



Service Instructions

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

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1	About these service instructions	3
1.1	Scope of the service instructions	3
1.2	Representation conventions – symbols and characters	3
1.3	Other documents	4
1.4	Liability	4
2	Safety	5
2.1	Basic safety instructions	5
2.2	Signal words and symbols used in warnings	6
3	Working basis	9
3.1	Order of the settings	9
3.2	Cable routing	9
3.3	Removing the covers	10
3.3.1	Tilting and erecting the machine head	10
3.3.2	Removing and placing the arm cover	11
3.3.3	Removing and placing the head cover	12
3.3.4	Removing and placing the valve cover	13
3.3.5	Removing and installing the throat plate	14
3.3.6	Removing and installing the feed dog	15
3.4	Flats on shafts	16
3.5	Locking the sewing machine in place	16
3.6	Setting the handwheel into position	18
4	Positioning the arm shaft	19
5	Setting the handwheel scale	21
6	Positioning the toothed belt wheels	23
6.1	Setting the upper toothed belt wheel	23
6.2	Setting the lower toothed belt wheel	25
7	Setting the stitch length adjusting wheels	27
7.1	Setting the upper stitch length adjusting wheel	28
7.2	Setting the lower stitch length adjusting wheel	30
7.3	Setting the stitch length limit	32
7.4	Setting the eccentric for the forward and backward stitches	33
8	Setting the feed dog	35
8.1	Setting the feed dog position	35
8.1.1	Moving the feed dog	36
8.1.2	Moving the feed dog carrier	37
8.2	Setting the feed dog movement	38
8.2.1	Setting the feed movement	38
8.2.2	Setting the feed dog height at top dead center	39
8.2.3	Setting the stroke movement	40
9	Aligning the needle bar linkage	43
9.1	Moving the needle bar linkage sideways	43
9.2	Aligning the needle bar linkage in the sewing direction	45
10	Position of the hook and needle	47
10.1	Setting the hook side clearance	47

10.2	Setting the loop stroke position	49
10.3	Setting the needle bar height.....	51
11	Sewing feet.....	53
11.1	Setting an even sewing foot stroke.....	54
11.2	Setting the stroke movement for the feeding foot.....	55
11.3	Setting the sewing foot pressure	57
11.4	Setting the sewing foot lifting height	58
12	Setting the needle thread tension.....	59
12.1	Setting the needle thread regulator	59
12.2	Setting the thread tensioning spring	60
13	Winder	61
13.1	Setting the winder	61
13.2	Setting the hook thread guide.....	64
14	Thread cutter.....	65
14.1	Setting the control cam position	65
14.2	Setting the armature of the thread cutter magnet.....	66
14.3	Setting the position of the thread-pulling knife.....	67
14.4	Setting the cutting pressure.....	68
15	Setting the potentiometer	71
16	Maintenance.....	73
16.1	Cleaning	74
16.1.1	Cleaning the machine	74
16.1.2	Cleaning the motor fan mesh	75
16.2	Lubricating	76
16.2.1	Lubricating the machine head	77
16.2.2	Lubricating the hook	78
16.3	Servicing the pneumatic system.....	79
16.3.1	Setting the operating pressure	79
16.3.2	Draining the water condensation	80
16.3.3	Cleaning the filter element.....	81
16.4	Servicing specific components	82
16.5	Parts list.....	82
17	Decommissioning.....	83
18	Disposal.....	85
19	Technical data.....	87

1 About these service instructions

These instructions for sewing machine 667 was compiled with the utmost care. They contain information and notes intended to ensure long-term and reliable operation.

1.1 Scope of the service instructions

The instructions describe the setting and maintenance work on the 967 sewing machine. They apply to all subclasses.

The proper use and setup is described in the  *Operating Instructions*.

1.2 Representation conventions – symbols and characters

Various information in these instructions is represented or highlighted by the following characters in order to facilitate easy and quick understanding:



Proper setting

Specifies proper setting.



Disturbances

Specifies the disturbances that can occur from an incorrect setting.



Steps to be performed when operating the machine (sewing and equipping)



Steps to be performed for service, maintenance, and installation



Steps to be performed via the software control panel

The individual steps are numbered:

1. 1. First step
 2. 2. Second step
- The steps must always be followed in the specified order.

- Lists are marked by bullet points.



Result of performing an operation

Change to the machine or on the display.



Important

Special attention must be paid to this point when performing a step.

**Information**

Additional information, e.g. on alternative operating options.


**Order**

Specifies the work to be performed before or after a setting.

References

Reference to another section in these instructions.

Safety

Important warnings for the user of the machine are specifically marked. Since safety is of particular importance, hazard symbols, levels of danger and their signal words are described separately in  2 *Safety*.

Location information

If no other clear location information is used in a figure, indications of *right* or *left* are always from the user's point of view.

1.3 Other documents

The device contains built-in components from other manufacturers. Each manufacturer has performed a hazard assessment for these purchased parts and confirmed their design compliance with applicable European and national regulations. The proper use of the built-in components is described in the corresponding manufacturer's instructions.

1.4 Liability

All information in these service instructions was compiled in accordance with the current state of the art and the applicable standards and regulations.

The manufacturer cannot be held liable for damages resulting from:

- Breakage and damage during transport
- Failure to follow the operating instructions
- Improper use
- Unauthorized modifications to the machine
- Use of untrained personnel
- Use of unapproved parts

2 Safety

This chapter contains basic information for your safety. Read the instructions carefully before setting up or operating the machine. Make sure to follow the information included in the safety instructions. Failure to do so can result in serious injury and property damage.



2.1 Basic safety instructions

The machine may only be used as described in these instructions.

The instructions should be available at the machine's location at all times.

Work on live components and equipment is prohibited. Exceptions are defined in the DIN VDE 0105.

For the following work, the machine must be disconnected from the power supply using the main switch or by disconnecting the power plug:

- Replacing the needle or other sewing tools
- Leaving the workstation
- Performing maintenance work and repairs
- Threading

Missing or faulty parts could impair safety and damage the machine. Therefore only use original parts from the manufacturer.

Transport Use a lifting carriage or forklift to transport the machine. Raise the machine max. 20 mm and secure it to prevent it from slipping off.

Setup The connecting cable must have a power plug approved in the relevant country. The power plug may only be connected to the power cable by qualified specialists.

Obligations of the operator Follow the country-specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

All the warnings and safety signs on the machine must always be in legible condition, and must not be removed. Missing or damaged labels must be replaced immediately.

Requirements to be met by the personnel The machine may only be set up by qualified specialists.

Maintenance work and repairs may only be carried out by qualified specialists.

Work on electrical equipment may only be carried out by qualified specialists.

Only authorized persons may work on the machine. Every person who works on the machine must first have understood these instructions.

Operation Inspect the machine for any externally visible damage during use. Stop working if you notice any changes to the machine. Report any changes to your supervisor. Machines must no longer be used if they are damaged.

Safety equipment Safety equipment should not be removed or deactivated. If it is essential to remove or deactivate safety equipment for a repair operation, it must be refitted and put back into service immediately afterward.



2.2 Signal words and symbols used in warnings




Warnings in the text are distinguished by color bars. The color scheme based on the severity of the danger. Signal words indicate the severity of the danger.

Signal words Signal words and the hazard they describe:

Signal word	Meaning
DANGER	(with hazard symbol) If ignored, fatal or serious injury will result
WARNING	(with hazard symbol) If ignored, fatal or serious injury can result
CAUTION	(with hazard symbol) If ignored, moderate or minor injury can result
NOTICE	(without hazard symbol) If ignored, property damage can result

Symbols The following symbols indicate the type of danger to personnel:

Symbol	Type of danger
	General
	Electric shock

Symbol	Type of danger
	Sharp parts
	Crushing
	Environmental damage

Examples Examples of the layout of warnings in the text:

DANGER



Type and source of danger!
 Consequences of non-compliance.
 Measures for avoiding the danger.

↪ This is what a warning looks like for a hazard that will result in serious injury or even death if ignored.

WARNING



Type and source of danger!
 Consequences of non-compliance.
 Measures for avoiding the danger.

↪ This is what a warning looks like for a hazard that could result in serious or even fatal injury if ignored.

CAUTION



Type and source of danger!
 Consequences of non-compliance.
 Measures for avoiding the danger.

↪ This is what a warning looks like for a hazard that could result in moderate or minor injury if the warning is ignored.

CAUTION



Type and source of danger!

Consequences of non-compliance.

Measures for avoiding the danger.

-
- ↪ This is what a warning looks like for a hazard that could result in environmental damage if ignored.

NOTICE

Type and source of danger!

Consequences of non-compliance.

Measures for avoiding the danger.

-
- ↪ This is what a warning looks like for a hazard that could result in property damage if ignored.


3 Working basis

3.1 Order of the settings

The setting positions for the sewing machine are interdependent.



Always comply with the order of individual setting steps as specified.

It is absolutely essential that you follow all notices regarding prerequisites and subsequent settings that are marked with  in the margin.

NOTICE

Property damage may occur!

Risk of machine damage from incorrect order.

It is essential to follow the working order specified in these instructions.

3.2 Cable routing

Ensure that all cables are laid in the machine such that the function of moving parts is not hampered.



1. Lay any excess cabling neatly in proper cable snakes.
2. Bind together the cable loops with cable ties.



- Tie loops wherever possible to fixed parts.
The cables must be secured firmly.
3. Cut off the extending ends of cable ties.

NOTICE

Property damage may occur!

Machine damage and malfunctions can be caused by laying the cables incorrectly.

Lay excess cabling in such a way that moving parts are not impaired in their ability to function correctly.

3.3 Removing the covers

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before removing or re-placing covers.

For many types of setting work, you will have to remove the machine covers first in order to access the components.

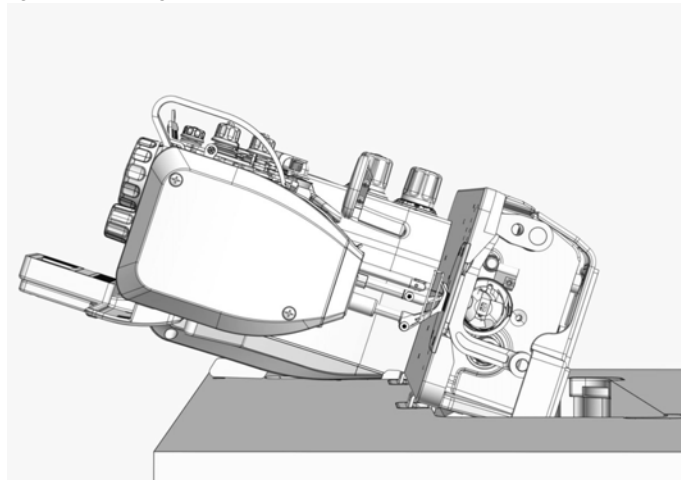
This chapter describes how to remove and then refit the individual covers. The text for each type of setting work then specifies only the cover that needs to be removed at that particular time.

3.3.1 Tilting and erecting the machine head



To access the components on the underside of the machine, swivel up the machine head.

Fig. 1: Tilting and erecting the machine head



Tilting the machine head



To tilt the machine head:

1. Tilt the machine head as far as it will go.

Erecting the machine head



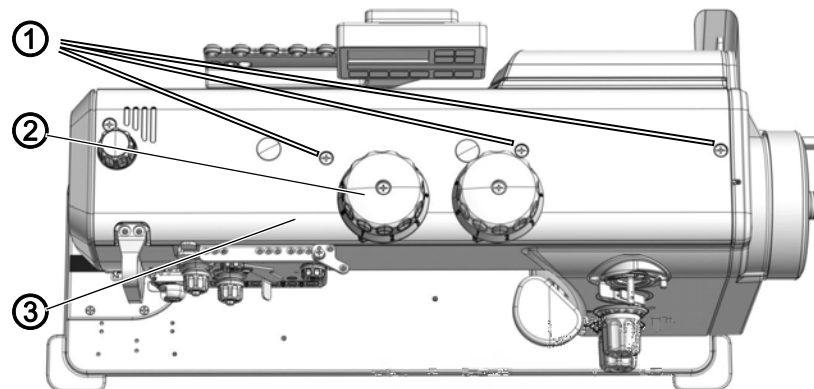
To erect the machine head:

1. Erect the machine head.

3.3.2 Removing and placing the arm cover



Fig. 2: Removing and placing the arm cover



(1) - Screws

(2) - Left adjusting wheel for sewing
foot stroke

(3) - Arm cover

Removing the arm cover



To remove the arm cover:

1. Position the left adjusting wheel for the sewing foot stroke (2) to 2.
2. Loosen the screws (1).
3. Hold the arm cover (3) at the adjusting wheels and remove it.

Placing the arm cover



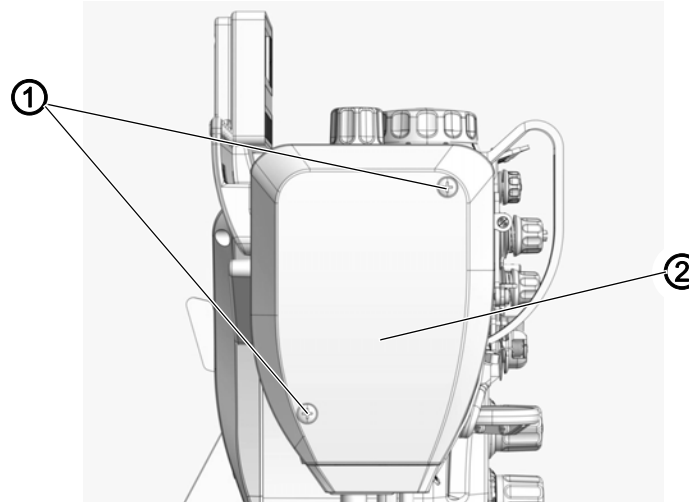
To place the arm cover:

1. Position the left adjusting wheel for the sewing foot stroke (2) to 2.
2. Place the arm cover (3).
3. Tighten the screws (1).

3.3.3 Removing and placing the head cover



Fig. 3: Removing and placing the head cover



(1) - Screws

(2) - Head cover

Removing the head cover



To remove the head cover:

1. Loosen the screws (1).
2. Remove the head cover (2).

Placing the head cover



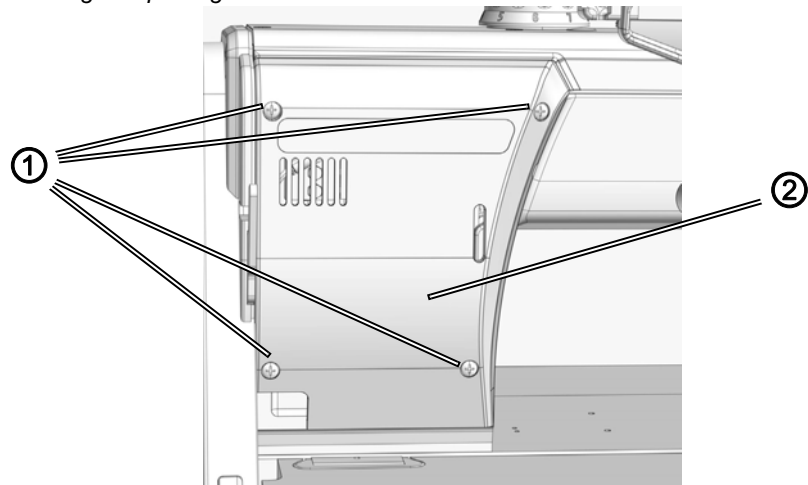
To place the head cover:

1. Place the head cover (2).
2. Tighten the screws (1).

3.3.4 Removing and placing the valve cover



Fig. 4: Removing and placing the valve cover



(1) - Screws

(2) - Valve cover

Removing the valve cover



To remove the valve cover:

1. Loosen all 4 screws (1).
2. Remove the valve cover (2).



Important

When removing the valve cover, be sure not to pull off any cables.

Placing the valve cover



To place the valve cover:

1. Place the valve cover (2).
2. Tighten all 4 screws (1).



Important

When placing the valve cover, be sure not to pull off any cables.

3.3.5 Removing and installing the throat plate

WARNING



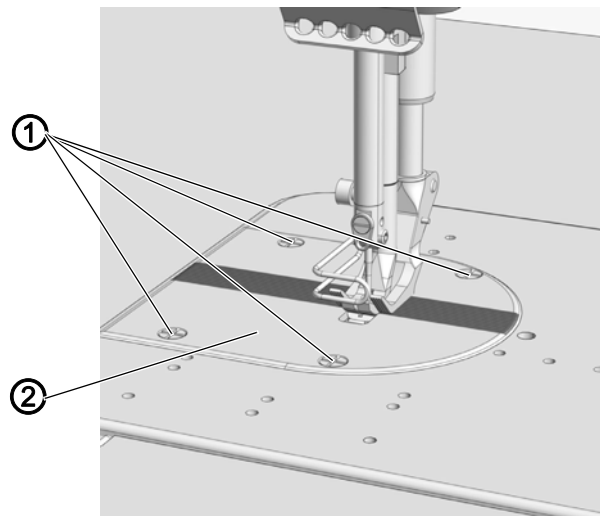
Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you remove or install the throat plate.



Fig. 5: Removing and installing the throat plate



(1) - Screws

(2) - Throat plate

Removing the throat plate



To remove the throat plate:

1. Loosen the screws (1).
2. Remove the throat plate (2).

Installing the throat plate



To install the throat plate:

1. Insert the throat plate (2).
2. Tighten the screws (1).

3.3.6 Removing and installing the feed dog

WARNING



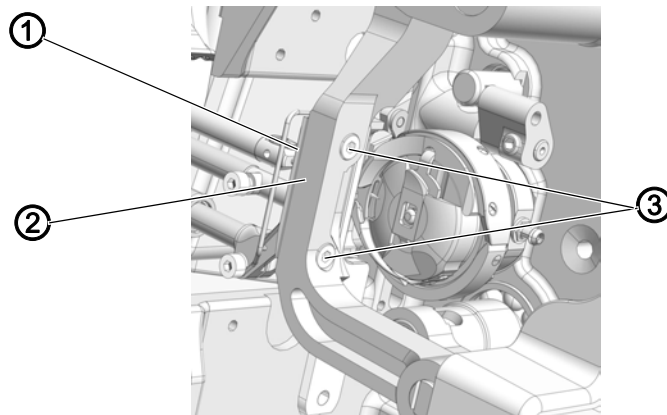
Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you remove or install the feed dog.



Fig. 6: Removing and installing the feed dog



(1) - Feed dog

(2) - Feed dog carrier

(3) - Screws

Removing the feed dog



To remove the feed dog:

1. Tilt the machine head.
2. Loosen the screws (3).
3. Take the feed dog (1) off the feed dog carrier (2).

Installing the feed dog



To install the feed dog:

1. Place the feed dog (1) onto the feed dog carrier (2).
2. Tighten the screws (3).



Important

Check the feed dog position in its movement at maximum stitch length (depending on the equipment: 6, 9 or 12) by turning the handwheel. The feed dog must not hit against the throat plate.



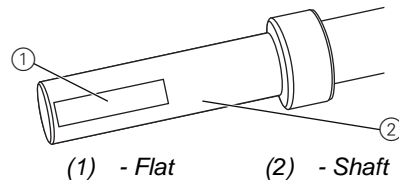
Order

Then check the following setting:

- Feed dog ( p. 36)

3.4 Flats on shafts

Fig. 7: Flats on shafts



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



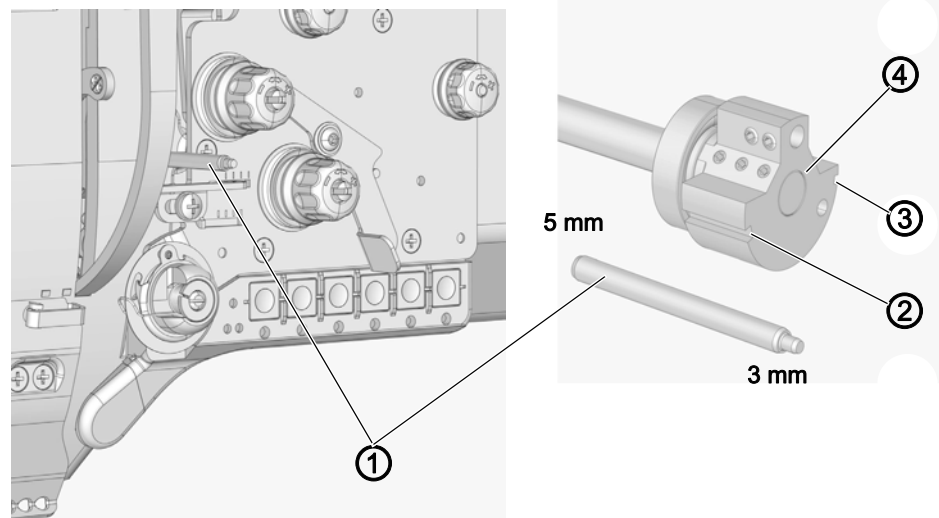
Important

Always ensure that the screws are completely flush with the surface.

3.5 Locking the sewing machine in place

For some settings, the machine must be locked in place. To do this, the arresting pin from the accessory pack is inserted into a slot on the arm shaft crank, blocking the arm shaft.

Fig. 8: Locking the sewing machine in place (1)



- (1) - Arresting pin
- (2) - Large arresting groove

- (3) - Small arresting groove
- (4) - Arm shaft crank

There are 2 securing positions:

- **Position 1:** Loop stroke position
 - 5 mm end in the large slot
 - Setting the loop stroke and needle bar height
- **Position 2:** Handwheel zero position
 - 3 mm end in the small slot
 - Setting the handwheel position and checking the top dead center for the needle bar

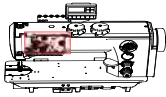
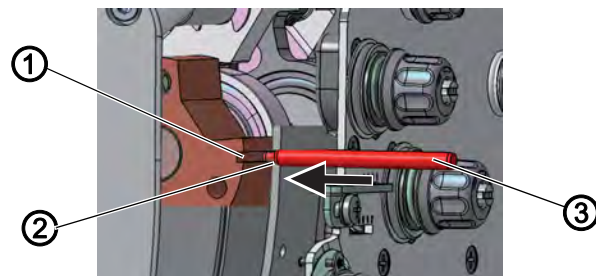


Fig. 9: Locking the sewing machine in place (2)



(1) - Slot

(2) - Locking opening

(3) - Arresting pin



Locking the machine in place

1. Remove the plug from the locking slot (2).
2. Turn the handwheel until the appropriate groove (1) is in front of the locking opening (2):
 - Small slot at handwheel position 0°
 - Large groove at handwheel position 200 – 205°
3. Insert the arresting pin (3) with the appropriate end in the groove (1).



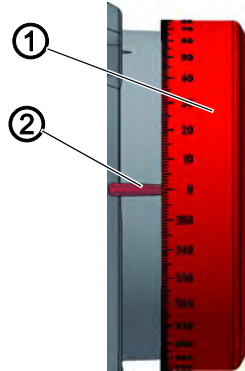
Removing the positional lock

1. Pull the arresting pin (3) out of the groove (1).
2. Insert the plug into the locking opening (2).

3.6 Setting the handwheel into position

For some settings, the graduated scale on the handwheel has to be moved to a certain position.

Fig. 10: Setting the handwheel into position



(1) - Graduated scale (2) - Marking scale



To set the handwheel into position:

1. Turn the handwheel until the specified number on the graduated scale (1) is next to the marking (2).

4 Positioning the arm shaft

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the position of the arm shaft crank.



Proper setting

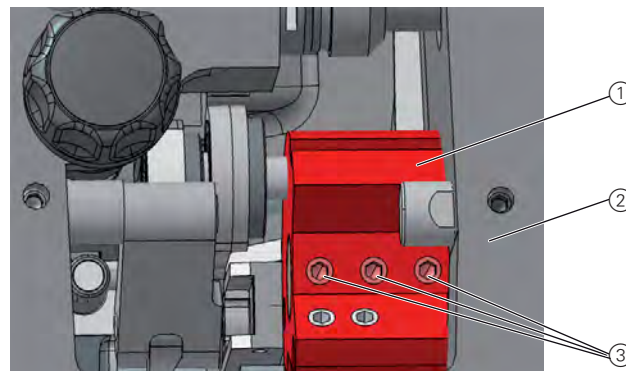
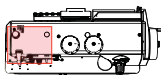
The 3 threaded pins (3) on the arm shaft crank (1) are seated completely on the flat. The arm shaft crank (1) is flush with the machine casting (2).



Cover

- Arm cover (📖 p. 11)

Fig. 11: Positioning the arm shaft



(1) - Arm shaft crank
(2) - Machine casting

(3) - Threaded pins



To position the arm shaft:

1. Loosen all threaded pins (3) on the arm shaft crank (1).
2. Turn the arm shaft crank (1) such that the threaded pins (3) are seated completely on the flat of the arm shaft.
3. Push the arm shaft (1) to the right as far as it will go and flush with the machine casting.
4. Tighten all the threaded pins (3) on the arm shaft crank (1).

5 Setting the handwheel scale

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the position of the handwheel on the arm shaft.



Checking the proper setting


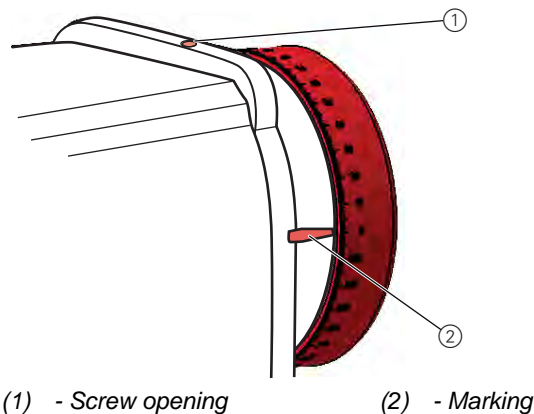


1. Lock the machine in place at position 2 ( p. 16).
- ↳ The handwheel is at position 0°.
 - If a different degree number is next to the marking (2) then you will have to reset the graduated scale.

Fig. 12: Setting the handwheel scale



To set the handwheel scale:

The handwheel is fastened using 2 threaded pins, which you can see through the screw opening (1).

1. Turn handwheel until the first threaded pin is under the opening (1).
2. Loosen the threaded pin through the opening (1).
3. Turn the handwheel by 50° such that the second threaded pin is under the opening (1).
4. Loosen the threaded pin through the opening (1).
5. Lock the machine in place at position 2 ( p. 16).
6. Turn the handwheel scale so that the 0° is at the center of the marking (2).
7. Tighten the threaded pin through the opening (1).
8. Removing the lock ( p. 16).
9. Move the handwheel into the 50° position.
10. Tighten the threaded pin through the opening (1).

6 Positioning the toothed belt wheels

The two toothed belt wheels must be positioned one on top of the other such that the toothed belt can run correctly. In machines with normal lengths, the winder wheel is directly next to the upper toothed belt wheel and determines its alignment. In long arm machines, the winder wheel is fastened farther away in the center of the arm.



Order

- Always check the position of the other toothed belt wheel after making a change on either of the toothed belt wheels.

The position of the upper toothed belt wheel is defined by the distance to the winder wheel.



Therefore, you must first align the upper toothed belt wheel on the winder wheel and then align the lower toothed belt such that the toothed belt runs correctly over both wheels.

6.1 Setting the upper toothed belt wheel

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the upper toothed belt wheel.



Proper setting

The 2 threaded pins for the upper toothed belt wheel are seated flush on the flat.

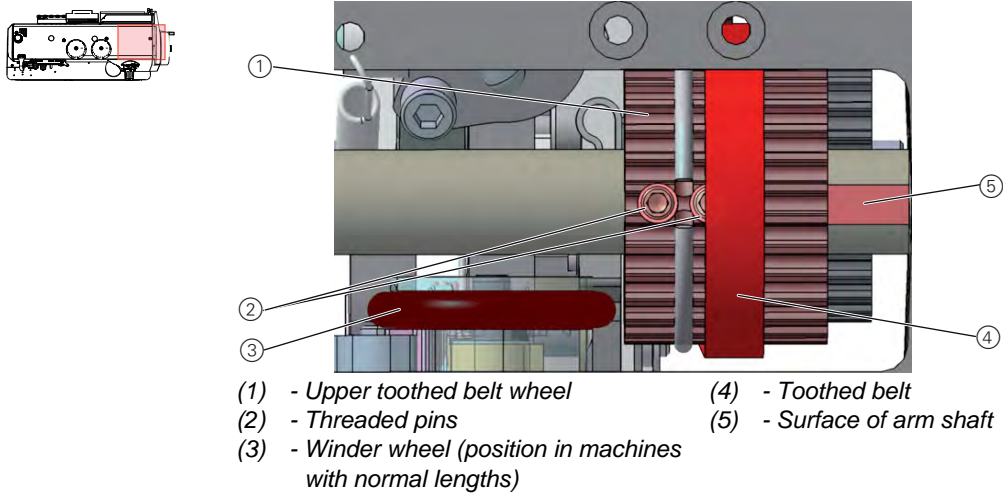
The distance between the winder wheel and the upper toothed belt wheel is 0.8 mm.



Cover

- Arm cover ( p. 11)

Fig. 13: Setting the upper toothed belt wheel



To set the upper toothed belt wheel:

1. Using the screwdriver, push the toothed belt (4) sufficiently far to the side so that the 2 threaded pins (2) can be reached.
2. Loosen the threaded pins (2).
3. Turn the upper toothed belt wheel (1) such that the threaded pins (2) are seated flush on the flat (5) of the arm shaft.
4. Move the upper toothed belt wheel (1) to the side such that the distance to the winder wheel (3) is 0.8 mm.
5. Tighten the threaded pins (2).
6. Use the screwdriver to push the toothed belt (4) back again.

6.2 Setting the lower toothed belt wheel

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the lower toothed belt wheel.



Proper setting

The 2 threaded pins for the lower toothed belt wheel are seated flush on the flat of the lower shaft.

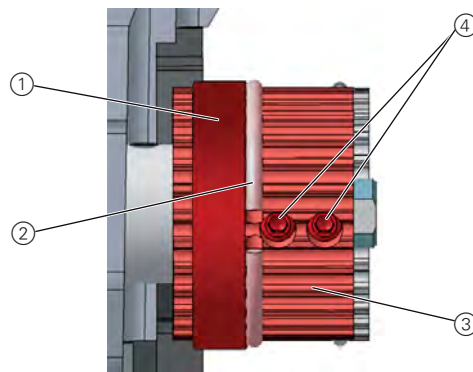
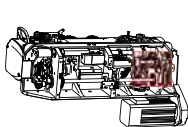
The toothed belt runs correctly without running against the retaining ring or slipping off.



Cover

- Tilt the machine head ( p. 10)

Fig. 14: Setting the lower toothed belt wheel



(1) - Toothed belt
(2) - Retaining ring

(3) - Lower toothed belt wheel
(4) - Threaded pins

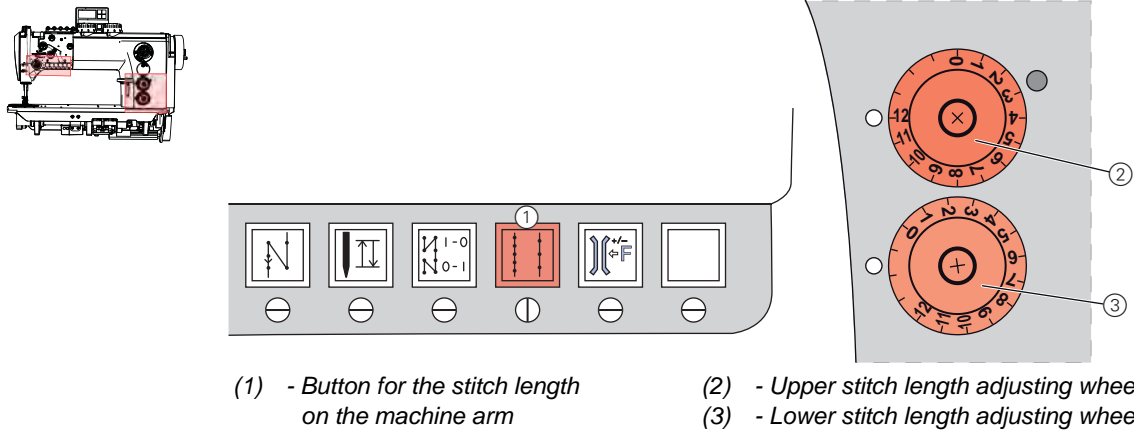


To set the lower toothed belt wheel:

1. Loosen the threaded pins (4).
2. Turn the lower toothed belt wheel (3) such that the threaded pins (4) are seated on the flat of the arm shaft.
3. Move the lower toothed belt wheel (3) sufficiently far to the side so that the toothed belt (1) makes contact with the retaining ring (2) without being pushed away.
4. Tighten the threaded pins (4).

7 Setting the stitch length adjusting wheels

Fig. 15: Setting the stitch length adjusting wheels



The 2 adjusting wheels on the machine column determine the stitch length.

- Upper adjusting wheel: larger stitch length
- Lower adjusting wheel: smaller stitch length

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

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

If the upper adjusting wheel is activated, then the button (1) lights up.

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

An automatic switchover to the upper adjusting wheel is made when you switch off the machine at the main switch.



Order

Set the upper stitch length adjusting wheel first, then the lower stitch length adjusting wheel.

7.1 Setting the upper stitch length adjusting wheel

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you set the upper toothed belt wheel.



Proper setting

Upper stitch length adjusting wheel to 0:

- ↪ No play on the stitch regulator gear. The plates for the gear are parallel; the frame cannot be moved.



Cover

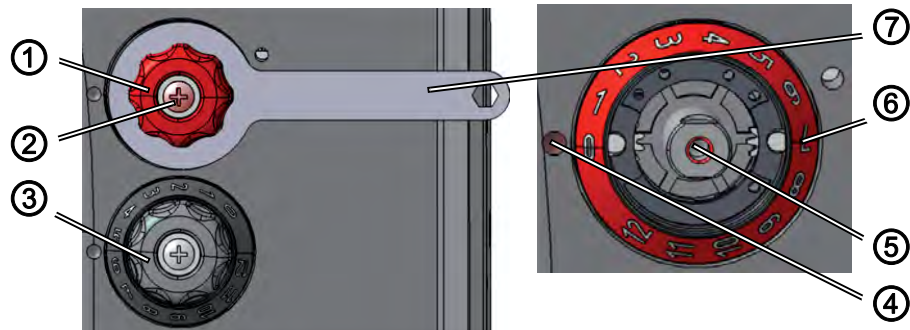
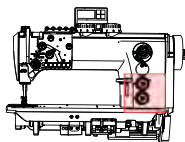
- Tilt the machine head (📖 p. 10)



To set the upper stitch length adjusting wheel:

1. Switch off the machine at the main switch.
- ↪ The machine switches over to the upper stitch length adjusting wheel.

Fig. 16: Setting the upper stitch length adjusting wheel (1)



- | | |
|---|--------------|
| (1) - Upper stitch length adjusting wheel | (5) - Shaft |
| (2) - Screw | (6) - Scale |
| (3) - Lower stitch length adjusting wheel | (7) - Wrench |
| (4) - Adjusting mark | |

2. Hold the upper stitch length adjusting wheel (1) in place using a wrench (7).
3. Loosen the screw (2).
4. Remove the upper stitch length adjusting wheel (1) from the shaft (5).

NOTICE

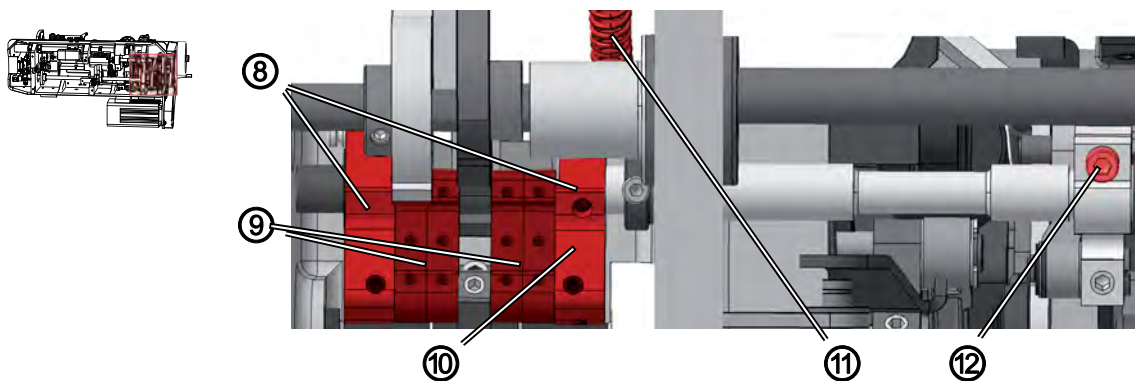
Property damage may occur!

Risk of machine damage if the shaft is turned too hard.
If you turn the shaft too far, parts on the stitch regulator gear may bend or get stuck.

Turn the shaft carefully and stop as soon as you feel a slight resistance.

- Carefully turn the shaft (5) clockwise using a size 10 wrench.

Fig. 17: Setting the upper stitch length adjusting wheel (2)



- | | |
|--|-----------------------|
| (8) - Frame for the stitch regulator gear | (11) - Tension spring |
| (9) - Plates for the stitch regulator gear | (12) - Screw |
| (10) - Hole | |

- Check whether the frame (8) for the stitch regulator gear can be moved.



Information

In machines that have a **stitch adjustment lever**, check this by pressing the stitch adjustment lever.

In machines that **do not have a stitch adjustment lever**, insert the arresting pin or a hex key into the opening (10) and try to move the frame (8) up and down.

- As soon as the frame (8) stops moving: Remove the wrench from the shaft (5).
- Turn the scale (6) so that the 0 is exactly next to the adjusting mark (4).
- Place the upper stitch length adjusting wheel (1) onto the shaft (5) and tighten it with a wrench (7).
- Tighten the upper stitch length adjusting wheel (1) using screw (2).
- Check whether the plates for the stitch regulator gear (9) are parallel to one another.



Important

If the plates (8) are not parallel to one another:

12. Remove the tension spring (11).
13. Loosen the screw (12).
14. Manually position the plates (9) so that they are parallel.
15. Tighten the screw (12).
16. Attach the tension spring (11).

7.2 Setting the lower stitch length adjusting wheel

WARNING



Risk of injury from moving parts!

Crushing possible.

The lower stitch length adjusting wheel has to be set when the machine is switched on because a switchover is automatically made to the upper stitch length adjusting wheel when the machine is switched off.

Carry out all work with extreme caution.



Checking the proper setting

Sewing with 2 different stitch lengths:

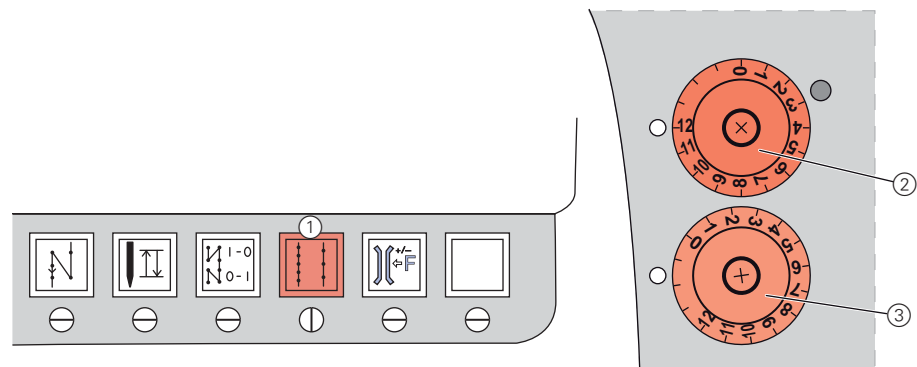
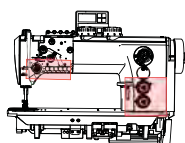
- The stitch lengths on the seam correspond with the set stitch lengths.
- The lower stitch length adjusting wheel can only be turned up to the stitch length set on the upper stitch length adjusting wheel.



Cover

- Tilt the machine head (📖 p. 10)

Fig. 18: Setting the lower stitch length adjusting wheel (1)



(1) - Button for the stitch length on the machine arm

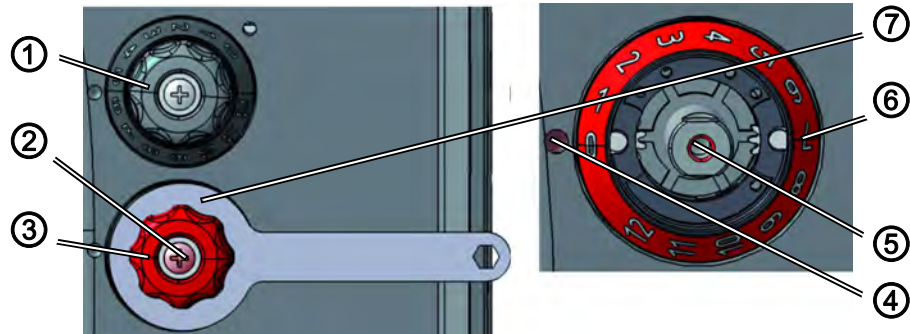
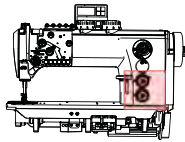
(2) - Upper stitch length adjusting wheel
(3) - Lower stitch length adjusting wheel



To set the lower stitch length adjusting wheel:

1. Position the upper stitch length adjusting wheel (2) > 3.
2. Switch the machine to short stitch length.
- ↘ The button for the stitch length (1) does not light up.
If the button lights up, press button (1) again.

Fig. 19: Setting the lower stitch length adjusting wheel (2)



- | | |
|---|--------------|
| (1) - Upper stitch length adjusting wheel | (5) - Shaft |
| (2) - Screw | (6) - Scale |
| (3) - Lower stitch length adjusting wheel | (7) - Wrench |
| (4) - Adjusting mark | |

3. Hold the lower stitch length adjusting wheel (3) in place using the wrench (7).
4. Loosen the screw (2).
5. Remove the lower stitch length adjusting wheel (3) from the shaft (5).

NOTICE

Property damage may occur!

Risk of machine damage if the shaft is turned too hard.
If you turn the shaft too far, parts on the stitch regulator gear may bend or get stuck.

Turn the shaft carefully and stop as soon as you feel a slight resistance.

6. Carefully turn shaft (5) clockwise with a size 10 wrench until you feel significant play on the frame for the stitch regulator gear.
7. Carefully turn shaft (5) counterclockwise with a size 10 wrench until you no longer feel any play.
8. As soon as the frame stops moving: Remove the wrench from the shaft (5).
9. Turn the scale (6) so that the 0 is exactly next to the adjusting mark (4).
10. Place the lower stitch length adjusting wheel (3) onto the shaft (5) and tighten it with a wrench (7).
11. Tighten the lower stitch length adjusting wheel (3) using screw (2).

7.3 Setting the stitch length 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.

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before setting the maximum stitch length limit.

9 or 6 mm can be selected as the maximum stitch length. The appropriate throat plate must be selected for the selected maximum stitch length. The throat plate cut-out must be large enough to prevent the feed dog from hitting the edges of the throat plate at the front and rear dead center.

NOTICE

Property damage may occur!

Risk of damaging the feed dog due to incorrect throat plate size. If the throat plate cut-out is too small, the feed dog may hit against the edges.

Make sure that an appropriate throat plate is used for the selected maximum stitch length.

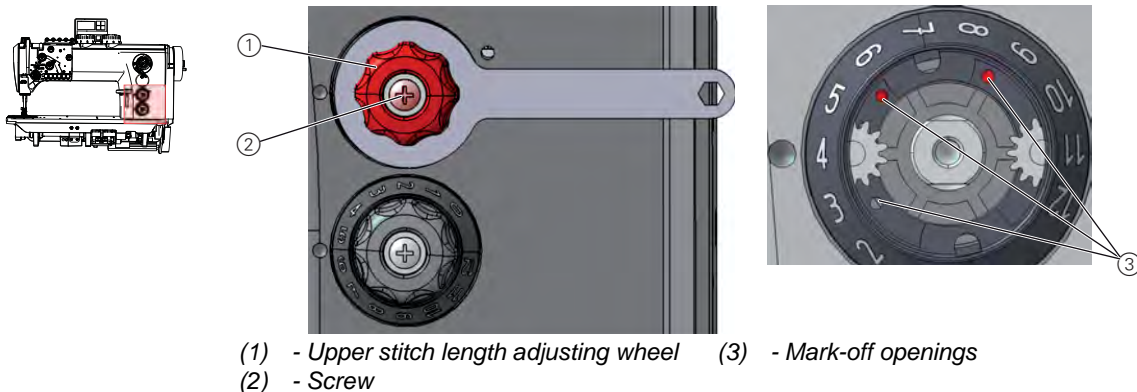


Proper setting

Turn the upper stitch length adjusting wheel clockwise as far as it will go.

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

Fig. 20: Setting the stitch length limit





To set the stitch length limit:

1. Position the upper stitch length adjusting wheel (1) to 0.
2. Hold the upper stitch length adjusting wheel (1) in place using a wrench.
3. Loosen the screw (2).
4. Remove the upper stitch length adjusting wheel (1).
5. Loosen the threaded pin from one of the 3 mark-off openings (3).
6. Screw the threaded pin into the mark-off opening for the required maximum stitch length. The openings are marked with numbers for the stitch length.
7. Turn the scale so that the 0 is exactly next to the adjusting mark.
8. Place the upper stitch length adjusting wheel (1) and hold it in position using a wrench.
9. Tighten the screw (2).

7.4 Setting the eccentric for the forward and backward stitches

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before setting the eccentric screw.



Proper setting

The forward and backward stitches are the same length.

As a test, sew a seam forward, stop, and sew a seam backward. The insertions of the forward and backward stitches have to lie within one another.



Cover


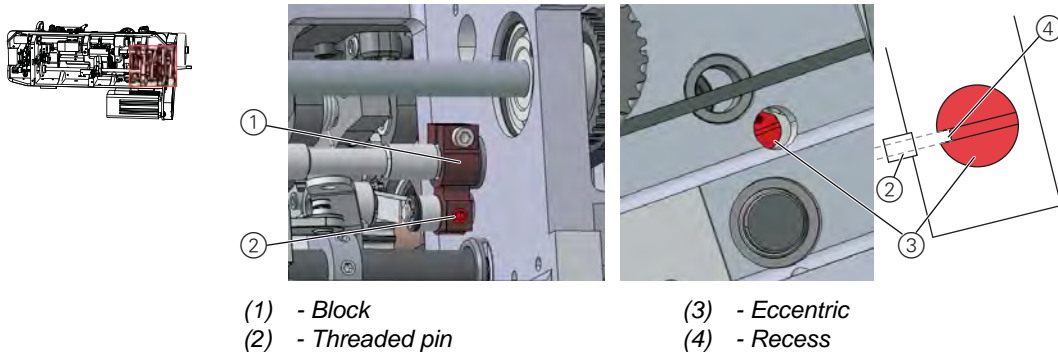
- Tilt the machine head ( p. 10)

Fig. 21: Setting the eccentric for the forward and backward stitches



To set the eccentric for forward and backward stitches:

1. Loosen the threaded pin (2).
2. Turn the eccentric screw (3) from the right through the opening in the base plate:

Initial position:

The slot in the eccentric screw (3) is parallel to the threaded pin (2), the recess (4) faces the front.

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. Tighten the threaded pin (2).

8 Setting the 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.



Order

First, check the following setting:

- Needle bar linkage ( p. 43)

8.1 Setting the feed dog position

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you set the feed dog position.





Proper setting

The feed dog is exactly in the center of the throat plate cut-out, both side-ways and in the sewing direction.

If the stitch length is 0, the needle pierces exactly in the center of the needle hole.

Various settings can be made depending on how far the position of the feed dog differs from the correct setting:

- For minimal deviations, it suffices to move the feed dog on the carrier ( p. 36).
- If this is not sufficient, move the entire feed dog carrier on the sliding shaft ( p. 36).

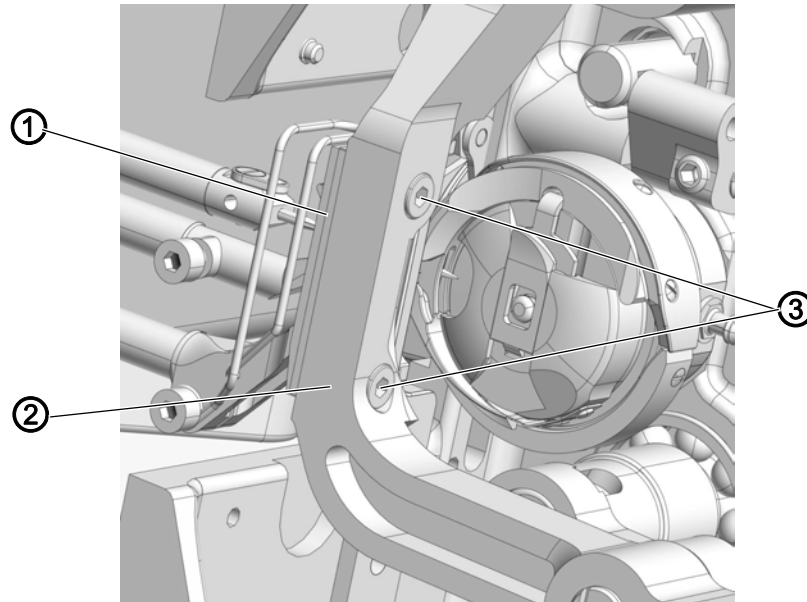
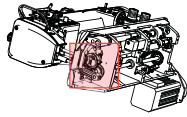
8.1.1 Moving the feed dog



Cover

- Throat plate (📖 p. 14)

Fig. 22: Moving the feed dog



(1) - Feed dog

(2) - Feed dog carrier

(3) - Screws



To move the feed dog:

1. Loosen the screws (3).
2. Move the feed dog (1) on the feed dog carrier (2).
Place the removed throat plate next to it as an aid for orientation so that the feed dog can be screwed on straight.
3. Tighten the screws (3).

8.1.2 Moving the feed dog carrier

The feed dog carrier is connected to the stitch regulator gear via the sliding shaft, and can be moved on this shaft.



Cover


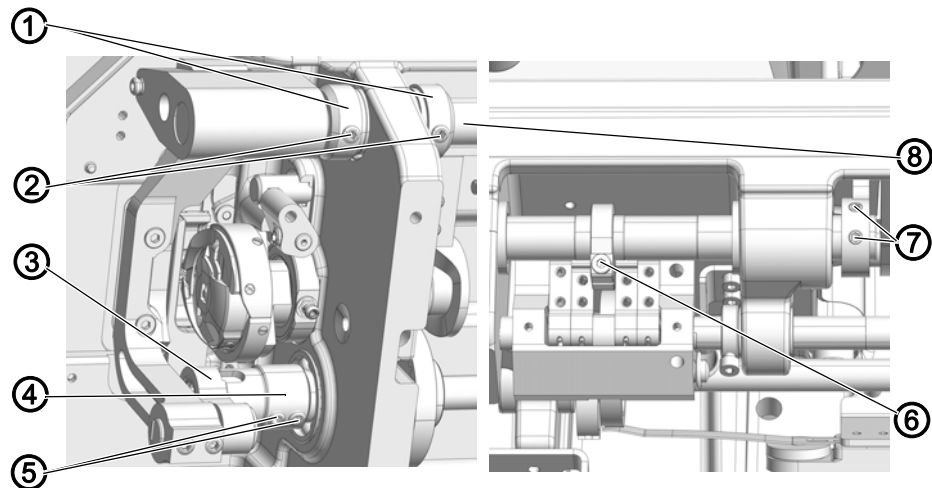
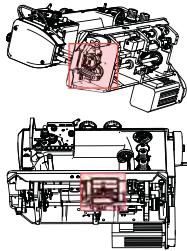
- Tilt the machine head ( p. 10)

Fig. 23: Moving the feed dog carrier



- (1) - Adjusting rings
 (2) - Threaded pins
 (3) - Lever
 (4) - Stroke eccentric

- (5) - Threaded pins
 (6) - Screw
 (7) - Threaded pins
 (8) - Sliding shaft



To move the feed dog carrier:

1. Position the upper stitch length adjusting wheel to 0.
2. Loosen threaded pins (2), (5), (7) and screw (6).
3. Move the feed dog carrier perpendicular to the sewing direction so that the feed dog is exactly in the center of the throat plate cut-out.
4. Push the adjusting rings (1) toward each other as far as they will go.




Important

Make sure that the sliding shaft (8) is tightened by the clamping rings.

5. Tighten the threaded pins (2).
6. Tighten the threaded pins (5) for the stroke eccentric (5).
7. The stroke eccentric (4) and the slot of the lever (3) must be in a line.
8. Move the feed dog carrier in the sewing direction such that the feed dog is exactly in the center of the throat plate cut-out.
9. Tighten screw (6) and threaded pin (7).



In the process, make sure that the feed dog height has the correct setting ( p. 39).

8.2 Setting the feed dog movement

The feed dog moves in an elliptical cycle. To align this correctly, the feed movement and the stroke height and the stroke movement of the feed dog all have to be set.



Order

First, check the following setting:

- Feed dog (📖 p. 35)

8.2.1 Setting the feed movement

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the feed movement of the feed dog.

The proper setting for the feed movement is checked at standstill and set using the pusher eccentric.



Proper setting

Lock the machine in place at position 1 and position the upper stitch length wheel to stitch length 0.

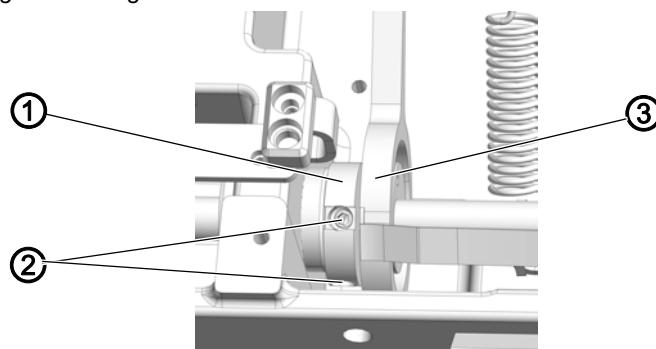
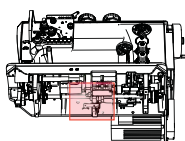
↪ The slots of the feed dog eccentric and of the connecting rod are in a line.



Cover

- Tilt the machine head (📖 p. 10)

Fig. 24: Setting the feed movement



(1) - Pusher eccentric
(2) - Threaded pins

(3) - Connecting rod



To set the feed movement:

1. Position the upper stitch length adjusting wheel to 0.
2. Lock the machine in place at position 1.
3. Loosen the threaded pins (2) on the pusher eccentric (1).
4. Turn the pusher eccentric (1) such that the slot is in a line with the slot of the connecting rod.
5. Tighten the threaded pins (2).

8.2.2 Setting the feed dog height at top dead center

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the feed dog height.

The feed dog reaches the maximum stroke height at top dead center when the handwheel is positioned at 190°.



Proper setting

Place the feed dog in the uppermost position by turning the handwheel.

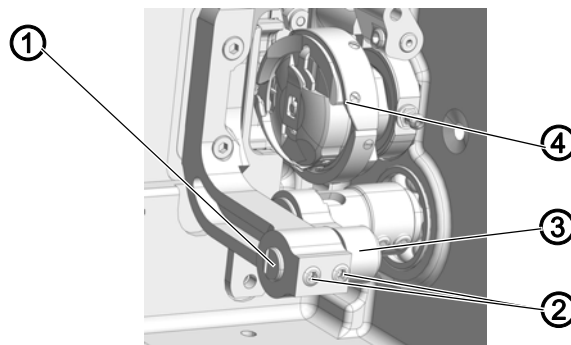
↳ The upper edge of the feed dog protrudes 0.5 mm above the throat plate.



Cover

- Tilt the machine head (📖 p. 10)

Fig. 25: Setting the feed dog height at top dead center



(1) - Stroke eccentric
(2) - Threaded pins

(3) - Lever
(4) - Locking ring



To set the feed dog height at top dead center:

1. Position the upper stitch length adjusting wheel to 0.
2. Place the feed dog in the uppermost position by turning the handwheel.

3. Loosen the threaded pins (2).
4. Turn the stroke eccentric (1) such that the upper edge of the feed dog protrudes 0.5 mm above the throat plate.
5. Move the stroke eccentric (1) to the left such that the feed dog has no play in relation to the lever (3).
6. Tighten the threaded pins (2).

8.2.3 Setting the stroke movement

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the stroke movement of the feed dog.



Order

First, check the following setting:

- Feed dog height (📖 p. 39)



Proper setting

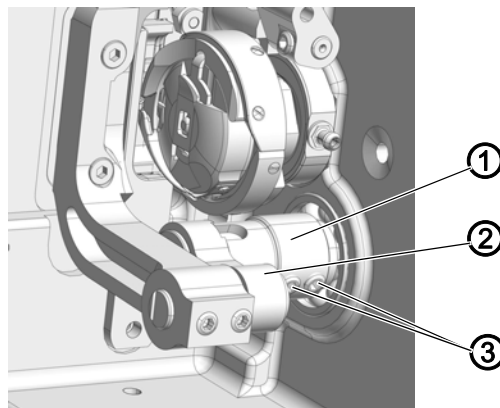
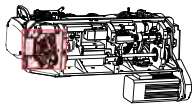
Machine locked in place at position 1 and upper stitch length adjusting wheel set to 0.



Cover

- Tilt the machine head (📖 p. 10)

Fig. 26: Setting the stroke movement



(1) - Stroke eccentric

(2) - Lever

(3) - Stroke eccentric



To set the feed stroke:

1. Position the upper stitch length adjusting wheel to 0.
2. Lock the machine in place at position 1.


3. Loosen the threaded pins (3).
4. Turn the stroke eccentric (1) such that the slot is in a line with the slot of the lever.
5. Tighten the threaded pins (3).

9 Aligning the needle bar linkage



Order

First, check the following setting:

- A straight and undamaged needle must be inserted
( *Operating Instructions, chap. Inserting and replacing the needle*)



Proper setting

Position the upper and lower stitch length adjusting wheel to 0.

- ↳ The needle pierces exactly in the center of the feed dog needle hole.

9.1 Moving the needle bar linkage sideways

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before aligning the needle bar linkage sideways.



Cover



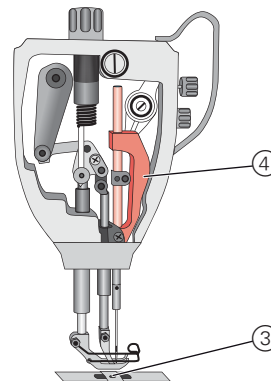
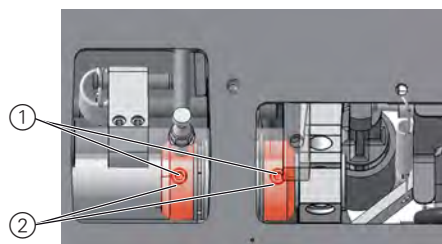
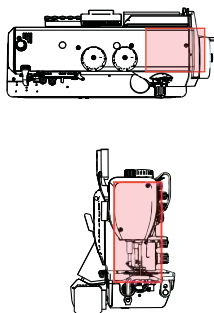
- Arm cover ( p. 11)
- Head cover ( p. 12)

Fig. 27: Moving the needle bar linkage sideways (1)



- (1) - Threaded pins
(2) - Adjusting rings

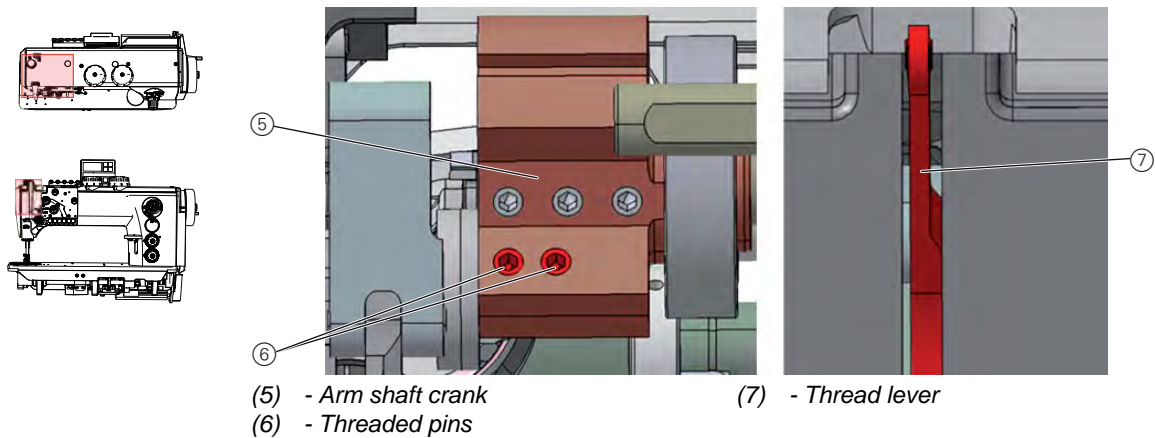
- (3) - Throat plate
(4) - Needle bar linkage



To move the needle bar linkage sideways:

1. Set the upper and lower stitch length adjusting wheel to 0.
2. Loosen the threaded pins (1) on the two adjusting rings (2) at the right-hand end of the shaft for the needle bar linkage.

Fig. 28: Moving the needle bar linkage sideways (2)



3. Loosen both threaded pins (6) on the arm shaft crank (5). Make sure that the threaded pins stay on the surface.
4. Move the needle bar linkage (4) sideways such that the needle pierces exactly in the center of the needle hole (3) for the feed dog.
5. Push the two adjusting rings (2) inwards as far as they will go and tighten them.
6. Tighten the threaded pins (1) on the two adjusting rings (2).
7. Align the thread lever (7) exactly in the middle of the slot.
8. Tighten both threaded pins (6) on the arm shaft crank (5).



Order



Then check the following settings:

- Loop stroke position (📖 p. 49)
- Distance of the hook to the needle (📖 p. 47)

9.2 Aligning the needle bar linkage in the sewing direction

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the position of the needle bar linkage in the sewing direction.



Cover



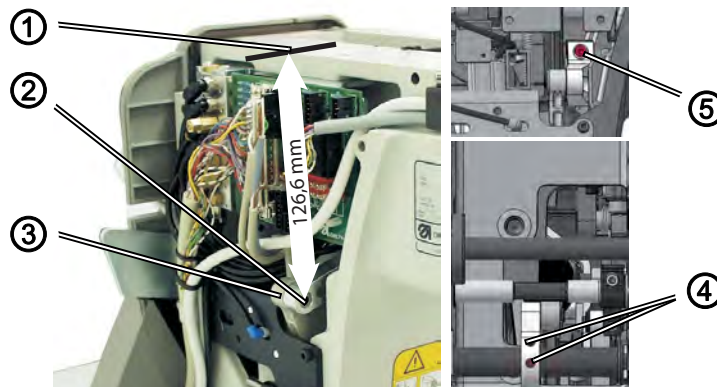
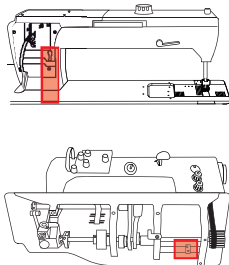
- Valve cover ( p. 13)
- Tilt the machine head ( p. 10)

Fig. 29: Aligning the needle bar linkage in the sewing direction



- | | |
|----------------------|---------------------|
| (1) - Arm surface | (4) - Threaded pins |
| (2) - Center of bolt | (5) - Screw |
| (3) - Lever | |



Proper setting

Stitch length adjusting wheels to 0.

↘ The lever (3) is positioned such that the distance from the surface of the arm (1) to the middle of the bolt (2) is 126.6 mm.



To align the needle bar linkage in the sewing direction:

1. Position the lower stitch length adjusting wheel to 0.
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the threaded pins (4).
4. Loosen the screw (5).
5. Position the lever (3).
6. Tighten the threaded pins (4).
7. Tighten the screw (5).



Order

Then check the following setting:

- Loop stroke position ( p. 49)

10 Position of the hook and needle

10.1 Setting the hook side clearance

WARNING



Risk of injury from moving parts!



Crushing possible.

Switch off the machine before you check and set the hook side clearance.



Order

First, check the following settings:

- A straight and undamaged needle has been inserted
( *Operating Instructions, chap. Inserting and replacing the needle*)
- Needle bar linkage ( p. 43)
- Loop stroke position ( p. 49)

NOTICE


Property damage may occur!

Damage to the machine, needle breakage, or thread damage due to an incorrect clearance between the needle and hook tip.

Check and, if necessary, readjust the distance to the hook tip after inserting a new needle with a different size.



Proper setting

Machine locked in place at position 1 ( p. 16).

- ↳ Maximum 0.1 mm distance between the hook tip and the groove for the needle.



Cover




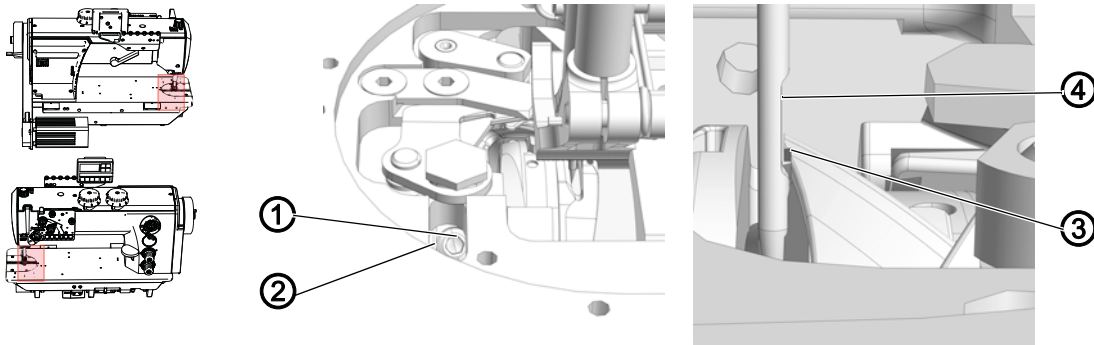
- Tilt the machine head ( p. 10)
- Throat plate ( p. 14)
- Feed dog ( p. 15)

Fig. 30: Setting the hook side clearance



(1) - Threaded pins
(2) - Slot for screw

(3) - Hook tip
(4) - Needle groove



To set the hook side clearance:

1. Position the upper stitch length adjusting wheel to 0.
2. Lock the machine in place at position 1.
3. Remove the middle section from the hook.
4. Loosen the threaded pins (1) through the slot (2).
The 1st screw in the direction of rotation is located on the flat.
5. Move the hook sideways such that the distance between the hook tip (3) and the groove for the needle (4) is 0.1 mm at most, without the hook tip (3) touching the needle.
6. Tighten the threaded pins (1).
7. Remove the lock.

10.2 Setting the loop stroke position

WARNING



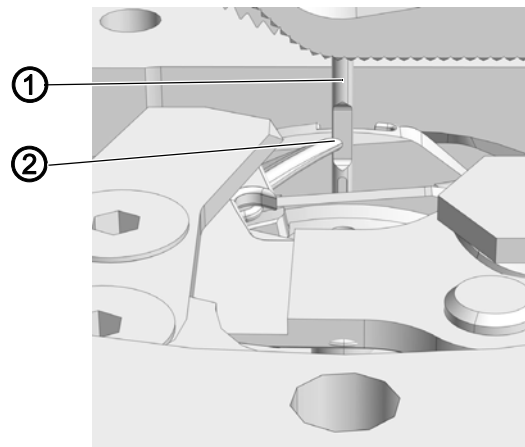
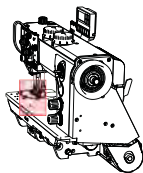
Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you check and set the loop stroke position.

The loop stroke is the path length from the lower dead center of the needle bar up to the position where the hook tip is exactly on the vertical center line of the groove for the needle.

Fig. 31: Setting the loop stroke position (1)





(1) - Vertical center line of the needle (2) - Hook tip

The loop stroke is precisely 2 mm.



Order

First, check the following settings:

- Needle bar linkage ( p. 43)
- A straight and undamaged needle must be inserted ( *Operating Instructions, chap. Inserting and replacing the needle*)



Proper setting

Machine locked in place at position 1 and stitch length set to 0.

- ↳ The hook tip (2) points exactly to the vertical center line (1) of the needle.



Disturbance caused by an incorrect setting

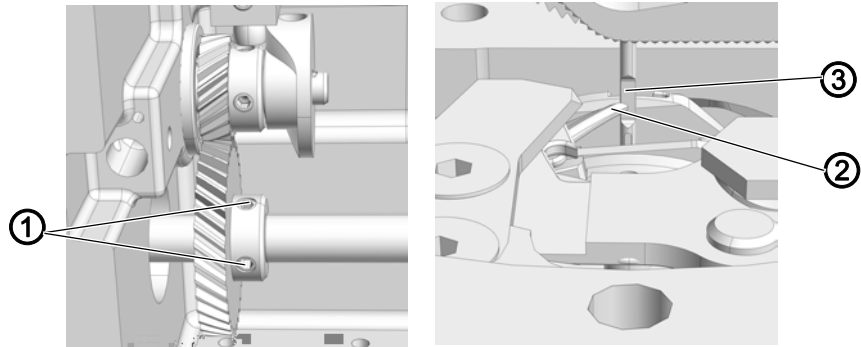
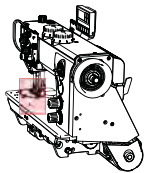
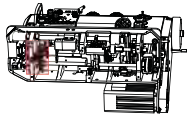
- Missing stitches



Cover

- Tilt the machine head (📖 p. 10)
- Throat plate (📖 p. 14)
- Feed dog (📖 p. 15)

Fig. 32: Setting the loop stroke position (2)



- (1) - Threaded pins
(2) - Hook tip

- (3) - Needle groove



To set the loop stroke position:

1. Lock the machine in place at position 1 (📖 p. 16).
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the threaded pins (1).
4. Turn the hook such that the hook tip (2) points exactly to the vertical center line of the groove (3).
5. Tighten the threaded pins (1).
6. Remove the lock.



Order

Then check the following settings:

- Timing of cutting by the thread cutter (📖 p. 65)

10.3 Setting the needle bar height

WARNING



Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you check and set the needle bar height.



Order

First, check the following settings:

- Loop stroke position (📖 p. 49)
- A straight and undamaged needle must be inserted (📖 *Operating Instructions, chapter Inserting and replacing the needle*)



Proper setting

Machine locked in place at position 1 and upper stitch length adjusting wheel set to 0.

↪ The hook tip is level with the lower third of the groove on the needle.



Disturbances caused by an incorrect needle bar height

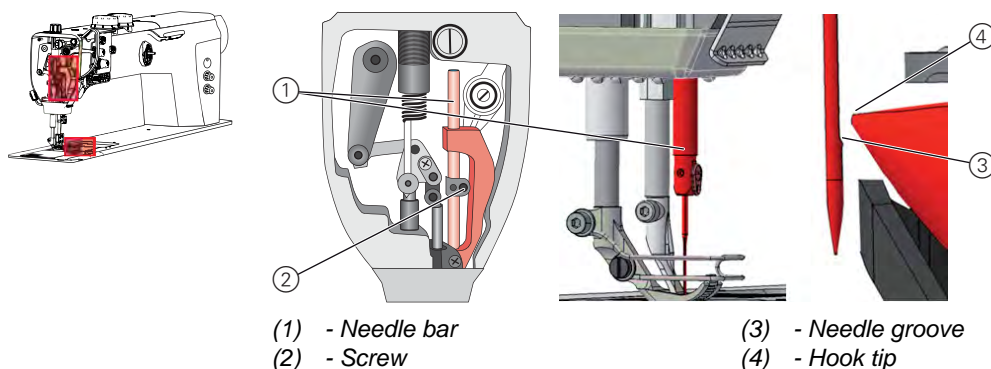
- Damage to the hook tip
- Jamming of the needle thread
- Missing stitches
- Thread breaking
- Needle breakage



Cover

- Head cover (📖 p. 12)

Fig. 33: Setting the needle bar height




To set the needle bar height:

1. Lock the machine in place at position 1 (📖 p. 16).
2. Position the upper stitch length adjusting wheel to 0.

3. Loosen the screw (2) of the needle bar (1).
4. Move the height of the needle bar (1) such that the hook tip (4) is in the middle of the lower third of the groove for the needle.


**Important**

When doing so, take care not to twist the needle to the side. The groove (3) must face toward the hook.

5. Tighten the screw (2) for the needle bar (1).
6. Remove the lock ( p. 16).

**Order**

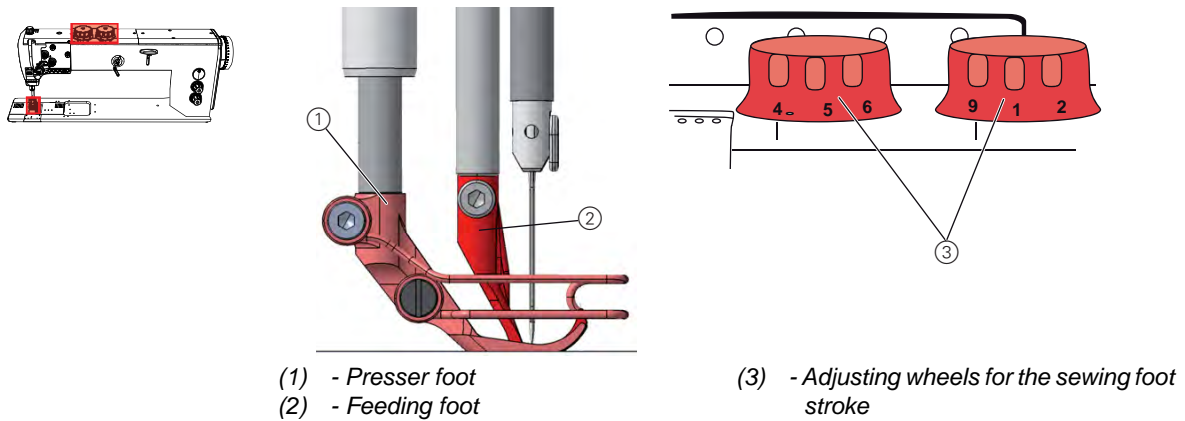
Then check the following setting:

- Position of the needle guard ( p. 51)

11 Sewing feet

The two adjusting wheels (3) on the machine arm determine how high the presser foot (1) and feeding foot (2) are raised during the sewing process. The left adjusting wheel determines the normal sewing foot stroke. The right adjusting wheel determines the elevated sewing foot stroke. The elevated sewing foot stroke must not be lower than the normal sewing foot stroke.

Fig. 34: Sewing feet



NOTICE

Property damage may occur!

Machine can be damaged if the adjusting wheels are forced.

Do not attempt to use force to set a smaller sewing foot stroke at the right adjusting wheel.

11.1 Setting an even sewing foot stroke

WARNING



Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you check and set the sewing foot stroke.



Proper setting

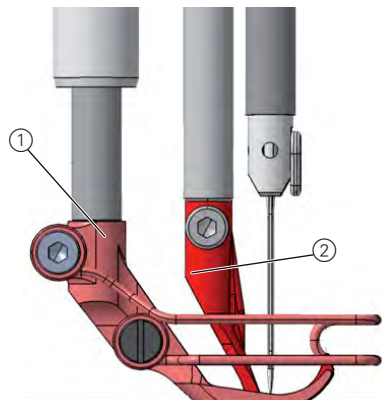
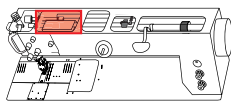
For sewing foot stroke 3, the presser foot and feeding foot are raised by the same height.



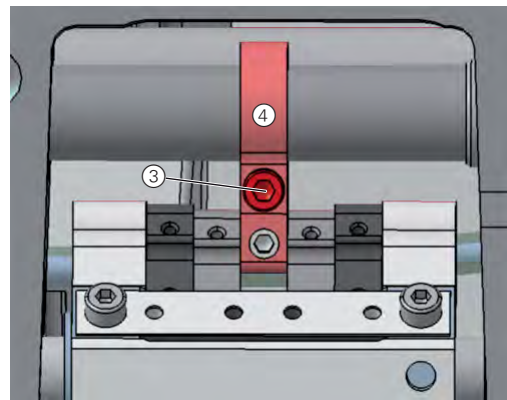
Cover

- Arm cover (p. 11)

Fig. 35: Setting an even sewing foot stroke



- (1) - Presser foot
(2) - Feeding foot



- (3) - Screw
(4) - Sewing foot lever



To set the even sewing foot stroke:

1. Set the handwheel to the 0° position.
2. Loosen the screw (3).
3. Lower the presser foot (1) and feeding foot (2) together down to the throat plate.



Important

While doing so, make sure that the feeding foot is only lowered down to the throat plate. Do not inadvertently lower the feeding foot through the throat plate cut-out down to the feed dog.

4. Tighten the screw (3).

11.2 Setting the stroke movement for the feeding foot

WARNING



Risk of injury from sharp and moving parts!

Crushing and puncture possible.

Switch off the machine before you check and set the stroke movement for the feeding foot.

In order to ensure a correct feed, the stroke movement for the feeding foot must be aligned to the stroke movement for the feed dog.



Order

First, check the following settings:

- Feed dog movement (📖 p. 38)
- Even sewing foot stroke (📖 p. 54)

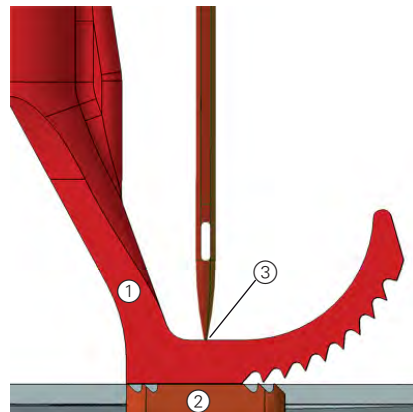


Proper setting

Left adjusting wheel for the sewing foot stroke set to 9 and the upper stitch length adjusting wheel to 0.

- ↙ The feeding foot (1) touches down exactly on the feed dog (2) when the downward movement of the needle tip (3) reaches the upper edge of the feeding foot. This will occur when the handwheel is in the 95° position.

Fig. 36: Setting the stroke movement for the feeding foot (1)



(1) - Feeding foot
(2) - Feed dog

(3) - Needle tip



Cover

- Arm cover (📖 p. 10)

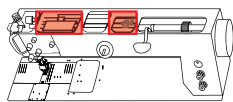
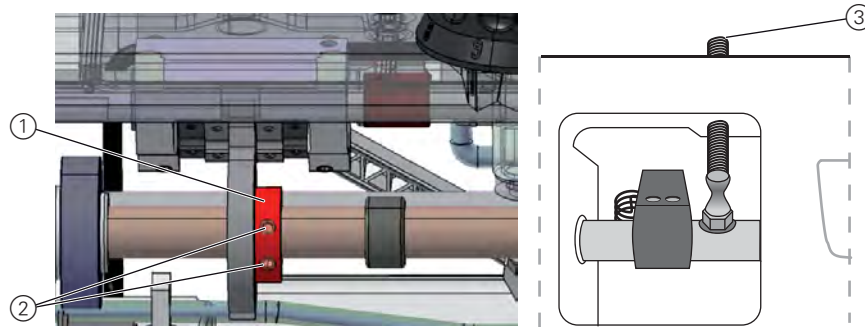


Fig. 37: Setting the stroke movement for the feeding foot (2)



(1) - Stroke eccentric
(2) - Threaded pins

(3) - Threaded pin



Proper setting

The feeding foot reaches the level of the throat plate at the same time as the following elements:

- The feed dog moving up
- The needle tip moving down



To set the stroke movement for the feeding foot:

1. Screw in the threaded pin (3) so that there is a stroke.
2. Loosen the threaded pins (2).
3. Turn the stroke eccentric (1) such that the feeding foot reaches the level of the throat plate at the same time as the feed dog and the tip of the needle.



Important

When doing so, ensure not to move the stroke eccentric (1) laterally on the axle.

4. Tighten the threaded pins (2).
5. Unscrew the threaded pin (3) far enough so that there is no longer any contact with the clamp.

11.3 Setting the sewing foot pressure

The adjusting wheel at the top left of the machine arm determines the pressure for the sewing feet on the sewing material. The pressure can be adjusted continuously by turning the adjusting wheel.

The correct pressure depends on the sewing material:

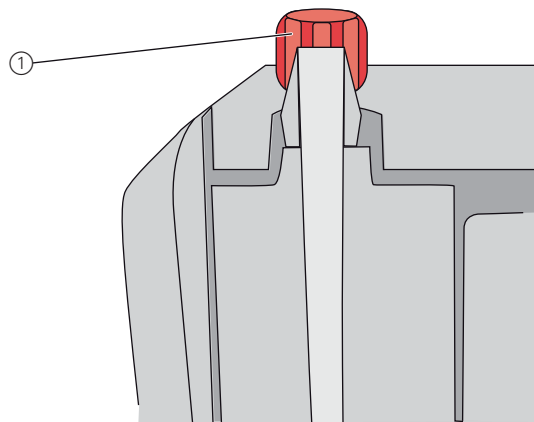
- Lower pressure for soft materials, e. g. silk
- Higher pressure for harder materials, e. g. leather



Proper setting

The sewing material does not slip and is correctly transported.

Fig. 38: Setting the sewing foot pressure



(1) - Adjusting wheel for the sewing foot pressure



To set the sewing foot pressure:

1. Turn the adjusting wheel for the sewing foot pressure (1):
 - **greater pressure:** turn clockwise
 - **lower pressure:** turn counterclockwise

11.4 Setting the sewing foot lifting height

WARNING



Risk of injury from moving parts!

Crushing possible

The machine must remain switched on so that the sewing feet can be raised.

Work very carefully when you check and set the lifting height for the sewing feet.

Do not put your hands under the sewing feet when they are being lowered.

When the pedal is pressed back halfway, the sewing feet can be raised during sewing, e. g. to move the sewing material.

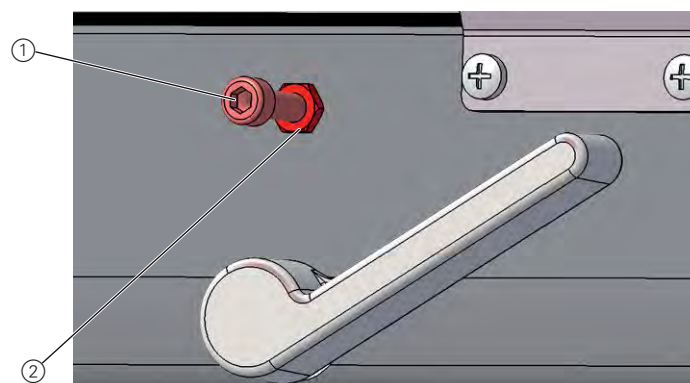
When the pedal is pressed completely back, the sewing feet will be raised after the thread is cut so that the sewing material can be exchanged.



Proper setting

The distance between the raised sewing feet and the throat plate is preset to 25 mm on delivery.

Fig. 39: Setting the sewing foot lifting height



- (1) - Adjusting screw
(2) - Counternut



Setting steps

1. Loosen the counternut (2) for the adjusting screw (1).
2. Turn the adjusting screw (1) to set the distance between the raised sewing feet and the throat plate:
 - **Raise the sewing feet to a lesser height:** turn clockwise
 - **Raise the sewing feet higher:** turn counterclockwise
3. Tighten the counternut (2) for the adjusting screw (1).

12 Setting the needle thread tension

12.1 Setting the needle thread regulator

The needle thread regulator determines the tension applied to guide the needle thread around the hook. The required tension depends on the thickness of the sewing material, thread strength, and stitch length.

Lower thread tension for

- thin sewing material
- low thread strengths

Greater thread tension for

- thick sewing material
- high thread strengths

Proper setting



The loop of the needle thread slides at low tension over the thickest point of the hook, without forming loops or snagging.



Cover


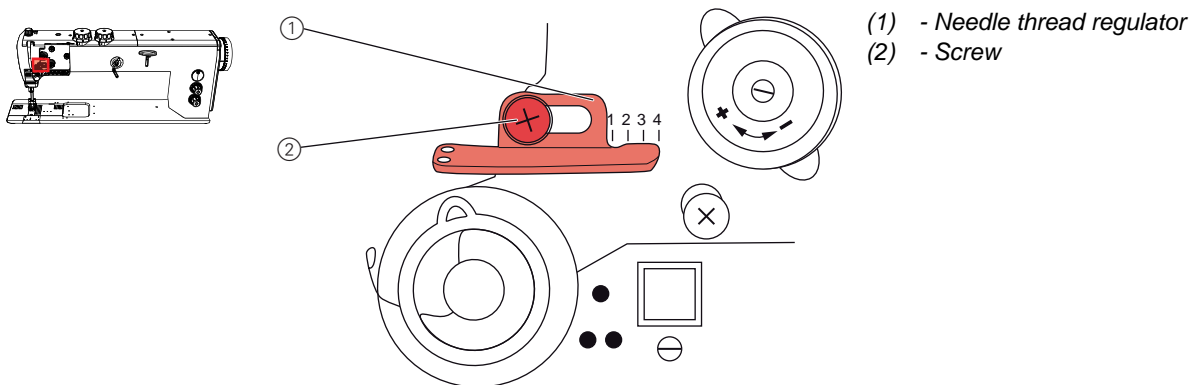
- Throat plate slide ( p. 14)

Fig. 40: Setting the needle thread regulator



To set the needle thread regulator:

1. Turn the handwheel and observe the cycle of the needle thread around the hook.
2. Loosen the screw (2).
3. Moving the needle thread regulator
 - **Reduce tension:** slide to the left
 - **Increase tension:** slide to the right
4. Tighten the screw (2).

12.2 Setting the thread tensioning spring

The thread tensioning spring holds the needle thread under tension from the top dead center of the thread lever up to the point when the needle eye plunges into the sewing material.



Proper setting

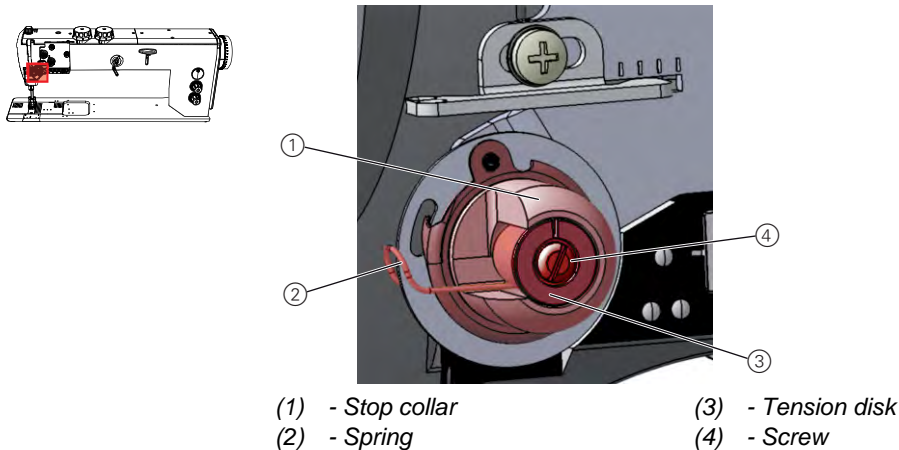
Initial position: The thread tensioning spring does not contact the stop until the needle eye has plunged into the sewing material.



Important

The setting for the thread tensioning spring must be varied according to the sewing material and the required sewing result.

Fig. 41: Setting the thread tensioning spring



(1) - Stop collar
(2) - Spring

(3) - Tension disk
(4) - Screw



To set the thread tensioning spring:

1. Loosen the screw (4).
2. **Setting the spring travel:** Turn the stop collar (1):
 - **Longer spring travel:** turn counterclockwise
 - **Shorter spring travel:** turn clockwise
3. **Setting the spring tension:** Turn the tension disk (3):
 - **Greater spring tension:** turn counterclockwise
 - **Lower spring tension:** turn clockwise



Important

Do not twist the stop collar in doing so.

4. Tighten the screw (4).

13 Winder

13.1 Setting the winder



Proper setting

The winder wheel runs smoothly and without axial play.

The winding process will stop automatically when the required filling quantity of the bobbin is reached.

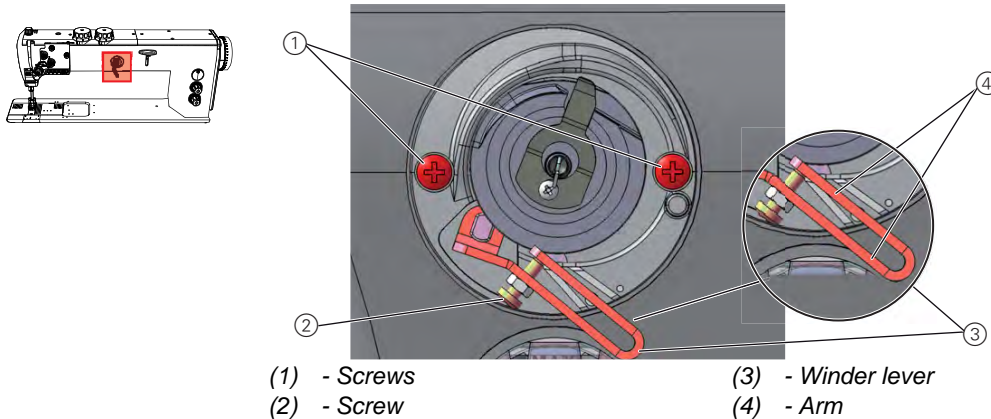


Cover

- Arm cover (📖 p. 11)

Removing the winder

Fig. 42: Removing the winder



To remove the winder:

1. Loosen the screws (1).
2. Remove the winder.

Setting the winder filling quantity



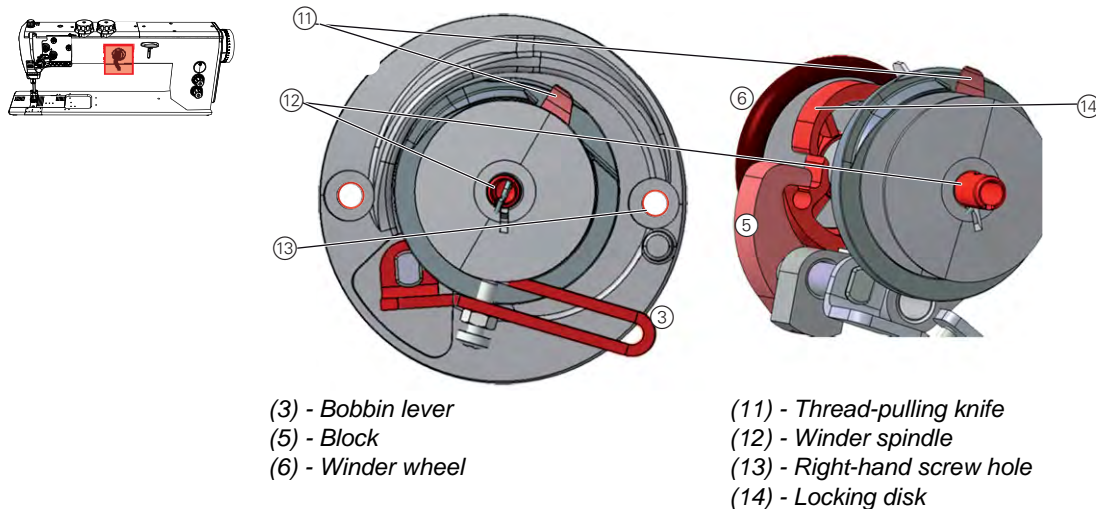
To set the winder filling quantity:

The position of the arms on the screw (2) determines the filling quantity:

- **Parallel:** Automatic winding stop at 0.5 mm below the edge of the winder
 - **Closer together:** Automatic stop with larger filling quantity
 - **Further apart from each other:** Automatic stop with smaller filling quantity
3. Turn the screw (2):
 - **Arms closer together:** turn counterclockwise
 - **Arms further apart from each other:** turn clockwise
 4. Put the completely filled bobbin onto the winder.
 5. Fold the winder lever (3) upwards as far as it will go to the thread.

Setting the winder spacing

Fig. 43: Setting the winder spacing



- (3) - Bobbin lever
- (5) - Block
- (6) - Winder wheel

- (11) - Thread-pulling knife
- (12) - Winder spindle
- (13) - Right-hand screw hole
- (14) - Locking disk

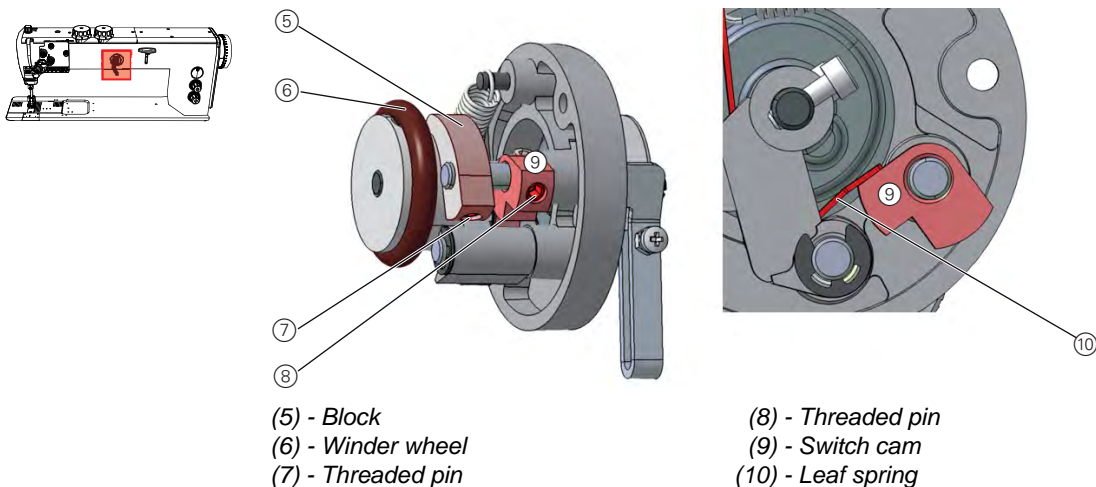


To set the winder spacing:

1. Turn the winder spindle (12) such that the thread-pulling knife (11) is at the top right and is facing the right-hand screw hole (13).
2. Loosen the threaded pin in the block (5).
3. Set the winder lever (3) such that the upper arm is above the marking for the XXL hook (15).
- ↳ The distance between the winder lever and the outer thread on the bobbin is 2 – 3 mm.
4. Set the block (5) such that it is resting against the locking disk (14).
5. Set the block (5) such that its distance to the winder wheel (6) is 0.5 mm.
6. Tighten the threaded pin in the block (5).

Setting the winder run

Fig. 44: Setting the winder run



- (5) - Block
- (6) - Winder wheel
- (7) - Threaded pin

- (8) - Threaded pin
- (9) - Switch cam
- (10) - Leaf spring

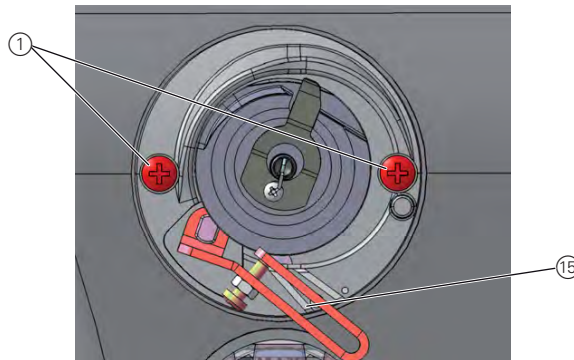
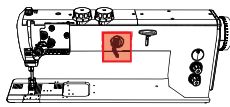


To set the winder run:

1. Loosen the threaded pin (8).
2. Set the switch cam (9) such that it is just contacting the leaf spring (10) when the block (5) has engaged in the locking disk.
3. Set the switch cam (9) such that the winder lever (3) has no axial play.
4. Tighten the threaded pin (8).

Installing the winder

Fig. 45: Installing the winder



(1) - Screws

(15) - Marking for XXL hook



To install the winder:

1. Place the winder on the machine arm.
2. Tighten the screws (1).

13.2 Setting the hook thread guide

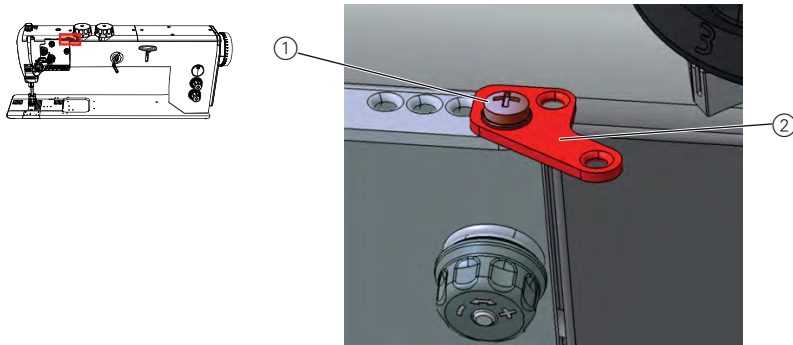
The position of the hook thread guide determines how the thread is wound onto the winder.



Proper setting

The thread is wound on evenly over the entire width of the bobbin.

Fig. 46: Setting the hook thread guide



(1) - Screw

(2) - Hook thread guide



To set the hook thread guide:

1. Loosen the screw (1).
2. Turn the hook thread guide (2):
 - **To the front:** The thread will be wound on further to the front
 - **To the rear:** The thread will be wound on further to the rear

14 Thread cutter

WARNING



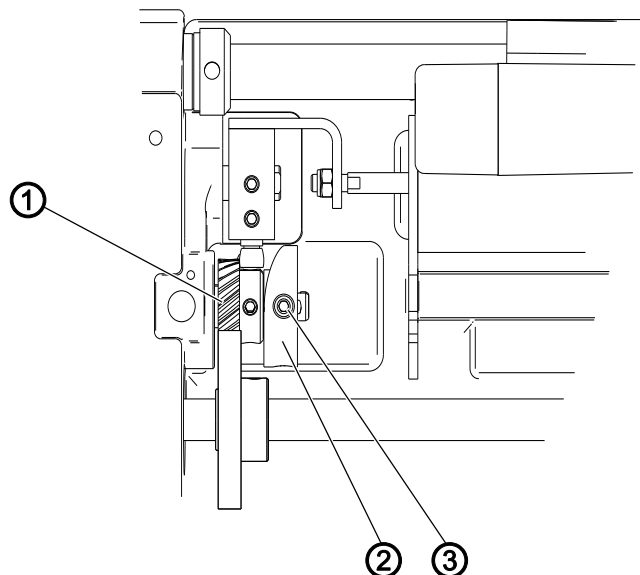
Risk of injury from sharp and moving parts!

Cutting and crushing possible.

Switch off the machine before setting the thread cutter.

14.1 Setting the control cam position

Fig. 47: Setting the control cam position



(1) - Hook pinion
(2) - Control cam

(3) - Screw



Proper setting

The control cam (2) makes contact with the hook pinion (1). The first screw (3) in the hook's direction of rotation must be located on the flat of the shaft. This defines the timing of the knife movement.

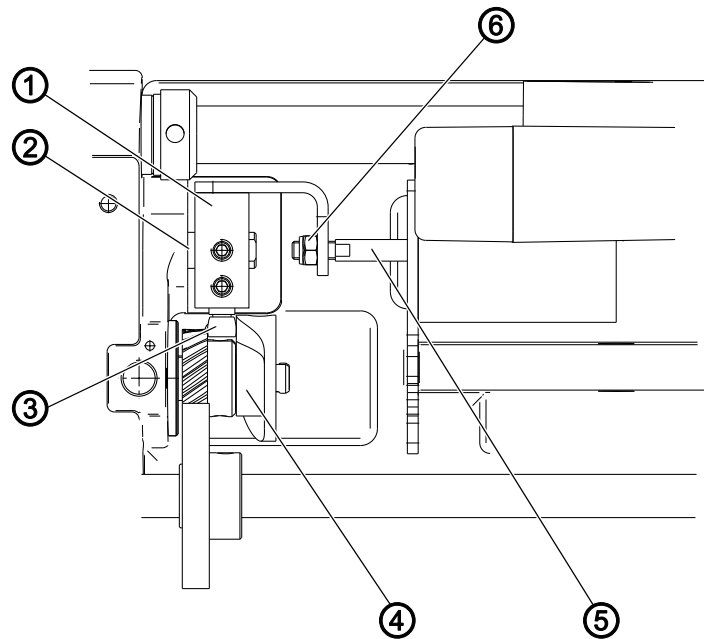


To set the position of the control cam:

1. Loosen the screw (3) on the control cam (2).
2. Rotate the control cam (2).
- ↺ The first screw in the direction of rotation is located on the flat of the shaft.
3. Tighten the screw (3).

14.2 Setting the armature of the thread cutter magnet

Fig. 48: Setting the armature of the thread cutter magnet



(1) - Block
(2) - Pull rod
(3) - Roller

(4) - Control cam
(5) - Armature
(6) - Nut



Proper setting

When the magnet is at rest, the distance between the roller (3) and the highest point of the control cam (4) must range between 0.2 and 0.3 mm.



To check the armature of the thread cutter magnet:

1. Slide the pull rod (2) with the block (1) all the way to the left.
2. Check the distance between the roller (3) and the control cam (4) using a feeler gage.

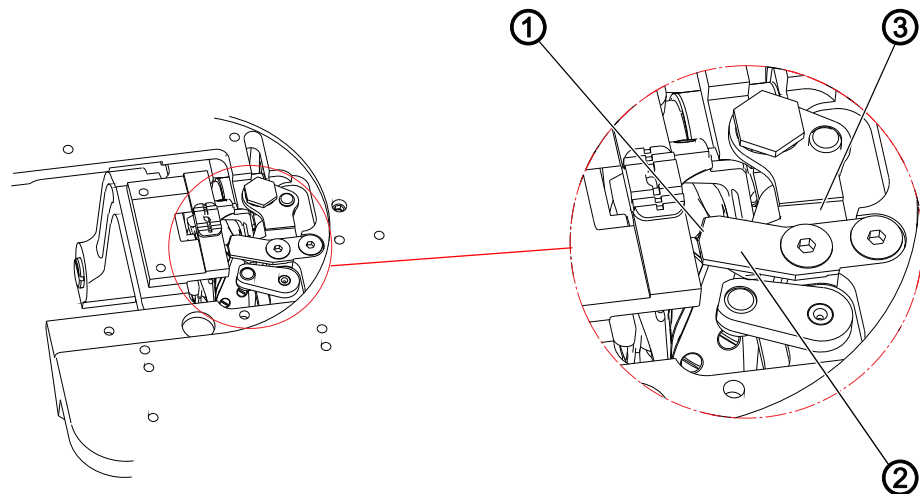


To set the armature of the thread cutter magnet:

3. Turn the nut (6) on the armature (5).
4. Check the setting and correct it if necessary.

14.3 Setting the position of the thread-pulling knife

Fig. 49: Setting the position of the thread-pulling knife (1)

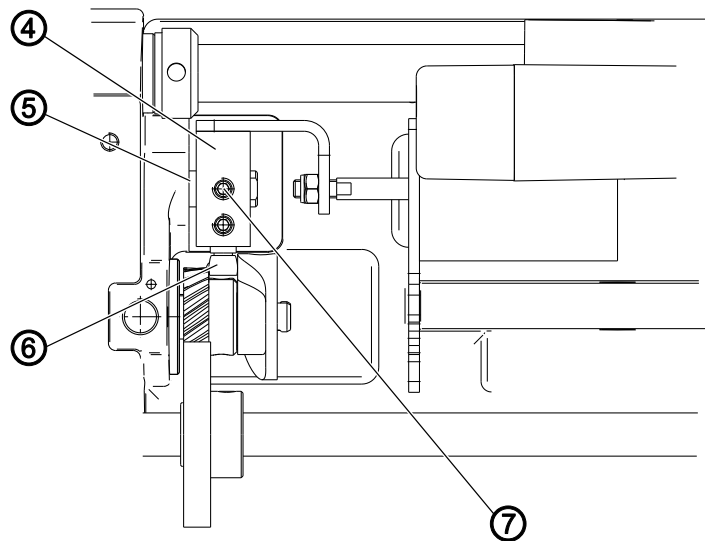


(1) - Tip

(2) - Stationary knife

(3) - Thread-pulling knife

Fig. 50: Setting the position of the thread-pulling knife (2)



(4) - Block

(5) - Pull rod

(6) - Roller

(7) - Screw



Proper setting

When the knife is at rest, the tip (1) of the thread-pulling knife (3) must be positioned flush below the cutting edge of the stationary knife (2).



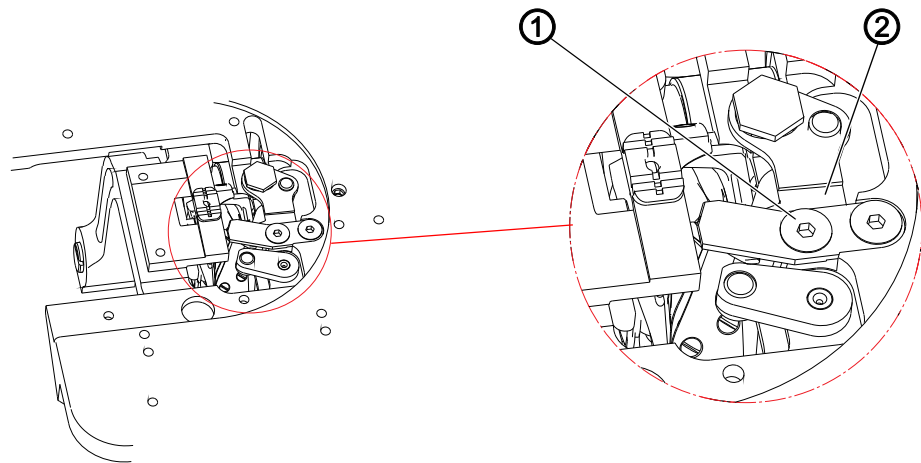
To set the position of the thread-pulling knife:

1. Turn the handwheel until the thread lever is positioned slightly beyond its highest point.
2. Loosen the screw (7).
3. Set the thread-pulling knife (3).

4. Slide the pull rod (5) to the left under slight pressure to keep the play inside the mechanics of the thread cutter at a minimum.
5. Position the block (4) with the roller (6) against the control cam.
6. Tighten the screw (7).
7. Check the setting and correct it if necessary.

14.4 Setting the cutting pressure

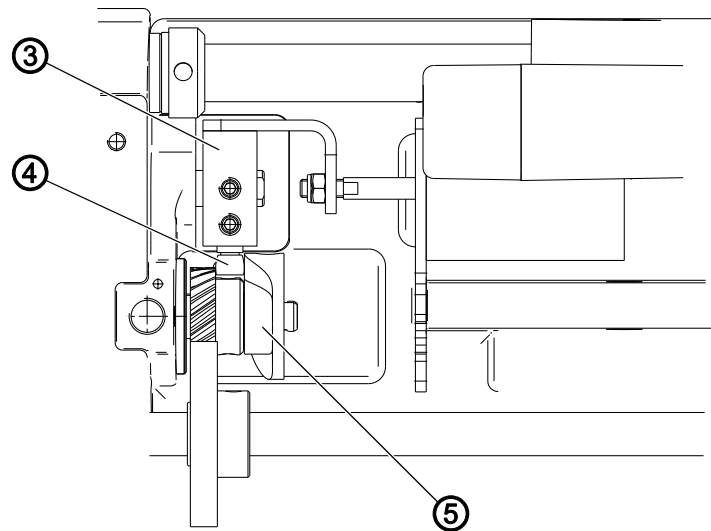
Fig. 51: Setting the cutting pressure (1)



(1) - Screw

(2) - Thread-pulling knife

Fig. 52: Setting the cutting pressure (2)



(3) - Block

(4) - Roller

(5) - Control cam



Proper setting

The thread should be cut at a pressure that is as low as possible.

A low cutting pressure will keep knife wear at a minimum.


Two of the thickest threads used must be reliably cut at the same time.

**Important**

If the cutting pressure is too high, the thread cutter magnet will not swivel out the thread-pulling knife. The thread will not be cut.



To check the cutting pressure:

1. Turn the handwheel until the thread-pulling knife (2) can be swung out by hand.
2. To do this, press the block (3) with the roller (4) to the right against the control cam.
-  The thread-pulling knife (2) swivels out.
3. Insert 2 threads to be cut into the thread-pulling knife (2).
4. Turn the handwheel further until the thread-pulling knife (2) is swiveled down.
5. Check whether the threads have been cleanly cut.



To set the cutting pressure:

1. Turn the screw (1).
 - greater cutting pressure: turn clockwise
 - lower cutting pressure: turn counterclockwise
2. Check the setting and correct it if necessary.

15 Setting the potentiometer

WARNING



Risk of injury from moving parts!

Crushing possible.

Carry out all work with great caution.

The potentiometer adjusts the number of stitches to the set sewing foot stroke and reduces the number of stitches if the sewing foot stroke is too much.



Proper setting

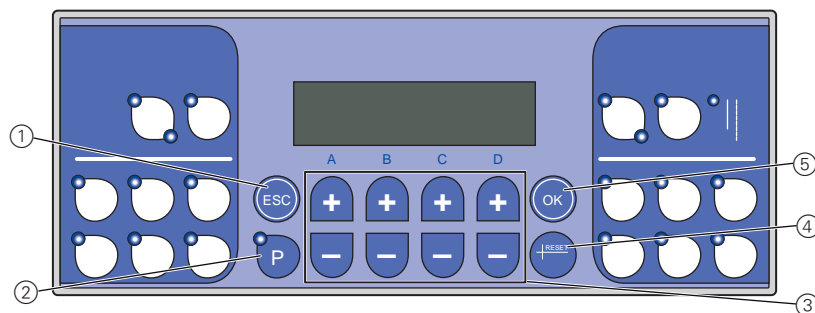
After accessing the technician level and pressing the OK button, the left display will show 1 in the first instance and the relevant maximum speed next to it.



Cover

- Arm cover ( p. 11)

Fig. 53: Setting the potentiometer (1)



- (1) - ESC button
(2) - P button
(3) - Plus/Minus buttons

- (4) - Reset button
(5) - OK button



To set the potentiometer:

1. Switch off the machine at the main switch.
2. Keep the P button (2) and Reset button (3) pressed down simultaneously and switch on the machine at the main power switch in doing so.
 - ↳ The display starts.
3. Release the P button (2) and the reset button (3).
 - ↳ The display indicates the current level.

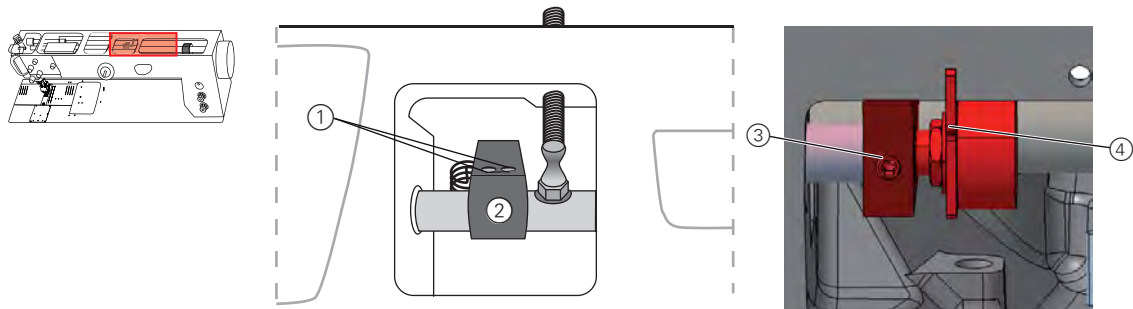
The potentiometer is set at technician level $t\ 10\ 04$.

If the display indicates a different level:

4. Call up the technician level using the **Plus/Minus** buttons (3):
As the case may be, press the Plus or Minus button below the letter or the number until the display indicates $t\ 10\ 04$.

5. Press the OK button (5).

Fig. 54: Setting the potentiometer (2)



- (1) - Threaded pins
 (2) - Connecting clamp for lifting cylinder
 (3) - Threaded pin for the setting shaft
 (4) - Potentiometer



6. Check whether the lifting gear plates are flush.
If the plates are not flush:
7. Loosen the threaded pins (1).
8. Set the connecting clamp (2) for the lifting cylinder such that the plates are flush.
9. Tighten the threaded pins (1).
10. Loosen the threaded pin (3).
11. Turn the potentiometer axle such that the left display shows 1 in the first instance and the relevant maximum speed next to it.
12. Tighten the threaded pin (3) without changing the value shown in the display.



13. Press the ESC button two times.



Important

14. Switch off the machine at the main switch.
 15. Switch on the machine at the main switch.
- ↩ Switching off and on will save the setting.

16 Maintenance

This chapter describes 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.

WARNING



Risk of injury from sharp parts!

Punctures and cutting possible.

Prior to any maintenance work, switch off the machine or set the machine to threading mode.

WARNING



Risk of injury from moving parts!

Crushing possible.

Prior to any maintenance work, switch off the machine or set the machine to threading mode.

Maintenance interval

Work to be carried out	Operating hours			
	8	40	160	500
Cleaning				
Removing lint and thread remnants	•			
Cleaning the motor fan mesh			•	
Lubricating				
Lubricating the machine head			•	
Lubricating the hook			•	
Servicing the pneumatic system				
Checking the operating pressure	•			
Draining the water condensation	•			
Cleaning the filter element			•	
Servicing specific components				
Checking the toothed belt			•	

16.1 Cleaning

16.1.1 Cleaning the machine

Lint and thread remnants should be removed after every 8 operating hours using a compressed air gun or a brush. If very fluffy sewing material is being sewn the machine must be cleaned more frequently.

WARNING



Risk of injury from flying particles!

Flying particles can enter the eyes, causing injury.

Wear safety goggles.

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

Property damage from soiling!

Lint and thread remnants can impair the operation of the machine.

Clean the machine as described.

NOTICE

Property damage from solvent-based cleaners!

Solvent-based cleaners will damage paintwork.

Use only solvent-free substances for cleaning.

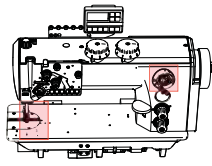
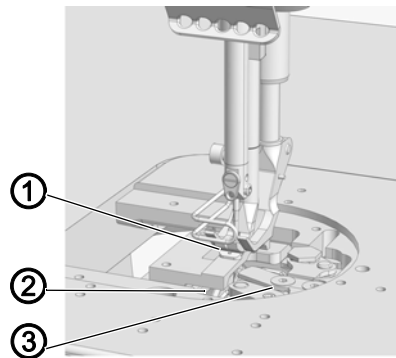
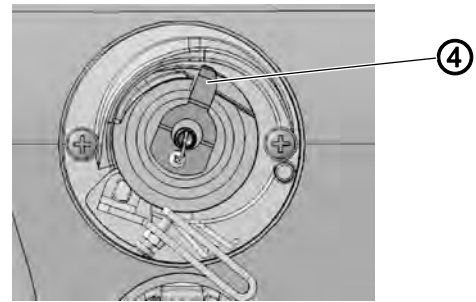


Fig. 55: Cleaning the machine



(1) - Area around the needle
(2) - Hook



(3) - Area under the throat plate
(4) - Cutter on the winder

Areas particularly susceptible to soiling:

- Cutter on the winder for the hook thread (4)
- Area under the throat plate (3)
- Hook (2)
- Area around the needle (1)



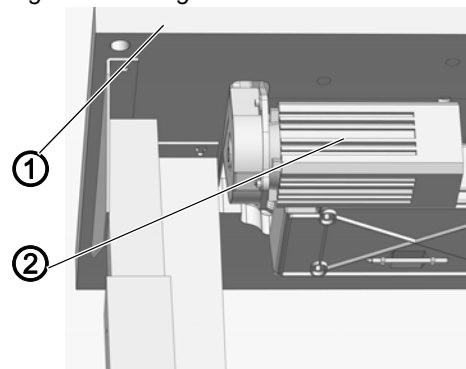
To clean the machine:

1. Remove any dust and thread remnants using a compressed air gun or a brush.

16.1.2 Cleaning the motor fan mesh

The motor fan mesh must be cleaned once a month using a compressed air gun. If very fluffy sewing material is being sewn, the motor fan mesh must be cleaned more frequently.

Fig. 56: Cleaning the motor fan mesh



(1) - Tabletop

(2) - Motor fan mesh



To clean the motor fan mesh:

1. Remove any sewing dust and thread remnants using a compressed air gun.

16.2 Lubricating

CAUTION



Risk of injuries from contact with oil!

Oil can cause a rash if it comes into contact with skin.

Avoid skin contact with oil.

If oil has come into contact with your skin, wash the affected areas thoroughly.

NOTICE

Property damage from incorrect oil!

Incorrect oil types can result in damage to the machine.

Only use oil that complies with the data in the instructions.

CAUTION



Risk of environmental damage from oil!

Oil is a pollutant and must not enter the sewage system or the soil.

Carefully collect up used oil.

Dispose of used oil and oily machine parts in accordance with national regulations.

For topping off the oil reservoir, use only lubricating oil **DA 10** or oil of equivalent quality with the following specifications:

Viscosity at 40 °C: 10 mm²/s

- Flash point: 150 °C

You can order the lubricating oil from our sales offices using the following part numbers:

Container	Part no.
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

16.2.1 Lubricating the machine head

The central oil lubrication system supplies all bearing positions automatically with oil from the reservoir.

NOTICE

Machine damage possible from incorrect oil level!

Too little or too much oil can cause damage to the machine.

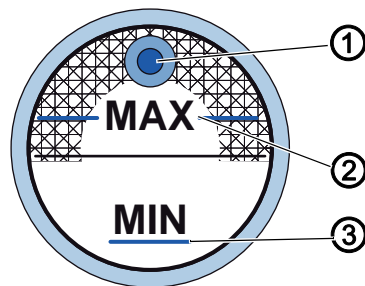
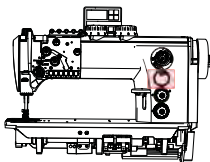
Check the oil level every day and top off the oil if necessary.



Proper setting

The oil level is correct if it is positioned between the minimum and the maximum marking.

Fig. 57: Lubricating the machine head



(1) - Filler opening
(2) - Minimum level marking

(3) - Maximum level marking



To lubricate the machine head:

1. Check the oil level indicator every day.
2. If the oil level is below the minimum level marking (3):
Pour oil through the refill opening (1) but no higher than the maximum level marking (2).



Information

Notice for machines with CLASSIC equipment

If the oil level drops below the minimum level marking (3), the oil level indicator lights up red.

1. Turn the sewing machine off, then on again after refilling oil.
- ↪ The red light will turn off.

16.2.2 Lubricating the hook

WARNING



Risk of injury!

Risk of crushing injuries and stab wounds from sharp and moving parts.

When holding the blotting paper, make sure it does not enter the area of the hook or below the needle and the sewing foot.

Switch the sewing machine off before lubricating the hook.

The oil quantity necessary for lubricating the hook has been set at the factory. Hold a sheet of blotting paper next to the hook while sewing.



Proper setting

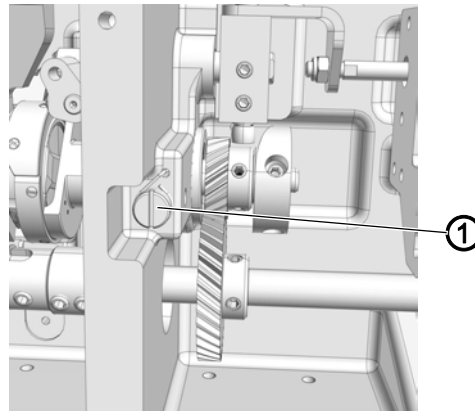
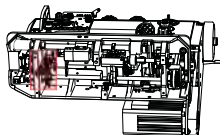
After sewing a stretch of approx. 1 m, the blotting paper will have been sprayed with a thin and even film of oil.



Cover

- Throat plate ( p. 14)

Fig. 58: Lubricating the hook



(1) - Screw



To lubricate the hook:

1. Turn the screw (1):
 - **Counterclockwise:** the oil quantity increases
 - **Clockwise:** the oil quantity decreases



Important

Any change in oil quantity will not take effect until the machine has been in operation for a few minutes. Before checking the setting again, sew for a few minutes first.

16.3 Servicing the pneumatic system

16.3.1 Setting the operating pressure

NOTICE


Property damage from incorrect setting!

Incorrect operating pressure can result in damage to the machine.

Ensure that the machine is only used when the operating pressure is set correctly.

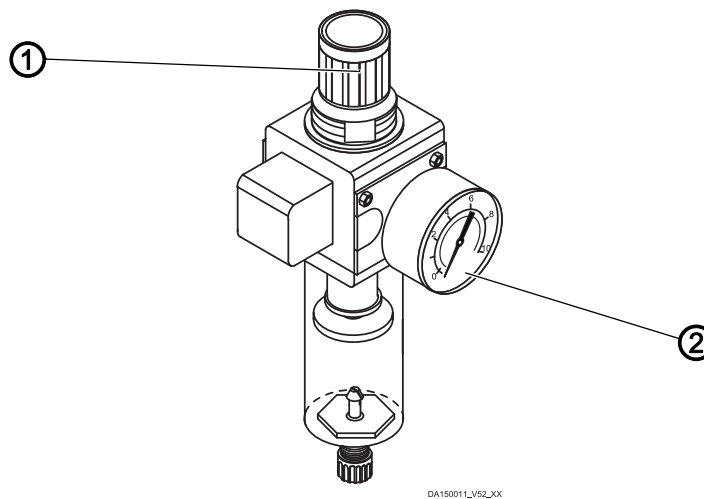


Proper setting

Refer to the **Technical data** ( p. 87) chapter for the permissible operating pressure. The operating pressure cannot deviate by more than ± 0.5 bar.

Check the operating pressure on a daily basis.

Fig. 59: Setting the operating pressure



(1) - Pressure controller

(2) - Pressure gage



To set the operating pressure:

1. Pull the pressure controller (1) up.
2. Turn the pressure controller until the pressure gage (2) indicates the proper setting:
 - Increase pressure = turn clockwise
 - Reduce pressure = turn counterclockwise
3. Push the pressure controller (1) down.

16.3.2 Draining the water condensation

NOTICE

Property damage from excess water!

Excess water can cause damage to the machine.

Drain water as required.

Water condensation accumulates in the water separator (2) of the pressure controller.

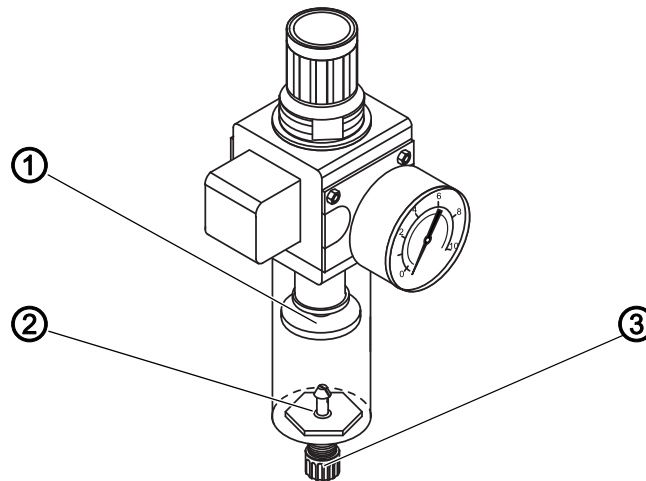


Proper setting

Water condensation must not rise up to the level of the filter element (1).

Check the water level in the water separator (2) on a daily basis.

Fig. 60: Draining the water condensation



(1) - Filter element
(2) - Water separator

(3) - Drain screw

To drain water condensation:



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

16.3.3 Cleaning the filter element

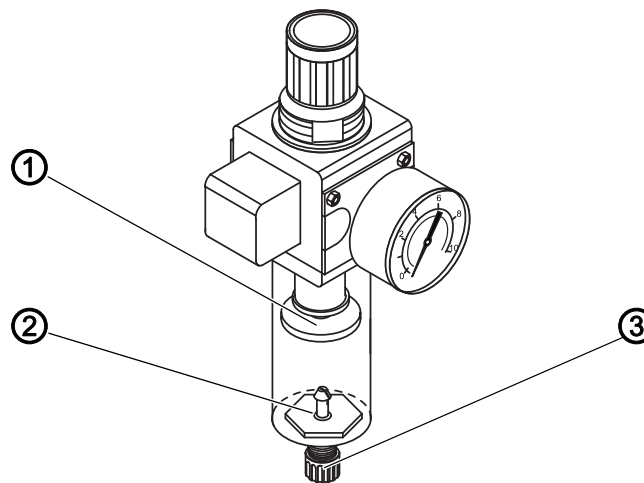
NOTICE

Damage to the paintwork from solvent-based cleaners!

Solvent-based cleaners damage the filter.

Use only solvent-free substances for washing out the filter tray.

Fig. 61: Cleaning the filter element




(1) - Filter element
(2) - Water separator

(3) - Drain screw

To clean the filter element:



1. Disconnect the machine from the compressed air supply.
2. Drain the water condensation ( p. 80).
3. Loosen the water separator (2).
4. Loosen the filter element (1).
5. Blow out the filter element (1) using a compressed air gun.
6. Wash out the filter tray using benzine.
7. Tighten the filter element (1).
8. Tighten the water separator (2).
9. Tighten the drain screw (3).
10. Connect the machine to the compressed air supply.

16.4 Servicing specific components

Checking the toothed belt

WARNING



Risk of injury!

Crushing injuries from moving parts.

Before checking the condition of the toothed belt, switch off the machine at the main switch.

The condition of the toothed belt must be checked once a month.



Important

A damaged toothed belt must be replaced immediately.



Proper setting

- The toothed belt exhibits no cracks or fragile areas
- When pressed with a finger, the toothed belt must yield no more than 10 mm.

16.5 Parts list

A parts list can be ordered from Dürkopp Adler. Or visit our website for further information at:

www.duerkopp-adler.com



17 Decommissioning

You need to perform a number of activities if the machine is to be shut down for a longer period of time or completely decommissioned.

WARNING



Risk of injury from a lack of care!

Serious injuries may occur.

ONLY clean the machine when it is switched off.
Allow ONLY trained personnel to disconnect the machine.

CAUTION



Risk of injuries from contact with oil!

Oil can cause a rash if it comes into contact with skin.

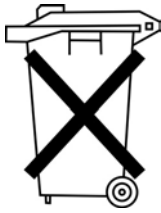
Avoid skin contact with oil.
If oil has come into contact with your skin, wash the affected areas thoroughly.

To decommission the machine:



1. Switch off the machine.
2. Unplug the power plug.
3. If applicable, disconnect the machine from the compressed air supply.
4. Remove residual oil from the oil pan using a cloth.
5. Cover the control panel to protect it from soiling.
6. Cover the control to protect it from soiling.
7. Cover the entire machine if possible to protect it from contamination and damage.

18 Disposal



The machine must not be disposed of in the normal household waste.

The machine must be disposed of in a suitable and proper manner and in accordance with all applicable national regulations.

CAUTION



Risk of environmental damage from improper disposal!

Improper disposal of the machine can result in serious environmental damage.

ALWAYS comply with the legal regulations regarding disposal.

When disposing of the machine, be aware that it consists of a range of different materials (steel, plastic, electronic components, etc.). Follow the applicable national regulations when disposing of these materials.

19 Technical data

Data and characteristic values

Technical data	Unit	Class
Machine type		667
Stitch type		Lockstitch 301
Hook type		Horizontal hook, XI or XXL
Number of needles		1
Needle system		134-35
Needle strength	[Nm]	80-150, 100-180
Thread strength	[Nm]	80/3-15/3
Stitch length	[mm]	9
Speed maximum	[min ⁻¹]	3000
Speed on delivery	[min ⁻¹]	2800
Operating pressure	[bar]	6
Length	[mm]	630
Width	[mm]	255
Height	[mm]	420
Weight	[kg]	50

Characteristics

The machine is equipped with a large or extra large horizontal hook.

The maximum sewing foot lift is 20 mm.

The remaining thread length following the thread cutting process is approx. 10mm.

A safety friction clutch prevents any misadjustment or damage to the hook in the event of a thread jamming.

Automatic wick lubrication with an inspection glass housed in the arm for lubricating the machine and one inspection glass in the base plate for lubricating the hook.

All subclasses, except for the classes without a thread cutting device, are equipped with a button bar. An additional button panel has been placed within easy reach of the sewer and allows the sewer to assign the same 6 functions of the buttons housed in the button bar.



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