DÜRKOPP ADLER AG

767

Spezialnähmaschine

Serviceanleitung

D

Service Instructions

GB

Postfach 17 03 51, D-33703 Bielefeld • Potsdamer Straße 190, D-33719 Bielefeld
Telefon +49 (0) 521 / 9 25-00 • Telefax +49 (0) 521 / 9 25 24 35 • www.duerkopp-adler.com

Ausgabe / Edition:	Änderungsindex		Teile-Nr./Part.-No.:
10/2008	Rev. index: **02.0**	Printed in Federal Republic of Germany	**0791 767651**

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.

Index **Page:**

Service Instructions Class 767

GB

Index **Page:**

1. General notes

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 switch off 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.

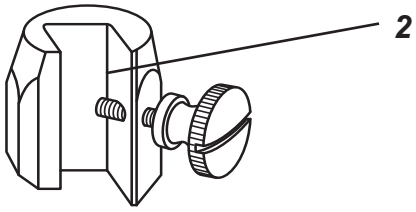
The instruction manual on hand describes the adjustment of the sewing machine in an appropriate sequence.

Please observe in this connection that various setting positions are interdependent. Therefore it is absolutely necessary to do the adjustment following the described order.

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

GB

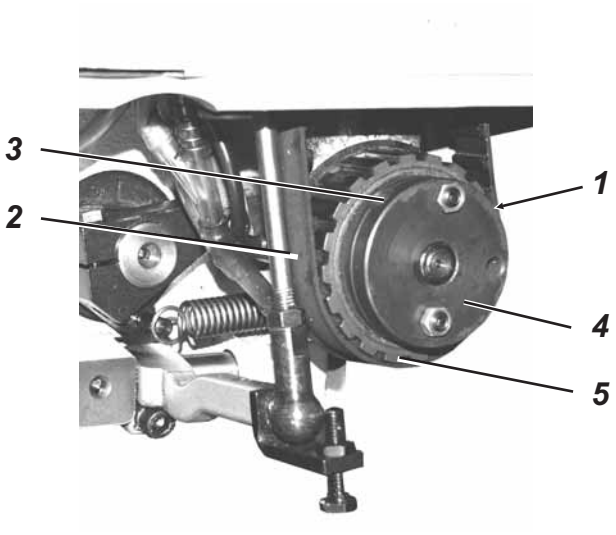
1.1 Gauge kit

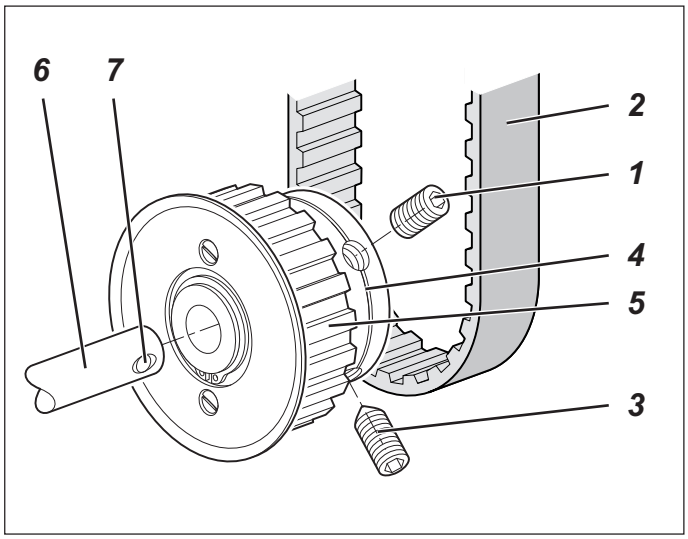


The setting gauges mentioned below allow a precise setting and testing of the sewing machine.

Pos.	Setting gauge	Order No.	Use
1	Gauge	0981 150003	looping stroke (2mm)
2	Adjusting block	0981 150002	looping stroke
3	Gauge	0767 250020	sewing foot stroke adj. (lever position)

2. Position of the lower toothed belt wheel





Caution: Danger of injury !

Switch off main switch.
Check and adjust the position of the lower toothed belt wheel only when the sewing machine is switched off.

Standard checking

The lower toothed belt wheel 5 is axially and radially fixed on shaft 6 via core pin 3.

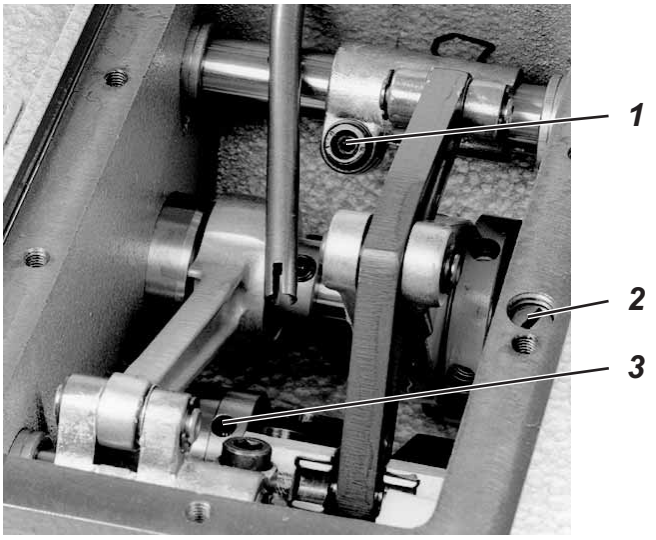
The position of the lower toothed belt wheel 5 is correct if core pin 3 (first core pin in direction of rotation) can be screwed in drill-hole 7 of the shaft.

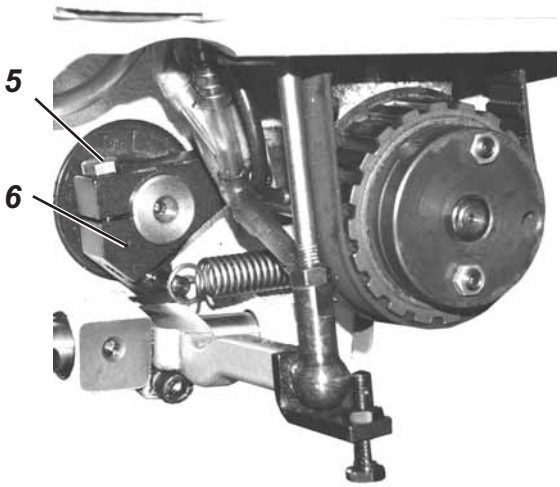
Correction

- Loosen core pins 1 and 3 at the slip clutch 4.
- Twist lower toothed belt wheel 5 with slip clutch 4 on shaft 6 and/or shift axially.
  It must be possible to screw core pin 3 (first core pin in direction of rotation) in the drill-hole 7 of shaft 6.
- Check all settings described hereafter and correct them, if necessary.

3. Zero position, feed with equipment

3.1 Zero position adjustment (position of the stitch regulator link)





Caution: Danger of injury !

Switch off main switch.
Check and adjust zero position of the stitch regulator only when the sewing machine is switched off.

4

Standard checking

If stitch length "**0**" is set, feed-dog and needle must not make a feeding motion when turning the handwheel.

- Remove cover of oil pan 4.
- Set stitch length to "**0**".
- Put Allen key in screw 1 and turn handwheel.
  The adjustment is correct at the slightest possible motion of the Allen key.

Correction

- Loosen clamping screw 5 at block 6.
- Put a pin in drill-hole 3 of the stitch regulator shaft.
  Twist stitch regulator shaft with stitch regulator link.
- Tighten clamping screw 5.

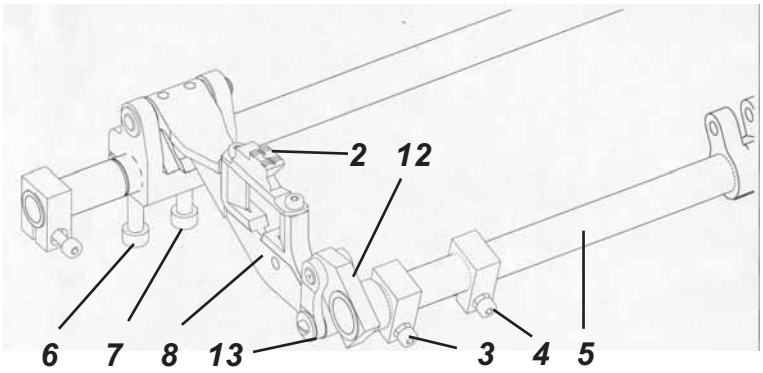
ATTENTION !

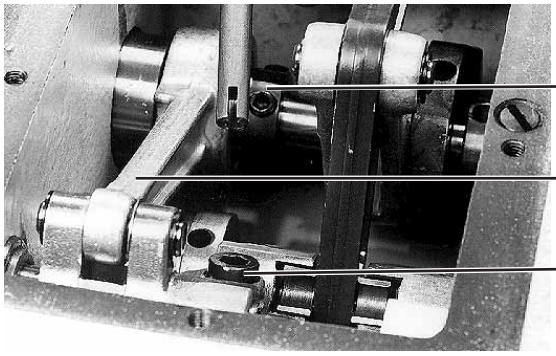
In case of a wrong adjustment the backward stitch lengths and the forward stitch lengths will differ.

The core pin 2 at the oil pan fixes the stitch regulator shaft.
Never screw in the core pin 2 up to the bottom.
If the core pin 2 is screwed in too deeply, the motion of the stitch regulator link can be hindered.

3.2 Bottom feed adjustment

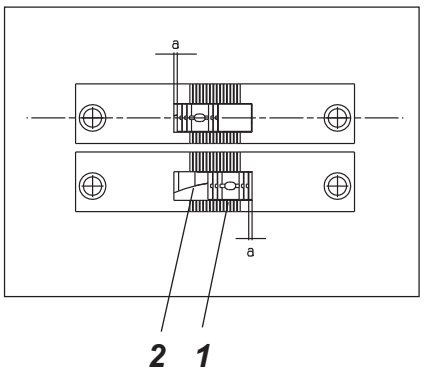
3.2.1 Position of the feed-dog in the throat plate cutout





Caution: Danger of injury !

Switch off main switch.
Check and adjust position of the feed-dog only when the sewing machine is switched off.



Standard checking

Lateral position:
The feed-dog 2 must be in the centre of the throat plate cutout 1.

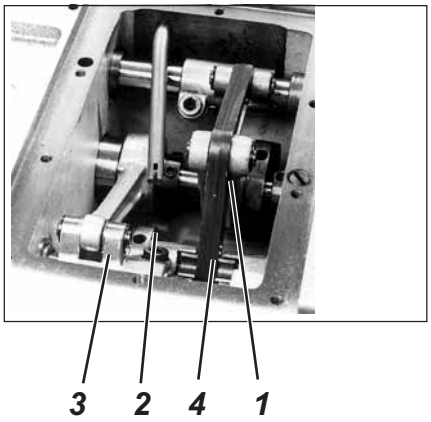
Position in feed direction:
In case of maximum stitch length the distance between feed-dog 2 and throat plate cutout 1 must be equal at the back (a) and at the front (b).

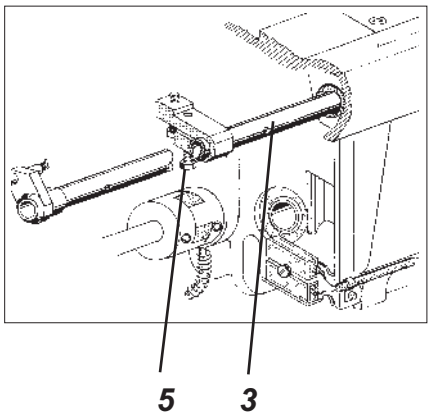
- Set maximum stitch length.
  Turn the button in clockwise direction as far as it will go.
- Turn handwheel and check position of feed-dog 2.

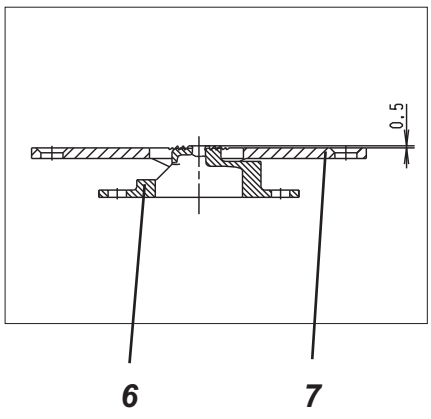
Correction

- Loosen screws 6 and 7.
- Adjust feed-dog bar 8 in such a way that the above-mentioned conditions are fulfilled.
- Tighten screws 6 and 7 again.
- Check whether the lifting shaft crank has lateral clearance to joint 13.
  If not, the position of the lifting shaft crank 6 has to be changed correspondingly.
- Loosen screws 3 and 4.
- Loosen screw 10.
- Adjust the position of the lifter shaft 5.
- Tighten screws 3, 4 and 10 again.
  The tratcion rod 9 must lie centered on the eccentric 11 and the shaft 5 must be axially fixed.

3.2.2 Height of the feed-dog







Caution: Danger of injury !

Switch off main switch.
Check and adjust height of the feed-dog only when the sewing machine is switched off.

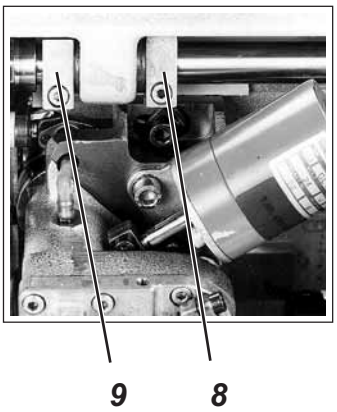
GB

Standard checking
Sewing machines without feed dog stroke:

The feed dog 6 should have the same height as the needle plate 7 in its highest position.

Correction

- Set stitch length to “0".
- Loosen screw 5
- Turn the stroke shaft 3.
  The feed dog should have the same height as the needle plate.
- Tighten screw 5 again.



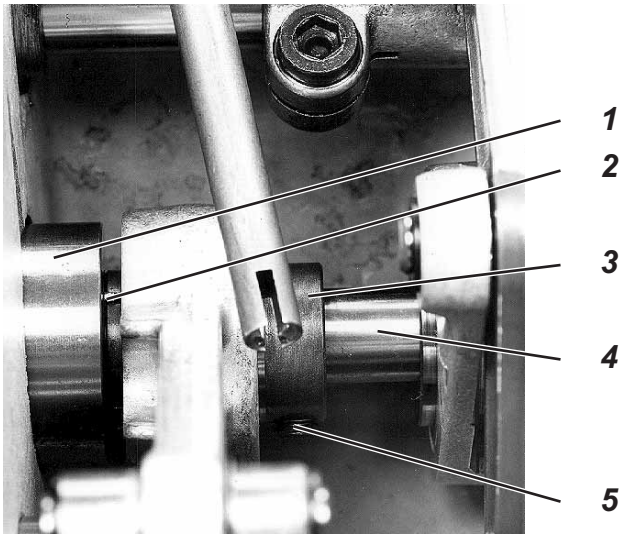
Standard checking
Sewing machines with feed dog stroke:

In its highest position the feed dog should extend 0.5 mm out of the needle plate 7.

Correction

- Set stitch length to “0".
- Loosen screw 4.
- Turn the stroke shaft 3.
  In its highest position the feed dog 6 should extend 0.5 mm out of the needle plate 7.
- Tighten screw 4 again.
  The tie rod 2 must lie centered on the eccentric 1.
- Check if the setting blocks 8 and 9 can still move freely.
  If not, then the two setting blocks 8 and 9 must be turned on the stroke shaft.
  The setting blocks may not be axially displaced when doing this.

3.2.3 Lifting motion of the feed-dog



Caution: Danger of injury !

Switch off main switch.
Check and adjust lifting motion of the feed-dog only when sewing machine is switched off.

Standard checking

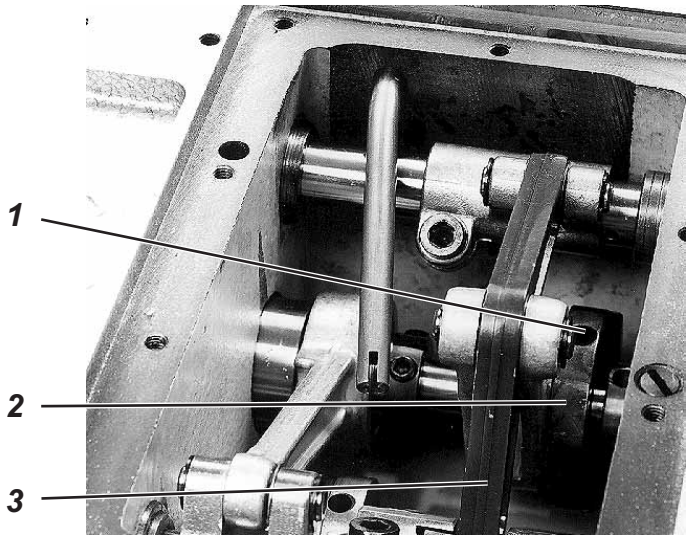
At needle position “down” the feed-dog must have reached its highest position.
If the needle moving downwards and the feed-dog moving upwards reach the throat plate level simultaneously, the adjustment is correct.

- Set stitch length to “0".
  Turn button counter-clockwise as far as it will go.
- Move needle to position “down” by handwheel and check position of the feed-dog.

Correction

- Loosen two screws 5.
- Twist eccentric 3.
  The adjustment is correct if the above-mentioned conditions are fulfilled.
- For axial fixation press shaft 4 to the right and push eccentric 3 to the left against the pump.
  The lugs 2 of pump ring 1 must be in the corresponding grooves of the eccentric 3.
- Tighten two screws 5 again.

3.2.4 Feeding motion of the feed-dog



Caution: Danger of injury !

Switch off main switch.
Check and adjust feeding motion of the feed-dog only when sewing machine is switched off.

GB

Standard checking

When actuating the stitch regulator shaft with the max. stitch length, the needle should not move when reaching its bottom dead center or 0.7 mm before.

- Set maximum stitch length.
- Turn handwheel until the needle reaches its bottom dead center or is 0.7 mm above its bottom dead center.
- Turn the stitch regulator shaft and observe the needle.

Correction

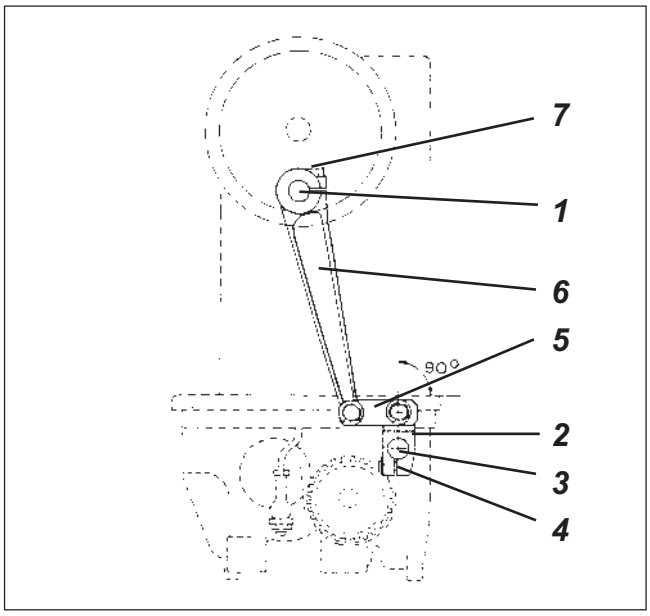
- Loosen two screws 1.
- Set eccentric 2.
- The needle must not move 0.5 mm after the bottom dead centre. Position eccentric 2 axially.
  The tie rod 3 should be central to the running surface of the eccentric.
- Tighten two screws 1 again.

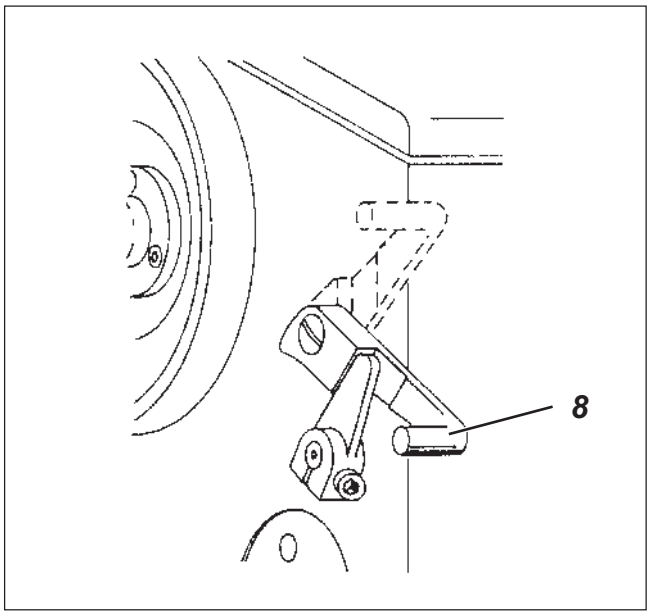
Hint

In order to obtain a constant loop stroke for forward and backward sewing, the needle bar should not move any longer for the first 2 mm loop stroke setting.

However the needle would still continue oscillating with the needle stitching the material, while the cloth preser foot still holds the material. This can lead to needle breakage.

3.2.5 Synchronous run of needle feed and bottom feed





The motion of the feeding shaft 3 is transmitted via block 2 and tie rod 5 to lever 6 and from there via tie rod 3 and lever 2 to needle bar wing 1.

Caution: Danger of injury !

Switch off main switch.
Check and adjust position of block 6 only when sewing machine is switched off.

Standard checking

During the feed the needle must not move in the needle hole. At stitch length **"0"** block 2 must be in perpendicular position.

- Set stitch length "**0**".
- Check position of block 2.
  Block 2 must be in parallel position to the cast edge of the casing.
- Lock sewing feet in lifted position with lifting lever 8.
- Set maximum stitch length.
- Turn handwheel and check the synchronous feeding motion of feed-dog and needle bar.
  The adjustment is correct if the position of the needle in the needle hole of the feed-dog does not change.

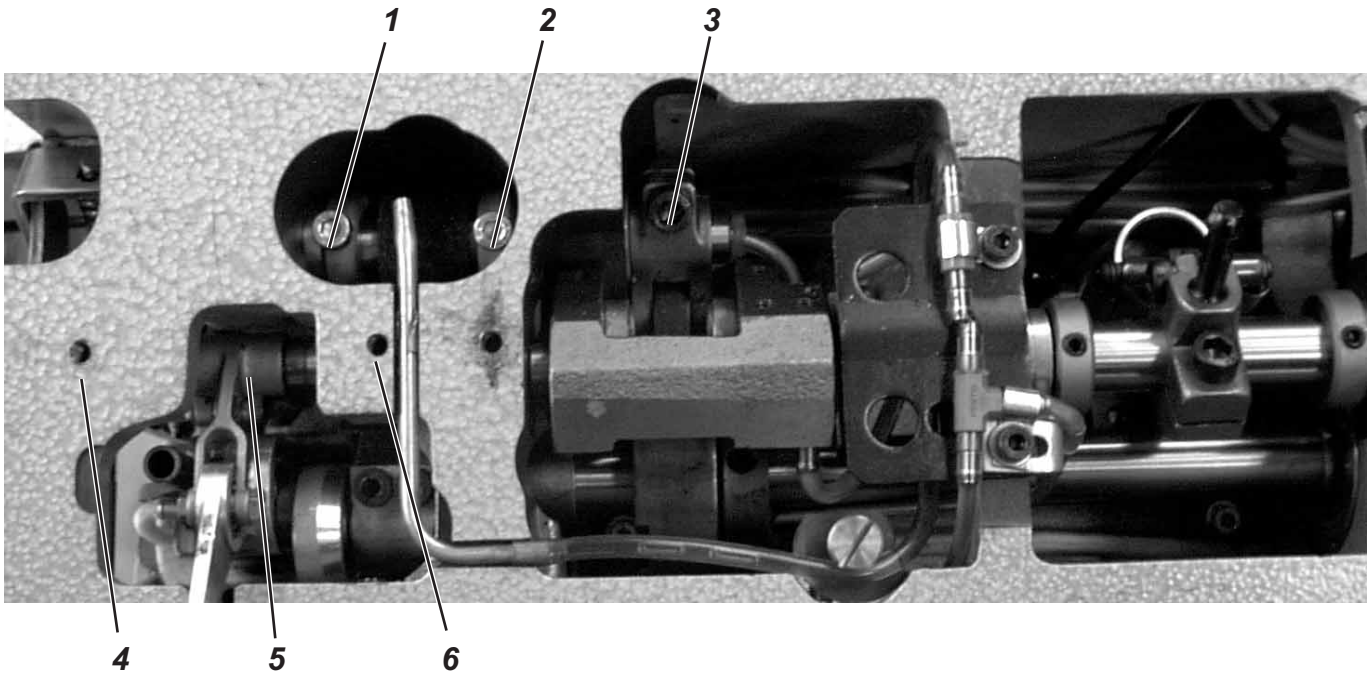
Correction

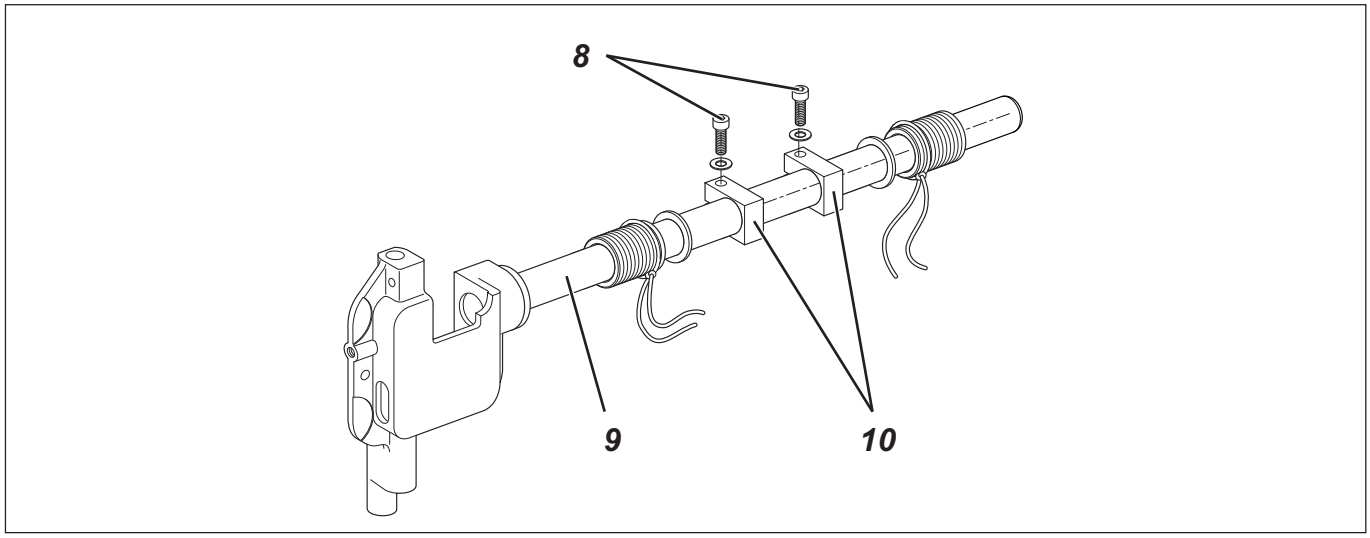
- Loosen clamping screws 4 and 7.
- Twist block 2 on feeding shaft 3.
- Tighten clamping screws 4 and 7.

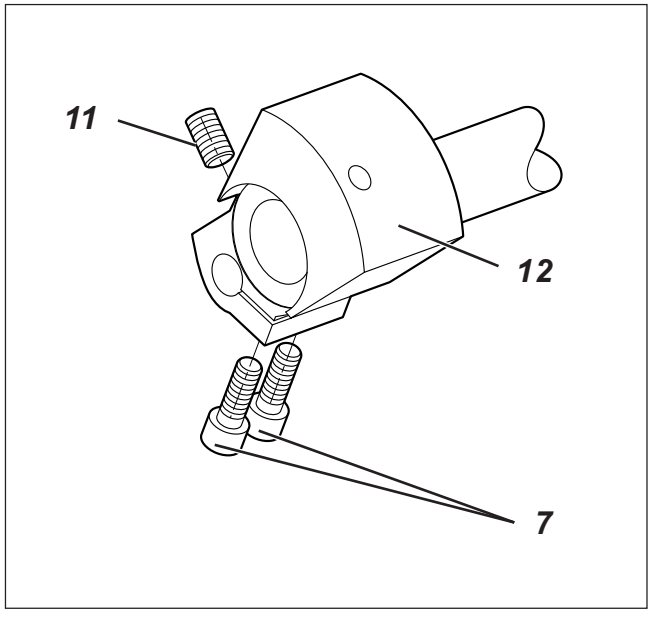
ATTENTION !

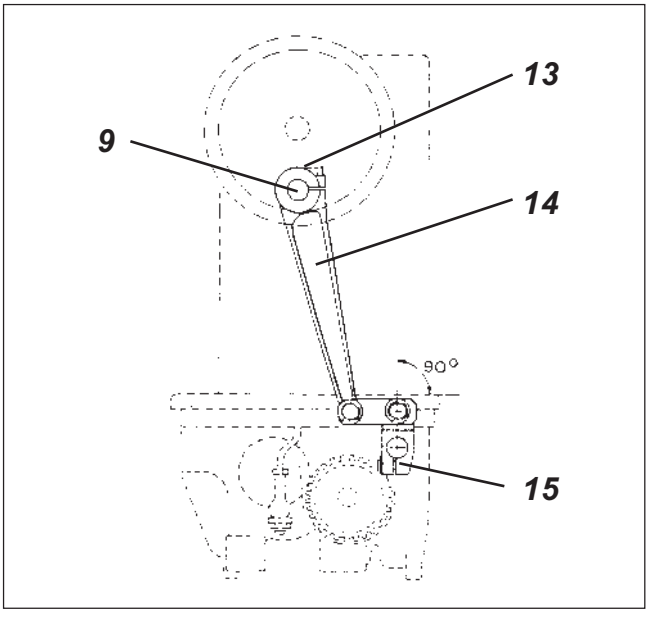
After twisting of block 2 it has to be checked that the needle bar wing 1 is positioned in feed direction. Correct, if necessary (see chapter Position of the needle bar wing in feed direction).

Notes:


1
2
3
4
5
6


8
9
10


11
12
7


13
9
14
90°
15

3.3 Needle bar wing

Preconditions for the positioning of the needle bar

– Position of feed-dog in the throat plate cutout is adjusted correctly (see chapter 3.2.1).

– Synchronous run of needle feed and bottom feed is adjusted correctly (see chapter 3.2.5).

3.3.1 Lateral position of the needle bar wing

Caution: Danger of injury !

Switch off main switch.
Check and adjust lateral position of the needle bar wing only when sewing machine is switched off.

Standard checking

At stitch length **"0"** the needle must stick in the centre of the needle hole of the feed-dog.

– Set stitch length "**0**".

– Move needle in position "down" by handwheel.

– Check position of the needle in the needle hole of the feed-dog.

GB

Correction

– Screw off arm cover.

– Loosen clamping screws 8 at both clamping blocks 10.

– Loosen both clamping screws 7 and core pin 11 at the needle bar crank 12.

– Loosen core pins 4 and 6.

– Loosen screw 13 at lever 14.

– Position needle bar wing 9 laterally.
The needle must stick in the centre of the needle hole of the feed-dog.

– If necessary, shift the shaft for the sewing foot drive axially.
Loosen clamping screws 1 and 2 at the setting rings and clamping screw 3 at the block.
Shift the shaft axially.
Tighten clamping screws 1,2 and 3 again afterwards.

– Tighten all screws which had been loosened.

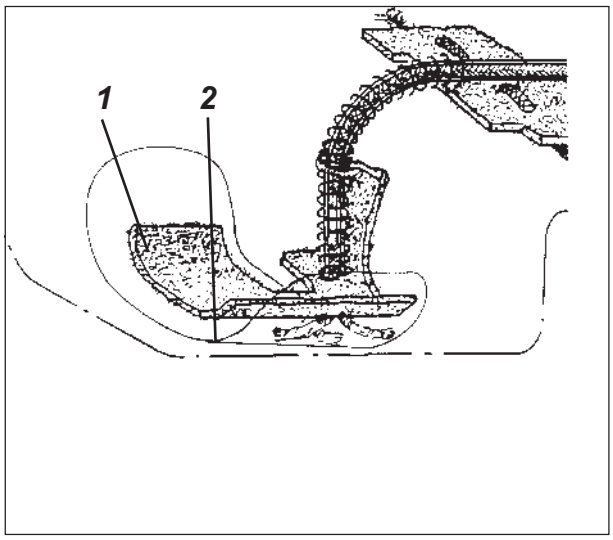
Please observe the following:
- Needle bar wing 9 must be fixed axially.
- Both clamping blocks 10 must be in horizontal position.
- Core pin 11 must be on the surface of the crank pin.
- Lever 15 must be in perpendicular position.
- The oil wicks must be in correct position.
- The lateral clearance of the thread lever control 5 must be adjusted as low as possible.
- The stroke heights of both sewing feet must be identical.

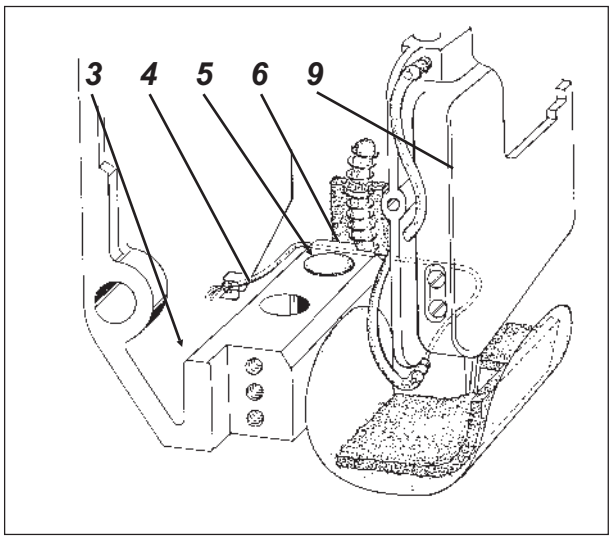
ATTENTION

After the lateral positioning of the needle bar wing:

– Check distance between hook and needle and correct, if necessary (see chapter Hook settings).

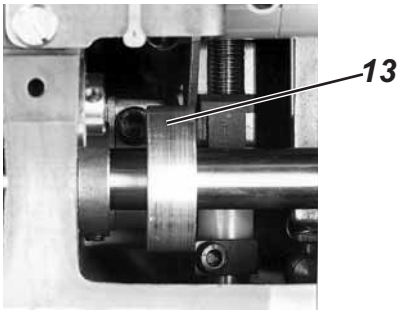
3.3.2 Position of the needle bar wing in feed direction





Caution: Danger of injury !

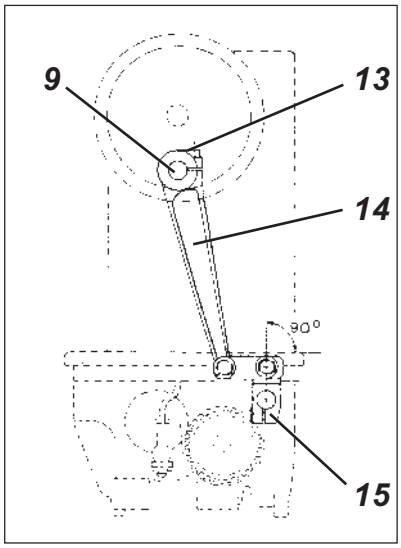
Switch off main switch.
Check and adjust position of needle bar wing in feed direction only when sewing machine is switched off.



Standard checking

At stitch length **"0"** the needle must stick in the centre of the needle hole of the feed-dog.

- Set stitch length to "**0**".
- Move needle in position "down" by turning the handwheel
- Check position of the needle in the needle hole of the feed-dog.



Correction

- Screw off arm cover.
- Loosen clamping screw 13 at lever 14.
- Twist needle bar wing 9 until the needle is centric above the needle hole of the feed-dog.
- Tighten clamping screw 13.

Replacing the oscillating crank

When replacing the oscillating crank, the following items must be observed:

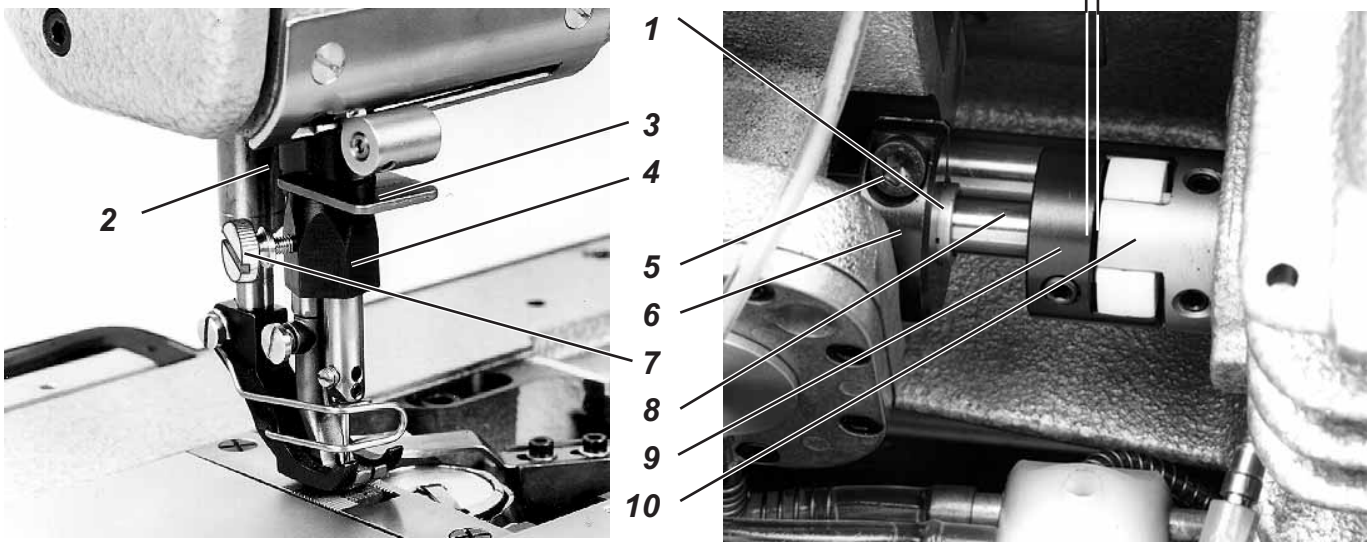
- The wick 4 leading from the oil sump 3 to the oscillating crank 9 must be fixed between the groove 5 in the cast iron and the spiral spring 6 of the recirculation wick.
- The recirculation felt pad 2 must have the position to the plastic foil 1 shown in the picture.

ATTENTION

After replacement of the oscillating crank or when the sideways position was changed, the clearance of the hook to the needle is to be checked and corrected, if necessary.

4. Hook settings

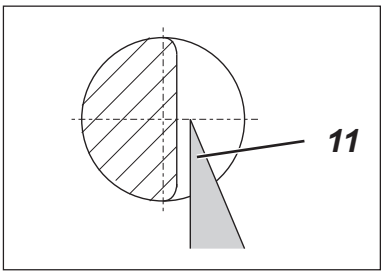
4.1 Looping stroke

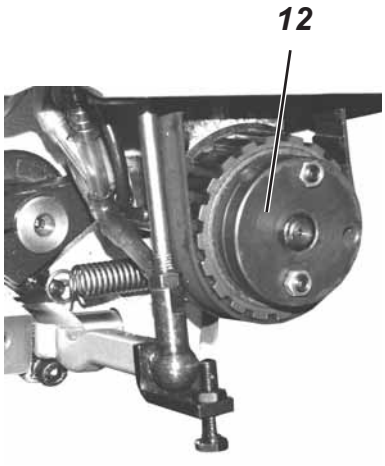


Caution: Danger of injury !

Switch off main switch.
Check and adjust looping stroke only when sewing machine is switched off.

GB





Standard checking

The looping stroke (2 mm) is the way of the needle bar from the bottom dead centre to the point where the hook tip 11 is at the level of the middle of the needle. The looping stroke is controlled by means of setting block 4 (Order No. 0981 150002) and gauge 3 (Order No. 0981 150003).

- Check whether safety clutch 12 snaps in (see chapter Safety clutch)
- Screw off throat plate.
- Set stitch length to “**0**”.
- Move needle in position “down” by handwheel.
- Press gauge 3 with block 4 against wing 2.
- Tighten screw 7 and pull out gauge 3.
- Turn handwheel **in travel direction** until block 4 abuts on needle bar wing 2 (looping stroke position).
  In this position the hook tip 11 must be at the level of the middle of the needle.

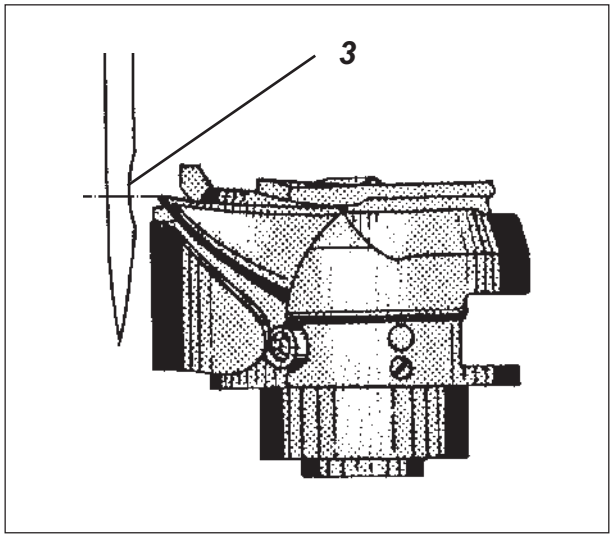
Correction

- Loosen screws 5 at the clamping rings 6.
- Twist hook until hook tip 11 is at the level of the middle of the needle.
- Position shaft 8 axially.
  The clearance between the clutch claws 9 and 10 must amount to 0.5 mm.
- Position clamping rings 6 flush with the steps in driving shaft 8.
- Tighten screws 5.

ATTENTION !

After a correction of the looping stroke the following adjustment is to be checked and corrected, if necessary:
(see chapter 4.4 Hook protection)

4.2 Needle bar height



Caution: Danger of injury !

Switch off main switch.
Check and adjust needle bar height only when sewing machine is switched off.

Standard checking

In looping stroke position the hook tip must be at the level of the middle of the needle hollow groove 3.

– Move needle in looping stroke position by handwheel.
  In looping stroke position the hook tip is at the level of the middle of the needle.
– Check position of the hook tip to the needle hollow groove 3.

Correction

– Take off head cover.
– Loosen both screws 1.
– Adjust the height of needle bar 2 in such a way that the hook tip is at the level of the middle of the needle hollow groove 3.
  Attention!
  Needle bar 2 must not be twisted when being shifted.
– Tighten screws 1.

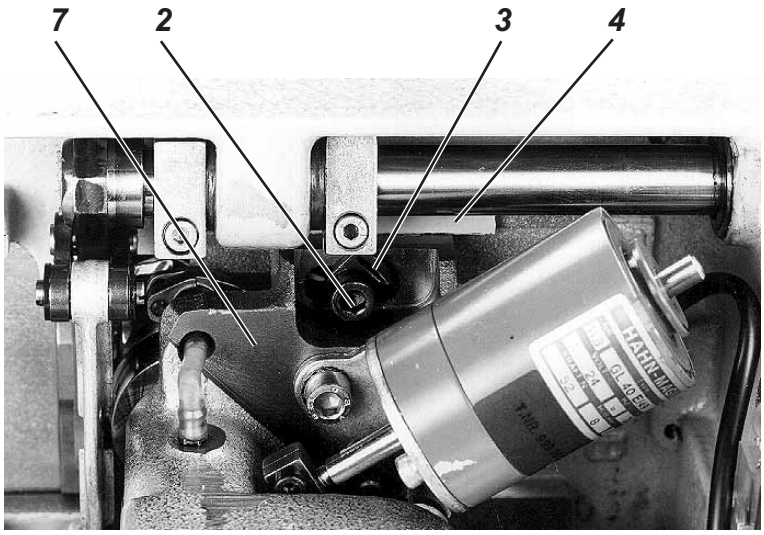
ATTENTION !

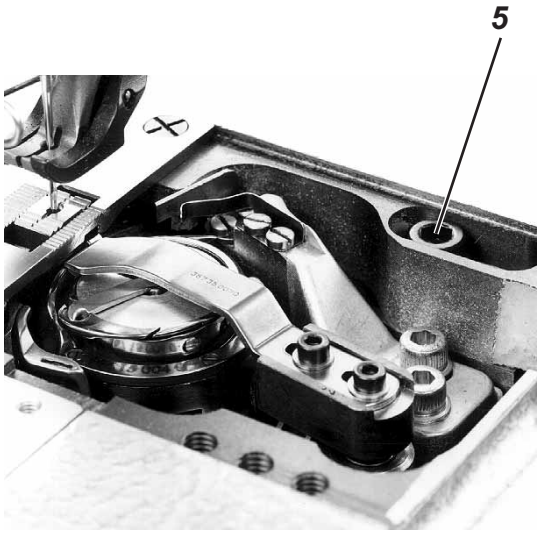
After a correction of the needle bar height:
Check position of the hook protection and correct it, if necessary.

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

– Damage to the hook tip
– Jamming of the bobbin thread between needle and needle protection

4.3 Distance between hook and needle

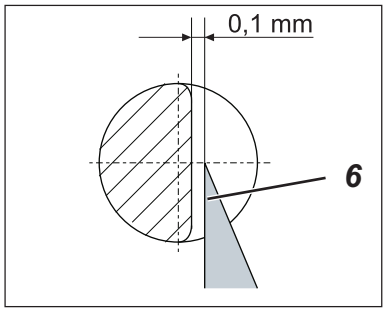




Caution: Danger of injury !

Switch off main switch.
Check and adjust distance between hook and needle only when sewing machine is switched off.

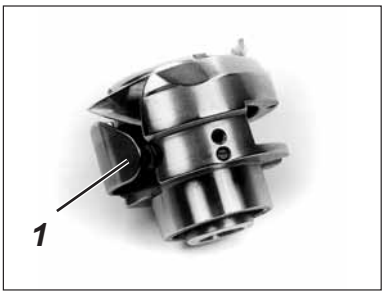
GB



Standard checking

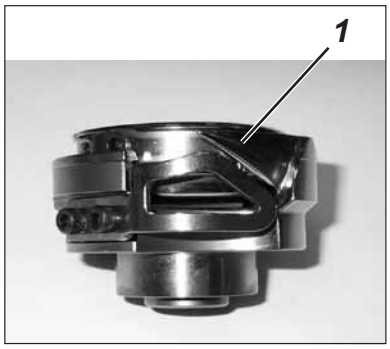
In looping stroke position the distance between hook tip 6 and the needle hollow groove must amount to max. 0.1 mm.

- Move needle in looping stroke position by handwheel.
  In looping stroke position the hook tip is at the level of the middle of the needle.
- Check whether the needle in looping stroke position is displaced by the hook protection 1. If this is the case, bend hook protection back carefully.
- Check distance between hook tip 6 and needle hollow groove.



Correction

- Loosen screw 5 and screw 2.
- Shift the hook case 7 accordingly.
- The eccentric 3 must press the hook case against the guide 4.
- Tighten screw 5 and screw 2.



ATTENTION !

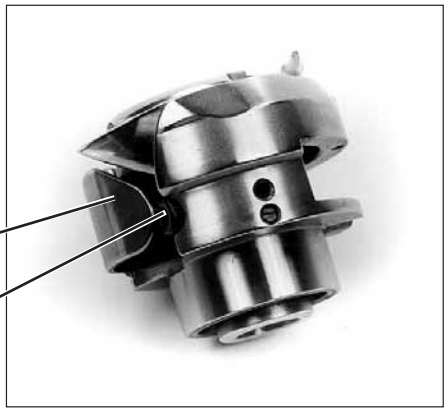
After a correction of the distance between hook and needle:

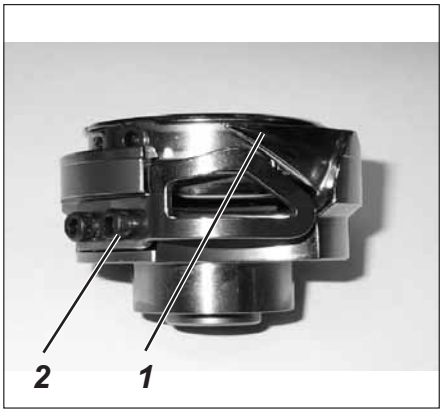
- Check clearance in the claw clutch and correct it, if necessary.

In case the needle size is changed:

- Check the distance between hook and needle, eventually adjust it.

4.4 Hook protection





The hook protection 1 avoids a contact between needle and hook tip.

Caution: Danger of injury !

Switch off main switch.
Check and adjust the position of the hook protection only when the sewing machine is switched off.

Standard checking

In looping stroke position the needle must abut on the hook protection 1 without being displaced.

– Move needle in looping stroke position by handwheel.
  In looping stroke position the hook tip is at the level of the middle of the needle.
– Press needle against hook protection 1 manually.
  The needle should not touch the hook tip.

Correction

– Set the hook protection 1 by twisting the screw 2.

ATTENTION !

The position of the hook protection has to be checked and corrected, if necessary, after the following adjustments:

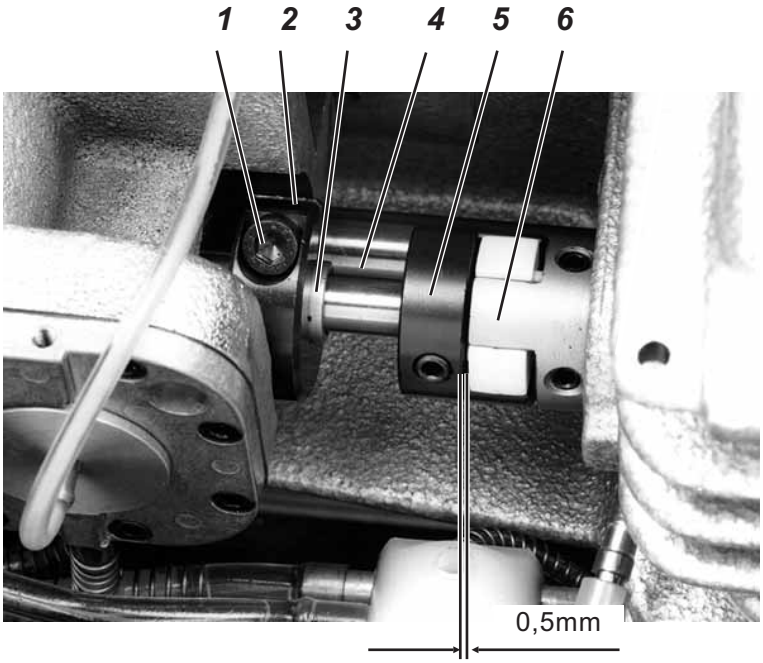
– Correction of the needle bar height
– Correction of the looping stroke
– Alteration of the needle size by 0.2 mm or more

4.4.1 Using other needle size

By use of a needle of different size, please check the following points:

1. When the size difference is at least 0.2 mm.
– Correct the hook position.
2. When the needle distance between the hollow groove and the middle of the needle changes.
– Check the distance between hook and needle.

4.5 Clearance in the claw clutch



Caution: Danger of injury !

Switch off main switch.
Check and adjust clearance in the claw clutch only when sewing machine is switched off.

Standard checking

The lateral clearance between the clutch claws 5 and 6 must amount to 0.5 mm.

– Check clearance in the claw clutch.

Correction

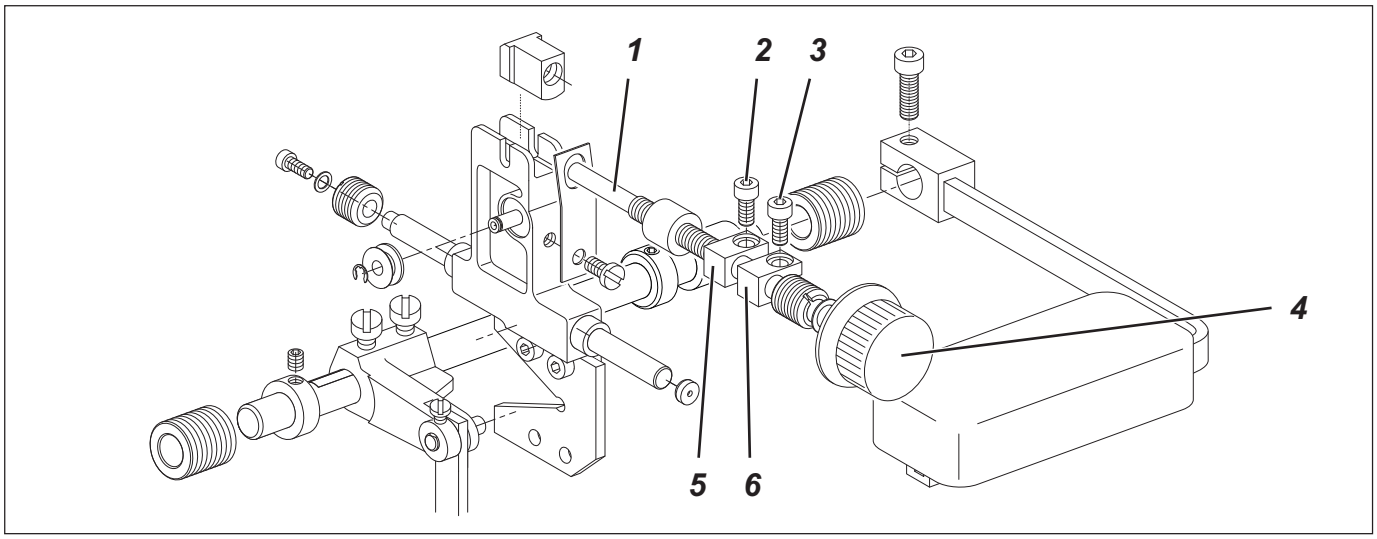
– Loosen screws 1 at the clamping rings 2.
– Adjust clearance between the clutch claws 5 and 6 by axial shifting of shaft 4.
  Attention!
  Shaft 4 must not be twisted!
– Position clamping rings 2 flush with the steps in driving shaft 3.
– Tighten screws 1.

ATTENTION !

After a correction of the clearance in the claw clutch:
Check looping stroke and correct, if necessary.

5. Stitch regulator

5.1 Limitation of maximum stitch length



Caution: Danger of injury !

Switch off main switch.
Check and adjust limitation of maximum stitch length only when sewing machine is switched off.

Standard checking

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

- Set maximum stitch length.
  Turn button 4 in clockwise direction as far as it will go.
- Sew test seam on thin cardboard and measure stitch length.
  The measured stitch length must not exceed the maximum stitch length allowed to realize with the used sewing equipment.

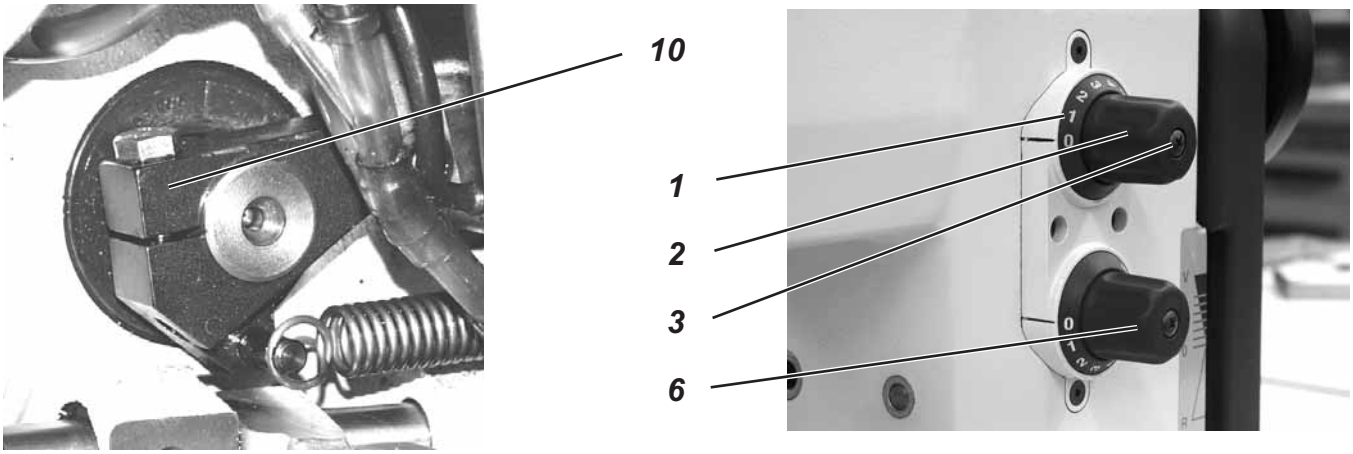
Correction

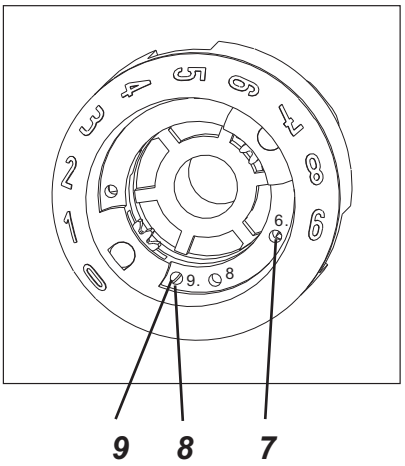
- Screw off arm cover.
- Loosen clamping screw 2.
- Shift clamping block 5 on threaded spindle 1.
- Tighten clamping screw 2.

After a longer operation of the sewing machine an axial clearance can occur in the threaded spindle 1 so that the maximum stitch length can no longer be set. In this case the position of clamping block 6 has to be readjusted.

- Loosen clamping screw 3.
- Shift clamping block 6 on threaded spindle 1.
- Tighten clamping screw 3.

5.2 Limitation of the max. stitch length for machines equipped with 2nd stitch length as standard





Depending on the used sewing equipment the stitch length adjustment must be limited to 6 or 9 mm.

This adjustment has to be made on the setting wheel for the long stitch length (upper setting wheel) only.

- Set the stitch lengths at “0".
- Loosen screw 3 at the setting wheel 2 and pull the setting wheel 2 off.
- The stitch length limitation is adjusted by means of screw 9. It can be inserted in different drill-holes.
  Drill-hole 7 : limitation to 6 mm
  Drill-hole 8 : limitation to 9 mm
- Set the scale 1 at “0".
- Put setting wheel 2 on again and tighten with screw 3.

GB

5.3 Basic settings of stitch adjustments for machines equipped with 2nd stitch length as standard

The subclasses 767-FAS-373-RAP-HP, 767-FAS-573-RAP-HP, 767-KFA-373-RAP-HP are equipped with the 2nd stitch length. This allows a shorter second stitch length to be activated though pressing a button.

Caution: Danger of injury !

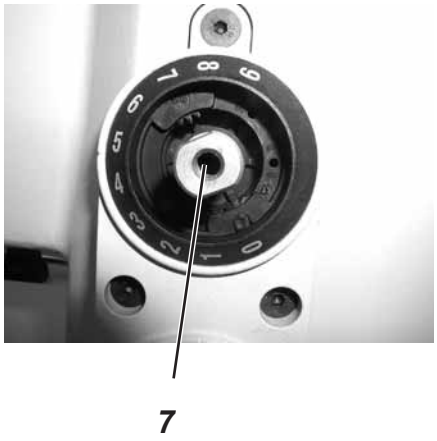
Switch off main switch.
Set the basic adjustment of the stitch adjustment only when the sewing machine is switched off.

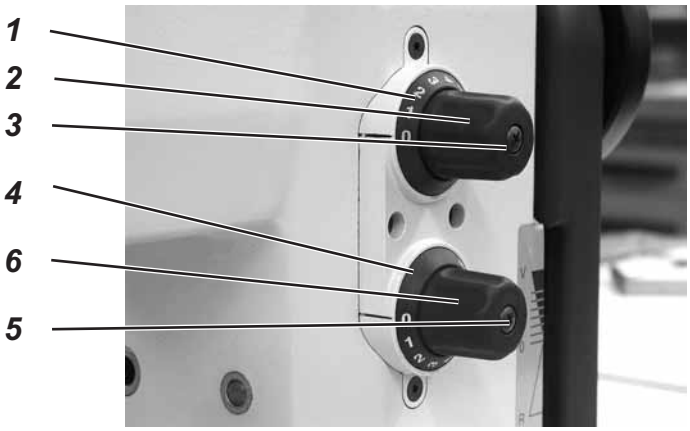
Standard checking

If the setting wheel 2 is in position “**0**“, the stitch regulator shaft should have the least possible clearance.

If the same stitch length is adjusted on both setting wheels, there must be no clearance at all in the stitch regulator.

- Turn setting wheel 2 to stitch length “0".
- Check the clearance of the stitch regulator shaft at block 10.





Correction

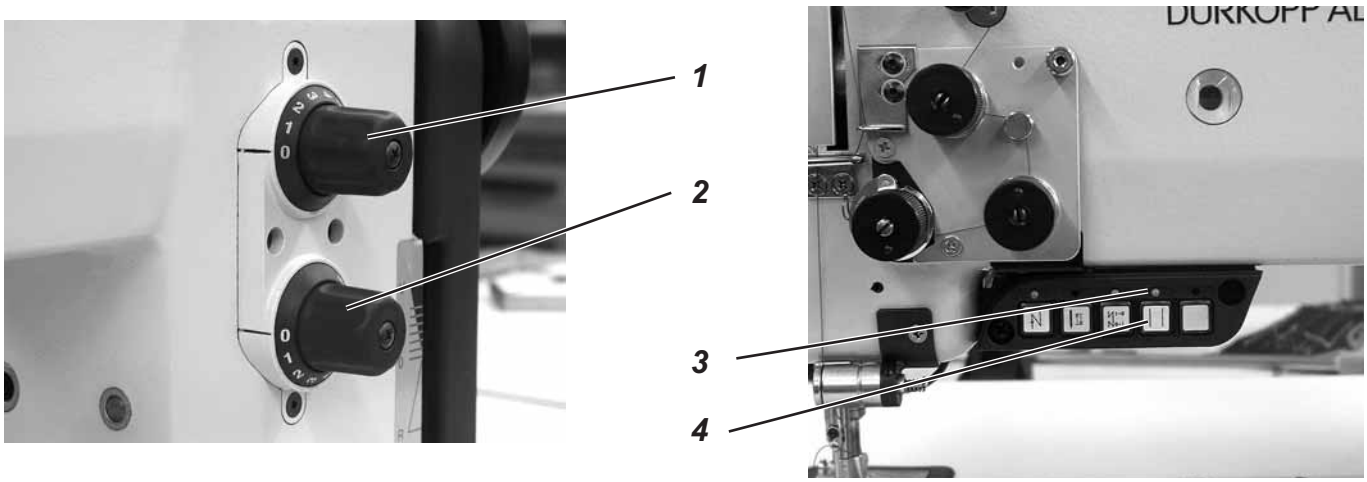
– Unhook the spring at the stitch regulator lever.
– Screw off screw 3 and pull setting wheel 2 off.
– Turn the spindle 7 to the right with a 10 mm open-end wrench until block 10 has the least possible clearance (see item 3.1).

ATTENTION !

Do not turn the spindle 7 to the right too far. The stitch regulator parts might jam, and the maximum stitch length of 9 mm or 6 mm is no longer reached.

– Set scale 1 at “0".
– Put the setting wheel 2 on again and tighten with screw 3.
– Put spring in again.
– Loosen screw 5 at the second setting wheel.
– Pull off setting wheel 6.
– Turn the spindle of the second setting wheel to the right with a 10 mm open-end wrench until a resistance can be felt.
– Set the scale 4 at “0".
– Put the setting wheel 6 on again and tighten with screw 5.

5.4 Operating the stitch adjustments for machines equipped with 2nd stitch length as standard



Both stitch lengths are defined by means of the two setting wheels 1 and 2.

– Set the longer stitch length with the upper setting wheel.
– Set the shorter stitch length with the lower setting wheel.

– With the switch 4 you can change over from one stitch length to the other. When the light emitting diode 3 is shining, the longer stitch length is active.When the light emitting diode 3 does not shine, the shorter stitch length is active.

GB

ATTENTION !

The stitch length adjusted at the lower setting wheel must never be longer than that adjusted at the upper setting wheel.

6. Bobbin case opening settings

6.1 Bobbin case opening

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

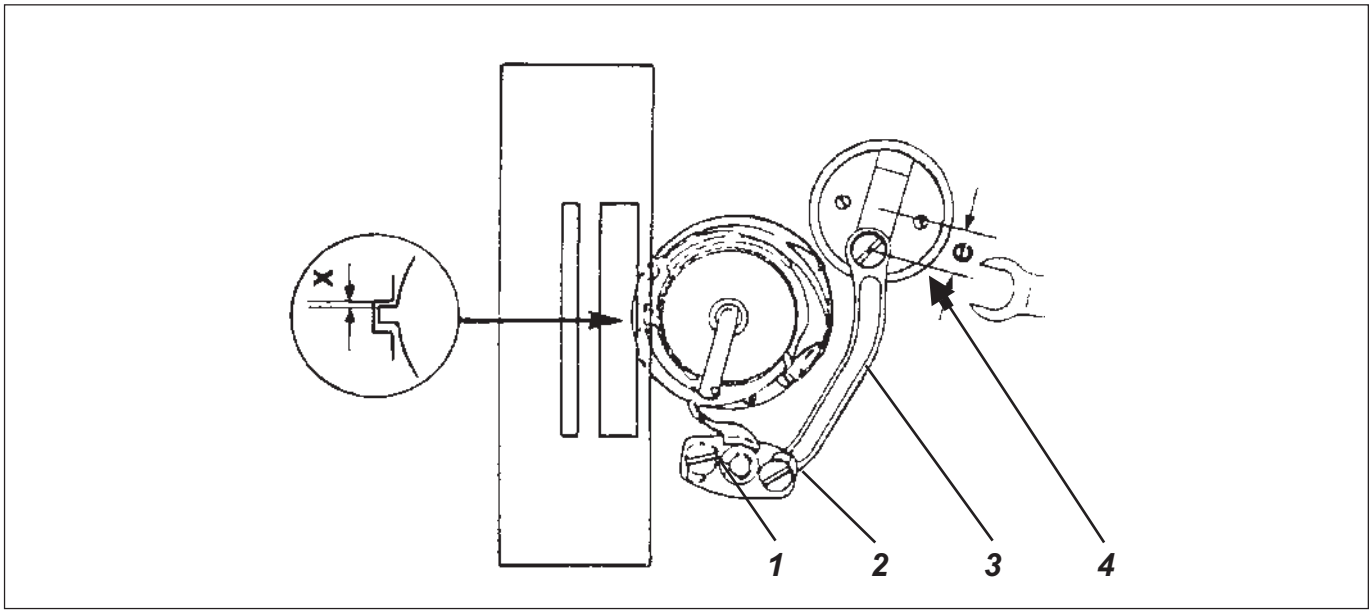
In order for this passing through of the thread to occur unhindered, the bobbin case must be opened at this instant.

This allows the desired seam pattern to be achieved with the lowest possible thread tension.

False settings can have the following effects:

- Thread breakage
- Eyes on the underside of the cloth
- Loud noises

6.1.1 Size of the finger run



Standard checking

Dependent on the subclass-end-no., lever 3 should be eccentrically bearinged approx. 3 to 4 mm.

- Check the distances

Caution Risk of Injury !

Turn the main switch off !
Set the eccentricity only with the sewing machine turned off.

Correction

- Loosen nut 4.
  Use the special wrench (Order No. 0367 250030).
- Turn the eccentric.

  Subclass-End-No. 3 Eccentricity approx. 3 mm
  (Subclass-End-No. 4 Eccentricity approx. 4 mm)
- Tighten nut 4 again.

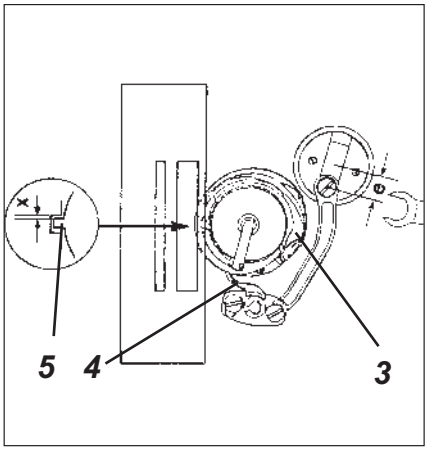
ATTENTION !

After a correction of the size, the open gap and the timing of the opening are to be checked and corrected, if necessary.

6.1.2 Lifting course

Caution: Danger of Injury !

Switch off main switch.
Adjust lifting course only when sewing machine is switched off.



Standard checking

Lifting finger 4 must lift bobbin case 3 in such a way that the thread can slip laterally between bobbin case lug 5 and the gap of the throat plate without being hindered.
When bobbin case 3 is lifted, the distance x between holding lug 5 and the gap of the throat plate must correspond to the thickness of the sewing thread.

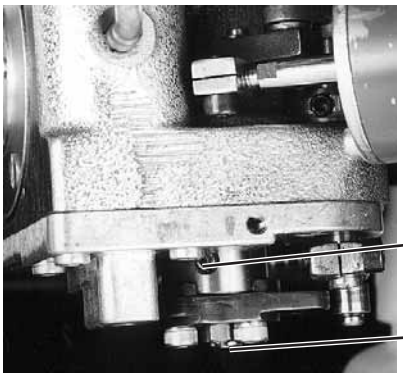
- Sew some stitches manually.
- Check distance x at the moment of the bobbin case lifting.

Correction

- Loosen screws 1 and 2
- Set the position of the finger accordingly.
- Tighten screws 1 and 2 again.

GB

6.1.3 Timing of the bobbin case opening



Standard checking

The bobbin case should be open at the instant that the thread passes through between the bobbin case and its holder.

Caution Risk of Injury !

Turn the main switch off !
Set the timing the bobbin case opening only with the sewing machine turned off.

- Loosen two screws 1.
- Turn the handwheel .
  After taking up the loop, the hook point should be in the “ 3 o’clock position ”.
- Turn shaft 2.
  The finger should be at the forward reversing point.
  The case is fully opened.
- Tighten two screws 1 again.

7. Upper feed settings

7.1 Altering the upper feed

Mechanical sewing foot stroke adjustment

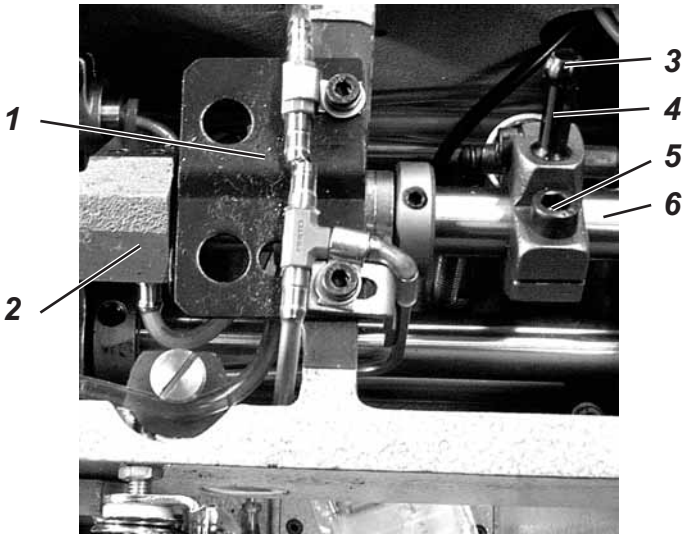
The foot stroke can be adjusted to match the thickness of the material during the sewing through the setting wheel 7 on the arm cover.

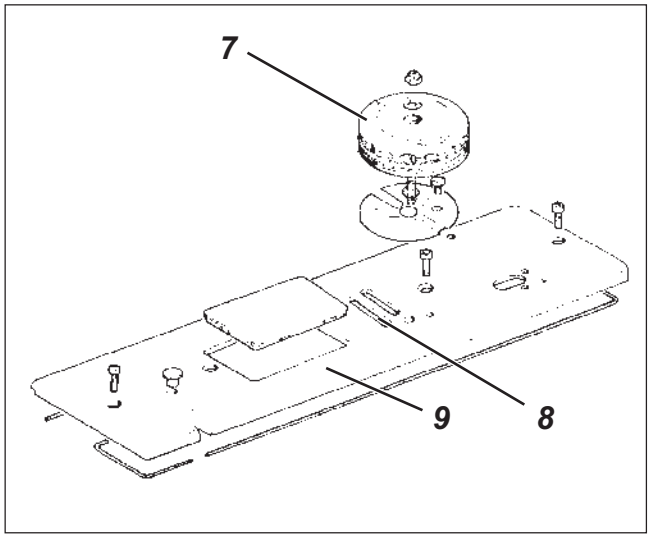
The joint for the sewing foot stroke adjustment is provided with an eccentric. The eccentric allows the an altering of the foot stroke from 1 to 6 mm or from 1.6 to 7 mm.

Electro-pneumatic stroke adjustment (HP)

The maximum stroke can be activated while sewing is in progress using the knee switch, when sewing thick material or for overstitching cross seams .

7.1.1 Lateral position of the lever for transmitting the setting wheel motion





The lever 3 should be centered in the slit of the arm cover.

During operation without the arm cover, the safety stop 1 prevents the no longer arrested joint 2 from being torn out of the bearing.

At the smallest and the largest stroke there is a clearance of approx. 0.4 mm between the joint 2 and the safety stop 1.

Caution: Danger of Injury !

Switch off main switch.
Check and adjust lateral position of the lever only when sewing machine is switched off.

Standard checking

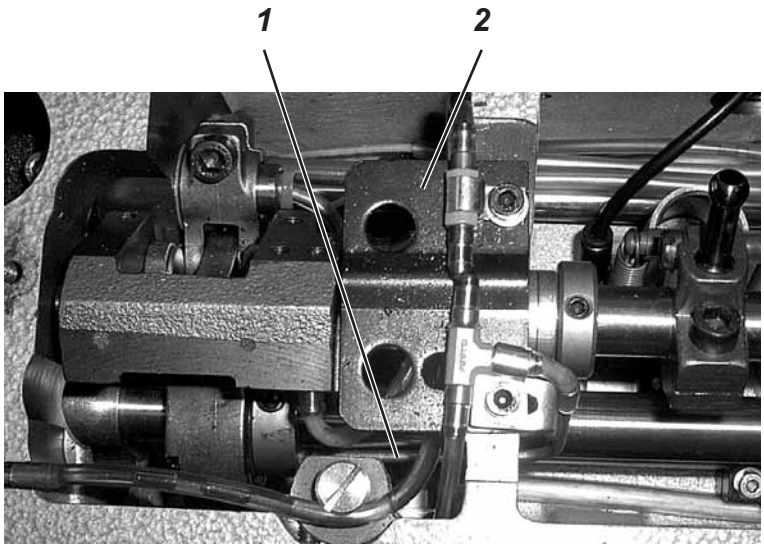
The lateral position of lever 4 must ensure that the ball stud 3 is in the centre of slit 8 when the arm cover is placed on.

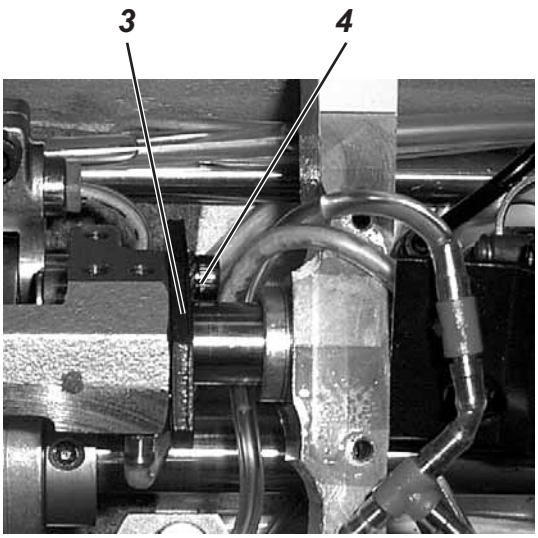
- Unscrew fastening screws of arm cover 9.
- Lift arm cover 9 slightly and check lateral position of lever 4.

Correction

- Remove arm cover.
- Loosen clamping screw 5 at lever 4.
- Shift lever 4 axially on shaft 6.
  Attention!
  The lever must not be twisted when being shifted axially.
- Tighten clamping screw 5.

7.1.2 Setting range of the sewing foot stroke adjustment

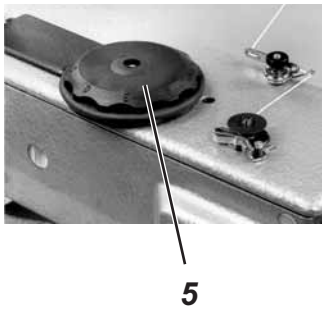




Caution: Danger of injury !

Switch off main switch.
Check and adjust setting range of sewing foot stroke adjustment only when sewing machine is switched off.

GB



Standard checking

If the setting wheel 5 for the sewing foot stroke adjustment is in position "**min.**", the minimum sewing foot stroke of 1 mm or 1.6 mm respectively must be effective.

- Turn setting wheel in setting position "**min.**".
- Turn handwheel and measure sewing foot stroke.

Correction

- Screw off arm cover.
- Screw off safety stop 2.
- Loosen fastening screw 4 of stop sheet 3.
- Adjust stop sheet 3.
  Stroke adjustment range 1 to 6 mm
  Press stop sheet 3 upwards as far as it will go.
  Stroke adjustment range 1.6 to 7 mm
  Press stop sheet 3 downwards as far as it will go.
- Tighten clamping screw 4.
- Screw on safety stop 2.

ATTENTION !

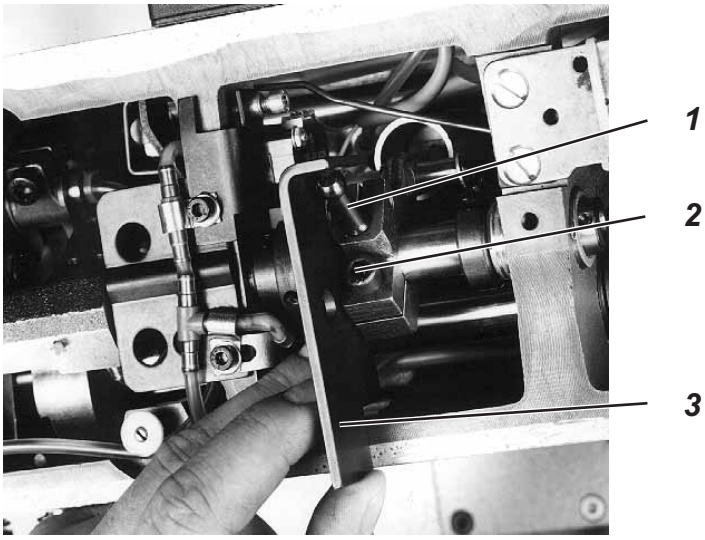
The safety stop 2 avoids that - when operating without arm cover - the joint, which is no longer locked, is pulled out of the bearing.
Never run the sewing machine without safety stop 2.

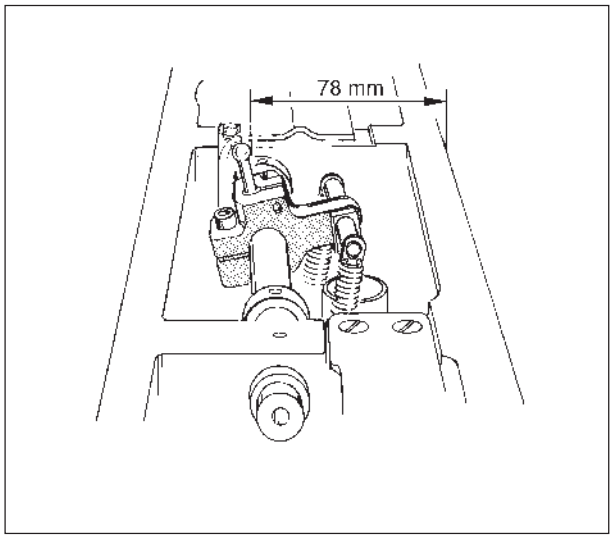
- The oil wick 1 must be in the lubrication groove of the stroke eccentric.

ATTENTION !

After a correction of the setting range of the sewing foot stroke adjustment the feeding motion of the feed-dog has to be checked and corrected, if necessary.

7.1.3 Position of the lever for transmitting the setting wheel motion





Caution: Danger of injury !

Switch off main switch.
Check and adjust position of the lever only when sewing machine is switched off.

Standard checking

Check without setting gauge:

The distance of ball stud 1 to the exterior surface of the casing wall must amount to 78 mm.

– Measure distance of the ball stud to the exterior surface of the casing wall.

Controll with Gauge

Gauge Order-No. 0767 250020

– Place the gauge 3 as represented in the picture.
– Check the distance between the ball stud 1 and the gauge 3.

Correction

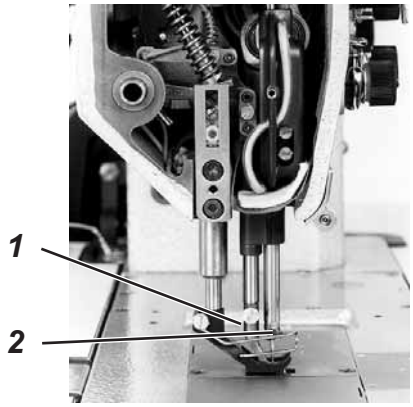
– Loosen clamping screw 2 at the lever.
– If no setting gauge is available, twist lever on shaft until the distance of ball stud 1 to the exterior surface of the casing amounts to 44 mm.
– Tighten clamping screw 2.
– Screw on arm cover.

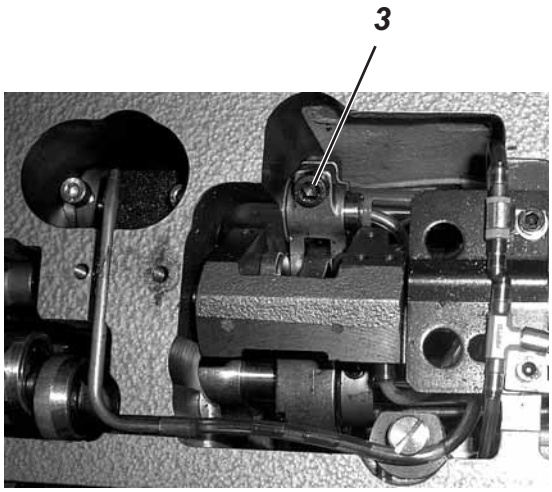
ATTENTION !

By sewing machines with FA or with Speedomat (HP 13-7), the potentiometer in the arm is to be checked and corrected, if necessary, after a correction of the position of the lever.

7.2 Feeding Foot and Presser Foot

7.2.1 Feeding foot and presser foot stroke





Caution: Danger of injury !

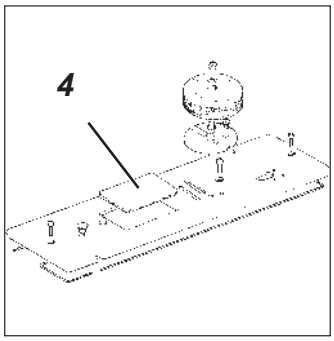
Switch off main switch.
Check and adjust feeding foot and presser foot stroke only when sewing machine is switched off.

GB

Standard checking

The strokes of feeding foot 1 and presser foot 2 must be equally high, if the minimum sewing foot stroke is set.

- Set stitch length “0".
- Set medium sewing foot pressure.
- Set minimum sewing foot stroke (setting wheel in position “**min.**”).
- Loosen the feed dog.
- Place a plate (approx. 3 mm) under the sewing foot.
- Turn handwheel and compare strokes of feeding foot 1 and presser foot 2.

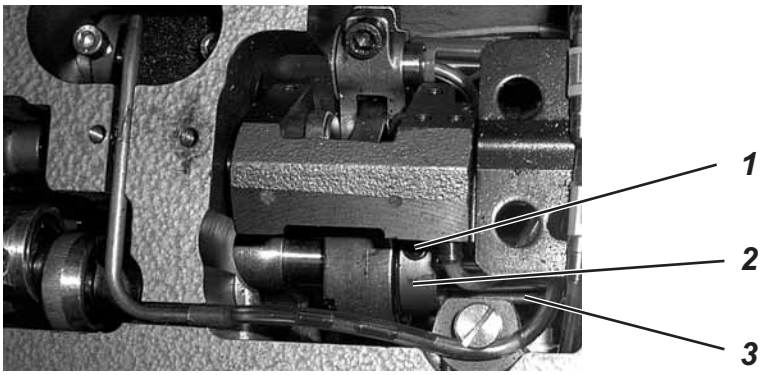


Correction

- Remove plastic cover 4 from the arm cover.
- Turn handwheel.
  The sewing foot with the higher stroke must be slightly lifted from the throat plate.
- Loosen screw 3.
  In case the presser foot had been lifted, it is lowered by the spring.
  In case the feeding foot had been lifted, it has to be pressed downwards manually.
- Tighten screw 3 again.
- Check whether both strokes are equally high.
  If not, the adjustment has to be corrected.
- Reinsert plastic cover 4.

The correct feeding motion of feeding foot 1 ensues from the adjustment of the feeding motion of the feed-dog (see chapter 3.2.4 Feeding motion of the feed-dog). Both motions are generated by the same eccentric.

7.2.2 Stroke motion of the feeding foot

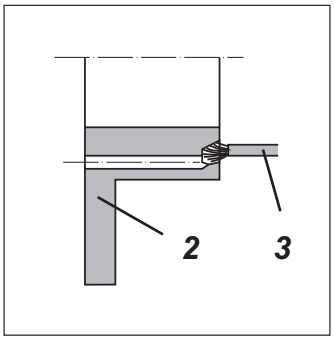


Caution: Danger of injury !

Switch off main switch.
Check and adjust stroke motion of the feeding foot only when sewing machine is switched off.

Adjustment preconditions

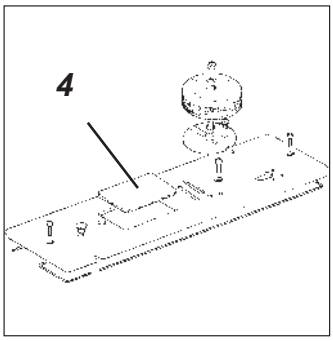
- Feeding foot and presser foot stroke correctly adjusted
- Stroke motion of feed-dog correctly adjusted



Standard checking

The feeding foot moving downwards must reach the throat plate level simultaneously with the feed-dog moving upwards and the needle going down.

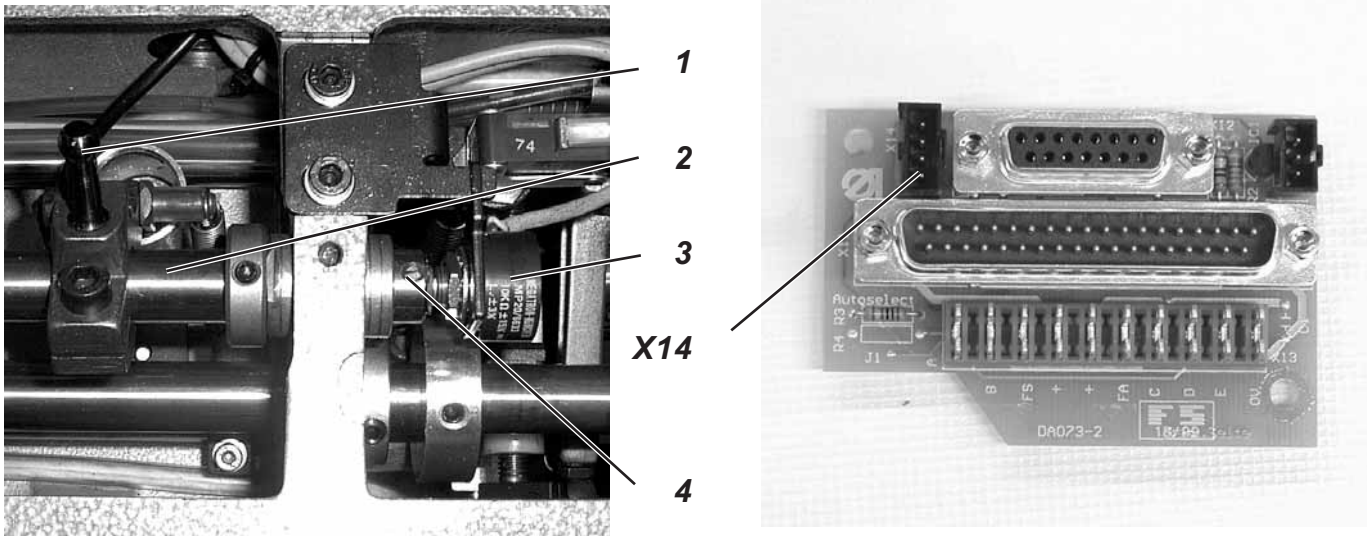
- Set stitch length “**0**”.
- Set maximum sewing foot stroke (setting wheel in position “**max.**”).
- Turn handwheel in travel direction and observe stroke motion of feeding foot.



Correction

- Remove plastic cover 4 from the arm cover.
- Loosen both core pins 1 at the stroke eccentric 2.
- Move point of the down-going needle to feed-dog height by handwheel.
- Twist stroke eccentric 2 on shaft in such a way that the feeding foot rests on the feed-dog.
  Attention!
  The stroke eccentric 2 must not be shifted axially on the shaft when being twisted.
  Through the drill-hole in the stroke eccentric 2 other sewing machine components are supplied with oil. Therefore the capillary tube 3 with the wick must touch the lubrication groove in the stroke eccentric.
- Tighten core pins 1.
- Reinsert plastic cover 4 in arm cover.

7.3 Potentiometer for Automatic Speed Limitation

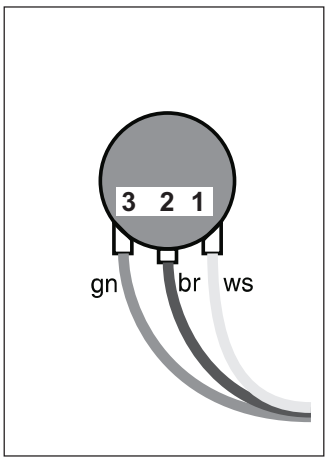


The FA-Version sewing machine is equipped with a potentiometer for speed limitation in case of higher strokes.
The potentiometer 3 is mechanically connected with the setting wheel on the arm cover via shaft 2, lever 1 and ball stud.
The control recognizes the set sewing foot stroke via potentiometer 3 and adapts the speed automatically.

GB

Caution: Danger of injury !

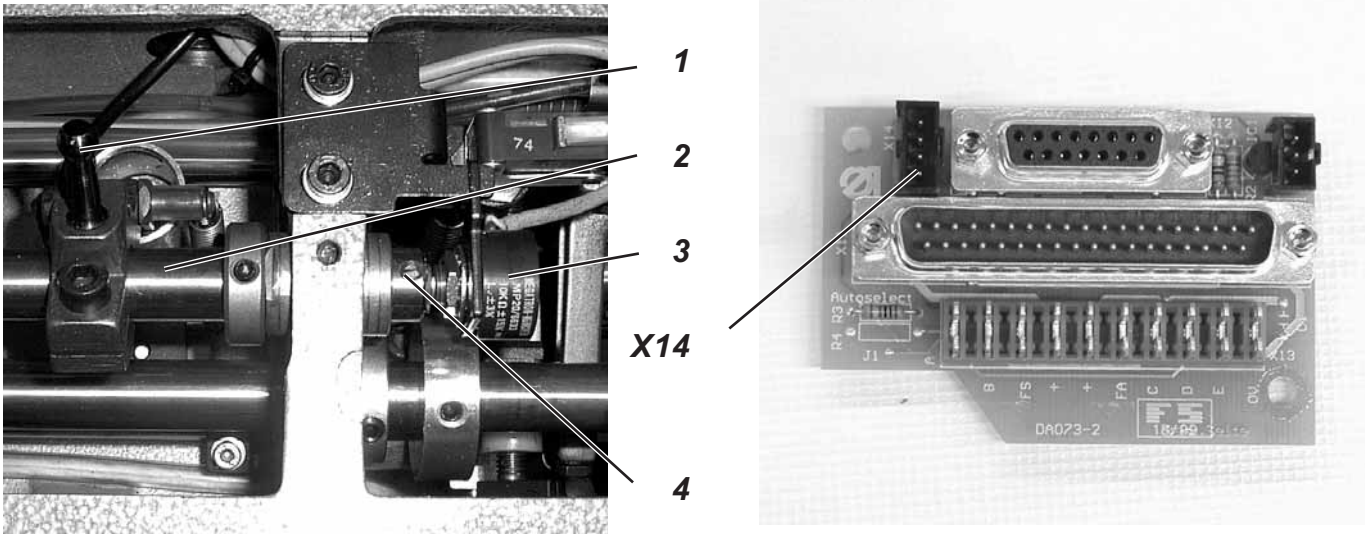
Switch off main switch.
Check and adjust position of the potentiometer only when sewing machine is switched off.



Standard checking

The sewing machine has to be checked according to the following description.

- Set the minimum foot stroke “min” by setting wheel.
- Take off cover of the machine head distributor.
- Separate plug X14 from the distributor.
- Remove arm cover.
- Measure the resistance at the green (a) and the brown (b) cable of potentiometer 3 with an ohmmeter. The resistance should amount to approx. 9 kOhm.
- Set the maximum foot stroke “max” by setting wheel.
- Pull lever 1 in the centre of the sewing head as far as it will go.
- Measure the resistance at the green (a) and the brown (b) cable of potentiometer 3 with an ohmmeter. The resistance should amount to approx. 1 kOhm.
- Reconnect plug X14 to the distributor.
- Mount arm cover.
- Mount cover of the machine head distributor.
- The adjustment has to be checked with parameter 188 afterwards.



Correction

If the mentioned values are not correct, the position of potentiometer 1 has to be readjusted.

- Loosen core pin 4.
- Adjust shaft of potentiometer 1 in such a way that the corresponding resistance is achieved.
- Push potentiometer completely in the drill-hole of setting shaft 2.
- Tighten core pin 4 again.

Checking and adjusting of the potentiometer is also possible with the Efka control DA82GA with control panel V810 or V820
(see chapter Controls and Control Panel Efka).

Note:

8. Sewing foot height and sewing foot lift

8.1 Electropneumatic sewing foot lift

The sewing machine is equipped with a standard electropneumatic sewing foot lift (FLP).

By pedalling backwards the sewing feet are pneumatically lifted via cylinder 7 (e.g. for corner sewing).

For lifting the sewing feet the piston rod of cylinder 7 extends.
The motion of the piston rod is transmitted to shaft 4 via lever 3, rod 2 and lever 1.

The pneumatically raised feet should have the following clearance to the needle plate:

Sewing machines with needle return device	= 16 mm
Sewing machines with short thread trimmer with needle return device	= 15 mm
Sewing machines without needle return device	= 8 mm

Standard checking

In case of electropneumatically lifted sewing feet:

– The distance between sewing feet and throat plate should amount to 16 mm.
  The distance should amount 15 mm with sewing machines equipped with short thread trimmer

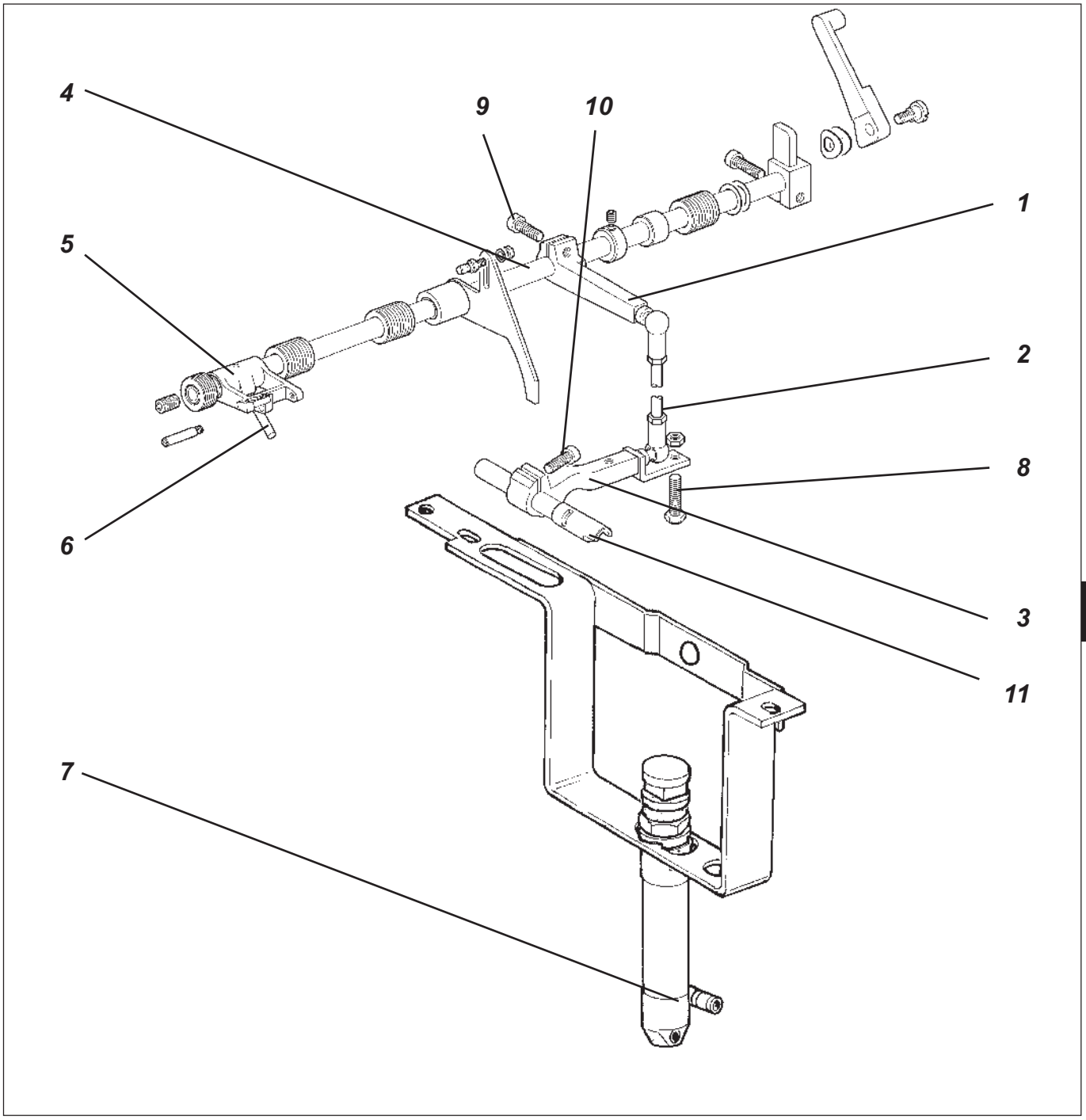
In case of lowered sewing feet:

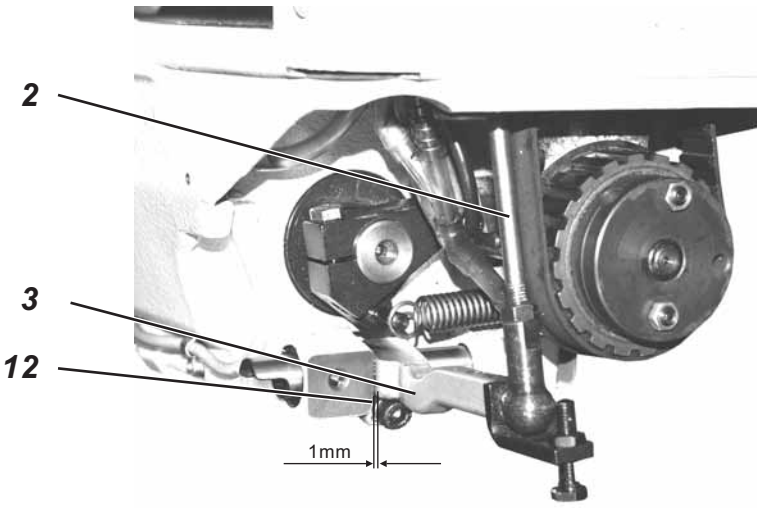
– Lever 3 must stand horizontally.
– The distance between lever 3 and the front cast edge 12 must be 1 mm.
– Dowel pin 6 must have a distance of approx. 0.5 mm to the end of the slit in fork lever 5.

ATTENTION !

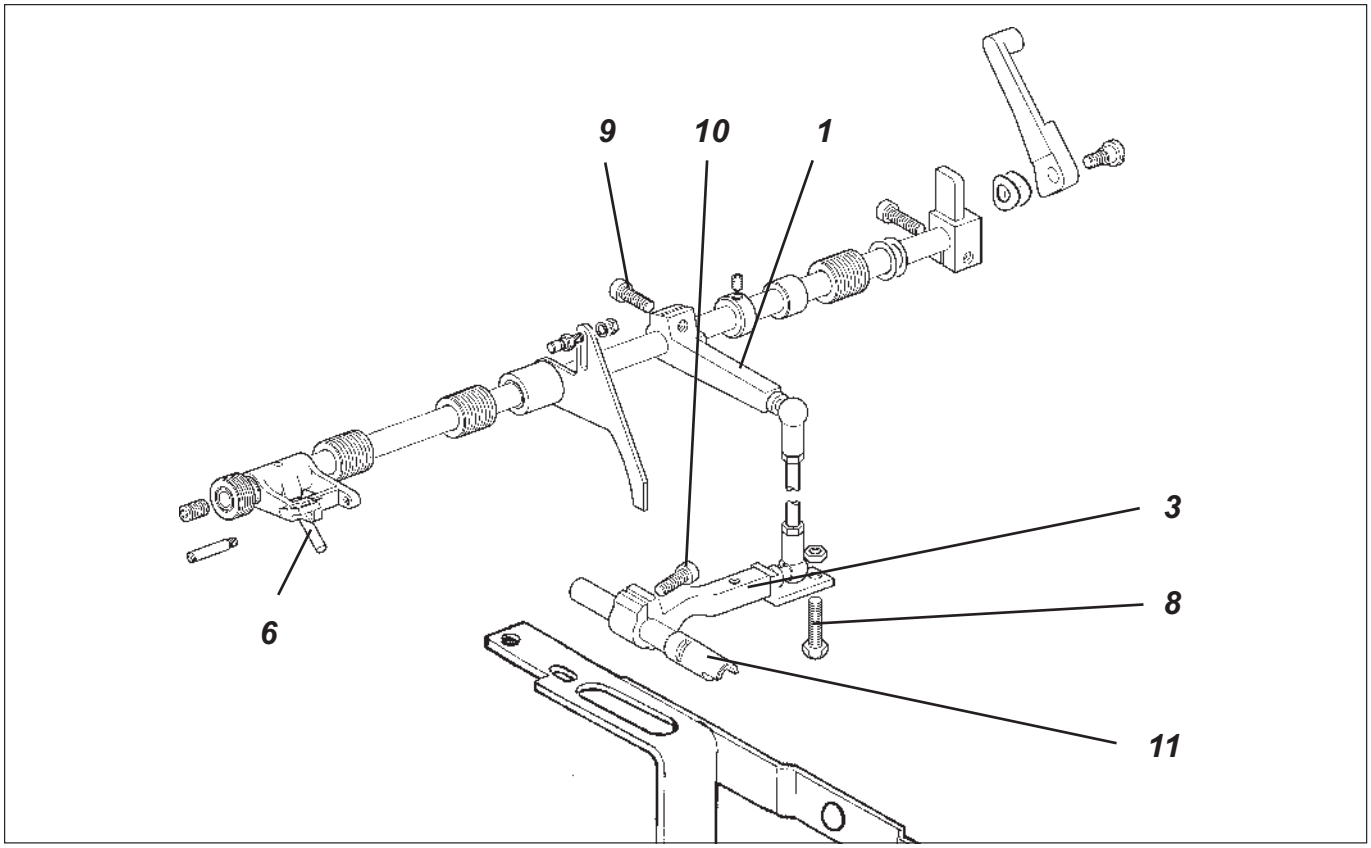
If the sewing feet are lowered, dowel pin 6 must not abut on the end of the slit in fork lever 5. Otherwise the dowel pin prevents that the sewing feet are lowered to the fabric level, which can lead to feeding problems when sewing thin material.

– Switch on main switch.
– Step pedal backwards halfway.
  Lift sewing feet.
– Check distance between lifted sewing feet and throat plate.
– Lower sewing feet.
  The sewing feet must rest on the throat plate.
– Switch off main switch.
– Tilt sewing machine back.
– Check horizontal position of lever 3.
– Check distance between lever 3 and front cast edge 12.





GB



Correction

Caution: Danger of injury !

Switch off main switch.
Adjust height of the electropneumatically lifted sewing feet only when sewing machine is switched off.

– Turn handwheel until both feet rest on the throat plate.
– Alter screw 8 correspondingly in order to reach the lift stroke of 16 mm.

Hint

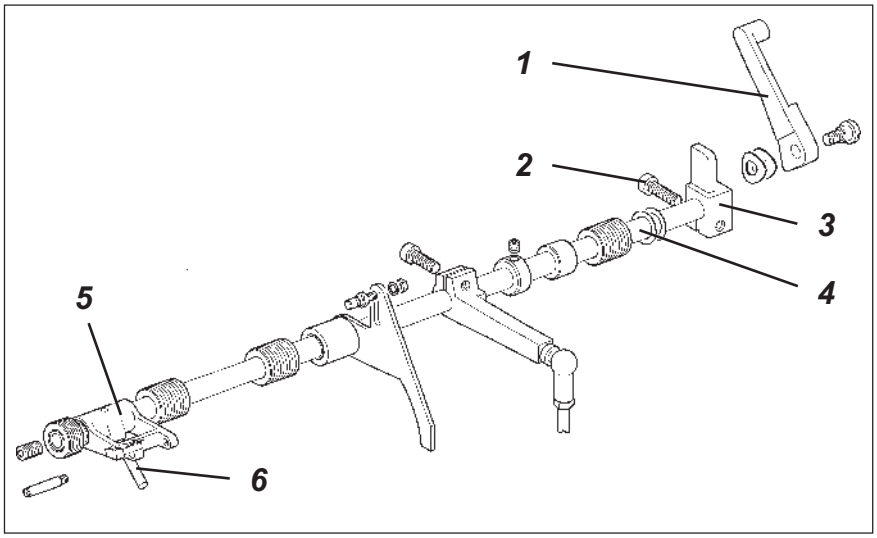
When sewing thin material feeding problems can occur if pin 2 hinders the lowering of both sewing foot to the fabric level.

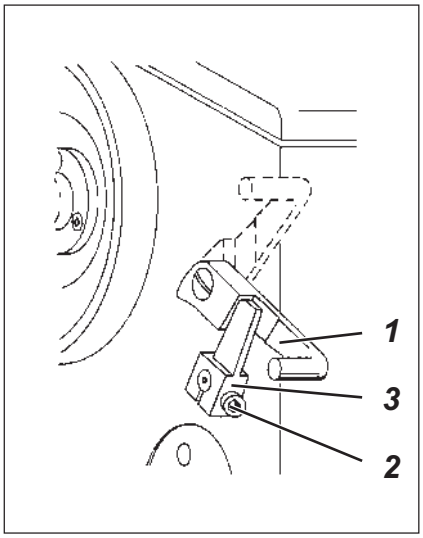
Check distance of pin 6 to the slit end and correct, if necessary.

The distance should amount to approx. 0.5 mm.

– Loosen screws 9 and 10.
– Press lever 1 downwards and press pin 6 upwards simultaneously. Pin 6 should have a distance of approx. 0.5 mm to the end of the slit.
– Tighten screw 9 again.
– Position lever 3.
The lateral distance to the cast trunk should amount to 1 mm and the distance between pin 6 and the slit end should be 0.5 mm.
– Turn shaft 11 completely to the right and tighten screw 10 again.
– Check height of the pneumatically lifted feet.
Correct adjustment, if necessary.

8.2 Sewing Foot Locking





The lifted sewing feet are locked in position “up” by lifting lever 1 (e.g. for winding the bobbin thread or for changing the sewing feet).

GB

Caution: Danger of injury !

Switch off main switch.
Check and adjust height of the locked sewing feet only when sewing machine is switched off.

Standard checking

The distance between the sewing feet locked in position “up” by lifting lever 1 and the throat plate should amount to 8 mm.

- Set minimum sewing foot stroke (setting wheel in position “**min.**”).
- Move both sewing feet to the same level by handwheel.
- Lock sewing feet in position “up” by lifting lever 1.
- Check distance between locked sewing feet and throat plate.

Correction

- Place spacer (8.5 mm thick) below the locked sewing feet.
  Due to the clearance in the transmission elements the sewing foot height will be 8 mm.
- Loosen clamping screw 2 at lifting block 3.
- Take off head cover.
- Press dowel pin 6 upwards until the end of the slit in fork lever 5.
- Press lifting block 3 against the surface of lifting lever 1.
  Attention!
  Lifting block 3 must not be shifted axially because shaft 4 is axially fixed by same.
- Tighten clamping screw 2.
  Lifting lever 1 must be positioned in such a way that its surface is parallel to lifting block 3.

8.3 Lift Limitation

Standard checking

The stopper screw 2 limits the lift when the knee lever is pressed all the way to the right. This prevents a collision between the sewing feet and the needle bar.

– Lift the sewing foot using the knee lever.
– Check whether the needle bar does not hit the lifted transport foot.

Caution Risk of Injury !

Turn the main switch off !

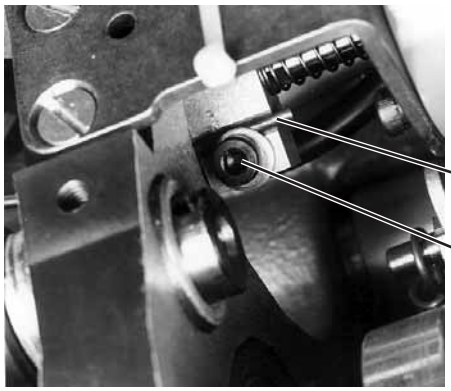
Set the stopper screw only with the sewing machine turned off.

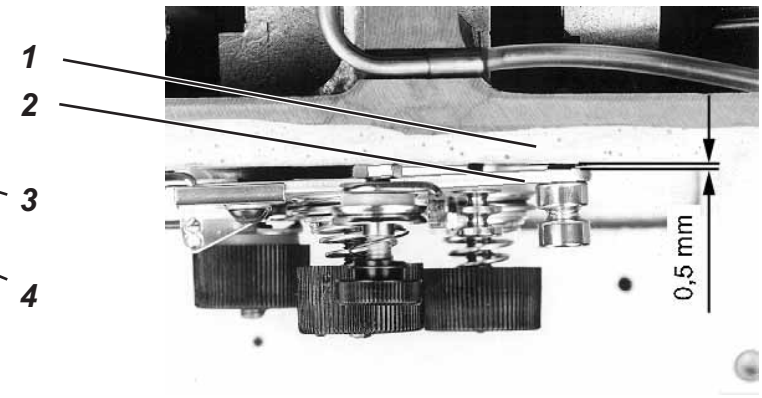
Correction

– Loosen lock nut 1.
– Set stopper screw 2.
  The clearance between the stopper screw 2 and the lever 3 should be 0.5 mm when the sewing feet are fully raised.
– Tighten lock nut 1 again.

9. Thread Tension Lift

9.1 Thread Tension Opening





Standard checking

The thread tension is opened,

- when the knee lever is operated.
- when the sewing feet are raised with the pedal by sewing machines with " RAP " and " FLP ".
- during the thread trimming sequence.
  Check whether the tension discs are open when performing the above functions.

GB

Caution Risk of Injury !

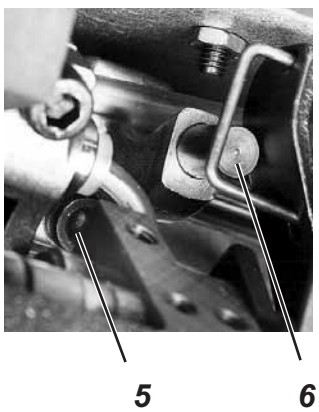
Turn the main switch off !
Set the thread tension opening only with the sewing machine turned off.

The opening with the magnet is set with the sewing machine turned on.
Conduct the setting only with the greatest possible caution !

Correction

Opening with the magnet

- Loosen screw 4.
- Set the position of the wire 3.
  The clearance between the carrier plate 2 and the arm 1 should be 0.5 mm when the thread tension is open.
- Tighten screw 4 again.



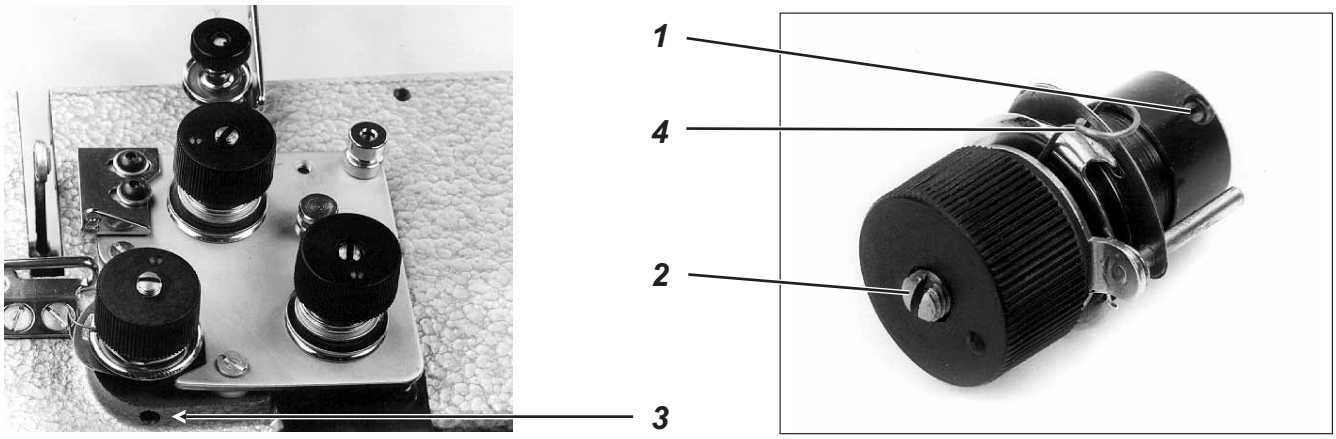
Opening with the knee lever

- Loosen screw 5.
- Move lever 6 axially on the shaft.
  The clearance between the carrier plate 2 and the arm 1 should be 0.5 mm when the thread tension is open.

  The lever 6 should not be turned on the shaft because the previously set lift limitation would be changed.

- Tighten screw 5 again.

9.2 Thread Tension Lift



Standard checking

Spring travel:
The thread controller spring 4 must keep the needle thread under a minor tension from the raised position of the thread lever to the moment the needle's eye penetrates the material.
The thread controller spring 4 must abut on the stop not before the eye of the needle has penetrated the material.

Spring tension:
The required tension of thread controller spring 4 depends on the material to be sewn.

Caution: Danger of injury !

Switch off main switch.
Adjust thread controller spring only when sewing machine is switched off.

Correction

Set spring tension:

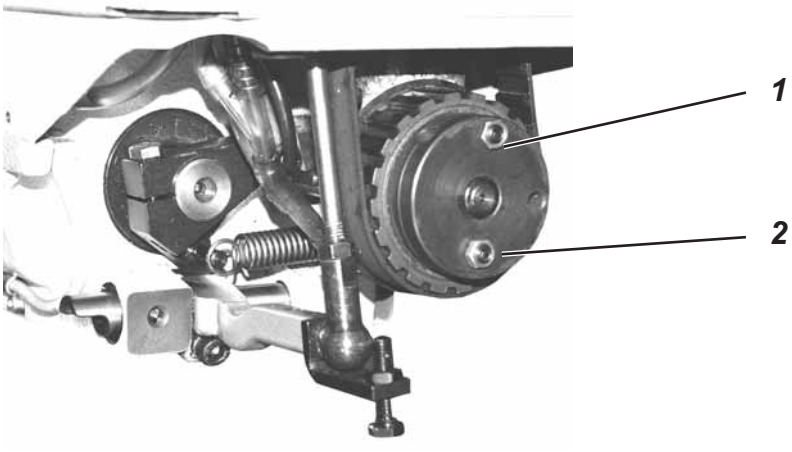
- Loosen core pin 1.
- Pull complete thread guide unit out of the machine casing.
- Loosen core pin 1.
- Twist bolt 2 until the desired spring tension is reached.
- Tighten core pin 1.
- Mount thread guide unit.
- Tighten core pin 3.

Set spring travel:

- Loosen core pin 3.
- Twist complete thread guide unit with bolt 2.
- Tighten core pin 3.
- Check whether the above-mentioned points are fulfilled.
  If not, the adjustment has to be corrected.

10. Safety Clutch

10.1 Engage disengaged safety clutch



The standard safety clutch 2 in the lower toothed belt wheel protects the hook from being displaced or damaged in case of thread jamming in the hook path.
When the hook is blocked, the safety clutch 2 must come out.

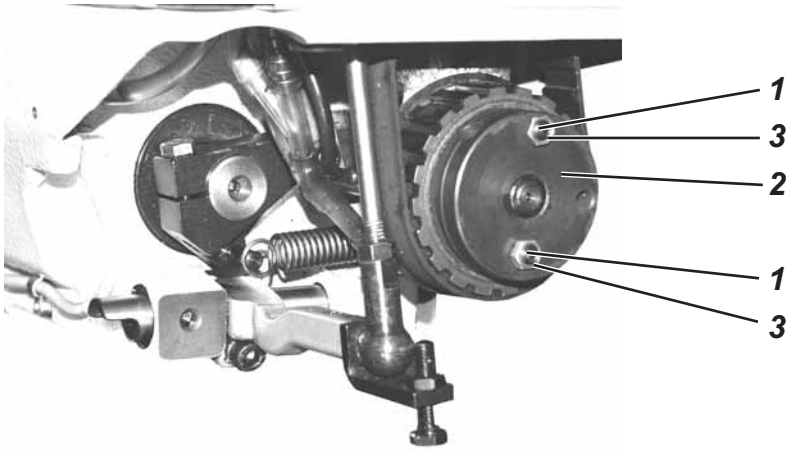
GB

Caution: Danger of injury !

Switch off main switch.
Engage safety clutch only when sewing machine is switched off.

- Set free blocked hook (eliminate fault).
- Stick a pin (Ø 5 mm) in drill-hole 1 of the outer clutch disc.
- Turn handwheel until the pin can be stuck in the drill-holes of **both** clutch parts.
- Turn handwheel forwards and backwards until the hook is freely movable again.
- Pull out pin.
- Hold down hook and turn handwheel until safety clutch 2 engages.

10.2 Adjust Transmittable Torque



Standard checking

The torque transmittable from safety clutch 4 is adjusted by the supplier by means of a torque spanner.

ATTENTION !

Increase the torque adjusted by the supplier only in case of a frequent disengagement of safety clutch 4 when processing heavy-weight material.

Correction

Caution: Danger of injury !

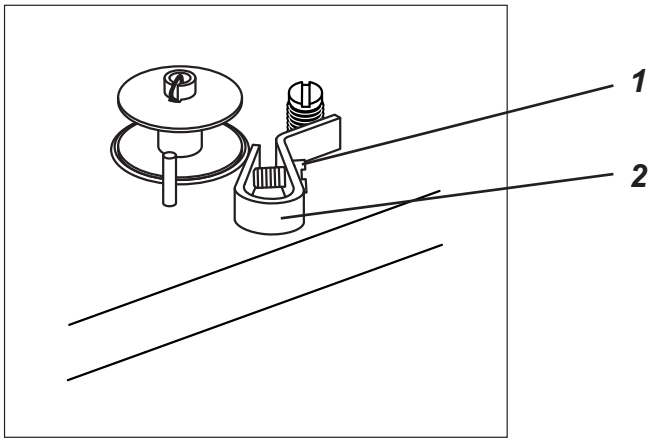
Switch off main switch.
Adjust transmittable torque of the safety clutch only when sewing machine is switched off.

– Loosen counternuts 3.

- Adjust torque:
  Screw in core pin 1 = increase torque.
  Screw out core pin 1 = reduce torque.

– Tighten counternuts 3 again.

11. Bobbin Winder



Standard checking

The bobbin winder must stop automatically when the bobbin is filled up to approx. 0.5 mm from its edge.

Caution: Danger of injury !

Switch off main switch.
Adjust bobbin capacity only when sewing machine is switched off.

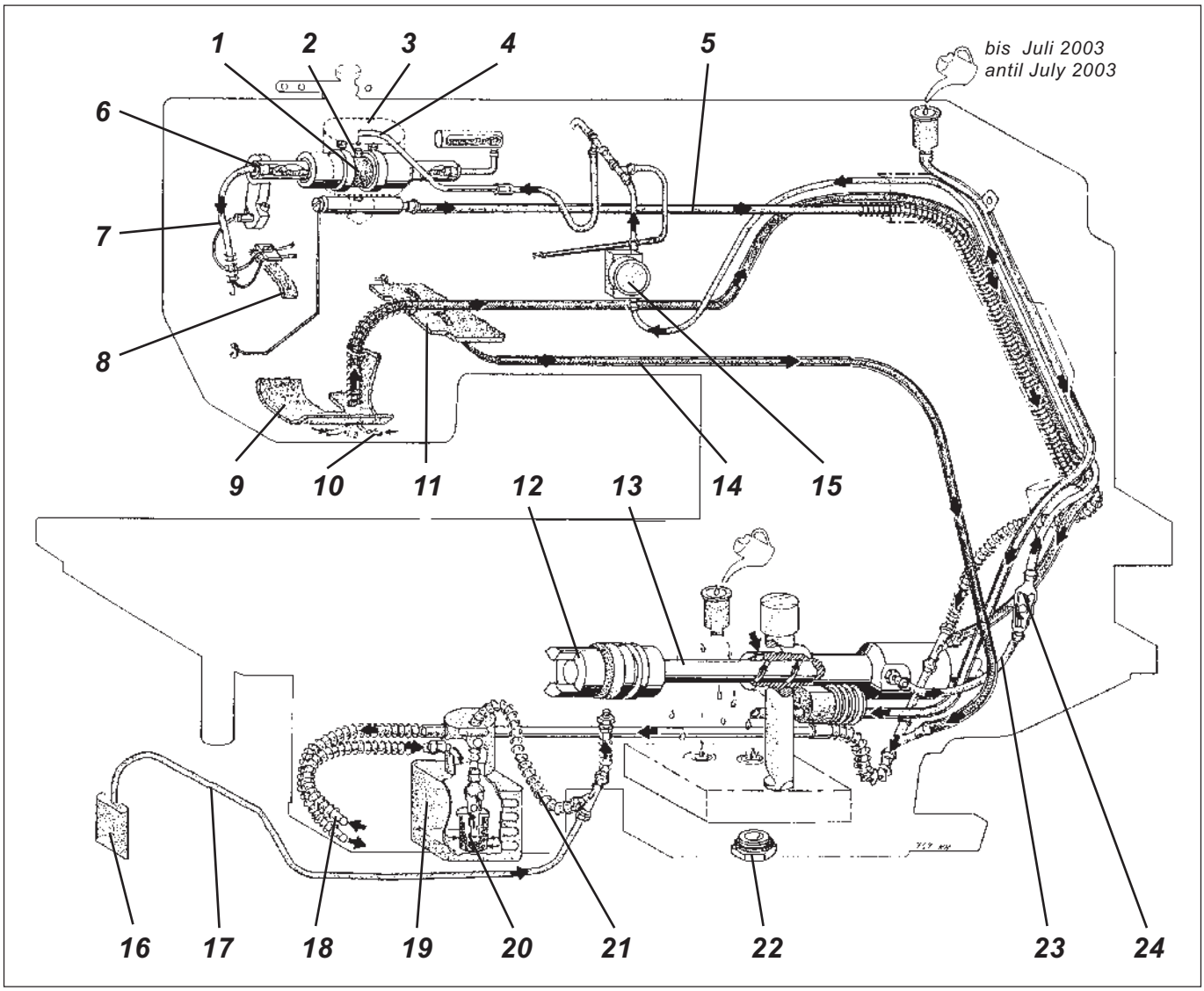
GB

Correction

Minor alterations of the bobbin capacity:

- Adjust setting screw 1 at the release lever 2.
  Reduce bobbin capacity: Screw in setting screw 1
  Increase bobbin capacity: Screw out setting screw 1

12. Lubrication



Oil feed to the sewing head

The spriral grooves in the hook drive shaft 13 feed the oil from the pan through the pipe 23 to the basin 3 in the sewing head. The check valve 24 in this pipe prevents the oil from running back when the machine is idle. The viewing glass 15 allows a checking of the oil feed.

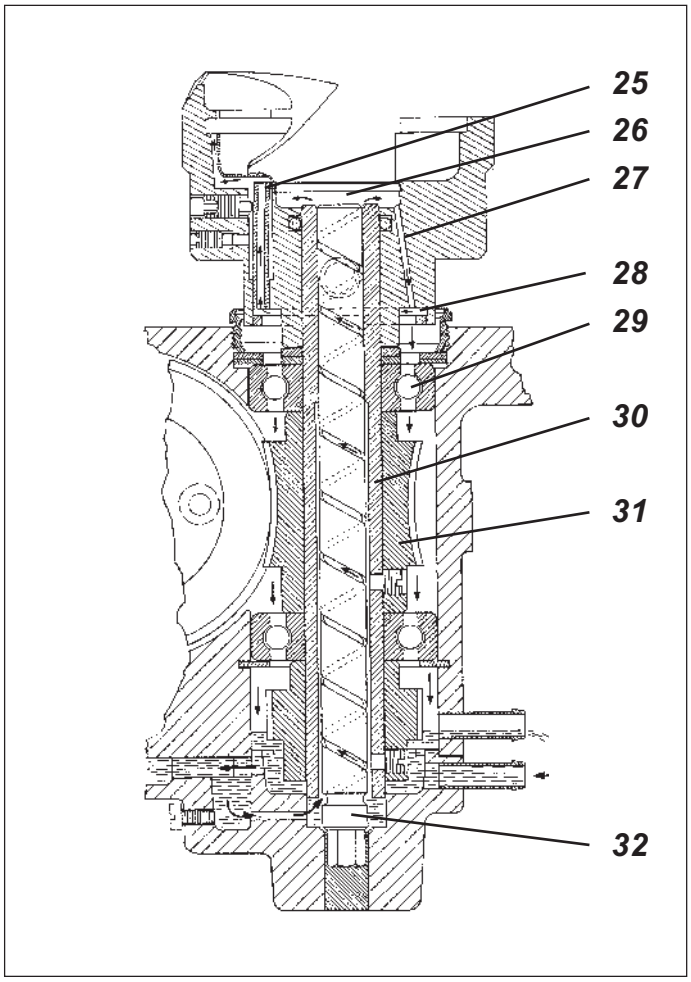
The oil exiting from the brass tube 4 drips onto the foam rubber ring 1. From here the oil reaches the pin 2 in the hole of the hollow shaft 6. The pin conducts the oil further to the wick 7 in the hollow shaft 6. The wick supplies the lubricating points of the linkage and the oil pad 8 in the sewing head. From the oil pad the oil is conducted directly or via a wick to the joints.

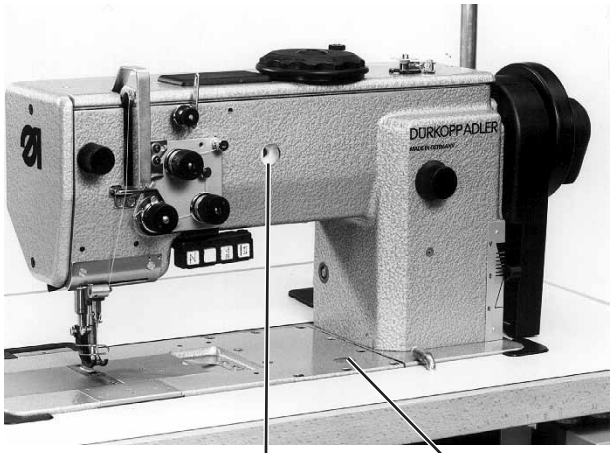
Oil feed from the sewing head to the hook box

The oil spun off in the sewing head is taken up by the felt pad 9 and conducted to the recirculation wick 10 lying underneath. The recirculation wick feeds the oil back into the hook box.

The oil dripping from the foam rubber ring 1 in the basin 3 reaches the hook box via pipe 5.

The oil spun off by the linkage is caught by the felt plate 11 and led back to the hook box via pipe 14.





GB

Oil return from the hook box to the oilpan

The oil is conducted to the equalizing reservoir 19 from the hook box via pipe 18. Via the pipe 21 with the sintered metal filter 20, the pump 12 on the hook shaft sucks oil back into the oilpan again. At the same time the pump also sucks the oil out of the oilpan via the oil return felt 16 and the pipe 17.

22 = Oil drain screw

Oil feed to the hook

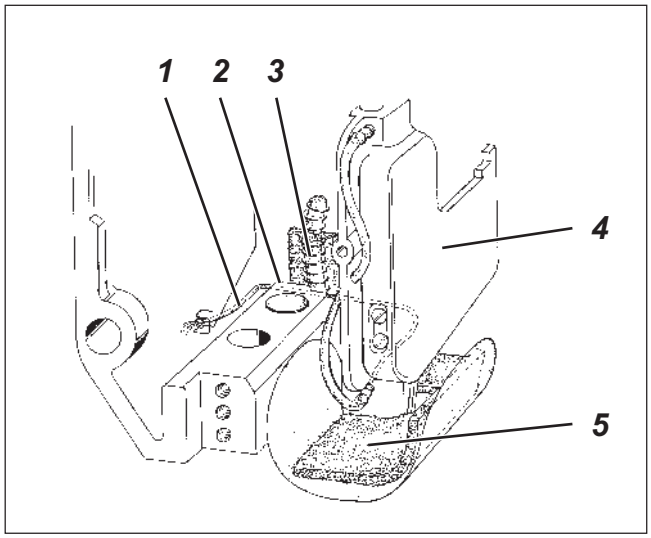
The oil returned from the sewing head flows into the hook box through pipe 14. Here the oil can rise to the level at which it flows off to the equalizing reservoir 19 through the overflow pipe 18.

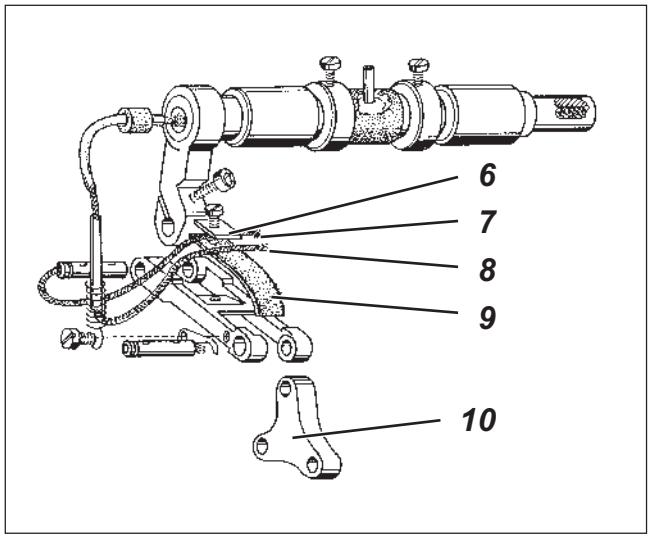
The hollow hook shaft 30 brings the oil to the upper basin 26 of the hook via the spriral grooves of the fixed shaft 32. From here the oil reaches the lower basin 28 through the drilled hole 27. The smaller portion of this oil is led to the hook run via oil pipe 25 through centrifugal force. The greater portion of the oil flows back down again and lubricates the sprockets 31 and the ball bearing 29.

Checking the oil feed and the oil level

– Check the oil feed at the viewing glass 33 with the sewing machine running.
– Check the oil level at the viewing glass 34.
  The oil level should lie between “ FULL ” and “ EMPTY ”.
  If not, then fill the oil reserve as described in the Operating Instructions.

12.1 General hints concerning the oil lubrication





Caution: Danger of injury !

Switch off main switch.

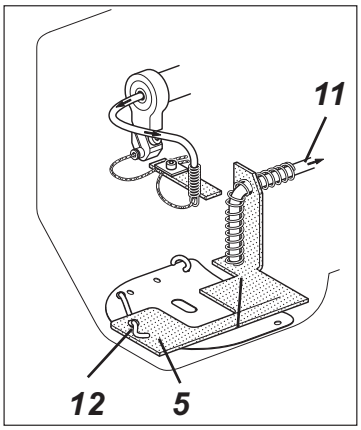
All operations on oil lubrication components are to be effected only when sewing machine is switched off.

Carry out adjusting operations and functional tests of the running machine only with utmost caution.

– During the break-in period the bolts for the sewing foot lifting mechanism have to be intensively lubricated via the oil wicks.

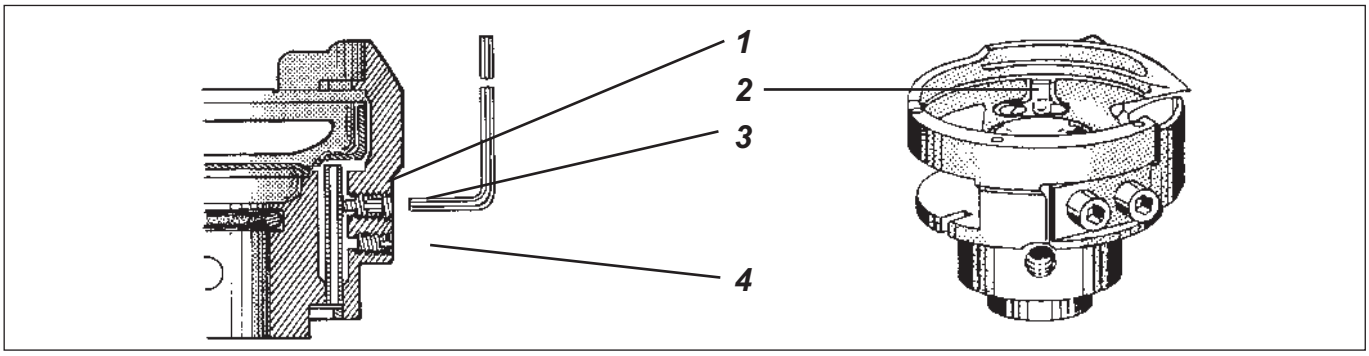
ATTENTION!

Before putting the special sewing machine into operation or after a longer stop the dried out oil wicks and the oil pad 9 in the sewing head have to be soaked with some oil.
See also part 2 (assembly instructions).



– The oil wicks in the sewing head must not touch the withdrawal wick 11.
– The end of withdrawal wick 11 must lie in the oil sump of oil pad 5 over its whole length (approx. 10 - 15 mm). This ensures an optimum return of the oil from the sewing head.
– The oil wick 1 leading to the needle bar wing 4 must be fixed between nut 2 in the cast and support spring 3 of the withdrawal wick. Oil wick 1 must not have any contact with oil pad 5.
– When exchanging the oil pad 9 please observe that the “porous” side is facing the guide 10.
The two oil wicks 7 and 8 leading to the oil pad 9 must be safely fixed under sheet 6.

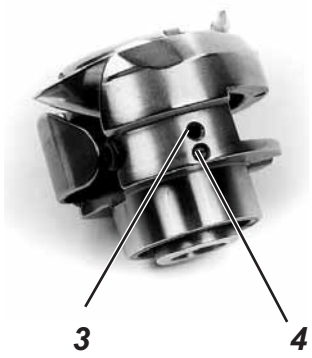
12.2 Hook Lubrication



Caution Risk of Injury !

Turn the main switch off.
Set the hook lubrication only with the sewing machine turned off.

Conduct function tests with the machine running only with the utmost caution.



- The hook should be lubricated with a small quantity of oil.
- Let the sewing machine run approx. 2 minutes.
- Let the sewing machine run in intervals.
  Hold a piece of paper next to the hook and check if sufficient oil is spun off onto the paper.

GB

- Remove cover plate 2.
- Loosen screw 3 until the tube 1 not longer moves.
  This is the case when the tube is in the center of the drilled hole.
- Turn screw 3 in until the tube movement just starts and then an 1/8 turn farther.
  The hook lubrication is preset.
- Attach cover plate 2 again.

- Setting the hook lubrication with screw 3.

  Turn screw 3 in = Reduce the oil quantity
  Turn screw 3 out = Increase the oil quantity

ATTENTION !

The setting range between the minimum and maximum oil quantity is only 1/4 turn.

When screw 3 is turned in too far, then there is a danger that the tube 1 will be pressed together and the oil flow interrupted.

Note

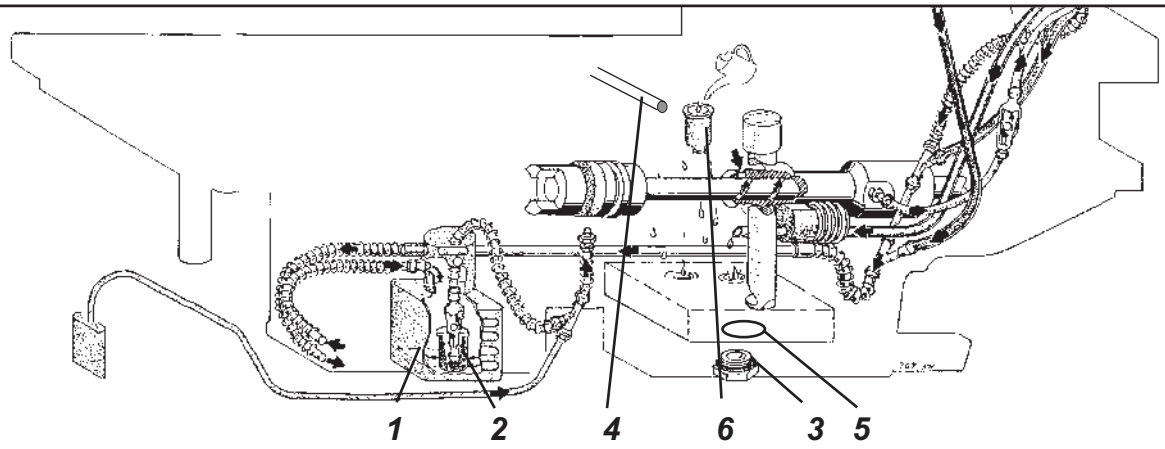
In order that a positive lubrication is assured during the running-in period, a relatively large oil quantity is set at the factory.

This is to be reduced to the necessary quantity after the running-in period.

Clogs in the oil feed to the hook run can be eliminated by a jet of air.

- Turn out screw 4.
- Eliminate the clog with a jet of air.
- Turn in screw 4 tight again.

12.3 Change Oil



ATTENTION !

The oil has to be changed after the first **500 operating hours.** Thereafter it has to be changed **every two years**, independent of the number of operating hours.

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

- Viscosity at 40° C : 10 mm^2/s
- Ignition point: 150 °C

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

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

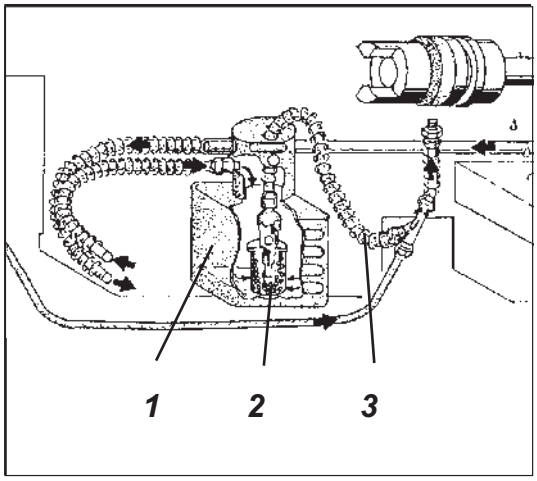
Caution: Danger of injury !

Switch off main switch.
Change oil only when sewing machine is switched off.

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

- Screw off cover of the oil pan.
- Unscrew locking screw 3 and drain off used oil. Deliver used oil to an authorized collecting station.
- Clean oil pan and ventilation tube 4.
- Clean fluid reservoir 1 and sintered metal filter 2.
- Screw in locking screw 3 with a new sealing ring 5.
- Screw on cover of the oil pan with a new gasket.
- Fill up fresh oil via charging funnel 6 (see operating instructions).

12.4 Oil level in the fluid reservoir



A considerable rise of the oil level in the fluid reservoir 1 or an oil overflow can be caused by the following:

- Wrong position of the fluid reservoir 1
- Blockage of the sintered metal filter 2
- Leakage of tube 3
- Malfunction of the oil pump

GB

Please find hereafter how to proceed for finding out the cause of the oil rise and how to eliminate the fault:

Caution: Danger of injury !

Switch off main switch.
Eliminate cause of the oil rise in the fluid reservoir only when sewing machine is switched off.

1. Wrong position of the fluid reservoir 1

In case of a vertical position of the sewing machine head the fluid reservoir 1 must also be in a vertical position.

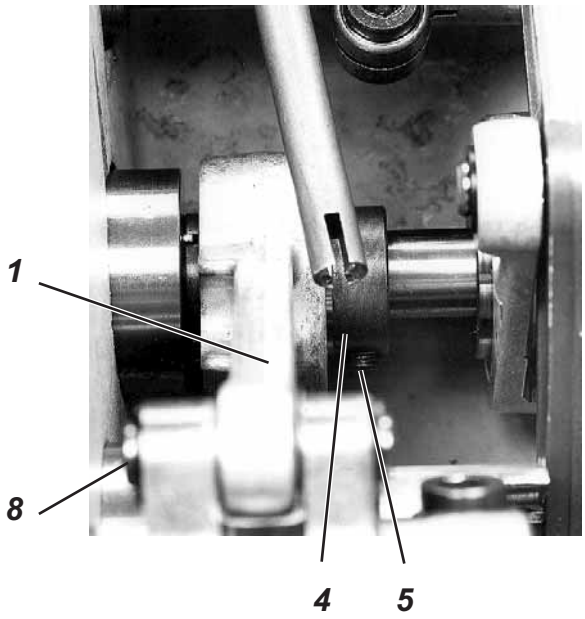
- Position fluid reservoir 1 correspondingly.

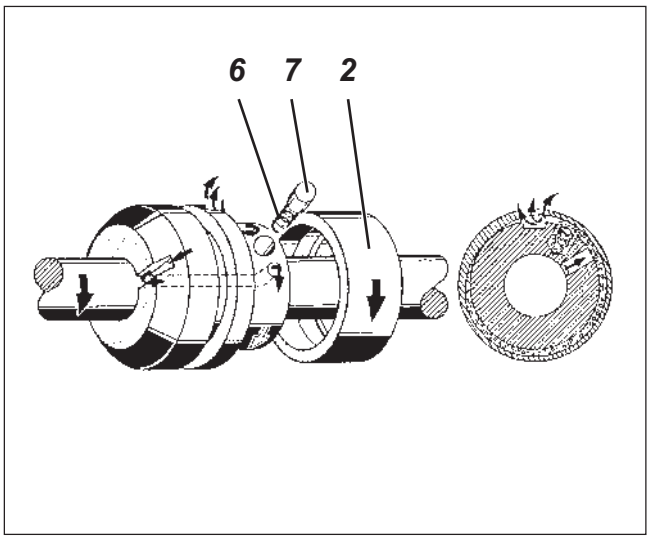
2. Blockage of the sintered metal filter 2

- Remove sintered metal filter 2.
- Blow through sintered metal filter 2 with compressed air pistol **from the inside to the outside.**

3. Leakage of the tube 3

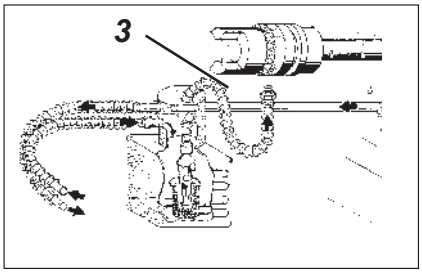
- Exchange tube 3 between sintered metal filter 2 and oil pump.





4. Malfunction of the pump

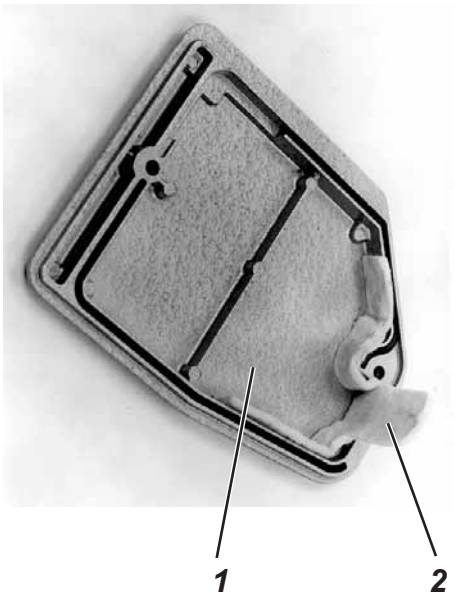
- Remove one locking ring at bolt 8.
- Pull out bolt 8.
- Loosen both core pins 5 at the stroke eccentric.
- Push stroke eccentric 4 to the right.
- Swivel tie rod 1 upwards and push it to the right.
- Pull off pump ring 2 to the right.
  The pump ring can only be pulled off in a certain position. Turn pump ring 2 before pulling it off.
- Take off piston 7 and spring 6.
  Exchange damaged or worn parts, if necessary.
- Clean the pump.
  Pull off the hose 3 and blow the pump with a compressed air.

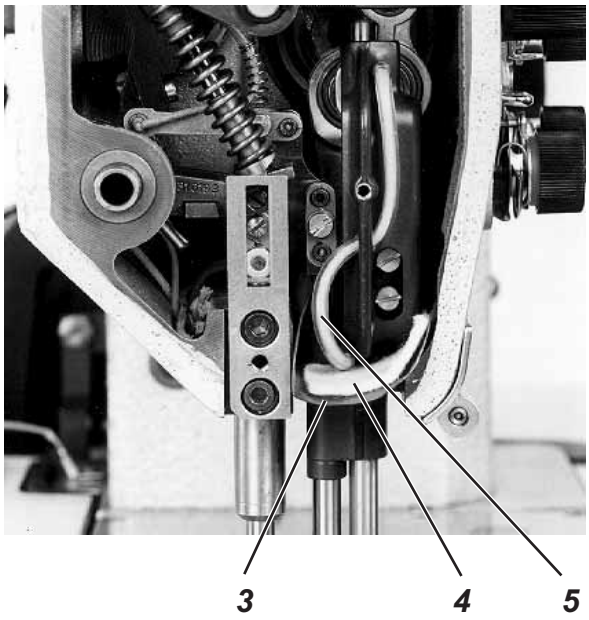


ATTENTION !

When cleaning the oil pump 2 the position of the stroke eccentric 4 is changed.
After cleaning the oil pump the stroke motion of the feed-dog has to be readjusted (see chapter 3.2.3 Lifting motion of the feed-dog).

12.5 Mounting of the head cover





GB

During operation of the sewing machine, oil is also spun off against the inside of the head cover. In order to prevent this oil from running out of the head, the felt pad 2 is glued onto the head cover to conduct the oil to the recirculation felt 4.

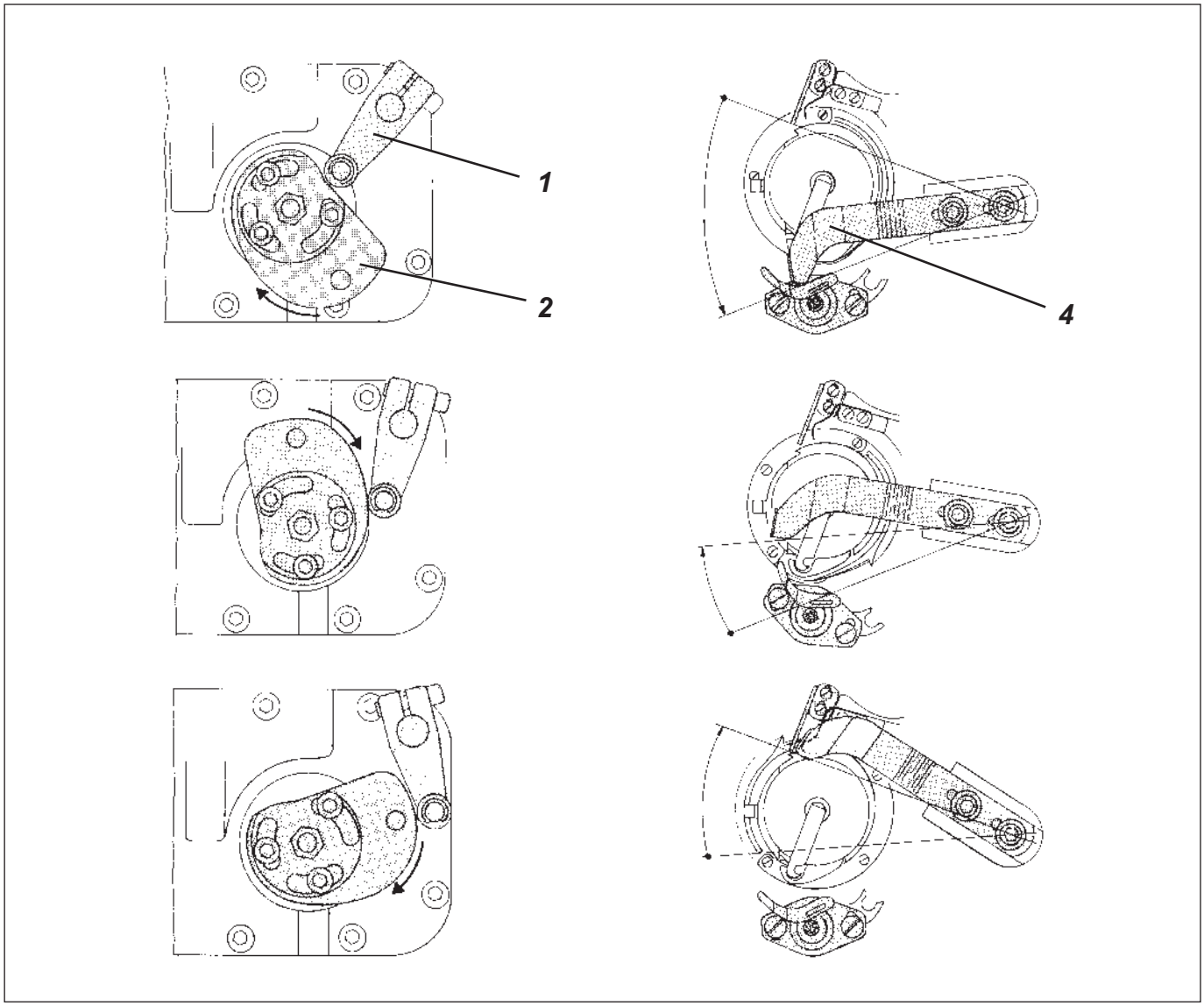
Caution Risk of Injury !

Turn the main switch off.
Attach or detach the head cover only with the sewing machine turned off.

– Place the head cover and screw fast.
  The felt tongue 2 of the head cover 1 must be clamped between the recirculation felt 4 and the nipple of the wick 5.
  The foil 3 must touch on the inside of the head cover.

13. Thread trimmer (Class 767-FA-...)

13.1 Function sequence



When, during sewing, the pedal is stepped completely back in order to trigger the trimming sequence, then the needle is positioned in the 1. position. The drive stops briefly.

The magnet presses the roller lever 1 against the lowest point of the guide curve 2. The thread knife 4 is swung completely away from the counter knife 3 thereby.

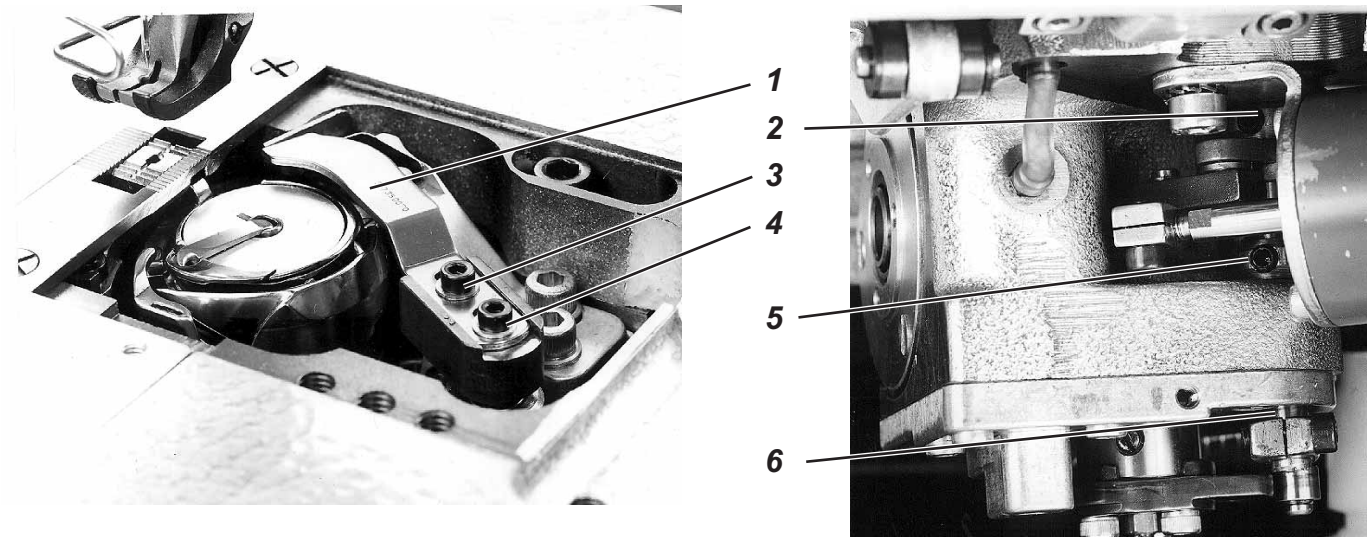
The sewing machine runs with a cutting speed of 150 $^{min-1}$.

When the guide curve 2 swings the thread pulling knife 4 to the counter knife 3, then the thread pulling knife is swung to just in front of the nose of the bobbin case in the 1st movement phase. Through this, the thread pulling knife is outside of the movement range of the bobbin case opener finger.

At the beginning of the 2nd movement phase the thread pulling knife first catches the hook and then the needle thread. The thread tension is opened. In due course the thread pulling knife pulls thread from the spool. Just before the thread lever high position the threads are cut and the underthread clamped.

When the thread lever high position and thus the 2nd position are reached, the drive stops. The magnet for the thread tension opening and the magnet for the thread trimmer are turned off.

13.2 Thread pulling knife



Standard checking

The thread pulling knife is to be set sideways so that it swings past at a safe clearance to the nose of the bobbin case. The thread pulling knife may not collide with the bobbin case.

The height of the thread pulling knife is to be set so that it swings as close as possible over the bobbin without touching it.

GB

Caution Risk of Injury !

Turn the main switch off.
Set the thread pulling knife only with the sewing machine turned off.

Correction

Sideways setting

- Loosen screws 3 and 4.
- Set the thread pulling knife 1 sideways as described above.
- Tighten screws 3 and 4 again.

Height

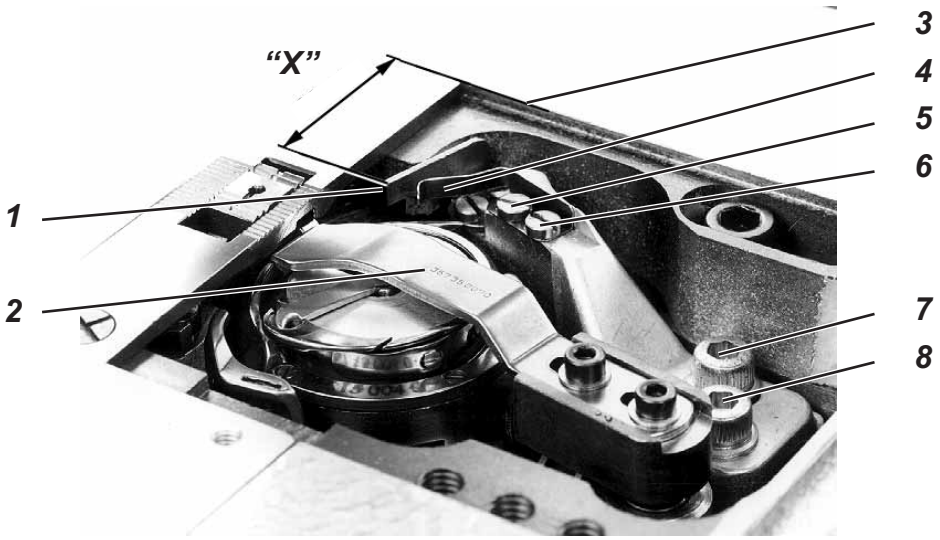
- Loosen screws 2 and 5 on the setting collars.
- Set the height of the thread pulling knife.
- Fix shaft 6 axially with the two setting collars so that the thread pulling knife can move easily without play.
- Tighten screws 2 and 5 on the setting collars again.

ATTENTION !

A false setting of the height can lead to following consequences:

- No secure catching of the threads.
- Contact of the slider.
- Damage to the bobbin.

13.3 Counter knife and underthread clamp



Standard checking

The clearance between the blade of the counter knife 1 and the slider guide 3 should be "X" mm.
(x = 26 mm with a 26 mm Ø bobbin / x = 25 mm with a 32 mm Ø bobbin)

The knives should securely cut with the least possible pressure of the counter knife on the thread pulling knife 2. This is normally the case when, with the knives half overlapped, the counter knife blade just touches the thread pulling knife.

During the trimming sequence the underthread clamp 4 should firmly clamp the underthread so that it is securely caught by the needle thread during sewing-on.

Trim the threads with the manually operated thread pulling knife. Pull the thread out of the clamp and thereby check the clamping effect. If the clamping effect is too great or too small, then the underthread clamp must be set again.

Caution Risk of Injury !

Turn the main switch off.
Set the counter knife and underthread clamp only with the sewing machine turned off.

Correction

Counter knife

- Loosen screws 7 and 8.
- Align the counter knife carrier.
  The above points must be met.
- Tighten screws 7 and 8 again.

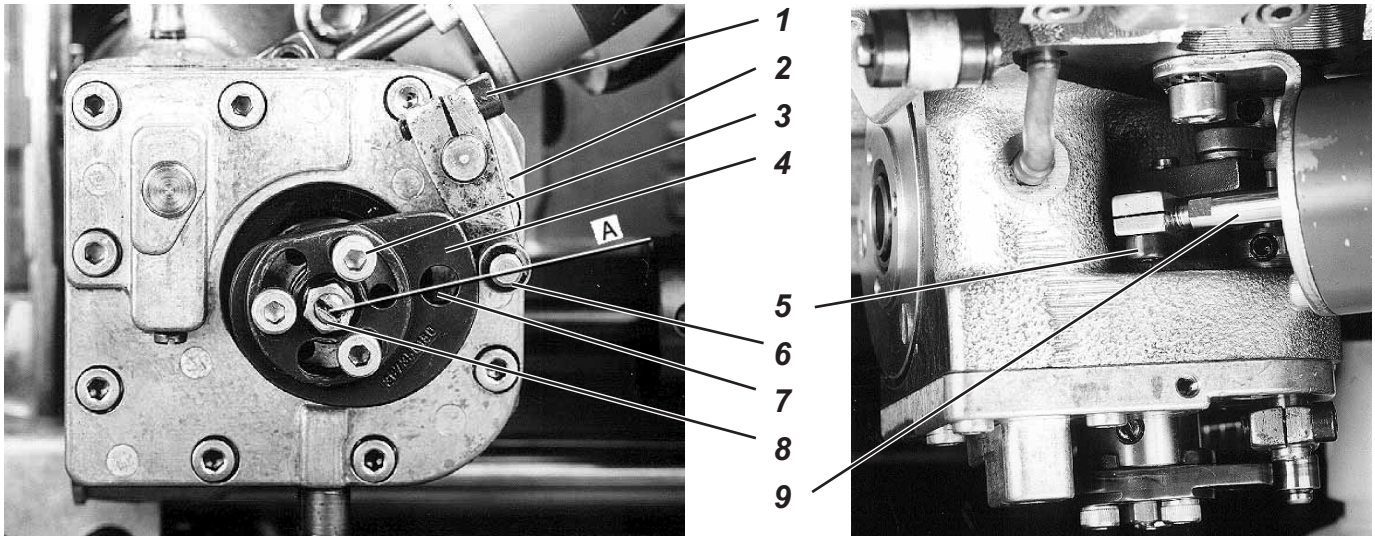
Underthread clamp

- Loosen screws 5 and 6.
- Align the underthread clamp 4.
  The above points must be met.
- Tighten screws 5 and 6 again.

ATTENTION !

When the pressure of the counter knife is set too high, then this leads to increased knife wear. A false setting of the underthread clamp can lead to sewing-on problems.

13.4 Guide curve, slewing range of the thread pulling knife and roller lever



GB

Standard checking

The guide curve 4 determines the movement sequence of the thread pulling knife.

The setting of the swung-out thread pulling knife results when the roller lever 2 touches on the lowest point of the guide curve.

The guide curve 4 may not touch the roller lever 2 during sewing.

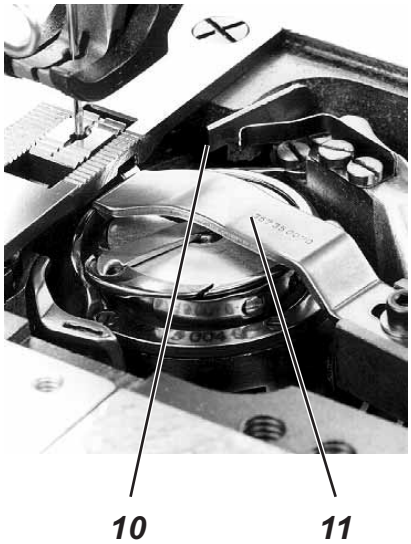
Caution Risk of Injury !

Turn the main switch off.
Set the guide curve, swing range of the thread pulling knife and roller lever only with the sewing machine turned off.

Correction

Position of the guide curve

- Loosen screws 3 (3 x).
- Set guide curve 4.
  In the thread lever high position the center of hole 7 and the center of shaft 8 and the roller 6 should lie in a line (A).
- Tighten screws 3 (3 x) again.



Swing range of the thread pulling knife

- Loosen screw 5.
- Set magnet anchor 9.
  The back of the thread pulling knife 11 should lie flush to the blade of the counter knife 10 when the magnet anchor 9 is fully extended.
- Tighten screw 5 again.

Setting of the roller lever

- Loosen screw 1.
- Turn roller lever 2 on the shaft.
  The roller 6 should lie centered to the guide curve.
  The clearance of the roller lever 2 to the highest point of the guide curve should be 0.1 mm when the magnet anchor 9 is fully extended.
- Tighten screw 1 again.

14. Short thread trimmer (KFA - 373)

Only possible with the Efka Sewing drive DC1600 DA82GA.

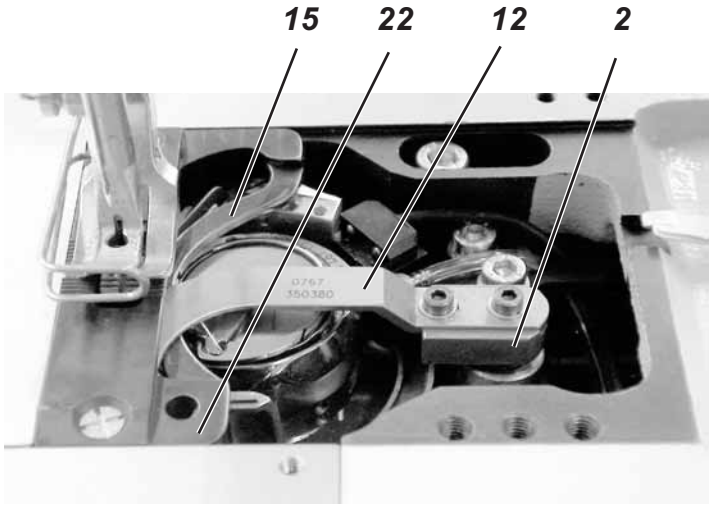
– Check the EPROM version
  For the present kit is the use of the EPROM from Version 3312 “F” to “J” or from 3316 “A” required.
  EPROM check Parameter 179

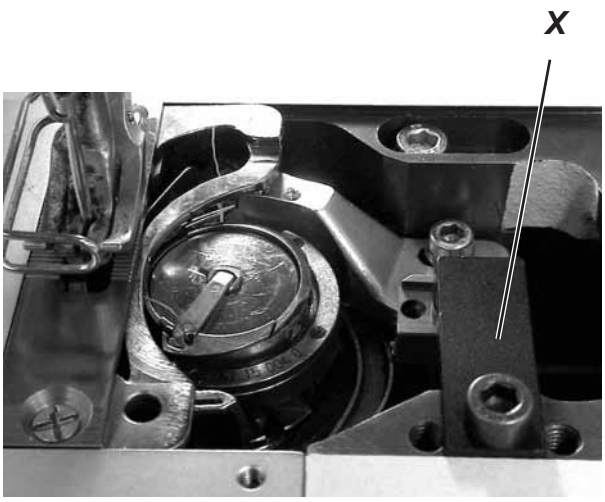
14.1 Parameter settings

Parameter 136	to 2
Parameter 154	to 7
Parameter 171	Position 2 (leading edge “496”) Position 2A (trailing edge “034”)
Parameter 180	Number of reversion increments 114
Parameter 181	Activation delay of reversion 10
Parameter 182	Reversion “ON”
Parameter 190	Activation angle of the thread trimmer 340
Parameter 192	Activation angle of thread tension release 310

14.2 Mechanical setting of the short thread trimmer

14.2.1 Setting the cutting position





Standard checking

Check whether the lower surface of the thread-pulling knife 12 rests upon the curved guide 15.The thread-pulling knife 12 must be flush with the rounded edge of the holder 2 (see picture).

When moving the thread pulling knife a light counter-pressure must be noticeable. The magnet must still be able to lead the thread-pulling knife 12 surely into the initial position.

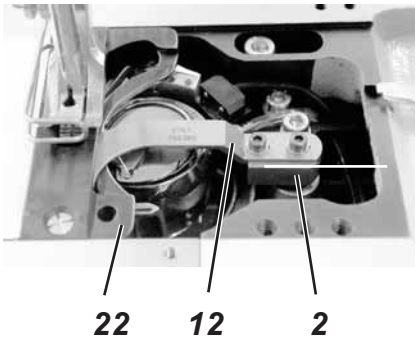
Correction

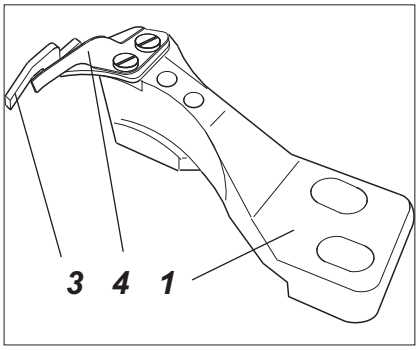
Carry out the setting of the cutting position according to the following sequences.

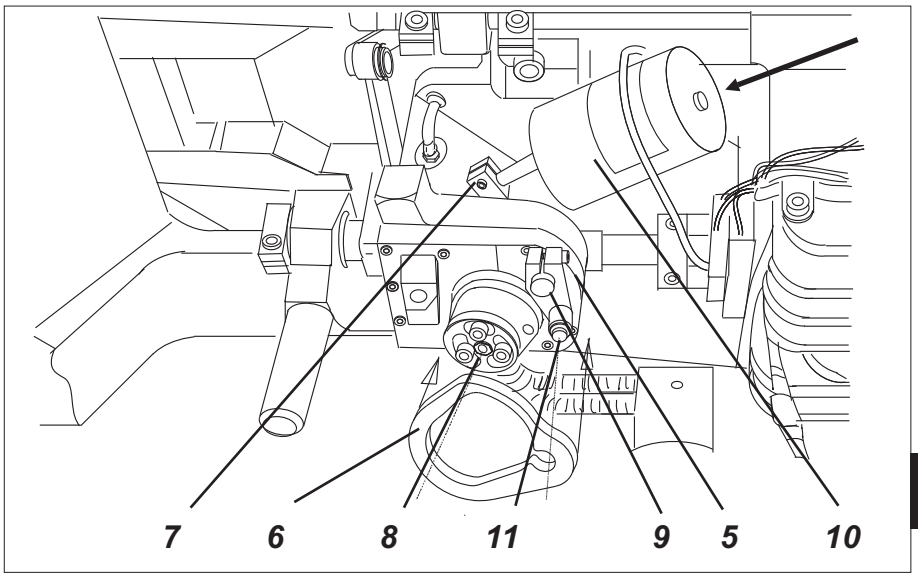
1. Loosen all the clamping on the axis of the holder 2.

– Screw on the gauge X (Part No. 0767 290030) and shift the axle of the holder 2 to press against the gauge on the bottom.
  (See picture).

– Screw on and tighten the adjustment discs on the axle of the holder 2.
Hint:
The adjustment discs set the height of the thread-pulling knife 12
– The rest of the clampings on the axle of the holder 2 will be tightened later.



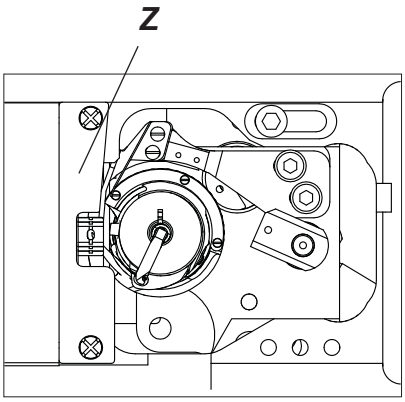




GB

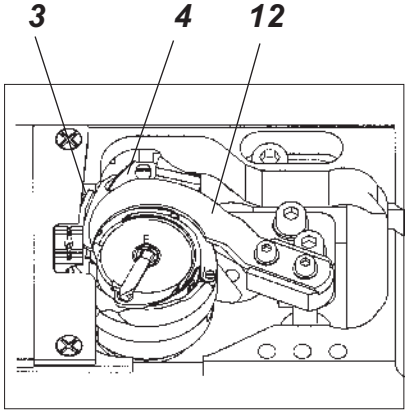
2. Positioning of the counter-knife 3, thread clamp 4 and support 1

– Screw on the thread-pulling knife 12 with the rounded rear edge on the holder 2.
– Adjust the support 1 with the counter knife 3 and the clamping plate 4 screwed on, in such a way that when moving the thread pulling knife 12 a light cutting pressure is to be felt at the counter knife 3.
– Set the support 1 to the rear until it touches the cast iron and then push it slightly to the left, in order to have a clearance of 0,5 mm remaining between the clamping plate 4 and the rear part of the thread pulling knife 12. If necessary, loosen the screws of the clamping plate 4 and position it again.
Hint:
The thread-pulling knife 12 is in its rear position.



3. Screw off the thread-pulling knife 12 again.

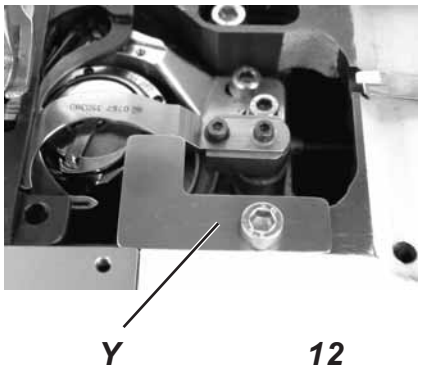
– Screw on the throat plate 22, check whether a clearance (for the thread) exists between the middle section of the hook and the throat plate 22.
– Screw on the thread-pulling knife 12 again (it should be flush with the rounded rear edge of the holder 2).

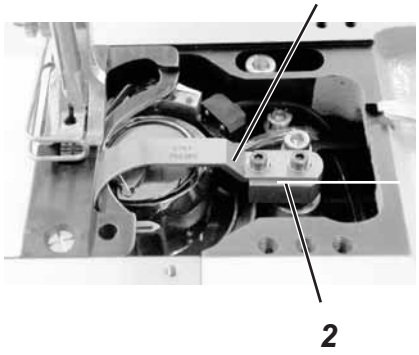


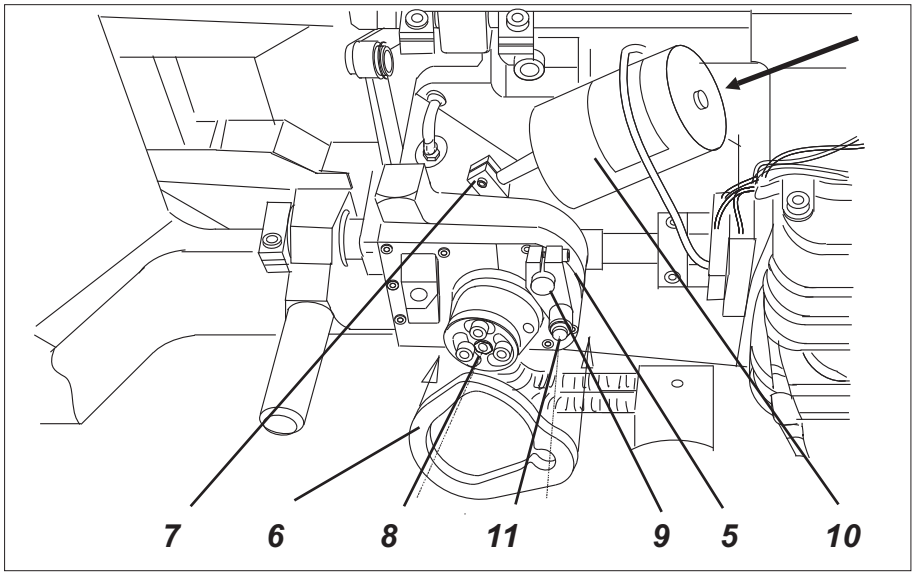
4. Align the trimmer disc 8 with the gauge 6.
For that purpose

– Set the thread lever to its highest position
(the clamping screw 5 is still unfastened see 1st point).
– Insert the gauge 6 to the roll 11 as represented in the picture.
– Insert the thread trimmer disc 8 in the gauge 6 and fasten it.
– Afterwards **remove** the gauge 6 !
Check whether all moving parts are running smoothly!

14.2.2 Align the trimmer disc with the gauge

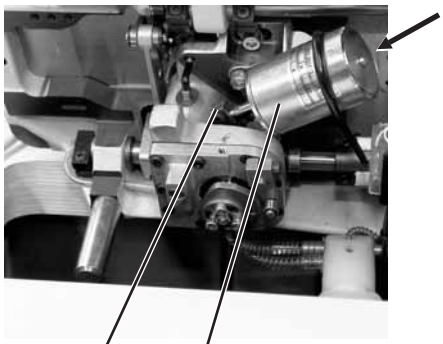






5. Set the piston rod of the magnet 10.

– Loosen the block 7 on the piston rod of the magnet 10.
– Twist the piston rod completely on the block 7 and tighten it.



6. Screw on the gauge Y (Part No. 0767 290020)

– Position the roll 11 against the disc 8.
– Position the trimmer disc 8 to its lowest position by turning the handwheel. (Lowest position:where the roll 11 comes closest to the to the axis of rotation of the disc 8). The thread pulling knife abut on the gauge Y, see picture.
– Tighten the clamping screw 5 again.
– Screw off the gauge Y.

7. Tighten the lever 1 to the shaft of the thread-pulling knife support 2

– Turn the machine using the handwheel, so that the roll 11 clings to the highest point of the thread trimmer disc 8.
(Highest position: where the roll 11 is furthest from the axis of rotation of the thread trimmer disc 8).
– There should be a clearance of 0.1 mm between the roll 11 and the peak of the trimmer disc 8.
– Press the rod of the magnet 10 downward in the direction of the arrow and tighten the clamping screw 1 in this position.
– Check whether all moving parts are running smoothly!

14.3 Short thread trimmer oversized hook

Only possible with the Efka Sewing drive DC1600 DA82GA.

Check the EPROM version
For the present kit is the use of the EPROM from Version 3312 “F” to “J” or from 3316 “A” required.
EPROM check Parameter 179

14.3.1 Parameter settings

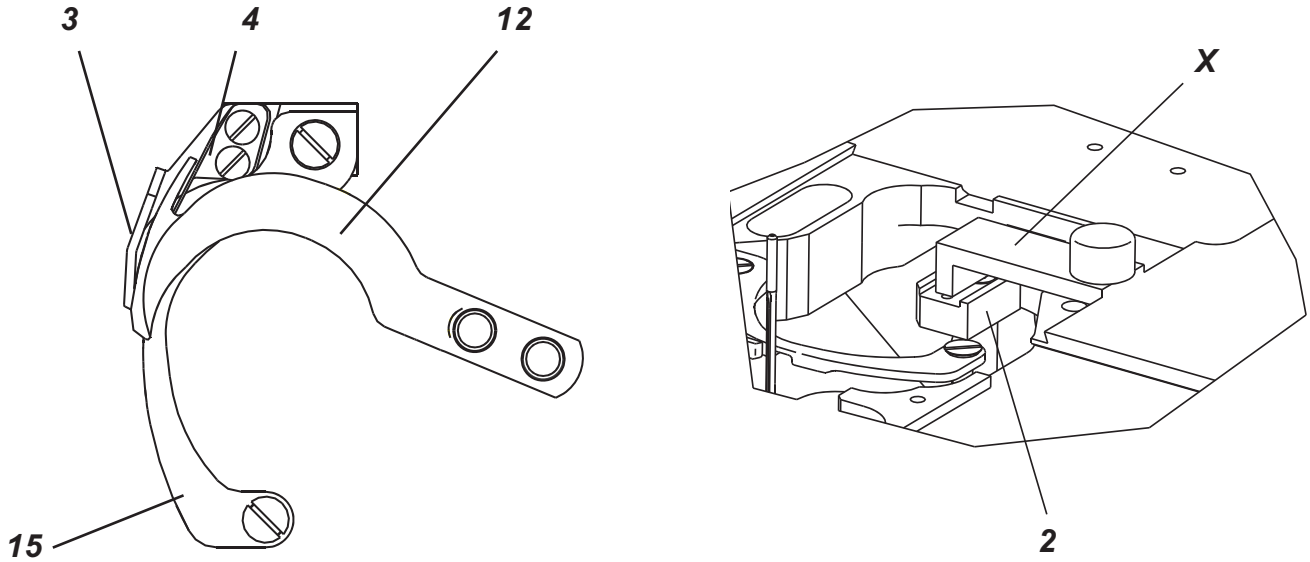
Check the parameter sheet 9800 130014 PB53.

Parameter 136	to 2
Parameter 154	to 7
Parameter 171	Position 2 (leading edge “496”) Position 2A (trailing edge “034”)
Parameter 180	Number of reversion increments 114
Parameter 181	Activation delay of reversion 10
Parameter 182	Reversion “ON”
Parameter 190	Activation angle of the thread trimmer 340
Parameter 192	Activation angle of thread tension release 310

14.3.2 Mechanical setting of the short thread trimmer

GB

14.3.2.1 Setting the cutting position



Standard checking

The thread-pulling knife 12 must be flush with the centerpiece holder 15.

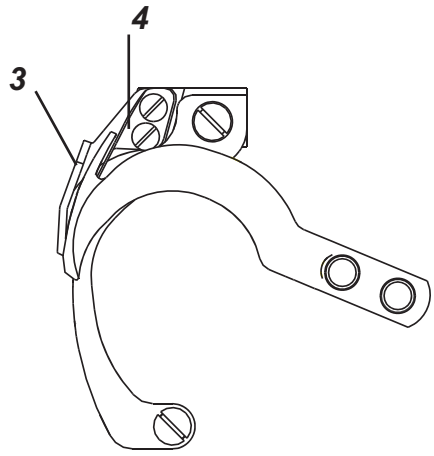
When moving the thread-pulling knife a light counter-pressure must be noticeable.

Correction

Carry out the setting of the cutting position according to the following sequences.

1. Loosen all the clamping on the axis of the holder 2.

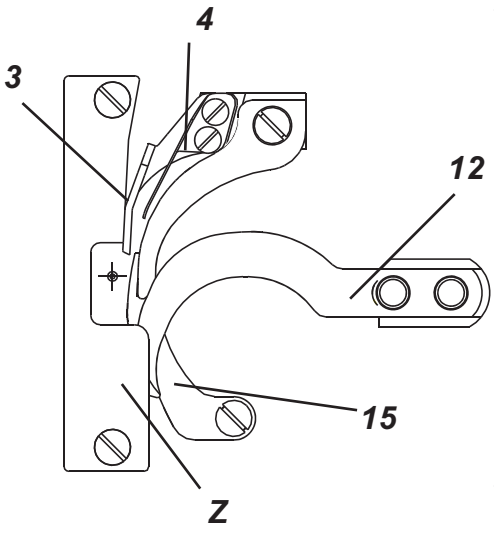
– Screw on the gauge X (Part No. 0767 290030) and shift the axle of the holder 2 to press against the gauge on the bottom (see picture).



– Screw on and tighten the adjustment discs on the axle of the holder 2.

Hint:
The adjustment discs set the height of the thread-pulling knife 12, yet the thread-pulling knife holder 2 should be slightly movable.

– The rest of the clampings on the axle of the holder 2 will be tightened later.



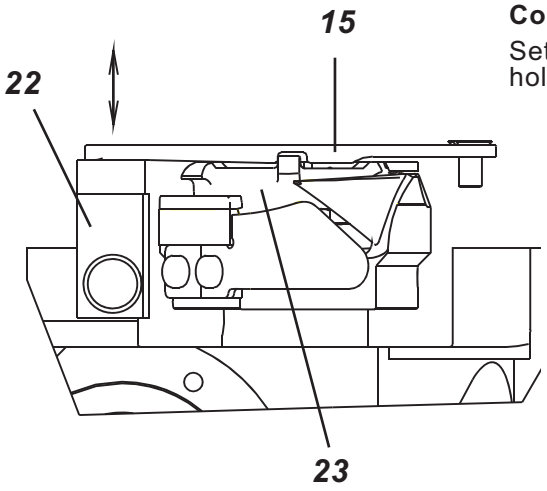
2. Positioning of the counter-knife 3 and the thread clamp 4.

– Screw on the gauge Z (Part No. 0767 290070).

– Bring the counter knife 3 toward the gauge and fasten it together with the clamping plate 4.
When the thread-pulling knife 12 is at its rear position, the clamping thread 4 should hold slitghtly the lower thread between the clamping thread 4 and the counter knife 3.
If necessary, loosen the screws of the clamping plate 4 and position it again.

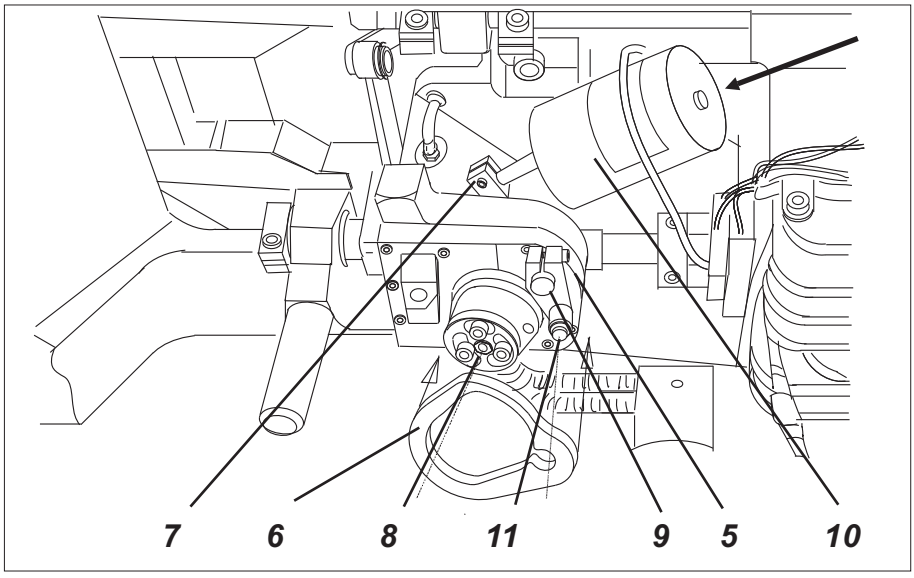
3. Checking the free space between the centerpiece hook 23 and the centerpiece holder 15.

– There should be enough room for the thread between the centerpiece holder 15 and the hook median 23.



Correction

Set the height at the rear of the postioner 22 of the centerpiece holder 15, see picture.

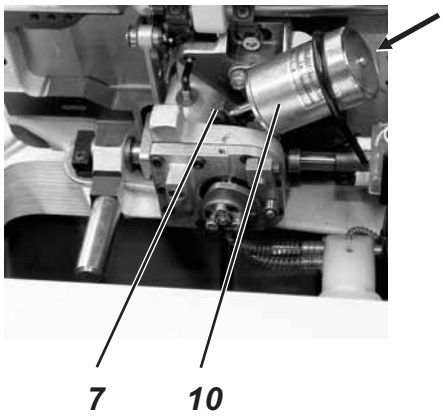


4. Align the trimmer disc 8 with the gauge 6 (Part No. 0767 290050), For that purpose:

– Set the thread lever to its highest position.
(the clamping screw 5 is still unfastened - see 1st point)

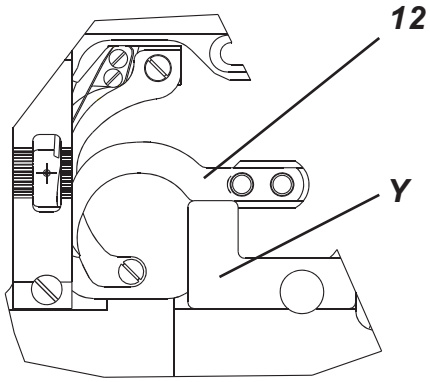
– Insert the gauge 6 to the roll 11 through the unfastened trimmer disc 8.

– Fasten the trimmer disc 8 and remove the gauge 6.
Check whether all moving parts are running smoothly.



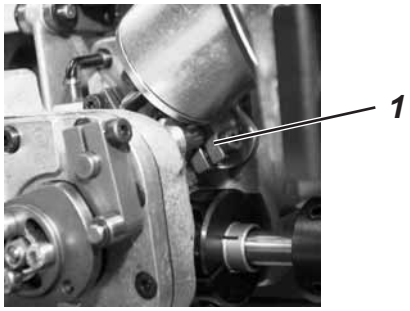
5. Set the piston rod of the magnet 10.

– Loosen the block 7 on the piston rod of the magnet 10.
– Twist the piston rod completely on the block 7 and tighten it.



6. Set the thread-pulling knife 12 with the gauge Y (Part-No. 0767 290020).

– Position the roll 11 against the trimmer disc 8.
– Position the trimmer disc 8 to its lowest position by turning the handwheel.
(Lowest position: where the roll 11 comes closest to the axis of rotation of the disc 8). The thread-pulling knife abut on the gauge Y, see picture.
– Tighten the clamping screw 5.
– Screw off the gauge Y.

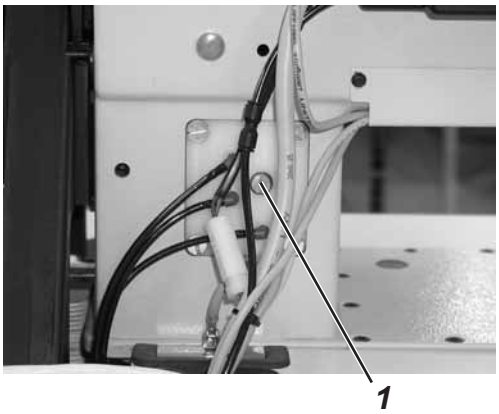


7. Set the roll 11 to the thread trimmer disc 8.

– Turn the machine using the handwheel, so that the roll 11 clings to the highest point of the thread trimmer disc 8.
(Highest position: where the roll 11 is furthest from the axis of rotation of the thread trimmer disc 8).
– There should be a clearance of 0.1 mm between the roll 11 and the peak of the trimmer disc 8.
– Press the rod of the magnet 10 downward in the direction of the arrow and tighten the clamping screw 1 in this position.
– Check whether all moving parts are running smoothly.

GB

14.4 Adjust the thread cutting stitch before thread cutting



Standard checking

The length of the last stitch before thread cutting can be adjusted. Thus, the lengths of the cut-off needle and bobbin threads can be influenced. Both thread ends should have almost the same length.

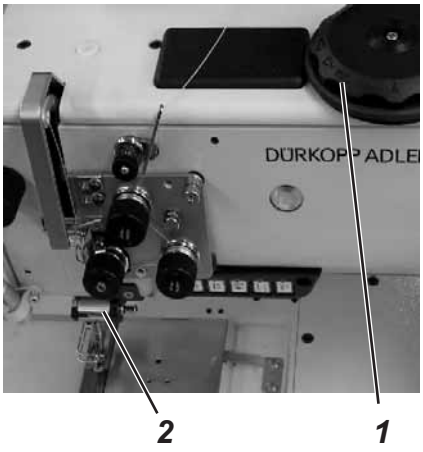
Correction

The length of the thread cutting stitch is influenced by means of screw 1.

Turning the screw in clockwise direction means longer stitches.

Turning the screw counter-clockwise means shorter stitches.

14.5 Thread clamp (Thread feeding device)



With the thread clamp 2 and the relevant electronic components, the thread is pulled downward and swallowed up while sewing on. In order to avoid a threadbreakage (the thread can get jammed between the sewing foot and material) the sewing foot is briefly relieved.

The strength of the relief depends on the position of the adjusting wheel 20 (stroke adjustment).
Higher stroke stronger relief (thicker material)
Lower stroke weaker relief (thinner material)

The correct function of the thread clamp 2 depends on the setting of the potentiometer (the potentiometer is in general correctly set).

14.6 Errors, Cause and Remedy

Error	Cause and Remedy
The thread does not get cut	- Check parameter - Knife dull or faulty - Cutting pressure pulling-knife/counter-knife - Pulling-knife position - Trimmer disc: Check the height of the thread-pulling knife to the counter-knife
Upper threadtoo short	- Pretension too strong / - Trimmer disc too early
The thread clampdoes not clamp	- Dirt particle in the thread guide - Check parameter - Check connection to the PCB
The upper thread is not pulled downward or the thread breaks while sewing on	-Check parameter -Check the stroke adjustment -Sewing foot lift too slow -Check throttle -The thread clamp does not clamp -Check connection to the PCB
The thread-pulling knife does not catch the thread	- Check the position of the trimmer disc - Thread-pulling knife not smoothly moving - Thread-pulling knife not in output position - Check setting - Thread-pulling knife too high
The thread-pulling knife will not be takento its catching position	- Magnet not set properly - Too strong pressure of the counter-knife

Hint!

The regrinding of the counter knife will result in lengthening the threads cut!

GB

15. Short thread trimmer (KFA-573)

Can only be used with Efka sewing drive DC1600 DA82GA.

– Check EPROM version
  For the present kit is the use of the EPROM from Version 3312 “F” to “J” or from 3316 “A” required.
  EPROM query Parameter 179

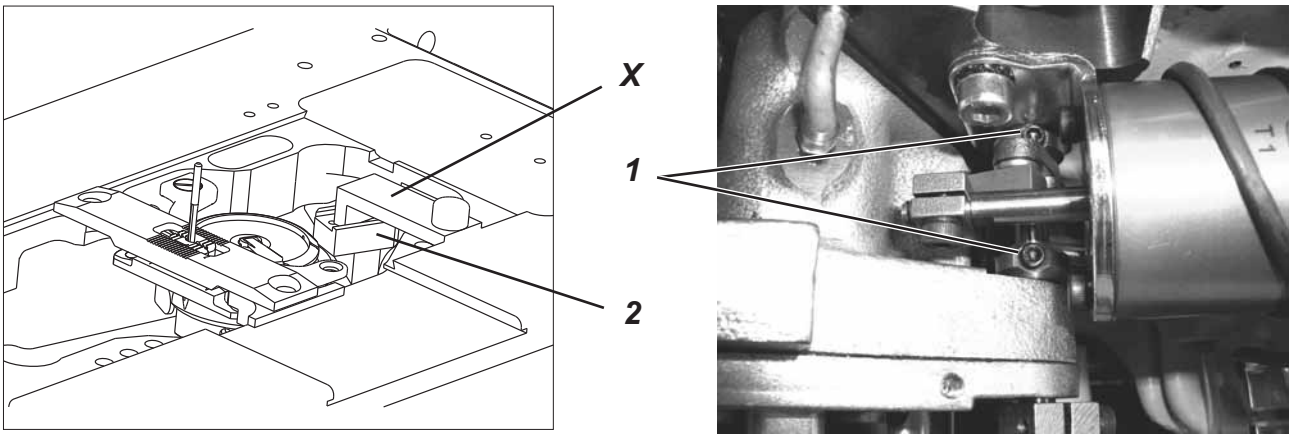
15.1 Parameter settings

See parameter sheet 9800 130014 PB53.

Parameter 136	on 2
Parameter 154	on 7
Parameter 171	2nd position (rising edge “496")
	2A position (falling edge ”034")
Parameter 180	Number of reverse steps 114
Parameter 181	Switch-on delay for reverse rotation on 10
Parameter 182	Reverse rotation on ON
Parameter 190	Switch-on angle of the thread trimmer on 340
Parameter 192	Switching point of the thread tension on 310

15.2 Mechanical adjustment of the short thread trimmer

15.2.1 Adjusting the cutting position



Standard checking

The adjustment of the cutting position has to be done as described hereafter.

1. Loosen all clampings on the axle of the thread pulling knife-support 2.

– Screw on gauge **X** (part no. 0767 290030) and press the axle of the thread pulling knife support 2 against the gauge **X** from below.

– Tighten the two adjusting rings 1 on the axle of the thread pulling knife support 2.
  Attention: Adjustment must be free of clearance!

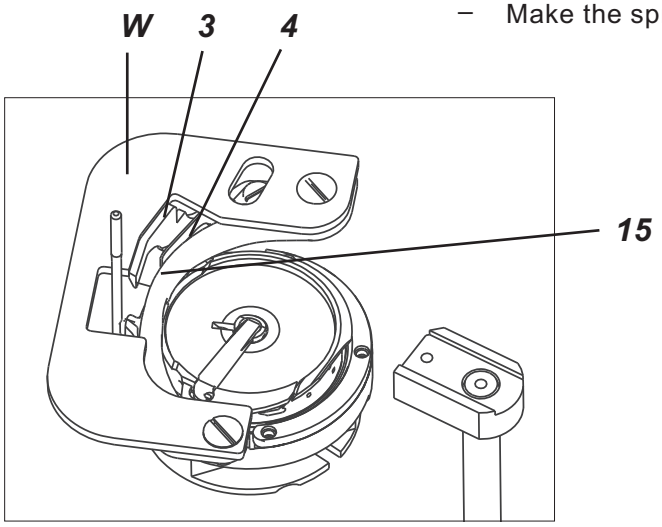
  Note:
  The adjusting rings fix the height of the thread pulling knife. The thread pulling knife support 2 must, however, be easily movable.

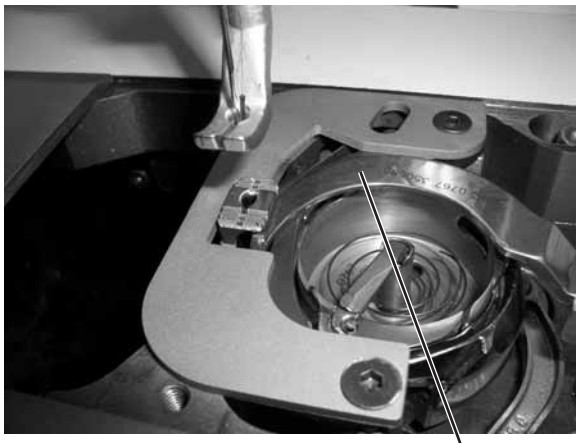
– The remaining clampings on the axle of the thread pulling knife support 2 are tightened later.

– Screw the gauge **X** off again.

2. Positioning the counter-knife 3, the spring clip 4 and the thread pulling knife 12.

– Screw the throat plate off,
loosen the fastening screws of counter-knife 3.
– Screw the gauge **W** (part no. 0767 290070) on the centerpiece support 15.
Use the fastening screws of the centerpiece support 15 for this purpose.
– Position the counter-knife 3 in such a way that it abuts on the gauge.
– Make the spring clip 4 abut on the centerpiece support 15.





GB

– Screw on the thread pulling knife 12, make the point abut on the front gauge cutout and tighten with the screws under slight pressure in the direction of the counter-knife 3.
– Adjust the spring clip 4 with a clearance of approx 0.2 mm to the thread pulling knife 12 and tighten the fastening screws of the counter-knife 3.
– Screw the gauge **W** off again.

Standard checking

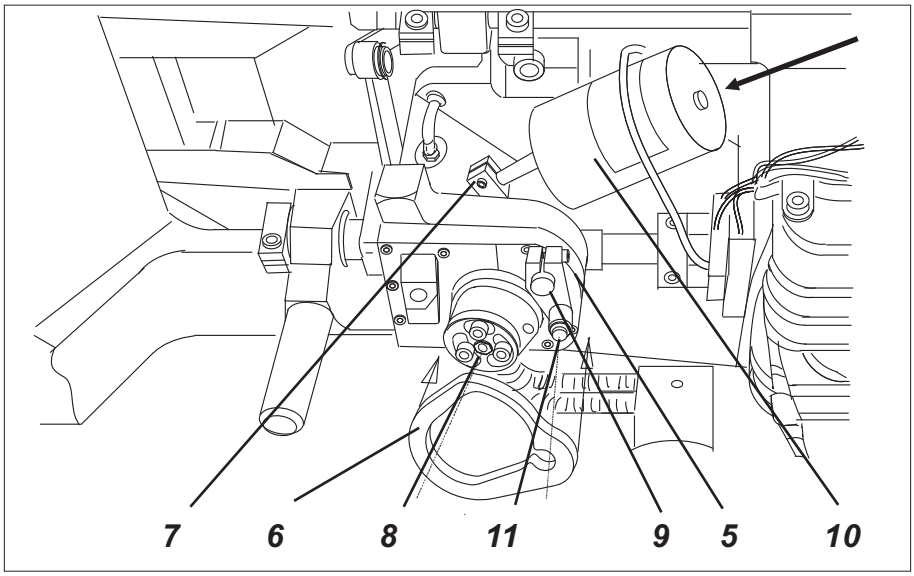
In the rear position of the thread pulling knife 12 the spring clip 4 should slightly hold the bobbin thread.

If required, loosen the screws of the spring clip 4 and correct (bring the thread pulling knife 12 in front position). Do not alter the adjustment of the counter-knife.

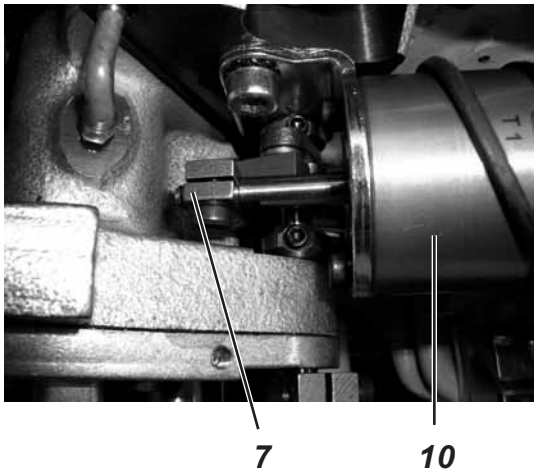
3. Aligning the cam disc 8 with the gauge 6 (part no. 0767 290050)

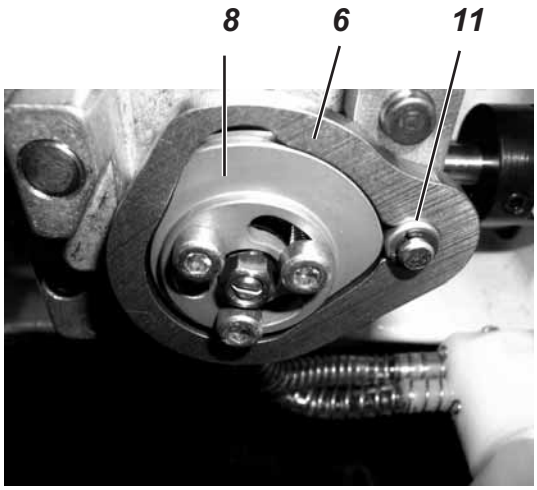
– Move the thread lever in top position.
(see opposite illustration).

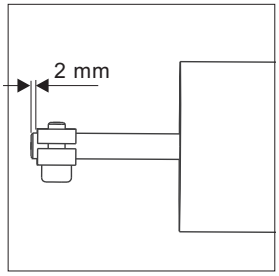
– Put the gauge 6 over the loosened cam disc 8 on the roller 11.



– Tighten the cam disc 8 and remove the gauge 6.
Check whether all movable parts are running smoothly.







4. Adjusting the piston rod of magnet 10

– Loosen block 7 on the piston rod of magnet 10.

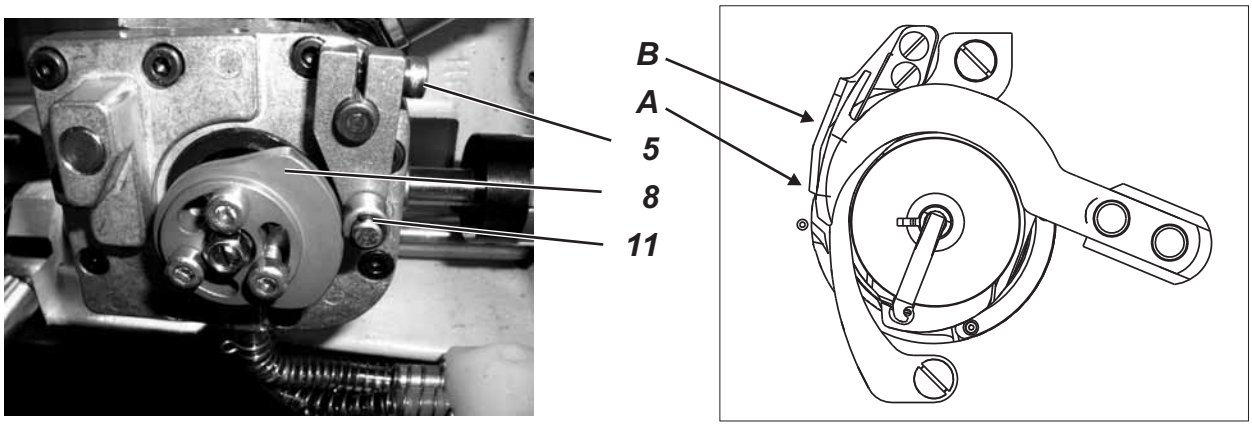
– Screw the piston rod into the block 7 until a projection of 2 mm is reached (see opposite illustration) and retighten.

5. Positioning the thread pulling knife in cutting position

– Make the roller 11 abut on the cam disc 8.
  Turn the handwheel until the roller 11 abuts on the highest point of the cam disc 8.

Note:

At the highest point the roller 11 has the furthest distance from the rotation axis of the cam disc.



GB

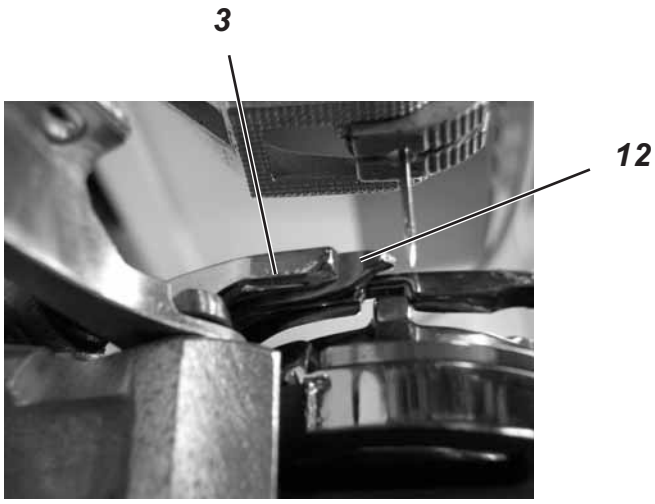
– Swivel the thread pulling knife in cutting position on the laser marking **A** (overlapping 0.5 mm).
– Tighten the roller follower screw 5.

Adjusting the cutting pressure of the thread pulling knife without gauge W

– Set the laser marking **B** of the thread pulling knife on the counter-knife edge and tighten with a slight pressure.

Attention:

The lower corner of the counter-knife 3 must not jut out over the thread pulling knife 12.

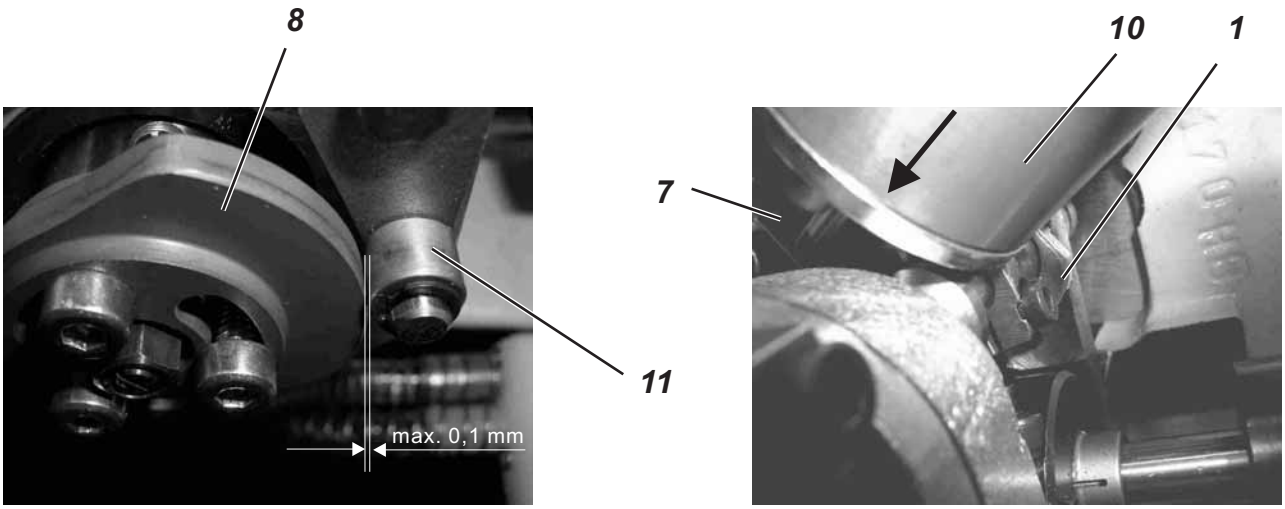


6. Adjusting the roller 11 as to the cam disc 8.

– Turn the handwheel until the roller 11 abuts on the highest point of the cam disc 8.
  Note:
  At the highest point the roller 11 has the furthest distance from the rotation axis of the cam disc.

Standard:

Between the highest point of the cam disc 8 and the roller 11 there might be a distance of **max. 0.1 mm**. The roller 11 must still be rotatable.



– Press the piston rod of magnet 10 in the direction of the arrow and screw lever 1 tight.
  Check whether everything is running smoothly.

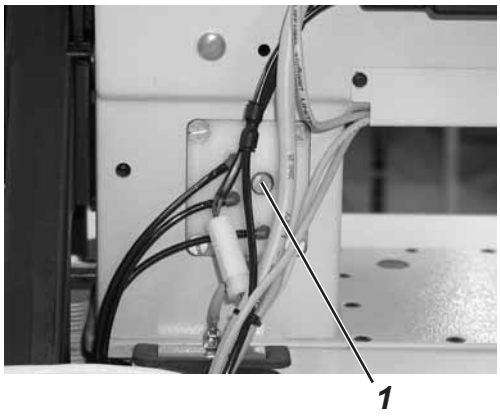
Check:

Move the thread pulling knife 12 in its rear position (cutting position) by hand. No clearance must be felt.

Correction:

– Loosen the screw at block 7.
  Turn the piston rod
  in clockwise direction = less clearance,
  counter-clockwise = more clearance,
  between roller 11 and cam disc 8.

15.3 Setting the thread trimming stitch for the short thread trimmer



Standard checking

The length of the last stitch before thread trimming can be set. Thus, the length of the cut needle and hook thread is influenced. These two threads should preferably be equally long.

The last stitch of the short thread trimmer should be approx. 1 - 1.5 mm.

GB

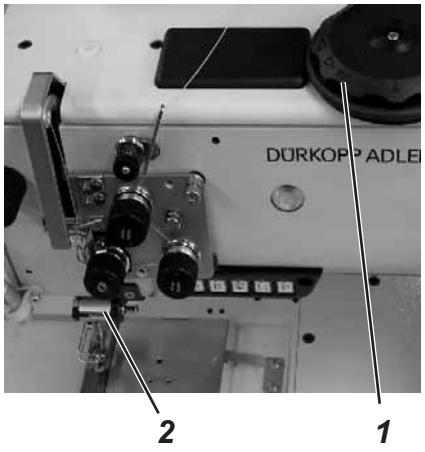
Correction

With the screw 1 the length of the thread trimming stitch is influenced.

When turning the screw in clockwise direction the stitch length will become longer.

When turning the screw counter-clockwise the stitch length will become shorter.

15.4 Thread clamp (thread pulling device)



With the thread clamp 2 and the corresponding electronics the needle thread is drawn downwards and a loop is formed at the sewing start. In order that the thread does not break (it may be clamped between foot and fabric) the sewing foot is released for a short time.

The degree of release is coupled with the position of the setting wheel 1 (stroke adjustment).
High stroke = high degree of release (thick material)
Low stroke = low degree of release (thin material)

The correct function of the thread clamp 2 depends on the setting of the potentiometer (normally this is set correctly).

Main setting rules

1. The thread pulling knife slightly rests on top of the centerpiece support.
   Correction: setting 1.
2. The cutting pressure should be as low as possible.
   Correction: Setting 2.
3. The overlap should amount to 0.5 mm.
   Correction: Setting 5.
4. The thread pulling knife must have no clearance to the rear when in cutting position.
   Correction: Setting 6.

15.5 Possible faults, cause and remedy for the short thread trimmer

Fault	Cause and remedy
Thread is not cut	- Check parameter; - Blunt or faulty knife; - Cutting pressure drawknife - counter-knife; - Position drawknife; - Cutting cam
Needle thread too short	- Pretension too strong; - Cutting cam too early
Thread clamp does not clamp	- Foreign matter in the thread guidance; - Check parameter; - Check connection at the printed circuit board
Needle thread is not drawn downwards or thread breaks at the seam beginning	- Check parameter; - Check stroke adjustment; - Foot lift too slow; - Check throttle; - Thread clamp does not clamp; - Check connection at the printed circuit board
Thread pulling knife does not catch the thread	- Check the position of the cutting cam; - Thread pulling knife does not run smoothly; - Thread pulling knife not in initial position;
Thread pulling knife is not brought to the catching position	- Magnet not adjusted correctly; - Pressure of the counter-knife too strong

Notes!

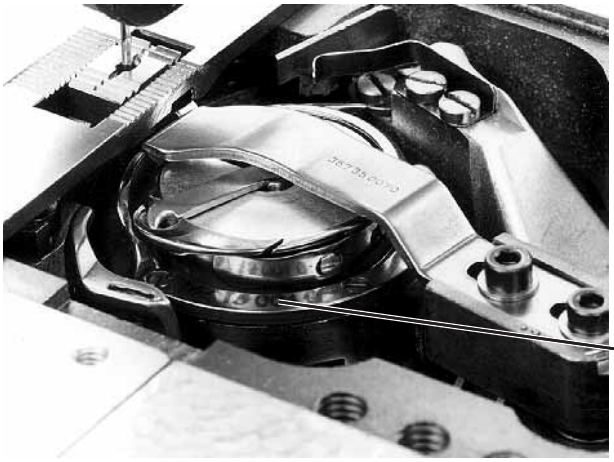
Attention!

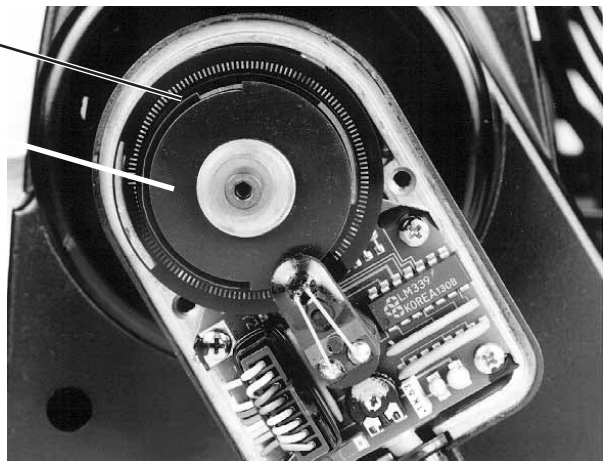
It has to be checked whether the hook casing is pressed against the guide of the base plate by the eccentric of the upper fastening screw. (Service instructions item 4.3; description of correction).

Attention! ***The needle thread is not caught and forms a loop around the thread pulling knife***

Check the adjustment of the cutting curve and adjust according to the top dead centre of the thread lever.

16. Synchronizer





The setting of the synchronizer is necessary when the synchronizer is mounted on the handwheel during installation of the machine or when a replacement of the synchronizer occurs.

The setting of the digital synchronizer is described in the Chapter 16.1 (Positioning).

GB

Caution Risk of Injury !

Turn the main switch off.
Set the synchronizer only with the sewing machine turned off.
Conduct function tests with the machine running only with the greatest possible caution.

Setting the 1. position

The trimming sequence is initiated in this position. This procedure already occurs before the needle low position because the thread pulling knife would otherwise collide with the bobbin case opener finger.

In this position the lower edge of the needle eye of the lowering needle should end at the hook covering ring 3.
This is necessary so that the roller lever can be swung against the lowest point of the guide curve.

– Turn the handwheel until the described setting is reached.
– Turn disc 1 accordingly.

Setting the 2nd position

The machine should stop in the thread lever high position after the trimming sequence.

– Turn the handwheel until the thread lever high position is reached.
– Set disc 2 accordingly.

The settings of the synchronizer are to be checked with the machine running !
If the positions are not reached, then the settings are to be corrected with the machine turned off.

17. Controls and control panel EFKA

In these Service Instructions only the most important items in the controls are described.

Please find the comprehensive description in the enclosed operating instructions of the motor manufacturer.

17.1 Positioning

17.1.1 Defining the positions

Reference position

The reference position is the starting position for all other positions. It is defined as the position of the needle tip, with the needle descending in the normal direction of rotation, at the level of the upper side of the needle plate. With the control correctly set only the reference position needs to be reset after the removal of the proximity switch: all other positions are then automatically correct.

Position 1

In position 1, the bottom edge of the needle eye of the lowered needle must be in the same height as the shuttle plunger ring.

Position 2

In position 2 the thread lever is shortly after the upper dead center. (The thread must be cut.)

17.1.2 Adjusting the positions (DC1600/DA82GA)

Once every rotation the digital proximity switch sends 512 pulses (increments) and one extra pulse to the control. All needle positions are determined by these pulses and the values of parameters F-170 and F-171.

The proximity switch requires no mechanical adjustment.

Caution !

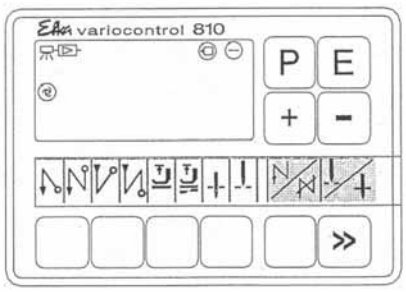
All positions must be reset after:

1. the sewing drive has been operated for the first time
2. the sewing drive, drive control or drive control plate have been replaced
3. the EPROM in the drive control has been replaced.

Only the **reference position** must be reset after:

1. Removing and mounting or replacing the synchronizer.

17.1.3 Adjusting the positions with the V810 control panel



Entering the technician-level code number

- Turn off the main switch.
- All plugs must be plugged in to the sewing-drive control.
- Press and hold down the "**P**" key.
- Turn on the main switch. "**C-0000**" appears in the display.
- Release the "**P**" key.
- Enter code no. **1907**. Press the "+" or "-" keys to alter the value of the flashing digit. Press the ">>" key to move to the next digit.
- Press the "**E**" key. The first technician-level parameter **F-100** is displayed.

Setting the reference position

- After entering the code number press the "**E**" key. The first technician-level parameter **F-100** is displayed.
- Press the "**+**", "**-**" and "**>>**" keys to set parameter **F-170**.
- Press the "**E**" key. "**Sr1**" appears in the display.
- Press the "**>>**" key. "**PoS0 ( )**" appears in the display.
- Turn the handwheel in the normal direction of rotation until "**( )**" disappears from the display, then turn it further until the reference position is reached (needle tip at the level of the upper side of the needle plate with the needle descending).
- Press the "**E**" key. The reference position is saved. "**F- 171**" appears in the display.
- If the reference position has not been saved, an error message - "**inF E3**" - appears in the display. Turn the handwheel on, press the "**E**" key and repeat the above procedure.

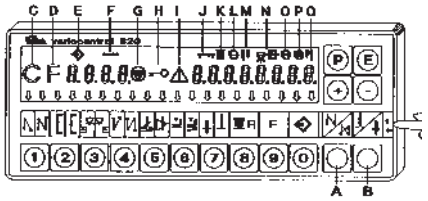
Setting positions 1 and 2

- The reference position is set (see above).
- Enter parameter **F-171**.
- Press the "**E**" key. "**Sr2**" appears in the display.
- Press the "**>>**" key. "**1 xxx**" , the parameter value of position 1, appears in the display.
- Correct the parameter value * if necessary, either with the "**+**" and "**-**" keys or by turning the handwheel.
- Press the "**E**" key. "**2 xxx**" , the parameter value of position 2, appears in the display.
- Correct the parameter value * if necessary, either with the "**+**" and "**-**" keys or by turning the handwheel.
- Press the "**E**" key. "**1A xxx**" , the parameter value of position 1A, appears in the display.
- Correct the parameter value * if necessary, either with the "**+**" and "**-**" keys or by turning the handwheel.
- Press the "**E**" key. "**2A xxx**" , the parameter value of position 2A, appears in the display.
- Correct the parameter value * if necessary, either with the "**+**" and "**-**" keys or by turning the handwheel.
- Press the "**P**" key twice to stop entering settings and leave programming level.
- Check the positions.

*** Caution !** The parameter values for positions 1, 2, 1A and 2A can be found in the parameter sheet (accessory pack).

GB

17.1.4 Adjusting the positions with the V820 control panel



Entering the technician-level code number

- Turn off the main switch.
- All plugs must be plugged in to the sewing-drive control.
- Press and hold down the “**P**” key.
- Turn on the main switch. “**C-0000**” appears in the display.
- Release the “**P**” key.
- Enter code no. **1907** with number keys 0 to 9.
- Press the “E” key. The first technician-level parameter **F-100** is displayed and the first digit flashes.

Setting the reference position

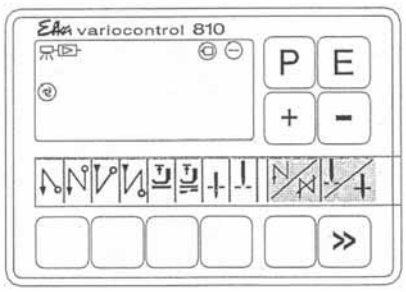
- After entering the code number press the “**E**” key. The first technician-level parameter **F-100** is displayed.
- Set the **F-170** parameter with keys 0 to 9.
- Press the “**E**” key. “**F-170 Sr1**“ appears in the display.
- Press the “**B**” key. “**F-170 PoS 0 ( )**” appears in the display.
- Turn the handwheel in the normal direction of rotation until “**( )**” disappears from the display, then turn it further until the reference position is reached (needle tip at the level of the upper side of the needle plate with the needle descending).
- Press the “**E**” key. The reference position is saved. “**F- 171**” appears in the display.
- If the reference position has not been saved, an error message - “**InFo E3**” - appears in the display. Turn the handwheel again until the required reference position is reached.

Setting positions 1 and 2

- The reference position is set (see above).
- Enter parameter “**F-171**”.
- Press the “**E”** key. “**Sr2**” appears in the display.
- Press the “**B**” key. “**F 171 1 xxx**” , the parameter value of position 1, appears in the display.
- Correct the parameter value * if necessary, either with the “**+**” and “**-**” keys or by turning the handwheel.
- Press the “**E**” key. “**F 171 2 xxx**” , the parameter value of position 2, appears in the display.
- Correct the parameter value * if necessary, either with the “**+**” and “**-**” keys or by turning the handwheel.
- Press the “**E**” key. “**F 171 1A xxx**” , the parameter value of position 1A, appears in the display.
- Correct the parameter value * if necessary, either with the “**+**” and “**-**” keys or by turning the handwheel.
- Press the “**E**” key. “**F 171 2A xxx**” , the parameter value of position 2A, appears in the display.
- Correct the parameter value * if necessary, either with the “**+**” and “**-**” keys or by turning the handwheel.
- Press the “**P**” key twice to stop entering settings and leave programming level.
- Check the positions.

*** Caution!** The parameter values for the positions 1, 2, 1A and 2A can be found in the parameter sheet (accessory pack).

17.2 Setting parameter values with the V810 control panel



Changing technician-level parameter values

Entering the technician-level code number

- Turn off the main switch.
- All plugs must be plugged in to the sewing-drive control.
- Press and hold down the “**P**” key.
- Turn on the main switch. “**C-0000**” appears in the display.
- Release the “**P**” key.
- Enter code no. **1907**. Press the “**+**” or “**-**” keys to alter the value of the flashing digit. Press the “**>>**” key to move to the next digit.
- Press the “**E**” key. The first technician-level parameter **F-100** is displayed.

Selecting parameters and changing values

- Press the “**+**” and “**-**” keys to select the next or preceding parameter.
- The parameter can be entered direct with the “**>>**”, “**+**”and “**-**” keys.
- Press the “**E**” key. The value of the selected parameter is displayed.
- Press the “**+**” and “**-**” keys to change the parameter value.
- Press the “**E**” key to display the next parameter or the “**P**” key to display the same parameter.

GB

Saving changed parameter values

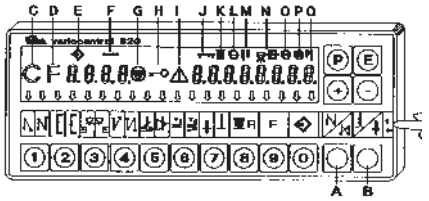
- Press the “**P**” key to terminate programming.
- Sew a complete seam, i.e. push the pedal forward and then fully back. The change is saved.
- If no seam is sewn, the change is lost.
- Press the “**P**” key again to return to programming level.
-

Changing manufacturer-level parameter values

Entering the manufacturer-level code number

- Turn off the main switch.
- All plugs must be plugged in to the sewing-drive control.
- Press and hold down the “**P**” key.
- Turn on the main switch. “**C-0000**” appears in the display.
- Release the “**P**” key.
- Enter code no. **3112**. Press the “**+**” or “**-**” keys to alter the value of the flashing digit. Press the “**>>**” key to move to the next digit.
- Press the “E” key. The first manufacturer-level parameter **F-200** is displayed.
- Continue as for “**Selecting parameters and changing values**”

17.2.1 Setting parameter values with the V820 control panel



Changing technician-level parameter values

Entering the technician-level code number

– Turn off the main switch.
– All plugs must be plugged in to the sewing-drive control.
– Press and hold down the “**P**” key.
– Turn on the main switch. “**C-0000**” appears in the display.
– Release the “**P**” key.
– Enter code no. **1907** with number keys 0 to 9.
– Press the “**E**” key. The first technician-level parameter **F-100** is displayed and the first digit flashes.

Selecting parameters and changing values

– After the code number has been entered the first parameter, **F-100**, is displayed. The first digit of the parameter number flashes.
– Enter the required parameter number with number keys 0 to 9.
– Press the “**E**” key. The value of the selected parameter is displayed.
– Press the “**+**” and “**-**” keys to change the parameter value.
– Press the “**E**” key to display the next parameter or the “**P**” key to display the same parameter.

Saving changed parameter values

– Press the “**P**” key to terminate programming.
– Sew a complete seam, i.e. push the pedal forward and then fully back. The change is saved.
– If no seam is sewn, the change is lost.
– Press the “**P**” key again to return to programming level.

Changing manufacturer-level parameter values

– Entering the manufacturer-level code number
– Turn off the main switch.
– All plugs must be plugged in to the sewing-drive control.
– Press and hold down the “**P**” key.
– Turn on the main switch. “**C-0000**” appears in the display.
– Release the “**P**” key.
– Enter code no. **3112** with number keys 0 to 9.
– Press the “**E**” key. The first manufacturer-level parameter **F-200** is displayed.
– Continue as for “**Selecting parameters and changing values**”

Caution !

The changed parameter values are not saved unless a complete seam is sewn after leaving programming level, i.e. the pedal is pushed forwards and then all the way back. If the drive is switched off straight after leaving programming level, the changes are lost.

17.3 Master reset

A master reset resets all parameter values to their factory settings.

- Turn off the main switch.
- Press the “**P**” key and turn on the main switch.
- Release the “**P**” key..
- Enter code no. “**1907**”.
- Press the “**E**” key. The parameter **F-100** is displayed.
- Press the “**E**” key. The value of the parameter **F-100** is displayed.
- Set the value to **170**.
- Press the “**P**” key twice.
- Turn off the main switch.
- After a brief waiting period turn the main switch back on.
  All parameters have now been restored to their pre-set values.

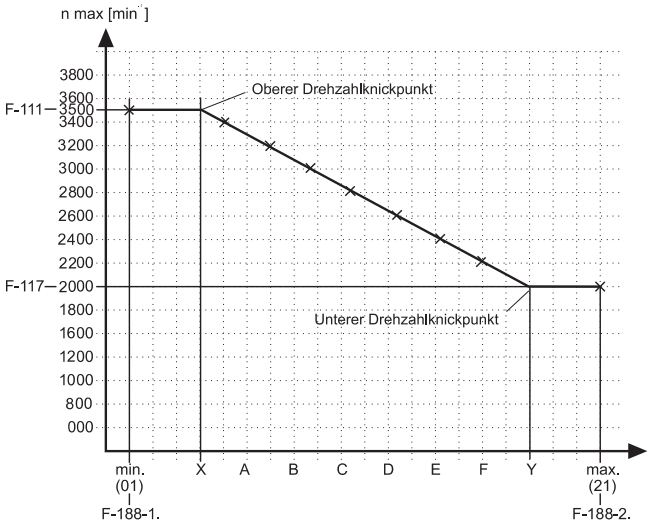
Caution !

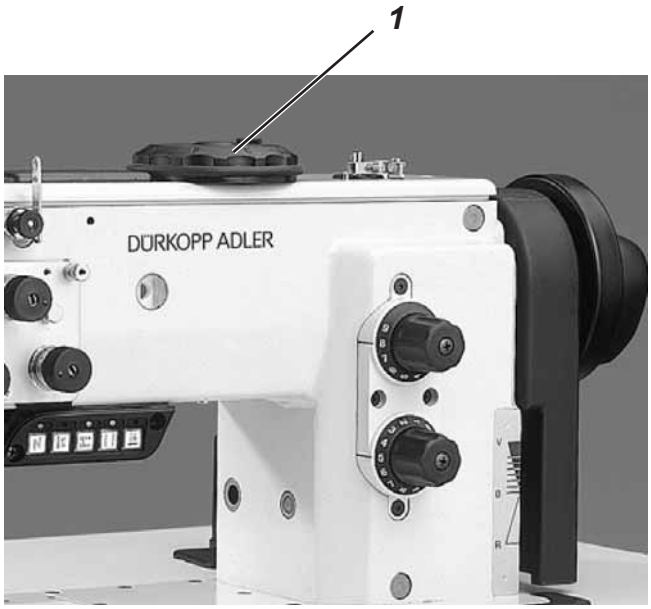
A few parameters, like F-111, F-161, F-170, F-171 and F-190 to F-194 for example, are not affected by a master reset. All machine-specific parameters must be reset again in accordance with the parameter sheet.

GB

18. Automatic speed adaptation

18.1 General





The “Speedomat” function allows a speed limitation dependent on the set stroke height (at setting wheel 1) up to 21 steps. The current stroke height value is indicated to the sewing drive control by the position of the potentiometer (10k Ohm with 60° angle of rotation), which is connected to the lifting shaft in the sewing machine arm. The maximum angle of rotation of the lifting shaft amounts to 48° and adjusts the potentiometer from 9k Ohm (= 4,5V at bushing A.3 = nmax) to 1k Ohm (= 0,5V at bushing A.3 = nmin).

See wiring diagram 9890 768003 B for connection of potentiometer.

Setting eccentric [Position]	Sewing foot stroke [mm]	Max. number of stitches [min^{-1}]
min.		3.500 / 3.200
A	1,5	
B	2,4	
C	3,3	
D	4,2	
E	5,1	
F	6,0	
max.		2000

18.2 Setting the “Speedomat” function

For the “Speedomat” function the following values must be set.

- The **maximum speed** of the machine at minimum stroke height is set with the parameter F-111 (n2 - see parameter sheet).
- The **speed at maximum stroke height** is set with the parameter F-117 eingestellt (n10 - see parameter sheet).
- The **upper “speed breaking point”** is the Speedomat step up to which the maximum speed F-111 is effective. The speed limitation begins with the next step. The adjustment is effected with the parameter F-188.
- The **lower “speed breaking point”** is the Speedomat step from which the speed is limited to F-117 (n10). The adjustment is effected with the parameter F-188.

Display V810 Control Panel

11.2400	10 19
Speed step Speed	upper lower breaking point

Display V820 Control Panel

3500 1) 10 2) 9 3) 19 4)

1) = Speed
2) = upper breaking point
3) = current Speed step
4) = lower breaking point

GB

Minimum sewing foot stroke = no speed limitation = maximum speed n2

Maximum sewing foot stroke = maximum speed limitation = speed n10

The difference between maximum speed and speed at maximum stroke adjustment is automatically and regularly distributed to the remaining steps between the upper and the lower speed breaking point by the control.

18.2.1 Setting the “Speedomat” function by means of control panel V810

The programming of the automatic speed adaptation is done by the competent technicians.

The adjustment of the upper and the lower speed breaking point is effected with the parameter **F-188**.

Base for the settings are :
F-111 = 3500; **F-117** = 2000; breaking point preset-value 10 + 19

- Set maximum speed with parameter **111** (3500 min).
- Set stroke adjustment speed with parameter **117** (2000 min).
- Input of parameter **F-188.**
- Press key “**E**”.
  The current Speedomat step (e.g. 9) and the matching speed limitation (e.g. 3500) are indicated.

9 . 3500

- Press key “**>>**”.
  The current values for the upper speed breaking point (e.g. 10) and the lower speed breaking point (e.g. 19) are indicated.

10 19

- Press key “**>>**”.
  The current Speedomat step (e.g. 9) and the matching speed limitation (e.g. 3500) are indicated.

9 . 3500

- Set new value for the upper speed breaking point (e.g. 12) by means of the potentiometer, e.g. by turning the setting wheel.

12 . 3160

- Press key “**>>**”.
  The current values for the upper speed breaking point (e.g. 10) and the lower speed breaking point (e.g. 19) are indicated.

10 19

- Press key “**E**”.
  The new value (e.g. 12) for the upper speed breaking point is taken over.

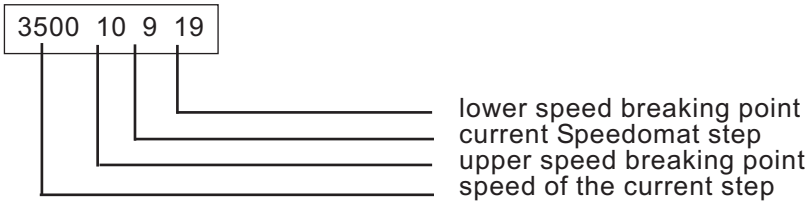
10 19

12 . 3160	– Press key “**>>**”. The current Speedomat step (e.g. 12) and the matching speed limitation (e.g. 3160) are indicated.
17 . 2430	– Set new value for the lower speed breaking point (e.g. 17) by means of the potentiometer, e.g. by turning the setting wheel.
12 19	– Press key “**>>**”. The memorized values for the upper speed breaking point (12 new) and the lower speed breaking point (17 old) are indicated.
08 17	– Press key “**E**”. The new value (e.g. 17) for the lower speed breaking point is taken over.
F - 189	– Press key “**P**” - the current parameter number is indicated or press key “**P**” twice - the programming ends.
DA 82 GA	

18.2.2 Setting the “Speedomat” function by means of control panel V820

– Set maximum speed with parameter 111.
– Set stroke adjustment speed with parameter 117.
– Input of parameter F-188 (see assembly instructions)

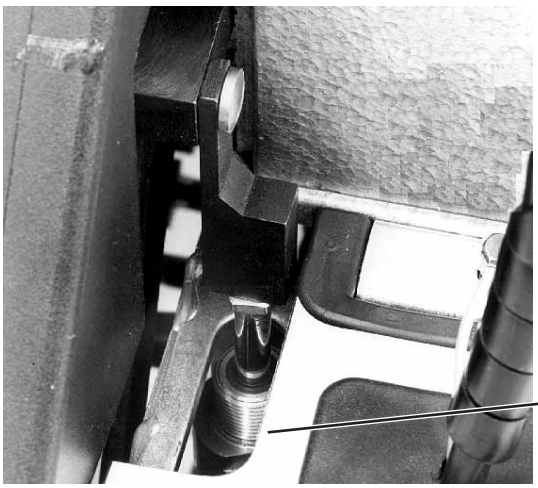
3500 10 9 19	– Press key “**E**”; the display shows e.g.: 3500 10 9 19 3500 = current speed limi limitation of current step 9 19 = lower speed breaking point 11 = current Speedomat step 10 = upper speed breaking point
3160 10 12 19	– Set new value for the upper speed breaking point (e.g. 12) by means of the potentiometer, e.g. by turning the setting wheel.
3160 12 12 19	– Press key “**E**”. The new value of the upper speed breaking point (e.g. 12) is taken over.
2430 12 17 19	– Set new value for the upper speed breaking point (e.g. 17) by means of the potentiometer, e.g. by turning the setting wheel.
2430 12 17 17	– Press key “**E**”. The new value of the upper speed breaking point (e.g. 17) is taken over.
F - 189	– Press key “**P**” - the current parameter number is indicated or press key “**P**” twice - the programming ends.
2400 DA82GA	

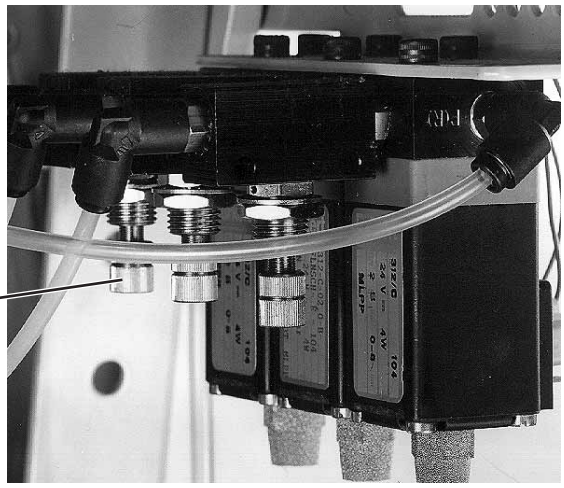


19. Optional equipment

19.1 RAP 13 - 2 Electro-pneumatic seam bartacking

For the following subclasses: 767-FA-273 and 767-VF-373





Sewing machines with electro-pneumatic seam bartacking are equipped with the cylinder 2. The cylinder brings the stitch regulator into the position for the reverse sewing.

Sewing machines with this optional equipment also allow the sewing of a fancy-stitch bartack.

The entries for the seam bartacking are made at the control panel.

During seam bartacking, the bartacking rpm (factory setting 1 200 $^{min-1}$) is in effect.

GB

Caution Risk of Injury !

Set the throttle only with the sewing machine turned off.
Conduct function tests with the sewing machine running only with the greatest possible caution.

– Set throttle 1.
  The piston rod should run out rapidly and uniformly.

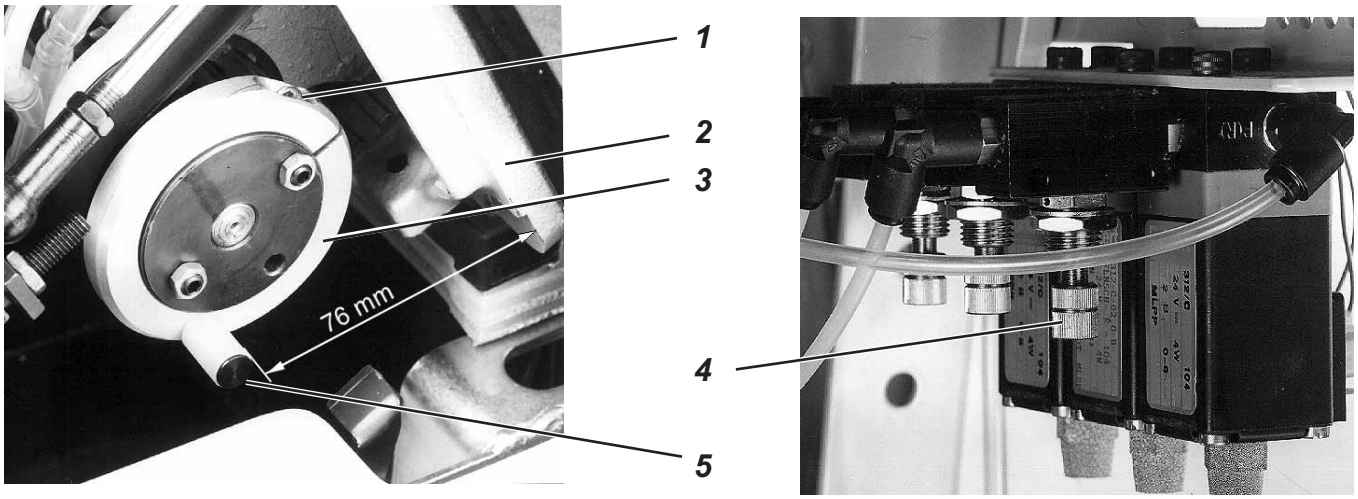
ATTENTION !

A changeover of the stitch regulator during entry of the needle into the material can lead to needle breakage. In this case, the throttle setting is to be corrected accordingly.

19.2 RAP 13 - 4 Electro-pneumatic seam bartacking

For the following subclasses: 767-AE-73 and 767-LG-73

19.3 NP 13 - 4 Electro-pneumatic needle return device



After the trimming of the thread, the machine stops in the 2nd position when the thread lever has reached its high position. In this position the needle bar has already left its high position, so that the needle projects under the raised sewing feet. In order to be able to use the max. material through-put under the sewing feet for thicker material, the cylinder turns the needle return device of the hook drive shaft back until the needle bar has reached the upper dead center. This procedure occurs immediately after the thread trimming.

Caution Risk of Injury !

Set the hold position and throttle only with the sewing machine turned off.
Conduct function tests with the sewing machine running only with the greatest possible caution.

Hold position

The needle bar should be in the high position after the positioning sequence.

- Loosen screw 1.
- Turn ring 3.
  In the thread lever high position the clearance between the tappet 5 and the upper edge of the cast boby 2 should be 76 mm.
- Tighten screw 1 again.

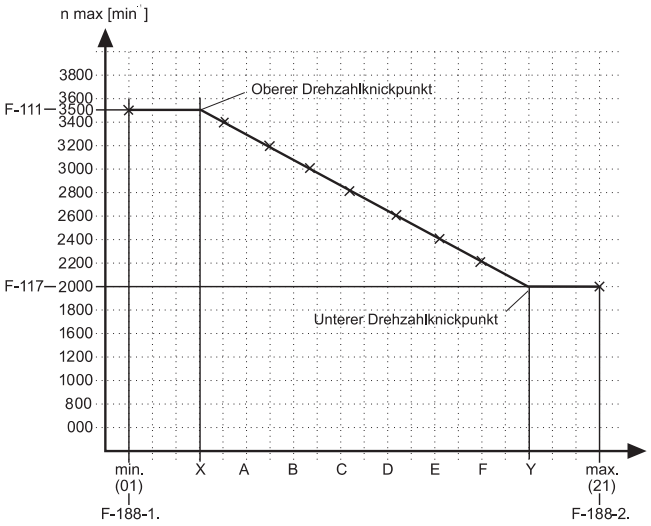
Positioning speed

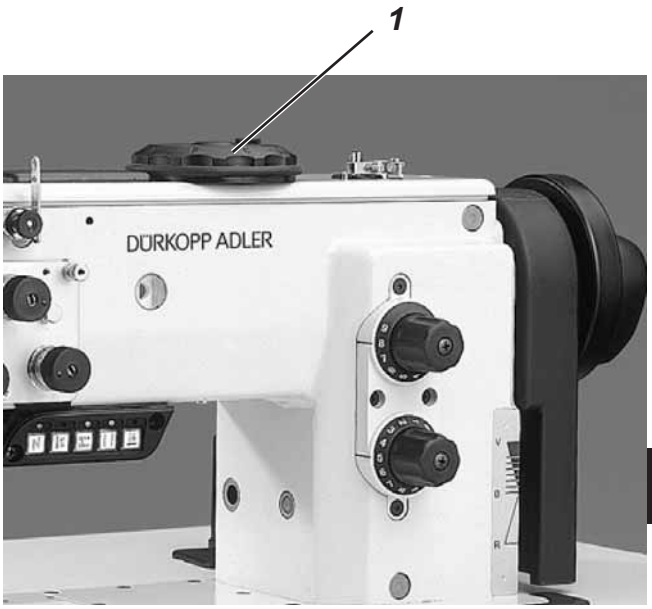
- Set throttle 4.
  The piston rod should run out the hook drive shaft rapidly and uniformly.

19.4 HP 13- 7 Electro-pneumatic quick stroke adjustment (Speedomat)

Available as standard equipment for the following subclasses:
767 - FA -373 - RAP - HP
767 - FAS - 373 -RAP - HP
767 - FAS - 573 - RAP - HP
767 - KFA - 373 - RAP - HP

For the sub-classes 767-FA-273 optional





GB

Sewing machines with this optional equipment make possible sewing with the following strokes and speeds:

Speedomat turned on

- Regulation of the rpm with the pedal up to the stroke-dependent highest rpm.
- Stroke according to the setting on the setting wheel 1.

Speedomat turned off

- Regulation of the rpm with the pedal up to 2 000 .
- Stroke at maximum height of 6 or 7 mm.

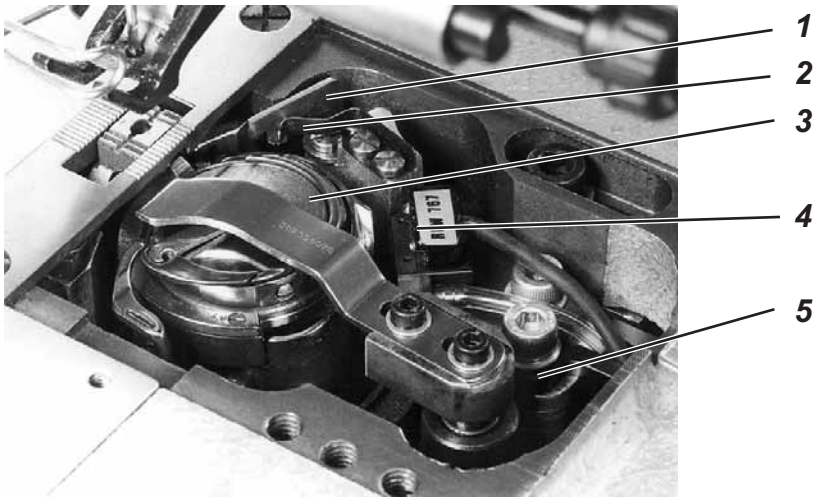
Caution Risk of Injury !

Conduct setting work with the sewing machine running only with the greatest possible caution.

Stitch length range mm	Adjusting wheel item (mm foot stroke)	Subclass	Max. Stitch rate Stitches / min
0 - 6	min. - B (up to 2 mm)	- VF-373 / VF-573 - AE-73 / AE-5-73 - FAS-473 - FAS-573 - all others	3 000 2 800 3 200 3 200 3 200 (3 500) [1]
	C - D (2 - 5 mm)	- VF-373 / VF-573 - AE 73 / VF-5-73 - all others	2 500 2 300 2 700 (3 000) [1]
	E - max (5 - 7 mm)	all	2 000
6 - 9	min - max (1 - 7 mm)	all	2 000

19.5 RFW 13-3 Remaining thread monitor

Available as optional equipment for the following subclasses:
767-FA-273; 767-FA-373-RAP-HP; 767-VF-373 and
767-FAS-373-RAP-HP.



The remaining thread monitor monitors the thread quantity of the bobbin. An acoustic signal warns that only a small thread quantity is still available.

Hook cpl.: 0767 150194
Bobbin housing 0767 150184
(See Fitting Instructions 0791 767701).

18.6 RFW 13-8

For the following subclass: 767-KFA-373-RAP-HP

Hook cpl.: 0767 150504
Bobbin housing 0767 150484
(See Fitting Instructions 0791 767701).

18.7 RFW 13-9

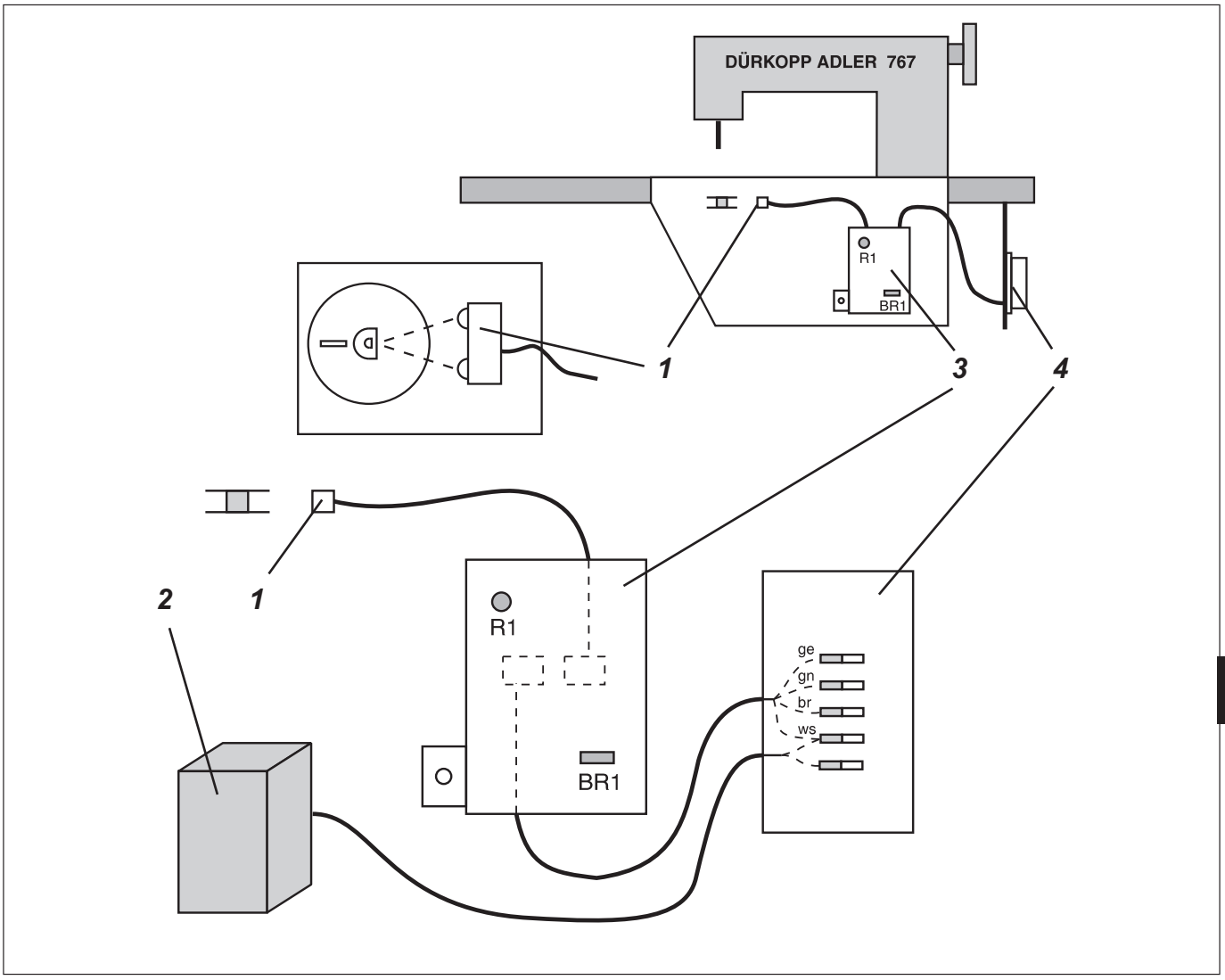
For the following subclasses: 767-FAS-573-RAP-HP
767-FAS-473-RAP-HP
767-VF-573

Hook cpl.: 0767 150334
Bobbin housing 0667 150894
(See Fitting Instructions 0791 767701).

18.8 RFW 13-6

For the following subclass: 767-KFA-573-RAP-HP

Hook cpl.: 0767 150574
Bobbin housing 0767 150494
(See Fitting Instructions 0791 767701).



GB

19.9 Connecting the controls and the solenoid valve for the remaining thread monitor

ATTENTION !

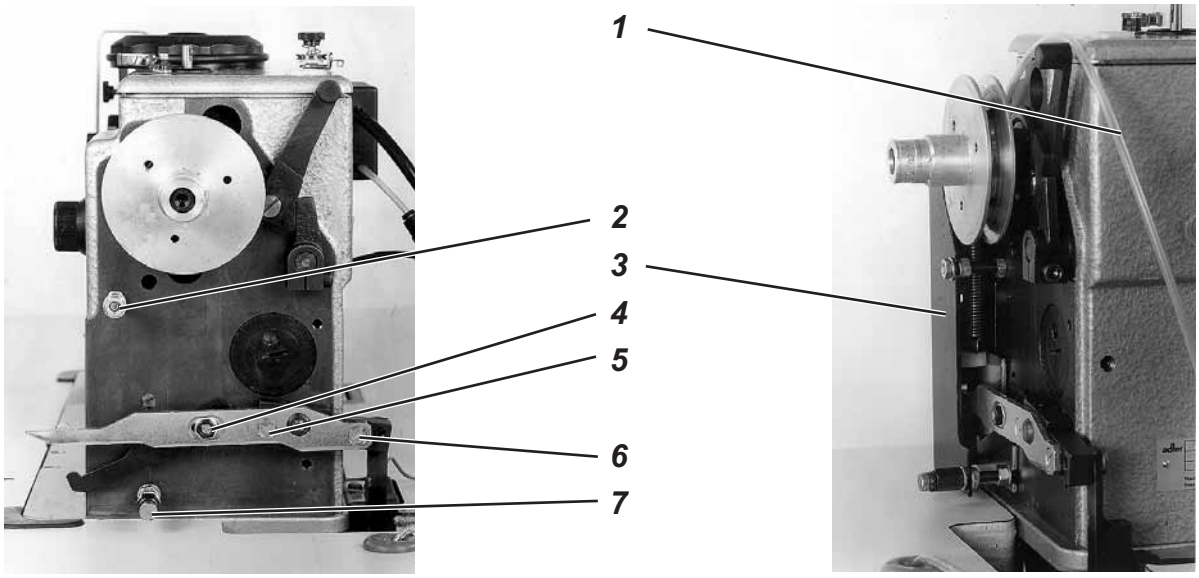
The electrical installation may only be conducted by electricians or apropriately instructed persons !
The mains plug must be pulled !

- Screw the controls 3 onto the base plate of the sewing machine and valve 2 onto the valve strip.
- Connect the hose from the light barrier 1 with the valve 2.
  Pull the hose and connection cable of the light barrier through the slit in the light barrier holder, lay behind the hook drive shaft and there tie together with a hose clamp.
  Fasten the hose and cable to the oil return pipe and onto the knee lever shaft with a hose clamp.
- Check the Interconnection-diagram 9890 767008 B for the electrical connection of the valve 2 and the controls 3

19.10 STLS 13-2 2nd Stitch length

Available as optional equipment for the following subclasses:
767-FA-373-RAP-HP; 767-FA-273 and 767-VF-373

The option for the 2nd stitch length is available as standard for the following subclasses: 767-FAS-373-RAP-HP; 767-FAS-573-RAP-HP and 767-KFA-373-RAP-HP.



Being able to call up the 2nd stitch length makes possible a quick change from the assembly seam to the following run-stitching seam.

The selection of 1st or 2nd stitch length occurs via the switch on the sewing arm. The 2nd stitch length is always shorter than the 1st stitch length.

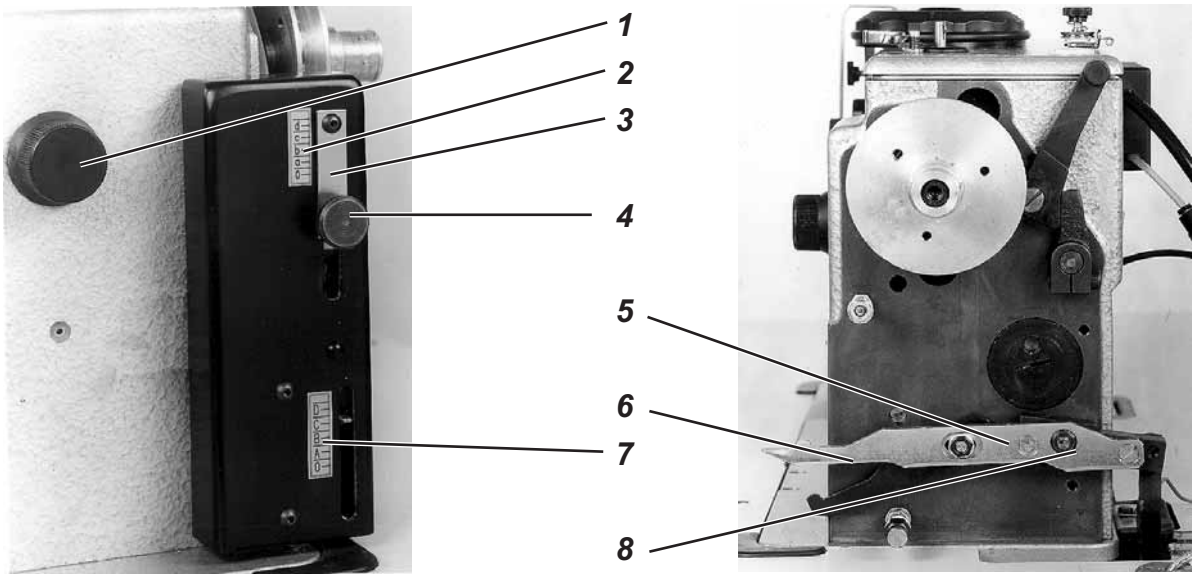
After the sewing machine is turned on the 2nd stitch length is active.

Mounting the 2nd stitch length optional equipment

Caution Risk of Injury !

Turn the main switch off !
The 2nd stitch length optional equipment may only be attached with the sewing machine turned off.

- Remove the belt guard and old stitch length indicator.
- Insert the stud bolts 2 and 7 with Loctite 270.
  Observe the instructions of the adhesive manufacturer !
  The stud bolts project 32 mm. The hexagonal socket of the stud bolts is in the threaded hole.
- Place the new stitch length indicator 6 onto the shaft and screw on.
  The bolt 4 should be in the center of the slot.
  Do not tighten the clamping screw 5.
- Position the switching unit 3 and fasten it on the stud bolts.
- Connect hose 1 to the solenoid valve underneath the table top.



Setting the stitch length indicator

GB

Caution Risk of Injury !

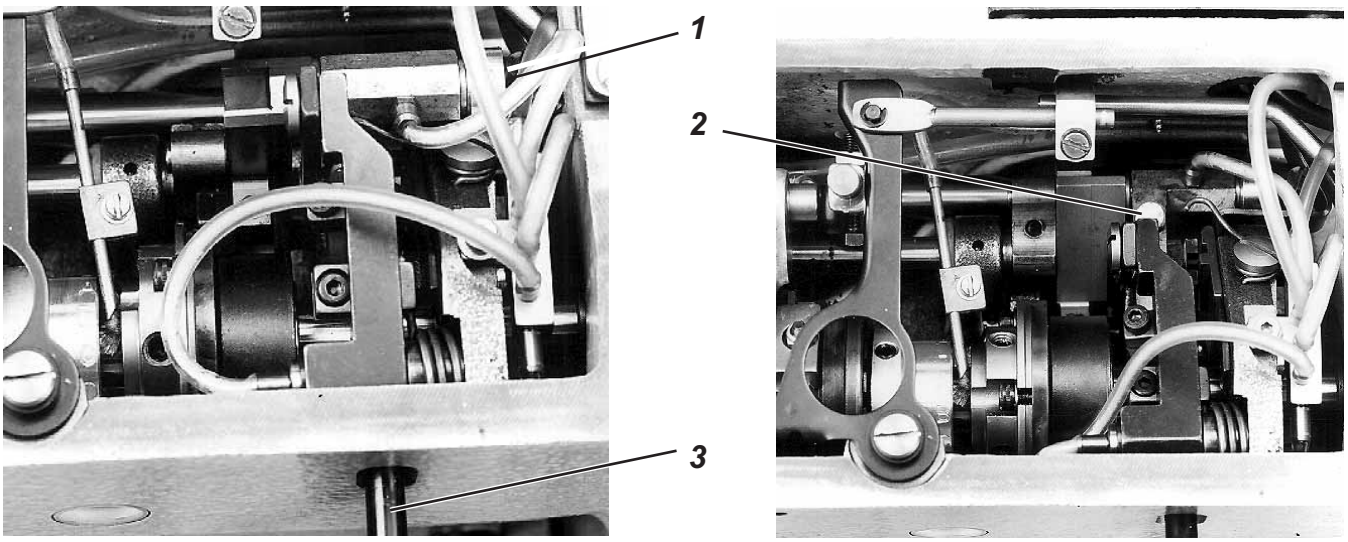
The stitch length indicator is set with the sewing machine turned on. Conduct the setting only with the greatest possible caution.

- Turn knob 1 all the way to the left.
  The 1. stitch length is set to the smallest value.
- Turn the sewing machine on.
  The light in the switch on the sewing arm lights up. The 2nd stitch length is active. The piston rod runs out.
- Loosen the knurled screw 4 and pull the cylinder down as far as possible.
- Tighten clamping screw 8.
- Glue on the lower scale 7.
  The stitch length indicator should show the size “0”.
- Glue on the upper scale 2.
  The upper edge of the metal plate 3 is the indicator.
  The size “0” should be indicated.
- Connect the stitch length indicator 6 with the tie rod of the cylinder.
- Attach the new belt guard.

Adjusting the 2nd stitch length

- Set the position of the bolt 5 in the slot.
  The 2nd stitch length should be the same during reverse sewing as during forward sewing.

19.11 VA Vertical cutter



Sewing machines with this device make possible the cutting of the material during the sewing sequence.

The vertical cutter does not function during each pneumatic lift of the sewing feet. During operation of the knee lever this is only the case after 2/3 lift.

To start the vertical cutter swing the operating lever down.

Caution Risk of Injury !

Turn the main switch off.
Set the vertical cutter only with the sewing machine turned off.

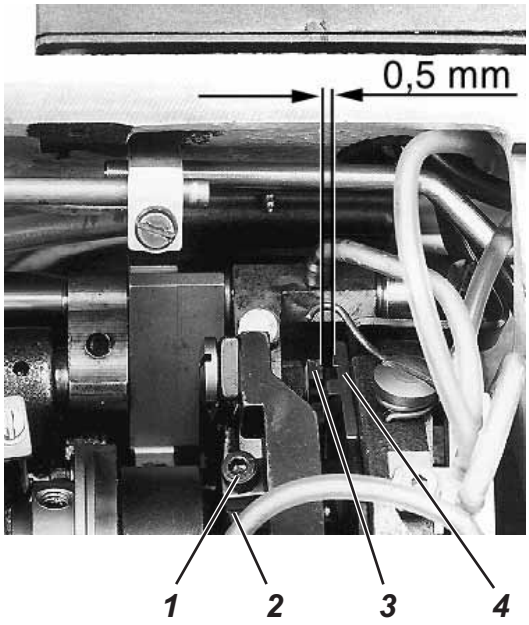
Idle of the knife when the vertical cutter is turned off

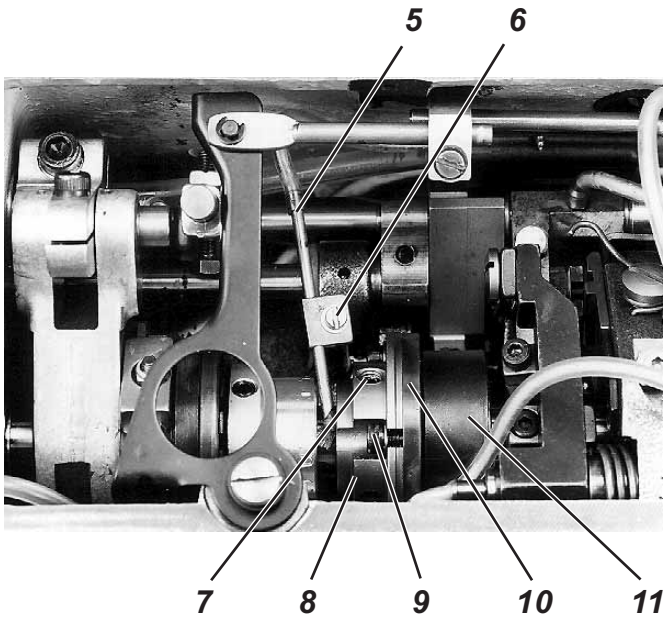
– Press the operating lever 3 to the right.
  The vertical cutter does not function.
– Turn the handwheel.
  When the vertical cutter is turned off the knife should not move during the sewing machine operation.
  If it does, then the stop screw 2 is to be set accordingly.

Timing of the deactivation of the knife during lifting of the sewing feet with the knee lever

Through this setting a lifting of the sewing feet up to a certain position should be made possible (e.g. to turn the material), without the knife being put out of operation.

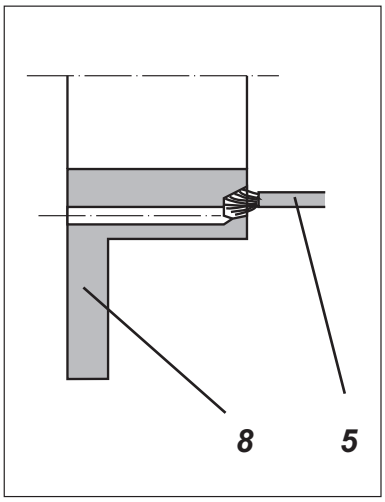
– Loosen gudgeon 1 and set its position.
  By sewing foot lift with the knee lever, the vertical cutter should be put out of operation when the feet are 2/3 lifted.
– Tighten gudgeon 1 again.





Position of the release block

- Loosen screw 1.
- Turn block 2.
  With the vertical cutter turned on, the clearance between the release block 3 and the latch 4 should be 0.5 mm.
  The block 2 should not touch the arm shaft.
- Tighten screw 1 again.



Lubrication of the eccentric

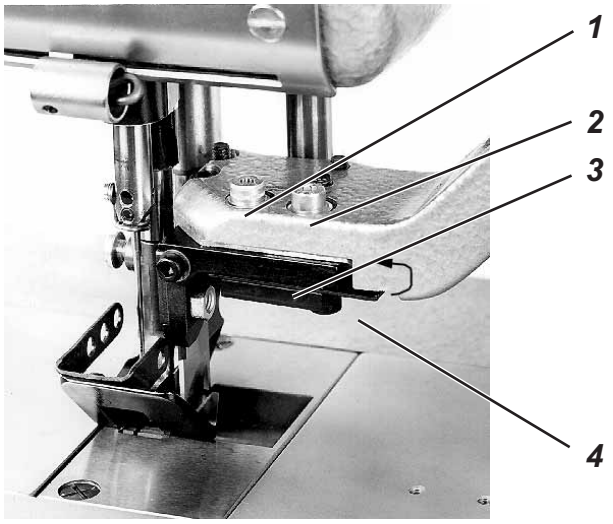
- Loosen screw 6.
- Set the position of the oil tube 5.
  The wick must touch the groove in the eccentric with its knots.
- Tighten screw 6 again.

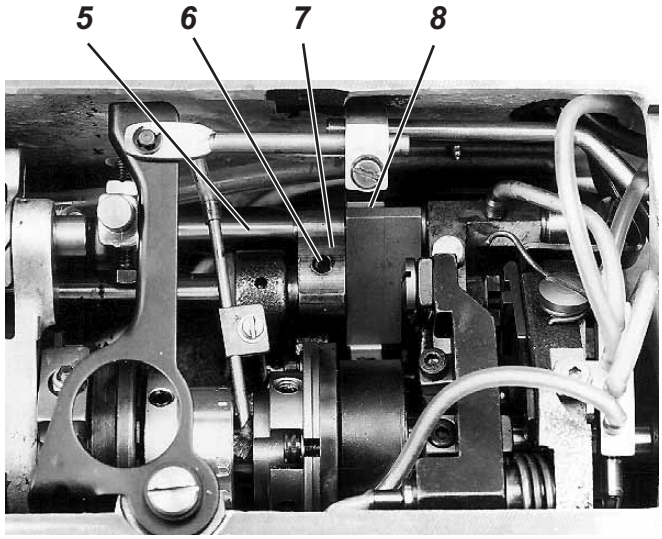
Stroke of the knife

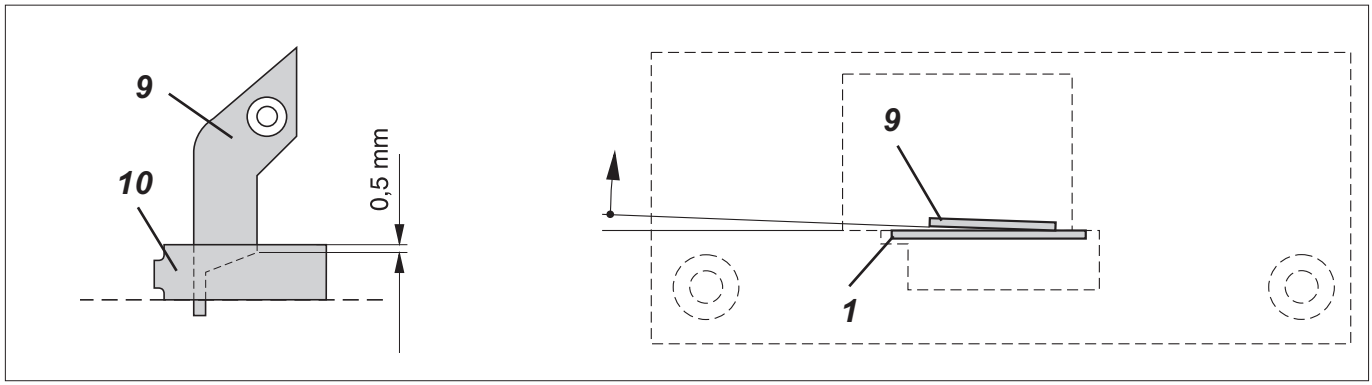
- Loosen screws 9 (3 x).
- Set the position of the eccentric sleeve 10 in the radial direction.
  The stroke (8 to 12 mm) should be appropriate to the material thickness.
  A stroke of 8 mm is set at the factory.
- Tighten screws 9 (3 x) again.
- Correct the knife overlap.
  (see further down in this Chapter)

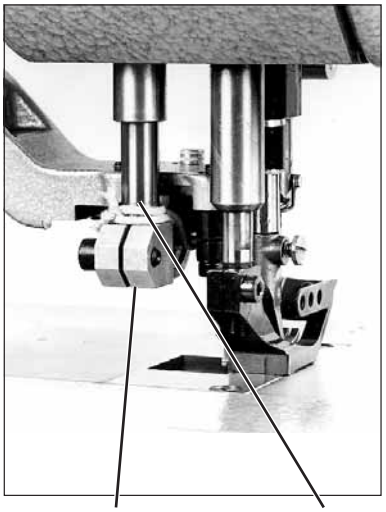
Timing of the knife movement

- Loosen screws 7 (2 x).
- Turn eccentric 8 on the shaft.
  The knife and the presser foot should reach their upper dead centers at the same time.
- Tighten screws 7 (2 x) again.
  The tie rod 11 must sit centered on the running face of the eccentric without touching the shoulder of the eccentric.
  The wick must touch the groove in the eccentric with its knots.









Knife overlap

Prerequisite is that the block 11 is seated flush on the rod 12.
This results in an optimum clamping effect.

- Loosen screw 6.
  (Insert the wrench through the hole in the housing wall)
- Turn shaft 5.
  When the knife 9 is at the lower dead center the overlap should be 0.5 mm.
- Tighten screw 6 again.
  The block 7 should not touch the link 8.

Note

When the knife has been reground often it may no longer be possible to set the overlap of 0.5 mm. In this case the spacer plate 4 can be moved from below the knife carrier 3 to above the knife carrier.

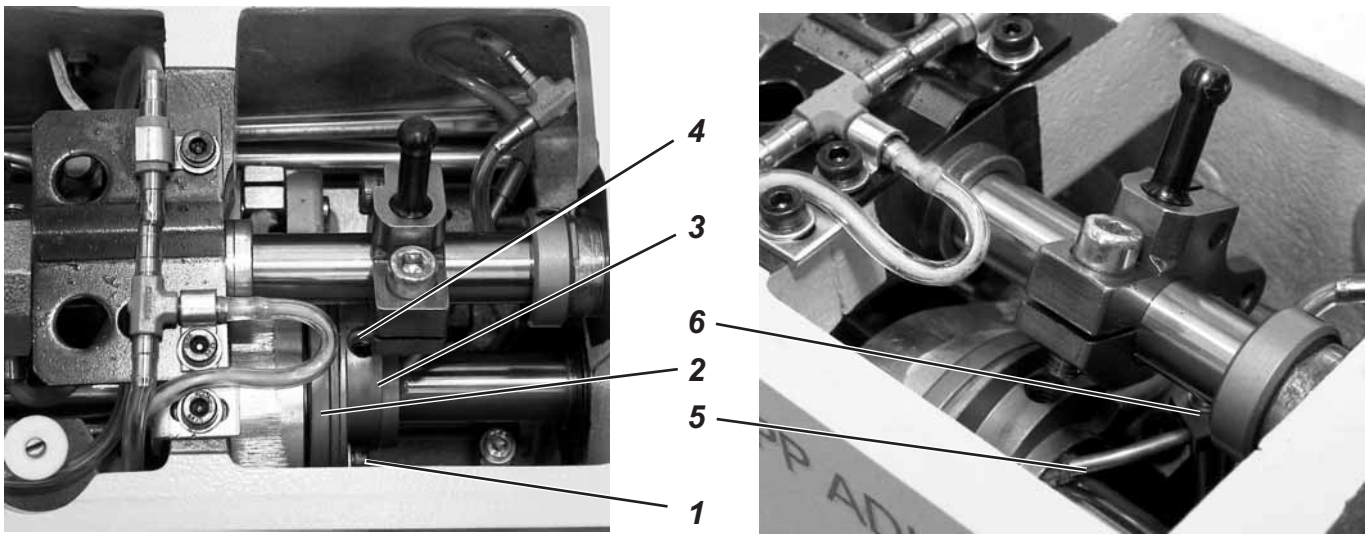
Setting and pressure of the knife blades

- Loosen screws 1 and 2.
- Set the position of the knife.
  The knife 9 should lie a little inclined to the counter knife 10.
  The knife should cut securely with the least possible pressure.
- Tighten screws 1 and 2 again.

Note

The higher the knife pressure, the higher the knife wear !

19.12 AE Edge cutter and binder



Sewing machines with this device make possible that the edge of the material is cut and bound at the same time.

The knife of the edge cutter runs continuously. With the hand lever, the edge cutter can be moved approx. 6 mm to the right at the seam beginning and seam end.

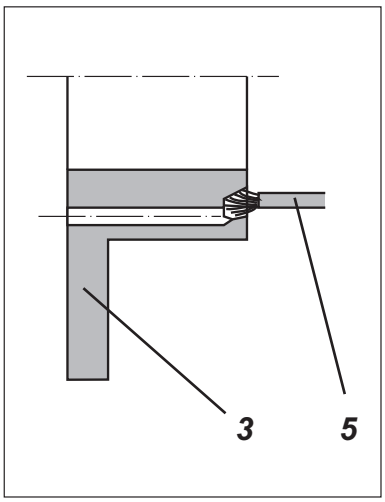
GB

Caution Risk of Injury !

Turn the main switch off.
Set the edge cutter and binder only with the sewing machine turned off.

Stroke of the knife

- Loosen screws 1 (3 x).
- Set the position of the eccentric sleeve 2 in the radial direction. The stroke (8 to 12 mm) should be appropriate to the material thickness.
  A stroke of 8 mm is set at the factory.
- Tighten screws 1 (3 x) again.
- Correct the knife overlap.
  (see further down in this Chapter)

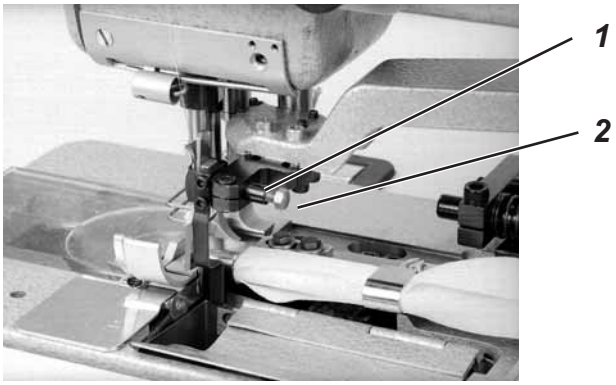


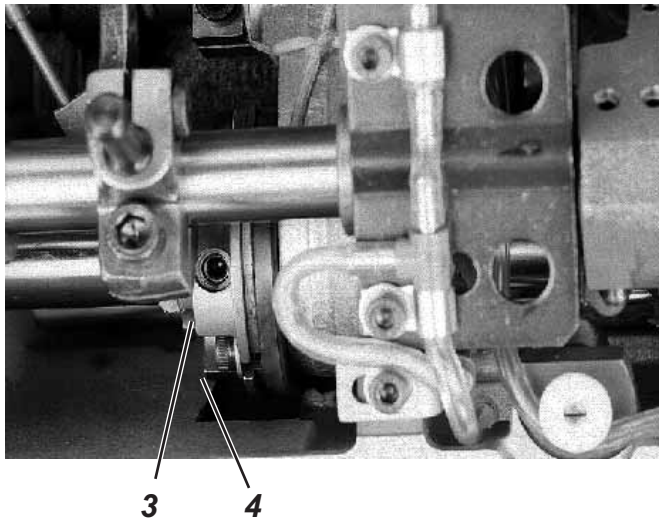
Timing of the knife movement

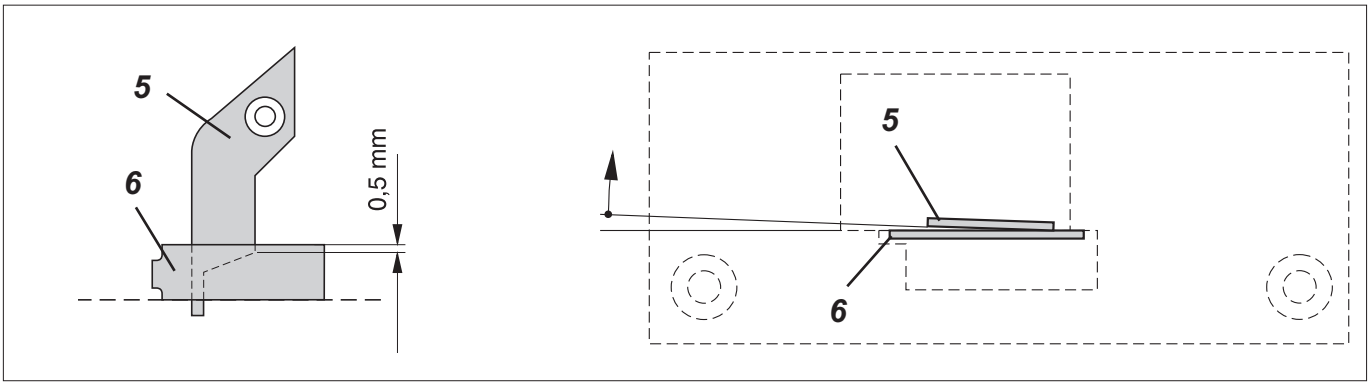
- Loosen screws 4 (2 x).
- Turn eccentric 3 on the shaft.
  At the end of the feeding motion, when the feeding foot begins to lift, the upper knife reached the bottom dead center at the same time.
- Tighten screws 4 (2 x) again.

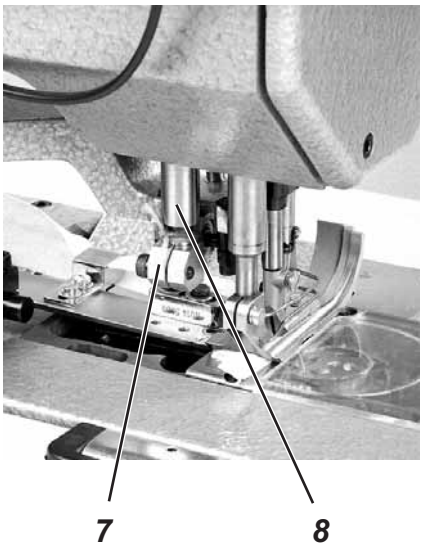
Lubrication of the eccentric

- Loosen screw 6.
- Set the position of the oil tube 5.
  The wick must touch the groove in the eccentric with its knots.
- Tighten screw 6 again.









Knife overlap

Prerequisite is that the block 7 is seated flush on the rod 8.
This results in an optimum clamping effect.

Important:

Just at the moment, when the cutting edge of the upper knife is touching the cutting edge of the lower knife, the knife arm should be horizontal. Otherwise the knife wear is increased!

– Loosen screw 3 on the eccentric 4.
– Turn the shaft.
  When the knife 5 is at the lower dead center, the overlap should be 0.5 mm.
– Tighten screw 3 again.

Setting and pressure of the knife blades

– Loosen screws 1 and 2.
– Set the position of the knife.
  The knife 5 should lie a little inclined to the counter knife 6.
  The knife should cut securely with the least possible pressure.
– Tighten screws 1 and 2 again.

Note

The higher the knife pressure, the higher the knife wear !

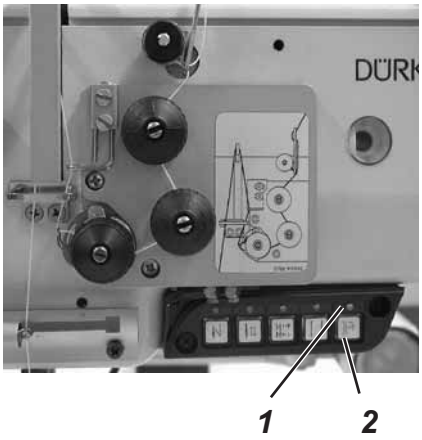
19.13 Seam center guide

In order to be able to operate the seam center guide the sewing drive DC1600/DA82GA is required.

The kit for the seam center guide can be mounted on the special sewing machine 767-FA-273 euipped with the sewing equipment E74.

The seam center guide serves as a guiding help for topstitching operation. It guides the center of two parallel seams to ensure an equal distance to the left and the right needle.

19.14 FS-13-1 Additional tension



The classes 767-FAS-373-RAP-HP; 767-FAS-573-RAP-HP; 767-KFA-373-RAP-HP equipped with the sewing drive DC1600/DA82GA can be retrofitted with the FS 13-1 Additional Tension (Part-No. 0767 590204).

The pneumatic additional tension can be activated or deactived at any time.

The additional tension is activated through the key 2.
When the LED 1 is on, the additional tension is active.

(See Fitting Instructions 0791 767772).

GB

19.15 NK 13-1 Needle cooling

Pneumatic needle cooling for one needle sewing machine.

19.16 LR 13-4 Light barrier

Reflecting Infrared Light Barrier for the automatic sewing stop at the end of the material with the follwoing functions:
seam end tacking, thread trimming, sewing foot lifting.

19.17 SP 470 Roller feed device

The removal of the material by the upper and lower conveyor rollers after sewing ensures a smooth and uniform product.

(See Additional Instructions 0791 767681).

19.18 WTA 13-2 Automatic lowering

This is an optional item to go with the upper and lower conveyor rollers. It enables the stitches to be adjusted from the beginning of the seam to the automatic lowering of the upper roller. This ensures that the roller is not lowered until the material is beneath it.

(See Additional Instructions 0791 767681).

19.19 FSE 13-1/2 Skip Stitch Detection

The classes 767-FAS-373-RAP-HP; 767-FAS-573-RAP-HP; 767-KFA-373-RAP-HP equipped with the sewing drive DC1600/DA82GA (since 01/01/1999) can be retrofitted with the Skip Stitch Detection FSE 13-1 (Part-No. 0767 590264) or the FSE 13-2 (Part-No. 0767 590274).

(See Fitting Instructions 0791 767707).

20. Maintenance

Caution Risk of Injury !

Turn the main switch off.
The maintenance of the special sewing machine may only be conducted with the machine turned off.

The maintenance tasks to be conducted daily and weekly by the operating personnel of the special sewing machine (cleaning and oiling) are described in Part 1: Operating Instructions. They are included in the following table only for the sake of completeness.

Work to be done	Operating hours			
	8	40	160	500
Machine head				
Remove lint accumulations, sewing dust, thread rests and cutting residue from the area of the hook, thread trimmer, needle plate, feed dog and sewing head	X			
Check the oil level in the oilpan	X			
Check the oil feed at the viewing glass		X		
Check hook lubrication			X	
Check the function of the safety clutch				X
Check the timing belts				X
Drive unit				
Check the condition and tension of the V-belt		X		
Pneumatic system				
Check the water level in the pressure regulator	X			
Clean the filter insert in the maintenance unit				X
Check the system for leaks				X

ATTENTION !

The oil should be changed after the first 500 hours of operation.
The oil is to be changed every 2 years, independent of the number of hours of operation.

GB

Note: