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1. General

The present Service Manual describes the sequence to be respected when adjusting the sewing unit.

ATTENTION !

The different adjustment positions are interdependent.
Therefore, all adjustments must be made in the described sequence.

ATTENTION !

The actions described in the present Manual must be carried out exclusively by specialists or by the properly qualified persons!

Danger of breakage !

Before restarting the machine that has been dismounted, first carry out all the necessary adjustments.

Caution: Danger of bodily injuries !

Before proceeding to repairs, transformations and maintenance:

– Press the key "**O**", so that the machine stops in the position "Safe motor stop ".

Adjustments and functions tests during the operation of the sewing unit

– When carrying out the adjustments and testing the functions during the operation of the machine, note all safety measures and proceed with the utmost care.

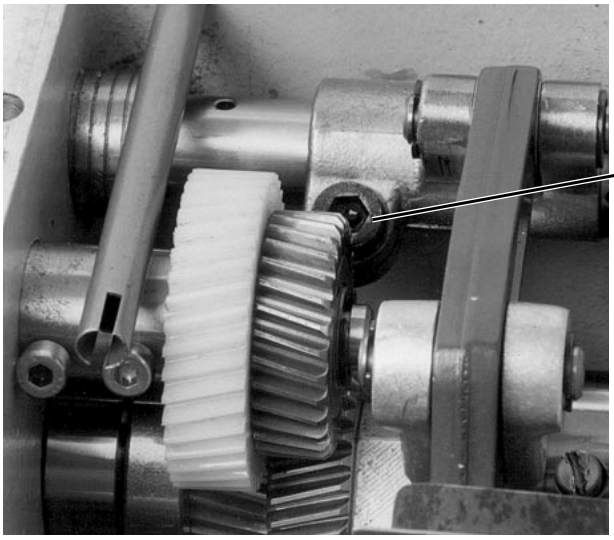
Adjustments in the needle area

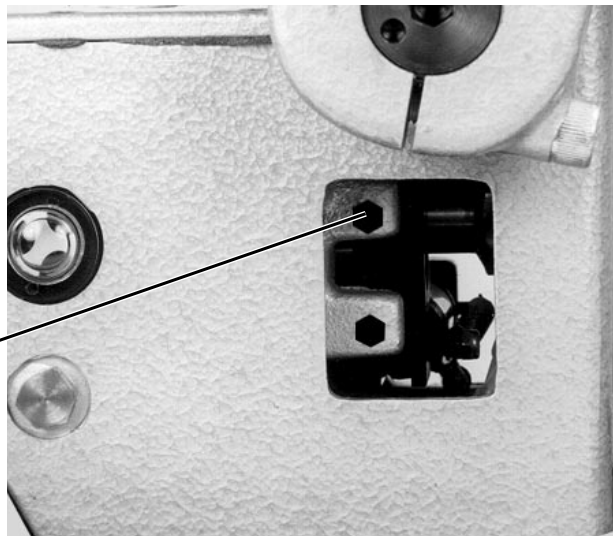
– For avoiding injuries, remove the respective parts before proceeding to the adjustments.
With the exception:
of the parts that are required for the adjustment.

2. Machine head (Class 806-111)

2.1 Stitch regulator and transmission lever

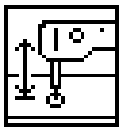
2.1.1 0-position of the stitch regulator

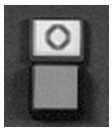




Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop " .

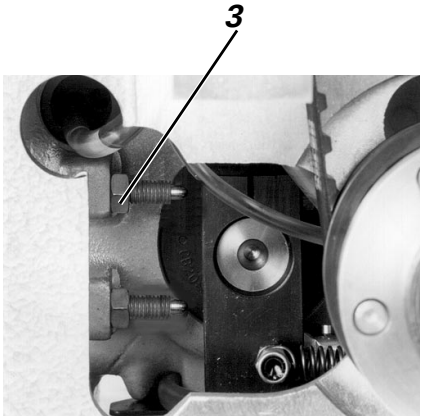




Rule and control

The needle bar should not ”oscillate” when sewing without zigzag function.

- Lower the sewing head by the function "**Lifting/lowering the sewing head ".**
- Press the key "**O**".
  "Safe motor stop” will be switched on.
- Unscrew oil pan cover.
- Introduce hexagon screw screwdriver into the screw 1.
- Turn the setting wheel of the stitch regulator until the spanner moves as little as possible..



Correction

- Loosen counter nut 3.
- Turn screw 2 accordingly.
- Tighten counter-nut 3.

2.1.2 Position of the transmission lever

The lever 2 transmits the motion of the feed shaft 3 to the rocker 1.

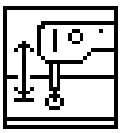
Caution: Danger of bodily injuries !

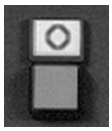
The machine must be in the position "Safe motor stop".

Rule and control

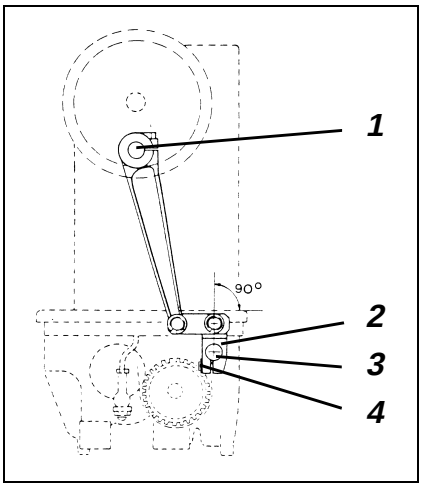
The lever 2 should be in vertical position when the zigzag function is snot activated.

Correction



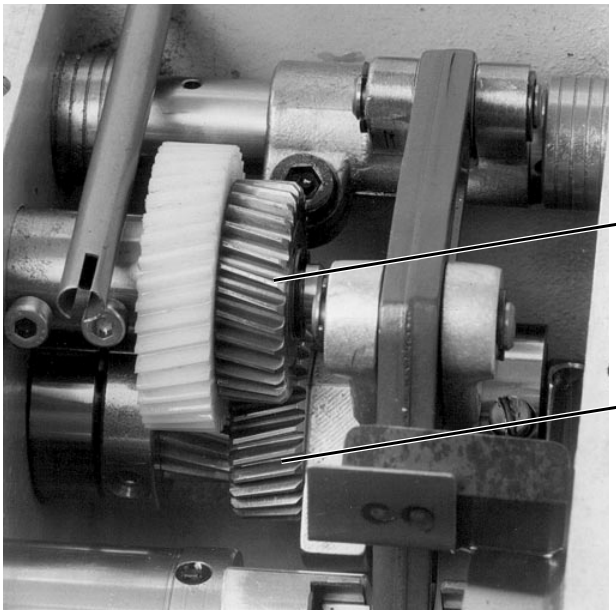


- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen screw 4.
- Turn the lever on the shaft accordingly.
- Tighten screw 4.



Note

In case of a wrong adjustment, the ”oscillations” of the needle bar and of the throat plate will not be synchronous during the zigzag operation.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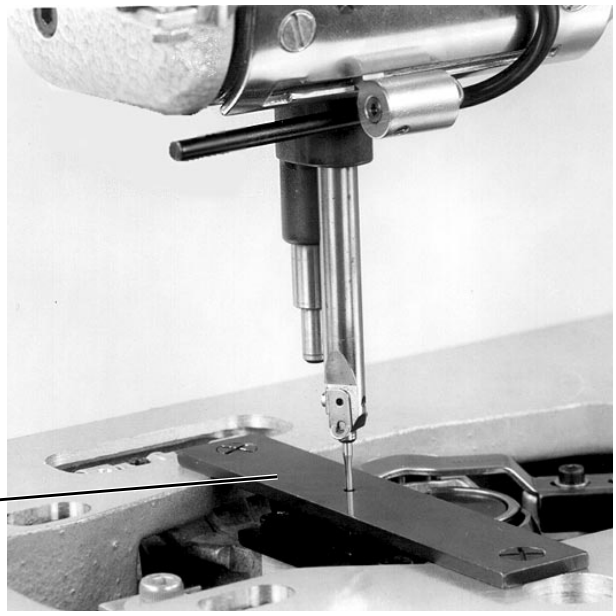

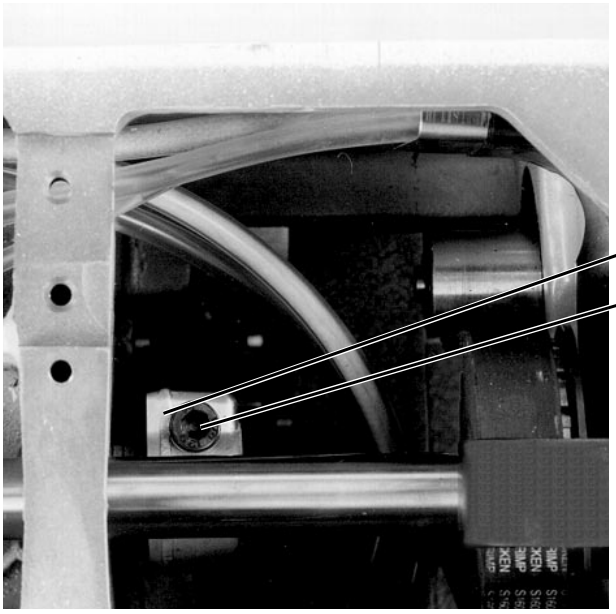
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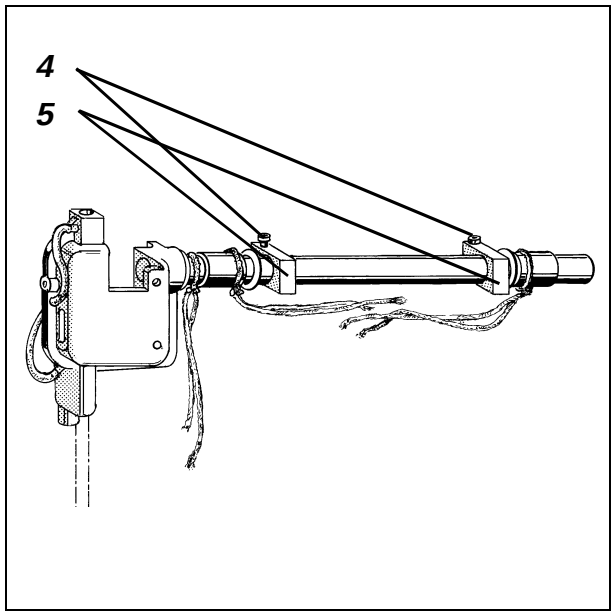
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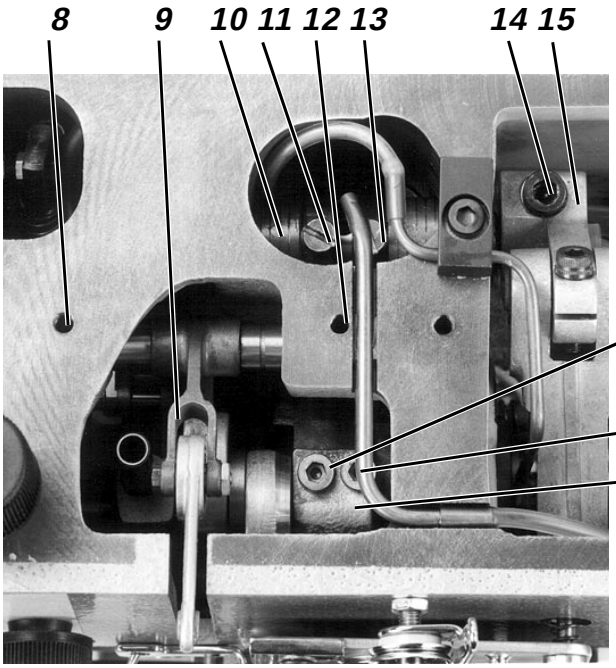
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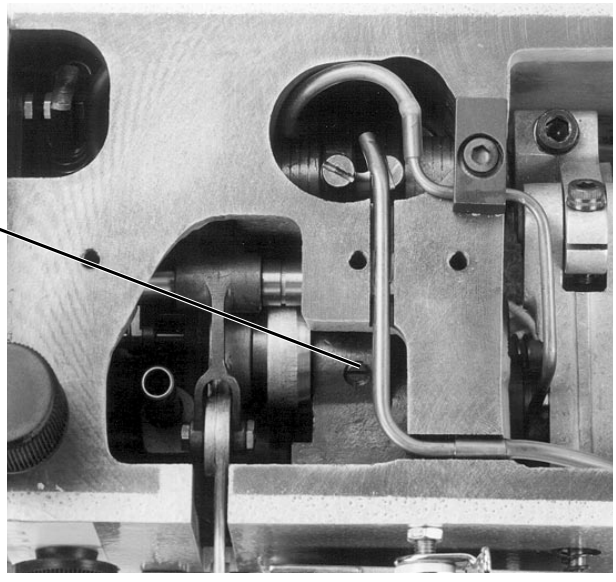


2.2 Rocker and throat plate

2.2.1 General information

While the needle bar and the throat plate are performing a complete oscillation movement during the zigzag function, the needle bar will move 2 times up and down.. This is ensured by the couple of gears 1 and 2, having a transmission ratio of 1 : 2..

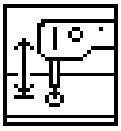
2.2.2 Position of the rocker

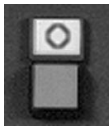
Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

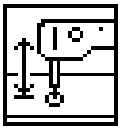
The needle should stitch into the centre of the 2 mm bore-hole of the gauge 3 (part no. 0804 400270) when the machine is out of the zigzag mode.

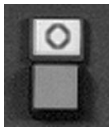




Correction in X direction

- Lower the sewing machine by the function "**Lifting/lowering the sewing machine**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screws 4 on the two setting blocks 5.
- Loosen the clamping screw 7 on the drive level 6.
- Loosen the screws 8 and 12 on the bearing for the thread take-up lever guide 5.
- Loosen the clamping screws 17 and 18 on the arm shaft crank 19.
- Loosen slightly the position screw 16 on the arm shaft crank.
- Proceed to a correction.
  If required, shift the sewing foot stroke shaft 10 in the axial direction after having loosened following screws:
  The screws on the two setting rings 11 and 13, the screw 14 on the block 15.
- Retighten all the previously loosened screw and note the following:
  Axial fixing of the rocker,
  horizontal position of the setting block 5 ,
  correct position of the wicks,
  minimum possible play of the thread take-up lever guide 9.





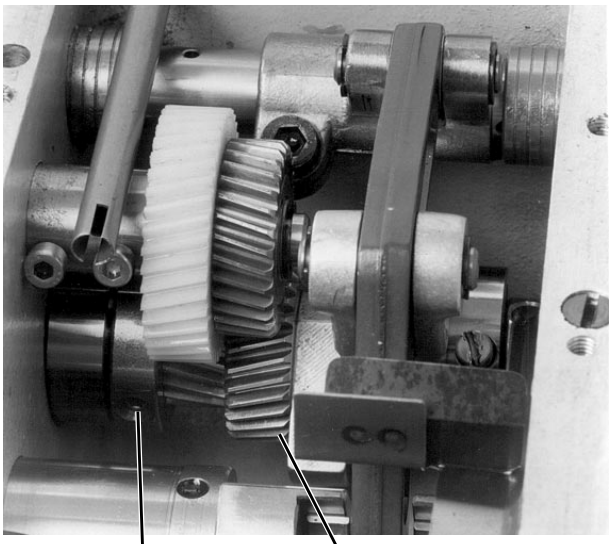
Correction in Y direction

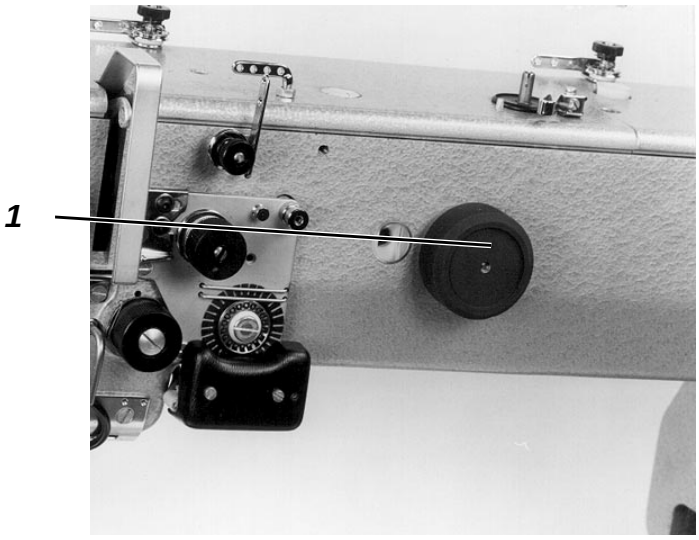
- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the clamping screw 7 on the drive lever 6.
- Change the rocker position accordingly.
- Retighten the clamping screw.

Note

Following a correction in X-direction, check and, if required, correct the distance between the hook and the needle.

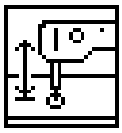
2.2.3 Timing the rocker oscillation

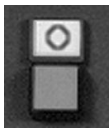


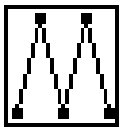


Caution: Danger of bodily injuries !

Do not introduce your hands into the moving machine parts.







Rule and control

- In the zigzag mode, when stitching into the upper bartack point, the needle should be ”driven inwards to the same extent as it is driven when stitching into the lower.
- Both bartacking stitches should be equidistant top the "zero stitch”.
- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor start " will be switched on.
- Place a piece of paper onto the fabric rest and hold it there.
- Turn the setting wheel 1 for determining the position of the "zero stitch".
- Select the "**zigzag**" function.
- Turn the setting wheel 1.

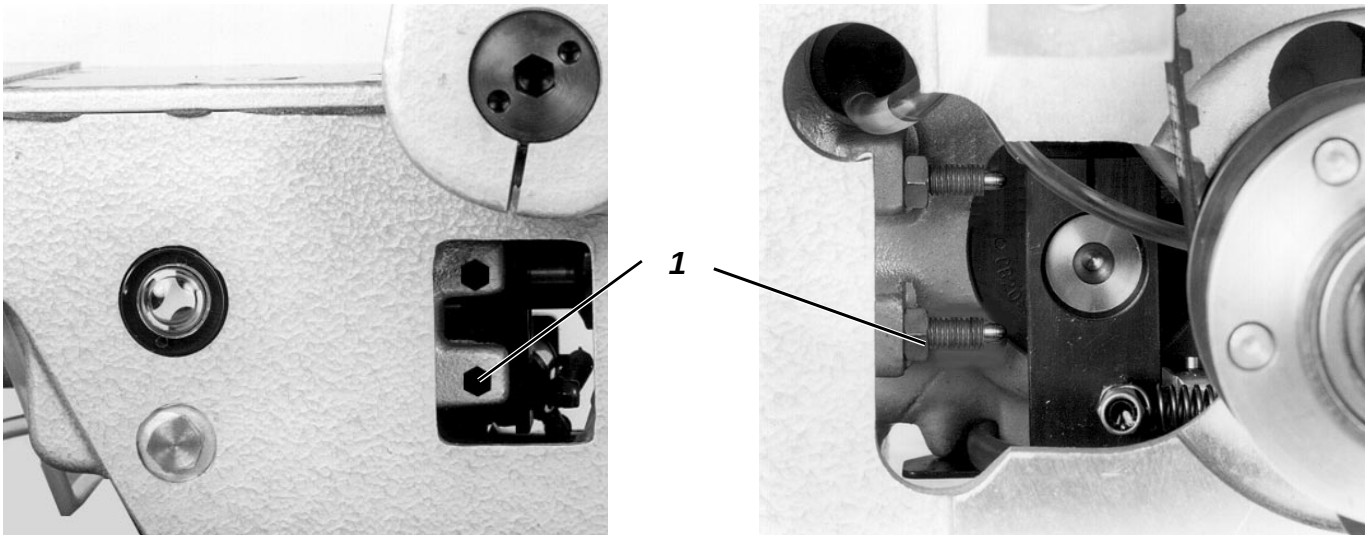
Correction

- Loosen screw 2.
- Turn the gear 3 on the hook driving shaft 3 accordingly.
- Retighten the screws 3.

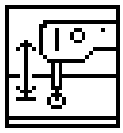
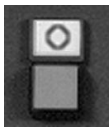
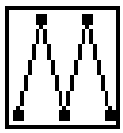
ATTENTION !

A wrong setting can cause needle breakage.

2.2.4 Range of the rocker oscillation (throw width)



Caution: Danger of bodily injuries !
The machine must be in the position "Safe motor stop ".

Rule and control

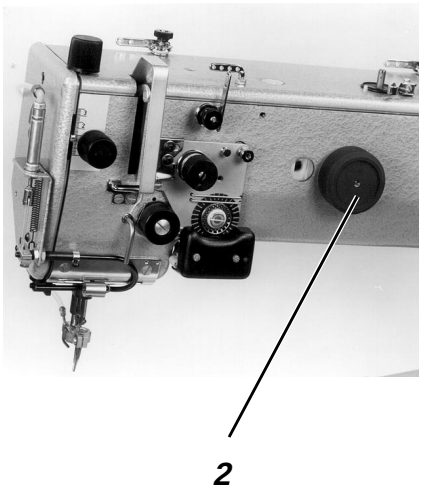
In the zigzag mode of the machine, the "upper" and the "lower" stitches on a piece of paper should have a distance of 5 mm.

In a set pocket, this will result in a throw width of about 3 mm, depending on the type of fabric and thread and on the thread tension.

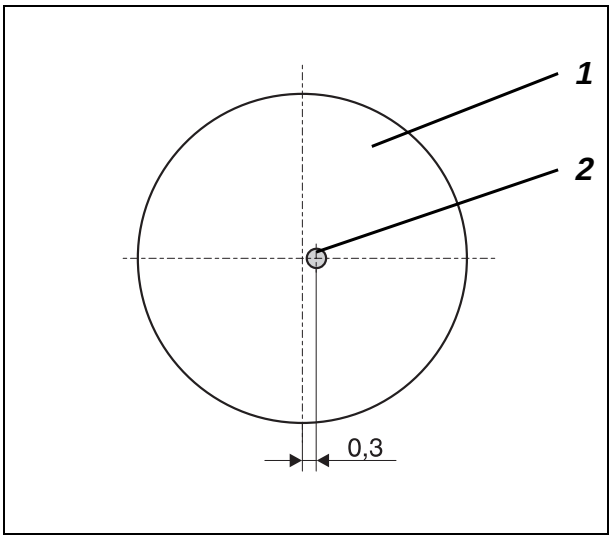
- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Select the "**zigzag** " function.
- Place a piece of fabric onto the fabric rest and hold it there.
- Turn the handwheel.

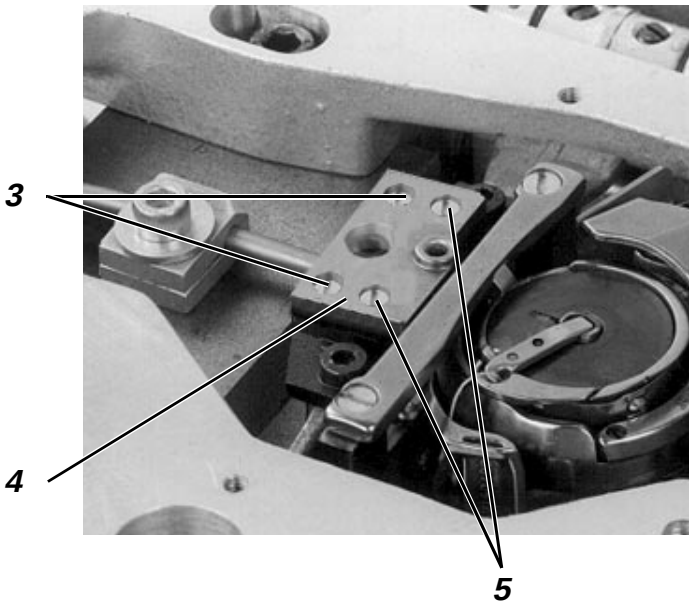
Correction

- Turn the counter-nut 1 and the stop screw 1 accordingly.



2.2.5 Horizontal position of the throat plate



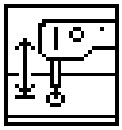


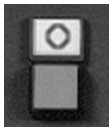
Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

- In X-direction:
  In the loop formation position – or a bit later – the needle shank 2 should be distanced 0.3 mm from the right side of the stitch hole 1.
- In Y-direction:
  In this direction, the needle should stitch in the middle of the stitch hole.

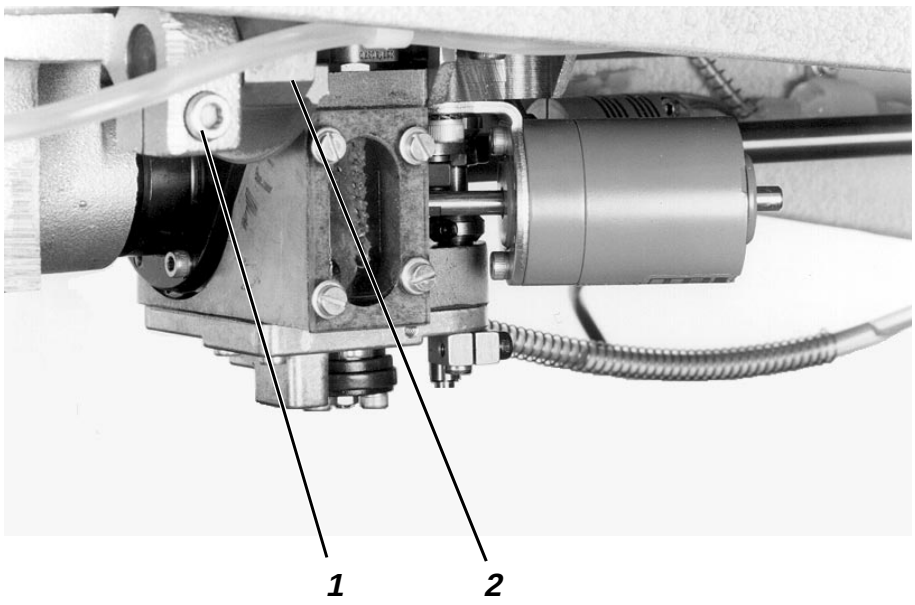




Correction

- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screws in the bore-hole 3 and 5 and change the position of the throat plate 4 accordingly.
- Retighten the screws in the bore-holes 3 and 5.

2.2.6 Height of the throat plate

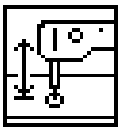
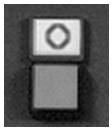


Caution: Danger of bodily injuries !
The machine must be in the position "Safe motor stop ".

Rule and control

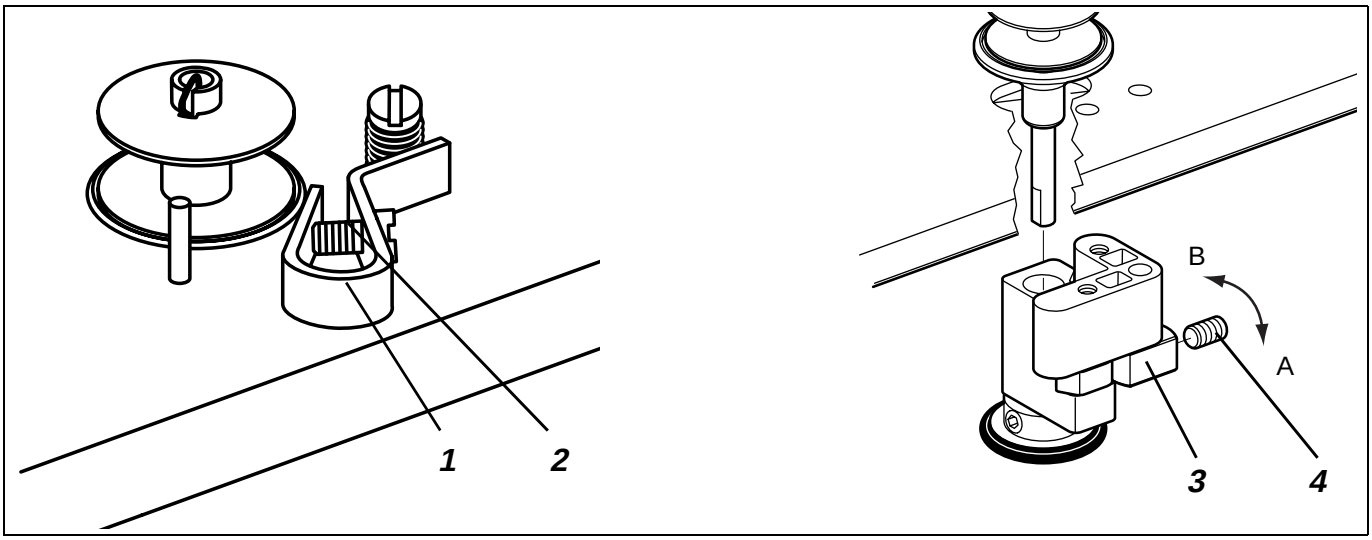
The stitch hole mushroom button must stand 0,5 mm under the top of the fabric rest.

Correction

- Lower the sewing head by the function ”**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen screw 1.
- Turn the block 2 accordingly.
- Retighten the screw 1.

2.3 Adjusting the bobbin winder



Rule and control

The bobbin winder should stop automatically when the bobbin when the thread wound on the bobbin is about 0,5 mm from its rim.

The thread should be wound cylindrically.

Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Correction

1. Small changes in the filling amount

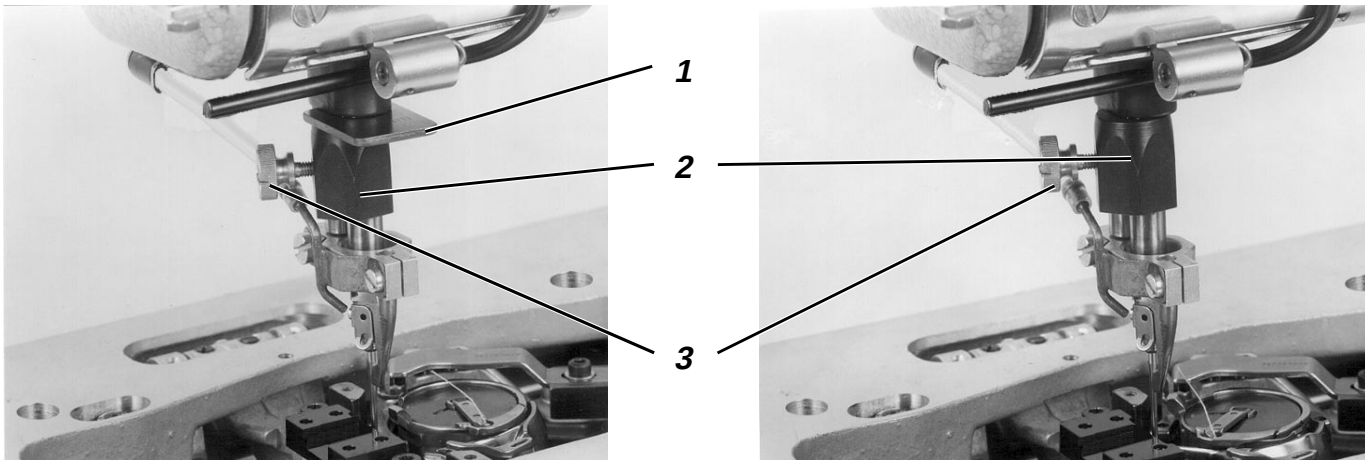
– Regulate the bobbin winder flap 1 by the screw 2.

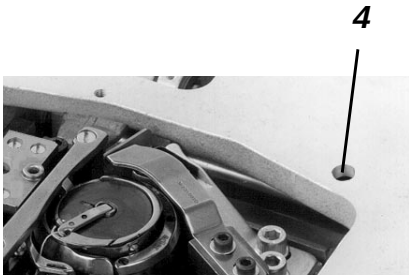
2. Major changes in the filling amount

– Remove arm cover.
– Loosen screw 4.
– Turn tripping cam 3.
  In A arrow direction: for small filling amount
  In B arrow direction for major filling amount
– Retighten screw 4.
– Replace arm cover.

2.4 Hook, needle bar, hook guard and needle guide

2.4.1 Loop stroke





The loop stroke is the distance covered by the needle bar from its lower dead centre up to the point where the point of the hook coincides with the middle of the needle.

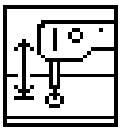
The 1st screw on the hook – seen in the direction of rotation of the hook – is located on the flat side of the hook shaft.
Being fixed, the hook cannot rotate on the shaft during the sewing process. If the hook is jammed, the sliding clutch will react.

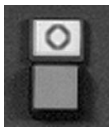
Caution: Danger of bodily injuries !

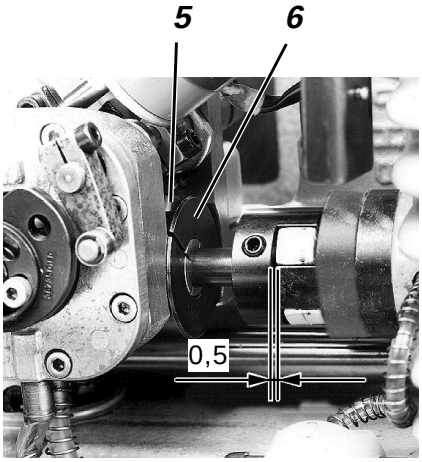
The machine must be in the position "Safe motor stop".

Rule and control

- The adjustment of the rocker position must be correct.
- The loop stroke should amount to 2 mm when the machine in not in the zigzag mode.
- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- By means of the block 2 (part no.. 0981 150002) press the gauge 1 (Part no. 0981 150003) against the rocker.
- Retighten the screw 3 on the block 2.
- Remove the gauge 1.
- Turn the setting wheel in the arrow direction until the block 2 is in contact with the rocker.
  In this position, the hook point should coincide with the middle of the needle.



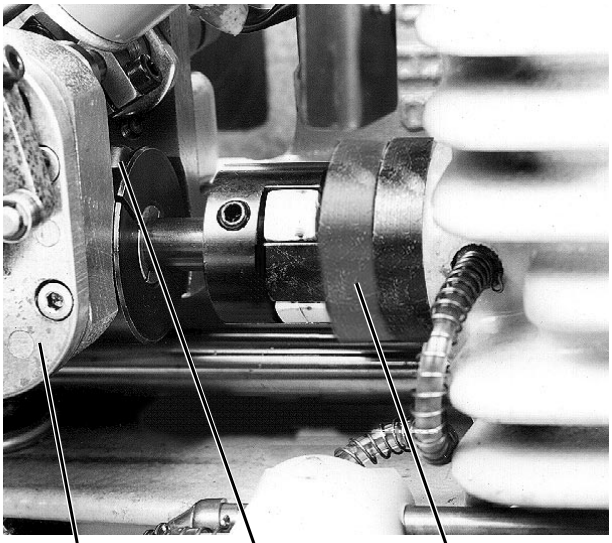


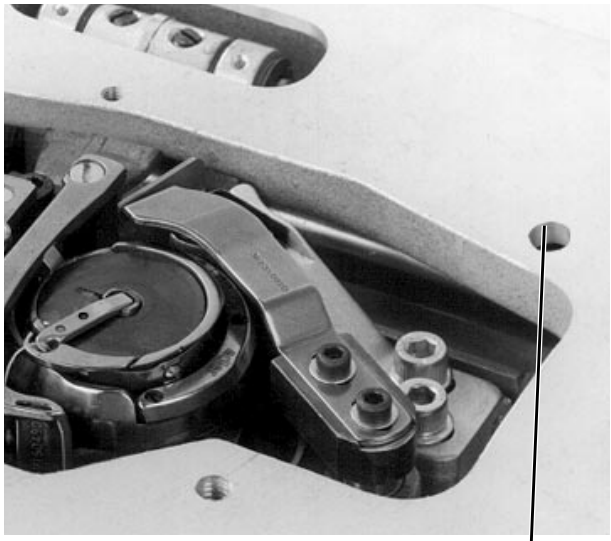


Correction

- Loosen the clamping screw in the bore-hole 4 by a hexagon screw screwdriver (spanner opening 5 mm).
  The screw 5 is located on the setting ring 6.
- Turn the hook on the driving shaft until the tip of the hook stands against the middle of the needle.
  Ensure that the air gap in the jaw clutch amounts to 0.5 mm.
- Retighten the clamping screw 5 in the bore-hole 4.

2.4.2 Sliding clutch





Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

The sliding clutch should react when the hook is jammed.

Adjust the sliding clutch 3 so that it reacts at a torque of 4 Nm.

Correction

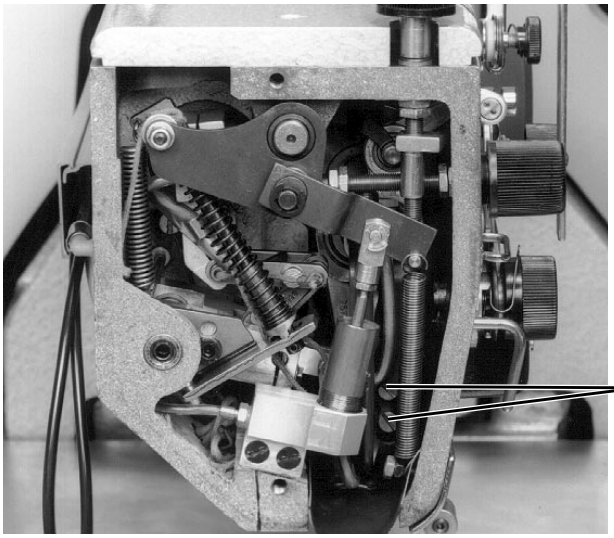
– If the clutch reacts too often, turn-in the two screws (spanner opening 3 mm) at the on the face of the sliding clutch 3.
If the **two** screws are turned a quarter (1/4) of a revolution, the torque will e increased by about 10 %.

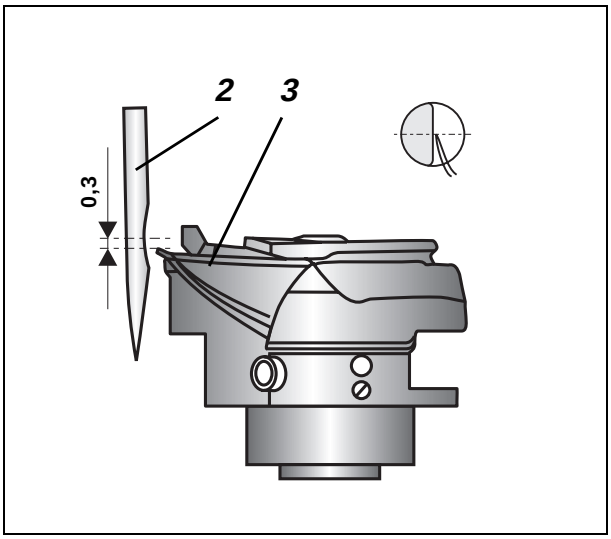
Re-engage the sliding clutch

Following a reaction of the sliding clutch, the latter must be re-engaged in the following manner::

– Introduce the hexagon screw driver into the screw of the bore-hole 4 and into the clamping screw 2.
– Turn the handwheel 6 until the clutch is re-engaged.

2.4.3 Needle bar height



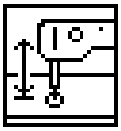


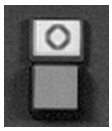
Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

In the loop formation position, the hook tip 3 should stand more or less under the middle of the furrow of the needle 2. When the machine is out of the zigzag mode.





- Lower the machine head by the function "**Lifting/lowering the machine head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

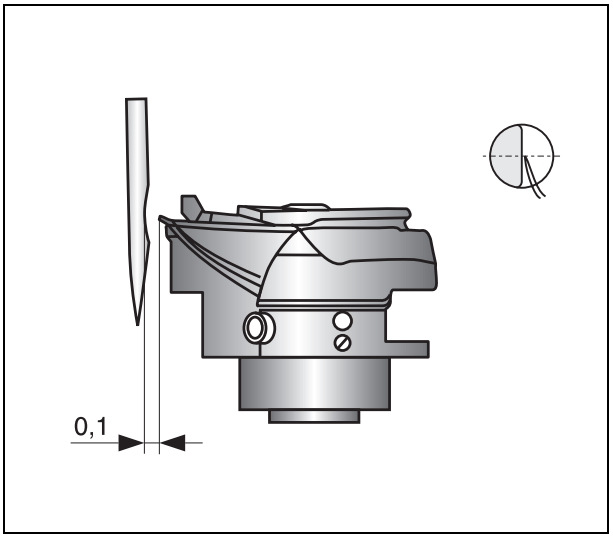
Correction

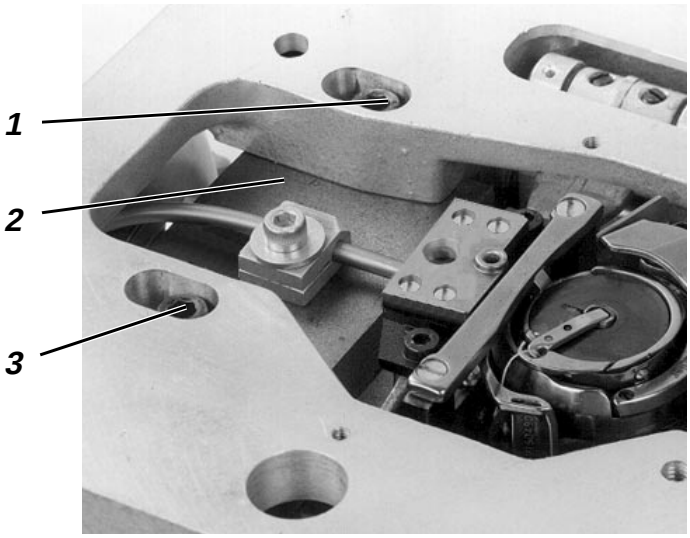
- Loosen the two screws 1.
- Change the height of the needle in the way that the tip of the hook stands a bit (about 0,3 mm) under the middle of the furrow of the needle.
  Do not turn the needle.
- Retighten the screws 1.

Note

Following a correction, check the position of the needle guide and of the hook guard.

2.4.4 Distance between the hook and the needle





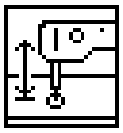
Caution: Danger of bodily injuries !

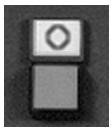
The machine must be in the position "Safe motor stop ".

The distance between the hook and the needle must be checked after inserting a needle that belongs to a different size group (80-110 Nm or 120-140 Nm).

Rule and control

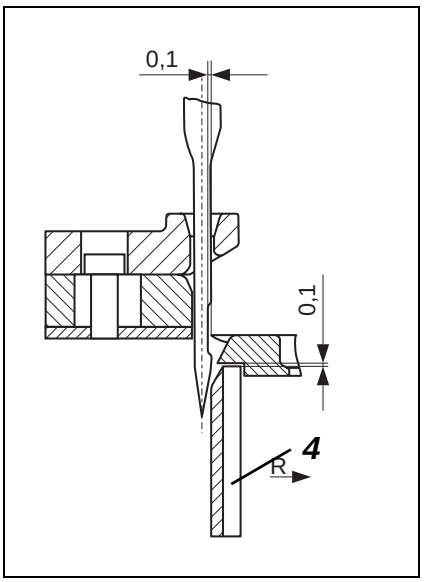
In the loop formation position, the distance between the hook and the furrow of the needle must amount to 0.1 mm when the machine is out of the zigzag mode.





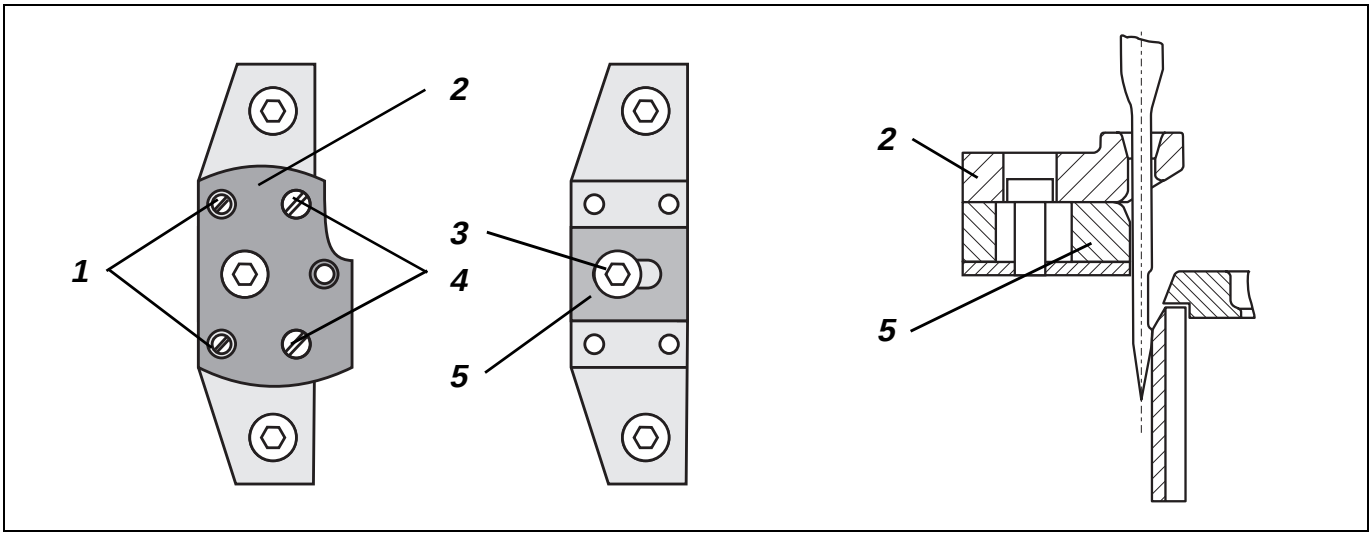
- Lower the machine head by the function "**Lifting/lowering the machine head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Remove the stitch throat.
- Check the distance. The needle must not osculare needle guard 5.

Correction



- Move the machine in the loop formation position by turning the handwheel.
- Loosen the screws 1 and 3.
- Loosen the screws 7
- Remove the stitch throat.
- Loosen screws of bobbin case retainer 6 and take bobbin case retainer.
- Non loosen accessible screws (SW 1,5) of the hook guard 4 to be laterally displaced.
  ATTENTION !
  Do not loosen screws securing the vertical position.
- Displace hook guard 4 in the direction of R.
- Displace the hook case 2 sideways until the distance between the furrow of the needle and the hook tip amounts to 0.1 mm.
- Retighten the screws 1 and 3.
- Displace the hook guard backwardly until the conical tip of the needle contacts the hook guard, without deflecting the needle.
  ATTENTION !
  The hook guard 4 sheet should not touch the hook.
- Tighten scrwes (SW 1,5) of the hook guard.
- Reassemble bobin case retainer and throat plate.

2.4.5 Position of the needle guide



The needle guide 5 should guide the needle during the sewing process in order to avoid its excessive deflection by the fabric. Otherwise, skipped stitches can occur.

The distance between the hook and the needle must be checked after inserting a needle that belongs to a different size group (80-110 Nm or. 120-140 Nm)

Caution: Danger of bodily injuries !

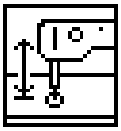
The machine must be in the position "Safe motor stop "

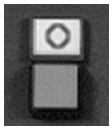
Rule and control

When the needle is in its lowest position, its distance to the needle guide should be as small as possible, but it should not touch the guide.

If the distance is too narrow, the needle may brake in the furrow area..

But if the distance is too wide, skipped stitches can occur, because the needle would be deflected by the fabric excessively.





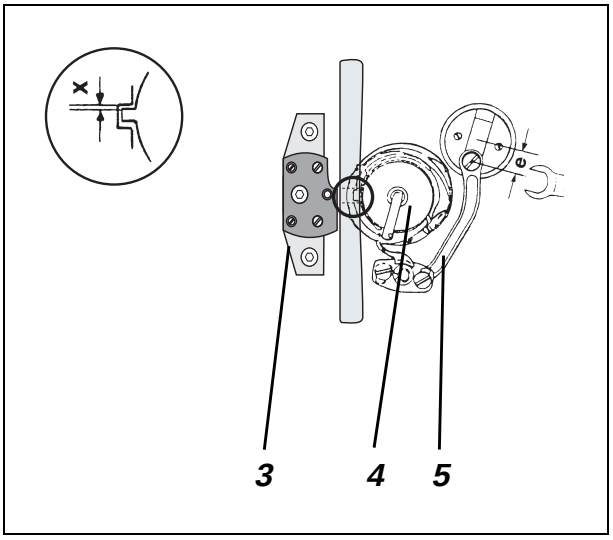
- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

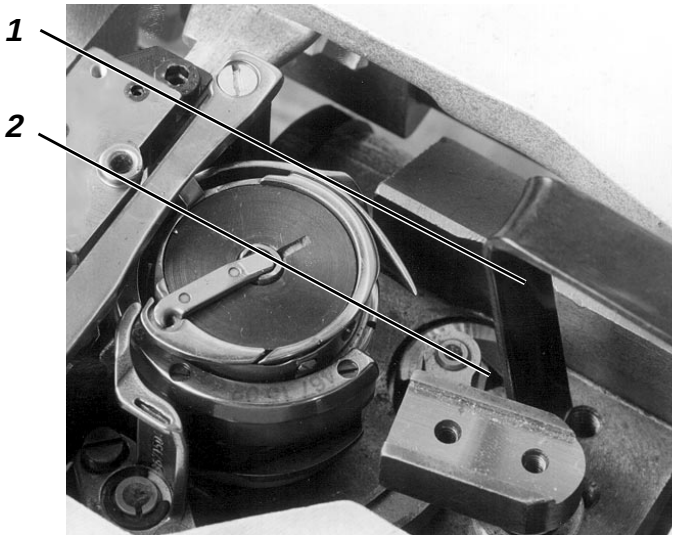
Correction

- Loosen the screws 4.
- Remove the throat plate 2.
  Ensure that the positioning aids 1 are well fastened and cannot be displaced.
- Loosen the clamping screw 3.
- Change the position of the needle guide 5 accordingly.
- Tighten the clamping screw 3.
- Replace the throat plate 2.
  Make sure that the positioning aids 1 are located in the bore-holes of the throat plate.
- Tighten the screws 4.

2.5 Bobbin case lifter

2.5.1 General information





The thread take-up lever should pass the thread between the bobbin case 4 and its support 3. For ensuring a free thread passage, the bobbin case must be lifted in this moment by the bobbin case lifter. This will ensure the desired seam pattern with the lowest possible thread tension.

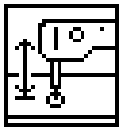
Wrong adjustments may have following effects:

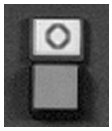
- Thread breakage
- Eyelets on the fabric underside
- High noise level

2.5.2 Amount of the finger travel

Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".





Rule and control

The support of the lever 5 should be eccentric. This will be ensured when the nut 2 is flush with the outer edge of the shaft.

- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

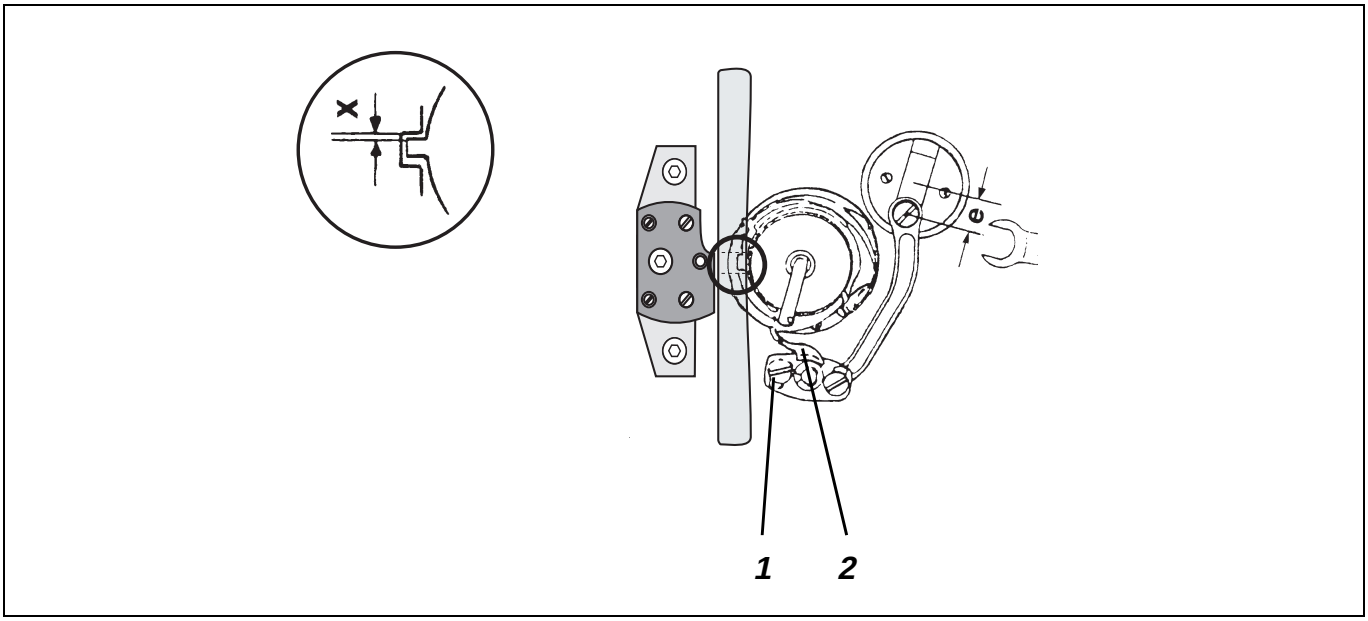
Correction

- Loosen the nut 2 by the special spanner 1and change the eccentricity accordingly.
- Tighten the nut 2.

Note

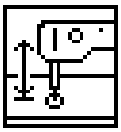
Following a correction, check the travel amount and the travel moment.

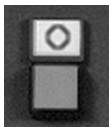
2.5.3 Amount of the lifting gap (position of the finger travel)



Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".





Rule and control

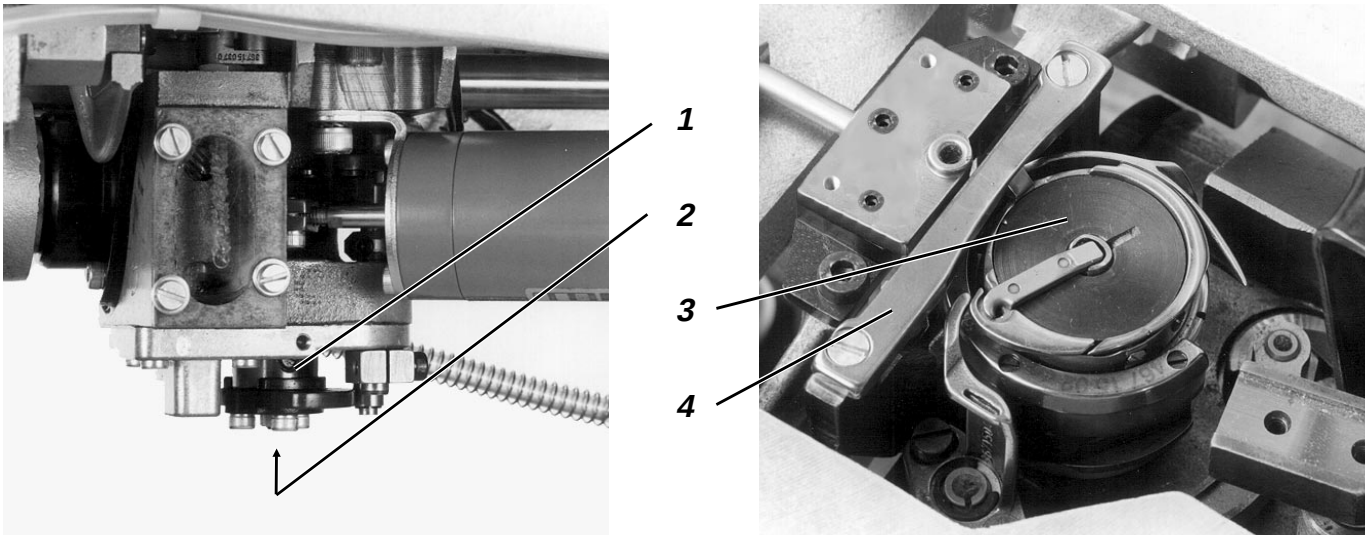
The X distance between the lifted bobbin case and its holder should correspond to the size of the thread used.

- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

Correction

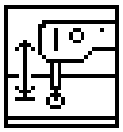
- Loosen screw 1.
- Change the position of the finger 2 accordingly.
- Tighten the screw.

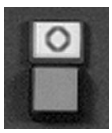
2.5.4 Timing the bobbin case lifting



Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".





Rule and control

The bobbin case must be in its lifted position when the thread passes between the bobbin case 3 and its support 4.

- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Turn the handwheel.
- Watch the thread passage.

Correction

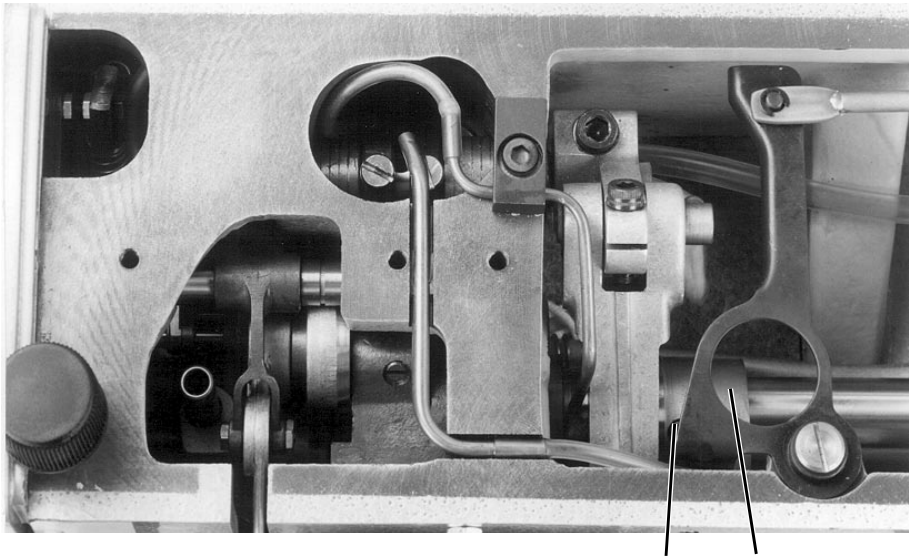
- Loosen the two screws 1.
- Turn the handwheel until the hook tip, after picking up the loop, is in its ”3 o’clock ” position.
- Turn the shaft 2 by a hexagon screw spanner (spanner opening 2,5 mm) until the finger stands at the front inversion point, where the case is completely lifted.
- 2 Tighten the screw 1.

2.6 Sewing foot

2.6.1 General information

The adjustment of the upper and lower sewing foot travel position is described under chapter 6.2.6 of the Operating Instructions.

2.6.2 Timing the sewing foot movement

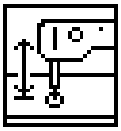


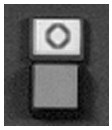
Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

The sewing foot should start moving upwards at the moment of the loop formation.





- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

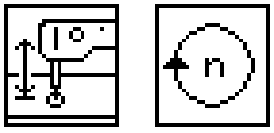
Correction

- Loosen the two screws 1.
- Turn the eccentric 2 on the shaft accordingly.
- Tighten the screws 1.

2.7 Thread take-up spring

Caution: Risk of Injury !

The machine must be in the position "Secured stop of motors".



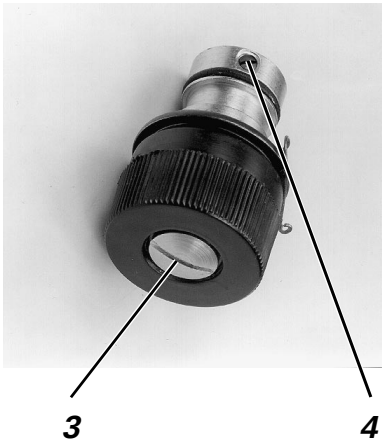
Rule and control

Adjust the travel and the tension of the thread take-up spring in a way that at the moment when the spring reaches its lowest position, the eye of the stitching needle is disappearing in the fabric.

- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Select the "**speed**" function.
- Enter the value 70 by the numerical keys and confirm by the **RETURN** key.
- Press key "**F2**" for starting the sewing process.
- Watch the thread take-up spring.
- Press key "**F3**" for stopping the sewing machine head.

Correcting the travel

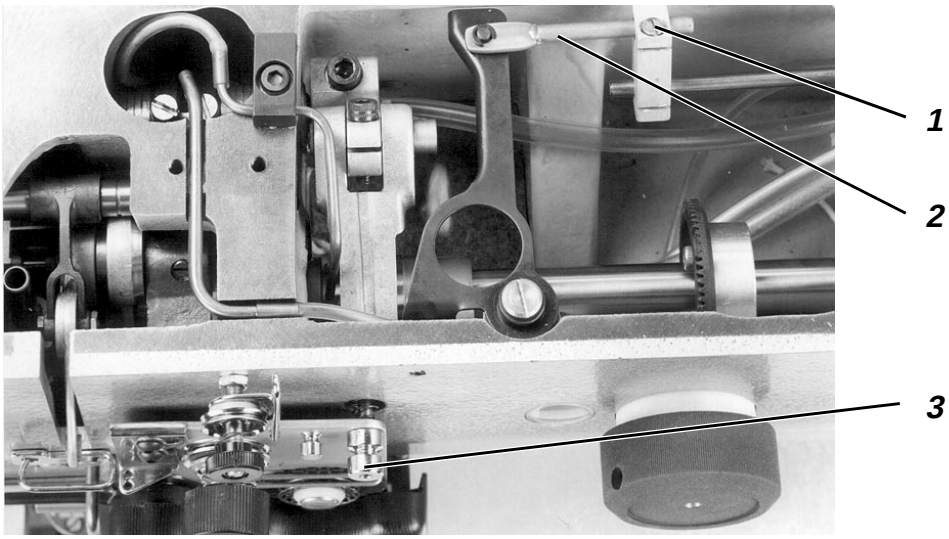
- Loosen slightly the screw 2 on the arm 1 by using a hexagonal screw spanner.
- By means of the bolt 1, turn the entire thread tension unit accordingly.
- Tighten screw 2.



Correcting the tension

- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screw 2 on the arm 1.
- Pull out the thread tension unit.
- Loosen the screw 4.
- Turn the bolt 3 accordingly.
- Tighten the screw 4.
- Replace the thread tension unit.
- Tighten the screw 2.

2.8 Lifting the thread tensioner



The thread tensioner will be lifted during the cutting process or after pressing the button 3 on the supporting plate.

Caution: Danger of bodily injuries !

Turn off the main switch.
Switch off the machine before adjusting the lifting of the thread tensioner.

Rule and control

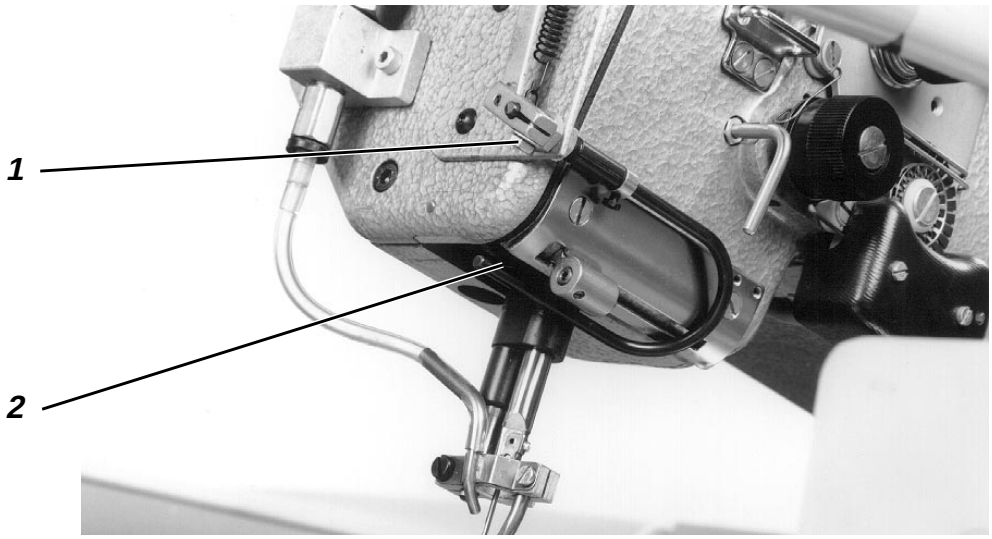
The thread must pass freely through the lifted tensioner during the cutting process..

– By means of the traction rod 1, lift the thread tensioner as far as possible.

Correction

– Loosen the screw 1.
– Change the position of the traction rod 2 accordingly.
– Tighten the screw 1.

2.9 Thread advancing device



During the cutting process, the thread advancing device 2 will be moved forwards after picking up the loop, and it will be returned during the 2nd movement phase of the thread cutting knife

The thread advancing device has been timed by the control unit. No change is possible.

The thread advancing device ensures a defined thread length required for starting the seam and it compensates for any thread elongation.

Caution: Danger of bodily injuries !

Turn off main switch.
Turn off the machine before adjusting the thread advancing device.

Rule and control

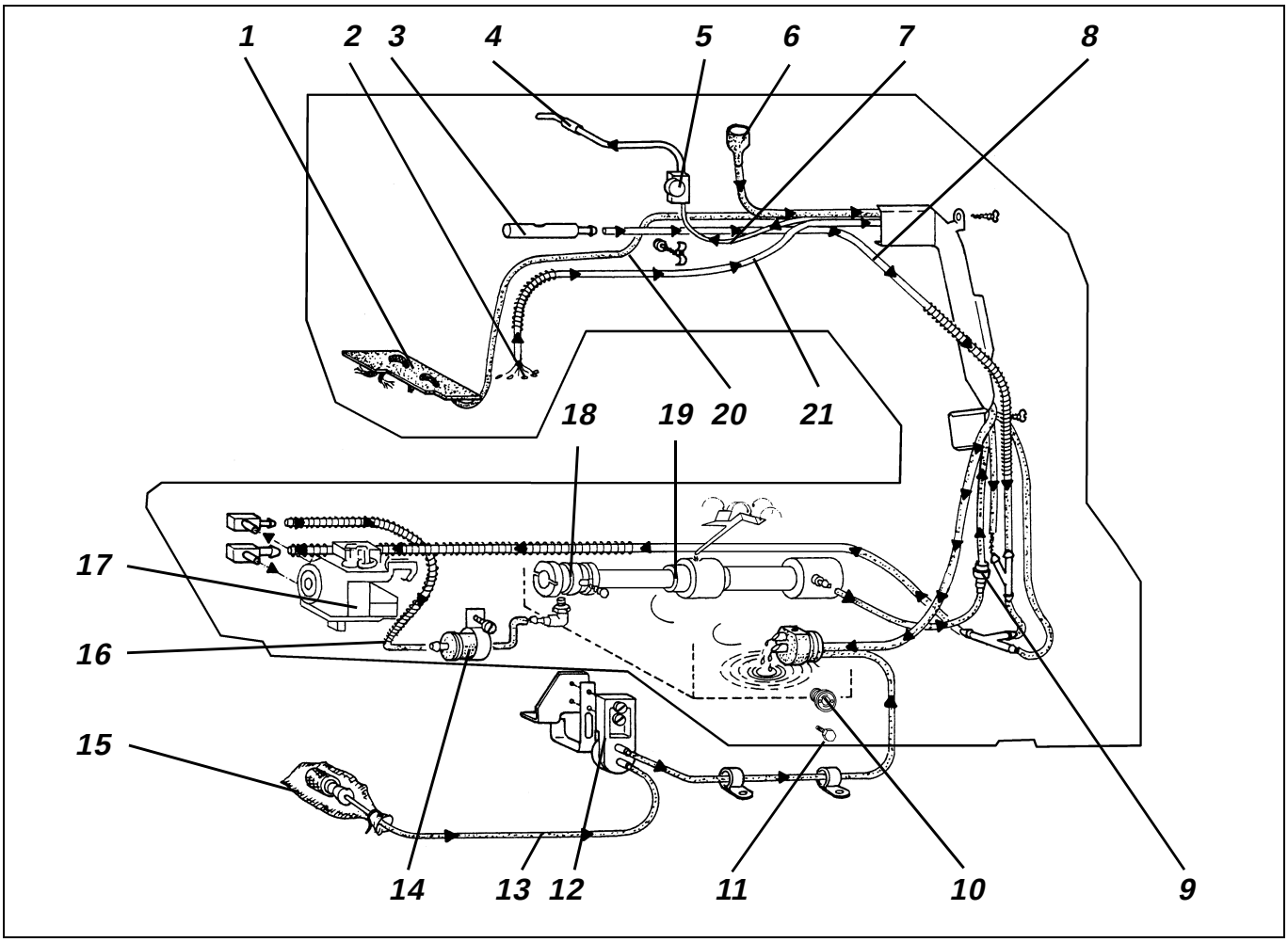
The thread advancing device 2 should advance enough thread to meet the following requirements for the next sewing cycle :

- Safe seam beginning.
- Pulling the thread end under the fabric.
- No "thread deflection" into the hook.

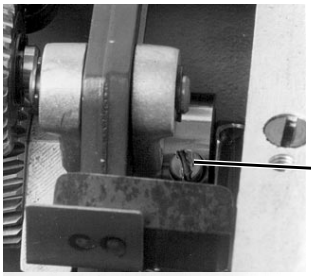
Correction

- Loosen the screw 1.
- Change the position of the thread advancing device 2 accordingly.
- Tighten the screw 1.

2.10 Lubrication

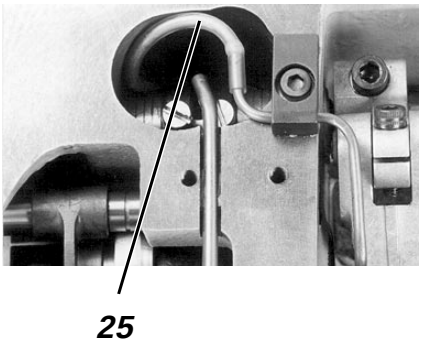


2.10.1 General information



- The wicks used for the lubrication of the respective elements in the machine head should not touch the re-circulation wick.
- The plastic cap on the hook impedes the suction of dust and fluff into the hook case by the vacuum pump.
- The oil splash screw 22 ensures that enough oil is supplied to the collecting sheet even if the oil level is very low..
- When completing the machine or following a longer machine stop, lubricate the ”dried up” wicks before restarting the machine, because an insufficient lubrication can cause damages.
- The slotted screw 24 under the lubrication adjustment screw 23 can be turned out, so that any obstructions of the oil ducts in the hook race can be eliminated by a blowing gun.
  Turn-in the screw 24 completely.

2.10.2 Mode of function

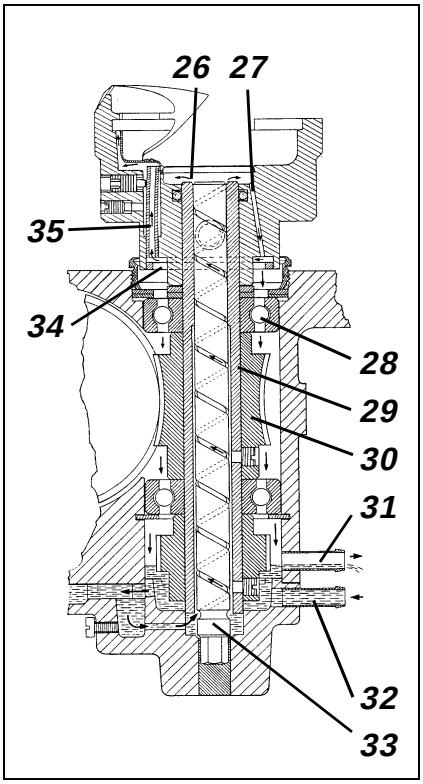


Oil supply from the sump to the sewing head

The oil passes from the oil sump to the cavity in the sewing head through the spiral grooves in the hook driving shaft 19 and through the duct 7. The check valve 9, contained in this duct, avoids the oil backflow when the machine is out of operation.. The oil supply through this duct can be controlled by the sight glass 5.

Most of oil delivered by the brass tube 4 flows into the bore hole of the hollow shaft 3.. This hollow shaft contains a wick, that passes the oil to the lubrication points of the foot lifting mechanism and to the sump in the sewing head.

From here, the oil is conducted through the wicks to the articulations of the foot lifting mechanism and to the rocker. The foot lifting eccentric is lubricated by the wick 25, sucking the oil out of the cavity.



Oil supply from the machine head to the hook case

The oil splashed in the sewing head is picked up by the felt, passing the oil to the lower wick, which in turn delivers the oil to the hook case.

The oil dropping from the brass tube 4 into the cavity is collected by the felt plate 1, passing then via the duct 20 to the hook case.

Oil supply to the hook

The oil returned from the sewing head flows through the duct 32 into the hook case. Here, the oil can rise up to the level of the suction pipe 31.

The hollow hook shaft 23 conveys the oil via the spiral grooves of the fixed shaft 33 to the upper vessel 26 of the hook. From here, the oil passes through the bore-hole 27 into the lower vessel 34. The smaller portion of this oil is conveyed by centrifugal force through an oil pipe 35 to the hook race. The major part of the oil flows again down and lubricates the gears 30 and the ball bearing 28.

Oil backflow from the hook case to the oil sump

The pump 18 on the hook driving shaft sucks the oil from the hook case via the pipe 16 back to the oil sump.. The filter 14, contained in this pipe, intercepts soil particles and avoids thus disturbances of the pump functions. The pump 12 sucks the oil from the outer plastic tray via the oil felt 15 and via the duct 15..

2.10.3 Checking oil level and oil supply

Caution: Danger of bodily injuries !

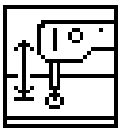
The machine must be in the position "Safe motor stop ".

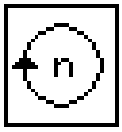
- Check the oil level in the oil sump through the sight glass 10 while the machine is out of operation.
  Top up if the oil level is in the lower third of the sight glass.
- Check the oil supply to the sewing head through the sight glass 5 while the sewing machine is in operation, e.g. during the automatic cycle.
- Check the oil level through the sight glass 17 of the hook case when the latter is in the sewing position and the sewing machine is out of operation.

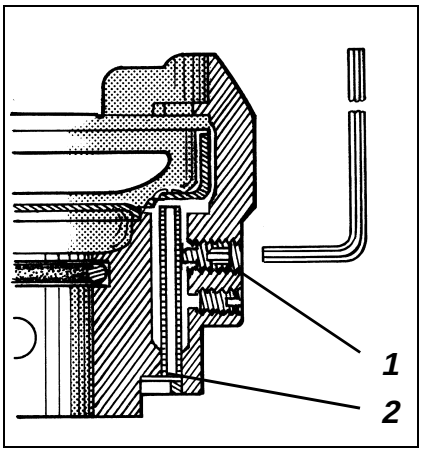
2.10.4 Adjusting the hook lubrication

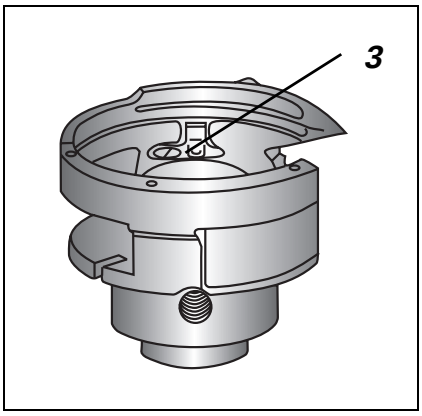
Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.









Rule and control

The hook should be lubricated safely with the lowest possible oil quantity. (This will also reduce the oil consumption)

- Lower the sewing machine head by the function "**Lifting/lowering the machine hea**d".
- Select the "**speed**" function.
  Enter by the numerical keys "4000" and confirm by the "**RETURN**" key
- Remove the fabric rest.
- Press the key "**F2**".
  Allow the sewing machine operate for about 1 minute.
- Press the key "**F3**".
- Hold a piece of paper beside the hook.
- Let the machine run at intervals of about 15 seconds by pressing the keys "**F2**" and "**F3**".
  The adjustment is correct if enough oil is splashed onto the paper.

Correction

- Remove the bobbin case and the covering sheet 3, for being able to recognise the position of the small oil pipe.
- By means of a socket spanner, having an opening of 1.5 mm, turn back the screw 1 until the small oil pipe 2 does no longer move. Normally, said pipe will not move when it stands in the middle of the bore-hole.
- Tighten the screw 1 until the pipe begins to move.
- Turn the screw again by 1/8 revolution.
  The adjusted oil quantity will decrease with the increasing distance of the pipe from the middle of the bore-hole.
- By means of a socket spanner, turn the screw 1clockwise for reducing the oil quantity.
  Turn the screw 1 counter-clockwise for increasing the oil quantity.
  Please note the following:
  The adjustment range between the maximum and the minimum oil quantity corresponds to a quarter (1/4) revolution of the screw..

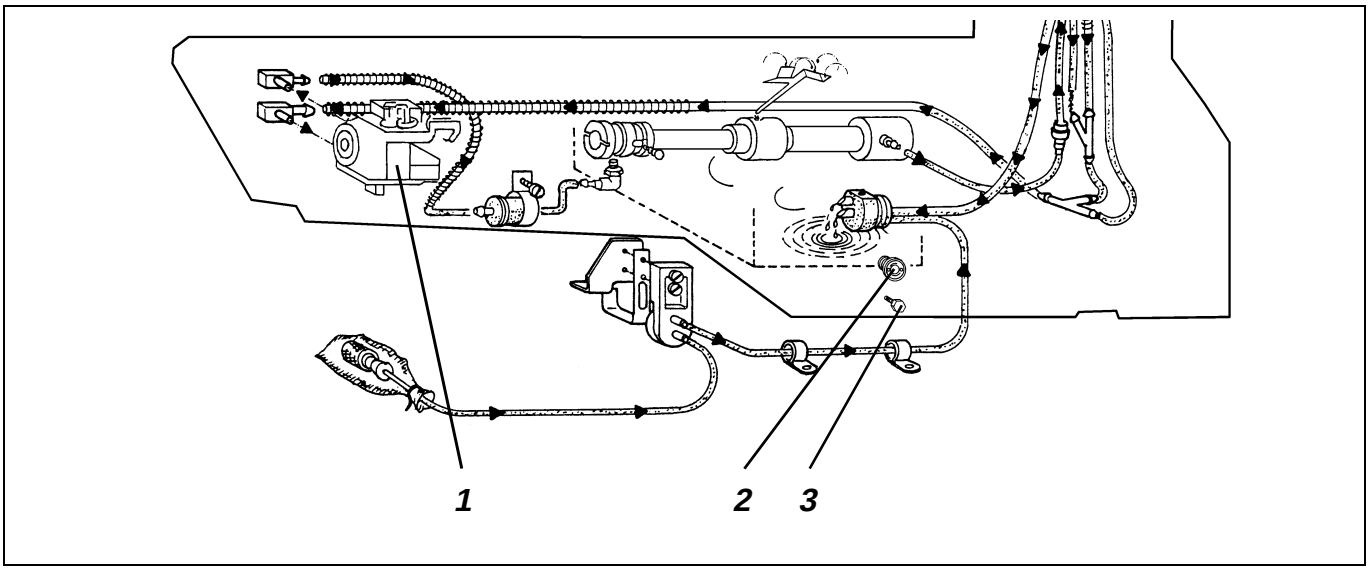
ATTENTION !

The small oil pipe will be squeezed if the screw 1 is turned-in excessively.

Note

For ensuring a safe lubrication of the machine during its run-in time, the factory-set oil quantity is rather high. Therefore, following the run-in time, check and, if required control the oil quantity.

2.10.5 Oil change



Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before proceeding to the oil change

The oil should be changed after the first 500 service hours as follows:

- Remove the oil sump cover.
- Such the oil. If sucking is impossible,
  loosen the drain screw 3 and let the oil flow out.
- Clean the oil sump and the breather tube.
- Turn-in the drain screw 3 after having replaced its gasket.
- Pour "**ESSO SP-NK 10**" oil through the filler neck 6 (s. page 26)
  until the oil level stands in the upper third of the oil sight glass.

2.10.6 Topping-up oil

Caution: Danger of bodily injuries !

Turn off main switch.
Turn off the machine before replenishing.

Top up if, during the operation of the machine, the oil level stands in the lower third of the sight glass 2 or when no oil supply can be seen through the sight glass 5 (s. page 26).

Fill "**ESSO SP-NK 10**" oil through the filler neck 6 (s. page 26) until the oil level stands in the upper third of the sight glass.

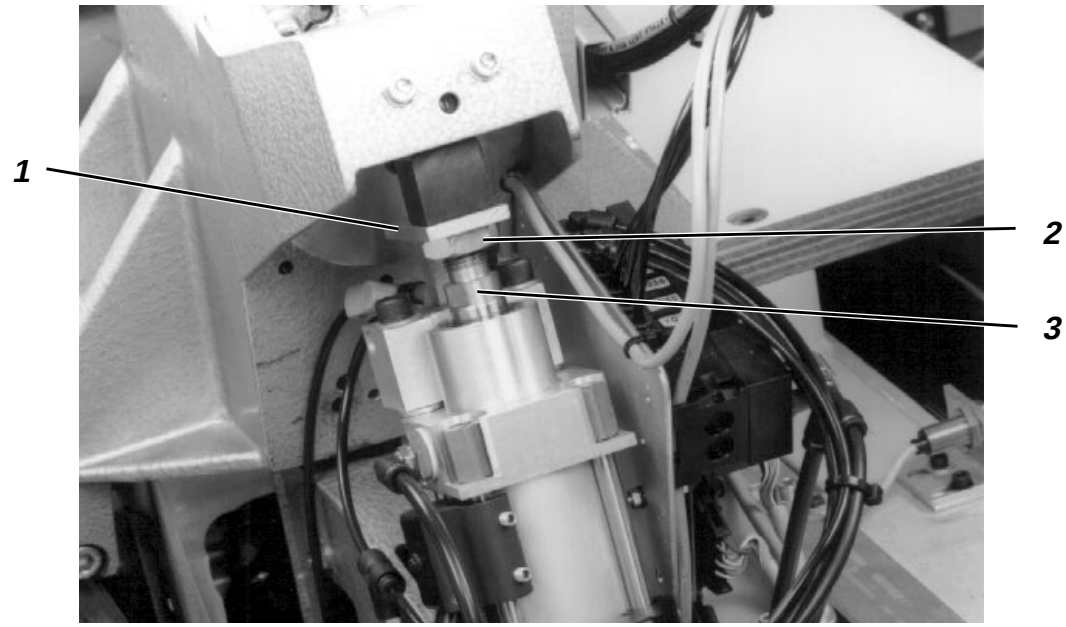
Other oil brands with the following specifications may be used:

Viscosity at 40°C: 10 mm2/s

Point of inflammation: 150 °C

2.11 Sewing arm

2.11.1 General information



The switches on the cylinder are actuated by the magnet core on the piston rod when the sewing head is lifted or lowered.

The catch 1 serves for locking the sewing head in its upper position when the pneumatic system is depressurised, e.g. after pressing the key "**O**" or after stopping the machine.

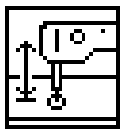
2.11.2 Lower position of the sewing arm

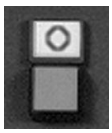
Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

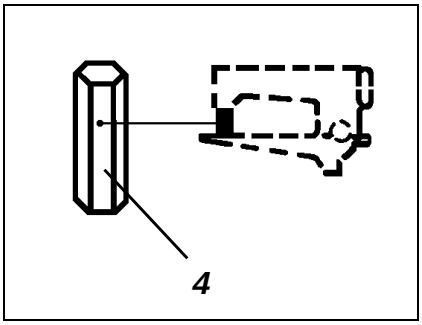
In the lowered position of the arm, the hexagonal distance gauge 4 (82,8 mm high) should fit between the throat plate and the underside of the sewing arm.





- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop " will be switched on.

Correction

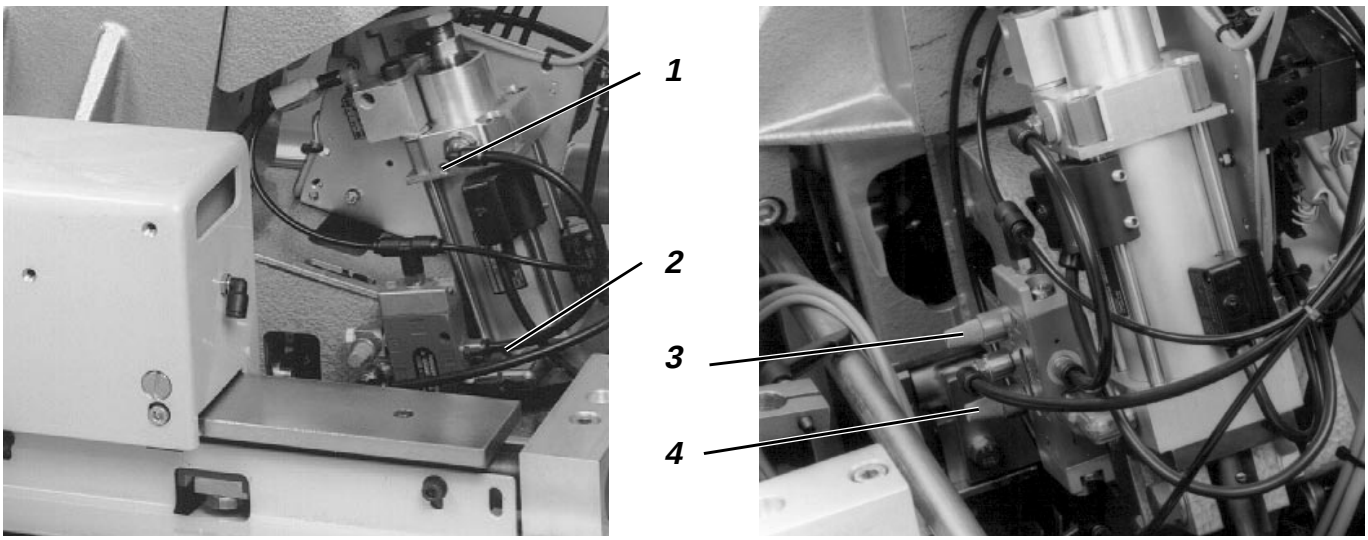


- Loosen the counter-nut 2.
- Turn the piston rod 3 accordingly.
- Tighten the counter-nut.

Note

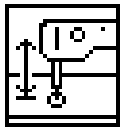
With this adjustment, the upper position of the sewing arm will be determined by the piston rod stroke of the cylinder.

2.11.3 Speed "Sewing arm up and down "



Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

The sewing head should move continuously and regularly.

– Select repeatedly the function "**Lifting/lowering the sewing head** ".

Correction

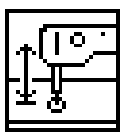
– By means of the throttles 3 and 4 regulate the ”outgoing air” of the cylinder accordingly.

2.11.4 Damping the cylinder in its end position

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

The speed of the piston rod is reduced about 10 mm from the end position, for braking softly the heavy sewing head.



Rule and control

The piston rod should move "softly" into its both end positions.

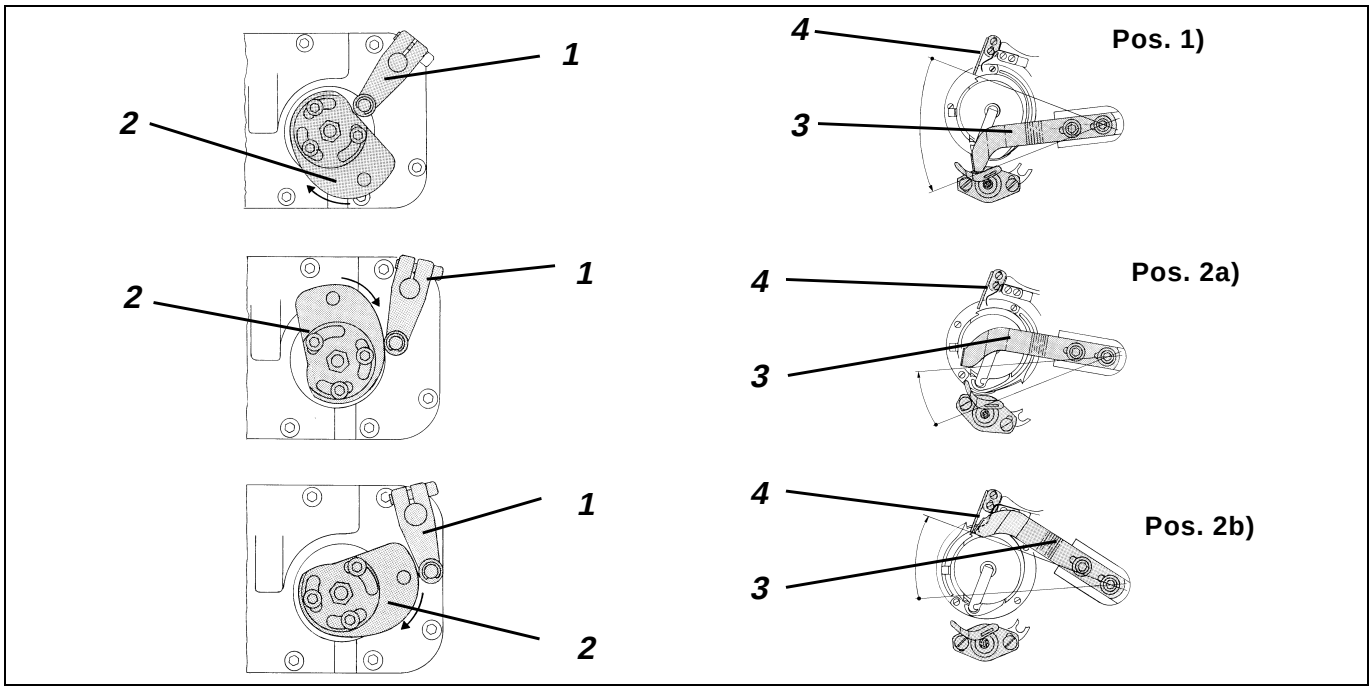
– Select repeatedly the function "**Lifting/lowering the sewing head**".

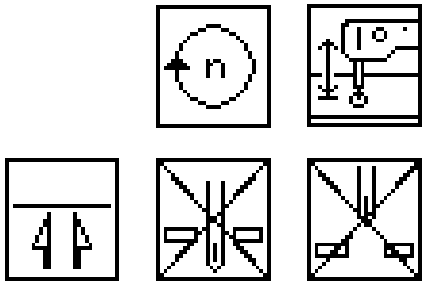
Correction

– Adjust the end positions 1 and 2 accordingly.

2.12 Thread cutter

2.12.1 Sequence of functions





Checking the thread cutting process

- When switching on during the display of the Dürkopp Adler Logo press the key "**F2**".
- Press the key "**I**".
  The adjustment menu will appear.
- Select the "**Sewing test** " function.
- Lower the sewing head by the function "**Lowering/lifting the sewing head**".
- Activate the "**knife**" function.
  Deactivate the functions "**Needle upper position**" and "**Needle lower position**".
- Start the sewing process by the key "**F2**".
- Press the key "**F3**".
  The thread cutting process will be started.

Following the release of the thread cutting process, the needle will stop in the 1st position. The drive will be stopped for a moment (Pos. 1).

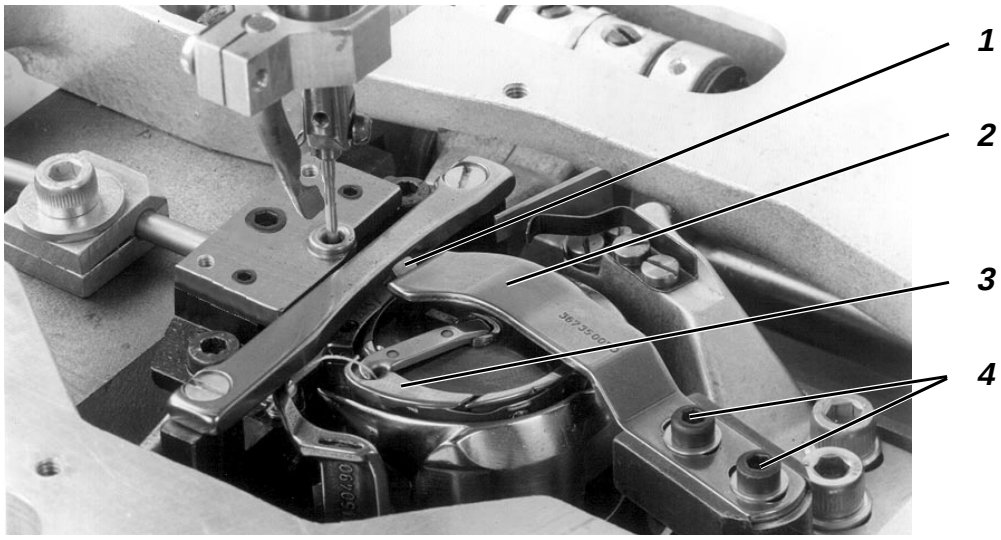
The magnet will press the roller lever 1 against the lowest point of the control cam 2. The thread knife 4 will be moved completely away from the counter-knife.
The sewing machine will run at a speed of 150 min-1.

When the control cam 2 of the thread pulling knife 4 is moved towards the counter-knife, the thread pulling knife moves during the 1st movement phase towards the bobbin case and stops short before its lug. This ensures that the thread pulling knife remains outside the movement range of the bobbin case lifting finger.

At the onset of the 2nd movement phase, the thread pulling knife catches the hook thread and the needle thread (Pos. 2a). The thread tensioner is lifted. During the further process, the thread pulling knife unwinds the thread from the reel. Short before the thread take-up lever is in its upper position, the threads are cut and the hook thread is clamped (Pos. 2b).

As soon as the upper position of the thread take-up lever and consequently the 2nd position is reached, the motor stops. The magnet for the thread tensioner lift and the magnet for the thread cutter will be switched off.

2.12.2 Lateral position of the thread pulling knife

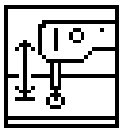


Rule and control

- The thread pulling knife 2 should travel along the bobbin case lug 1 at a safe distance.
- The thread pulling knife 2 should not knock against the bobbin case 3.

Caution: Danger of bodily injuries !

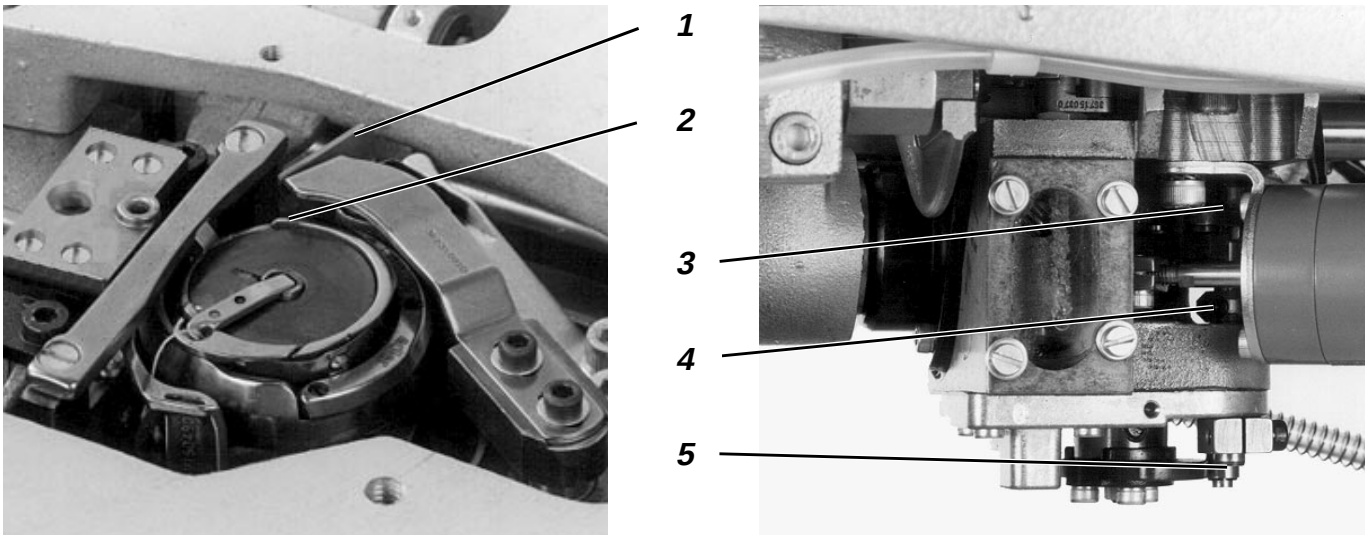
The machine must be in the position "Safe motor stop ".



Correction

- Lower the sewing head by the function "**Lowering/lifting the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screw 4.
- Change the position of the thread pulling knife 2 accordingly.
- Tighten the screws 4.

2.12.3 Height of the thread pulling knife

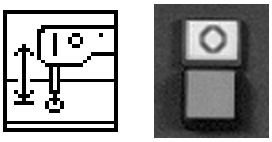


Rule and control

The thread pulling knife 1 should be as close to the bobbin as possible when it crosses the bobbin, however without touching the latter.

Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".



Correction

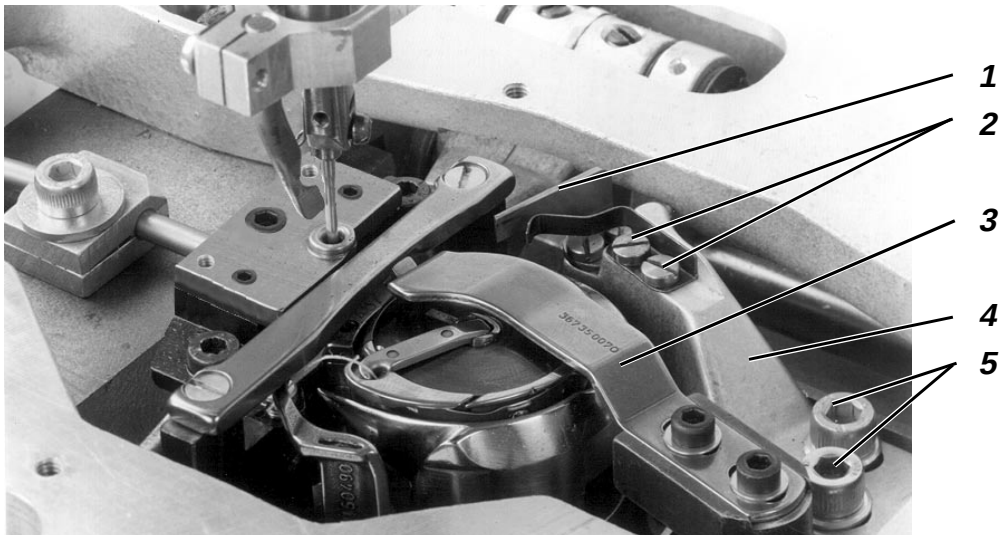
- Lower the sewing head by the function "**Lowering/lifting the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screws on the two setting rings 3 and 4.
- Change the height of the thread pulling knife accordingly.
- Fix the shaft 5 by the two setting rings so that the thread pulling knife can be moved easily without any play.
- Tighten the screws 3 ands 4 on the two setting rings.

ATTENTION !

An incorrect adjustment can have following effects:

- No safe thread catching.
- Contact with the fabric rest.
- Damage to the bobbin.

2.12.4 Position of the counter-knife in respect to the thread pulling knife

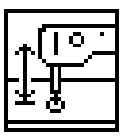


Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop ".

Rule and control

- The counter-knife support 4 should bed as close to the rear casting edge as possible.
- During the thread cutting process, the pressure of the counter-knife 1 against the thread pulling knife 2 should be as low as possible, but it should still be sufficient to ensure safe thread cutting. Normally, this will be ensured if at the moment when the knifes are half overlapped the blade of the counter-knife just touches the thread pulling knife.



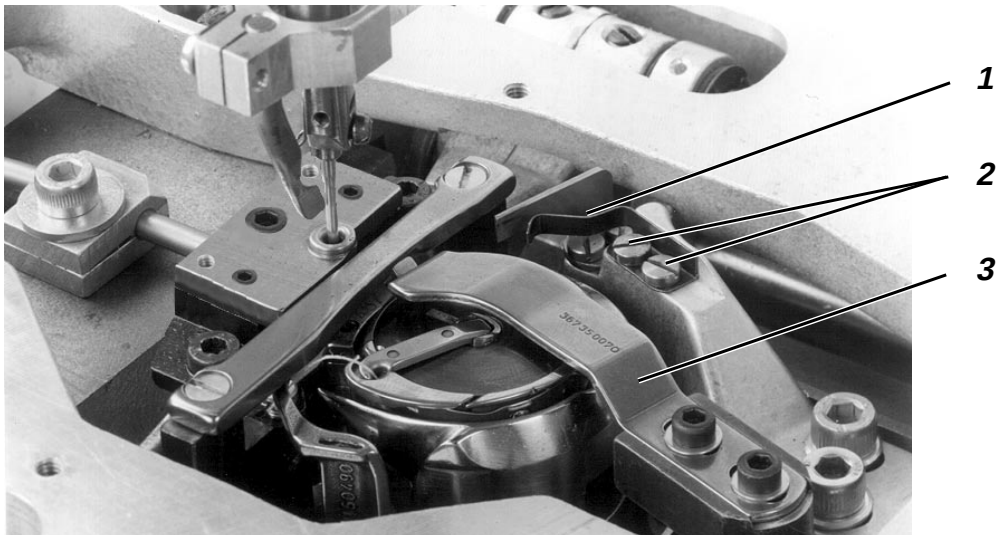
Correction

- Lower the sewing head by the function "**Lowering/lifting the sewing head**".
- Press the key "**O**".
  "Safe motor stop " will be switched on.
- Loosen the screw 5 or 2 and shift the counter knife support of the counter knife accordingly.
- Tighten the screws.

ATTENTION !

An excessive counter-knife pressure will result in an increased knife wear..

2.12.5 Position of the hook thread clamp



The purpose of the clamp 1 is to clamp the hook thread during the cutting process, so that it can be safely caught by the needle thread when starting the seam.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before adjusting the hook thread clamp.

Rule and control

The hook thread should be held safely by the lowest pressure possible.

- Cut the threads by the thread pulling knife, operated by hand.
- Pull the thread out of the clamp for checking the clamping efficiency.

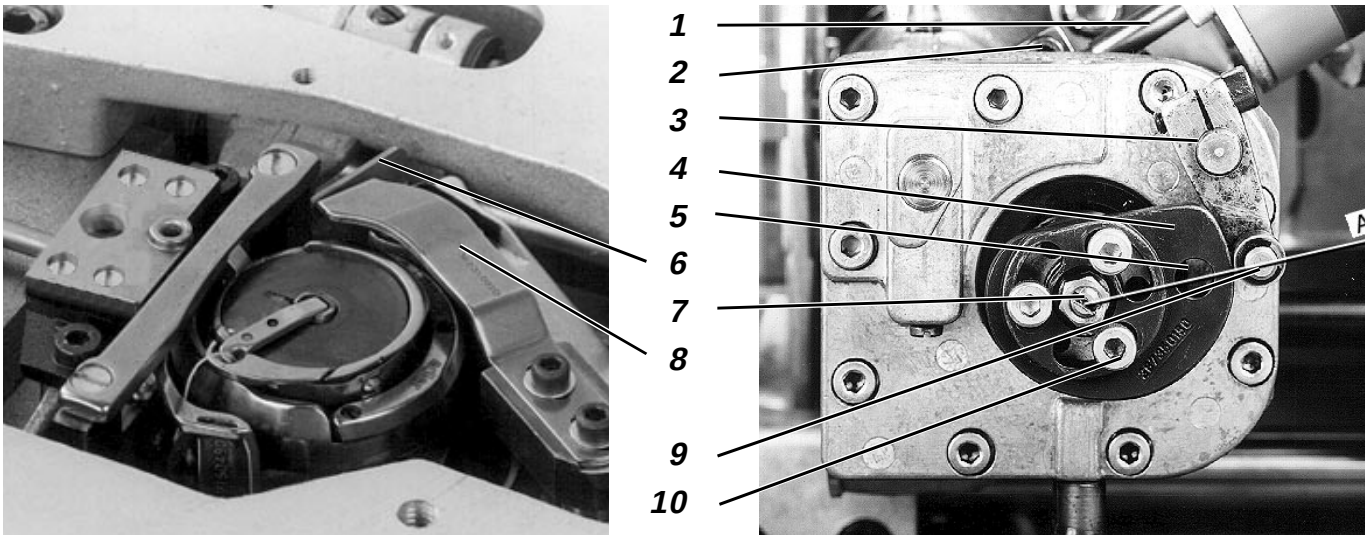
Correction

- Loosen the screw 2.
- Shift the clamp 1 accordingly.
- Tighten the screw 2.

ATTENTION !

An incorrect adjustment may cause problems when starting the seam.

2.12.6 Position of the control cam



The control cam 4 determines the sequence of movements of the thread pulling knife.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before adjusting the control cam.

Rule and control

In the upper position of the thread take-up lever, the hole 5 in the control cam 4 should be located on the connecting line A between the shaft 7 and the roller 9 of the lever 3.

Correction

- Loosen the three screws 10.
- Turn the control cam accordingly.
- Tighten the screws 10.

2.12.7 Swivelling range of the thread pulling knife

Rule and control

The back of the thread pulling knife 8 should be flush with the blade of the counter-knife 6 when the magnet armature 1 is fully extended.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before adjusting the thread pulling knife.

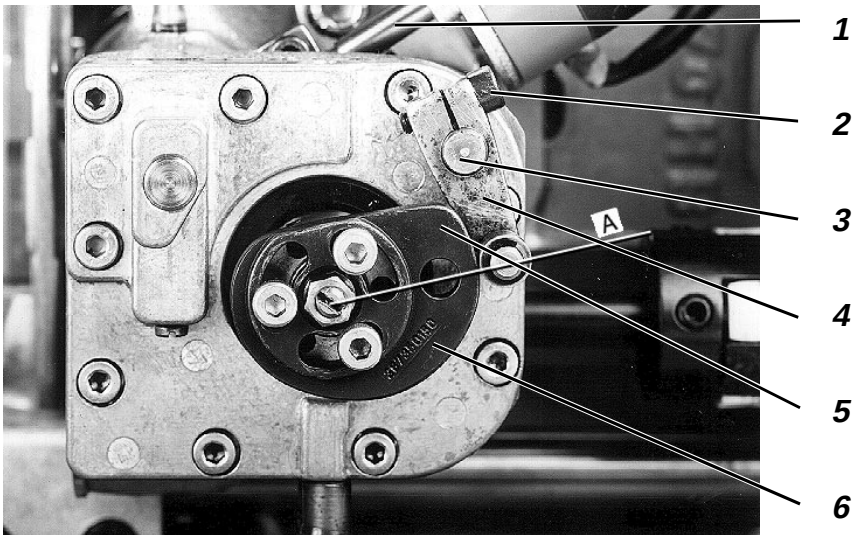
Correction

- Loosen the screw 2 on the clamping block.
- Turn the magnet armature 1 accordingly.
- Loosen the screw 2 on the clamping block.

Note

The position of the thread cutting knife swivelled out is determined by the lowest position of the roller lever 3, when it is in contact with the control cam 4.

2.12.8 Position of the roller lever in respect to the control cam



The control cam 6 should not touch the roller lever 4 during the sewing process.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before adjusting the control cam.

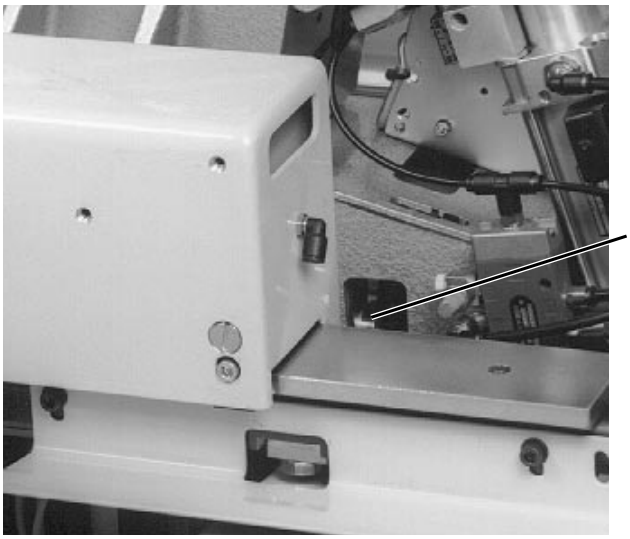
Rule and control

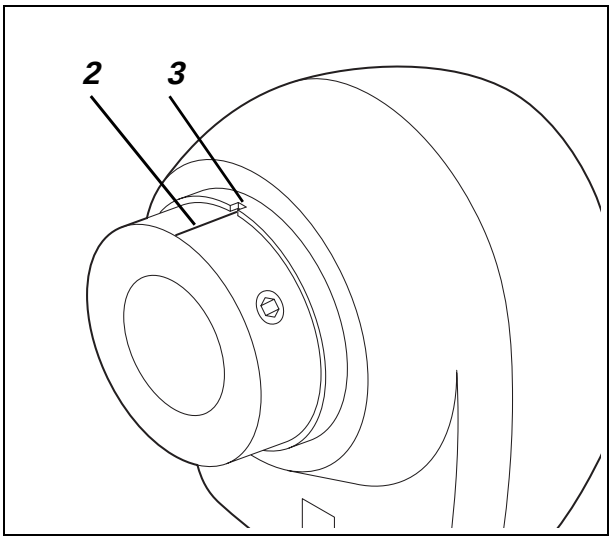
The distance of the roller lever 4 to the topmost point of the control cam 5 should amount to 0.1 mm when the magnet armature 1 is fully extended.

Correction

- Loosen the screw w on the roller lever 4.
- Turn the roller lever 4 on the shaft 3 accordingly.
  Make sure that the roller 5 stands against the centre of the control cam 6.
- Tighten the screw 2.

2.12.9 1st and 2nd position of the thread cutting knife





Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

1st position

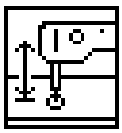
The thread cutter will be activated in this position after the "seam end" signal.

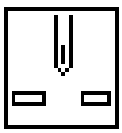
2. Position

The cutting process will end in this position.

ATTENTION !

The transfer carriage should not stand in the needle area.





- Displace the transfer carriage by hand to ensure that the needle can freely stitch into the stitch hole.
- Lower the sewing head by the function ”**Lifting/lowering the sewing head**”.
- Select the function "**thread take-up lever in upper position**".
- Start the sewing process by the key "**F2**".
- Press the key "**F3**".
  The sewing drive will stop in the 2st position.
- Press the key "**O**".
  ”Safe motor stop” will be switched on.
- Check whether the machine position corresponds to the upper position of the thread take-up lever.

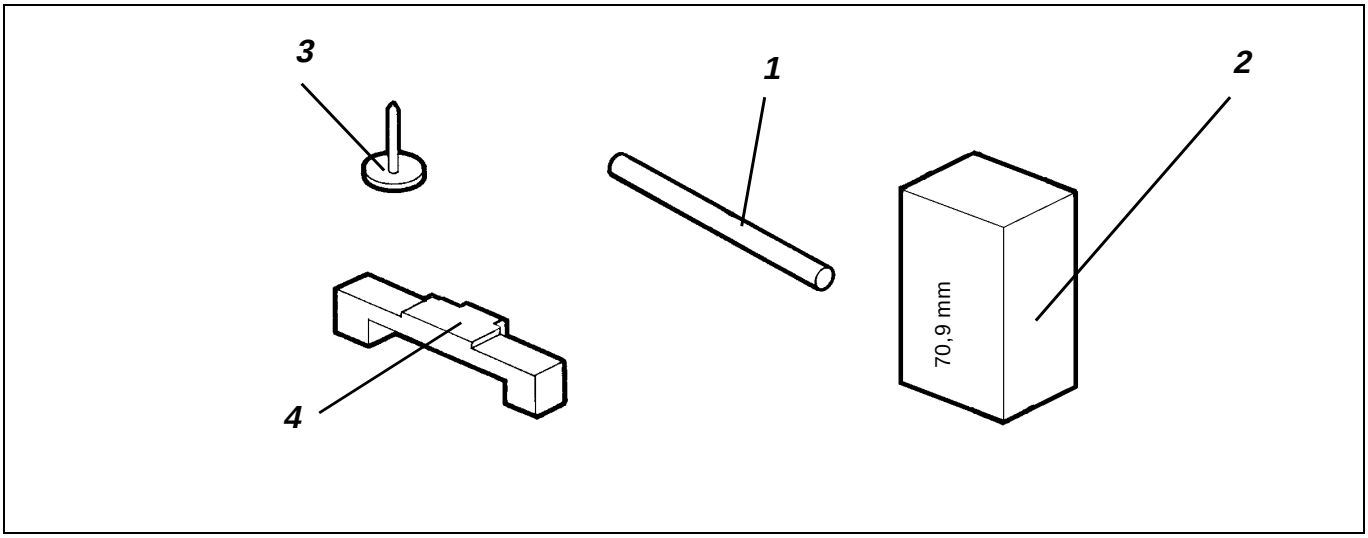
Correction

- Turn the handwheel until the position of the machine corresponds to the upper position of the thread take-up lever.
- Adjust the position of the position transmitter so that the mark 2 on the aluminium is flush with the notch 3 on the positioner.

3. Machine head (class 806-121)

3.1 Adjusting aids

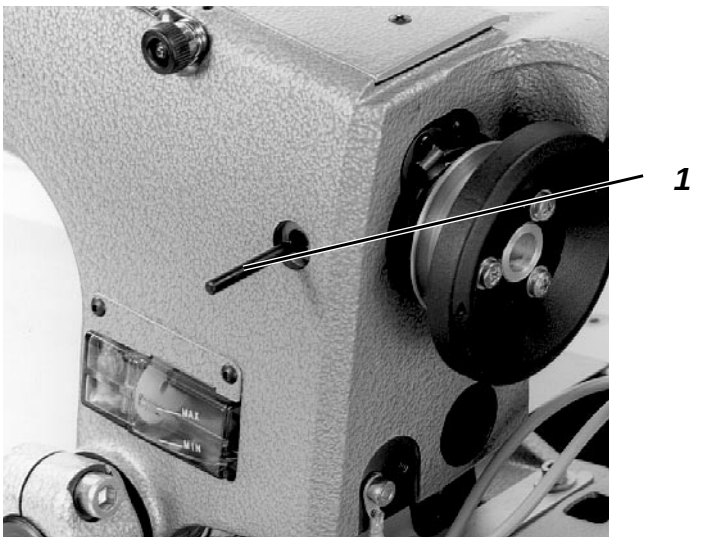
3.1.1 Gauge set

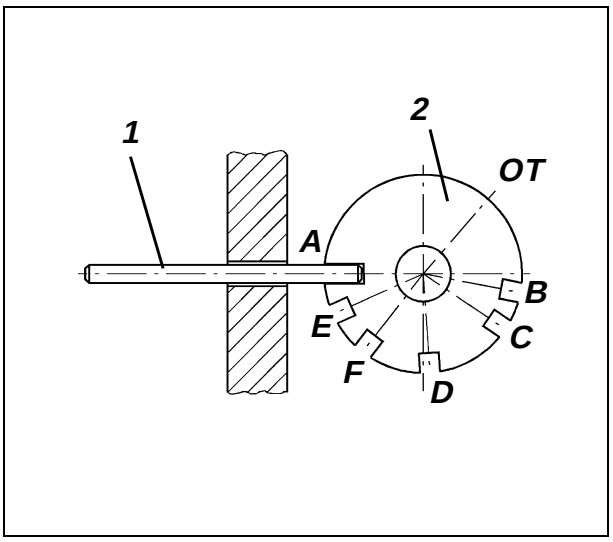


The setting gauges, specified hereinafter, enable a precise setting and checking of the machine head.

Position	Setting gauge	Ref. No..	Use
1	Setting pin	9301 022608	Stopping the sewing machine in **A - F** position
2	Gauge	0804 400290	Distance gauge (Plate / Arm)
3	Gauge	0216 001069	Needle bar height
4	Gauge	0271 000766	Needle bar height and hook drive housing for the big hook (0935 105211 / 0271 002091)

3.1.2 Description and adjustment of the integrated setting disk





By means of the locking pin 1 and the integrated setting disk 2, located on the toothed belt pulley, the machine can be locked in any setting position.

The setting disk is provided for this purpose with 6 incisions, marked on the handwheel by the letters **A, B, C, D, E** and **F**. The letters indicate the position, in which the machine can be locked by the pin 1.

The **A** incision (loop stroke position) is deeper than the other incisions.

Settings in the different positions:

A Setting disk in respect to the groove in the arm shaft crank, parallelism,
belt pulley, loop stroke, distance of the hook tip to the needle

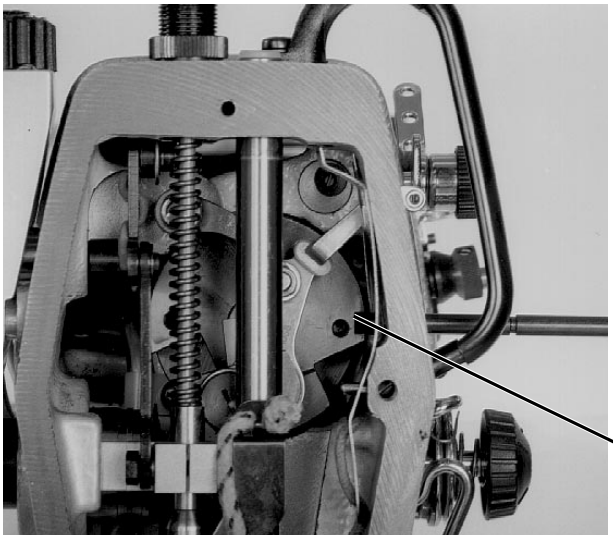
C 2nd needle position

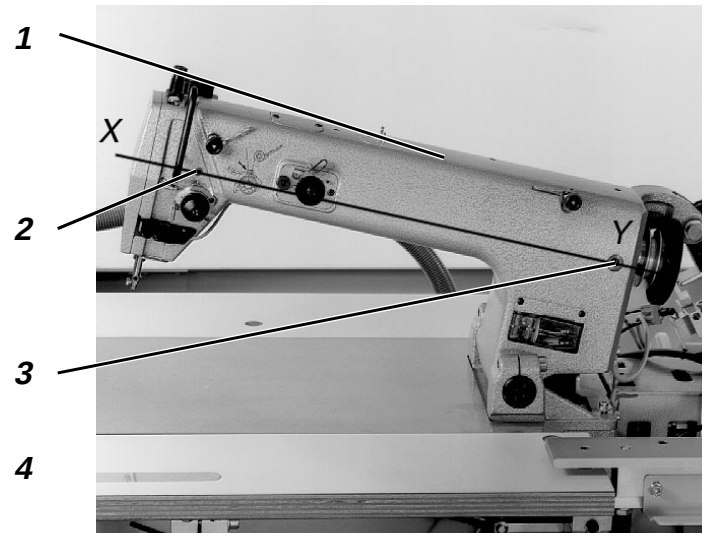
D Control cam for the thread cutter

E Needle bar height

OT Upper dead centre
Setting the phase position of the lifting eccentric

3.1.3 Position of the integrated setting disk in respect to the arm shaft





ATTENTION !

All settings made by the setting disk are only correct if the settings have been made as described under the rule.
Following a displacement of the arm shaft, check and, if necessary, correct all the following settings.

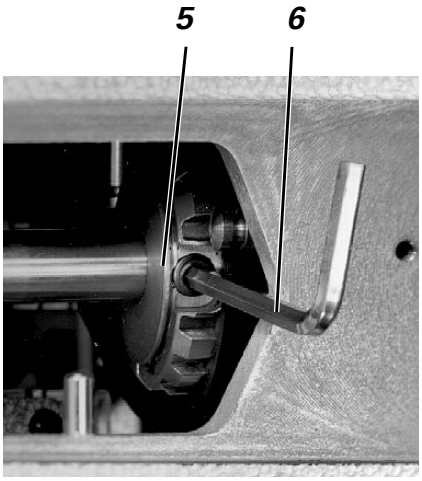
Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the position of the arm shaft.

Rule and control

The groove 4 and the **A** incision in the setting disk, integrated in the toothed belt pulley, must be in alignment with **X - Y**.

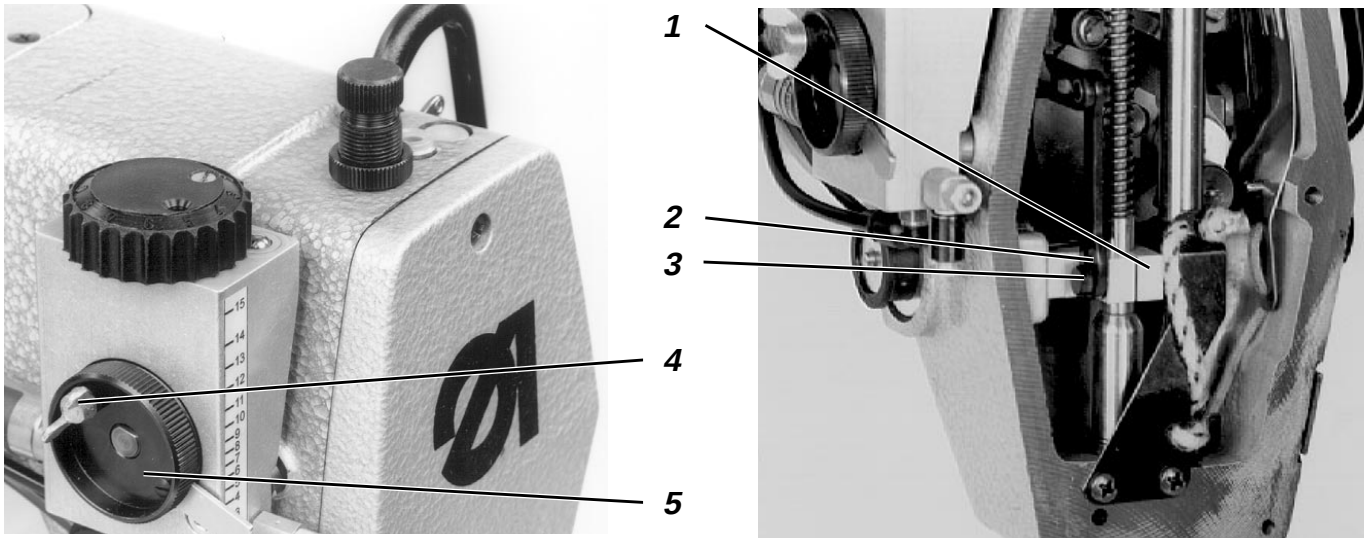
- Lock the arm shaft by a locking pin o a pin Ø 5 mm in the arm shaft groove 4 (through the bore-hole 2).
- It should be possible to introduce the locking pin through the bore-hole 3, in **A** pos., into the integrated setting disk.



Correction

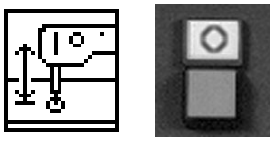
- Remove the cover 1.
- Loosen the screws of the toothed belt pulley 5 by a hexagon spanner 6.
- Lock the toothed belt pulley in **A** position by the locking pin.
- Introduce a 5 mm thick pin into the hole 3 and let it snap into the arm shaft groove 4.
- Tighten the screws on the toothed belt pulley 6.

3.2 Sewing foot height / lower stroke position



Caution: Danger of bodily injuries !

The machine must be in the "Safe motor stop" position.



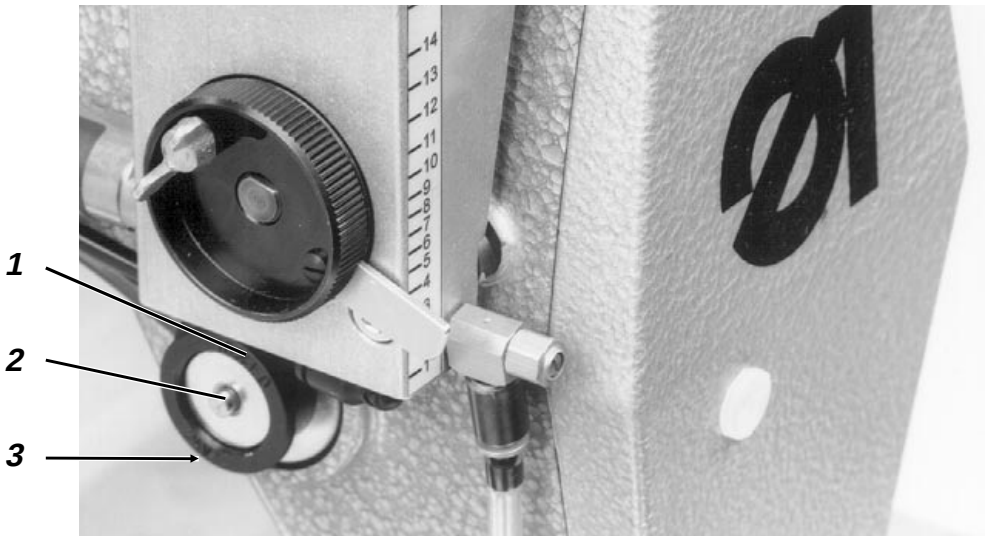
Rule and control

- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop" will be switched on.
- Remove head cover.
- Loosen wing screw 4 and set the setting wheel 5 to the lowest value.
- Move the sewing foot into its lowest position by turning the handwheel.
- The distance between the lower end of the oblong hole and the bolt should amount to 1 mm.

Correction

- Remove head cover.
- Loosen screw 3.
- Shift the block 1 so that the distance between the bolt 3 and the lower end of the oblong hole amounts to 1 mm.
- Retighten screw 3.
- Replace head cover.

3.3 Needle thread tension release



Rule and control

By the pressure against the axle 2, the tensioner will be opened about 1 mm.

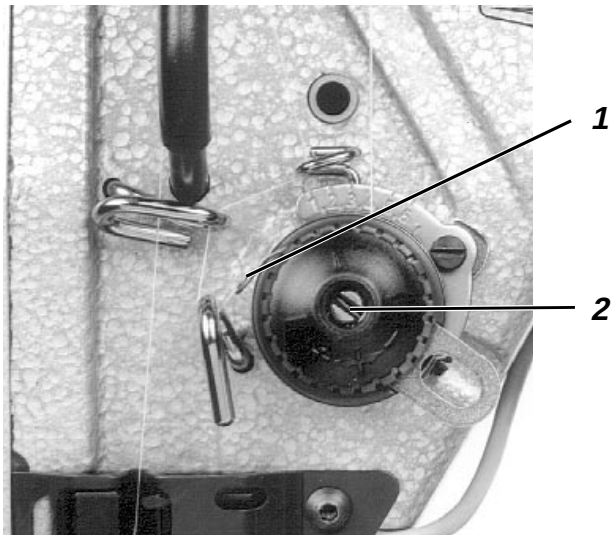
Caution: Danger of bodily injuries !

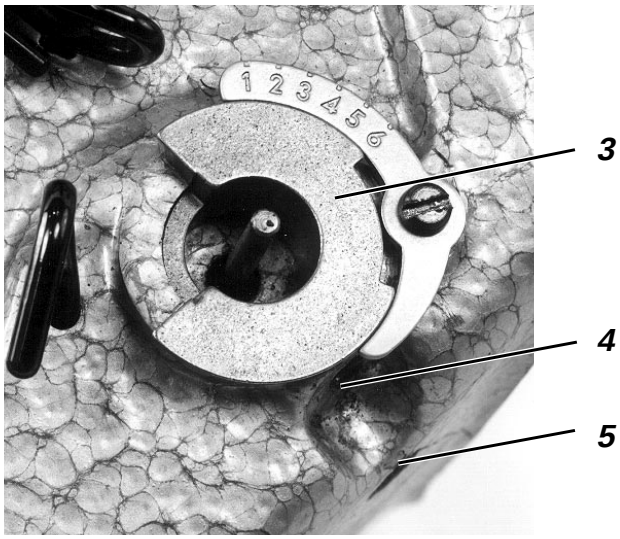
Turn off main switch.
Switch of the sewing machine before correcting the release of the needle thread tensioner.

Correction

- Loosen the screw 1.
- Shift the magnet 2.
  When the needle thread tensioner is fully tightened and when there is no thread between the tensioner disks, the axis 3 should have a play of about 0.3 mm.
- Retighten the screw 1.

3.4 Thread pulling spring





Rule and control

The thread pulling spring 1 should hold the needle thread tensioned at least until the tip of the needle stitches into the fabric.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the thread pulling spring.

Correction: Spring travel

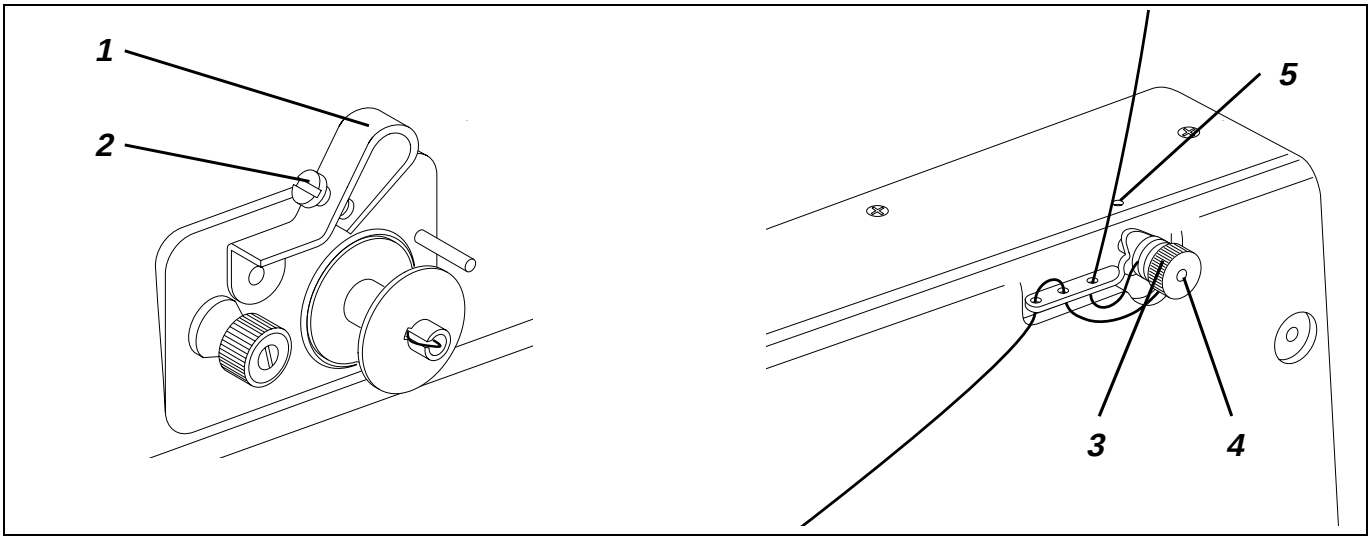
- Loosen the screw 4 by the hexagon spanner (spanner opening 2,5 mm).
- Turn the bush 3.
  The spring 1 should hold the needle thread tensioned at least until the tip of the needle stitches into the fabric
- Retighten the screw 4.

Correction: Spring force

- Loosen the screw 5 by the hexagonal spanner (spanner opening 2.5 mm).
- Set the tension value by turning the tension bolt 2
  .
  The tension of the thread tension spring must range between 20 and 50 cN (1 cN = 1 g), depending on the type of fabric and thread.
- Retighten the screw 5.

3.5 Bobbin winder

3.5.1 Adjusting the bobbin winder



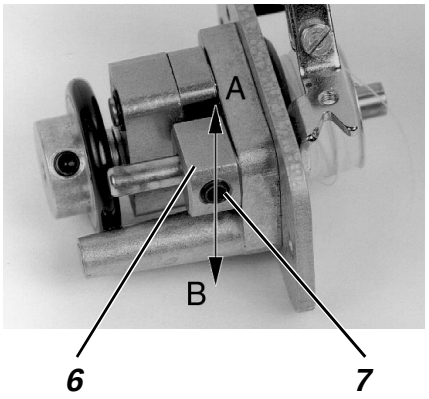
Rule and control

The bobbin winder should stop automatically when the thread wound on the bobbin is about 0.5 mm from the bobbin rim.

The thread must be wound cylindrically.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch of the sewing machine before correcting the bobbin winder.



Correction

1. Smaller changes of the thread amount

– Adjust the bobbin winder flap 1 by the screw 2.

2. Major changes of the thread quantity

– Remove the bobbin winder cover.
– Loosen the screw 6.
– Turn the cam 7.
In the **A** arrow direction: for the smaller thread quantity
in the **B** arrow direction: for the greater thread quantity
– Tighten the screw 6.
– Replace the bobbin winder cover.

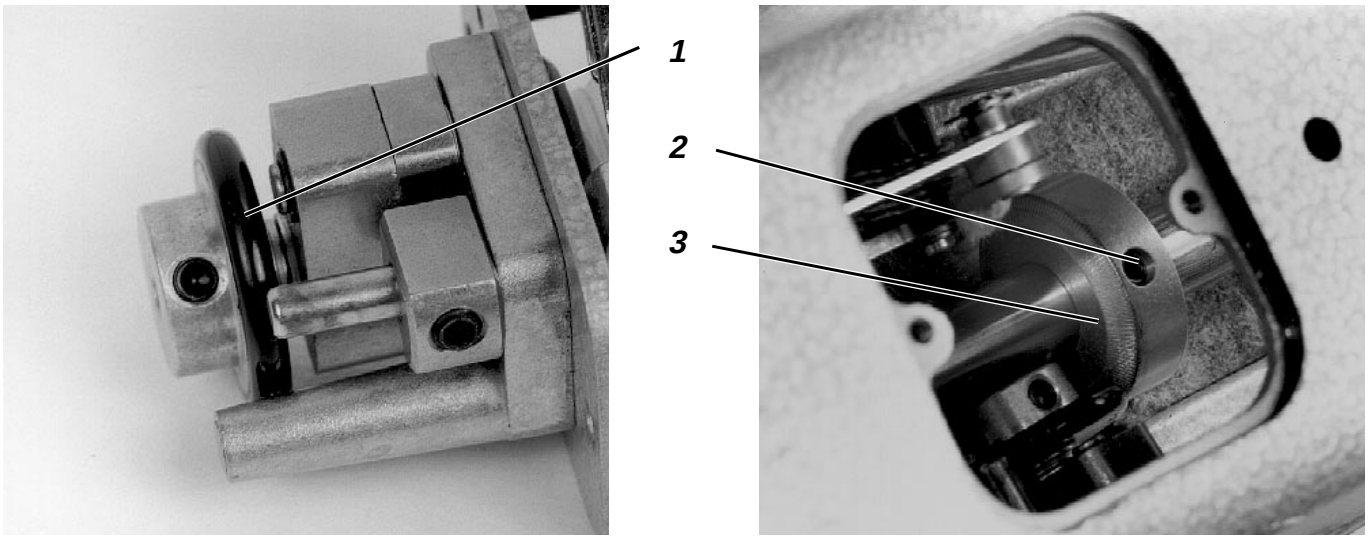
3.5.2 Cylindrical winding

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before correcting the bobbin winder.

– Loosen the screw 5.
– Shift the tensioner 3 accordingly.
– Tighten the screw 5.

3.5.3 Exchanging the friction ring



Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the bobbin winder.

- Remove the bobbin winder cover.
- Exchange the friction ring.
- Fit the bobbin winder cover.

3.5.4 Resetting the bobbin winder wheel

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the bobbin winder.

Rule and control

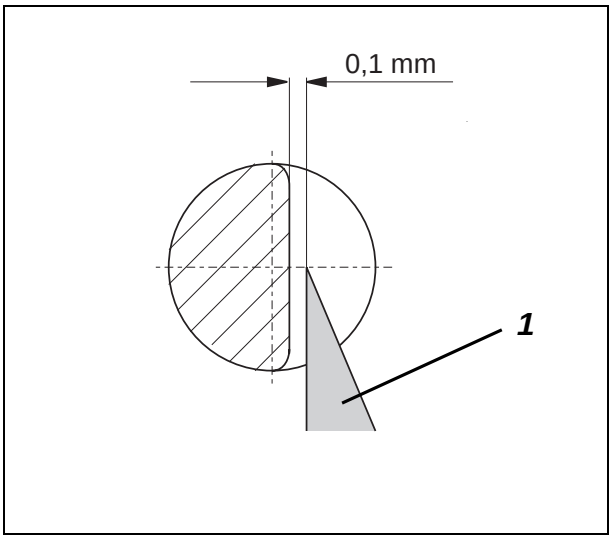
The bobbin wheel must drive as soon as the bobbin winder is switched on.

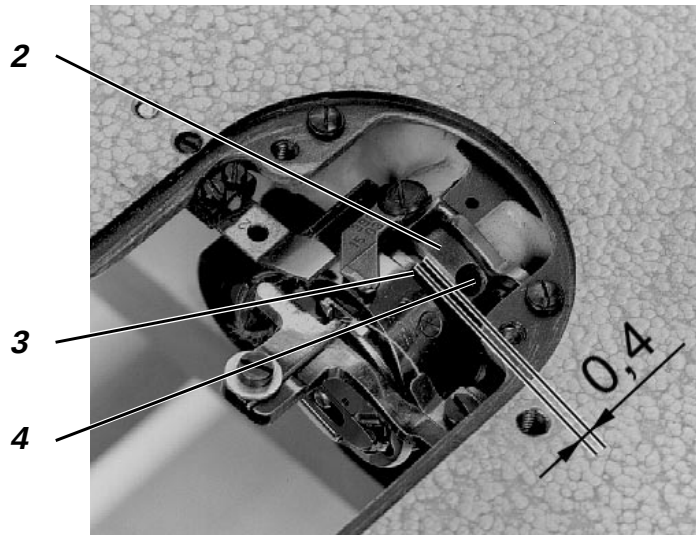
Correction

- By turning the handwheel, move the sewing machine until its position corresponds to the upper needle position.
- Loosen the two screws 2 on the bobbin winder wheel.
- Displace the bobbin winder wheel in the axial direction.
- Retighten the two screws 2.

3.6 Hook adjustments

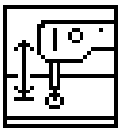
3.6.1 Loop stroke and distance between the hook tip and the needle





Rule and control

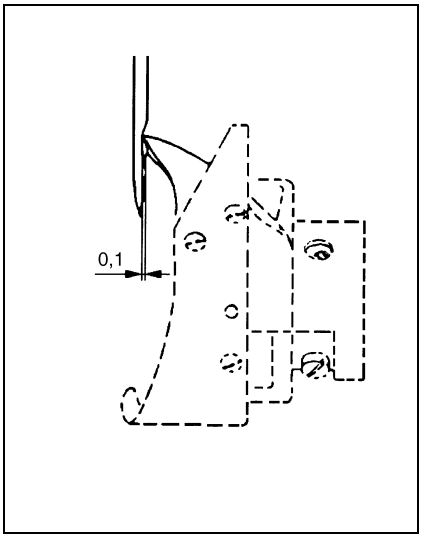
The loop stroke is the distance covered by the needle bar from its lower dead centre up to the tip where the tip of the hook coincides with the middle of the needle.
The loop stroke amounts to 1,8 mm.



- Lower the sewing head by the function "**Lifting/lowering the sewing head**".
- Press the key "**O**".
  "Safe motor stop" will be switched on.
- Lock the machine in **A** position.
  The hook tip 1 should stand against the middle of the needle.
  The distance between the hook tip 1 and the needle should amount to 0,1 mm.

Caution: Danger of bodily injuries !

The machine must be in the position "Safe motor stop"
.



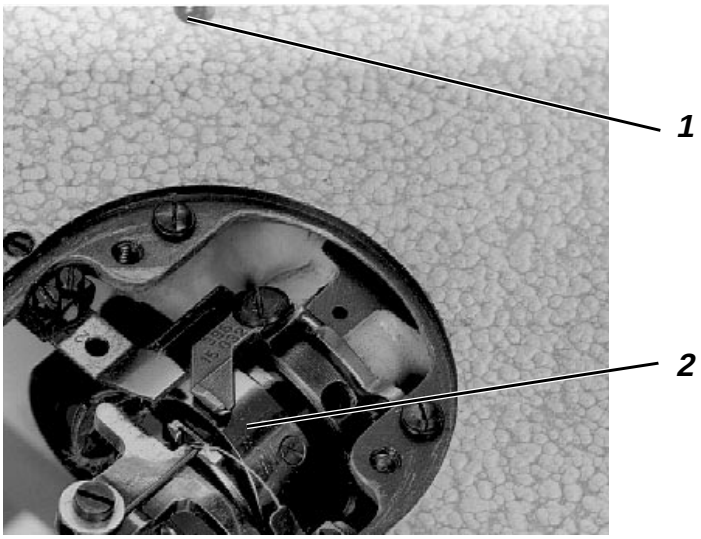
Correction

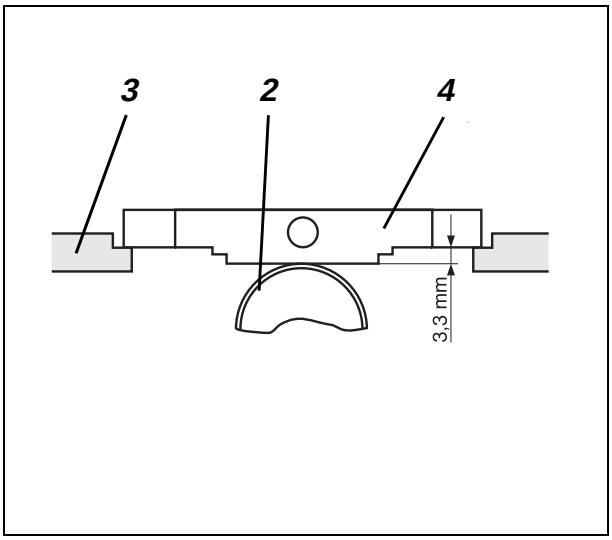
- Remove the sewing foot and the throat plate.
  Insert new needle.
- Lock the machine in **A** position.
- Loosen the fastening screws of the hook 3.
  The screws are accessible through the bore-hole 4.
- Set the hook tip 1 against the middle of the needle.
  The distance between the hook tip 1 and the furrow of the needle should amount to 0,1 mm.
  In this position, the distance between the hook 3 and the setting ring 2 will amount to about. 0,4 mm.

  If the distance of 0,4 mm is not attained, readjust the hook drive housing accordingly.
  (see chapter 3.6.2)

- Retighten again the fastening screws of the hook 3.
- Fit the sewing foot and the throat plate.

3.6.2 Hook drive housing





Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the hook drive housing.

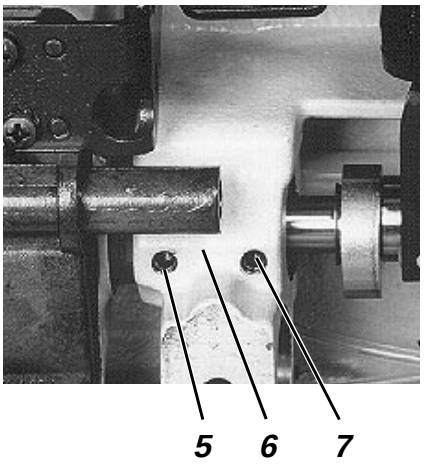
Rule and control

The hook drive housing 6 has been aligned in the factory.
It may be readjusted only in exceptional cases !

With a correct adjustment of the hook drive housing, the distance between the hook and the setting ring must amount to 0,4 mm (see chapter 7.1).

The distance between the throat plate rest top 3 and the thread pulling sheet 2 should be as follows:

for the big hook = 3,3 mm (0271 002091 / 0935 105211)



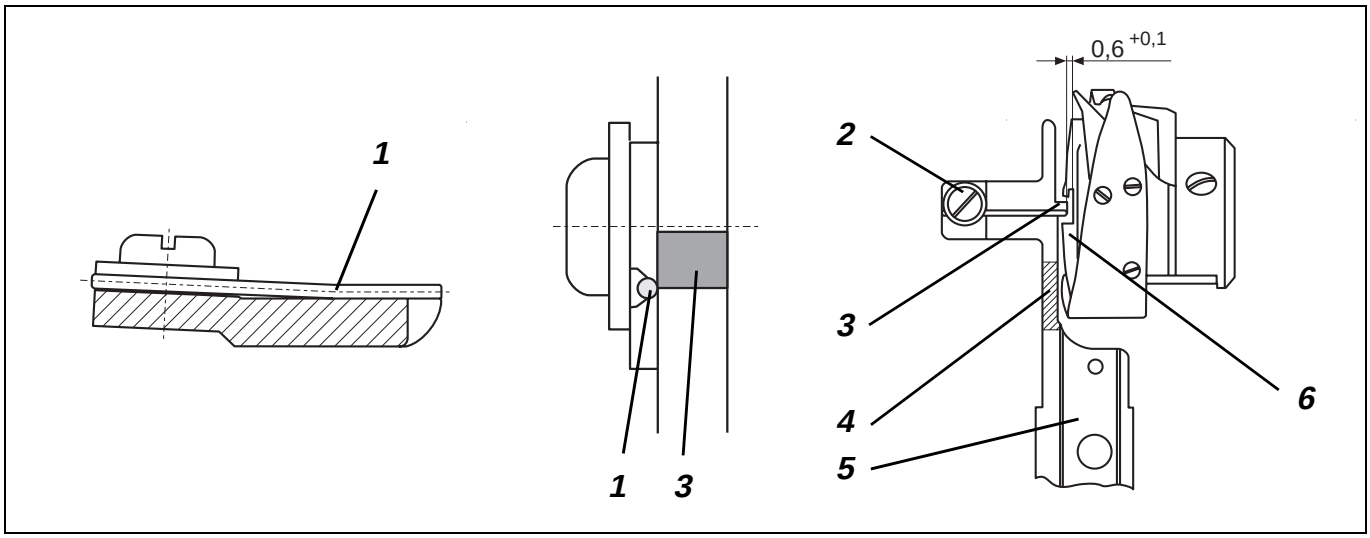
Correction

- Turn out the counter-screw 1.
  Under the counter-screw there is a stop screw.
- Adjust the stop screw.
  The distance between the throat plate rest top 3 and the thread pulling sheet 2
  should be as follows:

  for the big hook = 3,3 mm

  Check the distance by the gauge 4.
  For the big hook = reef. No,.: 0271 000766
- Replace the counter-screw 1.
- Loosen the screws 5 and 7 of the hook drive housing.
- Shift the hook drive housing 6.
  The distance between the hook and the setting ring must amount to about 0.4 mm (see chapter 7.1).
- Retighten the screws 5 and 7 of the hook drive housing.
- Check the distance between the hook tip and the needle and correct, if required (see chapter 7.1).

3.6.3 Bobbin case support



Rule and control

The bobbin case support has been set in the factory.

Following a change of the support, it may be necessary to readjust the new support.

The spring wire 1 should rest on the bobbin case bottom flush and without any gap.

The half of the width of the spring wire 1 should cover the retaining lug 3.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before correcting the bobbin case support.

ATTENTION !

The rectification should be done only in the hatched area 4.
(see the sketch)
The danger of breakage in the area of the supporting lug exists on account of the increased hardness.

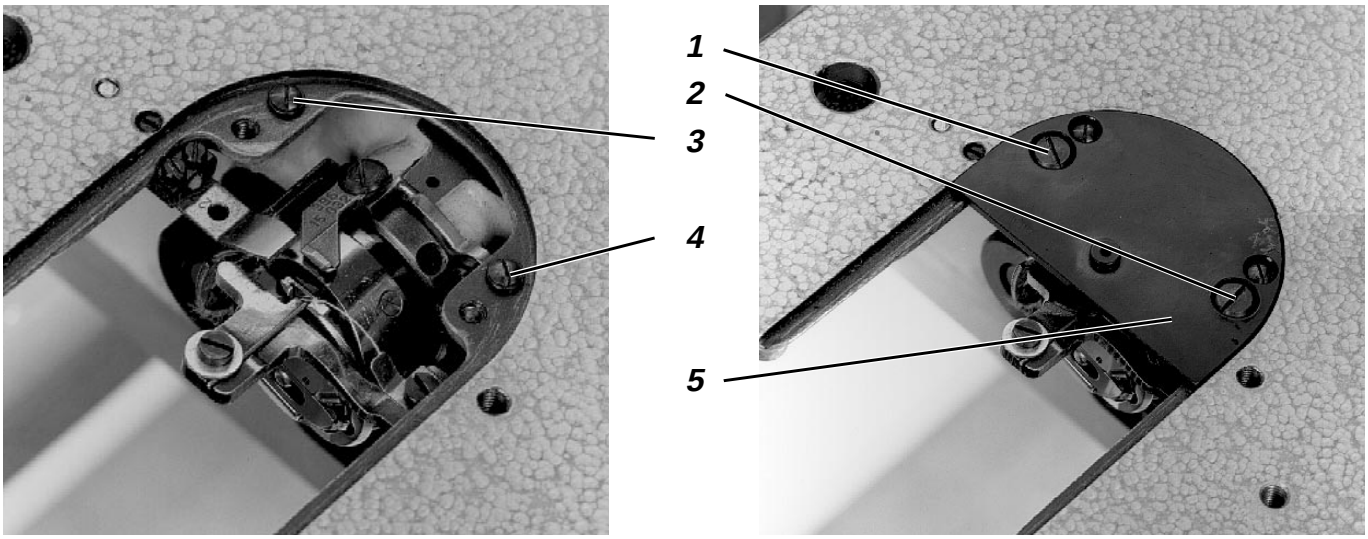
Correction

- Rectifying the bobbin case support.
  The distance between the supporting lug 3 of the bobbin support 5 and the bobbin case bottom 6 should amount to 0,6 +0,1 mm.
- Loosen the screw 2.
- Shift the wire so that it is flush with the supporting lug when in contact with the latter.
- Tighten the screw 2.

Note:

The supporting wire can be used on both sides.

3.6.4 Adjusting the throat plate



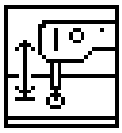
General

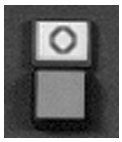
For cleaning the throat plate, it can be removed after loosening the screws 1 and 2, without causing any adjustment changes.

The adjusting washers under the screws 3 and 4 will again position the throat plate.

Rule and control

The needle should stitch in the middle of the stitch hole.





– Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
– Press the key "**O**".
"Safe motor stop" will be switched on.

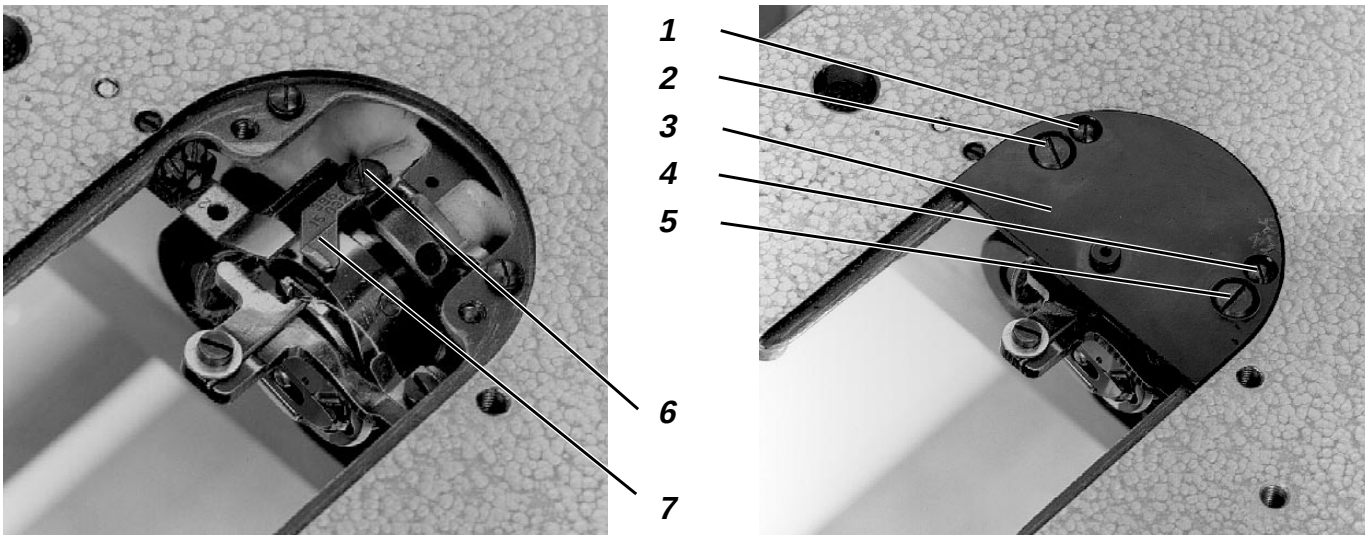
Caution: Danger of bodily injuries !

The machine must be in the "Safe motor stop" position
.

Correction

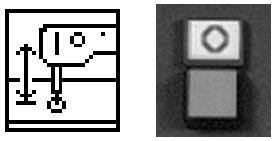
– Loosen the screws 1, 2, 3 and 4.
– Adjust the throat plate 5.
– Tighten the screws 1, 2, 3 and 4.

3.6.5 Adjusting the hook guard



Caution: Danger of bodily injuries !

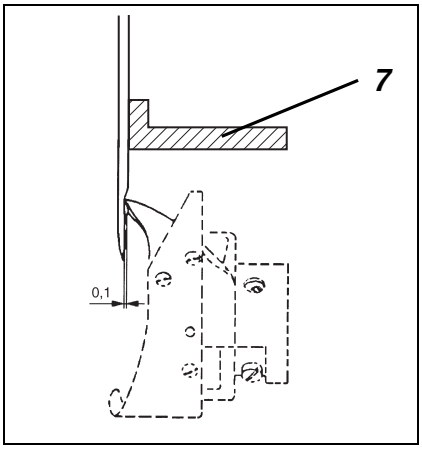
The machine must be in the "Safe motor stop" position.



Rule and control

Adjust the hook guard so that it is in contact with the needle, but without deflecting the latter.

- Lower the machine head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop" will be switched on.
- Loosen the screws 2 and 5.
- Remove the throat plate 3.
  Make sure that the positioning aids 1 and 4 are well fastened and cannot be shifted.
- Checking the position of the hook guard 7.



Correction

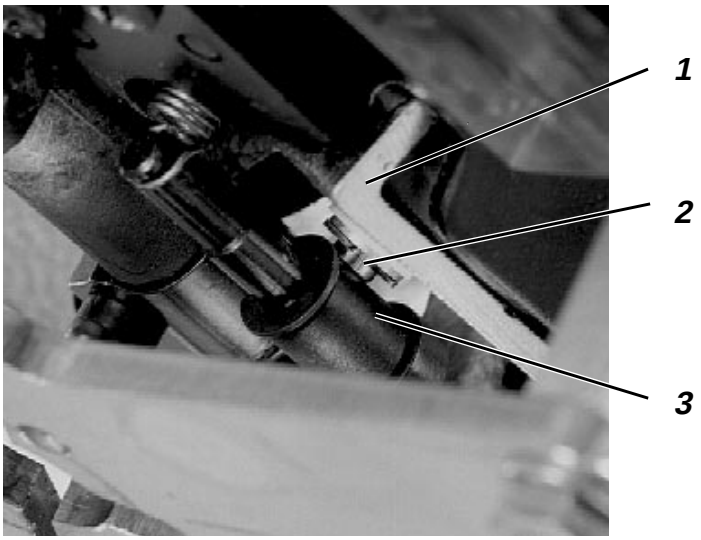
- Loosen the screws 2 and 5.
- Remove the throat plate 3.
  Make sure that the positioning aids 1 and 4 are well fastened and cannot be shifted.
- Loosen the clamping screw 6.
- Change the position of the hook guard 7 accordingly.
- Tighten the clamping screw 6.
- Fit the throat plate 3.
  Ensure that the positioning aids 1 and 4 are located in the bore-holes of the throat plate.
- Tighten the screws 2 and 5.

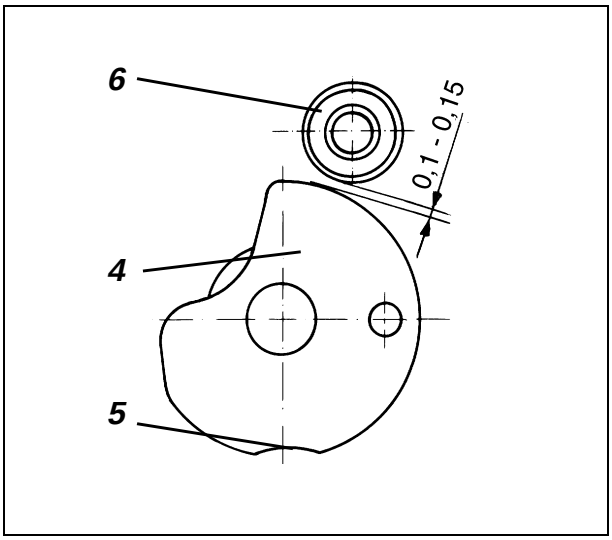
3.7 Thread cutter

The control cam 4 determines the movement of the thread cutter and the time of its action. Consequently, the time of action corresponds to the sequence of movements of the stitch-forming elements.

The thread cutter is switched by electromagnetic means.

3.7.1 Control cam for timing the knife movement





Rule and control

When the thread cutter is in neutral position, the distance between the outer diameter of the control cam 4 and the ball bearing 6 must range between 0,2 and 0,3 mm.

When the machine is locket in **D** position, the ball bearing, lowered by hand, must snap into the recess 5 of the control cam 4.

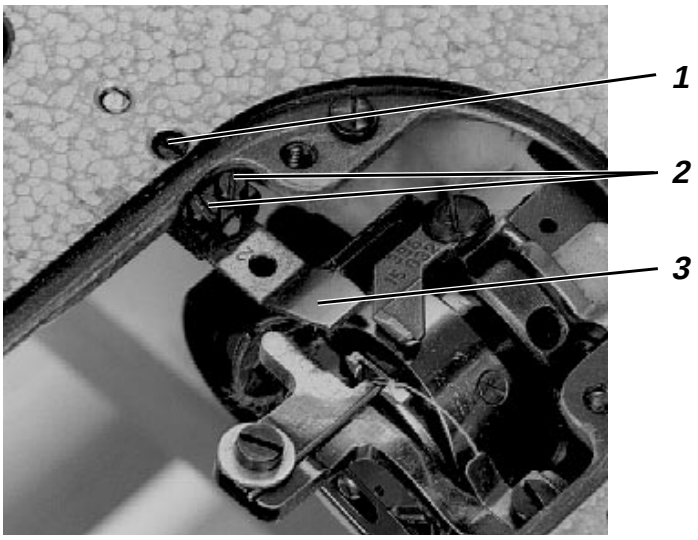
Caution: Danger of bodily injuries !

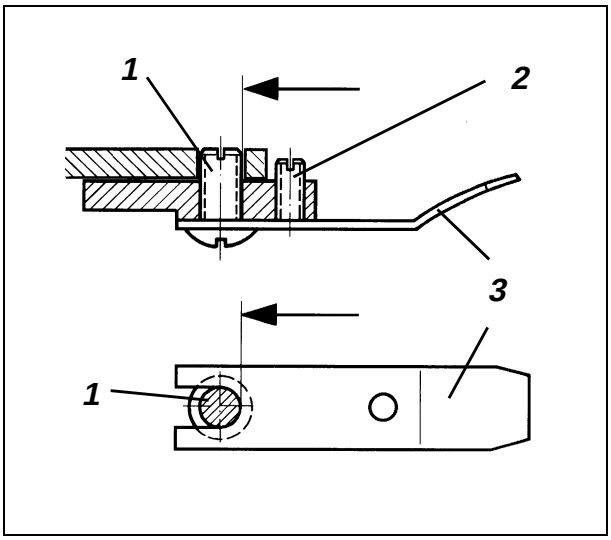
Turn off main switch.
Switch off the sewing machine before correcting the control cam.

Correction

- Loosen the fastening screws of the magnet 1.
- Shift the magnet 1.
  The distance between the control cam 4 and the ball bearing 6 must range between
  0,2 - 0,3 mm.
  The roller 3 must be in contact with the tappet 2.
- Tighten the fastening screws of the magnet 1.
- Lock the sewing machine in D position.
- Loosen the fastening screws of the control cam 4.
- Turn the control cam on the lower shaft.
  When the ball bearing 6 is lowered by hand, it must snap into the recess 5 of the control cam.
  Select the axial position so that the control cam 4 and the roller 6 face each other.
- Tighten the fastening screws of the control cam 4.

3.7.2 Position of the stationary knife





Rule and control

The stationary knife 3, seen in the arrow direction, must be in contact with the screw 1 (see the sketch).

Reground knives must be adjusted according to chapter 3.7.3 !

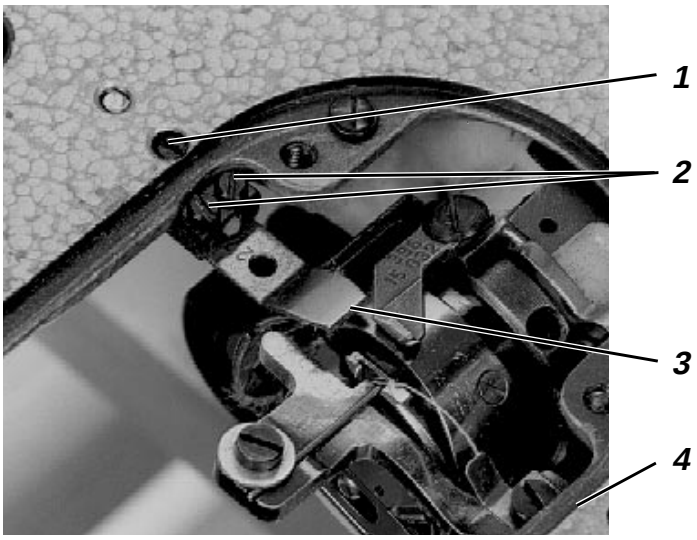
Caution: Danger of bodily injuries !

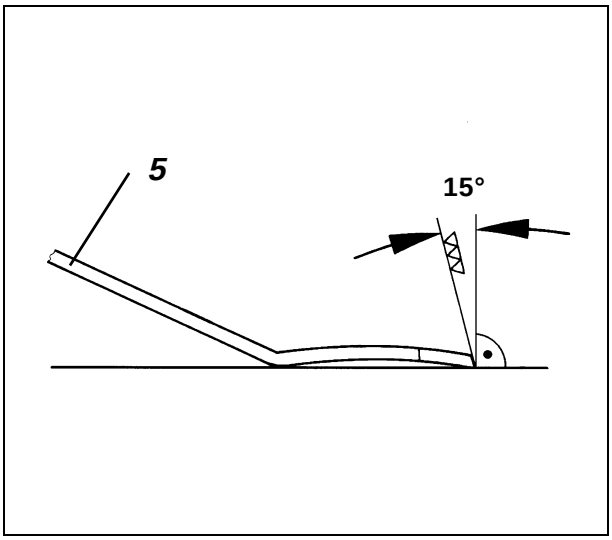
Turn off main switch.
Switch off the sewing machine before correcting the stationary knife.

Correction

- Turn back the cutting pressure screws 2.
- Loosen the screw 1 from below.
- Push the knife 3 in the arrow direction against the screw 1.
- Tighten the screw 1 slightly from above.
- Adjust the cutting pressure (see chapter 3.7.6).
- Tighten the screw 1 from below.

3.7.3 Regrinding the stationary knife





Rule and control

The cutting angle of the stationary knife 5 amounts to 15° (see the sketch).

For regrinding it is absolutely necessary to use a fine grain stone.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before fitting the reground knife.

ATTENTION !

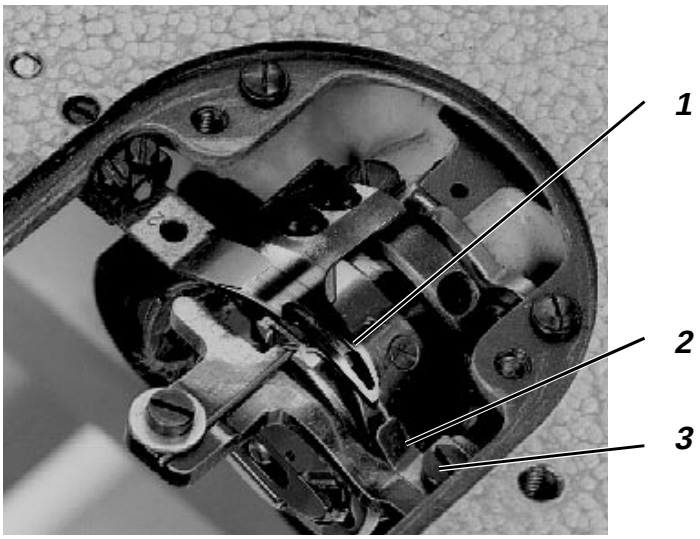
Reground knives, that have lost more than 0.5 mm of their original length, must be replaced by a new knife.

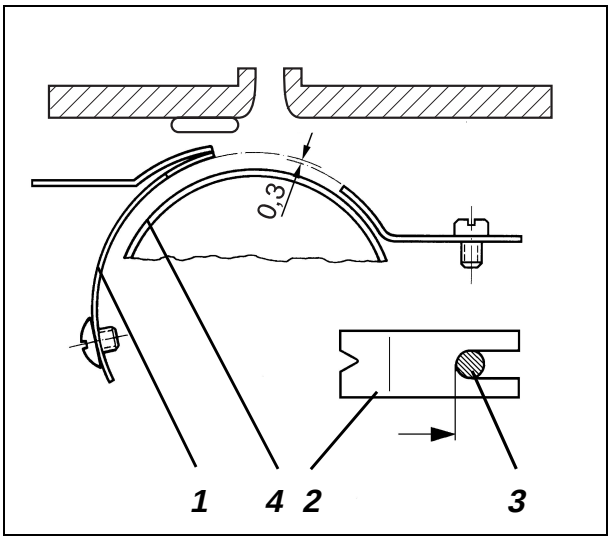
Correction

- Loosen the screw 2.
  The pre-tension of the stationary knife 6 will be reduced.
- Remove the knife 5.
- Regrind the knife.
  The cutting angle of the stationary knife amounts to 15°.
- Install the knife.
- Adjust the knife so that the distance between the cutting edge 3 and the edge 4 of the throat plate cut-out amounts to 38 mm.

  ATTENTION !
  When installing a reground knife ensure that it does not touch the screw 1.
- Tighten the screw.
- Readjust the neutral position of the hook-shaped knife (see chapter 3.7.5) and the cutting pressure (see chapter 3.7.6).

3.7.4 Adjusting sheet





Rule and control

Use for the big hook the adjusting sheet 2.

The adjusting sheet 2, seen in the arrow direction, must rest against the screw 3 (see the sketch).

Radially, the distance between the adjusting sheet 2 and the hook-shaped knife 1 should amount to 0.3 mm.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before removing the thread guiding sheet of the adjusting sheet.

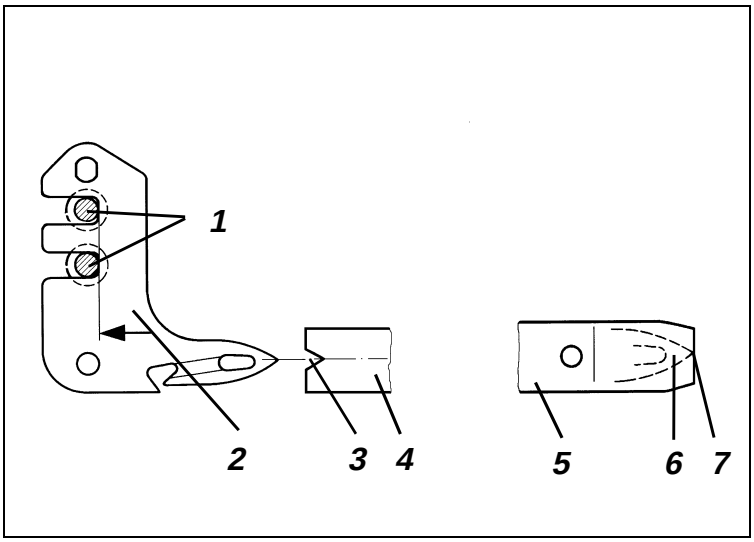
ATTENTION !

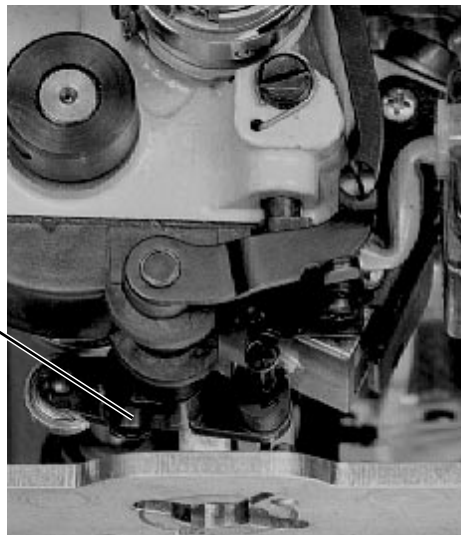
Following the installation of the adjusting sheet check the distances to the thread pulling sheet 4 of the hook and to the hook-shaped knife 1.

Correction

- Loosen slightly the screw 3.
- Remove the adjusting sheet 2 for the rectification.
- Rectify the adjusting sheet 2.
- Fit the adjusting sheet 2 and fasten by the screw 3.

3.7.5 Hook-shaped knife





Rule and control

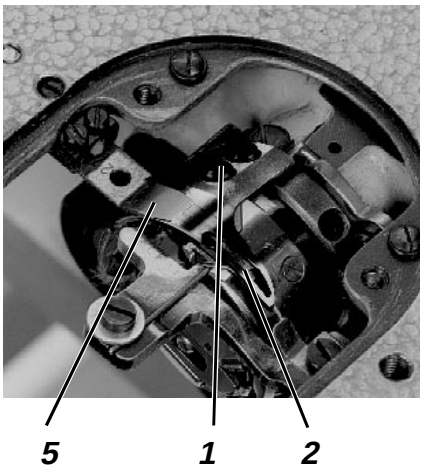
The hook-shaped knife 2, seen in the arrow direction, must rest against the two screws 1.

In neutral position of the hook-shaped knife, its tip 6 and the cutting edge 7 must be flush with the stationary knife 5.

During the movement of the knife, the tip 6 of the hook-shaped knife must stand, coincident, in the adjusting sheet 4 under the tip of the triangle 3.

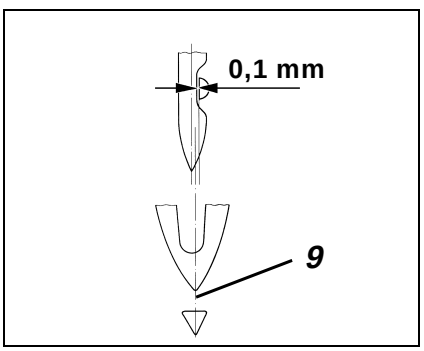
Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before correcting the hook-shaped knife.



Correction

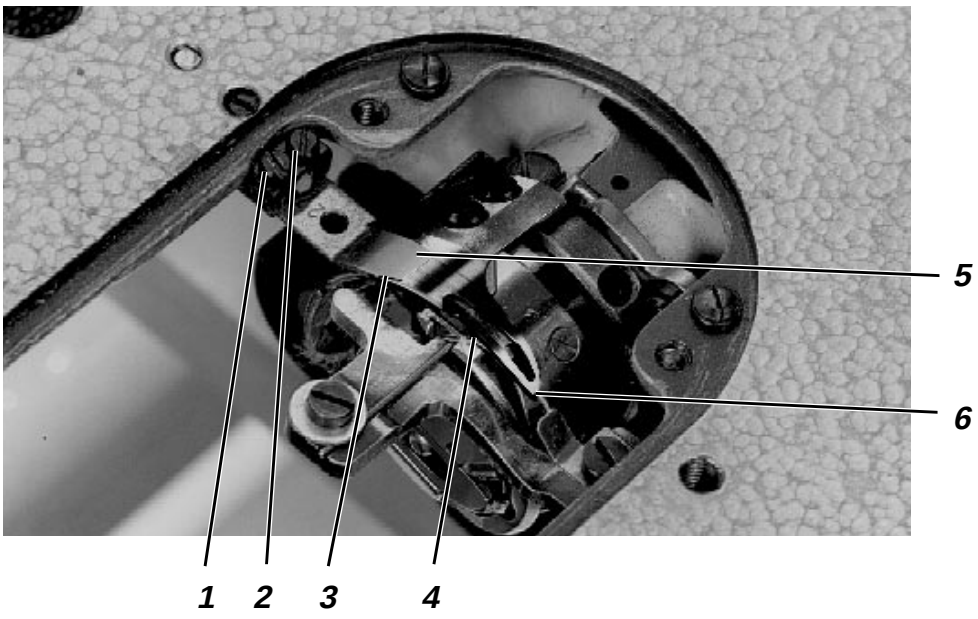
- Swing the hook-shaped knife 2 forwards by had.
- Loosen the fastening screws 1 of the hook-shaped knife.
- Push the hook-shaped knife in arrow direction against the fastening screws 1.
- Tighten the fastening screws 1.
- Loosen the screw 8.
- Set the neutral position of the hook-shaped knife 2.
  In neutral position of the hook-shaped knife, its tip 6 and the cutting edge 7of the stationary knife must be flush.
- Tighten the screw 8.
- Actuate the hook-shaped knife 2 by hand.
  Check whether the tip 6 of the hook-shaped knife coincides with the tip of the triangle 3.
- For correcting, loosen the screws 1 and shift the hook-shaped knife 2 in axial direction.



Adjustment:
If the adjustment of the hook-shaped knife 2 is correct, the tip 6 will move along the line 9 during the sewing process.

The dot-and-dash line 9 extends approximately between the middle of the needle an the tip of the hook.

3.7.6 Cutting pressure



Rule and control

The thread cutting pressure must be as low as possible. A low cutting pressure will reduce the wear !

Two of the thickest threads used must be cut safely at the same time .

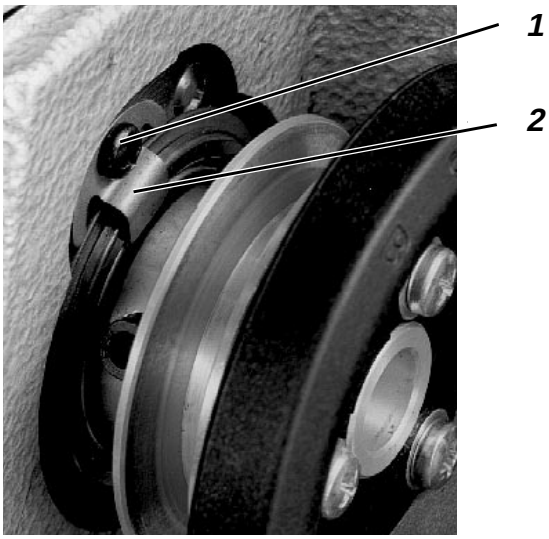
Caution: Danger of bodily injuries !

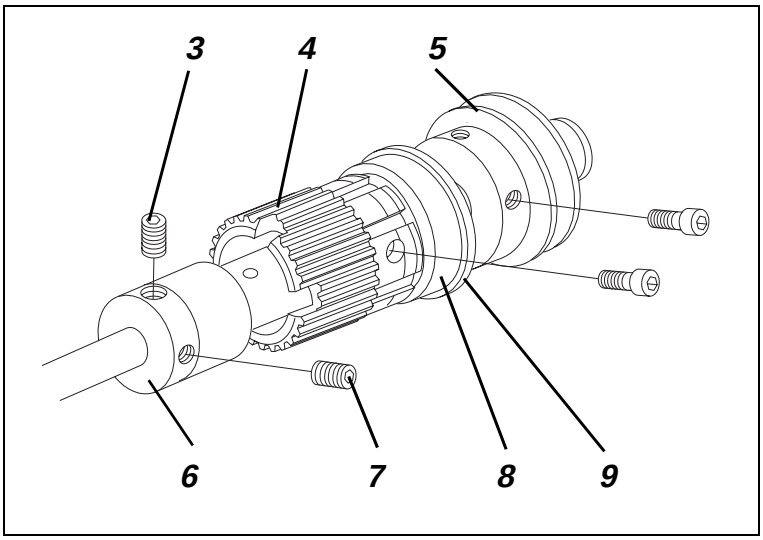
Turn off main switch.
Switch off the sewing machine before correcting the cutting pressure.

Correction

- Turn back the cutting pressure screws 1 and 2.
- Move the hook-shaped knife 4 under the stationary knife 2.
  The blade 6 of the hook shaped knife must stand under the blade 5 of the stationary knife 3.
- Set the stationary knife 3 against the hook-shaped knife 4 by tightening the cutting pressure screws 1 and 2.
- Place the thread to be cut alternately to the right and to the left. Regulate the respective cutting pressure screw.
- If the installed spring does no longer return the cutting mechanism into its initial position, the cutting pressure is too high.
  Regrind the stationary knife 3 (see chapter 3.7.3) or replace it.

3.8 Replacing right arm shaft bearing





Rule and control

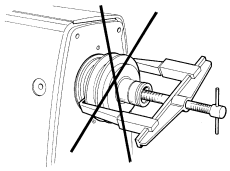
The right arm shaft bearing must be replaced when the operation of the arm shaft is sluggish.

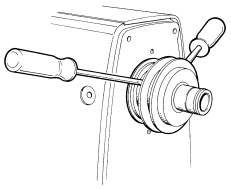
Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before replacing the arm shaft bearing.

ATTENTION !

Do not use any extraction tool !
When removing or installing the right arm shaft bearing no axial pressure against the arm shaft should be exerted. Axial pressure in head cover direction would result in a damage to the thread take-up lever.





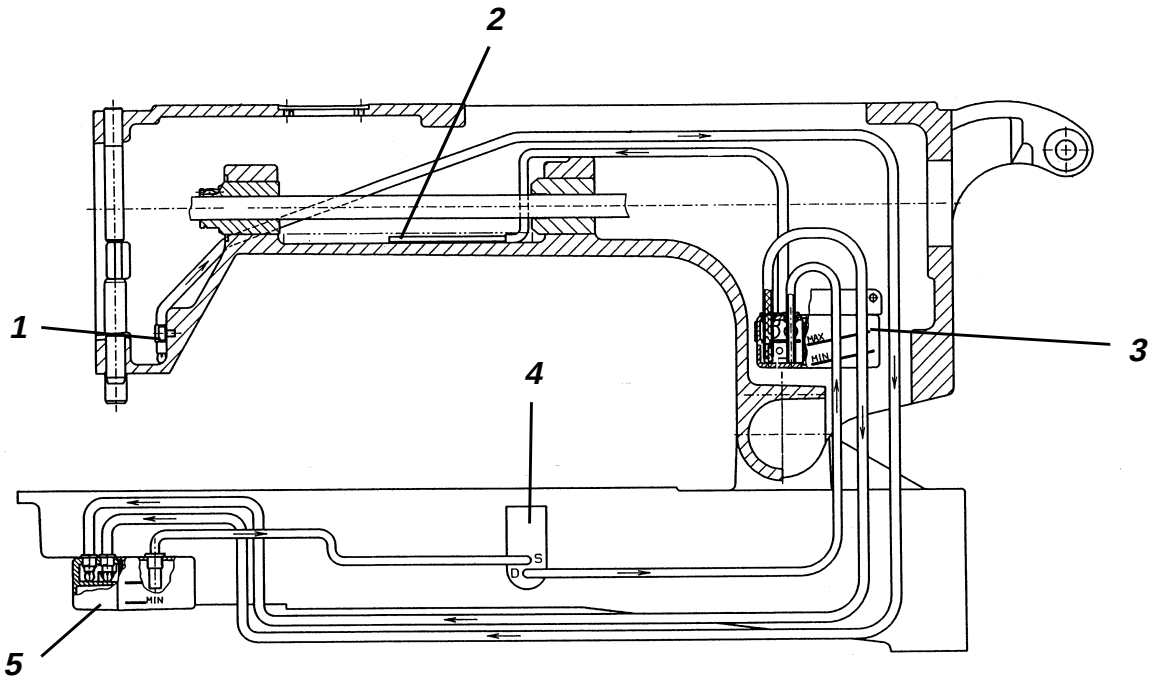
Replacing the arm shaft bearing

- Remove both head covers.
- Loosen the screw 1.
- Remove the retaining springs 2 (2 pieces).
- Loosen the screws 3 and 7.
- Push the toothed belt off the upper pulley to the left.
- ”Unlever” the drive unit by 2 spanners.
  The drive unit includes the toothed belt pulley, the V- belt pulley and the ball bearing.
- Remove the V-belt pulley 5.
- Replace the toothed belt pulley, consisting of the pos. 4, 6, 8 and 9, completely (ref. no.: 0271 000322).
  or : remove the ball bearing 8 by an extraction tool and press-in a new ball bearing (Ref. no.: 0211 000362).
- Re-install the V-belt pulley.
- Fit the driving unit.
- Fit the removed parts.

ATTENTION !

Following the replacement of the arm shaft bearing proceed to a new adjustment.

3.9 Lubrication



3.9.1 General information

The oil passes from the oil supply container 3 to the oil sump 2. This oil is used for lubricating the lubrication points in the arm and head area.

The oil projected by the crank drive passes via the wick 1 to the hook oil container 5. This oil is used for lubricating the hook. The oil exceeding the MAX mark is returned by the pump 4 to the upper oil container 3.

The oil of the container 3 flows via a wick connection to the hook oil container 5.

This ensures an effective lubrication and low oil consumption.

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before carrying out any work on the oil circulation system.

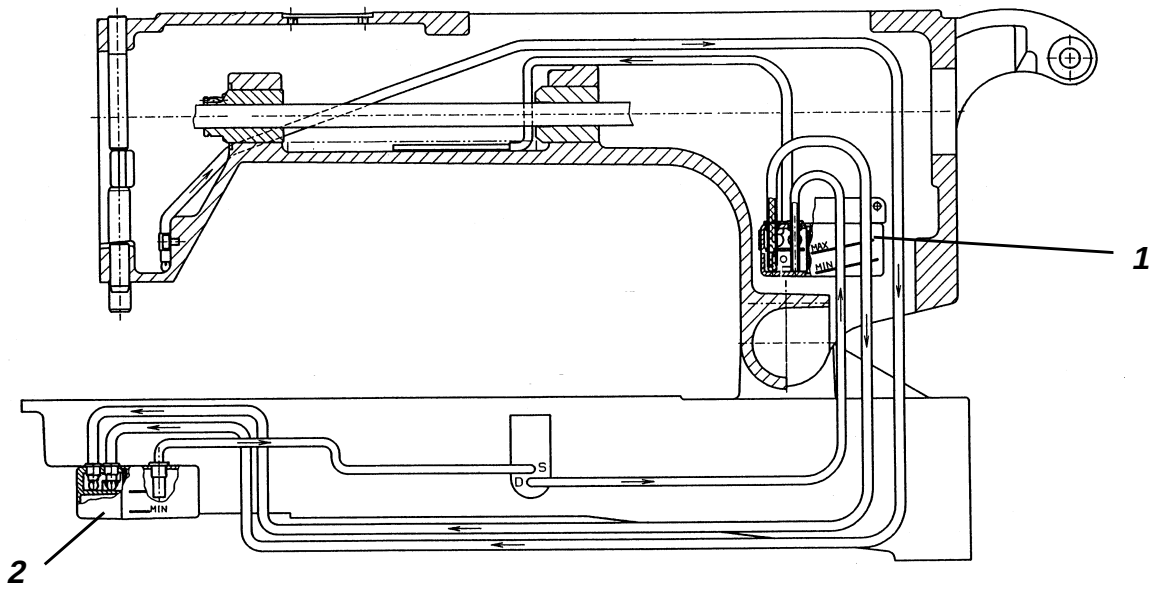
ATTENTION !

When proceeding to the installation work ensure that the hose ends are again properly connected to the pump.

S = Suck

D = Press

3.9.2 Checking oil level and oil supply



Rule and control

After long stops, the major part of the oil is in the lower oil container. Therefore, the oil level should be checked after about 20 sewing cycles.

- Check oil level in oil container 1.
  The oil level must stand between the marks MIN and MAX.
- Should the oil level in the container 1 drop below the mark MIN ,check additionally also the oil level in the oil container 2.
  When the oil level stands there above the mark MAX, do not yet top up. Set about 20 further pockets and check the oil level once more.
- Fill the oil through the filling neck of the oil container 1.
- Check the oil supply on the oil container 1.
  A formation of bubbles must be visible.
  Proceed to the control while the machine is running.

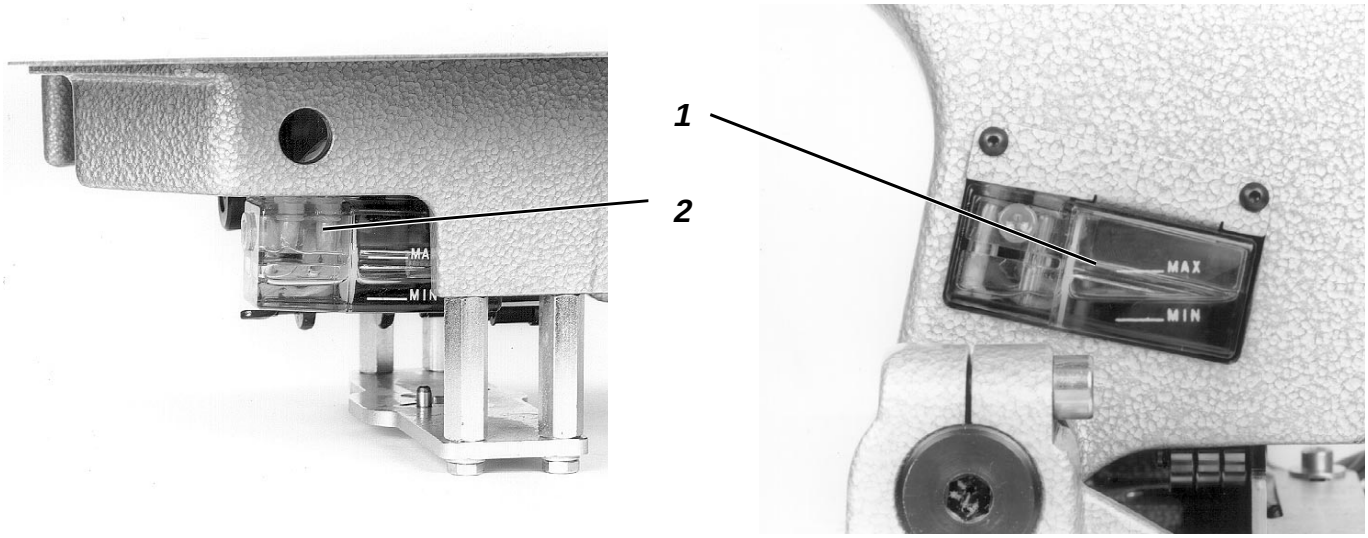
Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the sewing machine before proceeding to any installation work on the oil circulation system.

Oil can irritated the skin.
Avoid long skin contacts with the oil.
Wash thoroughly the contaminated skin.

ATTENTION !

The handling and the disposal of mineral oils is subject to statutory regulations.
Deliver the used oil to an authorised oil reception centre.
Protect your environment.
Do not spill any oil.



Correction

– Fill the oil container 1 up to the mark "MAX".

- For the hook lubrication see chapter 3.9.3 -

For replenishing the oil containers use exclusively the **ESSO SP-NK 10** oil or any other oil with following specification:

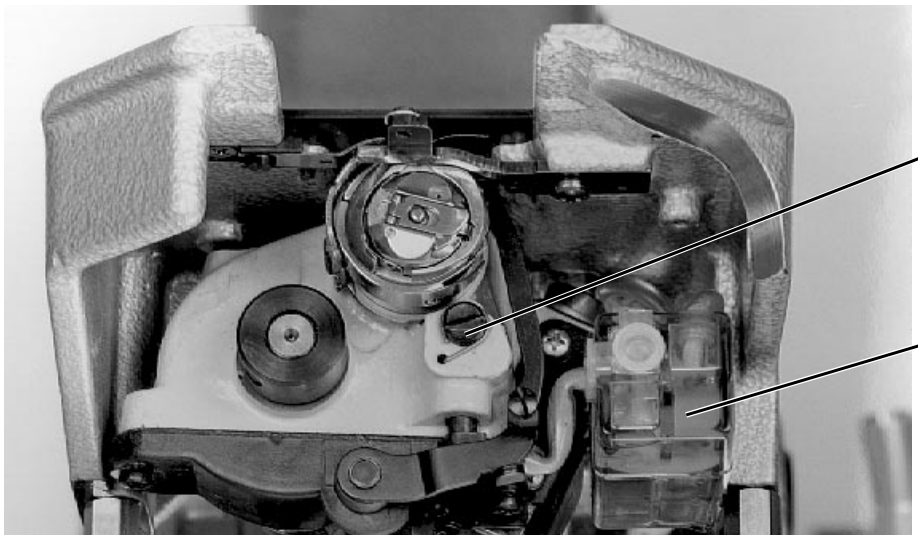
Viscosity at 40° C: 10 mm2/s
Point of inflammation: 150° C

ESSO SP-NK 10 can be obtained from
DüRKOPP-ADLER AG sales centres under the following ref. no.:

2 litre container: 9047 000013

5 litre container: 9047 000014

3.9.3 Hook lubrication



Caution: Danger of bodily injuries !

When the machine is switched on, be very careful when checking the hook lubrication.

Turn off main switch.
Switch off the sewing machine before correcting the hook lubrication.

Rule and control

The oil quantity required for the hook lubrication is adjustable and depends on the stress of the machine.

When sewing 2-3 pockets, the piece of paper – preferably blotting paper - , placed under the hook, should be slightly moistened by oil.

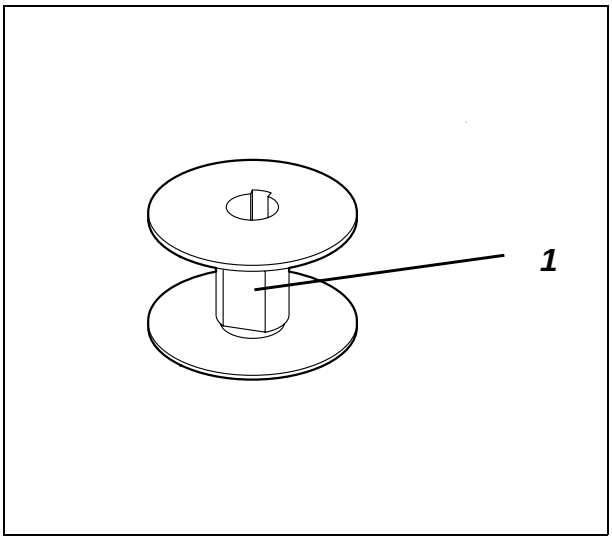
Correction

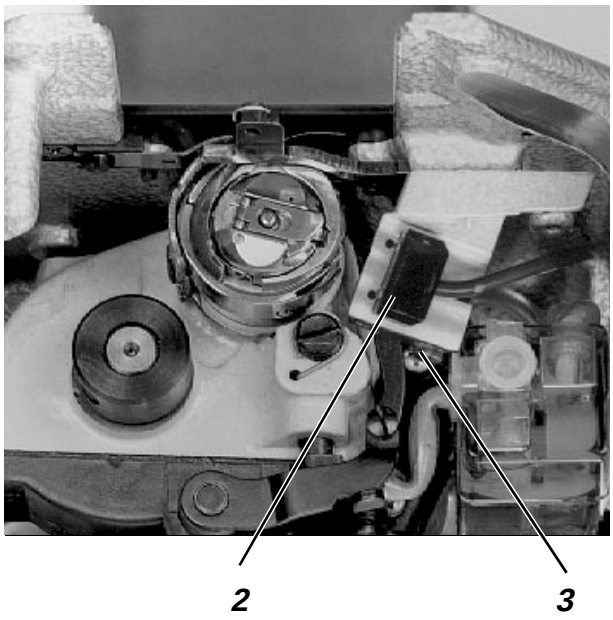
– Turn the screw 1.

Counter-clockwise	= for more oil
clockwise	= for less oil

2 = Oil container for the hook lubrication

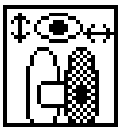
3.10 Adjusting the remaining thread monitor





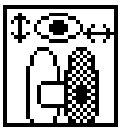
Rule and control

Adjust the remaining thread monitor so that the end of the hook thread is recognised.



- Select the function "**Adjusting the remaining thread monitor**".
- Insert empty bobbin.
- The symbol should not be crossed when the reflecting surface 1 stands in front of the light barrier.
  The symbol must be crossed when the reflecting surface does not stand in front of the light barrier.

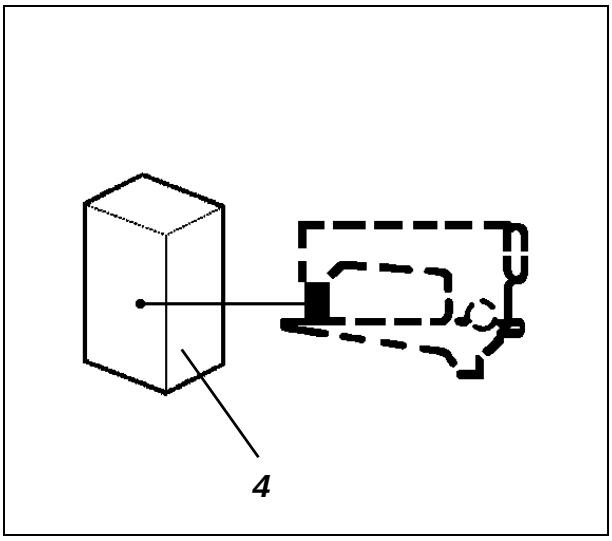
Correction

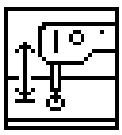


- Select the function "**Adjusting remaining thread monitor** ".
- Insert empty bobbin.
- Loosen the screw 3.
- Adjust the light barrier 2 so that the displayed symbol is no longer crossed.
- Tighten the screw 3.

3.11 Sewing arm position

3.11.1 Lower position of the sewing arm





Rule and control

When the arm is in its lowered position, the square distance gauge 4 (Ref. no.: 0804 400290) should fit exactly between the throat plate and the bottom of the sewing arm.

- Lower the sewing head by the function "**Lifting/lowering the sewing head** ".
- Press the key "**O**".
  "Safe motor stop" will be switched on.

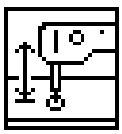
Correction

- Loosen the counter nut 1
- Turn the piston rod 2 accordingly.
- Tighten the counter nut 1.

Note:

The upper position of the sewing arm is determined by the stroke of the piston rod

3.11.2 Speed of the sewing arm



Rule and control

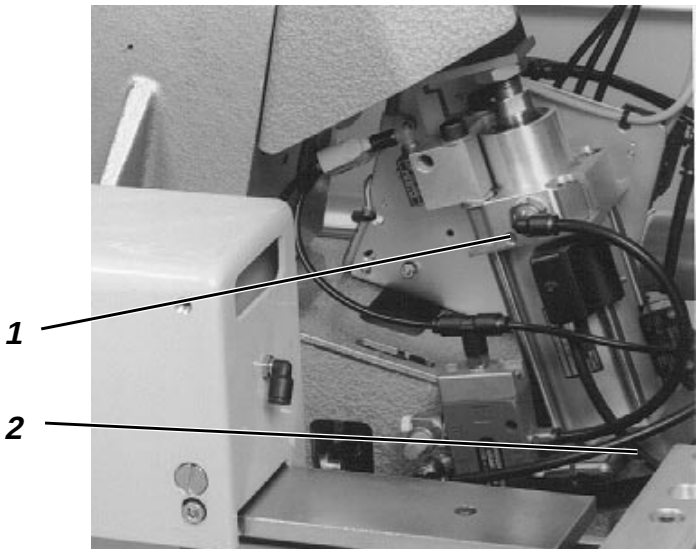
The sewing head should move continuously and smoothly.

- Select the function "**Lifting/lowering the sewing head**".

Correction

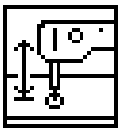
- Adjust the throttles 3 (2 pieces) accordingly.

3.11.3 Damping the cylinder in its end position



General

The speed of the sewing head is reduced about 10 mm before the end position, so that the sewing head is braked softly.



Rule and control

– Select repeatedly the function "**Lifting/lowering the sewing head**".

Correction

– Adjust the end position damping 1 and 2 accordingly.

4. Folding device

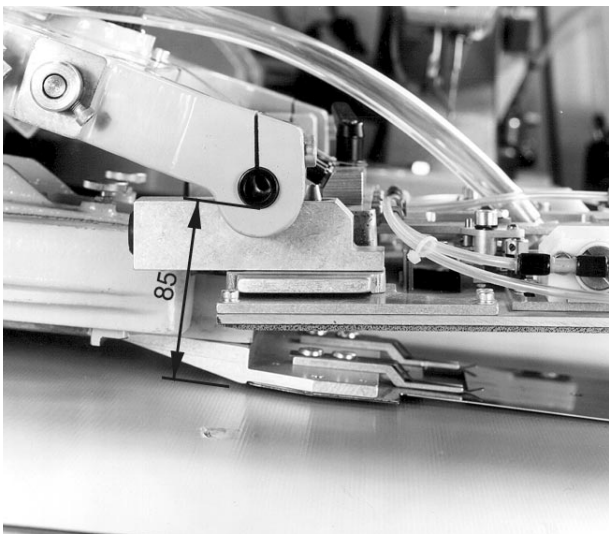
4.1 Outer frame

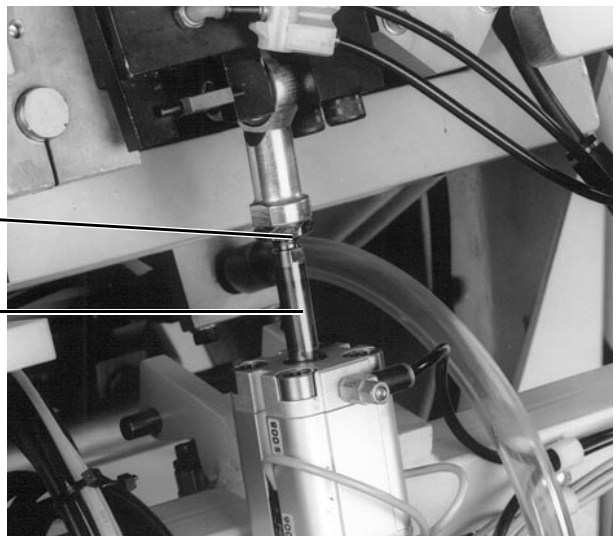
4.1.1 General information

The outer frame supports following functional elements:

- Lateral slide
- Front slide
- Corner slide
- Corner slide (in)
- Inner frame

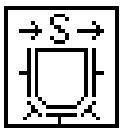
4.1.2 "Folding position" of the outer frame





Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

When the lifted outer frame is in its front position, its distance to the fabric rest should amount to 85 mm.

- Select the "**single step mode**" function.
- Repeat pressing the key "**Start**" until the outer frame is in its respective position.

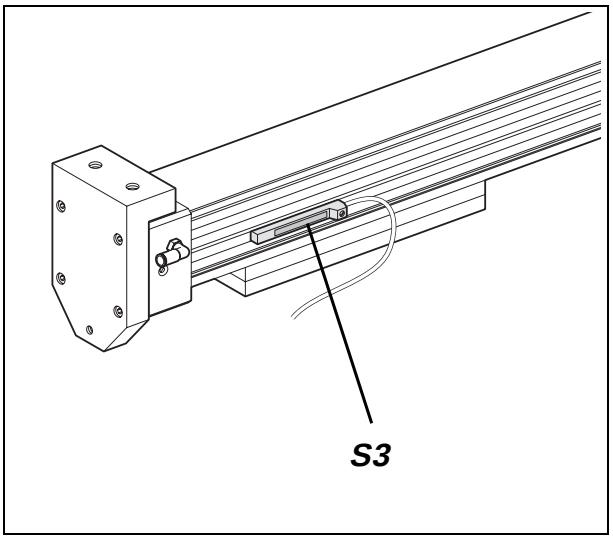
Correction

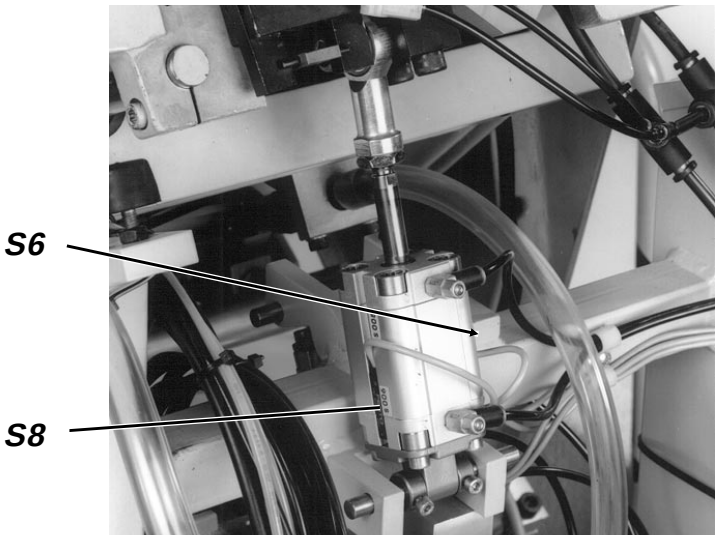
- Loosen the counter nut 1.
- Turn the piston rod 2 until the distance of the lifted outer frame, in the front position, to the fabric rest amounts to 85 mm.
- Tighten the counter nut 1.

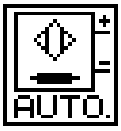
ATTENTION !

When the outer frame stands too deep, it can knock against the middle slide.

4.1.3 Timing the operation of the switches







Rule and control

The switches S3, S6 and S8 should be operated short before the end position of the outer frame.

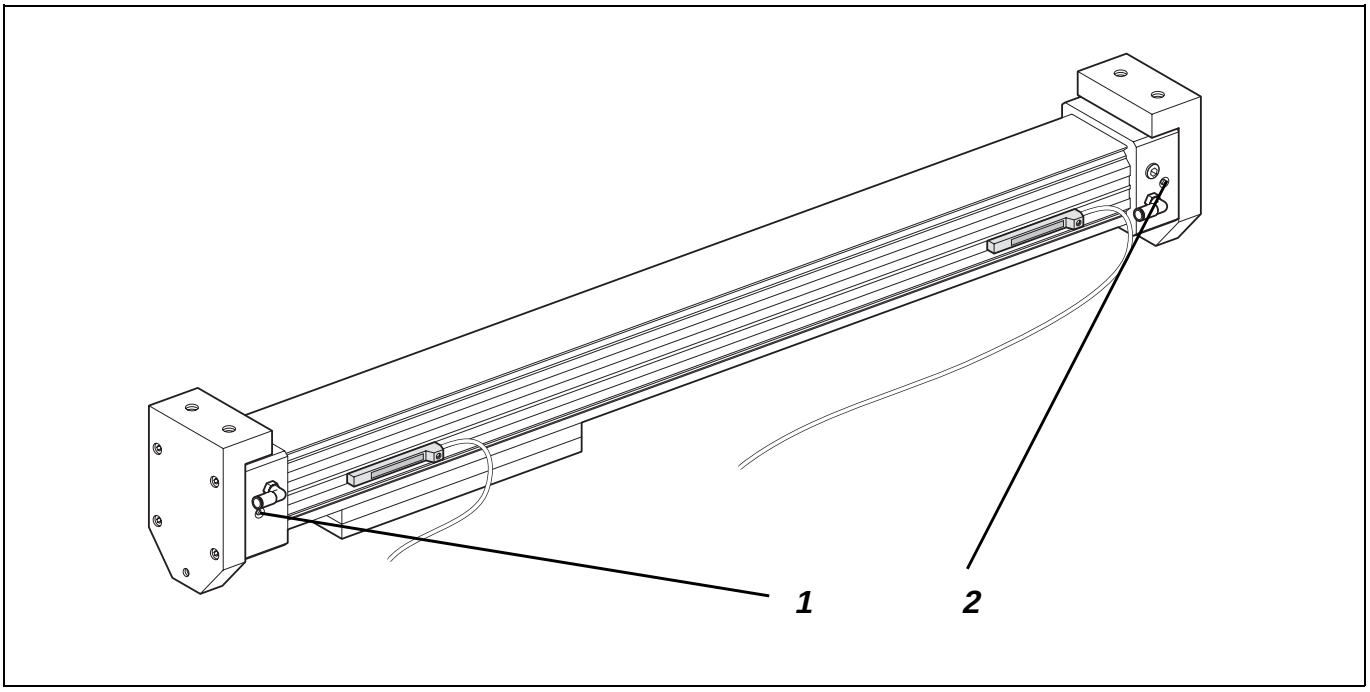
- When switching on, hold the key "**F3**" pressed down.
- Select the function "**Checking the input elements** ".
- Move the outer frame by hand.
  The display will show the circuit state of the input element, the state of which has changed.
  Check whether the following switches are releasing:

  S3 outer frame, rear
  S6 outer frame, top
  S8 outer frame, bottom

Correction

- Loosen the clamping screw of the switch to be changed.
- Change the position of the switch.
- Tighten the clamping screw of the switch.

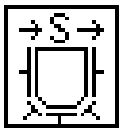
4.1.4 Damping the cylinder in its end position



The damping of the pistonrod-free cylinder "Outer frame forwards and backwards " begins already 20 mm from the end positions.

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

– Watch the damping during the automatic cycle

or

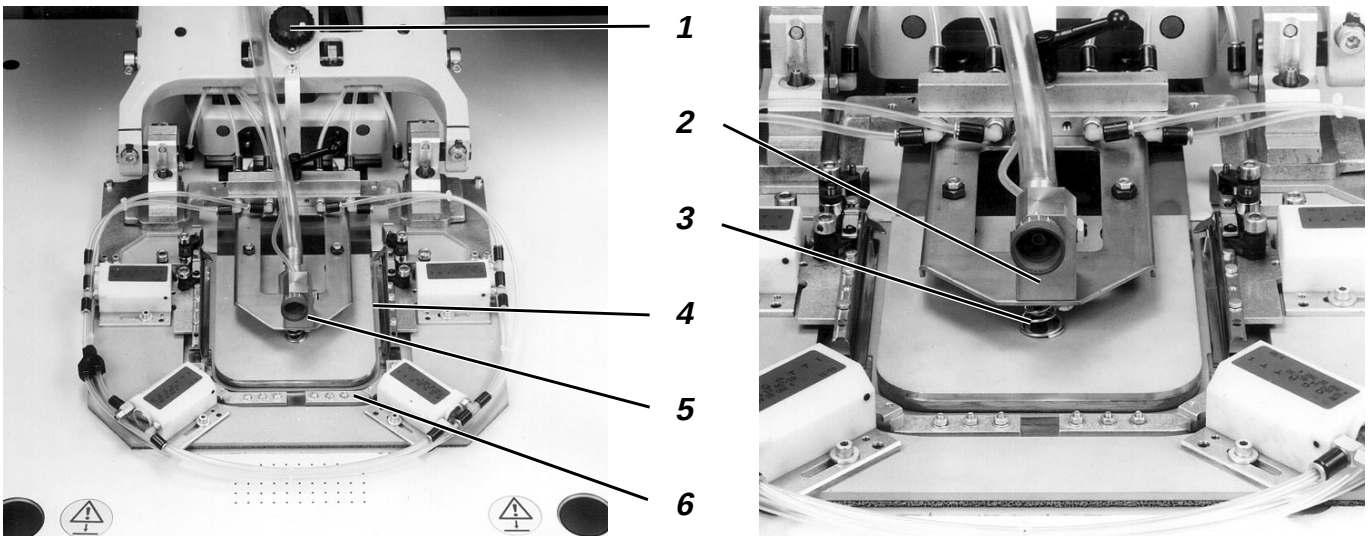
– select the function "**Single step mode**".

– By pressing the "**Start**" key carry out the single steps and watch the damping of the cylinder.

Correction

– Set the end positions 1 and 2 on the cylinder so that the outer frame moves softly into the end positions.

4.2 Inner frame



4.2.1 General information

- The inner frame 4 is linked to its supports in a springy way at 3 points.
- The vacuum field under the inner frame 4 sucks the middle slide, so that it can be pulled up into the "Folding position".

4.2.2 Adjustment range of the front setting wheel

The setting wheel 5 permits to determine "the folding position" of the inner frame 4 and consequently also of the middle slide. The sticker on the transfer plate shows the position of the setting wheel, required for folding the fabric of the respective type. When adjusting the setting wheel 5 note, that the main change of the "folding position" is in the "lower" pocket section. A greater change in the "upper" pocket section requires the adjustment by the setting wheel 1.

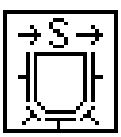
Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

It should be possible to move the front slides 6 under the middle slide at the smallest distance possible when the two settings wheels 1 and 5 are in "0" position and the inner frame 4 stands in the "folding position".

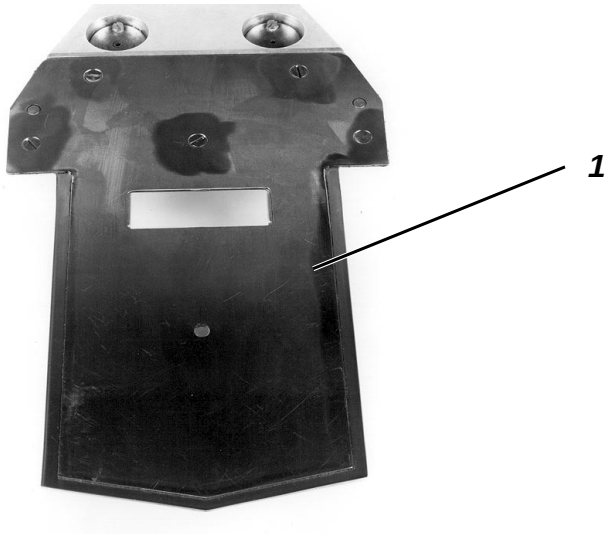
- Move the setting wheel 1 and the setting wheel 5 in "0" position.
- Select the "**Single step mode**" function.
- Repeat pressing the "**Start**" key until the front slides 4 can be advanced by hand.

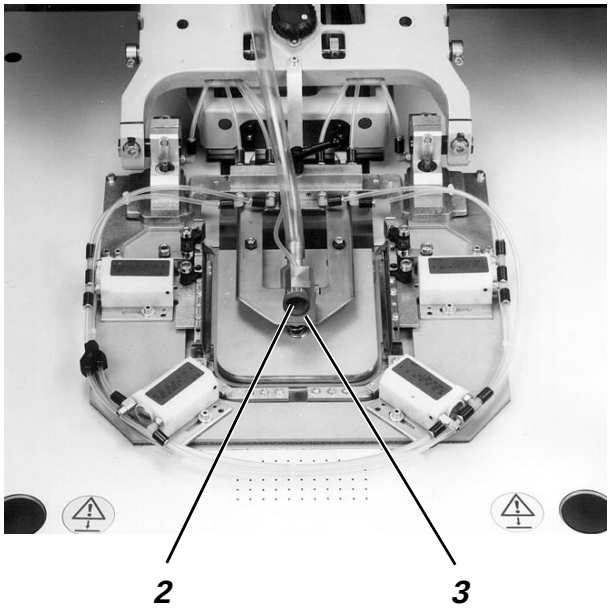


Correction

- Loosen the counter nut 3.
- Turn the piston rod of the resetting element 2 accordingly.
- Tighten the counter nut 3.

4.3 Middle slide

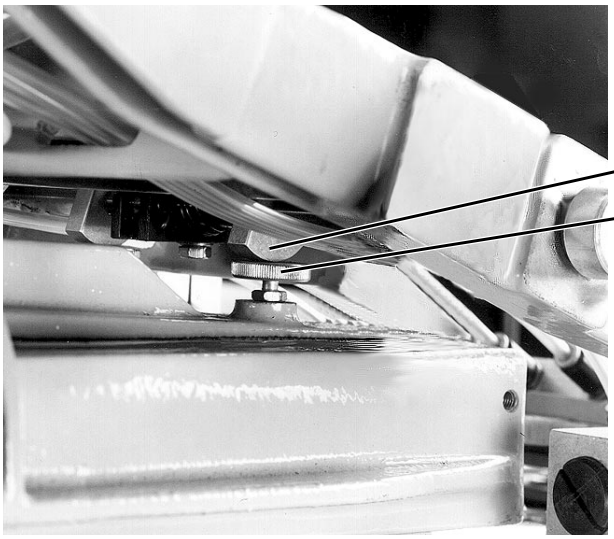


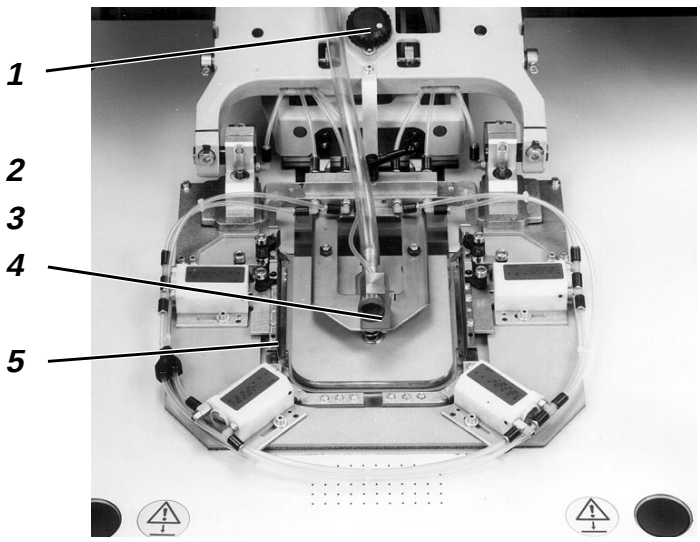


4.3.1 General information

- The middle slide 1 determines the outer contour of the pocket to be set.
- The lower sheet of the middle slide 1 should fix the folded edges, when the lateral, front and corner slides are again moving into their initial position. But this function can only be performed when the cut pocket piece has a respective minimum size. The size is sufficient if at least 10 mm are added to the pocket outer contour.
- By activating the vacuum field of the table top, the middle slide will be sucked against the lower side of the inner frame. The cylinder in the setting element 3 pulls the inner frame – and consequently the middle element – upwards into the "folding position". This fabric-dependant position can be modified by the setting wheel 2.

4.3.2 Adjustment range of the rear setting wheel





The position of the setting wheel 1 determines the "Folding position" of the middle slide in its rear section. The "Folding position" in the "front" section depends on the position of the setting wheel 4.

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

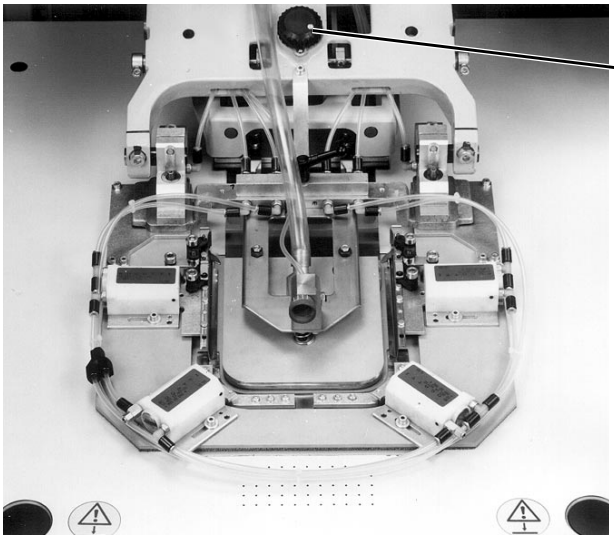
It should be possible to move the lateral slides 5 under the middle slide at the smallest distance possible when the two settings wheels 1 and 4 are in "0" position and the inner frame 4 stands in the "folding position".
The adjustment range of the setting wheel 4 must be correct.

- Select the "**Single step mode**" function.
- Turn both setting wheels into "**0**" position.
- Repeat pressing the "**Start**" key until the inner frame stands in the folding position and the lateral slide can be advance by hand.

Correction

- Changing the position of the stop screws 3.
  Make sure that the levers 2 are resting on both stop screws 3.

4.3.3 Limiting the movement "Middle slide up"



Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

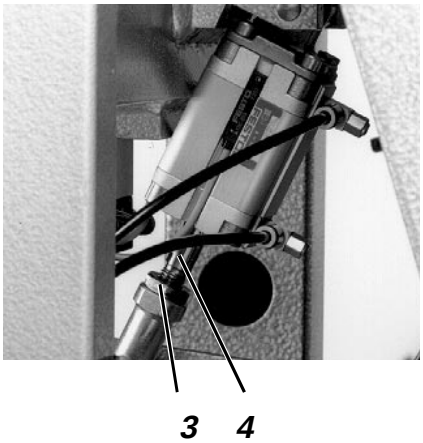
Rule and control

The upwards movement of the middle slide must be limited by the levers 2 on the outer frame and not by the cylinder "Middle slide up".

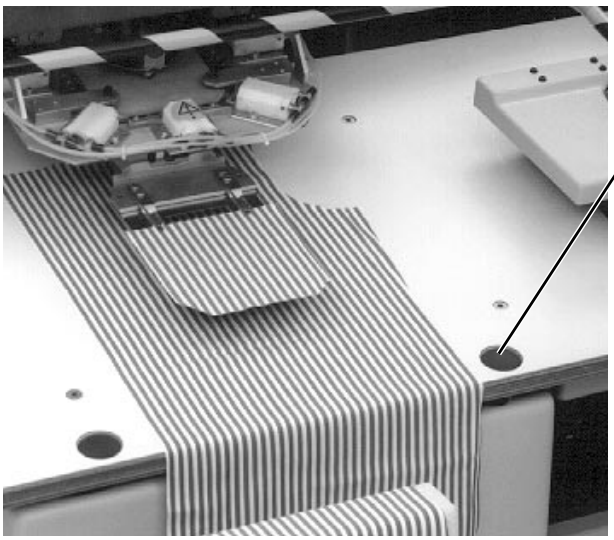
- Move the setting wheel 1 in "11" position.
- Select the "**Single step mode**" function.
- Call up the respective step by the "Start" key.

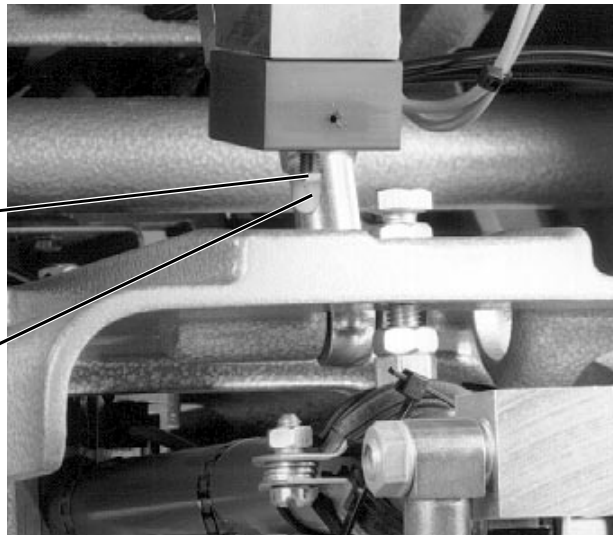
Correction

- Loosen the counter nut 3.
- Turn the piston rod 4 accordingly.
- Tighten the counter nut 3.



4.3.4 "Adjustment position" of the middle slide





After positioning the cut pocket fabric on the middle slide, the latter can be lowered by the key 1, for adjusting the basic part "according to the pattern".

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

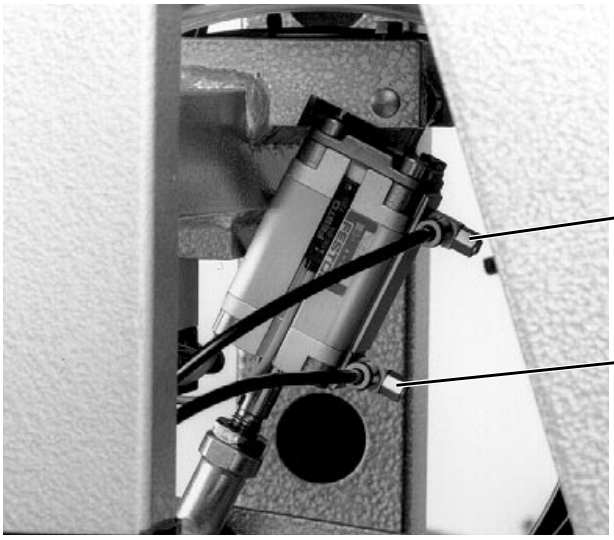
Rule and control

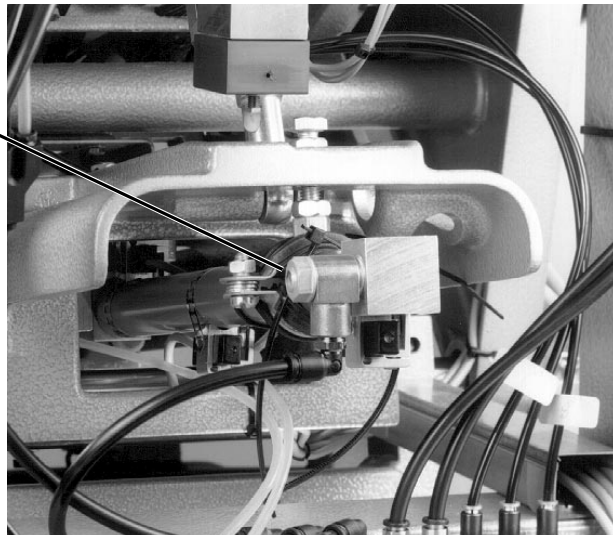
– By pressing the key 1 lower the middle slide down to the "Adjustment position".

Correction

– Loosen the counter nut 2.
– Turn the plastic cap 3 accordingly.
– Tighten the counter nut 2.

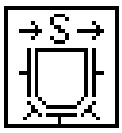
4.3.5 Speed "Middle slide forwards, downwards and upwards "





Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

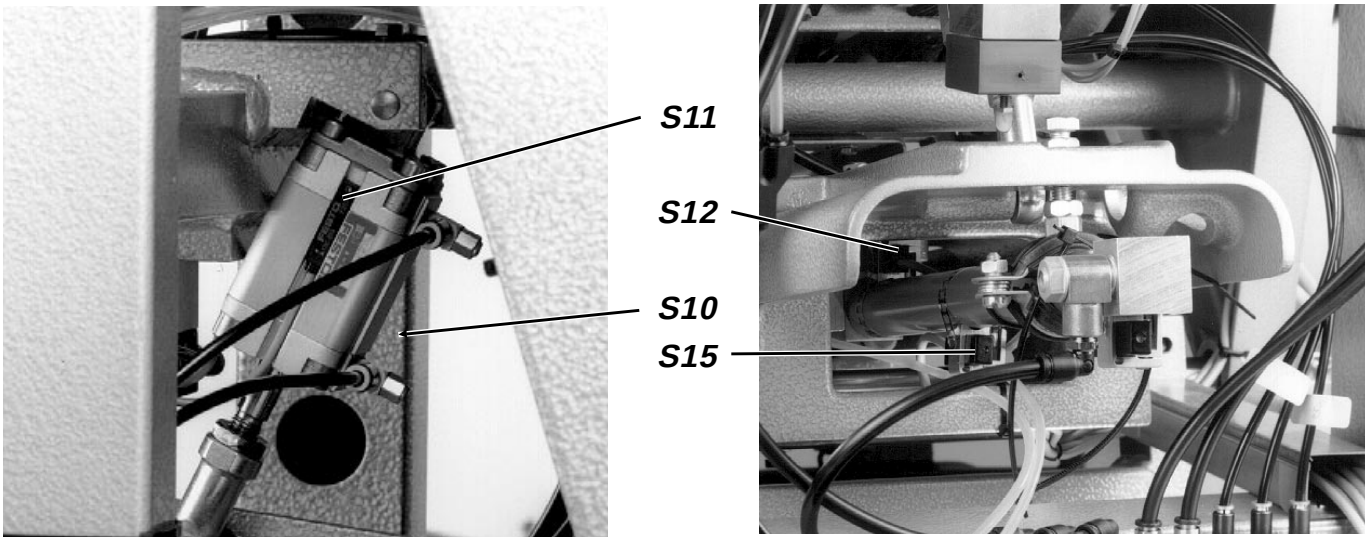
The middle slide should move continuously and regularly.

- Watch the advance movement during the folding process.
- Select the "**Single step mode**" function.
- Press the "**Start**" key repeatedly.
  Watch the vertical movement.

Correction

- Regulate the movement of the middle slide by the throttles 1, 2 and 3 accordingly.

4.3.6 Timing the operation of the switches



Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

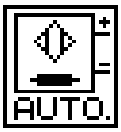
The switches should release signals at the following moments:

S15 Operation of the signal when the middle slide is about 80 mm from the rear end position

S12 Release of the switch in the front position of the Middle slide

S11 Operation of the switch in the lower position of the Middle slide

S10 Operation of the switch in the "Folding position of the middle slide"



- When switching on, hold the key "**F3**" pressed down.
- Select the "**switch checking** " function.
- Displace the middle slide by hand until all switches are released. The switch names will be displayed.

Correction

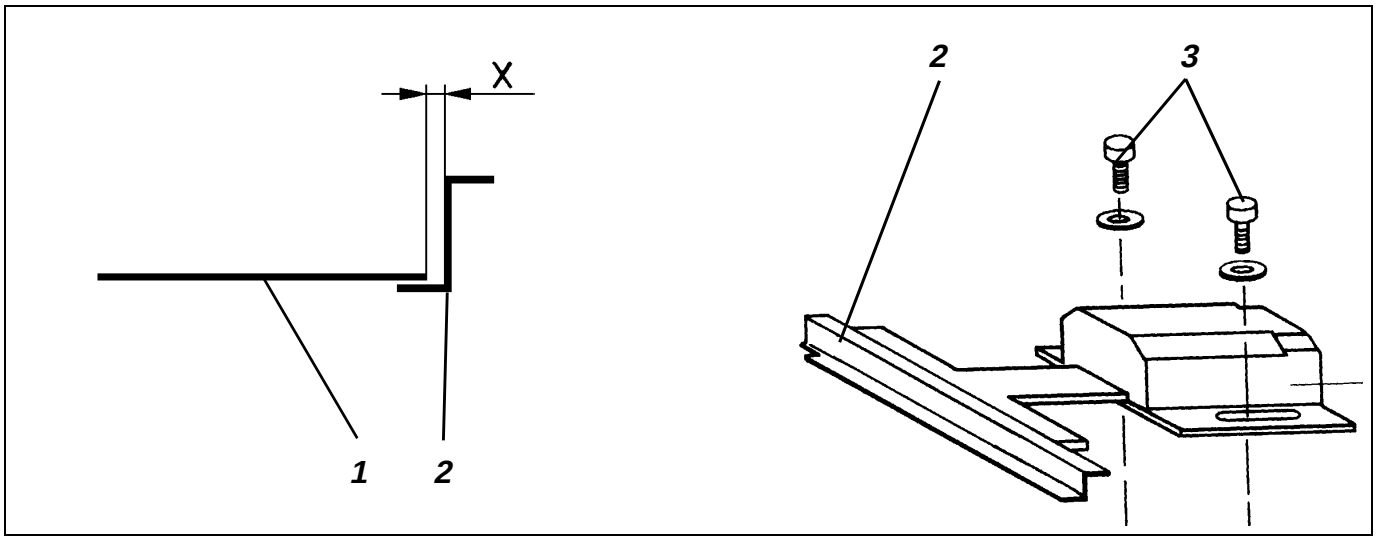
- Loosen the clamping screw of the switch.
- Reset the switch position accordingly.
- Retighten the switch clamping screw.

4.4 Lateral slide. front slide and corner slide

4.4.1 General information

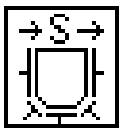
These slides are folding the cut pocket fabric around the middle slide when the latter has been taken into the folding position by the inner frame.

4.4.2 Front position of the slide



Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

The lateral X distance of the slide 2 in respect to the middle slide 1 should correspond to the middle fabric thickness.

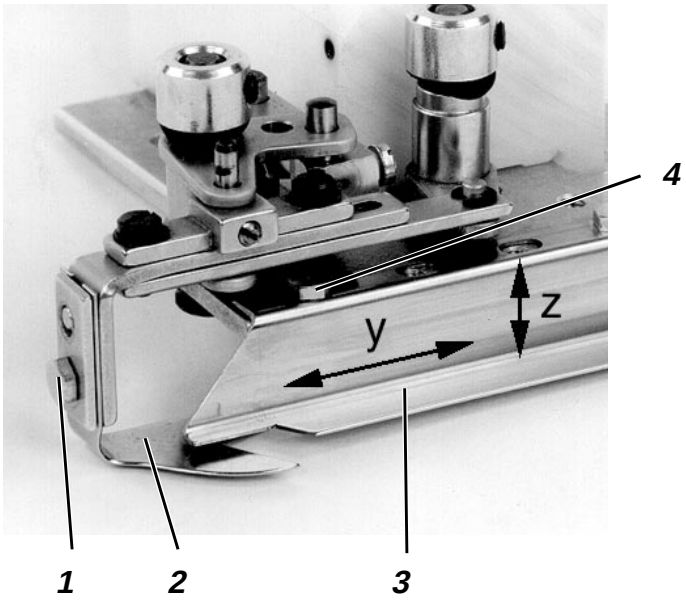
- Select the "**Single step mode**" function.
- Press the "**Start**" key as often as required.

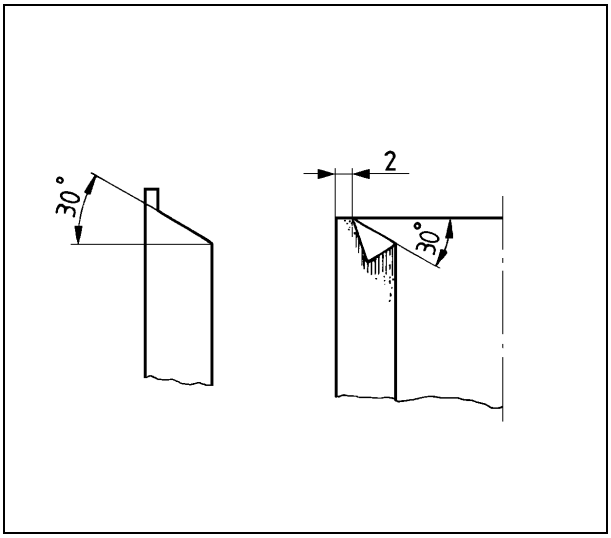
Correction

- Loosen the screws 3.
- Adjust the lateral slide sheet 2 accordingly.
- Close the screws 3.

4.5 Corner slide

4.5.1 Position of the "fold edge" of the lateral slide





Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

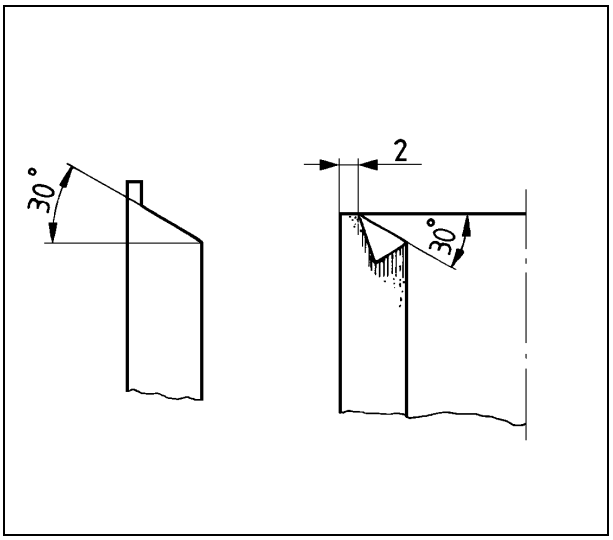
Following the "corner introduction" the position of the cut part should be as shown in the illustration at the right top.

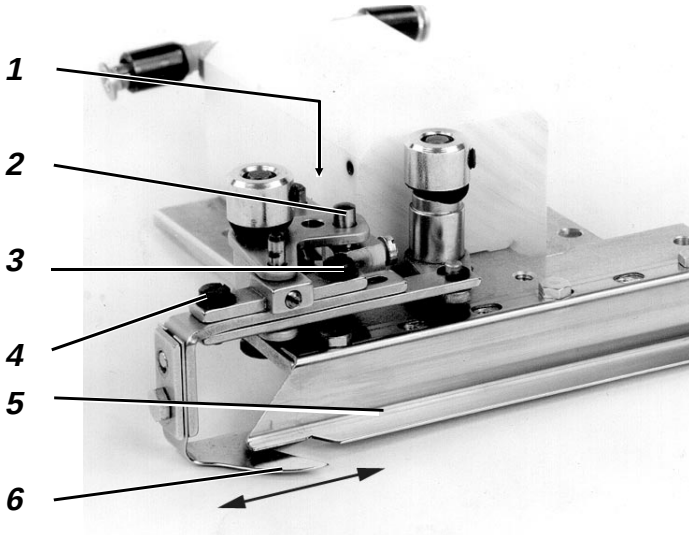
- Call up the "**Single step mode**" function.
- Position the cut pocket part on the middle slide.
- Repeat pressing the "**Start**" key until the lateral slides are depressurised.
- Displace lateral slides in "y" direction by hand.
- Adjust the height (y-direction) of the lateral slides by the sheet strip, contained in the accessories.

Correction

- Loosen all screws 4.
- Change the position of the lateral slide sheet 1 accordingly.
- Tighten all screws 4.

4.5.2 General information



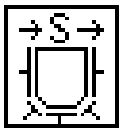


- The purpose of the corner slide 6 is to place the fabric under the 30°-edge of the lateral slide 5, in order to avoid any fabric projection in the pocket opening area.
- In case of corner introduction slides for the class 806-111 attention must be paid to the prescribed swivel position.
  Double seam: pin in the bore-hole 2 for a longer stroke
  Single seam: pin in the bore-hole 1 for a shorter stroke

4.5.3 Position of the entered corner introduction knife

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.



Rule and control

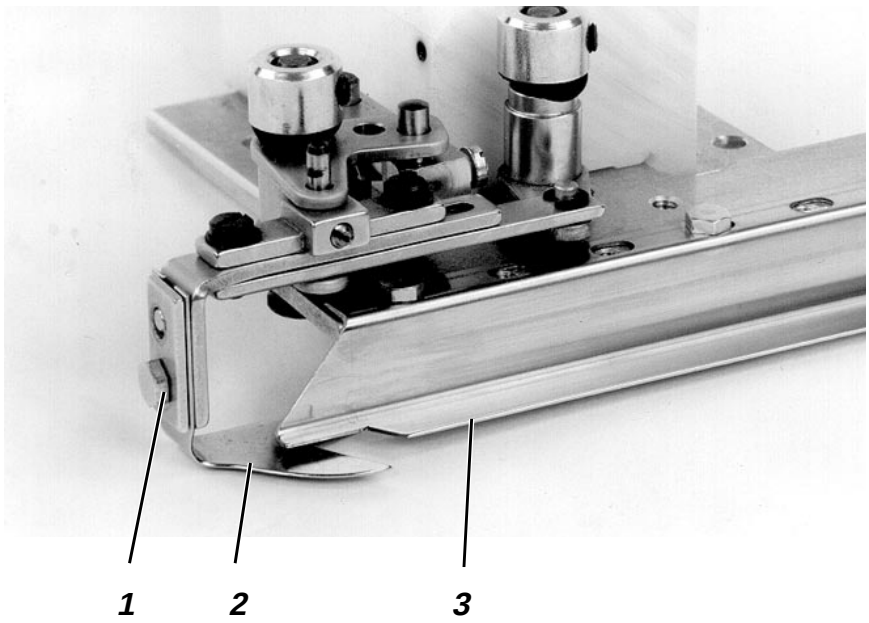
The amount of overlapping between the entered corner introduction slide 6 and the lateral slide sheet 5 should range between 1 and 2 mm , depending on the fabric type.

- Select the "**Single step mode**" function.
- Operate the "**Start**" key accordingly.

Correction

- Loosen the screw 3 and the screw 4.
- Change the position of the corner introduction slide 6 along the arrow direction accordingly.
- Tighten the screw 3 and the screw 4.

4.5.4 Height of the corner introduction slide



Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

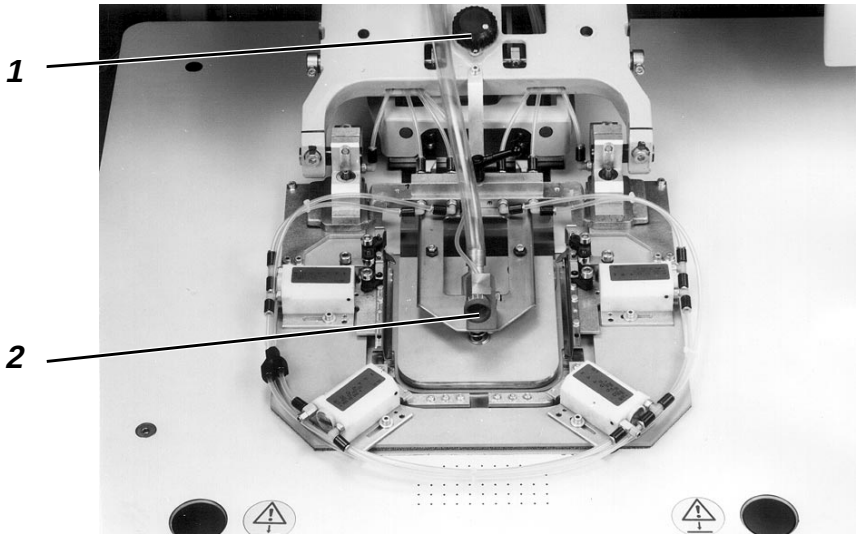
The distance between the entered corner introduction slide 2 and the lateral slide sheet 3 should correspond to a middle fabric thickness.

- Select the "**Single step mode**" function.
- Press the "**Start**" key as often as required.

Correction

- Loosen the screw 1.
- Change the height of the corner introduction slide 3 accordingly.
- Tighten the screw 1.

4.6 Position of the two setting wheels



The position of the rear setting wheel 1 determines the "Folding position" of the middle slide in its "rear section. The position of the setting wheel required for the respective fabric type is indicated, as far as it has been determined, on the sticker of the transfer plate.

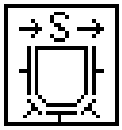
The position of the front setting wheel 2 determines the "Folding position" of the middle slide in its "front" section. The sticker on the transfer plate indicates the position of the setting wheel, being according to the experience made, the best for the fabric involved.

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

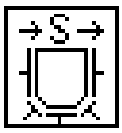
Rule and control

The position of the setting wheels 1 and 2 must be adapted to the fabric thickness involved for obtaining the optimum folding results.



- Select the "**Single step mode**" function.
- Press the "**Start**" key as often as necessary.

Correction

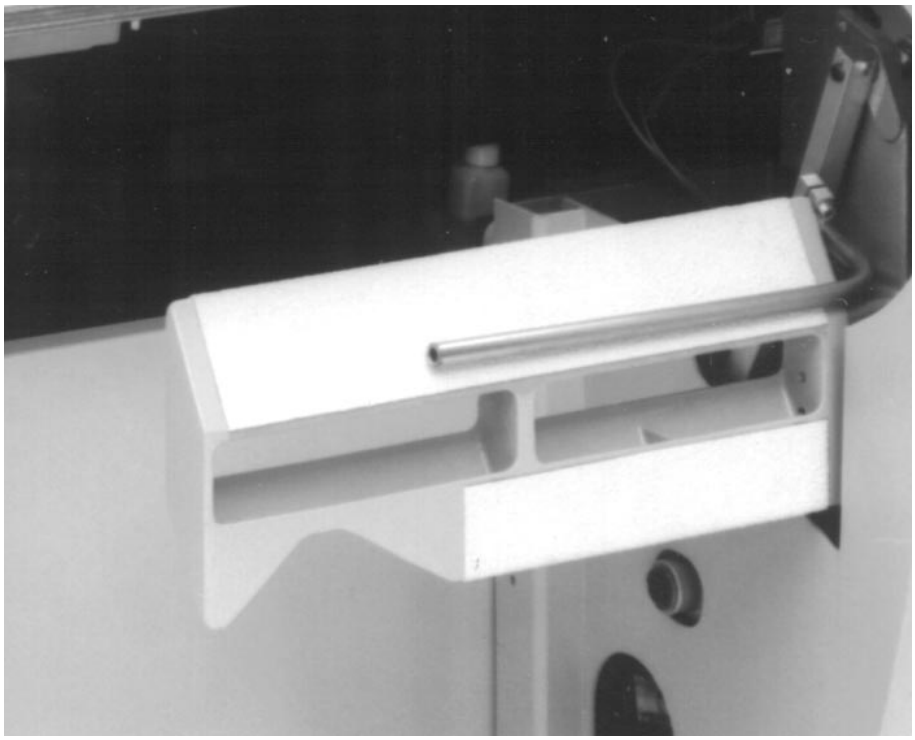


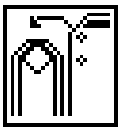
- Select the "**Single step mode**" function.
- Repeat pressing the "**Start**" key until the slides can be shifted by hand.
- Push the slides inwards by hand.
  It should be possible to shift the slides easily, but a resistance should be felt when they are pushed inwards.
- Reset the setting wheels 1 and 2 until an optimum folding result is achieved.

- The thicker is the fabric, the higher must be the values set.

5. Plug

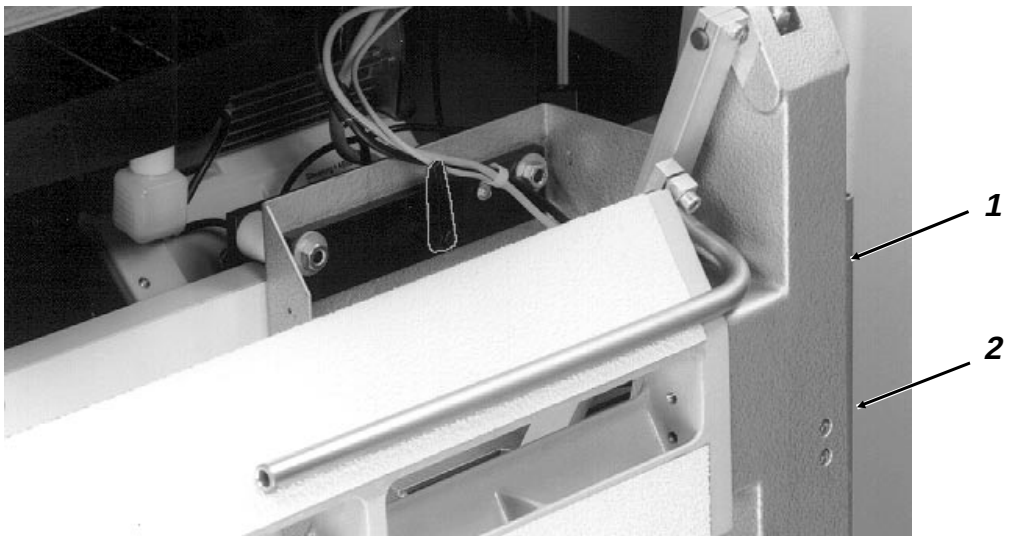
5.1 General information





- The stacker version with a roller enables stacking of parts the lower edge of which is at least 310 mm from the seam end. Normally, this requirement for all trousers and shirt parts.
  The stacker version with an additional roller enables stacking of parts the lower edge of which is distanced 130 and 310 mm from the seam end.
- The stacker can be switched off only under the function "**stacker choice**", for instance for the manual removal of a workpiece with the pocket already set on it.
- The rest can be turned 180°. The side with the recess is intended for stacking of shirts with button band. For all other parts use the side without recess.

5.2 Turning the rest o the stacker

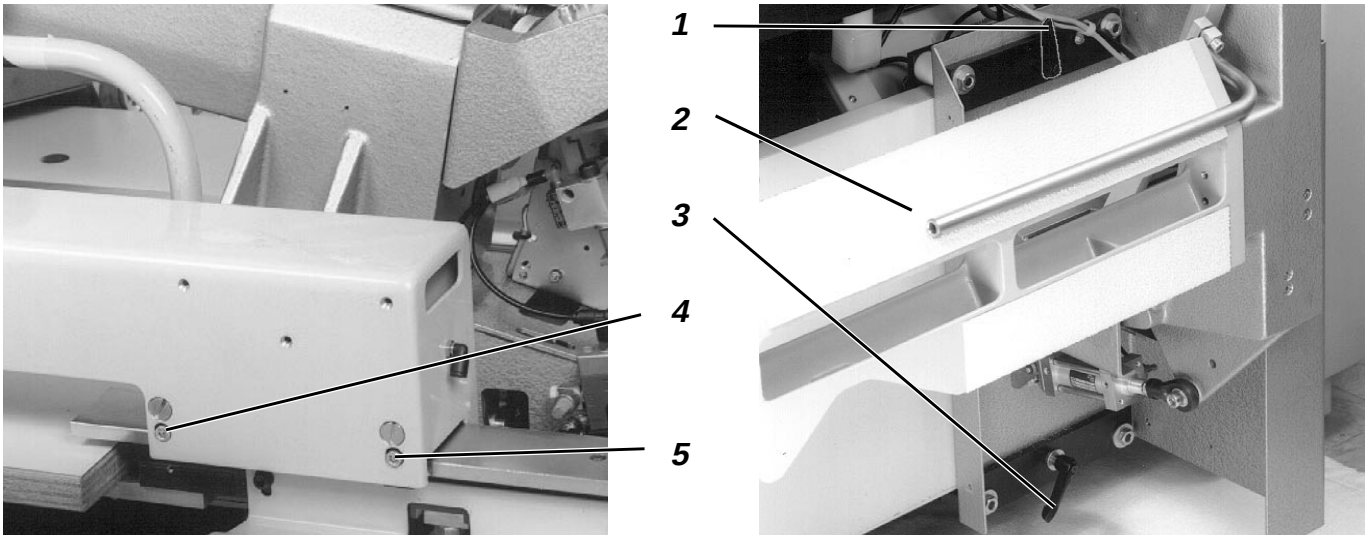


The rest of the stacker can be turned for enabling stacking of normal parts and of parts with a button stay.

- Loosen the hexagon screws 1 and 2 by a hexagonal spanner (Spanner opening 6 mm).
- Turn the desired side up.
- Retighten the hexagon screws 1 and 2.

5.3 Lateral position of the roller and of the stacker

5.3.1 Lateral position of the roller



Rule and control

- For shirts with button stay:
  The left roller should stand above the button stay.
- For all other parts:
  The rollers should be centered in compliance with the basic parts.
- Start the automatic cycle.
- Determine the position of the rollers.

Correction

- Loosen the clamping screws 4 and 5.
- Change the lateral position of the roller.
- Retighten the clamping screws 4 and 5.

5.3.2 Lateral position of the stacker

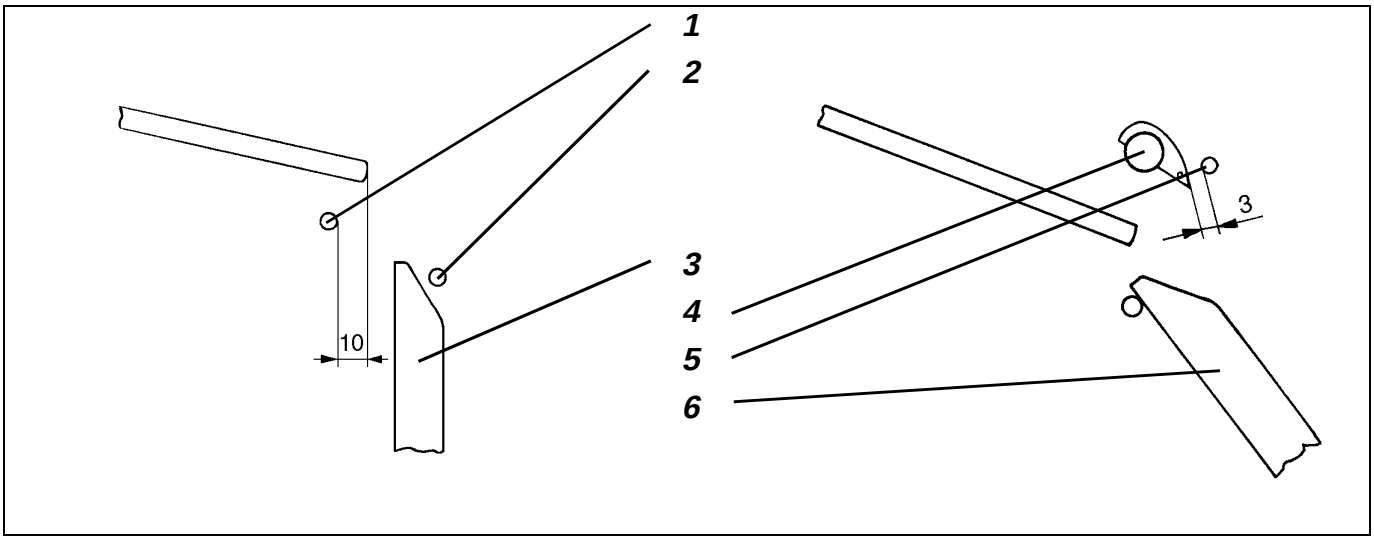
Rule and control

- For shirts with button stay:
  The button stay of the stacked part should be on the rest 2,in the recess of the segment.
- For all other parts:
  The stacked part should lie on the rests with its entire width.
- Start the automatic cycle.
- Determine the position of the material in respect to the stacker.

Correction

- Loosen the clamping levels 1 and 3.
- Change the position of the stacker accordingly.
- Retighten the clamping levers 1 and 3.

5.4 Position of the opened inner shackle



Caution: Danger of bodily injuries !

The machine must be in the "Safe motor stop" position.

Rule and control

The opened inner shackle 1 should be, in horizontal direction, about 10 mm from the fabric rest.

– Check the position in the initial position of the machine.

Correction

– Loosen clamping screw 1.
– Change the position of the shackle accordingly.
– Retighten the clamping screw.

5.5 Position of the opened outer shackle

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

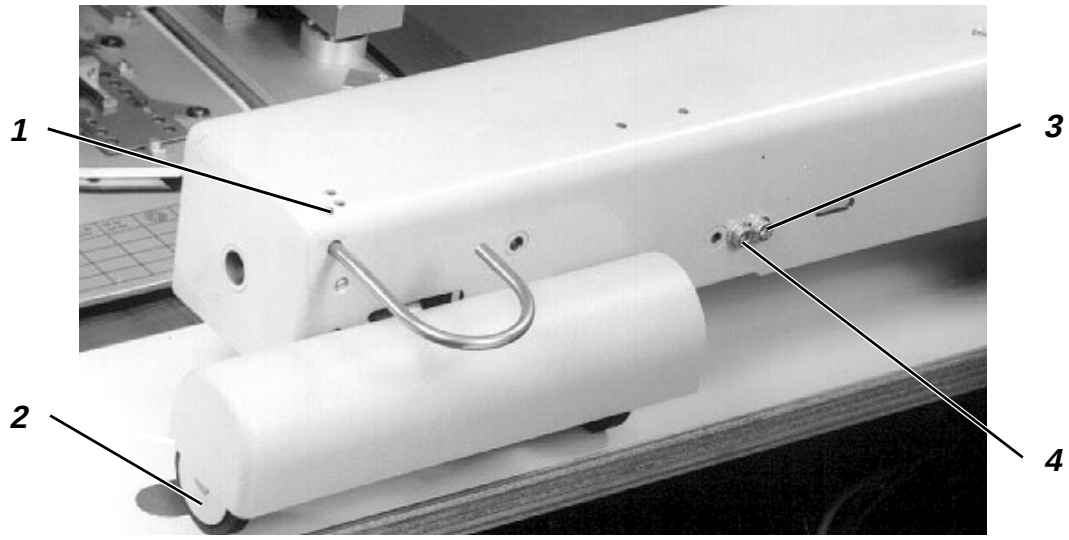
The opened outer shackle 5 should be about 3 mm from the covering of the lifted ejection rollers 4 when the rest 6 is advanced.

– Select the "**Single step mode**" function.
– Press the "**Start**" key as often as required.

Correction

– Loosen the clamping screw.
– Change the position of the shackle accordingly.
– Retighten the clamping screw.

5.6 Sensitivity of the light barrier



The light barrier emits the signal "Part rolled out " , so that the stacking process can be continued.

Caution: Danger of bodily injuries !

Do not introduce your hands into the area of the moving machine parts.

Rule and control

- The LED should not light up when there is a piece of material under the light barrier.
- The LED should light up when there in no material under the light barrier.

Correction

- Turn the potentiometer 1 accordingly.

5.7 Lower position of the rollers of the roller-out

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before adjusting the rollers.

Rule and control

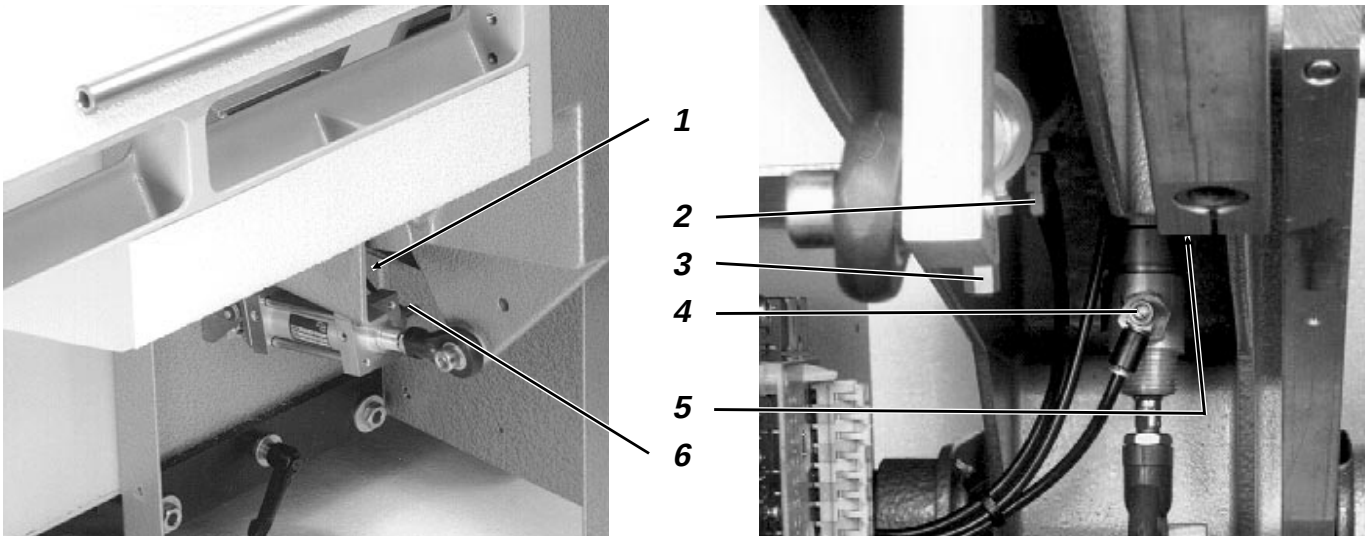
In this position, the foam ring at the roller 2 should be slightly compressed.

- Switch off the machine.
- Press down the roller.

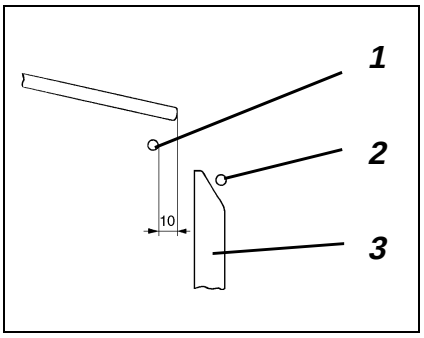
Correction

- Loosen the screws 3 and 4.
- Shift the cylinder, retained by the screws 3 and 4, sideways.
- Retighten the screws 3 and 4.

5.8 Speed of outer shackle, inner shackle and rest



Caution: Danger of bodily injuries !
Do not introduce your hands into the area of the moving machine parts.



Rule and control

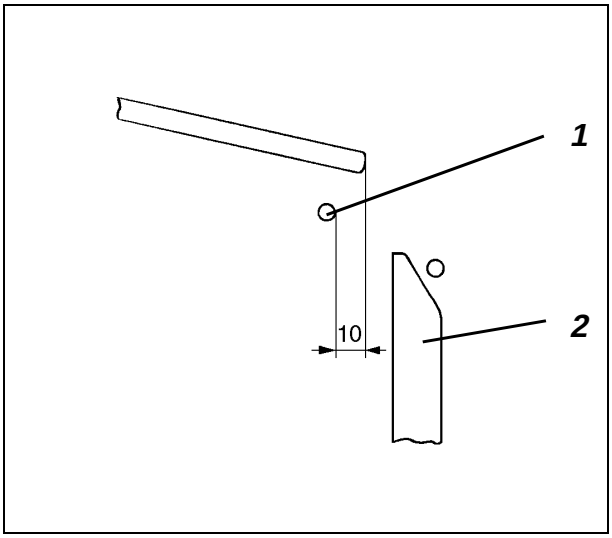
- All elements should move continuously and regularly.
- The outer shackle 2 should be fully opened when the part is ejected.
- The leading rest 3 should reach the part hanging down from the fabric rest simultaneously with the inner shackle 1 for enabling a proper stacking.
- Start the automatic cycle.
- Watch the movements.

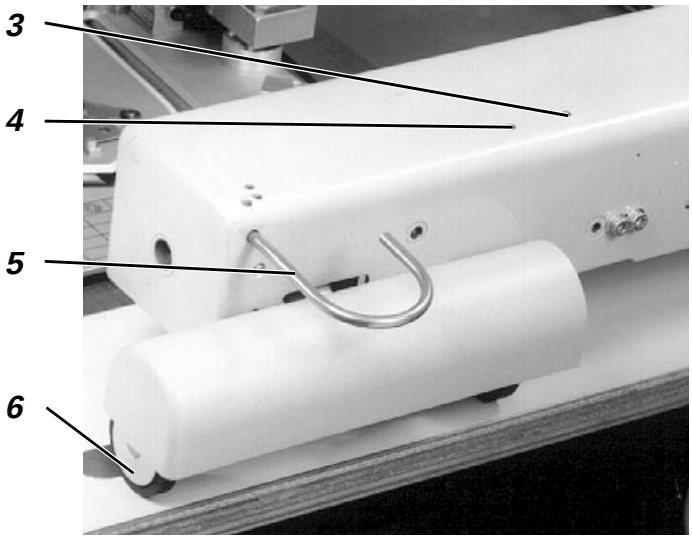
Correction

- Regulate the speed by throttling the outgoing air.

Function	**Throttle**
Open outer shackle	2
Close outer shackle	3
Open inner shackle	5
Close inner shackle	4
Advance the rest	1
Return the rest	6

5.9 Speed of the "Ejection rollers up and down "





Caution: Danger of bodily injuries !
Do not introduce your hands into the area of the moving machine parts.

Rule and control

The rollers of the roller-out 6 should move continuously and regularly.

- Start the automatic cycle.
- Watch the movements.

Correction

- Regulate the outgoing air by the throttles 3 and 4 accordingly.

5.10 Intensity of the air current and blowing direction of the nozzle

The purpose of the nozzle 5 is to blow down the part rolled off the fabric rest, so that the part can get between the rest 2 and the inner shackle 1.

Caution: Danger of bodily injuries !
Do not introduce your hands into the area of the moving machine parts.

Rule and control

- The air current should be directed vertically downwards.
- The nozzle should fulfil its function with the lowest intensity The intensity of the air current, delivered by the nozzle should be as low as possible but sufficient for attaining its purpose.
- Start the automatic cycle.
- Watch the air current intensity and the blowing direction.

Correction

- Change the position of the blower 5 accordingly.
- Set the throttles accordingly.

6. Adjustment options

All adjustments described in this section are made before delivering the machine. Should the adjustments get lost, they must be restored manually.

Following parameters are set with this menu:

- Machine class
- Remaining thread monitor available
- End position switch of the transfer carriage available
- Measuring the end positions of the transfer carriage
- Distance balance of the transfer carriage

Calling up adjustment menu

- Press the key "**F2**" when switching on the machine.
  The adjustment menu will appear some moments later

Note:

The machine will automatically be branched into this menu if the basic adjustments of the 806 are lost.
Quit the adjustment menu

- When all adjustments have been made, the symbol "<<" will appear above the F1 key.
- Press the key "**F1**".
  The adjustment menu will be quitted and the sewing unit will be restarted.

6.1 Selecting the machine class

Rule and control

The programming of the 806 has been done in a way that all classes of the 806 are getting the same Software.

- One of the following symbols is marked as a machine class :

806-111 (with machine head 467)

806-121 (with machine head 271)

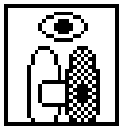
806-121 (with machine head 396)

- The marked symbol must correspond to the machine class.

Correction

- Mark the symbol that corresponds to the available machine class.

6.2 Remaining thread monitor (only 806-121)



By means of the function "**Remaining thread monitor available** " the sub-class 806-121 can be set to show whether a remaining thread monitor is available. The symbol can only be selected if the sub-class 806-121 has been adjusted accordingly.

Note:

The remaining thread monitor will not be switched on or off by this function.

6.3 Continuous operation

By means of the "**Continuous operation**" function the 806 can be switched over to the continuous operation mode for testing the machine.

ATTENTION !

This function is intended exclusively for the internal use by **DÜRKOPP ADLER AG** for testing the machine prior to the delivery. In no case should this function be used outside.

Caution: Danger of bodily injuries !

The "continuous operation" function shall in no case be used outside. The machine runs in the continuous operation mode without any intervention by the user.
This function is not a sewing programme.

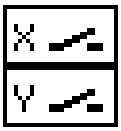
6.4 End position switch of the transfer carriage available

The lower left stop of the transfer carriage is determined mechanically. The latest machines have limit switching for avoiding the collision of the transfer carriage with the aforementioned stop.

If the machine is not fitted with limit switches, the control system will ensure that the transfer carriage does not knock against the stop.

ATTENTION !

Do not switch on this function if the machine has no limit switch.

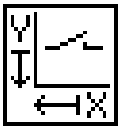


- Check whether the machine is fitted with limit switches for the lower left stop (see also chapter 7.4).
- Use the function "**End switch**" for showing whether the machine is fitted with limit switches.

6.5 Measuring the end positions of the transfer carriage

If the machine is fitted with limit switches for the transfer carriage, it is possible to measure the end position of the transfer carriage.

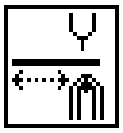
If the machine has no limit switches, standard values will be used for the end position of the transfer carriage.



Measuring the end position

- Select the function "**Measuring the end position** ".
  The transfer carriage will perform a reference run.
  The transfer carriage will move into the end positions of the transfer carriage.
  The values acquired will be memorised.

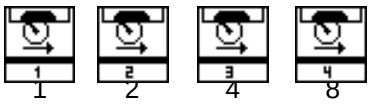
6.6 Checking the roll-out



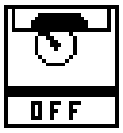
The roll-out menu can be selected by the function "**Checking roll-out**".

Following symbols are used for setting the roll-out speed.

Each symbol can be switched on and off individually. Each symbol has a different value, permitting to set 15 rotating speeds.



The figure under the symbol indicates the value of the symbol. If only the left symbol has been selected, the roll-out will correspond to the rotating speed "1". If all symbols have been selected, the rotating speed will correspond to "1+2+4+8=15".



The roll-out can be stopped by the function "**stop roll-out** ".

Additional functions for setting the roll-out

Following functions can be released by the keys 1, 2 and 3 of the numerical keyboard:

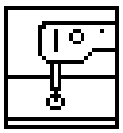
Key 1: Lifting all rollers

Key 2: Lowering the roll-out roller

Key 3: Lowering the advance roller (if available)

When quitting this menu by the key F1, the motor of the roll-out roller will be switched off, the roll-our roller and the advance roller will be lifted.

6.7 Checking the sewing motor

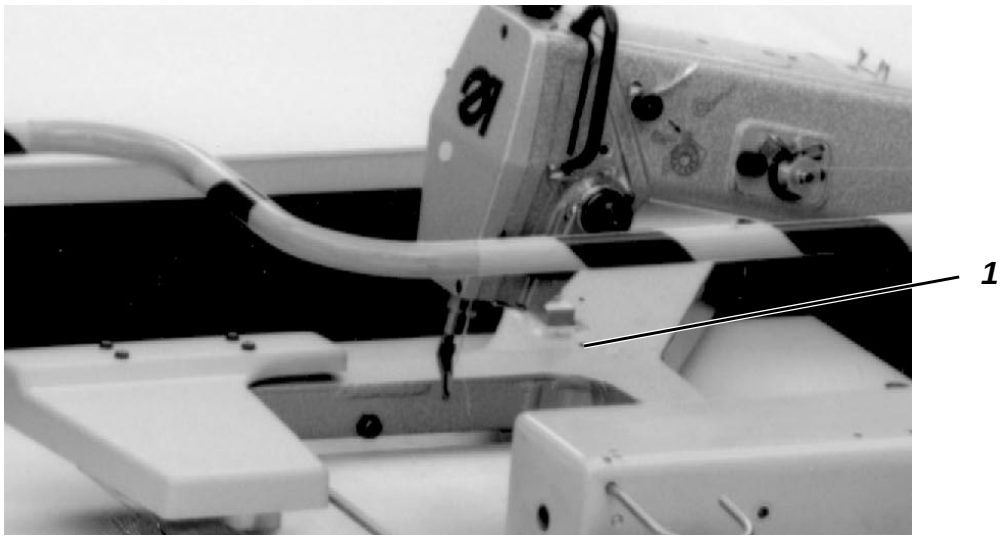


Call up the function "**Checking the sewing motor** " by the sewing motor menu.

The respective functions of this menu, that are required for setting the sewing machine head, are mentioned in the respective sections of the Service Instructions.

7. Transfer carriages

7.1 General information



The transfer carriages , moved by 2 motors in X and Y direction, have following duties:

- Transporting the material by means of the transfer plate from the folding station to the sewing station.
- Moving the material during the sewing process according to the seam outer contour

Following static traction forces of the X and Y carriage can be used for trouble shooting. The values acquired are measured by a spring balance.

X carriage without belt drive	about. 70-80 N
Y carriage without belt drive	about. 70-80 N

The sewing result can be improved by the following constructive measures:

- Owing to the parallel-action joint, the transfer plate is more or less parallel to the working surface also in lifted position. Consequently, no displacement of the fabric of different thickneses by the transfer carriage.
- The rubber springs of the reception fork care for compensation of any irregularities in the material. Therefore, same fabric pressure at all parts.

7.2 Adjusting the parallelism of the transfer plate

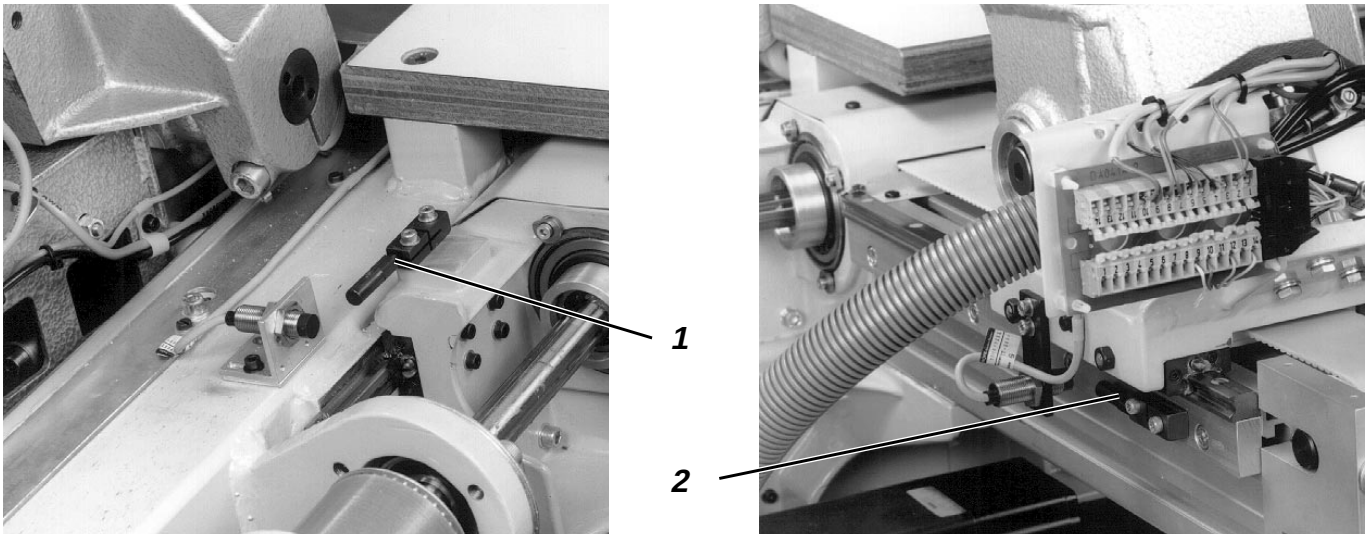
Rule and control

The transfer plate must be parallel to the table top surface when it has been lowered and depresurized.

Correction

- Regulate the adjustment screw in the bore-hole 1 accordingly.

7.3 Setting the reference point



Rule and control

- Turn on main switch.
  The control will be initialised.
  The display will show briefly the DÜRKOPP-ADLER-Logo.
- **During the display of the logo** press the key "**F2**".
- Press the key "**I**".
  The display will present the adjustment menu of the 806 after the basic adjustment run.
- Select the "**Reference run**" function.
  The transfer carriage will perform a reference run.
  The display must show a value between 6 and 15 for X and Y.

Correction

- By means of a spanner set the switch 1, releasing the magnet switch, so that the X value is set to 9 - 11.
- By means of a spanner set the switch 2, releasing the magnet switch, so that the y value is set to 9 - 11.
- Select the "**Reference runt**" function.
  The display must show a value between 9 and 11 for X and Y.

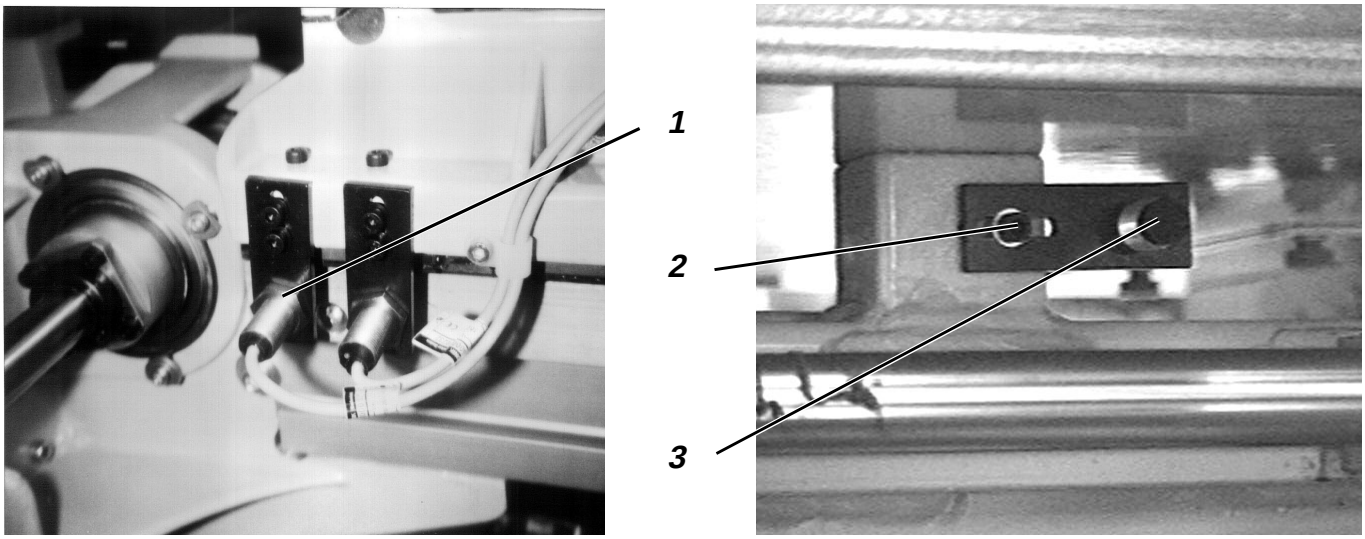
Note:

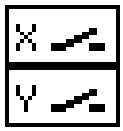
If this value is not attained, it is possible that the mechanical connection between motor-pinion-belt is loose.

ATTENTION !

Following a reference run it is necessary to balance the positions (see chapter 7.5). The positions of the transfer carriage must be checked.

7.4 Setting the limit switches S45 and S59





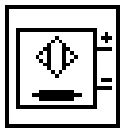
Note:

If the limit switches have been installed, they must be activated by the function "Limit switches available " (see chapter 6.4).

7.4.1 x-axis

Rule and control

The limit switch (S45) for the X-axis limits the maximum travel to the left. About 2 mm from the mechanical stop the drives will be stopped in case of an automatic mode of operation.

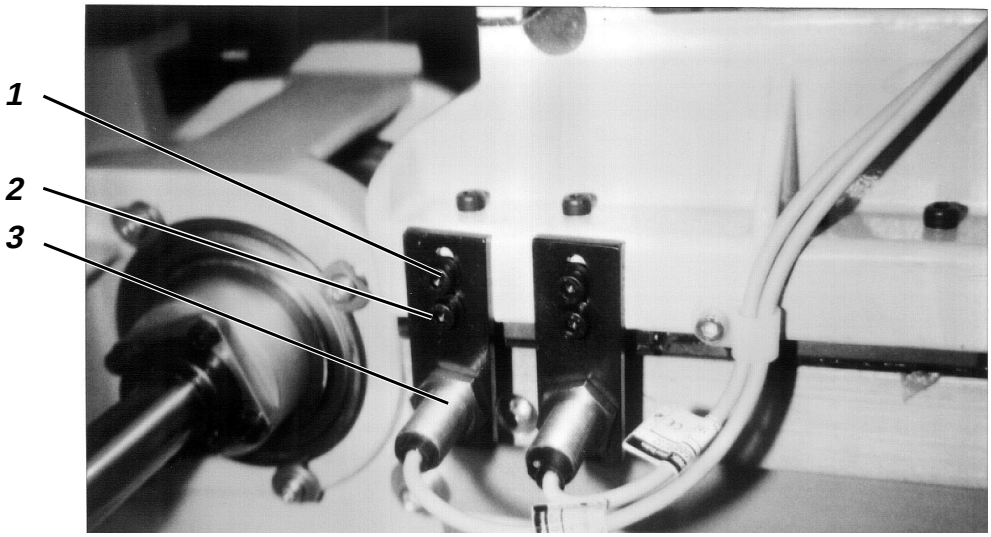


- When switching on the machine, hold the key "**F3**" pressed down. The multitest menu will appear.
- Select the function "**Checking the input elements** ".
- Select the switch S45.
- Displace the transfer carriage by hand from the sewing position to the left, to the folding station.
  When the circuit state of the limit switch changes, the display will chage from "**S45**:**+**" to "**S45**:**-**".
- Shift the transfer carriage to the point where the switch acts.
- The switch must act about 5 mm on the left from the position where the folding takes place (.

Correction

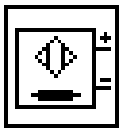
- Loosen clamping screw 2.
- Set limit switch 3.

7.4.2 Y-Axis



Rule and control

The limit switch (S59) for the Y-axis limits the maximum sewing area in respect to the pocket top edge. About 2 mm from the mechanical stop the drives will be stopped in case of an automatic mode of operation.

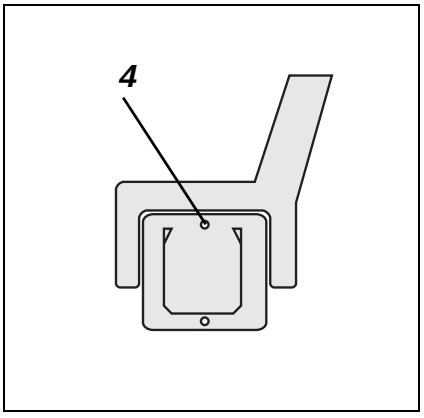


- When switching on the machine, hold the key "**F3**" pressed down. The multicast menu will appear.
- Select the function "**Checking input elements** ".
- Select the switch S59.
- .Lower the transfer carriage from the sewing position by

hand. When the circuit state of the limit switch changes, the display will change

from "**S59**:**+**" to "**S59**:**-**".

- Push the transfer carriage to the point where the switch acts.
- The distance between the middle of the needle and the transfer plate positioning hole 4 must amount to about 5 mm.



Correction

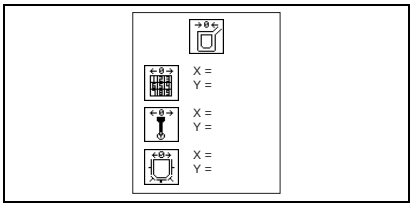
- Loosen clamping screws 1 and 2.
- Set limit switch 3.

7.5 Position balance

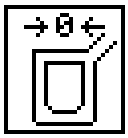
7.5.1 General

The position of the transfer carriage must be balanced

- when installing the sewing unit.
- when changing the sewing station .
- when changing the belt or rectifying the belt tension.
- when proceeding to a new setting of the reference point.



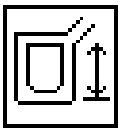
Note:
The sticker on the machine shows the co-ordinates of the positions existing when delivering the machine. The symbols on the sticker correspond to those displayed when balancing the positions. These values can be used as reference values when adjusting the positions.



By using the function "**Position balance**", balance the positions of the transfer carriage for the important positions in the following sequence :

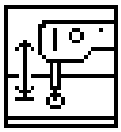
- Position balance for reading-in the coding 
- Balancing the position with the upper sewing position 
- Checking the position in respect to the lower sewing position 
- Balancing the position in respect to the folding station 

When the position balance has been selected, following functions can bed released by the keys F1 - F4:



Lifting/lowering the transfer carriage

This permits to lower and to lift the transfer plate when the sewing head is in its upper position.

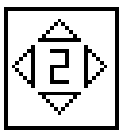


Lifting/lowering the sewing head

This permits to lower ands to lift the sewing head when the transfer plate is in its lowered position.

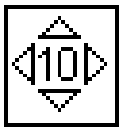
ATTENTION !

The needle bar should not stand above the transfer plate mechanism when the sewing head is in its lowered position.



Step width 2

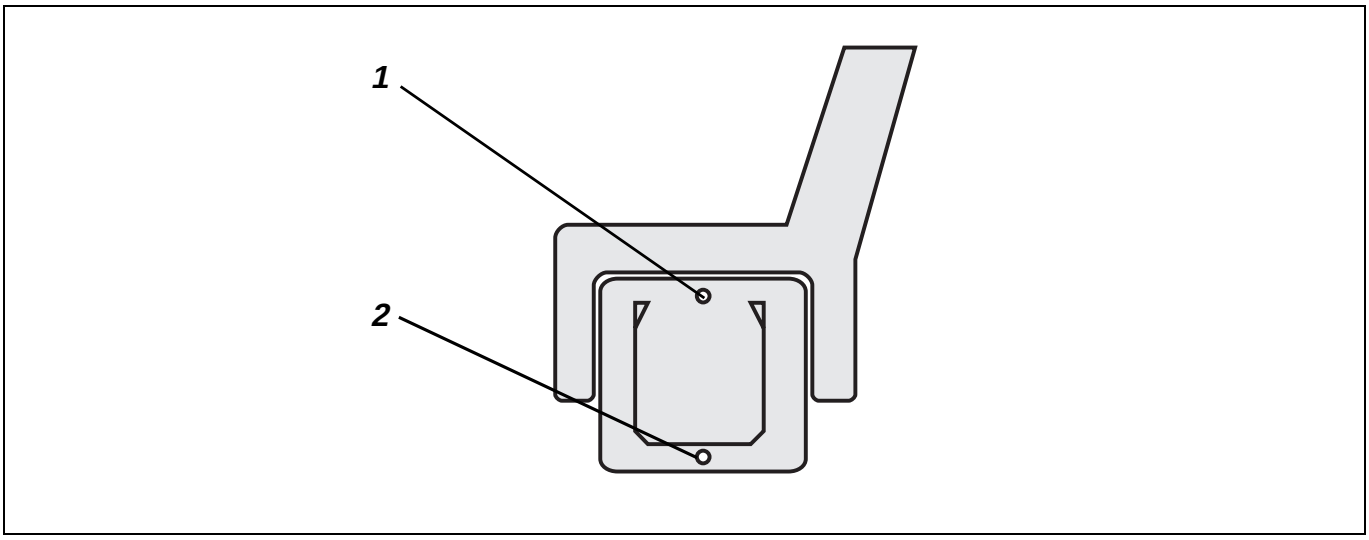
The step width is set here to the value 2 (0,2 mm). The transfer plate will be advanced by this value after each operation of the arrow keys.



Step width 10

In this case, the step width is limited to the value 10 (1 mm) The transfer plate will be advanced by this value after each operation of the arrow keys.

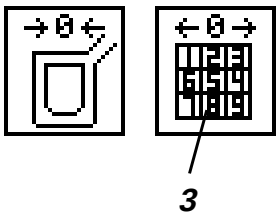
7.5.2 Balancing the positions



Preparing the transfer plate

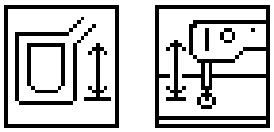
– By means of the reflecting foil, cover the no. 1 of the coding field by a circle, having a diameter of about 5 mm.
– Insert this transfer plate.

Position balance for reading-in the coding

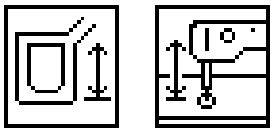


– Select the "**Position balance**" function.
– Do not lower the transfer plate.
– Displace the transfer plate by the arrow keys so that the displayed "**Coding OK**" symbol(Pos. 3) is no longer shown crossed.
The display will show the current co-ordinates.
If no position has been found, check the following:
- The transfer plate must be horizontal.
The light barrier must be clean.
– Press **RETURN** key.

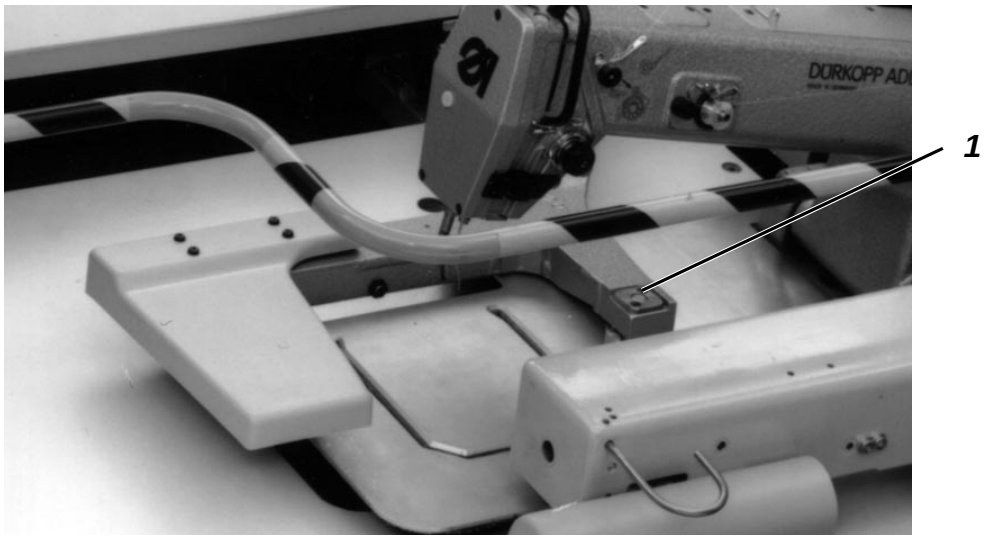
Balancing the position in respect to the upper sewing position



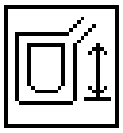
– The transfer carriage travels to the upper sewing position.
– Insert a 2 mm pin into the needle bar.
– Lower the transfer plate by the function "**Lifting/lowering the transfer plat**e".
– Lower the sewing head by the function "**Lifting/lowering the sewing head**".
By the arrow keys of the control, move the 2 mm pin over the above hole 1 of the transfer plate.
The current co-ordinates will be displayed.
– Turn the handwheel and check whether the 2 mm pin drops into bore-hole 1 of the transfer plate.



– By means of the functions "**Lifting/lowering the sewing head** " and "**Lifting/lowering the transfer plate** " lift and lower again the sewing head and the transfer plate.
Note:
When displacing the lowered transfer plate, the plate can be slightly shifted in its guides. Therefore, it is necessary to check and, if necessary to correct the position once more.
– Press **RETURN** key.
The sewing head will be lifted.
The transfer plate will be lifted.



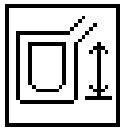
Checking the position in respect to the lower sewing position



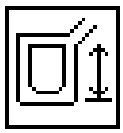
- The transfer carriage travels to the lower sewing position.
- Lower the transfer plate by the function "**Lowering/lifting the transfer plate**".
- Lower the sewing head by the function "**Lowering/lifting the sewing head**".
- The position of the transfer plate can be changed by the arrow keys, but the position will not be memorised.
  If the position does not suit, loosen the four screws 1 on both sides of the transfer lever and adjust the transfer plate so that the needle stitches into the lower hole.
  ATTENTION !
  Following a new adjustment of the transfer plate, balance also the positions completely.
- Press **RETURN** key.
  The sewing head will be lifted.
  The transfer plate will be lifted.

Balancing the position in respect to the folding station

- The middle slide will advance.
  The middle slide will be lowered.
  The transfer carriage will travel to the folding station.

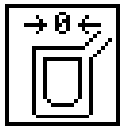


- Lower the transfer plate by the function "**Lifting/lowering the transfer plate**".
- Adjust the transfer plate by the arrow keys of the control unit so that the projection of the middle slide into the seam contour of the transfer plate is equal at all sides.
  The current co-ordinates will be displayed.



- Lift and lower again the transfer plate by the function "**Lifting/lowering the transfer plate** ".
- Check and correct, if required, the adjusted position.
- Press **RETURN** key.
  The transfer plate will be lifted.
  The middle slide will return.

Checking the adjustments

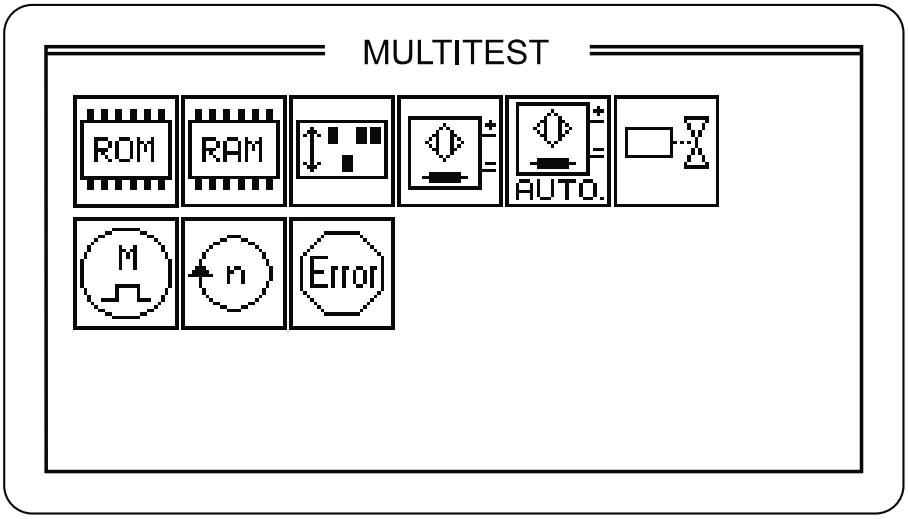


- Press the key "**F1**".
  The balancing of positions will be repeated.
- Check the adjusted positions of the transfer carriage.
- After having checked the positions press the key "**F4**".
  The balancing of positions will be closed.

8. Multitest System

The checking programmes of the Multitest Systems enable a quick examination of the input and output systems.
No additional measuring instruments are required.

- When switching on the 806 hold the key "**F3**" depressed.
  The message will pass to the screen of the Multitest system.
- Select the desired checking programme.



8.1 Displaying the programme version and the check sum

Programme version

In the case of programme versions with the same class designation and the same identification letters the higher version will replace all the lower versions (Example: 806A03 will replace 806A01 and 806A02).

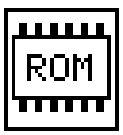
Is an exchange become possible in spite of the change in the identification letters, we will inform the customers accordingly.

Note:

The switch-on screen (see chapter 10.1) shows more precise information about the programme versions used for the sewing unit.

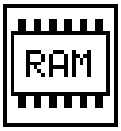
Check sum

The check sum is intended for the Works Service only.
The check sum shows to the specialists whether the programme memory (EPROM) of the sewing unit control system includes perfectly the entire programme.



- Select the "**Programme version and Check sum**" function.
  The programme will check the read-only memory(ROM) of the Micro-computer.
  The display will present information regarding the EPROM version involved.
- Press the function key "**F1**" in order to quit the checking programme.

8.2 Testing the working memory



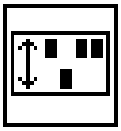
The programme tests the working memory (RAM) of the micro-computer.

– Select the function "**Testing working memory** ".
  The display will show the test result.

Display	Explanation
RAM OK	Working memory operates perfectly
RAM-Error	Error in the working memory

– Press the function key "**F1**" in order to quit the checking programme.

8.3 Displaying the DIP switch setting



– Select the "**DIP switch** " function.
  The state of the DIP switches on the CPU board will be displayed.

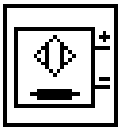
For the time being, no DIP-switches are used in the 806. The state of the DIP switches has no influence on the function of the sewing unit.

8.4 Selecting input elements

The programme is used for setting the input elements.

ATTENTION !

All input elements have been carefully adjusted in the factory. Only qualified Service technicians are allowed to proceed to re-adjustments and to corrections.



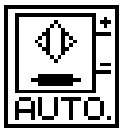
– Select the function "**Checking input elements** ".
– Enter the code number of the desired input element by the numerical keys.
  The code numbers correspond to the code designations in the circuit diagram.
– The display shows the circuit diagram code and the circuit state of the selected input element (e.g.. "**+S17**").
  The display changes with the change of the circuit state of the input element.
  The circuit state "**+**" means:

Switch with contacts	= contact opened
Proximity switch	= Metal in front of the switch
Reflecting light barrier	= no reflection
Transmitted light barrier	= Beam passage not interrupted

– Reset the input element until the display shows the desired circuit state.
– Press the function key "**F1**" in order to quit the checking programme.

8.5 Checking input elements

The programme serves for checking the input elements.



- Select the function "**Checking input elements** ".
- Operate the input element to be checked.
- The display shows the circuit diagram code and the circuit state of the modified input element (e.g. "**+S17**").
  The display changes when the circuit state changes or if any other input element is modified. A change of the circuit state will be indicated by an acoustic signal.
- Press the function key "**F1**" in order to quit the checking programme

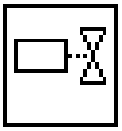
Input-element	Function
S01	Thread monitor
S02	Outer frame in front position
S03	Outer frame in rear position
S04	Light barrier Automatic Vacuum
S06	Outer frame in upper position
S07	Outer frame - counter air at top
S08	Outer frame in lower position
S09	Outer frame - counter air at bottom
S10	Middle slide in upper position
S11	Middle slide in lower position
S12	Middle slide in front position
S14	Middle slide, half way
S15	Middle slide in rear position
S16	Coding B stacker
S17	Coding A sewing head
S18	Coding B sewing head
S19	Coding C sewing head
S21	Sewing head in lower position
S22	Sewing head in upper position
S23	Hook flapS24lower thread monitor
S29	Stacker switch
S30	Roll-out light barrier
S31	Advance roller switch
S32	Coding A stacker
S33	X reference point
S34	Transfer plate Code
S35	Start key
S36	Middle slide lifting/lowering
S37	Vacuum
S38	Pressure monitor
S45	X end position
S49	Emergency stop relay
S50	Emergency stop key
S51	O-key
S52	Cycle free
S53	Repetition
S54	Safe zero stop
S55	Safe stop time
S56	Sm error
S59	Y end position
S60	Y reference point
S61	Transfer plate available
S62	Transfer plate in upper position
S63	Transfer plate in lower position
S64	Inner slide in rear position

8.6 Selecting output elements

The programme serves for checking the function of the output elements.

Caution: Danger of bodily injuries !

Do not introduce your hands into the running machine when checking the function of the output elements.



- Select the function "**Checking output elements** ".
- Enter the Code number of the desired output element by the numerical keys.
  The code numbers correspond to the circuit diagram codes (see the following tables).
- The display shows the circuit state (**ON/OFF**) of the selected output element.
- Switch on and off the selected output element by pressing the function key "**F4**" in inching mode.
- Press the function key "**F1**" in order to quit the checking programme.

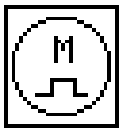
Output-element	Function
Y01	Lifting outer frame
Y02	Lowering outer frame
Y03	Advancing outer frame
Y04	Returning outer frame
Y05	Lifting middle slide
Y06	Lowering middle slide
Y07	Advancing middle slide
Y08	Returning middle slide
Y09	Middle slide, adjustment position
Y10	Advancing lateral slide
Y11	Returning lateral slide
Y12	Advancing front slide
Y13	Returning front slide
Y14	Sucking middle slide
Y15	Quick change
Y16	Middle slide correction
Y24	Free cycle lamp
Y27	Returning the rest
Y28	Advancing the rest
Y29	Closing inner shackle
Y30	Opening inner shackle
Y31	Closing outer shackle
Y32	Opening outer shackle
Y33	Thread cutter
Y34	Thread tension
Y35	Needled cooling
Y36	Stroke position adjustment
Y37	Lifting sewing head
Y38	Lowering sewing head
Y39	Zick Zack (806-111)
Y39	Resetting lower thread monitor (806-121)
Y40	Lower thread monitor sensitivity (only 806-121)
Y41	Sensitive lower thread monitor
Y47	Lifting transfer plate
Y48	Lowering transfer plate
Y49	Advancing inner slide
Y50	Returning inner slide
Y51	Lifting inner slide
Y52	Lowering inner slide
Y53	Hose, counter pressure
Y54	Vacuum 1
Y55	Vacuum 2
Y56	Vacuum 3

Output element	Function
Y60	Advance roller in lower position
Y61	Advance roller in upper position
Y62	Blowing
Y63	Ejection roller in lower position
Y64	Ejection roller in upper position

8.7 Checking stepping motors

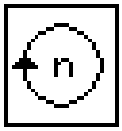
The programme checks the functions of the stepping motors

This programme shows the programme version, the check sums and the state of the individual stepping motor controls.



- Select the function "**Checking stepping motors** ".
  The display shows the software versions of the stepping motors.
- Press the function key F1 in order to quit the checking programme.

8.8 Checking sewing motor

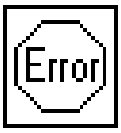


ATTENTION !

The function "Checking the sewing motor " should in no case be used for 806 with this menu..
For checking the sewing motor use always the function "Sewing motor ". You will reach the respective menu if you hold the key "F2" depressed while switching on the machine.

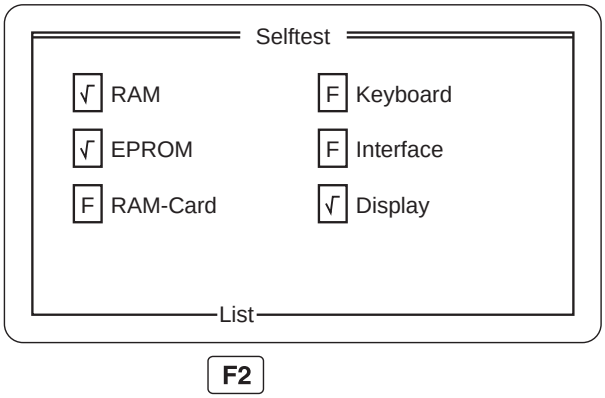
8.9 Displaying the emitted error messages

The programme displays the last 10 error messages.



- Select the function "**Error messages**".
  The display will show the last 10 error messages

9. Terminal Self-test



The service staff is using the Terminal-Selftest for checking the single components of the control terminal.

Note:

The RAM-Test and the EPROM-Test do not check in this menu the RAMs and the EPROMs, existing on the control circuit boards of the 806.

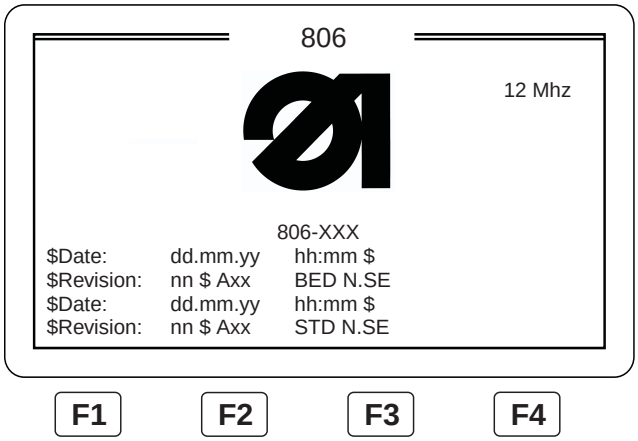
ATTENTION !
Use for the Terminal Selftest only a Test-RAM-Card.
All data contained on the RAM Card will be lost if the sewing unit is restarted or switched off during the .RAM-Card-Test.

- Insert the Test-RAM-Card.
- When switching on the 806, press the key "**F4**".
  The Terminal-Selftest will process in succession the following programmes.
  The checking programmes will be displayed by batons.
- **RAM-Test**
  The RAM-Test checks the working memory ("Video-RAM") of the operator terminal.
  Following the completion of the RAM-Test, the Terminal-Selftest passes automatically over to the EPROM-Test.
- **EPROM-Test**
  The EPROM-Test checks the programme memory of the control unit.
  After pressing the function key "**F2**" , the Terminal-Selftest will be succeeded by the RAM-Card-Test.
- **RAM-Card-Test**
  The RAM-Card-Test checks the memory (storage) card.
  Following the completion of the RAM-Card-Tests, the Terminal-Selftest passes automatically over to the Keyboard-Test.
- **Keyboard-Test**
  The Keyboard-Test checks the keys of the operator terminal.
  After pressing a key, you will see behind this key a tick, if the function is ok..
  By pressing the "**ESC**" key the Keyboard-Test will be closed.
  The display passes over to the Interface-Test.
- **Interface-Test**
  The Interface-Test checks the interface of the operator terminal (requires a special cable!).
  After closing the Interface-Test the Terminal-Selftest passes automatically over to the Display-Test.

- **Display-Test**
  The Display-Test shows the available "Character Set" and the" Graphic" of the display.
  After pressing the function key **F2** the display will automatically pass over to the main screen of the Terminal-Selftest (see the illustration).
- **Main screen**
  A complete test report can be fetched from the main screen by pressing the function key **F2**.
  In order to quit the Terminal-Selftest, the machine must be switched off and on.

10. Start messages

10.1 Start screen

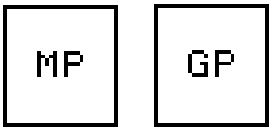


When starting the 806, the start screen will present the DÜRKOPP ADLER Logo.

Following details will be displayed :

- The selected machine class.
- The production date and the EPROM version for the two processors.
- Press the key "**I**".
  The principal menu of the sewing unit will appear.

10.2 "MP GP" message



Sequence

- The two symbols "MP" and "GP" will appear.
- After a short while, the symbol "MP" and then the symbol "GP" will be presented in an inverted mode.
- The machine will stop with the message "MP GP" .

Disturbance causes

If the sewing unit stops with the message "MP GP" , this can be due to one of the following causes:

- The values or the adjustments have been changed in the adjustment menu (see chapter 6), but the menu has not been closed by the key "**F1**".
- Hardware error of the Master CPU in RAM.

Eliminate the disturbance

- Switch off the sewing unit.
- Switch on the sewing unit.
  Standard values for machine adjustments will be load.
  The sewing unit will automatically branch into the adjustment menu.
- Make all adjustments as described under chapter 6.
- Quit the adjustment menu by the key "**F1**".
  The sewing unit will be restarted.

11. Error messages

11.1 Control error messages

Error number	Explanation	Remedy
100	Undervoltage	Stablize power supply
101 - 199	Processor error	---
TRANSFER STOP	Safety switch of the transfer plate has been triggered	see chapter 4.2 of the Operating Instructions
EMERGENCY STOP	Emergency switch has been triggered	see chapter 4.2 of the Operating Instructions
MP GP	The basic adjustments of the 806 have been lost	see chapter 10.2 and chapter 6 of the Service Instructions or Hardware error of the Master CPU in the RAM.
200	24V missing	---
300 - 399	Error in data transmission to the sewing motor	Check cables
400 - 411	General stepping motor error	---
412 - 417	End stage error	---
418 - 423	Error of the stepping motor card when transmitting the acknowledgement message	---
424 - 429	General stepping motor error	---

11.2 Error messages of the machine programme

If an error in the programme sequence occurs, the message "**Error XXXXX**" will be displayed

Should an error occur, proceed as follows :

- Note the error number.
- Stop and start again the machine.
- Repeat the process during which the error has happened.
- Should the error occur again, note the description regarding the error.

Note:

The error lists describes only the errors that can be eliminated. Should any other errors occur, please contact the Dürkopp-Adler Service.

Error number	Explanation	Remedy
10504	Pressure loss.	Open the compressed air stop valve or the pressure of the main supply line is too low.
10555	Transfer plate no longer available.	Insert transfer plate or regulate the inductive switch of the transfer plate.
10017	Stepping motor end stage error, supply cable defect etc.	Check supply cable or suppress end stage error or replace the end stage (Only Service).

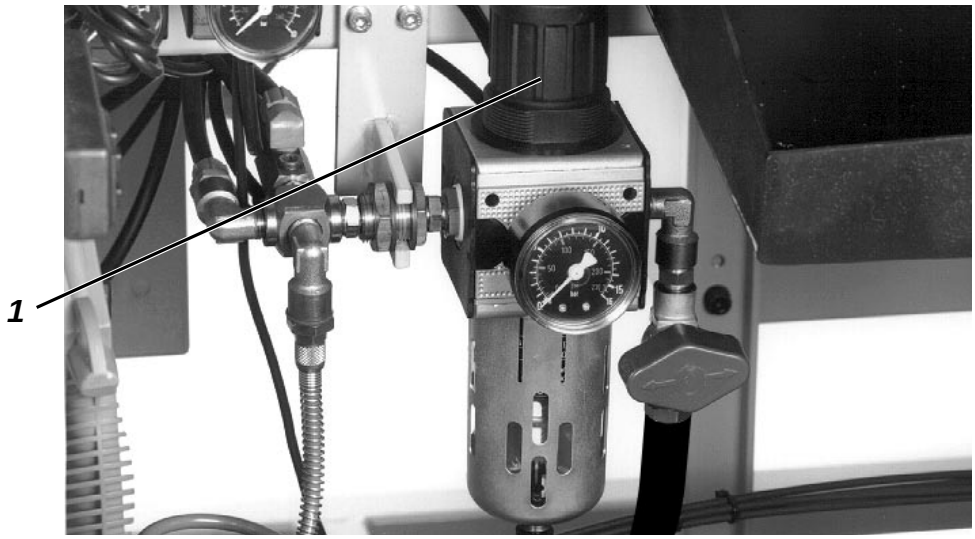
Error number	Explanation	Remedy
10022	Reading-in the coding cannot be interrupted (Position loss).	Do not stop the machine during the reference run.
10034, 10044, 10064	Hook flap opened.	Close hook flap.
10105	No reference stop possible.	Do not switch on the Safe Stop when carrying out the function.
10115	Impossible to stop during the displacement of the transfer plate	Do not switch on the Safe Stop when carrying out the function.
10125	Impossible to stop during the adjustment.	Do not switch on the Safe Stop when carrying out the function.
10135	Impossible to stop while adjusting the lower thread monitor for the class 806-121.	Do not switch on the Safe Stop when carrying out the function.
10145	Safe stop cannot be activated .	Do not switch on the Safe Stop when carrying out the function.
10155	Transfer plate cannot be determined.	Do not switch on the Safe Stop when carrying out the function.
10167	Safe stop has reacted before the software has stopped the machine.	Suppress the error in the safe stop electronic system or the Software error (only Service).
10174	Sequence error, the hook flap is opened, the switch is defective or it is not available.	Close the hook flap or check the switch .
10182	Internal error Safe Stop still active.	Suppress the error in the Safe Stop electronic system or the Software error (only Service).
10197	Sewing motor not initialised.	Check power supply to he sewing motor or check the interface conductors.
11022	No sewing motor positioning.	Check the sewing motor or see for Software error.
11034	The transfer plate not in lower position following the transfer to the sewing head.	Check limit switch for the lower transfer plate position.
11041	Timeout, sewing head not in lower position at the sewing start.	Check limit switch for the lower sewing head position.
11101	Timeout, sewing head not in upper position after sewing.	Check limit switch for the upper sewing head position.
11111	Timeout, transfer plate not in upper position, possibly after sewing without folding.	Check limit switch for the upper transfer plate position.
11121	Timeout, sewing head not in upper position after interrupting the transfer travel.	Check limit switch for the upper sewing head position or see the software error.
11131	Timeout, transfer plate not in upper position after interrupting the transfer travel.	Check limit switch for the upper transfer plate position.
12022	Left route, cycle control defective. Suppressing EMV cycle error	Suppress error in stepping motor controller or the configuration of the stepping motor controller bridges is wrong.
12032	Right route, cycle control defective. Suppressing EMV cycle error.	Suppress error in stepping motor controller or the configuration of the stepping motor controller bridges is wrong.
12072	Left route, cycle control defective. Suppressing EMV cycle error.	Suppress error in stepping motor controller or the configuration of the stepping motor controller bridges is wrong.

Error number	Explanation	Remedy
12082	Right route. Cycle control defective. Suppress EMV cycle error.	Suppress stepping motor controller error or the configuration of the stepping motor controller bridges is wrong.
12162	Motors already running.	Suppress stepping motor controller error or software error.
14011	Timeout, middle slide not in lower position.	Check limit switch for the lower middle slide position.
14021	Timeout, outer frame not in front position.	Check limit switch for the front outer frame position.
14031	Timeout, middle slide not in upper position.	Check limit switch for the upper middle slide position.
14041	Timeout, outer frame or middle slide not in lower position.	Check limit switches for lower middle slide position and lower outer frame position or remove the object located under the outer frame.
14051	Timeout, outer frame not in upper position.	Check limit switch for the upper outer frame position.
14061	Timeout, outer frame not in rear positon.	Check limit switch for the rear outer frame position.
14081	Timeout, middle slide not returned in end position.	Check limit switch for the rear middle slide position.
14091	Timeout, middle slide not in front position.	Check limit switch for the front middle slide position.
14107	Pocket name not loaded.	Check pocket programme name -
17011	Timeout, transfer plate not in upper position.	Check limit switch for the upper transfer plate position.
17021	At Stop, with defective light barrier. Timeout, stacker part is not rolled out.	Roll-out motor does not run: Electrical safety device has reacted. Stop and start the machine. Roll-out motor runs 2 seconds: Light barrier defective.
17031	Timeout, stacker switch, no end position.	Check limit switch for stacker end position.
17041, 17051, 17061 17077 17081	Timeout, advance roller switch, advance roller not in upper position.	Check limit switch for the lower advance roller position. Adjust the advance roller mechanism.
17091	Timeout, advance roller switch. Advance roller not in upper position after a stop.	Check limit switch for the lower advance roller position. Adjust the advance roller mechanism.
17101	Timeout, advance roller switch. Advance roller not in upper position after the bobbin change	Check limit switch for the lower advance roller position. Adjust advance roller mechanism.
18017	Stepping motor end stage error or supply cable defect after "free sequence".	Check supply cable or suppress end stage error or replace the end stage. (only Service)
18027	Stepping motor not ready of initialisation.	Check supply cable or suppress end stage error or replace end stage. (only Service)
18034	Sewing head not in position after "sequence free.	Check limit switch for the upper sewing head position.
18044	Transfer plate not in upper position after "sequence free".	Check limit switch for the upper transfer plate position.

Error number	Explanation	Remedy
18056	Reference run not properly performed.	Carryout reference run once again and readjust the switch, if necessary. (see chapter 7.3)
20017	x-axis end position exceeded.	Adjust X-Axis ednd position (see chapter 7.4.1).
20027	Y-Axis end position exceeded.	Proceed to a new adjustment of the Y-axis end position (see chapter 7.4.2).
20037	X-Axis reference exceeded.	Set limit switch for the X-Axis end position (see chapter 7.4.1).
20047	Y-Axis exceeded.	Adjust limit switch for the Y-Axis end position (see chapter 7.4.2).
20054	Trying to position beyond the X-Max Position. Limit switch adjustment not within the tolerance limits.	Adjust limit switch for the X-Axis end position (see chapter 7.4.1) or see for Software error.
20064	Trying to position beyond the Y-Max Position. Limit switch adjustment not within the tolerance limits.	Adjust limit switch for the Y-Axis end position (see chapter 7.4.2) or see for Software error.
20077	X-reference switch not active.	Check X-reference switch or see for Software error.
20087	Y-reference switch not active.	Check Y-reference switch or see for Software error.
20097	X-end position switch is active, although the motor is not in its end position.	Check X-reference switch or see for Software error.
20107	Y-end position switch is active, although the motor is not in its end position.	Check Y-reference switch or see for Software error.
20117	Motor X or Y not exactly in the reference - position.	Check X- and Y-reference switches or carry out reference run. (see chapter 7.3)
20127	Stepping motor is running.	Check stepping motor controller card or see for Software error
20137	Route error in X/Y.	Proceed to a new measurement of the end position. (see chapter 6.5)
21094	Sewing head lifting movement too slow.	Adjust the sewing head throttles. (see chapter 2.11.3 for 806-111 or chapter 3.11.2 for 806-121)
21104	Sewing head lowering movement too slow.	Adjust the sewing head throttles. (see chapter 2.11.3 for806-111 or chapter 3.11.2 for806-121)
22014	Reference run not carried out or carried out improperly or the machine positions have not been set or the machine class has not been selected or the limit switch run has not been performed properly.	Proceed to a new adjustment of the sewing machine, see chapter 6.
28244	Style change, Safe Stop was switched on.	Release the sewing unit before carrying out the style change.
28777	Software error	Enter once again the value for the maximum number of stitches that can be sewn with the bobbin thread.
30014	Compare desired and actual number of stitches. The number of stitches corresponds to the desired value.	- Check tension of the sewing motor belt. - Avoid Stop at low speed
30067	Signal sequence of the sewing motor and of the sewing motor interface have been offset.	Check sewing motor. Set sewing motor zero position. Check belt tension.

12. Pneumatic conditioning unit

12.1 Air filter and water separator



This unit separates soil particles and water, for avoiding obstructions and rust formation in the pneumatic system. The draining of the plastic container takes place automatically by a swimmer valve as soon as a certain water level is reached.

Maintenance

Clean the filter element every three months by benzine or petrol, before the air pressure drops.

- Stop the compressed air supply by the stop valve.
- Deaerate the pneumatic system.
- Screw off the plastic container.
- Screw off the filter element.

12.2 Pressure relief valve

The purpose of the pressure relief valve is to reduce the line pressure of 7-10 bar to the service pressure of 6 bar , for ensuring constant piston rod speeds and cylinder forces.

If the line pressure is above 10 bar, install a further pressure relief valve.

Caution: Danger of bodily injuries !

The machine must stand in the "Safe motor stop" position.

Rule and control

The service pressure should amount to 6 bar.

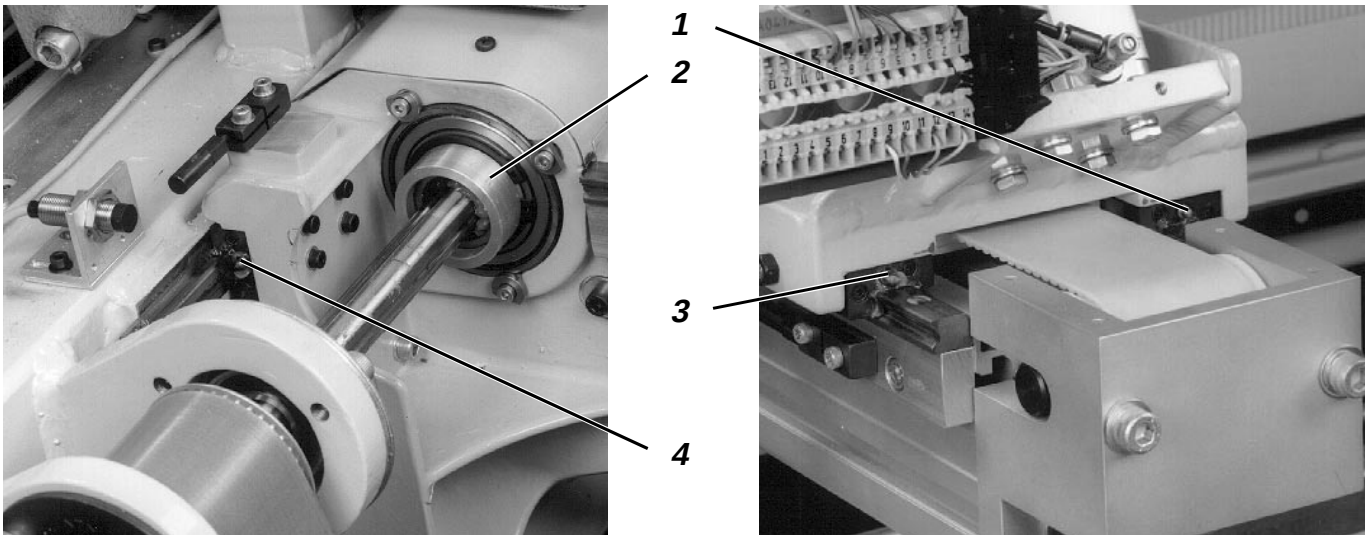
- The pressure set is shown by the manometer.

Correction

- Turn the head 1 accordingly.

13. Monthly maintenance

13.1 Lubrication



Following assemblies of the transfer carriage must be lubricated **monthly** :

- Spherical bush 2 of the torque shaft
- Carriage of linear rails
- Spherical heads

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before lubricating the lubrication points of the transfer carriage.

Spherical bush and carriage of the linear rails

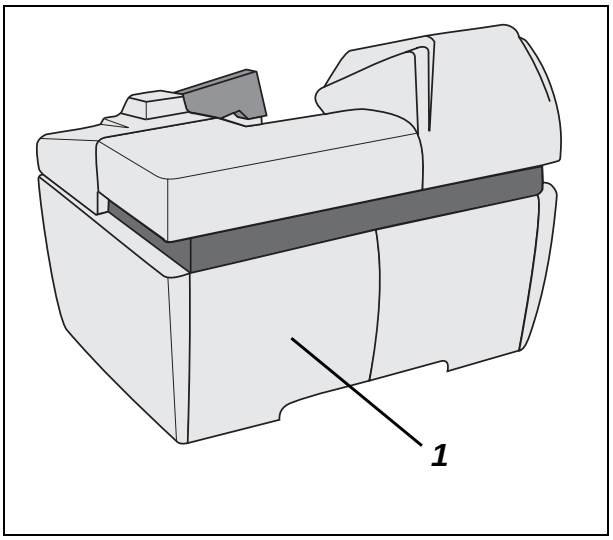
Use for the lubrication the commercial antifriction bearing grease.

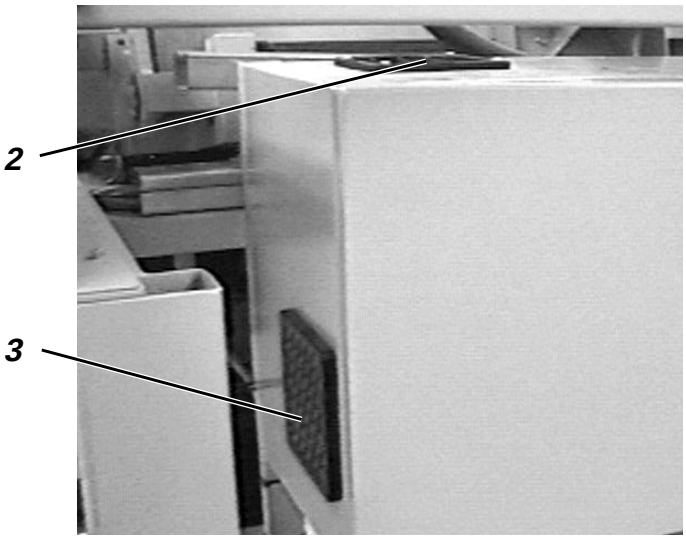
- Install the grease gun adapter, contained in the accessories.
- Lubricate the points 1, 2, 3 and 4 by a grease gun so that the old grease is fully pressed out.

Spherical heads and articulated heads

Use for the lubrication commercial installation paste (e.g.. OKS 260).

13.2 Ventilation grid and control





Caution: danger of bodily injuries !

Switch off the machine before cleaning the ventilation grid and the control unit.

- Turn off main switch.
- Remove cover 1.
- Remove fan cover 3.
- Remove the sieve and clean it by the compressed air gun.
- Fit the sieve and the cover 3.
- Clean the ventilation grid 2.
- Fit cover 1.

14. Maintenance

Caution: Danger of bodily injuries !

Turn off main switch.
Switch off the machine before proceeding to the maintenance of the machine.

Daily and weekly maintenance work to be carried out by machine operators (cleaning and lubrication is described under Part 1 of the Operating Instructions. This work is compiled in the following tables.

Work to be carried out	Service hours			
	8	40	160	500
Machine head (class 806-111)				
- Remove fluff	X			
- Check oil level in oil sump	X			
- Check oil supply through sight glass	X			
- Control the belt				X
- Control hook lubrication			X	
Pneumatic system				
- Check water level in pressure regulator	X			
- Clean filter element in the conditioning unit				X
- Check tightness of the pneumatic system				X
Transfer carriage				
- Clean guide rods			X	
- Clean toothed belt by compressed air gun			X	
- Clan splined shaft			X	
- Clean the linear route rails			X	
Vacuum				
- Check and clean inner framed hole opening		X		
- Check vacuum fields in the table top, ensure that the holes are free Screw off lower plate, loosen knurled screw and clean by compressed air		X		
- Clean outgoing air silencer housing			X	
Electrical system				
- Clean ventilation grid and control unit			X	