Contents **Page:**

Part 3: Service Instructions Cl. 971-805, -825

Contents **Page:**

1. General

ATTENTION!

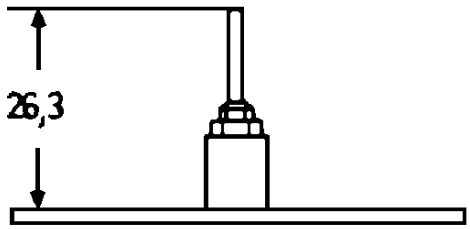
The tasks described in the Service Instructions may only be conducted by skilled personnel or appropriately trained staff!

Caution Risk of Injury!

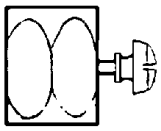
During repair, conversion and maintenance work turn the main switch off and disconnect the sewing unit from the pneumatic supply.

Adjustments and function testing with the sewing unit running are to be conducted only under observance of all safety measures with the greatest possible caution.

1.1 Gauge Set



K981 120012



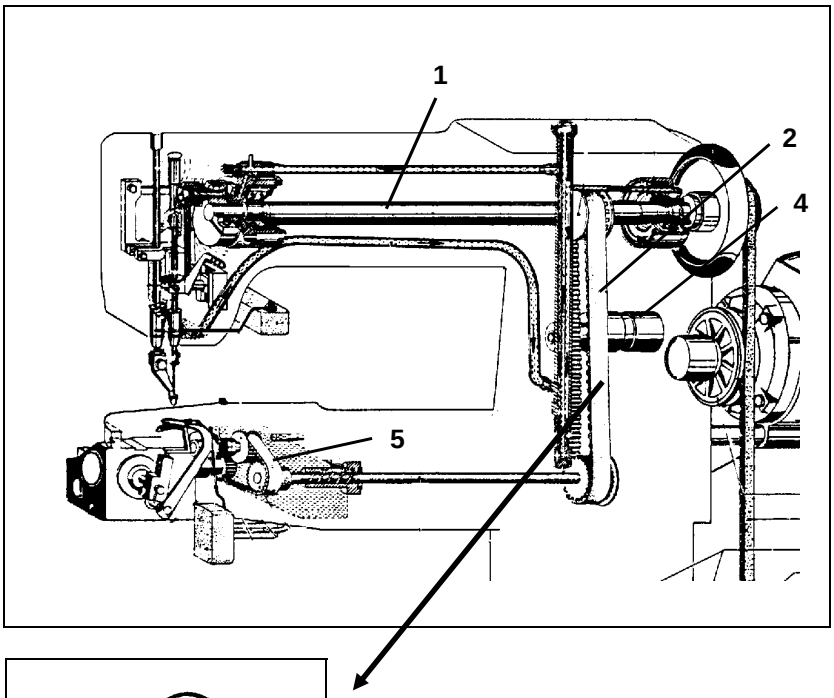
K981 150002

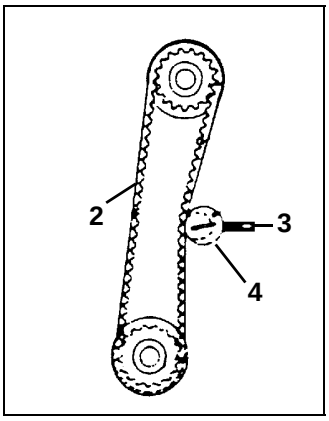
The adjustment gauges listed in the following make possible a precise setting and testing of the sewing unit.

Order no.	Setting
K981 120012	Height of the needle rod of the sewing head
K981 150002	Setting block for the timing of the hook movement and the radial position of the needle rod
K981 150015	Feeler gauge

2. Adjusting the Sewing Head

2.1 Timing Belts





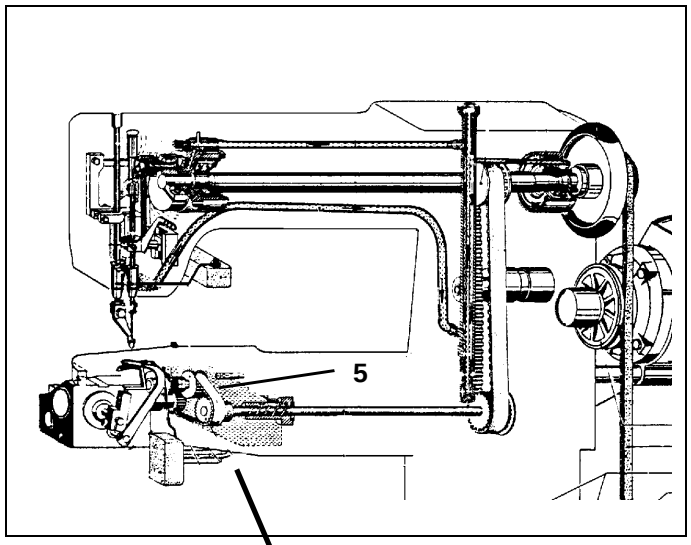
The arm shaft 1, via the timing belts 2 and 5, drives the bottom shaft, the shaft of the hook housing and the shaft of the thread take-up disk. The timing belts should be able to be "pressed in" a little by hand.

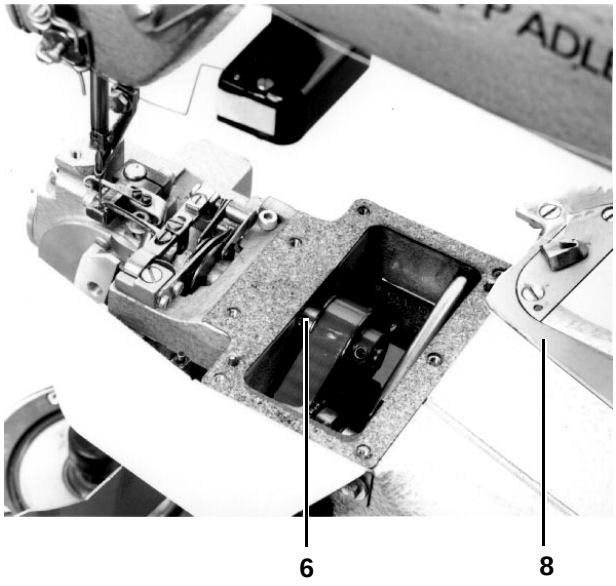
Caution Risk of Injury!

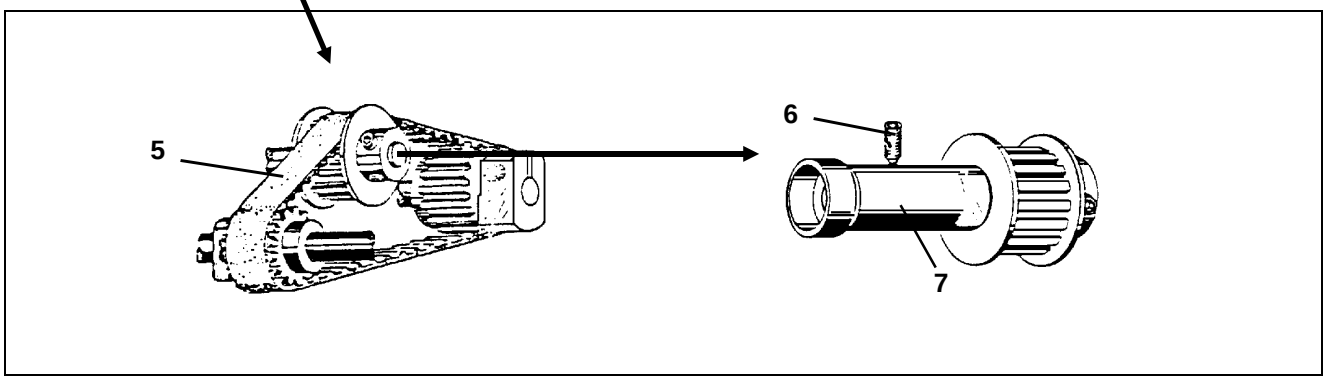
Before checking and setting the timing belts turn the main switch off.

1. Setting timing belt 2

- Screw the belt guard 6 off.
- Loosen screw 3.
- Turn the eccentrically bearinged tension roller 4 against the timing belt with light pressure.
- Tighten screw 3.
- Remount the belt guard.







2. Setting timing belt 5

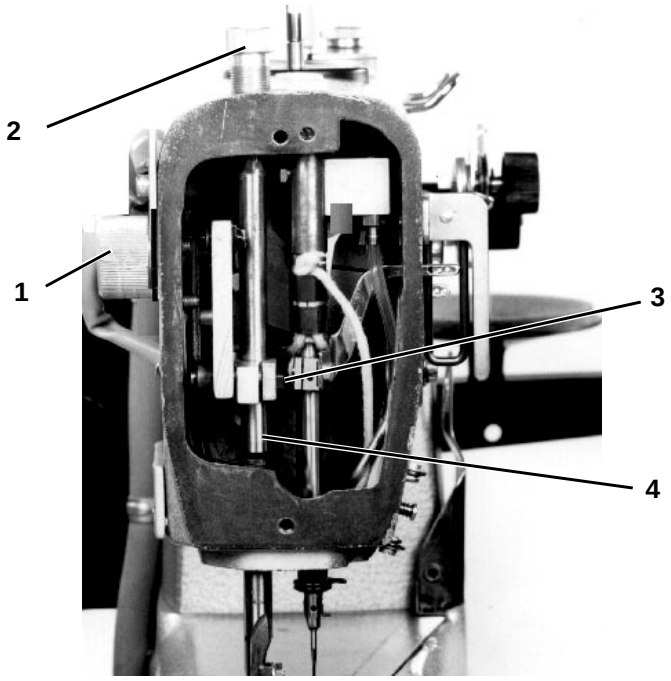
- Screw the housing cover 8 off
- Loosen screw 6 and turn the eccentric bush 7 appropriately.

ATTENTION!

Too high a belt tension leads to increased belt and bearing wear. With too low a tension no precise movement harmonization between the needle rod, the hook and the thread take-up disk can occur.

2.2 Pressure Foot

2.2.1 Pressure Foot Pressure



The pressure foot should follow the operating mechanism with its downward movement.
Too low a pressure can lead to missing stitches.

– Turn the knurled screw 2 accordingly.

2.2.2 Stroke Position of the Pressure Foot

The pressure foot should lightly touch the material in its lower dead center.

– Turn the handwheel in the direction of revolution until the pressure foot reaches its lowest position.
– Adjust the setting wheel 1 so that the pressure foot lightly touches the material.

2.2.3 Height Adjustment Range of the Pressure Foot

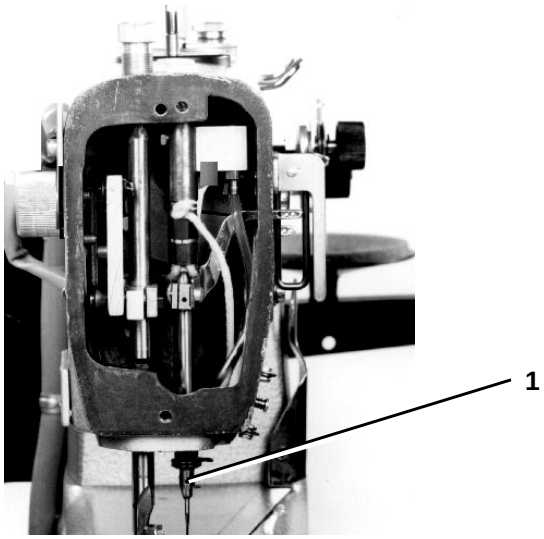
The pressure foot at lower dead center should have a clearance of 0.5 mm to the needle hole mushroom when the lowest stroke position is set.

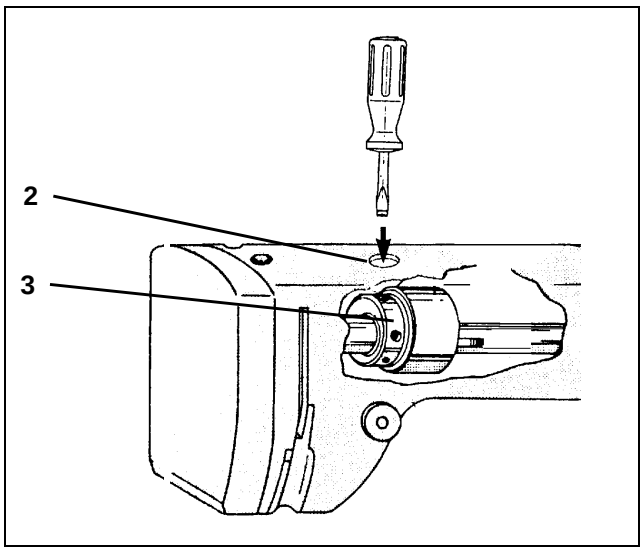
Caution Risk of Injury !

Before setting turn the main switch off.

– With setting wheel 1 set the lowest stroke position.
– Bring the pressure foot into the lowest position with the handwheel.
– Loosen screw 3 and set the height of the presser bar 4 appropriately.

2.2.4 Timing of the Pressure Foot Movement





The pressure foot should only start its upward movement after 2 mm of looping stroke.

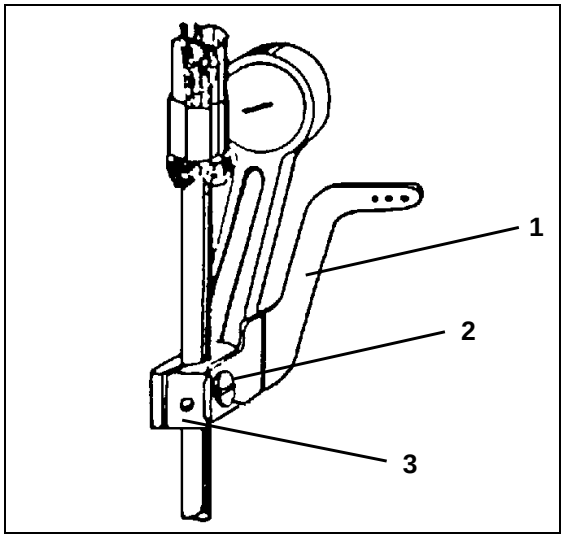
An incorrect setting can cause missing stitches.

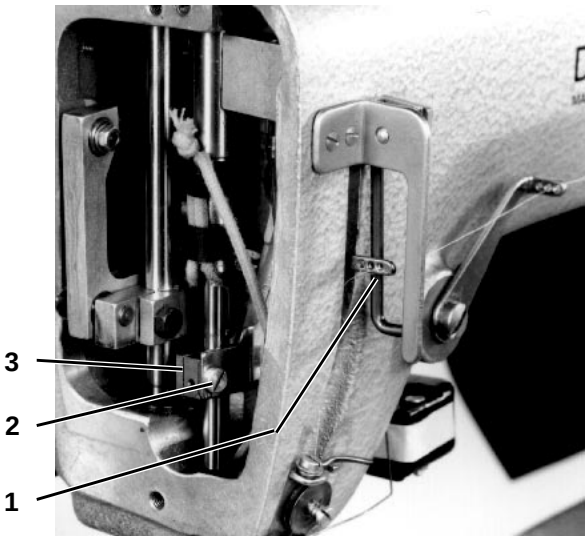
Caution Risk of Injury!

Before setting turn the main switch off.

- Remove plug 2
- Loosen the screws on the stroke eccentric 3.
- Turn the needle rod 1 into the low position.
- Change the position of the stroke eccentric on the shaft.
- Do not change the position axially.

2.3 Thread Lever





The thread lever 1 should be centered in the slot of the housing.

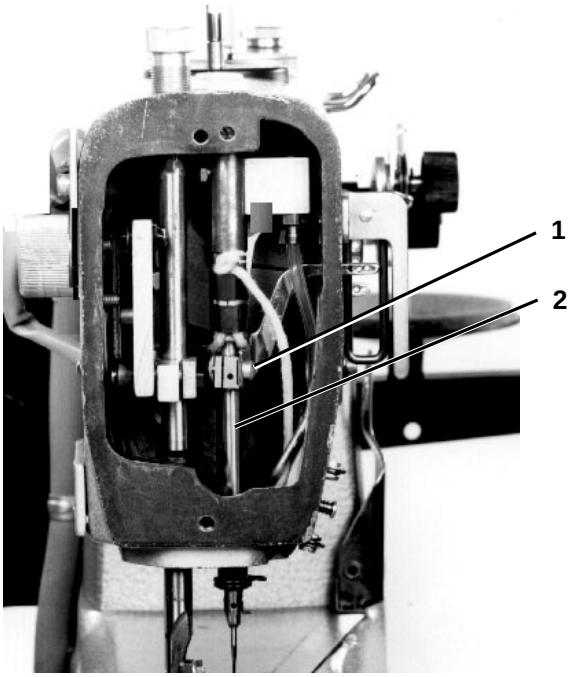
Caution Risk of Injury!

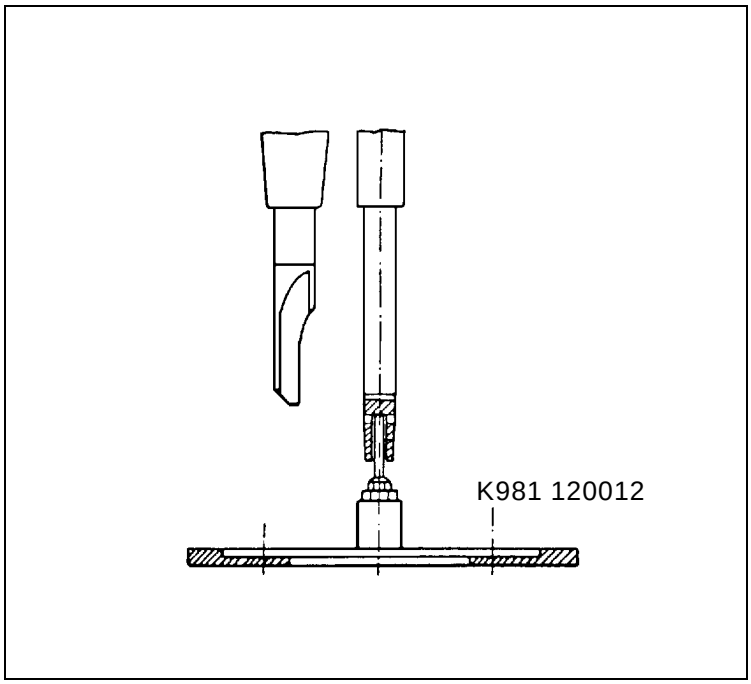
Before setting turn the main switch off.

- Remove the head cover.
- Loosen screw 2 on the clamping block 3.
- Alter the position of the thread lever in the vertical and horizontal directions appropriately.

2.4 Hook, Spreader, Needle Rod and Needle Guide

2.4.1 Height of the Needle Rod





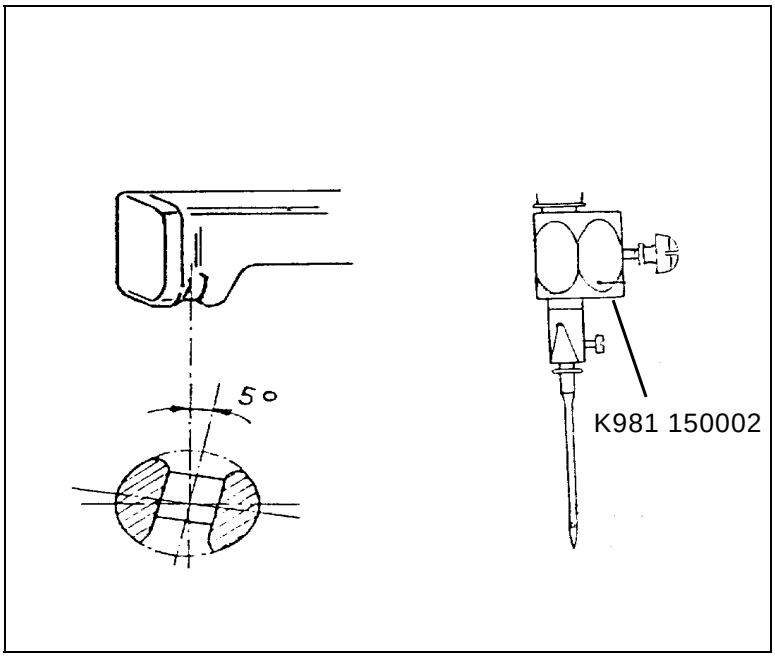
The needle rod height is set with the gauge K981 120012. The pin of the gauge must have completely entered the hole in the needle rod when this is at lower dead center.

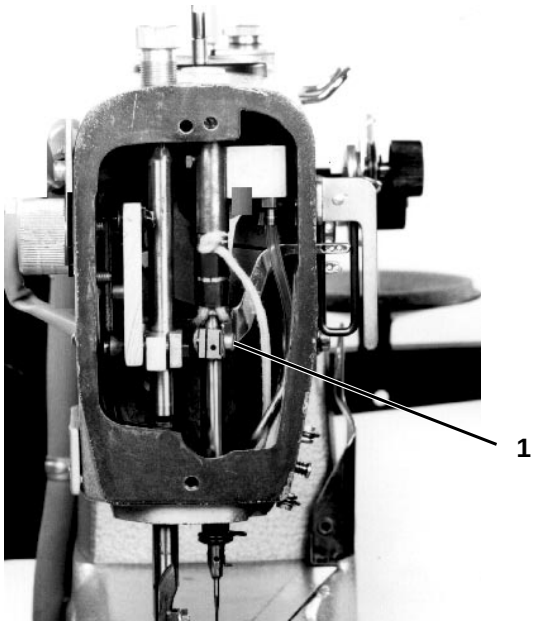
Caution Risk of Injury!

Before setting turn the main switch off.

- Screw the head cover and needle plate off.
- Take out the needle and pressure foot.
- Bring the needle rod in its high position with the handwheel.
- Place gauge K981 120012 on the base plate.
- Loosen screw 1 on the clamping block 2
- With the handwheel bring the drive mechanism of the needle rod into lower dead center.
- Pull the needle rod all the way down onto the pin of the gauge. Do not turn the needle rod.
- Tighten screw 2.

2.4.2 Radial Position of the Needle Rod





The needle fastening screw sits on the surface of the needle and thereby determines the correct position of the needle to the hook.

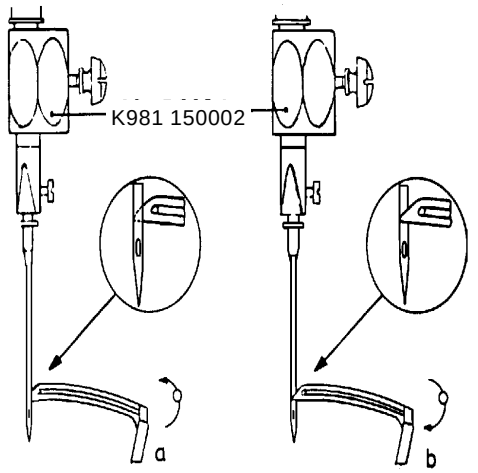
The furrow of the needle should be at an angle of 5 -10° to the hook.

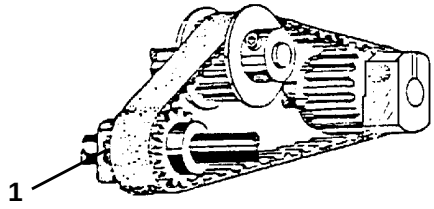
Caution Risk of Injury!

Before setting turn the main switch off.

- Screw the head cover off.
- Set the needle rod at the upper dead center.
- Attach the setting block K981 150002 to the needle rod in order to adjust the needle rod height.
- Loosen screw 1.
- Turn the needle rod and at the same time press it up against the stop.
- Tighten screw 1.

2.4.3 Timing of the Hook Movement





In the needle low position the hook should be at its right reversing point.

A correction also changes the position of the thread take-up disk.

Caution Risk of Injury!

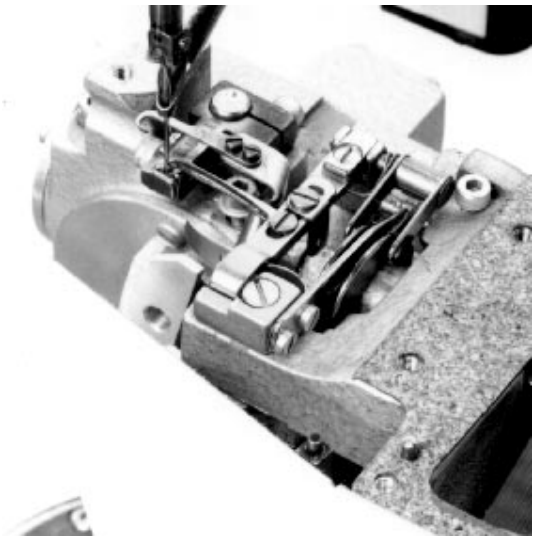
Before setting turn the main switch off.

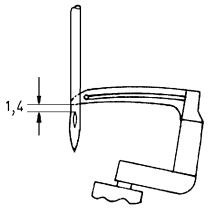
- Turn the handwheel until the hook point is **behind** the needle and in line with the left side of the needle (Illus. a).
- Place setting block K981 150002 on the needle rod, press against the needle rod guide bush and fix with the screw.
- Turn the handwheel counter to the direction of run until the block again lies on the bush. In this position (Illus. b) the hook point must be in front of the needle and in line with the left side of the needle.

Setting the timing

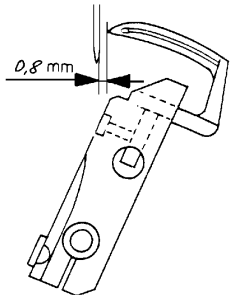
- Loosen screw 1 on the forward gear.
- Hold the hook carrier and turn the handwheel appropriately.

2.4.4 Position of the Hook to the Needle

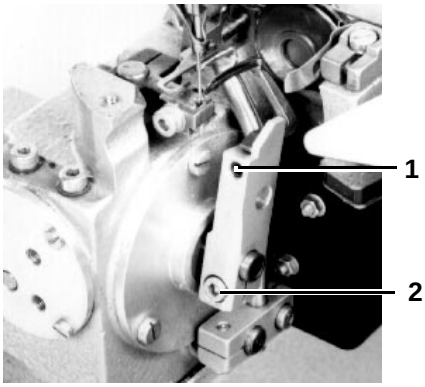




Illus. 1



Illus. 2



The hook height is correct when the hook point, being "in line" with the left side of the needle, has a clearance of 1.4 mm to the eye of the needle (Illus. 1).

At the right reversing point the hook should have a clearance of 0.8 mm to the needle (Illus.2)

The hook should move with a clearance of 0.1 mm past the furrow of the needle.

Caution Risk of Injury!

Before setting turn the main switch off.

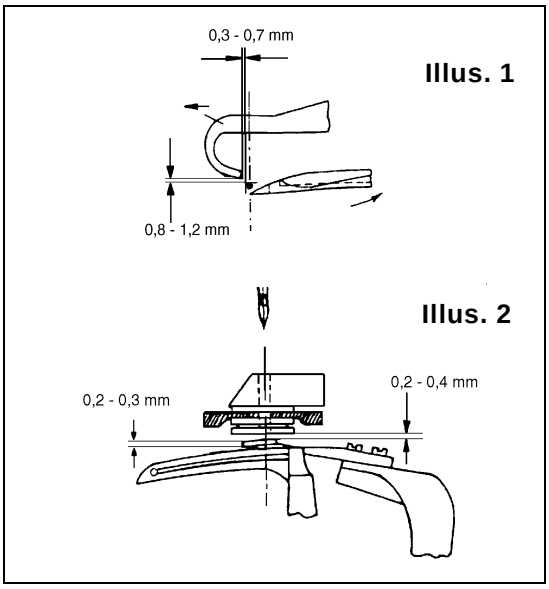
1st setting

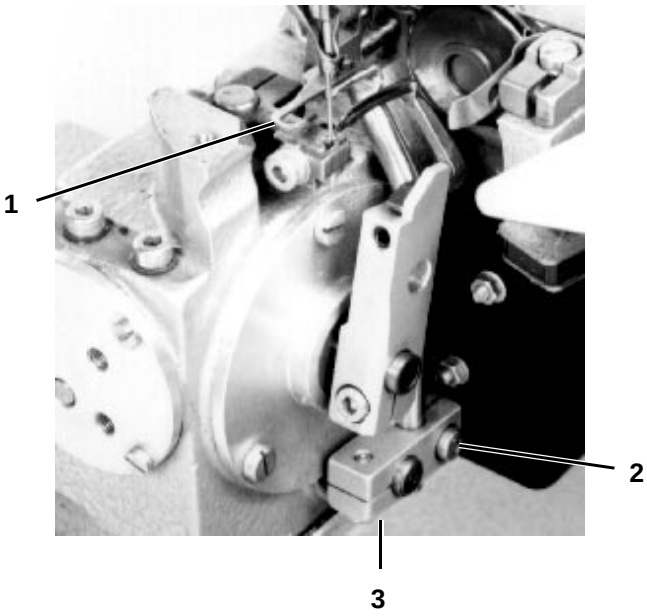
- Set the hook at the right reversing point.
- Loosen screw 2.
- Set the clearance from the hook point to the needle at 0.8 mm.

2nd setting

- Set the hook point at the left side of the needle.
- Check if the clearance to the eye of the needle is 1.4 mm.
- Loosen screw 1 and pull the hook in or out appropriately.
- Turn the hook in the hook carrier so that there is a clearance of 0.1 mm to the furrow of the needle.
- Check the clearance of 0.8 mm at the right reversing point.

2.4.5 Position of the Spreader





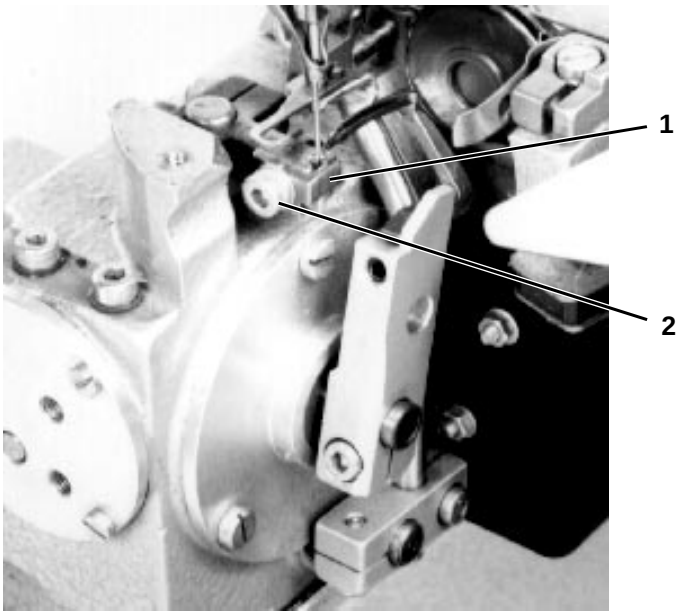
In order to avoid missing stitches the formation of the thread triangle is supported by the spreader 1.
When the hook is in front of the needle and the hook point lies at the needle center it should have the position shown in illus. 1.

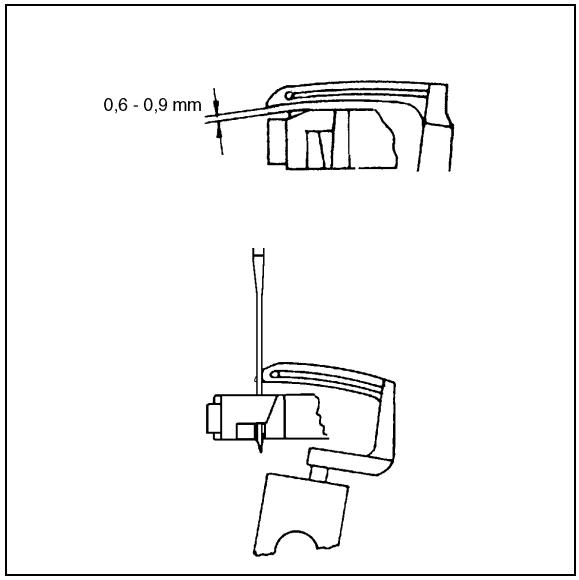
Caution Risk of Injury!

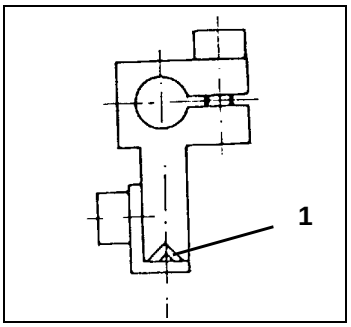
Before setting turn the main switch off.

- Turn the handwheel until the hook is in front of the needle and the hook point lies at the needle center.
- Loosen screw 3 and set the position of the spreader appropriately.
- Set the hook at the left reversing point (Illus. 2)
- Loosen screw 2 and set the spreader height appropriately.

2.4.6 Needle Guard







Through the continuous transport of the sewing head, the needle is deflected below the level of the material. The needle must therefore be appropriately guided when the hook point moves past the furrow of the needle.

The hook should move at a clearance of 0.6 - 0.9 mm above the needle guard.

The needle point should lay onto the needle guard 1 without deflection when the hook point is behind the needle and in line with the left side of the needle.

At the needle low position the forward part of the needle guard should have a clearance of 0.3 mm to the needle.

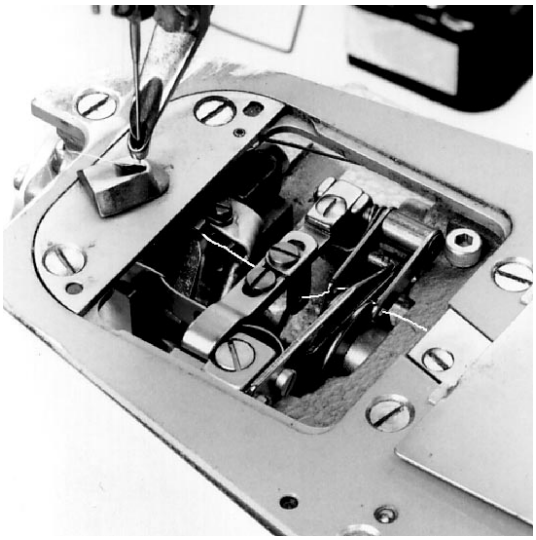
Caution Risk of Injury!

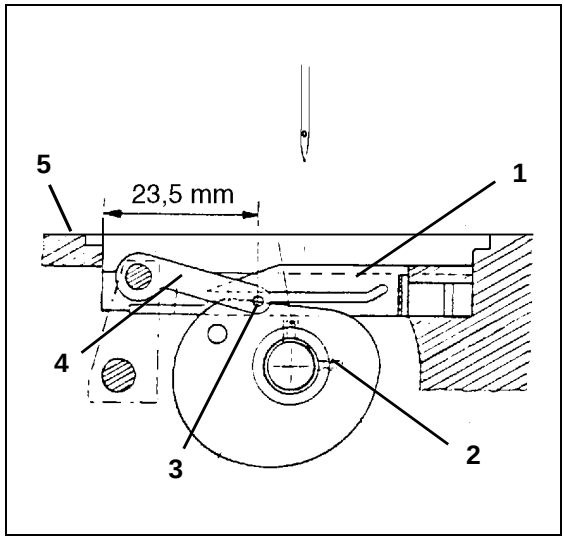
Before setting turn the main switch off.

– Loosen screw 2 and change the position of the needle guard appropriately.

2.5 Thread Take-Up Disk and Thread Guides

2.5.1 Thread Take-Up Disk





The thread take-up disk should draw or release the hook thread appropriate to the hook movement.

With the begin of the downward movement of the needle the thread take-up disk should begin with the drawing.

Caution Risk of Injury!

Before setting turn the main switch off.

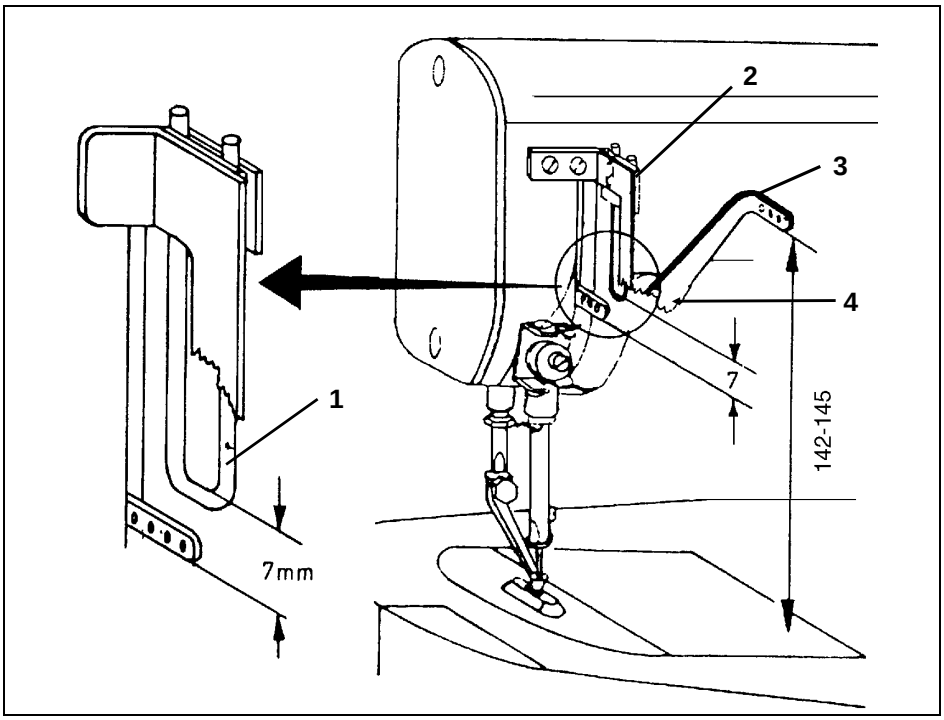
- Loosen screws 2 of the thread take-up disk.
- Move the needle rod down from upper dead center.
- Adjust the thread take-up disk so that it begins with the drawing of the hook thread. The thread take-up disk should lie centered to the thread guide 1.
- Tighten the screws again.

2.5.2 Thread Guides

The hole 3 of the thread guide 4 should have a clearance of 23 mm to the cast edge and be in line with the slit of the thread guide 1.

The thread guide should lie centered to the thread take-up disk.

2.6 Thread Regulator and Needle Thread Guide



The thread regulator 1 should have a clearance of 7 mm to the thread lever when this is in its lower dead center.

The position of the thread lever influences:

- The tension of the needle thread loop shortly before it jumps from the hook,
- the tension of the needle thread loop,
- the loop size.

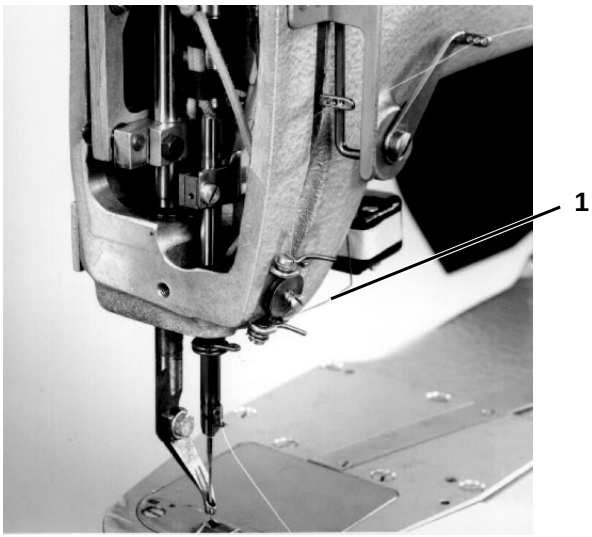
The height of the thread guide 3 should, depending on material and sewing threads, be 142 - 145 mm from the base plate.

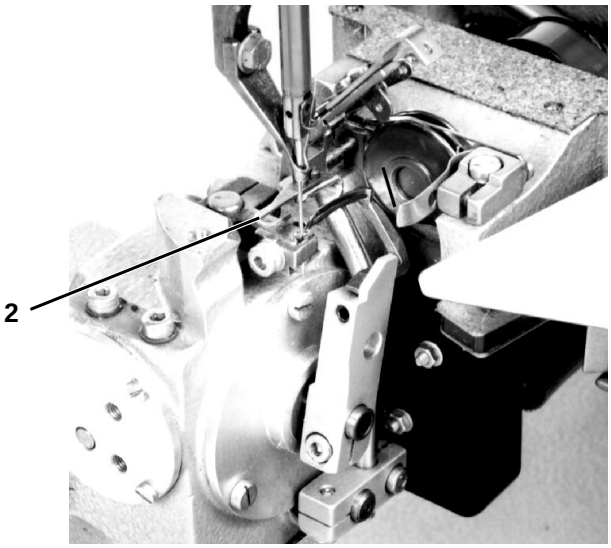
Caution Risk of Injury!

Before setting turn the main switch off.

- Loosen screws 2 and 4 and set the thread regulator / the thread guide appropriately.

2.7 Thread Monitors





With a thread break the switching flag of the appropriate thread monitor is released. The automatic operation is stoped.

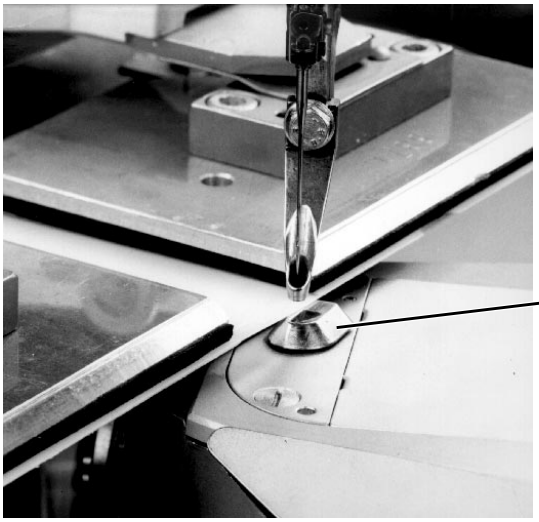
The thread break should, however, only be signaled when the switching flag has moved at least 2/3 of its possible movement.

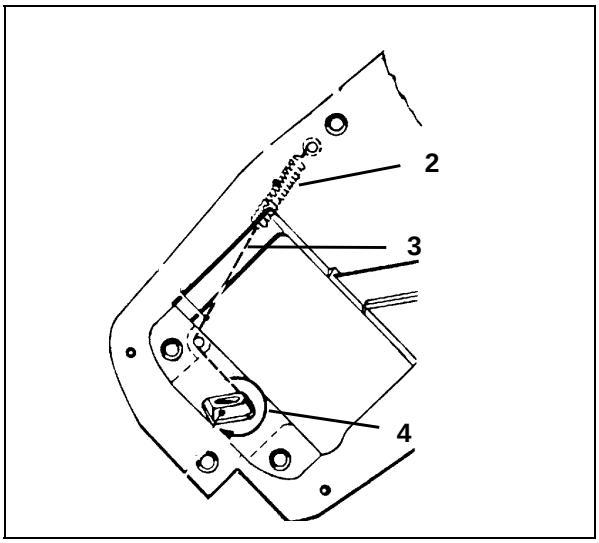
Caution Risk of Injury!

Before bending the switching flags turn the main switch off.

– Bend the switching flag 1 of the needle thread and switching flag 2 of the hook thread monitor appropriately.

2.8 Needle Hole Mushroom





In each sewing phase the needle hole mushroom 1 must lie on the material support with appropriate pressure. This is the case when the cord 3, with the sewing head swung out, is somewhat loose.

When the sewing head is swung in the spring 2 must pull the needle hole mushroom into sector 4. If this is not the case the cord must be shortened a little.

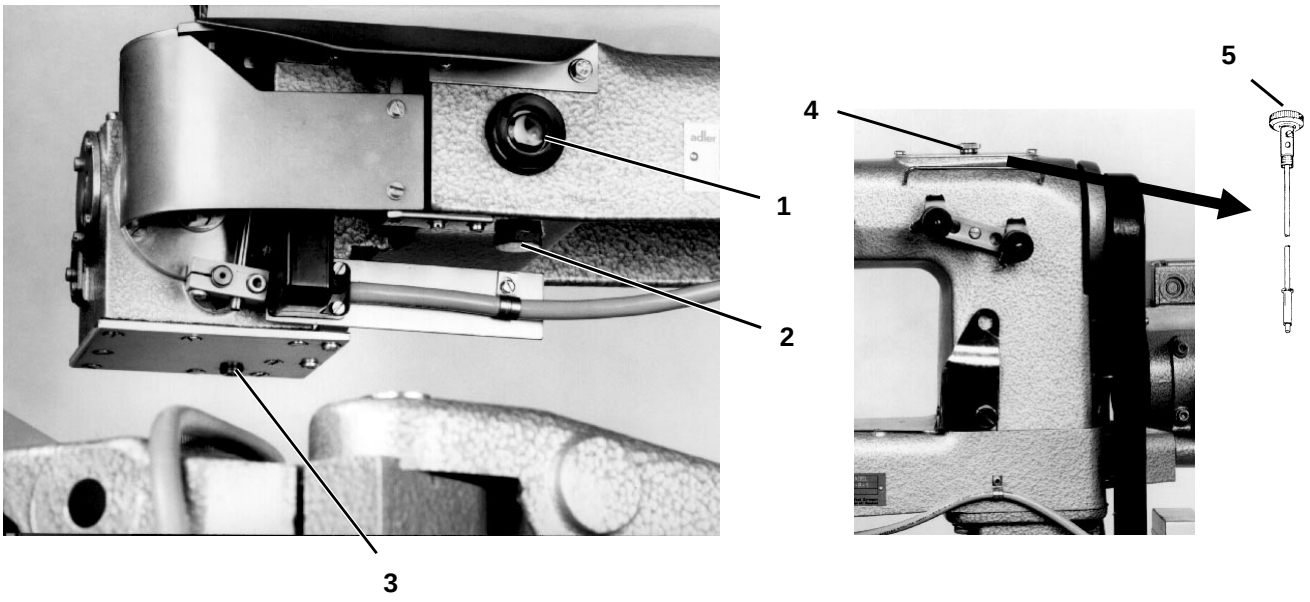
Caution Risk of Injury!

Before setting turn the main switch off.

- Check the needle hole mushroom position in the swung-in and swung-out positions.
- Loosen the housing plate screws.
- Remove the housing plate.
- Lengthen or shorten cord 3 appropriately.

2.9 Oil Lubrication

2.9.1 Checking the Oil Level and Oil Feed

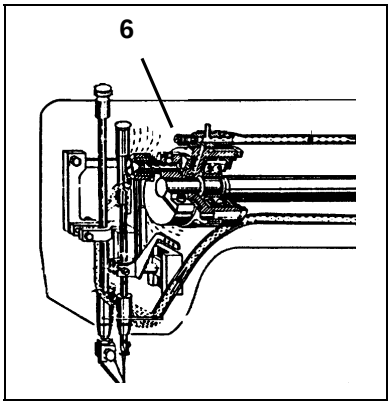


The oil level in the oilpan is to be checked, with the machine not running, at the oil level gauge 1 at weekly intervals. If the oil level is below the middle of the gauge, "Esso SP NK 10"-brand oil must be filled.

With the sewing unit running the oil feed from the oilpan to the riser tube can be checked at the viewing glass 5. The oil feed should be checked weekly.

- Screw out the oil riser tube 4.
- Pour oil through the filling nozzle into the oilpan.

2.9.2 Regulating Sewing Head Lubrication



The amount of oil fed can be considerably greater than the actually required amount of oil.

Check to see if all effected parts in the sewing head are covered with an oil film.

- Screw off the head cover.
- Screw the regulating screw 6 all the way in and turn back approx. 1/2 turn.

2.9.3 Changing the Oil

The oil is to be changed after the first 6 months, at the latest,however, after 1000 operating hours. Thereafter no further oil change is required.

Conduct the oil change in the following order:

Caution!

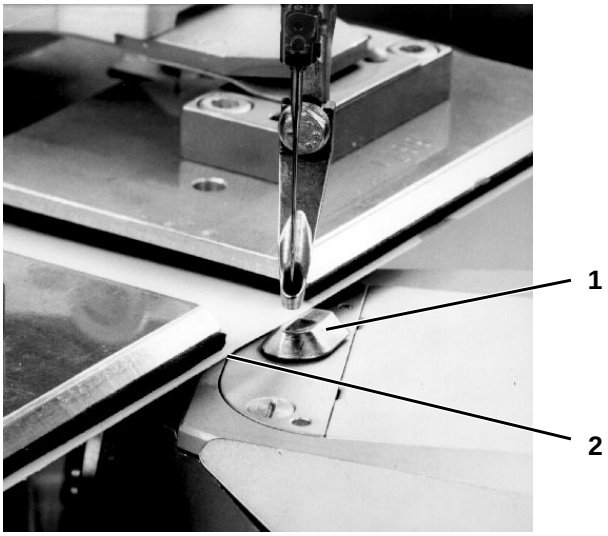
Oil can cause skin irritation. Avoid longer skin contact. Wash thoroughly after contact.

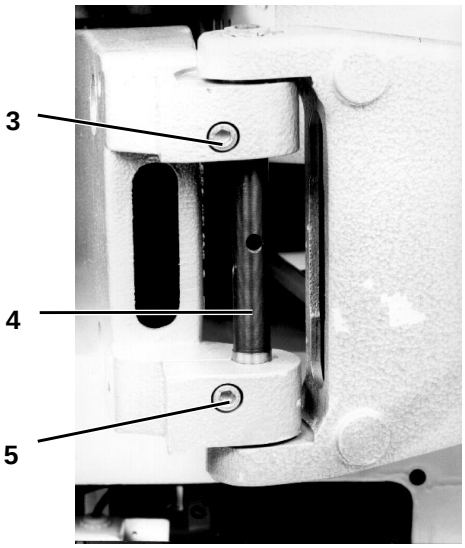
Protect the environment. The handling and disposal of mineral oils is regulated by law. Deliver waste oil to an authorized receiver.

Take care not to spill oil.

- Screw out drain screws 2 and 3 (See p. 19) to drain the oil.
- Remove the oilpan cover.
- Clean the oilpan.
- Screw in both drain screws again.
- Place a new gasket on the oilpan cover.
- Take out the oil riser tube.
- Fill "Esso SP NK 10" oil through the filling nozzle until the oil reaches the middle of the oil level gauge.
  Here observe that the oil from the oilpan can only reach the hook case through a relatively small hole. Therefore check the oil level again after a few minutes.

2.10 Height of the Sewing Head





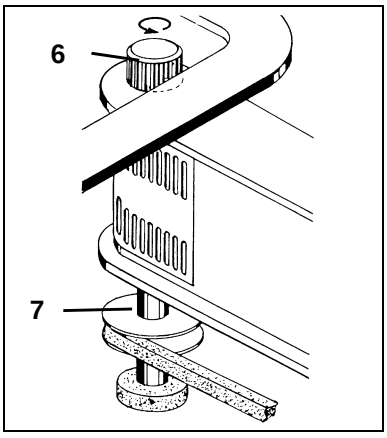
The needle hole mushroom 1 should have a clearance of 0.2 - 0.3 mm to the Delrin 2 of the material holder.

Caution Risk of Injury!

Before setting turn the main switch off.

- Guide the sewing head inside of the slewing area along the material template and check the clearance.
- Loosen the clamping screws 3 and 5 on the slewing arm and turn shaft 4 appropriately.
- Tighten clamping screws again.

2.11 Height of the Magnetic Roller

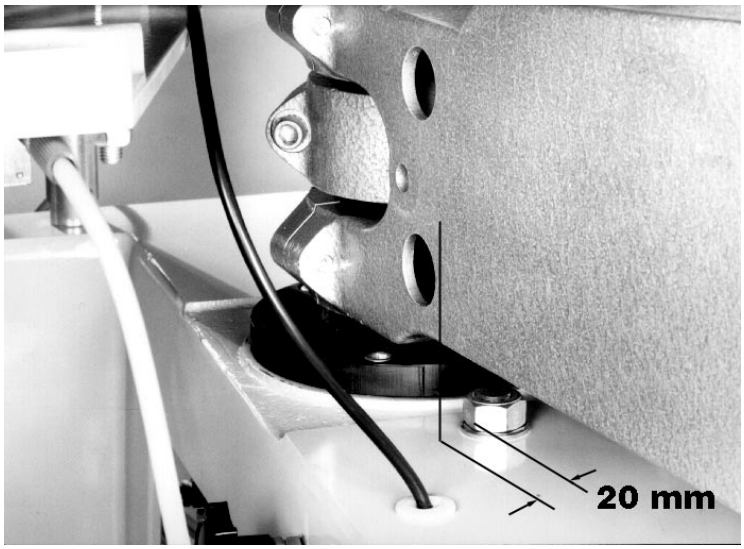


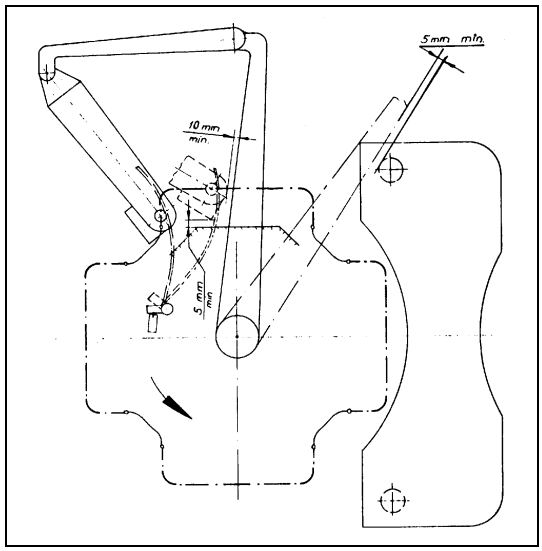
The magnetic roller 6 must move in rolling contact along the whole surface of the template. With adjustable holders also on the higher "bridge" between the holders.

Templates at the higher level for closer trimming in certain areas may in no case be touched by the magnetic roller.

- Loosen the screw on the pulley 7 and change the height of the magnetic roller appropriately.

2.12 Position of the Slewing Arm





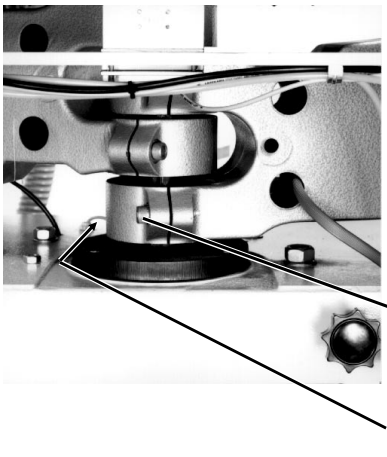
Illus. 1

The position of the slewing arm bearing is set at the factory. It is dependent on the type of material holder.
When using new material holders it may become necessary to change the position of the slewing arm bearing.

For establishing the correct position the position shown in illus. 1 can first be used as a reference point.

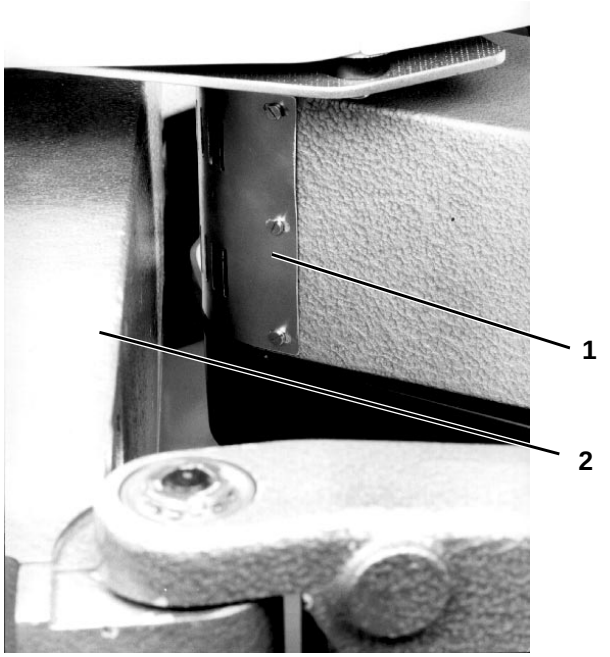
Caution Risk of Injury!

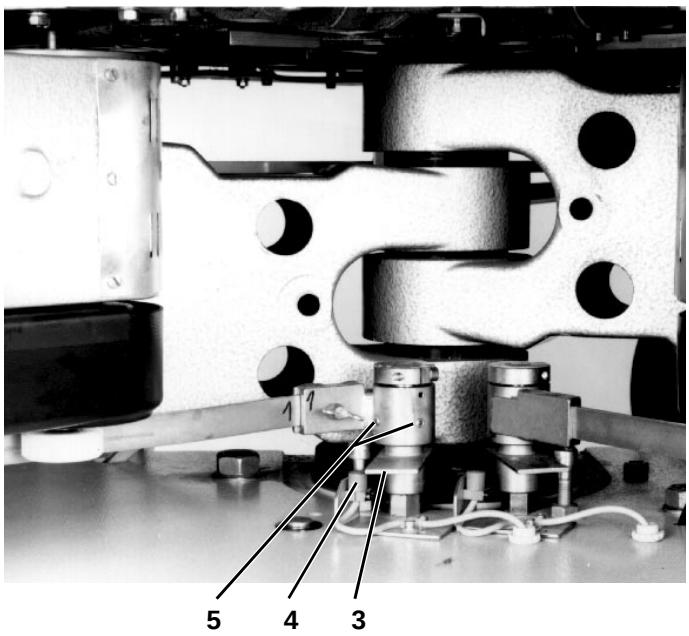
Before setting turn the main switch off.



- Loosen screws 1 and 2 and alter the position of the slewing arm bearing appropriately.
  Thereby do **not** change the height of the slewing arm bearing.
- Check the movement range of the sewing head (see also subject 2.13) and, if necessary, check the position of the slewing arm.

2.13 Movement Range of the Sewing Head





The sewing head has reached the end of the movement range when switch 4 (b21) is operated via the switching flag 3 and thus a new cycle is activated again.

The turntable should be activated when the sewing unit 1 has moved to within 20 mm of the slewing arm 2.

Caution Risk of Injury!

Before setting turn the main switch off.

– Loosen screws 5 and change the position of the switching plate appropriately.

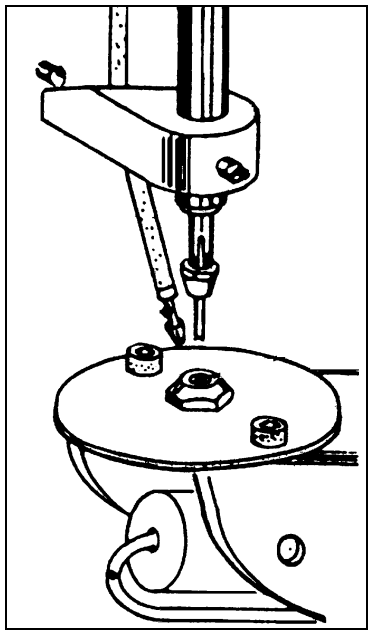
ATTENTION!

Deviations from this rule become necessary when at this point the warp is being sewn. In this case either the turntable is to be activated appropriately earlier or the position of the slewing arm bearing appropriately changed.

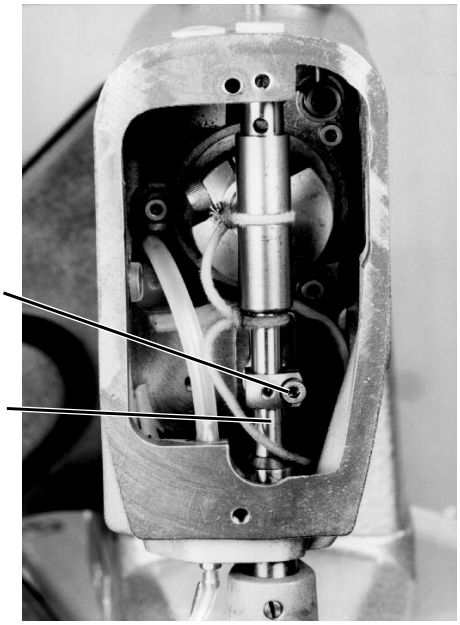
3. Trimming Head

3.1 General, Version 1 and 2

Illus. 1



Illus. 2



The trimmer in illus. 1 is equipped with an upper and a lower knife. It makes possible the trimming of "outside radii" and larger "inside radii".

This trimmer is designated **Version 1** in these instructions.

The trimmer in illus. 2 is equipped with a stamp and a template. It makes possible the trimming of small "inside radii" such as are required with gloves, for example.

It is designated **Version 2** in these instructions.

3.2 Knife or Stamp Overlapping

3.2.1 Knife Overlapping with Version 1

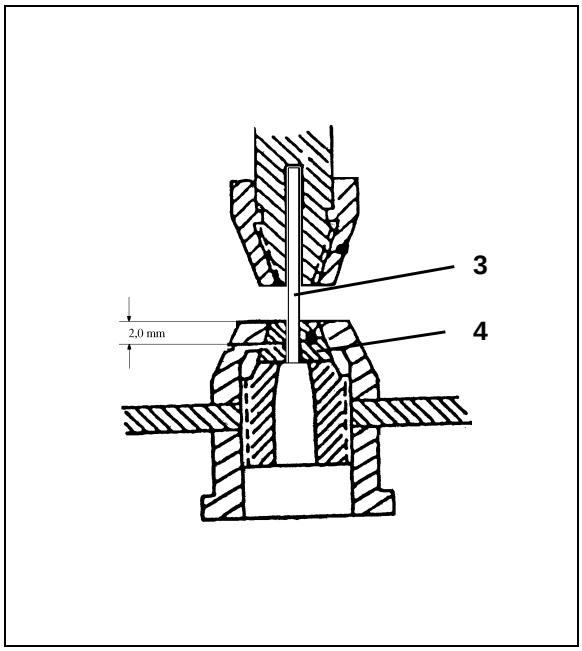
The blades of the upper and lower knives should be just overlapped when the upper knife is at lower dead center.

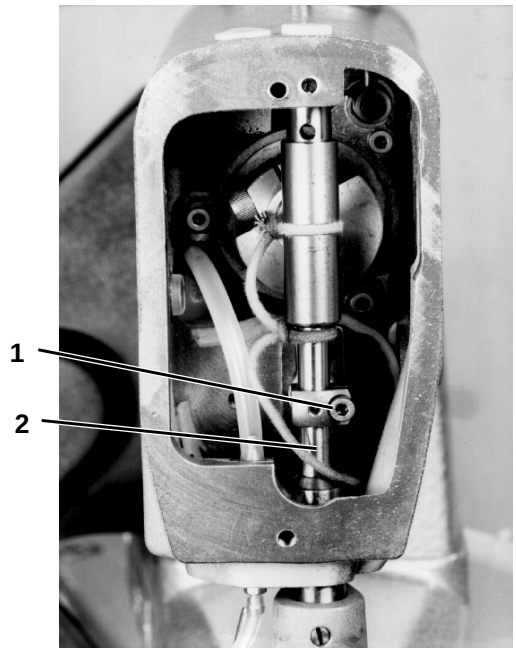
Caution Risk of Injury!

Before setting turn the main switch off.

- Screw the head cover off.
- Turn the handwheel in the direction of revolution until the upper knife is at its lower dead center.
- Loosen screw 1 and adjust the tension bar 2 so that the upper and lower knives overlap.
- Tighten screw 1 again.

3.2.2 Stamp Overlapping with Version 2





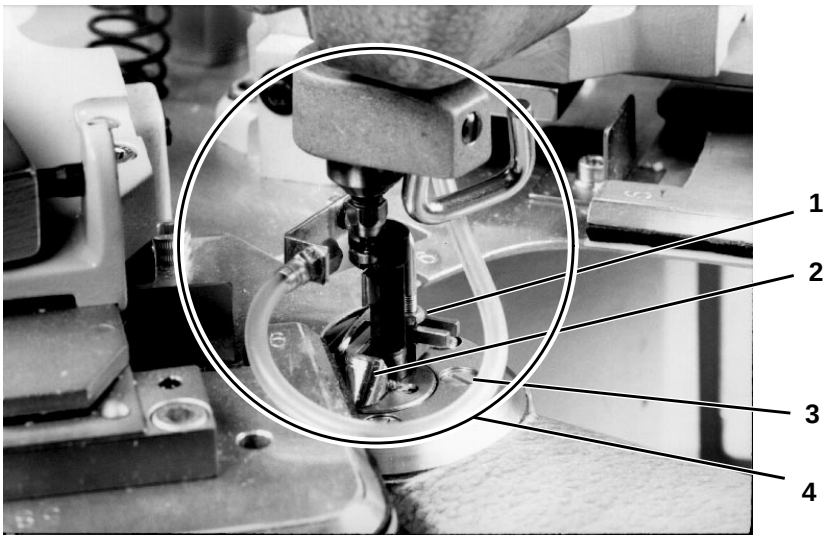
The stamp 3 should be pushed up into the receiving hole of the stamp rod until hitting the stop. In its lowest position it should have entered 2 mm into the template.

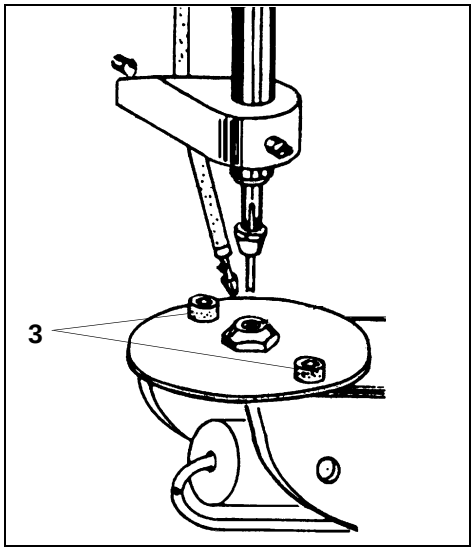
Caution Risk of Injury!

Before setting turn the main switch off.

- Screw the head cover off.
- Turn the handwheel in the direction of revolution until the stamp is at its lower dead center.
- Loosen screw 1 and adjust the stamp rod 2 so that the stamp has entered 2 mm into the template.
- Tighten screw 1 again.

3.3 Position of the Guide Pieces with Version 1





When trimming straight sections the knife blades should lie parallel to the material clamp.

Caution Risk of Injury!

Before setting turn the main switch off.

- Set the trimmer at a straight section.
- Loosen nut 1 on the guide piece 2.
- Adjust the position of the guide piece 2.

3.4 Position of the Shearing Head / the Template to the Drive Rod

Version 1

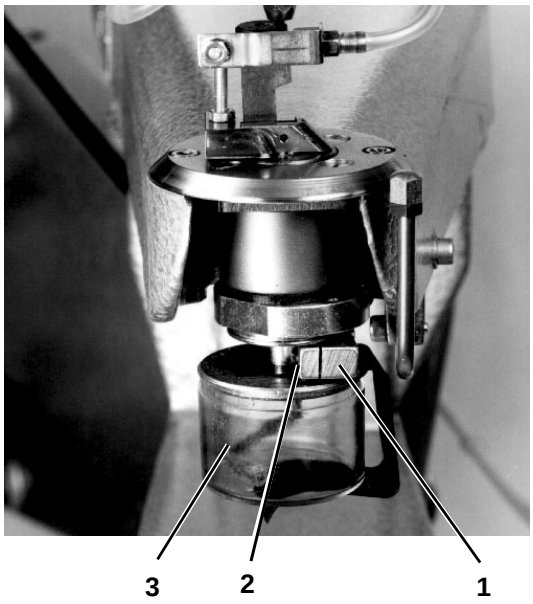
- The shearing head 4 must be able to be easily turned into any desired position.

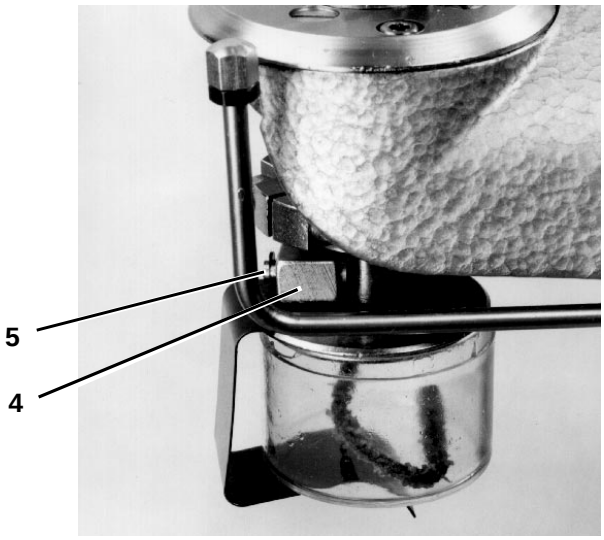
Version 2

- The stamp 5 must be able to enter the template without deflection.

Loosen screws 3 and adjust the position of the template / the mobility of the shearing head.

3.5 Pressure of the Knife Blades with Version 1





The knives should give a sure cut with the least possible pressure. This is the case when the securing collar 5 has a clearance of 0.2 - 0.3 mm to the clamping block 4.

Too high a pressure leads to increased knife wear.

Caution Risk of Injury!

Before setting turn the main switch off.

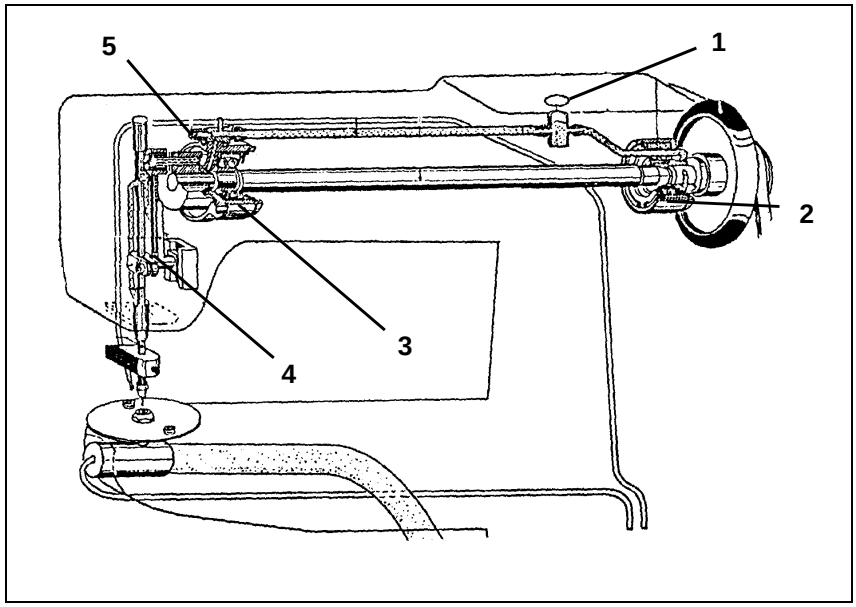
– Loosen screw 2 and change the position of the clamping block 1 appropriately. Take care that the lower knife carrier has no axial play.

3.6 Lubrication of the Rotating Body and Upper Knife with Version 1

The lubrication occurs from the reservoir 3 via the interior wick.

There must always be "Esso SP NK 10"-brand oil in the reservoir.

3.7 Lubrication of the Stamp Rod and the Arm Shaft Bearing



The oil in the reservoir 1 reaches the right arm shaft bearing 2 and left arm shaft bearing 3 via the wicks and goes from there into the head. Here the spun-off oil is collected in the "sump" and fed to the link 4 via the felt and to the stamp rod via the wick.

The stamp and link rod should be sufficiently lubricated but with the smallest amount possible.

There must always be oil in the reservoir 1. Top up daily.

Caution Risk of Injury!

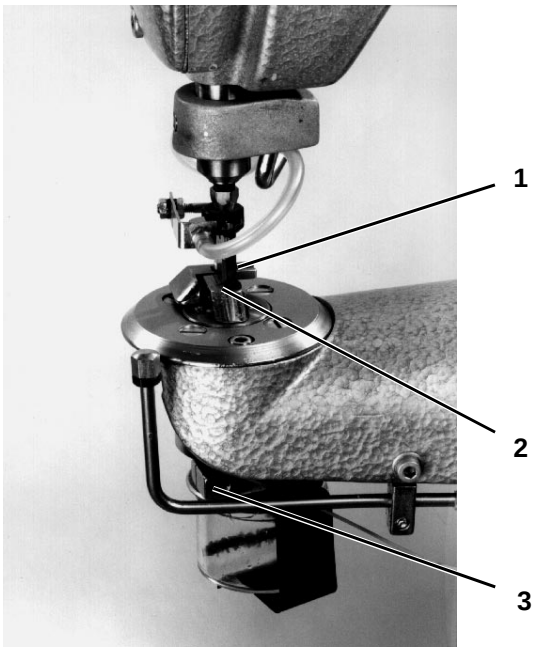
Before setting turn the main switch off.

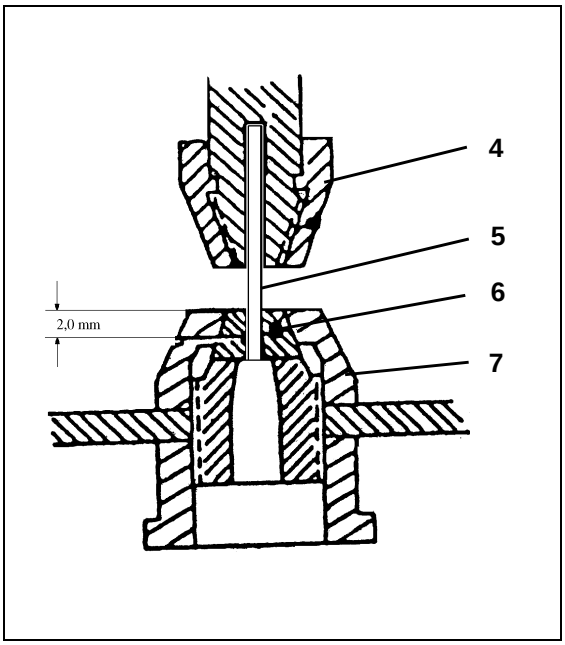
- Screw the head cover off.
- Check if all parts have a film of oil.
- Turn the setting screw 5 appropriately.

  Screw to the right = reduce the amount of oil
  Screw to the left = increase the amount of oil

3.8 Changing the Upper and Lower Knives or Stamp and Template

3.8.1 Changing the Upper and Lower Knives - Version 1





Caution Risk of Injury!

Before changing turn the main switch off.

- Loosen the screw on the clamping block 3.
- Swing the lower knife 2 to the side.
- Change the upper knife.
- Change the lower knife or position the "old knife" so that the 2nd blade is effective.
- Set the knife pressure and thereby take care that the knife carrier has no axial play. (See subject 3.5).

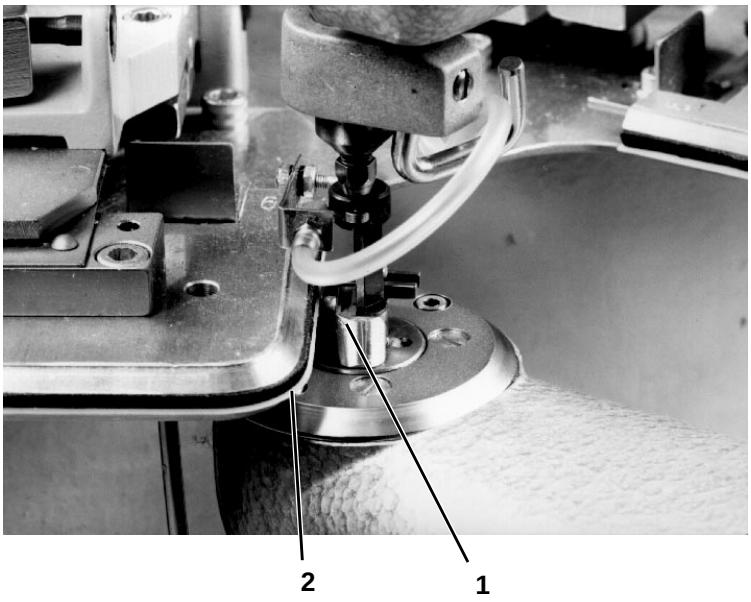
3.8.2 Changing the Stamp and Template - Version 2

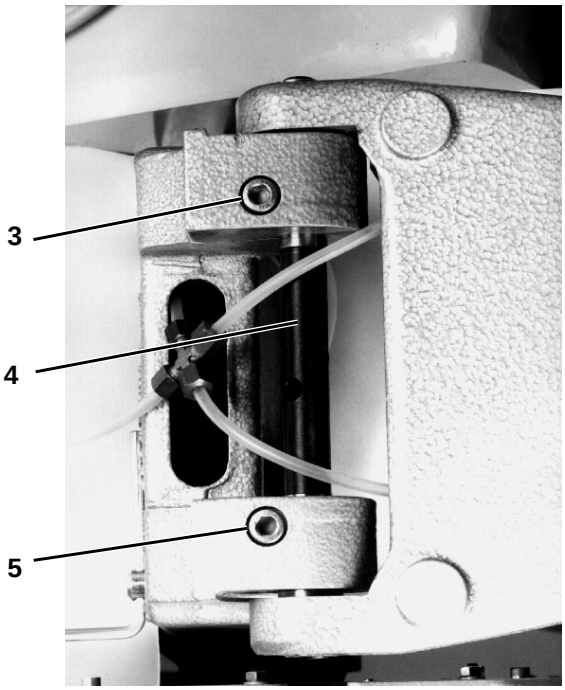
Caution Risk of Injury!

Before changing turn the main switch off.

- Screw the coupling ring 4 completely off.
- Change template 5.
- Screw the coupling ring on again.
- Loosen tension nut 7 a little.
- Take out the blunt stamp 6.
- Push in the "new" stamp until completely up in the receiving hole of the stamp rod.
- Tighten tension nut 7 again.

3.9 Height of the Trimmer





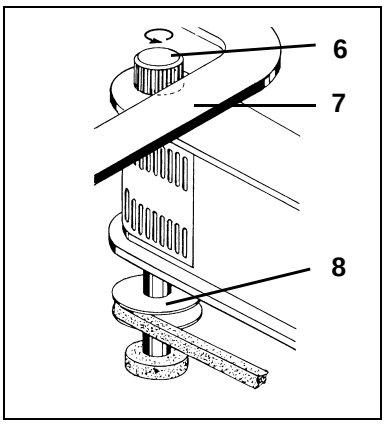
The clearance between the guide piece 1 / the template on the trimmer and the Delrin 2 of the material support should be 0.3 - 0.5 mm.

Caution Risk of Injury!

Before setting turn the main switch off.

- Guide the trimmer within its slewing range along the template and check the clearance.
- Loosen screws 3 and 5 on the slewing arm bearing.
- Adjust shaft 4 appropriately.
- Tighten screws 3 and 5 again and secure with crown caps.

3.10 Height of the Magnetic Roller

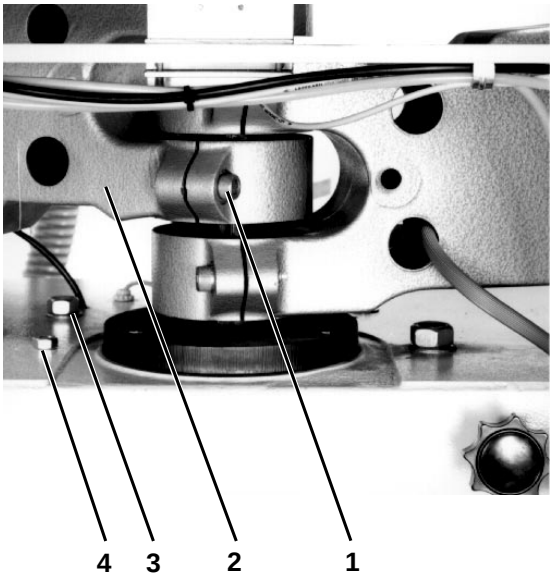


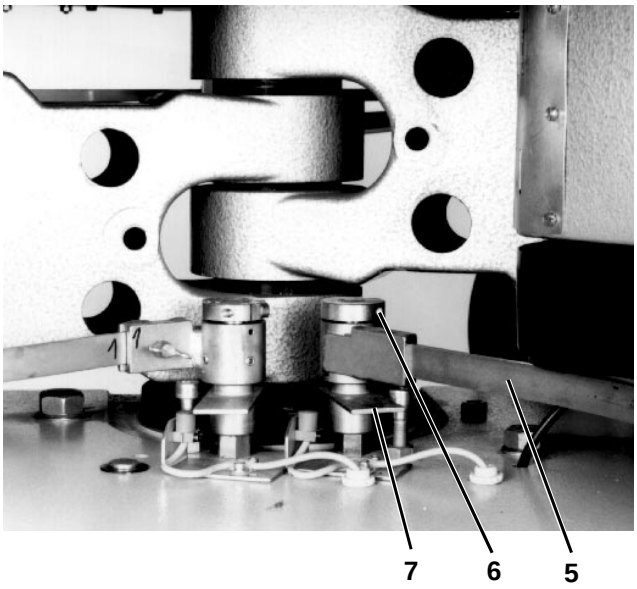
The magnetic roller 6 must move in rolling contact along the whole surface of the template 7. With adjustable material holders also along the higher "bridge" between the material holders.

If, above the template, there are further templates in the second level, in order, e.g. to be able to trim the material closer to the course of the seam in the radii, the magnetic roller must also move in rolling contact with these templates.

- Loosen screw 8 on the pulley.
- Set the height of the magnetic roller.
- Tighten screw 8 again.

3.11 Position of the Slewing Arm Bearing





The slewing arm bearing 2 should be centered between the two screws 3 and 4.

Caution Risk of Injury!

Before setting turn the main switch off.

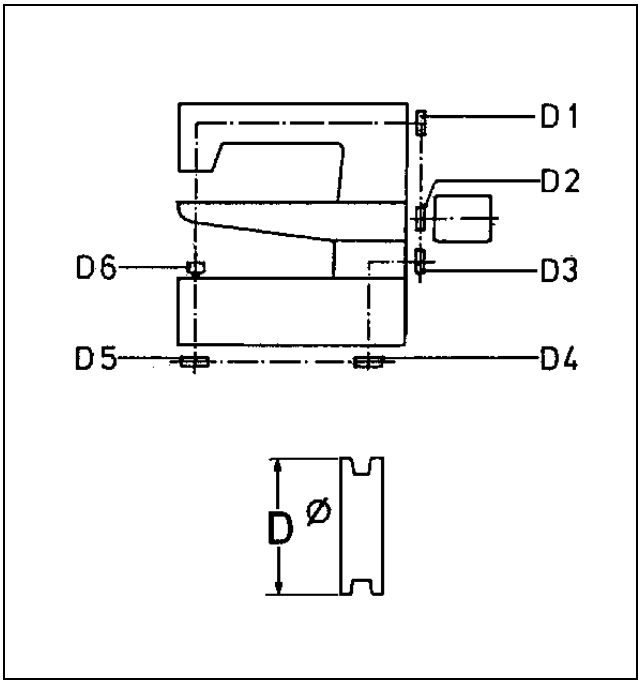
– Loosen screw 1 and set the position of the slewing arm bearing 2.

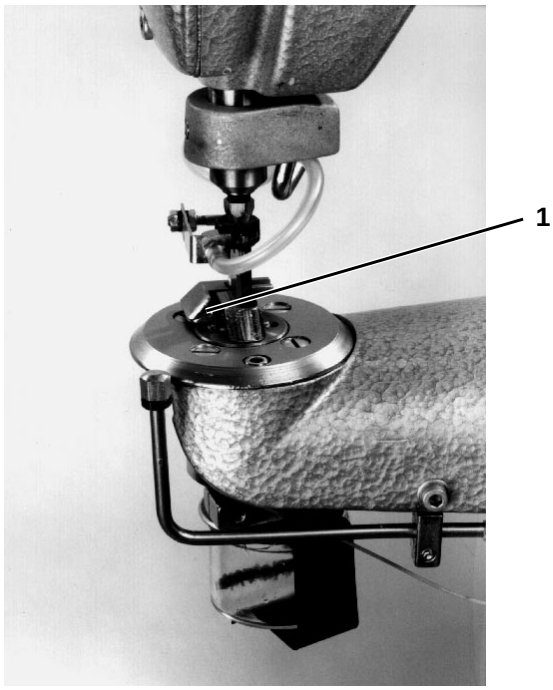
3.12 Movement Range of the Trimming Head

During automatic operation the trimming head should have a "safe" clearance to the sewing head so that a collision is not possible.

– Activate automatic operation and find the minimum clearance between the trimming head and sewing head.
– Loosen screw 7 and change the position of the switching plate 6 to the switching flag 5 appropriately.

3.13 Changing the Cutting Clearances.





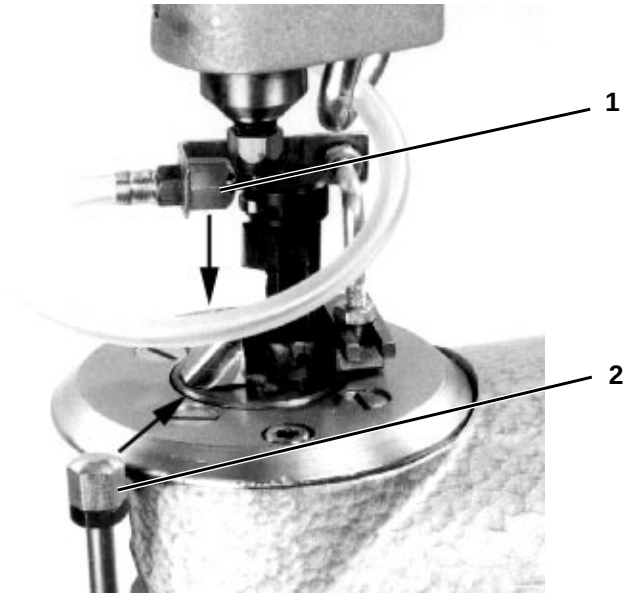
The cutting clearances are determined by the diameter of the magnetic roller D6. For a change in the cutting clearance, however, not only the change in the magnetic roller, but rather, in some cases, also a change in the pulleys D4 and D5 or D3 is necessary.

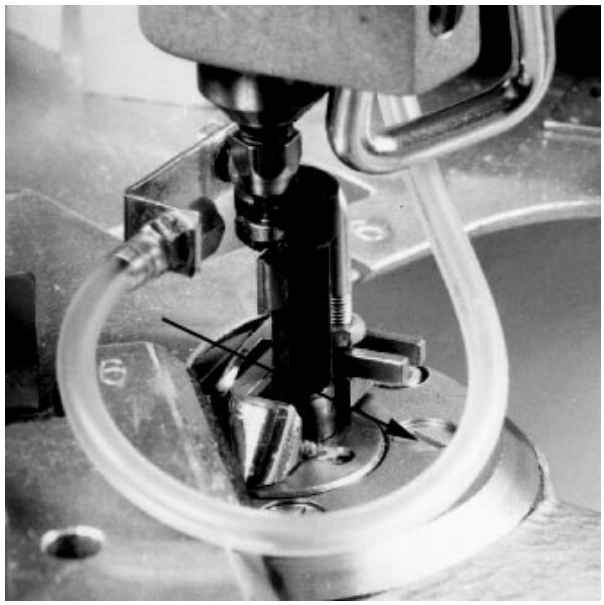
Cutting Clearance	Magnetic Roller D6 Ø	Parts No.	Pulley D5 Ø	Parts No.	Pulley D4 Ø	Parts No.	Pulley D3 Ø	Parts No.
3.5	18	K970 430120	72	K971 440453	54	K971 440443	54	K970 402253
4.5	16	K970 440020	72	K971 440453	54	K971 440443	48	K971 440063
5.5	14	K970 440010	66	K971 440883	62	K971 440893	54	K970 402253
6.5	12	K971 770850	66	K971 440883	62	K971 440893	48	K971 440063

After the change in the magnetic roller and the pulleys the position of the guide pieces 1 must be adapted to the changed cutting clearance. See subject 3.3.

4 Blower Devices

4.1 Blower Pipes "Hold Material Down" and "Blow Warp into Cutting Position"



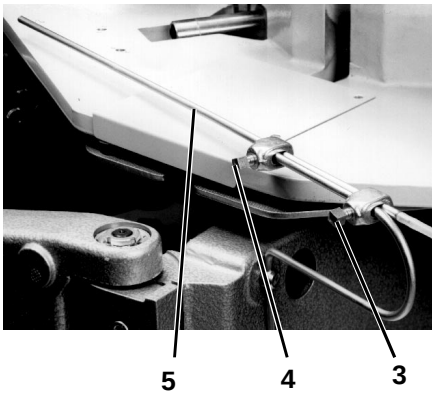


The blower pipe 1 should hold the material down during the cutting procedure.

Blower pipe 2 should blow the warp, which was already separated on the previously trimmed sewing piece, into the cutting position.

- Start automatic operation.
- Interrupt operation shortly before the separation of the hanging warp.
- Set blower pipe 1 so that the air current moves as shown in the illustration.
- Set blower pipe 2 so that it lies approx. 1 mm under the material holder and has approximately the blowing direction shown in the right illustration.
- Regulate the blowing strength with the appropriate throttles. (See Pneumatic Plan).

4.2 Blower Pipe "Blow Cloth Residue Away"

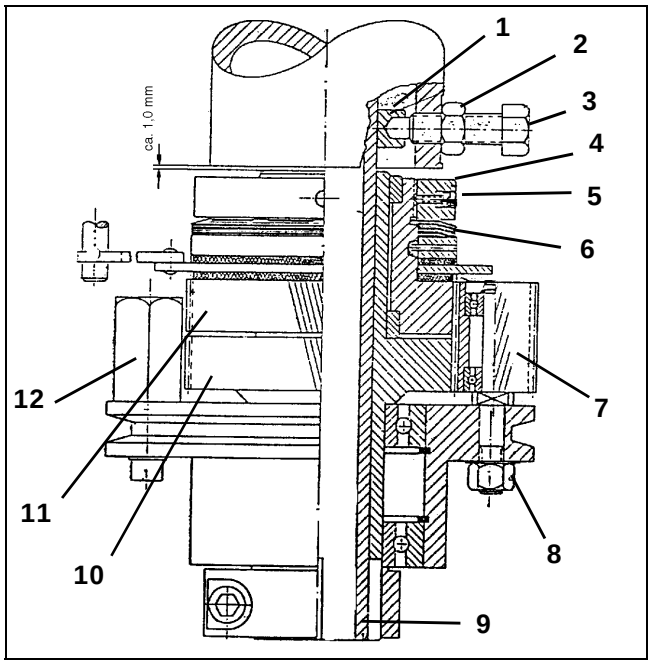


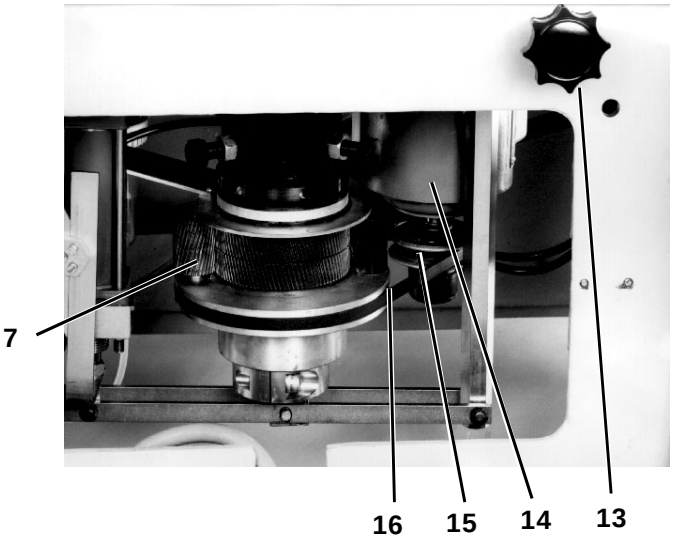
The blower pipe 5 on the turntable is active as long as the trimming head is switched on. It should blow away all cut cloth residue on the turntable.

- Loosen screws 3 and 4.
- Turn the blower pipe appropriately.

5. Turntable

5.1 General Information





The turntable is the carrier for the material holders and turns these appropriate to the number of holders (4, 6 or 8) by 60° or 90° during automatic operation.

The counterweight 12 of the gearbox should be effective opposed to the planet wheel 7 as force compensation.

The gears 7, 10 and 11 of the gearbox should be lubricated with a molycote-oil mixture. Here care must be taken that this mixture does not come in contact with the linings of the torque limiter.

5.2 Functioning of the Turntable Drive

The motor 14, via the Simpla-belt pulley 15, the belt 16 and the planet gear, drives the turntable. The Simpla-belt pulley consists of 2 halves, whose clearances to each other can be altered. In this manner the position of the belt to the shaft can be altered in order to alter the speed of the turntable.

The upper gear 11 of the planet gear consists of 99 teeth and can only be turned when the friction of the torque limiter is overcome. This is briefly the case during starting and braking during automatic operation and when the table is turned manually.

The lower gear 10 has 98 teeth and a firm connection to the drive shaft of the turntable. Through the differing number of teeth (98 and 99) on the two gears the lower gear is advanced 1 tooth counterclockwise by a full "orbit" of the planet gear. For a 360° revolution 98 orbits of the planet wheel are thus necessary.

5.3 Position of the Drive Shaft

With the aid of a dail gauge the drive shaft 9 is set at the factory so that the turntable is in the horizontal plane.

Checking

Within the movement range of the sewing head check the clearance between needle hole mushroom and the Delrin of the material holder. The position of the shaft is correct when the clearances are equal.

Setting

- Loosen the lock nuts 2 on the screws 3.
- Loosen ring 4 so far that the friction of the torque limiter is suspended.
- Adjust screws 3.
  Hereby observe the following:
  Do not screw out the screws too far, otherwise the plastic caps 1 will be "stripped".
  Do not tighten the screws too much,otherwise the rotation of the table is hindered.
- Tighten all previously loosened elements again.
- Set the torque limiter. See subject 5.5.

5.4 Play in the Gears

The planet wheel 7 should have the smallest possible play to the two other gears.

- Loosen nut 8 and change the position of the eccentrically bearinged planet wheel appropriately.

5.5 Torque Limiter

The torque limiter should prevent the onward movement of the turntable when the operator is in the movement range of the table. This is necessary for safety reasons. Furthermore, the torque limiter makes possible a soft starting and braking of the table.

The linings should be free of oil and grease, otherwise there will be no braking effect.

The turntable must rotate manually without using much force.

- Loosen screws 5 and turn ring 4 appropriately.

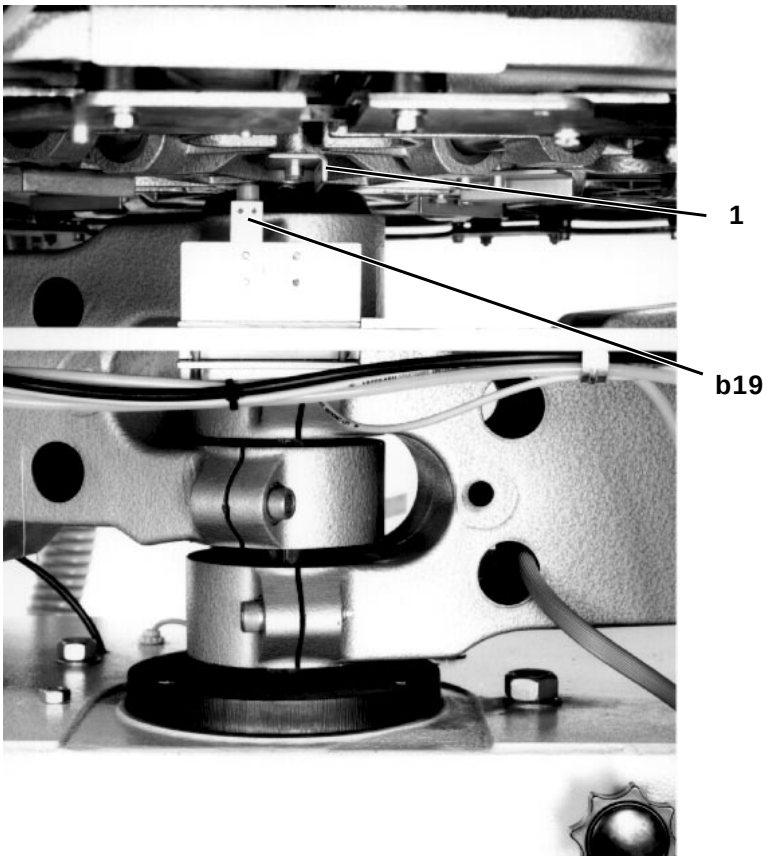
  Turning clockwise = Braking increased
  Turning counterclockwise = Braking reduced

5.6 Speed of the Turntable

The higher the speed the more time is available for feeding the material.

With the setting wheel 13 change the position of the Motor and thus the position of the belt on the Simpla-belt pulley appropriately.

5.7 Operation Timing of the "Table Drive Off" Switch



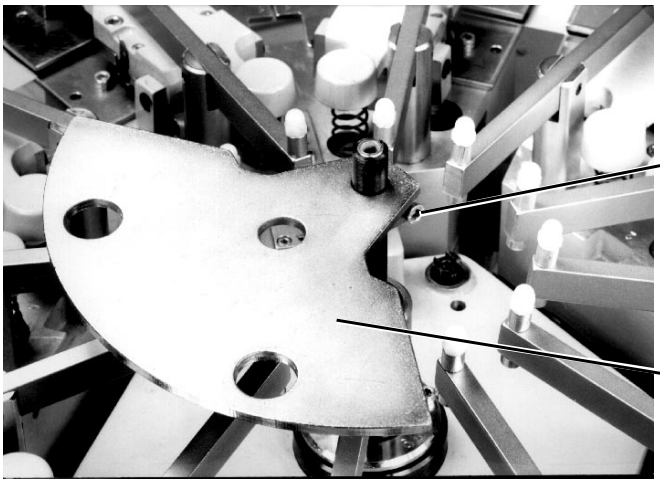
When the turntable is in the desired "feed position" the switching flag of switch b19 should have run approx. 20 mm to the right beyond the actual switching point.

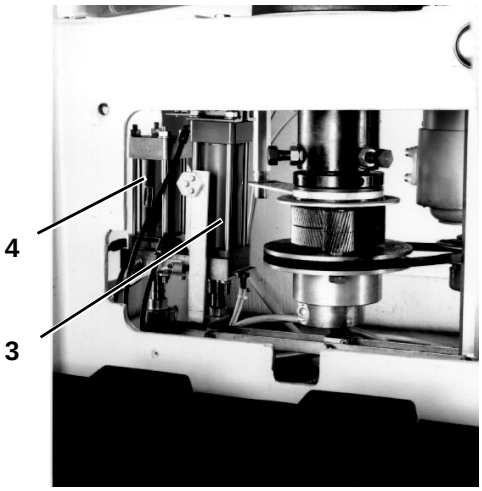
Prerequisite for this is a correctly functioning torque limiter.

- Start automatic operation.
- Establish the stop point of the turntable.
- Alter the position of switch b19 appropriately.

6. Material Clamp

6.1 "Intermediate Lifting" of the Clamp





When operating the left foot pedal the piston rod of the cylinder 3 is run out in order to open the clamp for intermediate lifting.

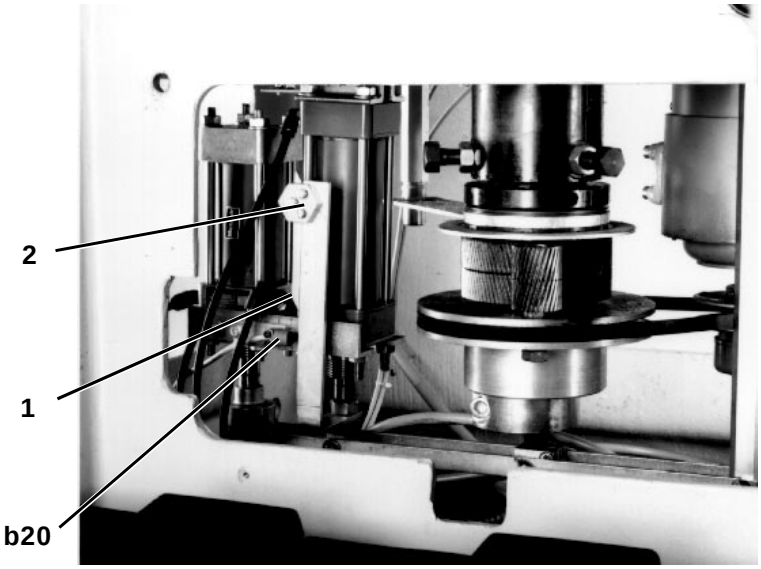
The clamp should only open so far that the material can be aligned without hindrance.
Clamps for ties should be opened so far that the lining holder plate can be placed on the material support.

- With the machine idle operate the left foot pedal.
- Loosen screw 1 and alter the position of the lifting plate. Hereby align the lifting plate 2 so that the clamps in the feed position and in stacker area are lifted at the same time.

6.2 Complete Opening

The height of the fully opened clamp results from the setting for "intermediate lifting" through the piston rod run of the cylinder 4.

6.3 Timing of the Operation of the Switch b20 "Clamp Open"



The rail 1 operates the switch b20 during automatic operation and gives the impulse to activate the stacker procedure. The switching procedure should occur at the beginning of the clamp lifting.

– Loosen screws 2 and set the rail appropriately.

6.4 Replacing the Rubber of the Material Holder

The rubber 1 on the upper clamp halves should hold the material so that it cannot be pulled out of the clamp during the sewing procedure.

Caution Risk of Injury!

Before replacing the rubber turn the main switch off.

- Swing the sewing and trimming head out.
- Remove "old" rubber.
- Clean the gluing surfaces.
- Cut rubber to size.
  The strips should be approx. 10 mm wide.
- Glue rubber on.
  Here take care that the whole edge of the plates must be glued and that the rubber overlaps approx. 1 mm on the sewing sides.

6.5 Replacing the Delrin of the Material Holder.

The Delrin 1 on the material support should be as close as possible to the needle, but not touch or deflect it, however. A damaged Delrin should be replaced without fail because the material is not securely held otherwise.

Caution Risk of Injury!

Before working on the material holders turn the main switch off.

- Swing the sewing and trimming head out.
- Remove the "old" Delrin on the material holder.

Cut new Delrin to size

- Mark the cutting contour on the Delrin.

With all holder types observe the following:

- The Delrin should end with the rear edge of the upper clamp.
- It should overlap approx. 5 - 8 mm on the sewing side.

With adjustable holders also observe:

- The Delrin of the left material holder half is glued so that it is even with the inside edge.
- The Delrin of the right material holder half should overlap 80 mm on the "interior" side.

- Mark recesses for the material stops on the Delrin.
  Hereby take into account the width and possible positioning area of the stop.
- Cut the Delrin to size along the markings.
- Clean the gluing surfaces.
- Glue the Delrin on the material support.

Marking the seam contour on the Delrin

Shorten the needle, grind to a point and insert in the needle rod.

– Swing the sewing and trimming head in.
– Check the height of the needle and correct, if necessary.
  The needle should not enter the Delrin too deeply since it will break otherwise.
– Switch on the sewing unit and start automatic operation in order to mark the precise contour of the Delrin.

Cutting and filing the Delrin

– Cut the Delrin along the perforation.
– File or emery the Delrin so that it has the smallest possible clearance to the needle without touching it.

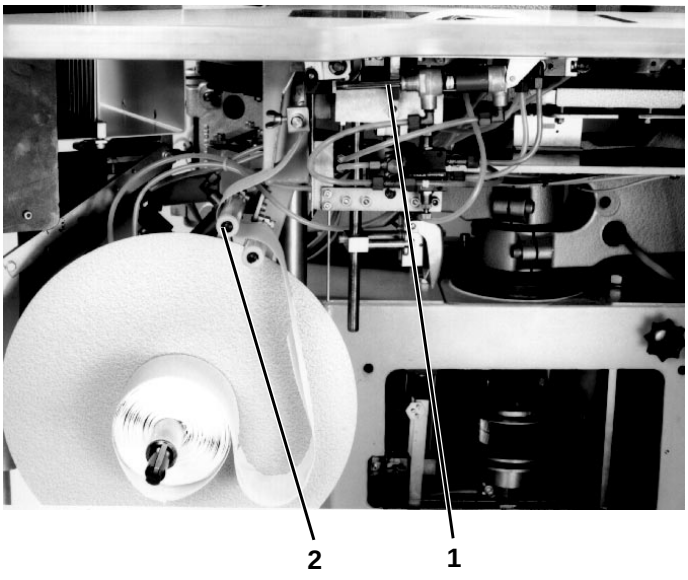
Check the clearance between the Delrin and the needle

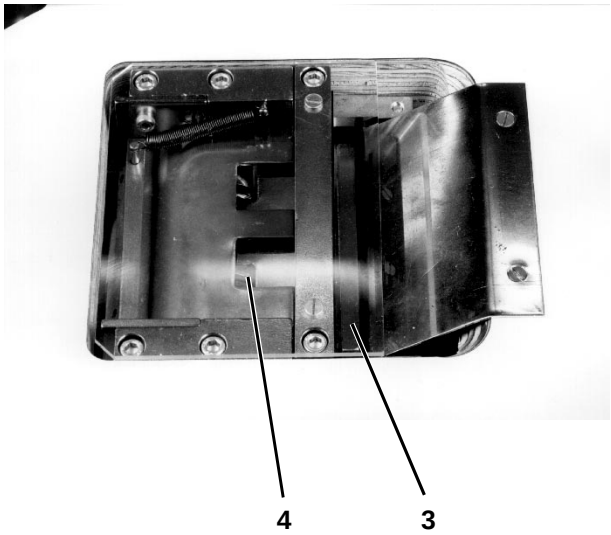
– Insert a new needle.
– Start the sewing cycle and find the clearance.
  By needle deflections file or emery the Delrin again at the effected positions.

7. Tape Scissors

Only sewing units of the sub-class 971-825 are equipped with these scissors for cutting the feed tape and the associated tape pull-off device.

7.1 Speed of the Knife, the Advancing Roller and the Puller





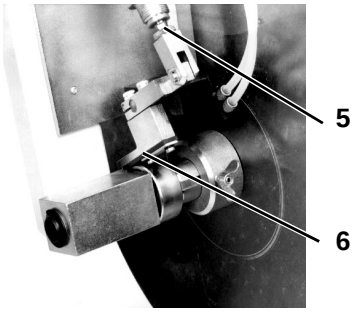
The puller 2 should not pull the feed off the roll too quickly because the run-on of the roll will otherwise become too strong and the feed can then possibly be pulled back again.

The other movements should, however, occur without delay and uniformly.

– Dependent on the function sequence set the appropriate throttles (see Pneumatic Plan) accordingly.

Throttle	Function
__	Knife 3 up.
__	Run in the piston rod of the cylinder 1 for the advancing roller 4.
__	Knife 3 down.
__	Puller 2 to the back.
__	Puller 2 forward.

7.2 Brake Device for the Tape Roll



After the cutting of the tape the tape roll is braked by the brake 6. If the tape roll "runs-on" the brake should be reset appropriately.

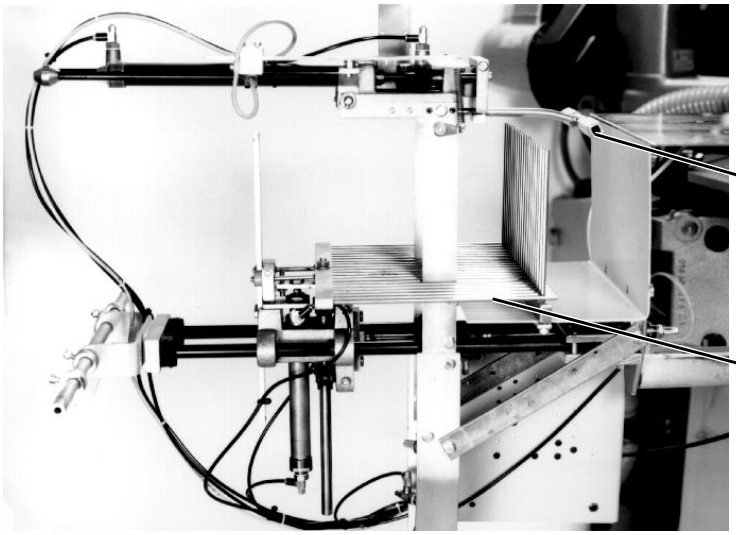
– Loosen lock nut 5 and adjust the piston rod of the cylinder appropriately.
– Tighten the lock nut again.

8. Stacker

8.1 General Information

The cycle period of the stacker determines the opening period of the material clamp as long as the left foot pedal is not operated to extend the opening period.

8.2 Speed of the Gripper and Catcher



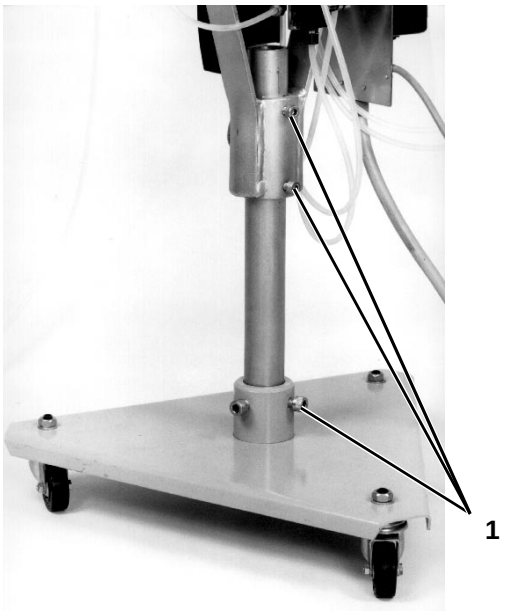
The gripper 1 and the catcher 2 should move without delay and uniformly.

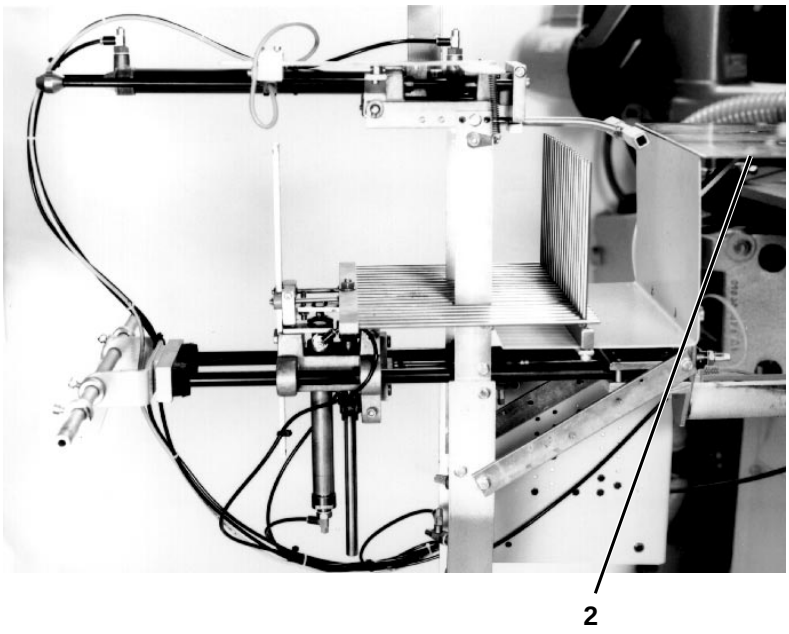
The stacker must end its function within the sewing head cycle period.

Dependent on function set the air intake and venting of the cylinder with the appropriate throttles. (see Pneumatic Plan)

Throttle	Function
S1	Catcher up
S2	Brake
S3	Gripper up
S4	Gripper down
S17	Catcher forward
S18	Gripper forward
S19	Catcher to the back
S20	Catcher down
S21	Gripper to the back

8.3 Height of the Stacker





The support plate 2 of the stacker should have a clearance of approx. 3 mm to the underside of the material holder.

– Loosen screws 1 and set the height of the stacker appropriately.

9. Maintenance Schedule

The maintenance of the sewing unit should be conducted, at the latest, after the listed operating hours. Further information can be found under the subjects named in the "See" column.

Procedure	Hours	See
Sewing Head		
Removal of lint accumulations	8	
Checking the oil level in the oilpan	40	2.9
Checking the oil feed at the viewing glass	40	2.9
Checking the timing belts	500	2.8
Checking the V-belt tension	500	
Trimming Head		
Removal of lint accumulations	8	
Checking the oil level in the reservoir	8	
Checking the oil level in the plastic reservoir of the shearing head	8	3.6
Oil feed quantity to the head	500	3.7
Checking the V-belt tension	40	
Turntable and Material Clamps		
Checking the condition of the Delrin	40	
Lubricating the planet wheel	40	5.1
Pneumatic System		
Cleaning the filter insert in the filter	500	
Testing the pneumatic system for air-tightness	500	