



H867

Service manual

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1 General information

1.1 Scope of application of the manual

This manual describes the setting and maintenance work on the H867 flatbed machine. It applies to all submodels.

The intended use and set-up is described in the  *operating manual*.

1.2 Declaration of conformity

The machine complies with the European regulations specified in the declaration of conformity or in the installation declaration.

1.3 Applicable documentation

The device contains built-in components of other manufacturers, e.g. drive motors. The corresponding manufacturers have performed a hazard assessment for these purchased parts and confirmed compliance of the design with the European and national specifications. The intended use of the built-in components is described in the corresponding manuals of the manufacturers.

1.4 Damage during transport

Dürkopp Adler cannot be held liable for any damage during transport. Check the delivered product immediately after receiving it. Report any damage to the last transport manager. This also applies if the packaging is not damaged.

Keep the machines, devices, and packaging material in the condition they were at the time the damage was identified. That secures any claims towards the transport company.

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

1.5 Limitation of liability

All information and notes in this operating manual have been compiled in accordance with the latest technology and the applicable standards and regulations.

The manufacturer accepts no liability for any damage due to:

- Failure to observe the instructions in the manual
- Improper use
- Unauthorized modifications to the machine
- The deployment of untrained personnel
- Damage during transport
- Using spare parts not approved

2 Safety instructions

This section contains basic instructions for your safety. Read the instructions carefully before setting up, programming, maintaining, or operating the machine.

Make sure to follow the information included in the safety instructions. Failure to do this can result in serious injury and damage to the machine.



2.1 General safety instructions

Only authorized persons may use the machine. Every person who works with the machine must have read the operating manual first.

The machine may only be used as described in this manual.

The operating manual must be available at the machine's location at all times.

Observe the generally applicable safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

Observe the safety instructions and the operating manual of the drive motor's manufacturer.

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

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

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

Inspect the machine while in use for any externally visible damage. Interrupt your work if you notice any changes to the machine. Report any changes to your supervisor. A damaged machine may not be used any more.

Machines or machine parts that have reached the end of their service life must not continue to be used. They have to be disposed of correctly and in accordance with the applicable statutory provisions.

Only qualified specialists may set up the machine.

Only qualified specialists may perform maintenance work and repairs.

Safety equipment may not be removed or put out of service. If this cannot be avoided for a repair operation, the safety equipment must be refitted and put back into service immediately afterwards.

Only qualified electrical specialists may perform work on electrical equipment.

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

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

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

2.2 Layout of safety instructions

The safety instruction text is surrounded by colored bars.

Signal words specify the severity of a danger:

- **Danger:** Death or serious injury will occur.
- **Warning:** Death or serious injury is possible.
- **Caution:** Moderate to minor injuries are possible.
- **Attention:** Material damage is possible.

In the case of dangers to personnel, the following symbols indicate the type of hazard:



General danger



Danger due to electric shock



Danger due to sharp objects



Danger due to crushing

Examples of the layout of the safety instructions in the text:**DANGER****Type and source of the danger****Consequences in the event of noncompliance**

Measures for avoiding the danger

*This is what a hazard note looks like for a hazard that will result in serious injury or even death if not complied with.***WARNING****Type and source of the danger****Consequences in the event of noncompliance**

Measures for avoiding the danger

*This is what a hazard note looks like for a hazard that could result in serious injury or even death if not complied with.***CAUTION****Type and source of the danger****Consequences in the event of noncompliance**

Measures for avoiding the danger

*This is what a hazard note looks like for a hazard that could result in moderate or minor injury if not complied with.***ATTENTION****Type and source of the danger****Consequences in the event of noncompliance**

Measures for avoiding the danger

This is what a hazard note looks like for a hazard that could result in material damage if not complied with.

3 Environmental protection information

3.1 General information on environmental protection

Machines or machine parts that have reached the end of their service life must be disposed of correctly and in compliance with the legal requirements concerning environmental protection.

Use consumables sparingly and dispose of them correctly and in compliance with the legal requirements concerning environmental protection.

3.2 Layout of environmental protection information

The environmental protection text is surrounded by green bars.

The following symbol indicates the type of environmental protection measure:



Reference to correct disposal

Example of the layout of environmental protection information in text form

ENVIRONMENTAL PROTECTION



Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what environmental protection information on correct disposal looks like and could lead to environmental damage if not complied with.

4 Working basis

4.1 Symbols in the text

The following symbols at the side and in the text show which type of information the text contains.



Correct setting

Specifies the correct setting.



Faults

Specifies the faults that can occur due to an incorrect setting.



Cover

Specifies which covers have to be removed in order to access the components going to be set.



Steps to be performed for servicing, maintenance, and installation



Steps to be performed via the software control panel

The individual steps are numbered:

1. 1. First setting step
2. 2. Second setting step
3. 3. Third setting step, etc.

...

The sequence of setting steps must always be followed.

Result of performing an operation



If the machine is changed in one particular setting step or a new notification text appears in the display which is considered as important feedback for you, then this change will be identified by an arrow: ↩

Specifies setting steps for the software via the control panel. The steps are numbered. The sequence of setting steps must always be followed.



Important

Specifies what you have to be particularly careful about during the work step.



Information

Provides additional information.



Sequence

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

Reference



A reference is provided to another place in the text.

4.2 Sequence of the settings

Observe the sequence! The setting positions for the sewing machine are interdependent.



Always adhere to the specified sequence for the individual setting steps.

Always observe all information on requirements and following settings marked at the side with .

ATTENTION

Machine damage due to incorrect sequence

Always adhere to the working sequence specified in this manual.

4.3 Cable routing

Tying the cable together Ensure that all cables in the machine are laid such that moving parts are not impaired in their ability to function correctly.



1. Lay any excess cabling neatly in proper cable snakes.
2. Tie the snakes together using a cable tie.



- If possible, bind the snakes to fixed parts.
The cables must be fixed firmly in place.
3. Cut off any protruding part of the cable tie.

ATTENTION

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

Excess cabling may obstruct moving machine parts in their ability to function correctly. This will affect the sewing function and may cause damage.

Lay excess cabling as described above.

4.4 Removing the covers

WARNING



Risk of injury

Crushing injuries from moving parts

Switch the sewing machine off before you remove the covers or refit them.

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

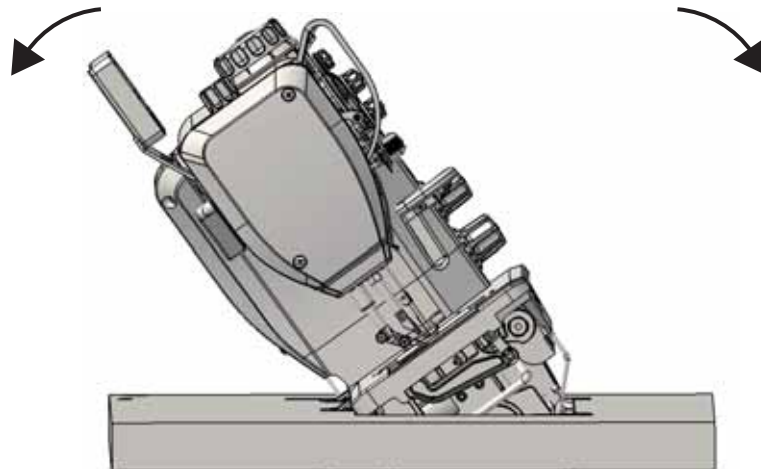
Described here is how to remove the individual covers and how to refit them. Just the cover that needs to be removed is then specified in the text for that particular type of setting work.

4.4.1 Access to the machine bottom section



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

Figure 1: Tilt the machine upper section backwards and erect it again



Tilting the machine upper section backwards



1. Tilt the machine upper section backwards as far as it will go.

Erecting the machine upper section

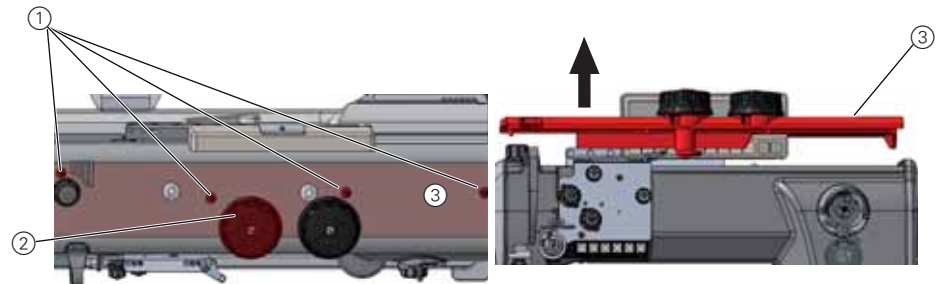


1. Erect the machine upper section again.

4.4.2 Removing and fitting the arm cover



Figure 2: Removing and fitting the arm cover



- (1) - Arm cover screws
(2) - Left adjusting wheel for the sewing foot stroke (3) - Arm cover



Removing the arm cover

1. Position the left adjusting wheel for the sewing foot stroke (2) to 2.



Important: You can only remove the arm cover when the adjusting wheel is positioned at 2.

2. Loosen the arm cover screws (1).
3. Hold the arm cover (3) at the adjusting wheels and remove it.

Fitting the arm cover

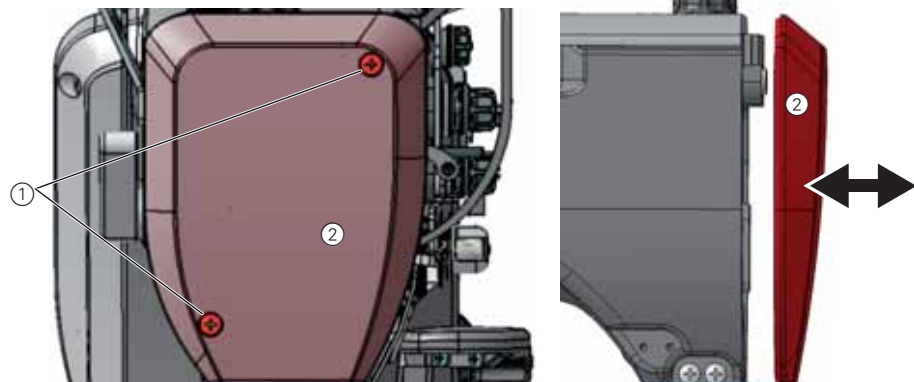


1. Fit the arm cover (3).
2. Screw the arm cover screws (1) firmly in place.

4.4.3 Removing and fitting the head cover



Figure 3: Removing and fitting the head cover



- (1) - Head cover screws (2) - Head cover

Removing the head cover



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

Fitting the head cover

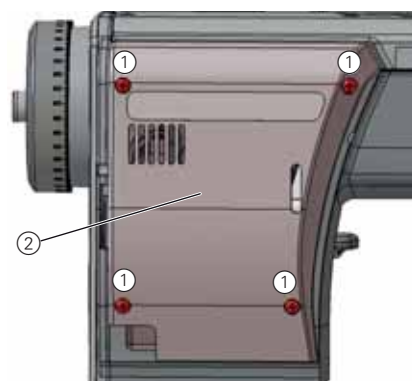


1. Fit the head cover (2).
2. Screw the head cover screws (1) firmly in place.

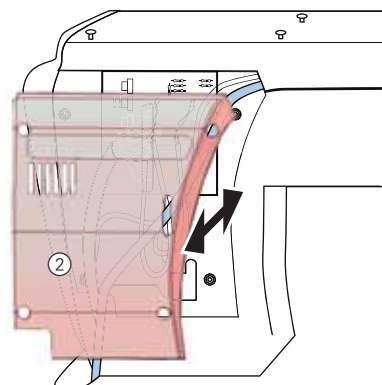
4.4.4 Removing and fitting the valve cover



Figure 4: Removing and fitting the valve cover



(1) - Valve cover screws



(2) - Valve cover

Removing the valve cover



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



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

Fitting the valve cover



1. Fit the valve cover (2).
2. Screw all four valve cover screws (1) firmly in place.

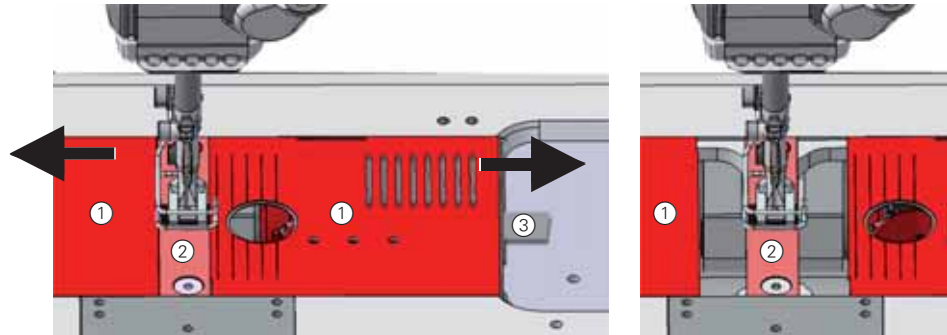


Important: When fitting the valve cover, be sure not to trap any cables.

4.4.5 Opening and closing the throat plate slide



Figure 5: Opening and closing the throat plate slide



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

(3) - Clamping spring

Opening the throat plate slide



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

Pushing the throat plate slide back into place



1. Push the throat plate slide (1) back to its initial position.

4.4.6 Removing and inserting the throat plate

WARNING

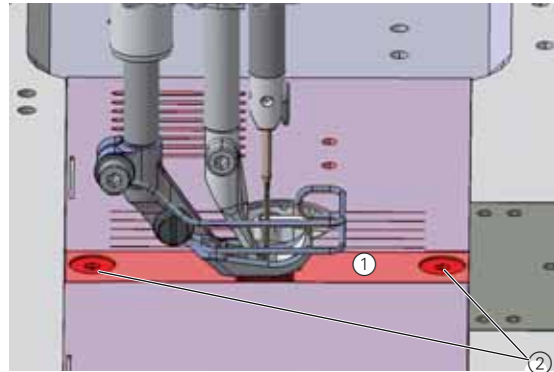


Risk of injury

Switch the sewing machine off before you remove or insert the throat plate.



Figure 6: Removing and inserting the throat plate



(1) - Throat plate

(2) - Throat plate screws

Removing the throat plate



1. Open the throat plate slide.
(📖 Section 4.4.5 *Opening and closing the throat plate slide*, page 13)
2. Loosen the throat plate screws (2).
3. Remove the throat plate (1).

Inserting the throat plate



1. Fit the throat plate (1).
2. Screw the throat plate screws (2) firmly in place.
3. Push the throat plate slide back into place.
(📖 Section 4.4.5 *Opening and closing the throat plate slide*, page 13)

4.4.7 Removing and inserting the feed-dog

WARNING

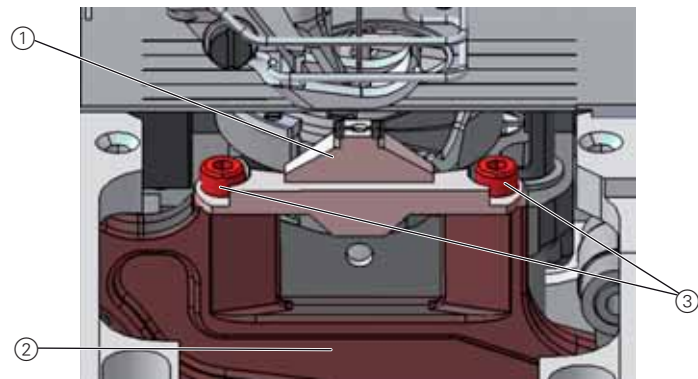


Risk of injury

Switch the sewing machine off before you remove or insert the feed-dog.



Figure 7: Removing and inserting the feed-dog



(1) - Feed-dog

(2) - Feed-dog carrier

(3) - Feed-dog screws

Removing the feed-dog



1. Remove the throat plate.
( Section 4.4.6 *Removing and inserting the throat plate*, page 14)
2. Loosen the feed-dog screws (3).
3. Take the feed-dog (1) off the feed-dog carrier (2).

Inserting the feed-dog



1. Place the feed-dog (1) onto the feed-dog carrier (2).
2. Screw the feed-dog screws (3) firmly in place.
3. Insert the throat plate.
( Section 4.4.6 *Removing and inserting the throat plate*, page 14)

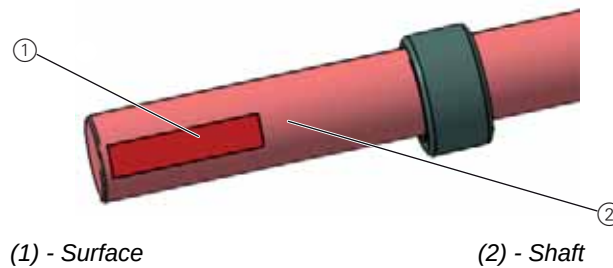


Important: Check the feed-dog position in its movement by turning the handwheel. The feed-dog must not hit against the throat plate.

4.5 Surfaces on shafts

Screwing components onto the surface

Figure 8: Surfaces on shafts



Some shafts have flat surfaces at those points where the components are screwed on. This strengthens the connection and setting work is made easier.

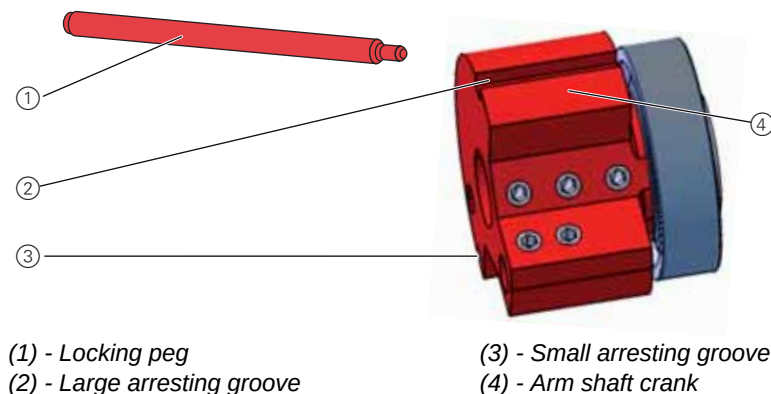


Important: Always make sure that the whole screw is seated completely on the surface.

4.6 Locking the sewing machine in place

With some settings, the machine has to be locked in place. To do this, the locking peg from the accessory pack is inserted into a groove on the arm shaft crank to block the arm shaft.

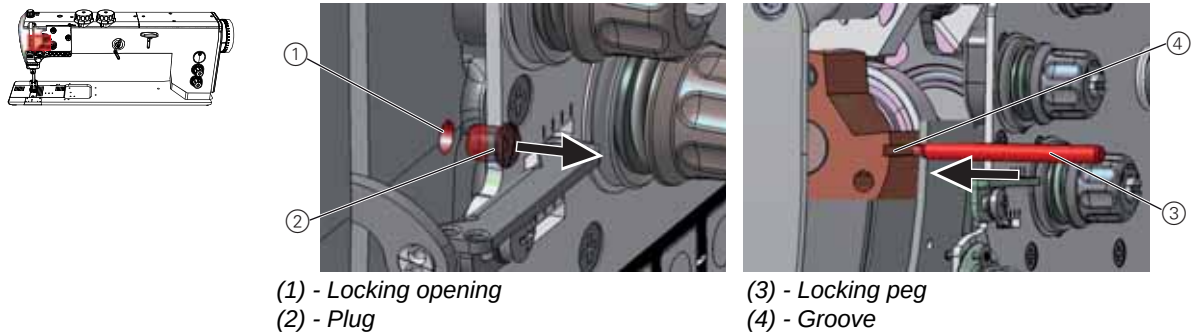
Figure 9: Locking peg and arresting grooves on the arm shaft crank



There are two securing positions:

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

Figure 10: Locking the sewing machine in place

**Locking the machine in place**

1. Remove the plug (2) from the locking opening (1).
2. Turn the handwheel until the appropriate groove (3) is in front of the locking opening (2):
 - Small groove at handwheel position 0°
 - Large groove at handwheel position 200 – 205°
3. Insert the locking peg (3) with the appropriate end into the groove (4).

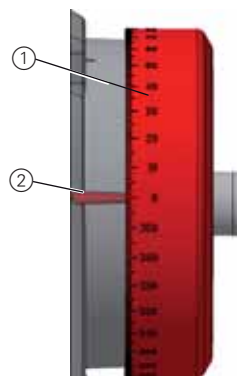
**Removing the locking mechanism**

1. Pull the locking peg (3) out of the groove (4).
2. Insert the plug (2) into the locking opening (1).

4.7 Putting the handwheel into position

With some settings, the graduated scale on the handwheel has to be put into a certain position.

Figure 11: Putting the handwheel into position



(1) - Graduated scale (2) - Pointer

**Setting steps**

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

5 Setting the handwheel scale

WARNING



Risk of injury

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



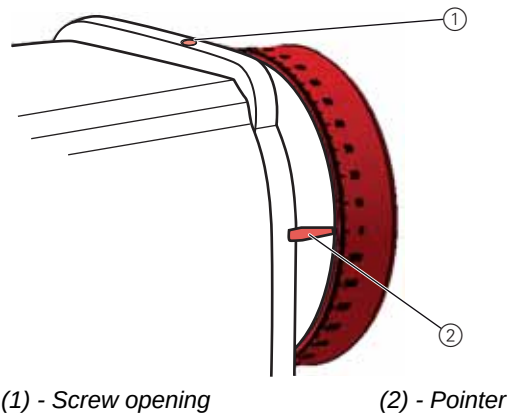
Checking the correct setting

Lock the machine in place in the *handwheel zero position* (📖 page 16):

✎ The handwheel is at position 0°.

If a different degree number is next to the pointer (2) in the *handwheel zero position* (📖 page 16), then you will have to reset the graduated scale. Otherwise you will not be able to work with the handwheel positions you need for specific settings.

Figure 12: Setting the handwheel scale



(1) - Screw opening

(2) - Pointer



Setting steps

The handwheel is fastened using two screws, which you can see through the screw opening (1).

1. Turn the handwheel such that one screw is under the opening (1).
2. Loosen the screw using a 3 mm hex key through the opening (1).
3. Turn the handwheel such that the second screw is under the opening (1).
4. Loosen the screw using a 3 mm hex key through the opening (1).
5. Lock the machine in place in the *handwheel zero position* (📖 page 16).
6. Turn the handwheel scale such that the 0° marking is exactly in the center of the pointer (2).
7. Firmly tighten the screw using a 3 mm hex key through the opening (1).
8. *Remove the locking mechanism* (📖 page 17).
9. Put the handwheel into the 50° position.
10. Firmly tighten the second screw using a 3 mm hex key through the opening (1).

6 Positioning the arm shaft crank

WARNING



Risk of crushing

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



Correct setting

The three setscrews (3) on the arm shaft crank (1) are seated completely on the surface. The arm shaft crank (1) is flush with the machine casting (2).



Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)

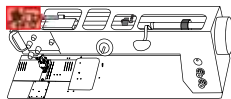
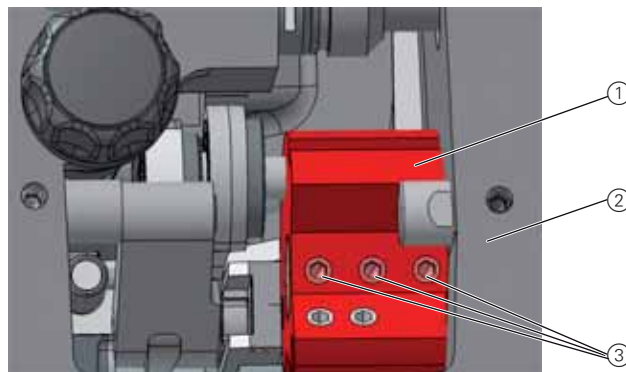


Figure 13: Setting the arm shaft crank



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

(3) - Setscrews



Setting steps

1. Loosen the three setscrews (3) on the arm shaft crank (1).
2. Turn the arm shaft crank (1) such that the setscrews (3) are seated completely on the surface of the arm shaft.
3. Push the arm shaft crank (1) to the right as far as it will go and against the machine casting (2).
4. Screw the setscrews (3) on the arm shaft crank (1) firmly in place.

7 Positioning the toothed belt wheels

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



Sequence

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

Differences between the short arm and long arm machines

Differences in the setting sequence are caused by the differing position of the winder wheel.

In long arm machines, the winder wheel on the driver wheel is aligned in the center of the arm ( Section 15 *Winder*, page 65) and is irrelevant for the toothed belt wheels.

Therefore, in long arm machines, it does not matter which toothed belt wheel you check first.

Short arm machines In short arm machines, the position of the upper toothed belt wheel is defined by the distance to the winder wheel.



This is why you have to align the upper toothed belt wheel on the winder wheel first in short arm machines. After that, align the lower toothed belt wheel such that the toothed belt runs correctly over both wheels.

7.1 Upper toothed belt wheel

WARNING



Risk of crushing

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



Correct setting

The two setscrews for the upper toothed belt wheel are seated completely on the surface.

Short arm machines

To be additionally checked in short arm machines:

In short arm machines, also the distance between the winder wheel and the upper toothed belt wheel must be 0.8 mm.



Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)

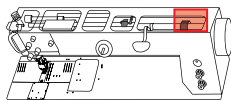
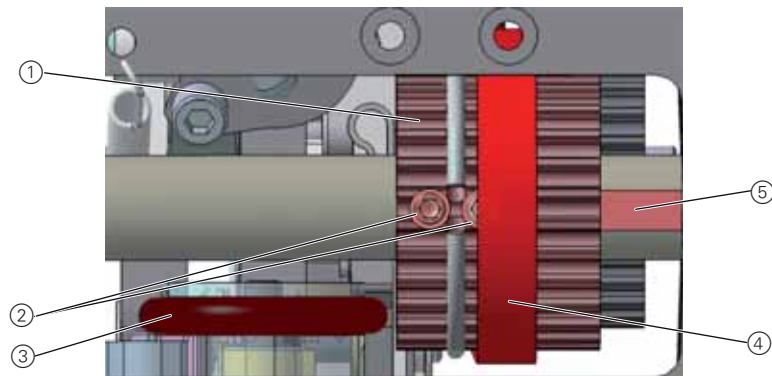


Figure 14: Setting the upper toothed belt wheel



- (1) - Upper toothed belt wheel
(2) - Setscrews
(3) - Winder wheel (position for short arm machines)

- (4) - Toothed belt
(5) - Surface of arm shaft



Setting steps

1. Using the screwdriver, push the toothed belt (4) as far to the side until the two setscrews (2) can be seen.
2. Loosen the setscrews (2).

3. Turn the upper toothed belt wheel (1) such that the setscrews (2) are seated completely on the surface (5) of the arm shaft.

**Short arm
machines**

-
4. **Additional setting step for short arm machines:**
Move the upper toothed belt wheel (1) to the side such that the distance to the winder wheel (3) is 0.8 mm.
-

5. Tighten the setscrews (2).
6. Use the screwdriver to push the toothed belt (4) back again.

7.2 Lower toothed belt wheel

WARNING



Risk of crushing

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



Correct setting

The two setscrews for the lower toothed belt wheel are seated completely on the surface of the lower shaft.

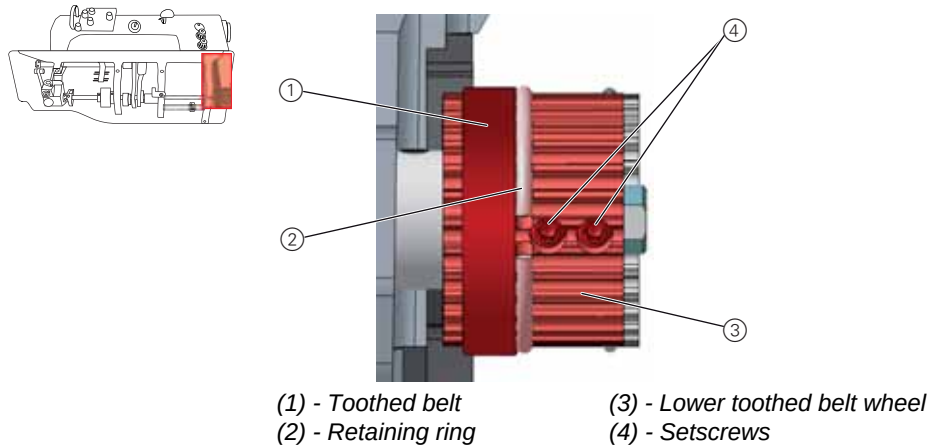
The toothed belt runs correctly without running against the retaining ring or slipping off.



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)

Figure 15: Setting the lower toothed belt wheel

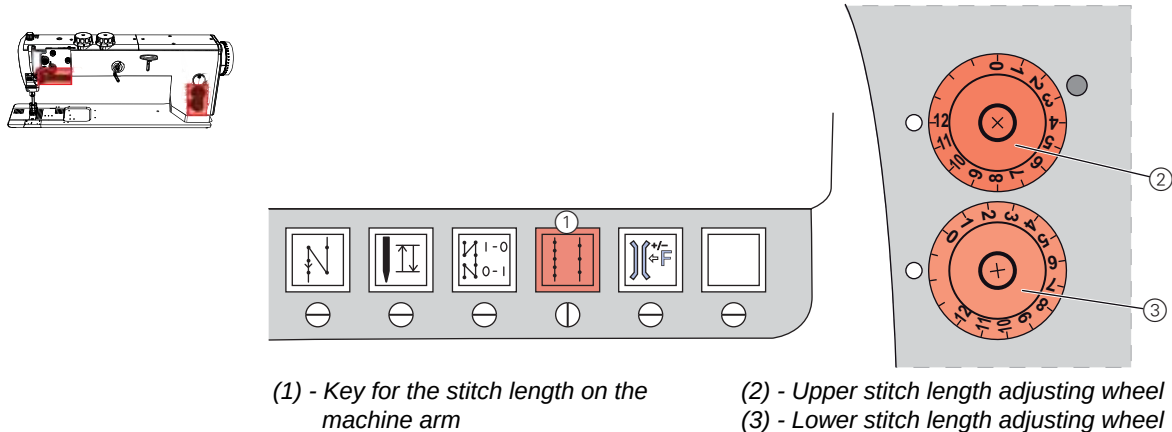


Setting steps

1. Loosen the setscrews (4).
2. Turn the lower toothed belt wheel (3) such that the setscrews (4) are seated on the surface of the arm shaft.
3. Move the lower toothed belt wheel (3) to the side such that the toothed belt (1) makes contact with the retaining ring (2), without being pushed away.
4. Tighten the setscrews (4).

8 Setting the stitch length adjusting wheels

Figure 16: Stitch length adjusting wheels



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

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

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

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

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

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

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



Sequence

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

8.1 Setting the upper stitch length adjusting wheel

WARNING



Risk of crushing

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



Correct setting

Upper stitch length adjusting wheel to 0:

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



Cover

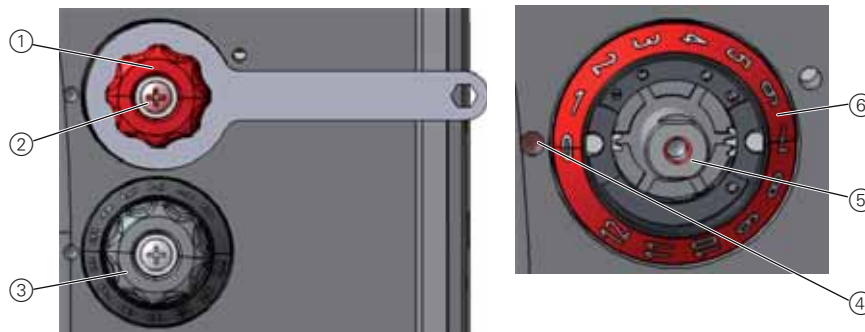
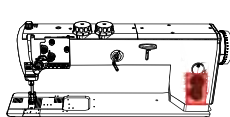
- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)



Setting steps

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

Figure 17: Setting the upper stitch length adjusting wheel - Part 1



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

2. Hold the upper stitch length adjusting wheel (1) using a star key.
3. Loosen the screw (2).
4. Remove the upper stitch length adjusting wheel (1) from the shaft (5).
5. Carefully turn the shaft (5) to the right using a 10 mm wrench.

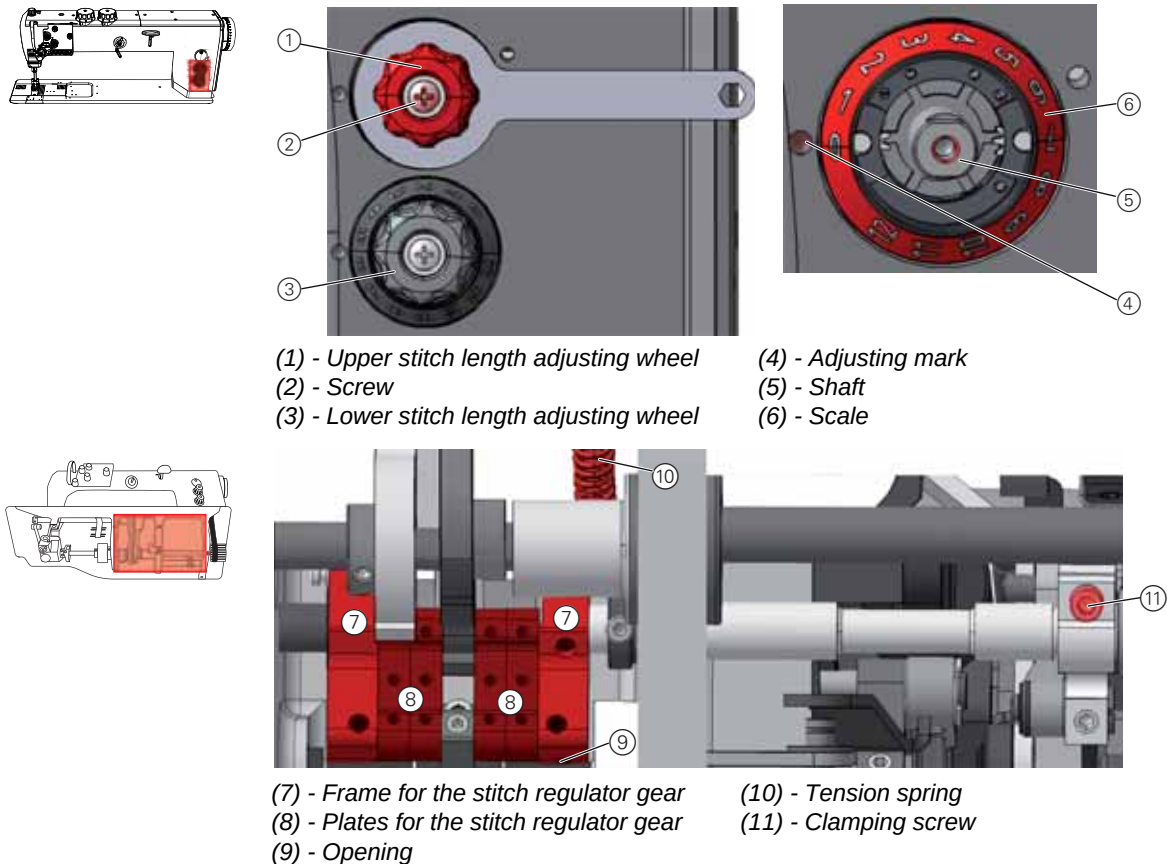
ATTENTION

Machine damage possible if the shaft is turned too strongly.

If you turn the shaft too far to the right, then parts on the stitch regulator gear could bend or get stuck.

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

Figure 18: Setting the upper stitch length adjusting wheel - Part 2



6. Check whether the frame (7) for the stitch regulator gear can be moved.

Tip: In machines that have a stitch adjustment lever, you can check this by pressing the stitch adjustment lever.

In machines that do not have a stitch adjustment lever, you can insert the locking peg or a hex key into the opening (9) and use it to try and move the frame (7) up and down.

7. As soon as the frame (7) no longer moves:
Remove the wrench from the shaft (5).

8. Turn the scale (6) for the upper stitch length adjusting wheel (1) such that the 0 is exactly next to the adjusting mark (4).

9. Place the upper stitch length adjusting wheel (1) onto the shaft (5).

10. Hold the upper stitch length adjusting wheel (1) using a star key.

11. Tighten the upper stitch length adjusting wheel (1) on the shaft (5) using the screw (2).



12. **Important:** Check whether the plates for the stitch regulator gear (8) are parallel to one another in this position.

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

13. Remove the tension spring (10).

14. Loosen the clamping screw (11).

15. Manually position the plates (8) so that they are parallel.

16. Tighten the clamping screw (11).

17. Attach the tension spring (10).

8.2 Setting the lower stitch length adjusting wheel

WARNING



Increased risk of injury!

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



Checking the correct setting

Sewing with two different stitch lengths:

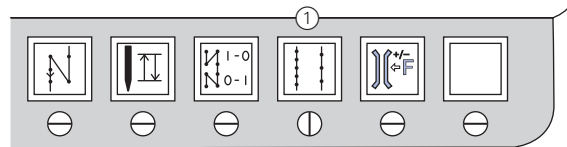
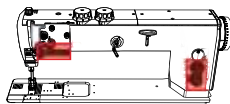
- ↪ The stitch lengths on the seam correspond with the set stitch lengths.
- ↪ The lower stitch length adjusting wheel can only be turned up to the stitch length set on the upper stitch length adjusting wheel.



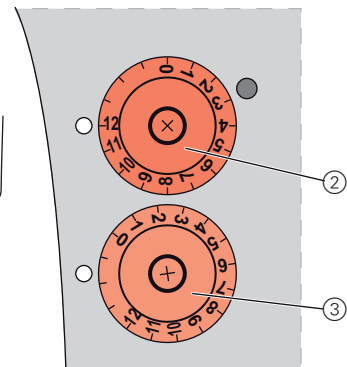
Cover

- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)

Figure 19: Setting the lower stitch length adjusting wheel



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



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



Setting steps

1. Switching over to the smaller stitch lengths:
The key for the stitch length on the machine arm (1) must be off. If it is lit up:
Press the key (1).
2. Repeat steps 2 to 11 from the previous section (Section 8.1 Setting the upper stitch length adjusting wheel, page 25) for the lower stitch length adjusting wheel (3).

8.3 Stitch length limit

If during the sewing operation not all stitch lengths are available, then you do have the option to limit the maximum stitch length that can be set.

WARNING



Risk of crushing

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

12, 9, or 6 mm can be selected as the maximum stitch length. In doing so, the appropriate throat plate has to be selected for the respective maximum stitch length. The throat plate cut-out must be large enough that the feed-dog does not hit against the edges of the throat plate at the front and rear dead center.

ATTENTION

Risk of damaging the feed-dog due to incorrect throat plate size

If the throat plate cut-out is too small, then the feed-dog can hit against the edges.

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

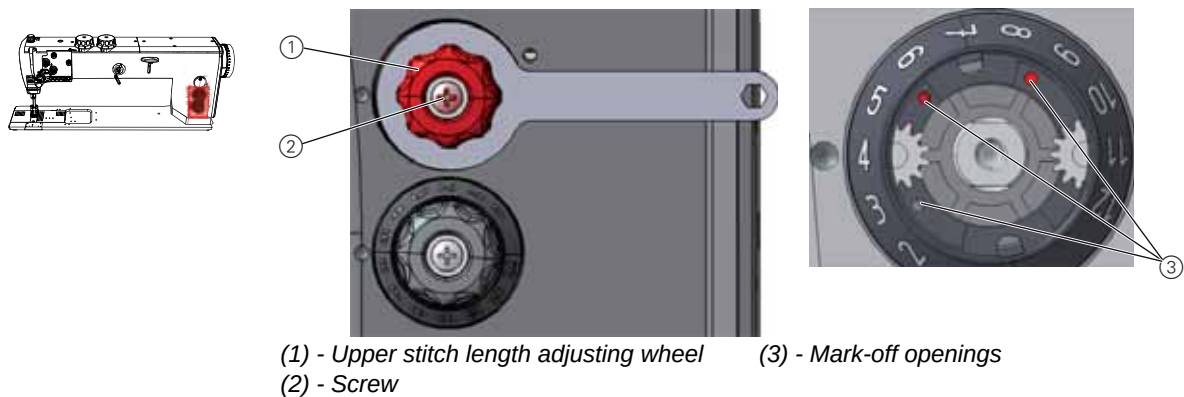


Correct setting

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

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

Figure 20: Setting the stitch length limit



Setting steps

1. Position the upper stitch length adjusting wheel (1) to 0.
2. Hold the upper stitch length adjusting wheel (1) using a star key.
3. Loosen the screw (2) on the upper stitch length adjusting wheel (1).
4. Remove the upper stitch length adjusting wheel (1).
5. Remove the setscrew from one of the three mark-off openings (3).
6. Screw the setscrew into the mark-off opening for the required maximum stitch length.
The openings are given numbers for the stitch length: 6 mm, 9 mm, or 12 mm



Important: Make sure that the scale for the adjusting wheel is not twisted.

7. Fit the upper stitch length adjusting wheel (1) back on.
8. Hold the upper stitch length adjusting wheel (1) using a star key.
9. Tighten the screw (2) on the upper stitch length adjusting wheel (1).

8.4 Setting the eccentric for the forward and backward stitches

WARNING



Risk of crushing

Switch off the sewing machine before setting the eccentric.



Correct setting

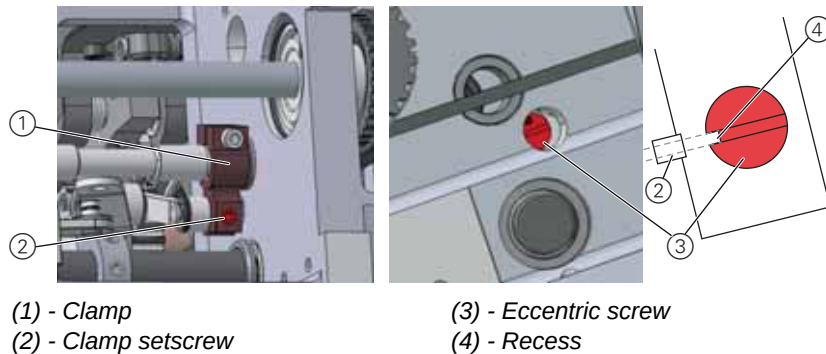
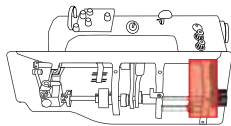
The forward and backward stitches are the same length.

As a test, sew a bartack. The insertions of the forward and backward stitches have to lie within each other.



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)



Setting steps

1. Loosen the clamp setscrew (2).
2. Turn the eccentric screw (3) from the right through the opening in the machine frame:

Basic position:

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

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

• Turning clockwise:

The forward stitch becomes larger, the backward stitch smaller.

• Turning counterclockwise:

The forward stitch becomes smaller, the backward stitch larger.

3. Tighten the clamp setscrew (2).

9 Setting the feed-dog

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



Sequence

First check the following settings:

- Needle bar linkage
( Section 10 *Aligning the needle bar linkage*, page 41)

9.1 Setting the feed-dog position

WARNING



Risk of injury

Switch off the sewing machine before setting the feed-dog position.



Correct setting

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

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

Various settings have to be made depending on how far the actual position of the feed-dog differs from the correct setting:

- For minimal deviations, it suffices to move the feed-dog on the carrier.
( Section 9.1.1 *Moving the feed-dog*, page 32)
- If this change does not suffice, then the whole feed-dog carrier has to be moved on the sliding shaft.
( Section 9.1.2 *Moving the feed-dog carrier*, page 33)
- For basic realignment, the feed-dog carrier has to be realigned together with the stitch regulator gear.
( Section 9.1.3 *Aligning the feed-dog carrier together with the stitch regulator gear*, page 34)

9.1.1 Moving the feed-dog

For minimal changes in position, it suffices to move the feed-dog on the feed-dog carrier.



Cover

- Throat plate (📖 Section 4.4.6 *Removing and inserting the throat plate*, page 14)

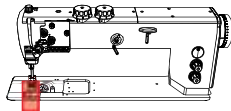
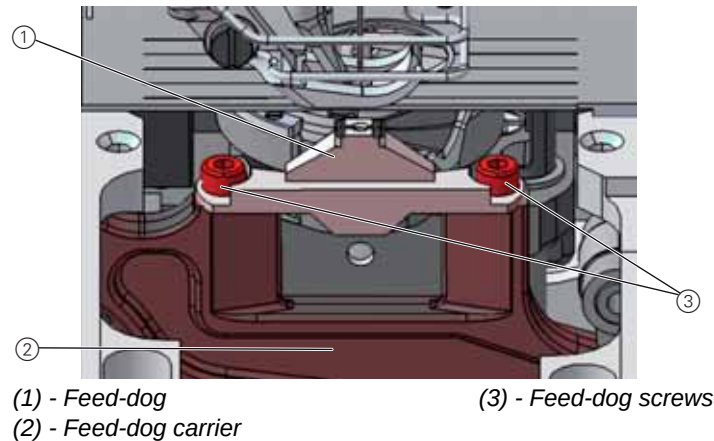


Figure 22: Moving the feed-dog on the feed-dog carrier



Setting steps

1. Loosen the feed-dog 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 again.
3. Screw the feed-dog screws (3) firmly in place.

9.1.2 Moving the feed-dog carrier

For the basic setting, the feed-dog carrier has to be moved both sideways and in the sewing direction.

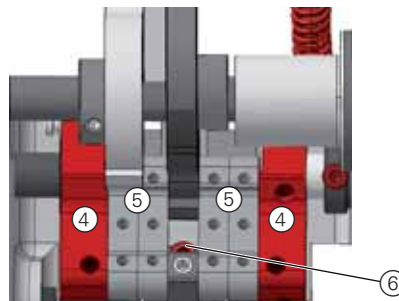
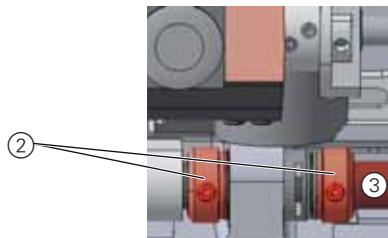
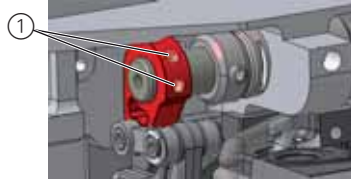
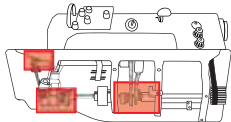
The feed-dog carrier is connected to the stitch regulator gear via the sliding shaft and can be moved on this shaft.



Cover

- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)

Figure 23: Moving the feed-dog carrier



- (1) - Tie rod connecting screws
(2) - Adjusting rings
(3) - Sliding shaft

- (4) - Assembly frame
(5) - Plates
(6) - Assembly frame screw



Setting steps

1. Position the upper stitch length adjusting wheel to 0.
2. Loosen the connection to the tie rod using the screws (1).
3. Loosen the rear assembly frame screw (6).
4. Loosen the setscrews for the adjusting rings (2).
5. Move the feed-dog carrier cross-line to the sewing direction such that the feed-dog is exactly in the center of the throat plate cut-out.
6. Push the adjusting rings (2) toward each other as far as they will go.



Important: Make sure that the sliding shaft (3) is tightened by the clamping rings.

7. Tighten the setscrews for the adjusting rings (2).
8. Move the feed-dog carrier in the sewing direction such that the feed-dog is exactly in the center of the throat plate cut-out.
9. Tighten the rear assembly frame screw (6).
10. Tighten the connection to the tie rod using the screws (1).



Important: In the process, make sure that the feed-dog height has the correct setting (Section 9.2.2 Setting the feed-dog height in the top dead center, page 38).

9.1.3 Aligning the feed-dog carrier together with the stitch regulator gear

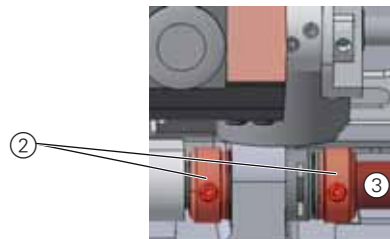
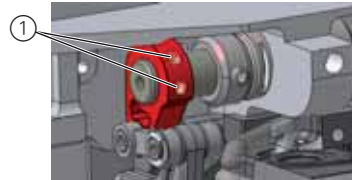
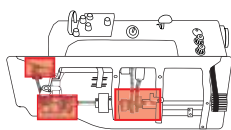
If moving the feed-dog carrier does not suffice, the feed-dog carrier must be aligned together with the stitch regulator gear.



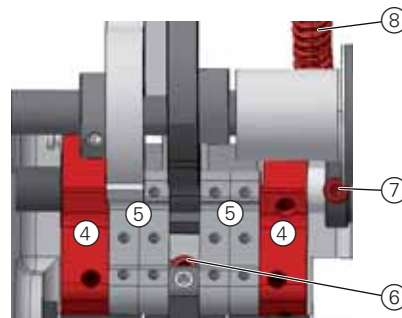
Cover

- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)

Figure 24: Moving the feed-dog carrier cross-line to the sewing direction



- (1) - Tie rod connecting screws
- (2) - Adjusting rings
- (3) - Sliding shaft
- (4) - Assembly frame



- (5) - Plates
- (6) - Assembly frame screw
- (7) - Screw
- (8) - Tension spring

Setting steps



Moving the feed-dog carrier cross-line to the sewing direction

1. Remove the tension spring (8) from the mounting bracket.
2. Loosen the connection to the tie rod using the screws (1).
3. Loosen the rear assembly frame screw (6).
4. Loosen the setscrews for the adjusting rings (2).
5. Move the feed-dog carrier cross-line to the sewing direction such that the feed-dog is exactly in the center of the throat plate cut-out.
6. Push the adjusting rings (2) toward each other as far as they will go.

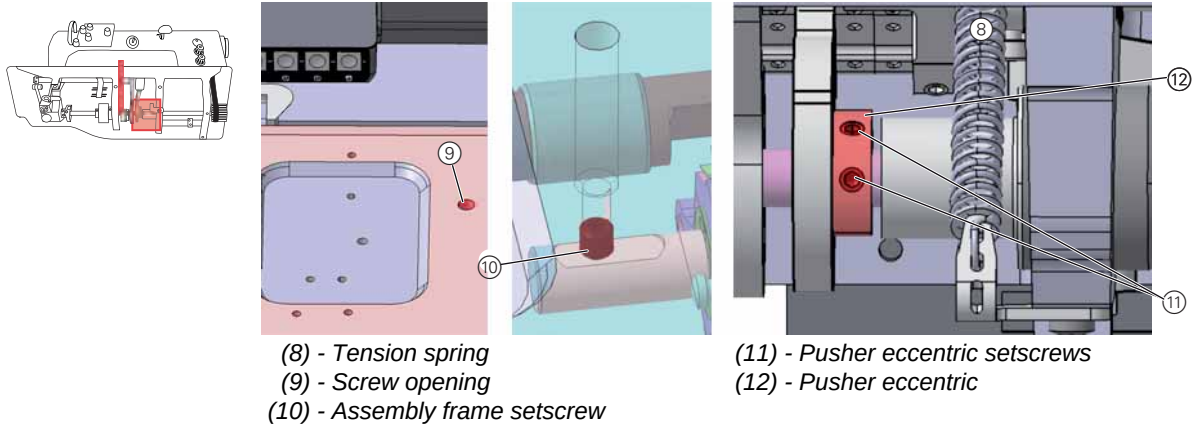


Important: Make sure that the sliding shaft (3) is tightened by the clamping rings.

7. Tighten the setscrews for the adjusting rings (2).

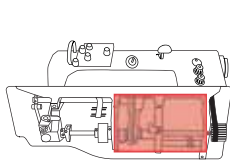
Moving the stitch regulator gear sideways

Figure 25: Moving the stitch regulator gear sideways - Part 1



8. Loosen the assembly frame setscrew (10) through the screw opening (9) using a 3 mm hex key.

9. Loosen the pusher eccentric setscrews (11).



10. Loosen the screw (7).

11. Move the assembly frames (4) sideways such that they are exactly in the center of the cut-outs for the sliding shafts (13).



Important: When doing so, make sure that the gear shaft is not moved so far that the plates hit against the sliding shaft.

12. Tighten the adjusting ring and fasten the screw (7).

13. Tighten the pin and fasten the assembly frame setscrew (10) through the screw opening (9).

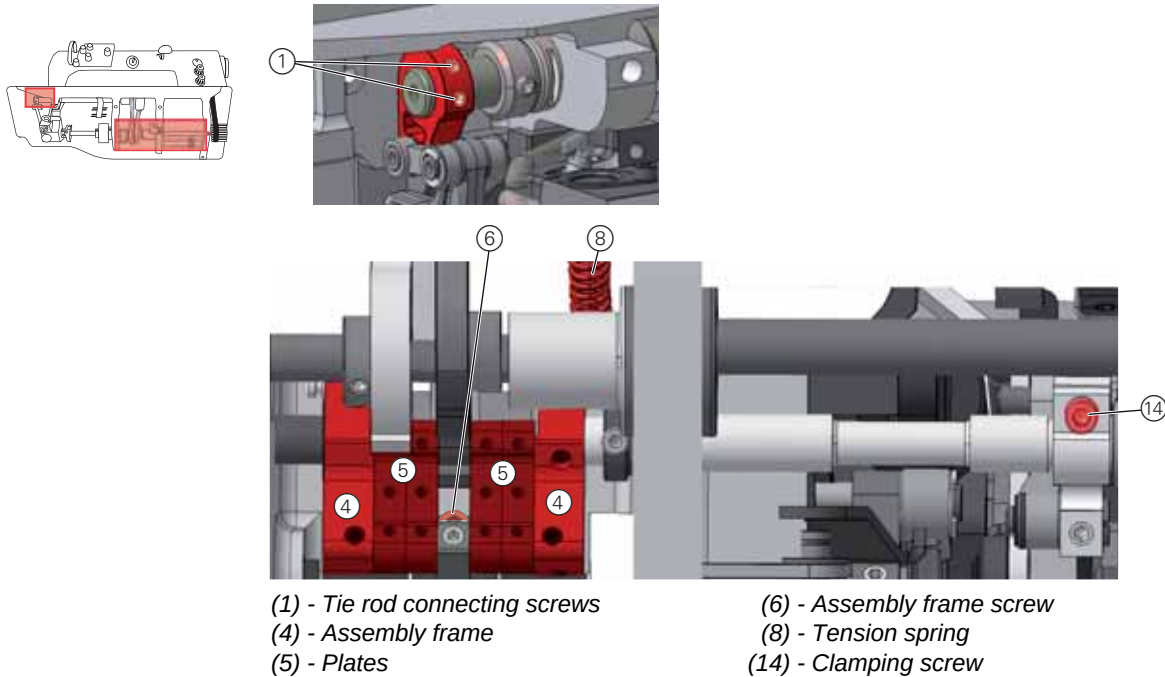
14. Fasten the pusher eccentric setscrews (11).



Important: When fastening the pusher eccentric setscrews (11), make sure that the feed movement of the feed-dog is correctly set (📖 Section 9.2.1 Setting the feed movement, page 37).

Moving the feed-dog carrier in the sewing direction

Figure 27: Moving the feed-dog carrier cross-line to the sewing direction



15. Position the upper stitch length adjusting wheel to 0.

16. Loosen the clamping screw (14).

17. Align the assembly frame such that the plates (5) are parallel to one another.

18. Tighten the clamping screw (14).

19. Move the feed-dog carrier in the sewing direction such that it is exactly in the center of the throat plate cut-out.

20. Tighten the rear assembly frame screw (6).

21. Tighten the connection to the tie rod using the screws (1).



Important: In the process, make sure that the feed-dog height has the correct setting (📖 Section 9.2.2 *Setting the feed-dog height in the top dead center*, page 38).

22. Attach the tension spring (8) back in the mounting bracket.

9.2 Setting the feed-dog movement

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



Sequence

First check the following settings:

- Feed-dog ( Section 9.1 *Setting the feed-dog position*, page 31)

9.2.1 Setting the feed movement

WARNING



Risk of crushing

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

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



Correct setting

Handwheel at the 190° position and set the upper stitch length adjusting wheel to the maximum stitch length:

- ✎ If the stitch adjustment lever is pressed downwards, then the feed-dog will stand still.



Cover

- Tilt the upper section backwards
( Section 4.4.1 *Access to the machine bottom section*, page 10)

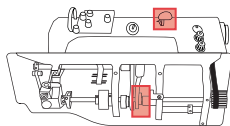
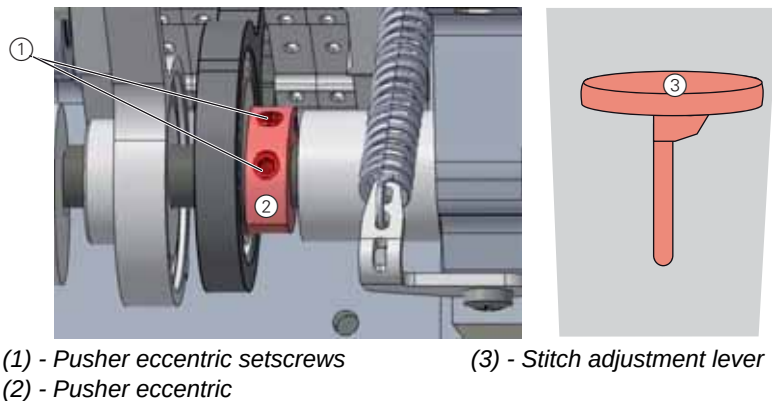


Figure 28: Setting the feed movement for the feed-dog



Setting steps

1. Set the upper stitch length adjusting wheel to the maximum stitch length.
2. Loosen the pusher eccentric setscrews (1).
3. Put the handwheel into the 190° position.
4. Press stitch adjustment lever (3) downwards and observe the feed-dog and needle in the process.

5. Turn the pusher eccentric (2) such that the feed-dog and needle no longer move when the stitch adjustment lever (3) is pressed.
6. Tighten the pusher eccentric setscrews (1).

9.2.2 Setting the feed-dog height in the top dead center

WARNING



Risk of crushing

Switch off the sewing machine before checking and setting the feed-dog height.

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



Correct setting

Handwheel in the 190° position:

- ✎ The upper edge of the feed-dog protrudes 0.8 mm above the throat plate.



Cover

- Tilt the upper section backwards
(📖 Section 4.4.1 Access to the machine bottom section, page 10)

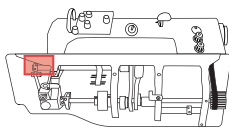
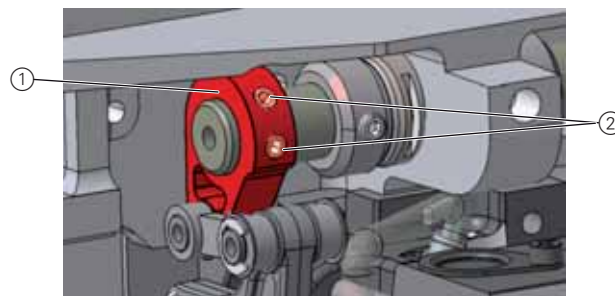


Figure 29: Setting the feed-dog height



(1) - Lever

(2) - Setscrews



Setting steps

1. Put the handwheel into the 190° position.
2. Loosen the setscrews (2) on the lever (1) at the left, above the hook.
3. Turn the lever (1) such that the upper edge of the feed-dog protrudes 0.8 mm above the throat plate.
4. Tighten the setscrews (2).

9.2.3 Setting the stroke movement

WARNING



Risk of crushing

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



Sequence

First check the following settings:

- Feed-dog height ( Section 9.2.2 *Setting the feed-dog height in the top dead center*, page 38)



Correct setting

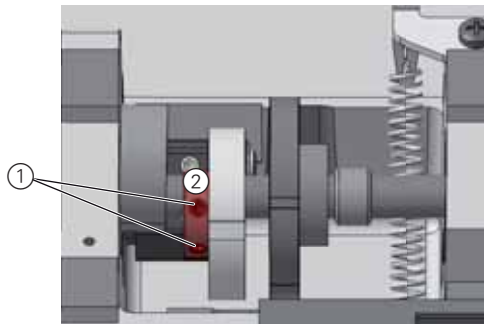
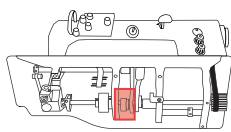
At the front dead center (handwheel position 90°) and at the rear dead center (handwheel position 270°) for the feed-dog, the upper edge of the feed-dog is at the same height as the upper edge of the throat plates. At 90°, the feed-dog is in the upward movement; at 270°, in the downward movement.



Cover

- Tilt the upper section backwards
( Section 4.4.1 *Access to the machine bottom section*, page 10)

Figure 30: Setting the feed-dog stroke



(1) - Stroke eccentric setscrews

(2) - Stroke eccentric



Setting steps

1. Loosen the stroke eccentric setscrews (1).
2. Put the handwheel into the 90° position.
3. Turn the stroke eccentric (2) such that the upper edge of the feed-dog is in the upward movement and at the same height as the upper edge of the throat plates.
4. Tighten the stroke eccentric setscrews (1).

9.2.4 Setting the compensating weight

WARNING



Risk of crushing

Switch the sewing machine off before you check and set the position of the compensating weight.



Correct setting

Handwheel position 210°:

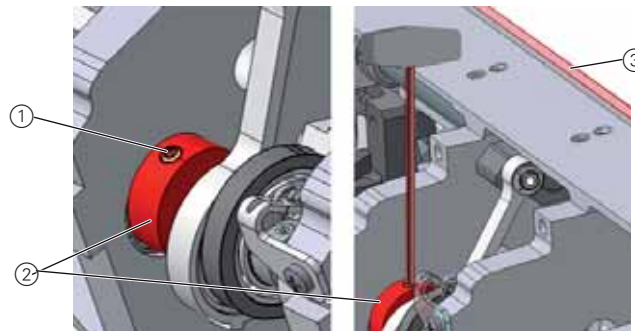
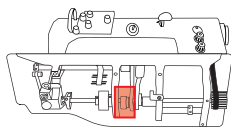
↳ The setscrew for the compensating weight is parallel to the base plate.



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)

Figure 31: Setting the position of the compensating weight



(1) - Setscrew

(2) - Compensating weight

(3) - Base plate

Setting steps



1. Put the handwheel into the 210° position.
2. Loosen the setscrew (1) on the compensating weight (2) using a 3 mm hex key.
3. Leave the hex key inserted in the setscrew.
4. Turn the compensating weight (2) such that the setscrew (1) is parallel to the base plate (3). Use the hex key inserted in the setscrew as a means of orientation.
5. Tighten the setscrew (1) on the compensating weight (2).

10 Aligning the needle bar linkage



Sequence

First check the following settings:

- A straight and undamaged needle has to be inserted
( *Betriebsanleitung Kap. 7.3 Nadel einsetzen und wechseln*)



Correct setting

Upper stitch length adjusting wheel to 0:

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

10.1 Moving the needle bar linkage sideways

WARNING



Risk of injury

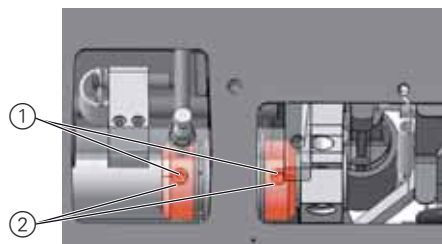
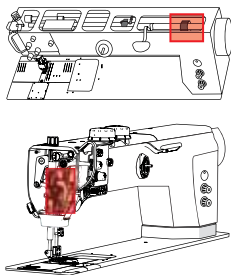
Switch off the sewing machine before aligning the needle bar linkage sideways.



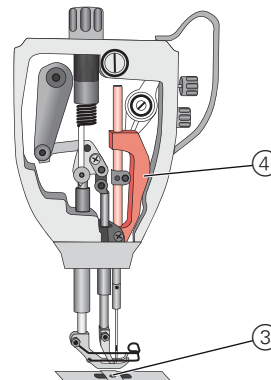
Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)
- Head cover ( Section 4.4.3 *Removing and fitting the head cover*, page 11)

Figure 32: Aligning the needle bar linkage sideways



- (1) - Setscrews
(2) - Adjusting rings



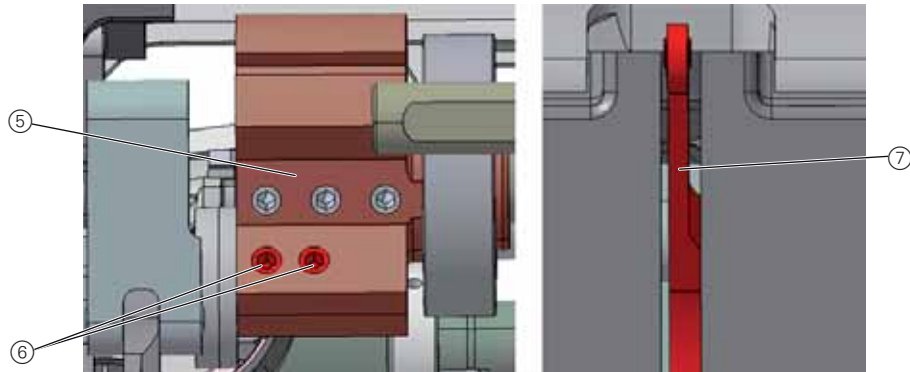
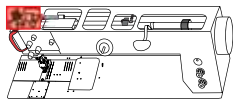
- (3) - Needle hole
(4) - Needle bar linkage



Setting steps

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

Figure 33: Aligning the thread lever sideways



(5) - Arm shaft crank
(6) - Setscrews

(7) - Thread lever



3. Loosen the two setscrews (6) on the arm shaft crank (5).

Important: Make sure that the setscrews stay on the surface.



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



Sequence

Then check the following settings:

- Loop stroke position
(📖 Section 11.2 *Setting the loop stroke position*, page 47)
- Distance of the hook to the needle
(📖 Section 11.1 *Setting the hook side clearance*, page 45)

10.2 Aligning the needle bar linkage in the sewing direction

WARNING



Risk of injury

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



Cover

- Valve cover ( Section 4.4.4 *Removing and fitting the valve cover*, page 12)
- Tilt the upper section backwards ( Section 4.4.1 *Access to the machine bottom section*, page 10)

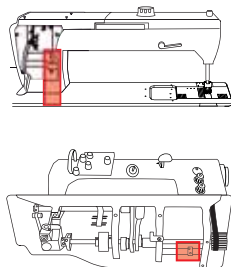
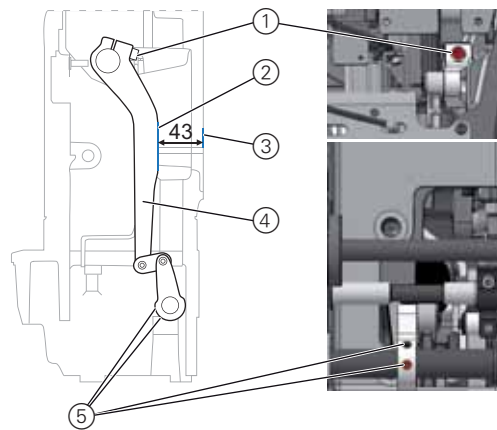


Figure 34: Aligning the needle bar linkage in the sewing direction



(1) - Screw
(2) - Straight surface

(3) - Outer edge
(4) - Lever
(5) - Setscrews



Setting steps

1. Position the lower stitch length adjusting wheel to 0.
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the screw (1).
4. Loosen the setscrews (5).
5. Move the needle bar linkage in the sewing direction such that the distance between the straight surface (2) of the lever (4) and the outer edge (3) of the rear arm surface is exactly 43 mm.
6. Tighten the setscrews (5).
7. Turn the needle so far downwards that insertion into the needle hole can be checked.
8. Move the needle bar linkage in the sewing direction such that the needle pierces exactly in the center of the needle hole for the feed-dog.
9. Tighten the screw (1).

**Sequence**

Then check the following settings:

- Loop stroke position
( Section 11.2 *Setting the loop stroke position*, page 47)

11 Position of the hook and needle

11.1 Setting the hook side clearance

WARNING



Risk of injury

Switch off the sewing machine before checking and setting the hook side clearance.



Sequence

First check the following settings:

- Needle bar linkage
( Section 10 *Aligning the needle bar linkage*, page 41)
- Loop stroke position
( Section 11.2 *Setting the loop stroke position*, page 47)

Make sure that a straight and undamaged needle is inserted ( *Operating manual, section 7.3 Inserting and changing the needle*) before you set the hook side clearance.

ATTENTION

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

Check the clearance to the hook tip after inserting a new needle of a different size. Adjust this if necessary.



Correct setting

Machine locked in place in the *loop stroke position* ( page 16):

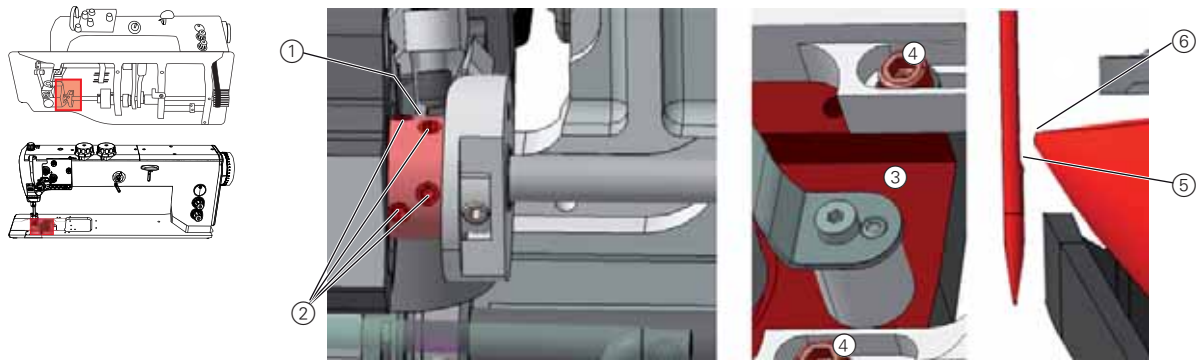
- ✎ Maximum 0.1 mm distance between the hook tip and the groove for the needle.



Cover

- Tilt the upper section backwards
( Section 4.4.1 *Access to the machine bottom section*, page 10)
- Throat plate slide
( Section 4.4.5 *Opening and closing the throat plate slide*, page 13)

Figure 35: Setting the hook clearance



- (1) - Hook clamping ring
(2) - Setscrews
(3) - Hook support

- (4) - Screws
(5) - Groove for the needle
(6) - Hook tip

1. Lock the machine in place in the *loop stroke position* (📖 page 16).
 2. Loosen the screws (4) for the hook support (3).
 3. Loosen the setscrews (2) for the hook clamping ring (1).
 4. Move the hook support (3) 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 (4) for the hook support (3).
- Important:** Check the loop stroke position.
(📖 Section 11.2 *Setting the loop stroke position*, page 47)
6. Tighten the setscrews (2) for the hook clamping ring (1).
 7. Remove the locking mechanism (📖 page 17).



Sequence

Then check the following settings:

- Position of the needle guard
(📖 Section 11.3 *Adjusting the needle guard*, page 49)

11.2 Setting the loop stroke position

WARNING

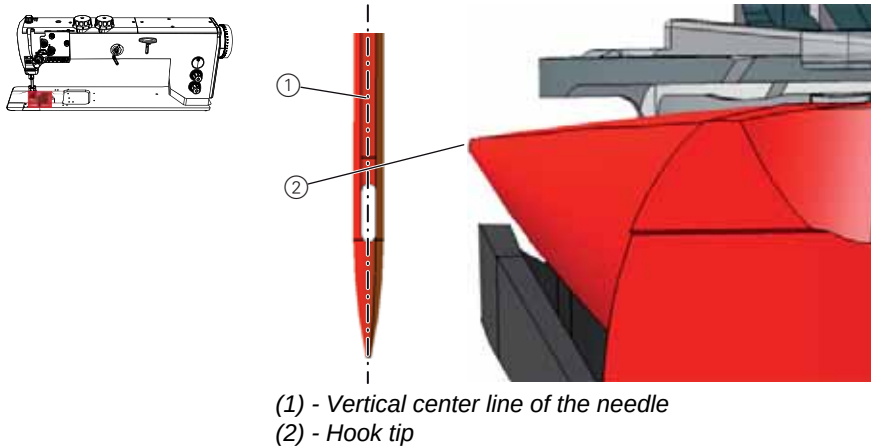


Risk of injury

Switch off the sewing machine before checking and setting the loop stroke position.

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

Figure 36: Loop stroke position - position of the hook tip



The loop stroke is exactly 2.4 mm in the H867.



Sequence

First check the following settings:

- Needle bar linkage
( Section 10 *Aligning the needle bar linkage*, page 41)
- A straight and undamaged needle has to be inserted
( *Betriebsanleitung Kap. 7.3 Nadel einsetzen und wechseln*)



Correct setting

Machine locked in place in the *loop stroke position* ( page 16):

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



Faults caused by an incorrect setting

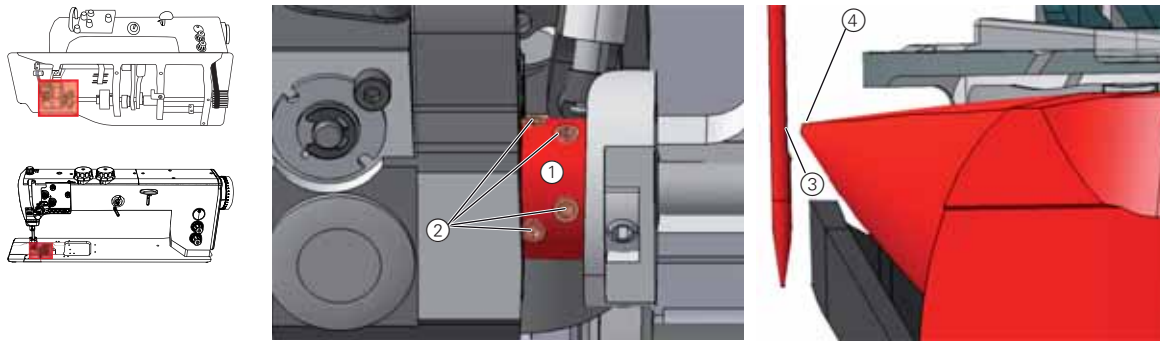
- Missing stitches



Cover

- Tilt the upper section backwards
( Section 4.4.1 *Access to the machine bottom section*, page 10)
- Feed-dog
( Section 4.4.7 *Removing and inserting the feed-dog*, page 15)

Figure 37: Setting the loop stroke position



(1) - Hook clamping ring
(2) - Setscrews

(3) - Groove for the needle
(4) - Hook tip



Setting steps

1. Lock the machine in place in the *loop stroke position* (📖 page 16).
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the four setscrews (2) for the hook clamping ring (1) on the hook housing.
4. Turn the hook such that the hook tip (4) points exactly to the vertical center line of the needle (3).
5. Tighten the setscrews (2) for the hook clamping ring (1).
6. Remove the locking mechanism (📖 page 17).



Sequence

Then check the following settings:

- Position of the needle guard
(📖 Section 11.3 *Adjusting the needle guard*, page 49)
- Point in time in cutting for the thread cutter
(📖 Section 16.4 *Setting the point in time for cutting*, page 74)

11.3 Adjusting the needle guard

WARNING



Risk of injury

Switch off the sewing machine before checking and adjusting the needle guard.

The needle guard prevents contact between needle and hook tip.



Sequence

First check the following settings:

- Loop stroke position
( Section 11.2 *Setting the loop stroke position*, page 47)
- Hook side clearance
( Section 11.1 *Setting the hook side clearance*, page 45)
- Needle bar height
( Section 11.4 *Setting the needle bar height*, page 51)
- A straight and undamaged needle has to be inserted ( *Betriebsanleitung Kap. 7.3 Nadel einsetzen und wechseln*)

ATTENTION

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

Check the clearance to the hook tip after inserting a new needle of a different size. Adjust this if necessary.



Correct setting

Machine locked in place in the *loop stroke position* ( page 16):

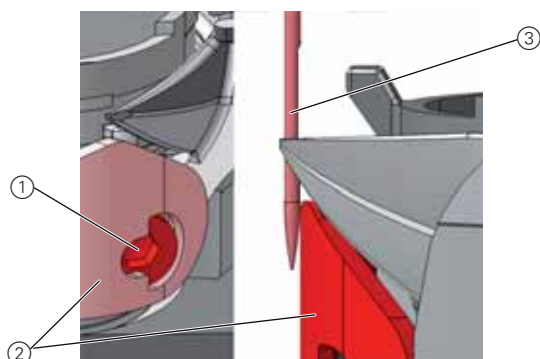
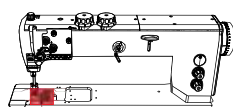
- ✎ The needle guard pushes the needle just enough away so that it cannot be touched by the hook tip.



Cover

- Feed-dog
( Section 4.4.7 *Removing and inserting the feed-dog*, page 15)

Figure 38: Adjusting the needle guard



(1) - Screw

(2) - Needle guard

(3) - Needle



Setting steps

1. Turn the handwheel and check how far the needle guard pushes the needle away.
2. Turn the screw (1) on the needle guard (2) 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 it counterclockwise
 - **For pushing away less:** Turn it clockwise

11.4 Setting the needle bar height

WARNING



Risk of injury by the needle point and moving parts

Switch off the sewing machine before checking and setting the needle bar height.



Sequence

First check the following settings:

- Loop stroke position
( Section 11.2 *Setting the loop stroke position*, page 47)
- A straight and undamaged needle has to be inserted ( *Betriebsanleitung Kap. 7.3 Nadel einsetzen und wechseln*)



Correct setting

Machine locked in place in the *loop stroke position* ( page 16) and the upper stitch length adjusting wheel set to 0:

- ✎ The hook tip is at the level of the lower third of the groove for the needle.



Faults caused by an incorrect needle bar height

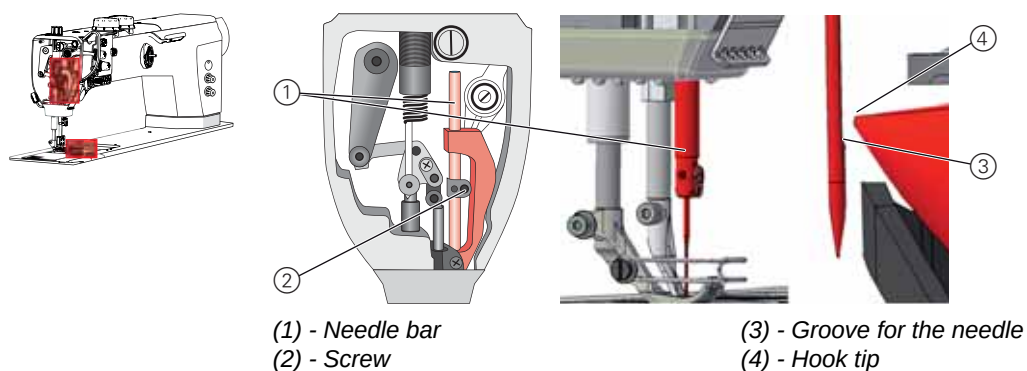
- Damage to the hook tip
- Jamming of the needle thread
- Missing stitches
- Thread breakage
- Needle breakage



Cover

- Head cover ( Section 4.4.3 *Removing and fitting the head cover*, page 11)

Figure 39: Setting the needle bar height



Setting steps

1. Lock the machine in place in the *loop stroke position* (📖 page 16).
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the screw (2) for the needle bar (1).
4. Move the height of the needle bar (1) such that the hook tip (4) is in the middle of the lower third of the groove for the needle.



Important: Do not twist the needle to the side in doing so.
The groove (3) for the needle must face the hook.

5. Tighten the screw (2) for the needle bar (1).
6. Remove the locking mechanism (📖 page 17).



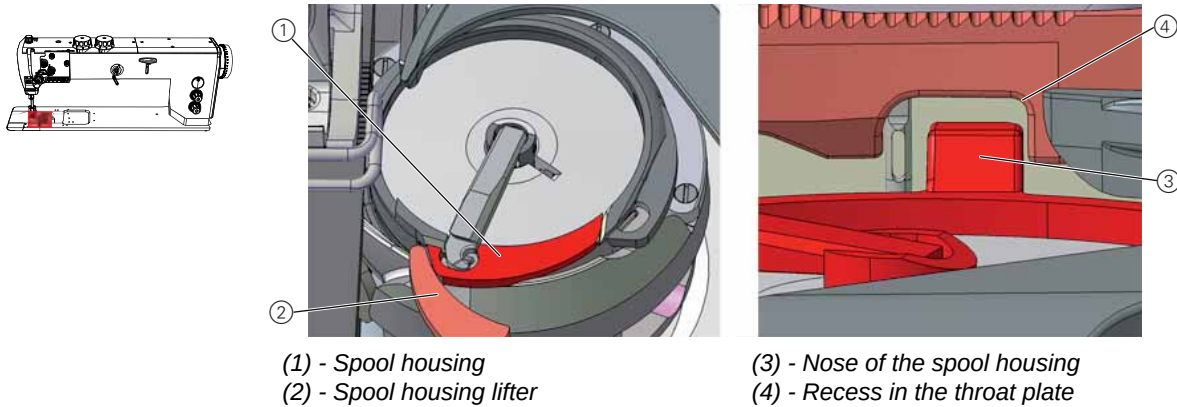
Sequence

Then check the following settings:

- Position of the needle guard
(📖 Section 11.3 Adjusting the needle guard, page 49)

12 Setting the spool housing lifter

Figure 40: Spool housing lifter



The hook pulls the needle thread through between the nose of the spool housing (3) and the recess in the throat plate (4).

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

If the hook tip is located below the spool housing lifter, then the spool housing 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 point in time of opening have to be set.



Faults caused by an incorrect setting:

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

12.1 Setting the lifting gap

WARNING



Risk of injury

Switch off the sewing machine before setting the width of the lifting gap.



Sequence

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 size of the needle thread.



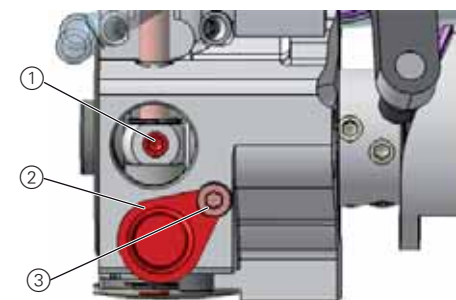
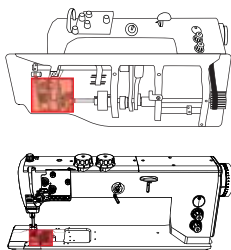
Correct setting

The needle thread slides through unobstructed between the nose of the spool housing and the recess in the throat plate.



Cover

- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)
- Throat plate slide
(Section 4.4.5 Opening and closing the throat plate slide, page 13)



- (1) - Setscrew
(2) - Cover



- (3) - Cover screw
(4) - Spool housing lifter

Figure 41: Setting the lifting gap



Setting steps

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



Important: The gap must not be so big that the middle part of the hook swings to and fro, hitting the recess in the throat plate.

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

12.2 Setting the point in time of opening

WARNING



Risk of injury

Switch off the sewing machine before checking and setting the point in time of opening.



Correct setting

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

In 1-needle machines, this happens when the handwheel position is approx. 100°.

In 2-needle machines, this happens when the handwheel position is approx. 100° for the right-hand hook, and when the handwheel position is approx. 300° for the left-hand hook.

For 100° or 300°, the control cam setscrew (4) is exactly in the middle of the opening. (insert hex key in the setscrew for orientation)



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)

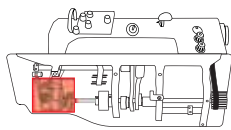
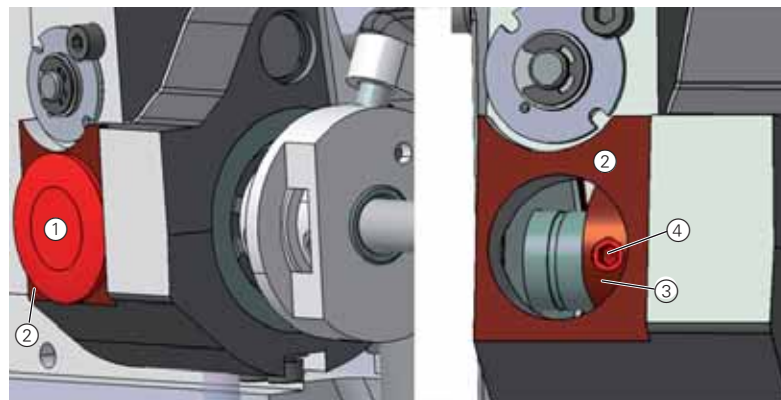


Figure 42: Setting the point in time of lifting



(1) - Plug
(2) - Hook housing

(3) - Control cam
(4) - Control cam setscrew



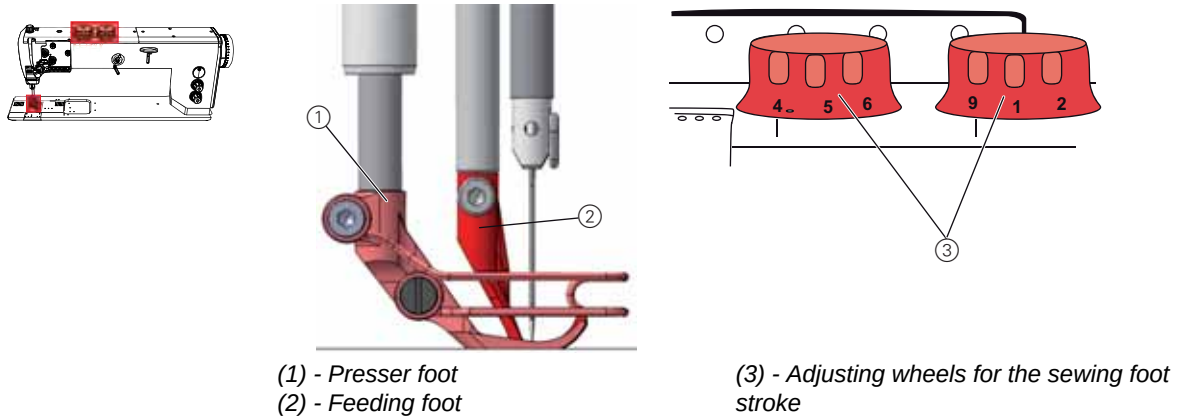
Setting steps

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

13 Sewing feet

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

Figure 43: Adjusting wheels for the sewing foot stroke



ATTENTION

Machine damage possible if the adjusting wheels are turned using brute force

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

13.1 Setting an even sewing foot stroke

WARNING



Risk of injury

Switch off the sewing machine before checking and setting the sewing foot stroke.



Correct setting

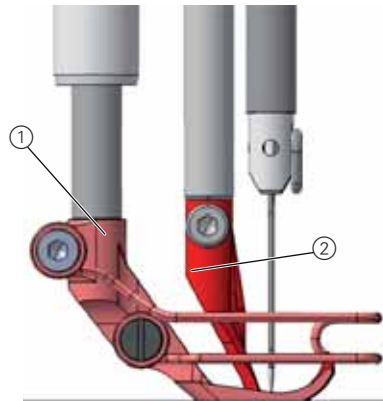
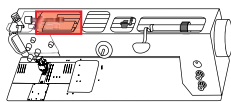
For sewing foot stroke 3, the presser foot and feeding foot are raised by the same height.



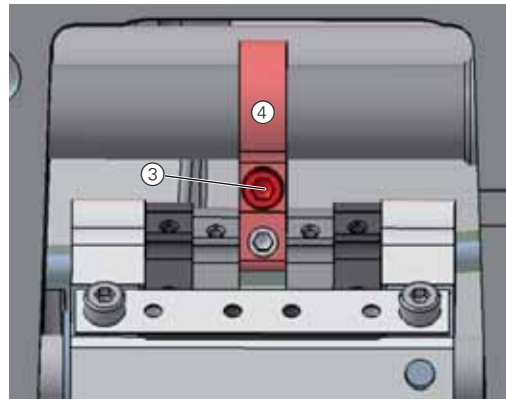
Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)

Figure 44: Setting an even sewing foot stroke



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



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



Performing the setting steps

1. Set the handwheel to the 0° position.
2. Loosen the screw (3) for the sewing foot lever (4).
3. Lower the presser foot (1) and feeding foot (2) together down to the throat plate.



Important: Make sure that the feeding foot is only lowered down to the throat plate. Do not inadvertently lower the feeding foot through the throat plate cut-out down to the feed-dog.

4. Tighten the screw (3) for the sewing foot lever (4).

13.2 Setting the stroke movement for the feeding foot

WARNING



Risk of injury

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

For correct feed, the stroke movement for the feeding foot must be aligned to the stroke movement for the feed-dog.



Sequence

First check the following settings:

- Feed-dog movement
(Section 9.2 *Setting the feed-dog movement*, page 37)
- Even sewing foot stroke (Section 13.1 *Setting an even sewing foot stroke*, page 57)

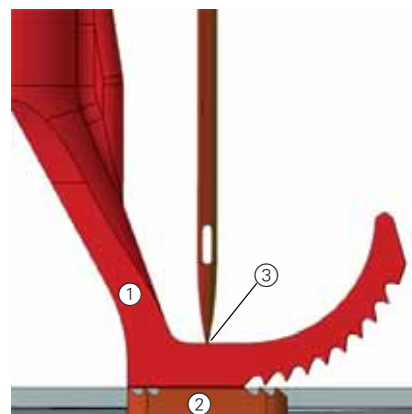


Correct setting

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

- ✎ The feeding foot (1) touches down exactly on the feed-dog (2) when the downwards 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.

Figure 45: Stroke movement for the feeding foot and feed-dog



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

(3) - Needle tip



Cover

- Arm cover (Section 4.4.2 *Removing and fitting the arm cover*, page 11)

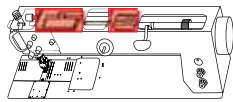
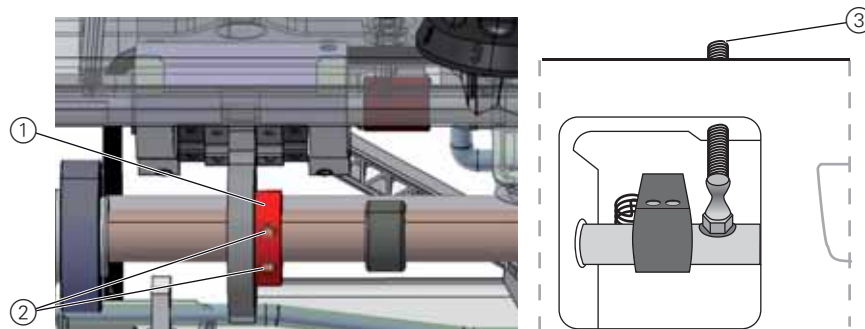


Figure 46: Setting the point in time for when the feeding foot touches down



(1) - Stroke eccentric

(2) - Stroke eccentric setscrews

(3) - Setscrew



Setting steps

1. Screw in the setscrew (3) so that a stroke is available.
2. Position the upper stitch length adjusting wheel to 0.
3. Loosen the stroke eccentric setscrews (2).
4. Turn the stroke eccentric (1) such that the feeding foot touches down on the feed-dog when the handwheel is in the 95° position.



Important: Do not move the stroke eccentric (1) laterally on the axle in doing so.

5. Tighten the stroke eccentric setscrews (2).
6. Unscrew the setscrew (3) far enough so that there is no longer any contact with the clamp.

13.3 Setting the sewing foot pressure

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

The correct pressure depends on the material to be sewn:

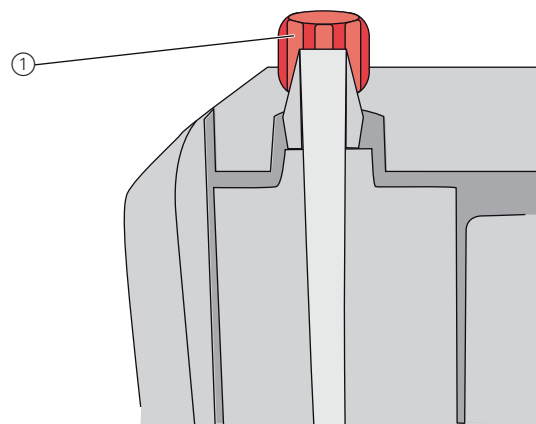
- Lower pressure for soft materials, e. g. silk
- Higher pressure for harder materials, e.g. leather



Correct setting

The material being sewn does not slip and is correctly transported.

Figure 47: Setting the sewing foot pressure



(1) - Adjusting wheel for the sewing foot pressure



Setting steps

1. Turn the adjusting wheel for the sewing foot pressure (1):
 - **To the right:** more pressure
 - **To the left:** less pressure

13.4 Setting the sewing foot lifting height

WARNING



Increased risk of injury

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

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

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

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

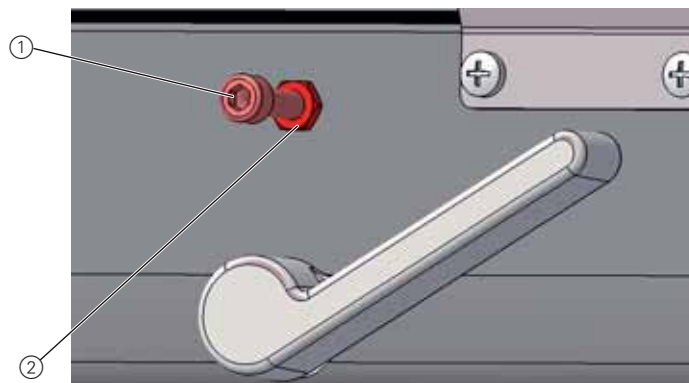
When the pedal is pressed completely back, the sewing feet will be raised after the thread is cut so that the material being sewn can be exchanged.



Correct setting

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

Figure 48: Setting the sewing foot lifting height



(1) - Adjusting screw

(2) - Counternut



Setting steps

1. Loosen the counternut (2) for the adjusting screw (1).
2. Turn the adjusting screw (1) to set the distance between the raised sewing feet and the throat plate:
 - **To raise the sewing feet to a lesser height:** Turn the screw to the right
 - **To raise the sewing feet higher:** Turn the screw to the left
3. Tighten the counternut (2) for the adjusting screw (1).

14 Adjusting the needle thread tension

14.1 Setting the thread regulator

WARNING



Risk of injury by the needle point and moving parts

Switch off the sewing machine before checking and setting the thread regulator.

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

Lower thread tension for

- thin material
- low thread strengths

Greater thread tension for

- thick material
- high thread strengths



Correct setting

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



Cover

- Throat plate slide
( Section 4.4.5 *Opening and closing the throat plate slide*, page 13)

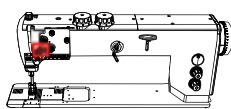
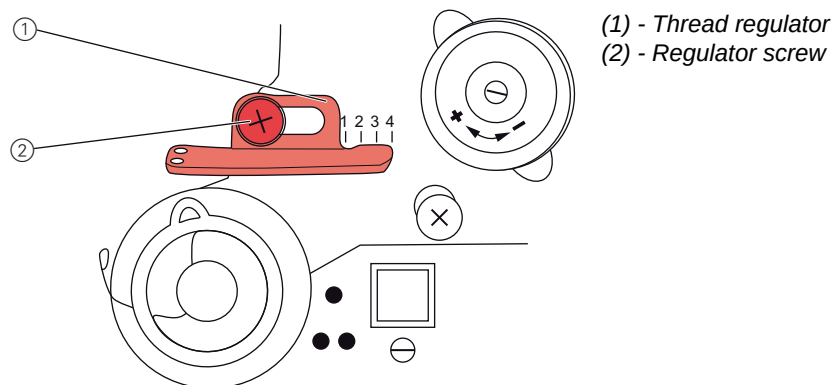


Figure 49: Setting the thread regulator



Setting steps

1. Turn the handwheel and observe the cycle of the needle thread around the hook.
2. Loosen the regulator screw (2).

3. Move the thread regulator
 - **To reduce the tension:** push to the left
 - **To increase the tension:** push to the right
4. Tighten the regulator screw (2).

14.2 Setting the thread tensioning spring

WARNING



Risk of injury by the needle point and moving parts

Switch off the sewing machine before checking and setting the thread tensioning spring.

The thread tensioning spring holds the needle thread under tension from the upper position of the thread lever up to the point when the needle eye plunges into the material being sewn.



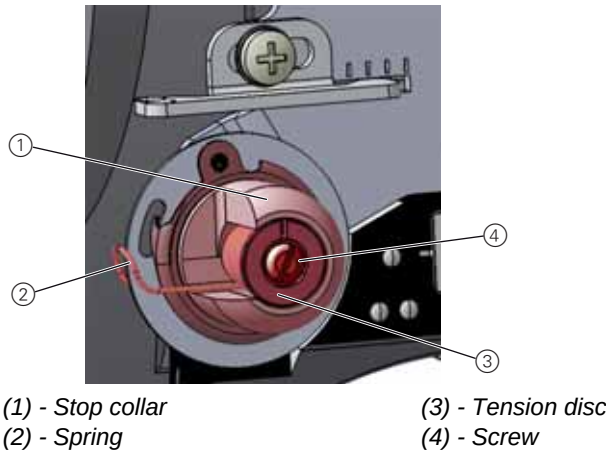
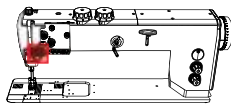
Correct setting

Basic setting: The thread tensioning spring does not contact the stop until the needle eye has plunged into the material being sewn.



The setting for the thread tensioning spring has to vary according to the material being sewn and required sewing result.

Figure 50: Setting the thread tensioning spring



Setting steps

1. Loosen the screw (4).
2. **Setting the spring travel**
Turn the stop collar (1):
 - **Longer spring travel:** Turn the collar to the left
 - **Shorter spring travel:** Turn the collar to the right

3. Setting the spring tension

Turn the tension disc (3):

- **Greater spring tension:** Turn the disc to the left
- **Less spring tension:** Turn the disc to the right



Important: Do not twist the stop collar in doing so.

4. Tighten the screw (4) using a slotted screwdriver.

15 Winder

15.1 Position of the winder wheel in long arm machines

Long arm machines

Long arm machines have the winder in the center of the machine arm. The winder wheel is therefore not aligned on the upper toothed belt wheel in long arm machines, but rather on the driver wheel in the machine arm.

WARNING



Risk of injury

Switch off the sewing machine before setting the position of the winder wheel.

Correct setting

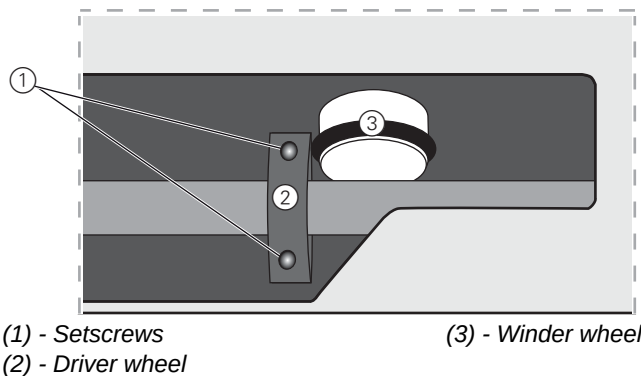
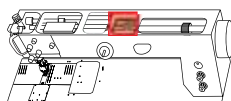
The distance between the winder wheel and the driver wheel is 0.8 mm.



Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)

Figure 51: Setting the distance between the winder wheel and driver wheel



Setting steps

1. Loosen the two setscrews (1) on the driver wheel (2).
2. Move the driver wheel (2) to the right or left such that distance to the winder wheel (3) is exactly 0.8 mm.
3. Tighten the two setscrews (1) on the driver wheel (2).

15.2 Setting the winder

WARNING



Risk of injury

Switch off the sewing machine before setting the winder.



Correct setting

The winder wheel runs smoothly and without axial play.

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



Cover

- Arm cover (Section 4.4.2 *Removing and fitting the arm cover*, page 11)

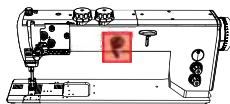
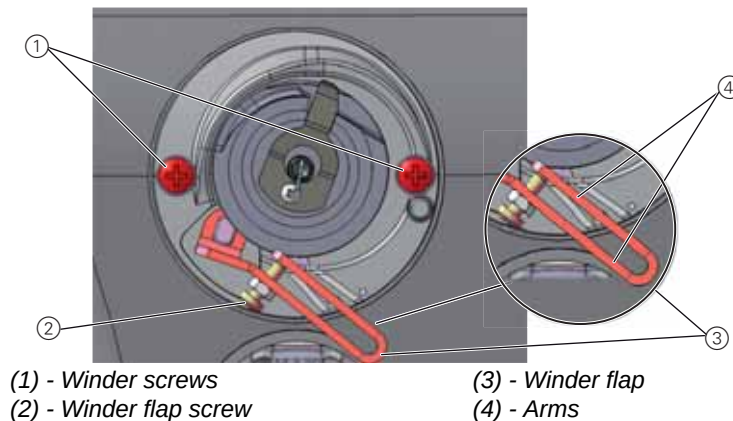


Figure 52: Removing the winder and setting the winder filling quantity



Setting steps

Removing the winder

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



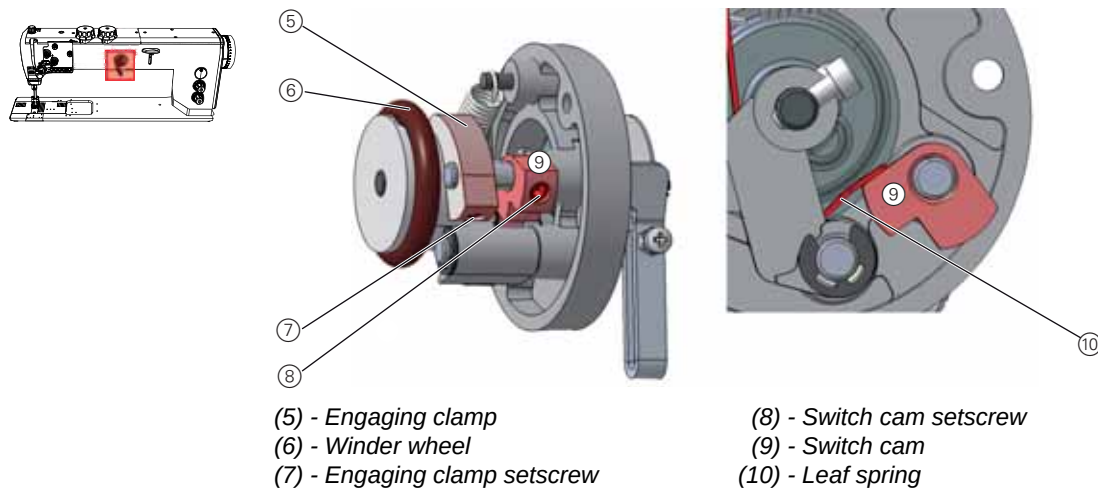
Setting the winder filling quantity

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

- **Arms parallel:**
Automatic winding stop at 0.5 mm under the edge of the winder
- **Arms closer together:**
Automatic stop with larger filling quantity
- **Arms further apart from each other:**
Automatic stop with smaller filling quantity

3. Turn the winder flap screw (2):
 - **Arms closer together:** Turn the screw to the left
 - **Arms further apart from each other:** Turn the screw to the right
4. Put the completely filled bobbin onto the winder.
5. Fold the winder flap (3) upwards as far as it will go to the thread.

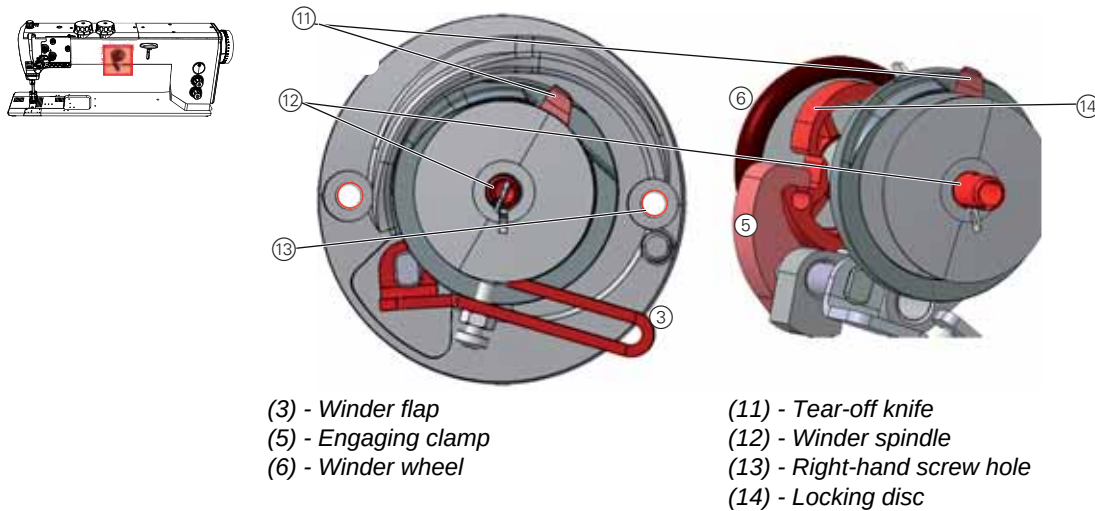
Figure 53: Setting the winder run and automatic stop



Setting the winder run

6. Loosen the switch cam setscrew (8).
7. Set the switch cam (9) such that it is just contacting the leaf spring (10) when the engaging clamp (5) has engaged in the locking disc.
8. Set the switch cam (9) such that the winder flap (3) has no axial play.
9. Tighten the switch cam setscrew (8).

Figure 54: Setting the winder spacing

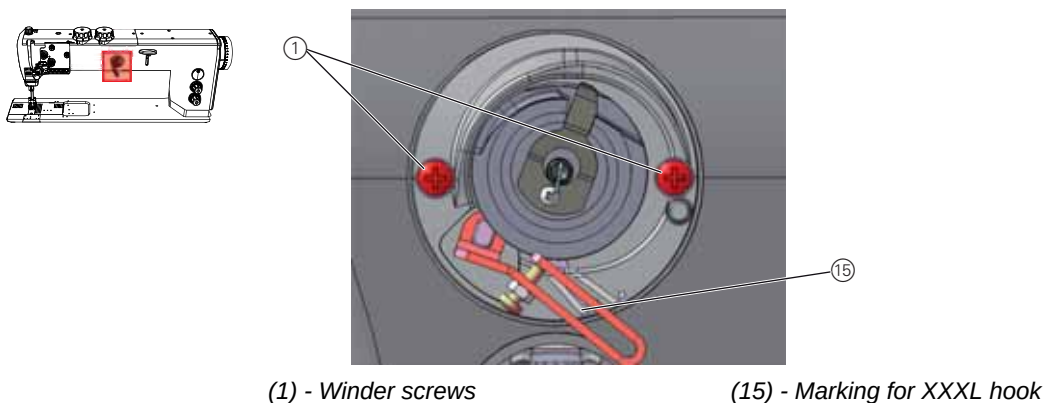


Setting the winder spacing



10. Turn the winder spindle (12) such that the tear-off knife (11) is at the top right and is facing the right-hand screw hole (13).
11. Loosen the setscrew in the engaging clamp (5).
12. Set the winder flap (3) such that the upper arm is above the marking for the XXXL hook (15).
 ↳ The distance between the winder flap and the outer thread on the bobbin is then 2 – 3 mm.
13. Set the engaging clamp (5) such that it is resting against the locking disc (14).
14. Set the engaging clamp (5) such that its distance to the winder wheel (6) is 0.5 mm.
15. Tighten the setscrew in the engaging clamp (5).

Figure 55: Installing the winder



Installing the winder



16. Fit the winder on the machine arm.
17. Screw the winder screws (1) firmly in place.

15.3 Setting the hook thread guide

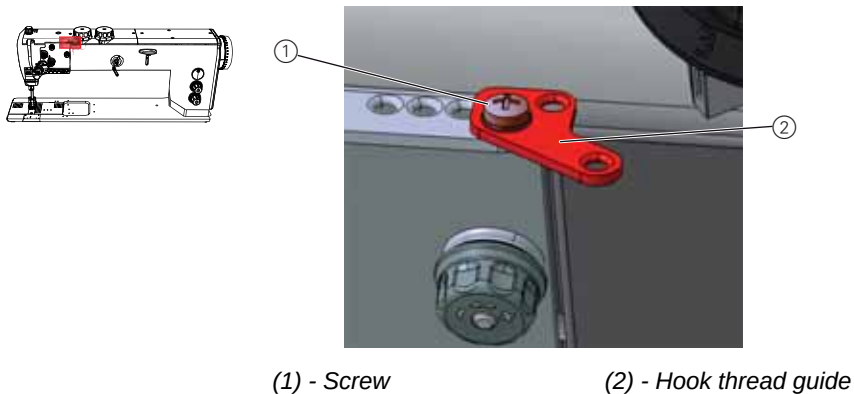
The position of the hook thread guide determines how the thread is wound onto the winder.



Correct setting

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

Figure 56: Setting the hook thread guide



Setting steps

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

16.1 Setting the position of the thread-pulling knife

16.1.1 Setting the height of the thread-pulling knife

WARNING



Risk of injury

Switch the sewing machine off before you check and set 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 ± 0.5 mm. Fine adjustment is made by means of washers between the knife carrier (4) and the thread-pulling knife (2).



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



Correct 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

- Throat plate slide
(Section 4.4.5 Opening and closing the throat plate slide, page 13)

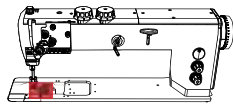
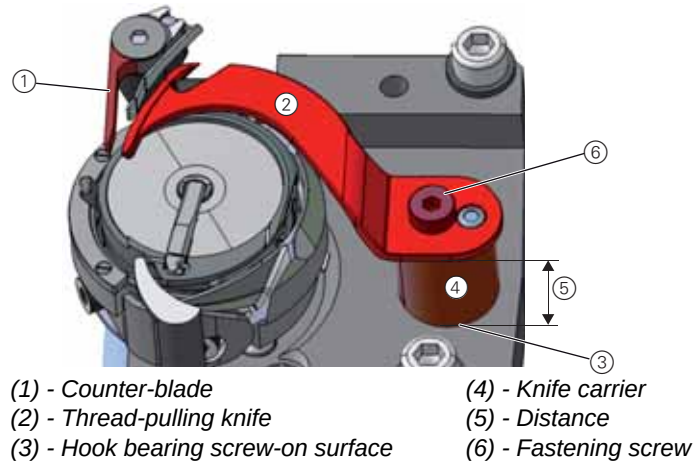


Figure 57: Setting the height of the thread-pulling knife



Setting steps

1. Loosen the fastening screw (6).
2. Remove the thread-pulling knife (2).
3. Place as many washers between the thread-pulling knife (2) and knife carrier (4) that the upper edges of the 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 fastening screw (6) should be kept.

5. Tighten the thread-pulling knife (2) onto the knife carrier (4) using the fastening screw (6).

16.2 Setting the cutoff curve

WARNING



Risk of injury

Switch off the sewing machine before aligning the thread-pulling knife sideways.



Correct setting

The control cam (4) makes direct contact with the hook 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.

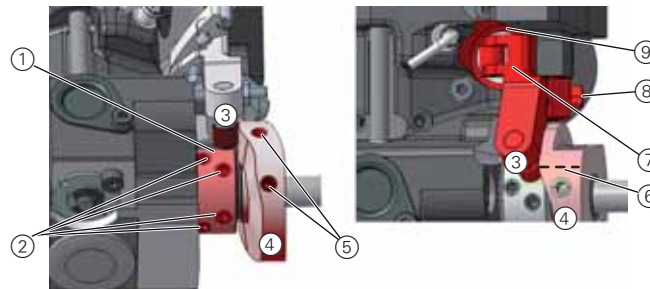
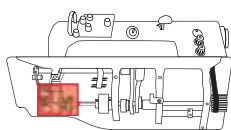
In resting position, the circle mark on the cutting edge of the thread-pulling knife is exactly next to the tip of the counter-blade.



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)
- Throat plate slide
( Section 4.4.5 Opening and closing the throat plate slide, page 13)

Figure 58: Aligning the thread-pulling knife sideways - Part 1



- (1) - Hook clamping ring
- (2) - Setscrews
- (3) - Roller
- (4) - Control cam
- (5) - Control cam setscrews

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



Setting steps

1. Loosen the four setscrews (2) on the hook clamping ring (1).
2. Push the hook clamping ring (1) as far as it will go to the left.
3. Tighten the four setscrews (2) on the hook clamping ring (1).

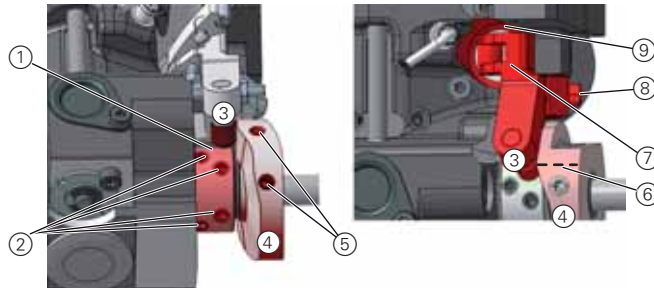
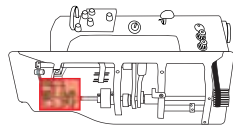


Important: Screw the four setscrews (2) tightly in place on the hook clamping ring (1) before you loosen the control cam setscrews (5). The hook clamping ring (1) and control cam (4) are both mutually used as a stop and should not be undone at the same time.

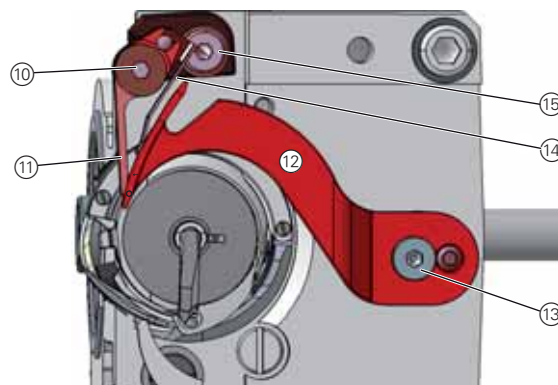
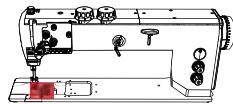
4. Loosen the control cam setscrews (5).
5. Press the actuating lever (7) against the solenoid (9).
6. Turn the control cam (4) such that its widest extent (6) is at the top, next to the roller (3).

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 control cam setscrews (5).
9. Loosen the clamping screw (8) on the actuating lever (7).

Figure 59: Aligning the thread-pulling knife sideways - Part 2



- | | |
|-----------------------------|-----------------------|
| (1) - Hook clamping ring | (6) - Widest extent |
| (2) - Setscrews | (7) - Actuating lever |
| (3) - Roller | (8) - Clamping screw |
| (4) - Control cam | (9) - Solenoid |
| (5) - Control cam setscrews | |



- | | |
|-----------------------------|---------------------------------|
| (10) - Counter-blade screw | (13) - Fastening screw |
| (11) - Counter-blade | (14) - Lower thread clamp |
| (12) - Thread-pulling knife | (15) - Lower thread clamp 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 the four setscrews (2) on the hook clamping ring (1).
13. Push the hook clamping ring (1) to the right as far as it will go and against the control cam (4).



14. **Important:** Check the loop stroke position.
( Section 11.2 Setting the loop stroke position, page 47)
15. Tighten the four setscrews (2) on the hook clamping ring (1).

16.3 Setting the cutting pressure

WARNING



Risk of injury

Switch the sewing machine off before you check and set the counter-blade and the lower thread clamp.

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.



Correct setting

In the rest position, the lower thread clamp makes contact with the thread-pulling knife without any pressure being applied. Two threads with the greatest strength for sewing can be neatly cut simultaneously.



Faults caused by an incorrect setting

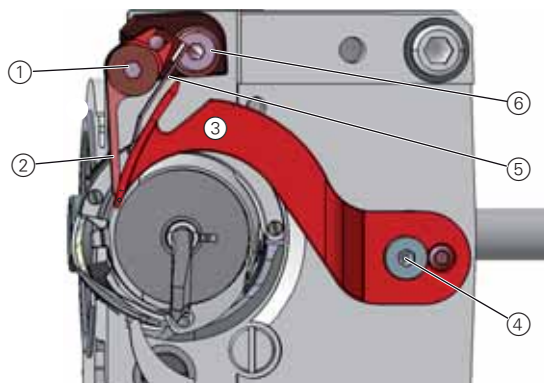
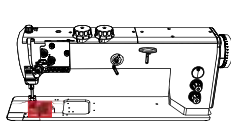
- Increased knife wear when the pressure is too great
- Problems when sewing on if the hook thread clamp is too high
- Problems in cutting the thread



Cover

- Throat plate slide
( Section 4.4.5 Opening and closing the throat plate slide, page 13)

Figure 60: Setting the cutting pressure



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

- (4) - Fastening screw
(5) - Lower thread clamp
(6) - Lower thread clamp screw



Setting steps

1. Turn the handwheel until the thread-pulling knife (3) can be swung out by hand.
2. Loosen the counter-blade 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 lower 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 counter-blade screw (1).



Important: After doing this, check the position of the knives, since the counter-blade can easily become warped when the screw is being tightened.

16.4 Setting the point in time for cutting

WARNING



Risk of injury

Switch off the sewing machine before checking and setting the point in time for cutting.



Correct setting

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



Cover

- Tilt the upper section backwards
(Section 4.4.1 Access to the machine bottom section, page 10)
- Throat plate slide
(Section 4.4.5 Opening and closing the throat plate slide, page 13)

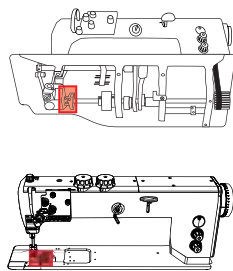
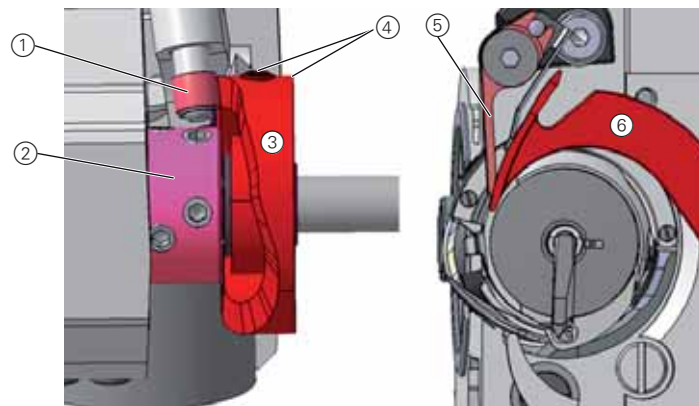


Figure 61: Setting the point in time for cutting



- (1) - Roller
- (2) - Hook clamping ring
- (3) - Control cam

- (4) - Control cam setscrews
- (5) - Counter-blade
- (6) - Thread-pulling knife



Setting steps

1. Loosen the control cam setscrews (4).
2. Turn the handwheel until the thread-pulling knife (6) can be swung out by hand.
3. Pivot the thread-pulling knife (6) as far 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 as far as it will go and against the hook clamping ring (2).

6. Turn the control cam (3) such that the roller (1) runs up at the contour of control cam (3) and the widest extent of the control cam is at handwheel position 60° at the highest point.
7. Tighten the control cam setscrews (4).
8. **Check:** Insert the thread into thread-pulling knife (6) and slowly turn the handwheel. Check in which handwheel position the thread is cut. If necessary, repeat setting steps 1 – 7 until the cut takes place at 60°.

17 Setting the potentiometer

WARNING



Increased risk of injury

The machine remains switched on when the potentiometer is set.

Carry out all work with extreme 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.



Correct setting

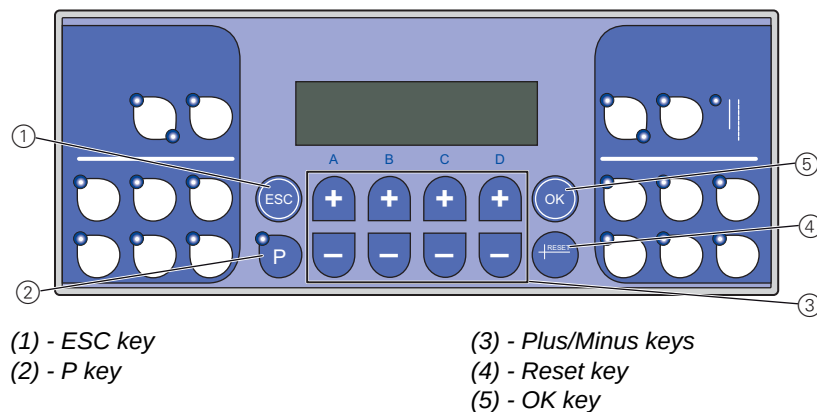
After accessing the technician level and pressing the OK key, the left display will show 1 in the first instance and the relevant maximum speed next to it.



Cover

- Arm cover ( Section 4.4.2 *Removing and fitting the arm cover*, page 11)

Figure 62: Control panel



Setting steps

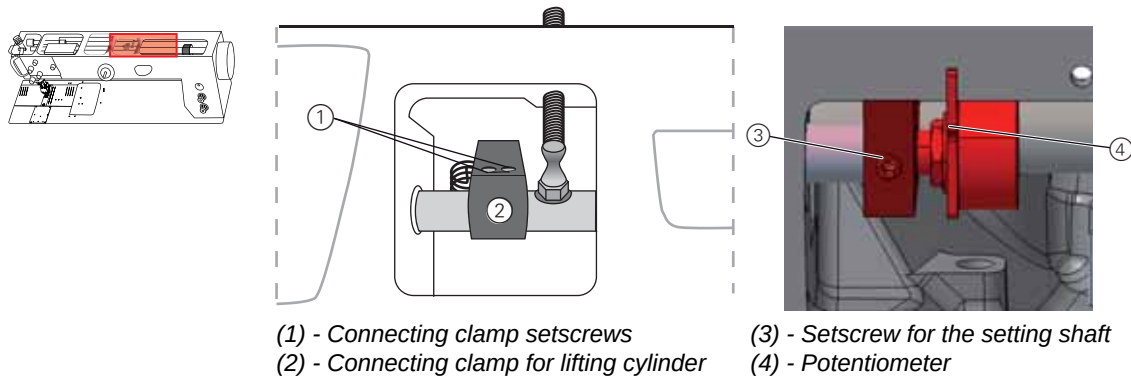
1. Switch off the machine at the main power switch.
2. Keep the P key (2) and Reset key (4) pressed down simultaneously and switch on the machine at the main power switch in doing so.
 - ↳ The display starts.
3. Release the P key (2) and Reset key (4).
 - ↳ The display indicates the current level.

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 keys (3):
 - As the case may be, press the Plus or Minus key under the letter or the number until the display indicates *t 10 04*.
5. Press the OK key (5)

Figure 63: Setting the potentiometer



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



Important:



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

18 Setting 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.

18.1 Attaching the safety snap-on coupling

WARNING



Risk of crushing

Switch off the sewing machine before you reattach the safety snap-on coupling after the thread has jammed.



Correct setting

The four setscrews (1) on the two adjusting rings next to the safety snap-on coupling (3) must be parallel to one another. After the coupling has disengaged, they are no longer parallel.



Cover

- Tilt the upper section backwards
(📖 Section 4.4.1 Access to the machine bottom section, page 10)

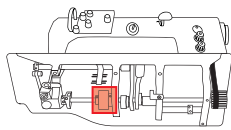
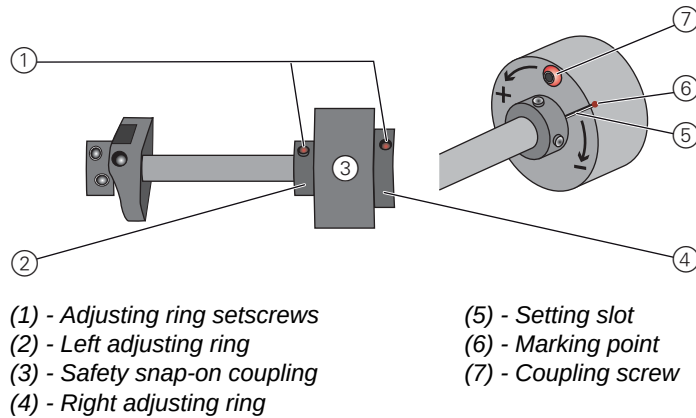


Figure 64: Attaching the safety snap-on coupling



Setting steps

1. Turn the left adjusting ring (2) such that the setscrews (1) on both adjusting rings are parallel to one another.
↳ The coupling engages.

18.2 Setting the torque

WARNING



Risk of crushing

Switch off the sewing machine before checking and setting the safety snap-on coupling.



Correct setting

The machine is set at the factory such that the torque is 8 Nm when the marking point (6) is exactly above the setting slot (5).

ATTENTION

Machine damage due to incorrect torque

If you change the torque, it could be that the coupling will not disengage although this would be required. This could cause machine damage, e. g. in the event of the thread jamming.

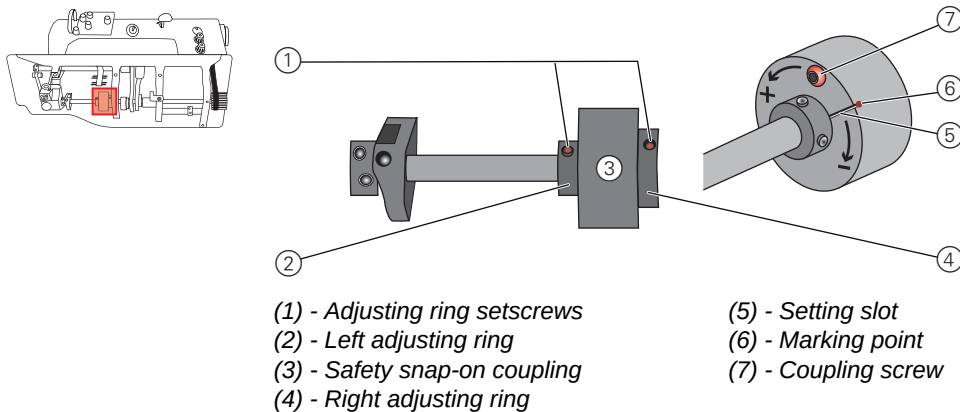
Do not change the factory setting and make sure that the torque remains at 8 Nm.



Cover

- Tilt the upper section backwards
( Section 4.4.1 Access to the machine bottom section, page 10)

Figure 65: Setting the torque for the safety snap-on coupling



Restoring the correct torque:



Setting steps

1. Loosen the coupling screw (7).
2. Using a screwdriver, turn the disc on the setting slot (5) such that 8 Nm is reached for the torque:
 - To increase the force: Turn in the + direction
 - To reduce the force: Turn in the - direction
3. Tighten the coupling screw (3).

19 Lubrication

WARNING



Skin injuries due to contact with oil

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

Avoid any skin contact with the oil. If oil gets on your skin, wash the affected skin areas thoroughly.

ENVIRONMENTAL PROTECTION



Risk of environmental damage from oil.

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

Carefully collect waste oil and dispose of the waste oil and oil-contaminated machine parts in the legally prescribed manner.

Oil to be used:

Only DA 10 or oil of equivalent quality may be used for the machine which has the following properties:

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

ATTENTION

Machine damage possible due to incorrect oil.

An incorrect oil type can cause damage to the machine.

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

19.1 Lubrication of the upper part of the machine

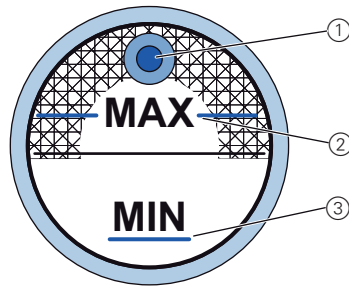
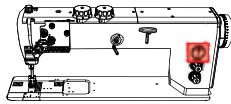
The central oil lubrication system supplies all bearing positions automatically with oil from the reservoir.



Correct setting

The oil level is between the minimum level marking and the maximum level marking.

Figure 66: Lubrication of the upper part of the machine



(1) - Refill opening

(2) - Maximum level marking

(3) - Minimum level marking



Setting steps

1. Check the oil level indicator every day.

If the oil level is below the minimum level marking (3):

2. Pour oil through the refill opening (1) but no higher than the maximum level marking (2).

ATTENTION

Machine damage due to incorrect oil level

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

Check the oil level every day and top up the oil, if necessary.

CLASSIC equipment

Note for machines with CLASSIC equipment

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

1. Switch the sewing machine off and on again after filling with oil.

↪ The red light goes out.

19.2 Hook lubrication

WARNING



Increased risk of injury

When holding the blotting paper, make sure that you do not reach into the hook or underneath the area of the needle and sewing feet.

The approved amount of oil for hook lubrication is a factory specification. Hold a sheet of blotting paper near to the hook when sewing.



Correct setting

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

WARNING



Risk of injury

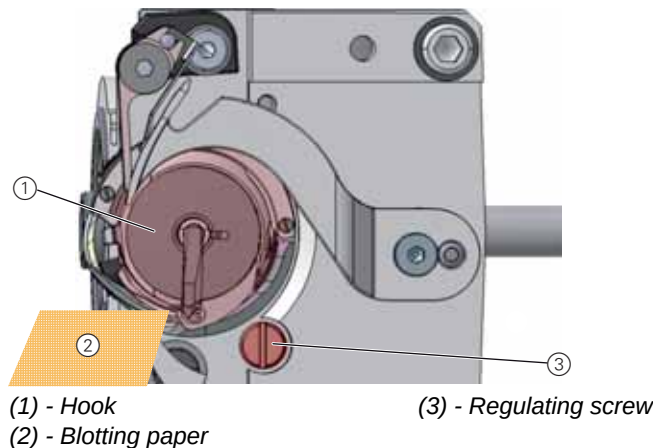
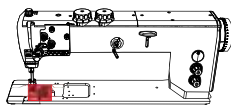
Switch off the sewing machine before adjusting the hook lubrication.



Cover

- Throat plate slide
(Section 4.4.5 *Opening and closing the throat plate slide*, page 13)

Figure 67: Setting the hook lubrication



Setting steps

1. Turn the regulating screw (3):
 - **Turning to the left:** more oil is released
 - **Turning to the right:** less oil is released



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 Maintenance work

20.1 Pneumatic system

20.1.1 Setting the operating pressure:



Correct setting

The operating pressure is 6 bar.

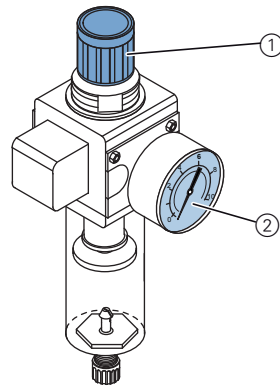
Check the pressure on the pressure indicator every day. The pressure must not deviate from the reference pressure by more than 1 bar.

ATTENTION

Machine damage due to incorrect pressure

An incorrect pressure can cause damage to the machine. Make sure that the machine is only used when the operating pressure is set correctly.

Figure 68: Setting the operating pressure



(1) - Turning handle (2) - Pressure indicator



Setting steps

1. Pull the turning handle (1) up.
2. Turn the turning handle until the pressure indicator (2) indicates 6 bar:
 - **To the right:** To increase pressure
 - **To the left:** To reduce pressure
3. Push the turning handle (1) down.

20.1.2 Draining the water condensation

Water condensation may accumulate in the water separator of the pressure controller.



Correct setting

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

Check the water level in the water separator on a daily basis.

ATTENTION

Machine damage due to too much water

Too much water can cause damage to the machine. Check the water level every day and drain water, if necessary.

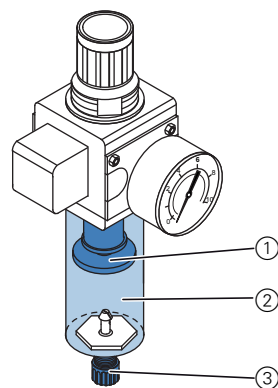
WARNING



Risk of injury

Switch off the machine at the main power switch and disconnect it from the pneumatic network before you drain the water from the water separator.

Figure 69: Draining the water condensation



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

(3) - Drain screw



Maintenance steps

1. Place the collection tray under the drain screw (3).
2. Unscrew the drain screw (3) completely.
3. Allow water to drain into the collection tray.
4. Tighten the drain screw (3).

20.1.3 Cleaning the filter element

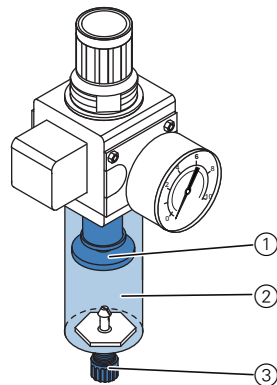
WARNING



Risk of injury

Switch off the machine at the main power switch and disconnect it from the pneumatic network before you clean the filter element.

Figure 70: Cleaning the filter element



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

(3) - Drain screw



Cleaning steps

1. Drain the water condensation (see section 20.1.2).
2. Unscrew the water separator (2).
3. Unscrew the filter element (1).
4. Blow out the filter element (1) using a compressed-air pistol.
5. Wash out the filter tray using benzine.

Attention

Damage to the filter due to solvent-based cleaners

Solvent-based cleaners damage the filter.

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

6. Tighten the filter element (1).
7. Tighten the water separator (2).
8. Tighten the drain screw (3).

20.2 Cleaning work

20.2.1 Cleaning the machine

Sewing dust and thread remains must be removed every 8 operating hours using a compressed-air pistol or a brush. When very fluffy material is used for sewing, the machine must be cleaned more frequently.

WARNING



Risk of injury

Switch off the machine at the main power switch before starting any cleaning work.

Flying dirt particles can get in the eyes, causing injury.

Hold the compressed-air pistol in such a way that no particles fly near persons.

Take care that no particles fly into the oil pan.

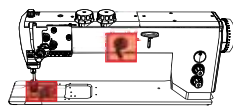
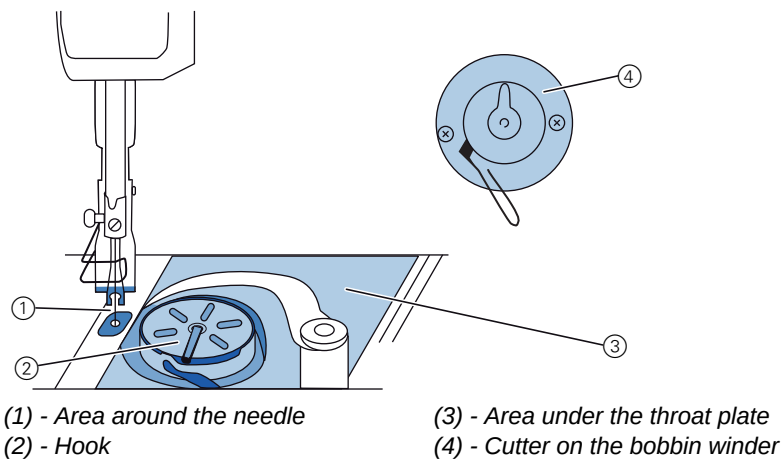


Figure 71: Points that need to be cleaned particularly thoroughly



Areas particularly susceptible to soiling:

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



Cleaning steps

1. Remove any dust and thread remains using a compressed-air pistol or a brush.

Attention**Damage to the paintwork due to solvent-based cleaners**

Solvent-based cleaners damage the paintwork of the machine.

Use only solvent-free substances for cleaning the machine.

20.2.2 Cleaning the motor fan sieve

The motor fan sieve must be cleaned once a month using a compressed-air pistol. When very fluffy material is used for sewing, the motor fan sieve must be cleaned more frequently.

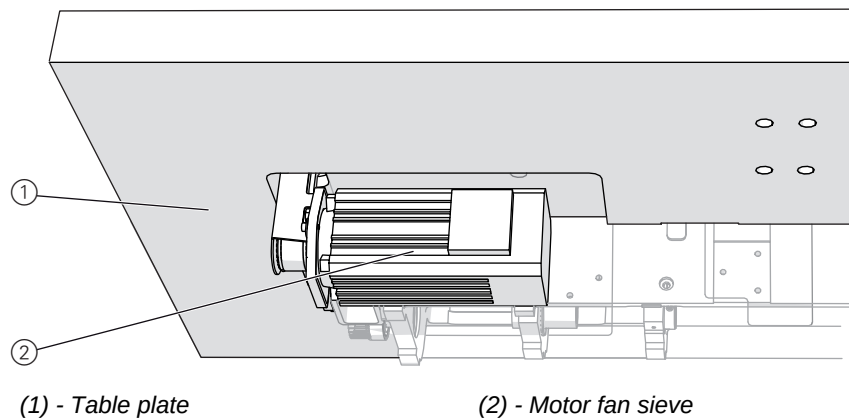
WARNING**Risk of injury**

Switch off the machine at the main power switch before cleaning the motor fan sieve.

Flying dirt particles can get in the eyes, causing injury.

Hold the compressed-air pistol in such a way that no particles fly near persons.

Figure 72: Cleaning the motor fan sieve

**Cleaning steps**

1. Remove any sewing dust and thread remains using a compressed-air pistol.

20.3 Checking the toothed belt

WARNING



Risk of injury

Switch off the machine at the main power switch before checking the condition of the toothed belt.

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

A damaged toothed belt must be replaced immediately.



Correct setting

The toothed belt exhibits no cracks or fragile areas.

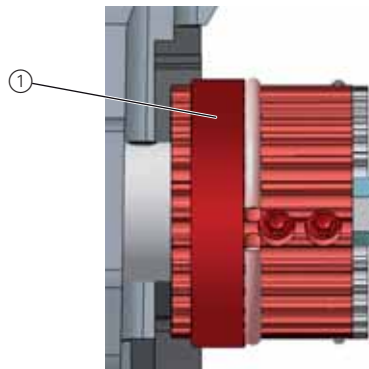
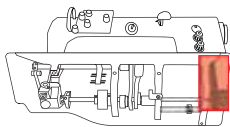
When pressed with a finger, the toothed belt gives no more than 10 mm.



Cover

- Tilt the upper section backwards
(📖 Section 4.4.1 Access to the machine bottom section, page 10)

Figure 73: Checking the toothed belt



(1) - Toothed belt



Test steps

1. Check the toothed belt for cracks or fragile areas.
 - ↪ The toothed belt should be tight and undamaged.
2. Prod the toothed belt gently in the middle using your finger.
 - ↪ The toothed belt should give no more than 10 mm.



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