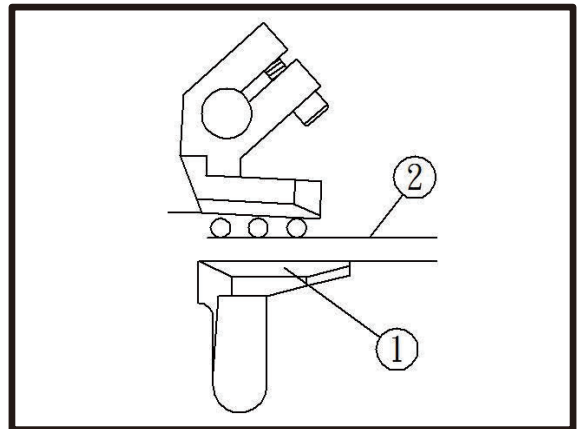
- (1) Loosen the screws ④ and ⑤.
- (2) When the looper ⑥ moves from right to left and the tip of the looper ⑥ pass behind each needle, the needle guard (rear) ② pushes the right needle to keep the gap between them to be 0~0.05mm.
- (3) Turn the handwheel. When the tip of the looper ⑥ reaches the center of the left needle, confirm whether the gap between left needle and needle guard is 0~0.05mm. The gap between the looper and left needle is about 0.2~0.3mm.
- (4) After adjustment, tighten screws ④ and ⑤.



## 5. Adjusting device

### 5.10 Needle and needle guard (front)

- (1) When the looper tip enters the center of the right needle, loosen the screw ③. View from the top, place the needle guard (front) ① parallel to the needle alignment line ②, then tighten the screw ③ temporarily.
- (2) Turn the handwheel clockwise, until the looper tip enters the center of the left needle.
- (3) Loosen the screw ③ to adjust the needle guard (front) ①, so that the needle tip is at 1.5~2.0mm below the cutting edge of the needle guard (front) ①.
- (4) Tighten the screw ③.
- (5) Loosen the screw ③ and ④, so that the gap between the needle guard (front) ① and the right and left needle is 0.3~0.4mm.
- (6) Tighten the screws ③ and ④.

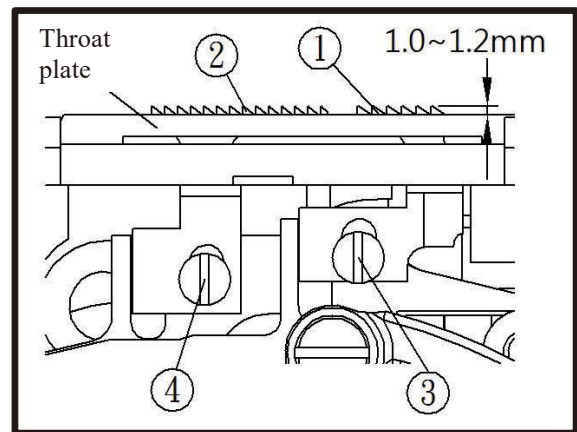




## 5. Adjusting device

### 5. Feed dog height

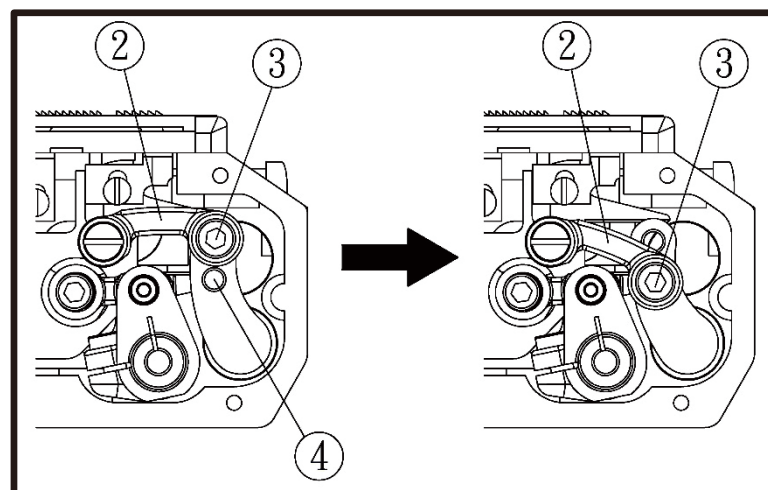
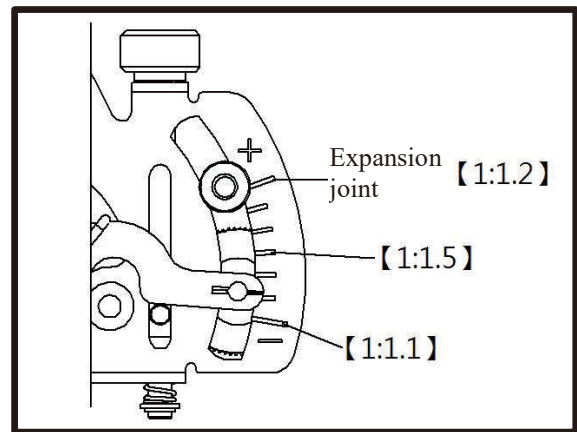
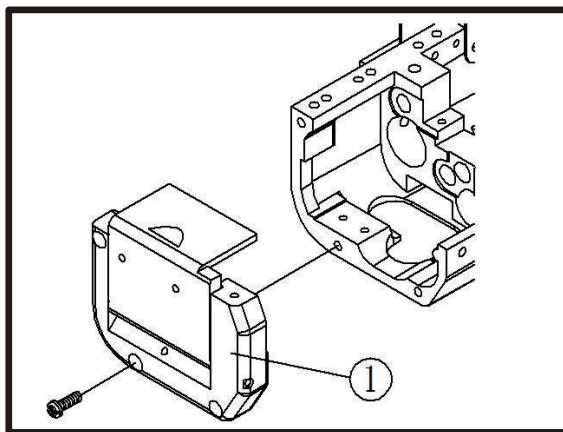
When the feed dog moves to the highest position, the distance of the differential feed dog ① and the main feed dog ② from the stitch plate is 1.0~1.2mm. They are also parallel to the stitch plate. The screws ③, ④ can be loosened for adjustment.



### 5.12 Variation of differential ratio

#### 5.12.1 Differential ratio 1:1.1 - 1:2

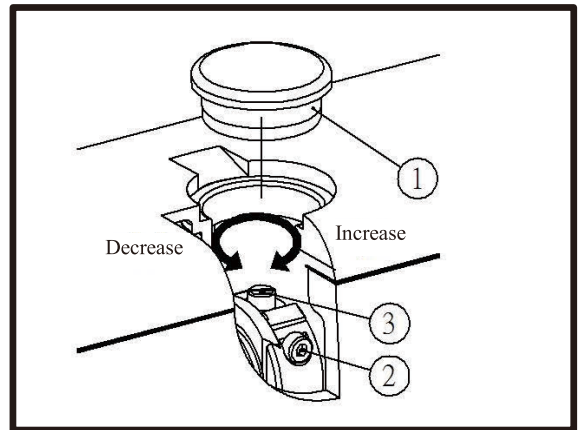
- (1) Remove the side cover ① (four screw holes).
- (2) Loosen the screw ③ of the differential feed connecting lever ②.
- (3) Use screw ③ to fix differential feed connecting lever ② in the hole ④.



## 5. Adjusting device

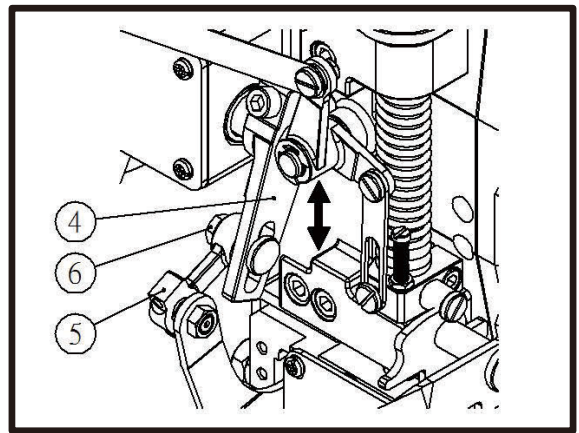
### 5.13 Puller feed (puller mechanism)

- (1) Remove the top cover sealing plug ①.
- (2) Turn the handwheel until the screw ② of puller regulator is on top. Loosen the screw ②.
- (3) Turn the handwheel until the adjusting screw ③ is on top.
- (4) Turn the adjusting screw ③ to adjust feed.
  - Turn clockwise to decrease feed.
  - Turn counterclockwise to increase feed.
- (5) Tighten the screw ② with a torque of 2.5N-m.



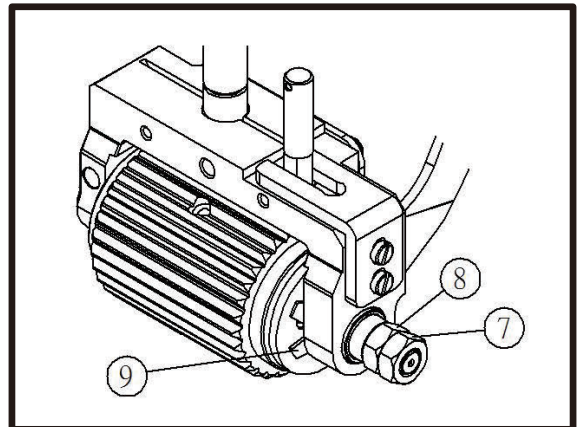
During fine adjustment, please loosen the screw ⑥ on the swing arm ④ and upper feed roller lever rod ⑤. Move the screw ⑥ up and down for adjustment.

- Move up to decrease feed.
- Move down to increase feed.



### 5.14 Puller tension force (puller mechanism)

- (1) Loosen the screw ⑦.
- (2) Fix the puller and turn the adjusting nut ⑧ to adjust force of puller tension spring ⑨.
  - Turn clockwise to increase tension force.
  - Turn counterclockwise to decrease tension force.
- (3) Tighten the screw ⑦.



## 6. Fabric cutting mechanism

**! Warning !**

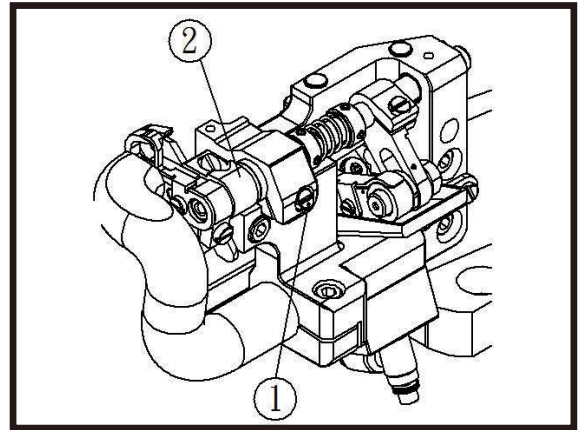
Before adjustment, please ensure that the power switch is turned off and whether the machine has stopped.

### 6.1 Adjusting trimming position of fabric

Loosen the screw ① of lower knife holder.

- (1) Move the lower knife holder ② to left or right.
- (2) Tighten the screw ① with a torque of 1.5N-m to 2N-m (15 kgf to 20 kgf)

Note: After changing the trimming position of fabric, please refer to “6.2 Adjusting suction pipe (front)” and “6.3 Adjusting suction pipe cover”.

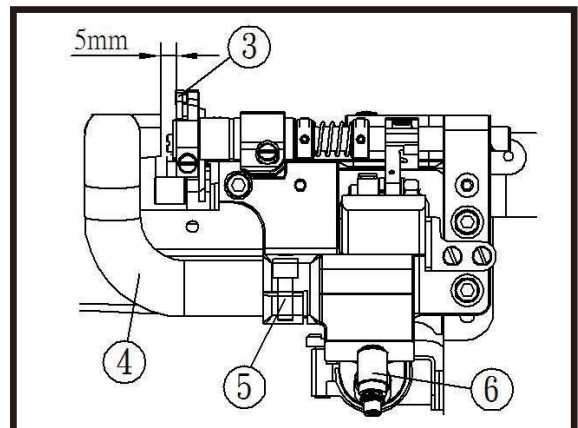


### 6.2 Adjusting suction pipe (front)

Keep the suction inlet of suction pipe (front) ④ away from the left side of chip guide ring ③ to about 5mm.

Loosen the screw ⑤ to adjust the position of suction pipe (front) ④ or remove it.

Use the speed regulating valve controller ⑥ to adjust the suction force. The guideline is to suck in waste fabric smoothly with minimal pressure.



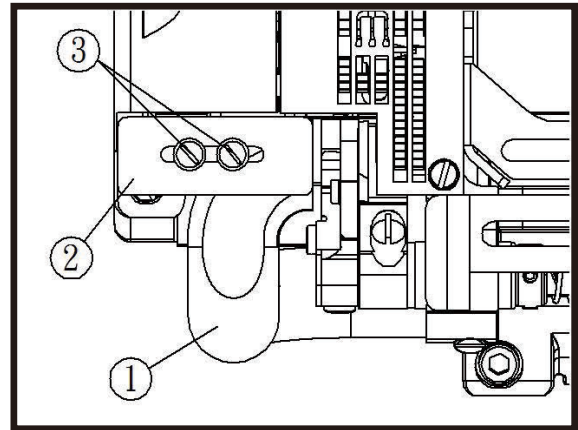
Note: If the screw ⑤ is tightened too much, it may be hard to adjust the suction pipe ④.

## 6. Fabric cutting mechanism

### 6.3 Adjusting suction pipe cover

After changing the position of suction pipe ①, adjust the position of suction pipe cover ②.

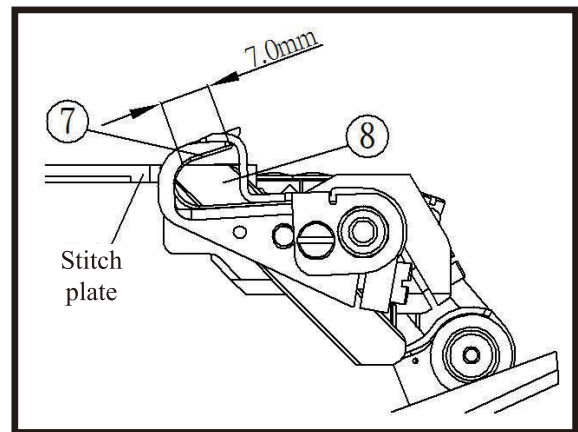
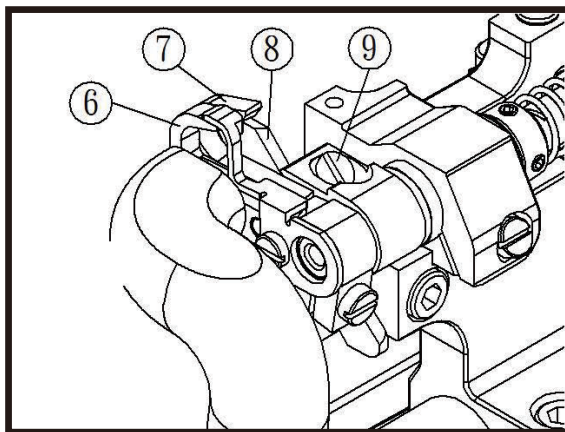
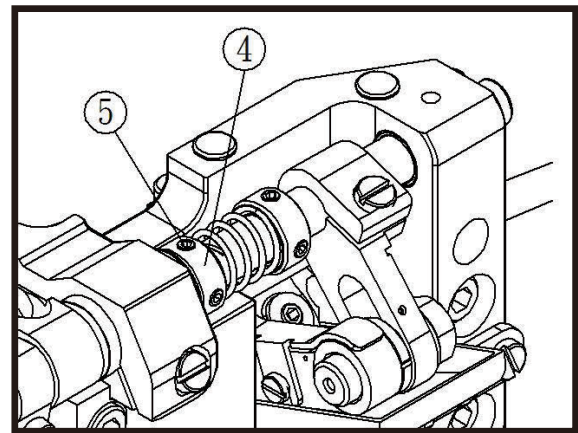
- (1) Loosen the screws ③ on the suction pipe cover ②.
- (2) Align the right side of suction pipe cover ② with the inlet of suction pipe (front) ①.
- (3) Tighten the screw ③.



### 6.4 Replacing lower knife

Remove the lower knife:

- (1) Loosen the screw ⑤ of the collar (left) ④.
- (2) Move the upper knife wolder ⑥ to left to keep a gap between upper knife ⑦ and lower cutter ⑧.
- (3) Tighten the screw ⑤.
- (4) Loosen the screw ⑨ which fixes the lower knife ⑧, then pull out the lower knife ⑧ downwards.



Install the lower cutter:

- (1) Align the blade of lower knife ⑧ with the top of stitch plate, then tighten the screw ⑨.
- (2) Loosen the screw ⑤, let the upper knife ⑦ and lower knife ⑧ contact each other with the help of spring force.
- (3) Put a thread between the upper knife ⑦ and lower knife ⑧, then turn the handwheel to check the sharpness of blades.
- (4) Adjust the tip of the upper knife ⑦ (on the bottom of blade) to 7.0mm from the top blade of lower knife ⑧, then tighten the screw ⑤.
- (5) Check if the thread is cut smoothly.



## 6. Fabric cutting mechanism

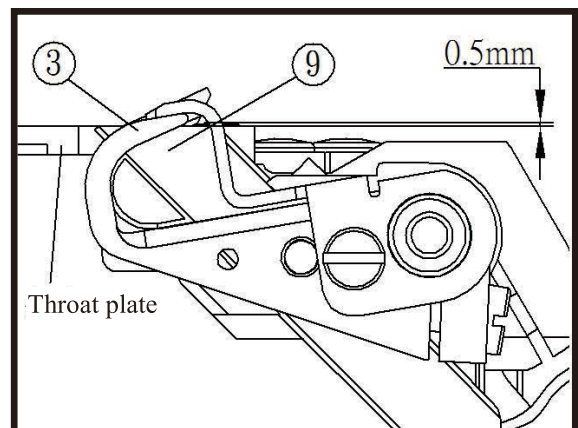
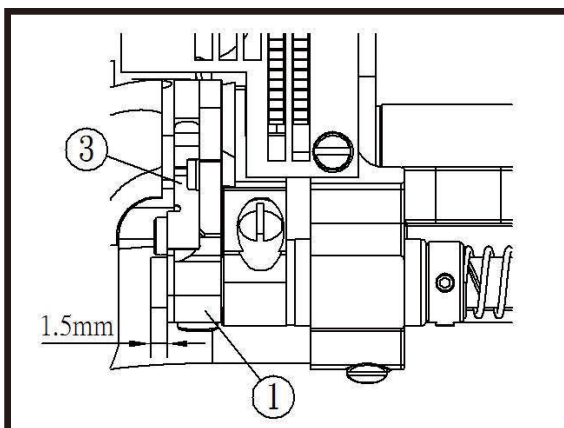
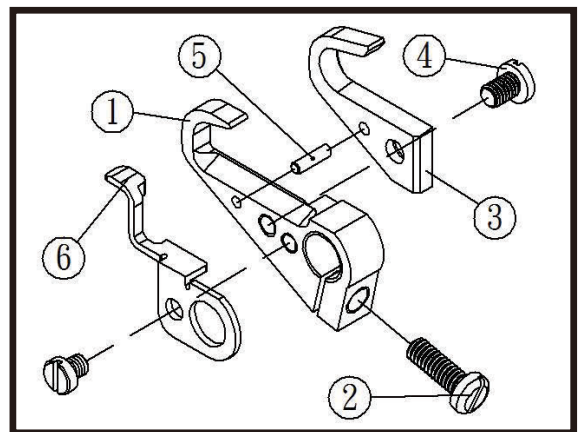
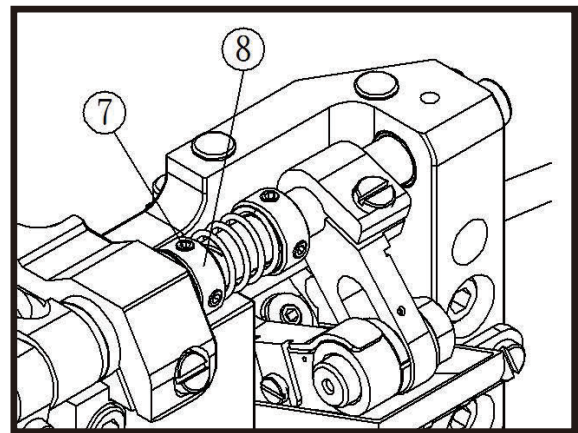
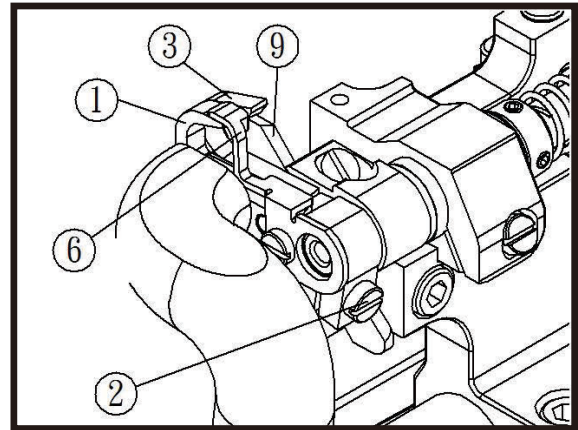
### 6.5 Replacing upper knife

Remove the upper knife:

- (1) Loosen the screw ② of the upper knife holder ①.
- (2) Loosen the upper knife carrier ①.
- (3) Loosen the screw ④ of the upper knife ③.
- (4) Remove the upper knife ③.

Install the upper knife:

- (1) Install the upper knife ③ to the pin of upper knife carrier ① and tighten the screw ④.
- (2) It is fixed at the left end of the chip guide ring ⑥ of upper knife carrier ① which must be 1.5mm away from the left end of upper knife spindle ⑩.
- (3) Turn the handwheel to lower the upper knife ③ to the lowest position. Move the upper knife carrier ① to locate the tip of upper knife 0.5mm away from the top of lower knife blade, then tighten the screw ②.
- (4) Loosen the screw ⑧ on the collar (left) ⑦, let the upper knife ③ and lower knife ⑨ contact each other with the push force of spring.
- (5) Put a thread between the upper knife ③ and lower knife ⑨, then turn the handwheel to check the sharpness of blades.
- (6) Adjust the tip of upper knife ③ (on the bottom of blade) to 7.0mm from the top blade of lower knife ⑨, then tighten the screw ⑧.
- (7) Check if the thread is cut smoothly.

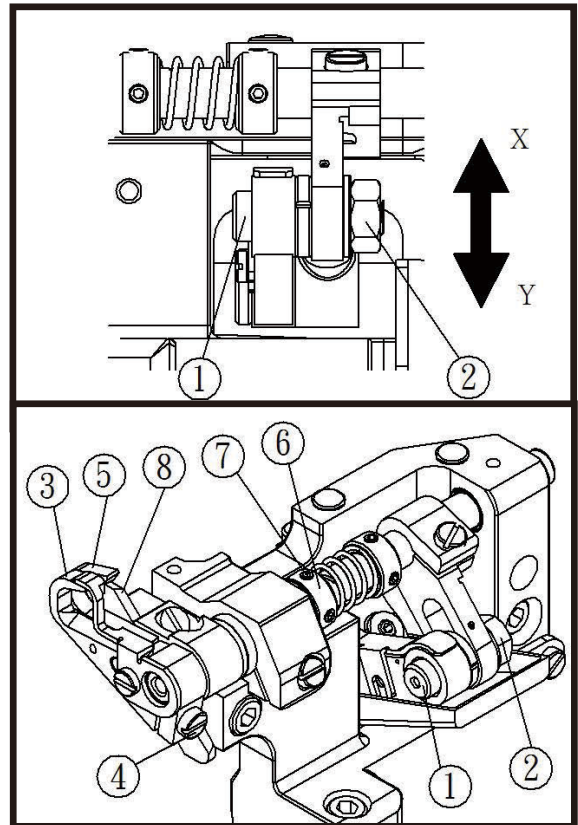


## 6. Fabric cutting mechanism

### 6.6 Adjusting stroke of upper knife

Adjust the stroke of the upper knife to 3.0mm to 6.5mm. It is adjusted to 4.0mm at time of shipping. Adjustment steps as below:

- (1) Loosen the nut ② of the upper knife regulator pin ① for adjustment.
  - Move along Y direction to reduce stroke.
  - Move along X direction to increase stroke.
- (2) Tighten the nut ②.
- (3) Loosen the screw ④ of the upper knife carrier ③, then tighten it slightly.
- (4) Turn the handwheel to lower the upper knife ⑤ to the lowest position. Move the upper knife carrier ③ to locate the tip of upper knife 0.5mm away from the top of lower knife blade, then tighten the screw ④.
- (5) Loosen the screw ⑦ on the collar (left) ⑥, let the upper knife ⑤ and lower knife ⑧ contact each other with the help of spring push force.
- (6) Put a thread between the upper knife ⑤ and lower knife ⑧, then turn the handwheel to check the sharpness of blades
- (7) Adjust the tip of upper knife ⑤ (on the bottom of blade) to 7.0mm from the top blade of lower knife ⑧, then tighten the screw ⑦.
- (8) Check if the thread is cut smoothly.



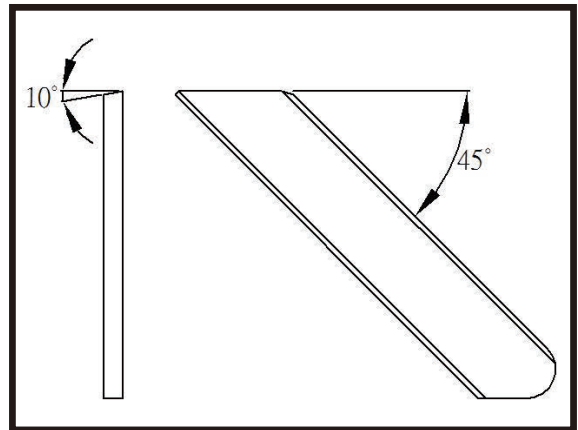
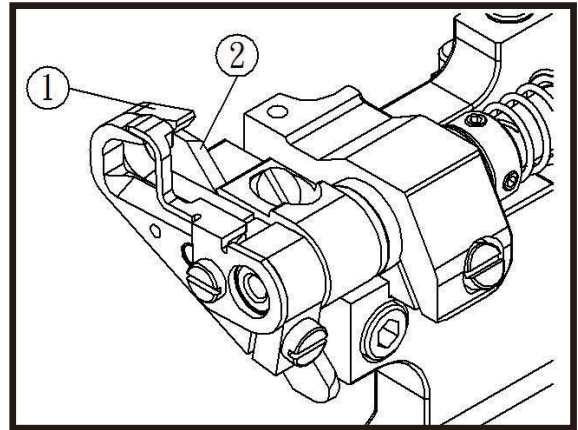
## 6. Fabric cutting mechanism

### 6.7 Grinding knife

If knife is severely worn out, please regrind lower knife ②.

Prepare cool water to keep cool and regrind lower knife

Readjust correct angle as shown in the figure.



## 7. Specification

|                              |  |
|------------------------------|--|
| Model                        | MU 721   |
| Description                  | High-speed 3-needle 5-thread cylinder interlock machine with left trimming mechanism   |
| Size                         | 470mm (L) x 220mm (W) x 415mm(H)   |
| Workspace                    | Circumference 340mm  |
| Weight                       | 41.5 Kg  |
| Application                  | Hemming of light-duty knit fabric  |
| Sewing speed                 | Max. 5000rpm (intermittent operation period)   |
| Stitch length                | 1.4mm-3.6mm<br>7-18 stiches per inch; 8-21 stiches per 30mm  |
| Needle type                  | UY x 128GAS #10-#14 (Standard: #10)  |
| Seam width                   | Three-needle: 4.8mm, 5.6mm, 6.4mm (Two-needle: 3.2mm, 4.0mm)   |
| Needle stroke                | 31mm   |
| Knife loading stroke         | 3.0mm-6.5mm  |
| Waste suction system         | Compression air system   |
| Presser foot lifter          | Stich length 5.6mm, with upper decorative thread: 5.5mm, without upper decorative thread: 7.0mm  |
| Feed method                  | Adjusting screw (fine-adjustable)  |
| Differential ratio           | Standard: 1:0.9 - 1:1.4<br>1:0.9 - 1:1.8 (Stich length for normal differential is maximal 2.5mm or less)<br>1:0.6 - 1:1.1 (Adjusted by changing connection position of feed lever) |
| Differential feed adjustment | Fine adjustment with regulator<br>Adjustment is possible through moving external control lever, even during operation.   |
| Lubrication                  | Automatic lubrication by oil pump  |
| Lubricant                    | OIL No.22  |
| Oil canister capacity        | 800 CC   |
| Installation style           | Tabletop   |