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1. Brief instruction

This machine is an industrial-type compound feed cylinder sewing machine, featuring the alternating high-pressure foot settings, easy to operate and adjust, the sewing stitches look beautiful, high efficiency and reliable performance. This machine can sew lightweight and thin to medium-thick materials. The materials used for stitching include textiles and leather (both natural and artificially manufactured). It can be used in industries such as garment manufacturing, footwear production, household goods and automotive interior components.

This machine is only permitted to be operated by personnel who have received specialized training and are qualified to do so, in accordance with the operating instructions provided in the manual. Any damage to the machine, financial losses, or injuries resulting from non-compliance with the operating instructions shall be the responsibility of the person or entity operating the machine. Please wear protective eyewear when operating the machine, the protective eyewear must be provided by the operator themselves.

The installation and operation of this machine should be conducted in a dry and clean environment. For the use of this machine in environments that are not dry and clean, measures should be taken to prevent moisture and dust. The machine should be regularly maintained, cleaned, and any debris should be removed. This machine is only suitable for processing dry sewing materials, the thickness of the sewing material does not exceed 10 mm after it has been pressed down by the presser foot, and the sewing materials should not contain any hard objects.

CAUTION: The main power supply of the machine must be turned off when performing the following operations.

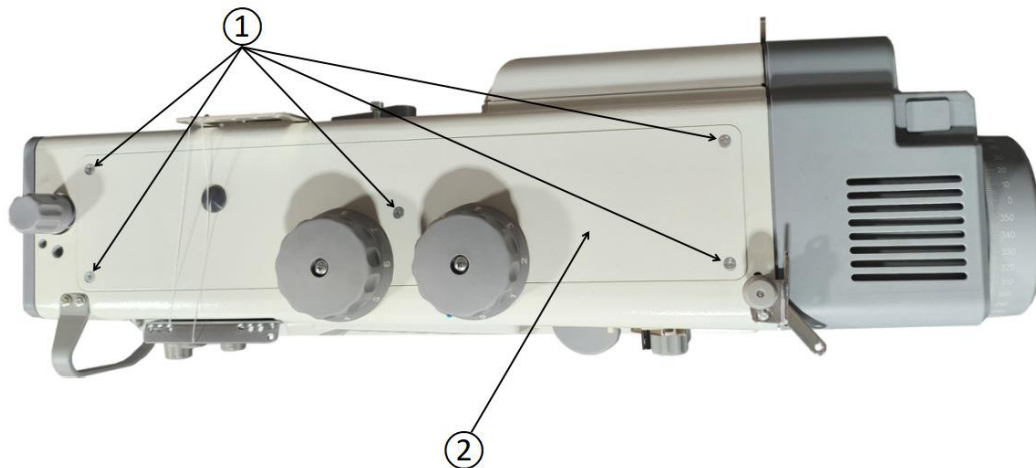
- Replacing the needle or other sewing tools
- Go away the working position
- Carry out maintenance and repairs
- Threading

2. Working basis

The machine's setting positions affect each other, always follow the setup steps.

To perform many setup tasks, you must first remove the cover plate to access the relevant components.

2. 1 Assembling and disassembling the top cover plate



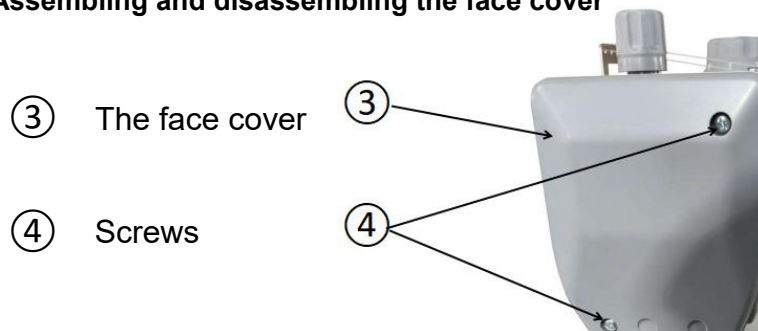
① Screws

② The top cover plate

Steps are as follows:

- (1) Wrench out the screw ① and remove the top cover plate ②.
- (2) Maintenance completed, place the top cover plate ② on the machine housing and tighten the screws ①.

2. 2 Assembling and disassembling the face cover



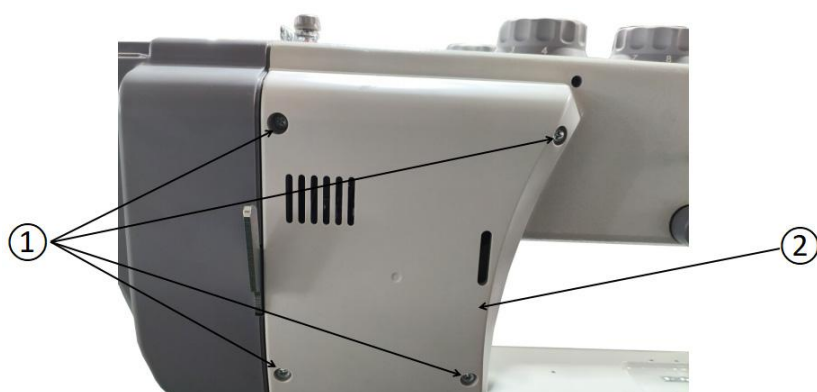
③ The face cover

④ Screws

Steps are as follows:

- (1) Wrench out the screw ④ and remove the face cover ③.
- (2) Maintenance completed, place the face cover ③ against the housing and tighten the screw ④.

2. 3 Assembling and disassembling the back plate



① Screws

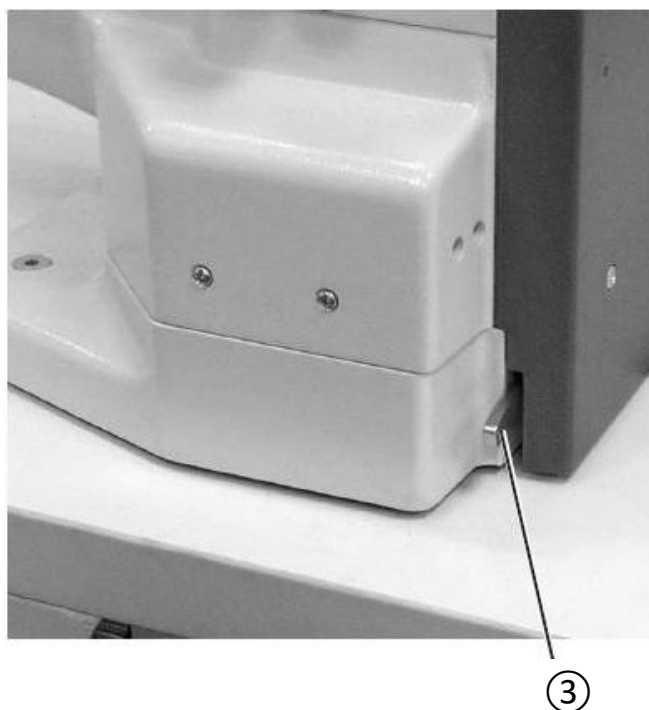
② The back plate

Steps are as follows:

- (1) Wrench out the screw ① and remove the back plate ②.
- (2) Maintenance completed, place the back plate ② against the housing and tighten the screw ①.

2. 4 Tilting the machine head

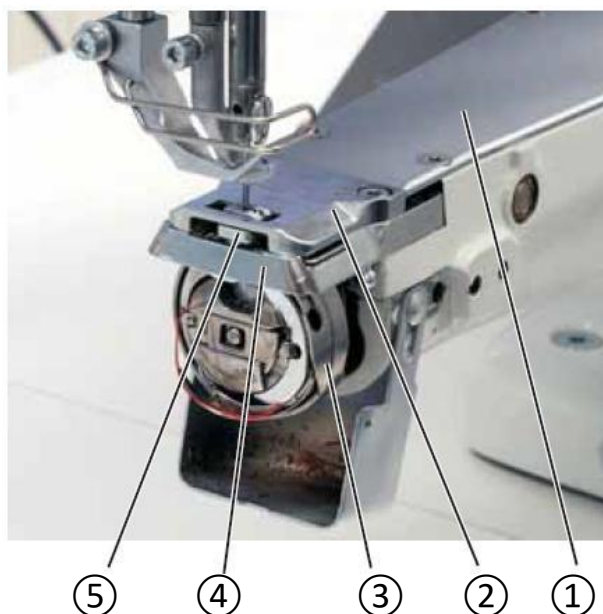
In order to access the components on the underside of the machine, you must first tilt the machine head.



Steps are as follows:

- (1) Pull up the stopper claw ③, tilt the machine backward to its limited position.
- (2) Maintenance completed, pull up the stopper claw ③, pull the head back, reset the head, loosen the stopper claw ③.

2. 5 Assembling and disassembling the cover plate, the needle plate, the feed dog and the needle plate seat

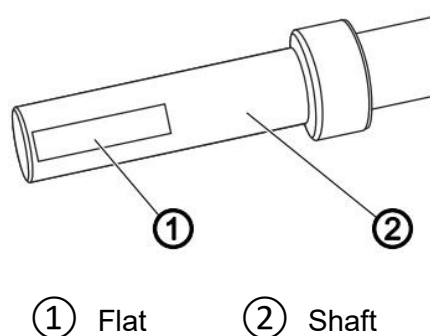


- | | | |
|---------------------|----------------|--------|
| ① Cover plate | ② Needle plate | ③ Hook |
| ④ Needle plate seat | ⑤ Feed dog | |

Steps are as follows:

- (1) Unscrew the mounting screws of the cover plate ①. Unscrew the mounting screws of the needle plate ②.
- (2) Remove the cover plate ①, the needle plate ②, this will allow you to remove the needle plate seat ④ and the mounting screws of the feed dog ⑤.
- (3) Remove the needle plate seat ④, the feed dog ⑤, easy to adjust the hook ③.
- (4) Maintenance completed, reset all the parts that have been removed.

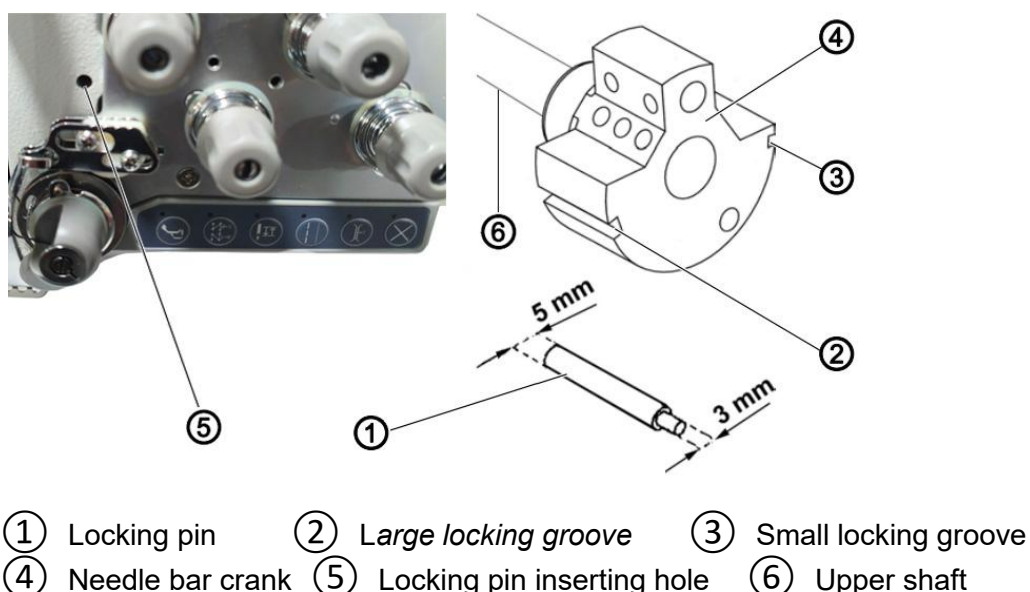
3. Flats on shafts



Some shafts have flat surfaces at the points where the components are screwed on. This stabilizes the connection and makes adjusting easier.

Refer to the rotation direction of the shaft during machine operation, the first screw in the direction of rotation is screwed onto the surface. Always ensure that the screw faces are completely flush with the surface.

4. Locking the machine in place

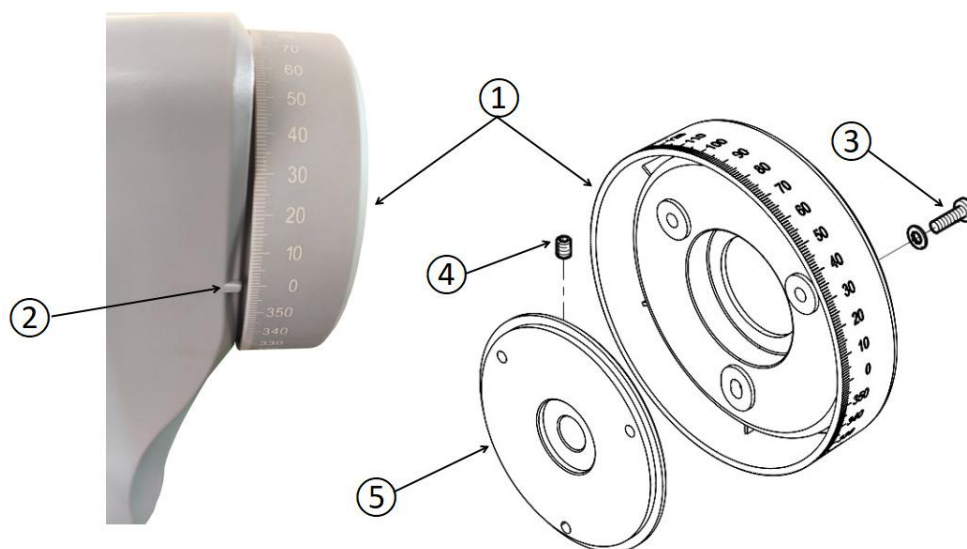


For some adjustments, the machine must be locked in place. The locking pin ① is inserted into a slot on the needle bar crank ④, locking the upper shaft ⑥.

Steps are as follows:

- (1) Turn the handwheel until the groove on the needle bar crank ④ aligns with the locking pin inserting hole ⑤ on the machine casting.
 - (2) When the small end of the locking pin ① is inserted into the small locking groove ③ of the needle bar crank ④, with the handwheel in zero position, set the top dead center of the needle bar.
 - (3) When the large end of the locking pin ① is inserted into the large locking groove ② of the needle bar crank ④, the handwheel is at 200-205°, set the hook claw threading distance and the needle bar height.
 - (4) Maintenance completed, pull the locking pin ① out.
-

5. Adjusting the handwheel into position



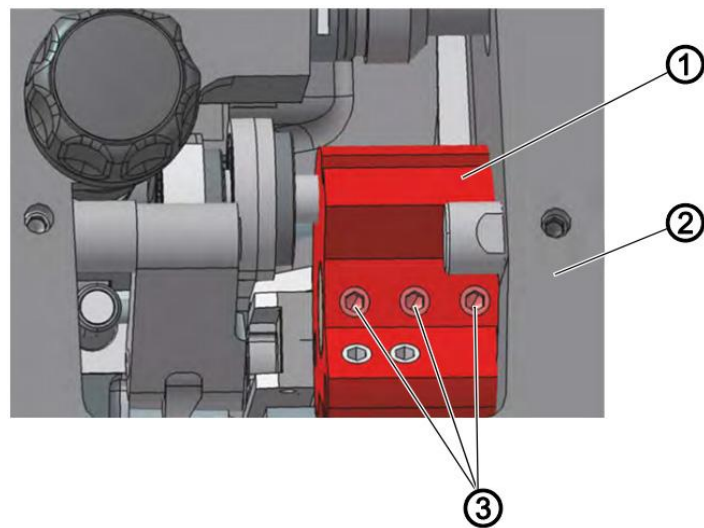
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|-------------|----------------------------|---------|
| ① Handwheel | ② Marking | ③ Screw |
| ④ Screw | ⑤ Handwheel mounting plate | |

When the small end of the locking pin is inserted into the small locking groove of the needle bar crank, the 0-degree line on the handwheel ① should align precisely with the marking ② on the cover.

Steps are as follows:

- (1) Insert the small end of the locking pin into the small locking groove of the needle bar crank.
- (2) Wrench out the screw ③, remove the handwheel ①.
- (3) Loosen the screw ④, position the handwheel ① against the handwheel mounting plate ⑤, install the screw ③ simultaneously and pre-tighten it.
- (4) Turn the handwheel ① until the 0-degree line aligns with the marking ② on the cover.
- (5) Wrench out the screw ③ (the handwheel ① must remain stationary), remove the handwheel ①.
- (6) Tighten the screw ④.
- (7) Position the handwheel ① against the handwheel mounting plate ⑤, keep the 0-degree line aligns with the marking ② on the cover, tighten the screw ③.
- (8) Pull out the locking pin from the casting.

6. Positioning the needle bar crank



- ① Needle bar crank ② Machine head ③ Screws

Steps are as follows:

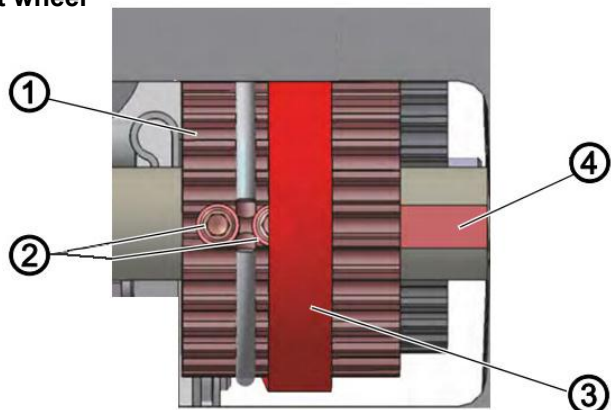
- (1) Loosen the screws ③, move the needle bar crank ① to the right until it comes into contact with the machine head ②.
- (2) The screws ③ are fully secured onto the flat surface of the upper shaft and must be tightened.

7. Positioning the toothed belt wheel

After moving the toothed belt wheel, it is essential to check the position of the other toothed belt wheel. The toothed belt should not protrude beyond the edge of the toothed belt wheel. Switch off the machine before you position the toothed belt wheel.

7. 1 Positioning the upper toothed belt wheel

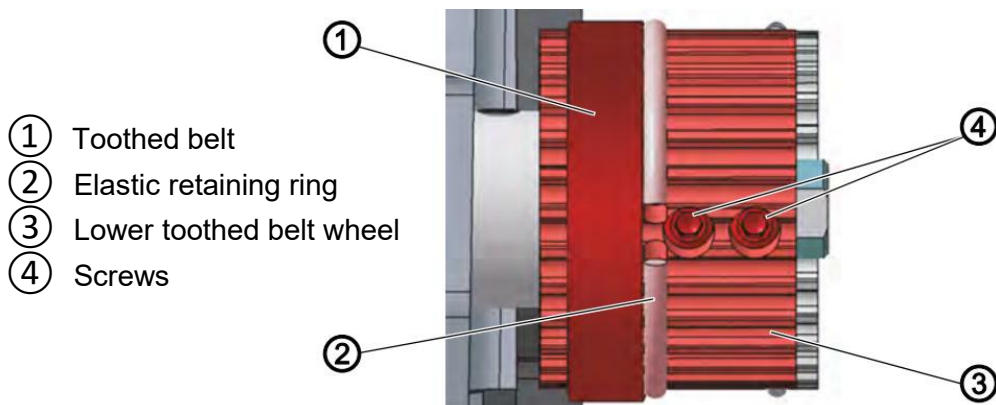
- ① Upper toothed belt wheel
② Screws
③ Toothed belt
④ Flat of upper shaft



Steps are as follows:

- (1) Disassemble the upper cover plate.
- (2) Use a screwdriver to move the toothed belt ③ sideways until you can reach the screw ②.
- (3) Loosen the screws ②.
- (4) Turn the upper toothed belt wheel ① until the screws ② are fully positioned on the flat surface of the upper shaft ④.
- (5) Tighten the screws ②.
- (6) Use a screwdriver to re-position the toothed belt ③.

7. 2 Positioning the lower toothed belt wheel

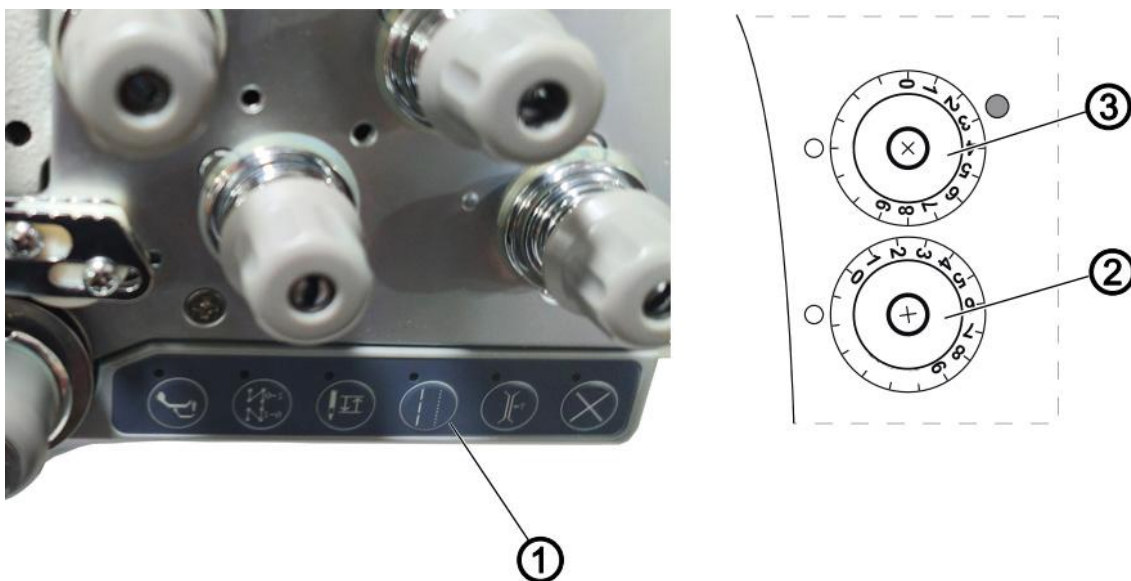


Steps are as follows:

- (1) Tilt the machine head.
- (2) Loosen the screws ④.
- (3) Turn the lower toothed belt wheel ③ until the screws ④ are fully positioned on the flat surface of the lower shaft.
- (4) Move the lower toothed belt wheel ③ until the toothed belt ① approach the elastic retaining ring ② closely, but it should not cause the toothed belt to be subjected to compression.
- (5) Tighten the screws ④.

8. Setting the stitch length adjusting knob

Switch off the machine before you adjust the stitch length adjusting wheel. Turn the adjusting knob carefully and stop as soon as you feel a slight resistance. If you turn it excessively, parts of the driven mechanism in the adjusting knob may bend or get stuck.



The two adjusting knobs on the machine column are used to determine the length of the stitch.

- Upper stitch length adjusting knob③: large stitch length
- Lower stitch length adjusting knob②: small stitch length

It is not possible to set a larger stitch length on the lower adjusting knob than on the upper adjusting knob.

It is not possible to set a smaller stitch length on the upper adjusting knob than on the lower adjusting knob.

To switch over between the stitch lengths: Press the button for the stitch length ① on the machine head.

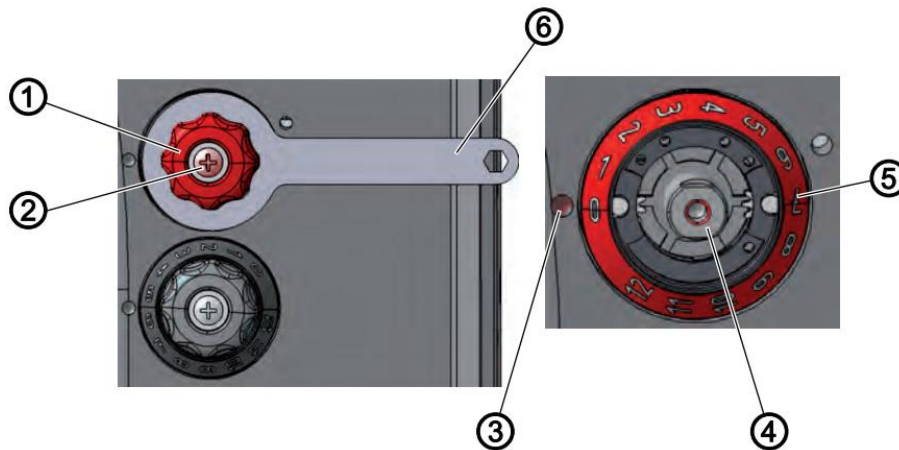
When the upper adjusting knob ③ is activated, the button ① lights up.

Upon switching on the machine, the stitch length adjusting knob activated most recently is always active.

Adjust the upper stitch length adjusting knob first before adjusting the lower stitch length adjusting knob.

8. 1 Setting the upper stitch length adjusting knob

The upper stitch length adjusting knob is set to the maximum stitch length, the length of the stitched seam is determined by the sewing components installed.



- | | | |
|--------------------------------------|---------|--------------------|
| ① Upper stitch length adjusting knob | ② Screw | ③ Calibration mark |
| ④ Adjusting shaft | ⑤ Scale | ⑥ Wrench |

Steps are as follows:

- (1) Unthread the needle thread, switch on the machine.
- (2) Press the stitch length switch over button  on the machine head.
The button lights up.
The machine switches over to the upper stitch length adjusting knob ①.
- (3) Use the wrench ⑥ to secure the upper stitch length adjusting knob ①, wrench out the screw ②.
- (4) Remove the upper stitch length adjusting knob ① from the adjusting shaft ④.
- (5) Carefully turn the adjusting shaft ④ with a 10 mm open-end wrench in order to set the stitch length.

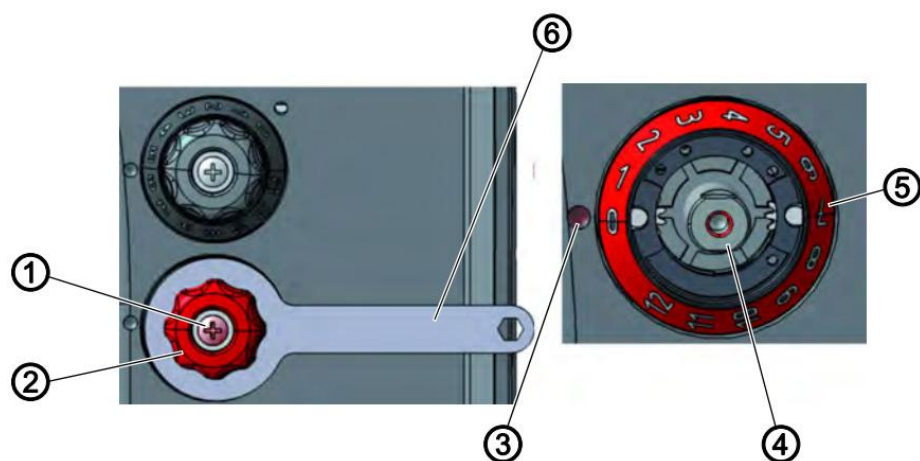
- To set the smaller stitch length: turn clockwise
- To set the larger stitch length: turn counterclockwise

- (6) Perform a sewing test with a sheet of paper and readjust if necessary.

- (7) Turn the scale ⑤, align the digital setting for the length of the stitch line with the calibration mark ③.
- (8) Insert the upper stitch length adjusting knob ① onto the adjusting shaft ④ and secure it with the wrench ⑥.
- (9) Tighten the screw ②.

8. 2 Setting the lower stitch length adjusting knob

The lower stitch length adjusting knob can be turned only up to the length set by the upper stitch length adjusting knob.



- | | | |
|-------------------|--------------------------------------|--------------------|
| ① Screw | ② Lower stitch length adjusting knob | ③ Calibration mark |
| ④ Adjusting shaft | ⑤ Scale | ⑥ Wrench |

Steps are as follows:

- (1) Unthread the needle thread, switch on the machine.

- (2) Press the stitch length switch over button  on the machine head.

The button turns off.

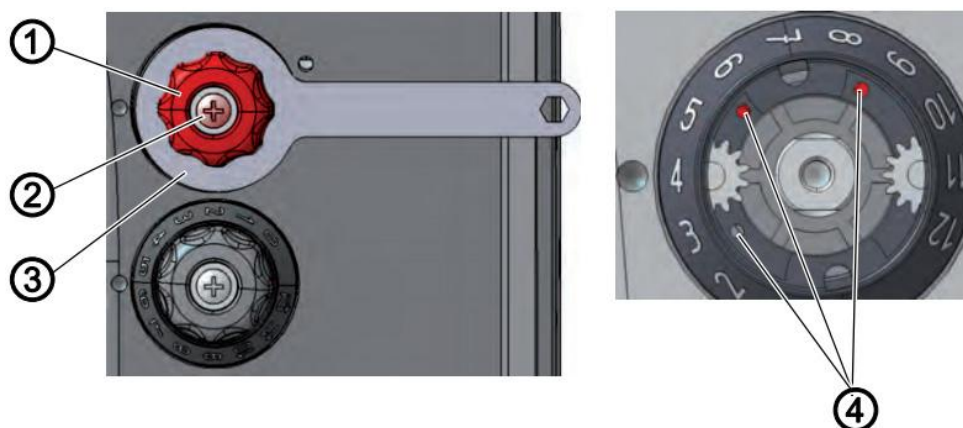
The machine switches over to the lower stitch length adjusting knob ②.

- (3) Use the wrench ⑥ to secure the lower stitch length adjusting knob ②, wrench out the screw ①.
- (4) Remove the lower stitch length adjusting knob ② from the adjusting shaft ④.
- (5) Carefully turn the adjusting shaft ④ with a 10 mm open-end wrench in order to set the stitch length.

- To set the smaller stitch length: turn counterclockwise
 - To set the larger stitch length: turn clockwise
- (6) Perform a sewing test with a sheet of paper and readjust if necessary.
 - (7) Turn the scale ⑤, align the digital setting for the length of the stitch line with the calibration mark ③.
 - (8) Insert the lower stitch length adjusting knob ② onto the adjusting shaft ④ and secure it with the wrench ⑥.
 - (9) Tighten the screw ①.

8. 3 Setting the stitch length adjusting limit

If not all of the stitch lengths are available during sewing operation, a limit can be placed on the maximum stitch length that can be set. 12, 9, or 6 mm can be selected as the maximum stitch length. The appropriate needle plate must be selected for the selected maximum stitch length. The needle plate groove must be large enough to prevent the feed dog from hitting the edges of the needle plate at the front and rear dead center.



- | | |
|--------------------------------------|--------------------|
| ① Upper stitch length adjusting knob | ② Screw |
| ③ Wrench | ④ Positioning hole |

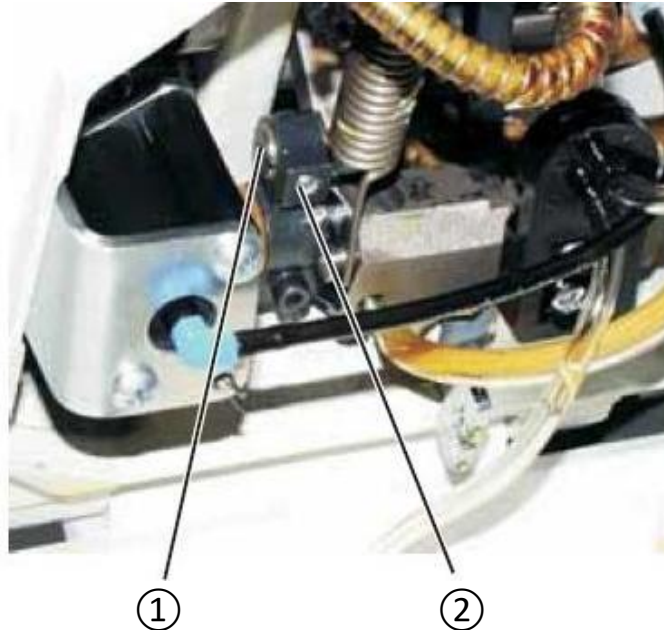
The upper stitch length adjusting knob can only be turned up to the set maximum stitch length.

Steps are as follows:

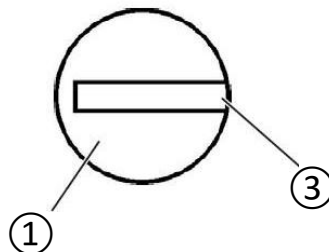
- (1) Position the upper stitch length adjusting knob ① to 0.
- (2) Hold the upper stitch length adjusting knob ① in place using the wrench ③, wrench out the screw ②.
- (3) Remove the upper stitch length adjusting knob ①.
- (4) Wrench out the screw from one of the positioning hole ④, screw this bolt into the numbered positioning hole that corresponds to the maximum stitch length required by the machine.
- (5) Turn the digital scale so that the 0 aligns with the calibration mark.
- (6) Insert the upper stitch length adjusting knob ① onto the adjusting shaft.
- (7) Use the wrench ③ to secure the upper stitch length adjusting knob ①, tighten the screw ②.

8. 4 Setting the eccentric pin

The forward and backward stitches must be the same length.
As a test, sew a seam forward, stop, and sew a seam backward.
The punctures of the forward and backward stitches have to lie within one another.



- ① Eccentric pin ② Screw ③ Eccentric pin opening position



Steps are as follows:

- (1) Tilt the machine head, loosen the screw ②.
- (2) Rotate the eccentric pin ① using a screwdriver so that its opening position ③ aligns with the screw ②.

If the forward and backward stitches are not the same length:

Turn clockwise: the forward stitch becomes larger, the backward stitch smaller.

Turn counterclockwise: the forward stitch becomes smaller, the backward stitch larger.

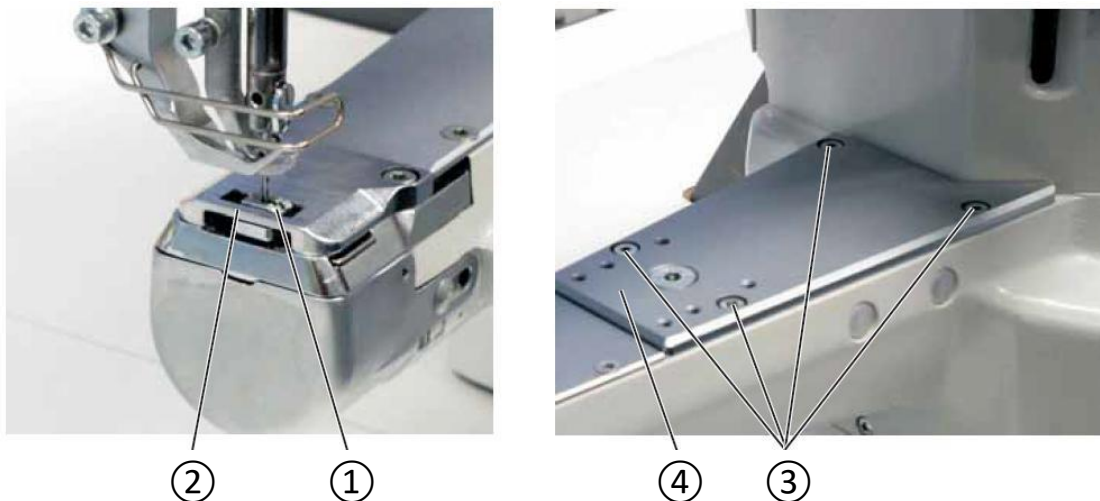
- (3) Maintenance completed, tighten the screw ②.

9. Feed dog

The position and the movement of the feed dog and needle bar have to be coordinated such that the needle pierces exactly in the center of the needle hole of the feed dog.

If the stitch length is 0, the feed dog is exactly in the center of the needle plate groove, both sideways and in the sewing direction.

9. 1 The position of the feed dog



① Feed dog ② Needle plate ③ Screws ④ Cover plate

Steps are as follows:

- (1) Switch off the machine, set the upper stitch length adjusting knob to 0.
- (2) Loosen the screws ③, move the cover plate ④, the gap between the sides of the feed dog ① and the needle plate ② slot is relatively close, and the distance between the front and back ends of the feed dog ① and the needle plate ② slot is also close.
- (3) Maintenance completed, tighten the screws ③.

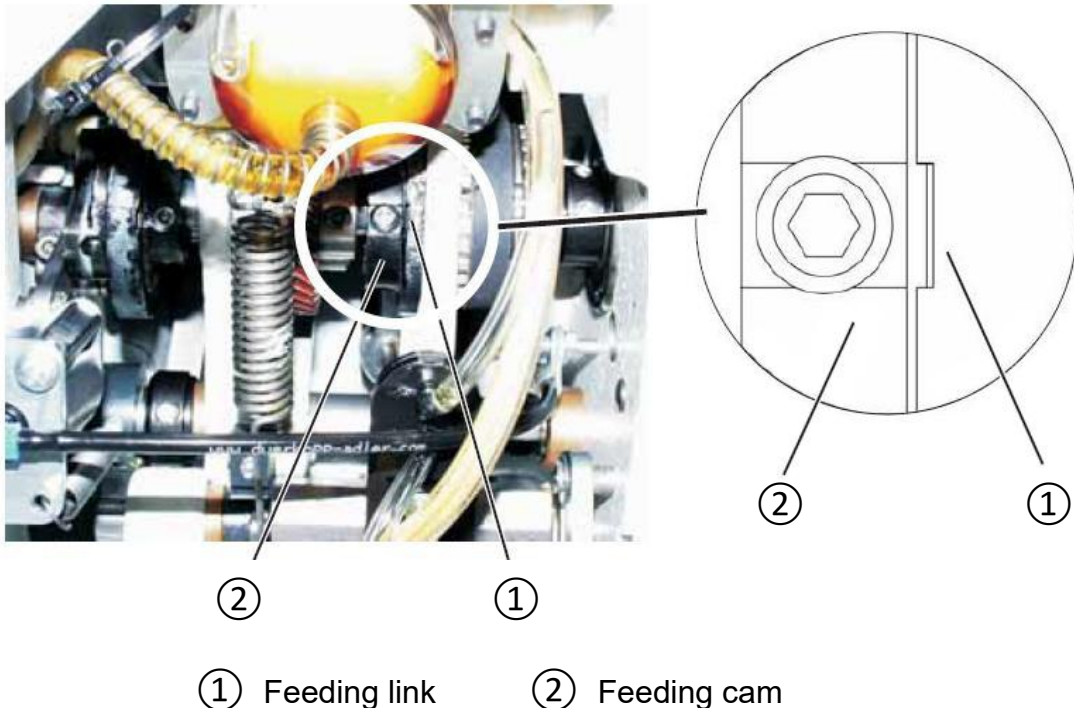
9. 2 Setting the feed dog movement

The feed dog moves in an elliptical cycle. To calibrate the movement of the feed dog, it is necessary to set the feeding motion, the lifting height and the lifting movement of the feed dog.

9. 2. 1 Setting the feed movement

Switch off the machine before you adjust the feed movement.

The proper setting for the feed movement is checked at standstill and adjusted using the feeding cam.



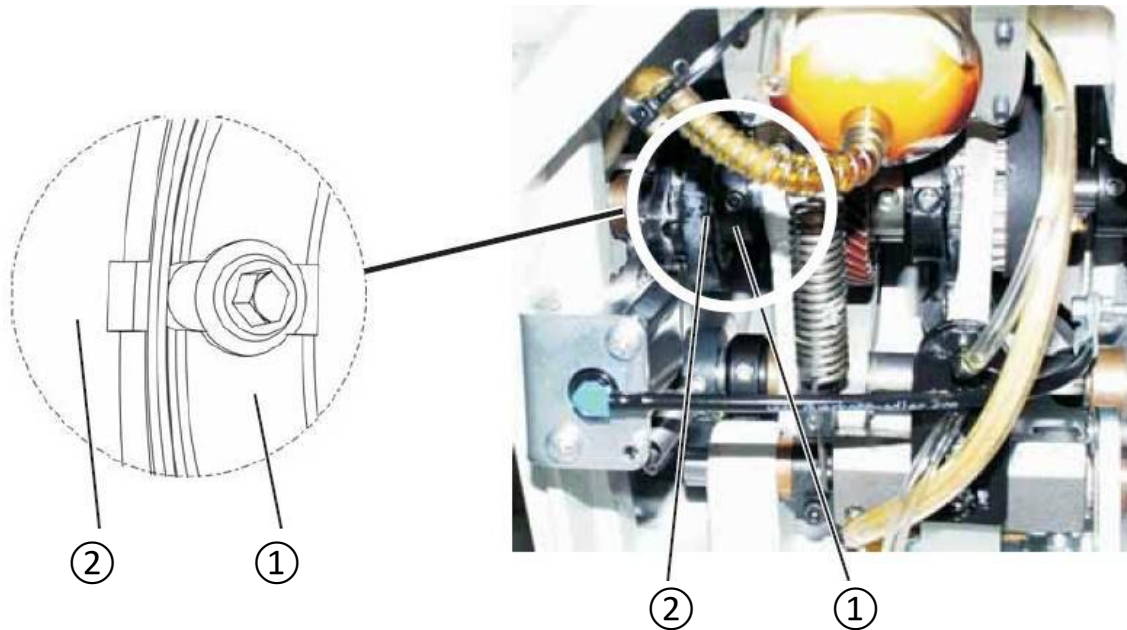
When the machine is in the “hook tip threading position,” the slot markings on the feeding cam ② and the feeding link ① should be adjacent to each other.

Steps are as follows:

- (1) Loosen the screw on the feeding cam ②.
- (2) Turn the feeding cam ②, align the slot markings on the feeding cam ② and the feeding link ① so that they are adjacent to each other.
- (3) Tighten the screw on the feeding cam ②.

9. 2. 2 Setting lifting movement

Switch off the machine before setting lifting movement.
In a stationary state, inspect the lifting movement and adjust it using the lifting feed dog cam.



① Lifting feed dog link ② Lifting feed dog cam

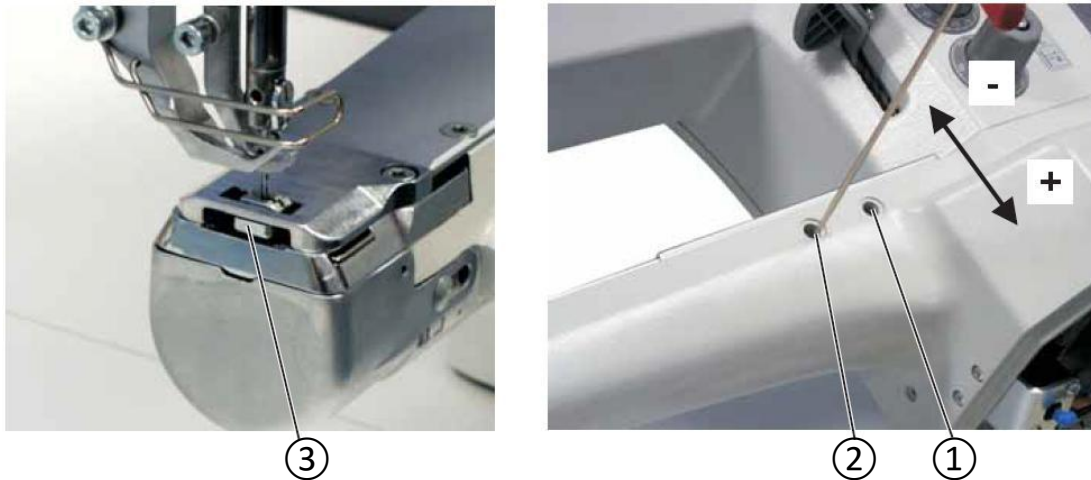
When the machine is in the “hook tip threading position,” the slot markings on the lifting feed dog cam ② and the lifting feed dog link ① should be adjacent to each other.

Steps are as follows:

- (1) Loosen the screw on the lifting feed dog cam ②.
- (2) Turn the lifting feed dog cam ②, align the slot markings on the lifting feed dog cam ② and lifting feed dog link ① so that they are adjacent to each other.
- (3) Tighten the screw on the lifting feed dog cam ②.

9. 2. 3 Setting the feed dog height at top dead center

Switch off the machine before setting the height of the feed dog.



① Screw

② Screw

③ Feed dog

When the machine is in the hook tip threading position, the feed dog ③ is at its highest point of movement and is 0.6 to 0.7 mm above the top surface of the needle plate.

Steps are as follows:

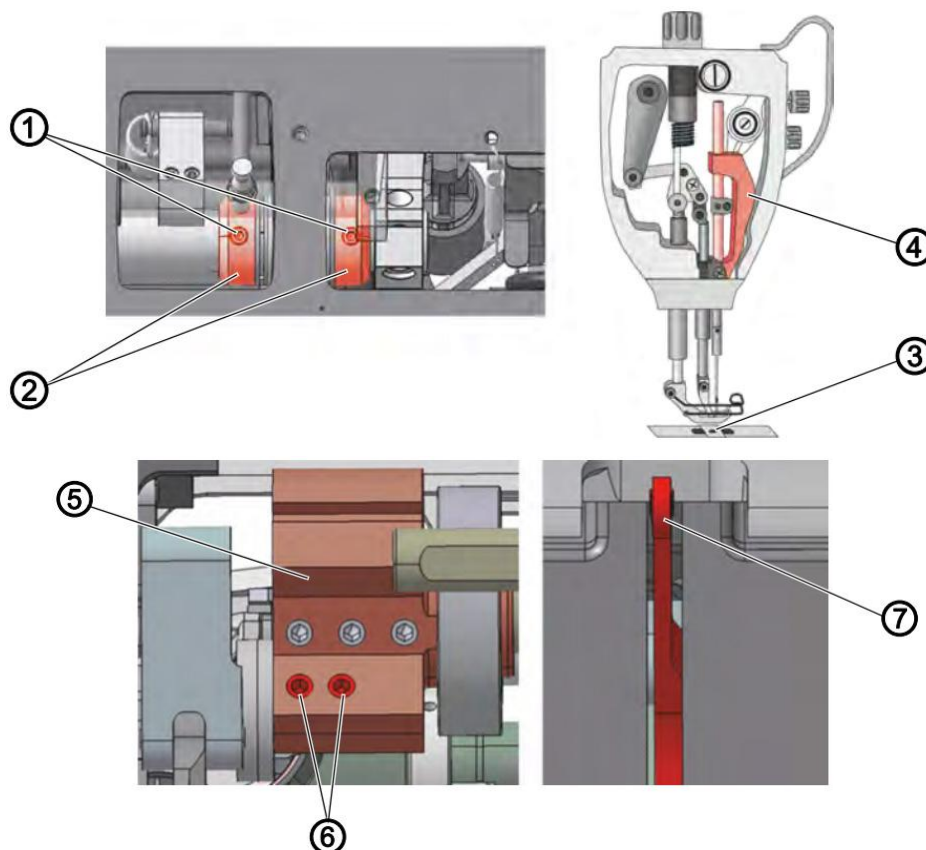
- (1) Loosen the screw ① and the screw ②.
- (2) Adjust the screw ① (up or down) until the top surface of the feed dog ③ is 0.6 to 0.7 mm above the top surface of the needle plate.
- (3) Tighten the screw ① and the screw ②.

10 Aligning the needle bar vibrating frame

Position the upper and lower stitch length adjusting knob to 0, turn the handwheel, the needle pierces exactly in the center of the feed dog needle hole.

Switch off the machine before aligning the needle bar vibrating frame.

10.1 Aligning the needle bar vibrating frame sideways

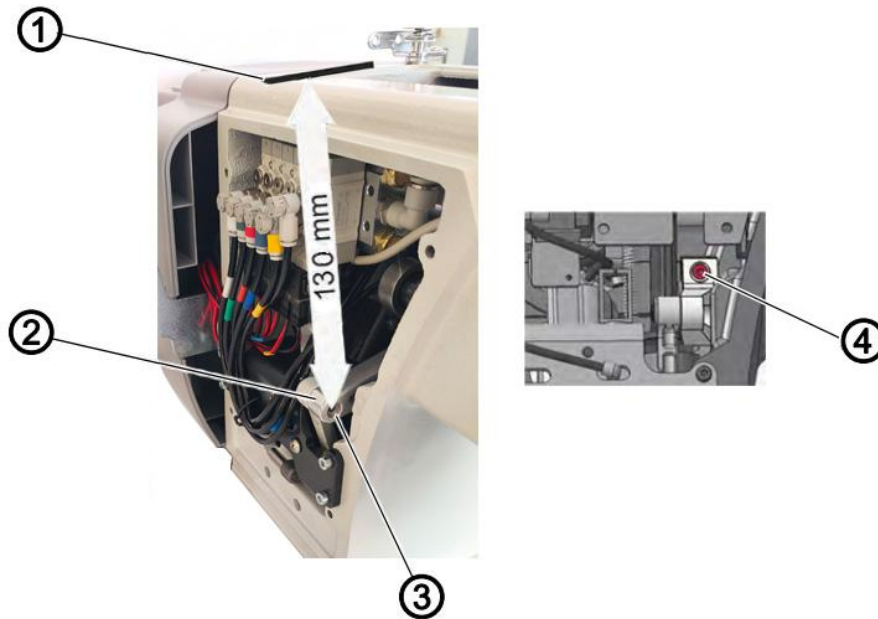


- ① Screws ② Retaining rings ③ Needle hole ④ Needle bar vibrating frame
⑤ Needle bar crank ⑥ Screws ⑦ Thread take up lever

Steps are as follows:

- (1) Disassemble the top cover plate and the face plate.
- (2) Set the upper and lower stitch length adjusting knob to 0.
- (3) Loosen the screws ① on the two retaining rings ② at the right end of the shaft for the needle bar vibrating frame.
- (4) Loosen the screws ⑥ on the needle bar crank ⑤. Caution: the screws ⑥ must be fully secured onto the flat surface of pin shaft.
- (5) Move the needle bar vibrating frame ④ sideways such that the needle pierces exactly in the center of the needle hole ③ for the feed dog.
- (6) Push the retaining rings ② inwards as far as they will go and tighten the screws ①.
- (7) Move the thread take up lever ⑦ to the center of the slot in the casting and tighten the screws ⑥.
- (8) Maintenance completed, install the top cover plate and the face plate.

10. 2 Aligning the needle bar vibrating frame in the sewing direction



- | | |
|-------------------------------|------------------------------|
| ① Top surface of machine head | ② Needle bar vibrating crank |
| ③ Center of pin shaft | ④ Screw |

Set the stitch length adjusting knob to 0, adjust the needle bar vibrating crank ② to ensure the center of pin shaft ③ is 130mm from the top surface of the machine head.

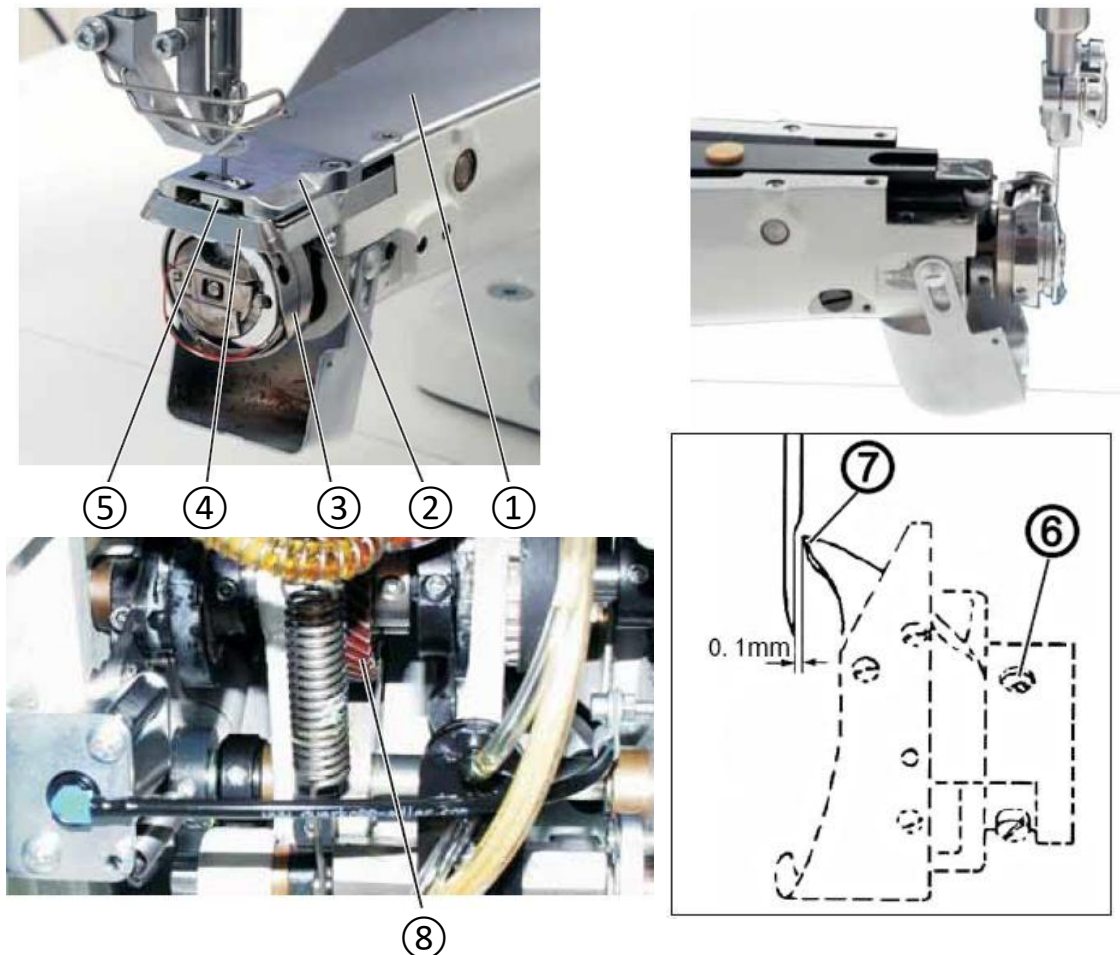
Steps are as follows:

- (1) Disassemble the back cover plate.
- (2) Loosen the screw ④.
- (3) Set the upper and lower stitch length adjusting knob to 0.
- (4) Rotate the handwheel to position the needle into the feed dog needle hole.
- (5) Adjust the needle bar vibrating frame to position the needle at the center of the feed dog needle hole.
- (6) Tighten the screw ④.
- (7) Install the back cover plate.

11 The hook, the hook claw thread gap and the needle bar height

11.1 The hook claw thread gap, the hook tip and the distance of the needle

Switch off the machine before you inspect and set the hook claw thread gap, the hook tip and the distance of the needle.



The hook claw thread gap refers to the distance of the needle bar precise located at the center of the needle from the lower stop point raised to the hook tip. The hook claw thread gap is 2mm. The distance between the needle groove and the hook tip at this time is 0-0.1 mm.

Steps are as follows:

- (1) Remove the cover plate ①, the needle plate ②, the needle seat ④ and the feed dog ⑤.
- (2) Remove the bobbin case from the hook, loosen the screw ⑥ (the first screw of the hook should be aligned with the positioning surface of the lower shaft) on the hook, loosen the screw on the gear ⑧.
- (3) Set the stitch length adjusting knob to 0.
- (4) Insert the large end of the locking pin into the groove of the needle bar crank.
- (5) Rotate the hook until the hook tip ⑦ aligns with the center of the needle.
- (6) Move the hook until the distance between the hook tip ⑦ and the needle slot is 0-0.1 mm.
- (7) Tighten the screw ⑥ and the screw on the gear ⑧.
- (8) Remove the locking pin.

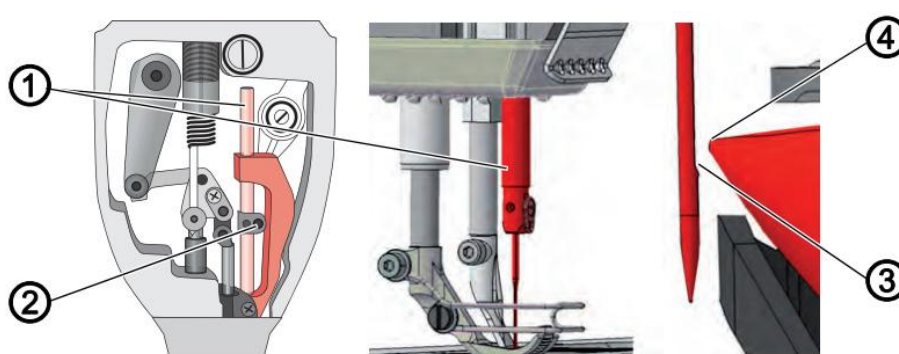
11. 2 The needle bar height

Proper setting:

Insert the large end of the locking pin into the groove of the needle bar crank.
The hook tip is level with the lower third of the needle groove.

Disturbances caused by an incorrect needle bar height:

- Damage to the hook tip
- Jamming of the needle thread
- Skip stitches
- Thread breaking
- Needle breakage



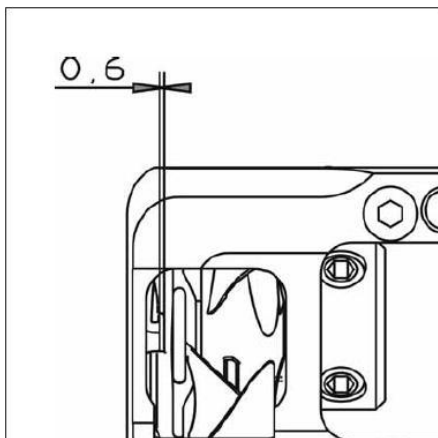
- ① Needle bar ② Screw ③ Needle groove ④ Hook tip

Steps are as follows:

- (1) Switch off the machine, disassemble the face plate.
- (2) The needle distance adjustment knob is set to "Maximum stitch length of the machine".
- (3) Insert the large end of the locking pin into the groove of the needle bar crank.
- (4) Loosen the screw ② of the needle bar ①.
- (5) Adjust the height of the needle bar ① such that the hook tip ④ is level with the lower third of the needle groove ③. When doing so, take care not to twist the needle bar, the needle groove ③ must face toward the hook tip ④.
- (6) Tighten the screw ② of the needle bar ①.
- (7) Remove the locking pin, install the face plate.

12 The needle plate seat

Switch off the machine before setting the gap between the hook and the needle plate seat.



① Screws

② Screws

③ Needle plate seat

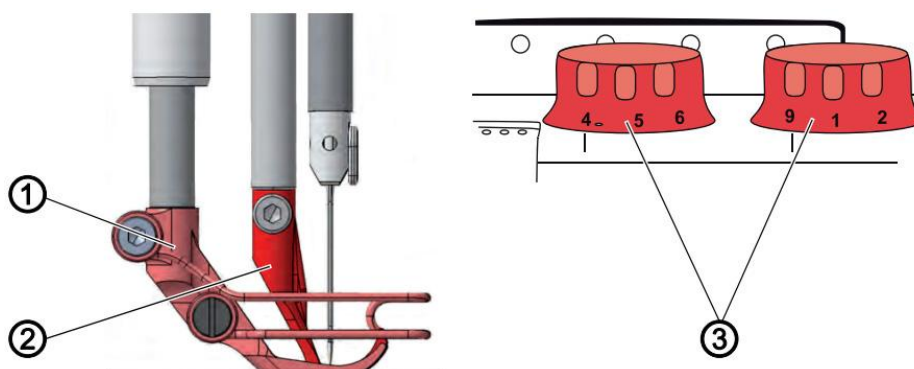
There should be sufficient gap (a gap of 0.6mm) between the casting and the flange of the needle plate seat ③, so that the needle thread can pass through without obstruction.

Steps are as follows:

- (1) Loosen the screws ①.
- (2) Loosen the screws ②.
- (3) Adjust the needle plate seat ③ (a gap of 0.6mm, see the illustration).
- (4) Tighten the screws ①.
- (5) Tighten the screws ②.

13 Setting the presser foot

Switch off the machine before adjusting the sewing feet.



① Outer presser foot ② Inner presser foot ③ Adjusting wheels for presser foot stroke

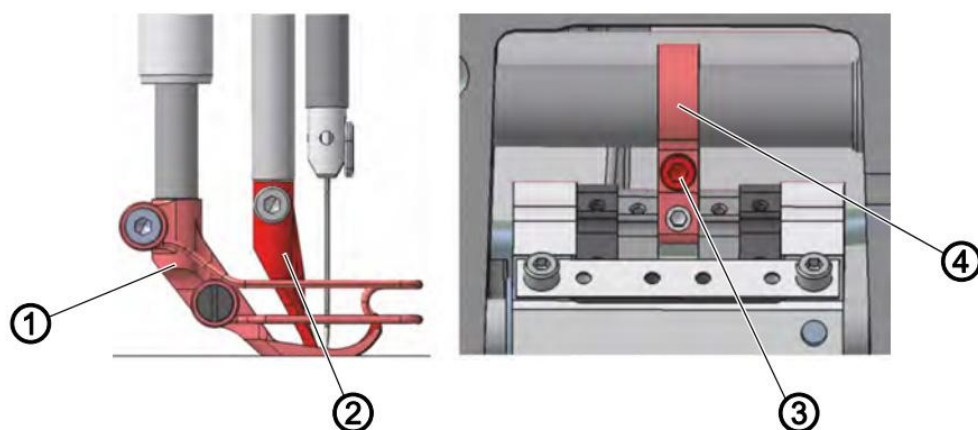
The 2 adjusting wheels ③ on top of the machine determine how high the outer presser foot ① and the inner presser foot ② are raised when sewing. When the adjusting wheel is set to “3”, the stroke of the inner presser foot and the outer presser foot should be the same.

The left adjusting wheel determines the normal sewing foot stroke.

The right adjusting wheel determines the increased sewing foot stroke.

The increased sewing foot stroke must NOT be lower than the normal sewing foot stroke.

13.1 Setting the uniform presser foot lifting



① Outer presser foot ② Inner presser foot ③ Screw ④ Crank

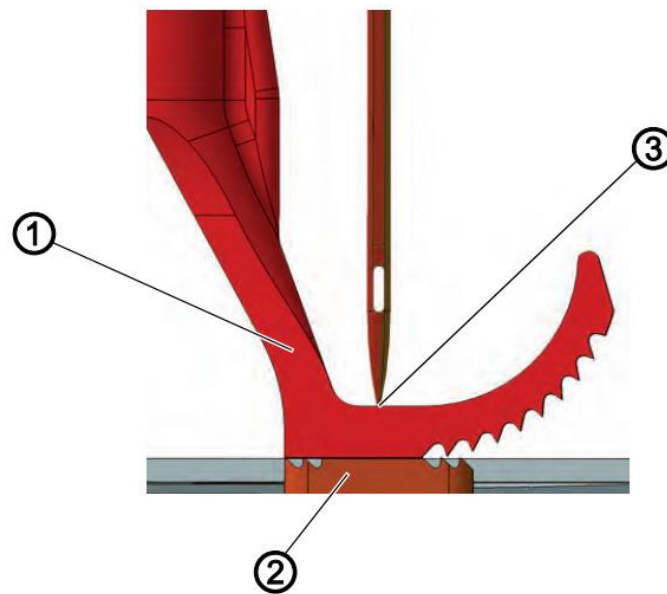
Steps are as follows:

- (1) Disassemble the top cover plate.
- (2) The needle distance adjustment knob is set to “0”, move the handwheel into the 0° position.
- (3) Loosen the screw ③ on the crank ④.
- (4) Lower the outer presser foot ① and the inner presser foot ② together down to the needle plate.

CAUTION: Do not inadvertently lower the inner presser foot through the needle plate cutout down to the feed dog.

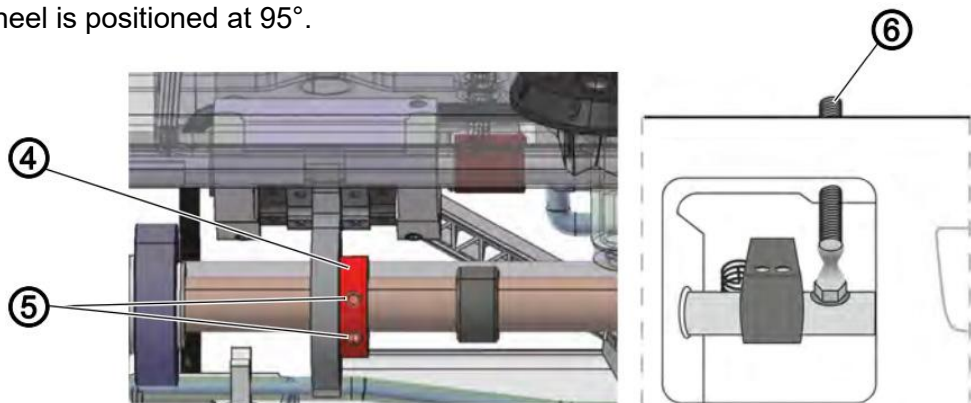
- (5) Tighten the screw ③.

13.2 Setting the inner presser foot



- ① Inner presser foot ② Feed dog ③ Needle tip

When the needle tip ③ move downward to the upper edge of the inner presser foot ①, the inner presser foot ① is precisely positioned on the feed dog. This occurs when the handwheel is positioned at 95°.



- ④ Presser foot lifting eccentric cam ⑤ Screws ⑥ Screw

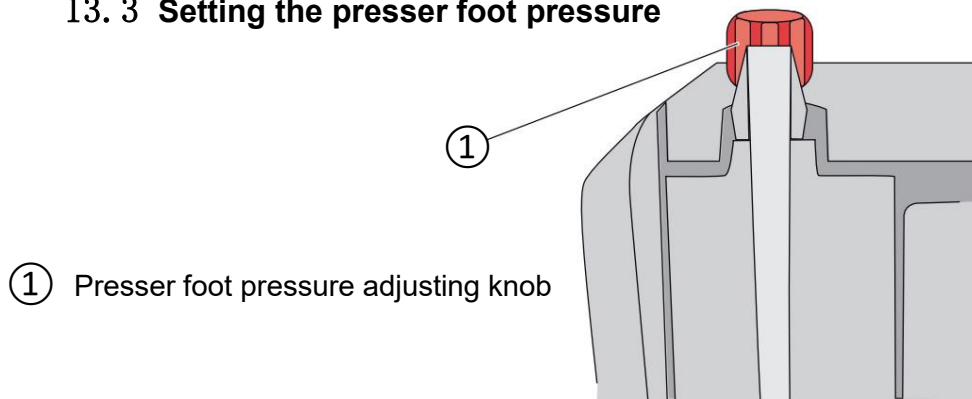
Steps are as follows:

- (1) Disassemble the top cover plate.
- (2) Wrench in the screw ⑥ into the upper limit screw of the tightening shaft to enable the presser foot to complete its stroke.
- (3) Set the upper stitch length adjusting knob to 0.
- (4) Loosen the screws ⑤, turn the handwheel to 95°.
- (5) Turn the presser foot lifting eccentric cam ④ so that the inner presser foot on the feed dog.

CAUTION: The presser foot lifting eccentric cam ④ will not move laterally on the shaft.

- (6) Tighten the screws ⑤.
- (7) Wrench out the screw ⑥ to prevent it from contacting the limit screw.

13. 3 Setting the presser foot pressure



Turning the adjusting knob ① can modify the pressure exerted on the presser foot.

- **Greater pressure:** turn clockwise
- **Lower pressure:** turn counterclockwise

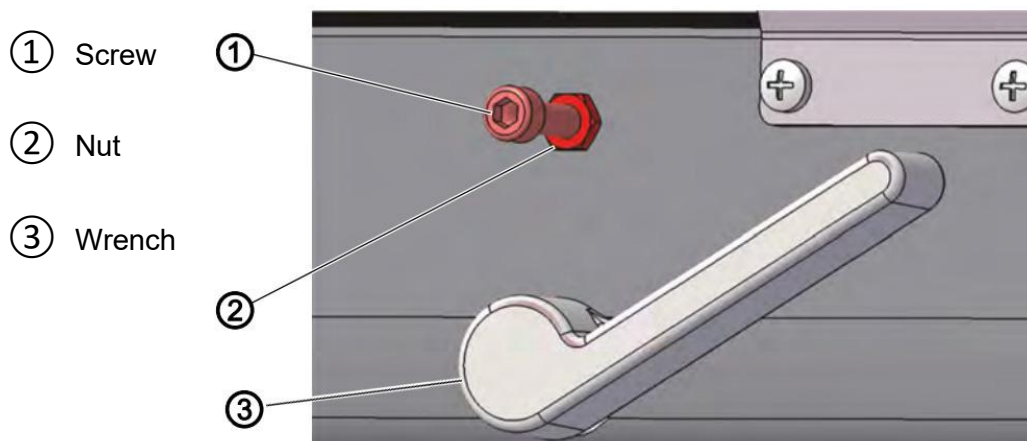
The correct pressure depends on the sewing material:

- Lower pressure for soft materials
- Higher pressure for thick materials

13. 4 The pneumatic or knee lever control presser foot lifting height

The preset distance between the pneumatic or knee lever control presser foot lifting and the needle plate is 20mm.

- **Lift the presser foot:** Turn the wrench ③ downward.
- **Release the presser foot:** Turn the wrench ③ upward.

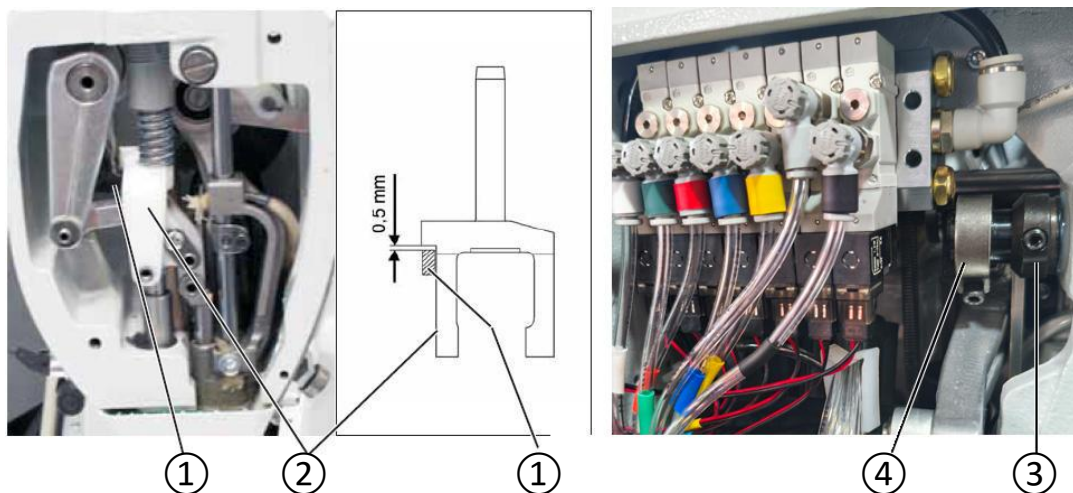


Steps are as follows:

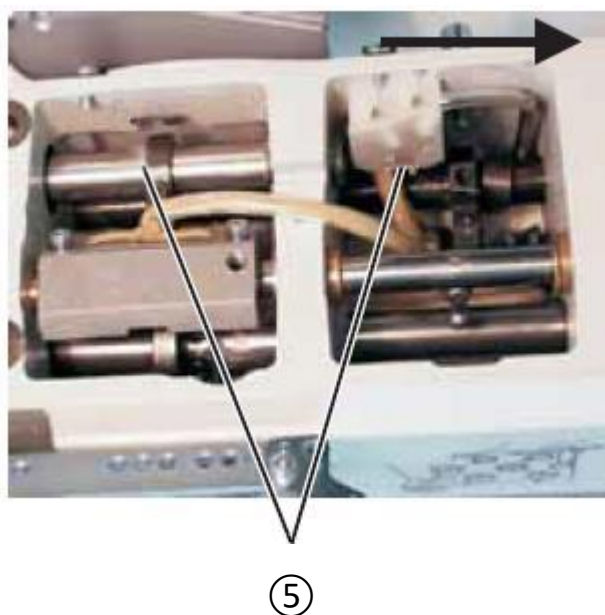
- (1) Loosen the nut ②.
- (2) Turn the screw ① to adjust the distance between lifted presser foot and the needle plate.
 - **Reduce the lifting height of presser foot:** turn clockwise
 - **Increase the lifting height of presser foot:** turn counterclockwise
- (3) Tighten the nut ②.

13. 5 The presser foot lifting shaft

Switch off the machine before setting the presser foot lifting shaft.



- ① Lifting rod
- ② Spring support bracket
- ③ Retaining ring
- ④ Presser foot lifting crank
- ⑤ Presser foot lifting shaft



Steps are as follows:

- (1) Remove the upper cover plate and back cover plate.
- (2) Rotate the handwheel until the outer pressure foot fully rests on the needle plate.
- (3) Loosen the screw on the retaining ring ③ and the screw on the presser foot lifting crank ④.
- (4) Push the presser foot lifting shaft ⑤ to the right until it reaches its maximum position, as indicated by the arrow.
- (5) Rotate the presser foot lifting shaft ⑤ to create a gap of 0.5mm between the lifting rod ① and the spring support bracket ②.
- (6) Tighten the screw on the retaining ring ③.

CAUTION: The presser foot lifting shaft ⑤ must not move side to side.

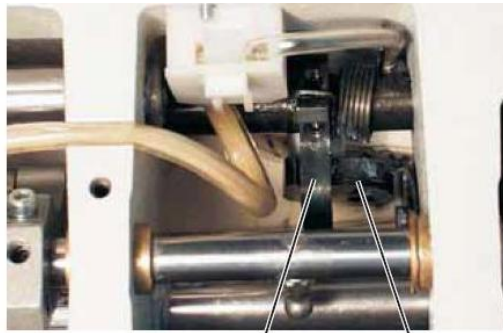
- (7) Tighten the screw on the presser foot lifting crank ④.

13. 6 The presser foot lifting lever

Switch off the machine before adjusting the presser foot lifting lever height.



①



②

③

① Presser foot lifting lever

② Presser foot lifting crank

③ Presser foot lifting block

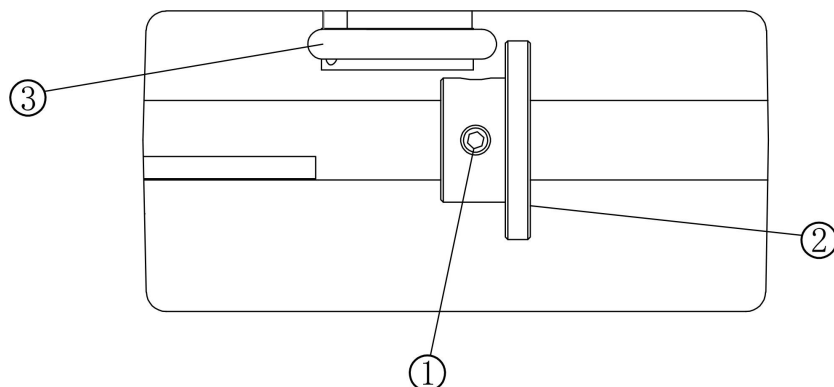
Steps are as follows:

- (1) Lifting the presser foot by knee control.
- (2) Place a measuring block under the presser foot (thickness 9mm) .
- (3) Loosen the screw on the presser foot lifting crank ②.
- (4) Push down the presser foot lifting lever ①.
- (5) Push the presser foot lifting crank ② downward until it reaches to the presser foot lifting block ③.
- (6) Tighten the screw on the presser foot lifting crank ②.
- (7) Lifting the presser foot by knee control, remove the measuring block.

14 The bobbin winder

Switch off the machine before setting the bobbin winder.

14.1 Setting the bobbin winder wheel and the drive wheel



① Screw

② drive wheel

③ Bobbin winder wheel

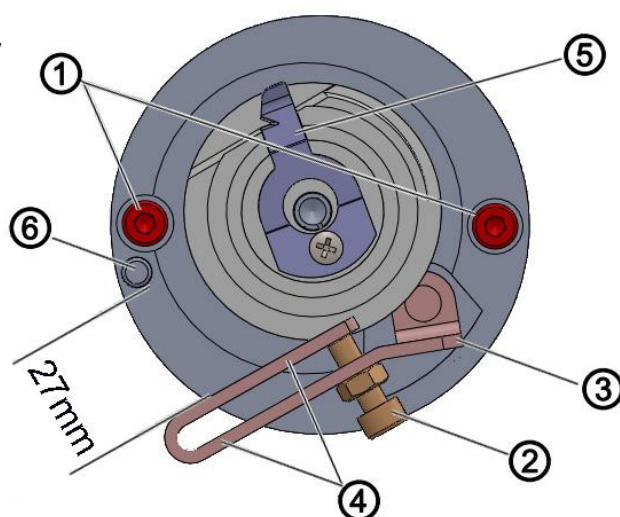
When unwinding, the distance between the bobbin winder wheel and the drive wheel is approximately 0.8mm.

Steps are as follows:

- (1) Remove the top cover plate.
- (2) Loosen the screw ①.
- (3) Move the drive wheel ② left or right to adjust the distance between the bobbin winder wheel ② and the drive wheel ③ to 0.8mm.
- (4) Tighten the screw ①, place the top cover plate in its original position.

14.2 Setting the bobbin winder

- ① Screws
- ② Screw
- ③ Full-line skip plate
- ④ Side
- ⑤ Cutter
- ⑥ limit post



CAUTION:

- The bobbin winder wheel runs smoothly and without shaft play.
- When the bobbin is fully wound with the required amount of line, the full-line skip plate ③ automatically disengages, marking the end of the winding process.
- End winding, the cutter ⑤ to the upper left corner.
- End winding, the distance between side ④ and limit post ⑥ is approximately 27mm.

Setting the winder filling quantity

(1) Remove the screws ①, take out the bobbin winder.

(2) Loosen the locking nut on the screw ②.

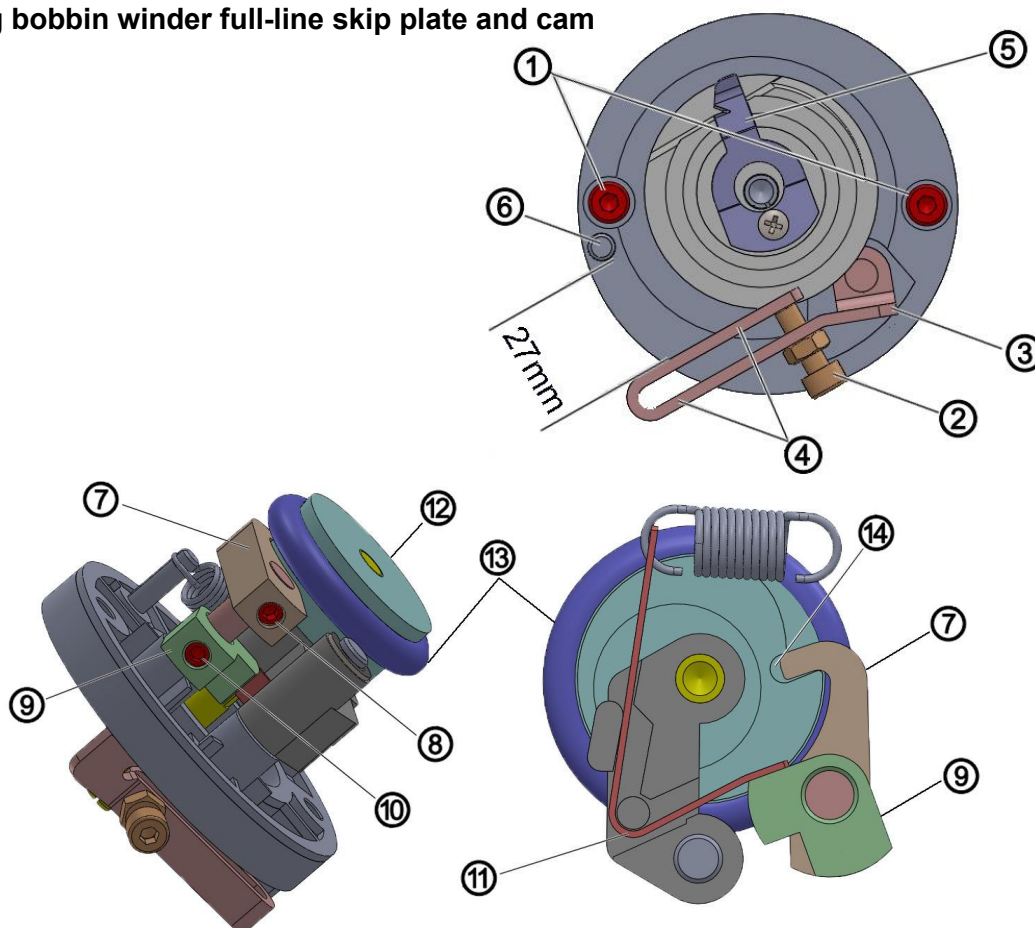
(3) Turn the screw ②.

● **Reduce the amount of bobbin winding:** turn clockwise, side ④ opens.

● **Increase the amount of bobbin winding:** turn counterclockwise, side ④ tighten up.

(4) Tighten the locking nut on the screw ②.

Setting bobbin winder full-line skip plate and cam



⑦ Limit claw

⑧ Screw

⑨ Cam

⑩ Screw

⑪ Leaf spring

⑫ Wheel disk

⑬ Bobbin winder wheel

⑭ Slot

Steps are as follows:

(1) Loosen the screw ⑧ and the screw ⑩.

(2) Turn the full-line skip plate ③, keep its side ④ approximately 27mm from the limit post ⑥.

(3) Turn the wheel disk ⑫ and push the limit claw ⑦ into its slot ⑭.

(4) Adjust the limit claw ⑦, maintain a clearance of approximately 0.5mm between it and the bobbin winder wheel ⑬.

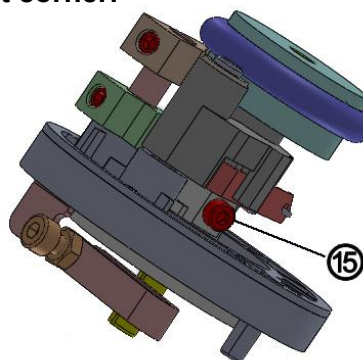
(5) Tighten the screw ⑧.

(6) Turn the cam ⑨ such that it is just contacting the leaf spring ⑪.

(7) Keep the full-line skip plate ③ without axial clearance, then tighten the screw ⑩.

Setting the cutter

End winding, the cutter ⑮ to the upper left corner.

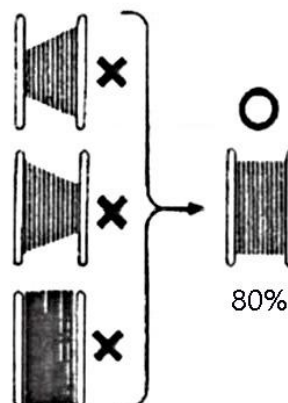
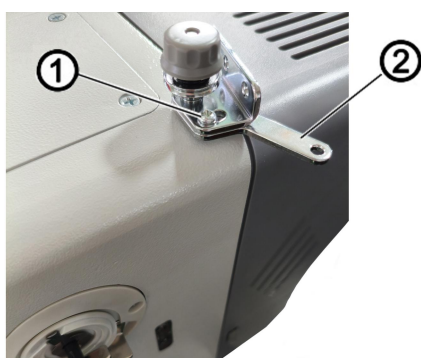


If the cutter is oriented incorrectly

Method 1: Wrench out the screw ⑮, turn the wheel disk to 180°, then tighten the screw ⑮.

Method 2: Remove the bobbin winder wheel from the wheel disk, wrench out the screw on the wheel disk, turn the wheel disk to 180°. Finally tighten the screw on the wheel disk and insert the bobbin winder wheel to the wheel disk.

14. 3 Setting the bobbin winder winding



When winding the bobbin, lift the full-line skip plate upward until it contacts the limit post. As shown in the lower left corner of the left image.

The winding amount is generally 80% of the bobbin diameter. Excessive winding, inward deviation, or over-winding are all detrimental to material sewing. As shown in the figure on the right

Steps are as follows:

- (1) Loosen the screw ①.
 - Excessive winding, turn the thread guide plate ② counterclockwise until the winding is even.
 - Inward deviation, turn the thread guide plate ② clockwise until the winding is even.
- (2) Tighten the screw ①.
- (3) Over-winding, loosen the nut on the full-line skip plate, then turn the screw on the full-line skip plate clockwise to open its side. Adjustment completed, tighten the nut on the full-line skip plate.

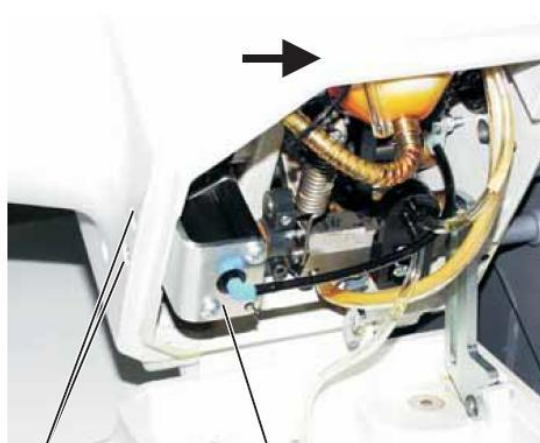
15 Setting the thread trimmer



③

②

①



⑤

④



⑥



⑦



⑧

15. 1 The movable knife shaft

The movable knife shaft shall not exhibit any axial movement.

Wrench out the screw on the cylinder arm plate ③ to remove the cylinder arm plate ③.

Inspect the movable knife shaft, if there is any play, it needs to be adjusted.

Switch off the machine before adjusting the movable knife shaft.

Steps are as follows:

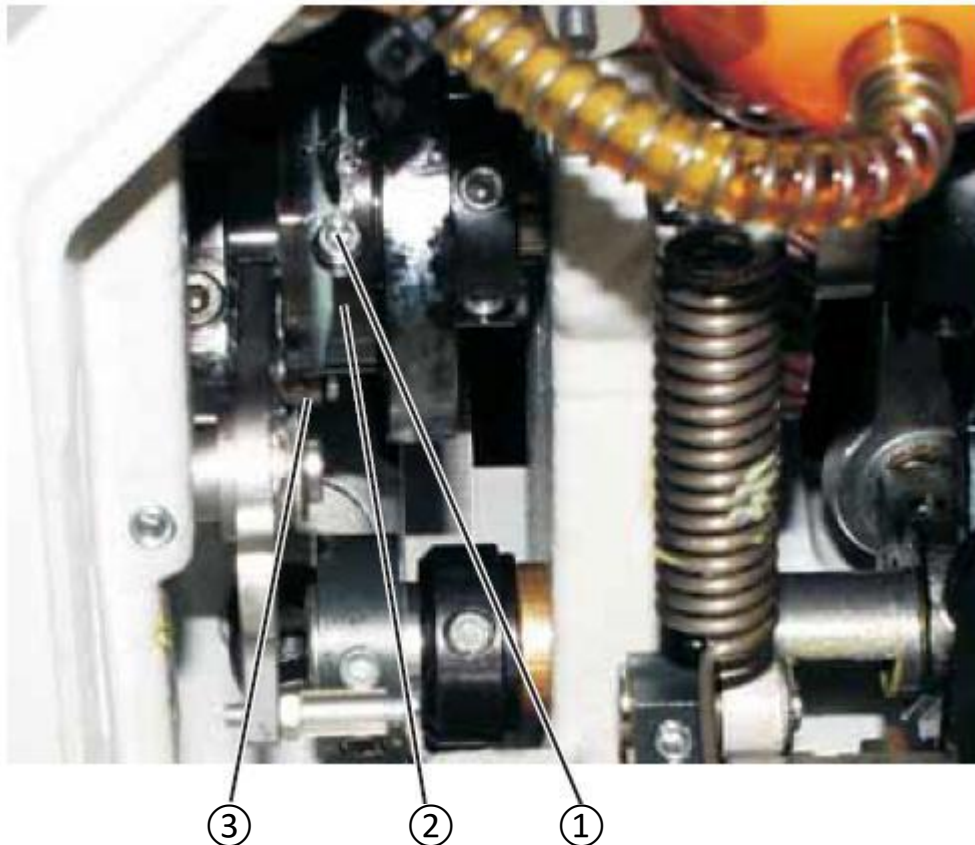
- (1) Release the spring of air cylinder ④.
- (2) Wrench out the screw ⑤, remove the air cylinder ④.
- (3) Secure the movable blade shaft using the locking pin ⑥.
- (4) Loosen the screw ② on the retaining ring ①.
- (5) Position the retaining ring ① firmly against the bushing to the right and tighten the screw ②.
- (6) Loosen the screw on the thread trimming crank ⑦.
- (7) Position the thread trimming crank ⑦ firmly against the bushing to the left and tighten the screw on the thread trimming crank ⑦. The sliding rod ⑧ must simultaneously contact the highest point of the thread trimming cam.
- (8) Install the air cylinder ④, tighten the screw ⑤.
- (9) Hang the spring of air cylinder ④.

CAUTION:

When resetting the cylinder arm plate ③, under the condition where the needle distance adjustment knob is set to "0", ensure that the feed dog is positioned in the center of the needle plate slot.

15. 2 Setting the thread trimmer cam

Switch off the machine before setting the thread trimmer cam.
When the hook tip is in the position of catching the thread, the sliding rod ③ should be positioned within the recessed area of the thread trimmer cam ②.



① Screw ② Thread trimmer cam ③ Sliding rod

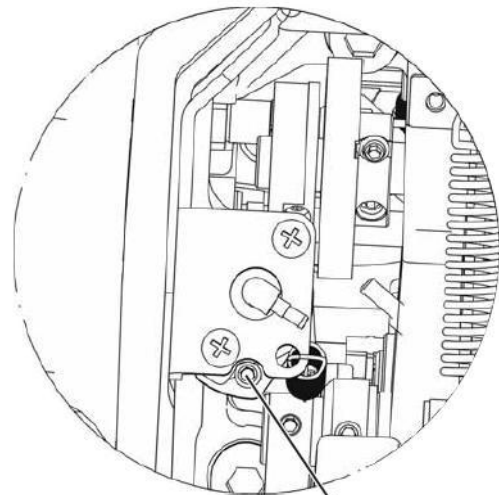
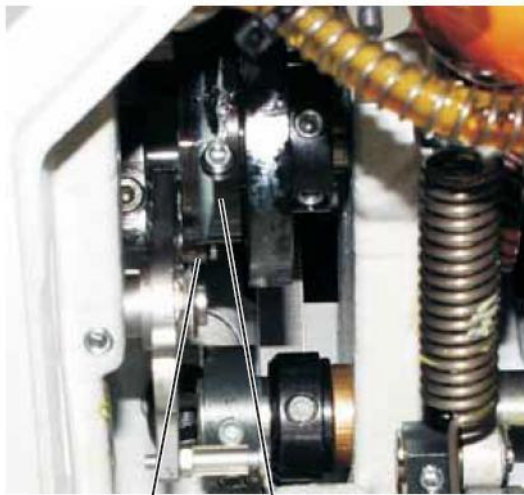
Steps are as follows:

- (1) When the hook tip is in the position of catching the thread, insert the locking pin into the recessed area of the needle bar crank.
- (2) Loosen the screw ① on the thread trimmer cam ②.
- (3) Rotate the thread trimmer cam ② to place the sliding rod ③ within the recessed area of the thread trimmer cam ②.
- (4) Tighten the screw ① on the thread trimmer cam ②.
- (5) Pull out the locking pin.

15.3 The clearance between the sliding rod and the thread trimmer cam

Switch off the machine before adjusting the clearance between the sliding rod and the thread trimmer cam.

When the hook tip is in the position of catching the thread, the sliding rod ① should be positioned within the recessed area of the thread trimmer cam ②. And the clearance is 0.1mm between the sliding rod ① and the thread trimmer cam ②.



①

②

③

① Sliding rod

② Thread trimmer cam

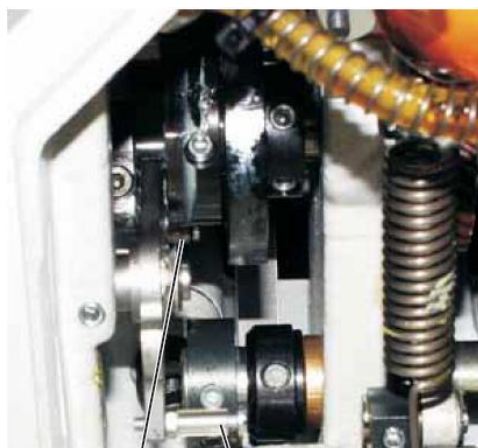
③ Screw

The clearance between the sliding rod and the thread trimmer cam can be adjusted using the screw ③ located on the air cylinder.

- Turn the screw ③ clockwise: reduce the clearance.
- Turn the screw ③ counterclockwise: Increase the clearance.

15. 4 Setting the thread trimming pressure

Switch off the machine before setting the thread trimming pressure.
Use the minimum amount of pressure as far as possible to cut through the thickest suture suitable for the machine.



①

②



③

④

① Sliding rod

② Link

③ Screw

④ Movable knife

Disturbances caused by an incorrect setting :

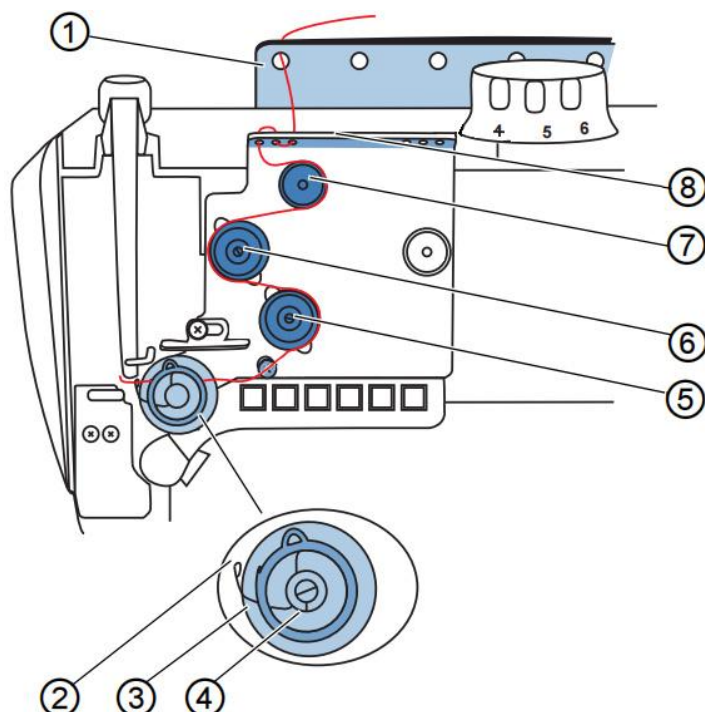
- Increased the movable knife and the fixed knife wear when the pressure is too great.
- Insufficient pressure prevents the sutures from being cut neatly.

Steps are as follows:

- (1) Turn the handwheel until the movable knife ④ can be turned manually counterclockwise to the extreme position.
- (2) Pressing the link ② until the sliding rod ① is pressed into the thread trimmer cam.
- (3) Insert two sutures that will be cut by the fixed knife.
- (4) Continue rotating the handwheel until the movable knife ④ rotates back.
- (5) Verify that the sutures have been completely severed.
- (6) The thread trimming pressure can be adjusted using the screw ③.
 - Turn the screw ③ clockwise: Increase the thread trimming pressure.
 - Turn the screw ③ counterclockwise: Reduce the thread trimming pressure.

16 Threading the top thread

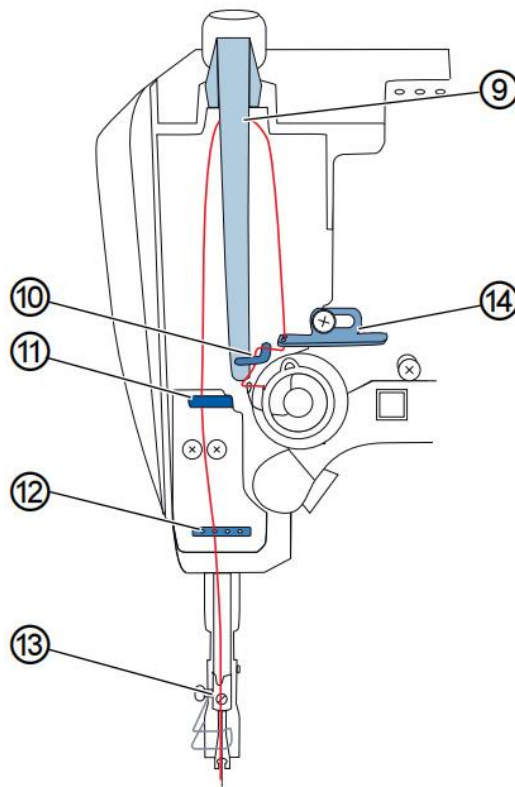
Switch off the machine before threading the top thread.
Do not touch the area beneath the needle with your hand.



- | | | |
|---|----------------------------------|-------------------------|
| ① Thread guide plate | ② Spring tip | ③ Thread take-up spring |
| ④ Thread clamp plate | ⑤ Main thread tension regulator | |
| ⑥ Additional thread tension regulator | | |
| ⑦ Pre-tensioning thread tension regulator | ⑧ Thread tension regulator plate | |

Pass the thread to single needle as follows:

- (1) The thread passes from the rear to the front through the left-side hole of the thread guide plate ①.
- (2) The thread passes through the three holes of the thread tension regulator plate ⑧ in a wavy pattern.
 - First, pass through the hole on the right side from top to bottom, then pass through the middle hole from bottom to top, and finally pass through the hole on the left side from top to bottom.
- (3) Pass the thread around the pre-tensioning thread tension regulator ⑦ clockwise.
- (4) Pass the thread around the additional thread tension regulator ⑥ counterclockwise.
- (5) Pass the thread around the main thread tension regulator ⑤ clockwise.
- (6) Pass the thread around the thread clamp plate ④ clockwise.
- (7) Pull the thread down toward the spring tip ②.
- (8) The thread lift the thread take-up spring ③.



- ⑨ Thread take-up lever (Invisible) ⑩ Thread guide lever ⑪ Thread guide slot
 ⑫ Thread guide hole ⑬ Thread guide plate ⑭ Thread adjusting device

- (9) Pass the thread through the lower side of the thread guide lever ⑩.
- (10) Pass the thread through the hole of the thread adjusting device ⑭ from bottom to up.
- (11) Pass the thread through the thread take-up lever ⑨(not visible in the image) from right to left.
- (12) Pass the thread through the thread guide slot ⑪.
- (13) Pass the thread through the thread guide hole ⑫.
- (14) Pass the thread through the thread guide plate ⑬ of the needle bar.
- (15) Pass the thread through the needle (not visible in the image) from left to right, the thread end towards the hook.
- (16) When the thread is pulled through the needle hole and the thread take-up lever is in its highest position, the length of the thread end that is pulled out is approximately 4 cm.

CAUTION: The thread end is too long, causing the thread to be wrapped by the hook, which can lead to malfunctions.
 The thread end is too short, it will be impossible to start stitching.

17 Threading the bobbin thread



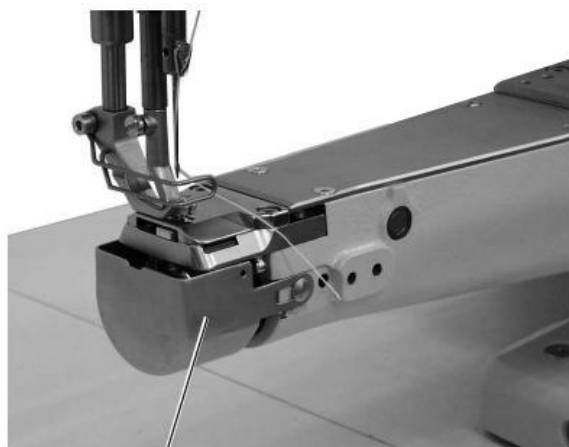
- | | | |
|----------------------------|---------------|----------------|
| ① Thread guide plate | ② Guide plate | |
| ③ Thread tension regulator | ④ Cutter | ⑤ Bobbin shaft |
| ⑥ Full-line skip plate | ⑦ Limit post | |

Threading the bobbin thread as follows:

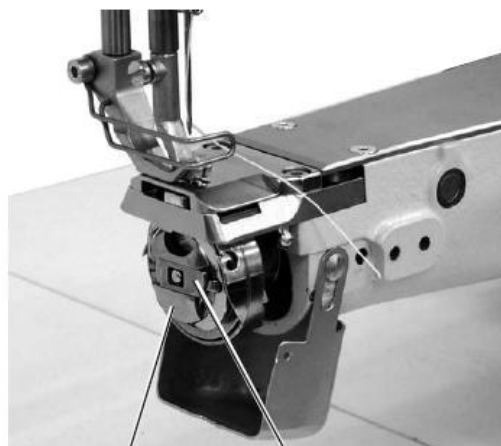
- (1) The thread passes through the last two holes in the thread guide plate ① from right to left.
- (2) The thread around the thread tension regulator ③ counterclockwise.
- (3) The thread passes through the front hole in the thread guide plate ① from left to right.
- (4) The thread passes through the hole in the guide plate ② from up to bottom.
- (5) Hold the thread in place behind the cutter ④.
- (6) Insert the bobbin onto the bobbin shaft ⑤.
- (7) Turn the bobbin until it locks into place on the bobbin shaft ⑤.
- (8) Pull up the full-line skip plate ⑥ until it contacts tightly to the limit post ⑦.
- (9) Press the pedal forward.
The machine begins stitching while simultaneously winding the thread from the ball of string onto the bobbin. When the bobbin reaches the required winding capacity, the full-line skip plate automatically opens, and the bobbin winder stops winding.
- (10) Remove the bobbin that has been wound with the thread from the bobbin shaft.

18 Replacing the bobbin

Switch off the machine before replacing the bobbin.



①



③

②

① Post cap assy.

② Bobbin case lock clasp

③ Bobbin case

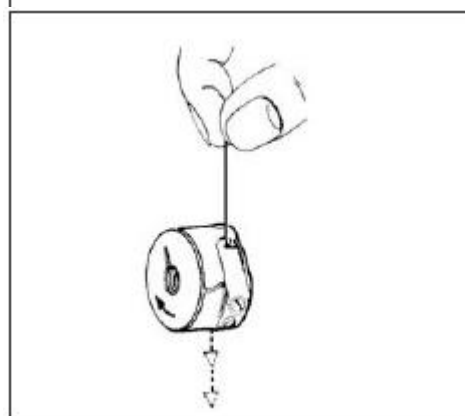
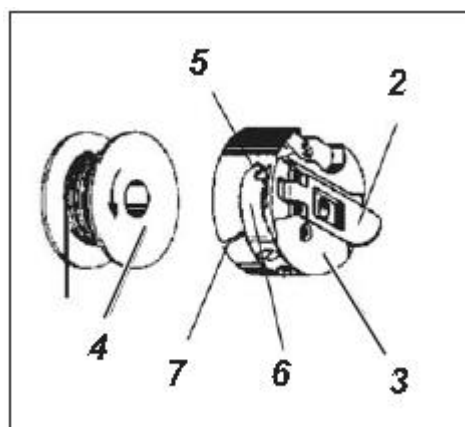
Replacing the bobbin as follows:

- (1) Raise the needle shaft to its highest point.
- (2) Pull out the post cap assy. ① and press it downwards.
- (3) Raise the bobbin case lock clasp ②.
- (4) Remove the bobbin case ③ and the bobbin ④.
- (5) Insert the bobbin with the wound thread into the bobbin case ③.

CAUTION:

When the bobbin thread is pulled out, the bobbin rotates in the opposite direction.

- (6) Pass the bobbin thread through the thread slot ⑦ under the tension spring ⑥, then pass through the hole ⑤.
- (7) Pull out the bobbin thread about 5cm from the bobbin case.
- (8) Insert the bobbin case ③ into the hook.
- (9) Press down the bobbin case lock clasp ②.
- (10) Close the post cap assy. ①.



Warning! Be cautious of the risk of damage!

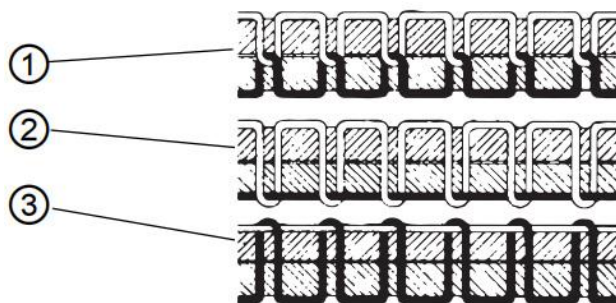
Press the bobbin case firmly and make sure it is securely locked in place.

19 Adjusting of thread tension

Both the tension of the top thread and the bobbin thread affect the stitches. If the thread tension is too high, it may cause unnecessary wrinkling or breakage of the stitches when sewing thin materials. Switch off the machine before adjusting the thread tension.

When the tension strength of the top thread and the bobbin thread are equal, the knot is located at the center of the seam material.

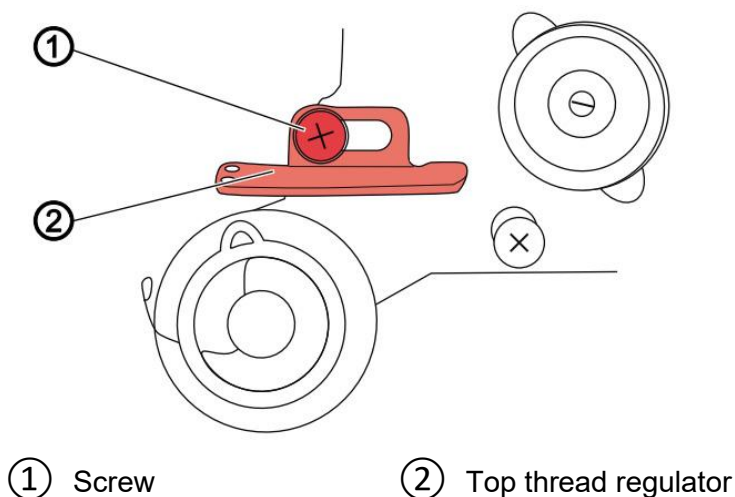
When setting the tension of the thread, ensure that the required stitch is achieved with the smallest possible tension.



- ① Tension of the top thread equals to the tension of the bobbin thread
- ② Tension of the top thread is less than the tension of the bobbin thread
- ③ Tension of the top thread is greater than the tension of the bobbin thread

19.1 Setting the top thread regulator

The top thread regulator determines the amount of tension to pass the top thread around the hook. The top thread ring should be drawn down to just above the thickest point of the hook with minimal tension.



① Screw

② Top thread regulator

Setting the top thread regulator as follows:

(1) Loosen the screw ①.

(2) Move the top thread regulator ②.

● **Reduce the top thread tension:** move to the left

● **Increase the top thread tension:** move to the right

(3) Tighten the screw ①.

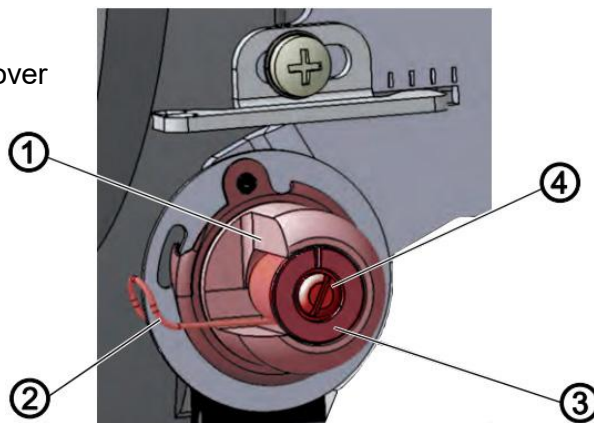
19.2 Setting the thread take-up spring

① Limited-position protective cover

② Thread take-up spring

③ Tension wheel

④ Screw



The thread take-up spring keeps the top thread at the highest position on the thread take-up lever, until the needle hole penetrates the sewing material under pressure. When the needle hole enters the sewing material, the thread take-up spring ② is located on the limited-position protective cover.

Different types of sewing materials and effects require distinct settings for the thread take-up spring.

Setting the thread take-up spring as follows:

(1) Loosen the screw ④.

(2) Turn the limited-position protective cover ① to adjust the stroke of the thread take-up spring ②.

- **Increase the stroke of the spring:** Turn counterclockwise

- **Reduce the stroke of the spring:** Turn clockwise

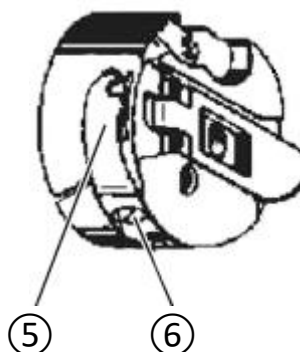
(3) Turn the tension wheel ③ to adjust the tension of the thread take-up spring ②.

- **Increase the tension of the spring:** Turn counterclockwise

- **Reduce the tension of the spring:** Turn clockwise

(4) Tighten the screw ④.

19.3 Setting the bobbin thread tension



⑤ Tension spring

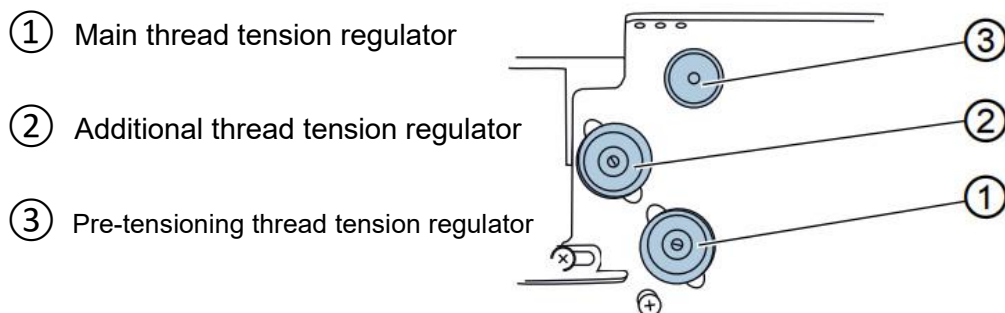
⑥ Screw

Setting the bobbin thread tension as follows:

(1) Turn the screw ⑥ clockwise to increase the bobbin thread tension.

(2) Turn the screw ⑥ counterclockwise to reduce the bobbin thread tension.

19. 4 Setting the top thread tension



The knobs on the three thread tension regulators determine the tension of the top thread.

- **Increase the top thread tension:** Turn clockwise
- **Reduce the top thread tension:** Turn counterclockwise

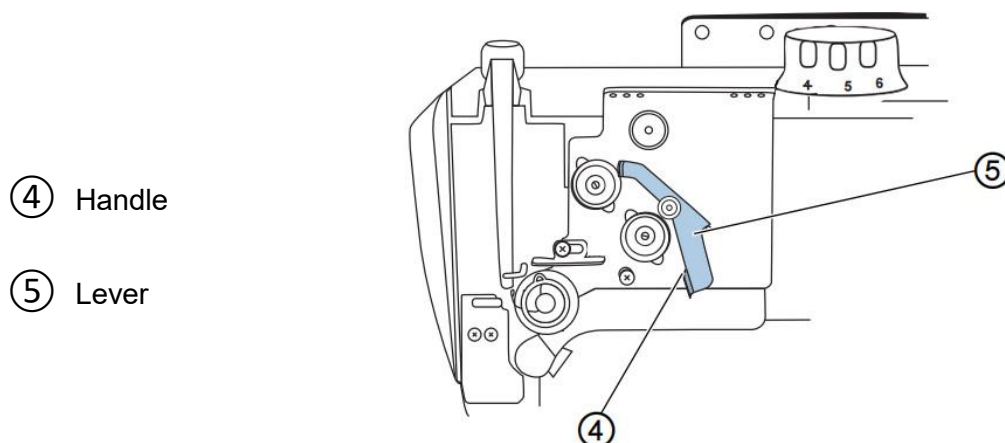
When the main thread tension regulator ① and the additional thread tension regulator ② are fully opened, the pre-tensioning thread tension regulator ③ should clamp the top thread.

The pre-tensioning thread tension regulator ③ determines the length of the thread when the stitching begins.

- **Shorten the length of the thread when the stitching begins:** Turn clockwise
- **Extend the length of the thread when the stitching begins:** Turn counterclockwise

As the thickness of the stitching material increases, the tension on the top thread needs to be increased. Turn the knob on the thread tension regulator in a clockwise direction by a specific angle. The tension settings on the additional thread tension regulator ② should always be lower than those on the main thread tension regulator ①. The additional thread tension regulator ② can be turned on or off either automatically or manually.

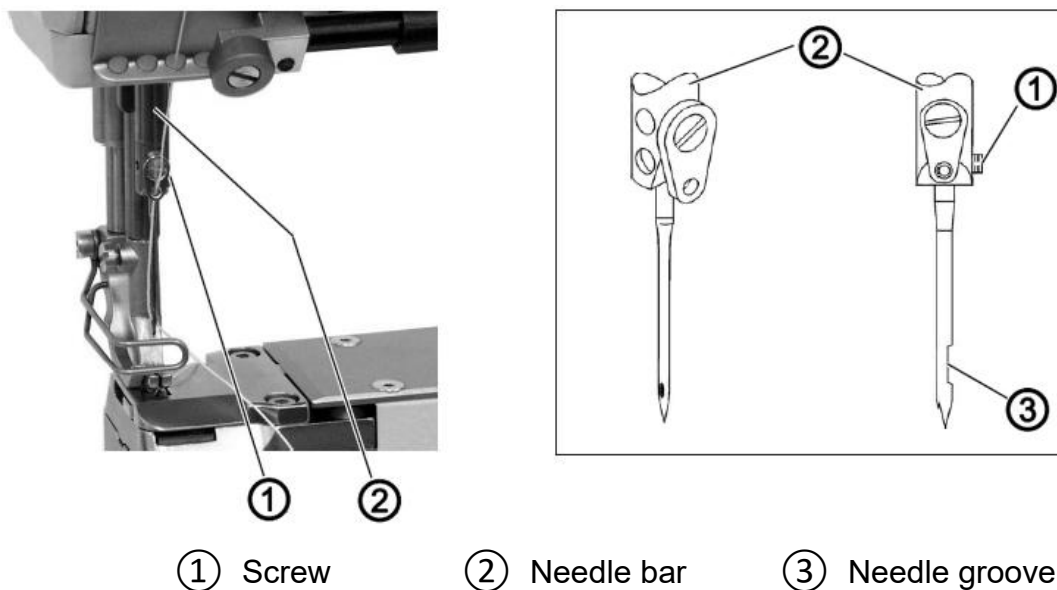
Turn on or off the additional thread tension regulator ② manually



- (1) Turn the lever ⑤ clockwise by using the handle ④ to turn on the additional thread tension regulator.
 - (2) Turn the lever ⑤ counterclockwise by using the handle ④ to turn off the additional thread tension regulator.
-

20 Replacing the needle

Switch off the machine before replacing the needle.



Replacing the needle as follows:

- (1) Rotate the handwheel until the needle bar ② reaches the highest point.
- (2) Loosen the screw ①.
- (3) Pull out the old needle from the needle bar ②.
- (4) Insert the new needle until it reaches the limited position.

CAUTION!

The needle groove must face towards the hook.

- (5) Tighten the screw ①.

Warning! Be cautious of the risk of damage!

After replacing the needle of different thickness, the clearance between the hook tip and the needle must be re-adjusted. If no adjustments are made, the following issues may arise:

- **When using a thinner needle:** Stitch skipping and broken threads
- **When using a thicker needle:** Damage the hook tip and the needle

21 Maintenance

Prior to any maintenance work, switch off the machine or set the machine to threading mode. The maintenance work that needs to be carried out on a regular basis to extend the service life of the machine and achieve the desired seam quality.

Maintenance intervals

Work to be carried out	Operating hours			
	8	40	160	500
Machine head				
Removing dust and thread remnants	○			
Check the oil level	○			
Check the hook lubrication		○		
Pneumatic system				
Setting the operating pressure	○			
Draining the water-oil mixture	○			
Cleaning the filter element				○
Specific components				
Cleaning the heat dissipation window of the motor	○			
Clean the heat dissipation window of the electromagnetic valve	○			
Checking the toothed belt			○	

21.1 Cleaning

Safety goggles should be worn during cleaning to prevent flying particles from entering the eyes. Hold the compressed air gun so that the particles do not fly close to people. Make sure no particles fly into the oil pan.

Notice:

- Solvent-based cleaners will damage paintwork.
- Use only solvent-free substances for cleaning.
- Dust and thread remnants should be removed after every 8 operating hour using a compressed air gun or a brush. If very fluffy sewing material is being sewn, the machine must be cleaned more frequently.

Areas particularly susceptible to soiling:

- ① Feed dog
- ② Inside of the post cap
- ③ Hook
- ④ Area under the needle plate



21. 2 Lubricating

Avoid skin contact with oil. Skin contact with oil can cause rashes. If oil has come into contact with your skin, wash the affected areas thoroughly.

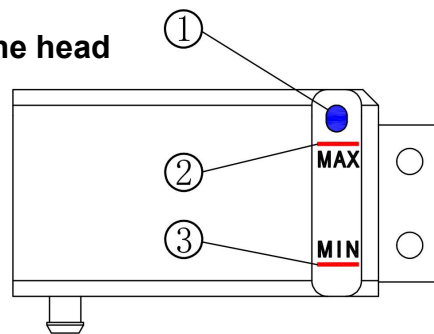
Incorrect oil types can result in damage to the machine.

For re-filling the oil, use only lubricating oil **DA 10** or oil of equivalent quality with the following specifications:

- Viscosity at 40°C : 10mm²/s
- Flash point: 150°C

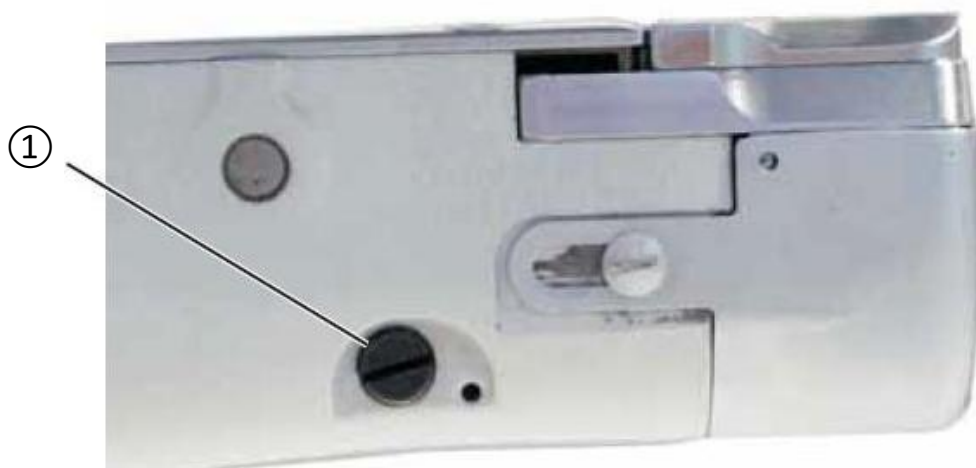
21. 2. 1 Lubricating the machine head

- ① Oil filling hole
- ② MAX marking
- ③ MIN marking



The oil level must not raise above the MAX marking ② or drop below the MIN marking ③. When re-filling the oil, pour it into the filling hole ①.

21. 2. 2 Lubricating the hook



① Oil quantity adjusting screw

The output oil quantity for hook lubrication was pre-set at the factory. Hold a piece of blotting paper next to the hook while sewing. After stitching 1m, the blotting paper ② have been sprayed a thin and even oil layer.

Set the hook lubrication system as follows:

- **Increase the output oil quantity:** Turn the oil quantity adjusting screw counterclockwise
- **Reduce the output oil quantity:** Turn the oil quantity adjusting screw clockwise

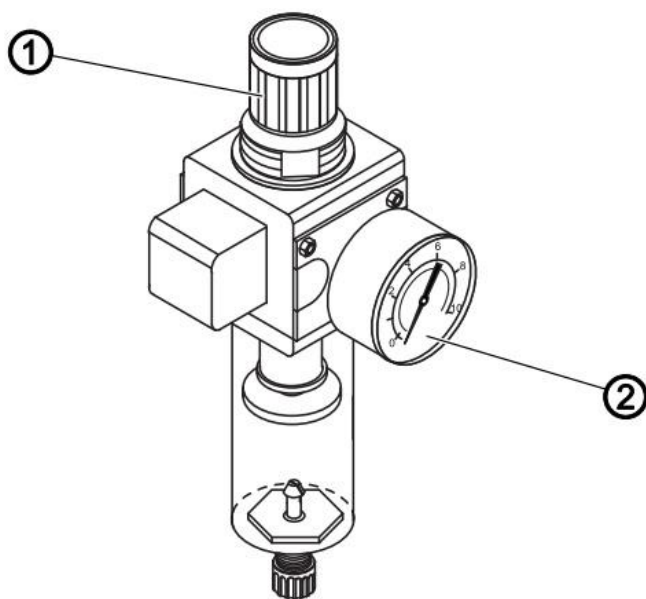
CAUTION: The output oil quantity does not change until after several minutes of operation. Please finish stitching for a few minutes before re-checking the output oil quantity.

21. 3 Servicing the pneumatic system

Check the operating air pressure on a daily basis.

21. 3. 1 Setting the operating air pressure

The air pressure of the pressure regulator is set to 0.6MPa when the machine is in operation. The operating air pressure cannot deviate by more than ± 0.5 bar. The machine is only used when the operating air pressure is set correctly, incorrect operating air pressure can result in damage to the machine.



① Pressure regulator

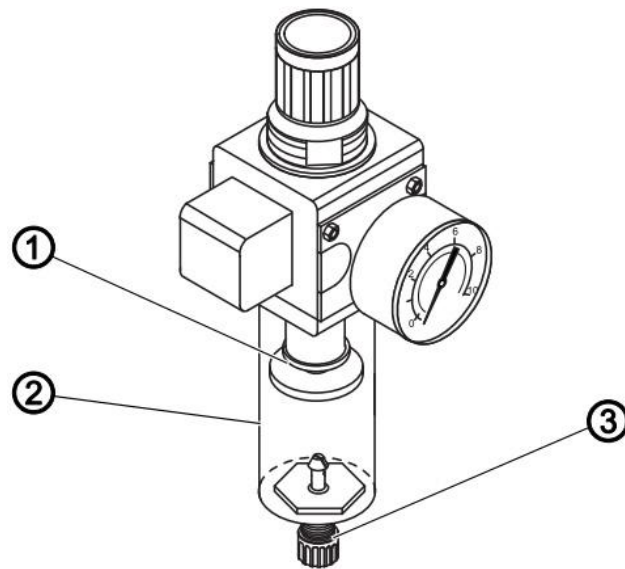
② Pressure gauge

Setting the operating air pressure as follows:

- (1) Pull the pressure regulator ① up.
- (2) Turn the pressure regulator ① until the pointer on the pressure gauge ② points to the inner ring number 0.6.
 - **Increase pressure:** Turn clockwise
 - **Reduce pressure:** Turn counterclockwise
- (3) Push the pressure regulator ① down.

21. 3. 2 Draining the water-oil mixture

During the operation of the machine, it is necessary to inspect the oil-water mixture in a daily basis. Excess accumulation of oil-water mixtures can result in damage to the machine. it must be drained promptly.



① Filter element ② Collection container ③ Drain screw

During operation, the oil-water mixture accumulates in the collection container ②.

Notice:

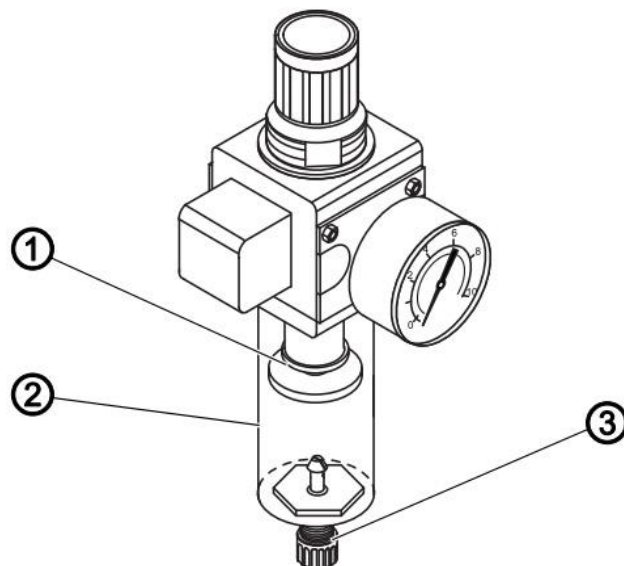
- Check the level of the oil-water mixture in the collection container ② daily.
- The level of the oil-water mixture should not exceed the filter element ①.

Drain the oil-water mixture as follows:

- (1) Disconnect the machine from the compressed air supply.
- (2) Place the container under the drain screw ③.
- (3) Loosen the drain screw ③ completely.
- (4) Allow the water-oil mixture to drain into the container.
- (5) Tighten the drain screw ③.
- (6) Connect the machine to the compressed air supply.

21. 3. 3 Cleaning the filter element

- Solvent-based cleaners damage the filter.
- Use only solvent-free substances for washing the filter housing.

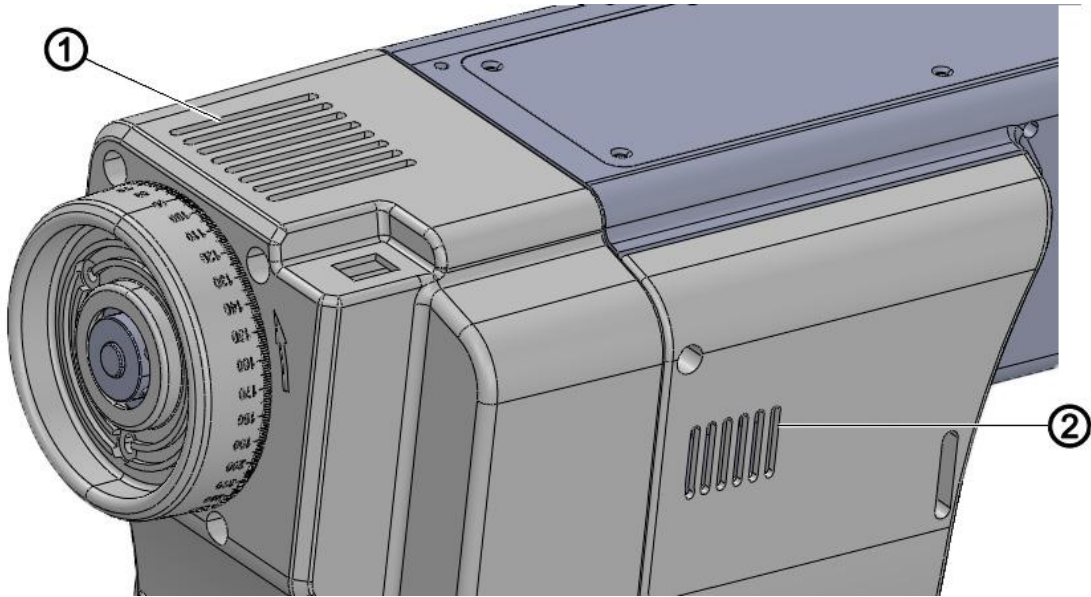


- ① Filter element ② Collection container ③ Drain screw

Clean the filter element as follows:

- (1) Disconnect the machine from the compressed air supply.
- (2) Drain the water-oil mixture.
- (3) Unscrew the collection container ②.
- (4) Unscrew the filter element ①.
- (5) Blow out the filter element ① using the compressed air gun.
- (6) Clean the filter housing with gasoline.
- (7) Tighten the filter element ①.
- (8) Tighten the collection container ②.
- (9) Tighten the drain screw ③.
- (10) Connect the machine to the compressed air supply.

21. 4 Servicing specific components



- ① Motor heat dissipation window ② Electromagnetic valve heat dissipation window

21. 4. 1 Cleaning the motor heat dissipation window

The motor heat dissipation window ① must be cleaned once a month using a compressed air gun. When very fluffy material is used for sewing, the motor heat dissipation window ① must be cleaned more frequently. The steps are as follows:

- (1) Disassemble the handwheel.
- (2) Disassemble the motor cover.
- (3) Use a compressed air gun to blow away dust and other debris from the motor heat dissipation window ①.
- (4) Install the motor cover.
- (5) Install the handwheel.

21. 4. 2 Cleaning the electromagnetic valve heat dissipation window

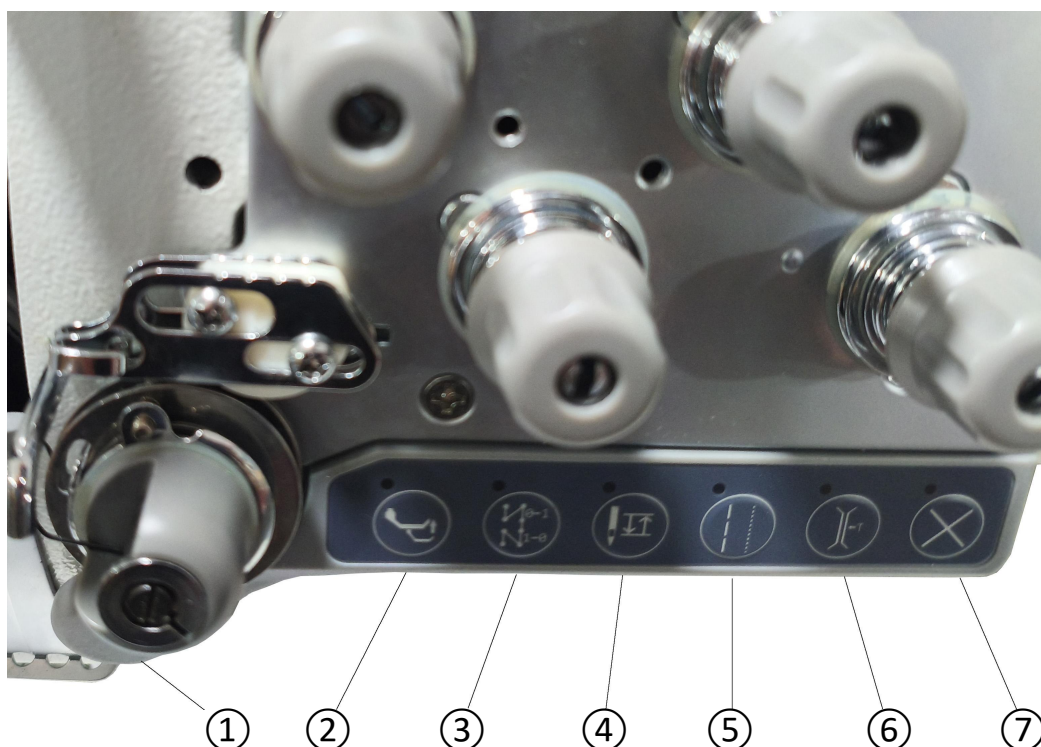
The electromagnetic valve heat dissipation window ② must be cleaned once a month using a compressed air gun. When very fluffy material is used for sewing, The electromagnetic valve heat dissipation window ② must be cleaned more frequently. The steps are as follows:

- (1) Disassemble the rear cover plate.
- (2) Use a compressed air gun to blow away dust and other debris from the electromagnetic valve heat dissipation window ②.
- (3) Install the rear cover plate.

21. 4. 3 Checking the toothed belt

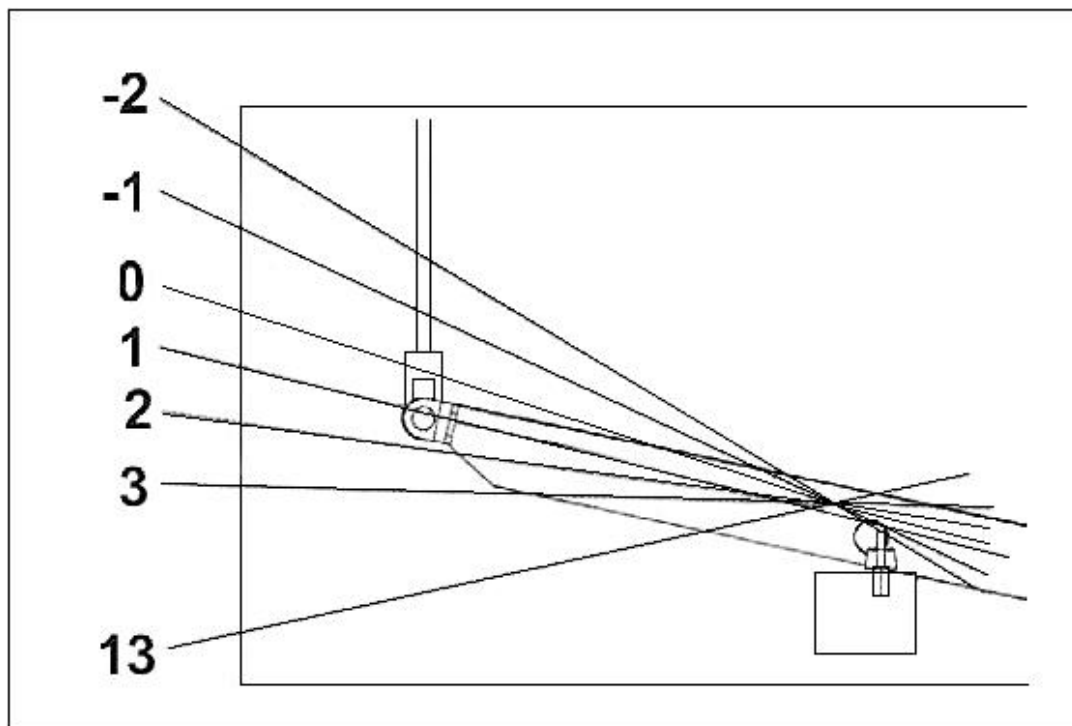
- The toothed belt must be checked once a month.
- When pressed with a finger, the toothed belt curvature must be no more than 10mm.
- The toothed belt must not exhibit any signs of cracks, brittleness, or broken teeth.
- A damaged toothed belt must be replaced immediately.

22 Function buttons on the machine arm



- ① Backtack key (Press this key, the machine start the reverse stitching)
- ② Climbing uphill key (When transitioning from thin material stitching to thicker material, press this key to slow down the stitching speed, making the seam more aesthetically pleasing, and also preventing unexpected occurrences such as broken needles.)
- ③ Start bartack and End bartack key (If the Start bartack and End bartack key are activated, press this key to disable the next bartack seam. If Start bartack and End bartack key have not been activated, press this key will enable the next bartack seam.)
- ④ Stop the needle key (Move the needle to the upper or lower position.)
- ⑤ Stitch length key
 - The key indicator light is illuminated: Longer stitch length has been used (Adjusting knob for upper stitch length) .
 - The key indicator light has gone out: Shorter stitch length has been used (Adjusting knob for lower stitch length) .
- ⑥ Supplement the surface thread tension key
 - The key indicator light is illuminated: The supplementary surface thread tension has been activated.
 - The key indicator light is not illuminated: The supplementary surface thread tension has not been activated.
- ⑦ Pause key (Press it to stop the stitching; press it again to continue the stitching.)

23 Pedal



Use the pedal

The position of the pedal is divided into 16 segments through sensor scanning for sampling inspection.

The meaning is described in the following list:

Position of the pedal	Pedal movement	Meaning
-2	Extend beyond the heel, fully backward	Thread trimming instruction (completion of stitching)
-1	Lean slightly backward at the heel	Lift presser foot instruction
0	Neutral position	Please refer to the precautions
1	Move slightly forward	Release presser foot instruction
2	Move forward further	The sewing machine is operating at its minimum rotation speed (1. Variable speed)
3	Move forward further	Sewing acceleration (2. Variable speed)
: : :		
13	Moving forward fully	Sewing at maximum speed (12. Variable speed)

Precautions:

The pedal positioning in neutral position allows the following functions to be set:

The stop position of the needle (down / up) during the pause in stitching and the stop position of the alternative presser foot (down / up).

After the stitching process is completed, the stop position of the alternative presser foot (up / down). Fully press the pedal backward and then press it back to the neutral position on the pedal.