

Part 3: Service Instructions 744-122

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Part 3: Service Instructions

1. Notes prior to adjustment

These servicing instructions describe the adjustments to the sewing unit in the appropriate order.

Here it is to be noted that the various adjustment positions are interdependent. It is therefore essential that the adjustments be made in the order described.



Attention Danger of Breakage!

After disassembly and prior to restarting the sewing unit, the required adjustments must be made as described in these instructions. The sewing unit must not be started with the wrong direction of motor rotation.



Attention Risk of Injury!

Should adjustments have to be made in the area of the needle and the needle not be absolutely necessary to these, it should be removed to avoid injuries. The main switch should always be turned off. The only exceptions are those adjustments which must be made with testing, setting or sewing programs from the control unit.

Attention!

With some adjustments it is necessary to move the transport carriage manually. This is possible with the main switch OFF. When the main switch is ON, e.g. when the testing program is to be used, the step motor is under current and its braking effect stops manual movement. In this case the fuse 3 for the step motor must be removed from the control panel. For all adjustments to parts forming stitches a faultless needle must be used.

Upon request you will receive the following adjustment gauges:

Order no.	Application
933 80207	Dail gauge
933 80193	Angle for the looper symmetry setting
933 80194	Indicator for the looper symmetry setting
933 80200	Feeler gauge for the thread take-up disk
933 80203	Gauge for the hook drive housing
933 80221	Gauge for the rocker bolt in the hook drive

An adjustment disk in the machine head has the notches A,B,C and D. An arresting pin, order no. 211700, for locking into the various adjustment positions can be found in the package with the unit. In conjunction with the letters on the handwheel the arresting pin can be pushed into one of the notches through a hole.

2.

Transport carriage

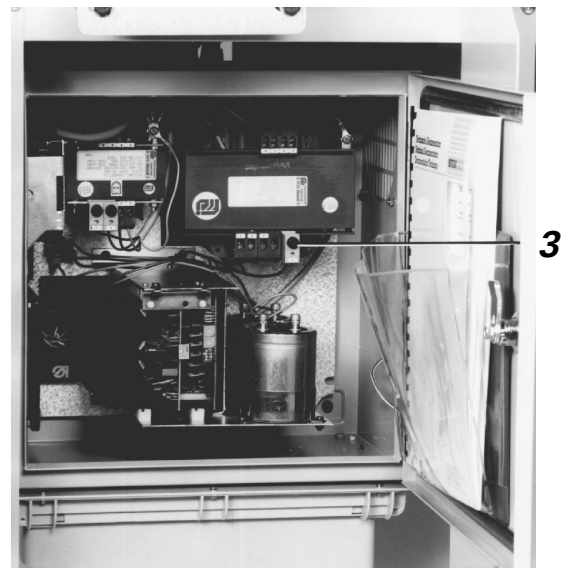
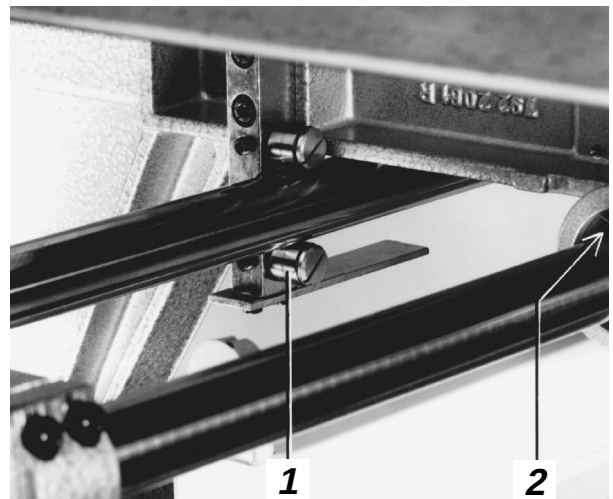


Caution in the area of moving machine parts
- Risk of Injury -

The transport carriage is guided on the extension pipes at the front by the ball sleeves 2 and at the back by the track rollers 1.

They have been set tight at the factory. To remove axial play only loosen the excentrically bearinged lower rollers 1 and set tight. Check for ease of movement.

The transport carriage is advanced by the step motor for the following speeds: Stitch condensing, Normal stitch length and transport carriage return. Through a coding on the material stopper it is possible by primary seams to reduce return speed for a partial or complete run according to the rail form. See 5.1.10 of the Microcontrol summary.





2.1_ Right End Position

If the right position has been set with the L<-W->R key, right diode bright, then the carriage will stop at the right.

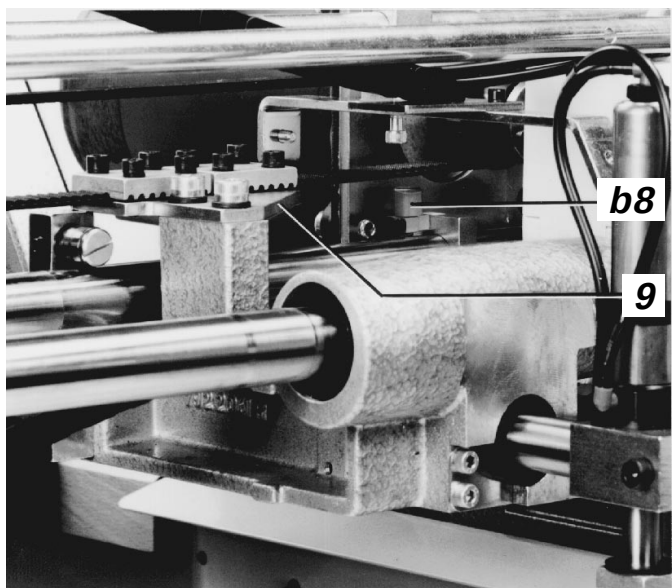
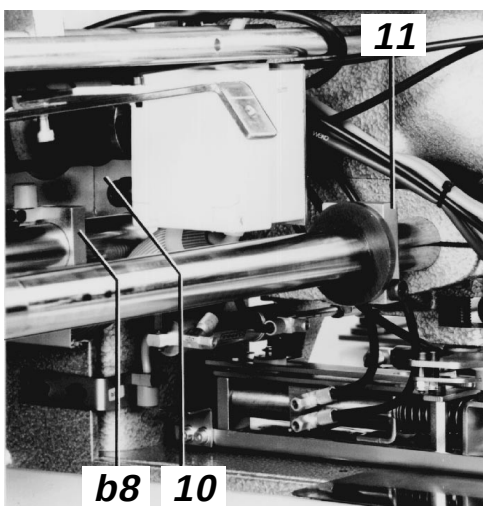
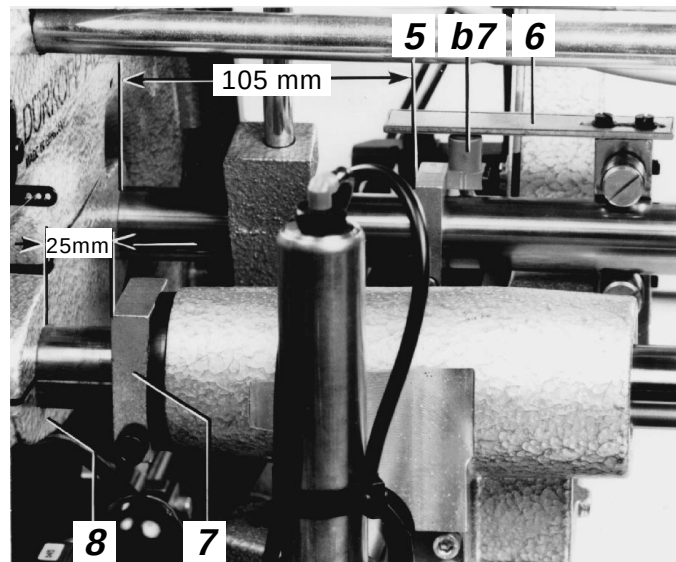
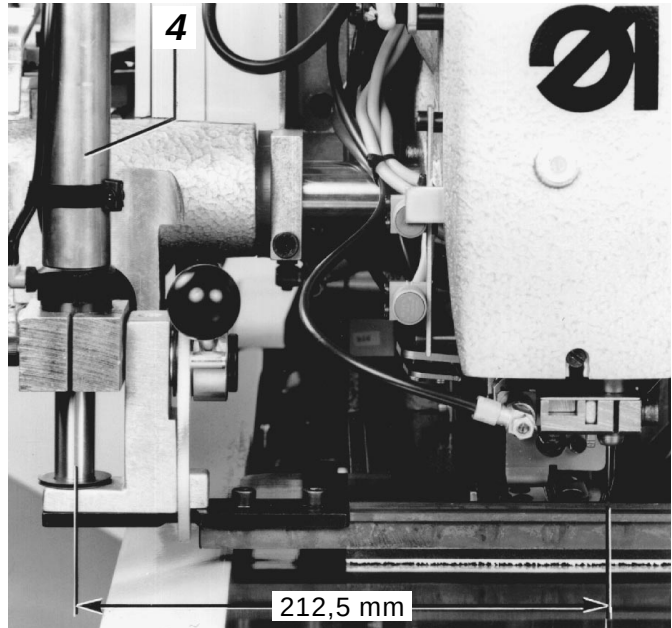
The distance between the middle of the cylinder 4 and the middle of the needle should be 212.5 mm in the right end position.



Main switch off
- Risk of Injury -

Preliminary Adjustments

- The b417.6 selector switch on the back of the control unit front panel must be set closed for 1000 mm and open for 1250 mm, appropriate to the rail length used.
- With the main switch Off, set the transport carriage with the bracket 6 over the switch b7. There must be a gap of 0.5 mm between the bracket 6 and the switch b7. Also between timing belt clamp 9 and switch b8.
- With lit right diode and a long tap of the L<-W->R key, set the parameter value to 0 with the numeric keypad.
- A gap of 105 mm must be set between the cast guide 8 under the machine arm and the clamp piece 5.
- In order to avoid a collision of the transport carriage with the machine head during a malfunction of the step motor, the safety stopper 7 is to be set at a distance of 25 mm from the machine head at the right. The distance of the safety stopper 11 at the left behind the machine head should be 45 mm at 1000 mm sewing length and 58 mm at 1250 mm sewing length.
- Switch b8 serves as a safety switch. Its distance from the mounting plate 10 should be 53 mm by 1000 mm sewing length and 55 mm by 1250 mm sewing length. All setting measurements can be seen together in the following dimension sketch. For the fine adjustment of the right end position see the next page.





Fine Adjustment

- Switch on main switch.
- With the right diode lit and a longer tap of the L<-W->R key, set the parameter to 0 with the numeric keypad.
- Conduct a reference run by pressing the <-O-> key. The carriage travels to the left.

When reaching the switch b7 this is run past by a bit. The step motor switches over and at first runs at low speed to the reference point (b7) and then runs with return speed to the right end position.

The distance between the middle of the cylinder 4 and the middle of the needle should then be 212.5 mm. The right end position is to be precisely set by adjusting the bracket_6 and repeated reference runs.

Note!

This is the initial carriage position which must be exactly adhered to in order to be able to alternate work with different material guide rails.

2.2 Left end position

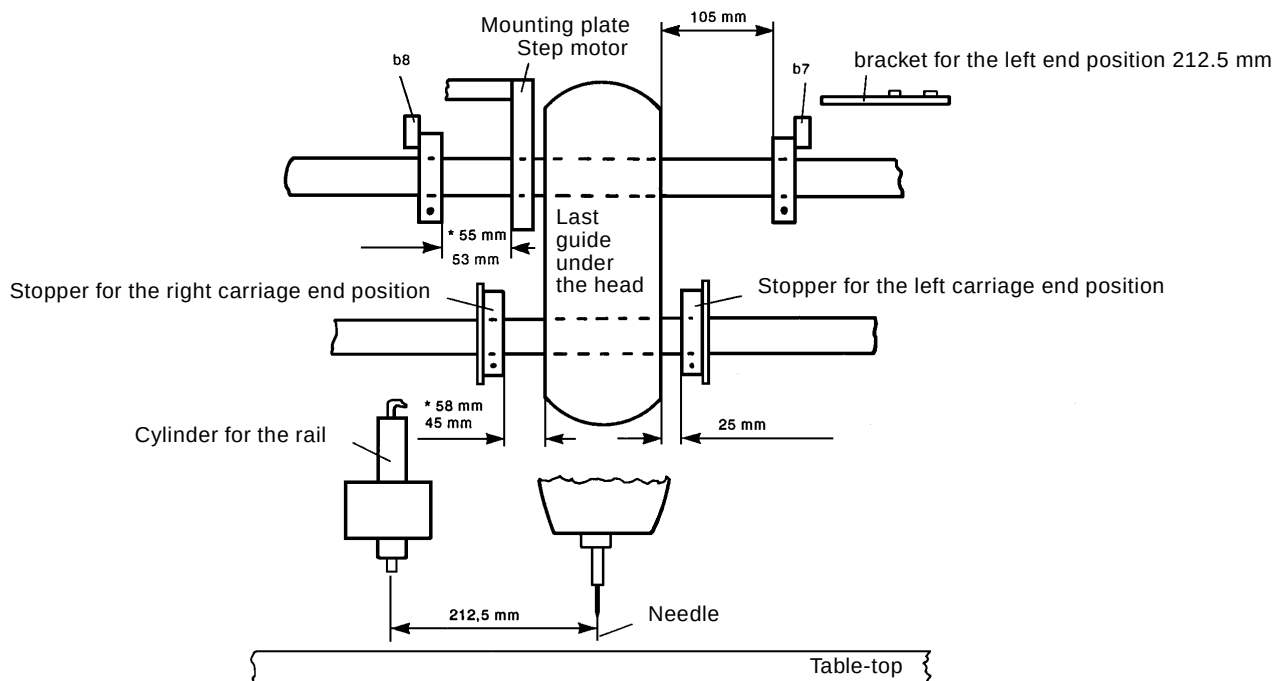
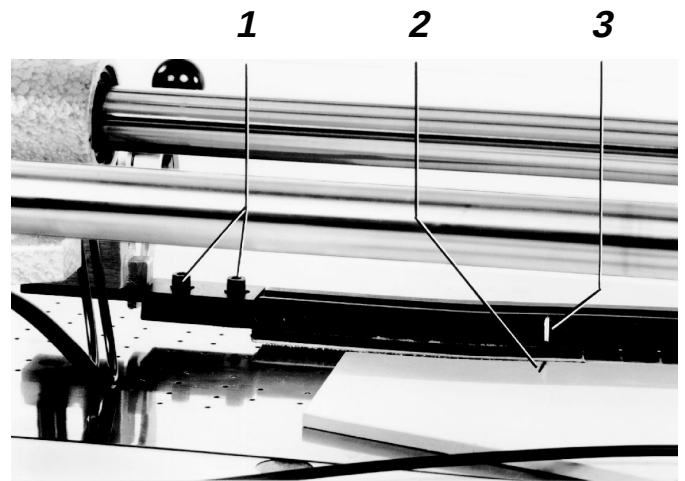
Set the left position with the L<-W->R key. The left diode lights up. Conduct a reference run with the <-O-> key. The carriage stops in the left end position. This position corresponds to the position of the switch b7 as described in Section 2.1. It must not be altered. In order to avoid a collision of the carriage by a possible malfunction, the stopper 7 is to be set at a distance of 25 mm from the cast part 8. See illustration in Sec. 2.1 and the dimension sketch.

2.3 Marking on the material guide rail and the material stopper

The marking 3 on the rail and the marking 2 on the material stopper must lie exactly opposite each other. They show the extreme sewing length range 1000 or 1250 mm, that is, the seam end.

The curved rail contour must correspond to that of the material stopper. After loosening the screws 1 located at the left and right the rail can be aligned in its slots to the contour of the material stopper.

The carriage end position set at switch b7 may not be changed for this purpose.



* Measure by long transport carriage (Sewing length 1250 mm)



2.4 Transport Carriage Guide



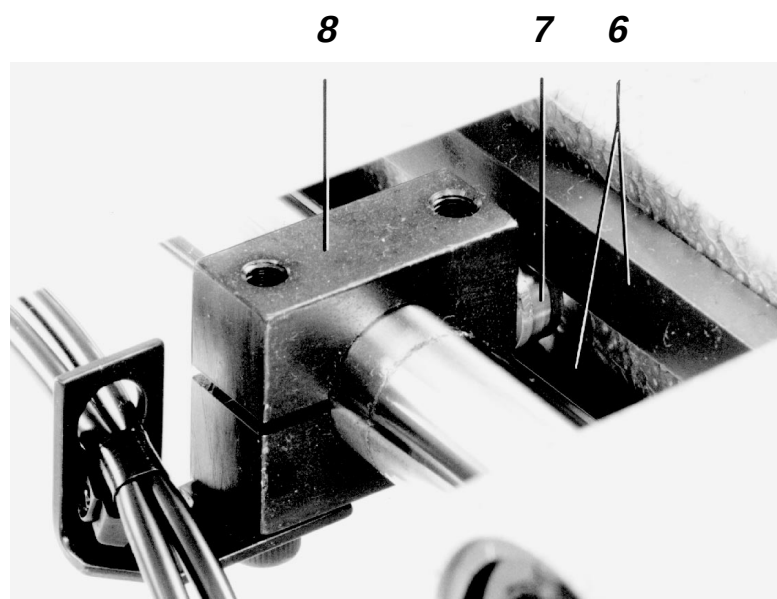
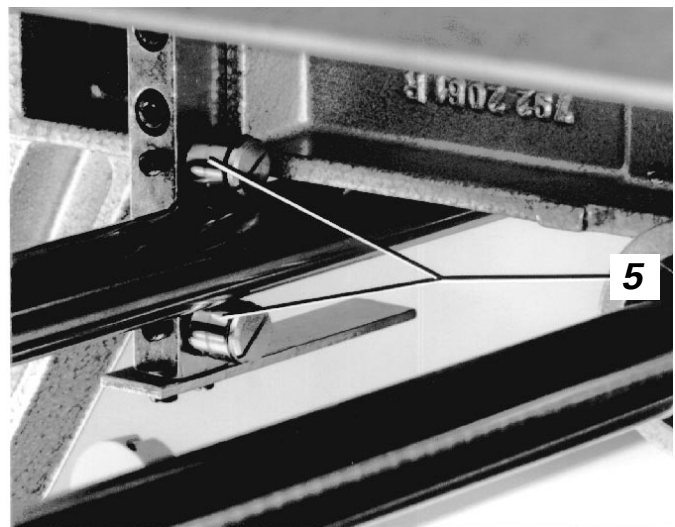
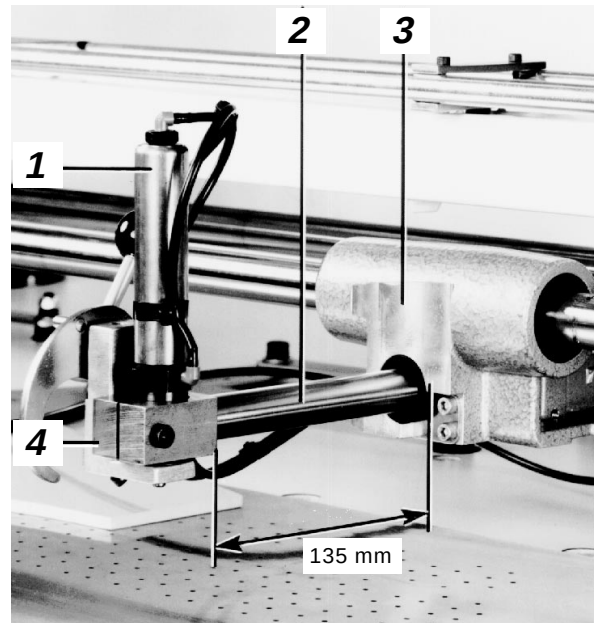
Turn main switch off
- Risk of Injury -

With curved material guide rails the guide rod 2 is moved within an allowable range crosswise to the direction of sewing.

The range is properly set if there is a distance of 135 mm between the transport carriage 3 and the clamping piston 4 when the guide rod 2 is pulled to its rest at the front of the unit.

For a perfect laying-on of the rail the guide rod must be set tight and parallel to the table top.

- Loosen the clamping piece 8 and set the dimension 135 mm.
- When tightening the clamping piece 8 take care that the stroke cylinder 1 is vertically aligned.
- Measure the distance to the material slider bed with the guide rod 2 in its forward and rear positions.
- Should the distances not be equal, first loosen the guide beads 6.
- Achieve parallelism of the guide rod 2 by adjusting the excentrically bearinged guide rollers 5. This is to be performed appropriate to the measurement results so that first one of the rollers is loosened and turned slightly. The transport carriage is to be held tight by the second roller.
- Set the guide rails 6 tight on roller 7. Take care that the guide rod can still be easily moved. The left guide rod is to be adjusted in the same manner.





2.5 Stroke cylinder for the material guide rail



Turn main switch off
- Risk of Injury -

A perfect laying-on of the material guide rail is dependent on the setting of the stroke cylinder 1.

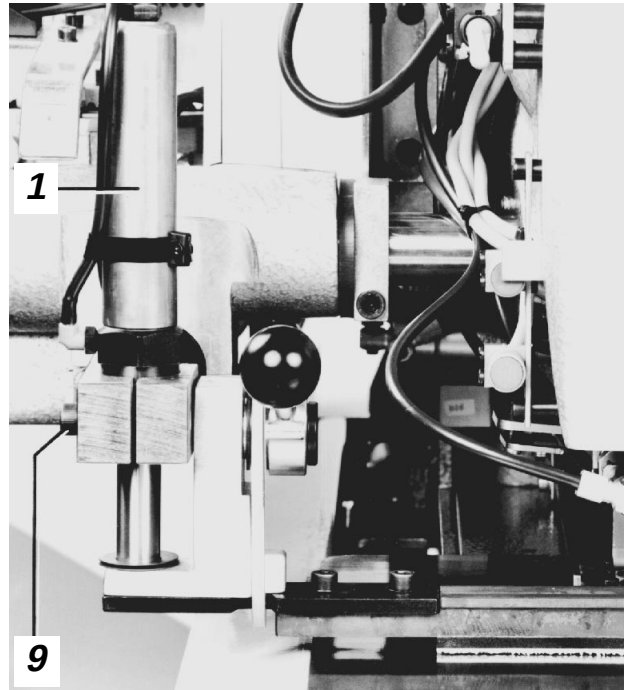
As described in 2.4, the stroke cylinder 1 must be set vertically.

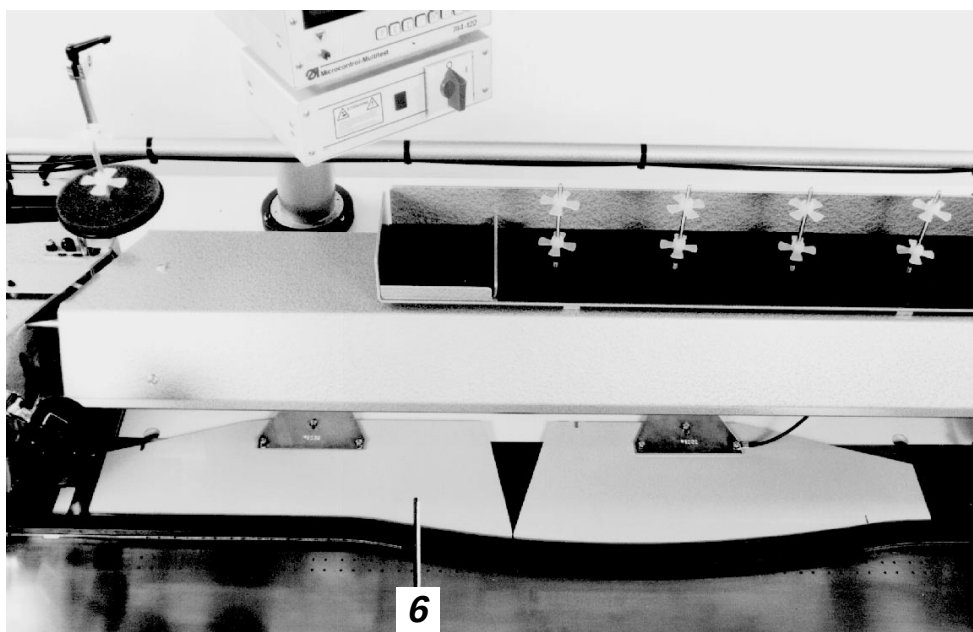
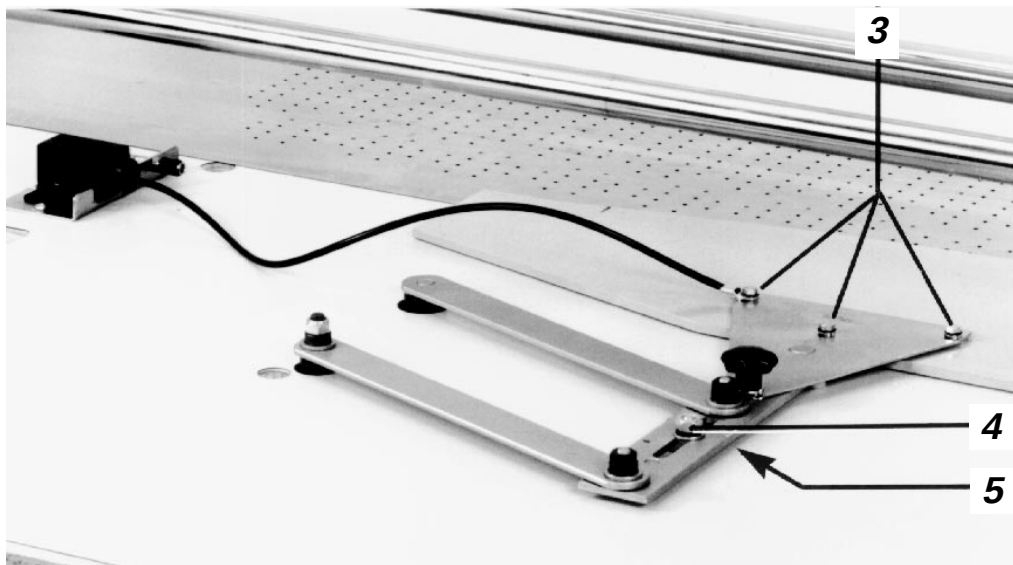
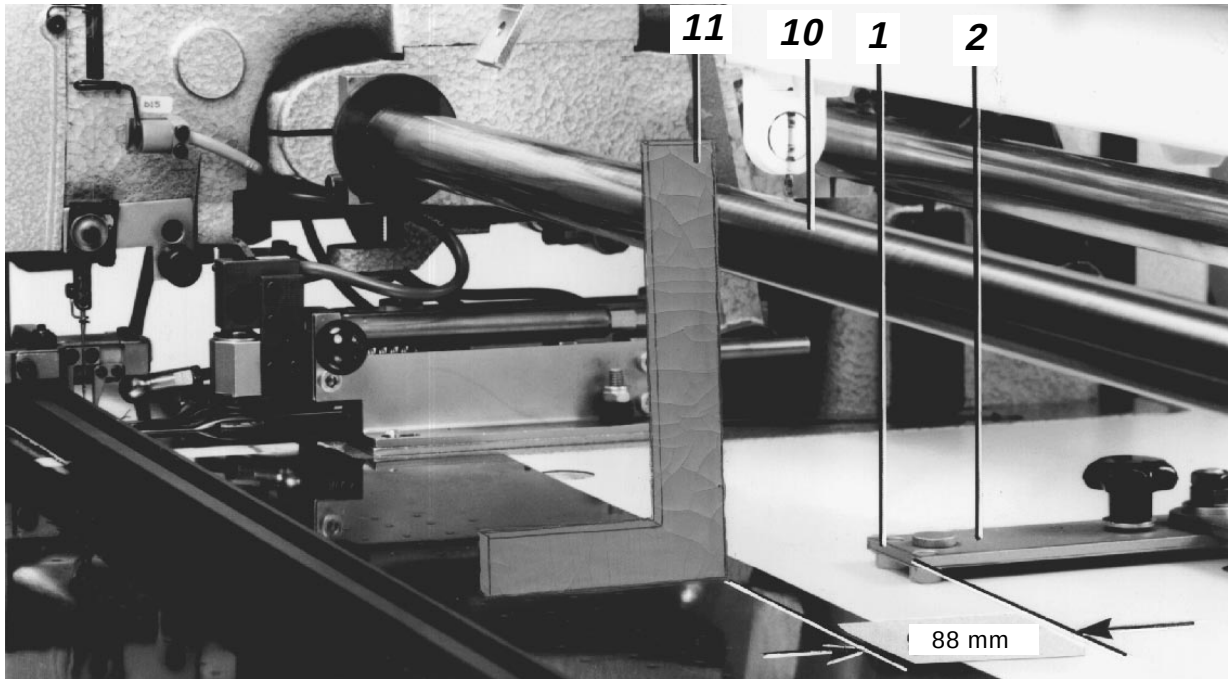
The lowering stroke should be so dimensioned that the material guide rail just barely securely lays on to the material slider bed.

A stroke cylinder 1 set too low worsens the laying on of the material guide rail.

The material guide rail, which is pretensioned along its whole length, could lift in the middle.

- Loosen screw 9.
- Set the height of the stroke cylinder 1 appropriately.
- Tighten screw 9.







3._ Material stopper mounting and material stopper



Turn main switch off
- Risk of Injury -

The material stopper mounting 2 must be in a specific initial position in order to be able to interchange material stoppers for various seam configurations without having to make further adjustments.

At the stopper bolt 5 lying on the stopper there must be a distance of 88_mm between the front of the guide pipe_10 and the front edge_1 of the material stopper mounting 2.

- Loosen nut 4.
- Move the stopper bolt 5 so that there is a gap of 88 mm between the front edge_1 and the angle_11.
- Tighten nut 4.

The equidistant interval from the seam to the material edge (seam interval) is determined by the material stopper 6.

Prerequisite for the setting is that the adjustments for the right transport carriage end position as per Section 2.1 and the markings on the rail and material stopper as per Section 2.3 have been carried out correctly.

- Loosen screw 3.
- Align the material stopper 6 so that there is an equidistant seam interval between it and the material guide rail along their complete length, e.g. 10 mm.
- Tighten screw 3.

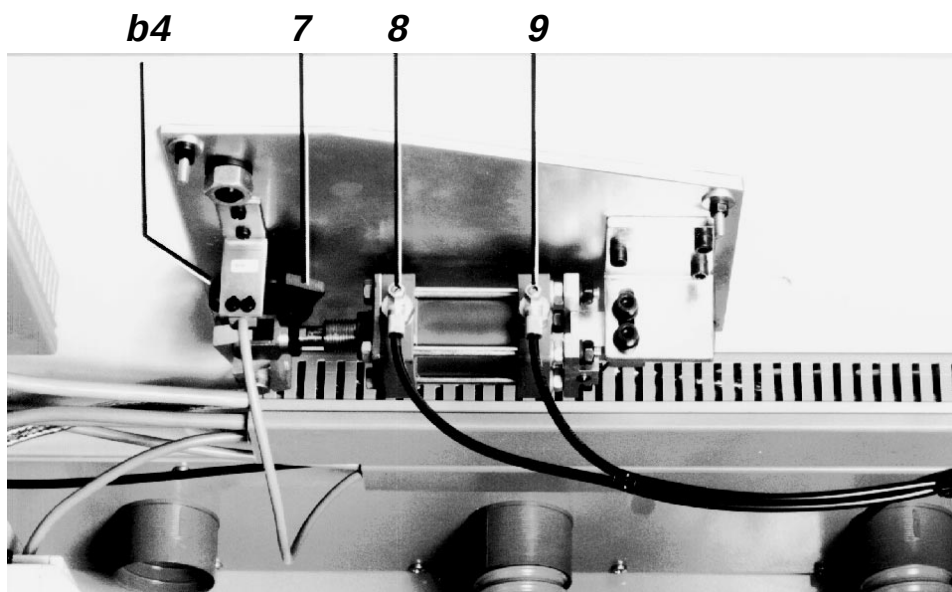
The sewing unit can only be started when the material stoppers have reached their end position, this is, when the switch b3 for the left stopper and the switch b4 for the right stopper have been activated.

- Turn main switch on.
- Key in Program 63 on the "PROGRAM" switch and activate with the STOP key. Enter the number 4 for switch b4.
- Push the stopper all the way to the back until at rest. - B4+ must appear in the display.
- Should this not be the case then a gap of 0.5 mm must be set between the contact maker 7 and the switch b4. Set contact maker so far over the switch until B4+ appears.
- Set switch b3 in the same manner.

- The forward and back movements of the material stoppers should be continuous, not jerky.
They can be adjusted at the throttle valves 8 and 9.

The right material stopper has an advance function, this means that when the transport carriage has passed the right material stopper this then starts its movement to the front to again position the material.

The timing is fixed in the controls.





4._ Distance from the material guide rail to the needle

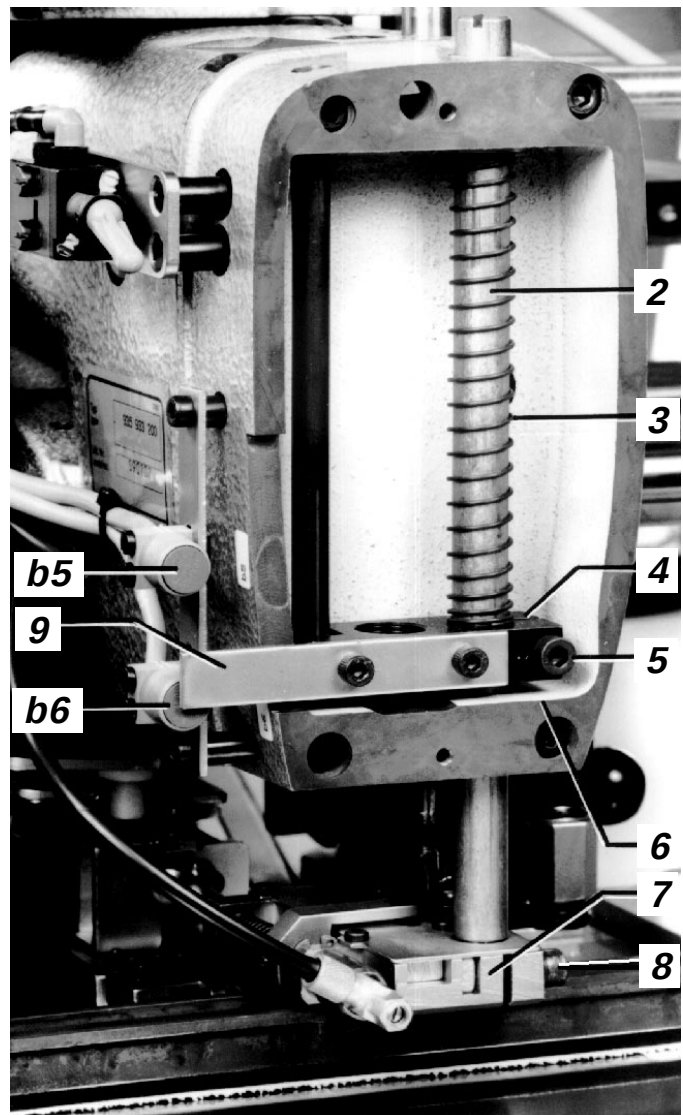
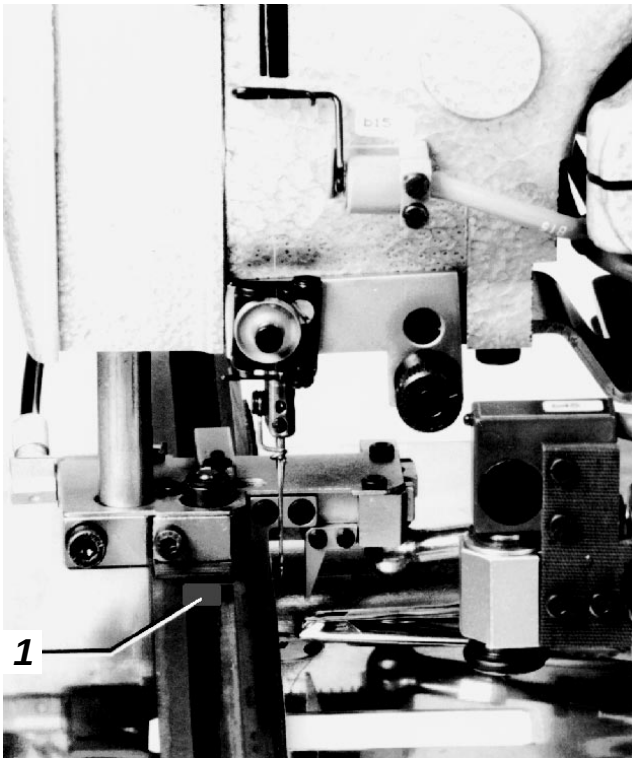


Turn main switch off
- Risk of Injury -

With the roller 1 in the curve path the distance between the rubber covering of the material guide rail and the needle should be 0.7 mm. The rubber edge should be led as close as possible along the stitch hole edge. This should be checked along the whole length of the rail. The rail should be moved manually past the needle with the main switch turned off.

- Loosen screws 5 and 8.
- Set the distance of 0.7 mm by turning the excentric rod 2 while at the same time holding the block 7 in its position.
- Tighten screw 8.

- Pressure spring 3 holds the block 7 and roller 1 down. With the roller 1 in the curve path set the distance between the clamping piece 4 and the cast edge 6 at 3 mm.
- Tighten screw 5.
- Bracket 9 must switch on switch b5 when the rail is raised and switch b6 when it is lowered. The gap from the bracket to the switches should be 0.5 mm. Turn on main switch. Key in Program 63 with the "PROGRAM" switch and activate with the Stop key. Enter the number 5 for switch b5. With the switch switched on B5+ appears in the display. Set switch b6 in the same manner. The sewing unit can only be started with the switches switched on.





5._ Light barrier

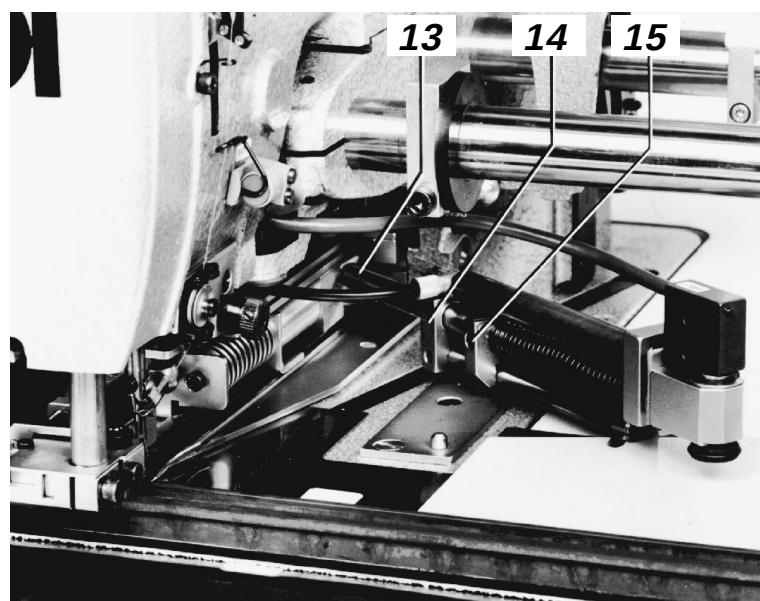
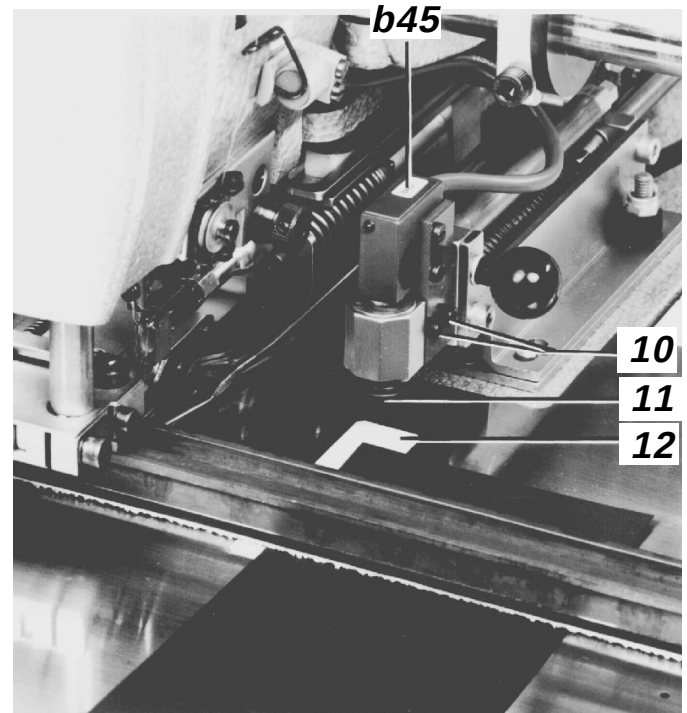
By seam configurations without distance measurement, e.g. Program P01, the material edges at the beginning and end are registered by the light barrier.

In order that the position of the 1st stitch can be corrected for diagonally-fed material edges, the median value 5 must be selected with the  key when adjusting.

The interval between the needle and the beam of the light barrier b45 should be 53 mm.
The track roller 11 should be 14 mm above the material slider bed.

The light barrier can be swung away sideways. It is pulled to the front over the rail, the globe is lifted and swung to the right.

- The height of 14 mm above the material slider bed is an approx. given due to the light barrier mounting. Minimal adjustments are possible after loosening the screws 10.
- Turn on main switch.
- Key in Program 63 on the "PROGRAM" switch and activate with the STOP key. Enter the number 45 for the light barrier b45.
- Fasten a thin carton to the material slider bed 53 mm from the needle.
- Loosen screw 15.
- It should be possible to pull the light barrier so far to the front that the rod_13 with its rear bearing 14 still ends flush.
- First tighten screw 15 only slightly.
- If the light barrier beam hits the reflector 12 B45+ appears in the display.
- Turn the light barrier on its axis to the right until B45- appears in the display. The material edge has been registered.
- Tighten screw 15.



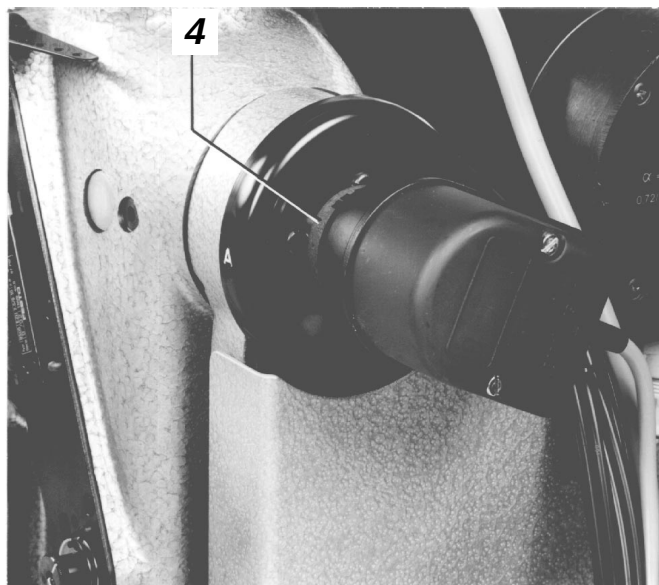
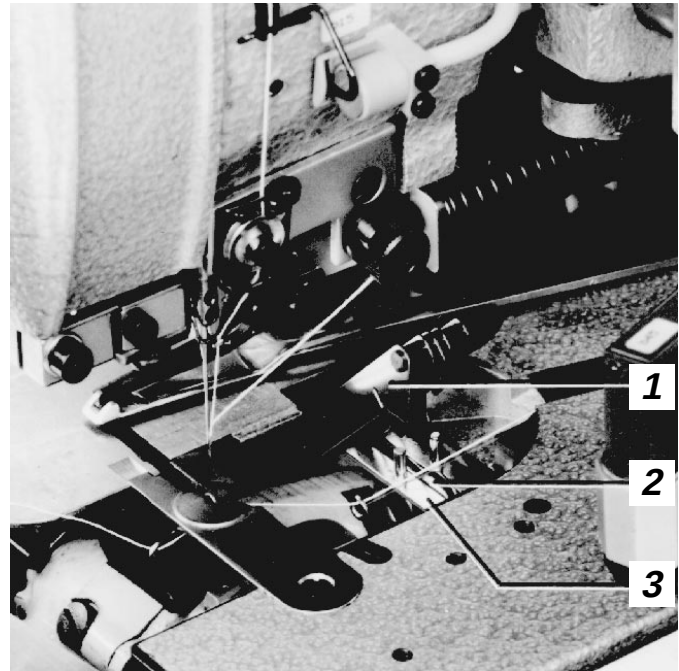


6. Synchronizer

The machine head should position when the bobbin disk 2 is at the level of the bearer plate 3. It should not jut out of the bearer plate 3 so that, even with a closed flap 1, a bobbin thread knotted to the thread stand can be drawn through (threaded) unhindered. On the other hand the needle should not lower much out of its upper dead point.

The bobbin disk must be set as per Section 7.12.

- First turn off the main switch to check the position.
- Bring the needle in the lower position by turning the handwheel.
- After turning on the main switch the machine head turns to the set position.
- Loosen the screws of the ring 4. Hold the ring and turn the handwheel so that the bobbin disk 2 moves to the position described above. Tighten the screws on the ring.
- Conduct a trial run in the position setting as described above.





7._ Adjusting the machine head

For some settings the machine head must be arrested in certain positions. The adjustment disk attached to the upper belt wheel has four notches, A, B, C and D, for this. In conjunction with the arresting pin 6 the letters on the handwheel show the position of the notches.

Notch	Setting
– A	Adjustment disk on the upper timing belt pulley with its deepest notch A to the groove in the arm shaft crank
A and D	Symmetry of looper motion
B	Thread take-up disk
C	Hook point at needle center

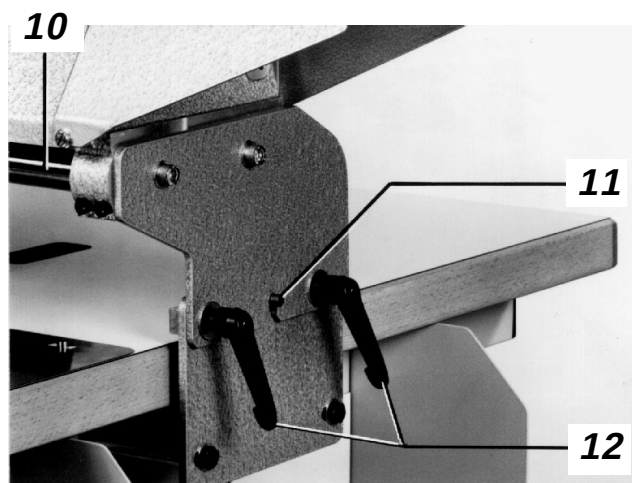
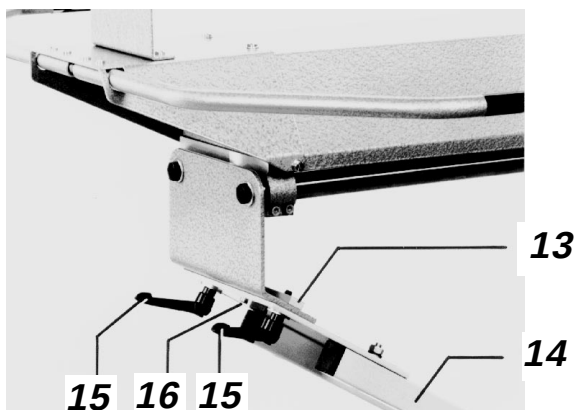
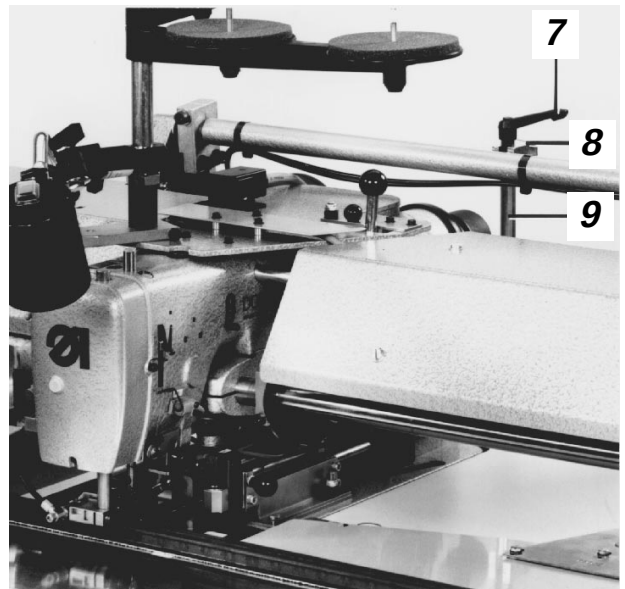


7.1 Folding over the machine head



Turn off main switch
- Risk of Injury -

- Remove the material guide rail.
- Pull the material slider bed back so far that the machine plate is exposed.
- Screw the clamp lever 15 out of the clamp strip 13.
Remove the support 14 from the pin 16 and lower.
- Swing the control unit away to the right.
- Remove the clamp screw 7 and the pipe connector 8 from the rod 9.
- Loosen the clamping lever 12 located at the right. Carefully fold over to the back the rods 10 with the machine head.
- Remove the oil pan under the machine plate.
- Raising the machine head should be conducted in the reverse order. Be careful that the appropriate holes fit over the pins 16 and 11.





7.2 Adjustment disk to the arm shaft crank

The deepest notch A on the adjustment disk must be set in- line with the groove in the arm shaft crank.

(Only with the adjustment disk in this position can the adjustments to be made in the other notches also be correct.)



Turn main switch off
- Risk of Injury -

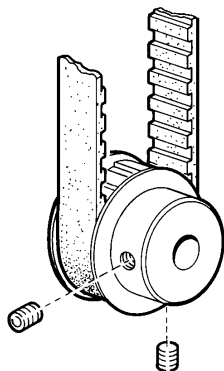
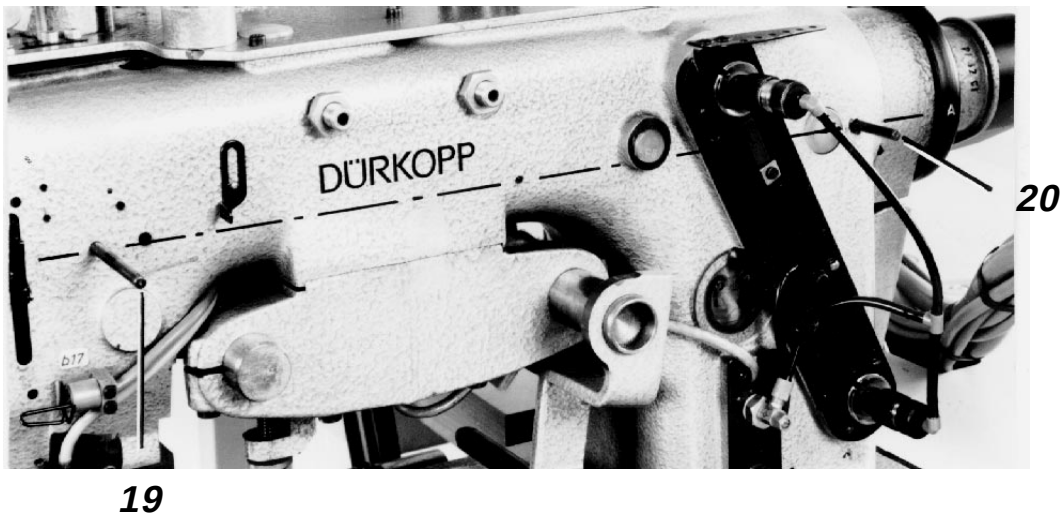
With two arresting pins (use 5 mm twist drills if pins unavailable) first check the settings made at the factory. If necessary set as follows:

- Using a round pin push the timing belt to the left while at the same time turning the handwheel.

- Loosen the screws of the upper timing belt pulley.
- Plug the pin 19 into the groove of the arm shaft crank.
- Turn the timing belt pulley until the arresting pin 20 can be inserted into the deepest notch A of the adjustment disk.
- Push the timing belt pulley to the right against the arresting pin.
- Tighten the timing belt pulley screws.
- Turn the handwheel until the timing belt moves to the middle of the timing belt pulley again.

Attention!

Changing the position of the upper timing belt pulley necessitates a correct of all following machine head settings.



7.3 Setting the lower timing belt pulley

When putting on the timing belt care is to be taken that both screws in notch C have the position shown, that is, that they are readily accessible with a screw driver.



7.4 Rocker bolt for the hook drive and left lower shaft bearing

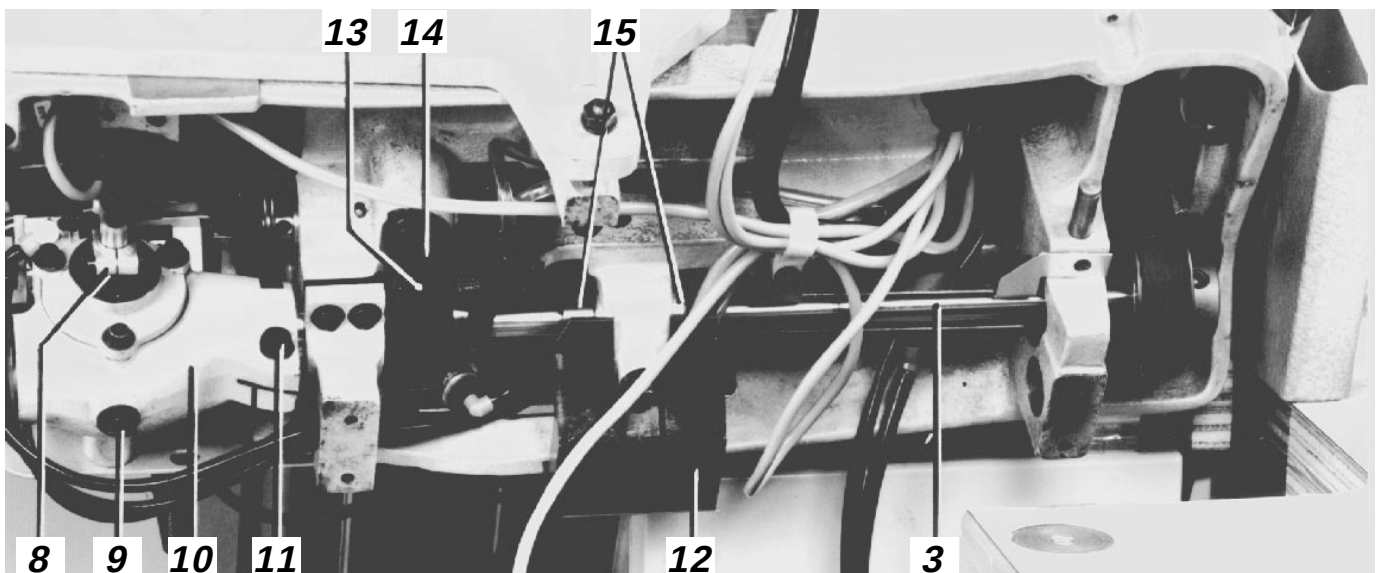
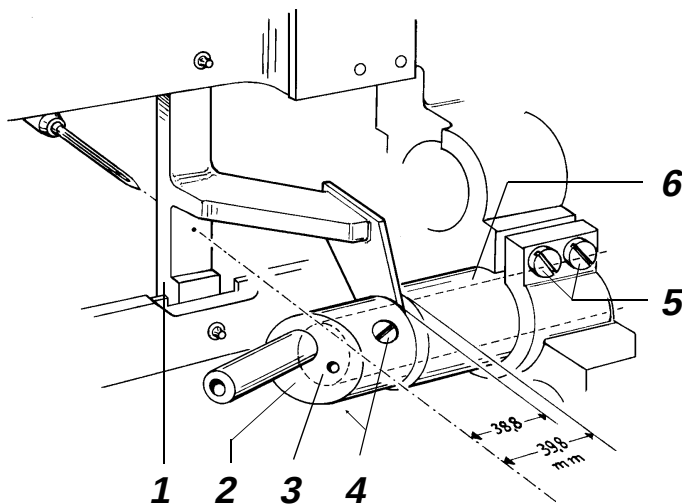


Turn main switch off
- Risk of Injury -

The distance between the needle center and the beginning of the left lower shaft bearing 6 should be 39.8 mm and 38.8 mm between the needle center and the end of the rocker bolt.

The rocker bolt 2 must be pushed on until touching the face 3 of the lower shaft.

- Screw out screw 9 and drain the oil from the housing. Place the machine vertically.
- Remove the needle, the needle protector and the hook holder 8 with hook.
- Loosen clamp screw 11.
- Carefully pull off the hook drive housing 10. At the same time slowly turn the lower shaft 3.
- Screw on gauge 1, order no. 933 80221. Loosen clamp screw 5.
- Place the lower shaft bearing 6 on the gauge. Tighten clamp screw 5.
- Loosen screws 4.
- Check to see if the rocker bolt 2 is lying so that it touches the face 3 of the lower shaft.
- Remove the grease cap 13 and the oil drip pan 12.
- Loosen the set collars 15 and pulley 13. Slide the lower shaft so that there is a gap of 1 mm between the lower shaft bearing 6 and rocker bolt 2, that is, that the rocker bolt touches the gauge.
- Fasten set collars 15. Set pulley 13. Tighten screws.
- Screw in screw 9. Replace hook drive housing and fill with Esso SP-NK 10 oil to the upper marking on the viewing glass.
- For adjusting the housing, the hook and the needle protector see Sections 7.5 to 7.11.





7.5 Hook drive housing



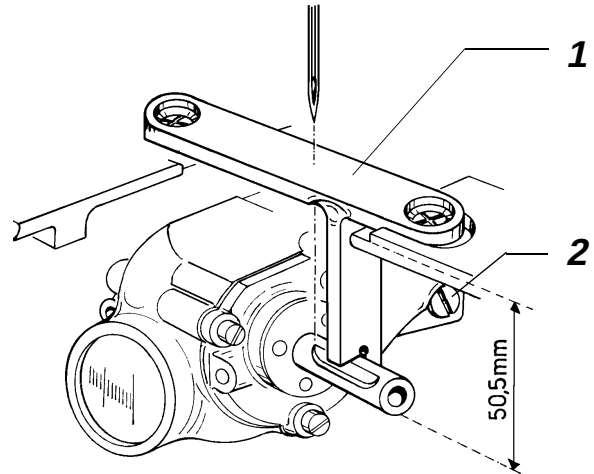
Turn main switch off
- Risk of Injury -

The needle tip should point to the middle of the hook shaft and the lower edge of the hook shaft lie parallel to the bottom of the throat plate.

This means a clearance of 50.5 mm between the lower edge of the hook shaft and the throat plate rest.

Remove the throat plate and hook bearer with hook. Loosen clamp screw 2.

Align the hook drive bearing so that the hook shaft lies in the cutout of gauge 1, order no. 933 80203. Tighten clamp screw 2.



7.6 Needle avoidance movement of the hook (Ellipse width)



Turn main switch off
- Risk of Injury -

The needle avoidance movement is properly set when, with hook movement from right to left, the needle clearance is between 0.05 and 0.1 mm and, with hook movement from left to right, the tip of the downward-moving needle touches the back of the hook at that moment when the hook and the needle are in the position shown in the accompanying sketch.

The exact dimension of the avoidance movement is dependent on the needle system and the needle thickness.

The ellipse width with this machine should be 1.9 mm. (Needle thickness Nm 90)

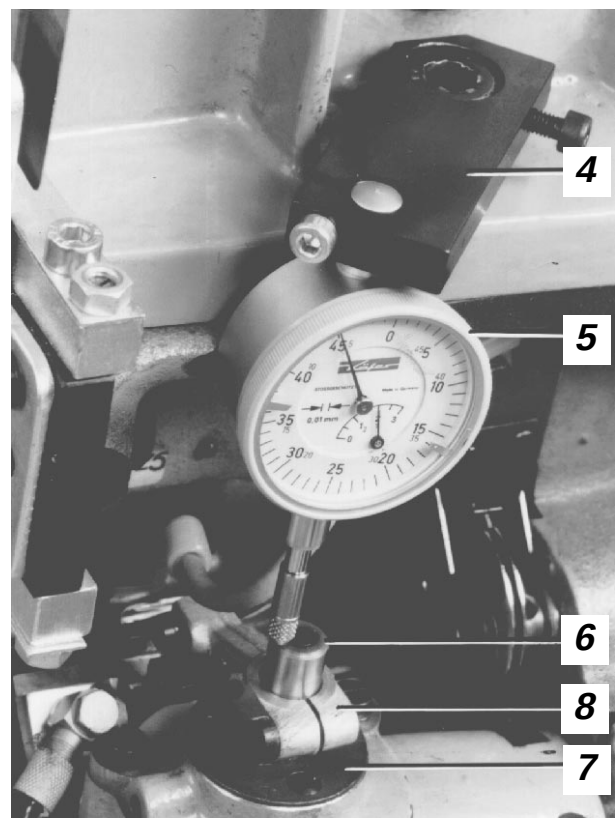
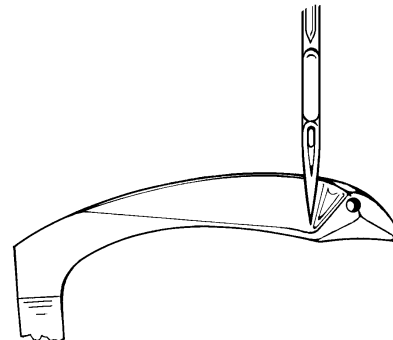
For adjustment slide the lower shaft in the direction of its axis.

To the right = Ellipse width smaller

To the left = Ellipse width greater

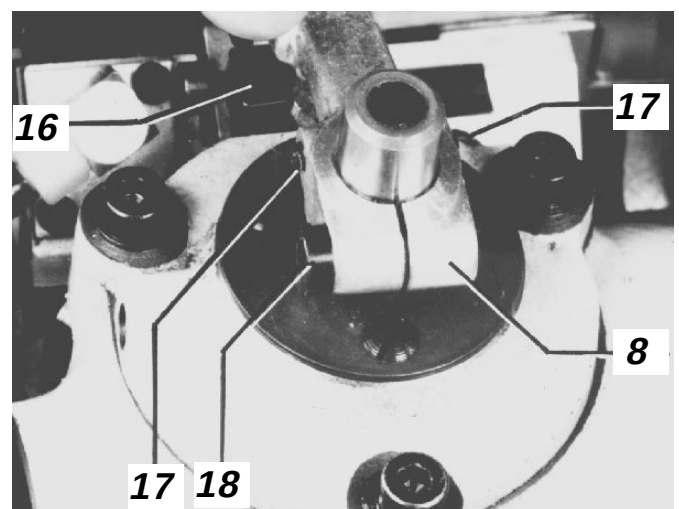
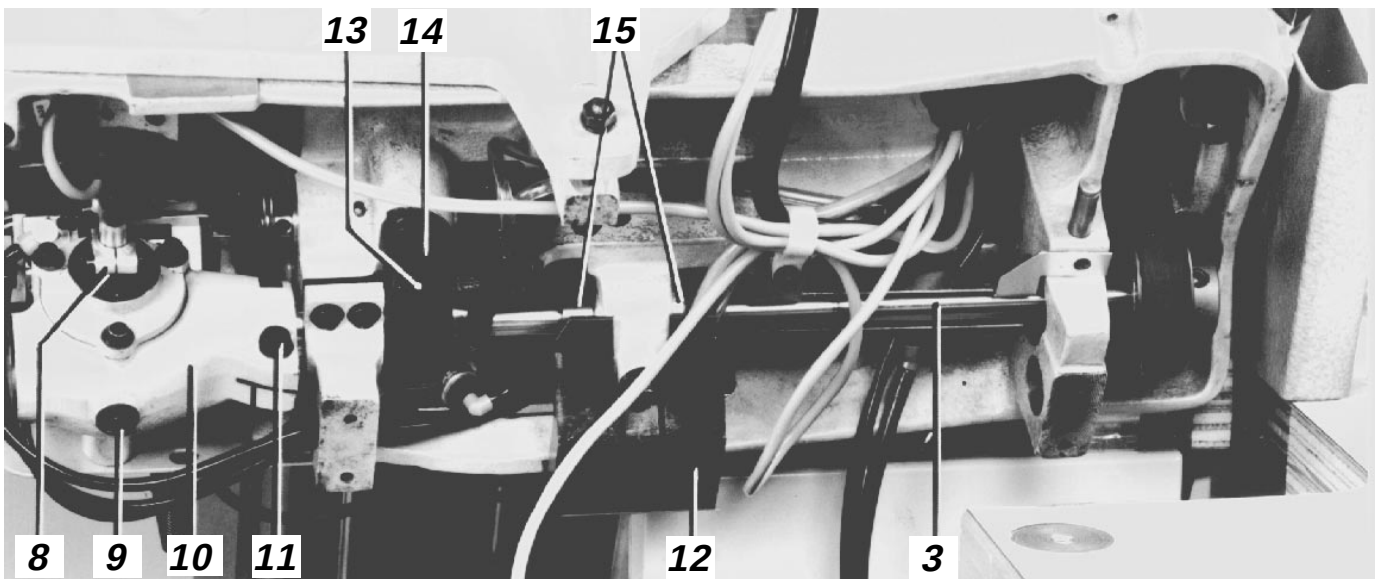
Setting the ellipse width occurs as follows:

- Fit a straight and undamaged needle. Screw on holder 4 and insert dial gauge 5. A complete dial gauge set is available under order no. 933 80207.
- Set the hook shaft 6 at its lowest point with the handwheel. Set the dial gauge to 0.





- Then set the hook shaft 6 at its highest point with the handwheel.
Read the difference from the dial gauge.
If the result does not agree with the given dimension for the ellipse width, the lower shaft 3 must be loosened.
- The measurement can also be made with a feeler gauge between the hook bearer 8 and the hook drive housing 7.
- With adjustments in the direction of the axis the ellipse dimension changes in a ratio of 1:2, that is, when the lower shaft is slid e.g. 0.2 mm, the ellipse width changes 0.1 mm.
- Remove the throat plate. Place the needle protector 16 to the rear.
- Loosen the set collars 15 and pulley 13. Slide the lower shaft 3 in the appropriate direction until the correct dimension is attained.
- Tighten set collars 15, so that the lower shaft 3 is tight. Align and tighten the pulley 13.
- Loosen screw 18 and one of the screws 17. By adjusting the hook bearer 8 bring the hook point to a distance of between 0.05 and 0.1 mm from the needle. (Hook point behind the needle).
- Tighten screws 18 and 17 again.
- Check the movement of the timing belt. If necessary adjust the lower timing belt pulley.





7.7 Symmetry of looper motion



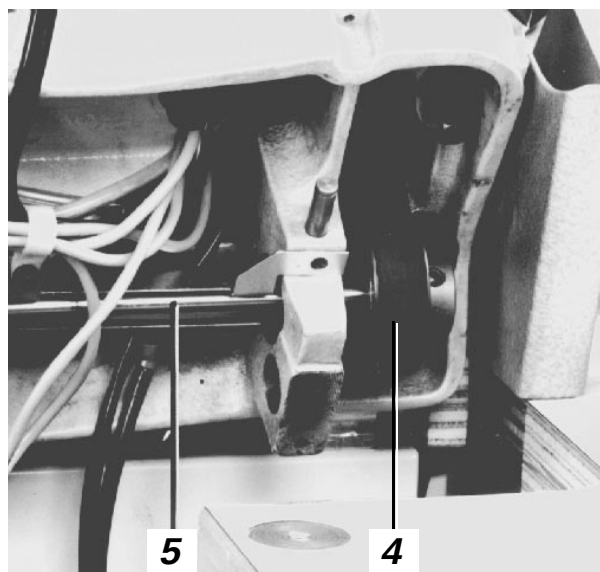
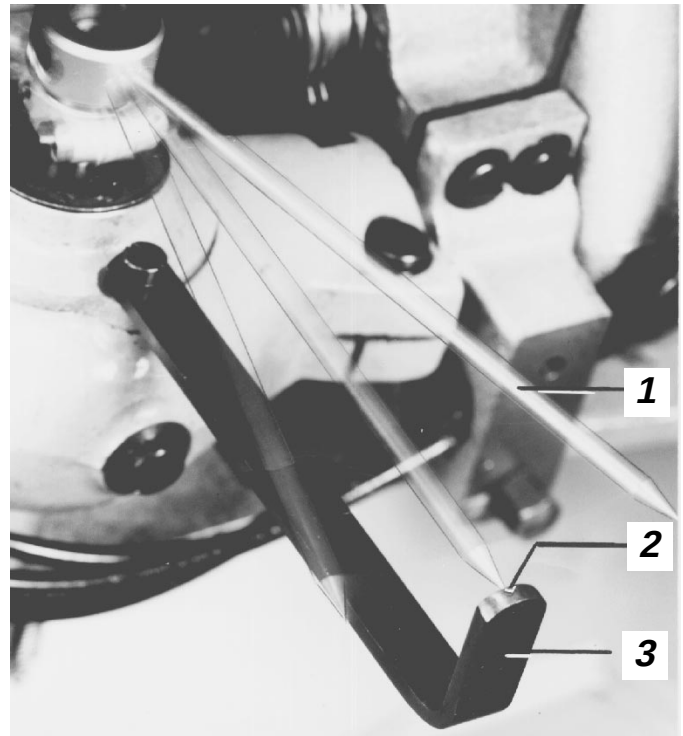
Turn main switch off
- Risk of Injury -

Symmetry of looper motion means that in the direction of machine rotation from notch A to notch D the indicator 1 makes a pendulum movement to the left from marking 2 and returns again precisely above the marking 2 when D is reached. Adjustment occurs after loosening the timing belt pulley by turning the lower shaft 5.

Indicator order no. 933 80194
Angle order no. 933 80193

The adjustment is conducted as follows:

- Insert the arresting pin into notch A.
- Fasten the angle 3 to the hook drive housing.
- Set the indicator 1 on the hook shaft so that the tip is over the marking 2.
- When turning the handwheel from A to D the indicator should swing to the left. When arresting in notch D the tip should again be over the marking 2.
- By turning the lower shaft 5 and adjusting the angle, agreement is reached in both positions A and D.
- Further turning of the handwheel in the direction of machine rotation from position D to position A swings the indicator 1 to the right and back again to the marking 2. This pendulum movement to the right occurs automatically because of the previously set left pendulum movement.





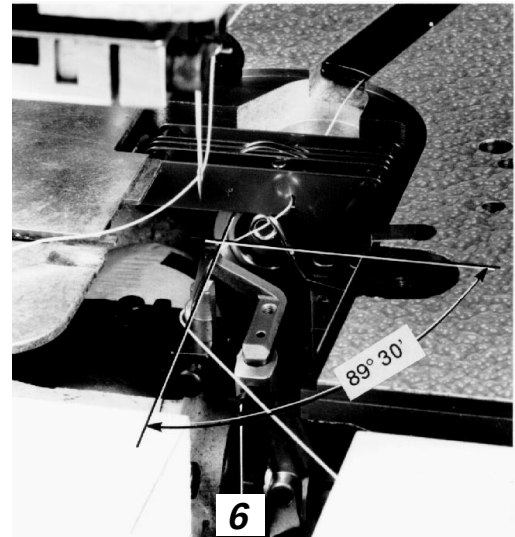
7.8 Hook in the hook bearer



Turn main switch off
- Risk of Injury -

In relation to the machine plate the hook front should be in a position of $89^{\circ} 30'$, that is, the hook tip must point slightly forward of the theoretical line of hook movement.

The setting of the hook is achieved by an appropriate tightening of the screw 6 in the hook bearer.



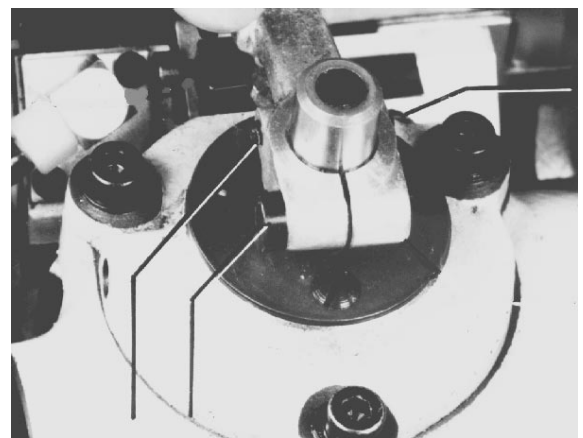
7.9 Setting the hook to the needle center



Turn main switch off
- Risk of Injury -

In adjustment disk position C the hook tip should lie on the needle center.

- Arrest handwheel in notch C.
- Loosen screw 7 and turn the stopper screws 8 appropriately.
- Set a clearance of 0.05 to 0.1 mm between the hook tip and the needle.
- Tighten screw 7.



8 7

8

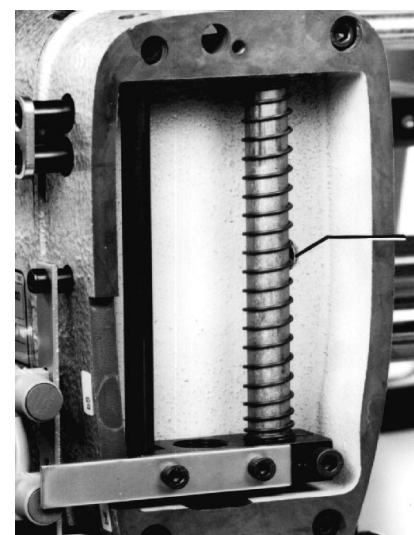
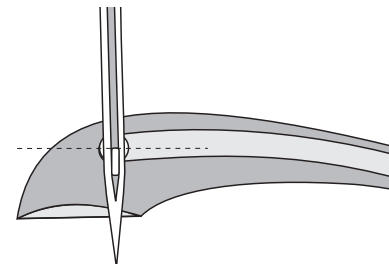
7.10 Needle bar height



Turn main switch off
- Risk of Injury -

Set the needle bar height so that at the moment when the hook eye lies on the middle of the needle the upper edge of the eye of the needle lies at the center of the hook eye. See sketch.

- Remove cover plate.
- The needle bar fastening screw is accessible through the hole 9.
- Set the needle bar higher or lower as needed. Tighten the needle bar fastening screw.
- Set a clearance of 0.05 to 0.1 mm between the needle and the hook tip.



9



7.11 Needle protector



Turn main switch off
- Risk of Injury -

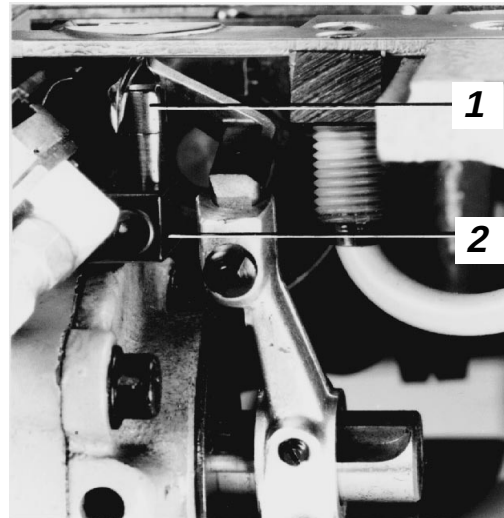
The needle protector is to hinder a diversion of the needle into the hook path.

The hook and needle bar height must be set as described above.

When in the course of the hook movement from right to left the hook tip reaches the needle and one presses against the needle at this moment, the needle should lay onto the needle protector. It should thus not be possible to press the needle into the hook tip path.

The clearance between the hook tip and the needle should be between 0.05 and 0.1 mm.

- The height of the needle protector 1 is properly set when its underside ends flush with the underside of the block 2.
- Align the needle protector 1 to the hook drive housing accordingly.



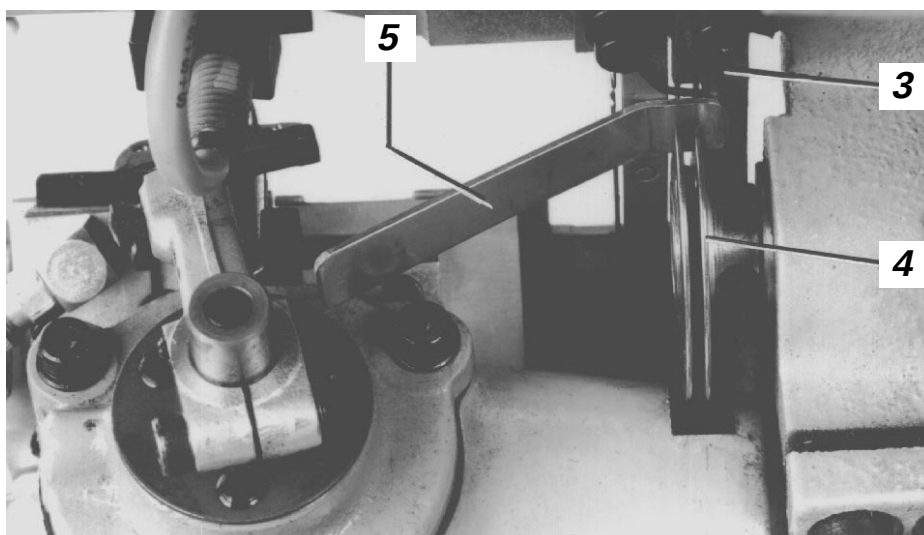
7.12 Bobbin disk



Turn main switch off
- Risk of Injury -

In the adjustment disk position there should be a clearance of 1 mm between the underside of the plate 3 and the flattened area on the bobbin disk 4. The setting can be made with the gauge 5, order no. 933 80200.

- Arrest the machine head in the adjustment disk notch B.
- Loosen the bobbin disk screws 4.
- Set the bobbin disk appropriately.

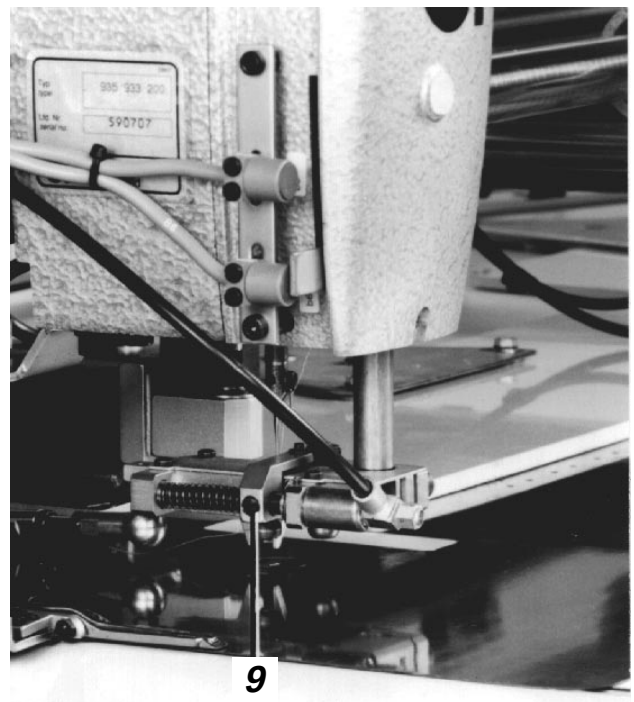
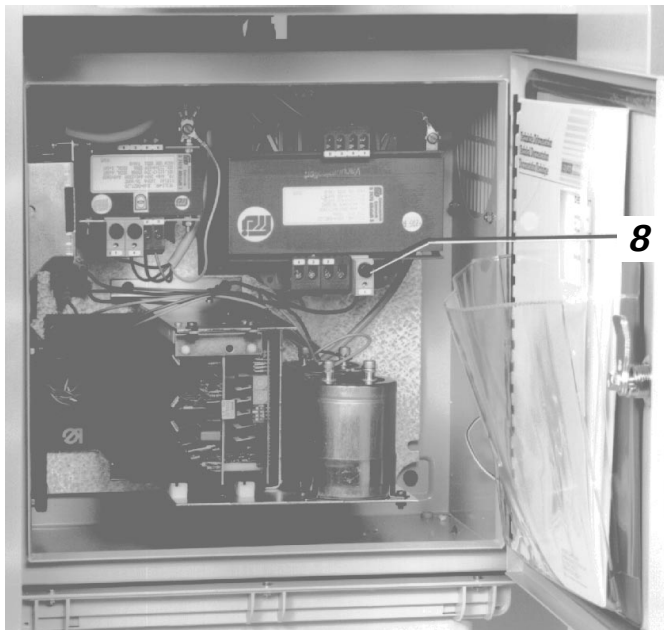
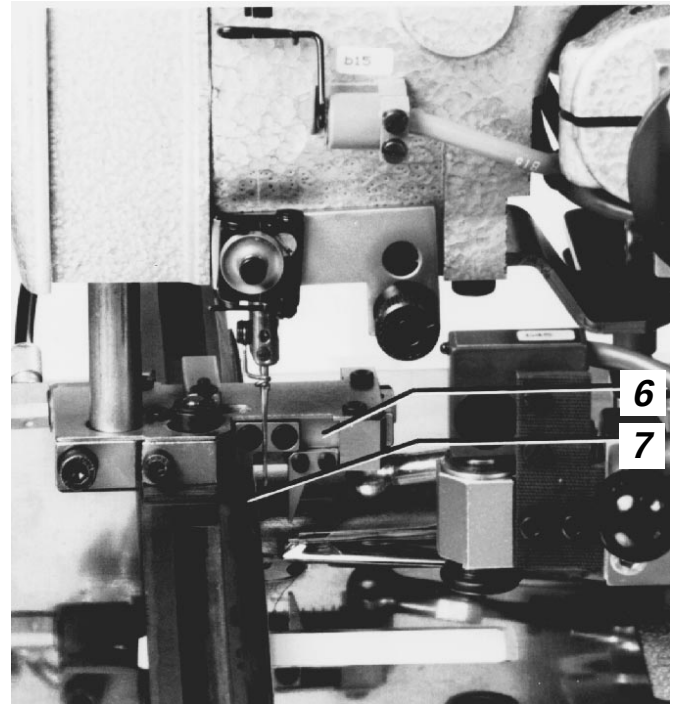




7.13 Needle thread catcher

When sewing without a stitch chain, that is, by slits or seam interruptions, the bobbin and needle threads are drawn after by a certain amount. The thread trimmer then cuts off both threads. The bobbin thread is held clamped by the trimmer and the needle thread by the thread catcher 6. To catch the needle thread the thread catcher should be open as far as possible. The moving leg_7 must, however, not bump into the material guide rail. This applies particularly to curved rails with small radii. The distance at the nearest position should be about 1 mm.

- Turn main switch off.
- Enter Program 64 and activate with the STOP key.
- Key in the code no. 7 for the solenoid valve s7 "Open Thread Catcher". The thread catcher can be opened and closed with the Σ key.
- To check the clearance the rail must be run along the open thread catcher manually. This is only possible with the main switch on when the fuse 8 of the step motor controls has been removed.
- Loosen screw 9. Set the leg 7 at a distance of approx. 1 mm at the tightest point of the rail.
- This clearance is to be checked with all rails employed.





8. Thread Trimmer

Function

When the material edge is registered by the light barrier the thread trimmer swings to the left and tensions the clamped thread chain for a secure seam beginning.

After approx. 5 stitches the thread chain is automatically released from the clamp. This occurs through a short lifting movement of the thread trimmer called the release stroke.

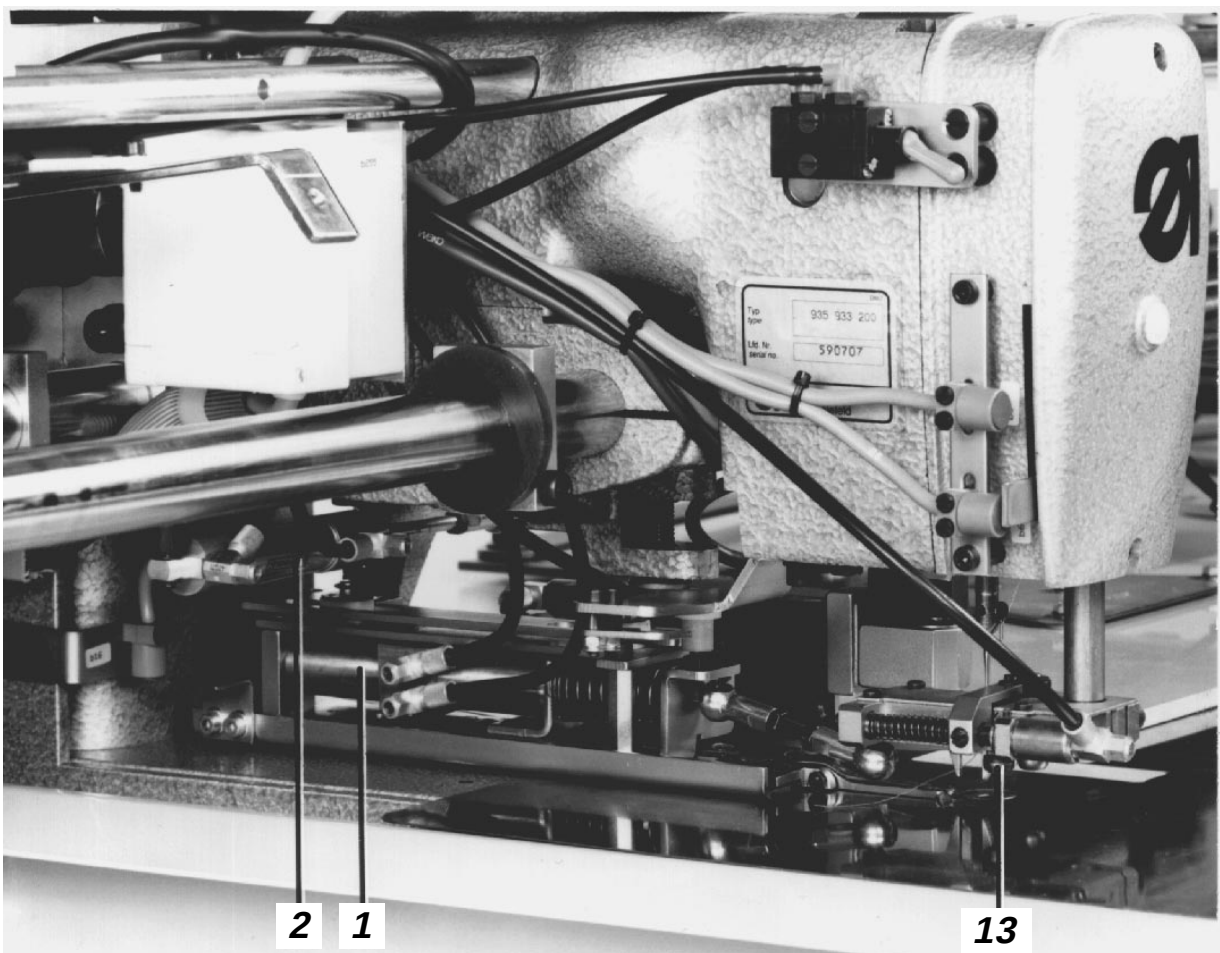
Appropriate to the form of the material guide rail, the roller 13 controls the necessary avoidance movements of the thread trimmer.

When a piece of thread chain is bound-off at the end of a seam and the sewing drive shut off, a stroke of the thread trimmer occurs and thus the cutting stroke.

When the thread trimmer has clamped and cut the thread chain, it again moves to the right. This slackens the tensioned thread chain and thus avoids its being pulled out of the clamp by the material guide rail return run.

The strokes are conducted by the following solenoid valves and dual-action cylinders:

- s11 Trimmer forward, cut (long stroke)
— = cylinder 1
- s12 Trimmer to the left, tension thread chain
— = cylinder 2
- s13 Release thread chain, (short stroke)
— = cylinder 1
- s14 Trimmer to the right, slacken thread chain
— = cylinder 2





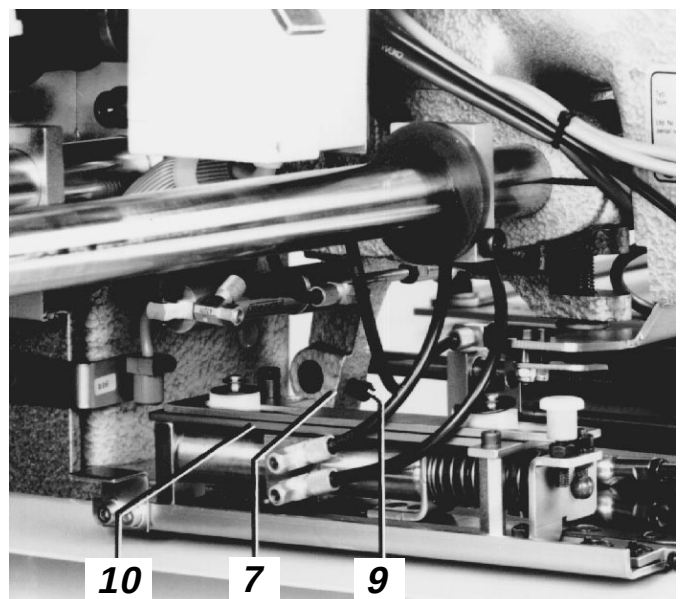
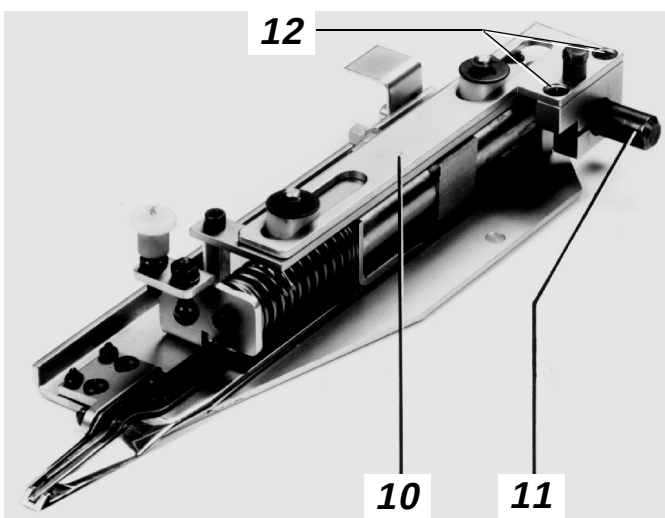
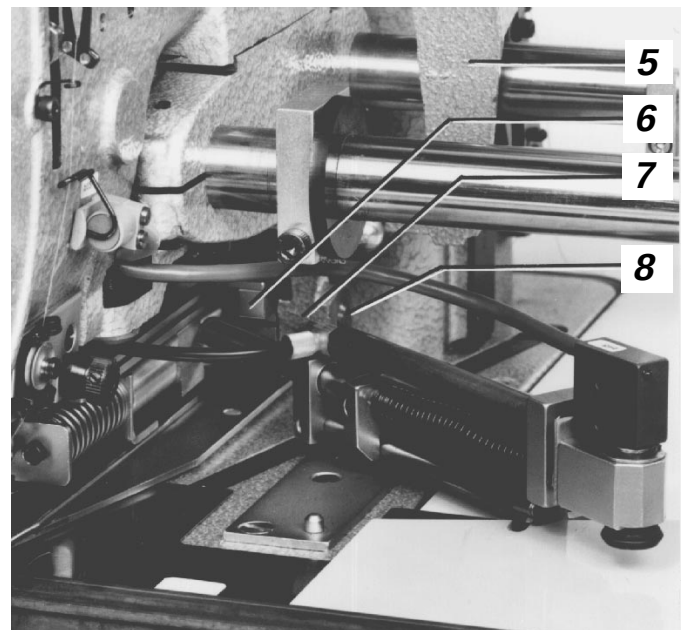
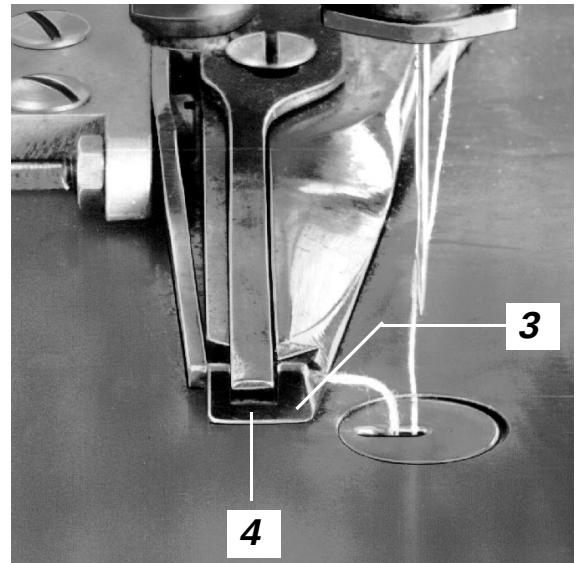
Adjusting

- a) The trimmer point 4 should not cover the stitch hole in the throat plate. This applies especially in the curve of the rail. (Danger of breaking the needle.)

The edge 3 of the trimmer point should lie to the left at the circular recess in the material slider bed as shown in the illustration.

- Turn main switch off.
- Manually pull the transport carriage about half of its length to the left. The trimmer guide roller 13 must be in a straight part of the rail.
- Loosen screw 9. Set the shaft 11 in the holder 7 so that the bezel 8 can still be seen.
- Tighten screw 9 until it touches surface.
- With the trimmer swing-out and lever 5 at the right rest, place the block 6 close on the holder 7.
- When tightening the screw 9 take care that the plate 10 remains horizontal.

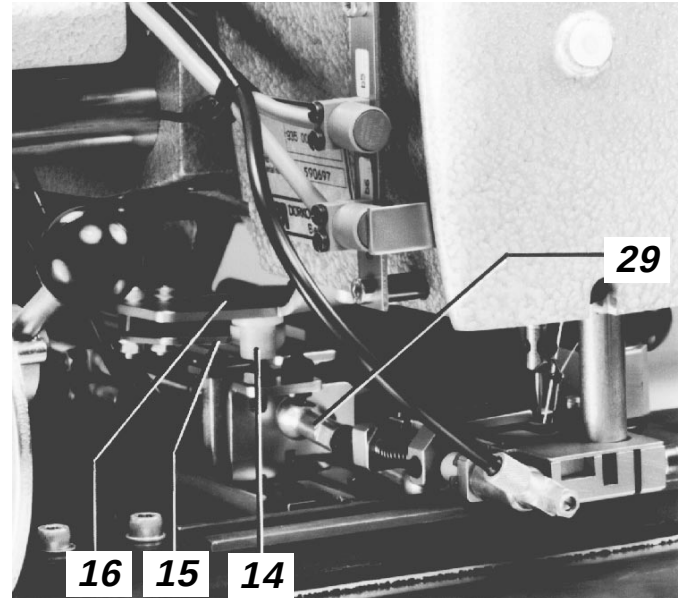
If the setting of the trimmer point has not been achieved, then the whole trimmer is to be removed after screw 9 has been loosened. Loosen screws 12 and set plate 10 accordingly. When inserting the trimmer again bring the block 6 to rest on the holder 7.





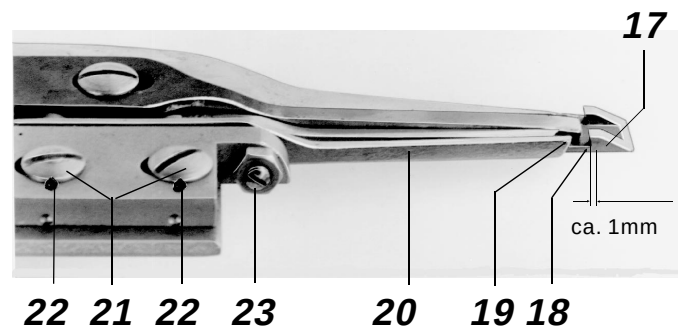
- b) The trimmer point must lay on at the front and be tight but easily moveable on the material slider bed. This is necessary so that no threads can get between the trimmer point and the material slider bed.

- If the trimmer point does not lay on, adjust the trimmer accordingly.
- Set the trimmer tight with the plastic stopper 14. Manually check for ease of swing.
- When swinging to the left the plastic stopper 14 must hold in the fork 15. Loosen angle 16 and adjust accordingly.



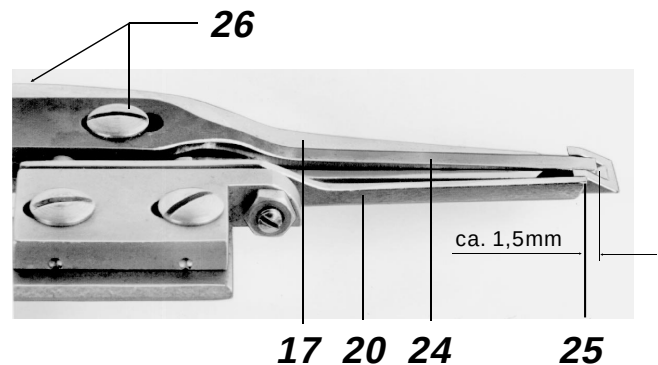
- c) When the counter knife 17 is pulled to rest at the back by spring pressure, the cutting edges 18 and 19 must overlap by about 1 mm. Three sewing threads must be cut cleanly.

- Loosen screws 21 and adjust knife 20 accordingly.
- Set the knife 20 level to the counter knife with the adjustment screws 22.
- Set the trimming pressure with the pressure screw 23. The pressure should only be so great that the threads are cleanly cut and the counter knife 17 moves back unhindered.
- Conduct a trimming trial in testing program P55 with three threads. After entering the program and operating the Σ key the trimmer functions will occur in order.



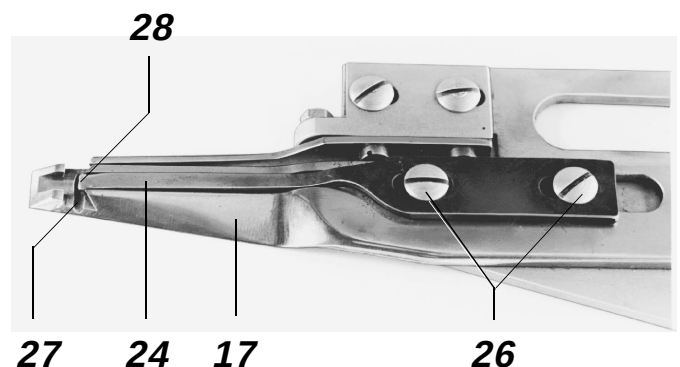
- d) With the counter knife 17 pulled to the back and knife 20 set as per c) the thread clamp plate 24 should be about 1.5 mm in front of the edge of the knife 20. This setting assures that the thread chain is first clamped and then trimmed.

- Loosen screws 26 and set the thread clamp plate 24.
- The thread clamp plate must lay on with a slight pressure.



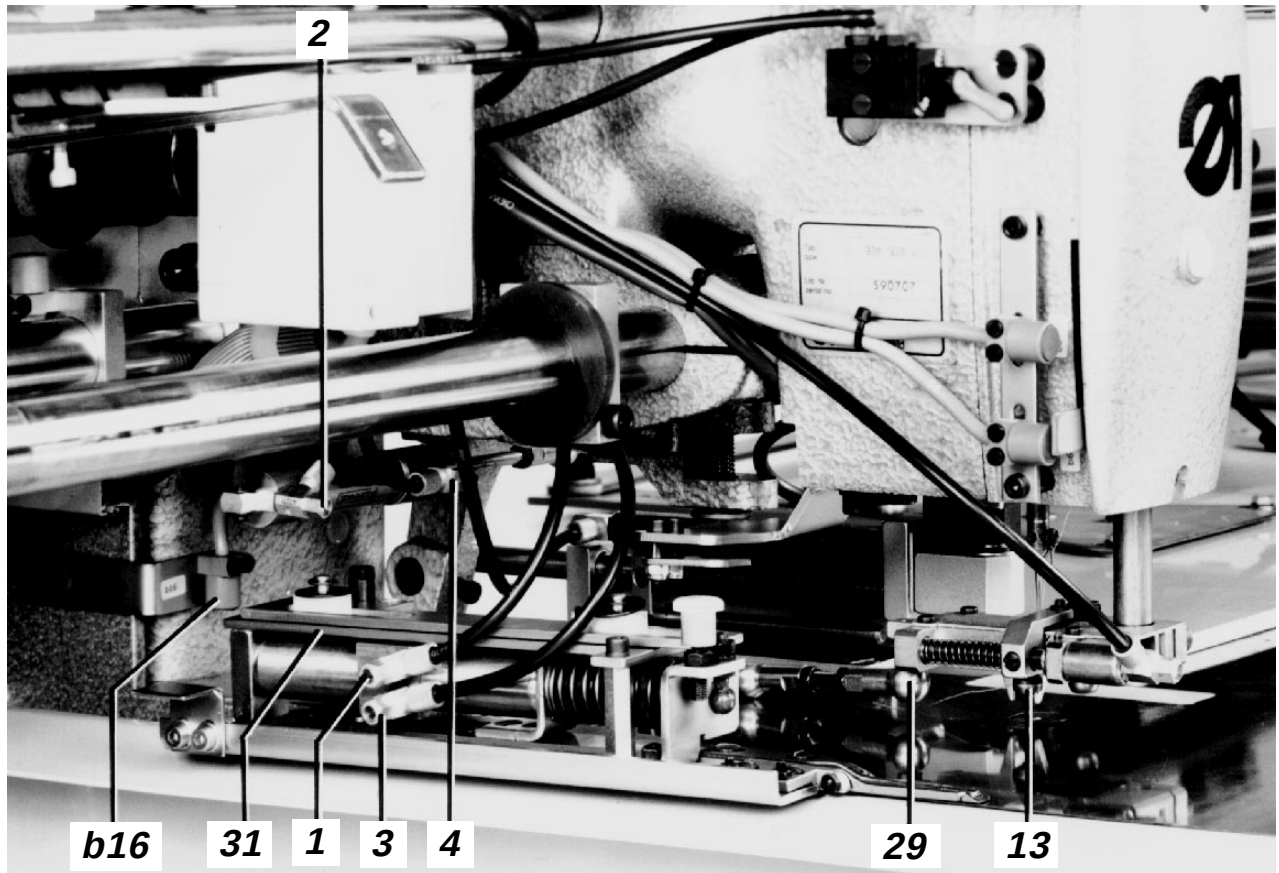
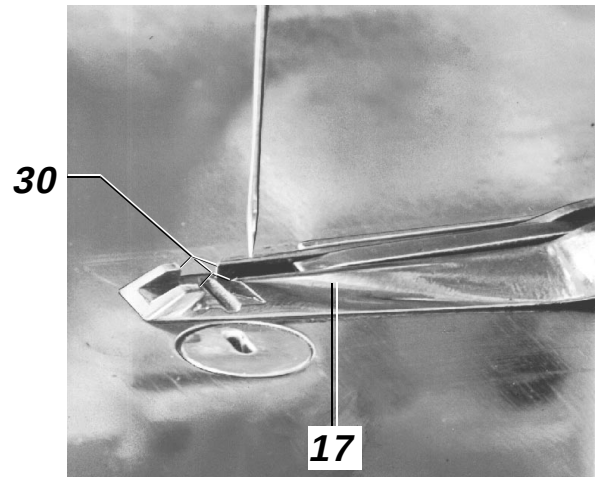
- e) With switched on release stroke the counter knife 17 should move so far to the front that the middle of the thread groove 27 lies under the front edge 28 of the thread clamp plate.

- Enter testing program 55 and switch on the release stroke position (short stroke) with the Σ key.
- Adjustment is to be made by altering the push rod length. For this purpose remove the push rod 29.





- f) With switched on cutting stroke the counter knife 17 should move so far to the front that the middle of the catcher groove 30 lies about even with the needle.
- Enter testing program 55 and switch on the cutting stroke position (long stroke) with the Σ key to check.
 - The position mentioned above results automatically if the push rod 29 is set as described in e).



- g) The trimmer movement speeds can be regulated with throttle valves. They should not be jerky. The thread trimmer must be able to securely take up and cut the thread chain. The trimmer movement to the left must be appropriate to the rail transport speed.
- | | |
|--|---|
| Trimmer forward, cut (long stroke) | = |
| throttle valve 1 | |
| Trimmer to the left, tension thread chain | = |
| throttle valve 2 | |
| Thread chain release (short stroke) | = |
| throttle valve 3 | |
| Trimmer to the right, slacken thread chain | = |
| throttle valve 4 | |
| – | |
- h) Should the guide roller 13 not be in the material guide rail groove then the complete thread trimmer will be pushed too far to the back. The contact maker 31 moves over switch b16. The malfunction message * Schiene * appears in the display. The sewing unit cannot be started.
- There should be a clearance of 0.5 mm between the contact maker and the switch b16.
 - After lowering the roller 13 into the rail the error message will disappear.



9. Throw-Over Stacker

The following base settings of the throw-over stacker were made at the factory. They are to be corrected only in exceptional cases.



Caution Risk of Injury !

Before all setting work turn the main switch off and disconnect the throw-over stacker from the compressed air supply.

9.1 Distance to the sewing unit

By means of the threaded bore-holes in the base plate of the throw-over stacker it is possible to set the distance to the sewing unit in three steps of each 40 mm (see the sketch). Set the distance so that the sewn parts can safely enter the opening between the smoother and the work carrier 3.

- Turn out the four screws 7 on the underside of the throw-over stacker.
- Move the complete throw-over stacker towards the sewing unit or away from it.
- Turn the four screws 7 into the respective threaded bore-holes in the base plate and tighten them.

9.2 Setting the Opening

The material must securely enter the opening x between the stacked-goods support 3 and clamping pipe 5 during the sewing sequence.

The stop screw 4 limits the position of the opened (swung away from the stacked-goods support 3) clamping pipe 5. It thus determines the opening x of the stacker. The opening x can be set up between 105 and a maximum of 240 mm.

- Loosen lock nut 4.
- Turn stop screw 4 until the desired opening x is reached.
- Tighten lock nut 4.

9.3 Setting the Height of the Counterholder

With the stacker open, the counterholder 9 lies under stacked-goods support 3.

The clearance y between the counterholder 9 and stacked-goods support 3 is adjustable between 30 and 170 mm.

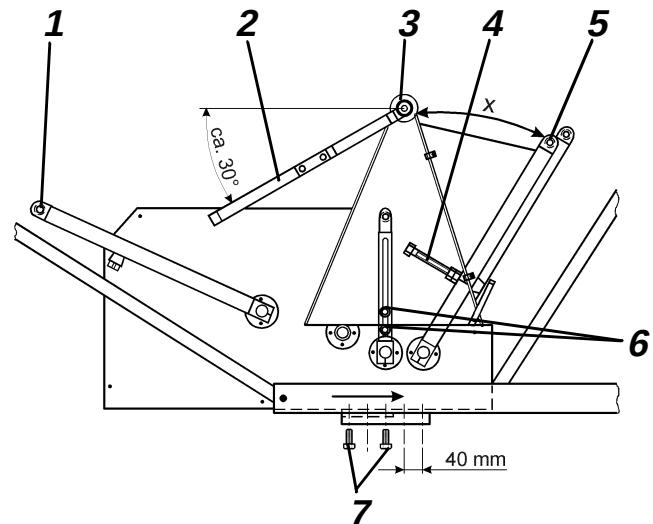
For material which is just barely clamped by the stacker on the feed side, a smaller clearance y must be set.

- Loosen both clamping screws 6.
- Set the counterholder 9 to the desired height.
- Tighten clamping screws 6.

9.4 Setting the Position of the Placement Plate

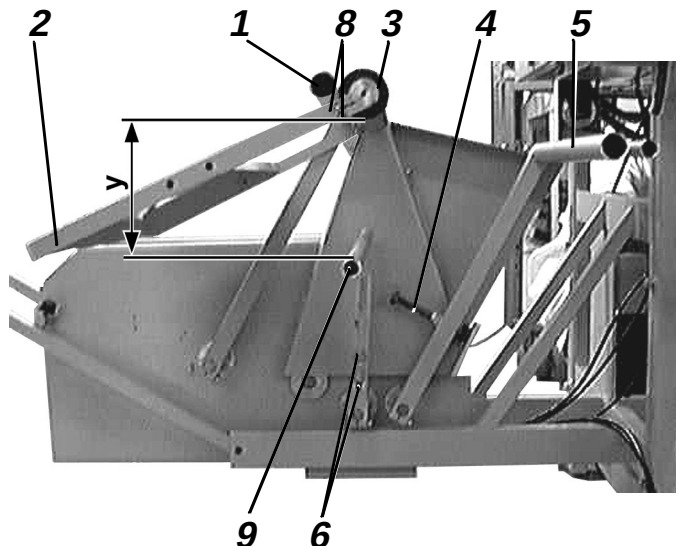
The placement plate 2 must have its angle set so that the material lies smooth after being pulled out.

- Loosen both clamping screws 8.
 - Swing placement plate 2 into the desired position.
- Base setting: Placement plate 1 should lie at an



angle of approx. 30° (see sketch).

- Tighten clamping screws 8.

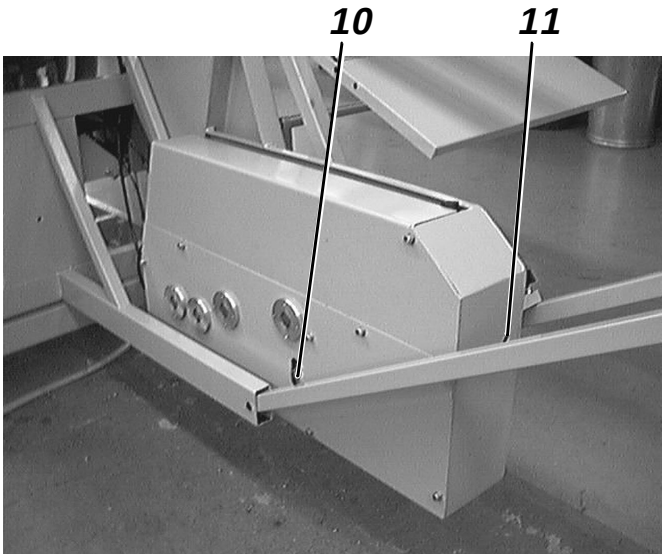




9.5 Setting the Speed of the Smoother Movement

The pull-out and return movements of the smoother 5 are to be quick but not jerky. The speeds of the movements are regulated at the one-way restrictors 10 and 11.

- One-way restrictor 10: Regulating return movement
- One-way restrictor 11: Regulating pull-out movement



The function "clamping before smoothing" can be activated by the pre-selector **b417.5** on the back of the face plate of the control unit.

The speed of the smoothing movement after clamping is to be regulated by the throttle 12, located on the solenoid valve strip of the sewing unit.

If necessary, readjust the smoothing movement of the throttle 10 on the throw-over stacker.

