

1767

Service Instructions



IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

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1 About these instructions

These instructions have been prepared with utmost care. They contain information and notes intended to ensure long-term and reliable operation.


Should you notice any discrepancies or if you have improvement requests, then we would be glad to receive your feedback through **Customer Service** ( p. 123).

Consider the instructions part of the product and store them in a place where they are readily available.

1.1 For whom are these instructions intended?

These instructions are intended for:

- Specialists:
This group has the appropriate technical training for performing maintenance or repairing malfunctions.

With regard to minimum qualification and other requirements to be met by personnel, please also follow the chapter **Safety** ( p. 9).

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.



Cover

Specifies which covers must be disassembled in order to access the components to be set.



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. First step
 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/control panel.



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 the chapter **Safety** ( p. 9).

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 machine includes 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 and notes in these instructions have been compiled in accordance with the latest technology and the applicable standards and regulations.

Dürkopp Adler cannot be held liable for any damage resulting from:

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

Transport

Dürkopp Adler cannot be held liable for breakage and transport damages. Inspect the delivery immediately upon receiving it. Report any damage to the last transport manager. This also applies if the packaging is not damaged.

Leave machines, equipment and packaging material in the condition in which they were found when the damage was discovered. This will ensure any claims against the transport company.

Report all other complaints to Dürkopp Adler immediately after receiving the product.

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.

These instructions must 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, switch off the machine at the main switch or disconnect 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. 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 assembled to the power cable by qualified specialists.
Obligations of the operator	<p>Follow the country-specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.</p> <p>All the warnings and safety signs on the machine must always be in legible condition. Do not remove! Missing or damaged warnings and safety signs must be replaced immediately.</p>
Requirements to be met by the personnel	<p>Only qualified specialists may:</p> <ul style="list-style-type: none"> • set up the machine • perform maintenance work and repairs • perform work on electrical equipment <p>Only authorized persons may work on the machine and must first have understood these instructions.</p>

Operation Check the machine during operating for any externally visible damage. Stop working if you notice any changes to the machine. Report any changes to your supervisor. Do not use a damaged machine any further.

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 assembled and put back into operation immediately afterward.



2.2 Signal words and symbols used in warnings




Warnings in the text are distinguished by color bars. The color scheme is 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
CAUTION	(with hazard symbol) If ignored, environmental damage 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
	Puncture
	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

NOTICE

Property damage may occur!


Risk of machine damage from incorrect order.

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



Order

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.

3.2 Laying the cables

NOTICE

Property damage may occur!

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

Excess cables can impair the functioning of moving machine parts. This impairs the sewing function and can result in damage.

Lay excess cable as described in these instructions.



To lay the cables:

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



Important

Tie loops wherever possible to fixed parts. The cables must be secured firmly.

3. Cut off any overlapping cable ties.

3.3 Removing the covers

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before removing and 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 Access to the underside of the machine

In order to access the components at the machine bottom section, you must first tilt the machine head.

Fig. 1: Access to the underside of the machine



Tilting the machine head



To tilt the machine head:

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

Erecting the machine head

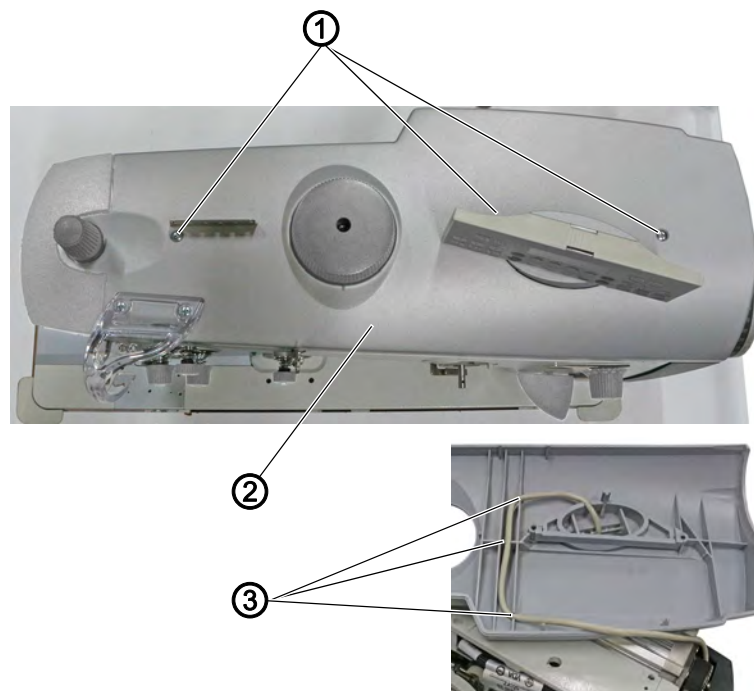


To erect the machine head:

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) - Arm cover

- (3) - Slots

Removing the arm cover



To remove the arm cover:

2. Loosen the screws (1).
3. Remove the arm cover (2).
The arm cover and control panel holder are removed jointly.

Placing the arm cover



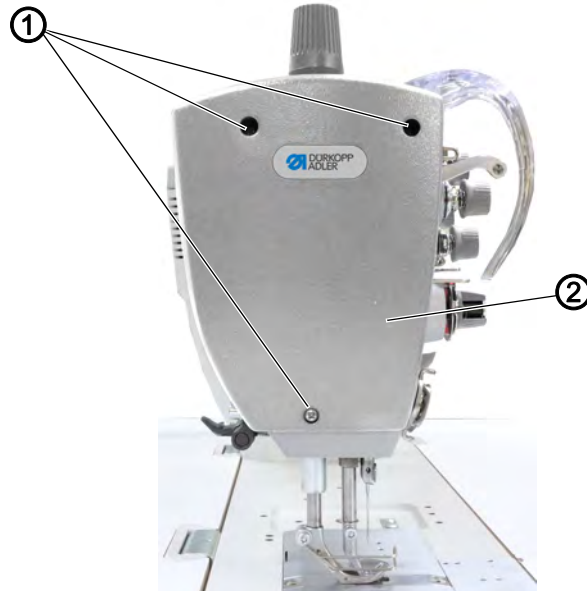
To place the arm cover:

4. Place arm cover (2) and control panel holder.

5. When doing so, ensure that the control panel cable is seated in the slots (3) without being pinched.
6. 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

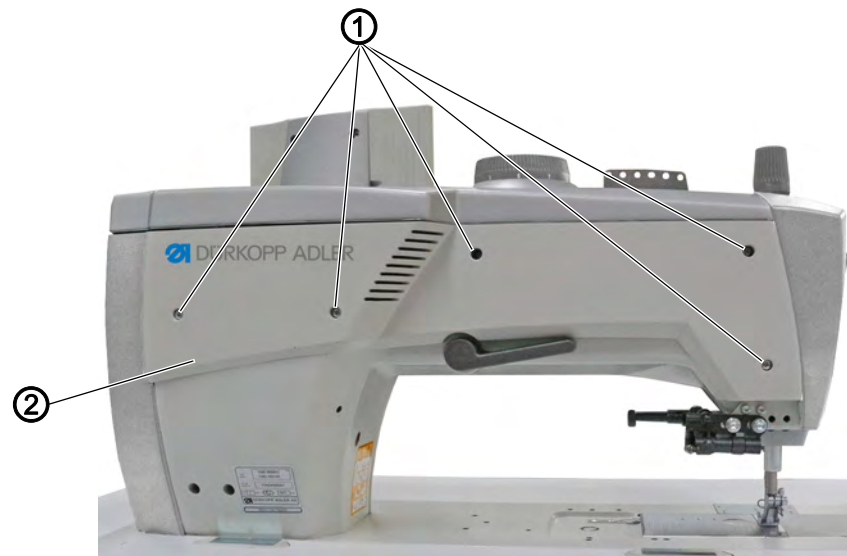


To place the head cover:

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

3.3.4 Removing and placing the rear cover

Fig. 4: Removing and placing the rear cover



(1) - Screws

(2) - Rear cover

Removing the rear cover



To remove the rear cover:

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

Placing the rear cover



To place the rear cover:

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

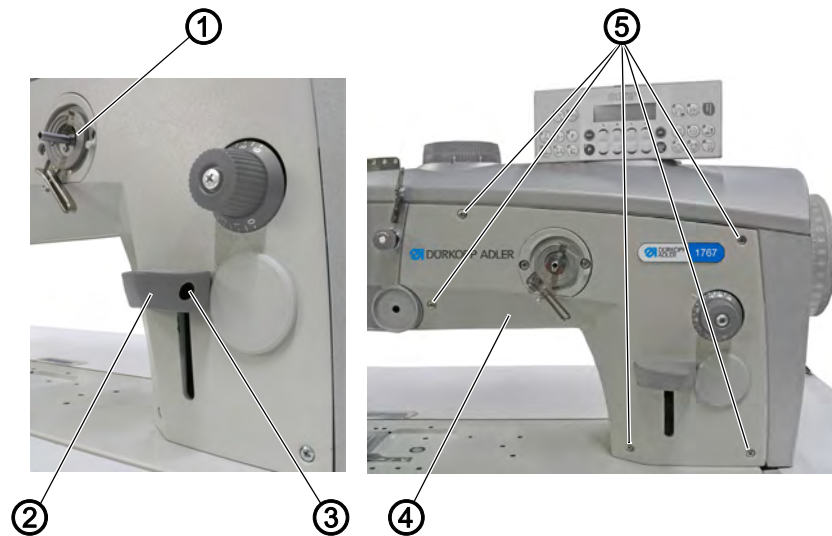


Important

When placing the cover, make sure not to pinch any cables.

3.3.5 Removing and placing the front cover

Fig. 5: Removing and placing the front cover



(1) - Winder

(2) - Stitch adjustment lever handle

(3) - Screw

(4) - Front cover

(5) - Screws

Removing the front cover



To remove the front cover:

1. Loosen the screw (3).
2. Pull off the stitch adjustment lever handle (2).
3. Switch on the winder (1).
4. Loosen the screws (5).
5. Remove the front cover (4).

Placing the front cover

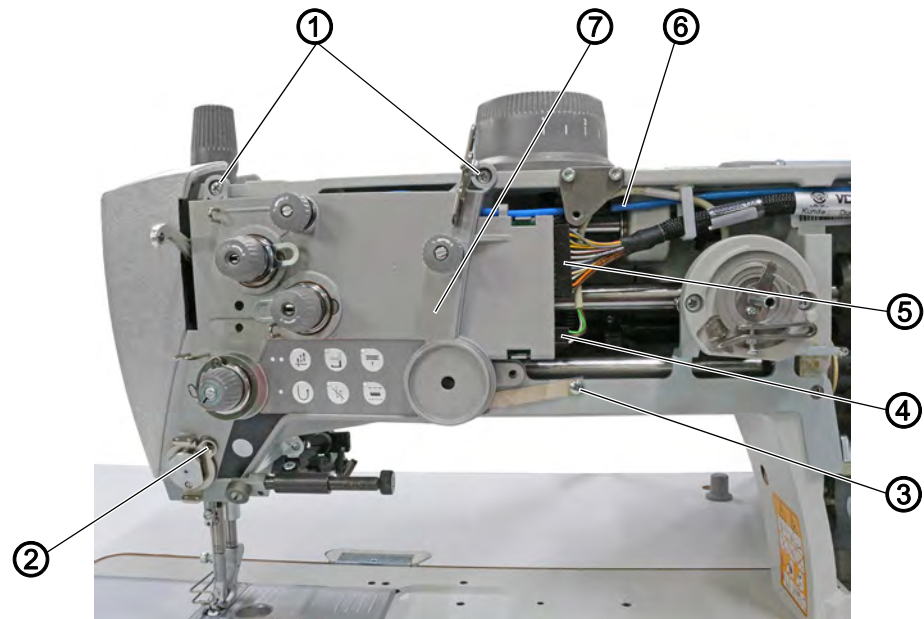


To place the front cover:

1. Switch on the winder (1).
2. Place the front cover (4).
3. Tighten the screws (5).
4. Fit the stitch adjustment lever handle (2).
5. Tighten the screw (3).

3.3.6 Disassembling and assembling the tensioning plate

Fig. 6: Disassembling and assembling the tensioning plate





- | | |
|-----------------------------|---------------------------|
| (1) - Screws | (5) - Plug |
| (2) - Thread guide | (6) - Compressed air line |
| (3) - Equipotential bonding | (7) - Tensioning plate |
| (4) - Plug | |

Disassembling the tensioning plate



To disassemble the tensioning plate:

1. Remove the arm cover ( p. 15).
2. Remove the front cover ( p. 18).
3. Unscrew the thread regulator.
4. Remove the thread guide (2).
5. Loosen the equipotential bonding (3).
6. Pull off plug (4) and (5).
7. Disconnect the compressed air line (6).
8. Loosen the screws (1).
9. Remove the tensioning plate (7).

Assembling the tensioning plate



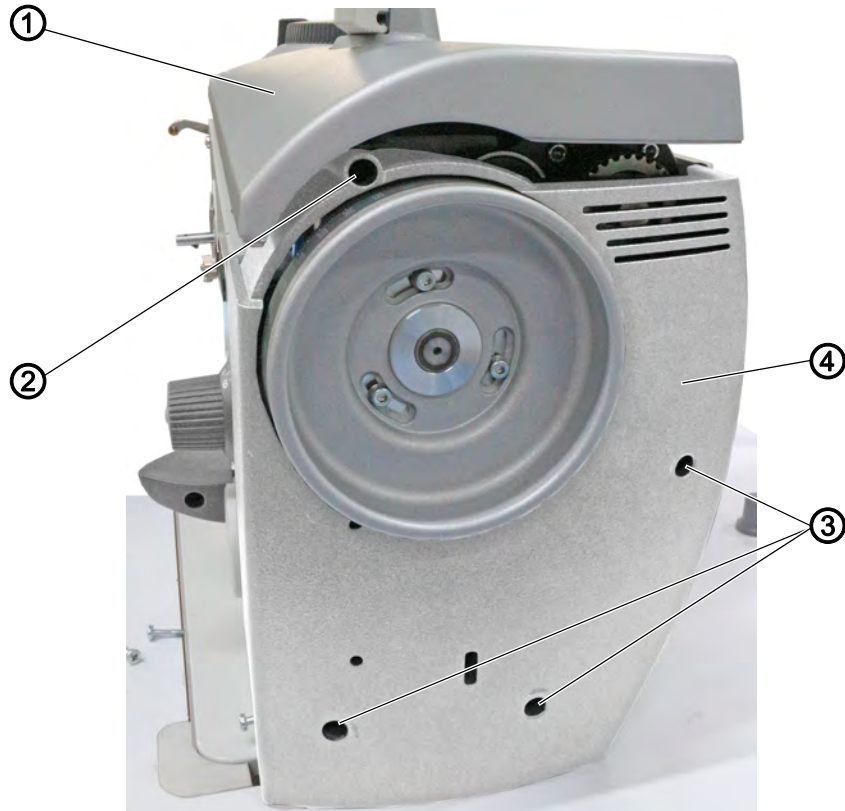
To assemble the tensioning plate:

1. Place the tensioning plate (7).
2. Tighten the screws (1).
3. Connect the compressed air line (6).
4. Insert plug (4) and (5).
5. Assemble the equipotential bonding (3).

6. Tighten the thread guide (2).
7. Tighten the thread regulator.
8. Place the front cover (📖 p. 18).
9. Place the arm cover (📖 p. 15).

3.3.7 Removing and placing the belt cover

Fig. 7: Removing and placing the belt cover



(1) - Arm cover
(2) - Screw

(3) - Screws
(4) - Belt cover

Removing the belt cover



To remove the belt cover:

1. Loosen and slightly raise the arm cover (1).
2. Loosen screws (2) and (3).
3. Remove the belt cover (4).

Placing the the belt cover



To place the belt cover:

1. Place the belt cover (4).
2. Tighten screws (2) and (3).

**Important**

Make sure not to pinch any cables.

3. Tighten the arm cover.

3.3.8 Opening and closing the throat plate slide

Fig. 8: Opening and closing the throat plate slide



(1) - Throat plate slide
(2) - Throat plate

(3) - Clamping spring

Opening the throat plate slide

To open the throat plate slide:

1. Press the clamping spring (3) downwards.
2. Push the throat plate slide (1) apart.

Closing the throat plate slide

To close the throat plate slide:

1. Slide the throat plate slide (1) up to the throat plate (2).

3.3.9 Disassembling and assembling the throat plate

CAUTION

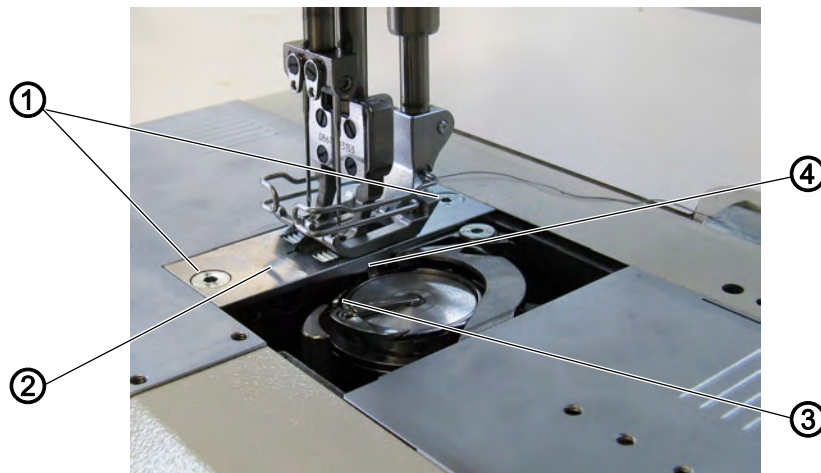


Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you disassemble or assemble the throat plate.

Fig. 9: Disassembling and assembling the throat plate



(1) - Screws
(2) - Throat plate

(3) - Nose
(4) - Bobbin case

Disassembling the throat plate



To disassemble the throat plate:

1. Open the throat plate slide (📖 p. 21).
2. Loosen both screws (1).
3. Remove the throat plate (2).

Assembling the throat plate



To assemble the throat plate:

1. Insert the throat plate (2).
Ensure that the nose (3) of the bobbin case (4) is in the cutout of the throat plate.
2. Tighten both screws (1).
3. Close the throat plate slide (📖 p. 21).

3.3.10 Disassembling and assembling the feed dog

CAUTION

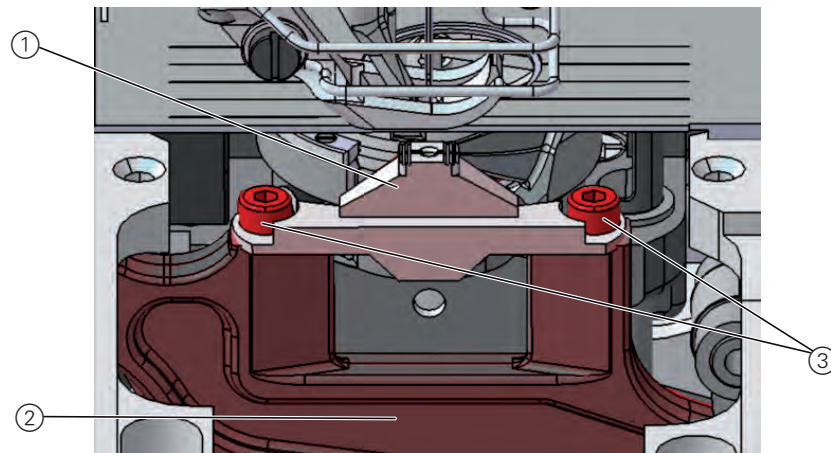


Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you disassemble or assemble the feed dog.

Fig. 10: Disassembling and assembling the feed dog



(1) - Feed dog


(2) - Feed dog carrier

(3) - Screws

Disassembling the feed dog




To disassemble the feed dog:

1. Disassemble the throat plate ( p. 22).
2. Loosen the screws (3).
3. Take the feed dog (1) off the feed dog carrier (2).

Assembling the feed dog



To assemble the feed dog:

1. Place the feed dog (1) onto the feed dog carrier (2).
2. Tighten the screws (3).
3. Insert the throat plate ( p. 22).



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.



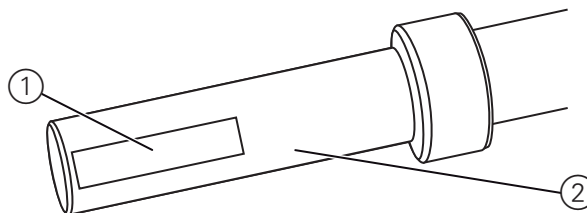
Order

Then check the following setting:

- Feed dog (📖 p. 42)

3.4 Flats on shafts

Fig. 11: Flats on shafts



(1) - Flat

(2) - Shaft

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



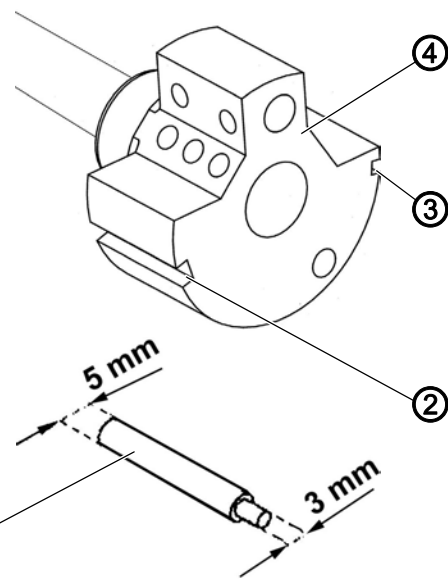
Important

Ensure that the screws are completely flush with the surface.

3.5 Locking the machine in place

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

Fig. 12: Locking the machine in place (1)



(1) - Locking peg

(2) - Large arresting groove

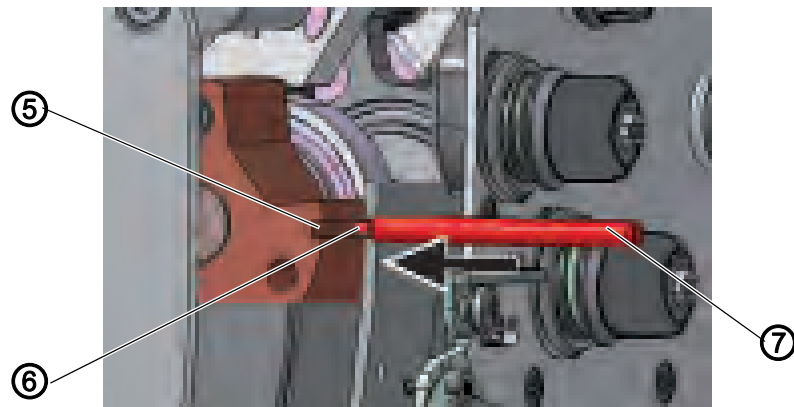
(3) - Small arresting groove

(4) - Arm shaft crank

There are 2 securing positions:

- **Securing position 1:** Loop stroke position
 - 5 mm end in the large slot
 - Setting the loop stroke and needle bar height
- **Securing 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. 13: Locking the machine in place (2)



(5) - Slot
(6) - Locking opening

(7) - Locking peg

Locking the machine in place



To lock the machine in place:

1. Remove the plug from the locking opening (6).
2. Turn the handwheel until the appropriate slot (5) is in front of the locking opening (6):
 - Small slot at handwheel position 0°
 - Large slot at handwheel position 200 – 205°
3. Insert the locking peg (7) with the appropriate end into the slot (5).

Removing the lock



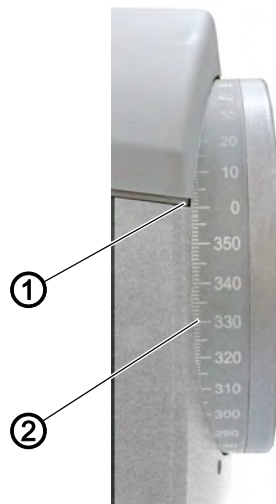
To remove the lock:

1. Pull the locking peg (7) out of the slot (5).
2. Insert the plug into the locking opening (6).

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. 14: Setting the handwheel into position



(1) - Marking

(2) - Graduated scale



To set the handwheel into position:

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

4 Positioning the arm shaft

CAUTION



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 ball bearing (1) is seated flush with the locking ring (2).
The 3 threaded pins (3) are seated flush on the flat of the arm shaft.
The flat of the crank (4) is flush with the flat of the arm shaft (5) or offset slightly toward the rear.



Cover





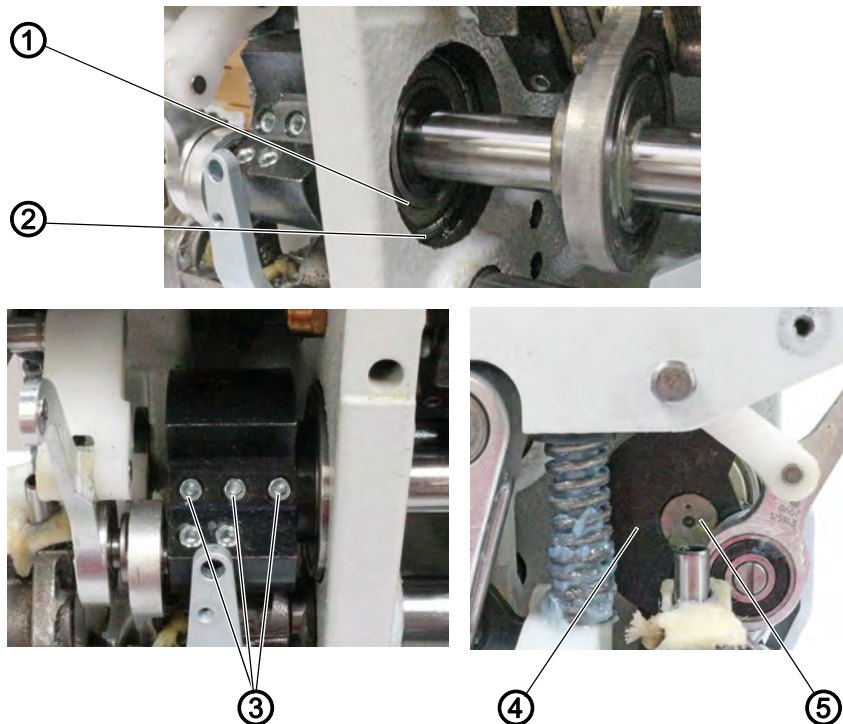
- Remove the arm cover ( p. 15)
- Remove the head cover ( p. 16)
- Remove the front cover ( p. 18)
- Disassemble the tensioning plate ( p. 19)

Fig. 15: Positioning the arm shaft crank



- (1) - Ball bearing
(2) - Locking ring
(3) - Threaded pins

- (4) - Flat of crank
(5) - Flat of arm shaft



To position the arm shaft:

1. Loosen the threaded pins (3).
2. Turn the arm shaft so that the threaded pins (3) are seated flush on the flat.
3. Position the arm shaft so that the face of the arm shaft (5) is flush with the face of the crank (4).
4. Tighten the threaded pins (3).

5 Positioning the toothed belt wheels

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set 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.

5.1 Positioning the toothed belt wheel on the motor shaft



Cover



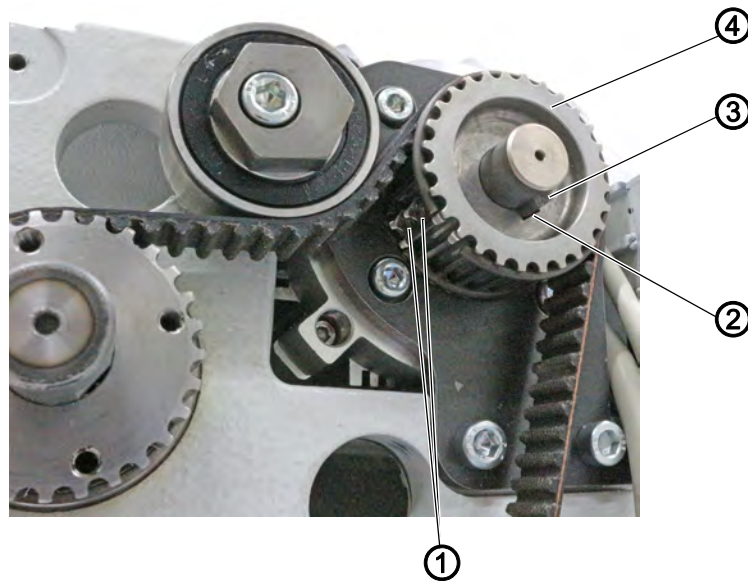
- Remove the arm cover ( p. 15)
- Remove the belt cover ( p. 20)

Fig. 16: Positioning the toothed belt wheel on the motor shaft



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

- (3) - Adjusting spring
(4) - Toothed belt wheel



To position the toothed belt wheel on the motor shaft:

1. Fit the adjusting spring (3) into the slot (2) of the toothed belt wheel (4).
2. Push the toothed belt wheel (4) with the adjusting spring (3) up against the motor shaft.
3. Tighten the threaded pins (1).

5.2 Positioning the upper toothed belt wheel



Proper setting

The 2 threaded pins (4) for the upper toothed belt wheel (3) are seated flush on the flat.

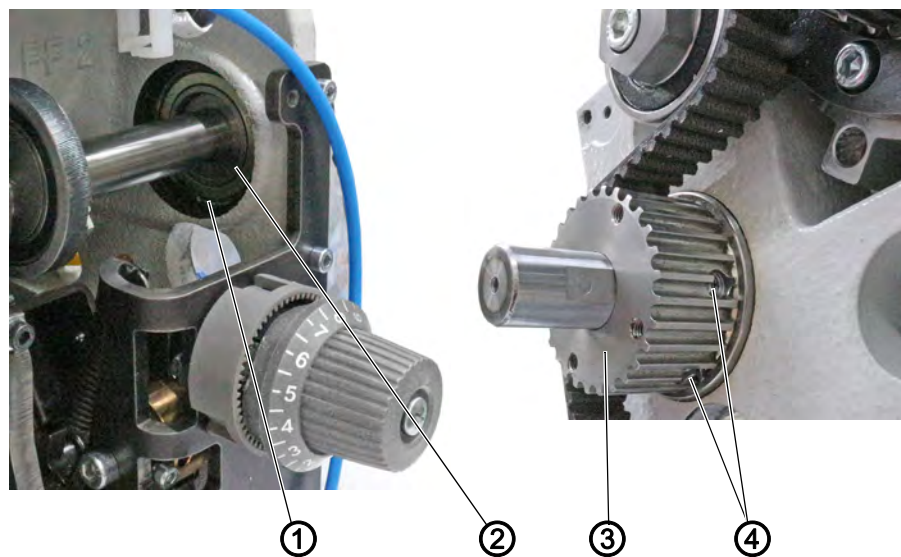
The ball bearing (2) abuts on the locking ring (1).



Cover

- Remove the arm cover (📖 p. 15)
- Remove the front cover (📖 p. 18)
- Remove the belt cover (📖 p. 20)

Fig. 17: Positioning the upper toothed belt wheel



(1) - Locking ring
(2) - Ball bearing

(3) - Toothed belt wheel
(4) - Threaded pins



To position the upper toothed belt wheel:

1. Loosen the threaded pins (4).
2. Turn the toothed belt wheel (3) such that the threaded pins (4) are seated flush on the flat of the arm shaft.
3. Tighten the threaded pins (4).

5.3 Positioning the lower toothed belt wheel



Proper setting

The 2 threaded pins (2) for the lower toothed belt wheel (1) are seated flush on the flat of the lower shaft.

The ball bearing (4) abuts on the locking ring (3).



Cover



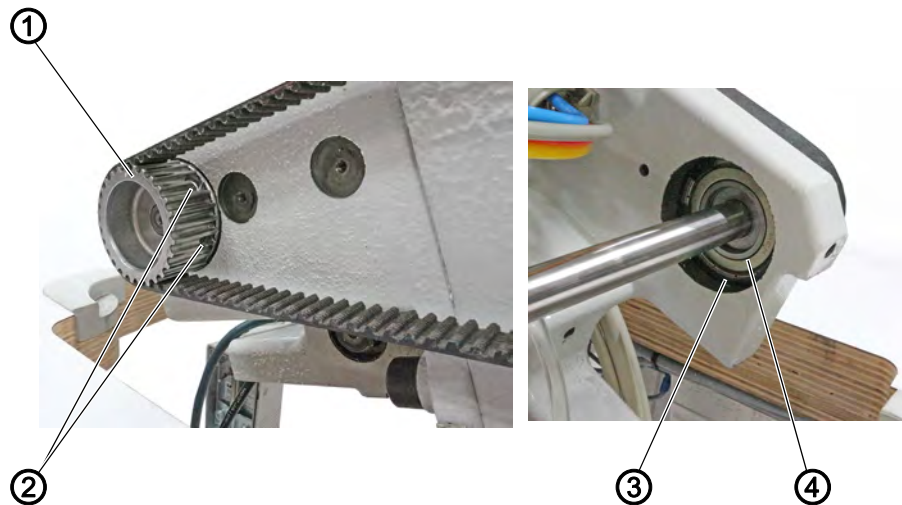
- Remove the belt cover ( p. 20)
- Tilt the machine head ( p. 14)

Fig. 18: Positioning the lower toothed belt wheel



(1) - Toothed belt wheel
(2) - Threaded pins

(3) - Locking ring
(4) - Ball bearing



To position the lower toothed belt wheel:

1. Unscrew the lower belt cover.
2. Loosen the threaded pins (2).
3. Turn the toothed belt wheel (1) such that the threaded pins (2) are seated on the flat of the arm shaft.
4. Tighten the threaded pins (2) such that the first screw in the direction of rotation is seated on the flat.

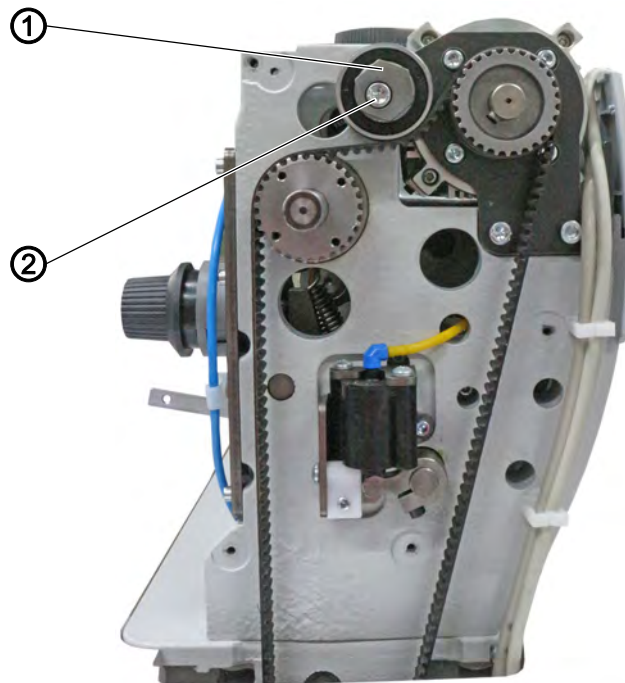
5.4 Setting the toothed belt tension



Cover

- Remove the belt cover (📖 p. 20)

Fig. 19: Setting the toothed belt tension



(1) - Eccentric

(2) - Screw



To set the toothed belt tension:

1. Loosen the screw (2).
2. Turn the eccentric (1).
3. Check and, if necessary, readjust the toothed belt tension.



Information

The toothed belt tension is set to the optimum value when the belt oscillates at 75 Hz. Check the oscillation, for instance, using a device made by Contitech.

4. Tighten the screw (2).

6 Setting the handwheel scale

CAUTION




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.



Proper setting

1. Lock the machine in place at position 2 ( p. 24).
- ↳ 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.



Cover



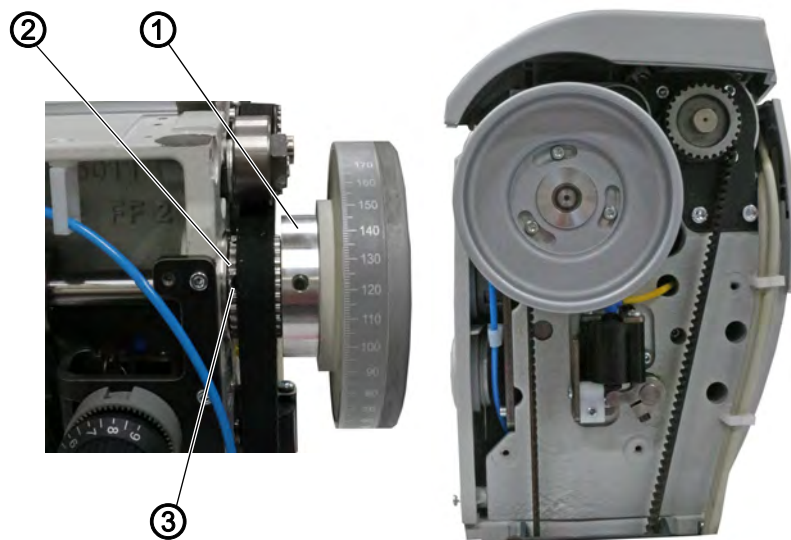
- Remove the arm cover ( p. 15)
- Remove the belt cover ( p. 20)

Fig. 20: Setting the handwheel scale (1)



- (1) - Handwheel flange
(2) - Toothed belt wheel

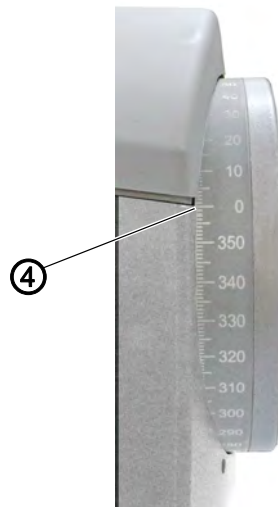
- (3) - Screws



To set the handwheel scale:

1. Place the handwheel flange (1) on the shaft.
- ↳ The handwheel flange (1) abuts on the toothed belt wheel (2).
2. Loosen the screws (3).
3. Lock the machine in place at position 2.

Fig. 21: Setting the handwheel scale (2)



(4) - Handwheel in the 0° position

4. Turn the handwheel to the 0° position (4).
5. Tighten the screws (3).

7 Latching the safety snap-on coupling

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you latch, check or set the safety snap-on coupling.

The safety snap-on coupling disengages in the event of the thread jamming and thus prevents the hook from being misadjusted or damaged.



Proper setting

The threaded pins (1) next to the safety snap-on coupling (2) must be parallel to one another.

After the coupling has disengaged, they are no longer parallel.



Cover


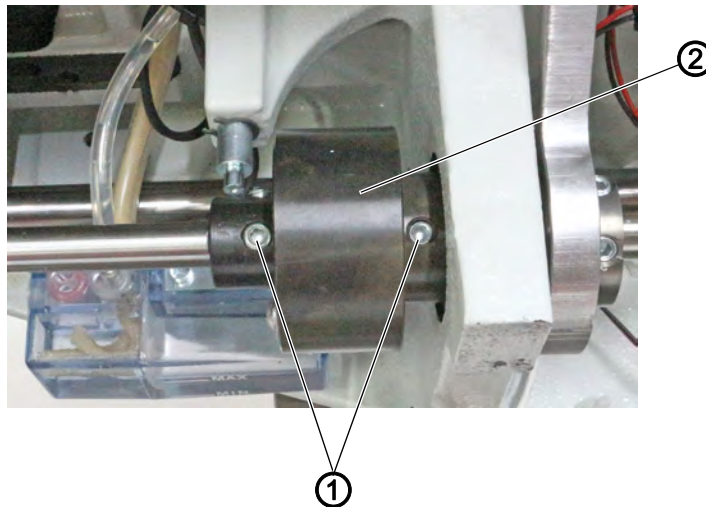
- Tilt the machine head ( p. 14)

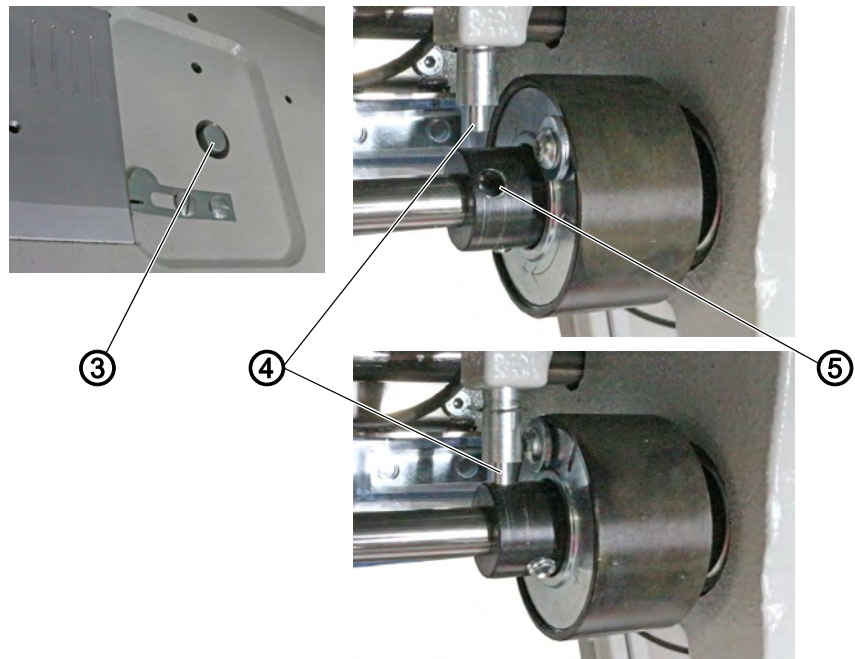
Fig. 22: Latching the safety snap-on coupling (1)



(1) - Threaded pins

(2) - Safety snap-on coupling

Fig. 23: Latching the safety snap-on coupling (2)



(3) - Button
(4) - Pin

(5) - Hole



So latch the safety snap-on coupling:

1. Press and hold the button (3) on the upper side of the throat plate. The pin (4) must be seated in the hole (5).
 2. Turn the handwheel until the threaded pins (1) are in parallel position.
- ↙ The safety snap-on coupling latches into place.

8 Setting the stitch length adjusting wheel

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you set the stitch length adjusting wheel.

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.



Proper setting

1. Set the stitch length adjusting wheel to **0**:

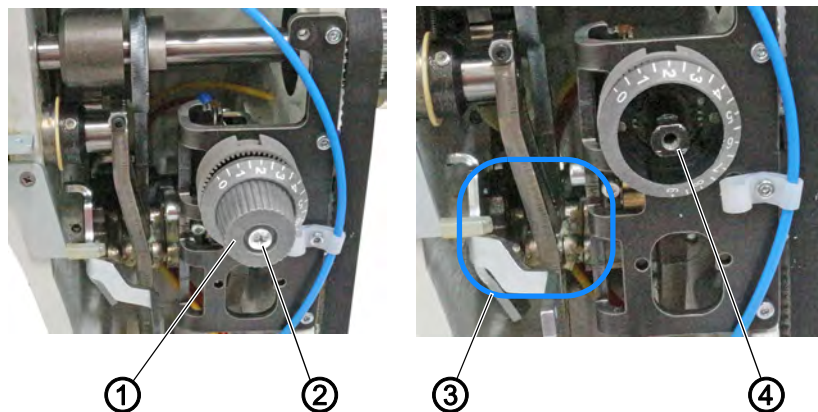
- ↳ No play on the stitch regulator gear.
The plates for the gear are parallel; the frame cannot be moved.



Cover

- Remove the front cover (📖 p. 18)

Fig. 24: Setting the stitch length adjusting wheel



- (1) - Stitch length adjusting wheel
(2) - Screw

- (3) - Frame of the stitch regulator gear
(4) - Spindle



To set the stitch length adjusting wheel:

1. Switch off the machine
 2. Hold the stitch length adjusting wheel (1) in place.
 3. Loosen the screw (2).
 4. Remove the stitch length adjusting wheel (1) from the spindle (4).
 5. Carefully turn the spindle (4) clockwise using a 10 mm wrench.
 6. Check whether the frame for the stitch regulator gear (3) can be moved.
 7. As soon as the frame (3) stops moving: Remove the wrench from the spindle (4).
 8. Turn the scale ring clockwise as far as it will go.
- ↳ The stitch length is **0**.
9. Place the stitch length adjusting wheel (1) on the spindle (4).
 10. Tighten the stitch length adjusting wheel (1) using the screw (2).

8.1 Setting the stitch length limit

NOTICE

Property damage may occur!

Risk of damaging the feed dog due to incorrect throat plate size.
If the throat plate cutout 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.

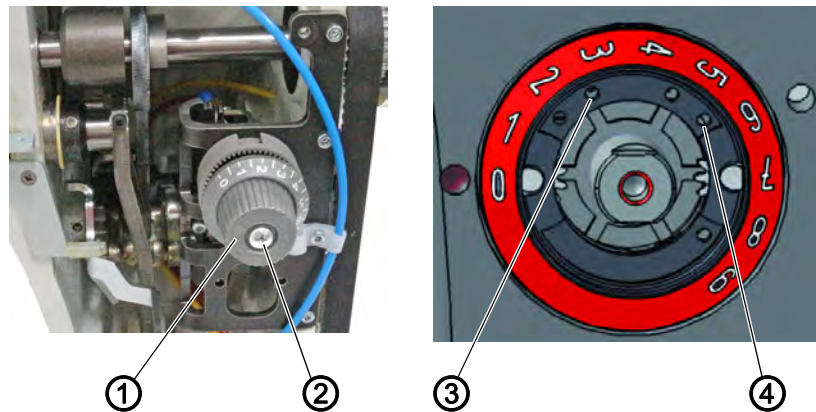
Not all stitch lengths may be available depending on the sewing equipment used.



Proper setting

1. Turn the stitch length counterclockwise as far as it will go.
- ↳ The stitch length adjusting wheel can only be turned up to the set maximum stitch length.

Fig. 25: Setting the stitch length limit



(1) - Stitch length adjusting wheel
(2) - Screw

(3) - Hole for stitch length 6
(4) - Hole for stitch length 9



To set the stitch length limit:

1. Position the stitch length adjusting wheel (1) to **0**.
2. Hold the stitch length adjusting wheel (1) in place.
3. Loosen the screw (2).
4. Remove the stitch length adjusting wheel (1).
5. Loosen the threaded pin from one of the holes (3) or (4).
6. Screw the threaded pin into the hole for the required maximum stitch length. The holes are marked with numbers for the stitch length.
7. Turn the scale so that the **0** is exactly next to the adjusting mark.
8. Assemble the stitch length adjusting wheel (1) and hold it in place.
9. Tighten the screw (2).

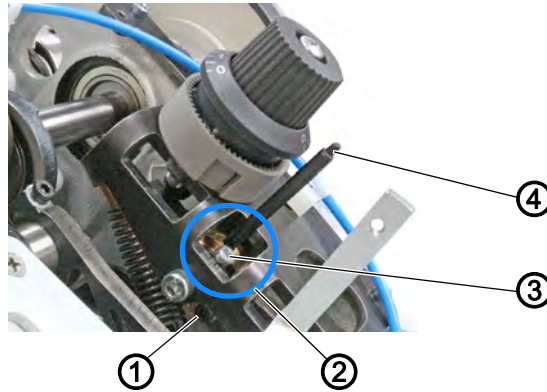
8.2 Setting the basic eccentric setting for forward stitch and backward stitch



Cover

- Tilt the machine head (📖 p. 14)

Fig. 26: Setting the basic eccentric setting for forward stitch and backward stitch (1)



(1) - Screw
(2) - Slot

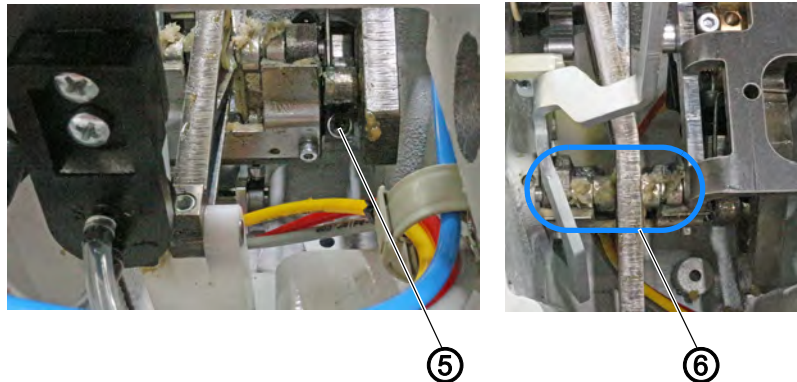
(3) - Hole
(4) - Locking pin



To set the basic eccentric setting for forward stitch and backward stitch:

1. Set the stitch length adjusting wheel to **0**.
2. Loosen the screw (1).
3. Insert the locking pin (4) into the hole (3) and center it in the slot (2).
4. Tighten the screw (1).

Fig. 27: Setting the basic eccentric setting for forward stitch and backward stitch (2)



(5) - Screw

(6) - Clips



5. Tilt the machine (📖 p. 14).
6. Loosen the screw (5).
7. Set the clips (6) to parallel position.
8. Tighten the screw (5).

9 Feed dog

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



Order

First, check the following setting:

- Needle bar linkage ( p. 48)

9.1 Setting the feed dog position

CAUTION



Risk of injury from moving parts!

Crushing possible.

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





Proper setting

When the stitch length is set to **0**, the feed dog is exactly in the center of the throat plate cutout, both sideways and in the sewing direction.

The needle must enter the needle hole precisely in the center.

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. 42)
- If this is not sufficient, move the entire feed dog carrier on the sliding shaft ( p. 43)

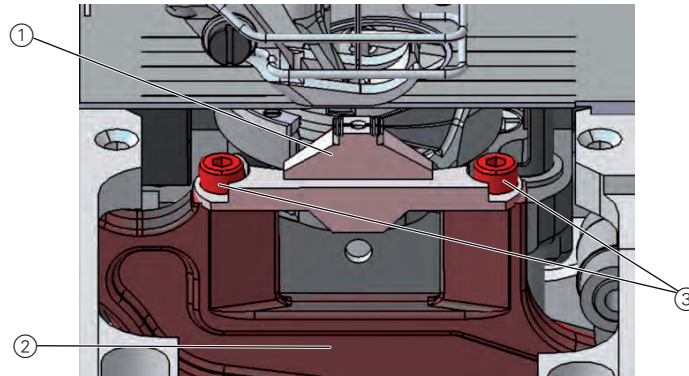
9.1.1 Moving the feed dog



Cover

- Throat plate (📖 p. 22)

Fig. 28: 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).

9.1.2 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


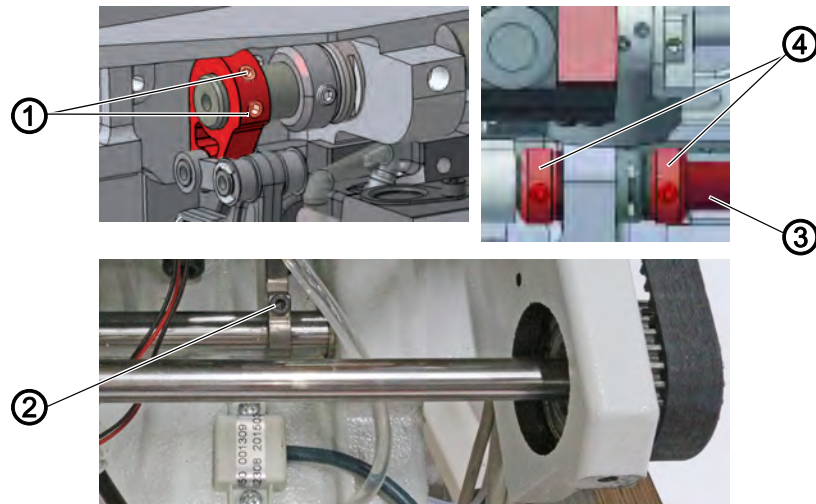
- Tilt the machine head ( p. 14)

Fig. 29: Moving the feed dog carrier



(1) - Screws
(2) - Screw

(3) - Sliding shaft
(4) - Adjusting rings



To move the feed dog carrier:

1. Set the stitch length adjusting wheel to **0**.
2. Loosen the screws (1).
3. Loosen the screw (2).
4. Loosen the threaded pins for the adjusting rings (4).
5. Move the feed dog carrier perpendicular to the sewing direction so that the feed dog is exactly in the center of the throat plate cutout.
6. Push the adjusting rings (4) toward each other as far as they will go.



Important

Make sure that the sliding shaft (3) is tightened by the adjusting rings.

7. Tighten the threaded pins for the adjusting rings (4).
8. Move the feed dog carrier in the sewing direction such that the feed dog is exactly in the center of the throat plate cutout.
9. Tighten the screw (2).
10. Tighten the screws (1).



Important

Make sure that the feed dog height has the proper setting ( p. 46).

9.2 Setting the feed dog movement

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you set 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 position (📖 p. 41)

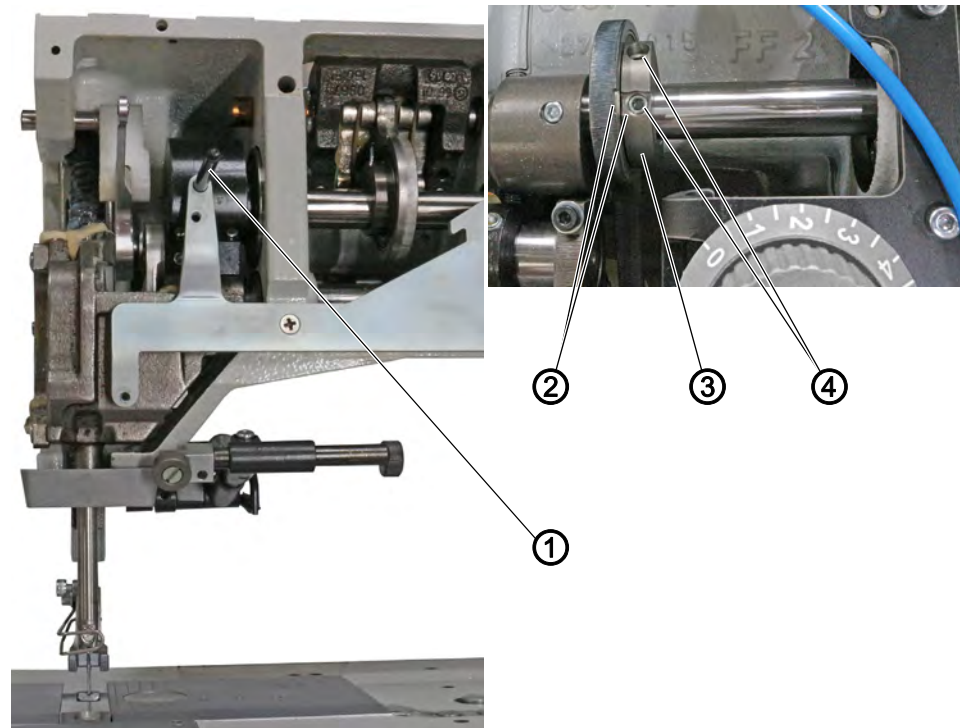
9.2.1 Setting the feed eccentric



Cover

- Remove the front cover (📖 p. 18)

Fig. 30: Setting the feed eccentric



- (1) - Locking pin
- (2) - Markings

- (3) - Eccentric
- (4) - Screws



To set the feed movement:

1. Lock the machine in place in the loop stroke position using the locking pin (1).
- ↳ The needle is in the loop stroke position.
2. Loosen the screws (4) on the eccentric (3).
3. Turn the eccentric (3) until the markings (2) line up.
4. Tighten the screws (4).

9.2.2 Setting the compensating weight



Order

Adjust the following setting first:

- Set the feed eccentric ( p. 44)



Proper setting

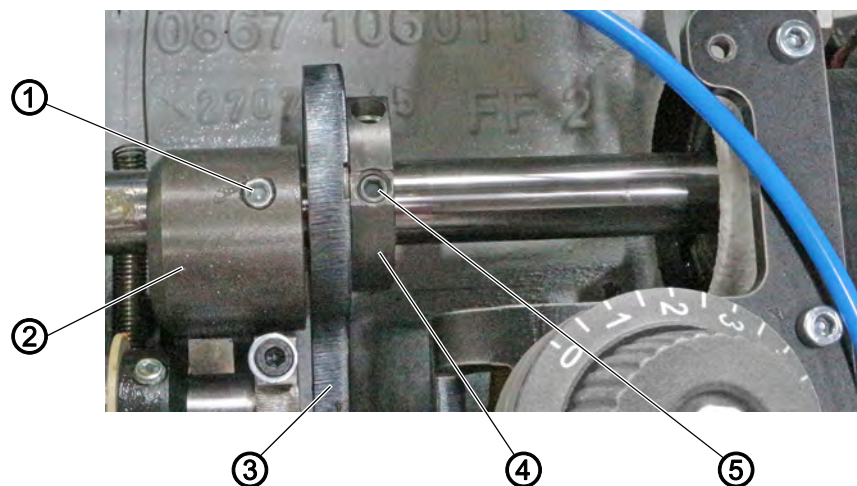
The screw of the compensating weight (2) must be parallel to the 1st screw in the rotational direction (5) of the eccentric (4).



Cover

- Remove the front cover ( p. 18)

Fig. 31: Setting the compensating weight



- (1) - Screw
 (2) - Compensating weight
 (3) - Pull rod

- (4) - Eccentric
 (5) - 1st screw in rotational direction



To set the compensating weight:

1. Loosen the screw (1).
2. Turn the compensating weight (2) until the screw of the compensating weight (1) is parallel to the 1st screw in the rotational direction (5) of the eccentric (4).

The distance between the compensating weight (2) and the pull rod (3) is approx. 1 mm.

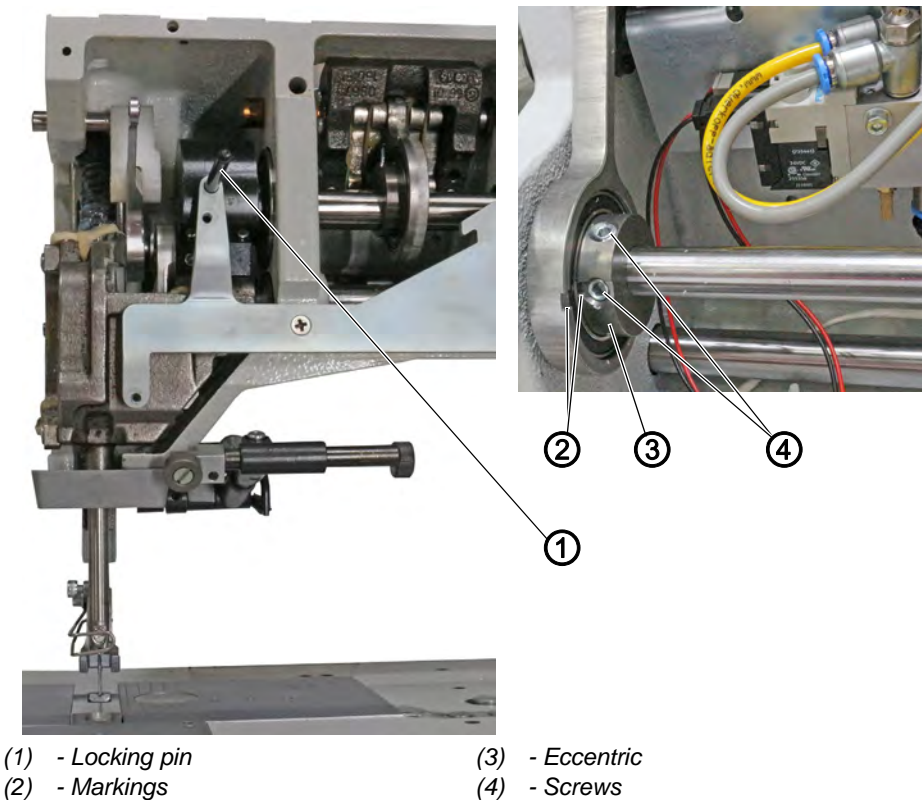
3. Tighten the screw (1).

9.2.3 Setting the feed stroke eccentric

Cover

- Tilt the machine head (📖 p. 14)

Fig. 32: Setting the feed stroke eccentric



To set the feed stroke eccentric:

1. Lock the machine in place in the loop stroke position using the locking pin (1).
- ↙ The needle is in the loop stroke position.
2. Loosen the screws (4) on the eccentric (3).
3. Turn the eccentric (3) until the markings (2) line up.
4. Tighten the screws (4).

9.3 Setting the feed dog height at top dead center

The feed dog reaches the maximum stroke height at top dead center when the handwheel is positioned at 185°.



Proper setting

1. 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.
- ↳ In machines with short thread cutters (KFA), the upper edge of the feed dog protrudes 0.8 mm above the throat plate.



Cover



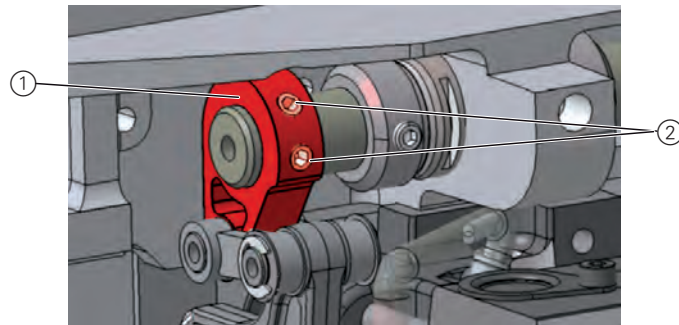
- Disassemble the tensioning plate ( p. 19)
- Tilt the machine head ( p. 14)

Fig. 33: Setting the feed dog height at top dead center



(1) - Lever

(2) - Threaded pins



To set the feed dog height at top dead center:

1. Move the handwheel into the 185° position.
2. Loosen the threaded pins (2) for the lever (1).
3. Turn the lever (1) such that the upper edge of the feed dog protrudes 0.5 mm (KFA = 0.8 mm) above the throat plate.
4. Tighten the threaded pins (2).

10 Aligning the needle bar linkage

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before aligning the needle bar linkage.



Order

First, check the following setting:

- A straight and undamaged needle has to be inserted
(📖 *Operating Instructions*)



Proper setting

1. Set the stitch length adjusting wheel to **0**.
↪ The needle pierces exactly in the center of the feed dog needle hole.

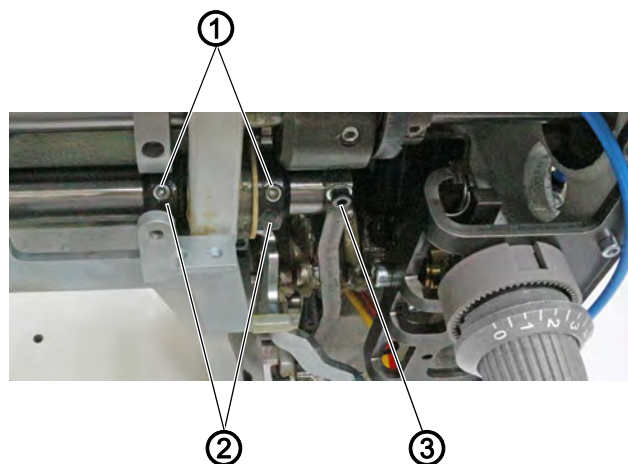
10.1 Aligning the needle bar linkage sideways



Cover

- Remove the arm cover (📖 p. 15)
- Remove the head cover (📖 p. 16)
- Disassemble the tensioning plate (📖 p. 19)
- Remove the front cover (📖 p. 18)

Fig. 34: Aligning the needle bar linkage sideways (1)



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

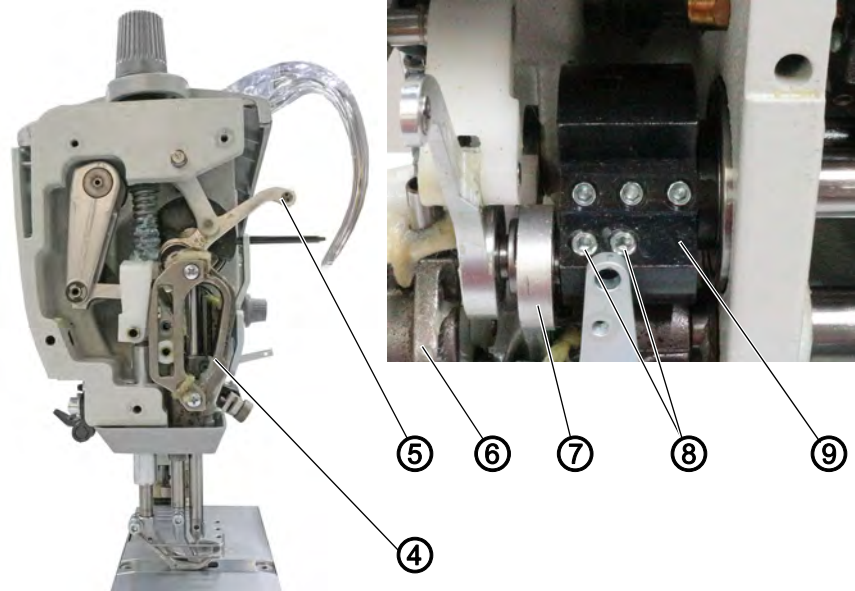
- (3) - Screw



To align the needle bar linkage sideways:

1. Set the 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.
3. Loosen the screw (3).

Fig. 35: Aligning the needle bar linkage sideways (2)



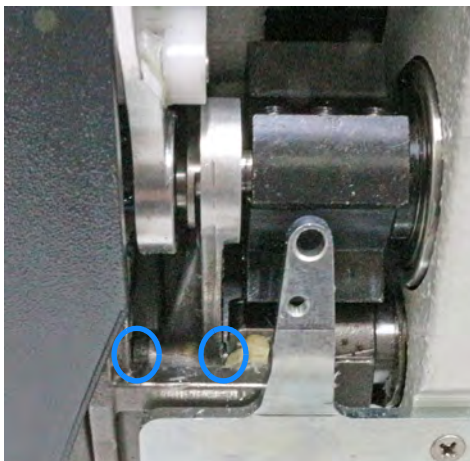
- (4) - Needle bar linkage
 (5) - Thread lever
 (6) - Crosshead

- (7) - Sliding block guide
 (8) - Threaded pins
 (9) - Arm shaft crank



4. Loosen both threaded pins (8) on the arm shaft crank (9). Make sure that the threaded pins stay on the surface.
5. Move the needle bar linkage (4) sideways such that the needle pierces exactly in the center of the needle hole for the feed dog.
6. Push the two adjusting rings (2) inwards as far as they will go and tighten them.
7. Tighten the threaded pins (1) on the two adjusting rings (2).

Fig. 36: Aligning the needle bar linkage sideways (3)



8. Align the thread lever (5) relative to the arm shaft crank (9).
 - ↳ There is an equal amount of space on either side.
Once the tensioning plate has been assembled, the thread lever (5) is positioned in the center of the slot.
9. Tighten both threaded pins (8) on the arm shaft crank (9).



Order

Then check the following settings:

- Distance between hook and needle (📖 p. 52)

10.2 Aligning the needle bar linkage in the sewing direction



Cover



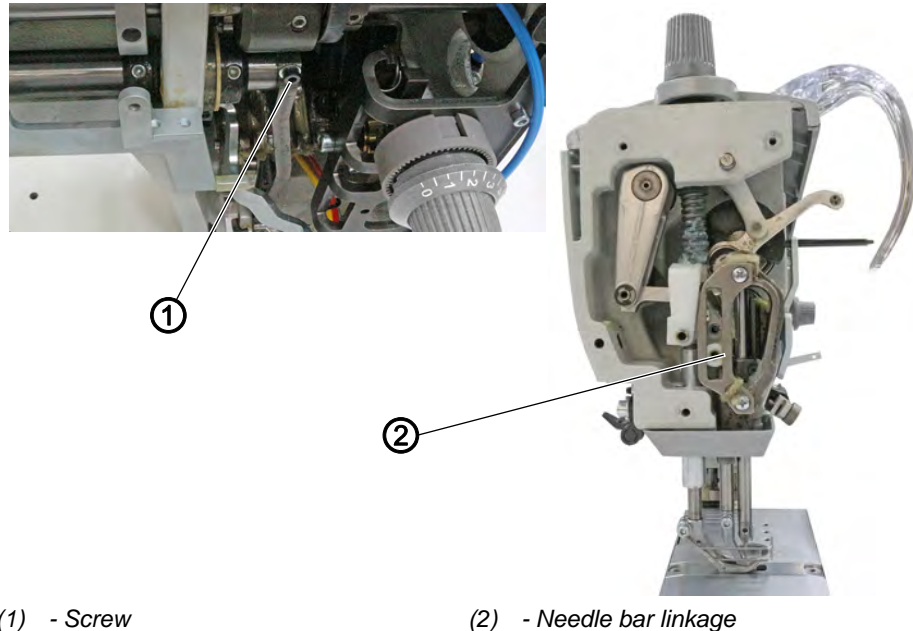
- Remove the front cover ( p. 18)
- Tilt the machine head ( p. 14)

Fig. 37: Aligning the needle bar linkage in the sewing direction



(1) - Screw

(2) - Needle bar linkage



To align the needle bar linkage in the sewing direction:

1. Loosen the screw (1).
2. Move the needle bar linkage (2) such that the needle pierces in the center of the needle hole.
3. Tighten the screw (1).



Order

Then check the following setting:

- Loop stroke position ( p. 54)

11 Position of the hook and needle

CAUTION



Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before adjusting the hook and needle settings.

11.1 Setting the hook side clearance

NOTICE

Property damage may occur!

There is a risk of machine damage, needle breakage or damage to the thread if the distance between hook and needle tip is incorrect.

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



Order

First, check the following settings:

- A straight and undamaged needle has been inserted
(*Operating Instructions*)
- Needle bar linkage (p. 48)



Proper setting

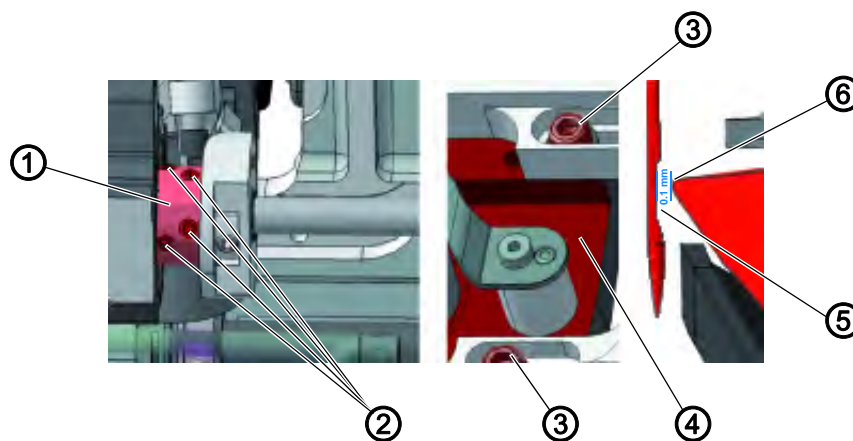
The distance between the hook tip and the groove of the needle is 0.1 mm.



Cover

- Tilt the machine head (p. 14)
- Open the throat plate slide (p. 21)

Fig. 38: Setting the hook side clearance (1)



(1) - Clamping ring
 (2) - Threaded pins
 (3) - Screws

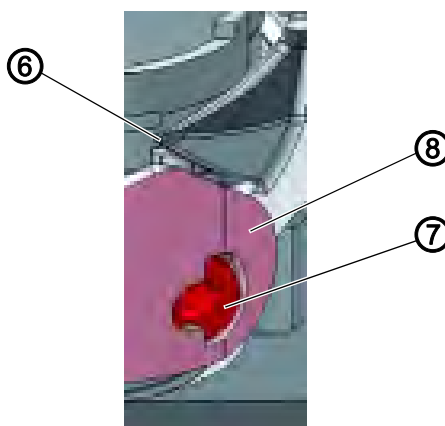
(4) - Hook support
 (5) - Groove
 (6) - Hook tip



To set the hook side clearance:

1. Loosen the screws (3).
2. Loosen the threaded pins (2) for the clamping ring (1).

Fig. 39: Setting the hook side clearance (2)



(6) - Hook tip
 (7) - Screw



(8) - Needle guard



3. Turn the screw (7) clockwise to swivel down the needle guard (8).
4. Move the hook support (4) sideways such that the distance between the hook tip (6) and the groove for the needle (5) is 0.1 mm at most, without the hook tip (6) touching the needle.
5. Tighten the screws (3).



Important

6. Check the loop stroke position ( p. 54).
7. Tighten the threaded pins (2) for the clamping ring (1).
8. Remove the lock ( p. 24).

**Order**

Then check the following setting:

- Position of the needle guard (p. 58)

11.2 Setting the loop stroke position

The loop stroke is the path length from the bottom 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.

Checking the position of the hook tip**Order**

First, check the following settings:

- Needle bar linkage (p. 48)
- A straight and undamaged needle has to be inserted (*Operating Instructions*)
- Latch the safety snap-on coupling (p. 35)

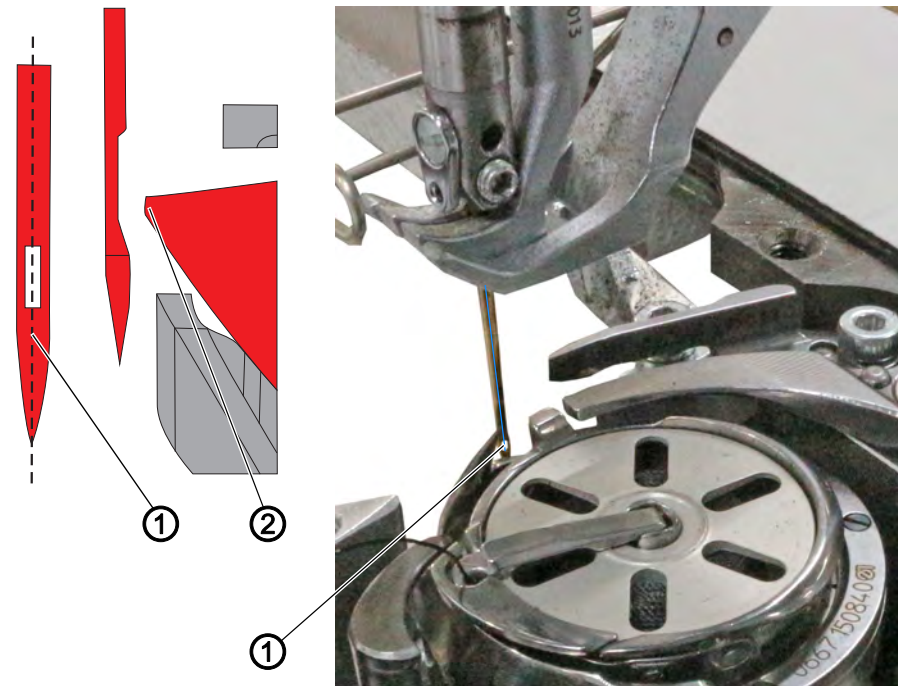
**Proper setting**

1. Lock the machine in place at position 1 (p. 24).
 - ↙ The hook tip (2) points exactly to the vertical center line (1) of the needle.
 - ↙ The loop stroke is precisely 2 mm.

**Disturbance**

- Missing stitches

Fig. 40: Checking the position of the hook tip



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

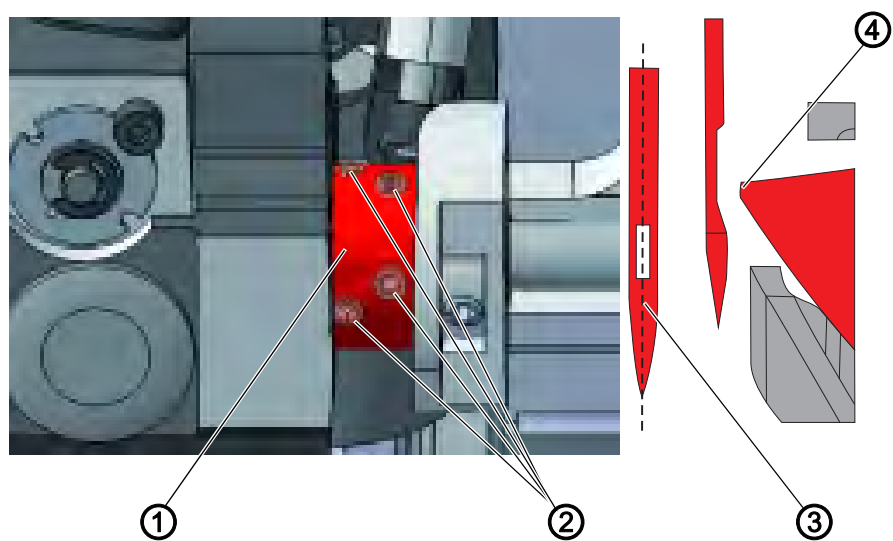
Setting the loop stroke position



Cover

- Tilt the machine head (📖 p. 14)
- Disassemble the throat plate (📖 p. 22)
- Disassemble the feed dog (📖 p. 23)

Fig. 41: Setting the loop stroke position





(1) - Clamping ring
(2) - Threaded pins

(3) - Vertical center line of the needle
(4) - Hook tip





To set the loop stroke position:

1. Lock the machine in place at position **1** ( p. 24).
2. Set the stitch length adjusting wheel to **0**.
3. Loosen the threaded pins (2) for the clamping ring (1).
4. Turn the hook such that the hook tip (4) points exactly to the vertical center line of the needle (3).
5. Tighten the threaded pins (2) for the clamping ring (1).
6. Remove the lock ( p. 24).



Order

Then check the following settings:



- Position of the needle guard ( p. 58)
- Timing of cutting by the thread cutter ( p. 79)

11.3 Setting the needle bar height





Order

First, check the following settings:

- Loop stroke position ( p. 54)
- A straight and undamaged needle has to be inserted ( *Operating Instructions*)



Proper setting

1. Lock the machine in place at position **1** ( p. 24).
 2. Set the stitch length adjusting wheel to **0**.
-  The hook tip is level with the lower third of the groove on the needle.



Disturbance

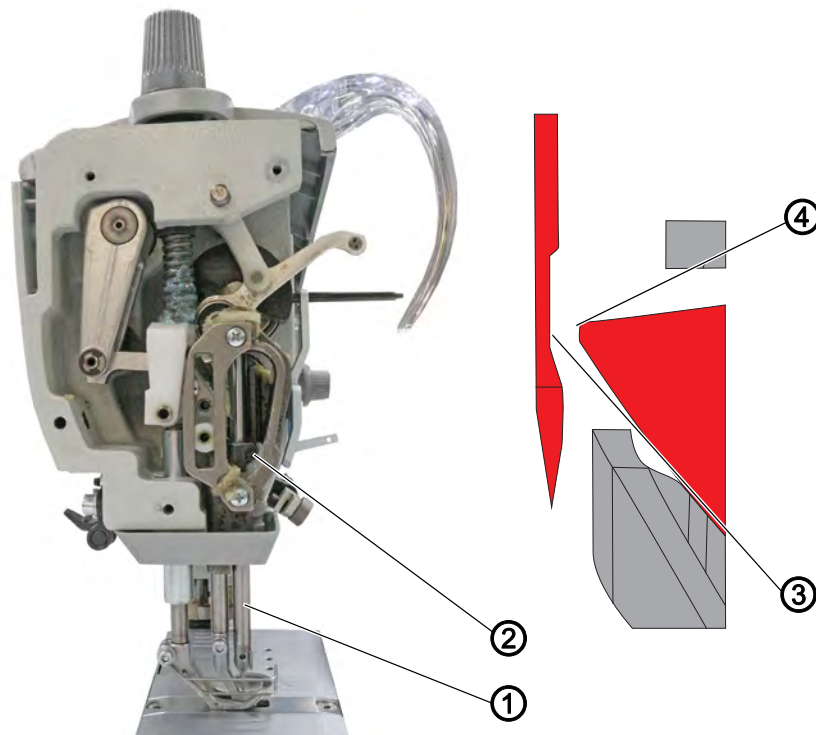
- Damage to the hook tip
- Jamming of the needle thread
- Missing stitches
- Thread breaking
- Needle breakage



Cover

- Remove the head cover ( p. 16)

Fig. 42: Setting the needle bar height




(1) - Needle bar
(2) - Screw

(3) - Groove
(4) - Hook tip




To set the needle bar height:

1. Lock the machine in place at position **1** ( p. 24).
2. Set the 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 level with the lower third of the groove for the needle.



Important

When doing so, take care not to twist the needle bar 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. 24).



Order

Then check the following setting:

- Position of the needle guard ( p. 58)

11.4 Setting the needle guard

NOTICE

Property damage may occur!

There is a risk of machine damage, needle breakage or damage to the thread if the distance between needle groove and hook tip is incorrect.

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

The needle guard prevents contact between needle and hook tip.



Order

First, check the following settings:

- Loop stroke position (📖 p. 54)
- Hook side clearance (📖 p. 52)
- Needle bar height (📖 p. 60)
- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)



Proper setting

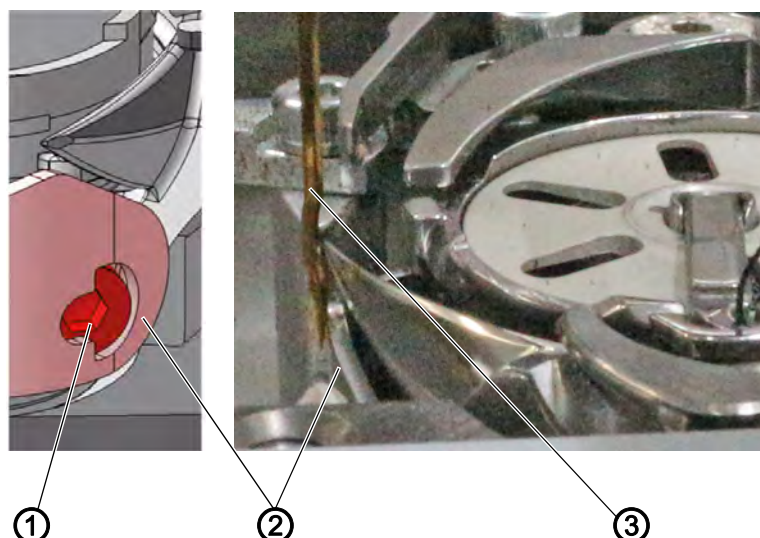
1. Lock the machine in place at position 1 (📖 p. 24).
- 👉 The needle guard pushes the needle just enough away so that it cannot be touched by the hook tip.



Cover

- Disassemble the feed dog (📖 p. 23)

Fig. 43: Setting the needle guard



(1) - Screw
(2) - Needle guard

(3) - Needle



To set the needle guard:

1. Turn the handwheel and check how far the needle guard (2) pushes the needle away.
2. Turn the screw (1) such that the needle guard (2) just pushes the needle (3) far away enough so that it cannot be touched by the hook tip:
 - **For pushing away more:** Turn counterclockwise
 - **For pushing away less:** Turn clockwise

12 Setting the bobbin case lifter

CAUTION

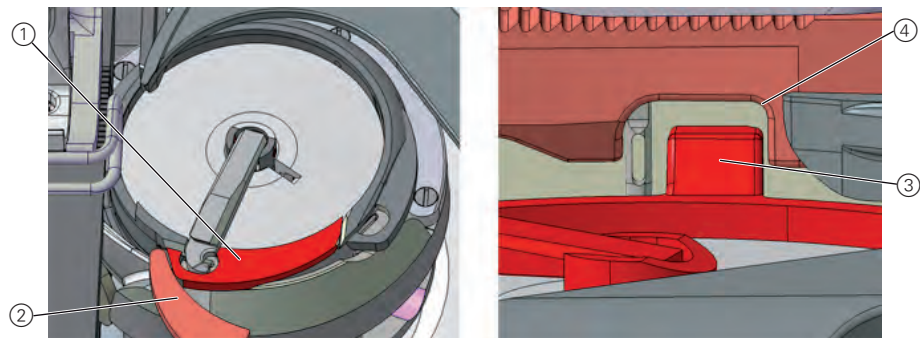


Risk of injury from moving parts!

Crushing possible.

Switch off the machine before setting the bobbin case lifter.

Fig. 44: Setting the bobbin case lifter



(1) - Bobbin case
(2) - Bobbin case lifter

(3) - Nose of the bobbin case
(4) - Slot in the throat plate

The hook pulls the needle thread through between the nose of the bobbin case (3) and the slot in the throat plate (4).

The bobbin case lifter (2) now pushes the bobbin case (1) away so that a gap appears for the thread.

If the hook tip is located below the bobbin case lifter, the bobbin case lifter must open so that the thread can also slide past in that position.

So that the thread can slip through without a problem, the width of the lifting gap and the timing of opening have to be set.



Disturbance

- Thread breaking
- Formation of loops on the bottom side of the seam
- Loud machine noise

12.1 Setting the lifting gap



Order

Always check the width of the lifting gap after making changes to the needle thread size. The correct width of the lifting gap depends on the thickness of the needle thread.



Proper setting

The needle thread slides through unobstructed between the nose of the bobbin case and the slot in the throat plate.



Cover



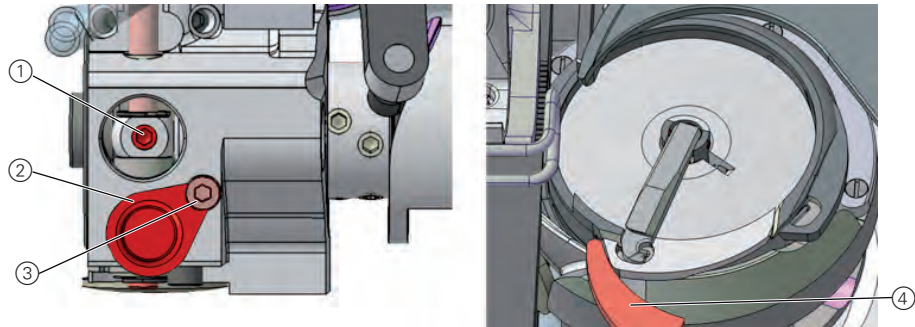
- Tilt the machine head ( p. 14)
- Open the throat plate slide ( p. 21)

Fig. 45: Setting the lifting gap



(1) - Threaded pin
(2) - Cover

(3) - Screw
(4) - Bobbin case lifter



To set the lifting gap:

1. Loosen the screw (3).
2. Push the cover (2) downwards.
3. Loosen the threaded pin (1).
4. Set the bobbin case lifter such that the gap between the nose of the bobbin case and the slot in the throat plate is just big enough to allow the needle thread to slip through without a problem.



Important

Ensure that the gap is not too big. The middle part of the hook must not swing back and forth, hitting the slot in the throat plate.

5. Tighten the threaded pin (1).
6. Push the cover (2) upwards.
7. Tighten the screw (3).

12.2 Setting the timing for opening



Proper setting

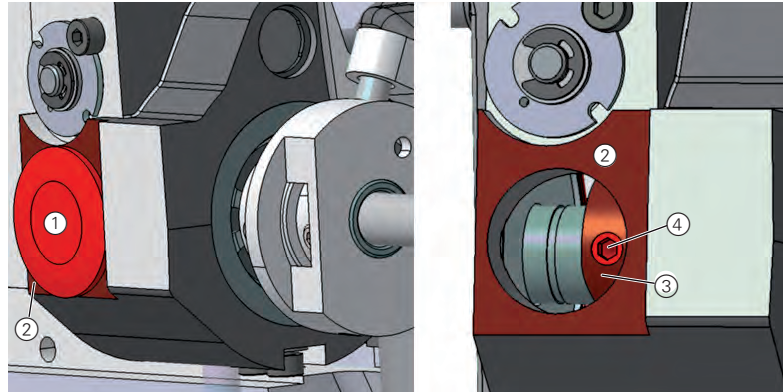
The bobbin case lifter starts to open exactly at the point when the hook tip is located below the bobbin case lifter after the loop is taken up.



Cover

- Tilt the machine head (📖 p. 14)

Fig. 46: Setting the timing for opening



(1) - Plug
(2) - Hook housing

(3) - Control cam
(4) - Threaded pin



To set the timing for opening:

1. Remove the plug (1) on the bottom side of the hook housing (2).
2. Loosen the threaded pin (4) through the slot.
3. Turn the handwheel until the hook tip is exactly below the bobbin case lifter.
4. Use the hex key to turn the control cam (3) such that the bobbin case lifter opens at the correct point in time.
5. Tighten the threaded pin (4).
6. Insert the plug (1) into the slot.

13 Sewing feet

CAUTION

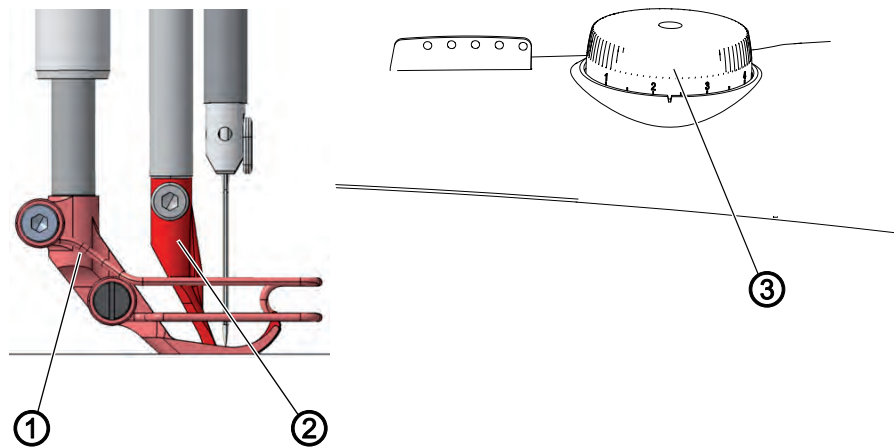


Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before adjusting the sewing feet settings.

Fig. 47: Sewing feet



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

(3) - Sewing foot stroke adjusting wheel

The adjusting wheel (3) on the machine arm determines how high the presser foot (1) and feeding foot (2) are raised during the sewing process.

13.1 Setting the eccentric for the top feed stroke



Checking 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:

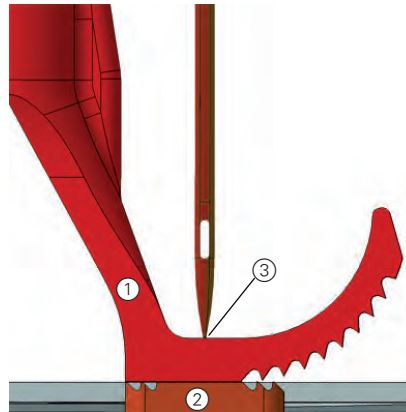
- Feed dog movement ( p. 44)
- Even sewing foot stroke ( p. 65)



Proper setting

1. Position the adjusting wheel for the sewing foot stroke **9** and the 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. 48: Checking the stroke movement for the feeding foot



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

(3) - Needle tip

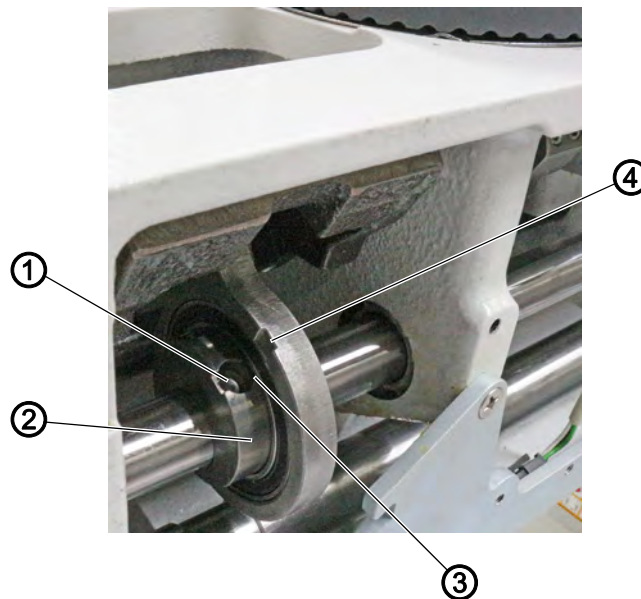
Setting the eccentric



Cover

- Remove the front cover (📖 p. 18)

Fig. 49: Setting the stroke movement for the feeding foot




(1) - Screw
(2) - Eccentric

(3) - Marking
(4) - Marking



To set the stroke movement for the feeding foot:

1. Lock the machine in place at position 1 ( p. 24).
2. Loosen the 2 screws (1) on the eccentric (2).
3. Turn the eccentric (2) until the markings (3) and (4) are parallel to one another.
4. Tighten the screws (1).
5. Remove the lock.

13.2 Setting an even sewing foot stroke

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.



Proper setting

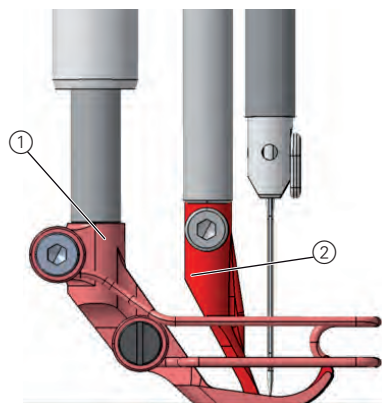
For sewing foot stroke **3**, the presser foot and feeding foot are raised by the same height.



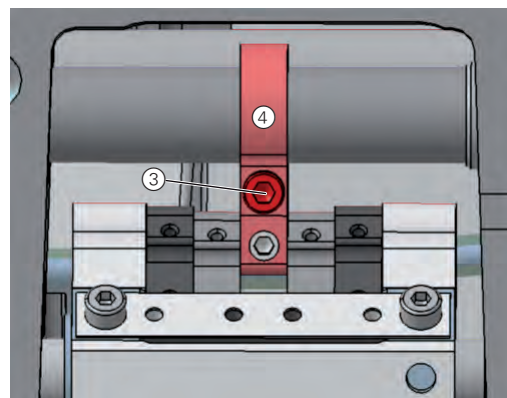
Cover

- Remove the arm cover ( p. 15)

Fig. 50: Setting an even sewing foot stroke



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



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



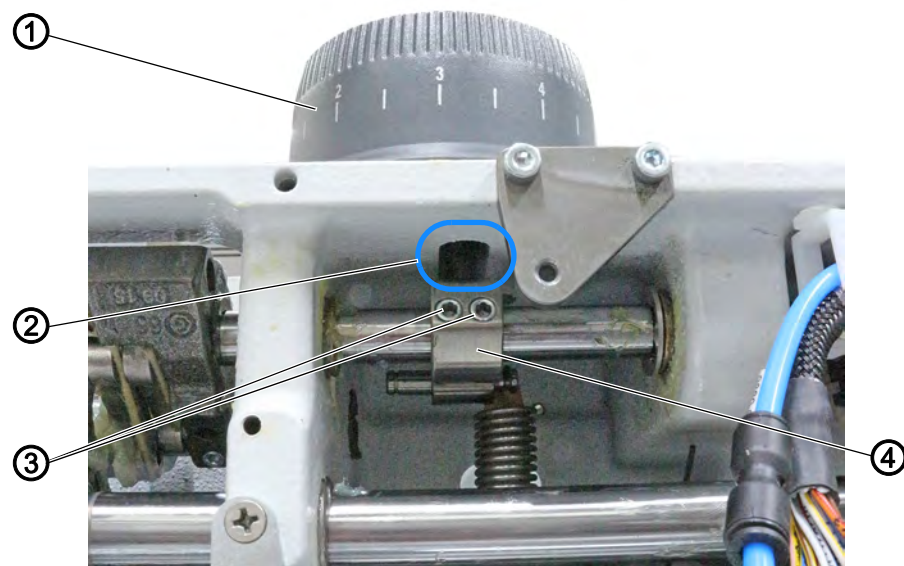
To set an even sewing foot stroke:

1. Check the sewing foot stroke.
2. Loosen the screw (3).

3. Push the feeding foot (2) down slightly by hand.
4. Tighten the screw (3).
5. Turn the handwheel and check if the presser foot (3) and the feeding foot (2) are at the same height.
If this is not the case, adjust the feeding foot (2) until the movement is correct.

13.3 Setting the adjusting frame

Fig. 51: Setting the adjusting frame



- | | |
|--|--------------------|
| (1) - Sewing foot stroke adjusting wheel | (3) - Screws |
| (2) - Slot | (4) - Stroke lever |



To set the adjusting frame:

1. Turn the handwheel to the 0° position.
2. Place a 3 mm hex key under the feeding foot.
3. Loosen the screws (3).
4. Position the adjusting wheel for the sewing foot stroke (1) to level 3.
5. Manually lower the feeding foot down onto the hex key.
6. Center the stroke lever (4) in the slot (2).
7. Tighten the screws (3).



Important

8. Ensure that the stroke lever (4) does not shift.

13.4 Setting the sewing foot lifting height

CAUTION



Risk of injury from moving parts!

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

Crushing possible

Exercise particular caution when setting the sewing foot lifting height.

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

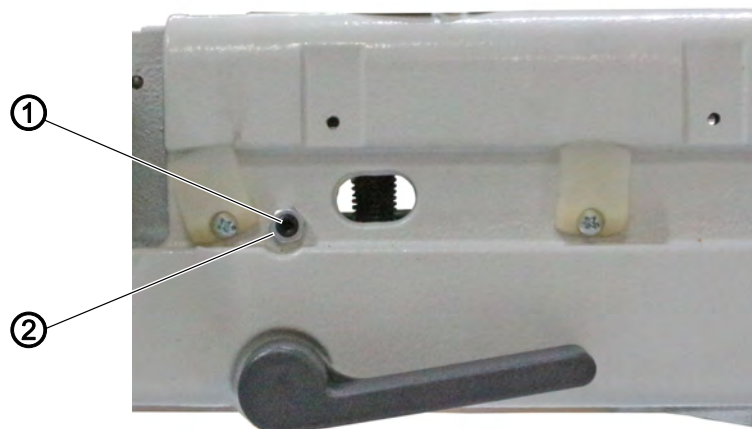
The distance between the raised sewing feet and the throat plate is preset to 20 mm on delivery.



Cover

- Remove the rear cover (📖 p. 17)

Fig. 52: Setting the sewing foot lifting height



(1) - Adjusting screw

(2) - Counternut



To set the lifting height of the sewing foot:

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:
 - **To raise the sewing feet to a lesser height:** Turn clockwise
 - **To raise the sewing feet higher:** Turn counterclockwise
3. Tighten the counternut (2) for the adjusting screw (1).

14 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

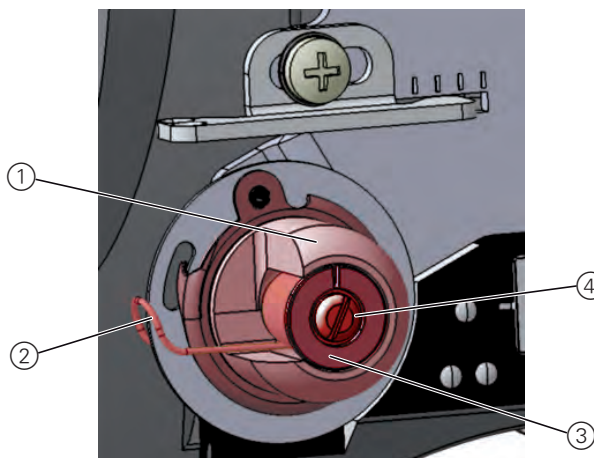
Initial position: The thread tensioning spring does not contact the stop until the needle eye has plunged into the sewing material.



Important

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

Fig. 53: 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. To set the spring travel: Turn the stop collar (1):
 - **Longer spring travel:** Turn counterclockwise
 - **Shorter spring travel:** Turn clockwise
3. To set the spring tension: Turn the tension disk (3):
 - **Greater spring tension:** Turn counterclockwise
 - **Less spring tension:** Turn clockwise



Important

Do not twist the stop collar (1) when doing so.

4. Tighten the screw (4).

15 Winder

15.1 Setting the winder

CAUTION



Risk of injury from moving parts!

Crushing possible.

Switch off the machine before 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.

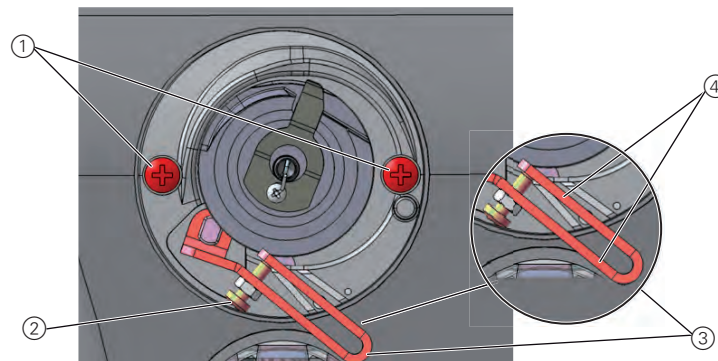


Cover

- Remove the arm cover (📖 p. 15)

Disassembling the winder and setting the winder filling quantity

Fig. 54: Disassembling the winder and setting the winder filling quantity



(1) - Screws
(2) - Screw

(3) - Winder lever
(4) - Arm



To disassemble the winder and set the winder filling quantity:

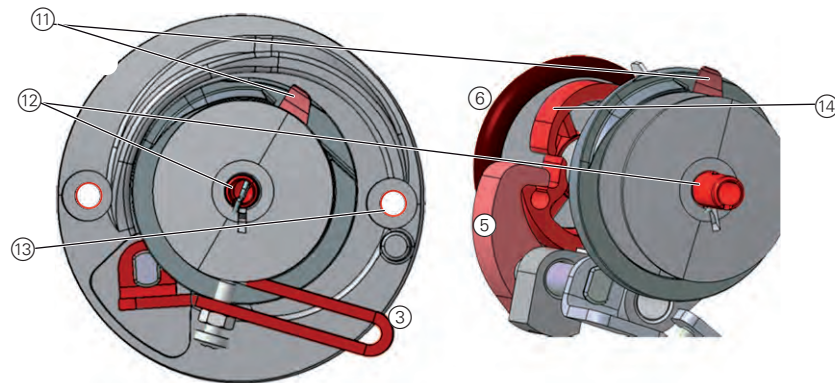
1. Loosen the screws (1).
2. Remove the winder.

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. 55: Setting the winder spacing



- (3) - Winder lever
 (5) - Block
 (6) - Winder wheel
 (11) - Thread-pulling knife

- (12) - Winder spindle
 (13) - Right-hand screw hole
 (14) - Locking disk

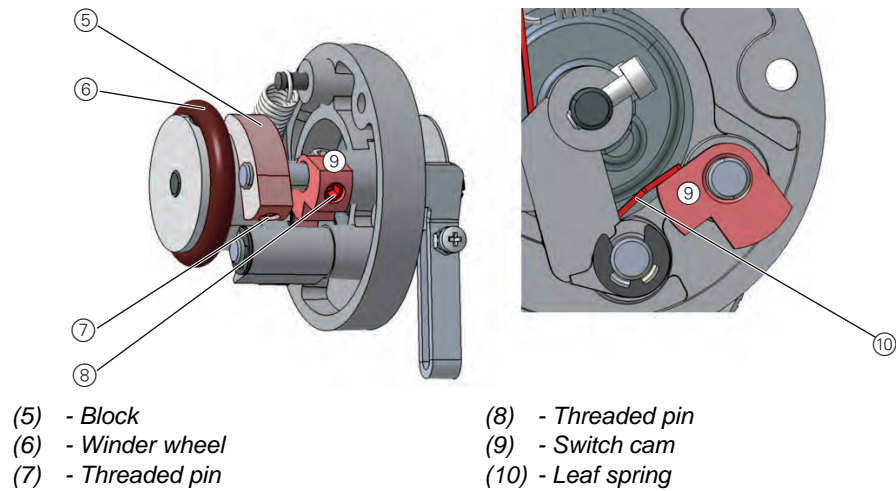


To set the winder spacing:

6. 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).
7. Loosen the threaded pin in the block (5).
8. 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.
9. Set the block (5) such that it is resting against the locking disk (14).
10. Set the block (5) such that its distance to the winder wheel (6) is 0.5 mm.
11. Tighten the threaded pin in the block (5).

Setting the winder run and automatic stop

Fig. 56: Setting the winder run and automatic stop

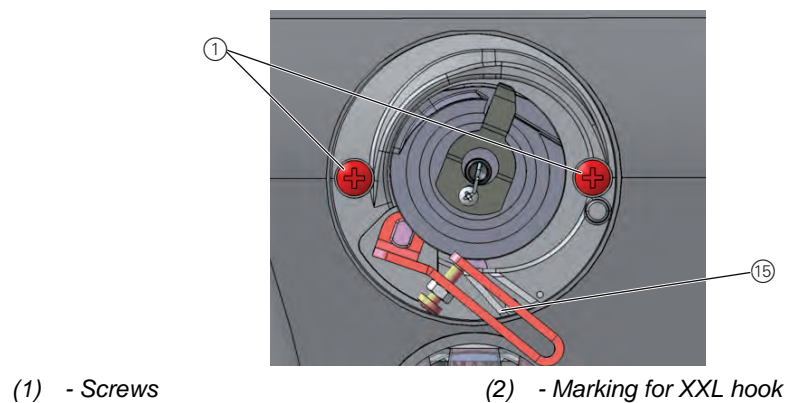


To set the winder run and the automatic stop:

12. Loosen the threaded pin (8).
13. 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.
14. Set the switch cam (9) such that the winder lever (3) has no axial play.
15. Tighten the threaded pin (8).

Assembling the winder

Fig. 57: Assembling the winder



To assemble the winder:

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

15.2 Setting the winder wheel



Cover


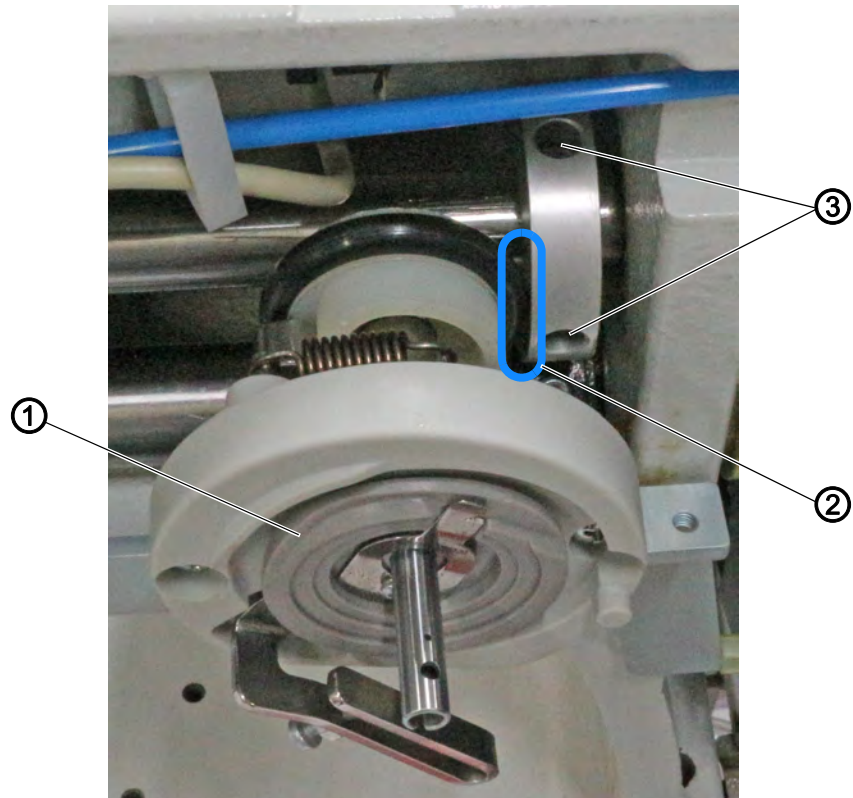
- Remove the front cover ( p. 18)

Fig. 58: Setting the winder wheel



(1) - Winder
(2) - Distance

(3) - Screws



To set the winder wheel:

1. Loosen the screws (3).
2. Switch off the winder (1).
3. Set the distance (2) between the wheels to 0.8 mm.
4. Tighten the screws (3).

15.3 Setting the hook thread guide

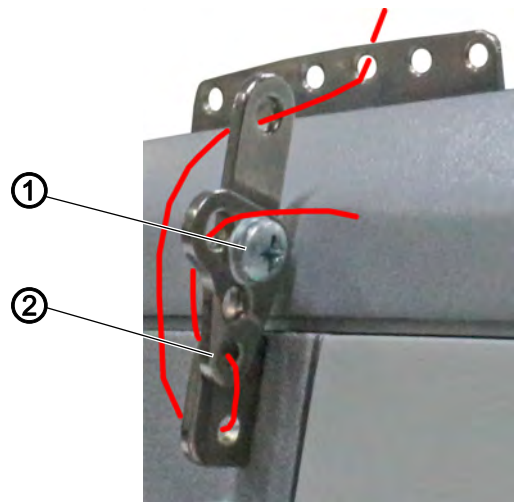
The position of the hook thread guide determines how the thread is wound onto the winder.



Proper setting

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

Fig. 59: 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

16 Thread cutter

CAUTION



Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before setting the thread cutter.

16.1 Setting the height of the thread-pulling knife

The height of the thread-pulling knife is factory-set such that the distance (5) between the upper edge of the knife carrier (4) and the hook bearing screw-on surface (3) is 10.7 ± 0.05 mm. Fine adjustment is made by means of washers between the knife carrier (4) and the thread-pulling knife (2).



Important

When changing the knives, make sure that you do not lose the washers.



Proper setting

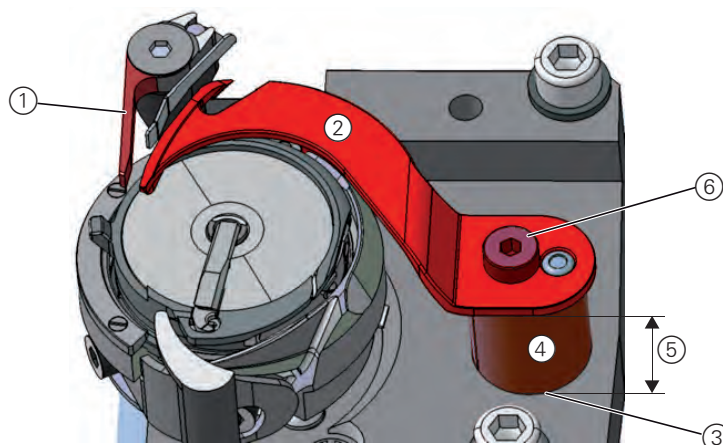
The thread-pulling knife (2) pivots as close as possible above the hook and is at the same height as the counter blade (1).



Cover

- Open the throat plate slide (📖 p. 21)

Fig. 60: Setting the height of the thread-pulling knife



- (1) - Counter blade
- (2) - Thread-pulling knife
- (3) - Hook bearing screw-on surface

- (4) - Knife carrier
- (5) - Distance
- (6) - Screw



To set the height of the thread-pulling knife:

1. Loosen the screw (6).
2. Remove the thread-pulling knife (2).
3. Place as many washers between thread-pulling knife (2) and knife carrier (4) as necessary to ensure that the upper edges of counter blade (1) and thread-pulling knife (2) are at the same height.
4. Non-required washers on the top side between the thread-pulling knife (2) and screw (6) should be kept.
5. Tighten the thread-pulling knife (2) using the screw (6).

16.2 Setting the cutoff curve



Proper setting

The control cam (4) makes direct contact with the clamping ring (1).

The distance between the widest extent (6) of the control cam (4) and the roller (3) is 0.1 mm at most.

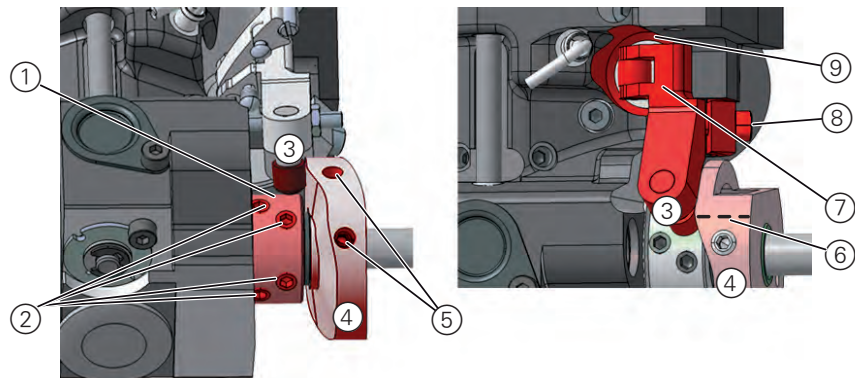
In resting position, the circle mark on the cutting edge of the thread-pulling knife is exactly next to the tip of the counter blade.



Cover

- Tilt the machine head (📖 p. 14)
- Open the throat plate slide (📖 p. 21)

Fig. 61: Setting the cutoff curve (1)



- (1) - Clamping ring
- (2) - Threaded pins
- (3) - Roller
- (4) - Control cam
- (5) - Threaded pins

- (6) - Widest extent
- (7) - Actuating lever
- (8) - Clamping screw
- (9) - Solenoid



To set the cutoff curve:

1. Loosen all 4 threaded pins (2) on the clamping ring (1).
2. Slide the clamping ring (1) to the left as far as it will go.
3. Tighten all 4 threaded pins (2) on the clamping ring (1).

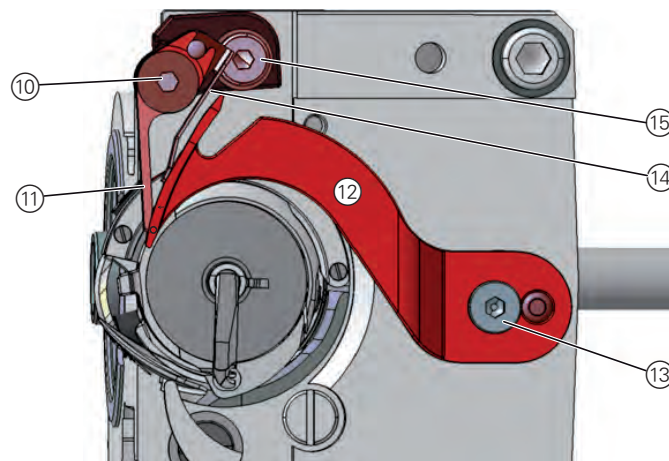


Important

Tighten the 4 threaded pins (2) on the clamping ring (1) before you loosen the threaded pins (5). The clamping ring (1) and control cam (4) are both mutually used as a stop and should not be loosened at the same time.

4. Loosen the threaded pins (5).
5. Press the actuating lever (7) against the solenoid (9).
6. Turn the control cam (4) such that its widest extent (6) is at the top, next to the roller (3).
7. Move the control cam (4) such that the distance between its widest extent (6) and the roller (3) is 0.1 mm at most.
8. Tighten the threaded pins (5).
9. Loosen the clamping screw (8) on the actuating lever (7).

Fig. 62: Setting the cutoff curve (2)



(10) - Screw

(11) - Counter blade

(12) - Thread-pulling knife

(13) - Screw

(14) - Hook thread clamp

(15) - Screw



10. Turn the thread-pulling knife (12) such that the circle mark is exactly next to the tip of the counter blade (11).
11. Tighten the clamping screw (8) on the actuating lever (7) such that the actuating lever (7) has no axial play.
12. Loosen all 4 threaded pins (2) on the clamping ring (1).
13. Push the clamping ring (1) to the right up against the control cam (4).



Important

Check the loop stroke position ( p. 54).

14. Tighten all 4 threaded pins (2) on the clamping ring (1).

16.3 Setting the cutting pressure

The shape of the thread-pulling knife automatically creates the required cutting pressure as soon as the thread-pulling knife and counter blade make contact.



Proper setting

In resting position, the hook thread clamp makes contact with the thread-pulling knife without any pressure being applied. Any 2 threads with the greatest strength used for sewing can be neatly cut simultaneously.



Disturbance

- Increased knife wear when the pressure is too great
- Problems when sewing on if the hook thread clamp is too high
- Problems in cutting the thread



Cover


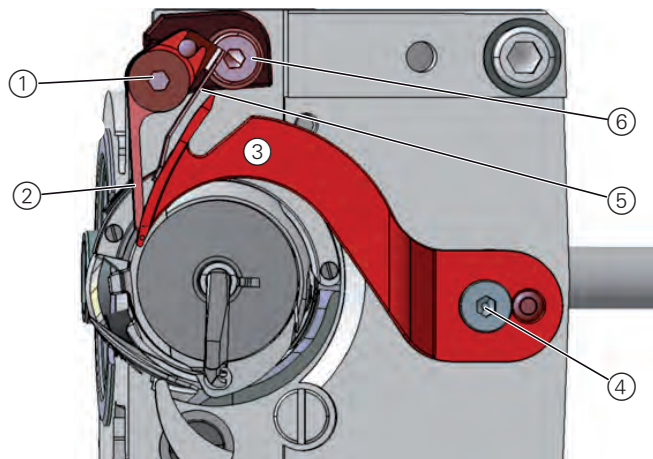
- Open the throat plate slide ( p. 21)

Fig. 63: Setting the cutting pressure



- | | |
|----------------------------|-------------------------|
| (1) - Screw | (4) - Screw |
| (2) - Counter blade | (5) - Hook thread clamp |
| (3) - Thread-pulling knife | (6) - Screw |



To set the cutting pressure:

1. Turn the handwheel until the thread-pulling knife (3) can be swung out by hand.
2. Loosen the screw (1).
3. Position the thread-pulling knife (3) such that the arrow mark is exactly next to the tip of the counter blade (2).
4. Turn the hook thread clamp (5) such that it rests against the thread-pulling knife (3).
5. Turn the counter blade (2) such that it rests against the thread-pulling knife (3).
6. Tighten the screw (1).



Important

Check the position of the cutters, since the counter blade can easily become warped when the screw is being tightened.

16.4 Setting point in time for cutting



Proper setting

The threads are cut when the thread lever is at the top dead center (hand-wheel position 60°).



Information

Additional setting for 2-needle machines

The control cam for the right-hand needle or the right-hand hook support is identified by an **R** and an arrow for the direction of rotation.

The control cam for the left-hand needle or the left-hand hook support is identified by an **L** and an arrow for the direction of rotation.



Cover



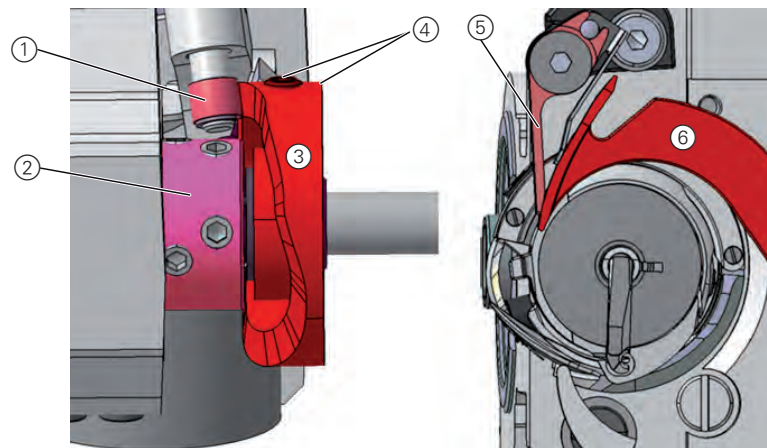
- Tilt the machine head ( p. 14)
- Open the throat plate slide ( p. 21)

Fig. 64: Setting point in time for cutting



(1) - Roller

(2) - Clamping ring

(3) - Control cam

(4) - Threaded pins

(5) - Counter blade

(6) - Thread-pulling knife



To set the point in time for cutting:

1. Loosen the threaded pins (4).
2. Turn the handwheel until the thread-pulling knife (6) can be swung out by hand.

3. Swivel the thread-pulling knife (6) forward until the circle mark is exactly next to the tip of the counter blade (5).
4. Set the handwheel position to **60°**.
5. Push the control cam (3) to the left up against the clamping ring (2).
6. Turn the control cam (3) such that the roller (1) runs up at the contour of the control cam (3) and the widest extent of the control cam is at handwheel position **60°** at the highest point.
7. Tighten the threaded pins (4).
8. Check setting:
 - Insert the thread into the thread-pulling knife (6) and slowly turn the handwheel.
 - Check the handwheel position at which the thread is cut.
 - If necessary, repeat setting steps 1 – 7 until the cut takes place at **60°**.

17 Short thread cutter

CAUTION



Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before adjusting the thread cutter settings.

NOTICE

Property damage may occur!

Risk of breakage.

The reverse-motion lock for the bobbin case is on the thread-pulling knife.



Never operate the machine without the thread-pulling knife.



Important

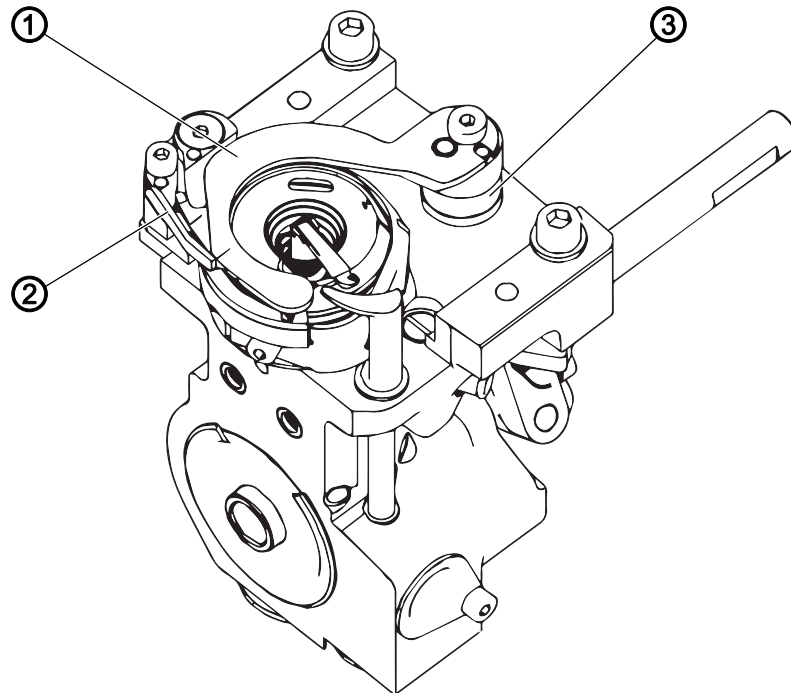
Correct setup of the short thread cutter requires that the necessary work steps be performed in the order given in this chapter.

Requirements

- The needle bar must be at the top dead center when the handwheel position is 0° ( p. 33)
- The hook bearing must be set correctly ( p. 52).

Height of the thread-pulling knife

Fig. 65: Height of the thread-pulling knife



(1) - Thread-pulling knife
(2) - Counter blade

(3) - Knife carrier

The height of the thread-pulling knife has been set at the factory using adjusting washers between thread-pulling knife (1) and knife carrier (3). When changing the knives make sure that you do not lose the adjusting washers.

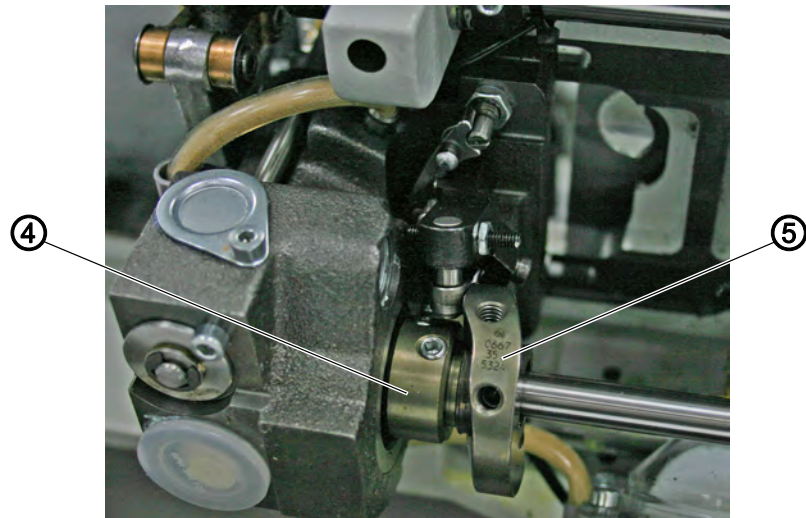


Important

The height of the thread-pulling knife is determined by the height of the counter blade. The upper edges of the two knives must be on the same level.

Position of the thread-pulling knife

Fig. 66: Position of the thread-pulling knife



(4) - Clamping ring

(5) - Control cam

The thread-pulling knife (1) cannot be moved on the knife carrier (3). Therefore, you will not have to set the cutting pressure after replacing the thread-cutting knife (1).

The knife carrier (3) can be installed in 2 different positions: Large hook and XXL hook. To do this, the knife carrier (3) is rotated by 180°.

In rest position, the thread-pulling knife (1) completely covers the cutting edge of the counter blade (2). This prevents the needle thread from being damaged.

The pivot range of the thread-pulling knife is 23°.

The control cam (5) is designed for operating with the large hook and the XXL hook.

The control cam (5) can be on the right-hand side (label is right side up) or on the left side (label is upside down) of the clamping ring (4).



Proper setting

The control cam (5) makes contact with the clamping ring (4). The label of the control cam (5) is correct in accordance with the installation situation.

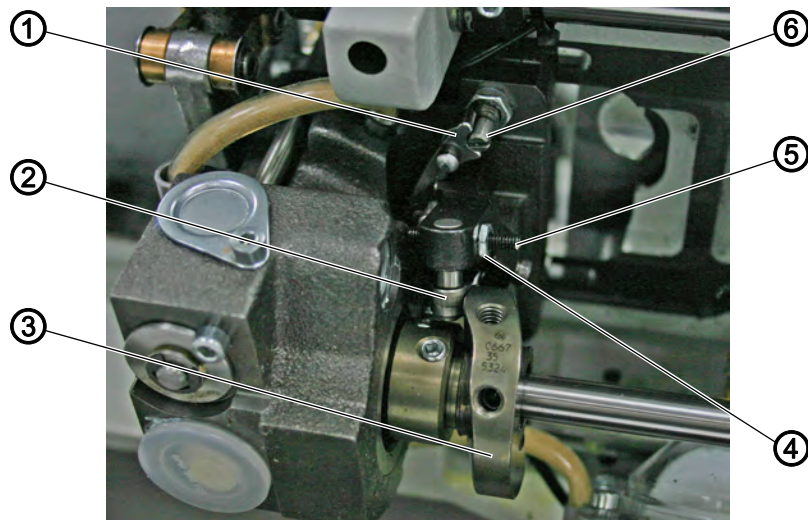
17.1 Setting the locking latch



Proper setting

1. Turn the handwheel until the roller (2) is at the highest point of the control cam (3).
2. Press the roller (2) against the control cam (3).
- ↪ The locking latch (1) can be swung out without clamping, and the distance between the locking latch (1) and locking pin (6) is not greater than 0.1 mm.

Fig. 67: Setting the locking latch



- (1) - Locking latch
 (2) - Roller
 (3) - Control cam

- (4) - Nut
 (5) - Screw
 (6) - Locking pin



To set the locking latch:

1. Loosen the nut (4).
2. Turn the screw (5) and set the distance.
3. Tighten the nut (4).

17.2 Setting the thread-pulling knife



Proper setting

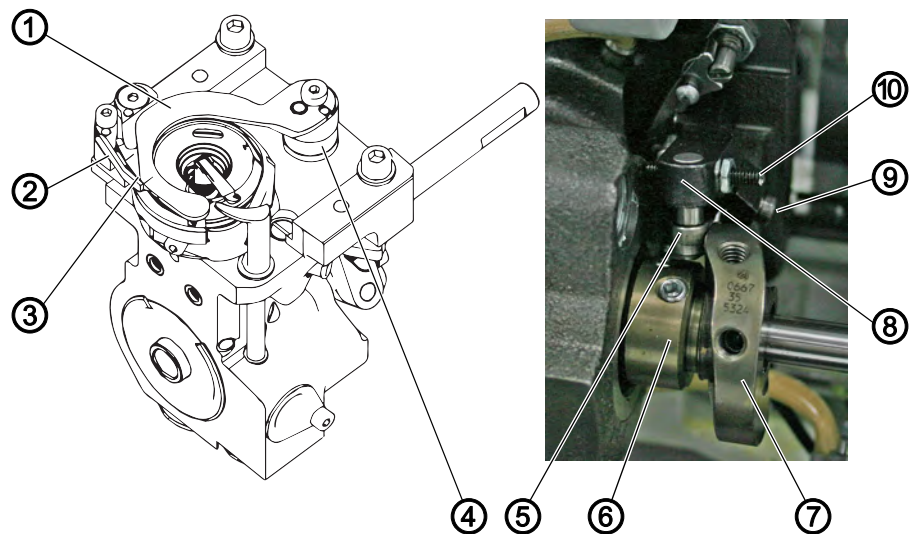
When the thread-pulling knife (1) is at rest, the distance between the highest point of the control cam (7) and the roller (5) is 0.1 mm

The control cam (7) makes contact with the clamping ring (6).

The marking (3) on the thread-pulling knife (1) is adjacent to the cutting edge of the counter blade (2)

The knife carrier (4) must have no axial play, but still run smoothly

Fig. 68: Setting the thread-pulling knife



- (1) - Thread-pulling knife
- (2) - Counter blade
- (3) - Marking
- (4) - Knife carrier
- (5) - Roller

- (6) - Clamping ring
- (7) - Control cam
- (8) - Lever
- (9) - Clamping screw
- (10) - Screw



To set the thread-pulling knife:

1. Loosen all 4 screws on the clamping ring (6) and push the clamping ring (6) toward the hook bearing.
2. Tighten all 4 screws on the clamping ring (6).
3. Loosen both threaded pins on the control cam (7).
4. Turn the lever (8) as far as it will go against the screw (10).
5. Set the distance between the roller (5) and the highest point of the control cam (7) to 0.1 mm.
6. Tighten both threaded pins on the control cam (7).
7. Loosen the clamping screw (9) on the lever (8).
8. Turn the thread-pulling knife (1) until the marking (3) on the cutting edge of the counter blade (2) is adjacent to it.
9. Tighten the clamping screw (9).
Take care to ensure that there is no axial play.

10. Loosen all 4 screws (6) on the clamping ring and push the clamping ring (6) as far as it will go and against the control cam (7).
11. Tighten all 4 screws on the clamping ring (6).
12. Check the loop stroke (📖 p. 54).

17.3 Setting the counter blade

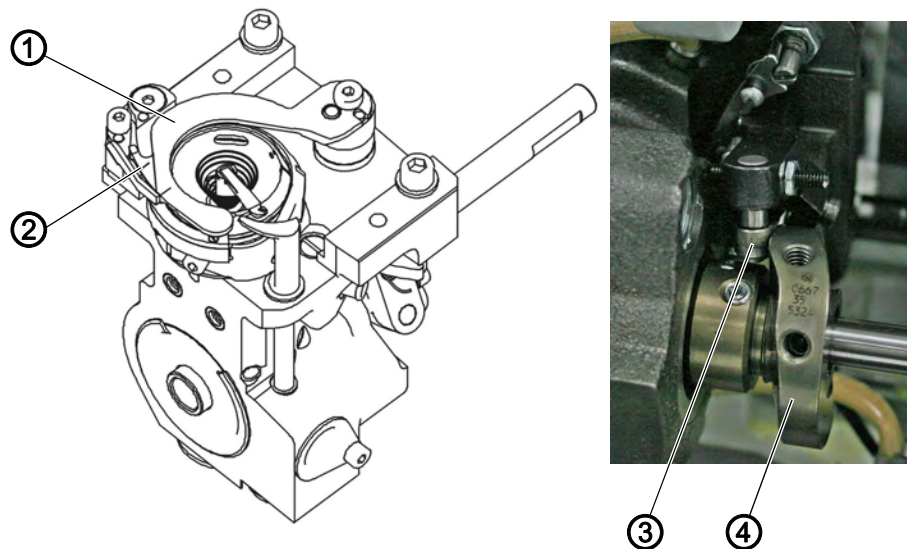


Proper setting

The thread must be reliably cut using little pressure. The pressure is built up starting at the marking (2).

Any 2 threads with the greatest strength used for sewing can be neatly cut simultaneously.

Fig. 69: Setting the counter blade



(1) - Thread-pulling knife
(2) - Marking

(3) - Roller
(4) - Control cam



To set the counter blade:

1. Turn the handwheel until the thread-pulling knife (1) can be swung out after the latch is triggered.
2. Swing out the thread-pulling knife (1) manually. To do this, press the clamp with the roller (3) to the right against the control cam (4).
3. Insert 2 threads into the thread-pulling knife (1).
4. Turn the handwheel until the cutter swivels down.
5. Check whether the sewing threads have been cleanly cut and pressure is built up starting at the marking (2).



Disturbance

- Increased knife wear when the pressure is too great
- Problems in cutting the thread

Setting the cutting pressure



Cover

- Open the throat plate slide (📖 p. 21)

Fig. 70: Setting the cutting pressure



(1) - Thread-pulling knife
(2) - Marking

(5) - Counter blade
(6) - Screw



To set the cutting pressure:

1. Swing out the thread-pulling knife (1) until the marking (2) is next to the cutting edge of the counter blade (5).
2. Loosen the screw (6).
3. Place the counter blade (5) in position against the thread-pulling knife (1).
4. Tighten the screw (6).

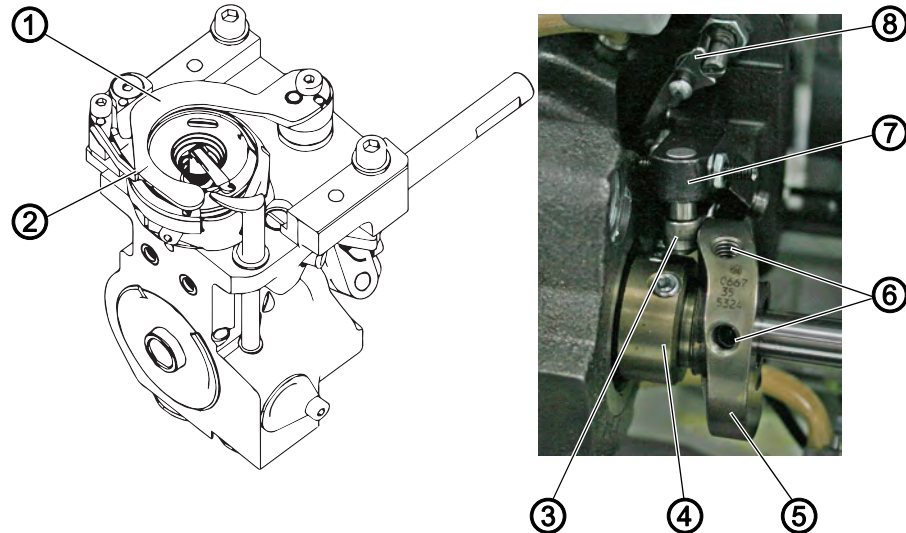
17.4 Setting the cutoff position



Proper setting

The default is that the cutoff position is at **65°** on the handwheel (thread lever at top dead center). When the machine is at the **65°** position on the handwheel, the control cam (5) is at its highest point.

Fig. 71: Setting the cutoff position



(1) - Thread-pulling knife
(2) - Marking
(3) - Roller
(4) - Clamping ring

(5) - Control cam
(6) - Threaded pins
(7) - Lever
(8) - Locking latch



To check the cutoff position:

1. Turn the handwheel to the **0°** position (thread lever at top dead center).
2. Loosen the locking latch (8).
3. Swing out the thread-pulling knife (1) manually. To do this, press the lever (7) with the roller to the right (3) against the control cam (5).
4. Insert a thread into the thread-pulling knife (1).
5. Use the handwheel to turn the machine until the thread is cut shortly before reaching the marking (2).
6. Check if the cut was made at the 65° position on the handwheel.



To set the cutoff position:

1. Loosen the threaded pins (6) on the control cam (5).
2. Move the control cam (5) towards the clamping ring (4) until it makes contact and correct the position of the control cam (5).
3. Tighten the threaded pins (6) on the control cam (5) again.
4. Check the position as described above under **Proper setting** and correct the position again if necessary.

18 Setting the potentiometer

WARNING



Increased risk of injury!

The machine remains switched on when the potentiometer is set.
Puncture or 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

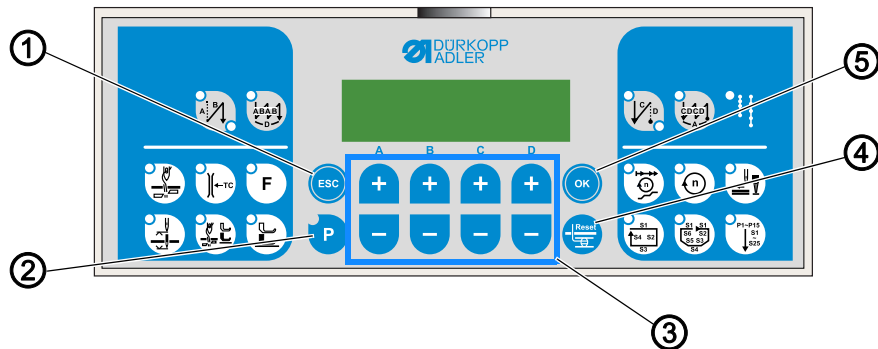
After accessing the technician level and pressing the **OK** button, the left display will show 1 in the first instance and the relevant maximum speed next to it.



Cover

- Remove the arm cover (📖 p. 15)

Fig. 72: Setting the potentiometer (1)



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

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



To set the potentiometer:

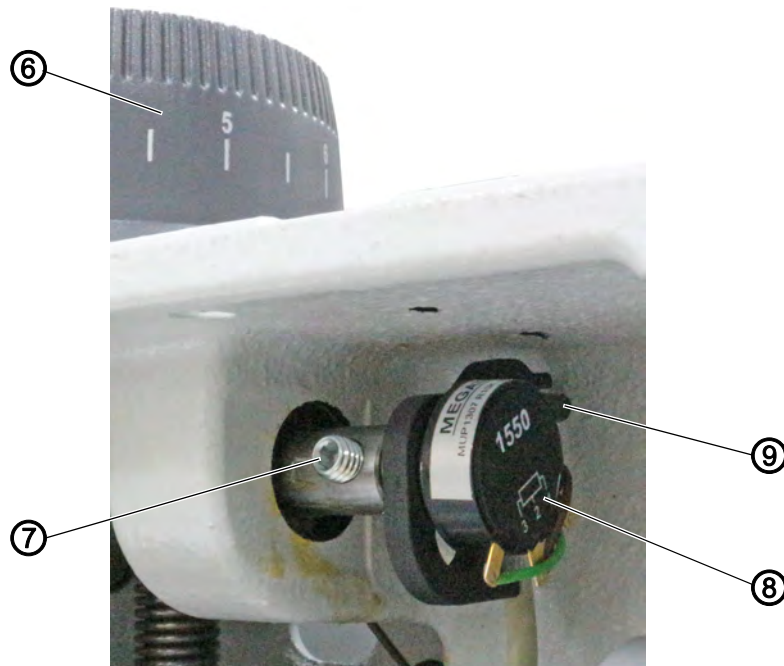


1. Switch off the machine
2. Keep the **P** button (2) button and the **Reset** button (4) pressed down simultaneously and switch on the machine at the main power switch in doing so.
- ↪ The display starts.
3. Release the **P** button (2) and the **Reset** button (4).
- ↪ The display indicates the current 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. 73: Setting the potentiometer (2)



(6) - Adjusting wheel for sewing foot stroke
(7) - Threaded pin

(8) - Potentiometer
(9) - Pin



6. Turn the adjusting wheel for the sewing foot stroke (6) to **3**.
7. Loosen the threaded pin (7).
8. Turn the potentiometer axle such that the left display shows **4** in the first instance and the relevant maximum speed next to it.
9. Tighten the threaded pin (7) without changing the value shown in the display.



Important

Ensure that the potentiometer (8) is guided on the pin (9).



10. Press the **ESC** button 2 times.



Important

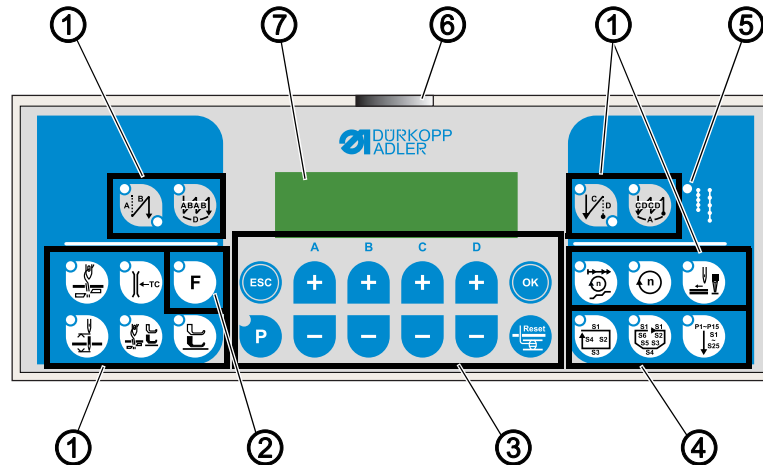
11. Switch off the machine
 12. Switch on the machine.
- ↪ Switching off and on will save the setting.

19 Programming

All software settings are performed using the OP1000 control panel.

19.1 Control panel OP1000

Fig. 74: Control panel OP1000



- | | |
|---------------------------------|------------------------------------|
| (1) - Thread button group | (5) - LED for second stitch length |
| (2) - Function button | (6) - POWER LED |
| (3) - Programming button group | (7) - Display |
| (4) - Seam program button group | |

19.1.1 Display

The display of the control panel is divided into:

- User levels
- Categories
- Parameters (📖 *Parameter list*)

Fig. 75: Display



- | | |
|------------------|-----------------|
| (A) - User level | (D) - Parameter |
| (B) - Category | |

The user level (A) includes

- 0 (user)
- t (technician)

The categories include the following enhanced machine functions:

- Production control (such as the stitch counter)
- Needle cooling
- Light barrier

















Parameters are represented by a number from 00-99.













19.1.2 Buttons











The buttons of the control panel are divided into the following groups:

- Thread
- Programming
- Seam program

OP1000 buttons and functions

No.	Button	Function	Reference
①	Thread button group		
	 Start bartack	• Sets the start bartack	 p. 96
	 Multiple start bartack	• Sets the multiple start bartack	 p. 97
	 End bartack	• Sets the end bartack	 p. 98
	 Multiple end bartack	• Sets the multiple end bartack	 p. 99
	 Thread cutter	• Activates or deactivates the thread cutter	 p. 99
	 Thread clamp	• Activates or deactivates the thread clamp	 p. 99
	 Needle position after sewing stop	• Sets the needle position after sewing stop	 p. 100
	 Sewing foot lift after thread cutter	• Activates or deactivates the sewing foot lift after thread cutter	 p. 100

No.	Button	Function	Reference
	 Sewing foot lift after sewing stop	<ul style="list-style-type: none"> Activates or deactivates the sewing foot lift after sewing stop 	p. 100
	 Soft start	<ul style="list-style-type: none"> Activates or deactivates the soft start 	p. 101
	 Speed	<ul style="list-style-type: none"> Reduces the motor speed 	p. 101
②	 Function button	<ul style="list-style-type: none"> Activates or deactivates any stored function 	
③	Programming button group		
	 ESC	<ul style="list-style-type: none"> Ends parameter mode 	
	 A+	<ul style="list-style-type: none"> Increases parameter Changes user level Selects subprogram 	
	 B+	<ul style="list-style-type: none"> Increases parameter Changes to next higher category Selects subprogram 	
	 C+	<ul style="list-style-type: none"> Increases parameter Selects subprogram 	
	 D+	<ul style="list-style-type: none"> Increases parameter Selects subprogram 	
	 OK	<ul style="list-style-type: none"> Calls parameter or saves it 	
	 P	<ul style="list-style-type: none"> Starts or ends the parameter mode 	
	 A-	<ul style="list-style-type: none"> Decreases parameter Changes user level Selects subprogram 	

No.	Button	Function	Reference
	 <p>B-</p>	<ul style="list-style-type: none"> Decreases parameter Changes to next lower category Selects subprogram 	
	 <p>C-</p>	<ul style="list-style-type: none"> Decreases parameter Selects subprogram 	
	 <p>D-</p>	<ul style="list-style-type: none"> Decreases parameter Selects subprogram 	
	 <p>Reset</p>	<ul style="list-style-type: none"> Resets the (piece) counter 	
④	Seam program button group		
	 <p>Seam program I</p>	<ul style="list-style-type: none"> Activates seam program I 	 <i>Instructions for use DAC basic/ classic</i>
	 <p>Seam program II</p>	<ul style="list-style-type: none"> Activates seam program II 	 <i>Instructions for use DAC basic/ classic</i>
	 <p>Seam program III</p>	<ul style="list-style-type: none"> Sets seam program III 	 <i>Instructions for use DAC basic/ classic</i>

19.1.3 Using button groups

Use the button groups to select machine functions, such as start bartack. The following options are available:

Button groups and use

Button group	Use
Thread	For sewing only: <ul style="list-style-type: none">• Activate machine functions• Set simple machine functions
Programming	For the entire sewing process: <ul style="list-style-type: none">• Set advanced machine functions
Seam program	<ul style="list-style-type: none">• Process complex seams



To select a machine function:

1. Press the corresponding button on the control panel.
↳ You will recognize which machine function has been activated by the LED in the respective button.

When the LED illuminates you can sew. Changes are only possible outside of a seam.

19.2 Thread button group functions

Using the *Thread* button group you can set or activate:

- Start bartack
- Multiple start bartack
- End bartack
- Multiple end bartack
- Thread cutter
- Thread clamp
- Needle position after sewing stop
- Sewing foot lift after thread cutter
- Sewing foot lift after sewing stop
- Soft start
- Speed


19.2.1 Setting the start bartack

The start bartack secures the seam at the seam beginning. If a seam consists of backward stitches only, one speaks of single bartacks. A seam of forward and backward stitches is called a double bartack.

Single bartack



To set the single bartack:

1. Press .
- ↳ The LED at the lower right illuminates.
2. Press the *B+* button from the *Programming* button group repeatedly until the required number of backward stitches is reached.




You can begin sewing; press the pedal forward to pedal position +1.

Double bartack



To set the double bartack:

1. Press  twice.
- ↳ Both LEDs illuminate.
2. Press the *A+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.
3. Press the *B+* button repeatedly until the required number of backward stitches is reached.



You can begin sewing; press the pedal forward to pedal position +1.




To deactivate the start bartack press .

19.2.2 Setting the multiple start bartack

Use the multiple start bartack to set the number of stitches as well as the number of repetitions (sections with forward and backward stitches).



To set the multiple start bartack:

1. Press  .
- ↳ The LED flashes. If it illuminates, the multiple start bartack has been activated as the darning program and has to be deactivated ( p. 97).
2. Press the *A+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.
3. Press the *B+* button repeatedly until the required number of backward stitches is reached.
4. Press the *D+* button repeatedly until the required number of repetitions is reached.
5. Confirm your selection with  .

19.2.3 Using the multiple start bartack as the darning program



Information

The darning program is only supported by certain classes.



Order



If you want to use the multiple start bartack as the darning program, it has to be released in advance by qualified specialists.

The darning program offers the following functions:

- The thread is cut at the end of the program.




To set the darning program:

1. Check whether the thread cutter  has been activated.
2. Press  .
- ↳ The LED illuminates.
3. Press the *A+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.
4. Press the *B+* button repeatedly until the required number of backward stitches is reached.
5. Press the *C+* button to set the start of path 1.
6. Press the *D+* button repeatedly until the required number of repetitions is reached.



Important

If the number of repetitions = 0, the program will continue working until stopped by the pedal.

7. Confirm your selection with .


19.2.4 Setting the end bartack

The end bartack secures the seam at the seam end. If a seam consists of backward stitches only, one speaks of single bartacks. A seam of forward and backward stitches is called a double bartack.

Single bartack



To set the single bartack:

1. Press .
- ↳ The upper left LED illuminates.
2. Press the *C+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.




You can begin sewing; press the pedal forward to pedal position +1. At the end of the seam, press the pedal back to pedal position -2.

Double bartack




To set the double bartack:

1. Press  twice.
- ↳ Both LEDs illuminate.
2. Press the *C+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.
3. Press the *D+* button repeatedly until the required number of backward stitches is reached.



You can begin sewing; press the pedal forward to pedal position +1. At the end of the seam, press the pedal back to pedal position -2.



To deactivate the end bartack press .

19.2.5 Setting the multiple end bartack

Use the multiple end bartack to set the number of stitches as well as the number of repetitions.



To set the multiple end bartack:

1. Press  .
- ↳ The LED flashes.
2. Press the *C+* button from the *Programming* button group repeatedly until the required number of forward stitches is reached.
3. Press the *D+* button repeatedly until the required number of backward stitches is reached.
4. Press the *A+* button repeatedly until the required number of repetitions is reached.
5. Confirm your selection with  .



You can begin sewing; press the pedal forward to pedal position +1. At the end of the seam, press the pedal back to pedal position -2.

19.2.6 Activating the thread cutter

The thread cutter automatically cuts the thread at the seam end.



To activate the thread cutter:

1. Press  .
- ↳ The LED illuminates.

19.2.7 Activating the thread clamp

The thread clamp holds the thread firmly to pull it down and loop it while sewing on.



To activate the thread clamp:

1. Press  .
- ↳ The LED illuminates.

19.2.8 Setting the needle position after sewing stop

You can determine where the needle is positioned after a sewing stop. There are two options:

- Top dead center (needle position 2)
- Bottom dead center (needle position 1)



To activate the top dead center after a sewing stop:

1. Press .

↳ The LED illuminates; i.e., the needle is raised after a sewing stop.

If the needle is to be in the bottom dead center after a sewing stop, press



again.

19.2.9 Activating sewing foot lift after thread cutter

The sewing foot lift after thread cutter lifts the sewing foot after the thread is cut.



To activate the sewing foot lift after thread cutter:

1. Press .

↳ The LED illuminates.

19.2.10 Activating sewing foot lift after sewing stop

The sewing foot lift after sewing stop lifts the sewing foot after a sewing stop.



To activate the sewing foot lift:

1. Press .

↳ The LED illuminates.

19.2.11 Activating the soft start

Soft start refers to starting the machine at a slower speed. The function prevents the motor from overheating during long work processes. After a certain stitch count, the machine runs at the set speed.



To activate the soft start:

1. Press .

↳ The LED illuminates.

19.2.12 Reducing speed

The reduced speed protects the motor with an ongoing lower speed. Reduced speed is set at the factory as the default.




To activate the reduced speed:

1. Press .

↳ The LED illuminates.



To adjust the speed:

1. Press .
2. Press the *C+* button from the *Programming* button group.
↳ The reduced speed increases by one-hundredth.
3. Press the *D+* button.
↳ The reduced speed increased by one-tenth.



You can also reduce the speed:




1. Press the *C-* button for one-hundredth and *D-* for one-tenth increments.

19.3 Programming button group functions

Using the *Programming* button group you can set:


- Bobbin stitch counter
- Remaining thread monitor (if present)
- Piece counter
- Needle cooling (if present)
- Light barrier (if present)

Buttons and use

Button	Use
	<ul style="list-style-type: none"> • Start parameter mode
	<ul style="list-style-type: none"> • Select or save parameters
	<ul style="list-style-type: none"> • Exit parameter mode and do not save parameters
Plus button	<ul style="list-style-type: none"> • Increase parameter
Minus button	<ul style="list-style-type: none"> • Decrease parameter



Important

If you press  you can no longer sew.

19.3.1 Setting the bobbin piece counter


The bobbin piece counter outputs a message when the entered number of stitches is reached. The number of stitches should approximately determine when the hook thread is depleted. Thus you avoid having to repeat work processes.

The bobbin stitch counter must be set for every thread type. The value to be set (i.e. 8000) is the product of the default value (reset value) and the number of stitches (factor):

$$400 \times 20 = 8000$$

Example for setting the bobbin stitch counter



1. Press .

↪ Parameter mode is started. The following appears on the display:




2. Press the $D+$ button from the *Programming* button group.

↪ The following appears on the display:




Use parameter 01 to set the reset value for bobbin stitch counter A.

3. Press .

↪ The LED of the  button flashes.


4. Use the $D-$ or $D+$ button to set the reset value to 400.

5. Confirm your selection with .

6. Press the $D+$ button repeatedly until 04 appears on the display:




Use parameter 04 to set the factor.

7. Press .

↪ The LED of the  button flashes.


8. Use the $D-$ or $D+$ button to set the factor to 20.

9. Confirm your selection with .

10. Exit parameter mode with .

↪ The bobbin stitch counter is at 8000.


In addition to A, there are 2 other bobbin stitch counters.
Use parameter 02 and 03, respectively, to set the reset value for bobbin stitch counter B and C.

Reset the bobbin stitch counter with the  button.

Activating the bobbin stitch counter







To activate the bobbin stitch counter:

1. Press .
- ↳ Parameter mode is started.
2. Press the B+ button of the *Programming* button group repeatedly until 06 appears on the display:



If parameter 00 does not appear:
Press the D+ button repeatedly until the parameter appears on the display.

3. Press .
- ↳ The LED of the  button flashes. 0 appears on the display.
4. Press the D+ button.
- ↳ 1 appears on the display.
5. Confirm your selection with .
- ↳ The bobbin stitch counter is activated.
6. Exit parameter mode with .

To deactivate the bobbin stitch counter again, in category 06 change parameter 00 to 0.

20 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	1000
Machine head					
Remove fluff, lint and thread remnants	●				
Clean the motor fan mesh			●		
Check the oil level		●			
Lubricating the gear					●
Pneumatic system					
Check the water level in the pressure controller	●				
Check the filter element in the maintenance unit				●	
Check the tightness of the system				●	

20.1 Cleaning

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!

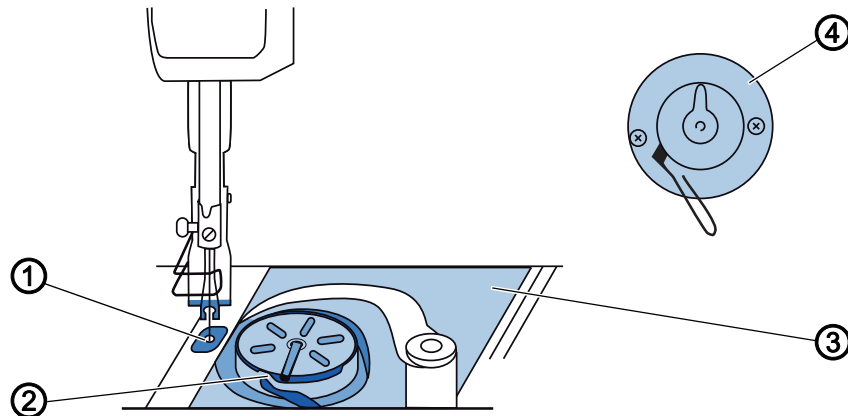
Solvent-based cleaners will damage paintwork.

Use only solvent-free substances for cleaning.

20.1.1 Areas requiring special cleaning

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

Fig. 76: Areas requiring special cleaning



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

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

Check and clean daily:

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



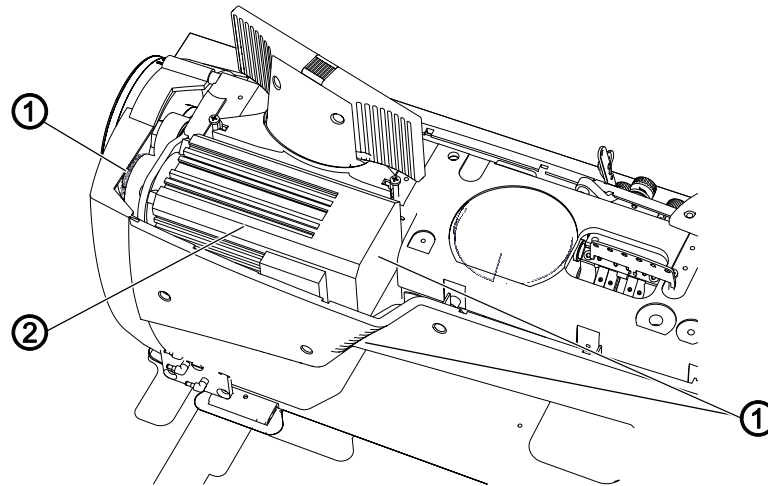
To clean areas that are susceptible to soiling:

1. Switch off the machine
2. Remove any lint and thread remnants using a compressed air gun or a brush.

20.1.2 Cleaning the motor fan mesh

The motor fan mesh must be cleaned every 100 - 200 operating hours using a compressed air gun. If very fluffy sewing material is being sewn, the motor fan mesh must be cleaned more frequently.

Fig. 77: Cleaning the motor fan mesh



(1) - Areas requiring cleaning

(2) - Motor



To clean the motor fan mesh:

1. Switch off the machine
2. Remove the arm cover.
3. Remove any lint and thread remnants using a brush.

20.2 Lubricating

CAUTION



Risk of injury 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.

The machine is equipped with a central oil-wick lubrication system. The bearings are supplied from the oil reservoir.

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

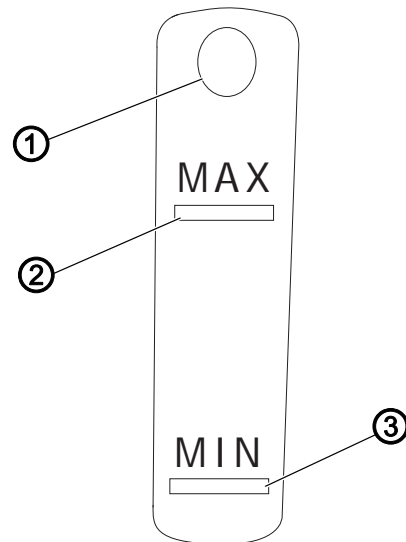
- Viscosity at 40 °C: 10 mm²/s
- Flash point: 150 °C

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

20.2.1 Checking the oil level

Fig. 78: Checking the oil level



(1) - Refill opening

(2) - Maximum level marking

(3) - Minimum level marking



To check the oil level:

1. Check the oil level indicator every day:

- The oil level must be between the minimum level mark (3) and the maximum level mark (2).

Topping off the oil



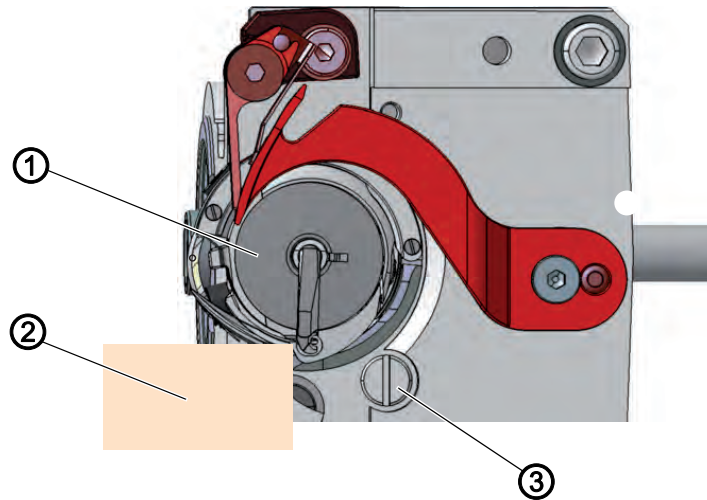
To top off the oil:

1. Pour in oil through the refill opening (1).

↪ Add oil up to but not past the maximum level marking.

20.2.2 Setting the hook lubrication

Fig. 79: Setting the hook lubrication



(1) - Hook
(2) - Blotting paper

(3) - Screw

The approved oil quantity for hook lubrication is a factory specification. Hold a piece of blotting paper (2) next to the hook (1) while sewing.




Proper setting

After sewing a stretch of approx. 1 m, the blotting paper (2) will have been sprayed with a thin and even film of oil.



To set the hook lubrication:

1. Open the throat plate slide ( p. 20)
2. Turn the screw (3):
 - Release more oil: turn counterclockwise
 - Release less oil: turn clockwise



Important

The released amount of oil does not change until the operating time has run a few minutes. Sew for several minutes before you check the setting again.

20.2.3 Lubricating the gear

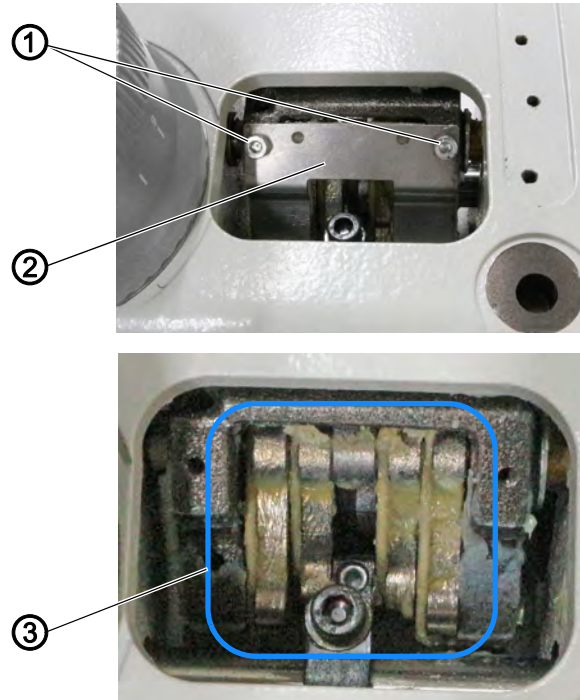
Lubricating the upper gear



Cover

- Remove the arm cover (📖 p. 15)

Fig. 80: Lubricating the upper gear



- (1) - Screws
(2) - Plate

- (3) - Gear



To lubricate the upper gear:

1. Loosen the screws (1).
2. Remove the plate (2).
3. Spread grease across the gear (3).

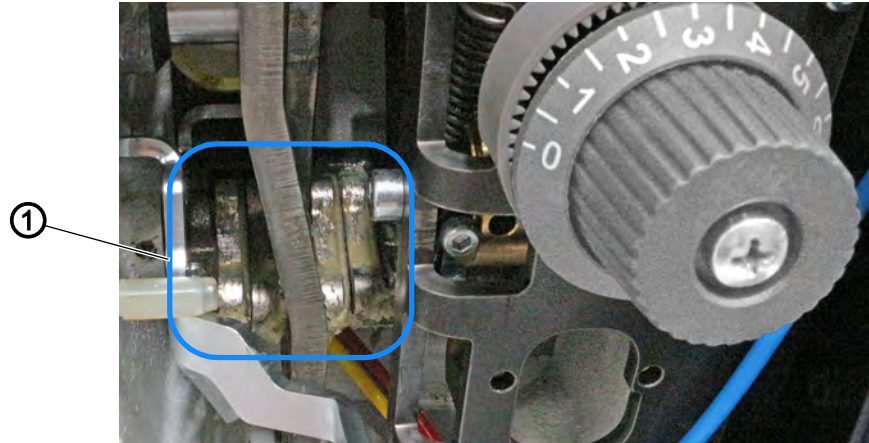
Lubricating the lower gear



Cover

- Remove the front cover ( p. 18)

Fig. 81: Lubricating the lower gear



(1) - Gear



To lubricate the lower gear:

1. Spread grease across the gear (1).

20.3 Servicing the pneumatic system

20.3.1 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.

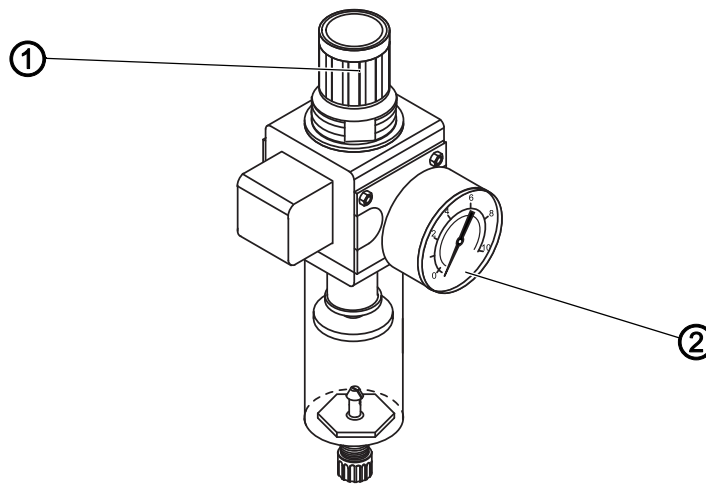


Proper setting

Refer to the **Technical data** (📖 p. 125) 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. 82: 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.

20.3.2 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.

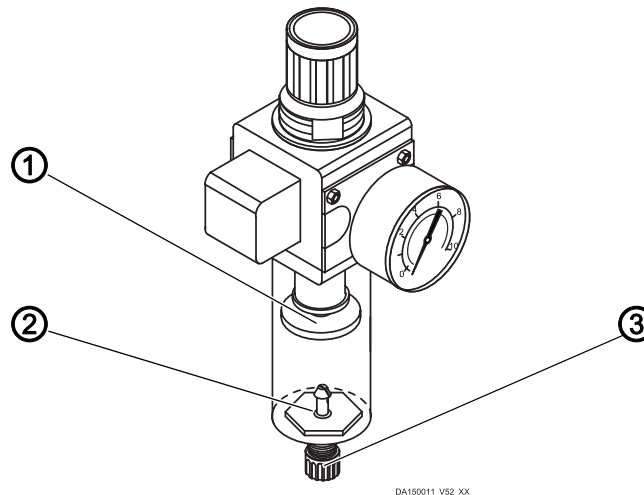


Proper setting

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. 83: 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.

20.3.3 Cleaning the filter element

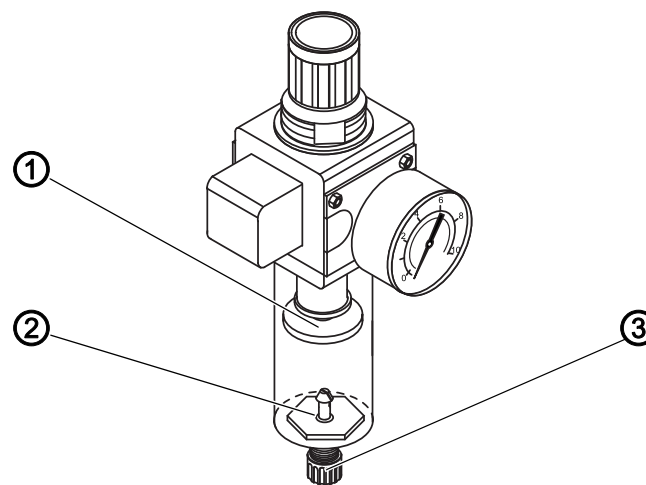
NOTICE

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. 84: 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. 115).
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.

20.4 Parts list

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

www.duerkopp-adler.com



21 Decommissioning

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 injury 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.

22 Disposal

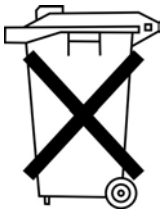
CAUTION



Risk of environmental damage from improper disposal!

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

ALWAYS comply with the national regulations regarding disposal.



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

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

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

23 Troubleshooting

23.1 Customer Service

Contact for repairs and issues with the machine:

Dürkopp Adler AG

Potsdamer Str. 190
33719 Bielefeld, Germany

Tel. +49 (0) 180 5 383 756

Fax +49 (0) 521 925 2594

Email: service@duerkopp-adler.com

Internet: www.duerkopp-adler.com



23.2 Errors in sewing process

Error	Possible causes	Remedial action
Unthreading at seam beginning	Needle thread tension is too firm	Check needle thread tension
Thread breaking	Needle thread and hook thread have not been threaded correctly	Check threading path
	Needle is bent or sharp-edged	Replace the needle
	Needle is not inserted correctly into the needle bar	Insert the needle correctly into the needle bar
	The thread used is unsuitable	Use recommended thread
	Thread tensions are too tight for the thread used	Check thread tensions
	Thread-guiding parts, such as thread tube, thread guide or thread take-up disk, are sharp-edged	Check threading path
	Throat plate, hook or spread have been damaged by the needle	Have parts reworked by qualified specialists

Error	Possible causes	Remedial action
Missing stitches	Needle thread and hook thread have not been threaded correctly	Check threading path
	Needle is blunt or bent	Replace the needle
	Needle is not inserted correctly into the needle bar	Insert the needle correctly into the needle bar
	The needle thickness used is unsuitable	Use recommended needle thickness
	The reel stand is installed incorrectly	Check the assembly of the reel stand
	Thread tensions are too tight	Check thread tensions
	Throat plate, hook or spread have been damaged by the needle	Have parts reworked by qualified specialists
Loose stitches	Thread tensions are not adjusted to the sewing material, the sewing material thickness or the thread used	Check thread tensions
	Needle thread and hook thread have not been threaded correctly	Check threading path
Needle breakage	Needle thickness is unsuitable for the sewing material or the thread	Use recommended needle thickness

24 Technical data

Data and characteristic values

Technical data	Unit	Class
Machine type		1767
Type of stitches		Double lockstitch 301
Hook type		Vertical hook, XXL
Number of needles		1-2
Needle system		134-35
Needle strength	[Nm]	90-180
Thread strength	[Nm]	120/3 - 10/3 120/3 - 15/3
Stitch length	[mm]	9
Speed maximum	[min ⁻¹]	3000
Speed on delivery	[min ⁻¹]	3000
Mains voltage	[V]	250
Mains frequency	[Hz]	50/60
Operating pressure	[bar]	6
Length	[mm]	690
Width	[mm]	220
Height	[mm]	460
Weight	[kg]	59
Power input	[kVA]	0.75

Characteristics

The machines are equipped with an extra large (XXL) vertical hook.

The remaining thread length following the thread cutting process is, respectively, approx. 15 mm and approx. 5 mm without and with the short thread cutter.

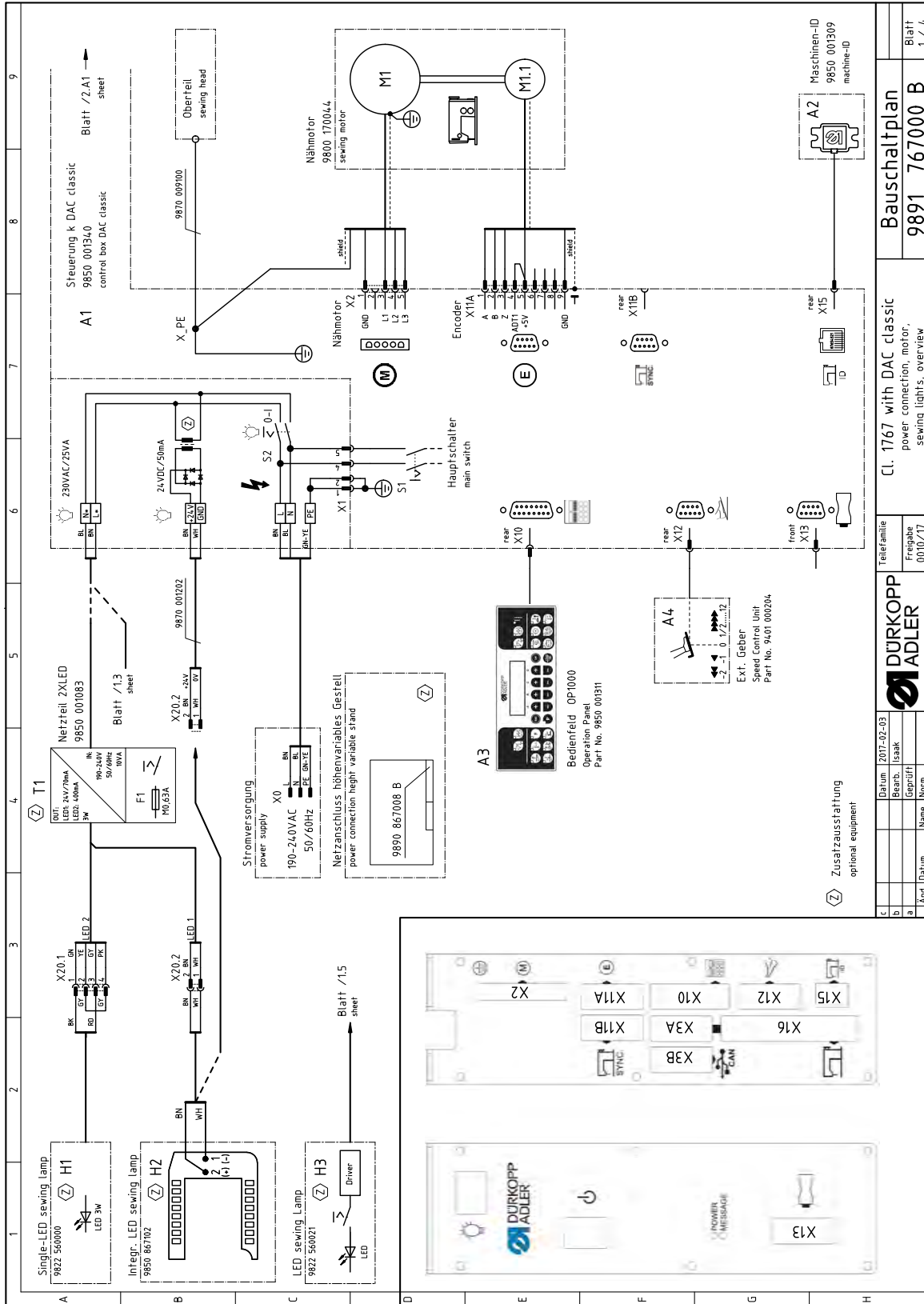
A safety snap-on coupling prevents any misadjustment or damage to the hook in the event of a thread jamming.

Automatic lubrication system for lubricating the machine and the hook.

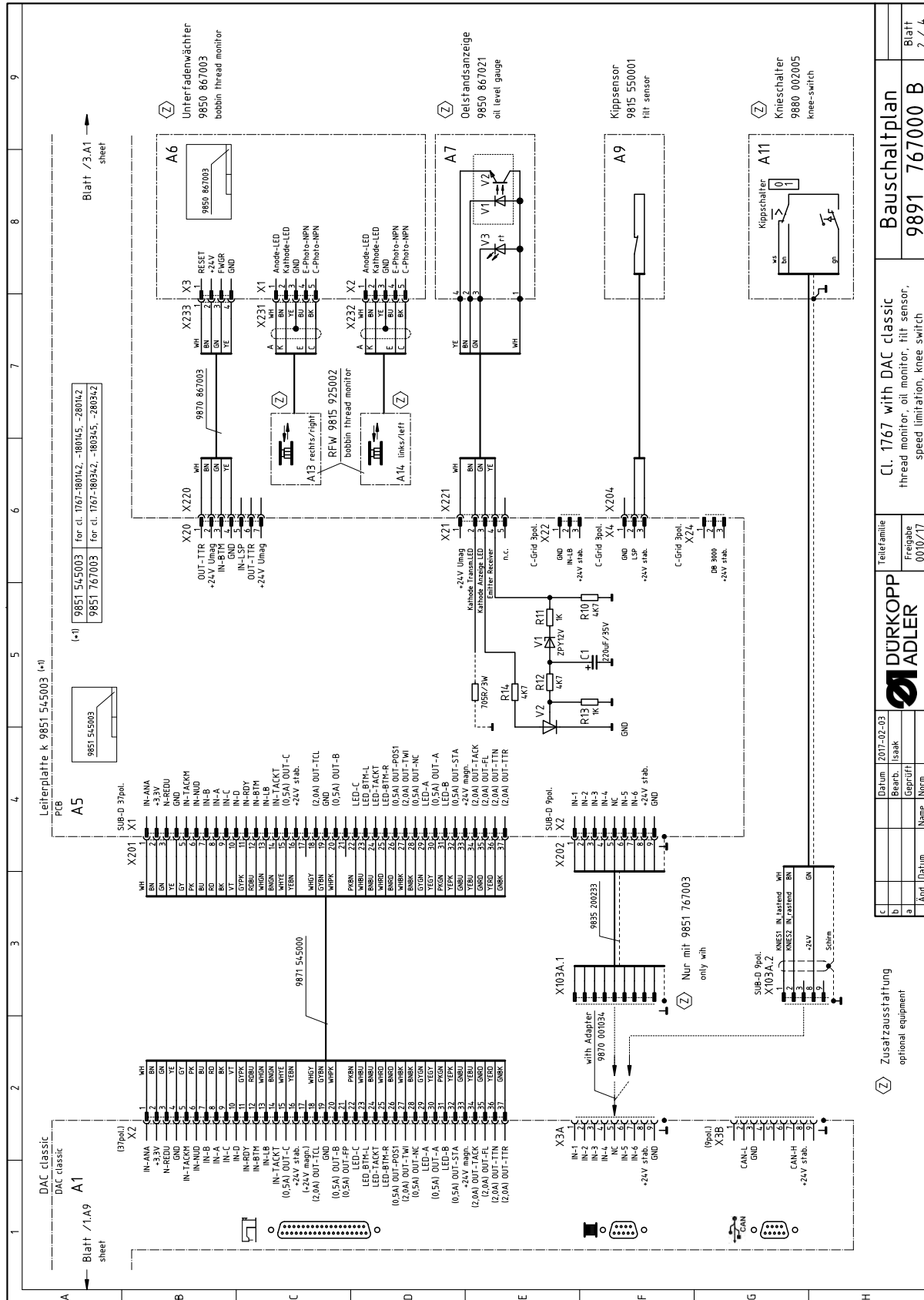
All subclasses are equipped with a bar holding 6 push buttons. An additional button panel has been placed within easy reach of the sewer and allows the sewer to assign the same 6 functions of the buttons housed in the button bar.

25 Appendix

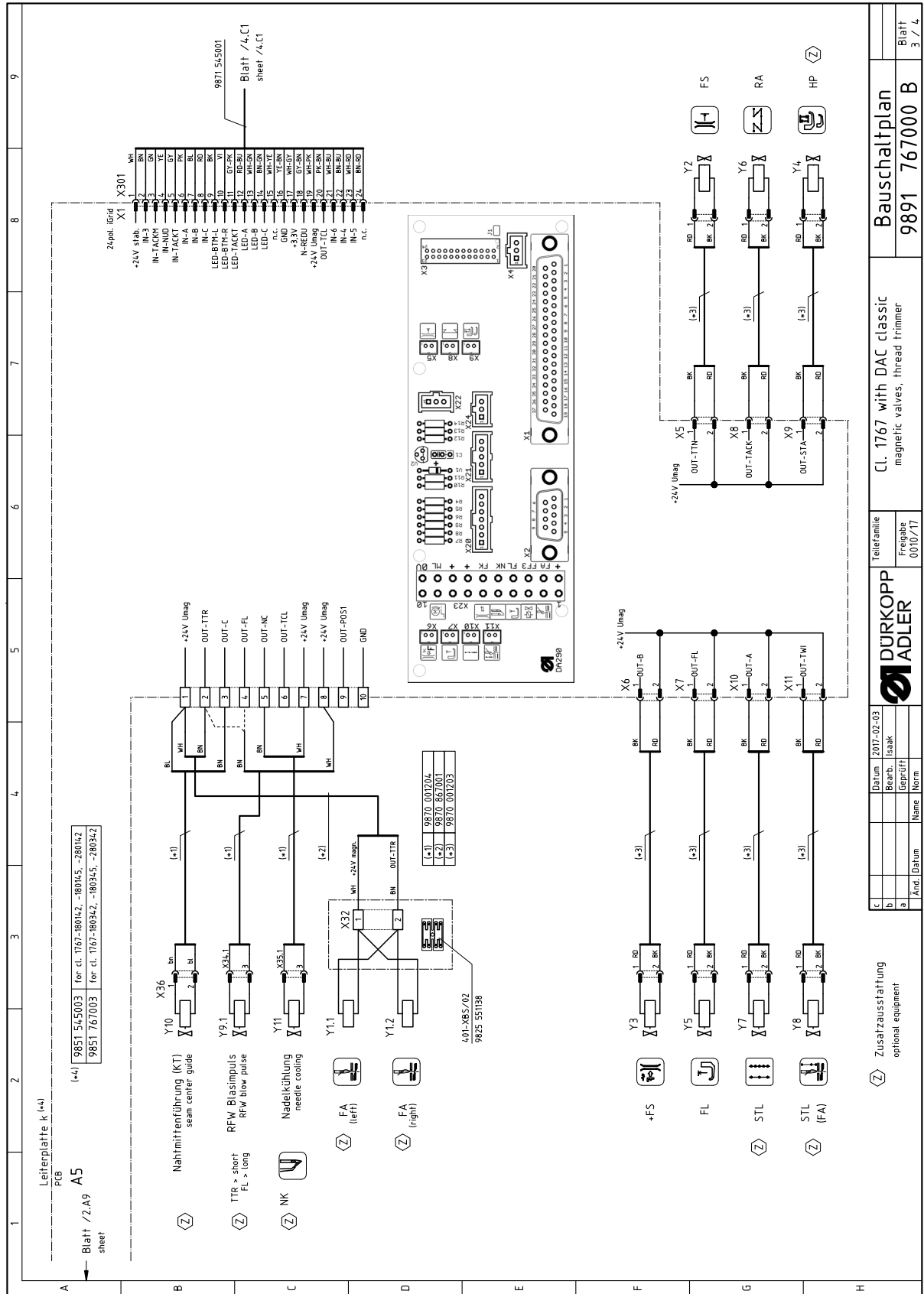
Wiring diagram

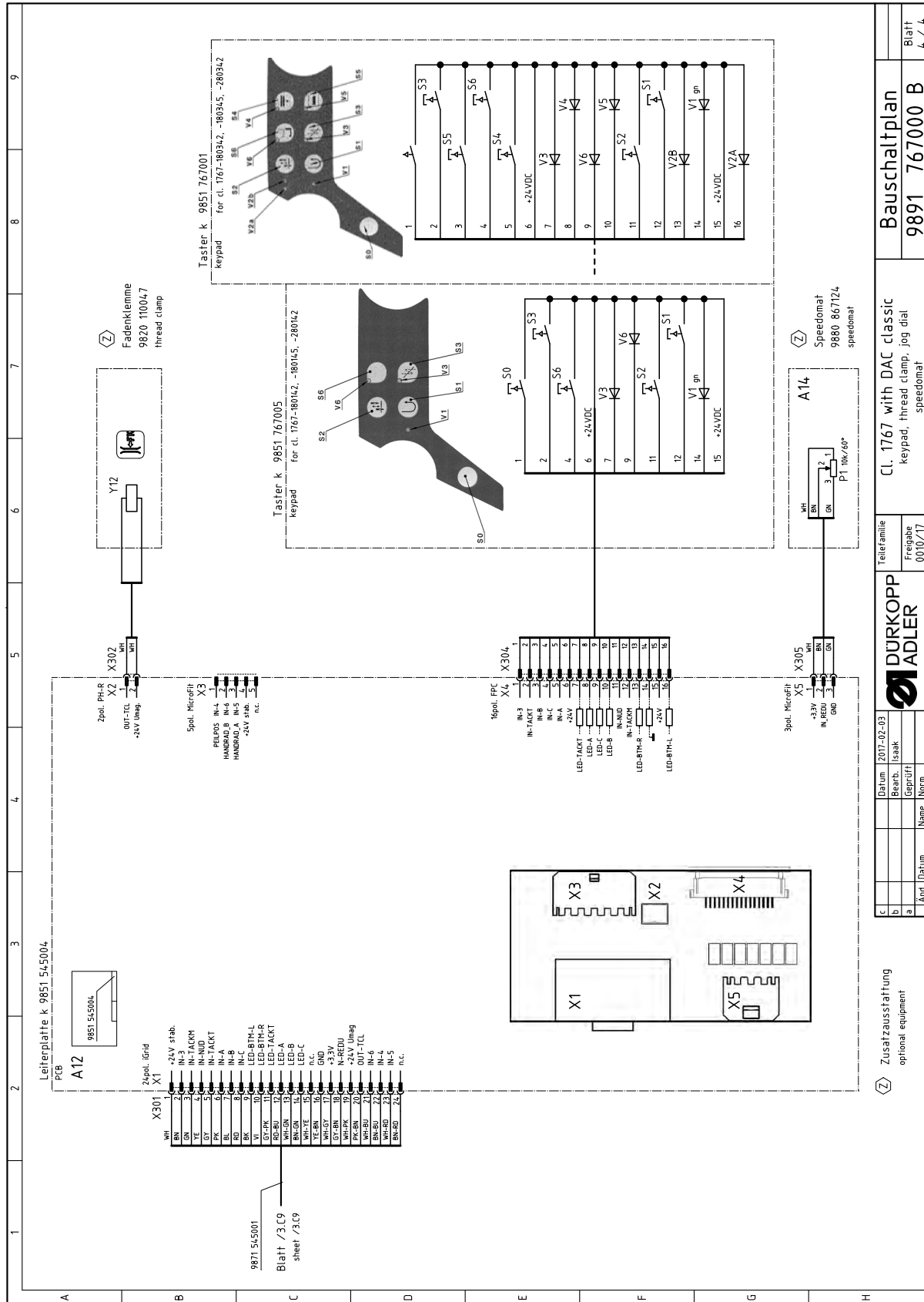


DURKOPP ADLER		Cl. 1767 with DAC classic power connection, motor, sewing lights, overview		Bauschaltplan 9891 76700 B	
Teilenummer 9891 76700 B		Maschinen-ID 9850 001309		Blatt 1 / 4	
Datum 2017-02-03		Freigegeben 0010/17		Name Norm	
Bearb. Isaak		Geprüft Isaak		Zusatzausstattung optional equipment	
Änd. 0		Name Norm		Blatt 1 / 4	



Teilfamilie		Datum	
Freigabe		2017-02-03	
0010/17		Bearb. Isak	
		Geprüft	
		Name	
		Norm	
DÜRKOPP ADLER			
Zusatzausstattung optional equipment			
Zurück zu			
Cl. 1767 with DAC classic		Bauschaltplan	
thread monitor, oil monitor, tilt sensor, speed limitation, knee switch		9891 767000 B	
		Blatt	
		2 / 4	





Teilfamilie		Freigabe	
DÜRKOPP ADLER		0010/17	
Datum		Name / Norm	
2017-02-03		Isaak	
Bearb.		Geprüft	
a		a	
b		b	
c		c	

Zusatzausstattung optional equipment		Teilfamilie	
Cl. 1767 with DAC classic keypad, thread clamp, jog dial speedomat		Freigabe	
9891 767000 B		0010/17	
Datum		Name / Norm	
2017-02-03		Isaak	
Bearb.		Geprüft	
a		a	
b		b	
c		c	

Bauschaltplan
9891 767000 B
Blatt
4 / 4

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