

867**Spezialnähmaschine**

Serviceanleitung

D[Service Instructions](#)**GB**

Instructions de service

F

Istruzioni per il servizio

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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 immediately 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 permanent 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.



Service instructions class 867

(Edition 02.2010)

1.	General notes	
1.1	Gauges.	3
1.2	Description of the locking positions.	4
1.3	Graduation on the handwheel	5
2.	Sewing machine	
2.1	Position of the arm shaft crank on the arm shaft	6
2.2	Upper and lower toothed belt wheel / toothed belt	7
2.2.1	Position of the upper toothed belt wheel	7
2.2.2	Position of the lower toothed belt wheel	8
2.3	Bottom feed and stitch regulator gear	9
2.3.1	Basic setting of stitch adjustment	9
2.3.2	Adjust the 2nd stitch length.	11
2.3.3	Position of the feed dog in the throat plate cutout	12
2.3.4	Feeding motion of the feed dog	14
2.3.5	Lifting motion of the feed dog	15
2.3.6	Feed dog height	16
2.3.7	Balance weight	17
2.4	Transmission lever.	18
2.5	Needle bar linkage.	19
2.5.1	Align the needle bar linkage laterally	19
2.5.2	Needle penetration in feeding direction	20
2.6	Hook, looping stroke and needle bar height.	21
2.6.1	Looping stroke	21
2.6.2	Needle bar height	22
2.6.3	Distance between hook and needle.	23
2.6.4	Needle guard	24
2.7	Bobbin case opening	25
2.7.1	General	25
2.7.2	Setting of the bobbin case opening	25
2.7.3	Timing of opening	27
2.8	Feeding foot and presser foot	28
2.8.1	Feeding foot and presser foot stroke	28
2.8.2	Stroke motion of the feeding foot	29
2.8.3	Sewing foot pressure	30
2.9	Stitch length limitation.	31
2.10	Stitch equality of the forward and backward stitch	32
2.11	Sewing foot lifting	33
2.11.1	Mechanical sewing foot lift	33
2.11.2	Height of the sewing feet arrested with hand lever.	34
2.11.3	Height of the lifted sewing feet.	35

2.12	Thread-guiding parts	36
2.12.1	Thread regulator	36
2.12.2	Thread take-up spring	37
2.13	Bobbin winder	38
2.14	Thread cutter	40
2.14.1	General	40
2.14.2	Thread pulling knife	42
2.14.3	Counter-knife and lower thread clamp	44
2.14.4	Cutting position	46
2.15	Short thread cutter	48
2.15.1	General	48
2.15.2	Locking latch for the thread-pulling knife	49
2.15.3	Thread pulling knife	50
2.15.4	Counter knife	52
2.16	Potentiometer in the arm	54
2.16.1	Basic setting without control panel	54
2.16.2	Basic setting with the control panel V810 or V820	55
2.16.3	Check the potentiometer adjustment	56
2.17	Connections PCB	57
2.18	Machines with moving binder	58
2.19	Machines with vertical trimmer	59
3.	Oil lubrication	
3.1	Hook lubrication	63
3.2	Maintenance	64

1. General notes

The present service instructions describe the adjustment of the special sewing machine **867**.



ATTENTION !

The operations described in the service instructions must only be executed by qualified staff or correspondingly instructed persons respectively!



Caution: Danger of injury !

In case of repair, alteration or maintenance work turn off the main switch and disconnect the machine from the pneumatic supply system.

Carry out adjusting operations and functional tests of the running machine only under observation of all safety measures and with utmost caution.

The present service instructions describes the adjustment of the sewing machine in an appropriate sequence. Please observe in this connection that various setting positions are interdependent. Therefore it is absolutely necessary to do the adjustment following the described order.

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For all setting operations of parts involved in the stitch formation a new needle without damage has to be inserted.

Machine covers having to be screwed off and on again for checking and adjusting operations are not mentioned in the text.

Note:

Some of the shafts of the special sewing machine **867** are provided with flat spots. This facilitates the adjustment considerably.

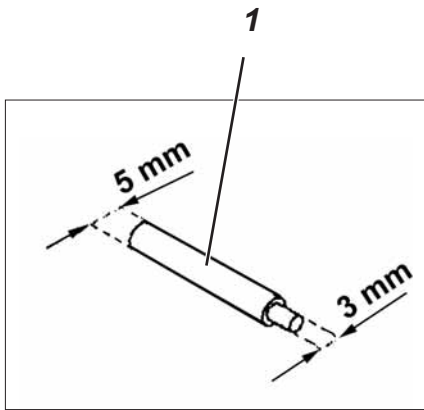
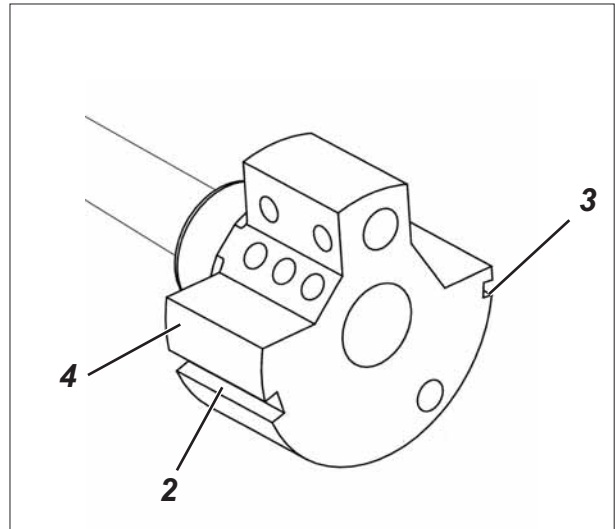
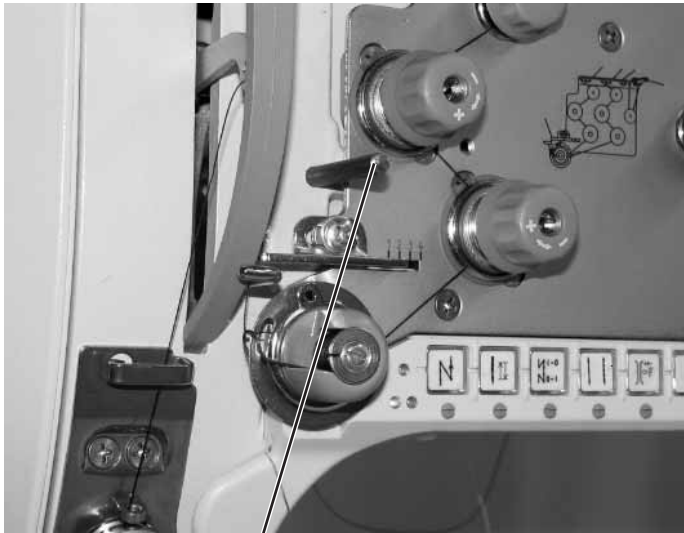
In case of all adjustments on flat spots the first screw in rotation direction is put on such a flat spot.

1.1 Gauges



The locking pin **1** required for adjusting the machine belongs to the serial equipment of the machine. It is in the accessories and can be put at the bottom side of the oil pan.

1.2 Description of the locking positions



With the locking pin **1** and the arresting grooves **2** and **3** in the arm shaft crank **4** the sewing machine can be arrested in two adjusting positions.

Position I = Locking pin Ø 5 mm for large groove
= Looping stroke, needle bar height

Position II = Locking pin Ø 3 mm for small groove
= Needle bar at its upper dead center, graduation on the handwheel

1.3 Graduation on the handwheel



The handwheel **2** has a graduation printed on it.

Certain settings are carried out according to the position of the handwheel.

- Turn the handwheel until the degree mark mentioned in this manual points to the index **3**.
- Carry out the described adjustment.

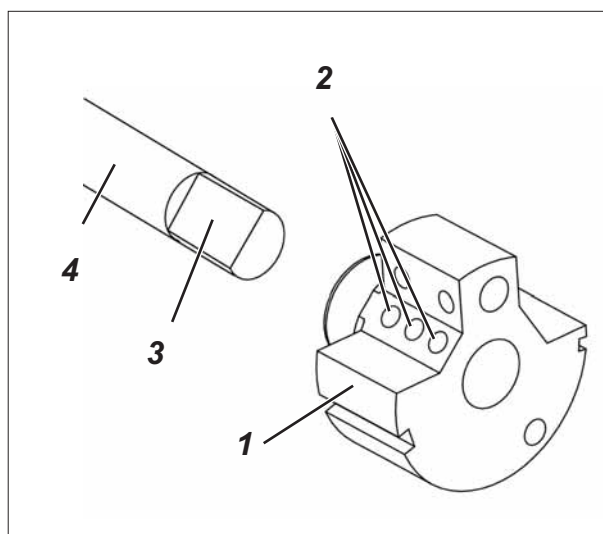
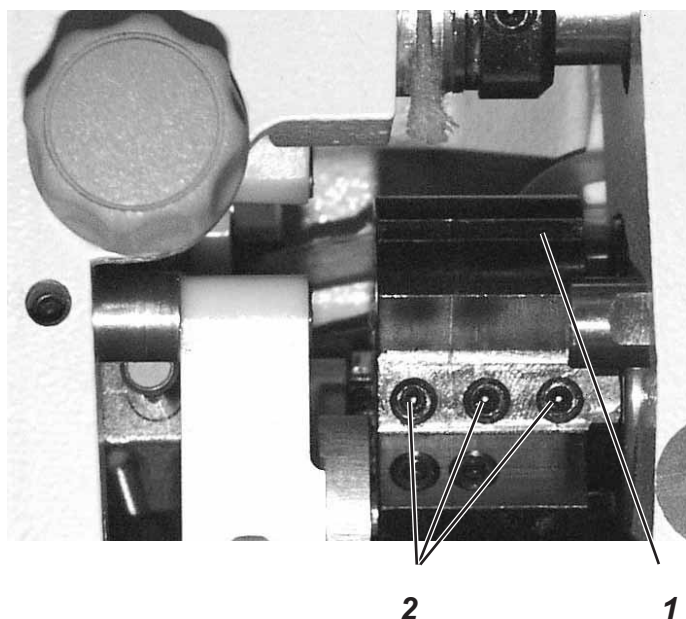
GB

Setting the handwheel

- Setting the handwheel to the degree mark 50°
- Loosen the threaded pin for the handwheel through opening **1**.
- Set the handwheel to 0°
- Arrest the machine in position II with the locking pin Ø 3 mm
- Loosen the threaded pin for the handwheel through opening **1**.
- Turn the handwheel **2** so that the degree mark 0° points to the middle of the index **3**.
- Tighten the threaded pin for the handwheel through opening **1**.
- Set the handwheel to 50° and tighten the threaded pin for the handwheel.

2. Sewing machine

2.1 Position of the arm shaft crank on the arm shaft



Caution: Danger of injury !

Turn off the main switch.

Check and set the position of the arm shaft crank only when the machine is switched off.

Standard checking

The arm shaft crank **1** is fastened on the arm shaft **4** with three threaded pins **2**.

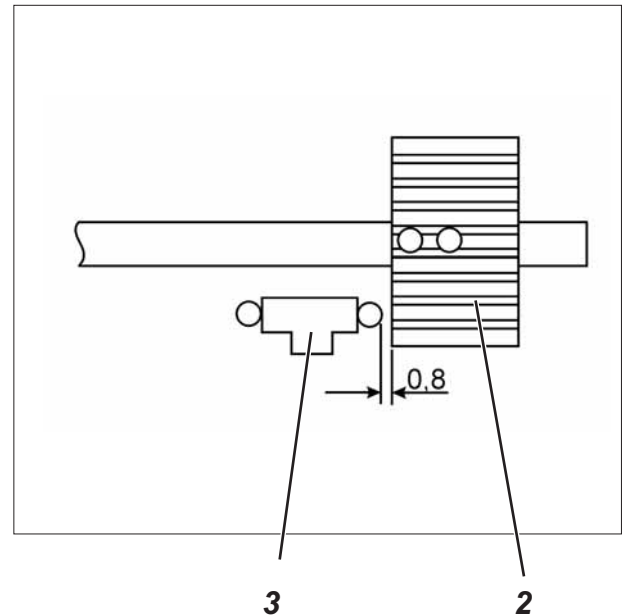
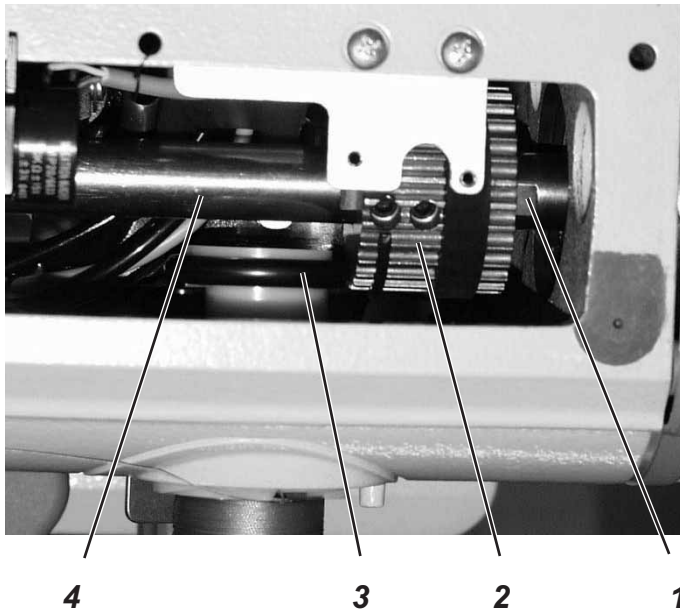
The threaded pins must sit on the flat spot **3**.

Correction

- Loosen the threaded pins **2** on the arm shaft crank.
- Twist the arm shaft crank **1** on the shaft until the threaded pins **2** sit on the flat spot **3**.
- Push arm shaft crank **1** axially to the right as far as it will go.
- Tighten the threaded pins **2**.

2.2 Upper and lower toothed belt wheel / toothed belt

2.2.1 Position of the upper toothed belt wheel



Caution: Danger of injury !

Turn off the main switch.

Check and set the position of the upper toothed belt wheel only when the machine is switched off.

Standard checking

The toothed belt wheel **2** is fastened on the arm shaft **4** with two threaded pins.

The threaded pins must sit on the flat spot **1**.

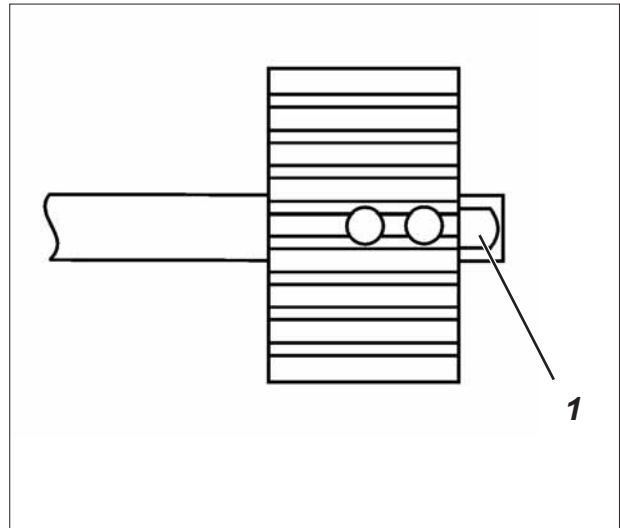
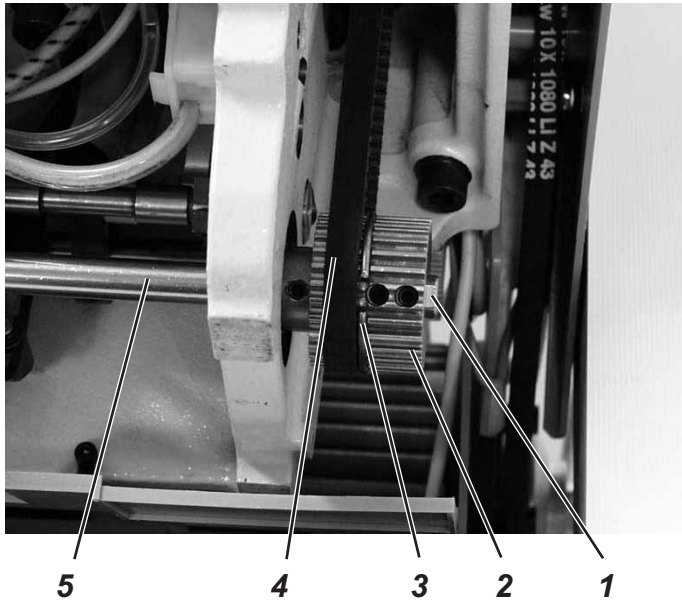
The distance between the toothed belt wheel **2** and the bobbin winder wheel **3** must amount to 0.8 mm when the bobbin winder is switched off.

- Check distance between toothed belt wheel **2** and bobbin winder wheel **3** by means of a thickness gauge.

Correction

- Loosen the threaded pins in the toothed belt wheel.
- Turn the toothed belt wheel, until the threaded pins sit on the flat spot **1** of the arm shaft **4**.
- Set lateral distance of 0.8 mm between the toothed belt wheel **2** and the bobbin winder wheel **3** by using a thickness gauge.
- Tighten the threaded pins in the toothed belt wheel.

2.2.2 Position of the lower toothed belt wheel



Caution: Danger of injury !

Turn off the main switch.

Check and set the position of the lower toothed belt wheel only when the machine is switched off.

Standard checking

The threaded pins in the toothed belt wheel **2** must sit on the flat spot **1** of the lower shaft **5**.

The toothed belt wheel must be positioned in a way that the toothed belt **4** bears against the belt tensioner ring **3** when the handwheel is turned without being dislocated.

- Check the position of the toothed belt wheel.

Correction

- Pull out the toothed belt from the lower toothed belt wheel.
- Loosen the threaded pins in the toothed belt wheel.
- Turn the toothed belt wheel **2**, until the screws sit on the flat spot of the lower shaft **5**.
- Tighten the threaded pins in the toothed belt wheel.
- Pull the toothed belt on the toothed belt wheel again.
- Check the course of the toothed belt.

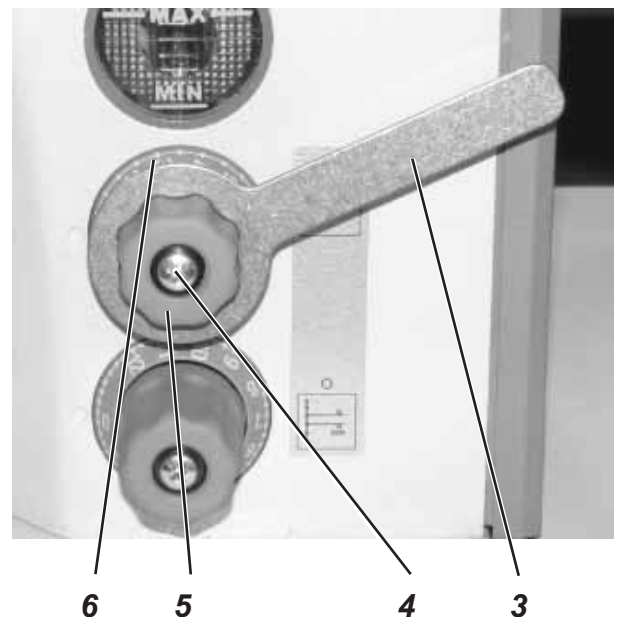
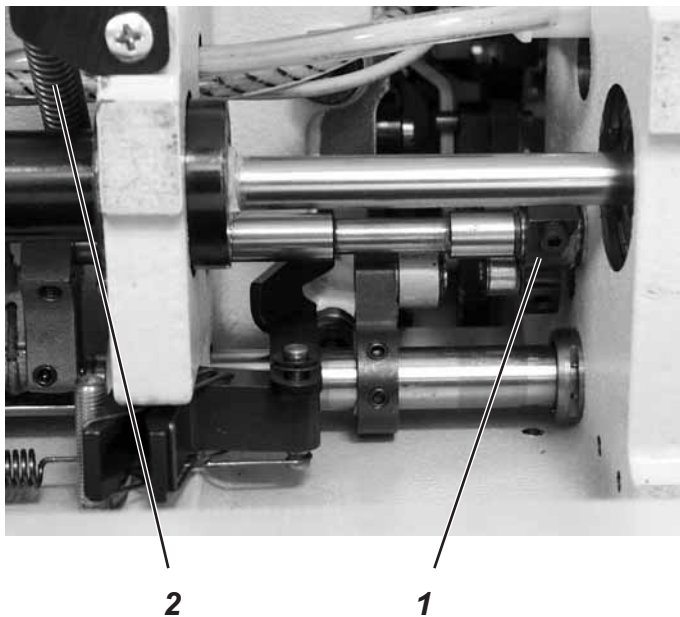


ATTENTION: Danger of breakage !

After replacing the toothed belt, check the following: Hook adjustment (see chapter 2.6), feeding motion of the feed dog (see chapter 2.3.4) and lifting motion of the feed dog see chapter 2.3.5).

2.3 Bottom feed and stitch regulator gear

2.3.1 Basic setting of stitch adjustment



Caution: Danger of injury !

Turn off the main switch.

Set the basic setting of stitch adjustment only with the sewing machine switched off.

Standard checking

When the setting wheel 5 is in zero position, the stitch regulator gear should have the least clearance possible.

- Set stitch length "0" at the setting wheel 5.
- Check the clearance of the stitch regulator gear at the stitch regulator lever 1.



Correction

- Unhook the spring 2.
- Retain the setting wheel 5 using the wrench 3.
- Unscrew the screw 4 and remove the setting wheel 5.
- Turn shaft 7 to the right using a 10 mm wrench until the stitch regulator lever 1 has the least possible clearance.



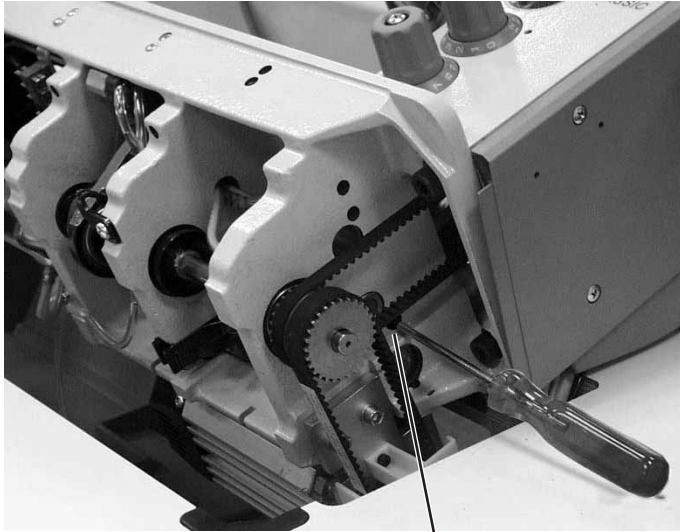
ATTENTION: Danger of breakage !

Do not turn the shaft too far to the right .
The stitch regulator parts may jam and the maximum stitch length of 8 mm and 6 mm can no longer be achieved.

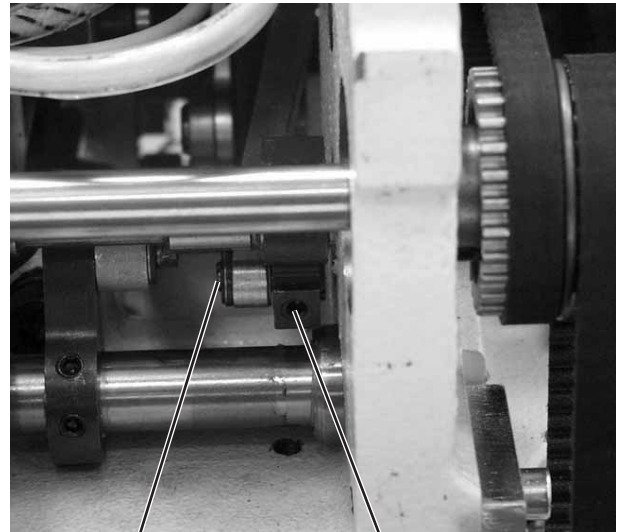
7

- Set scale 6 to "0".
- Put setting wheel 5 on again and tighten it with screw 4.
- Check the clearance of the stitch regulator lever 1.
- Put the spring 2 again.

GB



1



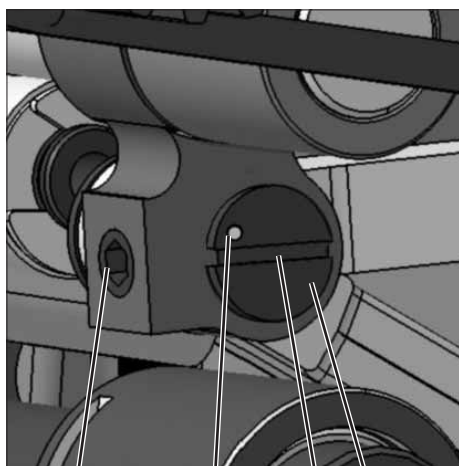
3

2

Adjust the eccentric

The eccentric 3 has to be adjusted in such a way that the mark 4 points to the upper left and that the eccentric slot 6 stands parallel to the threaded pin 2.

- Loosen the threaded pin 2 of the block 5.
- Through the hole 1, turn the eccentric 3 in such a way that the mark 4 points to the upper left and that the eccentric slot 6 stands parallel to the threaded pin 2.
- Tighten the threaded pin 2 of the block 5.

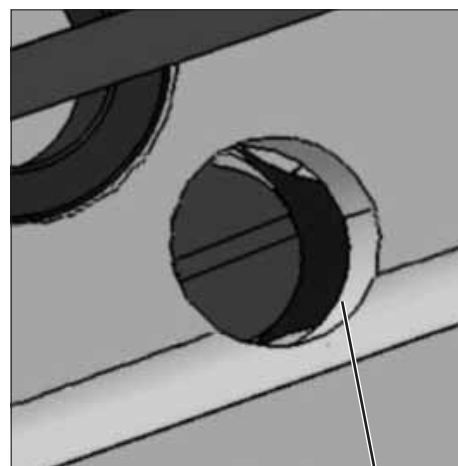


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5

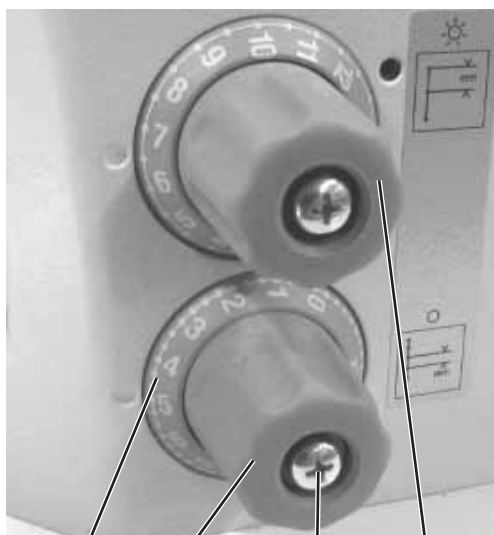
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3

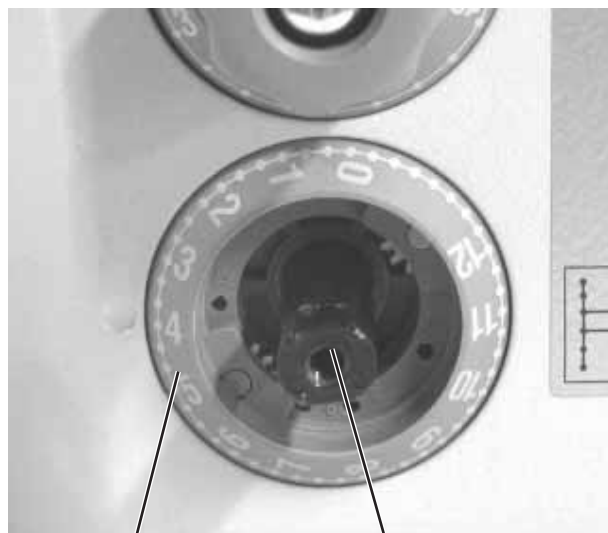


6

2.3.2 Adjust the 2nd stitch length



4 3 2 1



4 5



Caution: Danger of injury !

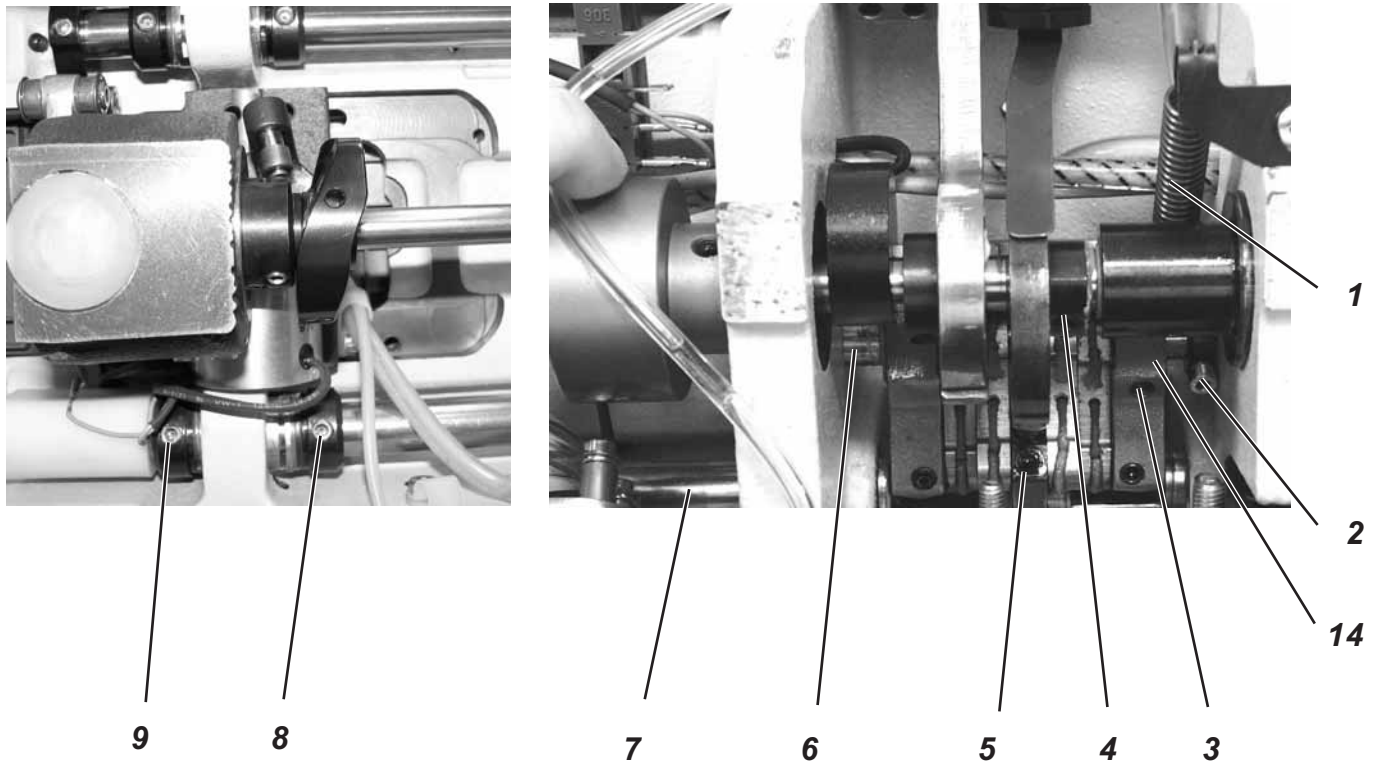
Turn off the main switch.

Set the basic setting of stitch adjustment only with the sewing machine switched off.

GB

- Set the upper setting wheel 1 to “4”.
- Unscrew the screw 2 and remove the setting wheel 3.
- Using a 10 mm wrench, turn with caution the shaft 5 clockwise as far as it will go.
- Set scale 4 to “4”.
- Put setting wheel 3 on again and tighten it with screw 2.

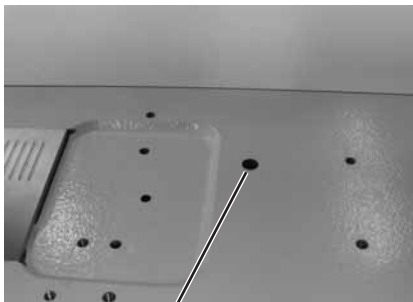
2.3.3 Position of the feed dog in the throat plate cutout



Caution: Danger of injury !

Turn off the main switch.

Check and set the position of the feed dog and stitch regulator gear only when the machine is switched off.



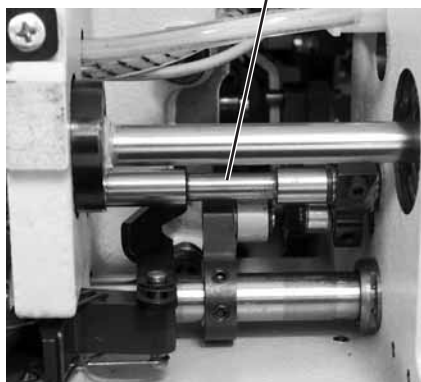
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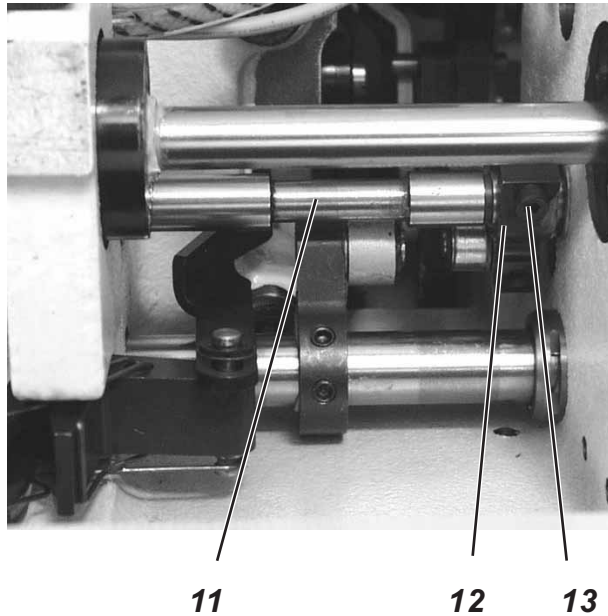
11

- Unhook the spring 1.
- Loosen the threaded pins on the adjustment rings 8 and 9.
- Loosen screw 5.
- Align the feed dog in the center of the throat plate cutout.
- Arrest the shaft 7 with the adjustment rings 8 and 9 and tighten the screws.
- Loosen threaded pin 10 and screw 2.
- Loosen the threaded pins on the thrust eccentric 4.
- Align the positioning frame 14 laterally so that it comes to sit in the center between the cutouts on the shaft 7.
- Arrest the positioning frame 14 axially with the bearing bolt 6 (fixed with screw 10) and the adjustment ring 2.
- Tighten the threaded pins on the thrust eccentric 4.

Note:

The shaft 11 is fixed on surface in the positioning frame 14 at position 3 with two screws in series.





- Turn the stitch regulator handwheel to position “0”.
- Set the gear to “0”.
In order to do so, turn the positioning frame 14 so that the tongues come parallel to each other.
- Tighten the screw 13 on the block 12.
- Align the feed dog in longitudinal direction in the center of the throat plate cutout.
- Tighten the screw 5 (see picture on page 12).
- Fit in the spring 1 (see picture on page 12) on the positioning frame and the fastening bracket.

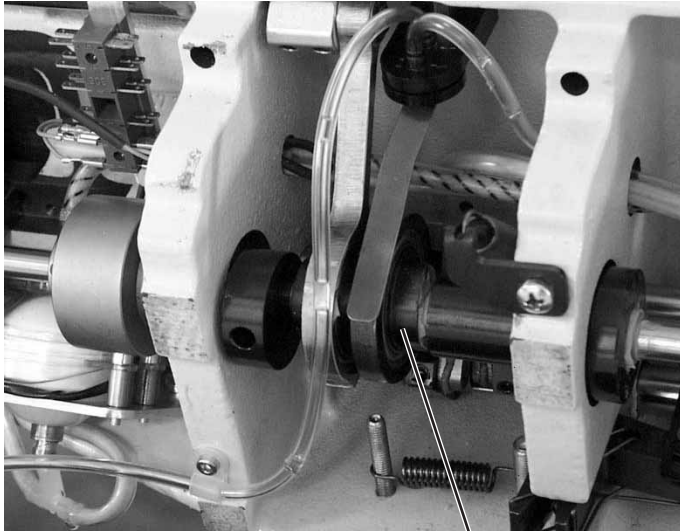
GB



ATTENTION: Danger of breakage !

The shaft 11 must **not** reach so far into the positioning frame 14 that the tongues are hindered in their movements.

2.3.4 Feeding motion of the feed dog



1



Caution: Danger of injury !

Turn off the main switch.

Check and set the feeding motion of the feed dog only when the machine is switched off.

Standard checking

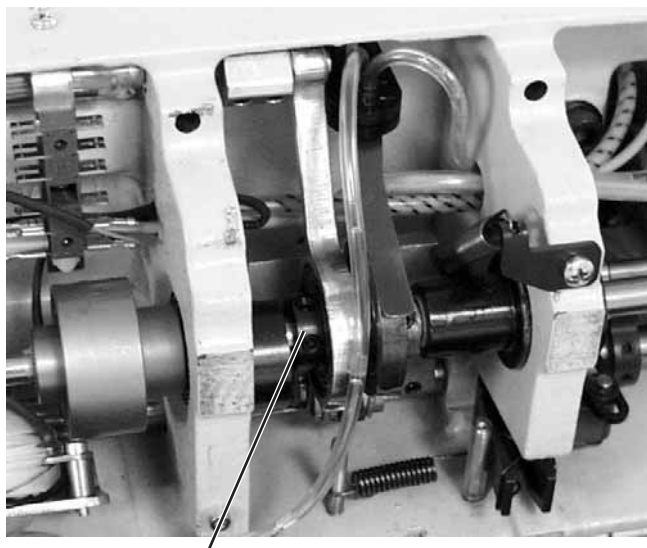
When the machine is in position “190°” the feed dog must not move upon actuating the stitch regulator lever if the maximum stitch length is set.

- Set the maximum stitch length.
- Turn the machine to position “190°”.
- Move the stitch regulator lever and check whether the feed dog stands still.

Correction

- Loosen the threaded pin on the thrust eccentric 1.
- Adjust thrust eccentric 1.
- Tighten the threaded pin on the thrust eccentric 1.
- Move the stitch regulator lever and check whether the feed dog stands still.

2.3.5 Lifting motion of the feed dog



1



Caution: Danger of injury !

Turn off the main switch.

Check and set the lifting motion of the feed dog only when the machine is switched off.

GB

Standard checking

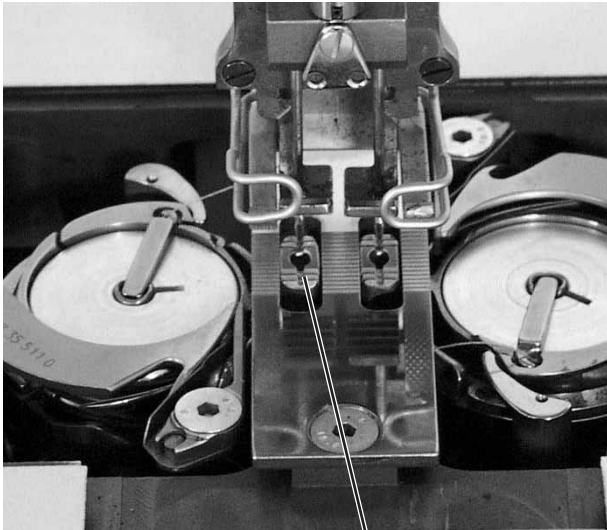
The feed dog is supposed to have the same distance to the throat plate at its front and backward dead center:

- Turn the handwheel and check the movement of the feed dog.

Correction

- Loosen the threaded pin on the lifting cam 1.
- Turn the lifting cam.
- Tighten the screws on the lifting cam 1.
- Check the setting.

2.3.6 Feed dog height



2



1



Caution: Danger of injury !

Turn off the main switch.

Check and set the height of the feed dog only when the machine is switched off.

Standard checking

Machines without feed dog lifting device

The feed dog should be on the same level as the throat plate.

Machines with feed dog lifting device

For a safe forward movement of the material the feed dog **2** must in its highest position be:

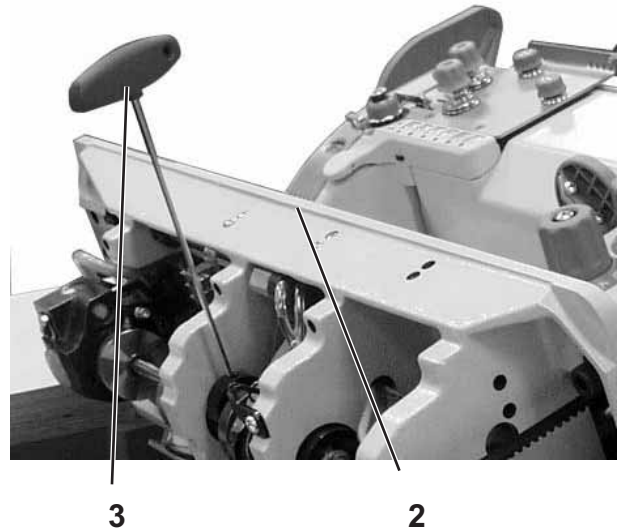
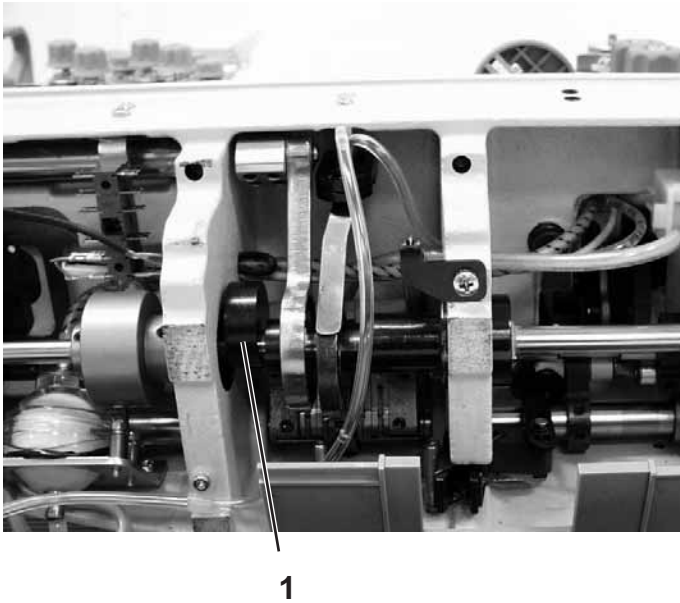
0.5 mm above the throat plate surface on FA machines,
0.8 mm above the throat plate surface on KFA machines.

- Turn the handwheel until the feed dog **2** has reached its highest position.
- Check the height of the feed dog **2**

Correction

- Turn the handwheel until the feed dog **2** has reached its highest position.
- Loosen the screws on the lever **1**.
- Turn the lever **1** so that the feed dog stands 0.5 mm with FA, respectively 0.8 mm with KFA above the throat plate surface.
- Tighten the screws on the lever **1**.

2.3.7 Balance weight



Caution: Danger of injury !

Turn off the main switch.

Check and set the balance weight only when the machine is switched off.

GB

Standard checking

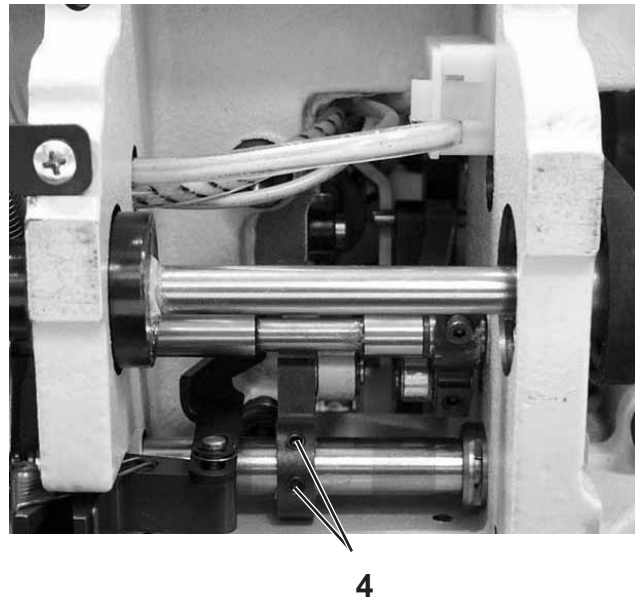
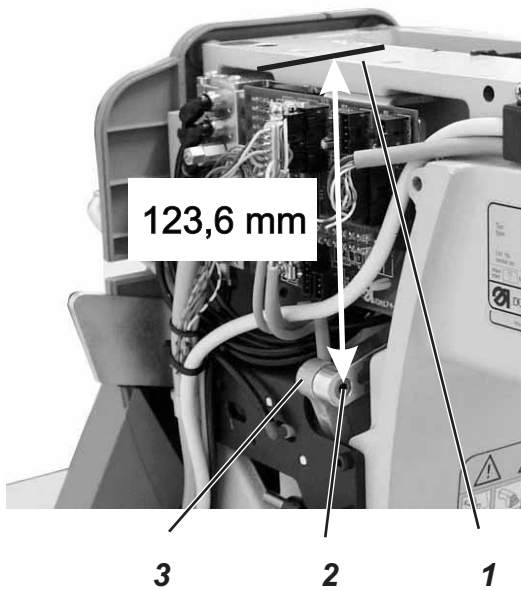
The balance weight 1 has to be positioned in a way that, with the handwheel in position "210°", a stuck in Allen key 3 stands parallel to the bed plate 2.

- Check the position of the balance weight.

Correction

- Loosen the screws on the balance weight 1.
- Turn the balance weight 1 accordingly.
- Tighten the threaded pin on the balance weight 1.

2.4 Transmission lever



Caution: Danger of injury !

Turn off the main switch.

Check and set the transmission lever only when the machine is switched off.



Standard checking

The lever 3 transmits the movement of the advance shaft to the needle bar linkage.

The lever 3 must be positioned in a way the distance between the surface of the arm 1 and the center of the bolt 2 amounts to 123,6 mm with the stitch length set to "0".

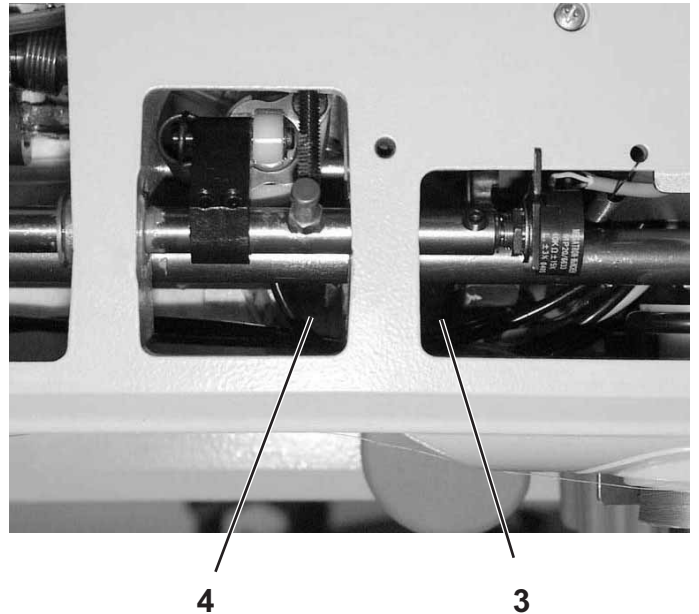
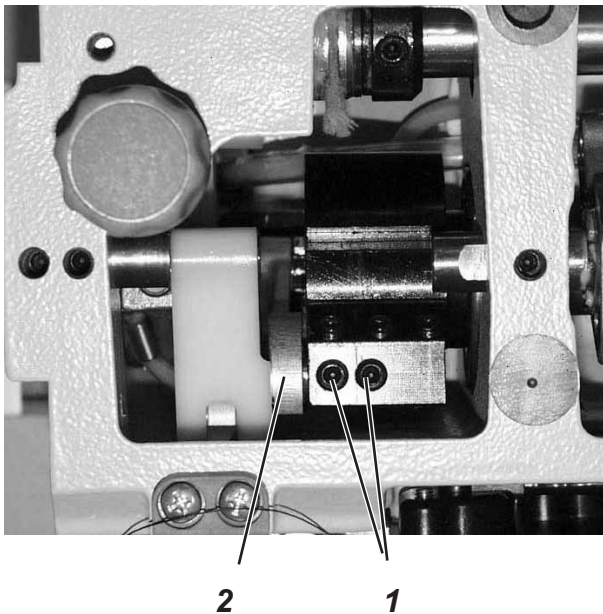
- Set the stitch length to "0".
- Check the distance between the top edge 1 and the bolt center 2.

Correction

- Loosen the threaded pin 4 at the lower transmission lever.
- Loosen the screw 5 at the upper transmission lever.
- Adjust the lever 3 to fit the given measure.
- Tighten the threaded pin 4 and the screw 5 again.

2.5 Needle bar linkage

2.5.1 Align the needle bar linkage laterally



Caution: Danger of injury !

Turn off the main switch.

Check and set the needle bar linkage only when the machine is switched off.

Standard checking

The needle must penetrate the center of the feed dog's stitch hole.

- Insert a new needle.
- Turn down the needle bar with the handwheel.
- Check the lateral position of the needle in the stitch hole.

Correction

- Loosen the screws on the adjustment rings 3 and 4.
- Adjust the lateral position of the needle bar linkage so that the needle stands in the center of the stitch hole.
- Fix the adjustment rings 3 and 4 and tighten the screws.
- Loosen the threaded pins 1.
- Adjust the thread lever laterally in a way that the clearance of the traction rod 2 on the cross head is identical to both sides.
- Tighten the threaded pins 1.



ATTENTION: Danger of breakage !

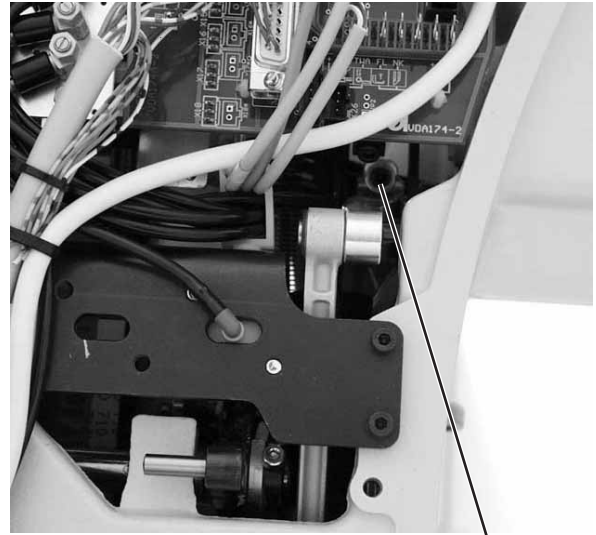
Check the distance between the hook tip and the needle after adjusting the lateral position of the needle bar linkage. If necessary, readjust the distance (see chapter 2.6.3).

2.5.2 Needle penetration in feeding direction



2

1



3



Caution: Danger of injury !

Turn off the main switch.

Check and set the needle penetration only when the machine is switched off.

Standard checking

The needle is supposed to penetrate the center of the feed dog's stitch hole with the stitch length set to "0".

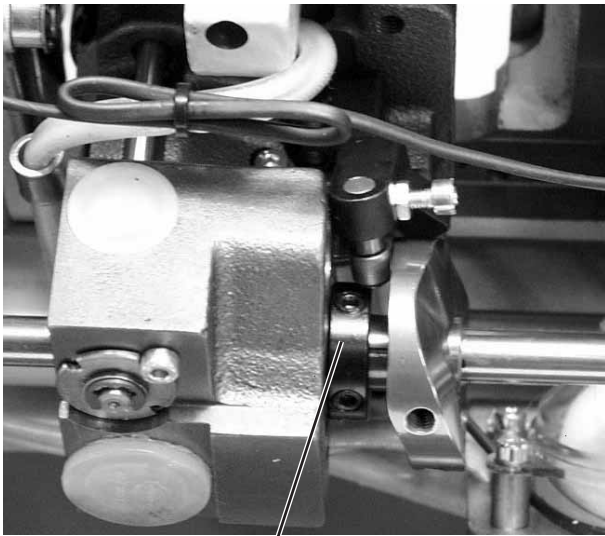
- Set the stitch length to "0".
- Insert a new needle.
- Turn down the needle bar with the handwheel.
- Check the position of the needle in the stitch hole.

Correction

- Loosen the screw 3 at the upper transmission lever.
- Adjust the needle bar linkage 2 so that the needle 1 stands in the center of the stitch hole.
- Tighten screw 3 again.

2.6 Hook, looping stroke and needle bar height

2.6.1 Looping stroke



3

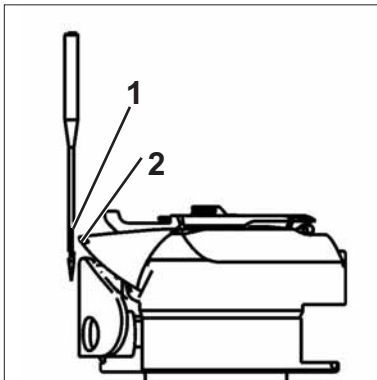


Caution: Danger of injury !

Turn off the main switch.

Check and set the looping stroke only when the machine is switched off.

GB



Standard checking

The looping stroke is the way of the needle bar from its bottom dead center to the point where the hook tip 2 is at the middle of the needle 1.

- Arrest the machine head in position I (Locking pin Ø 5 mm in the large groove).
- Set the stitch length setting wheel to "0".
- Check the position of the hook tip in relation to the needle.

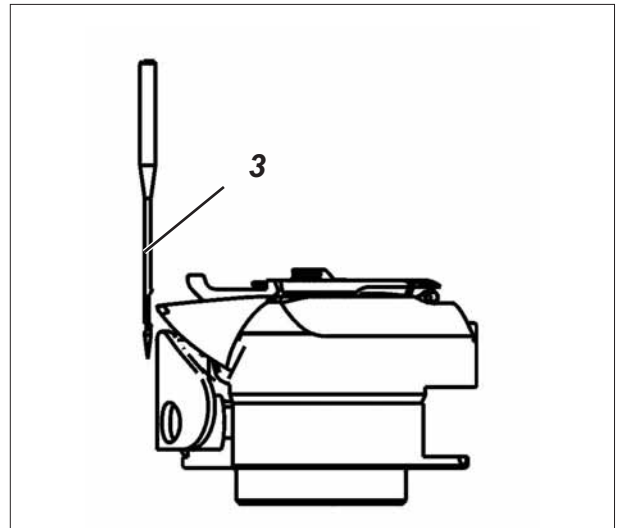
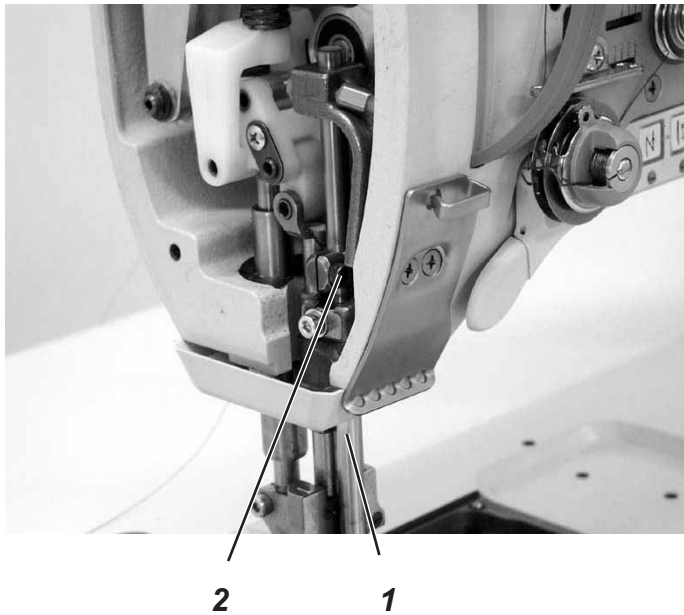
Correction

- Arrest the machine head in position I by putting the locking pin Ø 5 mm into the large groove.
- Set the stitch length setting wheel to "0".
- Loosen the screws on the clamping ring 3.
- Turn the hook in a way that the hook tip 2 stands in the middle of needle 1.
- Tighten the screws on the clamping ring 3.

ATTENTION !

After the hook's setting the position of the thread cutter cam is to be checked (see chapter 2.14.4).

2.6.2 Needle bar height



Caution: Danger of injury !

Turn off the main switch.

Check and set the needle bar height only when the machine is switched off.

Standard checking

The needle bar's height is to be set in a way that the hook tip stands in the lower third of the needle scarf with the stitch length set to "0" in the looping stroke position.

- Set the stitch length setting wheel to "0".
- Arrest the sewing machine in position I (looping stroke position).
- Check the position of the needle in relation to the hook tip.

Correction

- Set the stitch length setting wheel to "0".
- Loosen the needle bar fastening screw 2.
- Shift the needle bar 1 with needle 3. Upon shifting the needle bar must not be turned. The needle scarf must be directed to the hook tip.
- Tighten the needle bar fastening screw.

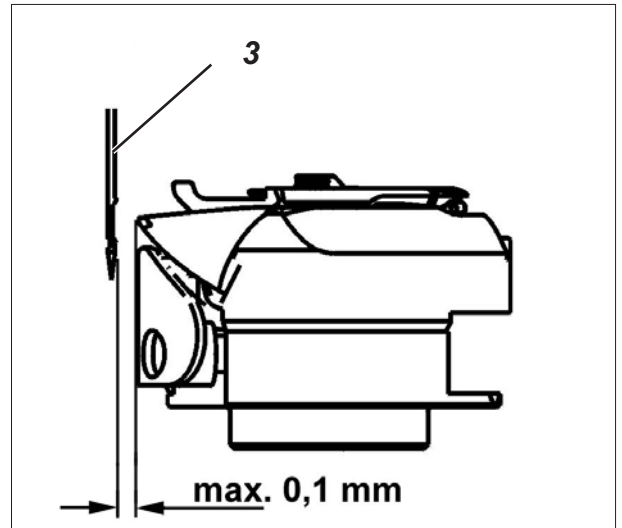
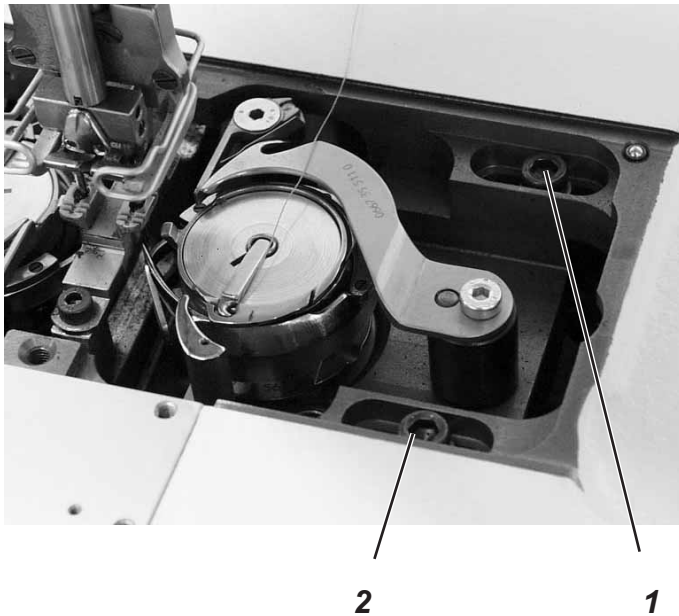
A wrong setting of the needle bar height can have the following consequences:

- Damage on the hook tip.
- Jamming of the needle thread between needle and needle guard.
- Missed stitches and thread breakage.

ATTENTION !

After a correction of the needle bar height, the needle guard's position has to be checked (see chapter 2.6.4).

2.6.3 Distance between hook and needle

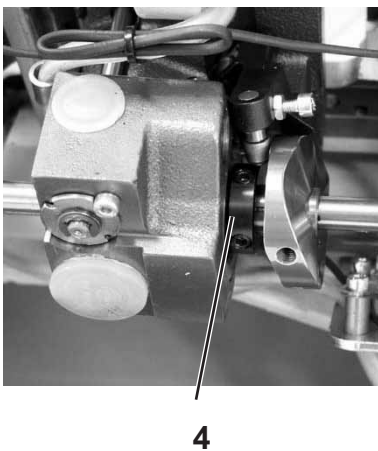


Caution: Danger of injury !

Turn off the main switch.

Check and set the distance between hook and needle only when the machine is switched off.

GB

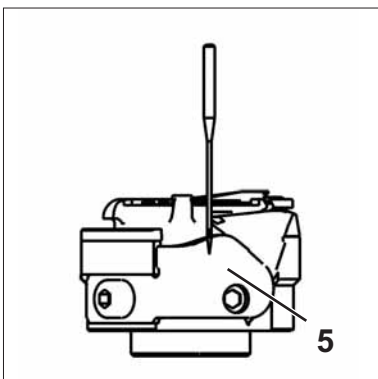


Standard checking

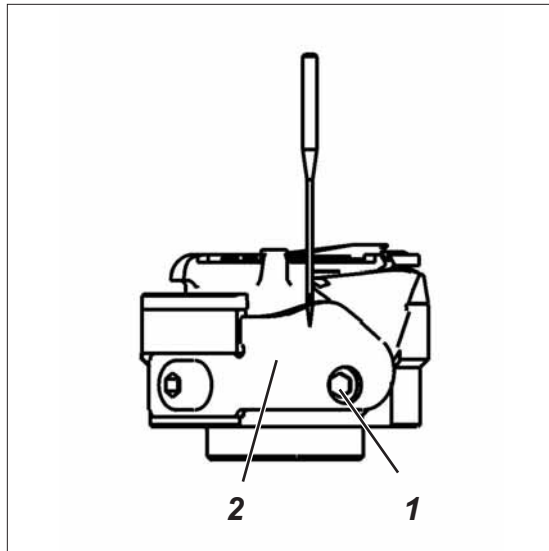
In looping stroke position the distance between the hook tip and the needle scarf is to be max. 0.1 mm.

Correction

- Check whether the needle is dislocated by the hook guard 5 in looping stroke position. If this is the case, the hook guard 5 must be readjusted accordingly (see chapter 2.6.4).
- Check the distance. The distance between the needle 3 and the hook should be max. 0.1 mm.
- Loosen the screws 1 and 2.
- Loosen the screws on the clamping ring 4.
- Shift the hook turret laterally to fit.
- Tighten the screws 1 and 2.
- Set the looping stroke (see chapter 2.6.1).
- Tighten the screws on the clamping ring 4.



2.6.4 Needle guard



Caution: Danger of injury !

Turn off the main switch.

Check and set the needle guard only when the machine is switched off.

Standard checking

The needle guard 2 is to prevent a contact of the needle with the hook tip. In looping stroke position the needle should be slightly dislocated.

- Check the needle guard.

Correction

- Turn the machine into looping stroke position.
- Adjust the needle guard by twisting the screw 1.



ATTENTION !

The needle guard must be adjusted after changing the needle bar height, correcting the looping stroke and changing the needle size.

2.7 Bobbin case opening

2.7.1 General

The thread lever has to pull the thread through between the bobbin case and its holder.

For the thread to slip through without any hindrance the bobbin case must be opened in this particular moment.

That way the desired seam pattern can be achieved with the lowest possible thread tension.

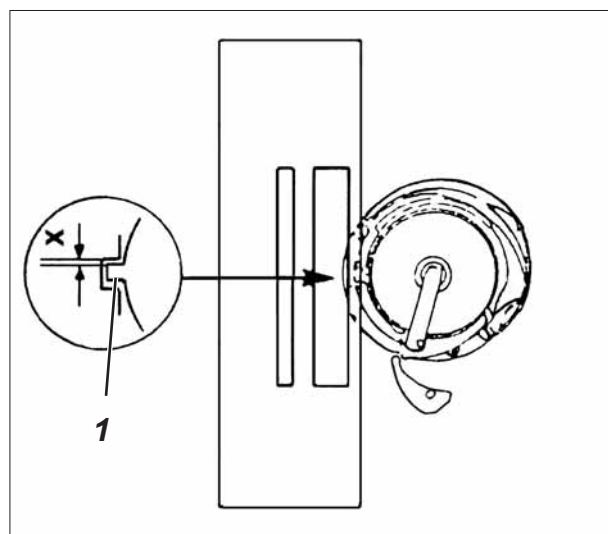
Wrong settings can have the following consequences:

- Thread rupture
- Eyes on the seam's bottom side
- Loud noises

2.7.2 Setting of the bobbin case opening



3 2 1



GB



Caution: Danger of injury !

Turn off the main switch.

Check and set the bobbin case opener only when the machine is switched off.

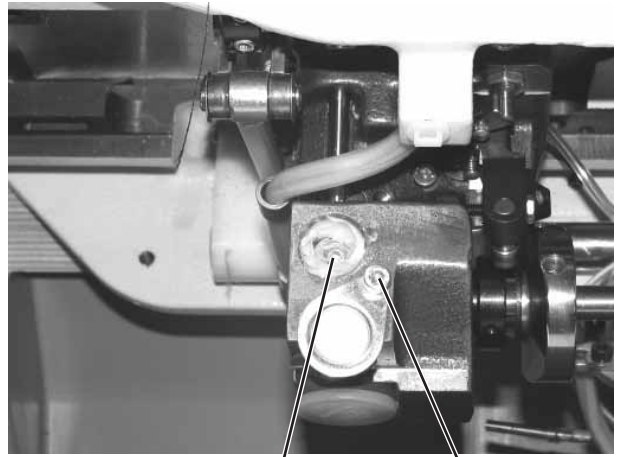
Standard checking

The bobbin case opener 3 has to open the hook center 2 just enough for the sewing thread to pass unimpededly between the bobbin case dog 1 and the pocket of the stitch plate. The opening gap X depends on the thickness of the sewing thread.

- Turn the handwheel and check, whether the bobbin case opener opens the hook center wide enough.



3 2 1

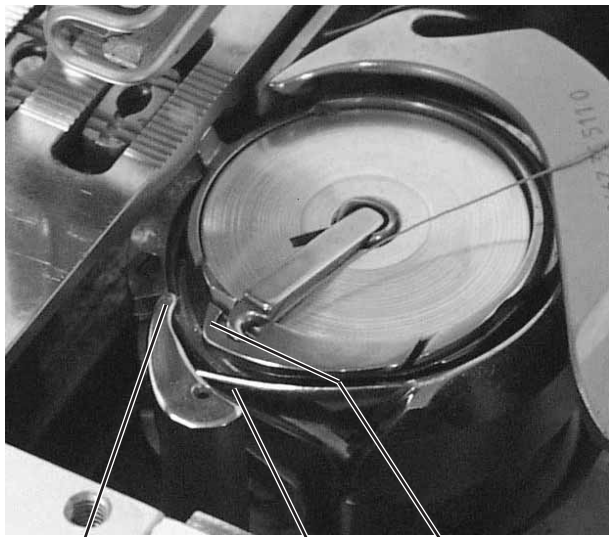


5 4

Correction

- Loosen screw 4.
- Shift the cover on the hook housing downward.
- Loosen screw 5.
- Adjust the bobbin case opener 3.
- Tighten screw 5 again.
- Put the cover back again.
- Tighten screw 4.

2.7.3 Timing of opening



3 2 1



6 5 4

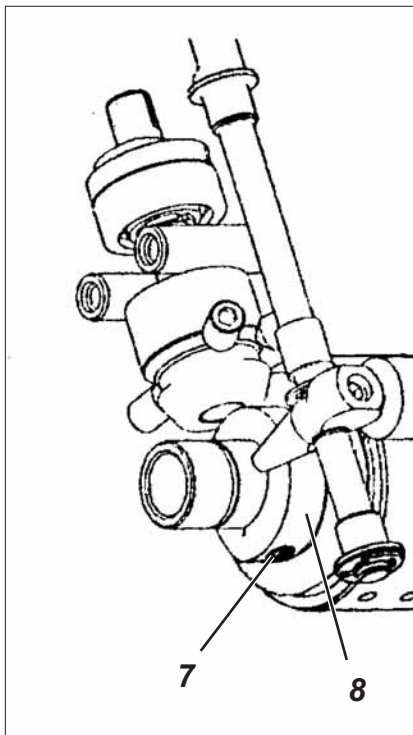


Caution: Danger of injury !

Turn off the main switch.

Check and set the bobbin case opener only when the machine is switched off.

GB



Standard checking

After having taken up the loop, when the hook tip 2 is below the bobbin case opener (handwheel position 350°) the sewing thread should be able to slip through unimpededly between the bobbin case opening finger 3 and the bobbin case 1.

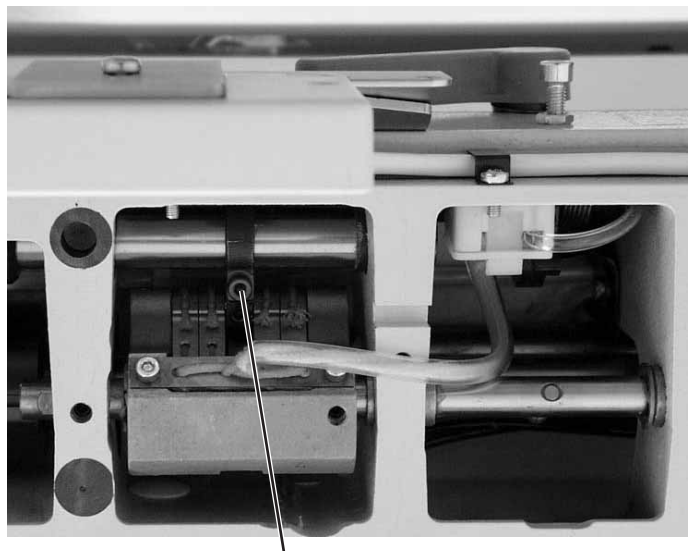
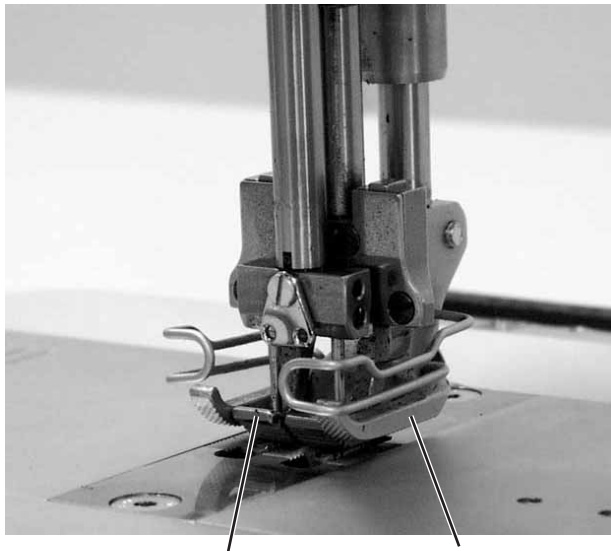
- Turn the handwheel to position “350°”.
- Check whether the bobbin case opening finger has opened wide enough for the sewing thread to be pulled through unimpededly.

Correction

- Remove the plug 6 from off the hook housing 4.
- Loosen the screw 7 in the control cam 8 using the Allen key 5.
- Twist the control cam 8.
- Tighten screw 7.
- Reinsert the plug 6.

2.8 Feeding foot and presser foot

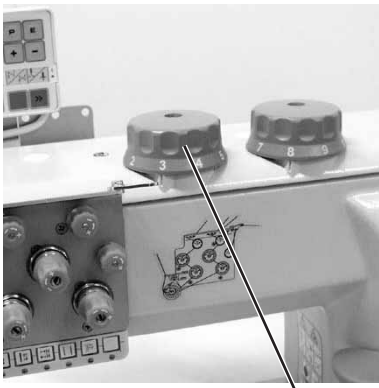
2.8.1 Feeding foot and presser foot stroke



Caution: Danger of injury !

Turn off the main switch.

Check and set the stroke of the sewing feet only when the machine is switched off.



Standard checking

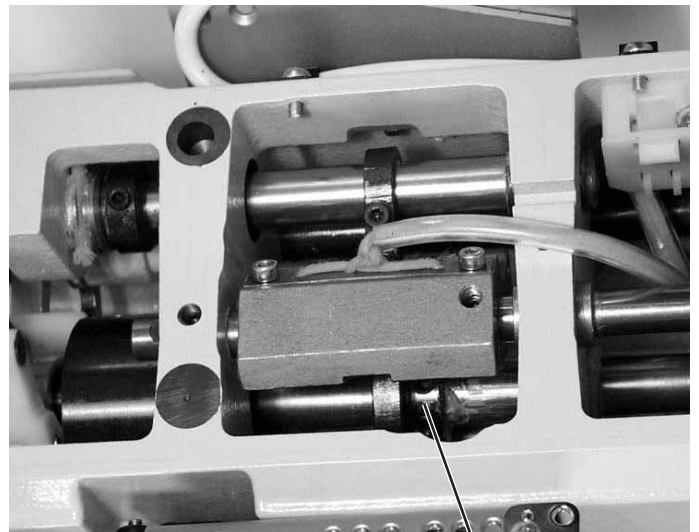
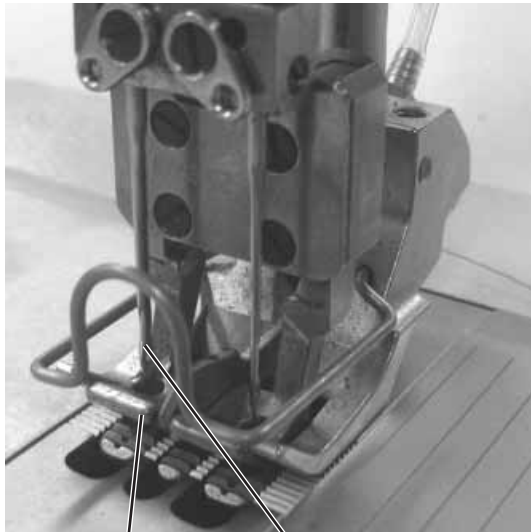
The strokes of both sewing feet should be identical when the setting wheel 5 for the sewing foot stroke setting is set to "3".

- Set the stitch length to "0".
- Set the medium sewing foot pressure.
- Set the sewing foot stroke on the setting wheel 5 to "3".
- Remove the feed dog.
- Put a plate of 3 mm underneath the sewing feet.
- Turn the handwheel and compare the stroke of the sewing feet 1 and 2. The stroke of the presser foot 1 and the feeding foot 2 should be identical.

Correction

- Remove the arm cover.
- Turn the handwheel to position 0°.
- Loosen screw 3.
- Push the feeding foot 2 completely onto the throat plate.
- Tighten screw 3.
- Put the arm cover back on again.
- Turn the setting wheel to position "3".
- Check whether the two strokes are identical now. If not readjust the setting.

2.8.2 Stroke motion of the feeding foot



Caution: Danger of injury !

Turn off the main switch.

Check and set the stroke motion only when the machine is switched off.

GB

Prerequisite

- The strokes of the feeding foot and the presser foot must be identical (see chapter 2.8.1)
- Correct timing of the feeding dog's lifting motion (see chapter 2.3.3)

Standard

The descending feeding foot 2 is, with max. sewing foot stroke and max. stitch length, supposed to touch down on the feed dog, when the needle 1 is descending and the needle tip has reached the upper edge of the feeding foot (95° on the handwheel).

- Set the maximum stitch length.
- Set the maximum sewing foot stroke.
- Turn the handwheel and check the stroke motion.

Correction

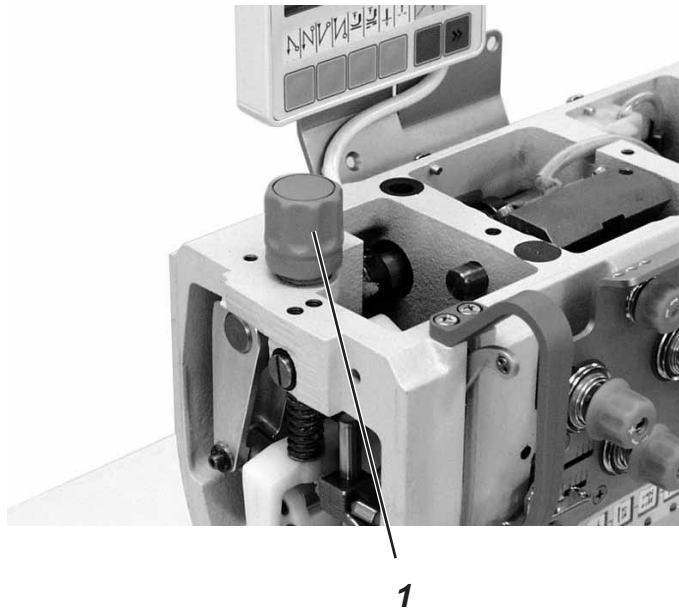
- Loosen the screws on the lifting cam 3 (2 pieces).
- Twist the cam accordingly.

ATTENTION !

The cam must not be shifted axially.

- Tighten the screws on the lifting cam 3.
- Check the setting.

2.8.3 Sewing foot pressure



Standard checking

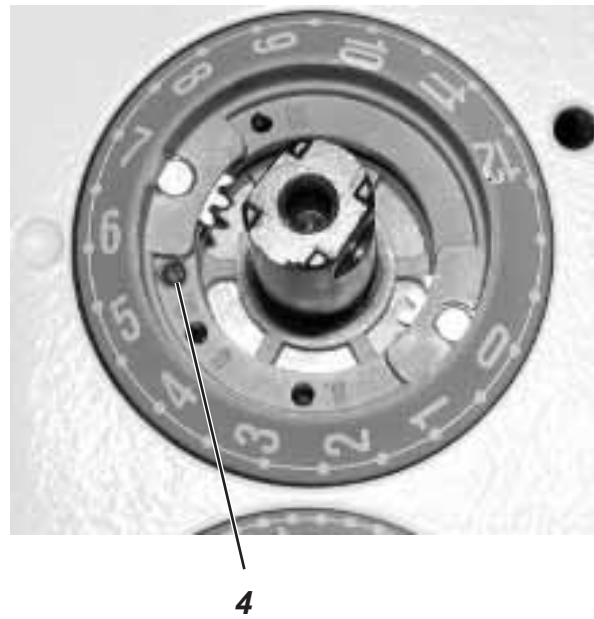
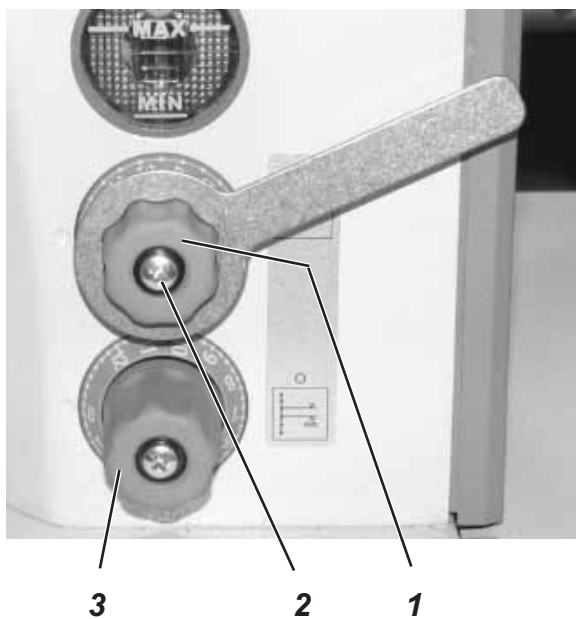
The material that is to be sewn must not “float”.

It should not be exerted more pressure than necessary.

Correction

- Set the sewing foot pressure by turning screw 1.
 - Increase the pressure = Turn screw 1 clockwise.
 - Decrease the pressure = Turn screw 1 counter-clockwise

2.9 Stitch length limitation

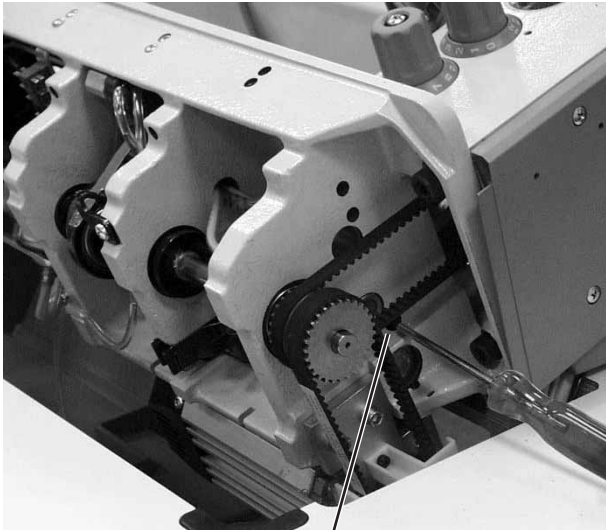


Depending on the sewing equipment used, the stitch length setting has to be limited to 6, 9 or 12 mm.

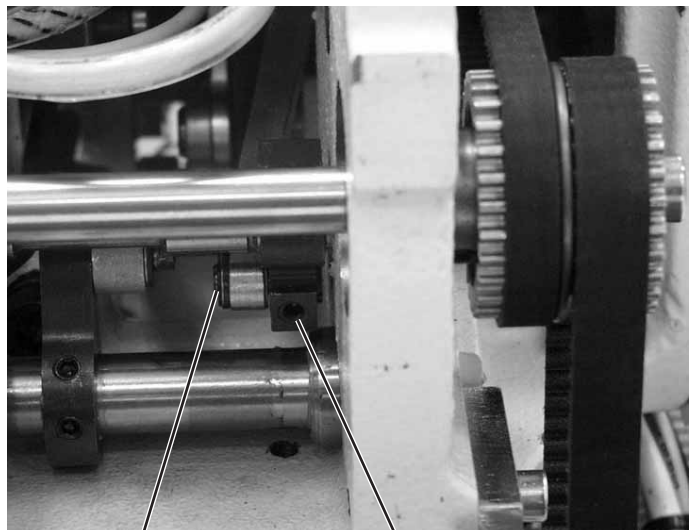
- Unscrew the screw 2 on the stitch length setting wheel.
- Lift off the setting wheel 1.
- Unscrew the threaded pin 4 and screw it into the corresponding bore hole. The bore holes are numbered showing the corresponding max. stitch length.
- Carry out the setting according to chapter 2.3.1 “**Basic setting of stitch adjustment**”.
- Reinsert the setting wheel and fix it with screw 2.

GB

2.10 Stitch equality of the forward and backward stitch



1



3

2



Caution: Danger of injury !

Turn off the main switch.

Set the stitch equality only with the sewing machine switched off.

Standard checking

The stitch length of the forward and backward stitch should be identical.

- Sew a seam length forward.
- Sew a seam length backward.
- Compare the stitch lengths of both seams.

Correction

- Loosen screw 2.
- Turn the eccentric 3 through the bore hole 1 using a screw driver.

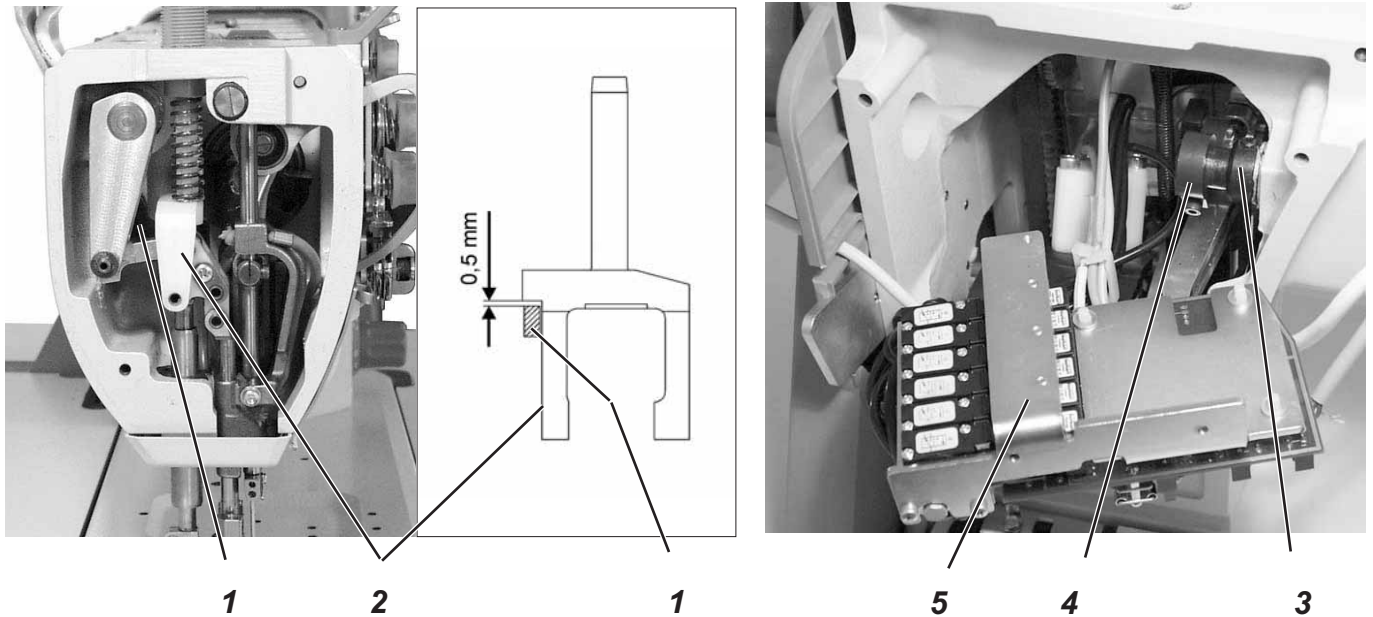
Clockwise =
Forward stitch larger, backward stitch smaller.

Counter-clockwise =
Backward stitch larger, forward stitch smaller.

- Tighten screw 2.
- Sew a seam length forward.
- Sew a seam length backward.
- Compare the stitch lengths of both seams.

2.11 Sewing foot lifting

2.11.1 Mechanical sewing foot lift

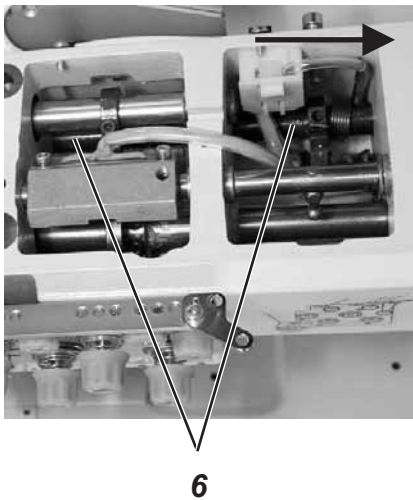


Caution: Danger of injury !

Turn off the main switch.

Check and set the clearance of the lifting mechanism only when the machine is switched off.

GB



Standard checking

The lifting shaft 6 is supposed to run softly but should have no end play. The clearance in the lifting mechanism should be approx. 0.5 mm between the spring guide 2 and the lifting lever 1.

- Lower the sewing feet.
- Turn the handwheel until the presser foot touches down.
- Move the lifting shaft 6 and check its clearance.

Correction

Tightening the lifting shaft

- Unscrew the electric and pneumatic unit 5.
- Loosen the screw on the setting ring 3.
- Push the lifting shaft completely to the right (see the arrow), push the setting ring 3 close to the bearing bush and tighten it.

ATTENTION !

The shaft must still run softly.

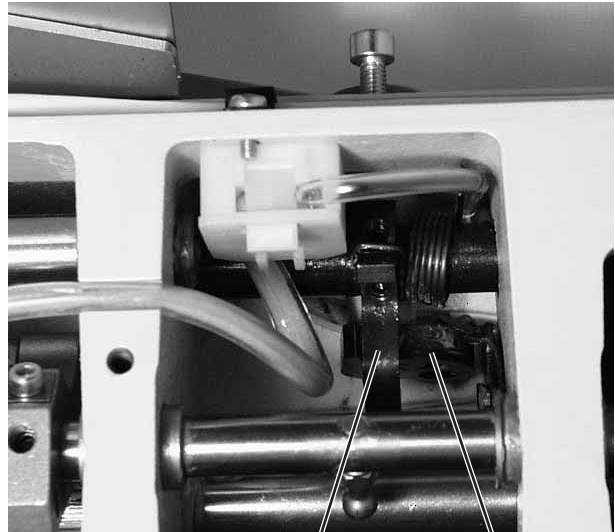
More clearance for the lifting shaft

- Loosen the screws on the lifter block 4.
- Twist the lifting shaft 6 until it has a clearance (approx. 0.5 mm).
- Tighten the screws on the lifter block 4.

2.11.2 Height of the sewing feet arrested with hand lever



1



3

2



Caution: Danger of injury !

Turn off the main switch.

Check and set the sewing foot lifting only when the machine is switched off.

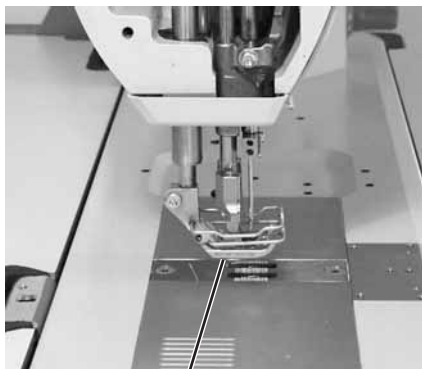
Standard checking

The sewing feet 4 are arrested in lifted position with the hand lever 1, for example in order to exchange the sewing feet or to run the sewing machine without any material or to wind up the hook thread. When arrested in lifted position with the hand lever, the sewing feet 4 are supposed to have a distance of 10 mm to the stitch plate.

- Bring both sewing feet to the same level.
- Lift the sewing feet with the hand lever and arrest them.
- Check the lifting height.

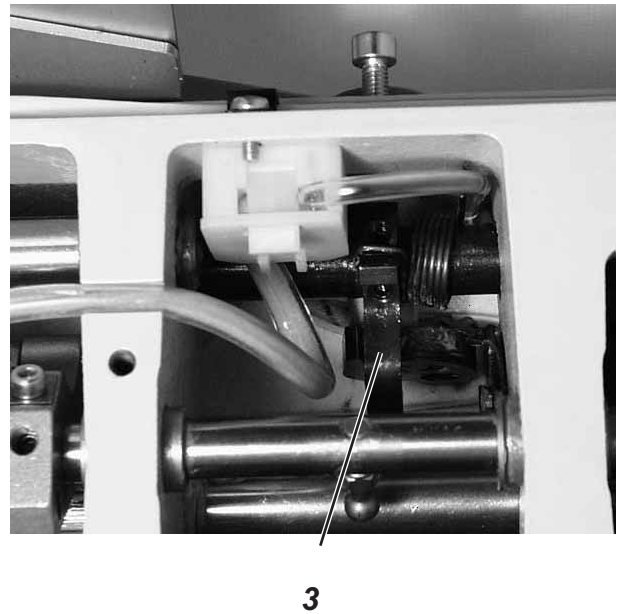
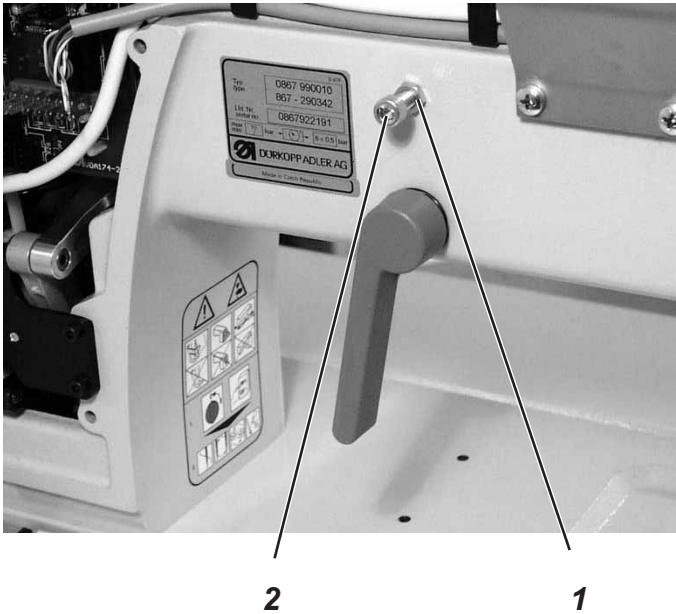
Correction

- Lift the sewing feet.
- Put a distance keeper (10 mm) under the sewing feet 4.
- Loosen the screws on the lifting lever 3.
- Push down the lifting lever 1.
- Press the lever 3 onto the eccentric cam 2.
- Tighten the screws on the lifting lever 3.



4

2.11.3 Height of the lifted sewing feet

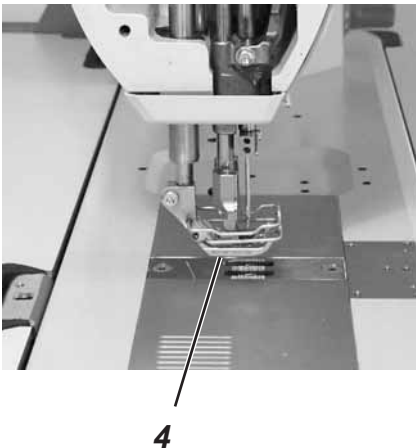


Caution: Danger of injury !

Turn off the main switch.

Check and set the height of the lifted sewing feet only when the machine is switched off.

GB



Standard checking

The pneumatically or via knee lever lifted sewing feet 4 are supposed to have a distance of 20 mm to the throat plate, when the needle bar is in its upper dead center.

The screw 2 limits the travel of the lifting lever 3.

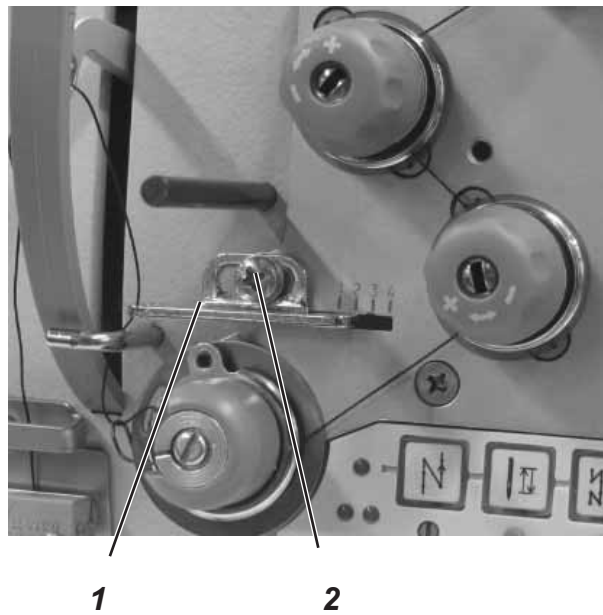
- Lower the sewing feet.
- Turn the handwheel until the needle bar is in its upper dead center.
- Lift the sewing feet pneumatically or via knee lever and check the lifting height.

Correction

- Loosen the lock nut 1.
- Twist the stop screw 2 accordingly.
- Tighten the lock nut 1.

2.12 Thread-guiding parts

2.12.1 Thread regulator



Caution: Danger of injury !

Turn off the main switch.

Check and set the thread regulator only when the machine is switched off.

Standard checking

The position of the thread regulator 1 depends on the thickness of the material to be sewn, the thread size and the chosen stitch length. It has to be set so that the thread is guided around the hook and kept under control.

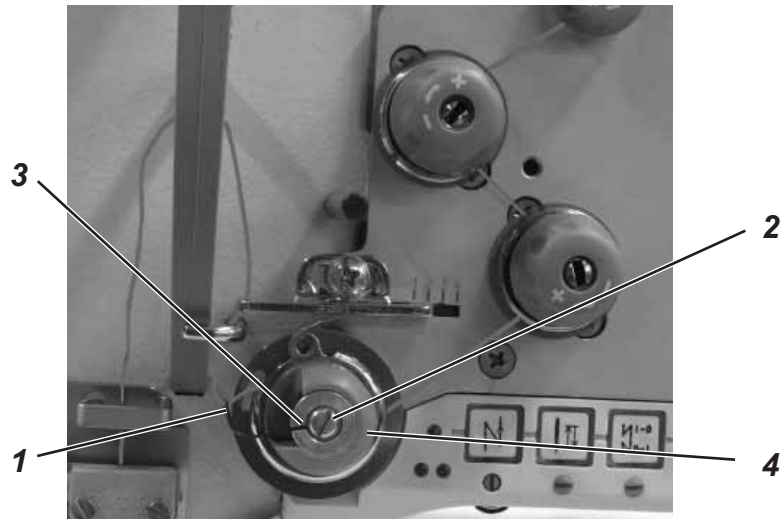
In position "1" occurs the highest thread output, as needed with particularly large stitch lengths and thick sewing threads.

- Insert the material.
- Open the throat plate slide.
- Thread in the needle and hook thread.
- Sew a few stitches.
- Turn the handwheel slowly and observe how tight the thread is guided around the hook.

Correction

- Loosen screw 2.
- Shift the thread regulator.
Thread regulator to the left = more thread.
Thread regulator to the right = less thread.
- Tighten screw 2.

2.12.2 Thread take-up spring



Caution: Danger of injury !

Turn off the main switch.

Check and set the thread take-up spring only when the machine is switched off.

Standard checking

The standard setting for the spring travel and spring tension only apply to usual thread sizes. Very thick or very thin threads or sewing material may necessitate different settings.

Spring travel

The thread take-up spring 1 has to keep the needle thread from the moment of the thread lever lifting until the needle eye's penetrating of the material under a light tension. In order to achieve a regular seam with a low thread tension, the travel of the thread take-up spring may be increased. The thread take-up spring must only meet the stop when the needle eye has penetrated the material.

Spring tension

The spring tension should be lower than the thread tension.

Correction

Spring travel

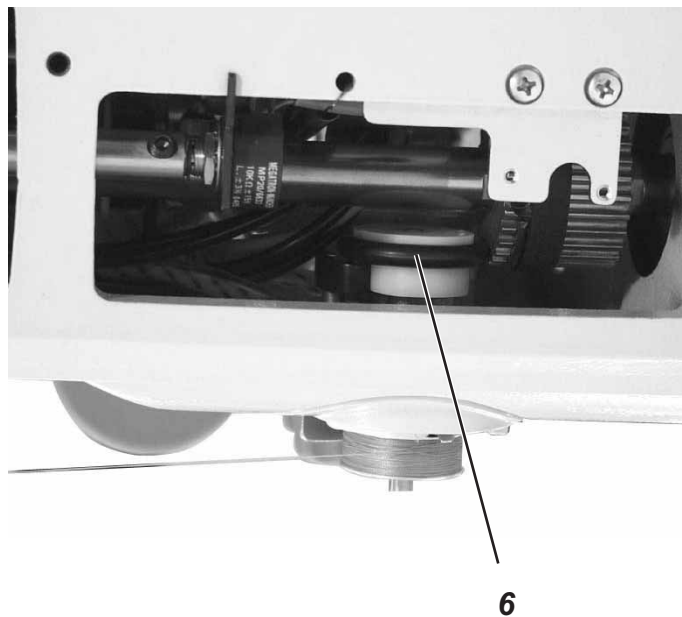
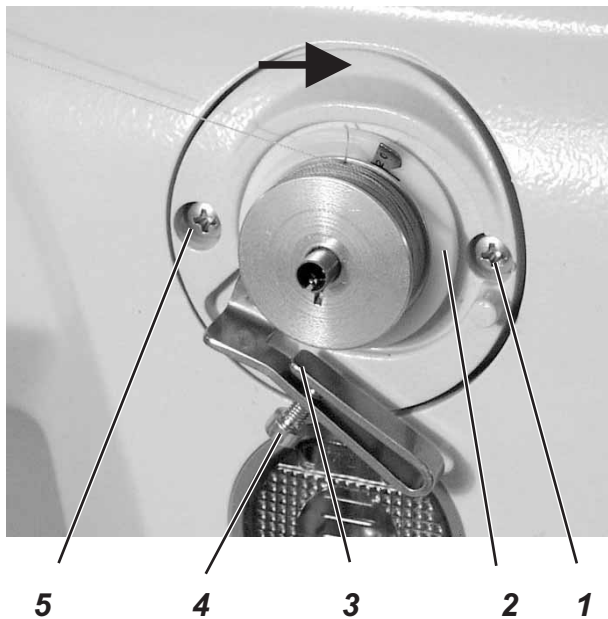
- Loosen screw 2.
- Turn the stopping collar 4.
Turning counter-clockwise = larger travel
Turning clockwise = smaller travel.
- Tighten screw 2.

Spring tension

- Loosen screw 2.
- Adjust the tensioner disc 3 without changing the stopping collar's 4 position.
Turning the disc clockwise = less spring tension
Turning the disc counter-clockwise = higher spring tension
- Tighten screw 2 without changing the positions of the stopping collar 4 and the tensioner disc 3.

GB

2.13 Bobbin winder



Caution: Danger of injury !

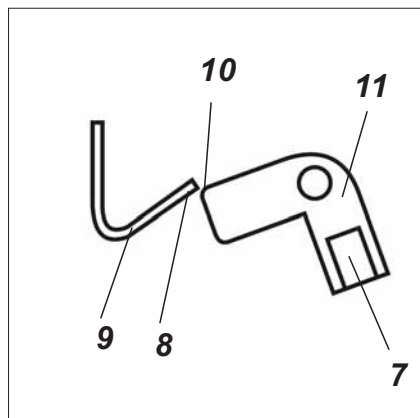
Turn off the main switch.

Check and set the bobbin winder only when the machine is switched off.

Standard checking

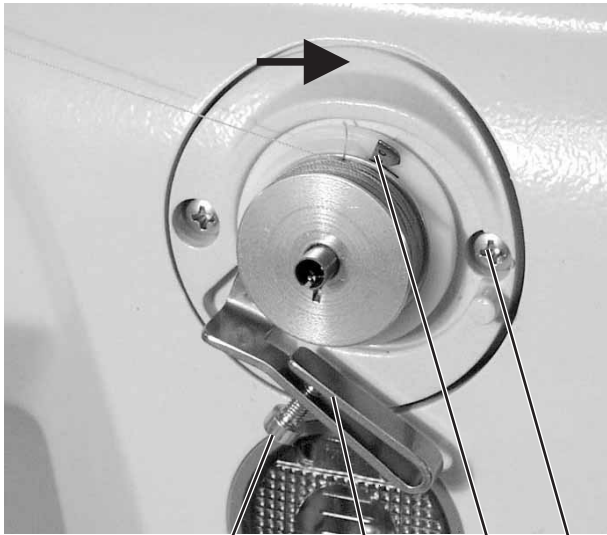
The bobbin winding operation has to stop automatically, when the bobbin is filled up to approx. 0.5 mm below the edge of the bobbin.

The winder wheel must not have end play but its moving should not be too sluggish either.

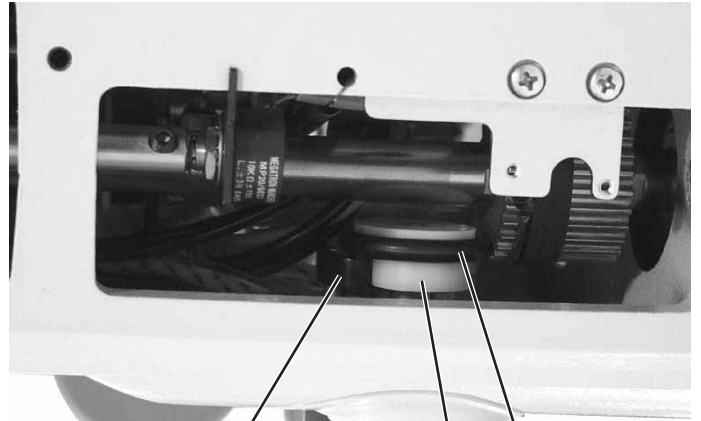


Basic setting

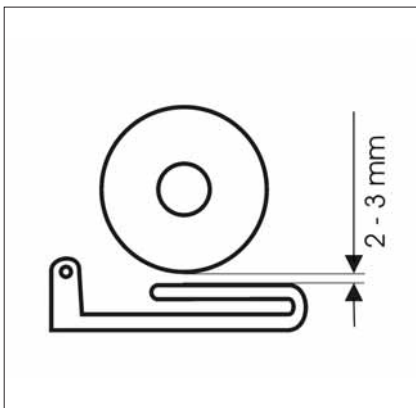
- Disassemble the winder.
In order to do so unscrew the two fastening screws 1 and 5 and pull the winder off.
- Screw in the screw 4 until the two arms of the winder flap 3 come parallel to each other.
- Insert a completely filled bobbin on the winder.
- Twist the winder flap 3 so that it bears against the thread on the bobbin.
- Loosen screw 7.
- Set the switching cam 11 so that the corner 10 of the switching cam and the corner 8 of the leaf spring 9 superpose (the spring is loaded) and the winder flap 3 has no end play.
- Tighten screw 7.



4 3 12 1



14 13 6



- Turn the winder bobbin so that the tear-off knife 12 points to the fastening screw 1 on the right side.
- Loosen the screw on the engagement block 14.
- Set the winder flap so that between the thread on the bobbin and the winder flap remains a distance of 2 - 3 mm (insert a distance keeper).
- Set the engagement block 14 so that it bears on the locking disc 13 and has an end play of 0.5 mm towards the winder wheel 6.
- Tighten the screw on the engagement block.
- Screw the winder on again.

GB

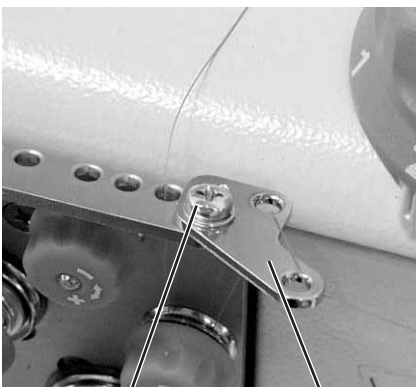
Small changes of the bobbin wind-on quantity

- Adjust the winder flap 3 with the screw 4.

Correction of the winder's pretension position

The guide must be set in a way that the bobbin is evenly filled with thread over its whole width.

- Loosen screw 17.
- Adjust the guide 16.
- Tighten screw 17.

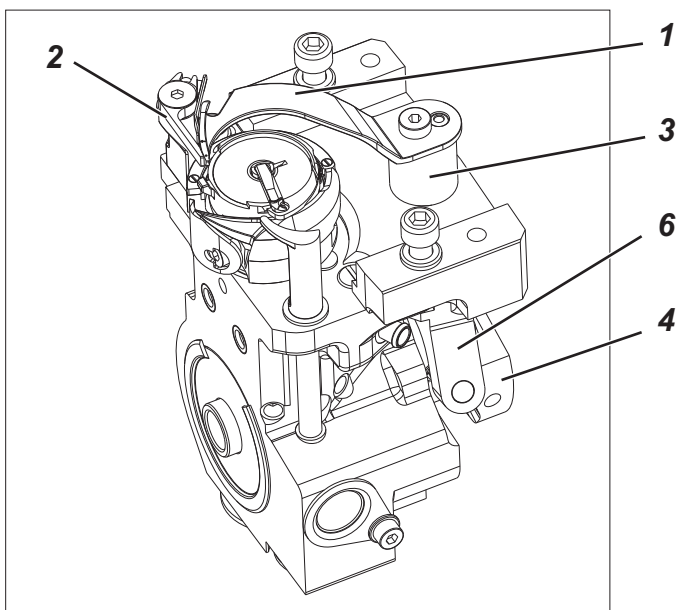


17 16

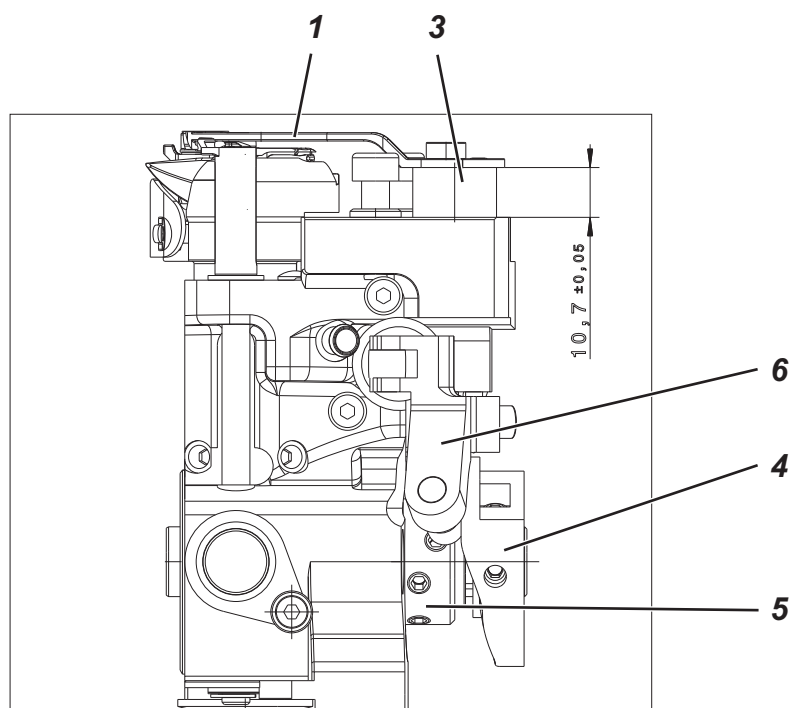
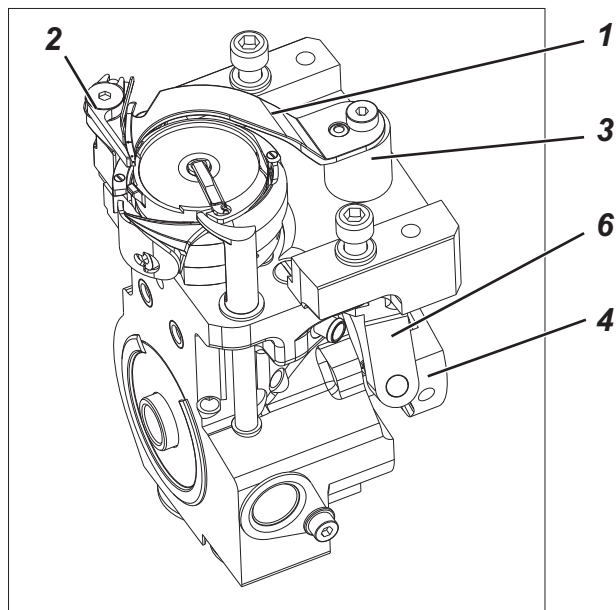
2.14 Thread cutter

2.14.1 General

large hook



oversized hook



Thread-pulling knife height

The thread-pulling knife 1 is supposed to swing past the bobbin as close as possible.

As standard the height of the thread-pulling knife is set through the washers underneath the knife carrier 3 to a measure of 10.7 ± 0.05 between the upper edge of the knife carrier 3 and the screw-on area of the hook bearing.

Pay attention to the number of washers when dismantling the thread-pulling knife!

Position of the thread-pulling knife

The thread-pulling knife 1 cannot be shifted on the knife carrier 3. This allows exchanging the thread-pulling knife without having to reset the cutting pressure.

The knife carrier 3 can be mounted in two different positions: for the large and the extra large hook. In order to do so, turn the knife carrier 3 180° around (see the picture).

The swing range of the thread-pulling knife measures 35° and is defined by the control cam's 4 geometry.

Control cam

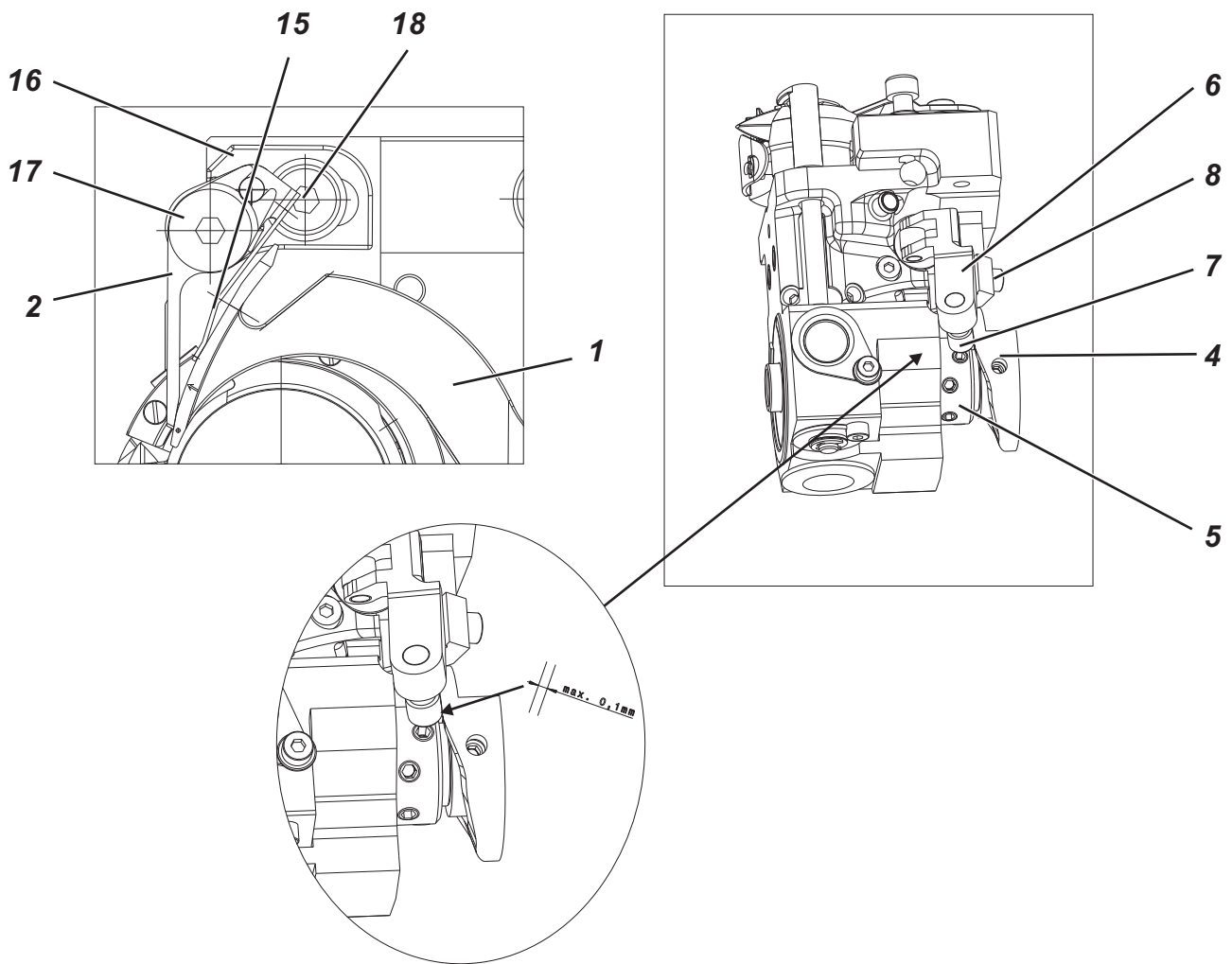
The control cam is designed to operate with large and extra large hooks.



ATTENTION!

The control cam 4 and the clamping ring 5 serve mutually as stop and should not be loosened at the same time.

2.14.2 Thread pulling knife



Caution: Danger of injury !

Turn off the main switch.

Check and set the thread-pulling knife only when the machine is switched off.

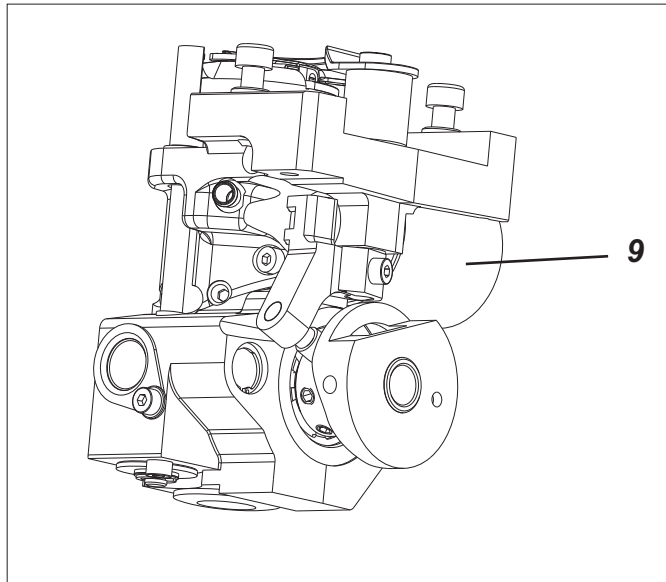
Standard checking

In the thread-pulling knife's 1 resting position the distance between the control cam 4 (highest point) and the roller 7 should be at max. 0.1 mm. At the same time the control cam 4 has to bear on the clamping ring 5.

While in resting position the thread-pulling knife 1 should jut out over the blade of the counter-knife 2 for about 2 mm.

The thread-pulling knife carrier must not have any end play but should move freely.

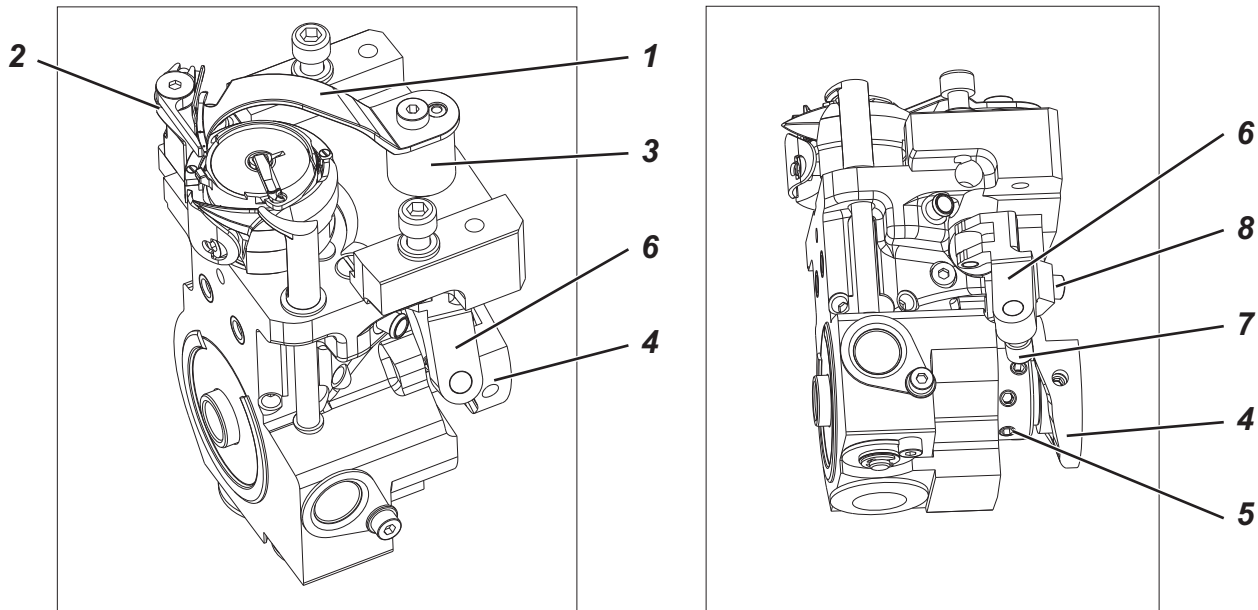
- Check whether the control cam 4 bears on the clamping ring 5.
- Turn the machine until the control cam's 4 highest point is pointing to the roller 7.
- Check the distance between the control cam 4 and the roller 7.



Correction

- Loosen the screw (4x) on the clamping ring 5 and shift it towards the hook bearing. Fasten the screws (4x) on the clamping ring 5 again in order to avoid a change of the looping stroke's position.
- Loosen the screws (2x) on the control cam 4.
- Push the lever 6 until as far as it will go against the lifting magnet 9.
- Set the distance between the roller 7 and the control cam 4 at the control cam's 4 highest point to 0.1 mm.
- Tighten the screws (2x) on the control cam 4 again.
- Loosen the clamping screw 8 on the lever 6.
- Twist the thread-pulling knife 1 so that the tip of the thread-pulling knife 1 juts out for about 2 mm over the blade of the counter knife (marking „o“ next to the counter-knife's blade 2).
- Tighten the clamping screw 8. Make sure not to give any end play.
- Loosen the screws (4x) on the clamping ring 5 and shift it until it stops against the control cam 4.
- Fasten the screws (4x) on the clamping ring 5 again.
- Check the looping stroke.

2.14.3 Counter-knife and lower thread clamp



Caution: Danger of injury !

Turn off the main switch.

Check and set the counter-knife and the lower thread clamp only when the machine is switched off.

Standard checking

In the thread-pulling knife's 1 resting position the thread clamp 15 is supposed to bear without any pressure on the thread-pulling knife.

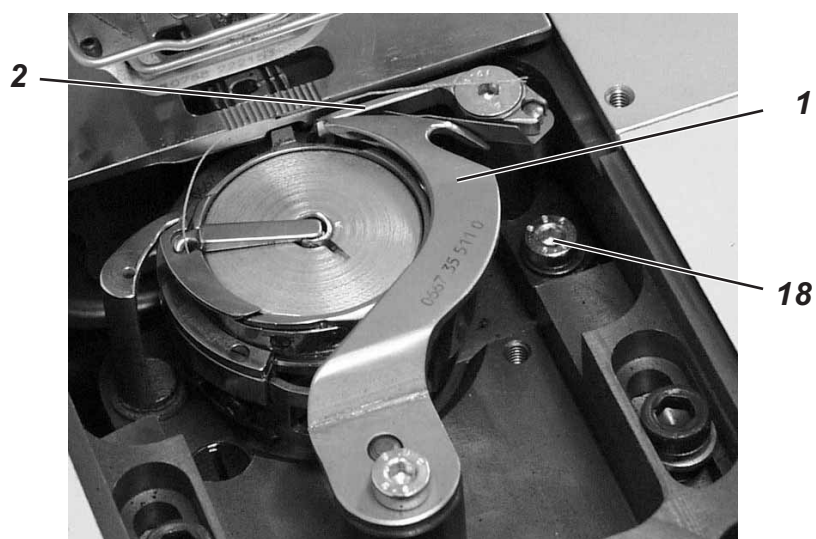
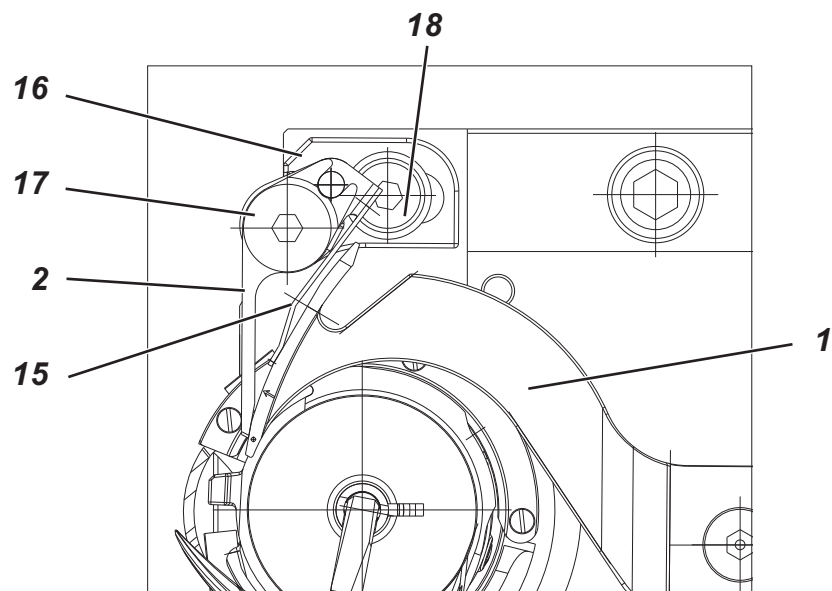
The thread is to be trimmed safely with as little pressure as possible. A low trimming pressure keeps the knife wear low! It must be possible to safely trim two of the thickest sewing threads simultaneously.

- Turn the handwheel until the thread-pulling knife 1 can be swung out.
- Swing out the thread-pulling knife 1 manually.
Push the lever 6 to the right against the control cam 4.
- Insert two threads to be trimmed into the thread-pulling knife 1.
- Continue turning the handwheel until the thread-pulling knife 1 has swung back.
- Check whether the sewing threads have been trimmed properly.
- Pull the threads out of the thread clamp 15 and, on doing so, check the clamping effect. If the clamping effect is too strong or too little, the thread clamp must be reset again.



ATTENTION !

If the pressure of the counter-knife 2 is set too high this leads to an excessive knife wear. A wrong thread clamp setting can lead to problems with the sewing start.



GB

Correction of the cutting pressure

- Turn the handwheel until the thread-pulling knife 1 can be swung out.
- Swing out the thread-pulling knife 1 far enough so that the marking “↑” stands next to the blade of the counter-knife 2.
- Loosen screw 18.
- Turn the counter-knife 2 against the thread-pulling knife 1.
- Tighten screw 18.

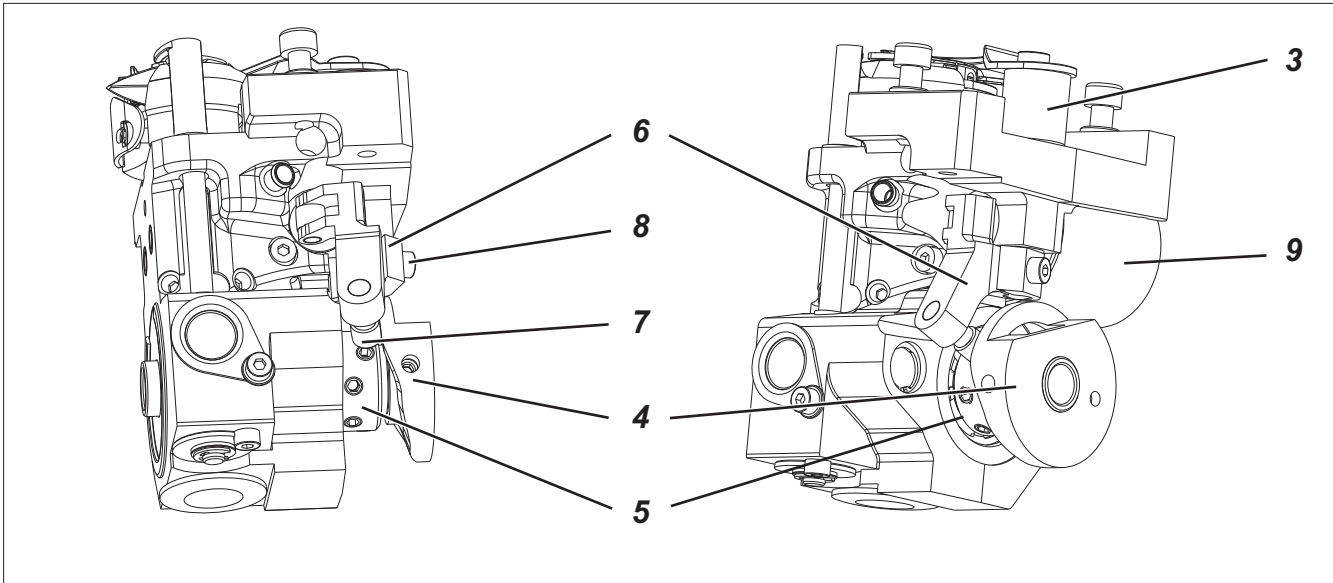
Note:

Through the eccentric cut of the thread-pulling knife 1 a cutting pressure is automatically exerted when the two blades superpose.

Correction lower thread clamp

- Swing out the thread-pulling knife 1 far enough so that the marking “↑” stands next to the blade of the counter-knife 2.
- Loosen screw 17.
- Turn the lower thread clamp 15 towards the thread-pulling knife 1.
- Turn the counter-knife 2 against the thread-pulling knife 1.
- Tighten screw 17.
- Check the cutting pressure.

2.14.4 Cutting position



Caution: Danger of injury !

Turn off the main switch.

Check and set the cutting position only when the machine is switched off.

Standard checking

With the factory setting the cutting position corresponds to the position "thread lever in its upper dead center" (60° on the handwheel).

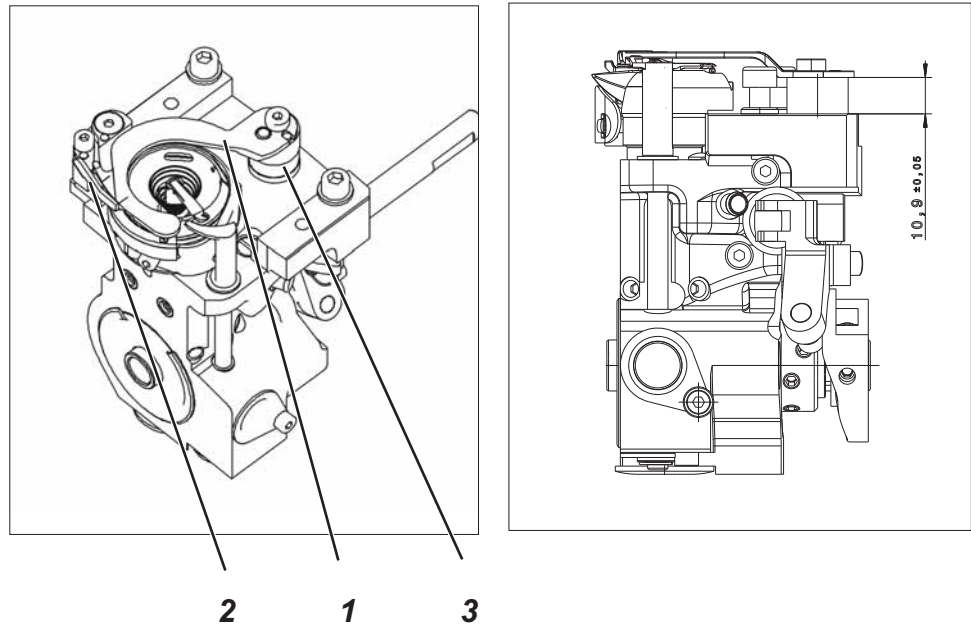
- Turn the handwheel until the thread-pulling knife 1 can be swung out.
- Swing out the thread-pulling knife 1 manually.
In order to do so push the lever 6 with the roller 7 to the right against the control cam 4.
- Insert the thread into the thread-pulling knife 1.
- Turn the handwheel until the thread is cut.
- Check whether the cutting took place in the position "thread lever in its upper dead center" (60° on the handwheel).

Correction

- Loosen the screws (2x) on the control cam 4.
- Swing out the thread-pulling knife 1 until the blade of thread-pulling knife 1 comes flush with the blade of the counter-knife 2.
- Bring the machine into the position "thread lever in its upper dead center" (60° on the handwheel).
- Shift the control cam 4 until its stops (against clamping ring 5) and twist it on the shaft until the control cam 4 touches the roller 7.
- Tighten the screws (2x) on the control cam 4 in this position.

2.15 Short thread cutter

2.15.1 General



Thread-pulling knife height

As standard the height of the thread-pulling knife is set through the washers underneath the knife carrier 3 to a measure of 10.9 ± 0.05 between the upper edge of the knife carrier 3 and the screw-on area of the hook bearing (see the picture).

Pay attention to the number of washers when dismantling the thread-pulling knife!

Position of the thread-pulling knife

The thread-pulling knife 1 cannot be shifted on the knife carrier 3. This allows exchanging the thread-pulling knife 1 without having to reset the cutting pressure.

The knife carrier 3 can be mounted in two different positions: for the large and the extra large hook. In order to do so, turn the knife carrier 3 180° around (see the picture in chapter 2.14.1)

In the resting position of the thread-pulling knife 1, the blade of the counter-knife 2 must be completely covered by the thread-pulling knife 1 in order to avoid damaging of the needle thread.

The swing range of the thread-pulling knife measures 23° and is defined by the control cam's 4 geometry.

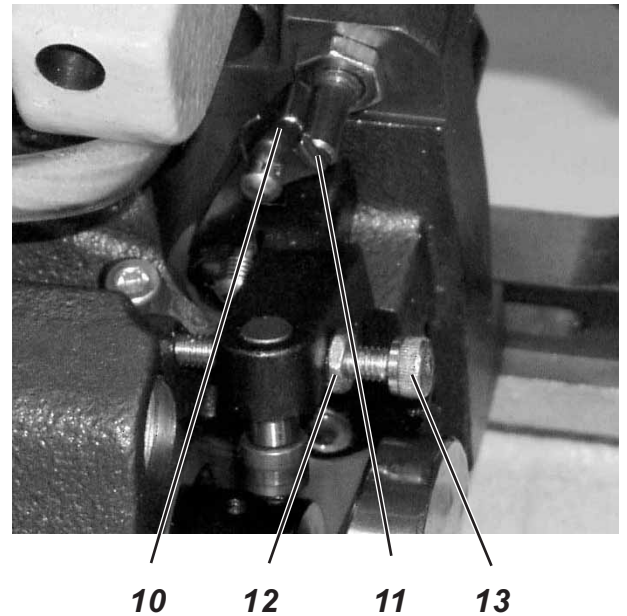
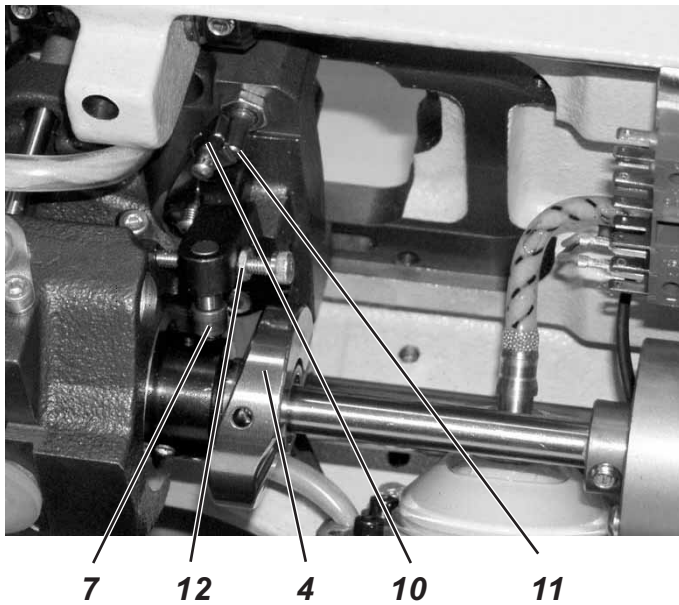
Control cam

The control cam is designed to function with the large and the extra large hook and it has a control function on both sides for the right and left hook bearing.

Note!

Make sure that the control cam 4 bears against the clamping ring 5 and that the printing on the control cam 4 is readable. If the printing on the control cam 4 is upside down, the control cam 4 has been mounted the wrong way.

2.15.2 Locking latch for the thread-pulling knife



ATTENTION: Danger of breakage!

The sewing machine must not be used without the thread-pulling knife
The back stop (anti-rollback) for the bobbin case 2 is situated on the thread pulling knife.

GB

Standard checking

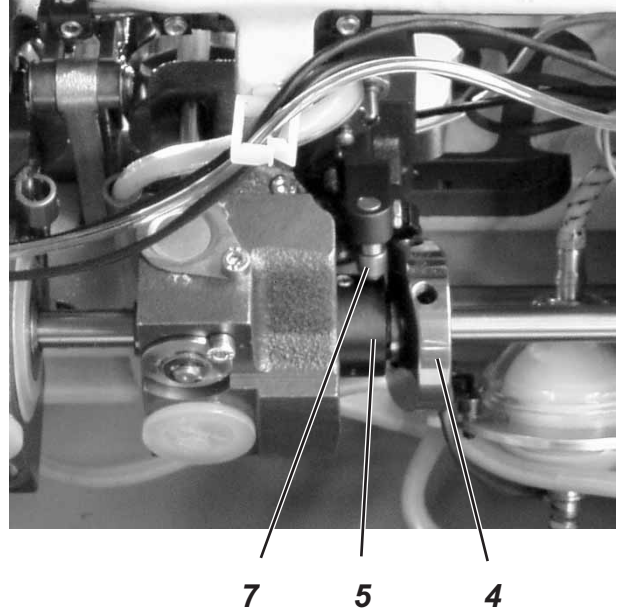
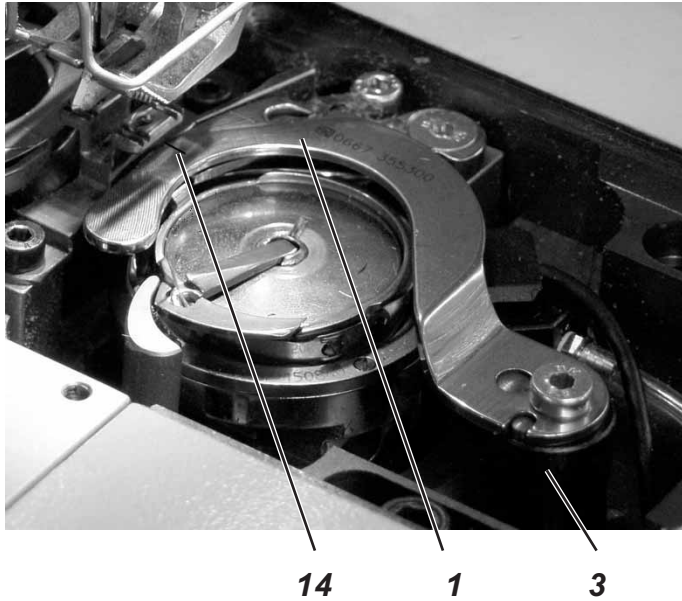
In the thread-pulling knife's 1 resting position, between the locking latch 10 and the locking bolt 11 should not be a distance of more than 0.1mm.

- Turn the handwheel until the roller 7 stands in the highest point of the control cam 4.
- Push the roller 7 against the control cam 4.
- In this position the locking latch 10 should be able to swing out without hindrance and
- The distance between the locking latch 10 and the locking bolt 11 should not be more than max. 0.1mm.

Correction

- Loosen the locknut 12.
- Turn the stop screw 13 until the distance between the locking bolt 11 and the locking latch 10 measures 0.1mm.
- Tighten the locknut 12.

2.15.3 Thread pulling knife



Caution: Danger of injury !

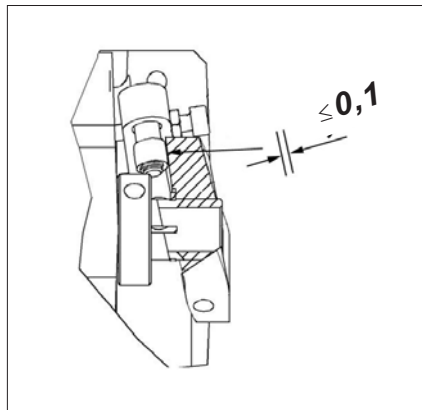
Turn off the main switch.

Check and set the thread-pulling knife only when the machine is switched off.



ATTENTION!

The sewing machine must not be used without the thread-pulling knife. The back stop (anti-rollback) for the bobbin case 2 is situated on the thread pulling knife.



Standard checking

In the thread-pulling knife's 1 resting position the distance between the control cam 4 (highest point) and the roller 7 should be ≤ 0.1 mm. The control cam 4 must then bear on the clamping ring 5.

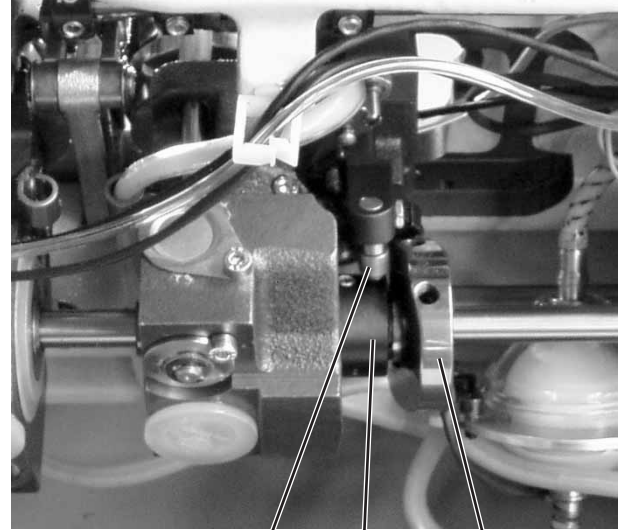
In the resting position the marking 14 of the thread-pulling knife 1 should face the blade of the counter-knife 2.

The thread-pulling knife carrier 3 must not have any end play but should move freely.

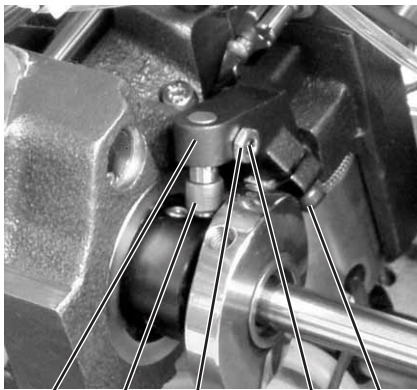
- Check whether the control cam 4 bears on the clamping ring
- Turn the machine until the control cam's 4 highest point is pointing to the roller 7.
- Check the distance between the control cam 4 and the roller 7.



14 1



7 5 4



6 7 12 13 8

Correction

- Loosen the screws (4x) on the clamping ring 5 and shift it towards the hook bearing. Tighten the screws (4x) on the clamping ring 5 again in order to avoid changing the looping stroke's position.
- Loosen the screws (2x) on the control cam 4.
- Twist the lever 6 until it stops against the stop screw 13.
- Set the distance between the roller 7 and the control cam 4 at the control cam's 4 highest point to 0.1 mm.
- Tighten the screws (2x) on the control cam 4 again.
- Loosen the clamping screw 8 on the lever 6.
- Twist the thread-pulling knife 1 so that the marking 14 of the thread-pulling knife faces the blade of the counter-knife 2.
- Tighten screw 8. Make sure not to give any end play.
- Loosen the screws (4x) on the clamping ring 5 and shift it until it stops against the control cam 4.
- Fasten the screws (4x) on the clamping ring 5 again.
- Check the looping stroke.

GB



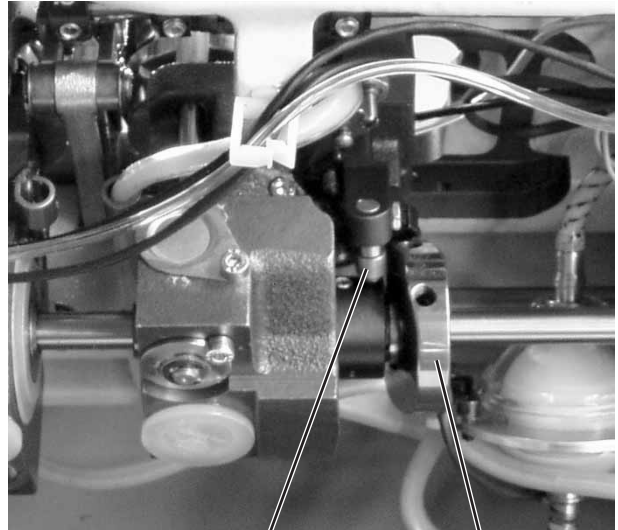
ATTENTION!

The control cam 4 and the clamping ring 5 serve mutually as stop and should not be loosened at the same time!

2.15.4 Counter knife



1



7

4



Caution: Danger of injury !

Turn off the main switch.

Check and set the counter-knife only when the machine is switched off.

Standard checking

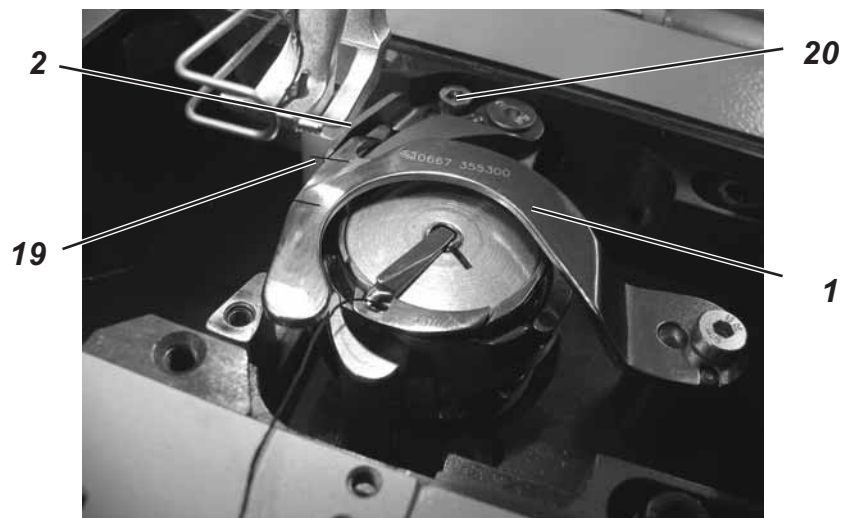
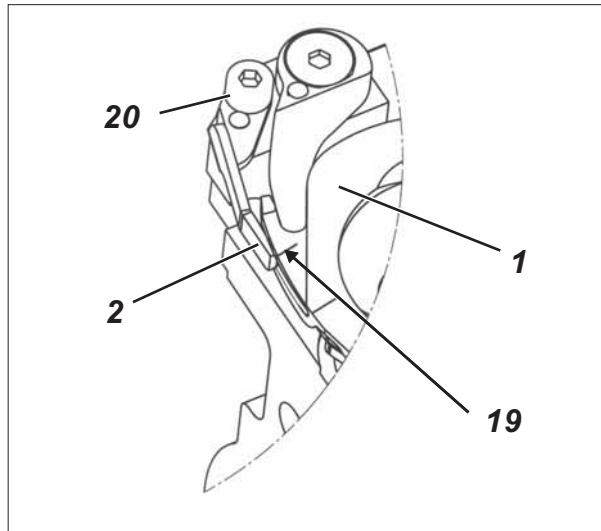
The thread is to be trimmed safely with as little pressure as possible. A low trimming pressure keeps the knife wear low! It must be possible to safely trim two of the thickest sewing threads simultaneously.

- Turn the handwheel until the thread-pulling knife can be swung out after releasing the latch.
- Swing out the thread-pulling knife manually. In order to do so push the bolt with the roller 7 to the right against the control cam 4.
- Insert two threads to be trimmed into the thread-pulling knife 1.
- Continue turning the handwheel until the knife has swung back.
- Check whether the sewing threads have been trimmed properly.



ATTENTION !

If the pressure of the counter-knife is set too high this leads to an excessive knife wear.



GB

Correction of the cutting pressure

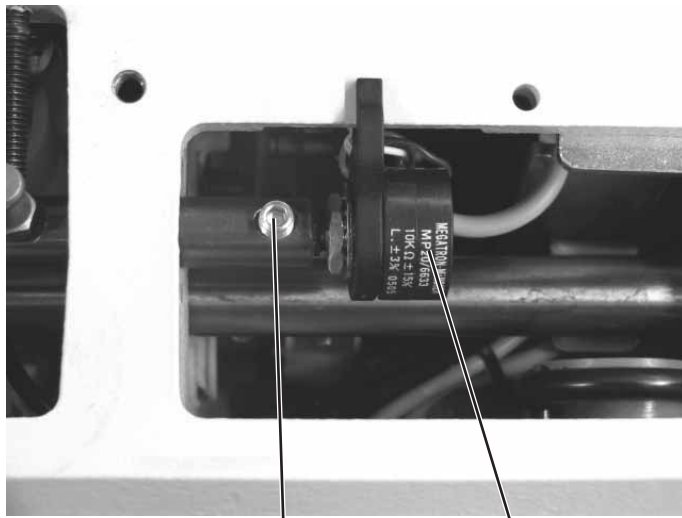
- Swing out the thread-pulling knife 1 far enough so that the marking 19 stands next to the blade of the counter-knife 2.
- Loosen screw 20.
- Turn the counter-knife 2 against the thread-pulling knife 1.
- Tighten the screw 20.

Note:

Through the eccentric cut of the thread-pulling knife 1 a cutting pressure is automatically exerted when the two blades superpose.

2.16 Potentiometer in the arm

Sewing machines with thread cutter are equipped with a potentiometer in order to limit the driving speed of higher sewing foot strokes. Through this potentiometer the control recognizes the sewing foot stroke and limits the sewing speed.



1

2



4

3

2.16.1 Basic setting without control panel

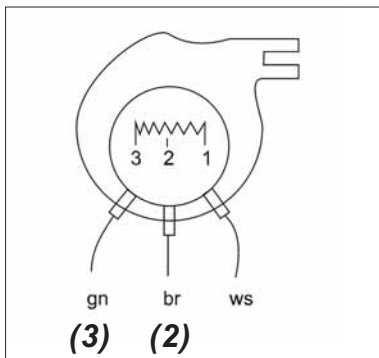
Set sewing machines without control panel according to the following description.



Caution: Danger of injury !

Turn off the main switch.

Set the potentiometer only with the sewing machine switched off.



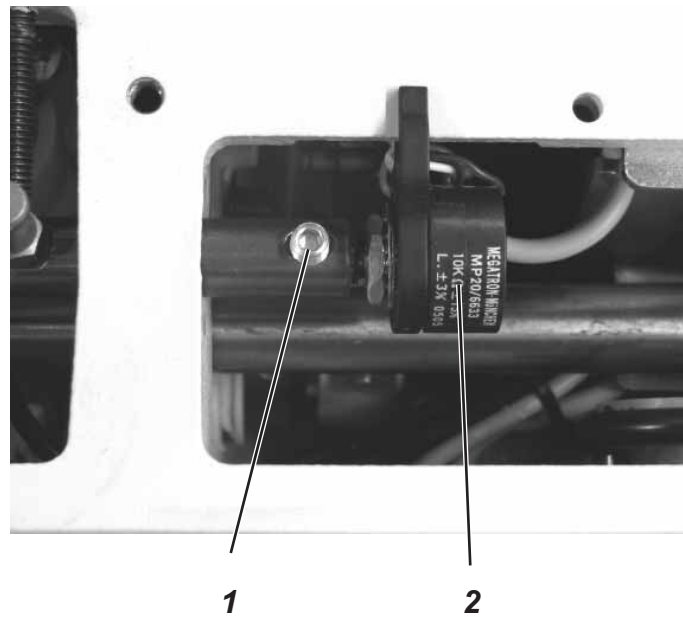
- Pull out the plug 3 of the potentiometer on the PCB 4.
- Check the resistance on the terminals (2) and (3) of the potentiometer with an ohmmeter.
Terminal (3) = green wire
Terminal (2) = brown wire

Measuring value: 7.1 to 7.3 kOhm

If the values mentioned are not correct, the position of the potentiometer 2 has to be adjusted.

- Loosen screw 1.
- Set the shaft of the potentiometer 2 to the corresponding value. Push the potentiometer completely into the bore hole of the setting shaft and tighten screw 1.
- Plug in plug 3 of the potentiometer on the PCB 4.

2.16.2 Basic setting with the control panel V810 or V820



Caution: Danger of injury !

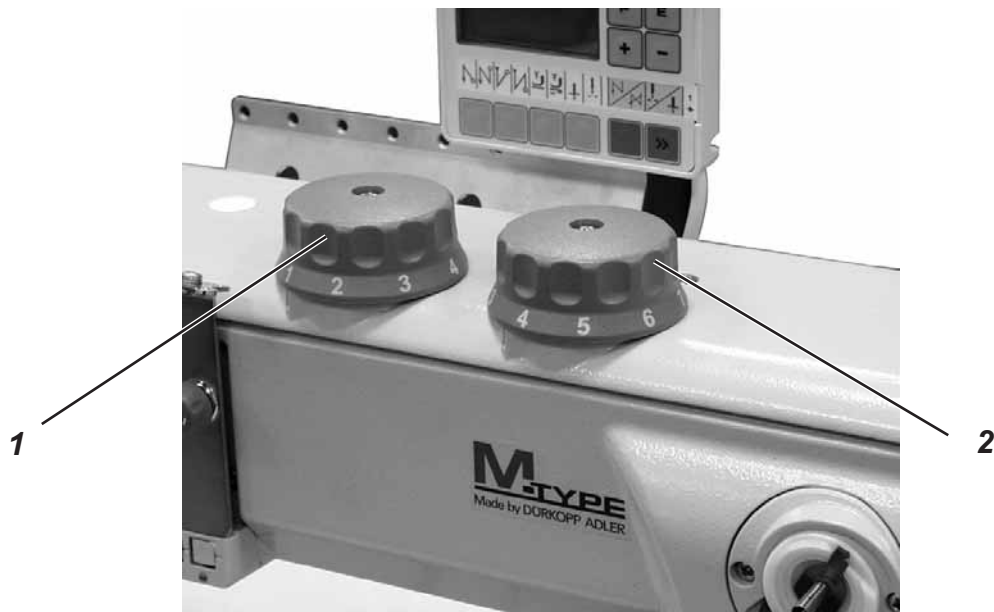
The adjustment of the potentiometer is done with the main switch turned on.

Work with utmost caution.

- Loosen the stop screw 1 for the potentiometer 2.
- Keep the key “P” pressed and switch on the main switch.
- Enter the technician level.
- Select the parameter “F-188”.
- Actuate the key “E”.
The current Speedomat grade (e.g. 11) and the corresponding driving speed limitation (e.g. 2860) are displayed.
- Turn the potentiometer shaft until the Speedomat grade “07” and the corresponding maximum driving speed of 3800 rpm resp. 3400 rpm (depending on the subclass) are indicated on the display.
- Tighten the stop screw 1.
- Check the setting.

GB

2.16.3 Check the potentiometer adjustment



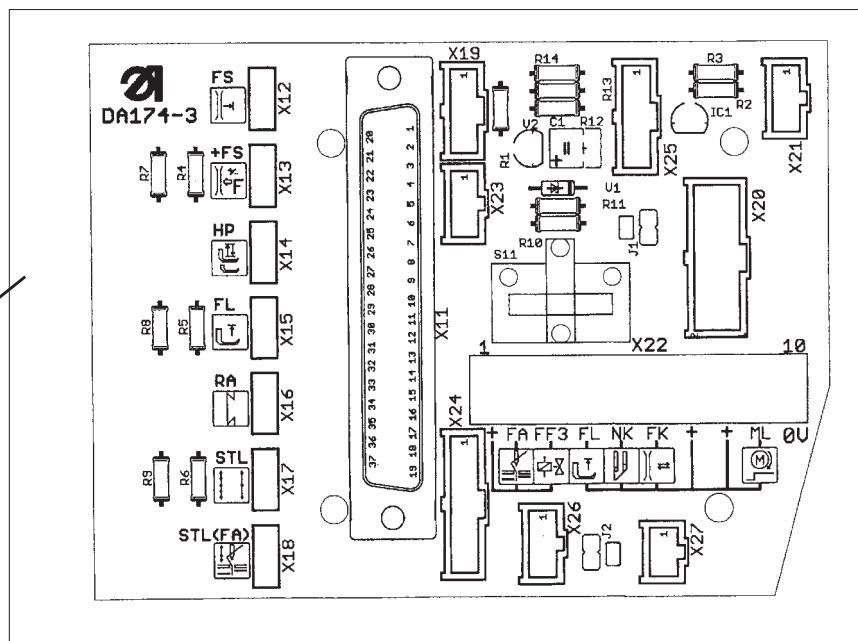
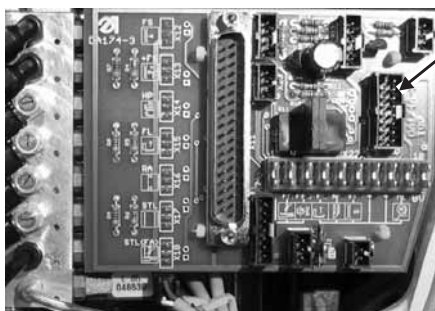
- Keep the key “P” pressed and switch on the main switch.
- Enter the technician level.
- Select the parameter “F-188”.
- Actuate the key “E”.
The current Speedomat grade and the corresponding driving speed limitation are displayed.
- Set the setting wheel 1 to “**lowest lifting stroke**”.
The display should indicate the Speedomat grade “07”.
- Set the setting wheels 1 and 2 to “**maximum lifting stroke**”.
The display has to indicate the Speedomat grade “21”.
For the driving speed the display indicates “EEEE”.

Note:

If the Speedomat grades “07” and “21” are not attained, the potentiometer must be readjusted.

2.17 Connections PCB

For the sake of completeness, the various connections of the PCB mentioned below are explained here.



GB

X11 Control Sewing Drive	X12 Solenoid Thread Tension	X13 Solenoid Additional Thread Tension
X14 Solenoid Stroke Adjustment pneum.	X15 Solenoid Sewing Foot Lifting	X16 Solenoid Tack
X17 Solenoid Switching Stitch Lengths	X18 Solenoid Short Stitch	X19 HP-Potentiometer in the Arm (Speedomat)
X20 Key Block	X21 Light Barrier Seam End	X23 Speed Limitation Stitch Length
X22 1 +24V	2 Output Thread Cutter	3 Output Flip-flop 3 Adjustable via Parameter 275
4 Output Sewing Foot Lifting	5 Output Needle Cooling	6 Output Thread Clamp
7 & 8 +24V	9 Output Motor Running / Signal	10 0V
<i>For each connection make sure to have one wire connected to the +24V and the other one to the output function.</i>		
X24 Residual Thread Monitor	X25 Oil Level Monitoring	X26 Input Machine Run Blockage (Possibility of connecting an external PIN 2/3)
X27 Output for max. 50 mA		
J2 Jumper 2	Closed: bridging the input machine run blockage X26 PIN 2/3 Open: an external "trigger" button must be connected to the X26 PIN 2/3.	

2.18 Machines with moving binder



1



3

2

Sewing machines with this equipment are able to bind the edges of the material at the same time while sewing. When switched on, the binder 1 should run synchronously to the feed. Via the "+" / "-" keys it can be set to fullness feed or lesser feed.



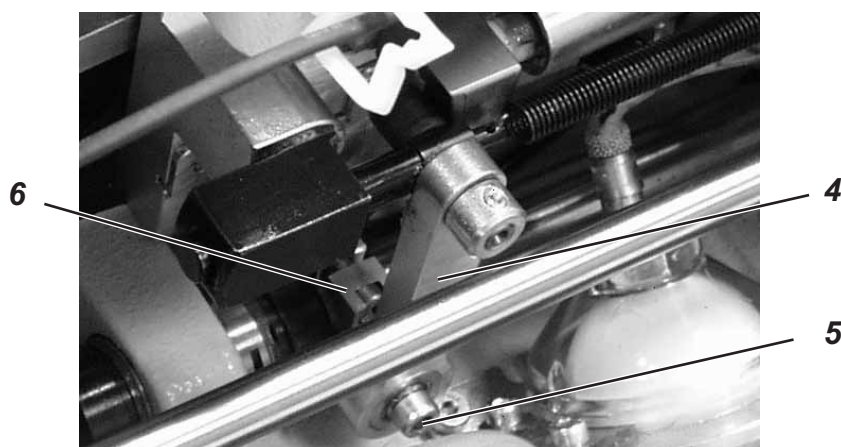
Caution: Danger of injury !

Turn off the main switch.

Set the binder only with the sewing machine switched off.

Basic setting synchronous run

- Set the handwheel to 100°. In this handwheel position the shaft 2 should be in parallel position to the lower shaft 3.
- Check the position of the shaft 2.
- Check the synchronous run.



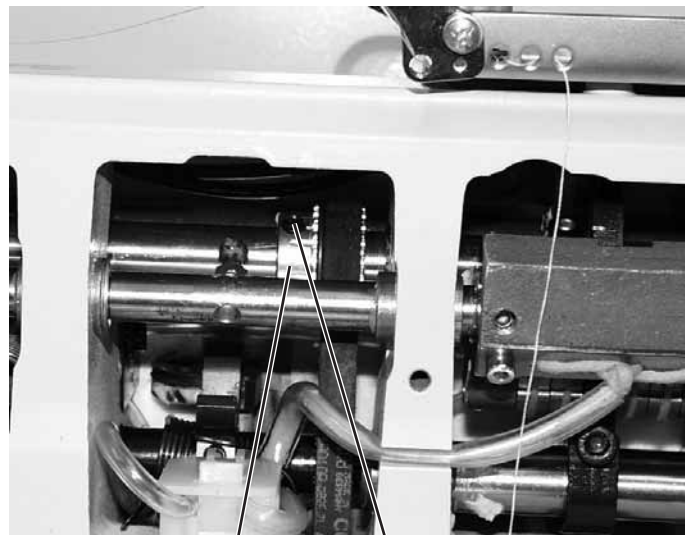
Fine adjustment synchronous run

- Shift the clamping block 6 on the shaft. The block can be shifted to the right, to the left or upwards and downwards. In order to do so, remove the screw 5 and pull off the lever 4.

2.19 Machines with vertical trimmer



1



3

2

Sewing machines with this equipment can cut the material during the sewing operation. The vertical cutter is stopped at each pneumatic lifting of the sewing feet. When the knee lever is being used, it stops only after 2/3 of the lifting has taken place.

GB



Caution: Danger of injury !

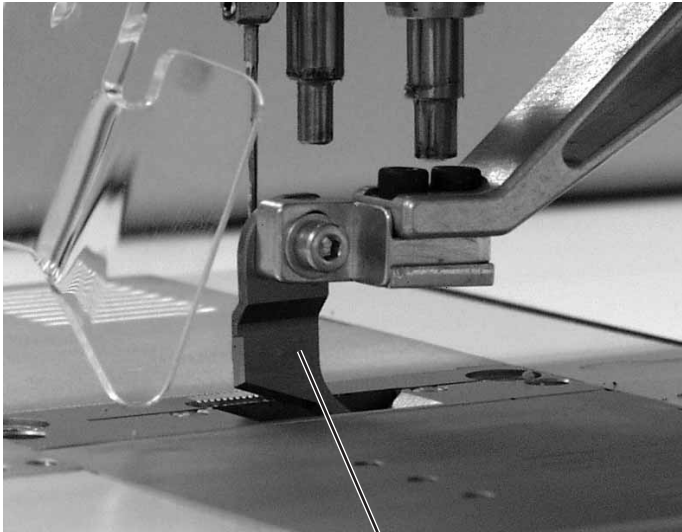
Turn off the main switch.

Set the vertical cutter only with the sewing machine switched off.

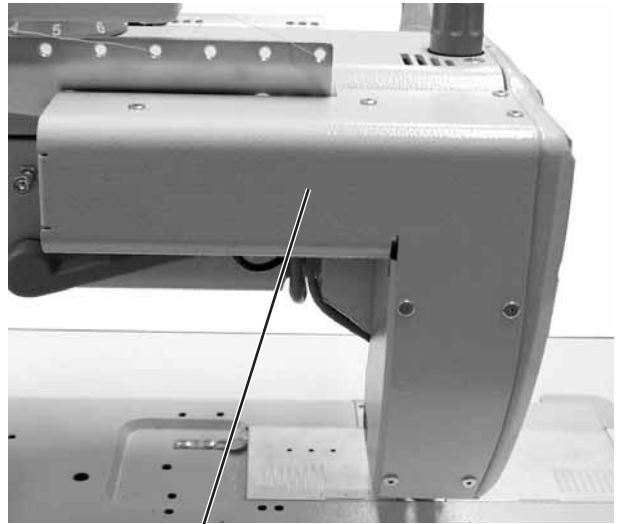
Timing of the knife movement

The knife should cut the material when there no feed takes place.

- Unscrew the face cover.
- Loosen the screws 2 of the belt pulley 3.
- Adjust the belt pulley 3 so that the knife only cuts when no feed takes place.
- Tighten the screws 2 on the belt pulley.



1



2

Stroke of the knife

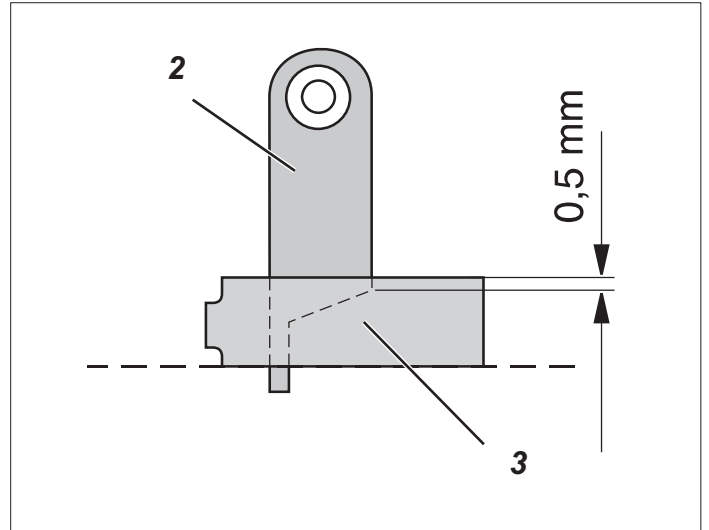
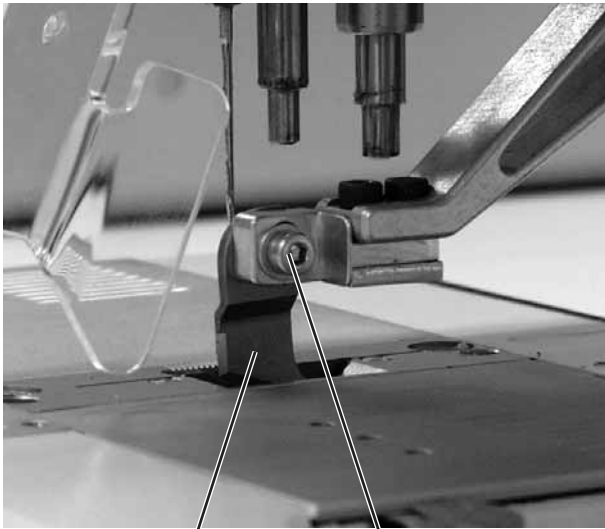
The stroke lift of the knife 1 can be set. This becomes necessary, e.g. after grinding, when the knife is shorter.

- Unscrew the cover 2.
- Loosen the locknut 3.
- Turn the screw 4.
Turn the screw upwards = higher stroke
Turn the screw downwards = lower stroke
- Tighten locknut 3 again.
- Correct the knife overlapping (see next page).



4

3



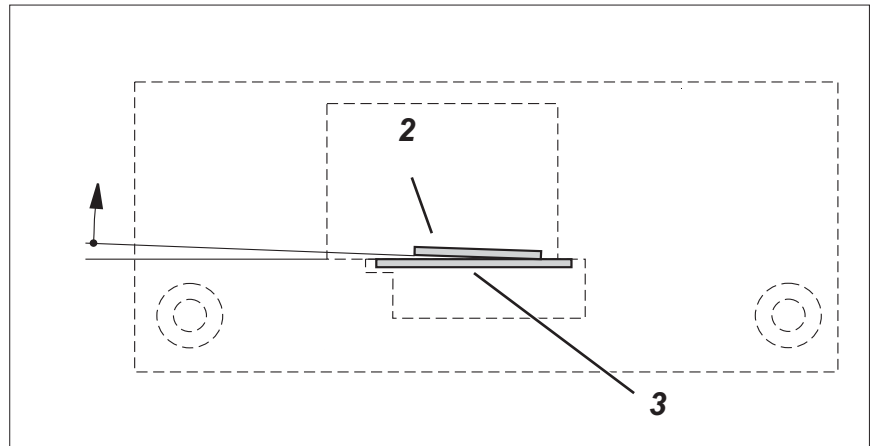
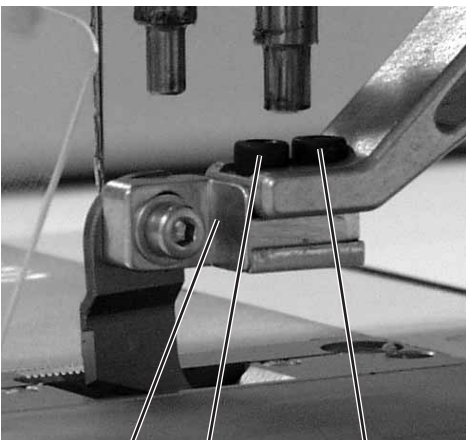
2 1

Knife overlapping

When the knife 2 is in the bottom dead center, the overlapping should amount to 0.5 mm.

- Loosen screw 1.
- Push the knife downwards until it overlaps the counter knife 3 for 0.5 mm.
- Tighten the screw 1.

GB



6 5 4

Position and pressure of the knife blades

The knife 2 should stand slightly inclined towards the counter knife 3. The knife should cut safely with as little pressure as possible.

- Loosen the screws 4 and 5.
- Set the position of the knife carrier 6.
- Tighten the screws 4 and 5 again.

Note:

The higher the knife pressure is set, the higher the knife wear will be.

3. Oil lubrication



Caution: Danger of injury !

Oil can cause skin eruption.
Avoid a longer contact with the skin.
Wash yourself thoroughly after a contact.



ATTENTION !

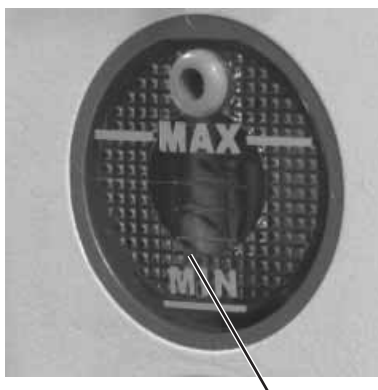
The handling and disposal of mineral oils is subject to legal regulations.
Deliver used oil to an authorized collecting station.
Protect your environment.
Be careful not to spill any oil.

Oil the special sewing machine exclusively with the lubricating oil **DA 10** or an equivalent oil with the following specification:

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

DA 10 can be bought at the sales points of **DÜRKOPP ADLER AG** under the following parts number:

250 ml-Container:	9047 000011
1-Liter-Container:	9047 000012
2-Liter-Container:	9047 000013
5-Liter-Container:	9047 000014



1

Lubrication of the machine head

- The machine head is equipped with central oil wick lubrication. All bearings are supplied by the oil reservoir 1.
- The oil level must not drop below the marking “**MIN**”.
- Fill up oil up to the marking “**MAX**” through the drill-holes 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.

GB

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.

3.2 Maintenance



Caution: Danger of injury !
Turn the main switch off !
The maintenance of the sewing machine must only be done when the machine is switched off.

The daily or weekly maintenance work (cleaning and oiling) to be carried out by the operators of the sewing machine is described in the operating instructions (part 1). It is only listed in the following table for the sake of completeness.

Maintenance work to be carried out	Operating hours			
	8	40	160	500
Sewing machine head				
- Remove sewing dust and thread waste	X			
- Check the oil level in the oil reservoir for the lubrication of the sewing machine head		X		
Sewing drive				
- Clean motor fan grill	X			
- Check status and tension of the V-belt			X	
Pneumatic system				
- Check water level in the pressure regulator		X		
- Clean filter element of the compressed air maintenance unit				X
- Check the tightness of the pneumatic system.....				X