DÜRKOPP ADLER AG

911

CNC-controlled sewing unit with large sewing area

Operating Instructions

Installation Instructions

Service Instructions

1

2

3

Postfach 17 03 51, D-33703 Bielefeld • Potsdamer Straße 190, D-33719 Bielefeld
Telefon +49 (0) 5 21/ 59 25-00 • Telefax +49 (0) 5 21/ 9 25 24 35 • www.duerkopp-adler.com

Ausgabe / Edition:	Änderungsindex		Teile-Nr./Part.-No.:
08/2010	Rev. index: **00.0**	Printed in Federal Republic of Germany	**0791 911001**

Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

– Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
– Service (maintenance, inspection, repair) and/or
– Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediatly report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanend danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.

2. Before putting into service also read the safety rules and instructions of the motor supplier.

3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.

4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.

5. Daily servicing work must be carried out only by appropriately trained persons.

6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.

8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.

10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.

11. For repairs, only replacement parts approved by us must be used.

12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.

13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).

It is absolutely necessary to respect the safety instructions marked by these signs.

Danger of bodily injuries !

Please note also the general safety instructions.

Contents **Page:**

Part 3: Service instructions class 911

(Edition 08/2010)

1. General

These service instructions describe how to set up the special CNC controlled large field **911** sewing unit.

IMPORTANT!

The tasks described in these service instructions must only be carried out by qualified or appropriately trained people.

Caution: Danger of injury!

Turn off the main switch for repair, conversion and maintenance work and disconnect the machine from the pneumatic supply system.

Only carry out adjustment work and function tests when the machine is running with the greatest care and observing all safety measures.

These service instructions describe how to set the sewing unit up in a practical order. With this it must be noted that different setting positions depend on each other. Therefore, perform the settings in the order described.

A new, perfect needle must be used for all adjustment work on stitch creating parts.

Machine covers that must be unscrewed and screwed back on again for inspection and adjustment work are not mentioned in the text.

Important

On the 911 sewing unit some shafts have flat spots that make it considerably easier to adjust the machine.

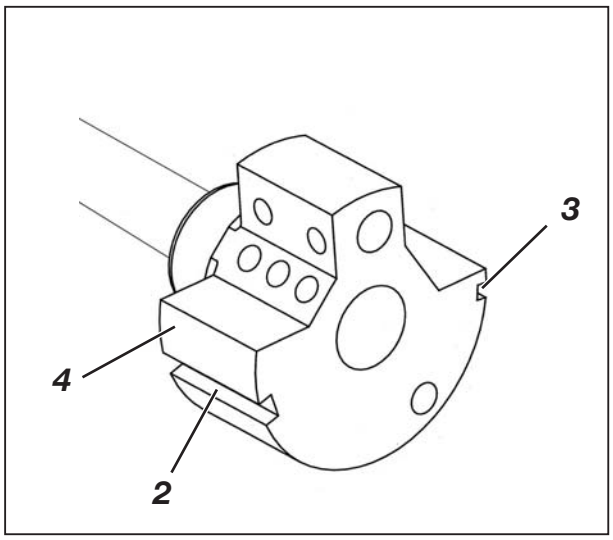
For all adjustments on the flat spot each time the first screw is screwed in the direction of rotation on the flat spot.

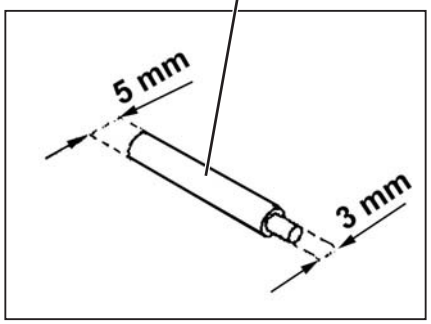
The hand wheel is replaced by crank 1 on the arm cover to turn the machine into the different setting positions.

1.1 Gauges

The locking pin 1 required to set the sewing unit is provided as standard with the machine. It is included with the machine

1.2 Description of the marking positions





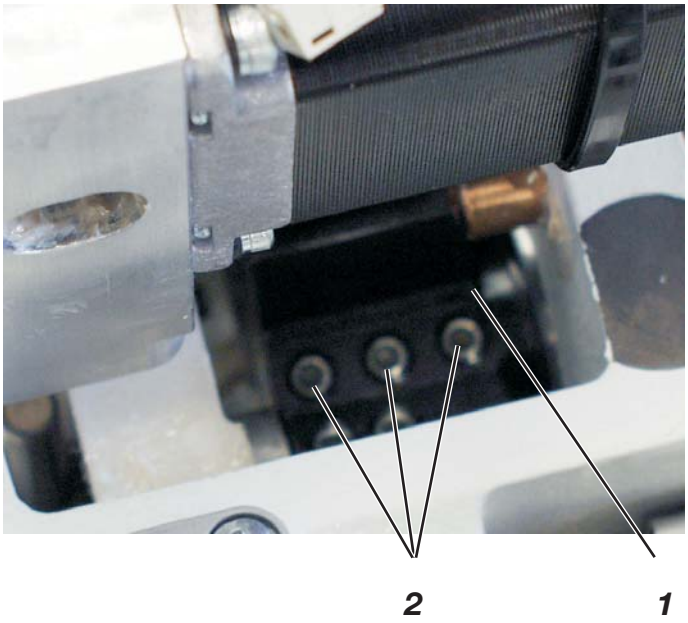
With the locking pin 1, the sewing machine can be locked in two setting positions in the marking grooves 2 and 3 in the needle bar crank 4.

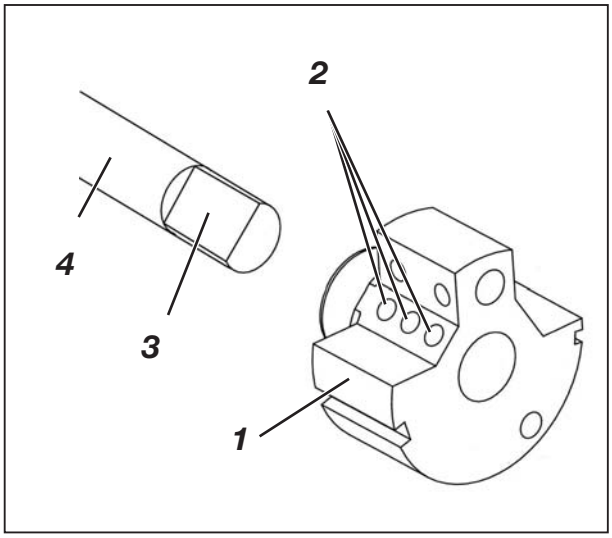
Position I = Ø 5 mm locking pin for large groove
= loop stroke, needle bar height

Position II = Ø 3 mm locking pin for small groove
= needle bar at top dead centre

2. Upper part of sewing machine

2.1 Position of the needle bar crank on the arm shaft





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the position of the needle bar crank when the sewing unit is switched off.

3

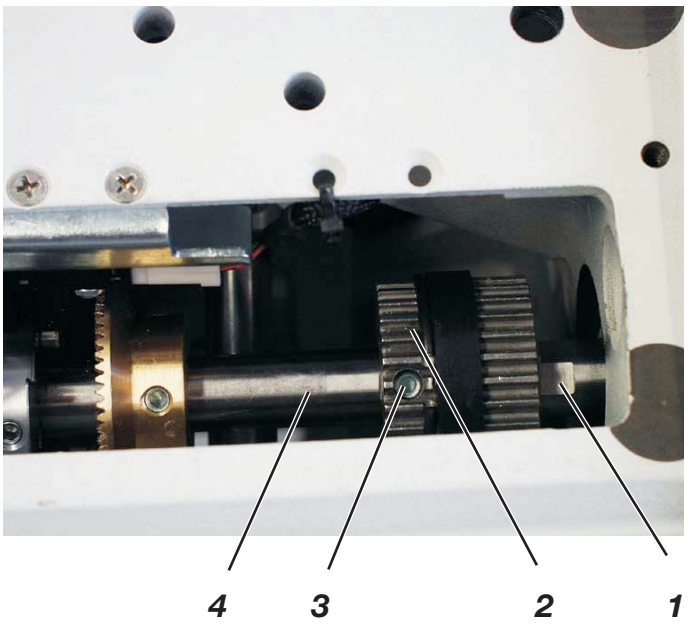
Adjustment and inspection

The needle bar crank 1 is fixed to the arm shaft with the two screws 2. The screws must be seated on the flat spot 3.

To adjust

- Undo grub screws 2 on the needle bar crank.
- Turn the needle bar crank on the shaft so that the screws 2 are seated on the flat spot 3.
- Push the needle bar crank axially to the right until it will go no further.
- Screw up grub screw 2.

2.2 Position of the top sprocket belt wheel



Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the position of the top sprocket belt wheel when the sewing unit is switched off.

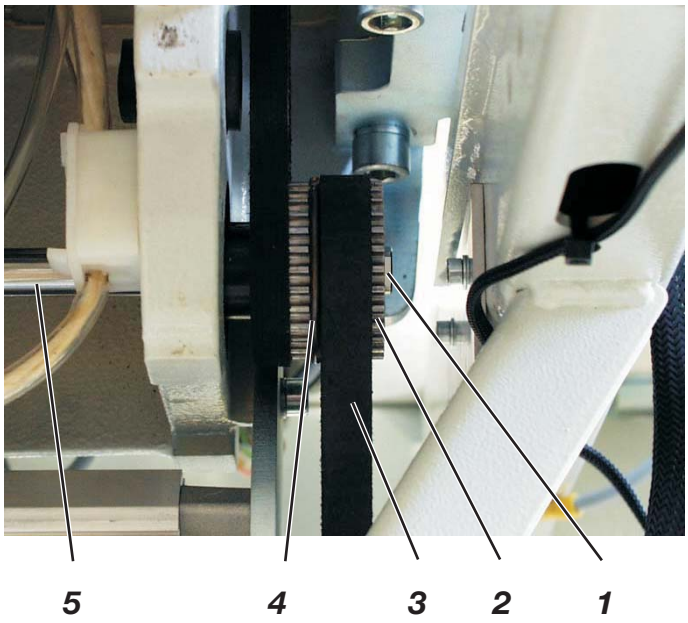
Adjustment and inspection

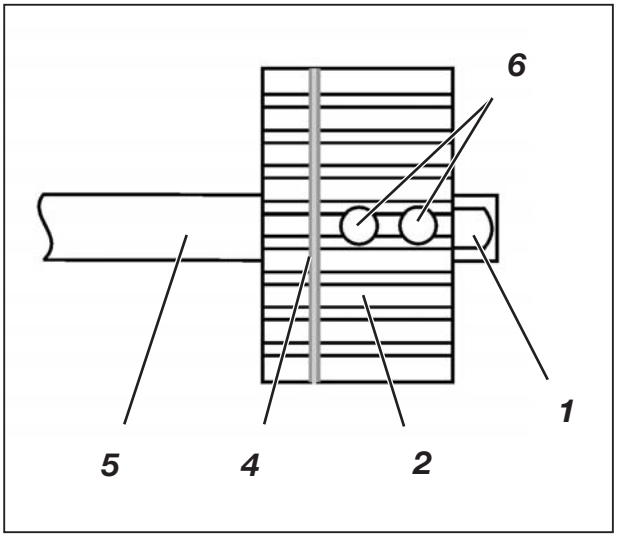
The sprocket belt wheel 2 is fitted to the arm shaft 4 with two grub screws 3. The screws must be seated on the flat spot 1.

To adjust

- Undo the grub screws 3 on the sprocket belt wheel.
- Turn the sprocket belt wheel until the grub screws sit on the flat spot 1 of the arm shaft 4.
- Screw up the grub screws 3 on the sprocket belt wheel.

2.3 Position bottom sprocket belt wheel





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the position of the lower sprocket belt wheel when the sewing unit is switched off.

3

Adjustment and inspection

The grub screws in the sprocket belt wheel 2 must sit on the flat spot 1 of the arm shaft 5.

The sprocket belt wheel must be in such a position that the sprocket belt 3 touches the tensioning ring 4 but is not pushed aside when the hand wheel is turned.

– Check position of the sprocket belt wheel

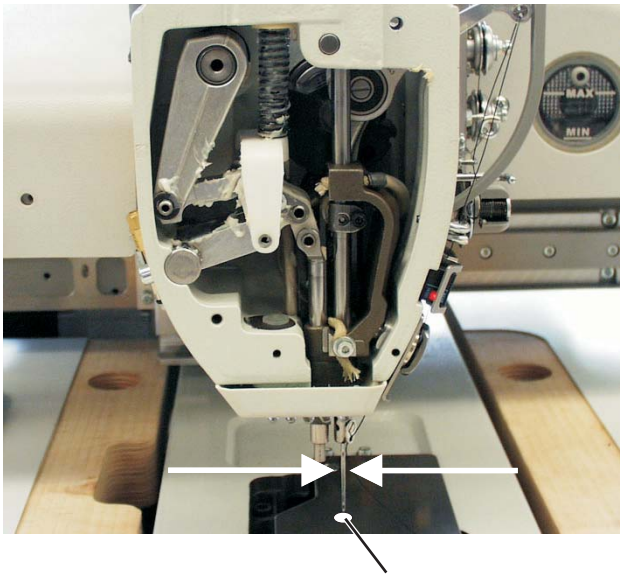
To adjust

– Remove the sprocket belt 3 from the bottom sprocket belt wheel 2.
– Undo the grub screws 6 on the sprocket belt wheel 2.
– Turn the sprocket belt wheel until the grub screws sit on the flat spot 1 of the lower shaft 5.
– Screw up the grub screws on the sprocket belt wheel 2.
– Reattach the sprocket belt 3 to the sprocket belt wheel 2.
– Check the run on the sprocket belt 3.

CAUTION Risk of breaking!

Check hook position (see Chapter 2.5) after sprocket belt change.

2.4. Aligning needle bar crank



1

2

Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the needle bar crank when the sewing unit is switched off.

Adjustment and inspection

The needle must go through the middle of the needle hole 1.

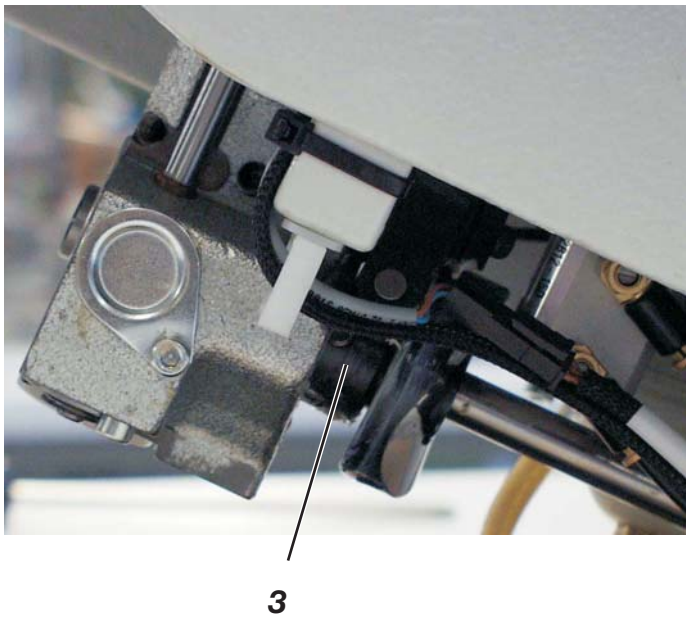
- Fit a new needle.
- Turn down needle bar.
- Check the lateral position of the needle in the needle hole.

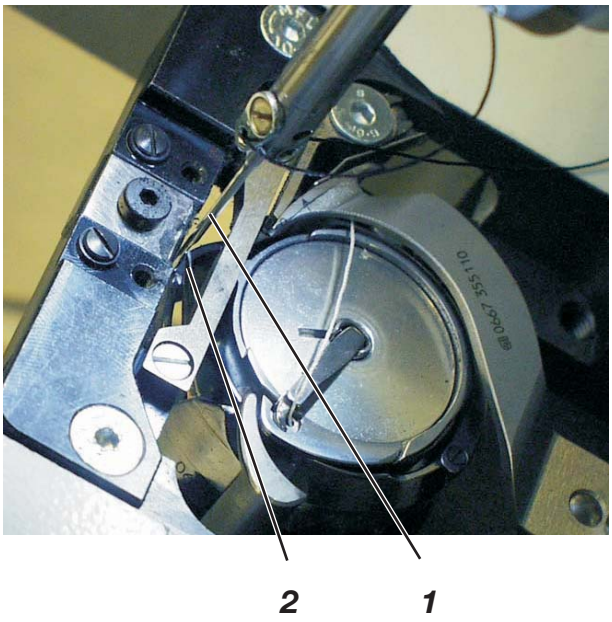
To adjust

- Undo both screws 2.
- Set the needle bar crank so that the needle is in the middle of the needle hole.
- Screw up screws 2.

2.5 Hook, loop stroke and needle bar height

2.5.1 Loop stroke

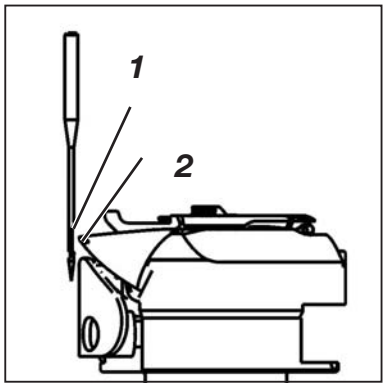




Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the loop stroke when the sewing unit is switched off.



Adjustment and inspection

The loop stroke is the path of the needle bar from the top dead centre to the point at which the hook tip 2 is in the middle of needle 1.
The loop stroke is 2 mm.

– Locate top part of the machine in position I (Ø 5 mm locking pin in the large groove).
– Check the position of the hook tip in relation to the needle.

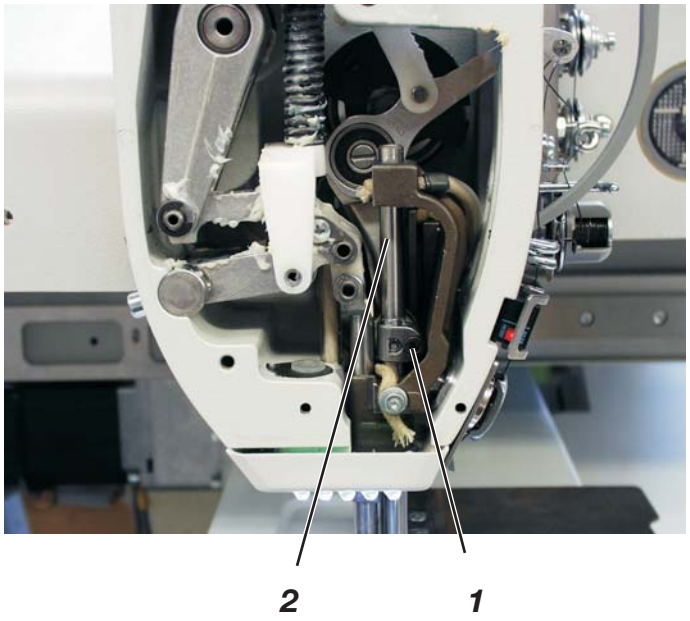
To adjust

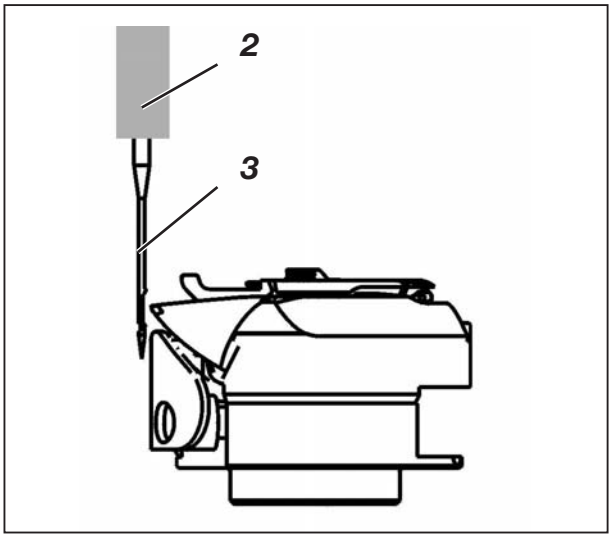
– Locate the top part of the machine in position I with the Ø 5 mm locking pin (large groove).
– Undo the grub screws on the adjustment ring 3.
– Turn the hook so that the hook tip 2 is in the middle of needle 1.
– Screw up the grub screws on the adjustment ring 3.

CAUTION Risk of breaking!

After adjusting the hook, the position of the thread cutter curve must be checked (see Chapter 2.9.5).

2.5.2 Needle bar height





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the needle bar height when the sewing unit is switched off.

Adjustment and inspection

The height of the needle bar must be set so that the hook point is in the centre of the hollow channel of the needle 3 when setting the loop stroke.

- Set the sewing machine's upper part to position I (loop stroke setting).
- Check the position of the needle in relation to the hook tip.

To adjust

- Undo screw 1.
- Push the needle bar 2 onto the needle 3.
  While doing this the needle bar must not be twisted.
  The channel must be by the hook tip.
- Tighten grub screw 1.

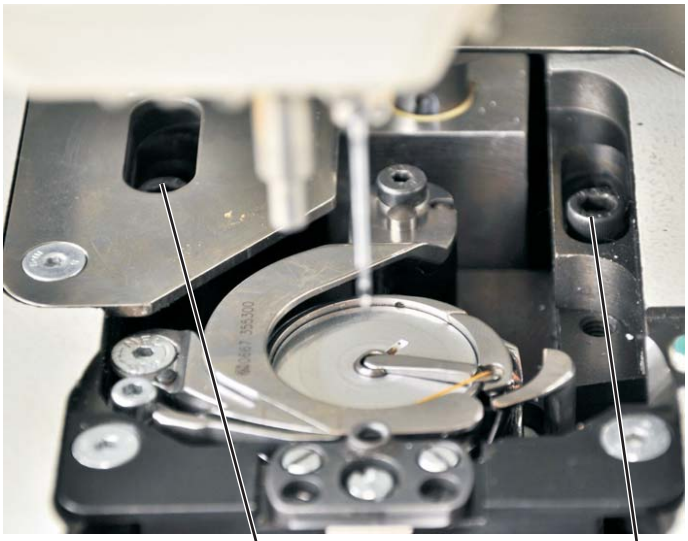
Setting the needle bar height wrongly can have the following effects:

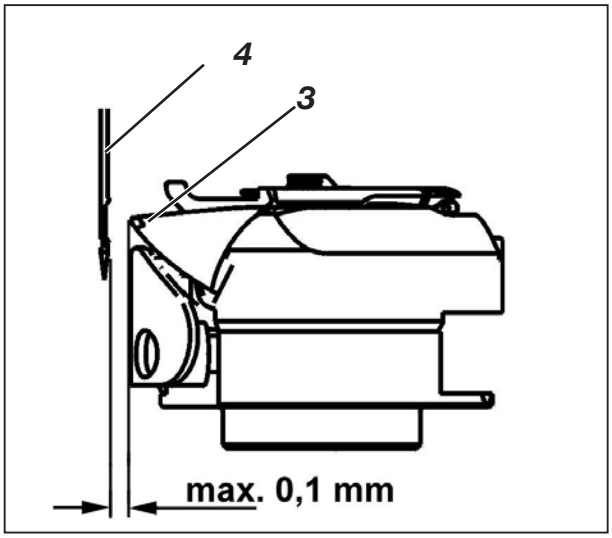
- Damage to the hook tip.
- Wedging the needle thread between the needle and the needle guard.
- Skipped stitches and thread tearing.

IMPORTANT!

After adjusting the needle bar height the position of the needle guard must be checked (see Chapter 2.5.4).

2.5.3 Distance between hook and needle





Caution: Danger of injury!

Turn off the main switch.

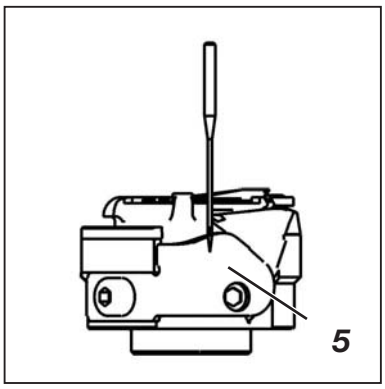
Only check and adjust the hook distance when the sewing unit is switched off.

3

Adjustment and inspection

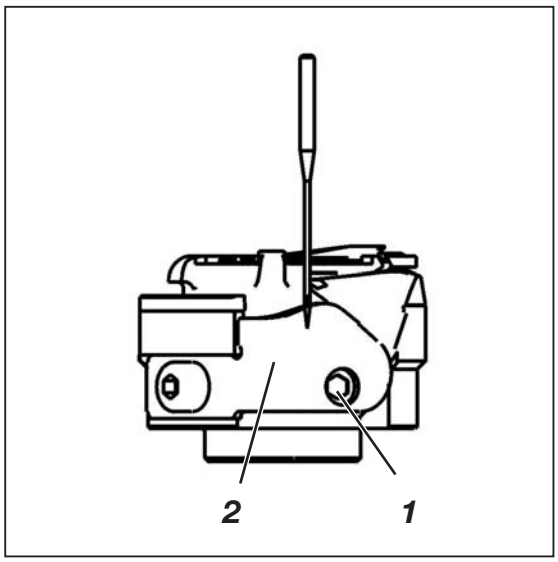
In the loop stroke position the distance between the hook tip 3 and the needle channel 4 must be no more than 0.1mm.

To adjust



- Check whether the needle is being pushed away from the hook guard 5 in the loop stroke position.
  If the needle is being pushed away the needle guard must be reset accordingly (see Chapter 2.5.4).
- Check the distance.
  The distance between the needle 4 and the hook tip 3 should be no more than 0.1mm.
- Undo the screws 1 and 2.
- Undo the grub screws on the adjustment ring 6.
- Push the hook housing to the side so that the distance between the needle 4 and the hook point 3 is about 0.1 mm.
- Screw up screws 1 and 2.
- Set the loop stroke (see Chapter 2.5.1).
- Screw up the grub screws at the adjustment ring 6.

2.5.4 Needle guard at the hook



Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the needle guard when the sewing unit is switched off.

Adjustment and inspection

The needle guard 2 should prevent the needle touching the hook tip. In the loop stroke position the needle should be pushed away slightly.

– Check the needle guard.

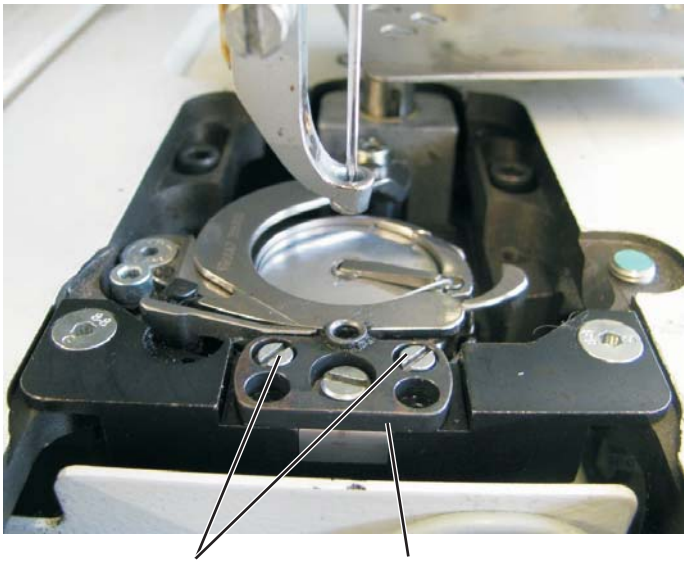
To adjust

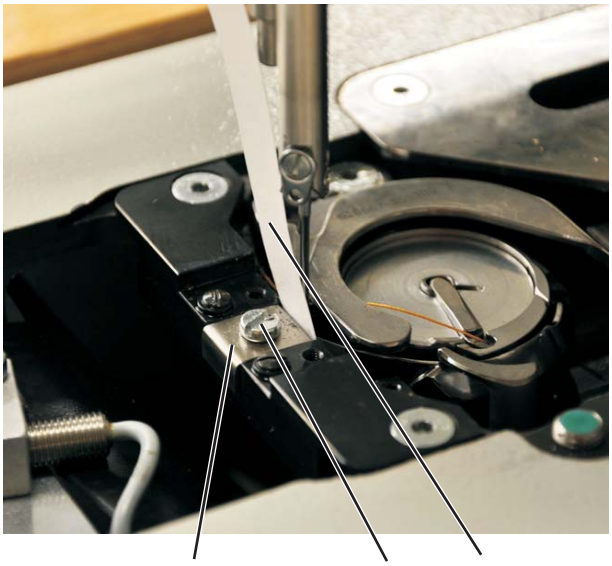
– Turn the machine to the loop stroke position.
– Adjust the needle guard by turning screw 1.

CAUTION Risk of breaking!

The needle guard must be adjusted after a change in the needle bar height, after adjusting the loop stroke and after changing the needle thickness.

2.5.5 Needle guide





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the needle guard when the sewing unit is switched off.

Adjustment and inspection

In the loop stroke position, the needle should be as close as possible to the needle guide 5 without touching it.

If the needle guide is set too tightly, the needle may break.

If the needle guide is set too wide, there may be missed stitches because the needle can be pushed away too far by the cloth.

– Check the needle guide.

To adjust

– Remove screws 2 and remove the stitch plate 1.
– Turn the machine to the loop stroke position.
– Undo screw 4.
– Set needle guide 5 as close as possible to the needle.
– Screw up screw 4 again.
– Check distance with a piece of paper 3.

2.6 Bobbin housing elevator

2.6.1 General

The thread lever must draw the thread between the bobbin housing 3 and its retainer 1.

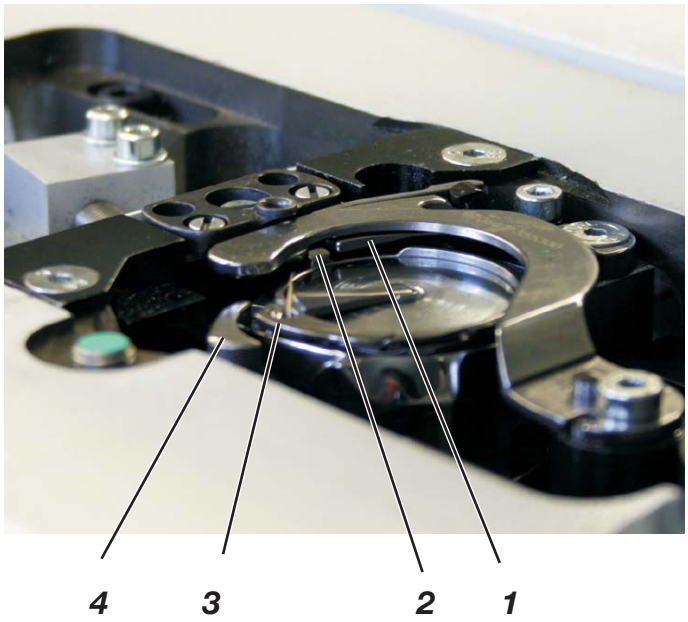
So that the thread can slip through unhindered, the bobbin housing must be raised at this time.

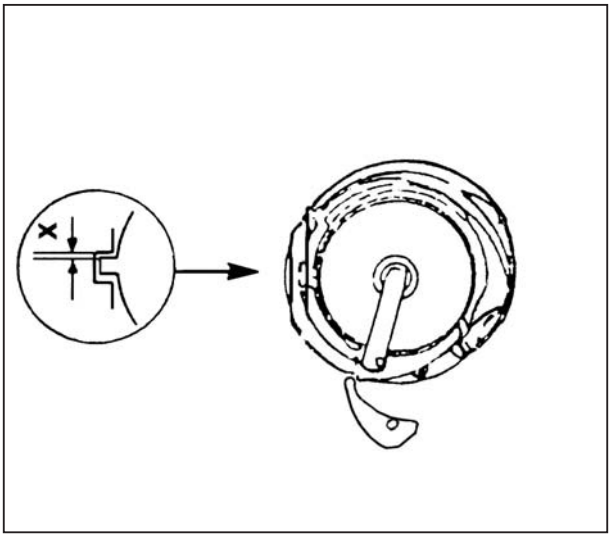
As a result the required seam construction is achieved with the lowest possible thread tension.

Incorrect settings may have the following effects:

– Thread breaking
– Loops on the underside of the seam
– Loud noises

2.6.2 Bobbin housing elevator path





Caution: Danger of injury!

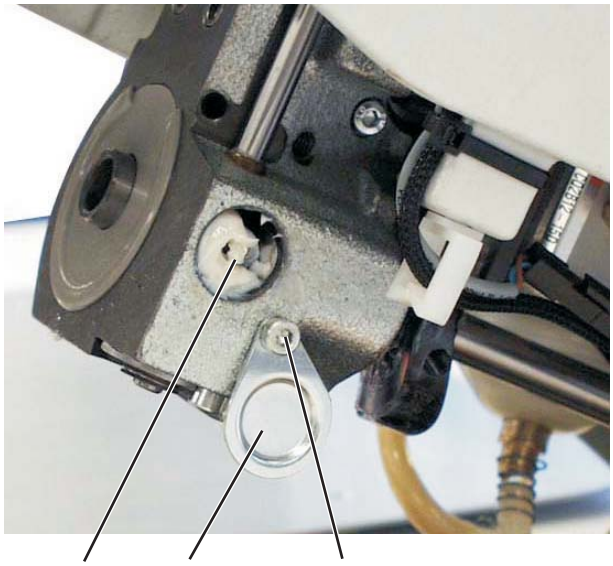
Turn off the main switch.

Only check and adjust the bobbin housing elevator when the machine is switched off.

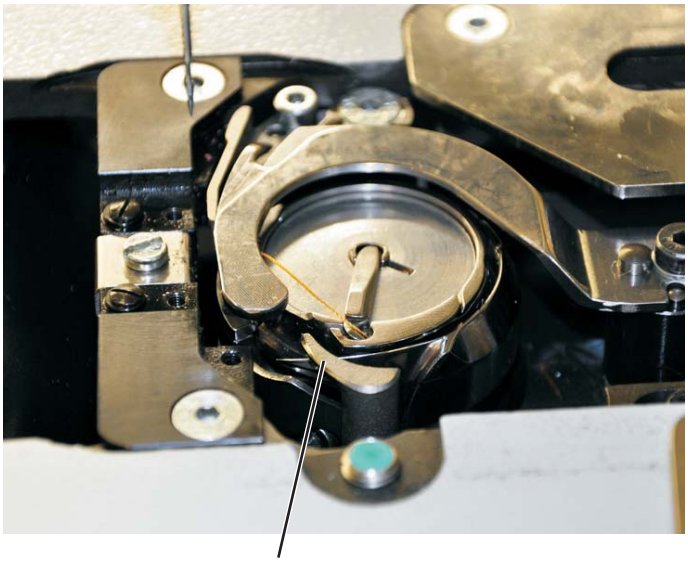
Adjustment and inspection

The bobbin housing elevator 4 should raise the middle part of the hook 3 so that the sewing thread can slip through unhindered between the bobbin housing lug 2 and the stitch plate retainer 1.
The elevation gap X depends on the thickness of the thread to be sewn.

– Turn the hand crank and check whether the bobbin housing elevator opens the middle part of the hook far enough.



7 6 5

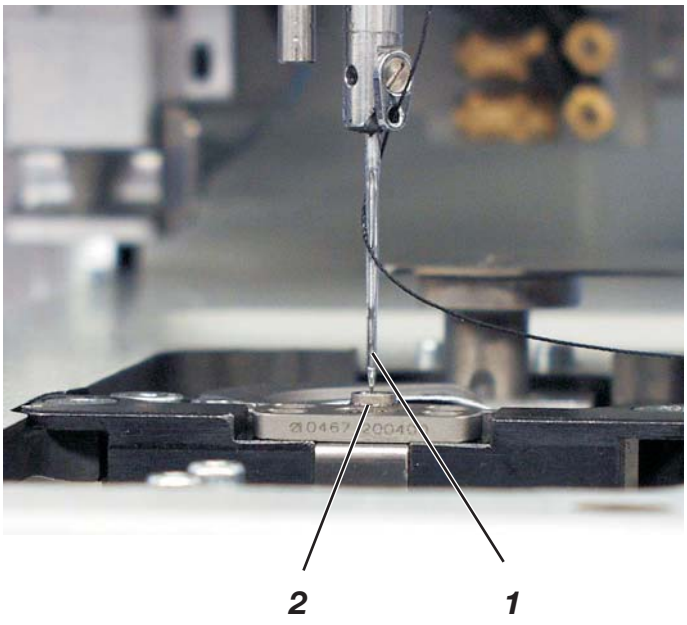


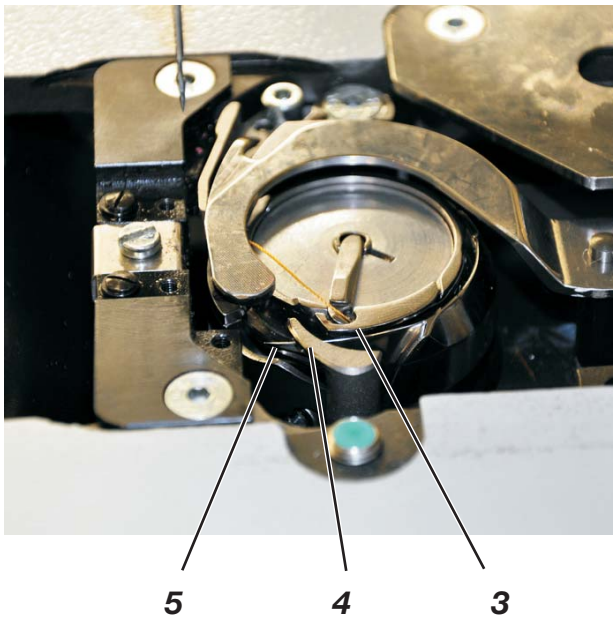
4

To adjust

- Undo screw 5 and turn lid 6 downwards.
- Undo screw 7 in the hook housing.
- Set bobbin housing elevator 4.
- Screw in screw 7 in the hook housing again.
- Turn lid 6 closed again and fix with screw 5.

2.6.3 Elevation time

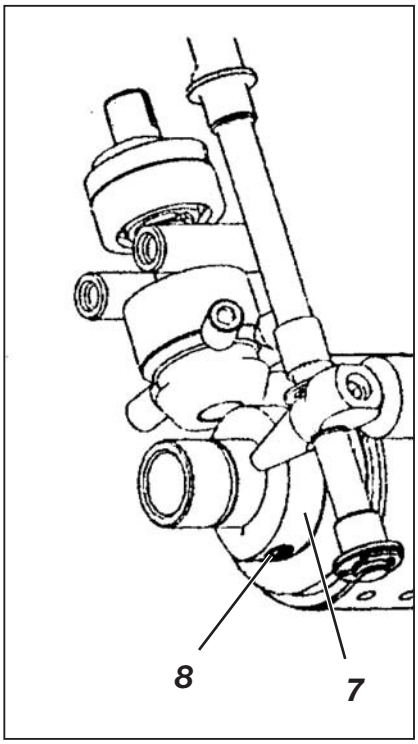




Caution: Danger of injury!

Turn off the main switch.

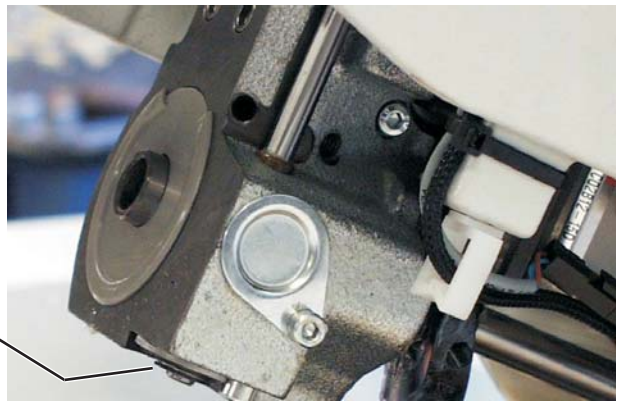
Only check and adjust the bobbin housing elevator when the sewing unit is switched off.



Adjustment and inspection

If the hook tip 5 is below the bobbin housing elevator after taking up the loop, the thread should slip through unhindered between the bobbin housing elevator finger 4 and bobbin housing 3.

– Check that the bobbin housing elevator finger is opened far enough for the thread to slip through unhindered.

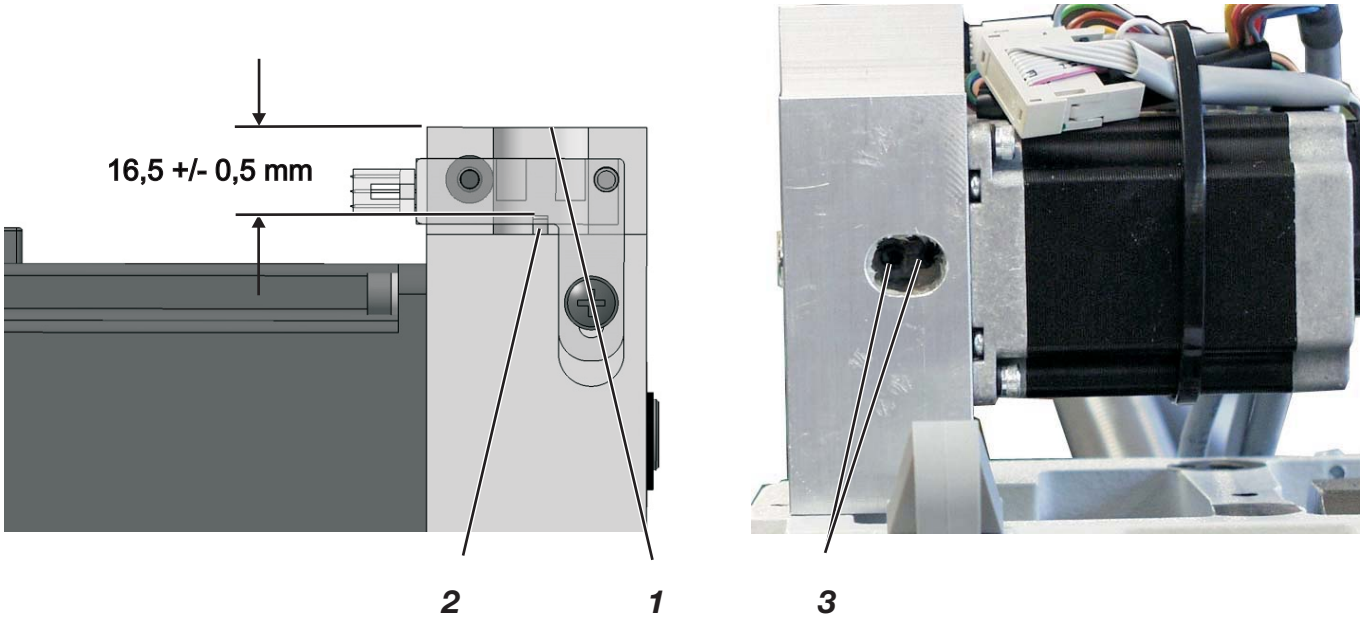


To adjust

– Remove plugs 6 from the hook housing.
– Turn hand crank until needle point 1 is at the level of the stitch plate 2.
The grub screw 8 must now be accessible.
– Undo the grub screw 8 and turn it with a socket wrench until it is exactly vertical.
– Replace the plug 6.

2.7 Sewing foot elevation

2.7.1 Checking the lift position drive



Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the stroke position drive when the sewing unit is switched off.

3

Adjustment and inspection

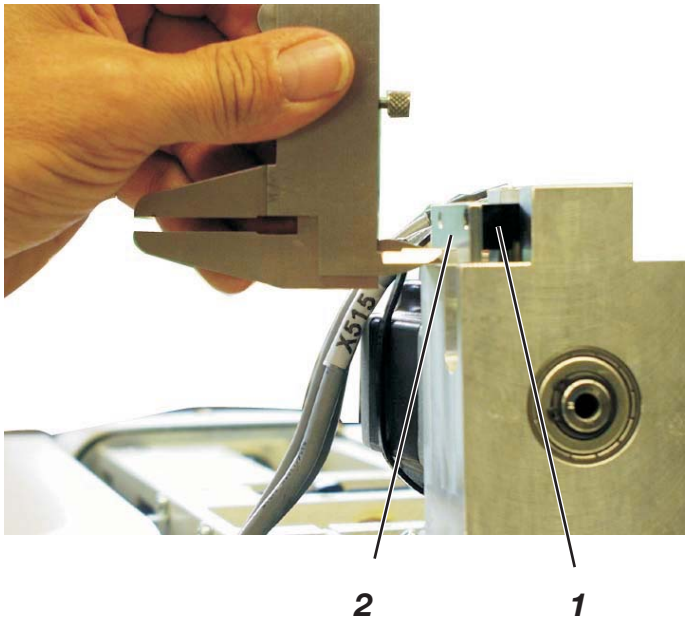
The sprocket rod 2 of the stroke drive should have a distance of 16.5 +/- 0.5 mm to the upper edge 1 of the stroke position housing. In this position, the grub screws must be visible in the long hole and horizontal.

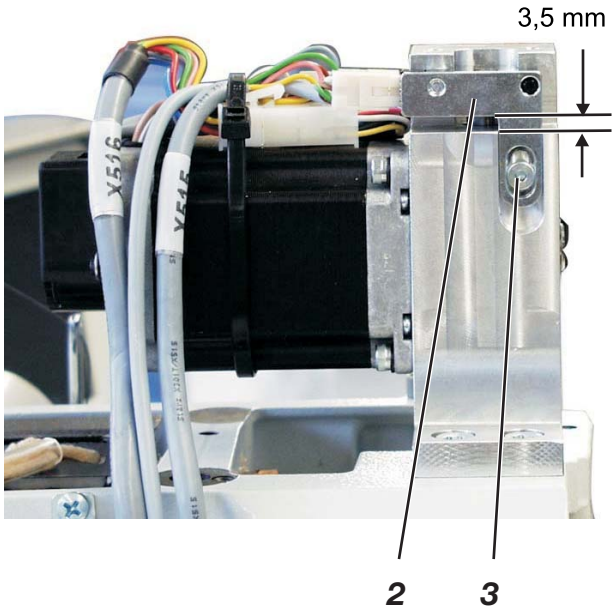
– Set sprocket rod of the stroke drive on the upper dead centre.
– Turn sprocket rod 16.5 mm downwards.
– Check that both screws 3 are visible and horizontal.

To adjust

– Undo grub screw 3.
– Remove sprocket wheel.
– Pull sprocket rod down to 16.5 mm from the upper dead centre.
– Replace the sprocket wheel.
– Screw up grub screw 3.

2.7.2 Setting the light barrier

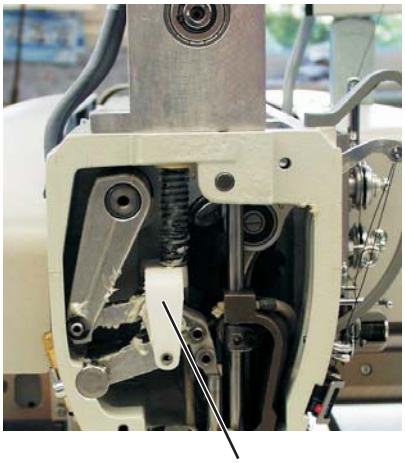




Caution: Danger of injury!

Turn off the main switch.

Check and adjust the light barrier with the greatest care when the sewing unit is switched on.



Adjustment and inspection

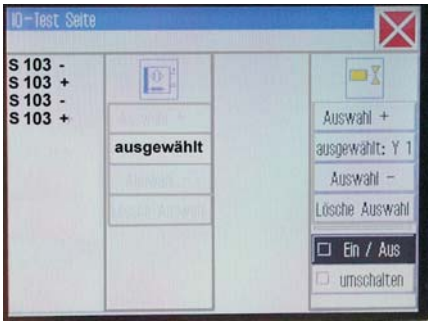
The light barrier with fastening plate 2 should be placed so that the light barrier (S103) switches before the upper stop of the sprocket rod is reached.
This setting can be checked in the multitest programme.

This leads to a distance of approx. 3.5 mm between the lower edge of the fastening plate 1 and the stroke position housing 2.

– Check measure between the lower edge of the fastening plate and stroke position housing.

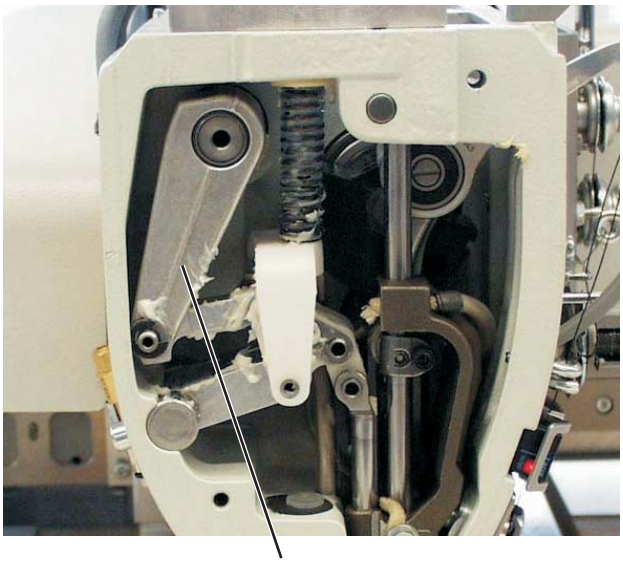
To adjust

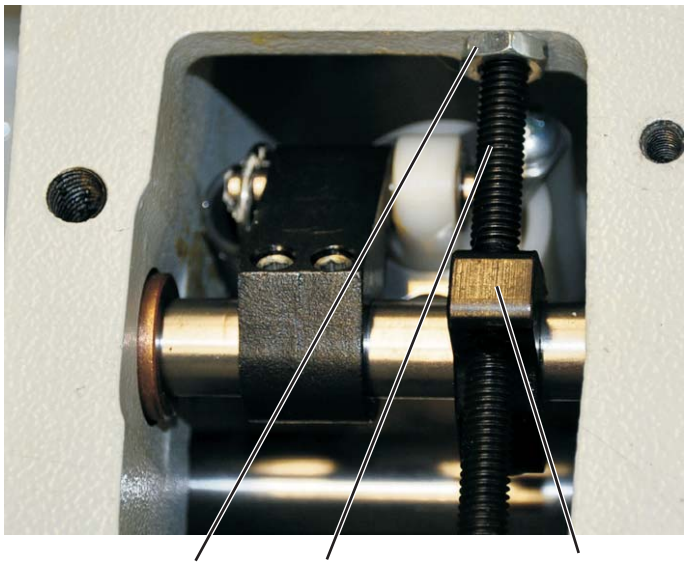
– Undo screw 3.
– Adjust fastening plate 2 accordingly.
– Screw up screw 3.



– Switch sewing unit off and on again.
– Press button **“Service”**.
– Enter password
– Press button **“Multitest”**.
– Press button **“Test Inputs / Outputs”**.
– Press lever 4 upwards and observe switching indication in the display.
+103 or -103 is displayed.
– Check that the sprocket rod has a play of about 0.5 mm to the stop.
– Reset light barrier with holding plate if required.

2.7.3 Setting the left stop screw of the lift drive





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the stop screw when the sewing unit is switched off.

3

Adjustment and inspection

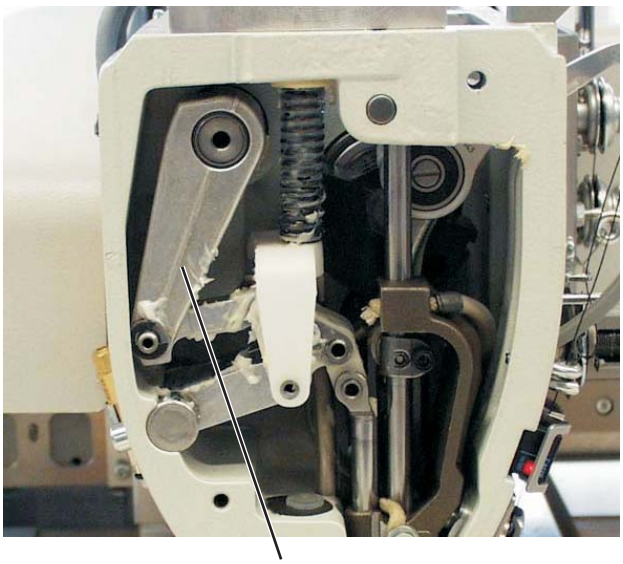
The left stop screw 3 of the lift drive must be set so that lever 1 does not perform lift if the stop block 2 touches the screw.
For this, the lift drive levers must be over covered.

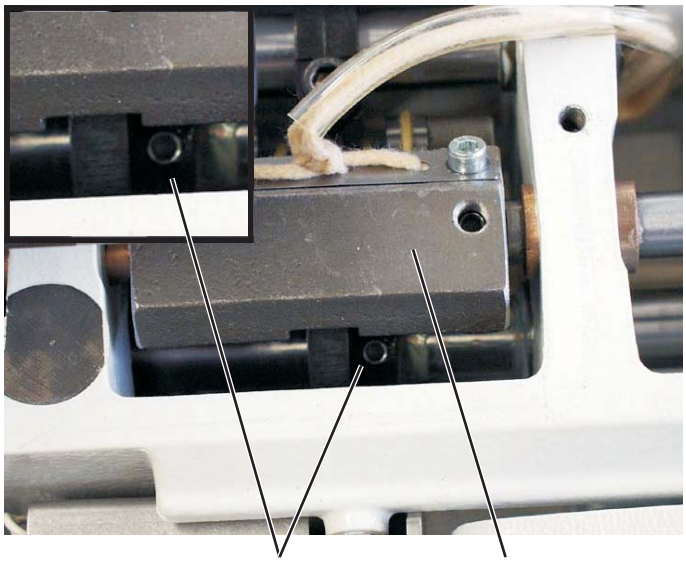
- Switch sewing unit off and on again.
- Perform reference run with the machine.
- Press button **“Extras -> Service -> Multitest -> Set lift position”**.
- Press button **“Jump / Presser”** until the presser foot is selected.
- Turn hand crank and check if no lift is performed.

To adjust

- Undo the counter nut 4.
- Turn the stop screw 3 accordingly.
- Screw up counter screw 4.

2.7.4 Setting the foot lift according to the needle bar lift





Caution: Danger of injury!

Check and adjust the foot lift according to the needle bar lift with the greatest care when the sewing unit is switched on.

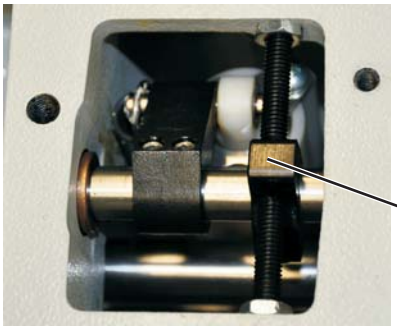
Adjustment and inspection

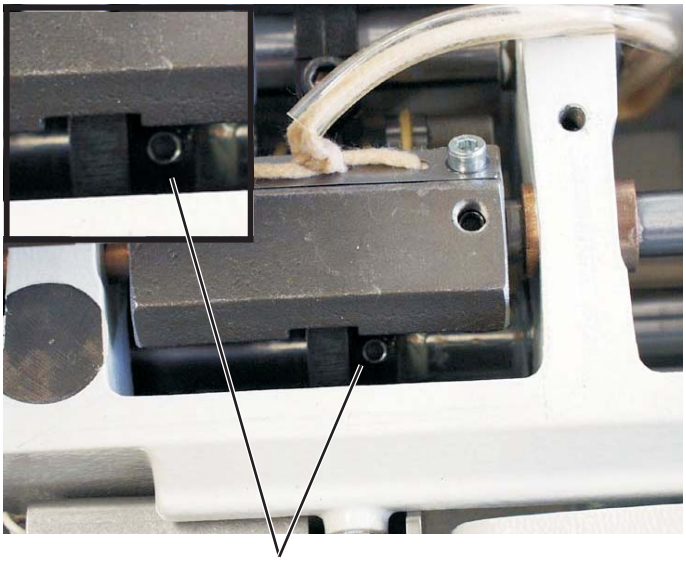
The lift drive 2 must be switched so that lift is performed. The stop block 5 must lie against the right stop.

The eccentric 3 for the foot lift must be set so that

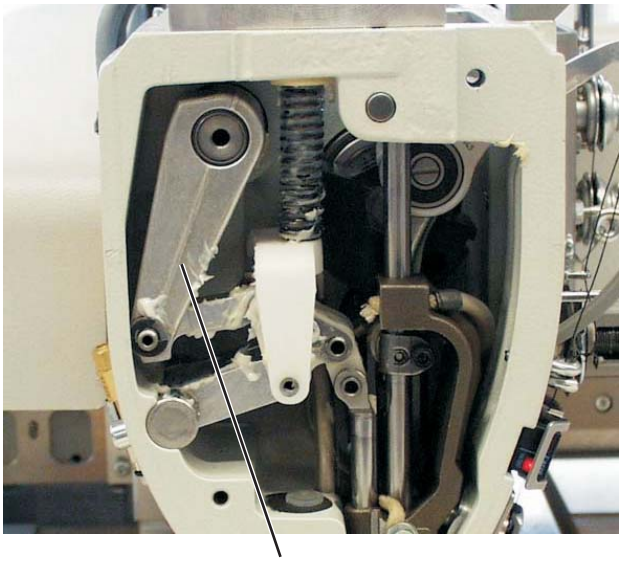
- the foot 4 is at the bottom when the needle bar is at the lower dead centre
- foot lift starts after loop lift.

– Switch sewing unit off and on again.
– Perform reference run with the machine.
– Press button **“Extras -> Service -> Multitest -> Set lift position”**.
– Press button **“Jump / Presser”** until the jumper foot is selected.
– Switch on sewing foot lift 4 in the control.
– Turn upper part into loop lift position.
Lever 1 must perform a movement.





3

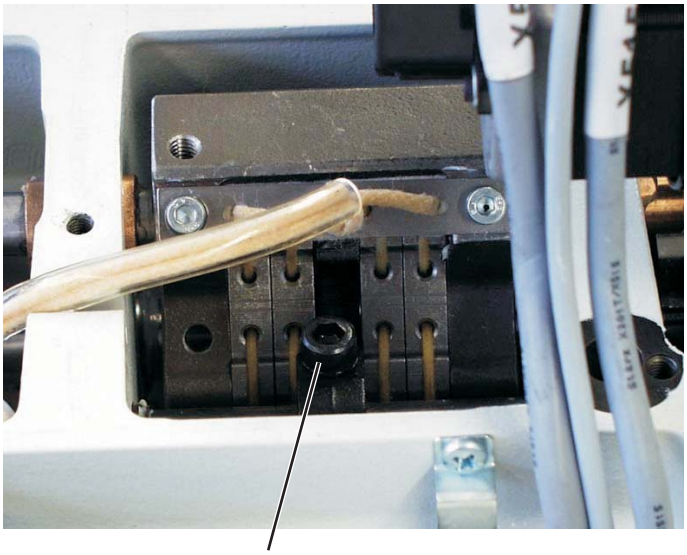


1

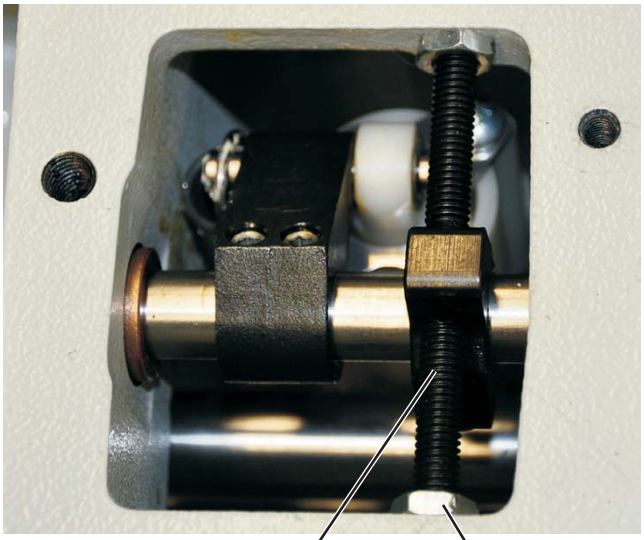
To adjust

– Undo the screw at eccentric 3.
– Turn eccentric 3 on the arm shaft.
– Tighten screw at eccentric 3.
– Turn upper part into loop lift position.
Check if lever 1 performs a movement.

2.7.5 Foot height



1



3 *2*

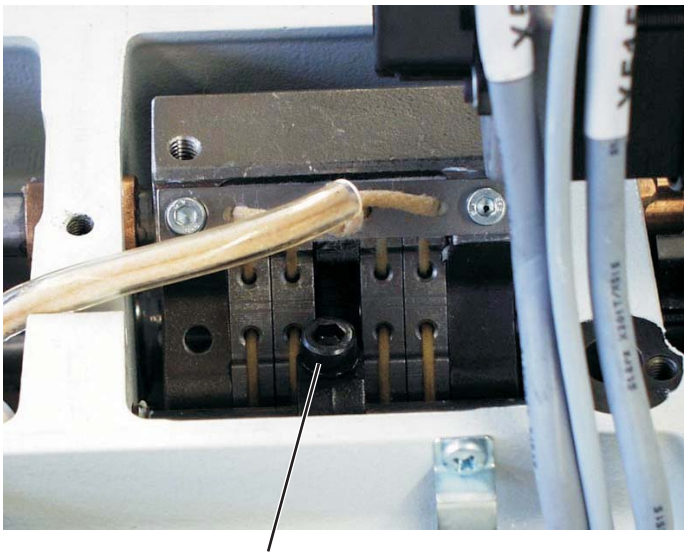
Caution: Danger of injury!

Check and adjust the foot height with the greatest care when the sewing unit is switched on.

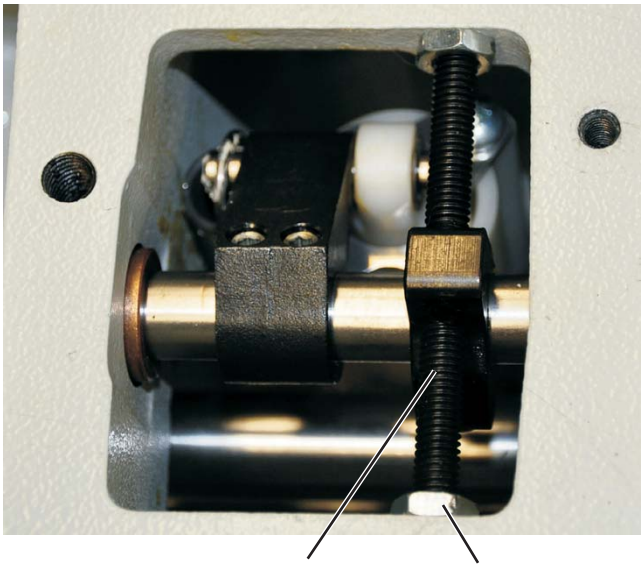
Adjustment and inspection

The sewing foot lift can be adjusted from 1 mm to max. 10 mm. Where a height of 1 mm is set in the control, the foot must be 1 mm above the stitch plate.

- Install the jumper foot.
- Press button **“Extras -> Service -> Multitest -> Set lift position”**.
- Press button **“Jump / Presser”** until the jumper foot is selected.
- Shortly press button **Sewing foot lift**.
- Move to position.
- Enter a sewing foot height of 1.0 mm.
- Turn sewing foot to lower dead centre.
- The distance between the stitch plate and sewing foot must be 1 mm.



1



3 2

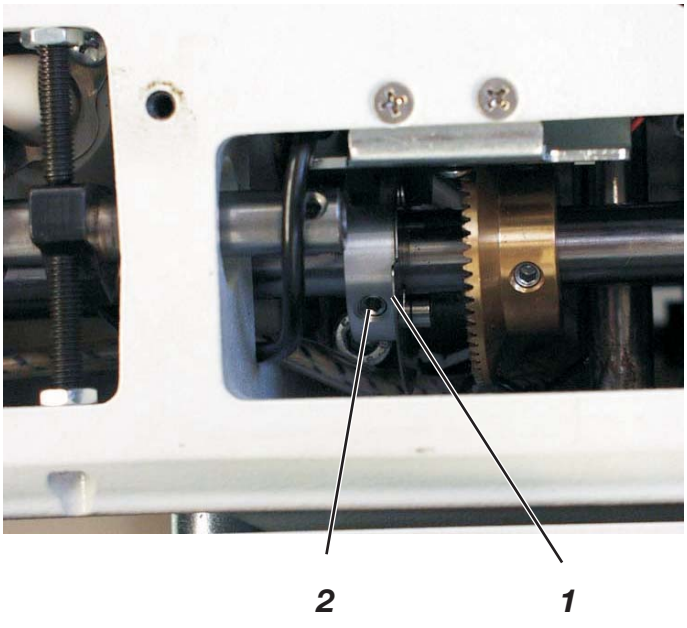
To adjust

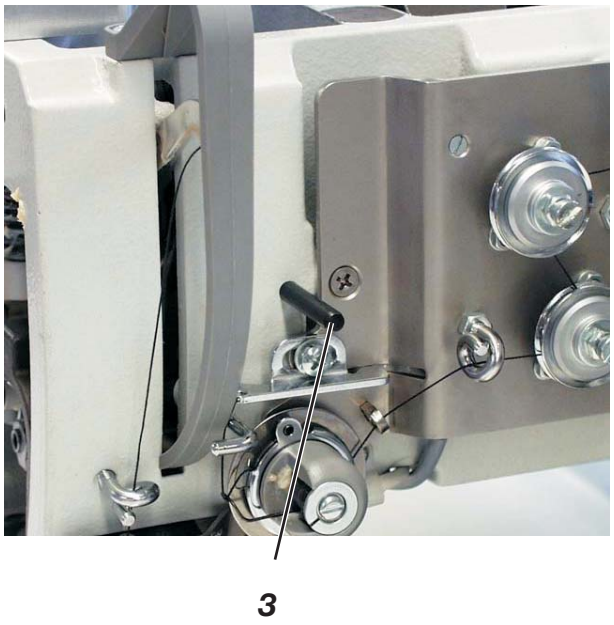
– Undo screw 1 on the swivel shaft.
– Turn swivel shaft so that the distance between stitch plate and sewing foot is 1 mm.
– Tighten screw 1 on the swivel shaft.
– Turn sewing foot into the upper dead centre.
The distance between the stitch plate and sewing foot must now be 5 mm.
– Undo the counter nut 2.
– Turn screw 3 so that the distance between stitch plate and sewing foot is 5 mm (corresponds to 4 mm sewing foot lift).

Important

You may have to reach a compromise between the two min. and max. distance settings.
If a setting is changed, the other must be checked again.

2.7.6 Reference light barrier sewing axis





Caution: Danger of injury!

Check and adjust the reference light barrier with the greatest care when the sewing unit is switched on.

Adjustment and inspection

The sewing machine should move to the upper dead centre of the needle bar for referencing.

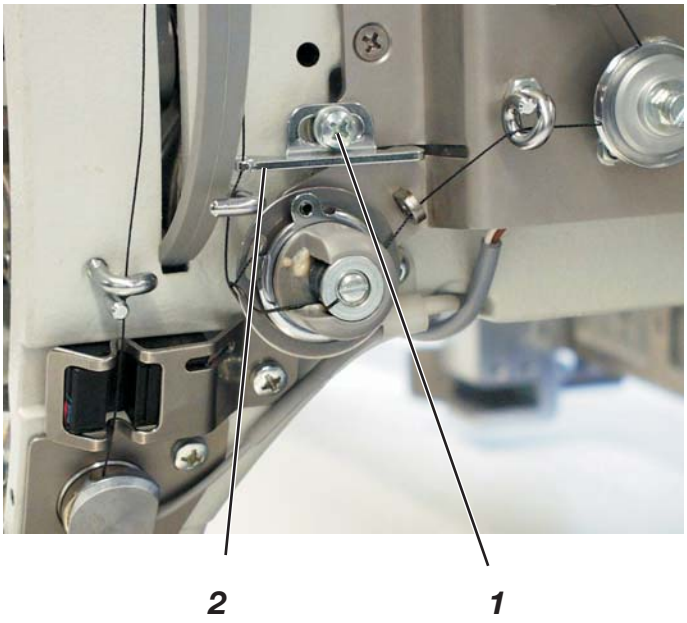
- Switch the machine off and on again.
- Perform reference run and check if the needle bar is at the upper dead centre.

To adjust

- Switch sewing unit off and on again.
- Press button **“Multitest”**.
- Enter password.
- Press button **“Multitest -> Test Inputs / Outputs”**.
- Turn needle bar into the upper dead centre and set it with the 3 mm end of the locking pin (see page 4) in position II of the arm shaft crank.
- Undo grub screw 2.
- Turn feed disk 1 on the arm shaft accordingly.
  The switch S100 switches.
- Tighten grub screw 2.
- Remove the setting pin 3.
- Switch machine off and on again and check if the needle bar is at the upper dead centre.

2.8 Thread guiding parts

2.8.1 Thread regulator



Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the thread regulator when the machine is switched off.

3

Adjustment and inspection

The position of the thread regulator 2 depends on the thickness of the material, the thread thickness and the selected stitch length.
It must be set so that the thread is fed round the hook in a controlled manner.

The greatest amount of thread is released at left position as it is required for particularly long stitch lengths and thick sewing threads.

To adjust

- Undo screw 1.
- Move the thread regulator.
  Thread regulator to the left = more thread
  Thread regulator to the right = less thread.
- Screw up screw 1.

2.8.2 Thread take up spring

Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the thread take up spring when the machine is switched off.

Adjustment and inspection

The adjustment rules for spring travel and spring tension apply to normal needle thread thicknesses.
With extremely strong or weak needle threads or sewing material other settings may be required.

Spring travel

The thread take up spring 4 must keep the needle thread at low tension from the top dead centre until the eye of the needle pierces the material.
To achieve an even seam at low thread tension the thread take up spring travel can also be increased.
The thread take up spring must only be at the stop when the needle has penetrated the material up to the eye.

Spring tension

The spring tension should be lower than the needle thread tension.

To adjust

Spring travel

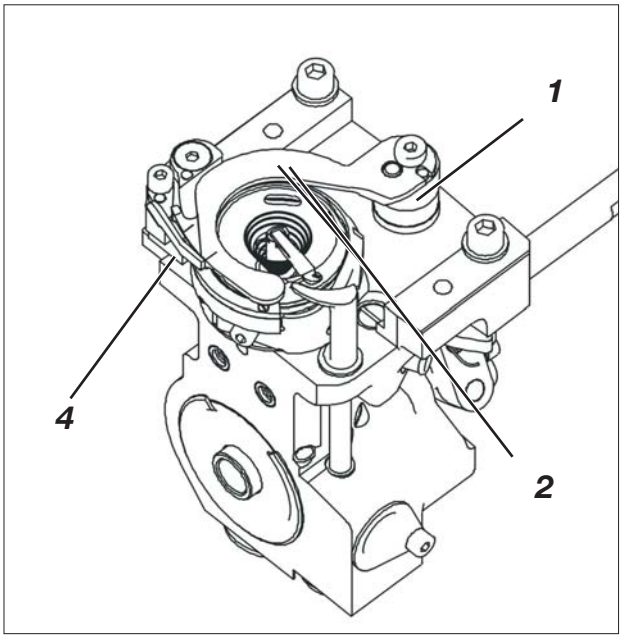
– Undo screw 1.
– Turn the stop sleeve 3.
  Turn anti-clockwise = more travel
  Turn clockwise = less travel.
– Screw up screw 1.

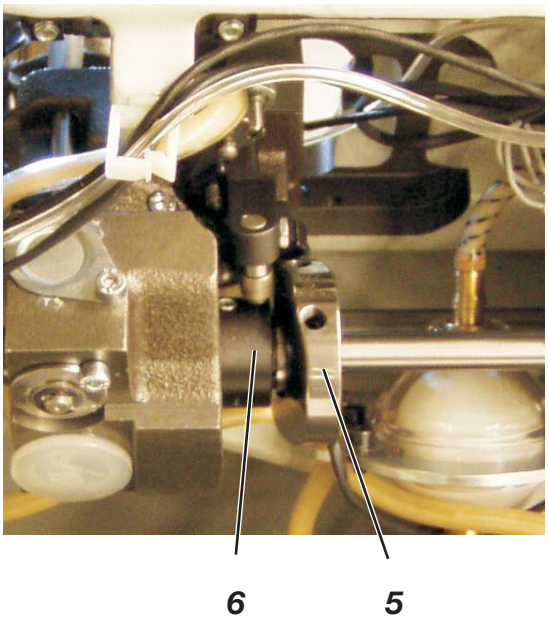
Spring tension

– Undo screw 1.
– Turn spring washer 2 without changing the position of the stop sleeve 3.
  Turn the washer clockwise = less spring tension
  Turn the washer anti-clockwise = more spring tension.
– Screw in screw 2 without turning the position of the stop sleeve 4 and the spring washer 3.

2.9 Short thread cutter

2.9.1 General





Thread draw cutter height

The thread draw cutter height is set at the factory by adjustment washers under the cutter support 1 (see figure).

When removing the thread cutter make a note of the number of adjustment discs.

Position of the thread draw cutter

The thread draw cutter 2 cannot be moved on the blade support 1. This ensures that the thread draw cutter 2 can be replaced without the cutting pressure having to be adjusted once more.

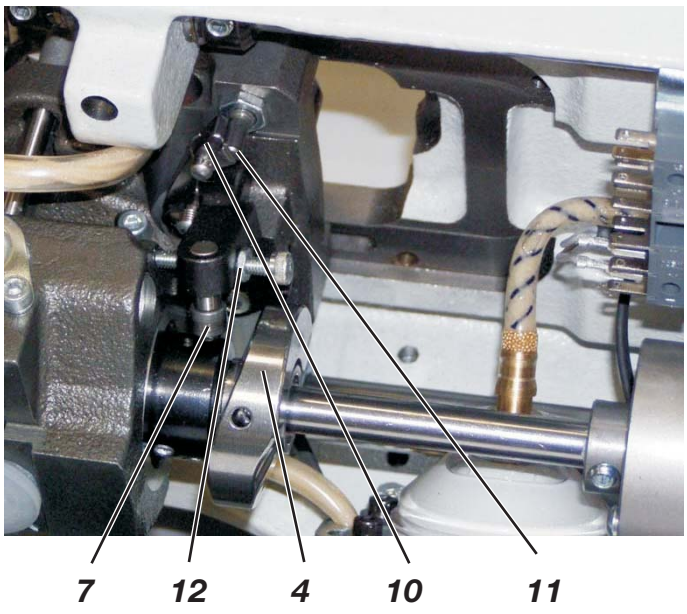
When the thread draw cutter 2 is in the idle position the counter cutter 4 blade must be completely covered by the thread draw cutter to avoid damage to the upper thread.

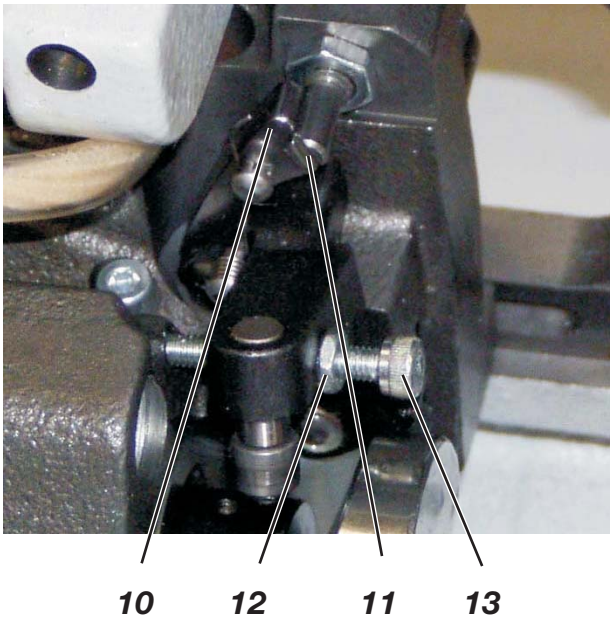
The swing range of the thread draw cutter is 23° and is determined in the radial cam geometry.

Note!

Ensure that the radial cam 5 touches the adjustment ring 6 at the stop and that the radial cam label 5 is legible. If the radial cam label 5 label is upside down, the radial cam was installed the wrong way around.

2.9.2 Locking catch for thread draw cutter





Caution! Risk of breaking!

Machine must not be operated without thread draw cutter.

The return protection for the bobbin housing is located at the thread draw cutter.

Adjustment and inspection

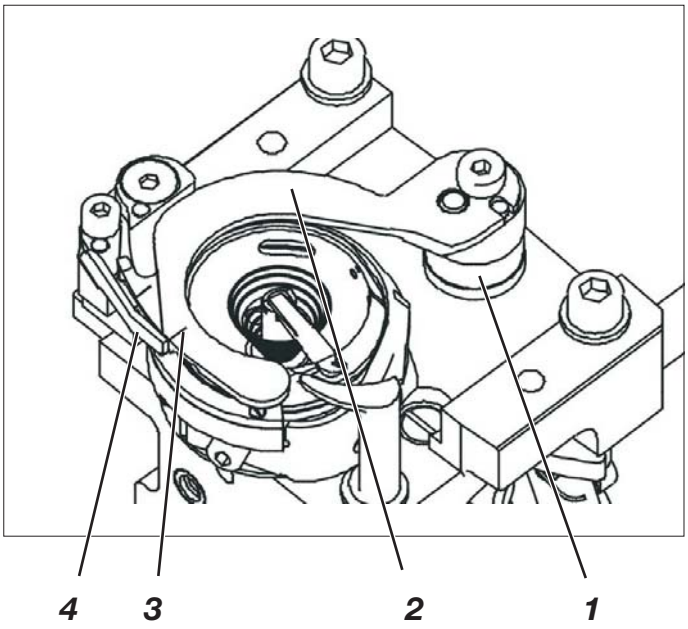
The locking catch 10 should not exceed approx. 0.1 mm distance to the locking bolt 11 in the tread draw cutter 1 rest position.

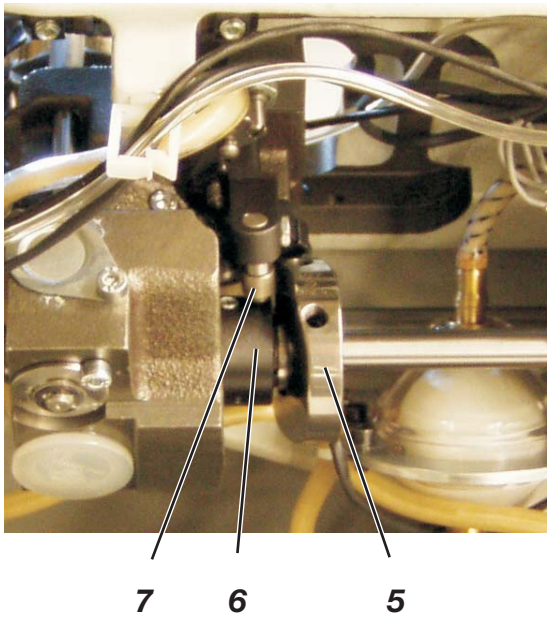
- Turn hand crank until the spool 7 has reached the highest point of the control curve 4.
- Press the spool 7 against radial cam 4.
- In this position it must be possible to swivel out the locking catch 10 without catching.

To adjust

- Undo the counter nut 12.
- Turn stop screw 13 until the distance between the locking bolt 11 and the locking catch 10 is 0.1 mm.
- Screw up counter screw 12.

2.9.3 Thread draw cutter





Caution: Danger of injury!

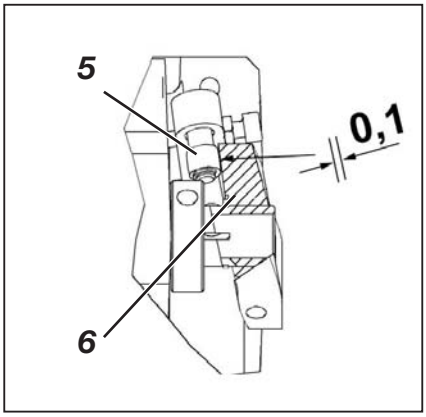
Turn off the main switch.

Only check and adjust the thread draw cutter when the sewing unit is switched off.

Warning!

Machine must not be operated without thread draw cutter.

The return protection for the bobbin housing is located at the thread draw cutter.



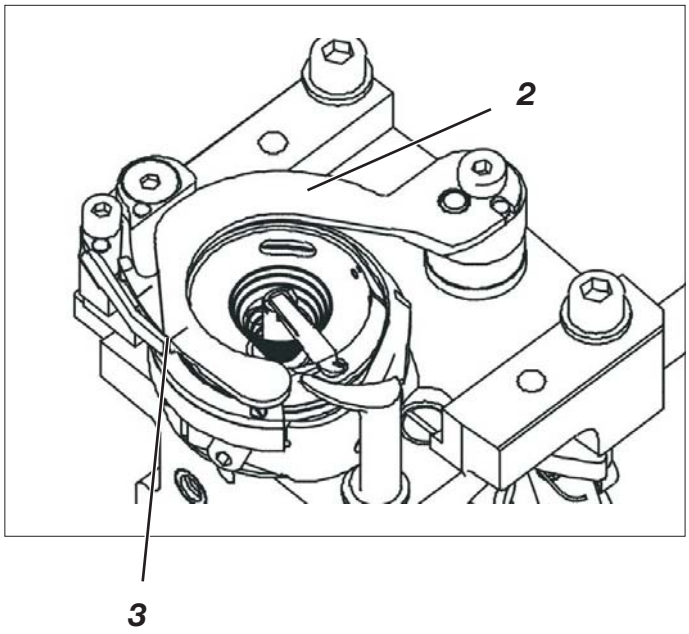
Adjustment and inspection

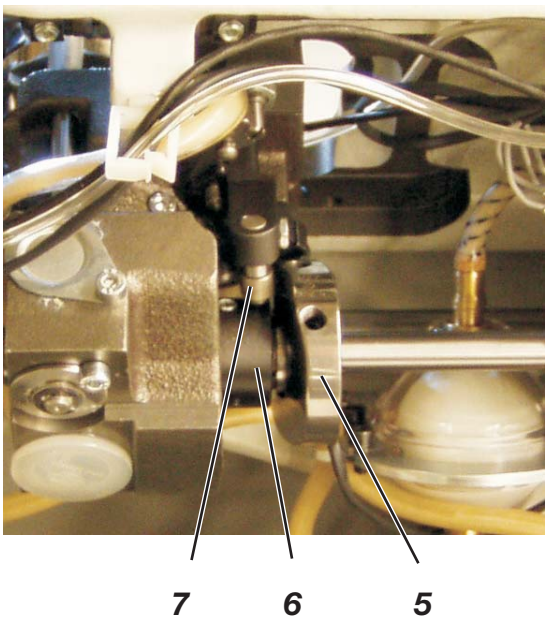
When the thread draw cutter 2 is in its rest position the distance between the cam 5 (highest point) and the spool 7 should be approx. 0.1 mm.
Here the radial cam 5 must abut the clamping ring 6.

In the rest position the mark 3 of the thread draw cutter 2 should be across from the edge of the counter blade 4.

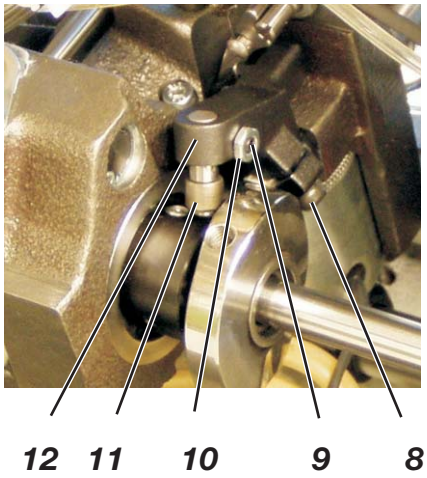
The thread draw cutter holder 1 must have no axial play but must run smoothly.

– Check that the radial cam 5 is flush with the clamping ring 6.
– Turn hand crank until the highest point of the radial cam 5 is at the spool 7.
– Check the distance between the radial cam 5 and the spool 7.





To adjust

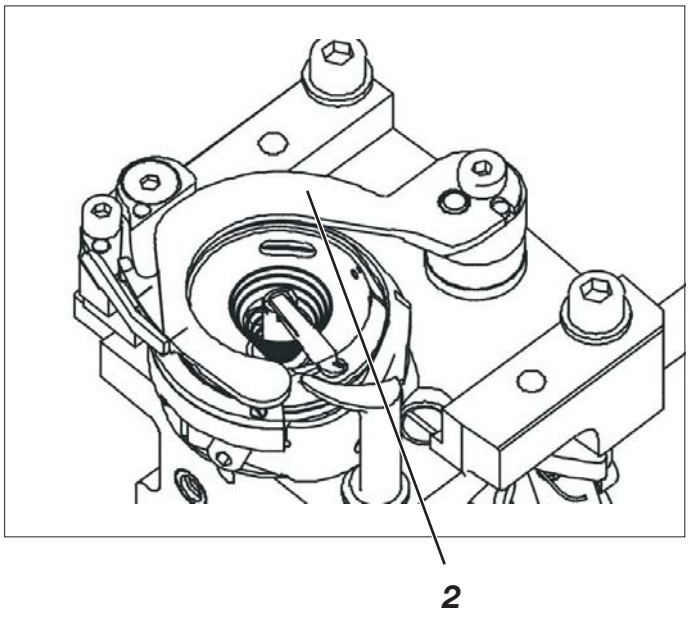


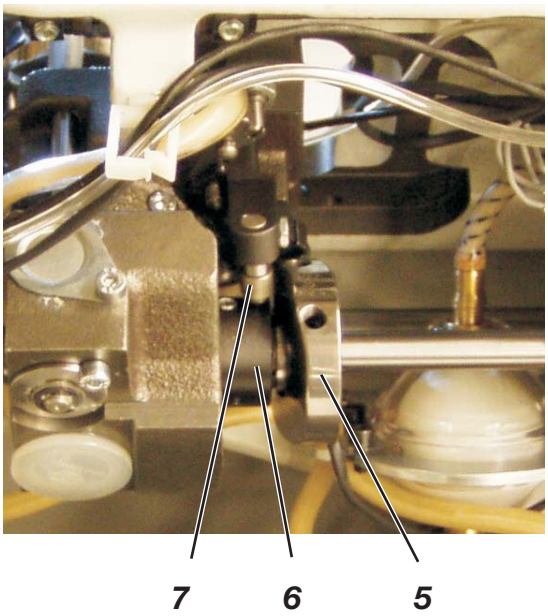
- Loosen grub screws (4x) at the clamping ring 6 and push them towards the hook bearing. Tighten the four grub screws at the clamping ring 6 again to prevent changing the loop lift.
- Undo grub screws (2x) at the radial cam 5.
- Turn operating lever 12 to the stop against the stop screw 9.
- Set the distance between the spool 7 and the radial cam 5 at the highest point of the radial cam 5 to 0.1mm.
- Retighten grub screws (2x) at the radial cam 5.
- Undo clamping screw 8 from the operating lever 12.
- Turn the thread draw cutter 1 so that the mark 3 of the thread draw cutter 1 is across from the edge of the counter blade 2.
- Retighten the clamping screw 8. Ensure that there is no axial play.
- Loosen grub screws (4x) at the clamp ring 6 and push them towards the radial cam 5 to the stop.
- Screw up the grub screws (4x) to the adjustment ring 6.
- Check the loop lift.

Warning!

The radial cam 5 and the adjustment ring 6 serve as mutual stop and should not be loosened at the same time!

2.9.4 Counter cutter





Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the counter cutter when the machine is switched off.

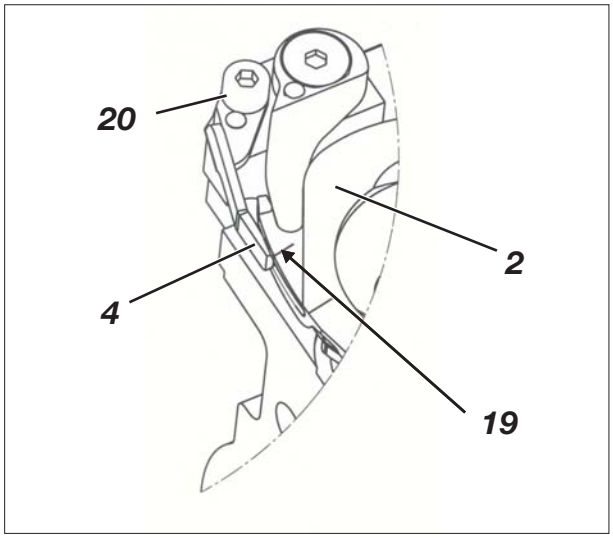
Adjustment and inspection

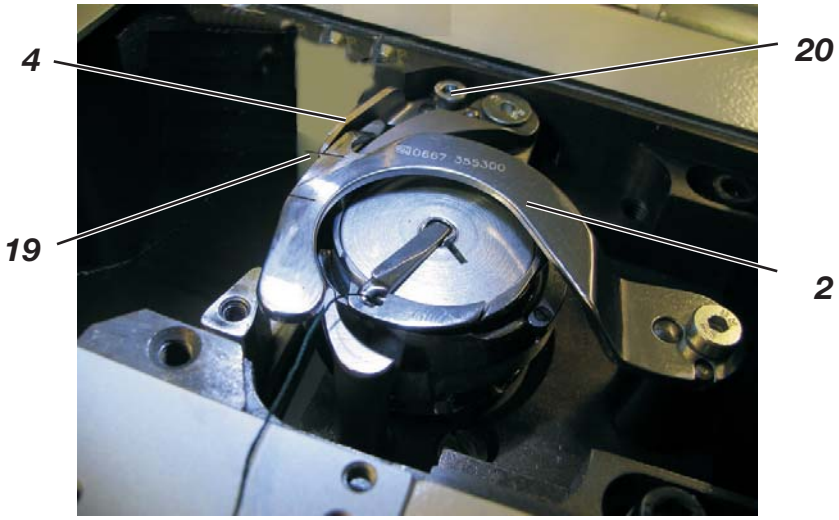
The thread should be cut reliably with the lowest possible pressure. Low cutting pressure keeps wear on the blades low
!
Two of the thickest threads to be sewn must be cut reliably at the same time.

- Turn the hand crank until the thread draw cutter can be swung out after triggering the catch.
- Swing out thread draw cutter manually.
  For this, press the collar with the spool 7 to the right against the radial cam 5.
- Insert two of the threads to be cut into the thread draw cutter 2.
- Keep turning the hand crank until the cutter has swung back.
- Check whether the sewing threads have been cut cleanly.

IMPORTANT!

If the counter cutter pressure is set too high this leads to increased wear on the cutter.





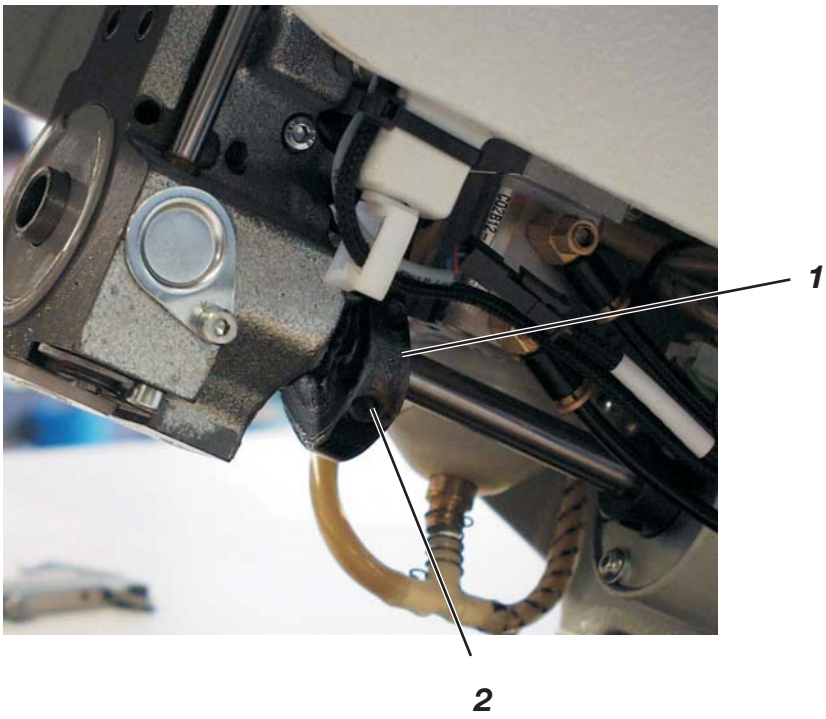
To adjust cutting pressure

- Swing out the thread draw cutter 2 until the mark 19 is next to the edge of the counter blade 4.
- Undo screw 20.
- Turn the counter blade 4 against the thread draw cutter 2.
- Screw up screw 20.

Important

The eccentric cut of the thread draw cutter 2 automatically produces a cutting pressure when both cutting edges are on top of each other.

2.9.5 Cutting position



Caution: Danger of injury!

Turn off the main switch.

Only check and adjust the cutting position when the machine is switched off.

Adjustment and inspection

By default, the cutting position is in the position “thread lever at the upper dead centre”.

If the machine is in the position “thread lever at the upper dead centre”, the radial cam 1 is to be at the highest position.

To adjust

- Turn the hand crank until the thread lever is at the top dead centre.
- Undo grub screws 2 at the radial cam 1.
- Turn the cam accordingly.
- Tighten grub screws 2 at the radial cam 1.

3. Oil lubrication

Caution: Danger of injury!

Oil can cause skin rashes.
Avoid excessive contact with the skin.
Wash thoroughly after contact.

IMPORTANT!

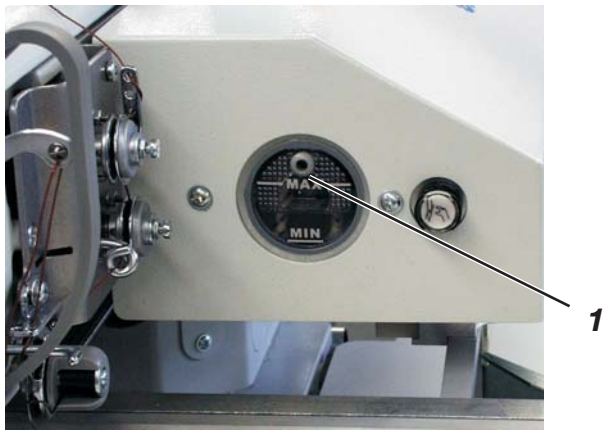
Handling and disposing of mineral oils is subject to statutory regulations.
Take used oil to an authorised receiving centre.
Protect the environment.
Ensure that you do not spill any oil.

Only use lubrication oil **DA 10** or a similar oil with the following specifications to lubricate the sewing unit:

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

DA 10 can be obtained from **DÜRKOPP ADLER AG** sales centres under the following part numbers:

250 ml container:	9047 000011
1 litre container:	9047 000012
2 litre container:	9047 000013
5 litre container:	9047 000014



Lubricating the upper part of the machine

– The upper part of the machine is fitted with a central oil wick lubrication system. All bearing points are supplied from the oil supply container 1.
– The oil level must not go below the **“MIN”** mark.
– Fill with oil up to the **“MAX”** mark through the hole in the inspection glass.

3.1 Hook lubrication

Caution: Danger of injury !

Turn off the main switch.

Adjust the hook lubrication only with the sewing machine switched off. Make a functional test with utmost caution when the sewing machine is running.

Standard checking

The necessary oil quantity for the correct lubrication of the hook has been adjusted by the manufacturer. It has to be altered, only in exceptional cases.

The required oil quantity depends on the sewing threads to be processed and on the fabric.

A piece of paper - preferably blotting paper - held below the hook has to be slightly sprayed with oil when sewing approx. 1 m of sewing thread and fabric.

Correction

– Adjust the oil quantity with the regulating screw 1.
  Turn the screw counter-clockwise = increase the oil quantity
  Turn the screw clockwise = reduce the oil quantity.

ATTENTION !

The adjusted oil quantity only changes after a several minutes of operation.

4. Maintenance

Caution: Danger of injury!

Switch the main switch off.
The sewing machine must only be maintained when it is switched off.

The maintenance work to be carried out by the sewing machine operating personnel daily or weekly (cleaning and lubricating) are described in the operating instructions (Part 1). They are only listed in the following table for completeness.

Maintenance work to be carried out	Operating hours			
	8	40	160	500
Upper part of sewing machine				
- Remove sewing dust and loose thread	X			
- Check the oil level in the oil reservoir for lubricating the top of the sewing machine		X		
Sewing drive				
- Clean the motor fan grid	X			
- Check the condition and tension of the V belt			X	
Pneumatic system				
- Check the water level in the pressure controller		X		
- Clean the filter insert in the compressed air maintenance unit				X
- Checking the pneumatic system for leaks				X

Notes: