Part 3: Service Instructions Cl. 745 - 26 / 28

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1. General

These service instructions describe the settings of the sewing unit in a practical order.

Attention!
Various setting positions are interdependent.
It is therefore essential that the individual settings be made in the order described.

ATTENTION !

The tasks described in these service instructions may only be conducted by skilled workers or appropriately trained personnel!

Risk of Breakage !

Before starting the sewing unit again after disassembly, the thus necessary setting work is to be conducted as per these service instructions.

To avoid damage to the clamp lining:

Run the lowered transport clamps into the rear end position only with material lying underneath.

Caution Risk of Injury !

Before repair, conversion and maintenance work:

– Turn the main switch off.
  Exception:
  Setting work which is to be conducted with the testing, setting or sewing programs of the control unit.

Adjustment work and function testing with the sewing unit running

– Conduct adjustment work and function testing with the sewing unit running only while observing all safety measures and with greatest caution.

Setting work in the area of the corner knives, the center knife and the needles

– Remove the appropriate parts previous to the setting work in order to avoid injuries.
  Exception:
  The parts are absolutely necessary for the setting work.

Pedal

– Attention!
  In the sewing programs the sewing unit can be started by accidentally stepping down on the pedal.

Setting gauges

The following setting gauges are available upon request:

	Setting gauge	Order no.	Application
745-26 u. -28:	Gauge	246 002591	Crank pin to the arm shaft
	Gauge	244 001001	Hook shaft height
	Timing pin	211 000700	Looping stroke position
	Measuring bridge	212 004942	Needle holder height
	Measuring pin	216 001070	Needle holder height
	Setting pin	244 001014	Sideways hook clearance
	Gauge	246 000919	Clearance of the needle bar link to the needle bar
745-28:	Gauge	792 007676	Corner knives (NA = 10 - 14 mm)
	Gauge	792 007677	Corner knives (NA = 16 mm)
	Gauge	792 007678	Corner knives (NA = 20 mm)

Replacement parts

The following replacement parts are in the accessories pack in the quantity listed:

	Replacement part	Quantity	Order no.
745-26 u. -28:	Center knife	1	246 002553
	Special bobbin for the remaining thread monitor	6	246 003058
745-26:	Corner knives (NA = 10 mm)	2 2	746 060689 746 060690
	or		
	Corner knives (NA = 12 mm)	2 2	746 060691 746 060692
	or		
	Corner knives (NA = 14 - 20 mm)	2 2	792 007217 792 007217 a
745-28:	Corner knives (NA = 10 mm)	2 2	746 000996 746 000996 a
	or		
	Corner knives (NA = 12 mm)	2 2	746 000997 746 000997 a
	or		
	Corner knives (NA = 14 - 20 mm)	2 2	792 000998 792 000998 a

2. Transport Carriage

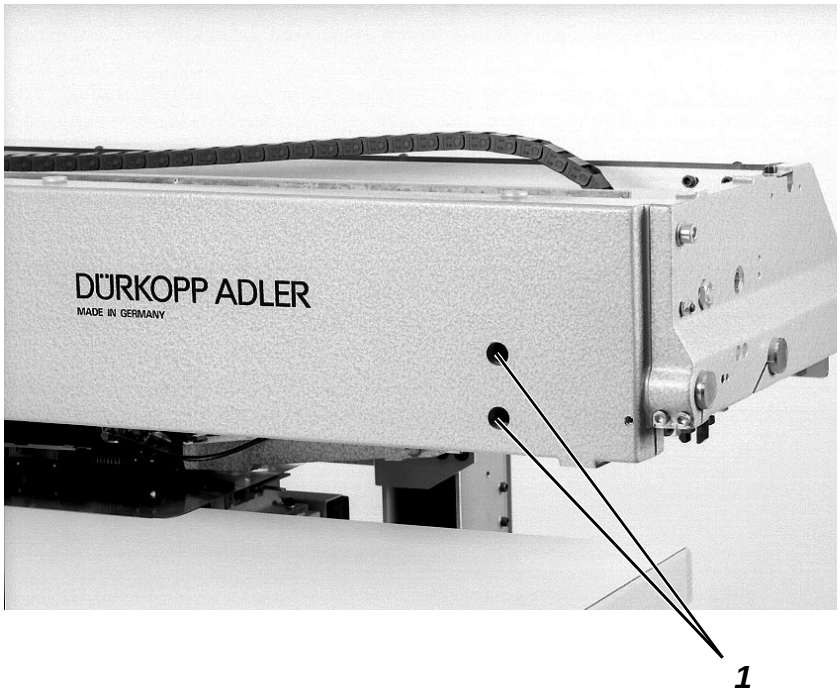
The advance of the transport carriage occurs via a step motor.

Caution Risk of Injury !

Keep hands clear of moving machine parts.

2.1 Rollers

The transport carriage is guided on the support axles by ball sleeves at the left and by rollers at the right.
The rollers 1 are set tight at the factory.



Caution Risk of Injury !

Turn the main switch off.
Set the play of the rollers 1 only with the main switch turned off.

To remove play:

– Loosen **one** of the eccentrically bearinged rollers 1 and set tight.
The rollers are accessible through the holes in the back plate.

2.2 Forward End Position

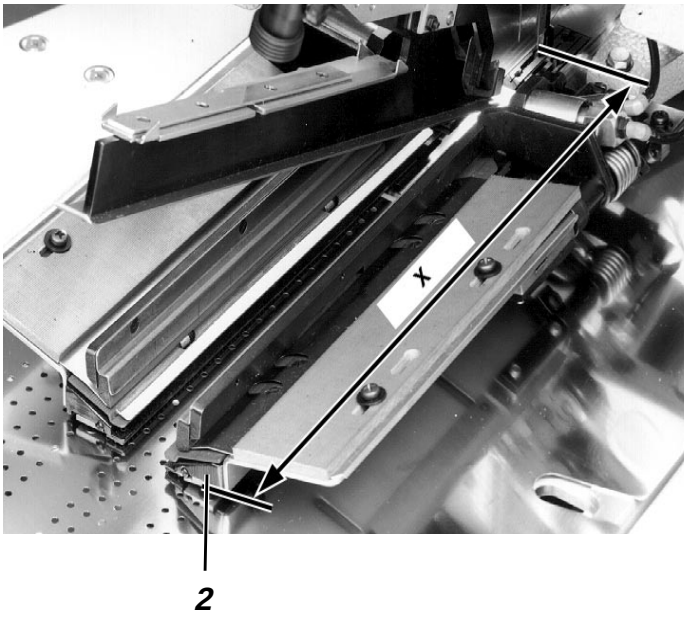
The **switch S25** determines the forward end position of the transport carriage. In this position the clearance **x** from the front edges of the forward-lying needles to the front edges 2 of the transport clamps must be:

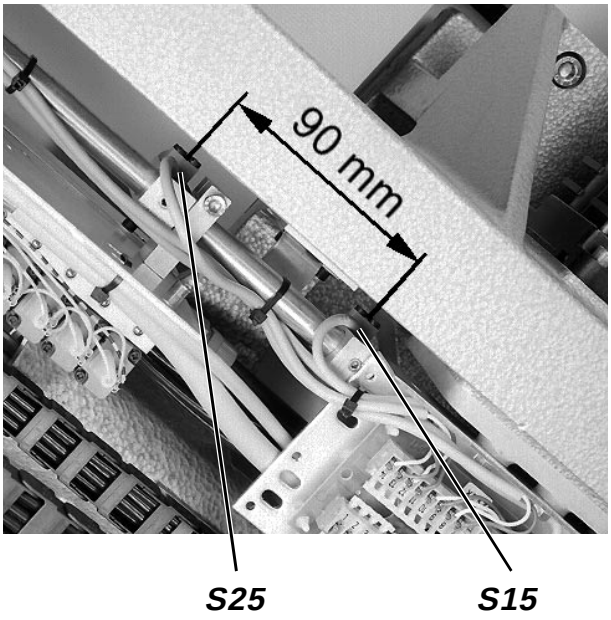
x = 336 mm at 180 mm sewing distance

x = 376 mm at 220 mm sewing distance

The switch **S15** serves as a safety switch. It prevents a possible striking of the transport carriage on the machine head.

The clearance between the switches **S25** and **S15** must be approx. 90 mm.





Checking the switch position

- Turn the main switch on.
- Step forward on the left pedal.
  The transport carriage runs to its forward end position.
  Hereby it runs over the switch **S25** (reference position).
  After a further run of approx. 80 mm it stops in the forward end position.
- Check the clearance **x** from the front edge of the forward-lying needles to the front edges 2 of the transport clamps.

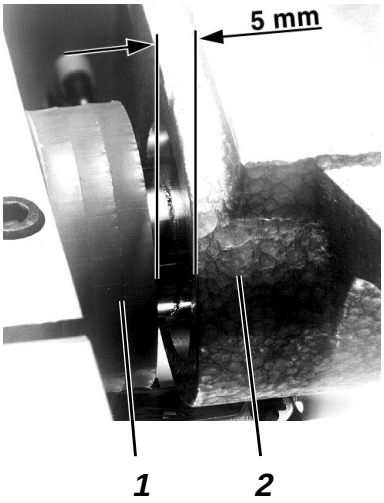
Correcting the switch position

Caution Risk of Injury !

Turn the main switch off.
Correct the position of the switches **S15** and **S25** only with the main switch turned off.

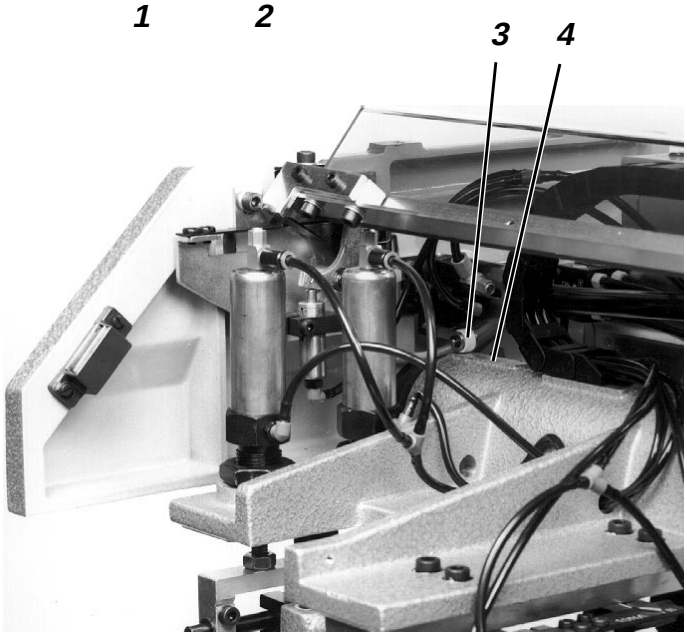
- Remove the cover plate after loosening the mounting screws.
- Set the switches **S15** and **S25** after loosening the clamping screws.
- Tighten the clamping screws again.

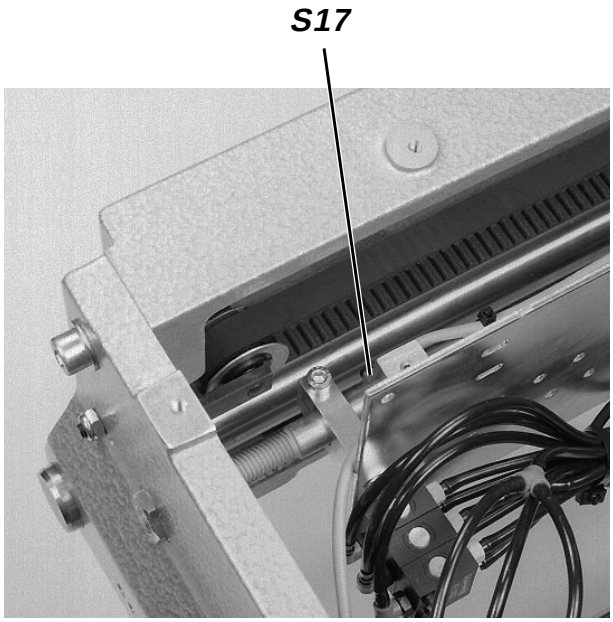
2.3 Rear End Position



The **switch S17** determines the rear end position of the transport carriage.
Set switch **S17** so that there is still a clearance of 5 mm between the damper discs 1 and the transport carriage 2 in the rear end position.

When running into the rear end position the surface 4 on the transport carriage must open the pneumatic valve 3.
With the main switch turned off and pneumatic valve 3 open, the interlock of the cover hood and the cloth slider plate is released.





Checking the position of the switch and pneumatic valve

- Turn the main switch on.
- Step back on the left pedal.
  The transport carriage runs to its rear end position.
- Check the clearance dimension of 5 mm between the damper discs 1 and the transport carriage 2.
- Check if the pneumatic valve 3 is opened by the surface 4 on the transport carriage.

Correcting the position of the switch and pneumatic valve

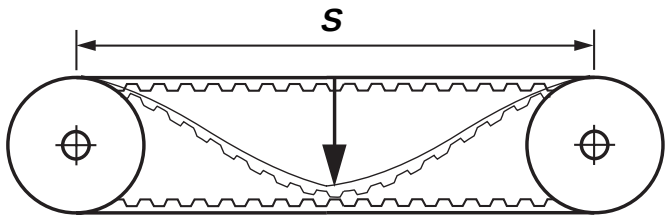
Caution Risk of Injury !

Turn the main switch off.
Set the position of the switch **S17** and the pneumatic valve 3 only with the main switch turned off.

- Move switch **S17** after loosening the clamping screws.
- Set the pneumatic valve 3 so that it is opened by surface 4 on the transport carriage.
- Tighten the clamping screws again.
- Mount the cover plate.

2.4 Timing Belt Tension

At the middle of the distance S it must be possible to bend in the timing belt under a test load of FV = 4.0 kg as per the illustration below.

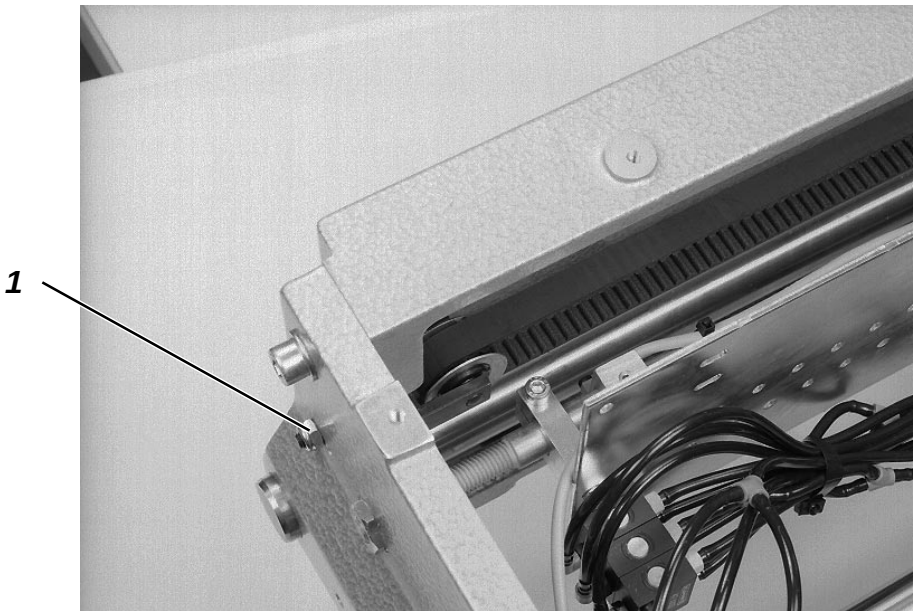


Consequences of too high a timing belt tension:

- Reduced life
- Running noise

Consequences of too low a timing belt tension:

- No flawless tooth mating between the belt teeth and pulley teeth
- Jumping of the teeth under load



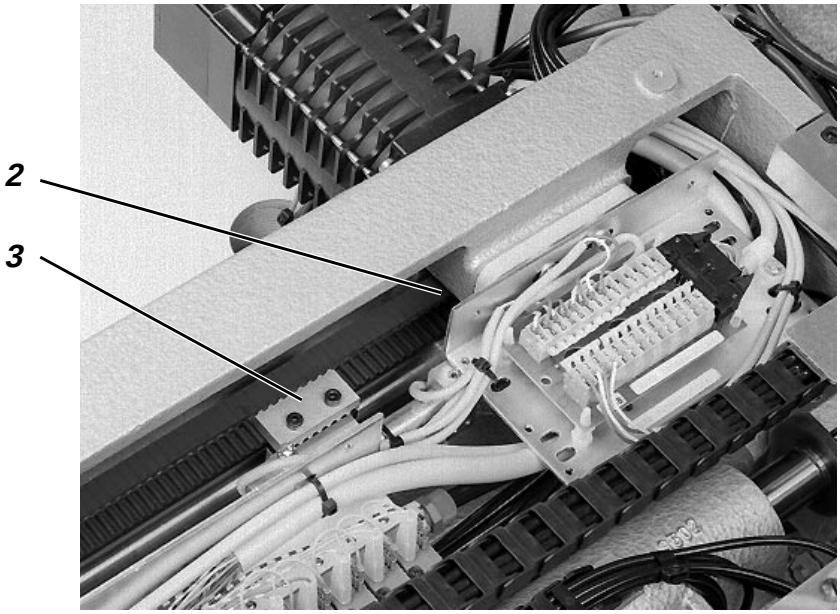
- Attach the test load in the center of the timing belt (e.g. with aid of a spring scale).
  The timing belt is correctly tensioned when the upper half of the belt just touches the lower half of the belt.

To correct:

- Correct the timing belt tension at the nut 1.
  The nut 1 has a self-locking thread.

2.5 Replacing the Timing Belt

For ease of replacement the timing belt is divided.
It is held together by the timing belt clamp 3.



Caution Risk of Injury !

Turn the main switch off.
Replace the timing belt only with the main switch turned off.

Removing the old timing belt

- Loosen the clamping screws on the timing belt clamp 3.
- Pull the timing belt out of the housing after loosening the timing belt clamp.

Inserting a new timing belt

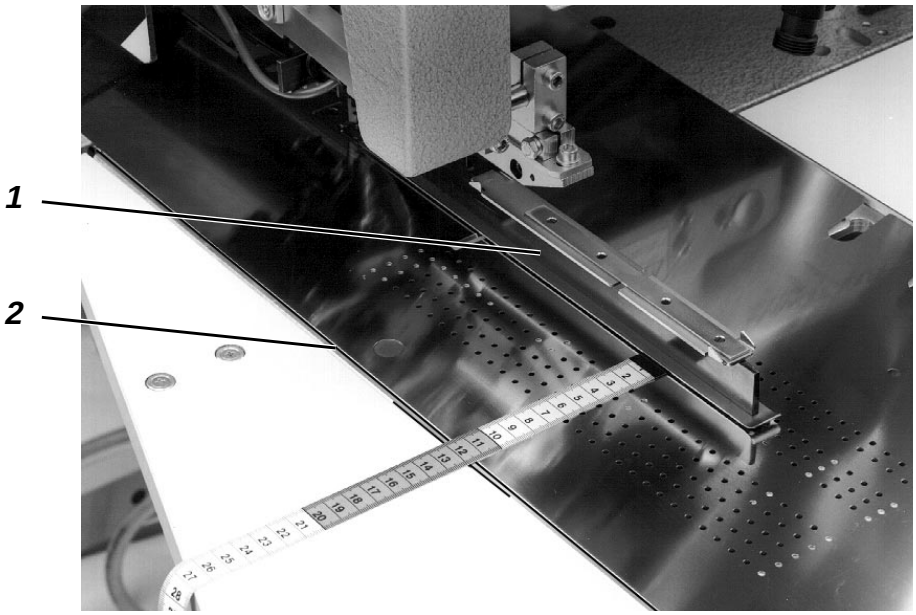
- Push one timing belt end through the opening 2 onto the timing belt pulley of the step motor and keep pushing until the end comes out of the opening again.
- To connect the two timing belt ends slacken the timing belt tension slightly at the nut 1.
- Connect the two timing belt ends with the timing belt clamp 3.
- Set the timing belt tension (see Chapter 2.4).

3. Cl. 745-28: Folder (Work Method A)

For the unimpeded transport of the material and a flawless working of the pocket opening, the folder and the cutting tools, as well as the marker lights, must be aligned to the center of the pocket opening. The incision of the center knife is seen as the center of the pocket opening.

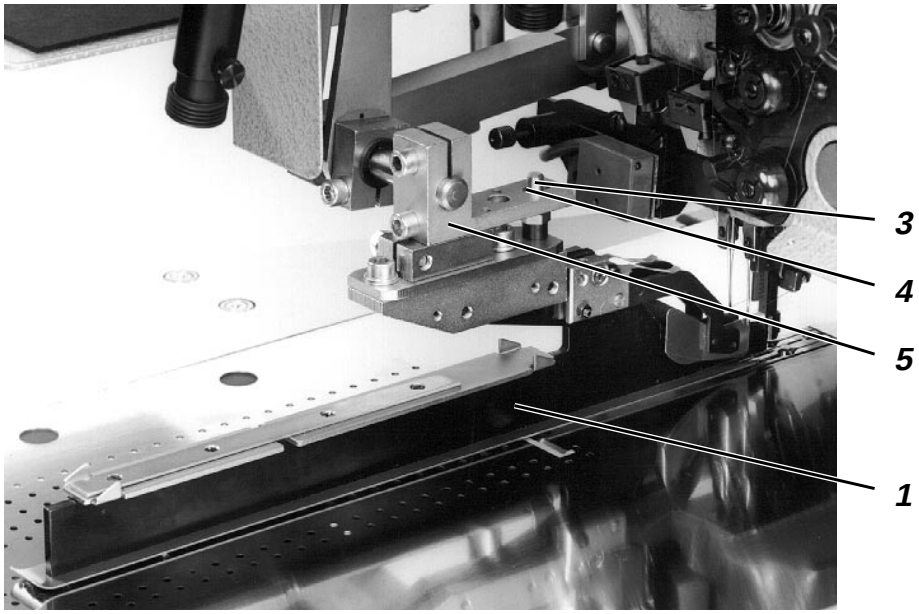
The reference line 2 was traced on the machine plate at the factory. It runs at a clearance of 125 mm parallel to the center of the pocket opening, that is, to the center knife incision.

With proper mounting, the folder can be aligned from the reference line to the center of the pocket opening.

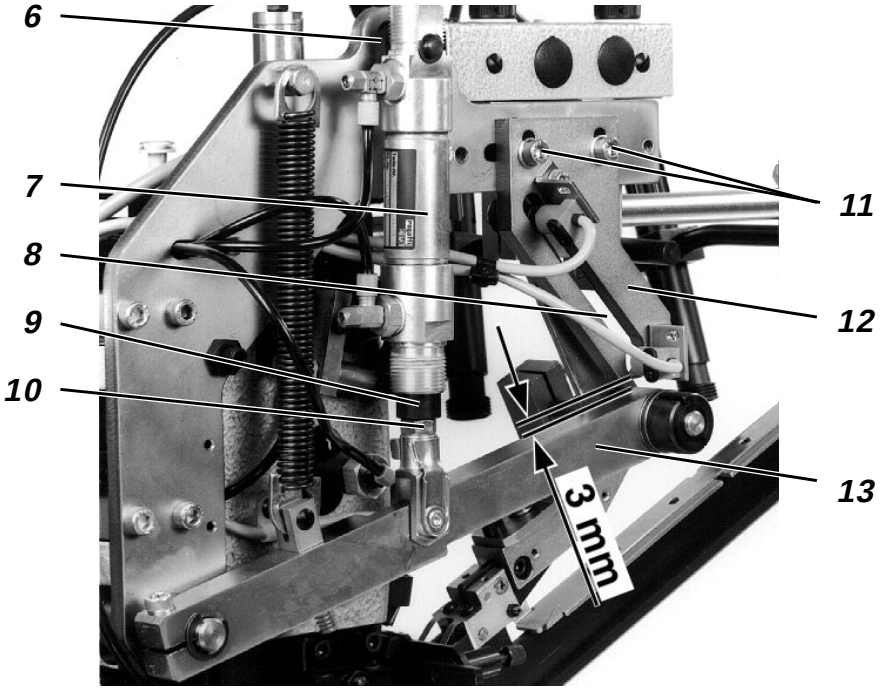


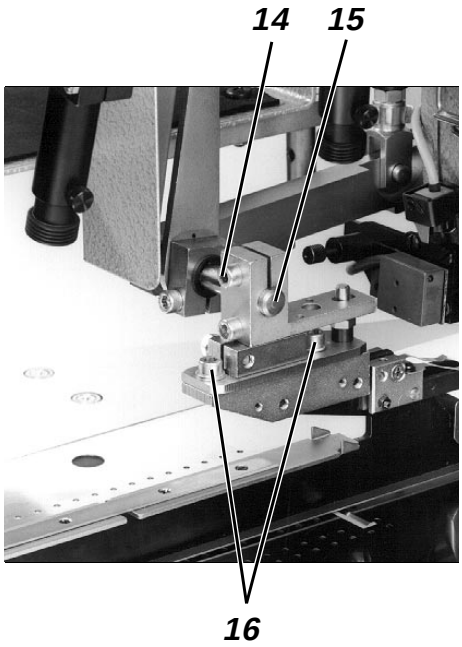
Proper mounting of the folder:

- The folder 1 is pushed up until touching on the clamping piece 5.
- The pin 3 catches in the slot 4.



3.1 Stroke Movement of the Folder





Caution Risk of Injury !

Turn the main switch off.
Set the stroke movement of the folder only with the main switch turned off.

With raised folder:

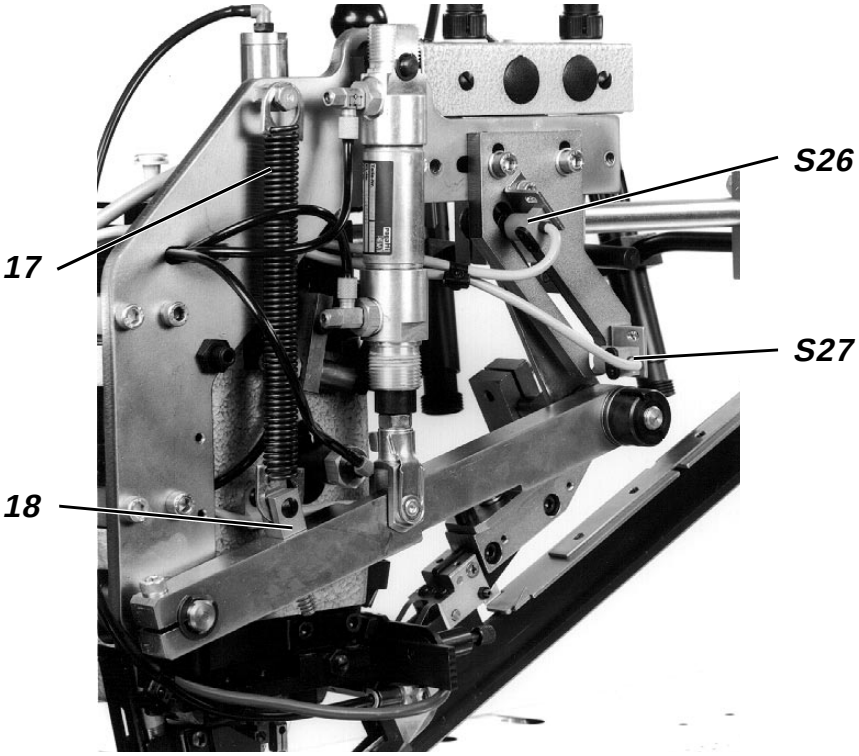
Between the lever 13 and the underside of the curve piece 12 there must be a safety clearance of 3 mm.

- Loosen nut 6.
- Set the mounting of the cylinder 7 higher or lower accordingly.
- Tighten nut 6.

With lowered folder:

The clearance between the folder sole and the cloth slider plate must be 1 mm along the whole length.

- Loosen nut 10.
- Set the clearance between the underside of the folder sole and the cloth slider plate by turning the piston rod of the cylinder 7.
- If the roller touches on the lowest point of the curve path 8:
  Loosen screws 11.
  Set the curve piece 12 lower.
- Loosen clamping screw 14.
- Turn the folder slightly on axle 15.
  There must be a uniform clearance between the folder sole and the cloth slider plate along the whole length.
- Tighten clamping screw 14 and nut 10.
- In the lowest position of the folder set the curve piece 12 as follows:
  There must be a clearance of 0.5 mm between the roller and the lowest point of the curve path 8.
- Tighten screws 11.



Setting the draw spring

Set the draw spring 17 so that only so much pressure (dead weight of the folder) is exerted on the material as is required for secure sewing. The draw spring should **not** pull the folder out of its lower position.

- Detach the draw spring 17.
- Set block 18.
  Turning in = Reduce pressure
  Turning out = Increase pressure
- Attach the draw spring 17 again.

Proximity switches S26 and S27

The proximity switches **S26** and **S27** monitor the two end positions of the folder.

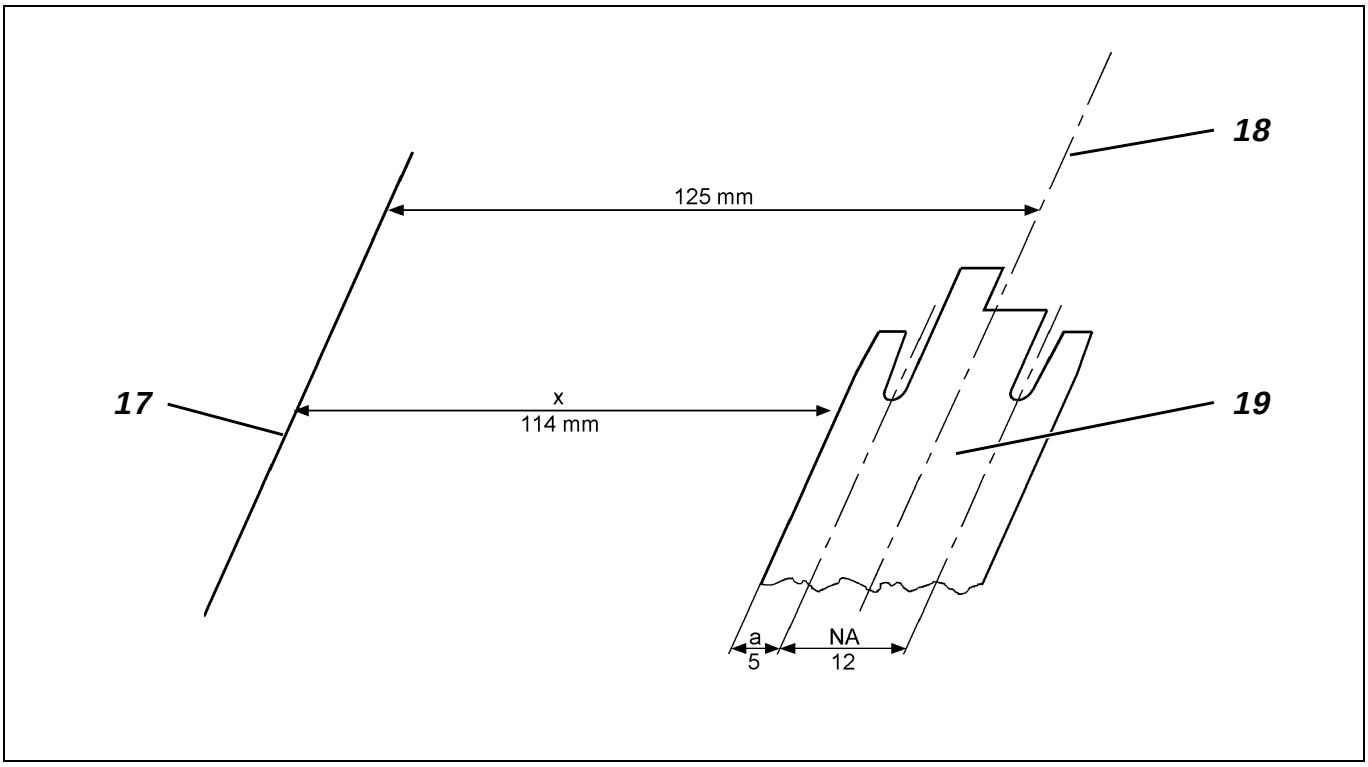
Switch **S26**: Monitoring the upper folder position
Switch **S27**: Monitoring the lower folder position

- Turn the main switch on.
- During the display of the DÜRKOPP-ADLER logo press function key **F3**.
  The display changes to the screen for the Multitest System.
  Activate the testing program **" Selecting Input Elements "**.
  The further operations are described in the **Short Description DAC** Chapter 6.4.4.
- Loosen the mounting screws on switch **S26** or **S27** slightly.
  Align switch **S26** or **S27** to the roller in the corresponding folder position.
  The display must show the switching status "**+**".
- Tighten the mounting screws of the switch again.
- To exit the setting program press function key **F1**.

3.2 Aligning the Folder to the Center of the Pocket Opening

With proper mounting the folder can be aligned from the reference line 17 to the center of the pocket opening.

Dependent on the width of the folder sole 19 the dimension **x** can be established. With the aid of this dimension the folder can be aligned to the center of the pocket opening 18 and parallel to the reference line 17.



– From the dimension 125 mm subtract the piping width a and half of the needle spacing NA.

  Example from the sketch:

  125 mm - a - 1/2 x NA = x
  125 mm - 5 mm - 1/2 x 12 mm = 114 mm

  Piping widths and needle spacings for other folders can be found in the Operating Instructions.

Caution Risk of Injury !

Turn the main switch off.
Align the folder to the center of the pocket opening only with the main switch turned off.

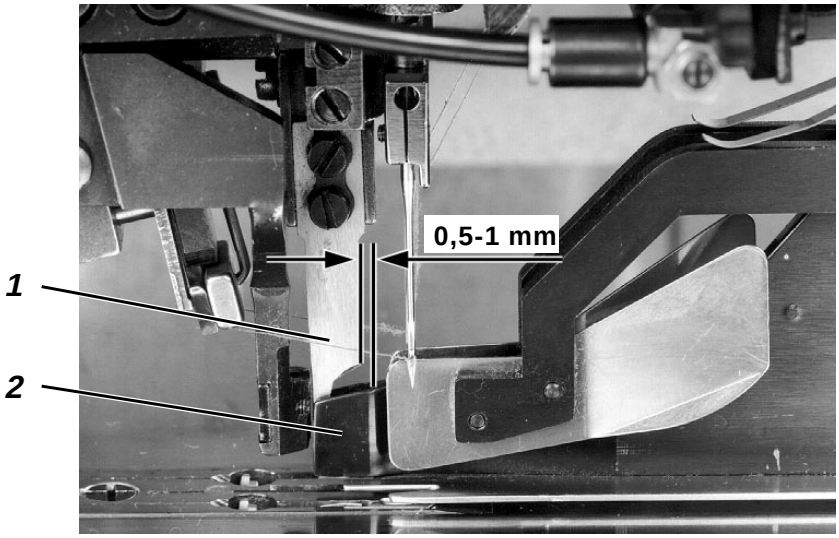
– Loosen screws 16 slightly.
– Align the folder sole parallel to the reference line 17 with the aid of a ruler.
– Tighten screws 16.

– Loosen clamping screw 14 slightly.
– Set the clearance **x** (in the example x = 114 mm) between the reference line 17 and the left edge of the folder sole 19.
  Move the folder to the side for this.
– Tighten clamping screw 14.

3.3 Position of the Folder to the Needles and the Center Knife

With a properly mounted folder the following positions must exist:

- In the most forward position the needles must enter into the needle holes on the folder sole unimpaired (without being deflected).
- When the center knife 1 enters the knife guard 2 in the most forward position, there must still be a clearance of 0.5 to 1 mm between the forward edge of the knife and the knife guard.



Caution Risk of Injury !

Turn the main switch off.
Align the folder to the needles and the center knife only with the main switch turned off.

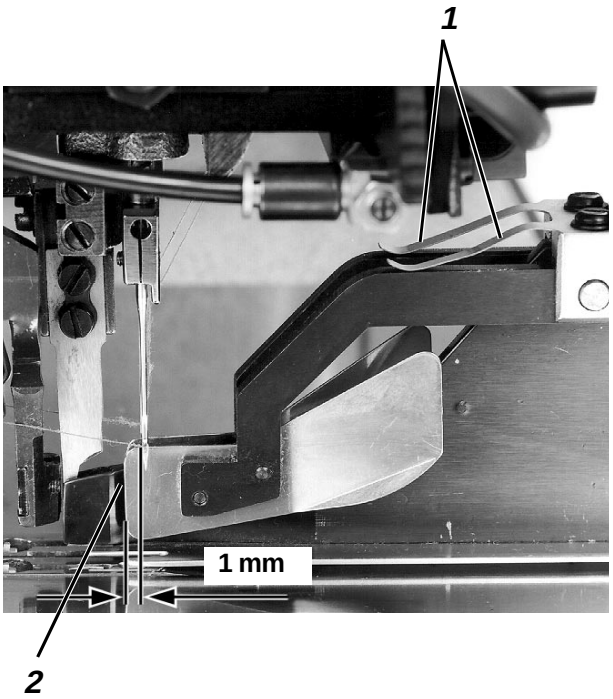
To correct:

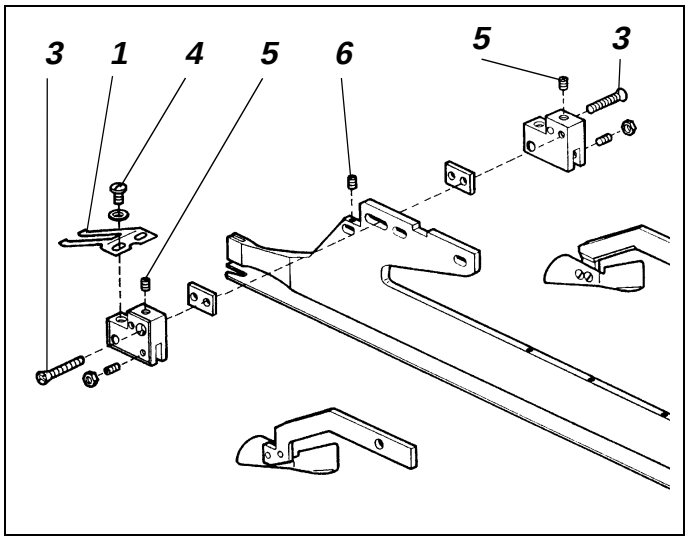
- Loosen screws 3 slightly.
- Slide the folder in the direction of transport.
- Tighten screws 3 again.

3.4 Guide Plates on the Folder

With the needle bar link in the most forward position the edges 2 of the guide plates must extend approx. 1 mm to the back beyond the needles.

The leaf springs 1 hold the guide plates down on the folder sole with a slight pressure.
The pressure must be so calulated that the spring-mounted guide plates can be easily raised by the entering piping strip or flap.





Caution Risk of Injury !

Turn the main switch off.
Correct the guide plates only with the main switch turned off.

- Loosen screws 3 (2-off).
- Loosen set screw 6.
- Set the guide plates in the lengthwise direction.
  In the forward needle position the edges 2 of the guide plates must extend approx. 1 mm to the back beyond the needles.
- Tighten set screw 6.
- Set the set screw 5 (2-off).
  The lower edges of the guide plates should be approx. 1 to 2 mm above the cloth slider plate.
- Tighten screws 3 (2-off).

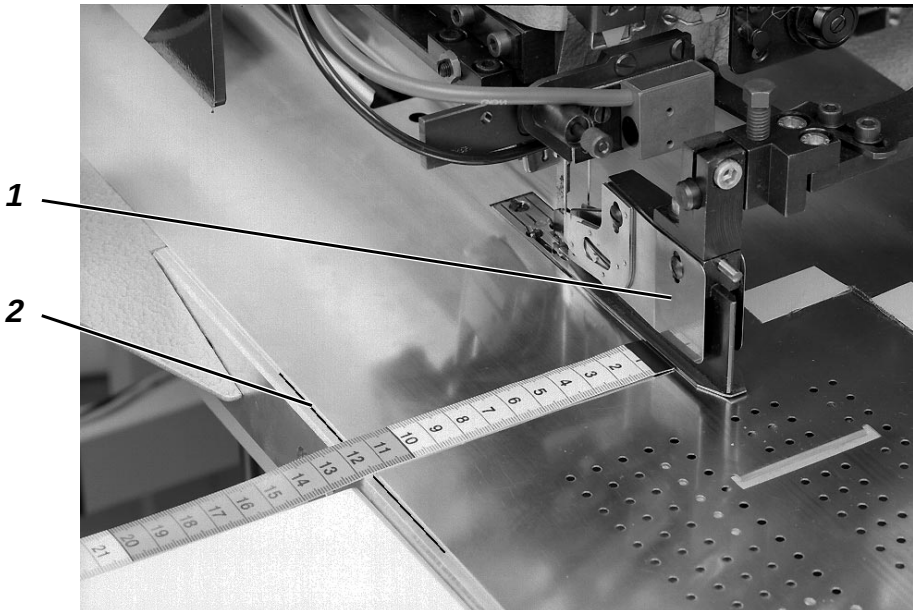
- Loosen screws 4 (2-off).
- Set the pressure by aligning the leaf springs 1.
- Tighten screws 4 (2-off).

4. Cl. 745-26 u. -28: Folder and Gripping Folder (Work Method B,D,F)

For the unimpeded transport of the material and a flawless working of the pocket opening, the folder and the cutting tools, as well as the marker lights, must be aligned to the center of the pocket opening. The incision of the center knife is seen as the center of the pocket opening.

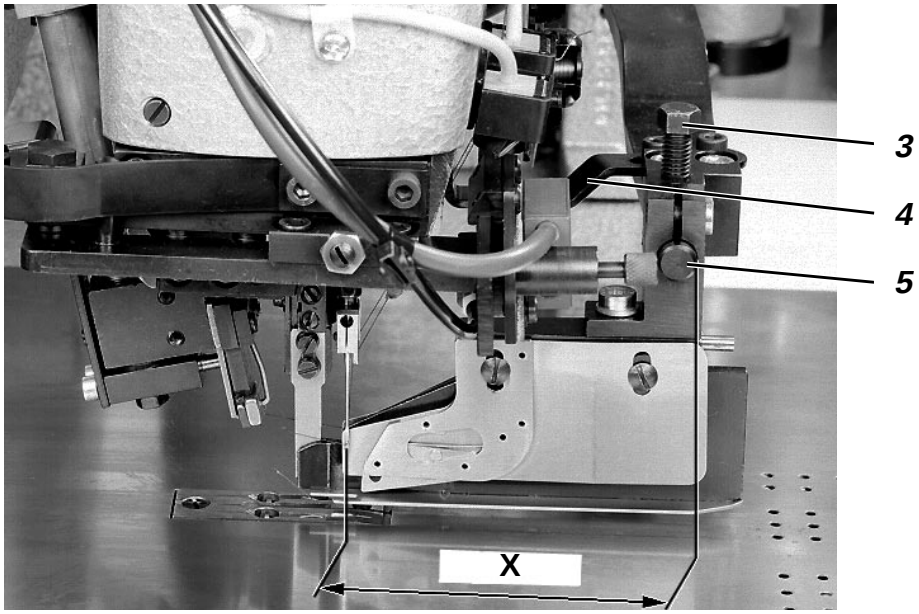
The reference line 2 was traced on the machine plate at the factory. It runs at a clearance of 125 mm parallel to the center of the pocket opening, that is, to the center knife incision.

With proper mounting, the folder 1 can be aligned from the reference line to the center of the pocket opening.

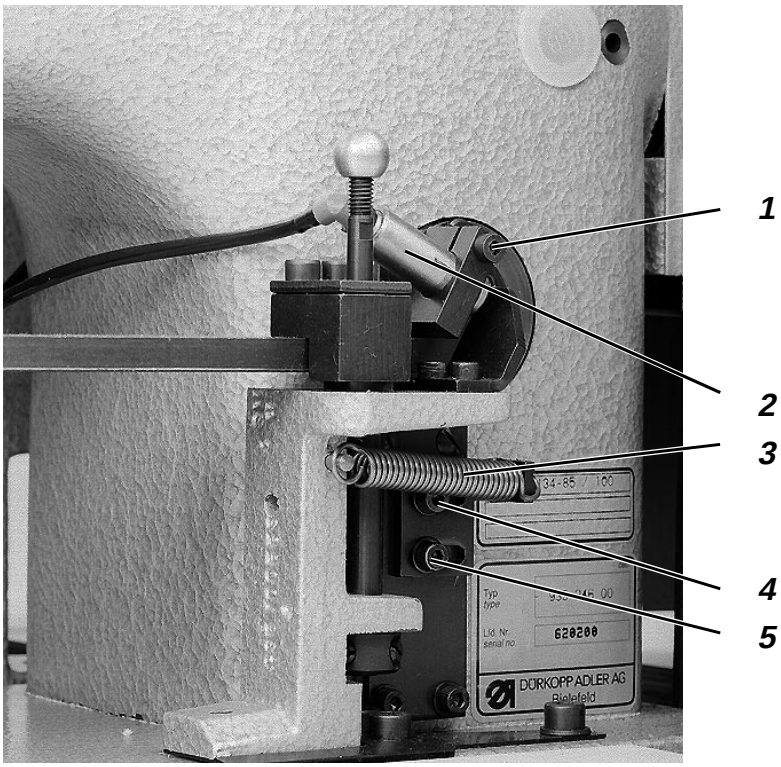


Proper mounting of the folder:

– Tighten mounting screw 3.
  This results in the setting made at the factory.
  The clearance from the stud 5 to the forward-lying needles should be 88 mm for the work method B and D and 74 mm for the work method F.
  The angle support 4 should touch the arm head and secure the position of the folder during the transport procedure.



4.1 Stroke Movement of the Folder



Caution Risk of Injury !

Set the stroke movement of the folder only with the main switch turned off.
Check the setting with the sewing machine turned on only while exercising the greatest possible caution.

The raising of the folder serves for the unimpaired positioning of the sewing piece.

- Loosen screw 1.
- Set cylinder 2.
  With the sewing machine turned on the folder should be raised approx. 6 mm.
- Tighten screw 1.

ATTENTION !

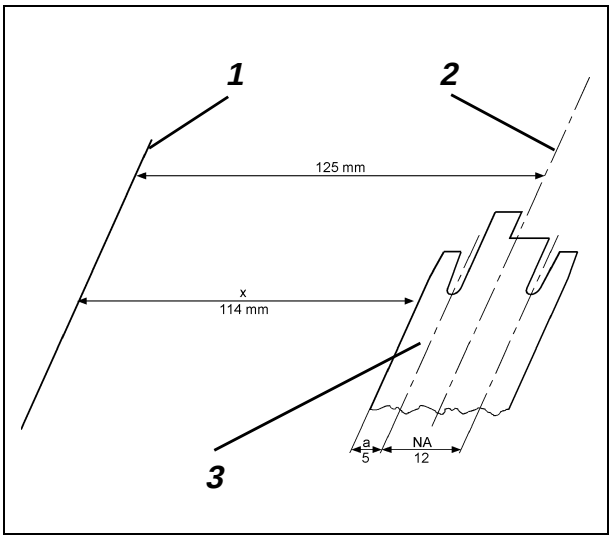
The folder may **not** be raised more than 6 mm.
The knife point which would otherwise show out of the folder sole can damage the material during positioning.

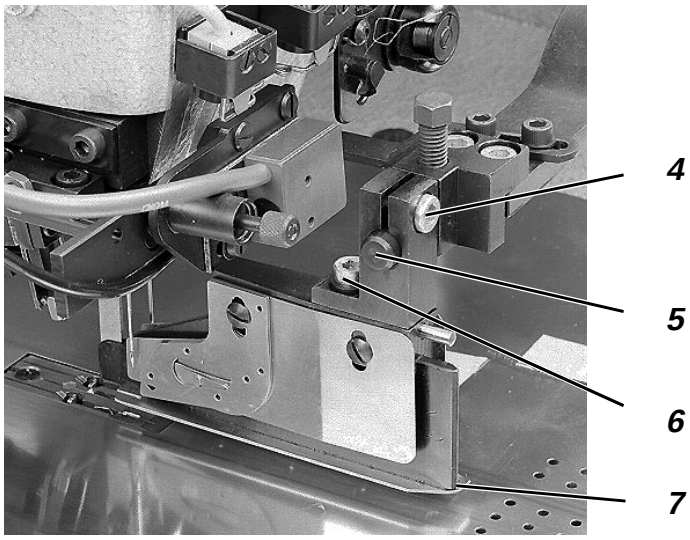
- Loosen screws 4 and 5.
- Tension the draw spring 3.
  The folder should lay on relieved, but exert no pressure on the material.
- Tighten screws 4 and 5.

4.2 Aligning the Folder to the Center of the Pocket Opening

With proper mounting the folder can be aligned from the reference line 1 to the center of the pocket opening.

Dependent on the width of the folder sole 3 the dimension **x** can be established. With the aid of this dimension the folder can be aligned to the center of the pocket opening 2 and parallel to the reference line 1.





– From the dimension 125 mm subtract the piping width a and half of the needle spacing NA.

  Example from the sketch:

  125 mm - a - 1/2 x NA = x
  125 mm - 5 mm - 1/2 x 12 mm = 114 mm

  Piping widths and needle spacings for other folders can be found in the Operating Instructions.

Caution Risk of Injury !

Turn the main switch off.
Align the folder to the center of the pocket opening only with the main switch turned off.

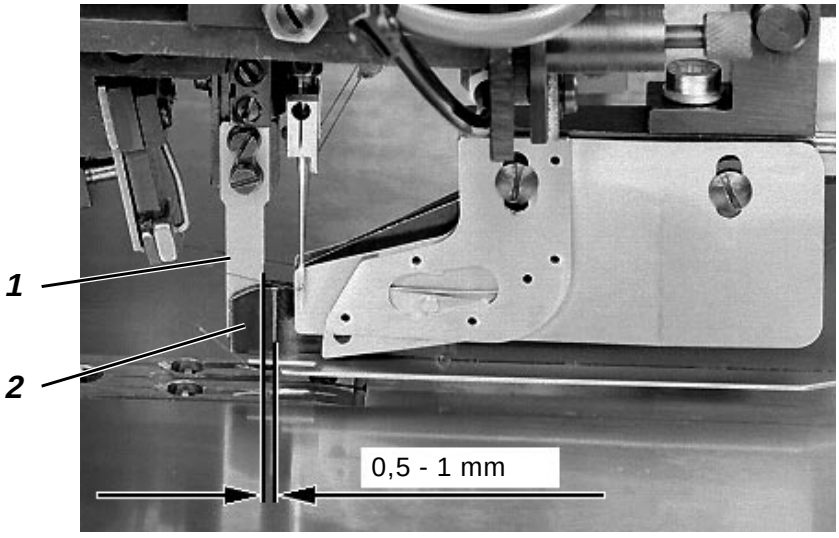
– Loosen screw 6 slightly.
– Align the folder sole parallel to the reference line 1 with the aid of a ruler.
– Tighten screw 6.

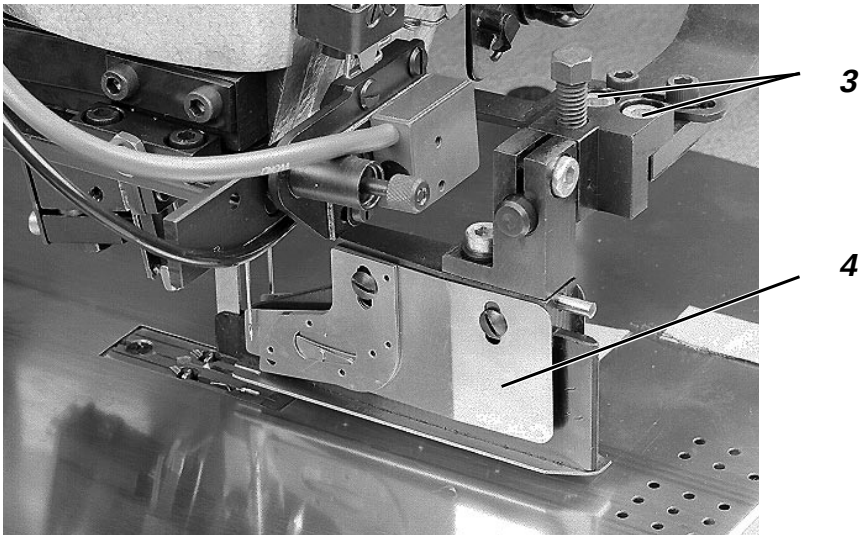
– Loosen screw 4 slightly.
– Set the clearance **x** (in the example x = 114 mm) between the reference line 1 and the left edge of the folder sole 3.
– Turn the folder a little on stud 5.
  There should be a clearance of 0.5 mm between the sole point 7 and the cloth slider plate when it lays onto the needle plate in the sewing area. This eases the in-feed of the material.
– Tighten screw 4.

4.3 Position of the Folder to the Needles and the Center Knife

With a properly mounted folder the following positions must exist:

- In the most forward position the needles must enter into the needle holes on the folder sole unimpaired (without being deflected).
- When the center knife 1 enters the knife guard 2 in the most forward position, there must still be a clearance of 0.5 to 1 mm between the forward edge of the knife and the knife guard.





Caution Risk of Injury !

Turn the main switch off.
Align the folder to the needles and the center knife only with the main switch turned off.

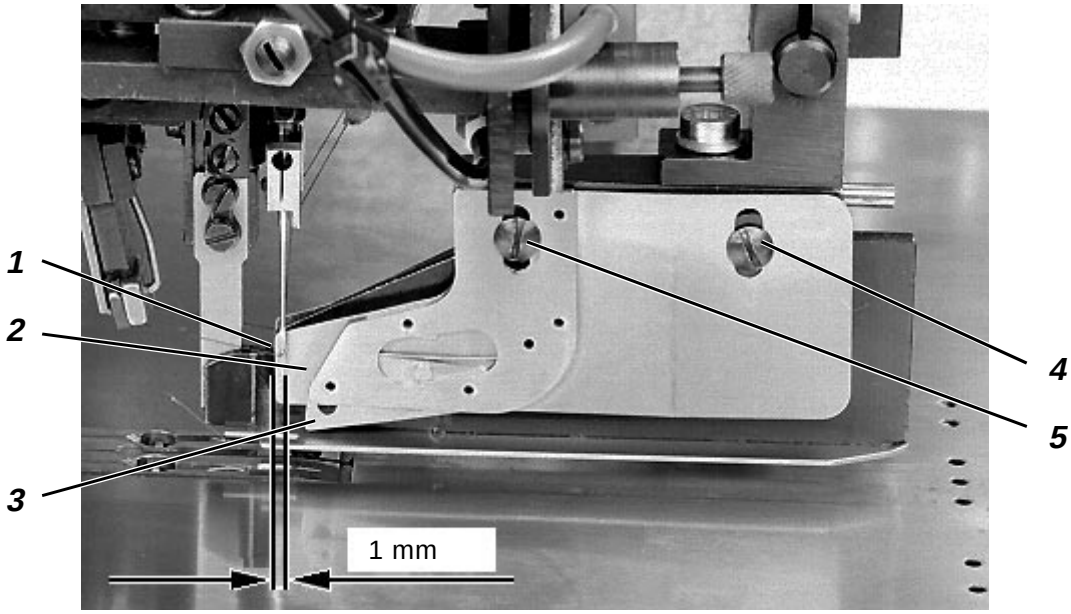
To correct:

- Loosen screws 3 slightly.
- Slide folder 4 in the direction of transport.
- Tighten screws 3 again.

4.4 Guide Plates on the Folder

With the needle bar link in the most forward position the edges 1 of the guide plates must extend approx. 1 mm to the back beyond the needles.

Depending on the material thickness and whether the flap is to be positioned right or left, the height of the guide plates 2 is to be set so that the spring-mounted holder 3 can easily be lifted by the material.



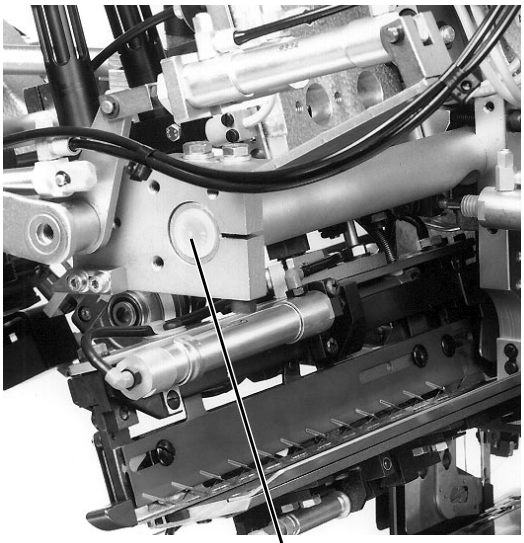
Caution Risk of Injury !

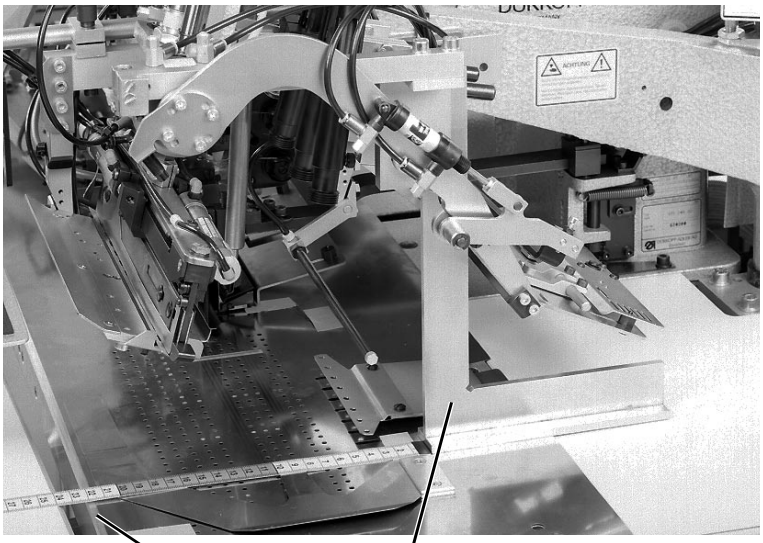
Turn the main switch off.
Set the guide plates only with the main switch turned off.

- Loosen screw 4 and 5.
- Set the guide plates 1.
- Tighten screw 4 and 5 again.

4.5 Support Axle

Prerequisite for the setting of the piping support, gripping folder and marker lights is the parallel positioning of the support axle 1 to the reference line 2.





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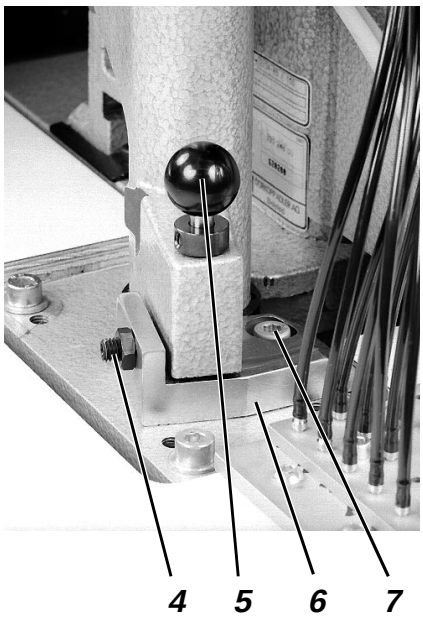
Caution Risk of Injury !

Turn the main switch off.
Set the support axle only with the main switch turned off.



4 *5* *6* *7*

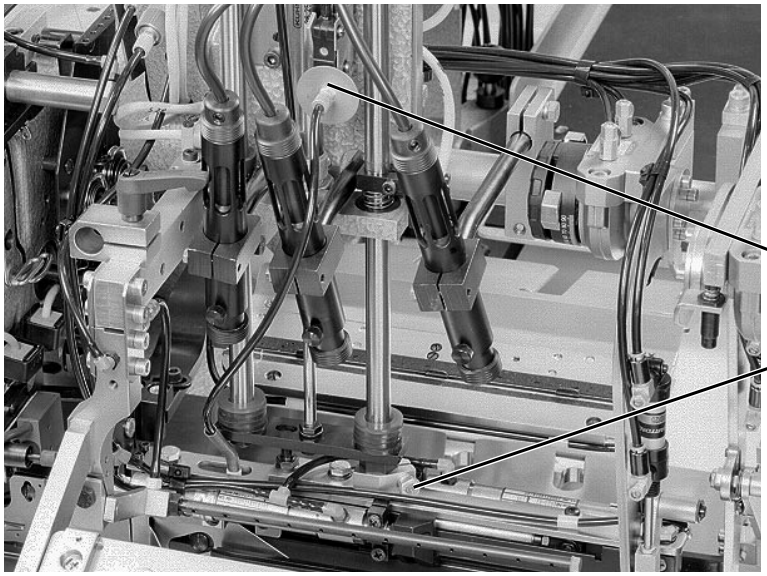
- Set the stopper screw 4.
  With the folding station swung in, the ball knob 5 should catch securely with its arresting pin.
- Check the parallelity of the support axle 1.
  Move the stopper angle 3 onto the the support axle at the front and back and check the dimension to the reference line 2.
  If the dimensions are not the same, then the folding station must be aligned again.
- Loosen screws 7 (2-off).
- Align the folding station with support axle 1 again by moving the block 6.
- Tighten screws 7 (2-off) again.

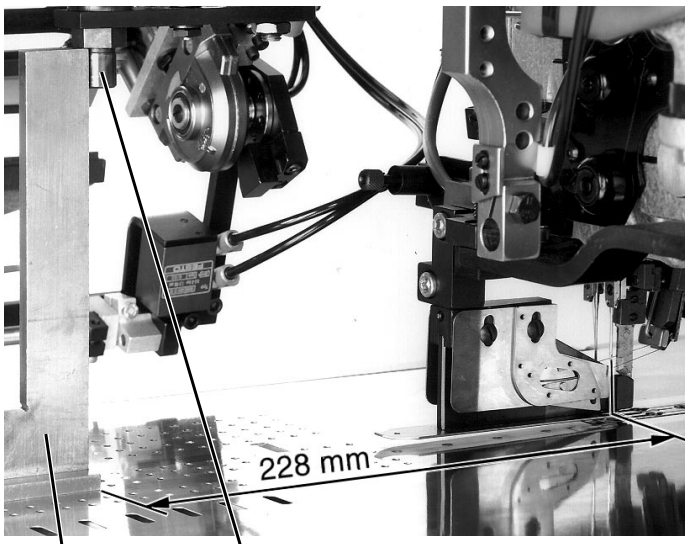
ATTENTION !

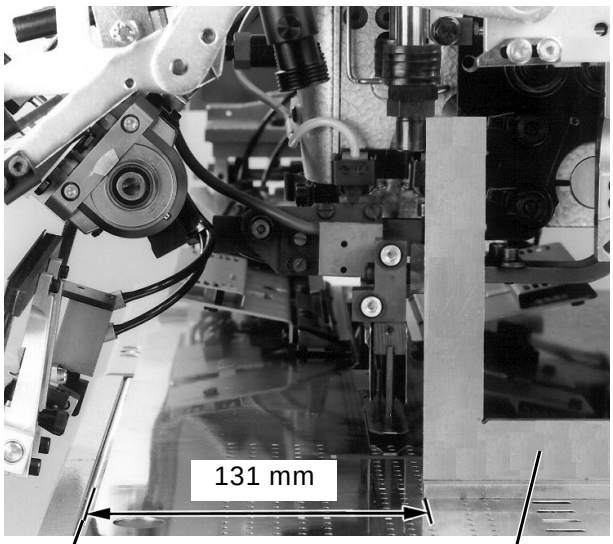
If the support axle was realigned, then the gripping folder, piping seat and the marker lights must also be set again.

4.6 Seat for the Gripping Folder

After the sideways swinging in to the center of the pocket opening the clearance from the seating pin 4 to the forward-lying needles should be 228 mm and the sideways clearance to the reference line 131 mm.

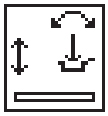




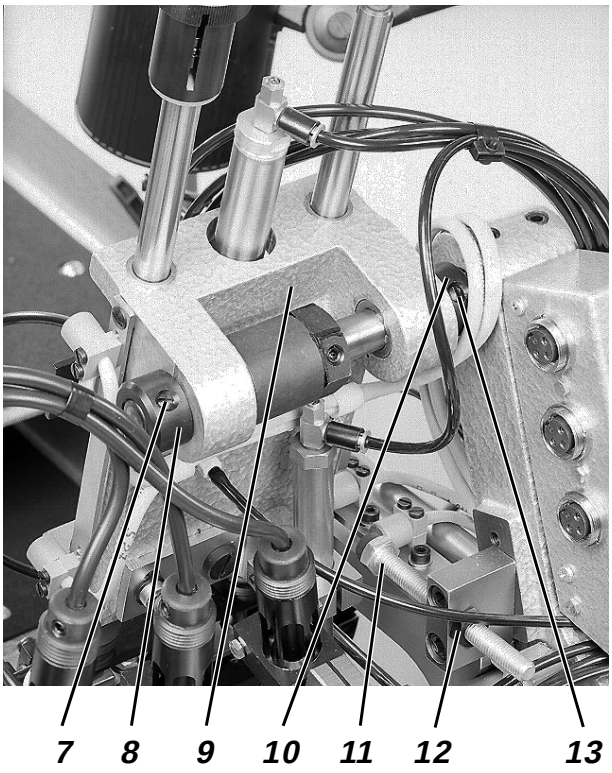


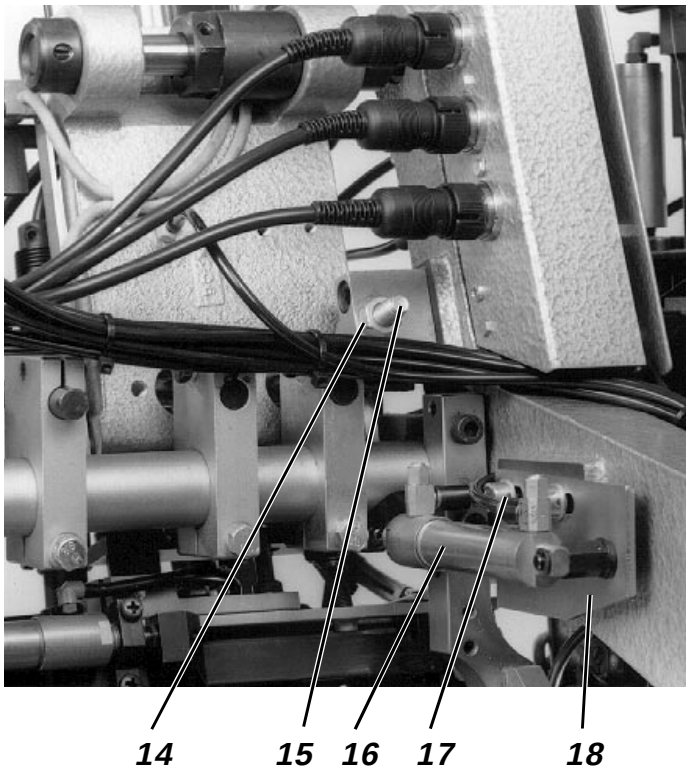
Caution Risk of Injury !

Turn the main switch off.
Set the gripping folder only with the main switch turned off.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.



- Pull out hose coupling 1.
- Loosen screw 2 and remove the gripping folder.
  The replacement of the gripping folder may only occur through the loosening of the clamping screw 2 !
- Turn the main switch on !
  Activate the setting program **" Checking the Gripping Folder without Transport Clamp "**. Press the **F3** key.
  The seat swings into the vertical.





Position the seat in the direction of sewing

- Loosen screws 7 and 13.
- Move the bracket 9 on the axle.
  The clearance between stopper angle 3 and the forward-lying needles is 228 mm.
- Move the set collars 8 and 10 onto the bracket 9.
- Tighten screws 7 and 13 again.

Setting with the piping seat at the left

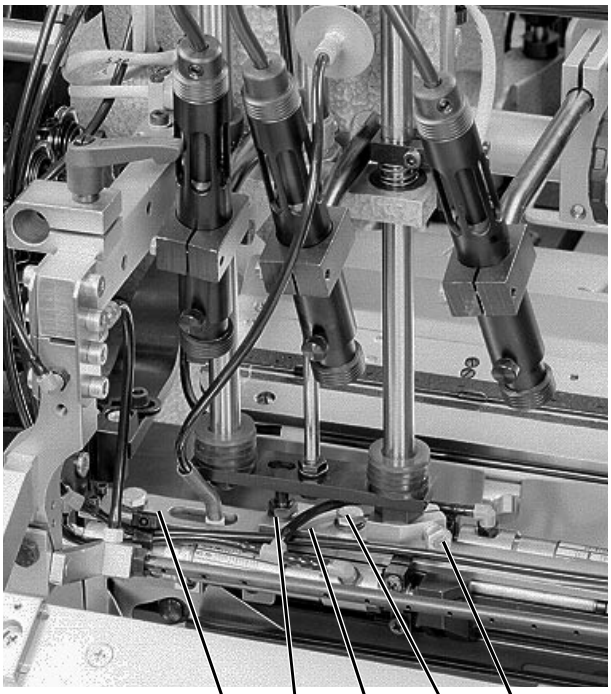
The cylinder 16 is in the forward position on the plate 18 (piston rod retracted).

- Loosen lock nut 12.
- Set the stopper screw 11.
  The clearance between stopper angle 6 and the reference line 5 is 131 mm.
- Tighten lock nut 12 again.

Setting with the piping seat at the right

The cylinder 16 is in the rear position on the plate 18 (piston rod extended).

- Loosen screws 17 (2-off).
- Set the plate 18 with cylinder 16.
  The clearance between stopper angle 6 and the reference line 5 is 131 mm.
- Tighten screws 17 (2-off) again.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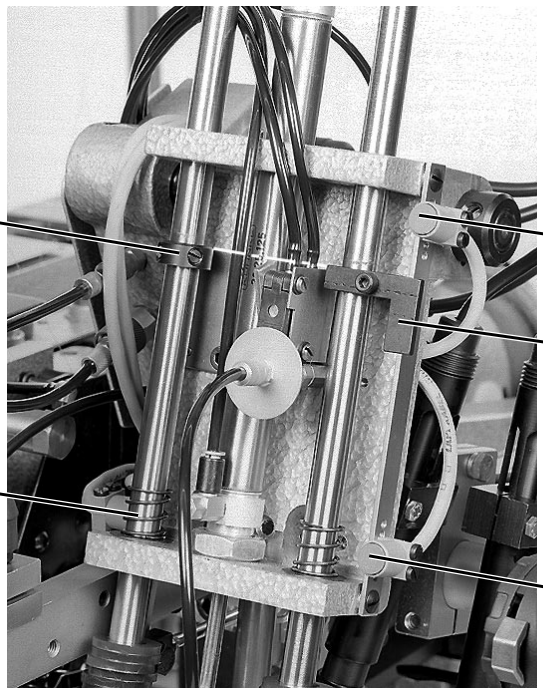
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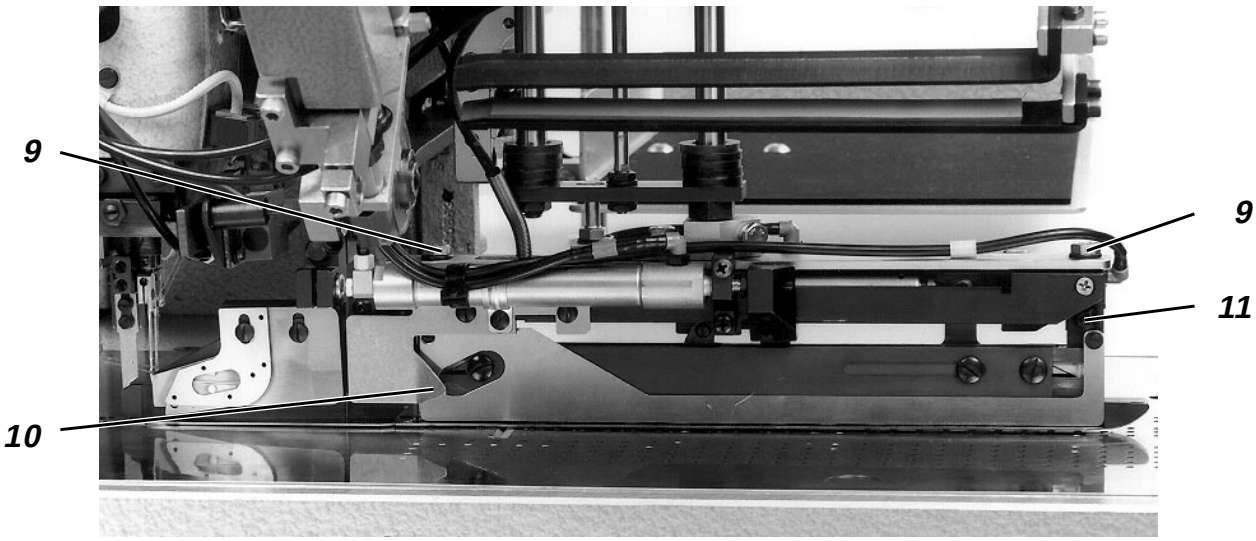
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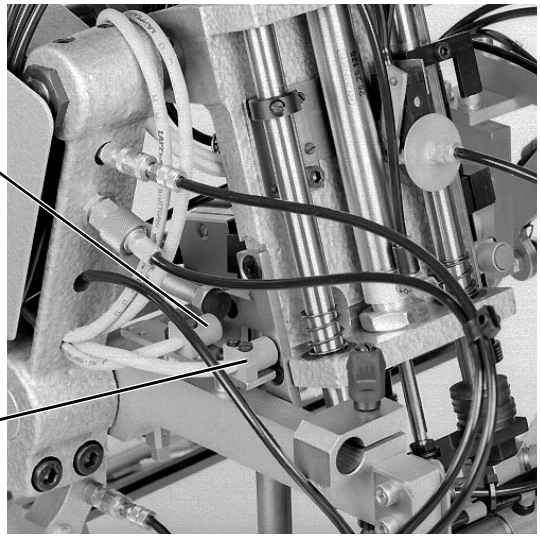
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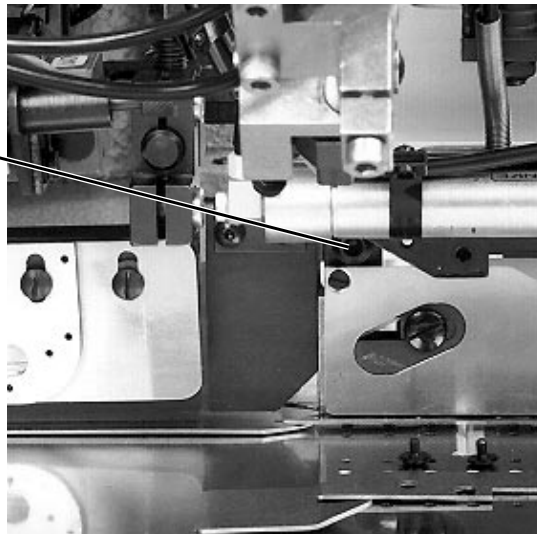
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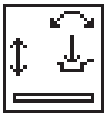
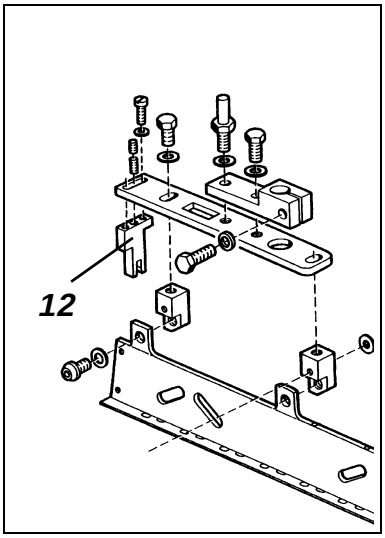
Aligning the gripping folder

– Push the gripping folder until it lays onto the seating pin 2.
– Tighten screw 5.



– Turn the main switch on !
Activate the setting program **" Checking the Gripping Folder without Transport Clamp "**. Press the **F3** key.
The gripping folder swings into the vertical position and lowers onto the cloth slider plate.



– Loosen screws 2 and 4.
– Set the clamping piece 3 and the small rail 1 parallel to each other.
– Tighten screws 2 and 4 again.
– Remove the guide plate 10 and loosen the screws 11 (2-off).
The 2nd screw 11 is to be found forward under the guide plate 10.
– Press down on the gripping folder until it lays onto the cloth slider plate flat.
– Tighten screws 11 and attach the guide plate 10 again.

– Loosen screws 9 (2-off).
– Align the folder sole to the center of the pocket opening.
(see Chapter 4.2)
– Tighten screws 9 (2-off) again.
– Check if the ridge of the folder catches unimpaired in the groove of the gripping folder.
– For correction, slide the forked piece 12 sideways after loosening the mounting screws.

When pressure-free the lowered gripping folder should be raised approx. 2 mm by the spring 7.

– For correction, set the height of the set collar 6 accordingly after loosening the clamping screws.
– Set the switching rocker 8 to the same height as the set collar 6 after loosening the clamping screw.

The clearance between the surface of the switching rocker 8 and the switches should be approx. 0.3 mm.

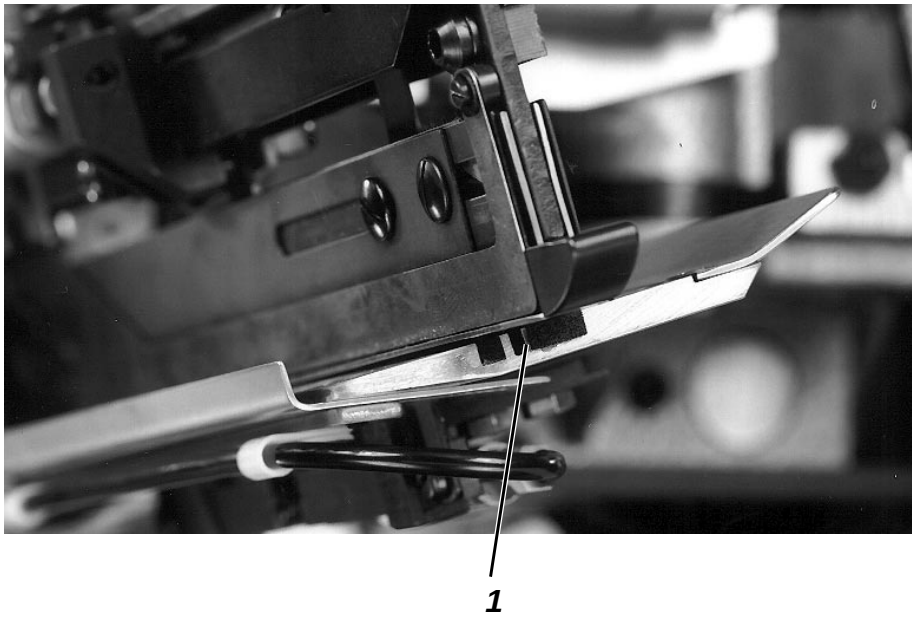
– Turn the switching rocker 8 accordingly after loosening the clamping screw.

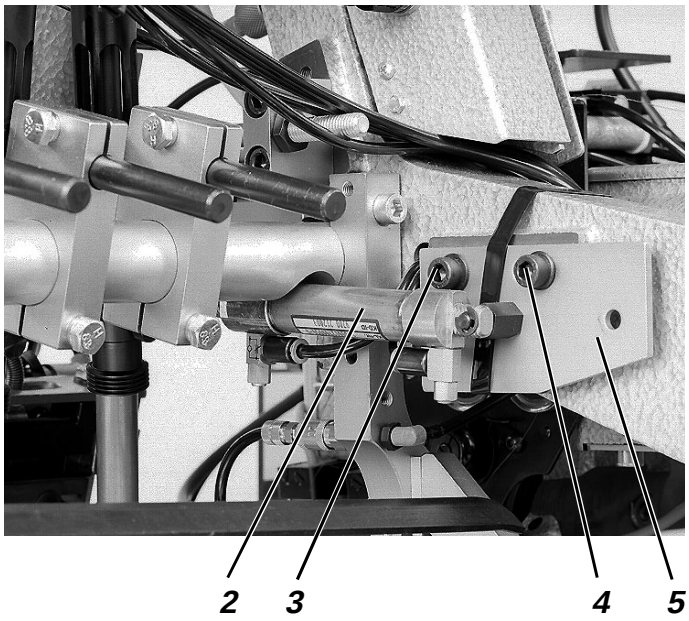
Proximity switches S26, S27 and S28, S29

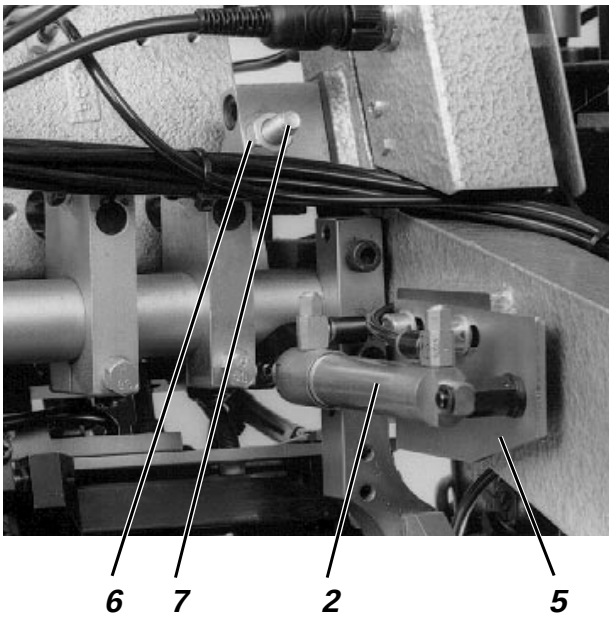
The proximity switches **S26** and **S27** monitor the position of the gripping folder. The proximity switches **S28** and **S29** monitor the setting of the gripping folder.

Switch **S26**: Gripping folder up
Switch **S27**: Gripping folder down
Switch **S28**: Gripping folder swung
Switch **S29**: Gripping folder vertical

– Turn the main switch on !
Activate the testing program **" Selecting Input Elements "**.
The further operations are described in the **Short Description DAC** Chapter 6.4.4.
– The clearance between the switching surfaces and the switches should be approx. 0.3 mm.
– Press the **F1** key.
This exits the setting program.







Gripper needle rows

With dual piping, when the gripping folder lowers onto the placing table, both gripper needle rows should enter at the same clearance right and left of the central ridge 1.

Setting with the piping seat at the left

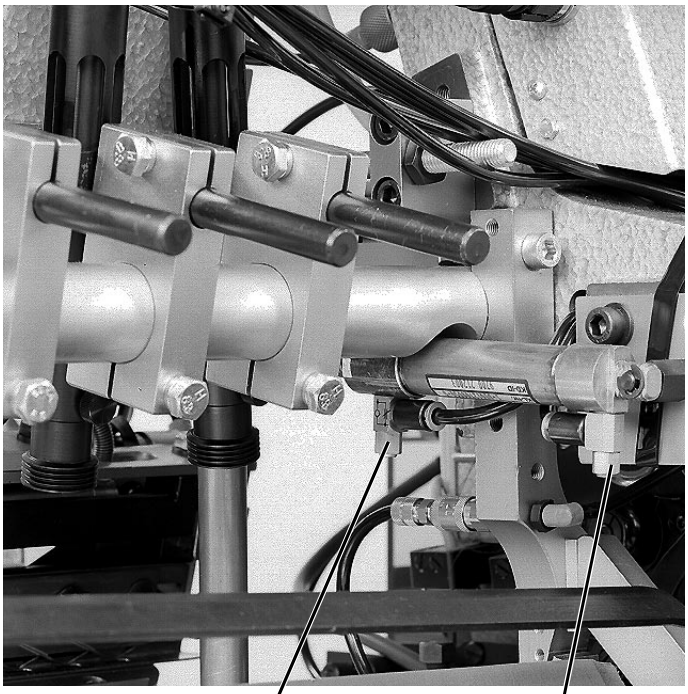
The cylinder 2 is in the forward position on the plate 5.

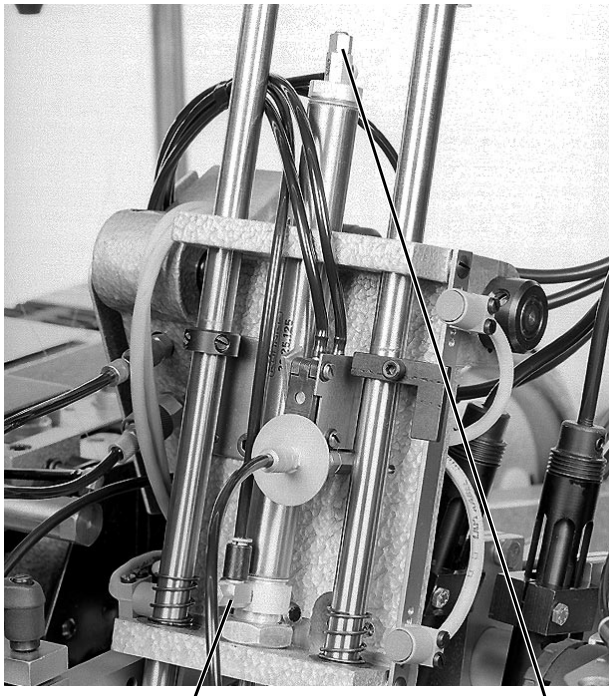
- Loosen screws 3 and 4.
- Set plate 5 with cylinder 2.
- Tighten screws 3 and 4 again.

Setting with the piping seat at the right

The cylinder 2 is in the rear position on the plate 5.

- Loosen lock nut 6.
- Set stopper screw 7.
- Tighten lock nut 6 again.





Motion

The movements, raising, lowering, swinging in and out of the gripping folder, should occur rapidly but not jerky.

– Set throttles 1, 2, 3 and 4 accordingly.

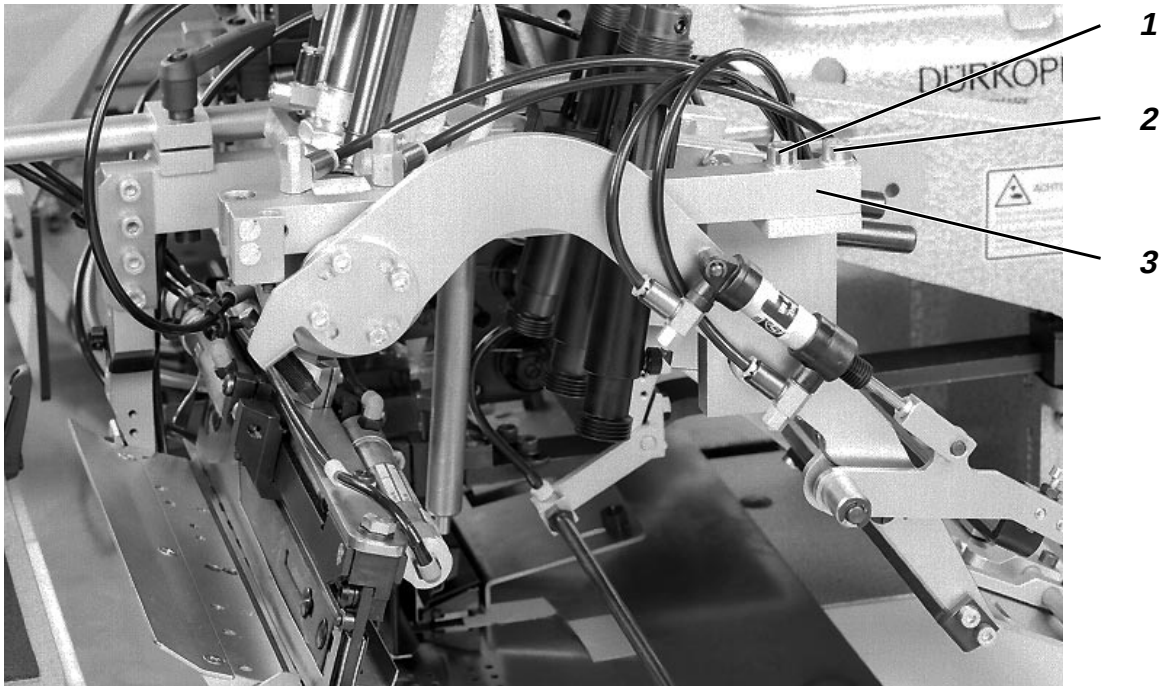
5. Cl. 745-26 u. -28: Transfer Devices for Work Method B / C

The transfer device is avaiable in 4 executions:

Transfer device right 180 mm	0794 004261
Transfer device left 180 mm	0794 004241
Transfer device right and left 180 mm	0794 004281
Transfer device right and left 220 mm	0794 004291

The flap nippers should transport the flap unimpaired under the open flap clamp up to the front of the gripping folder.

In the following the setting for the transfer device at the right is described.

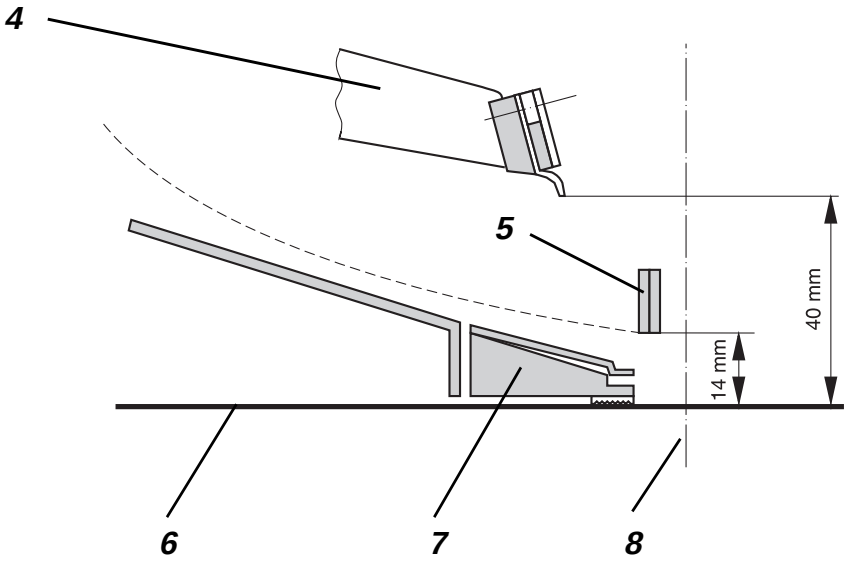


Caution Risk of Injury !

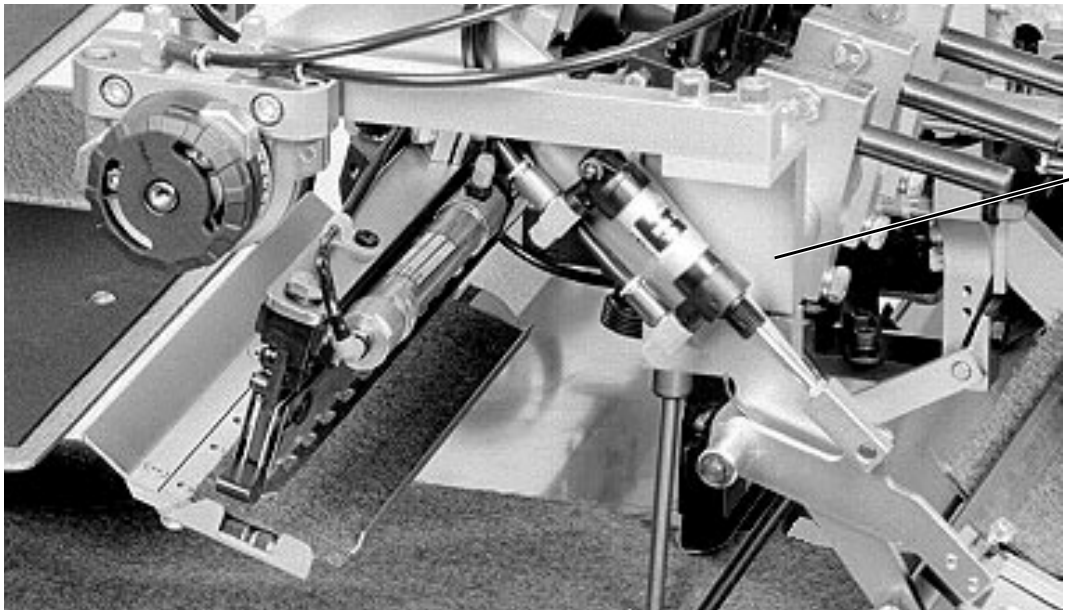
Turn the main switch off.
Set the transfer device only with the main switch turned off.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.

Aligning the flap nippers to the folder

- Loosen screws 1 and 2.
- Align bracket 3 with the slewing device parallel to the gripping folder.
- Tighten screws 1 and 2 again.

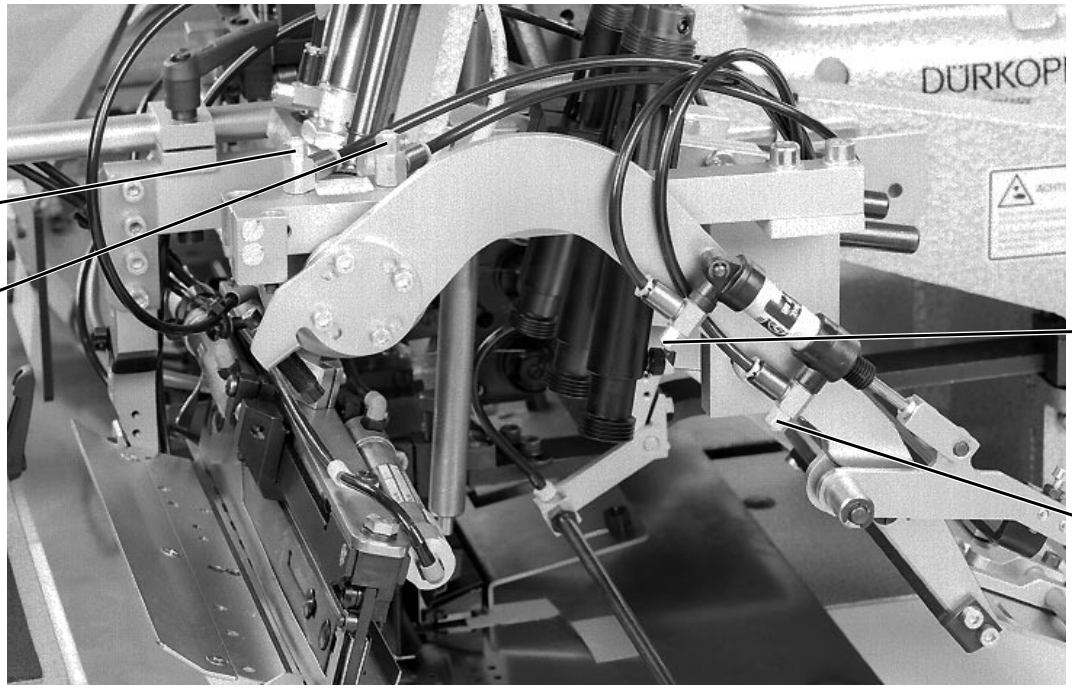


4 : Flap clamp left
5 : Clamps of the flap nippers (feed device)
6 : Slider plate
7 : Transport clamp
8 : Center of the pocket opening



Aligning the flap nippers to the slider plate

- Loosen the clamping screw on the bracket 9.
- Swing bracket 9.
  The clearance between the lower edges of the flap nippers 5 and the slider plate 6 is 14 mm.
- Tighten the clamping screw on the bracket 9 again.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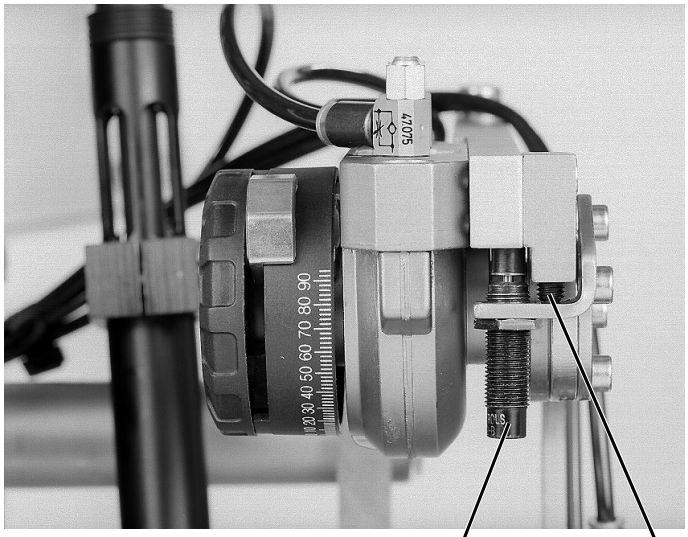
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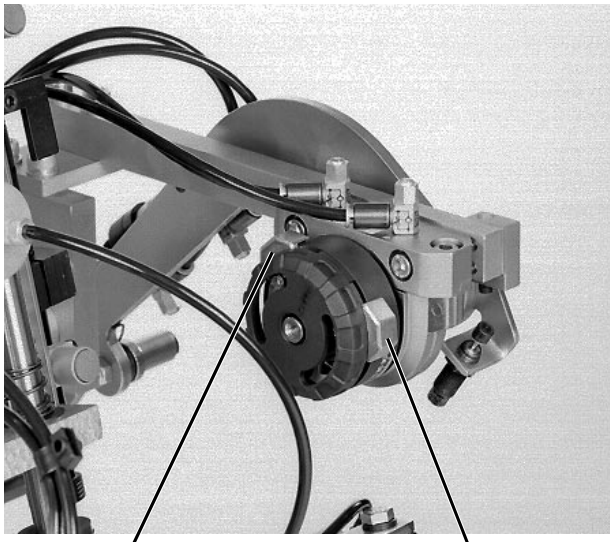
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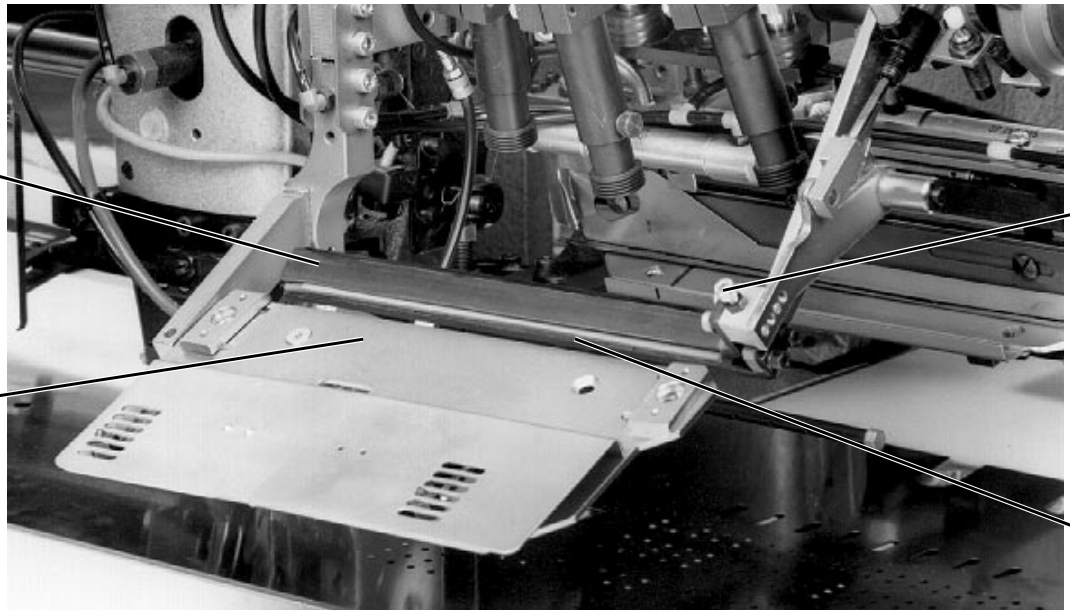
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Setting the swing cylinder

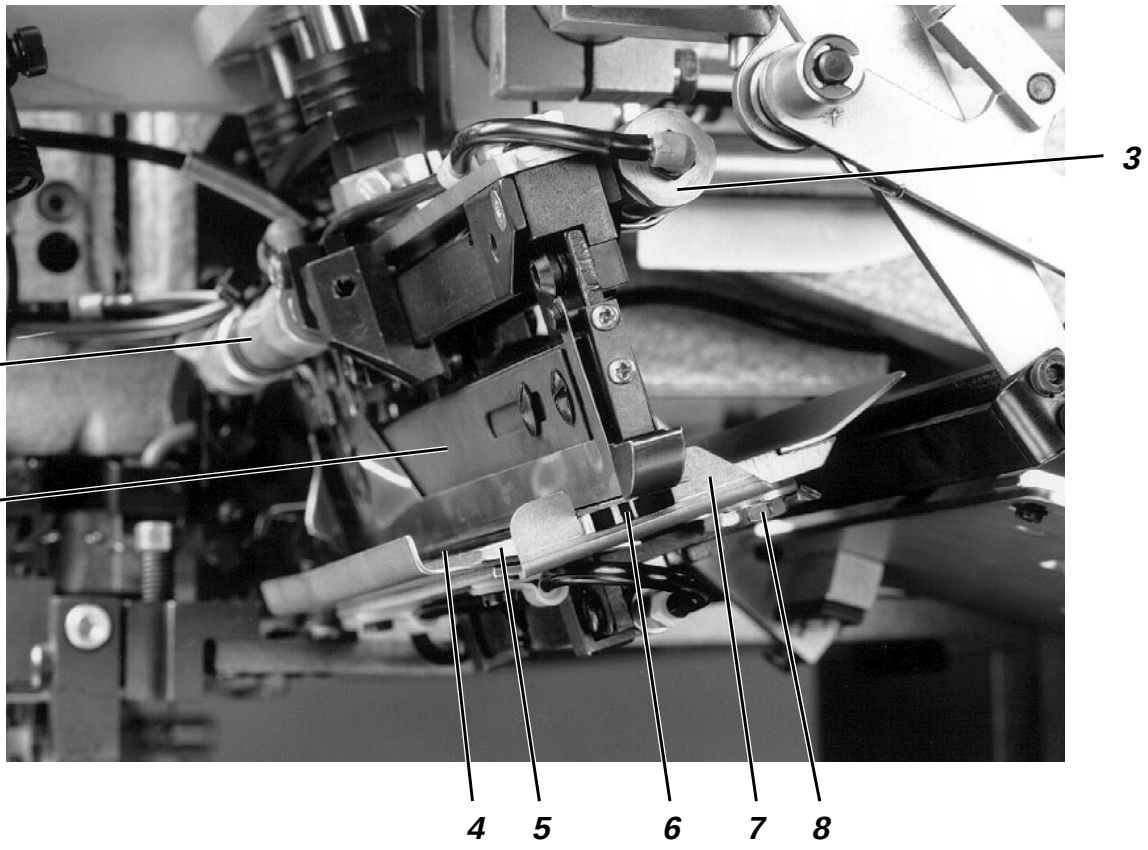
– Set the stop 8 to max. swing movement.
– Set stopper screw 6.
  The fixed leg 12 of the flap nippers should not strike the gripping folder.
– Set stop 7.
  The fixed leg 12 should lie approx. 2 mm below the placement table 10.
– Set the shock absorber 5.
  When swung in the shock absorber should lie approx. 1 to 2 mm in front of its stop.

Setting the flap nippers

– Align leg 12.
  For a uniform clamping the tip of the moveable leg 9 should make contact with the fixed leg first.
– Set the clamping force with the screw 11.
  The nippers should just still securely close.

Setting the throttle valves

– Set throttles 1, 2, 3 and 4.
  All movement should be rapid but not jerky.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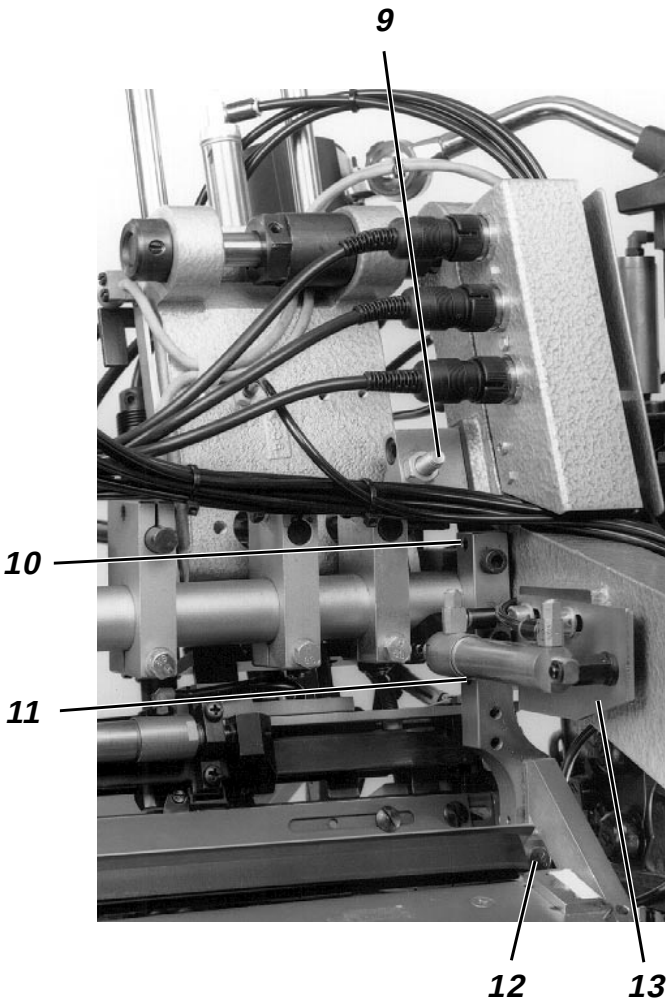
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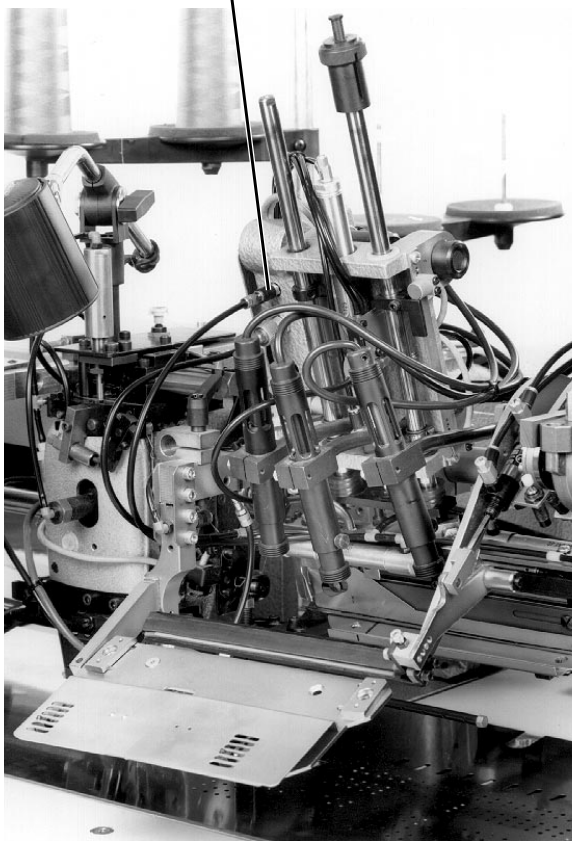

14

6. Device for the Cutting Open of the Piping Ends (Work Method C, F)

6.1. Setting the Swing Range of the Gripping Folder

Prerequisite:

The gripping folder 2 is aligned to the center of the pocket opening as described Chapter 4.2.

Setting the swing range

The piping knives must run in the middle groove 6 of the placement table 5 during the cutting sequence.

The guide plate 7 serves for additional sideways guidance of the gripping folder 2 during the cutting sequence.

- Loosen mounting screw 8 of the guide plate 7 slightly.
- Limit the swing range of the gripping folder:
  Feed table right: Set stopper screw 9
  Feed table left: Move plate 13.
- Lower the gripping folder 2 onto feed table 5.
- To check the setting pull out the compressed air coupling 14. The cylinders 1 and 3 can be operated by hand.

Caution Risk of Injury !

With operation of the cylinders 1 and 3 the piping knives run out downward from the sole of the gripping folder.
With improper use a danger of cuts exists throught the sharp blades of the piping knives.

- Carefully run out the piston rods of the cylinders 1 and 3 manually. Hereby check if the piping knives run centered in the groove 6 of the placement table 5 during the whole cutting motion.

Attention Risk of Breakage !

The piping knives may in no case touch the sides of the groove 6 during the cutting motion. The blades of the piping knives are very susceptible to sideways pressure.

- Should the piping knives touch the sides the feed table 5 must be aligned parallel to the knife motion.
- Set the guide plate 7 sideways.
  The sole of the gripping folder must lie centered in the recess of the guide plate 7.
- Tighten mounting screw 8 of the guide plate 7 and attach the compressed air coupling 14 again.

6.2 Aligning the Feed Table

With the mounting of the placement table on the left side; this was set at pretension at the factory.

With the mounting on the right side, the sole 4 of the lowered gripping folder 2 must lie flat on the placement table 5 along the whole length. This is necessary so that the piping strip is tensioned along its whole length during cutting.

- Lower the gripping folder 2 onto feed table 5.
- Set the angle of the placement table after loosening the screw 12.
- Set the feed table 5 against the sole of the gripping folder with a slight pretension by turning the pulling screws 10 and 11 in or out.

6.3. Replacing Piping Knives

Caution Risk of Injury !

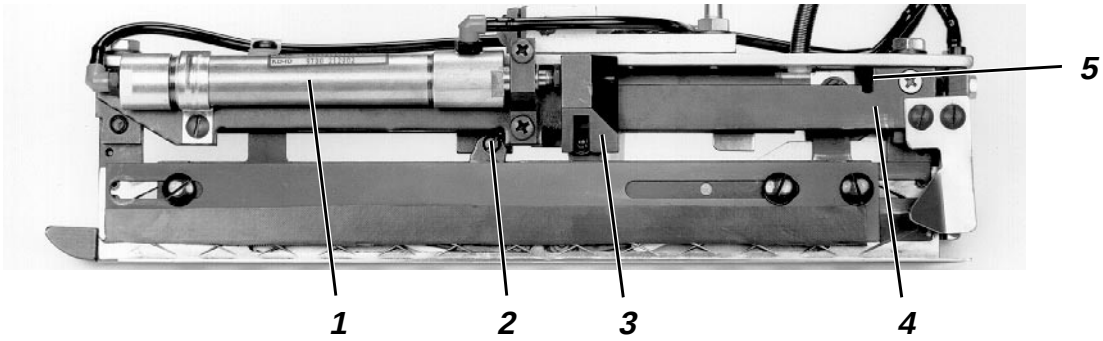
When the cylinder 1 is run out the piping knives run out downward from the sole of the gripping folder.
Because of the razor sharp blades a danger of cuts exists by improper use!

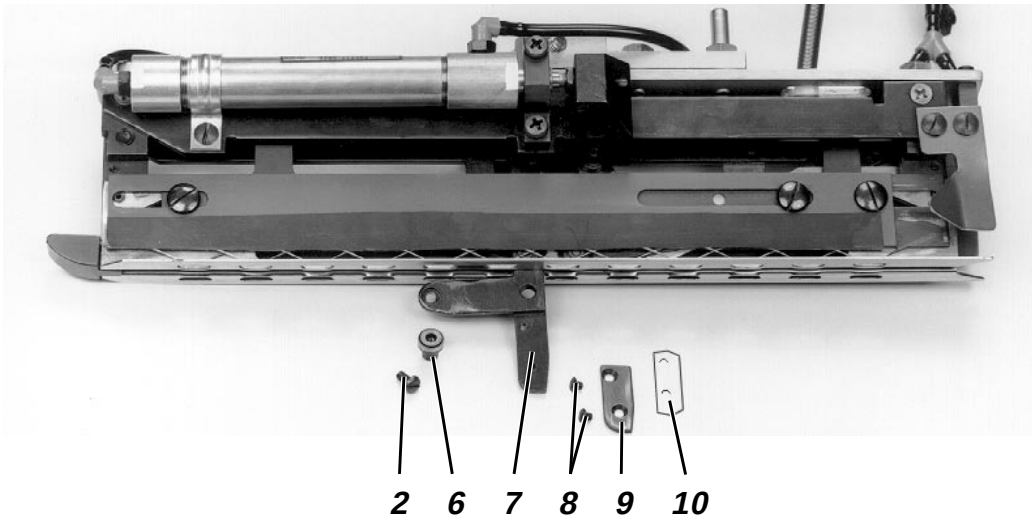
ATTENTION Risk of Breakage!
The blades 10 of the piping knives are very susceptible to sideways pressure.

The end positions of the cylinder 1 (on both sides of the gripping folder) are precisely set at the factory.
When replacing the piping knives the cylinder 1 and the block 3 should not be loosened or removed!

Because of the mounting position of the piping knives only one half of the blade is used for cutting. Blunt blades can thus be reused after removal and reversing. Only after both halves of the blade have lost their sharpness are the piping knives to be exchanged for replacement knives (Order no. 793 027521).

- Screw out screw 2.
  Attention! The screws 2 and 8 are secured at the factory with an easily removable adhesive (e.g. Loctite no. 242).
  These screws should be secured again after the reversing and replacing of the blades in order to exclude malfunctions.
- Remove bolt 6 to be found on the back.
- Swing the knife bracket 7 downward out of the sole of the gripping folder.
- Screw out screws 8.
- Remove plate 9 and piping knives 10.
- The insertion of the new piping knife occurs in the reverse order. The piping knife 10 must lay onto the stops on plate 9 and the knife bracket 7 thereby.





6.4 Setting the End Positions of the Piping Knives

The end positions of the two piping knives 12 and 15 are precisely set at the factory.
They must only be reset in exceptional cases (e.g. after replacing the cylinder 1 or the knife bracket 7).

ATTENTION !

In order to prevent damage to the cutting mechanism, the end positions of the piping knives 12 and 15 may only be determined by the stops of the piston rods 13 in the cylinders 1.

Caution Risk of Injury !

When the inner cylinder and/or the cylinder 1 are operated the needles and/or the piping knives 12 and 15 run downward out of the sole of the gripping folder.

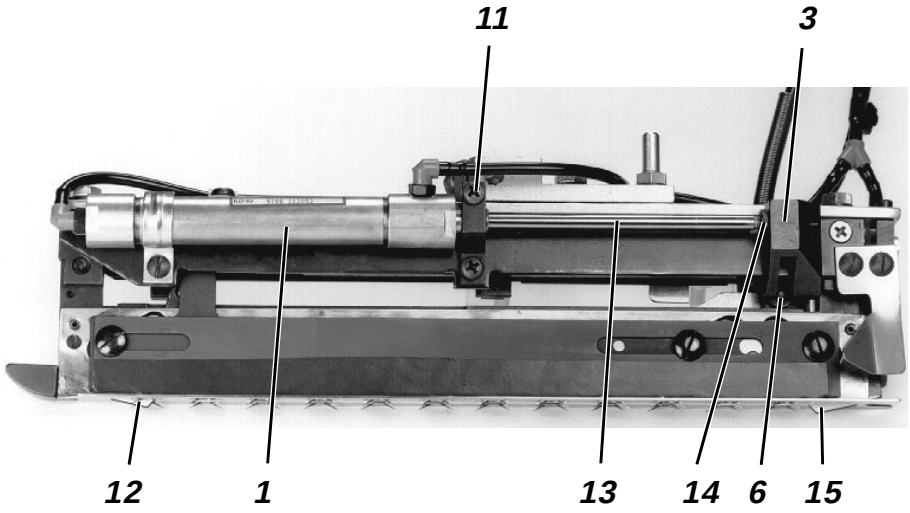
Because of the razor sharp blades a danger of cuts exists by improper use!

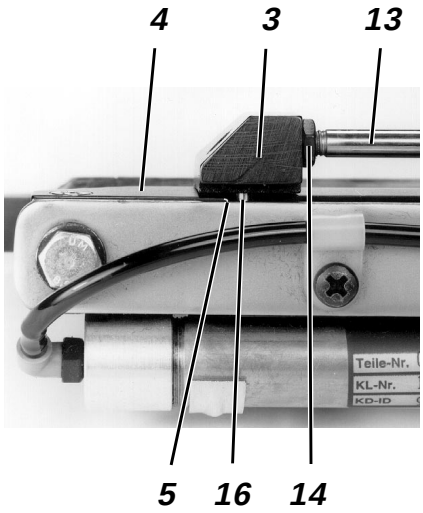
- Spread the needles by giving air to the inner cylinder.
  The piston rods 13 of cylinder 1 can only be extended completely with the needles spread.
- Extend the piston rods 13 of cylinder 1 up to the stop manually.
  There must be a safety clearance between the pin 16 of the block 3 and the edge 5 of the small rail 4.
  Pin 16 may in no case strike the edge 5!
- Vent the inner cylinder.

- Remove the gripping folder for the following setting work.
- Retract the piston rods 13 of cylinder 1 up to the stop manually and hold fast.
- Insert a screwdriver in the slot of the bolt 6.
  A perceptible play of the knife bracket 7 must be felt.
  The play may, however, be only so great that the piping knives 12 and 15 do not run downward out of the sole of the gripping folder.

To correct:

- For greater corrections: Turn cylinder 1 after loosening the clamping screw 11.
- For smaller corrections: Turn piston rod 13 slightly after loosening the lock nut 14.





7. Positioning Device for Work Method D

The breast selvage lying on the placing table is taken by the positioning device and positioned over the, at first, roughly aligned jacket front.
This makes possible pattern-perfect alignment and a subsequent sucking-on of the jacket front by the vacuum.

After the transport clamps have lowered onto the front, the breast selvage is lifted again, reversed and moved to the flap clamp.

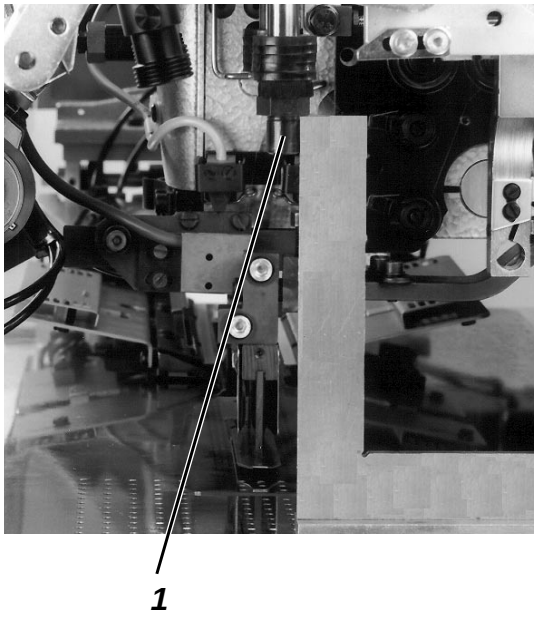
The maximum sewing distance for breast selvage pockets is 145 mm.

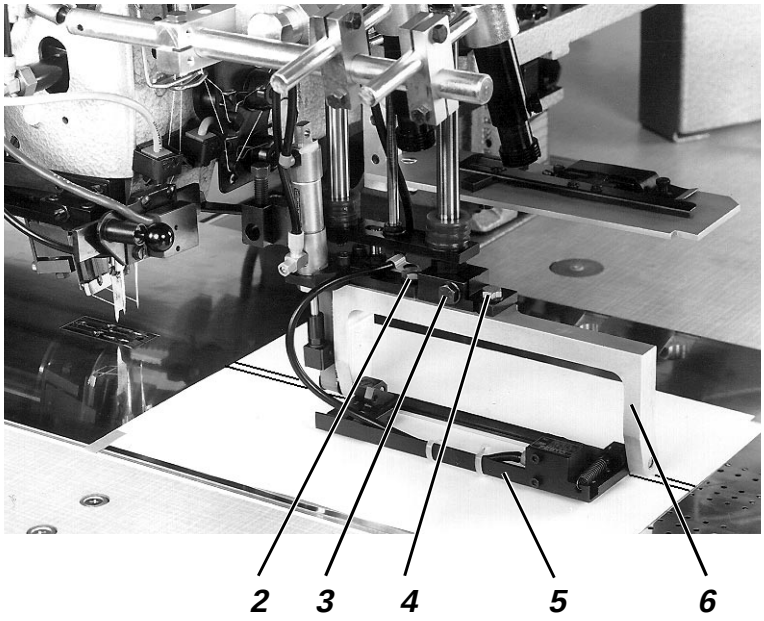
Caution Risk of Injury !

Turn the main switch off.
Set the positioning device only with the main switch turned off.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.

Aligning the folder

The folder is to be aligned exactly as described for the Work Method B, C in the Chapter 4.

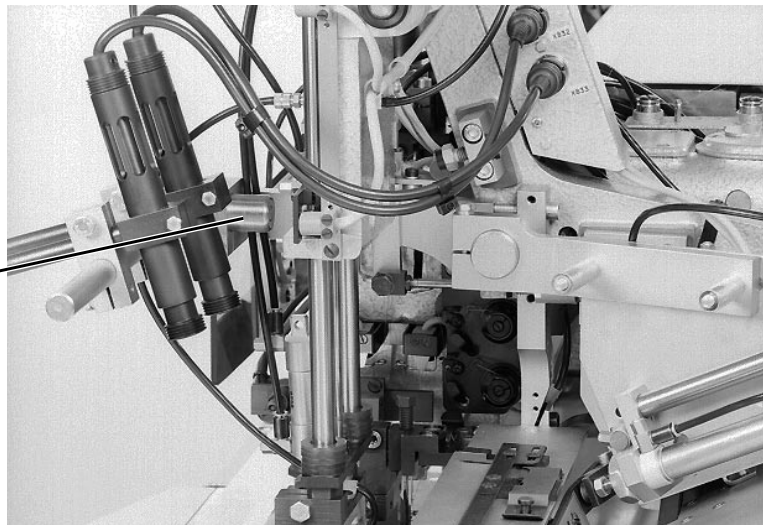




Aligning the positioning device

The positioning device 6 is mounted on the the seating pin 1.

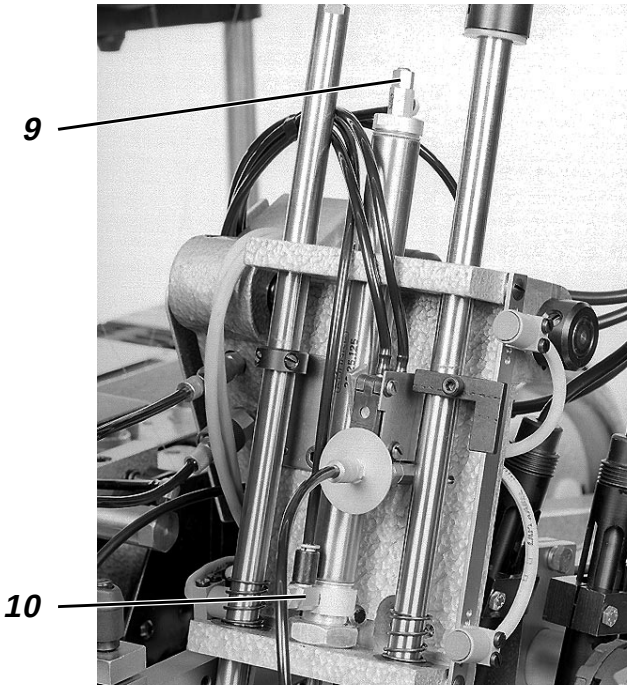
- Align the seating pin 1.
  Description see Chapter 4.6 Gripping Folder.
- Attach a DIN A4 sheet of paper to the slider plate.
  Mark the line for the center knife incision.
  Draw a parallel 2nd line at half the needle spacing distance.
  The left seam runs along the left line.
- Place the positioning device 6 on the seating pin 1 and align parallel to the lines. Tighten screw 3.
- Loosen screws 2 and 4.
- Align the left edge of the clamp 5 congruent to the left line.
- Tighten screws 2 and 4.



Setting the offset correction

For design reasons a pattern offset occurs between the pattern-perfectly placed and the reversed breast selvage. This offset is corrected by the stroke of cylinder 8.

- After the trial sewing and execution (turning over) of the breast selvage pocket it is essential to check its pattern.
- Set cylinder 8 accordingly in its bracket.



Setting the throttle valves

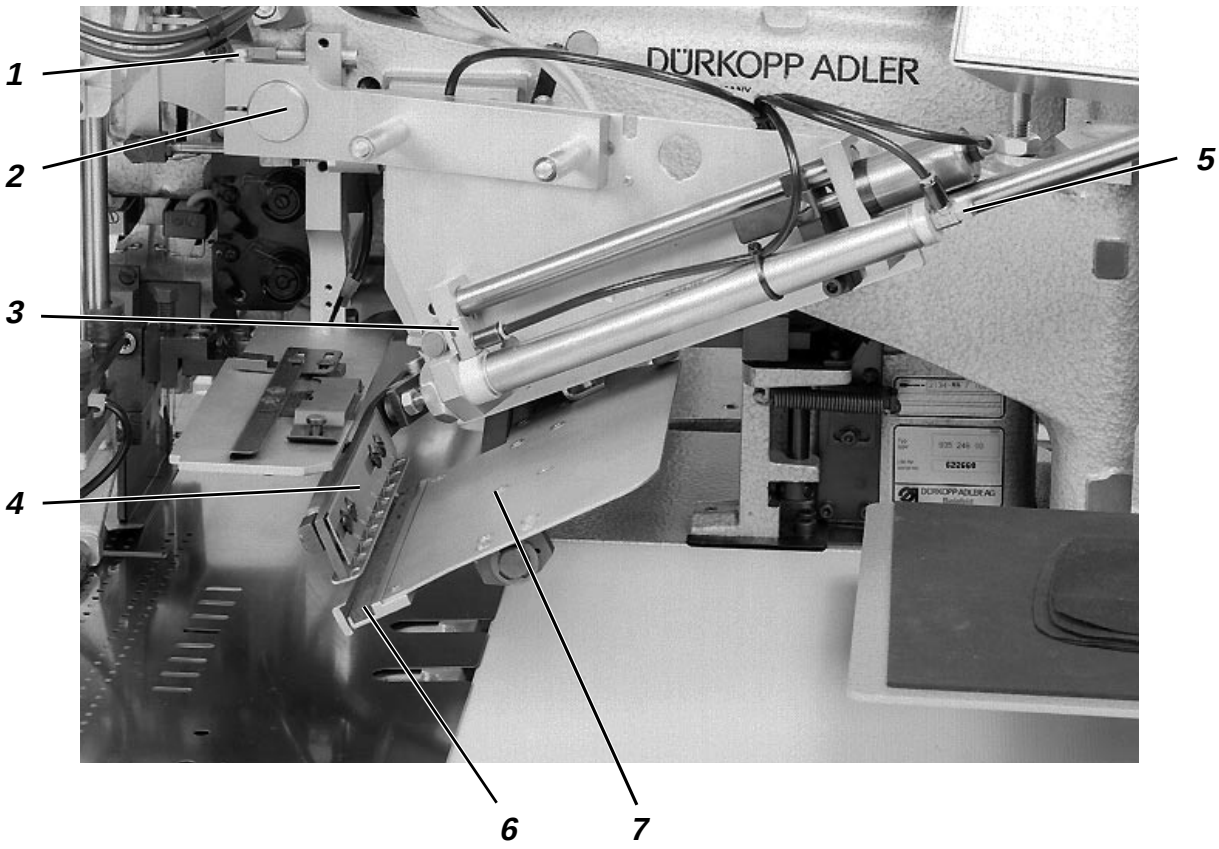
- Set throttles 9, 10, 11 and 12.
  All movement should be rapid but not jerky.

7.1 Feed for Pocket Bags

The feed brings the pocket bags securely to the center of the pocket opening of the folder.

Caution Risk of Injury !

Turn the main switch off.
Set the feed only with the main switch turned off.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.



Setting the position the take-up rail

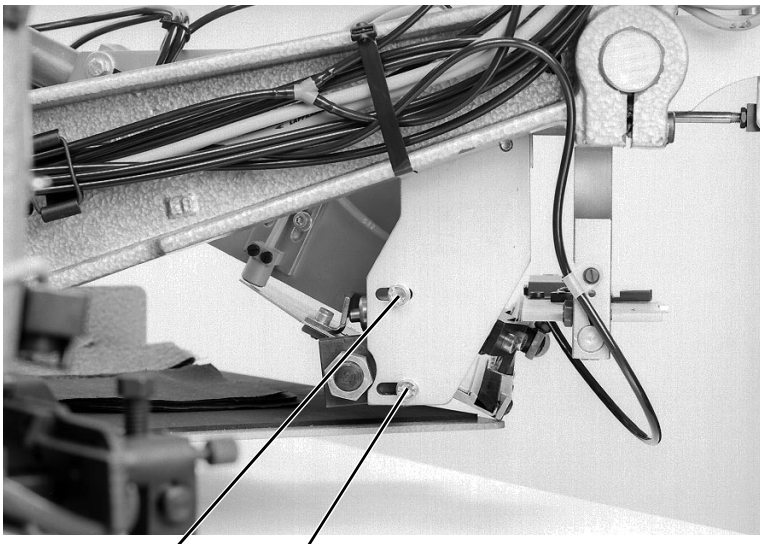
The take-up rail should run to the center of the pocket opening and at this point lie approx. 2 - 3 mm over the sewing piece.

- Loosen screw 1.
- Set the take-up rail 4 by turning the shaft 2.
- Tighten screw 1.

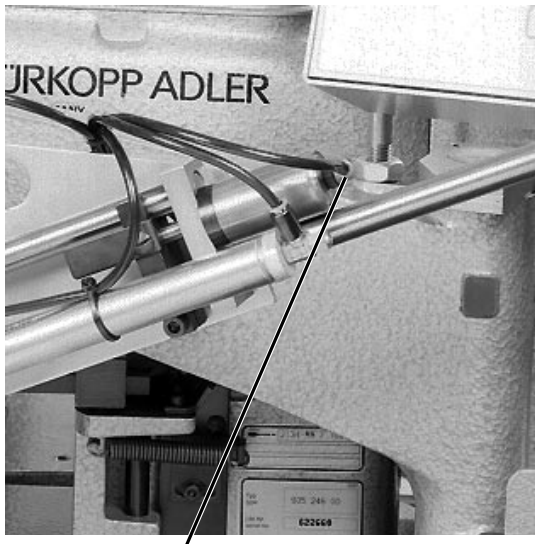
Setting the position of the table

Set the position of the table 7 so that the gripper needle rows of the take-up rail 4 enter in the center of the sponge rubber 6.

- Loosen screws 8 and 9.
- Move table 7.
- Tighten screws 8 and 9.



8 9

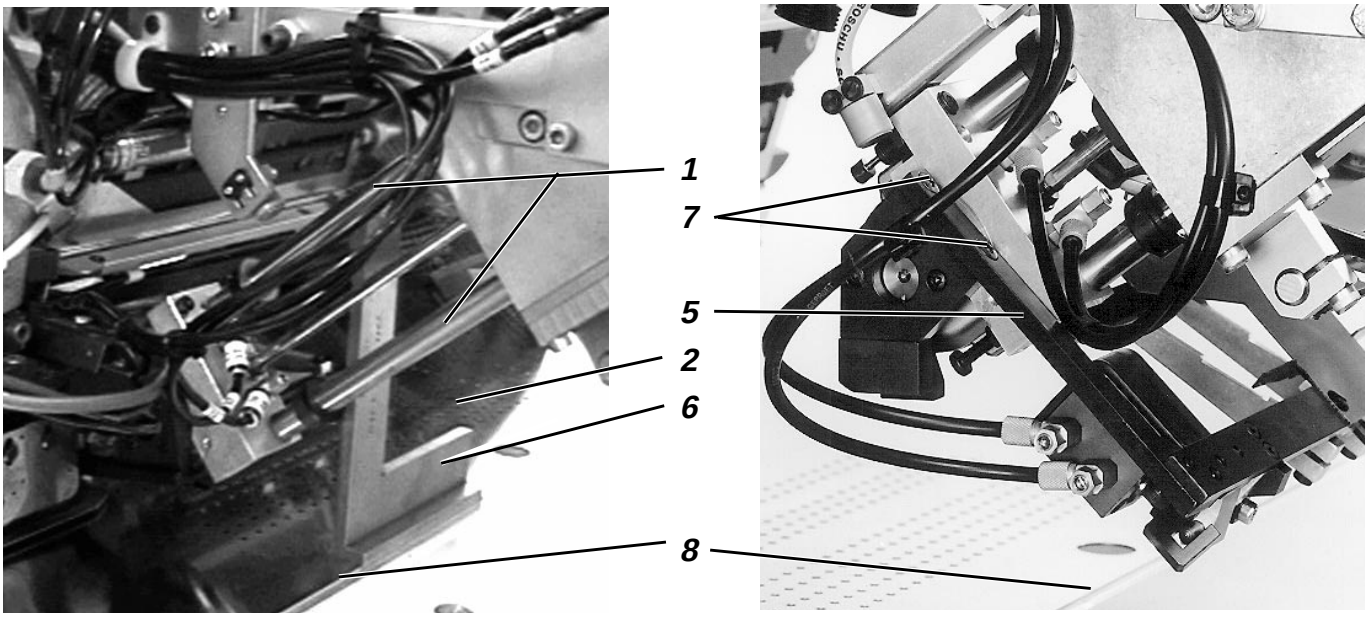


10

Setting the throttle valves

– Set throttles 3 and 5.
  All movement should be rapid but not jerky.

– Set throttle 10.
  The clamping movement should be rapid but not jerky.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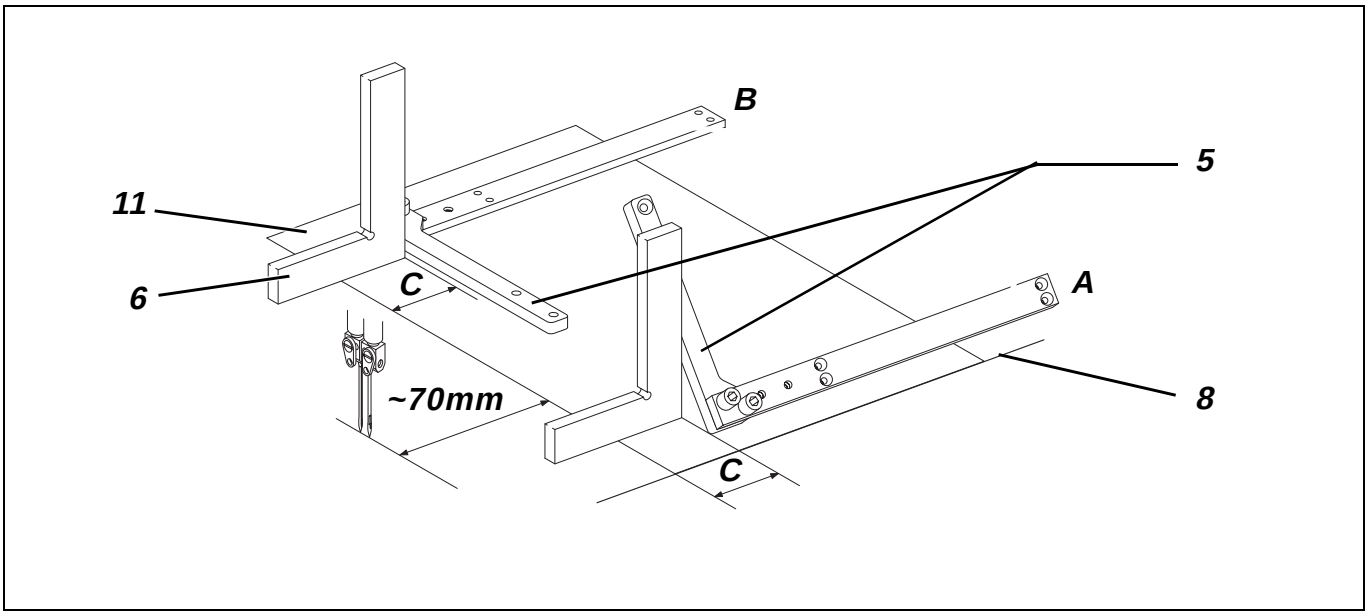
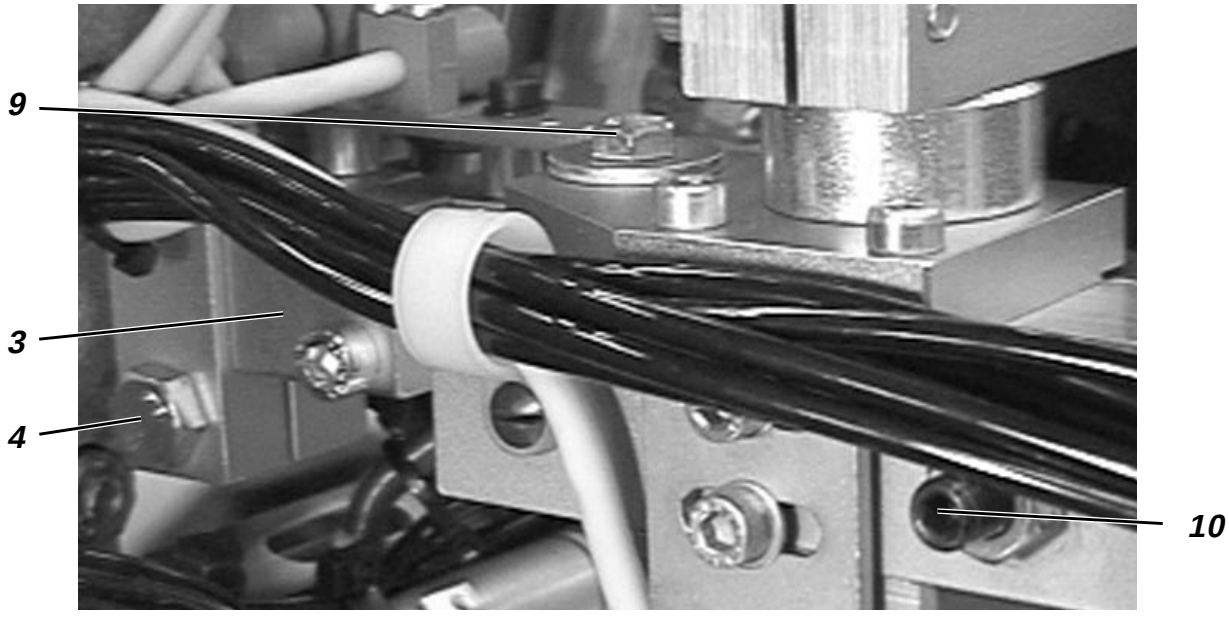
7
5
2
6
8


B
5
11
A
6
C
8
~70mm
C

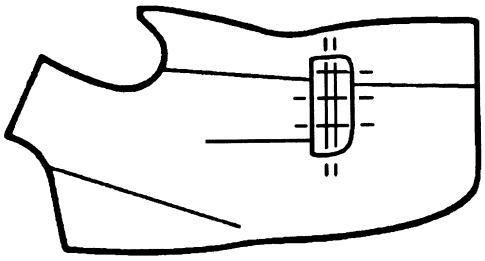

9
3
4
10

8. Transfer Device for Work Method F

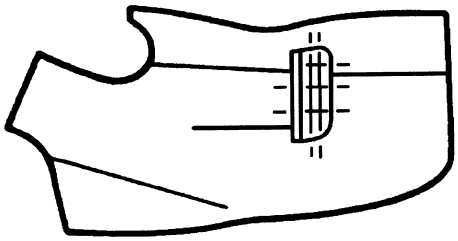
8.1 Base Settings of the Aligning Device

For pattern-perfect sewing of pocket openings in checked and striped goods the following rule applies:

The result of the correctly positioned jacket front and the correctly aligned flap must be pattern-perfectly transferable to the reversed and ironed pocket opening by the subsequent feed and sewing sequence. See sketches A and B.



A Pattern-perfectly aligned sewing pieces



B Sewn-in flap and reversed pocket opening

Caution Risk of Injury !

Turn the main switch off.
Set the device only with the main switch turned off.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.

Setting the motion rods in the pillow block

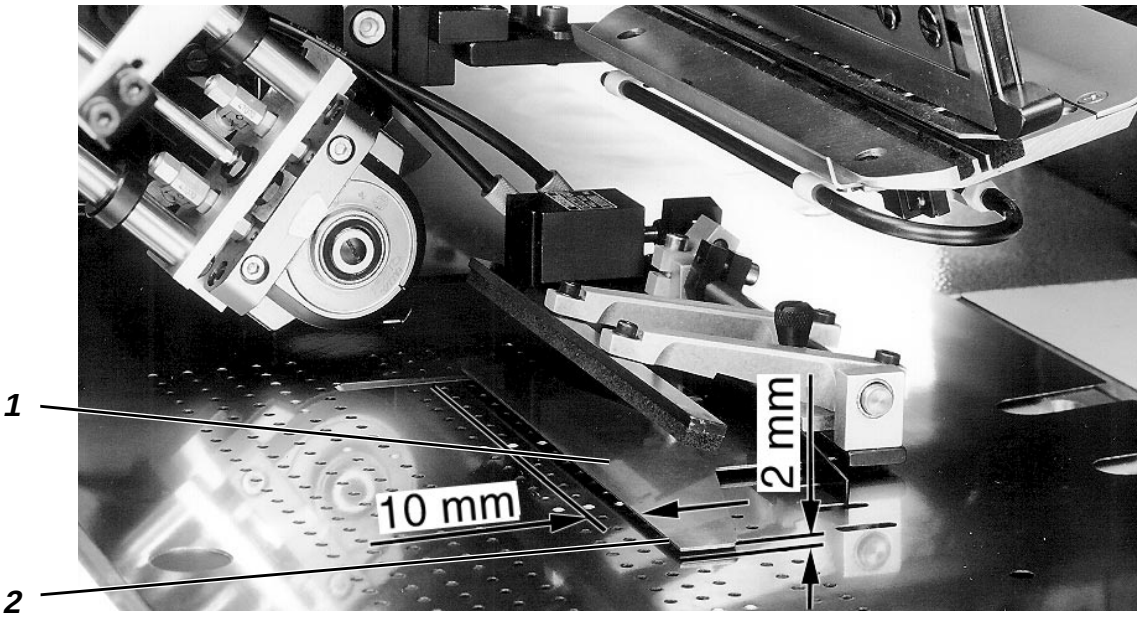
- The motion rods 1 must lie at a right angle to the slider plate support 2 (check with the stop angle 6).
- For this, loosen screw 4.
- Align block 3 accordingly.
- Tighten screw 4.

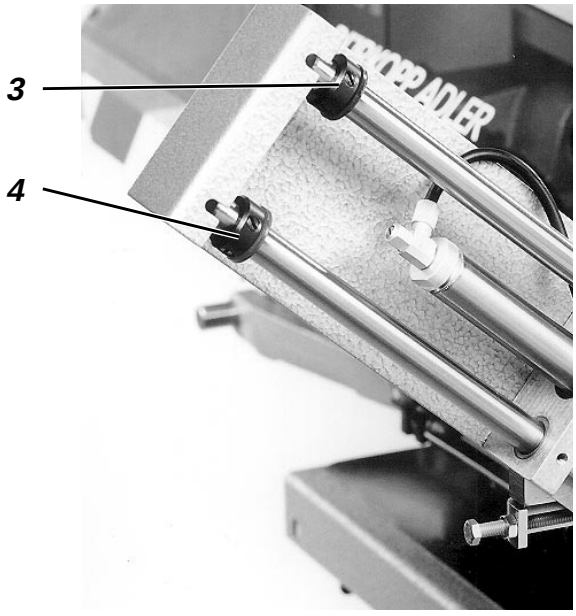
Setting the swivel arm

- In the vertical swing position, the swivel arm 5 must at a right angle to the slider part support 2 (check with the stop angle).
- Loosen screws 7.
- Align swivel arm 5.
- Tighten screws 7
- In the left end position **A** and the right end position **B**, the swivel arm 5 must lie at right angles to the reference line 8 (see sketch on page 40).

Possibility for checking: Place a rectangular sheet 11 (210 mm x 297 mm) on reference line 8 and glue fast. By placing a 90 stop angle 6 on swivel arm 5, the clearance **C** to the sheet edge can be measured in the left end position **A** and the right end position **B** of the swivel arm 5.

- Loosen screw 9.
- Align swivel arm 5 with screw 10.
- Tighten screw 9.


1
2
10 mm
2 mm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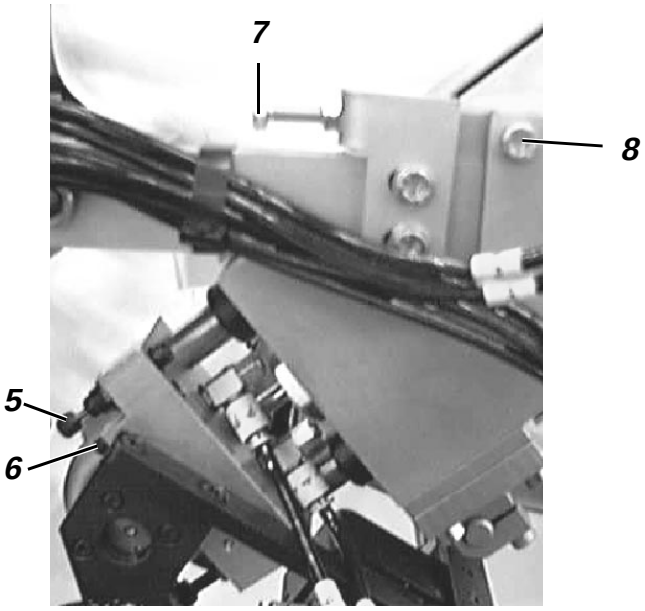
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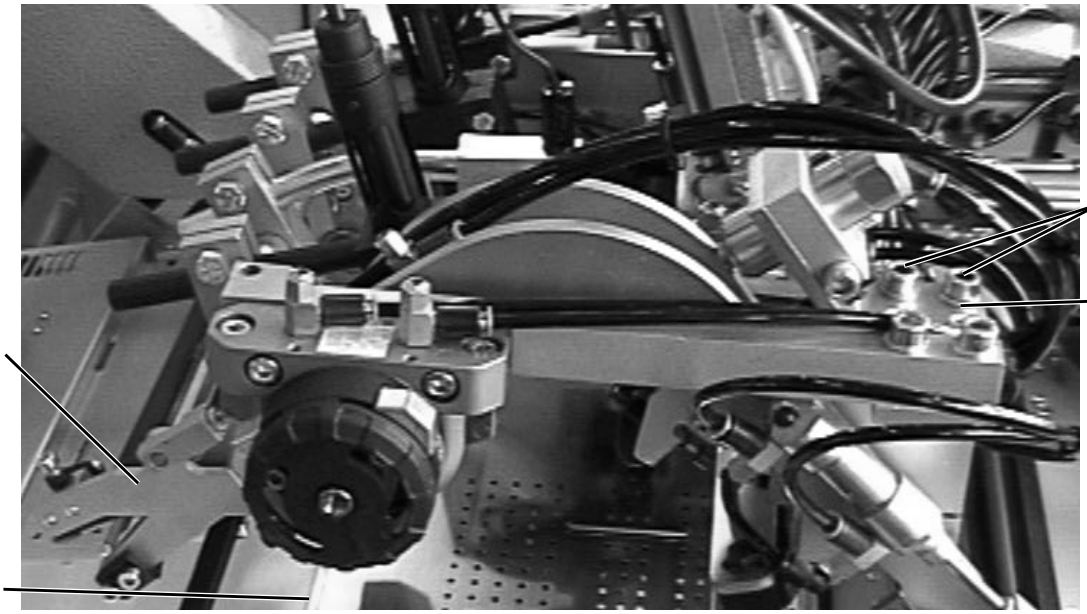
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Set the set collars

– Set the set collars 3 and 4 and stop 6.
  The aligning plate 1 should lie parallel to the cloth slider plate in the lowered position. The clearance should be approx. 2 mm.

Set the shock absorbers

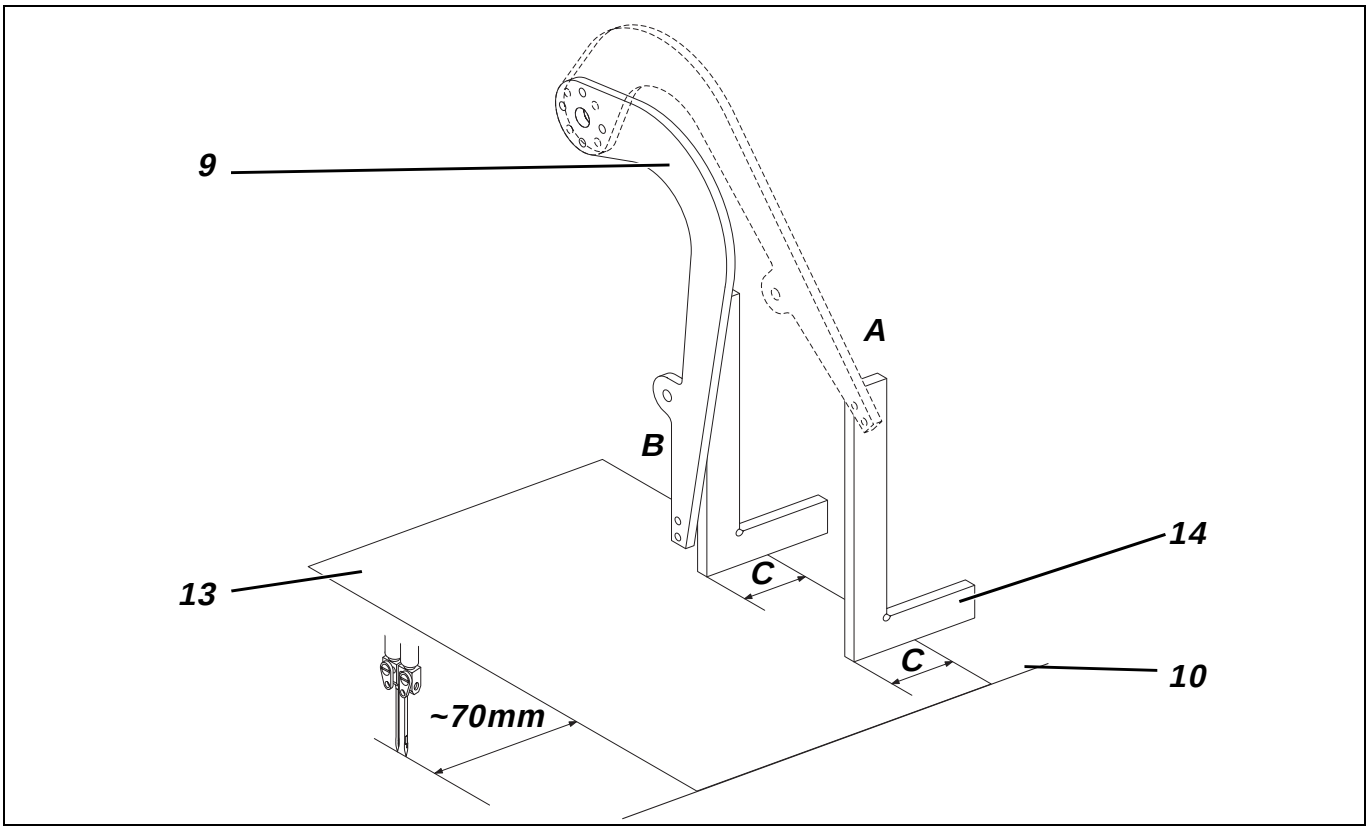
– Set the shock absorber 5.
  With the device lowered the shock absorber should lie approx. 1 to 2 mm in front of its stop.

Set the aligning plate

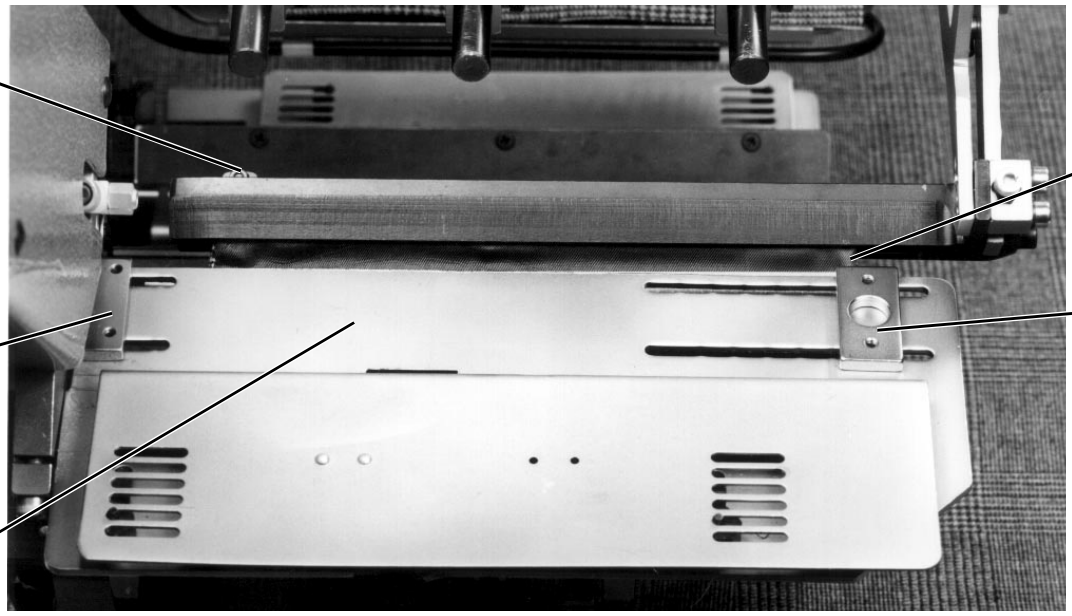
– Loosen screws 8 (4-off).
– Set the aligning plate 1 with the adjusting screw 7.
  The front edge 2 of the aligning plate should be approx. 10 mm removed from the base line.
– Lock the adjusting screw 7.
– Tighten screws 8 (4-off).

Setting the flap feed

– In the left end position **A** and the right end position **B**, the flap feed 9 must lie at right angles to the reference line 10 (see sketch). Possibility for checking: Place a rectangular sheet 13 (210 mm x 297 mm) on reference line 10 and glue fast. By placing a 90 stop angle 14 on flap feed 9, the clearance **C** to the sheet edge can be measured in the left end position **A** and the right end position **B** of the flap feed 9.
– Loosen screws 11 on block 12.
– Align flap feed 9.
– Tighten screws 11.




1
2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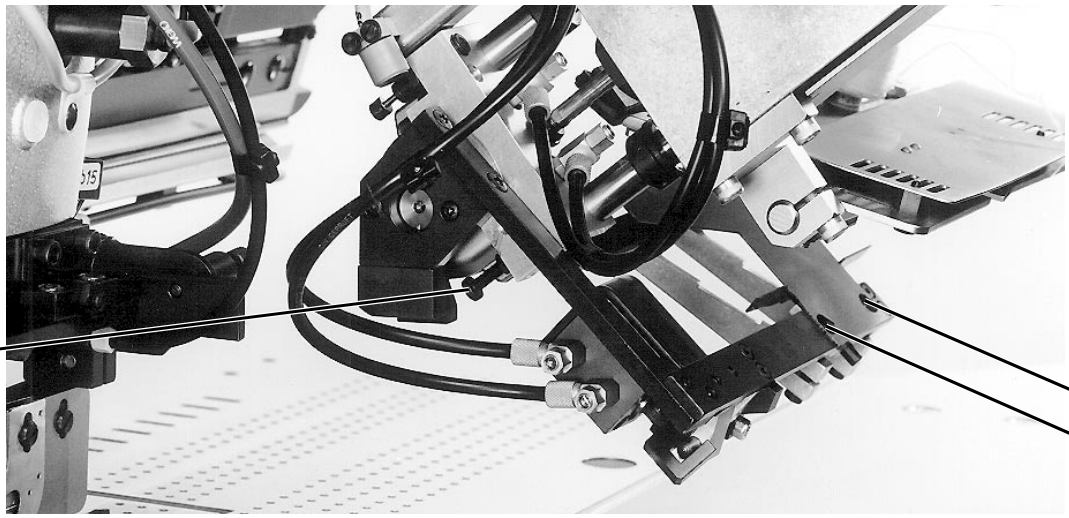
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– Set stopper screw 3.
When the flap feed is swung in during the work cycle, it lays on tight on the gripping folder. In order to avoid whipping and thus a displacement of the flap in the clamps, the flap feed must lay on forward.

– Set the flap support.
Loosen screws 9 and 10.
In the swung-back position the edge of the flap support 5 should lie parallel with the edge 2 of the aligning plate.

– Tighten screws 9 and 10.

– Set the stop 8.
The aligning plate 1 should not strike under the flap support 5 when swinging back.

The sewing area of the sewing unit is established at max. 180 mm and set accordingly at the factory. The marker lights and the stops 4 and 7 are set correspondingly to the seam beginning and seam end.

– Check the setting of the stops 4 and 7.
If the flap edge is positioned exactly on the light marker, then, with the flap held clamped and the device swung out, the flap edge 6 must lie exactly at the level of the stop 7.
The same applies analogously for stop 4.

Note

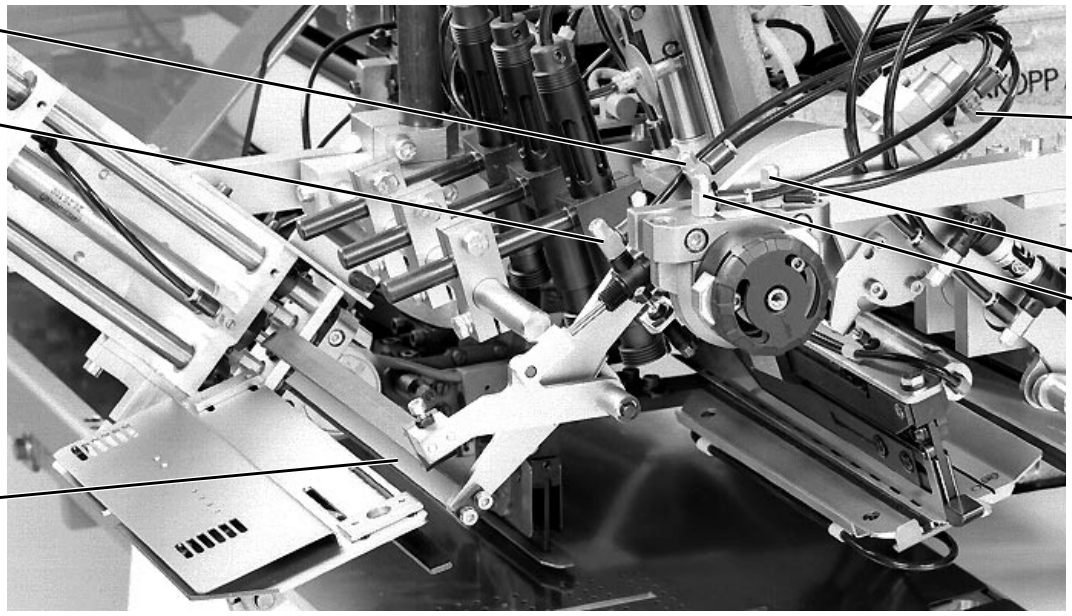
A pattern-perfectly aligned flap should not be pulled out of its position when taken up by the flap feed 11.

This leads to an imprecise sewing result !

– Set cylinder 14.
The cylinder 14 must press the opened flap feed 11 down so far that the flap can swing in securely and unimpaired.

When the flap feed closes the flap should not be pulled out of its position or strongly buckeled.
The lower clamp 12 must build one level with the flap support 13.

– Set the cylinder 15, flap clamps, stops and shock absorber as described in Chapter 5.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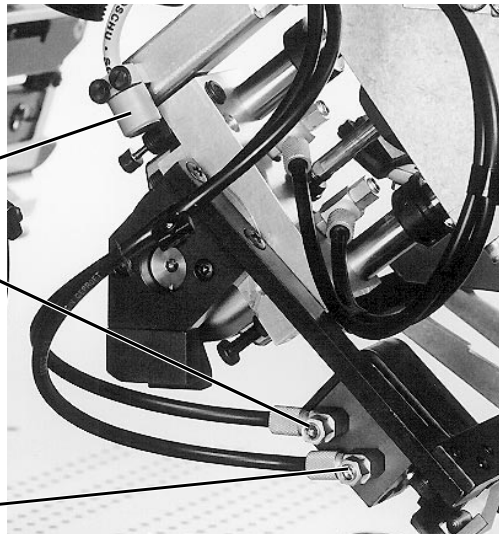
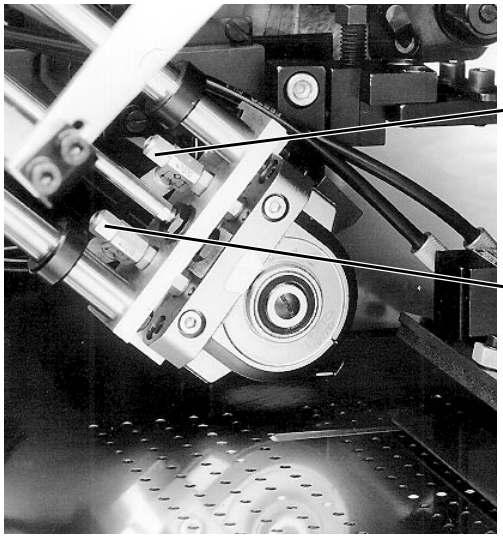

S28
7
8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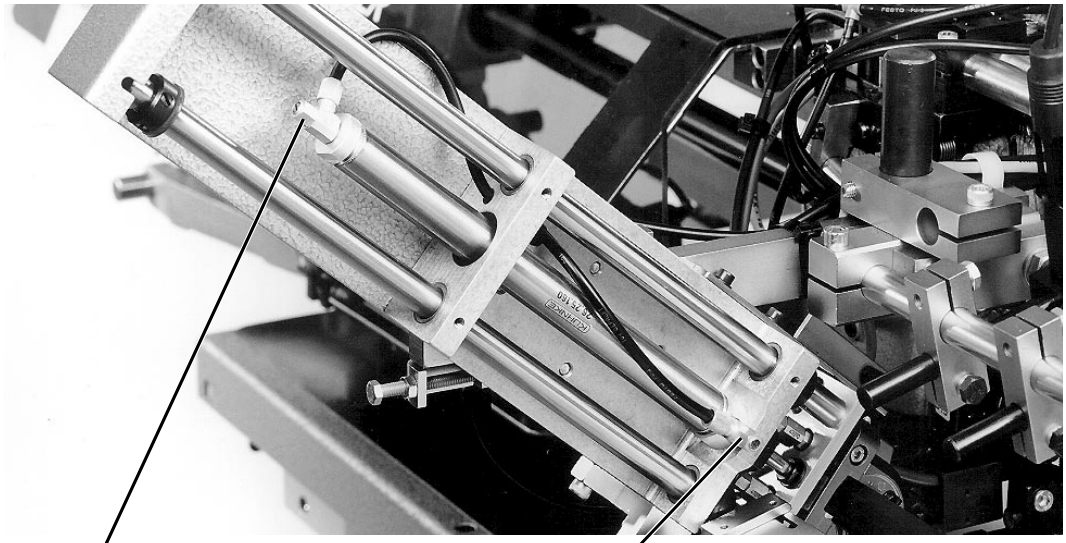

11
12

8.2 Speed Regulating Valves and Safety Switch

– Set the speed regulating valves.
  The movement of the aligning device should be rapid.

Note

The flap feed should not close with a jerk. Otherwise a displacement of the flap out of its position is possible.

The lower clamp 3 must first have reached its upper position before the flap feed closes completely. This results in a stable position of the flap.

Valve	Function
11	Aligning device rises
12	Aligning device lowers
10	Aligning device swings in
9	Aligning device swings out
8	Aligning device closes
7	Aligning device opens
1	Flap feed opens
2	Flap feed closes
6	Flap feed swings in
5	Flap feed swings out
4	Flap feed presses down the opened clamps to swing in the flap

Proximity switch S28

The proximity switch **S28** monitors the swing movement of the aligning device.

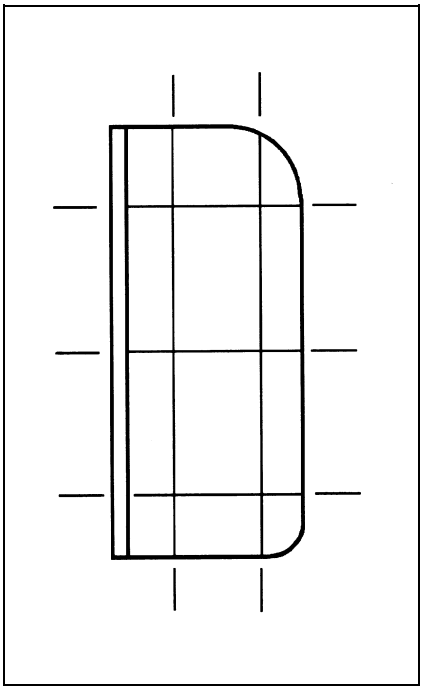
After release of the switch the swing movement is conducted first before the lowering movement of the cylinder begins.

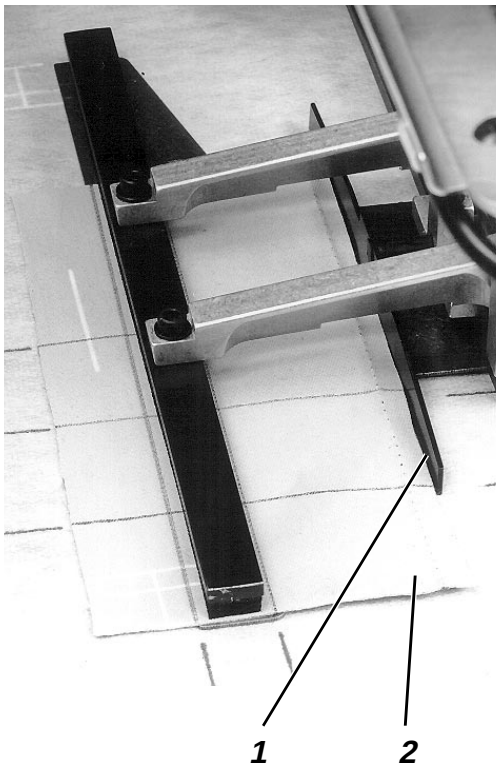
Only after the switch is operated again by the aligning device swinging out can the start of the transport carriage to the front begin.

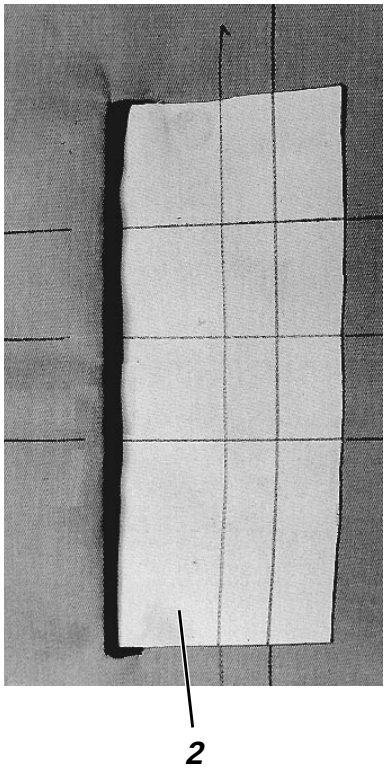
– Set switch **S28**.
  (Setting procedure see Chapter 4.6)

8.3 Sewing Trial to Pattern

After the base settings have been made according to these service instructions the pattern-perfect setting is made with an accordingly prepared sewing piece of light-colored material.

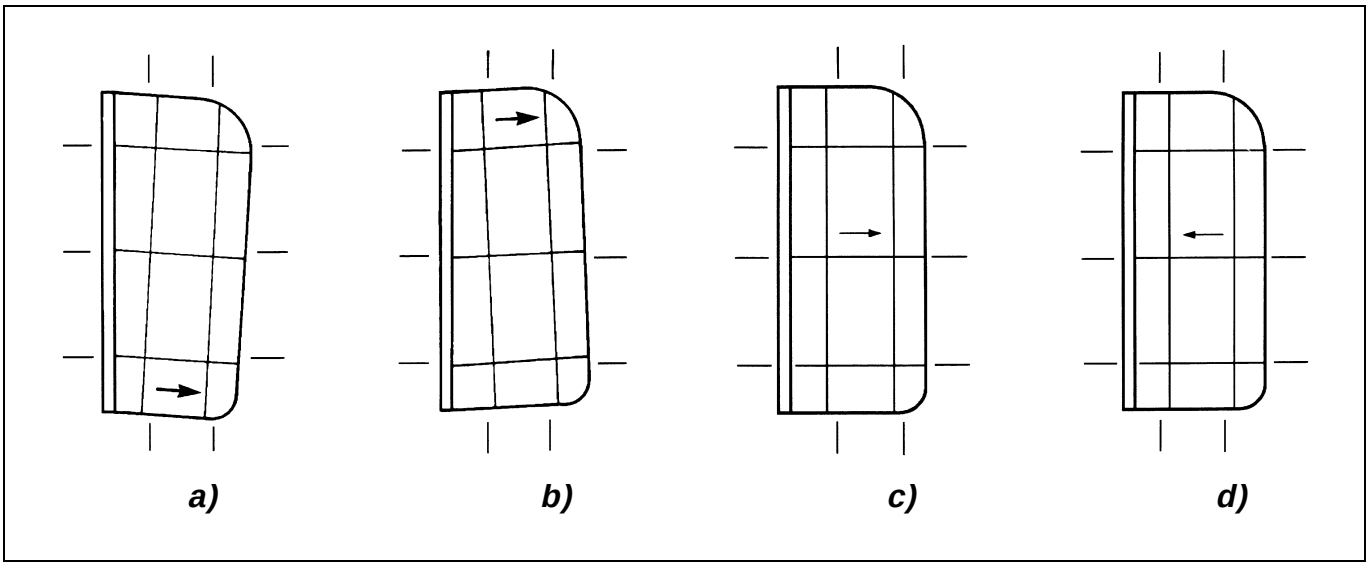






- Draw lengthwise and crosswise lines on flap 2 and the sewing piece.
- Position the piping strip.
- Position flap 2 on the parallelly aligned stop 1.
  Set the stop so that the flap lies approx. 10 - 15 mm beyond the base line to the left.
- Align the sewing piece.
  The lengthwise and crosswise lines of the sewing piece and the flap must be congruent.
- Conduct a sewing sequence.
- Remove the sewing piece and reverse it.
- Check the sewing trial and correct faulty sewing results.
  (see Chapter 8.4)

8.4 Error Correction



a) Flap correctly aligned but fed at an angle.

Loosen screws 1 (2-off).
Set bracket 2 with the swing cylinder and flap clamps appropriately angled to the flap support.
ATTENTION !
Check the flap support, flap stop and aligning plate and correct, if necessary.

b) Flap correctly aligned but fed at an angle.

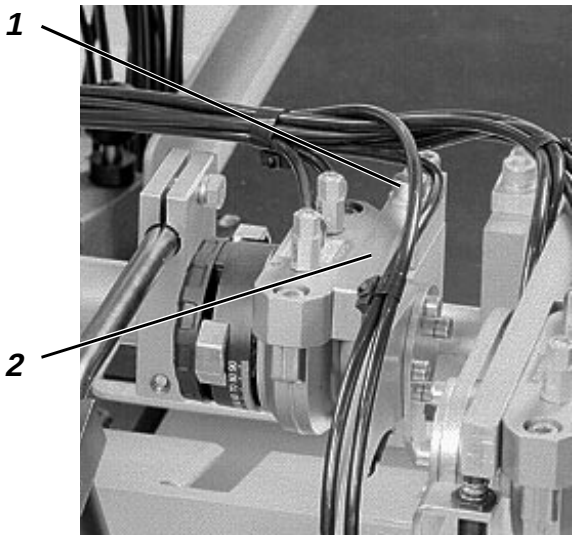
Loosen screws 1 (2-off).
Set bracket 2 with the swing cylinder and flap clamps appropriately angled to the flap support.
ATTENTION !
Check the flap support, flap stop and aligning plate and correct, if necessary.

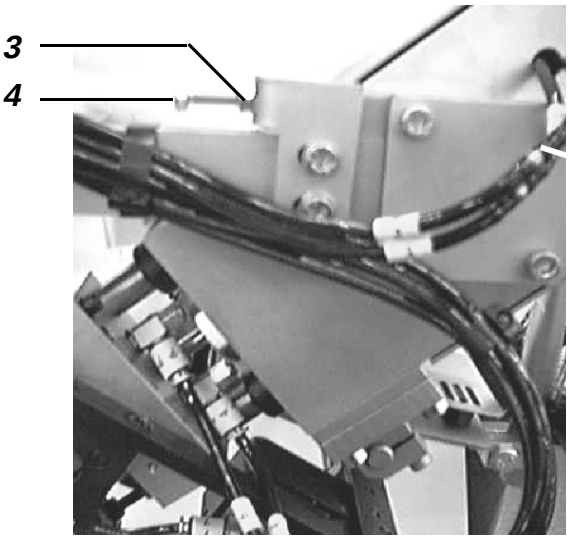
c) Flap sewn in too low.

Loosen nut 3 and turn adjusting screw 4 in.

d) Flap not sewn in low enough.

Loosen nut 3 and turn adjusting screw 4 out.
In case of wrong adjustments check switch S28.





9. Transport Clamps

9.1 Clearance of the Transport Clamps to the Folder Sole

There must be a specific clearance between the outer edges 2 of the folder sole and the inner edges 1 of the transport clamps. By medium-weight ready-to-wear material it must be e.g. 1 to 1.5 mm.

The clearance is necessary in order to assure uniform piping widths on both sides and an unimpaired transport of the material.

Both transport clamps are set by turning the Allan screws 7.
The scale plates 5 serve as setting aids.

Caution Risk of Injury !

Turn the main switch off.
Set the transport clamps only with the main switch turned off.

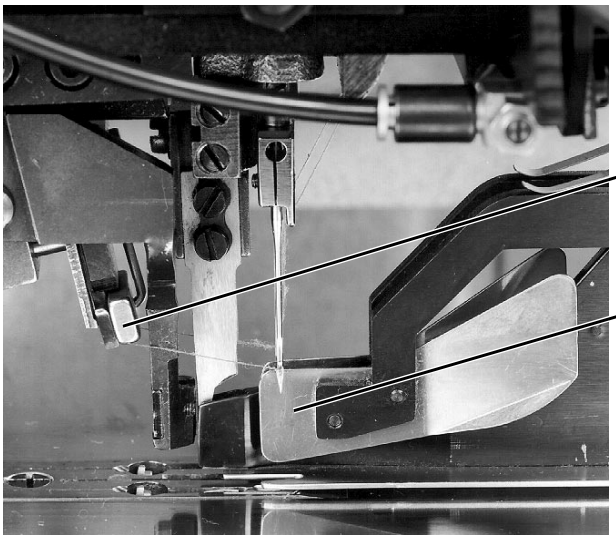
- Turn the Allan screw 7 for setting the clearance. To turn use the Allan key 8 to be found in the accessories pack.
- The scale plates 5 are aligned at the factory as follows:
  When the pointer 6 indicates the marking " **I** " , the correct clearance is set for medium-weight material when sewing pocket openings with piping on both sides.
  The second marking indicates the clearance for sewing a greater piping width or a pocket opening piped on one side.
- By stepping forward and back on the left pedal conduct test runs with the transport carriage.
  The transport clamps must pass the guide plates 4 and the thread catcher 3 unimpaired.

ATTENTION !

The markings on the scale plates 5 are matched with the needle spacing of the machine head.

When inserting needle holders for different needle spacings, the scale plates 5 must also be replaced.

1 2



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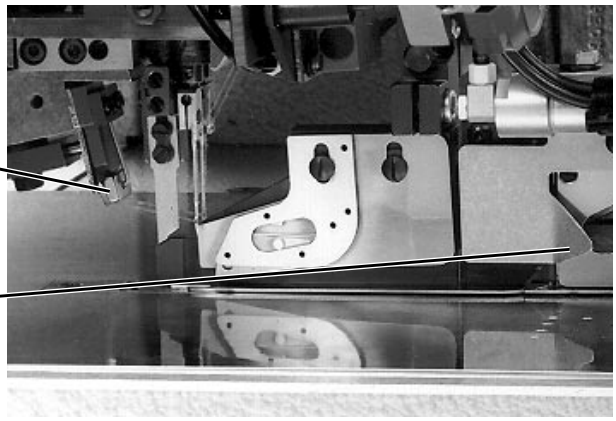

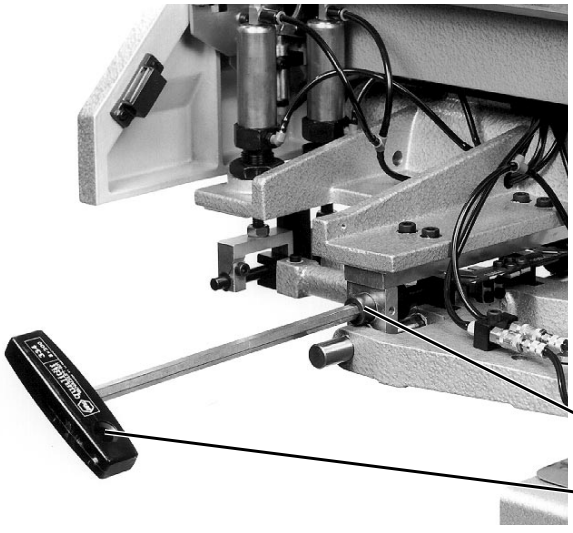

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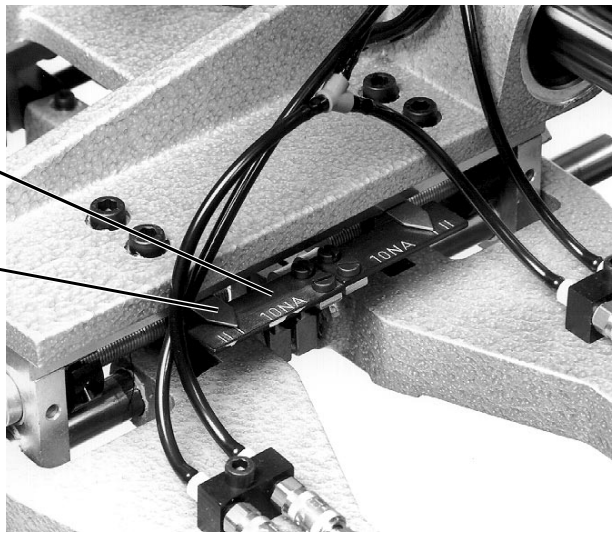
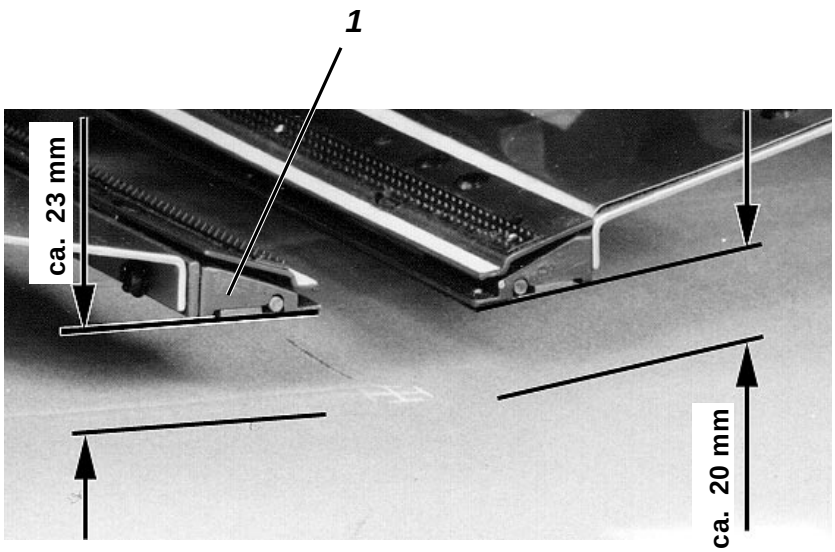
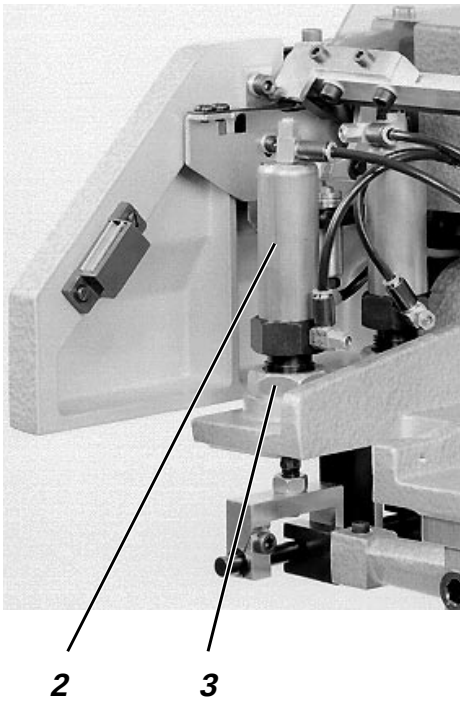


9.2 Stroke Height of the Transport Clamps

With the flap clamps closed, the raised transport clamps must pass the machine arm without striking.

The clearance between the front edges of the raised transport clamps 1 and the cloth slider plate should be approx. 23 mm at the left and approx. 20 mm at the right.





– Step back on the left pedal.
  The transport carriage runs to its rear end position.

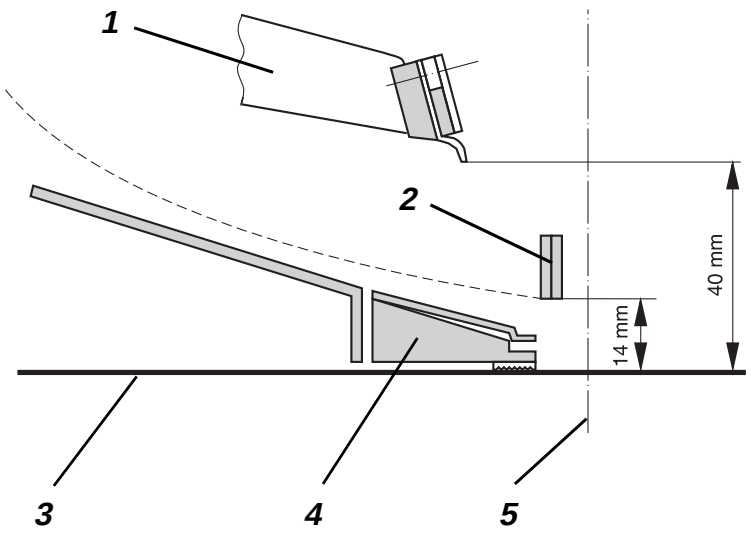
Caution Risk of Injury !

Turn the main switch off.
Set the stroke height of the transport clamps only with the main switch turned off.

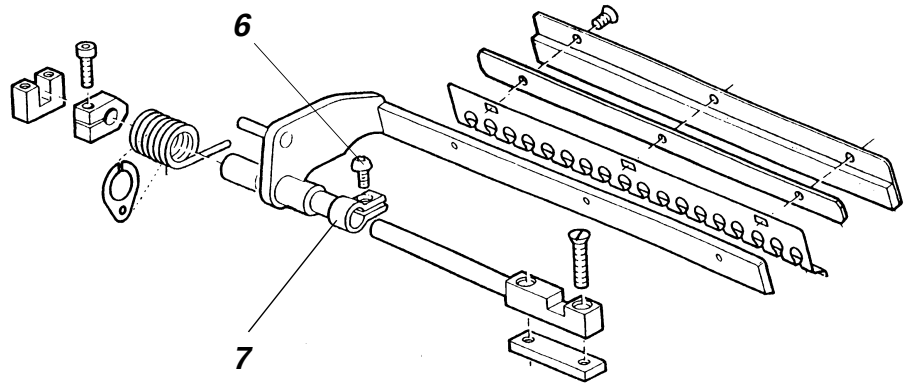
– Turn the main switch off.
– Raise the cover hood.
– Loosen the compressed air hoses on the cylinders 2.
– Loosen lock nut 3.
– Set the stroke height of the transport clamps at the cylinders 2.
  Increase stroke: Screw cylinder 2 in
  Decrease stroke: Screw cylinder 2 out
– Attach the compressed air hoses to the cylinders 2 again.
– Tighten lock nut 3.

9.3 Clearance of the Flap Clamps to the Slider Plate

In order for the flap nippers (feed devices) to be able to swing in and out unimpaired, the clearance of the flap clamps to the cloth slider plate should be 40 mm.



1: Flap clamp-left
2: Clamps of the flap nippers
3: Slider plate
4: Transport clamp
5: Center of the pocket opening



Caution Risk of Injury !

Turn the main switch off.
Set the flap clamps only with the main switch turned off.

- Loosen screw 6.
- Set stop 7.
  The clearance of the flap clamps to the cloth slider plate should be 40 mm.
- Tighten screw 6 again.

10. Reflected Light Barrier for Flap Scanning

The recognition of the seam beginning and seam end when sewing with flap occurs via the reflected light barrier **S100**.


Presetting:

- Set the correction values for the light barrier at the seam beginning and the light barrier at the seam end to the median value 0 (see **Short Description DAC** Chapter 5.3).
- The clearance between the forward-lying needles and the target point of the invisible infrared beam should be 55 mm.
  With the folding plates closed the infrared beam must strike the center of the reflecting foil 1.

Checking the alignment

The alignment of the infrared-reflected light barrier **S100** occurs in the program " Aligning the Light Barrier ":

- Turn the main switch on.
  Activate the setting program" **Aligning the Light Barrier** ".
  The further operations are described in the **Short Description DAC** Chapter 6.3.4.
- Place a piece of reflecting foil 6 (in the accessories pack) 55 mm in front of the needles.
- The light barrier should recognize the reflecting foil precisely at this point. An acoustic signal is heard and the display shows **" + "**.
- If necessary, correct the alignment.
- Scan the reflecting foil 1 by pushing the transport carriage back and forth. The display **" + "** must appear along the whole length.
- If the display **" + "** is not heard along the whole length:
  Align the reflected light barrier precisely over the reflecting foil 1.
  Set the transport clamp parallel to the carriage run.

Correcting the alignment

Caution Risk of Injury !

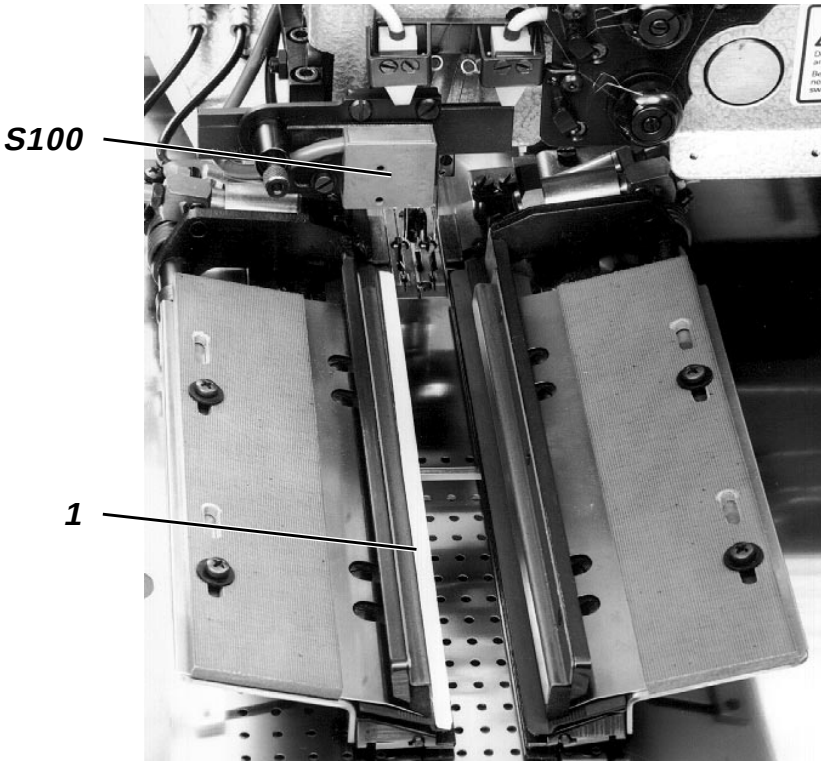
Turn the main switch off.
Align the reflected light barrier only with the main switch turned off.

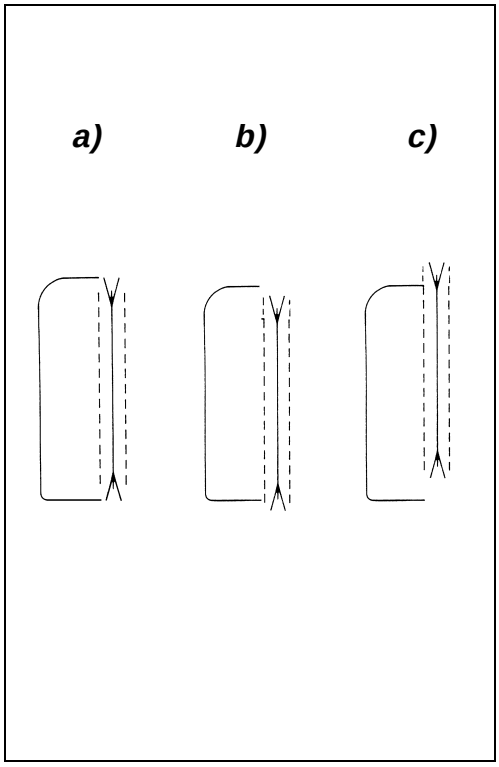
- Loosen screws 7.
- Align the light barrier bracket 3 in the direction of transport over the reflecting foil 6 lying below.
- Tighten screws 7 again.

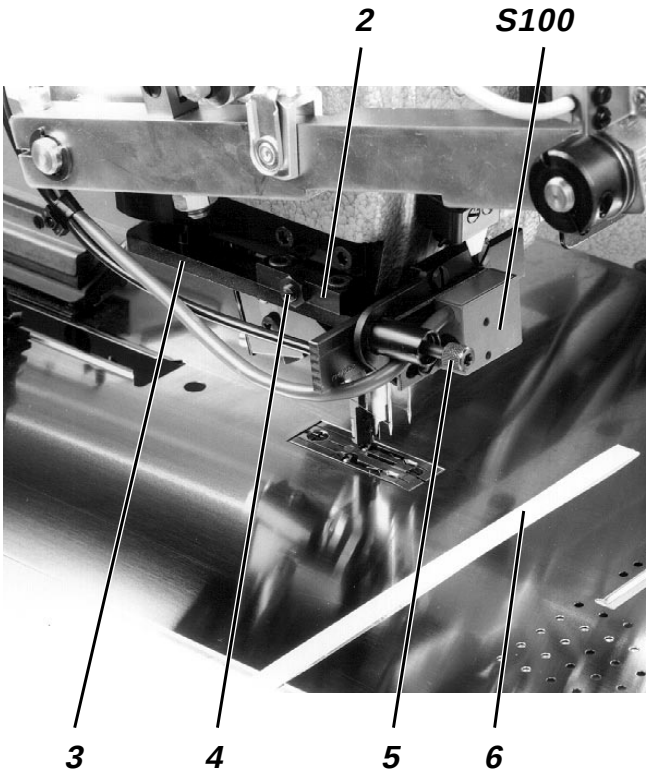
- Screw adjusting screw 4 so deep into mounting piece 2 that it extends approx. 4 mm out the other side.
  Adjusting screw 4 serves for the sideways alignment of the reflected light barrier **S100**.

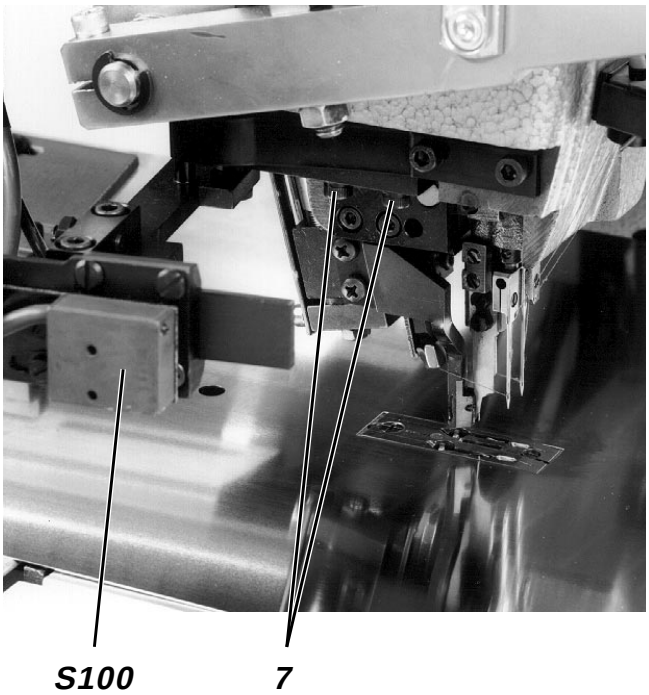
- Loosen screw 5 slightly.
- Align the reflected light barrier **S100** sideways precisely over the center of the reflecting foil 1.
- Tighten screw 5 again.

- Conduct a sewing trial.
  The seam beginning and seam end must lie symmetric to the flap. The first stitch should lie in front of and the last stitch behind the flap edge (see illustration a).
- In case of seam sketch b) or c) loosen screws 7.
- Slide light barrier **S100** counter to or in the direction of transport until the position of the seam as per illustration a is achieved.
- Tighten screws 7.
- Fine tune the seam length with the correction values for the light barrier at the seam beginning and seam end (see **Short Description DAC** Chapter 5.3).









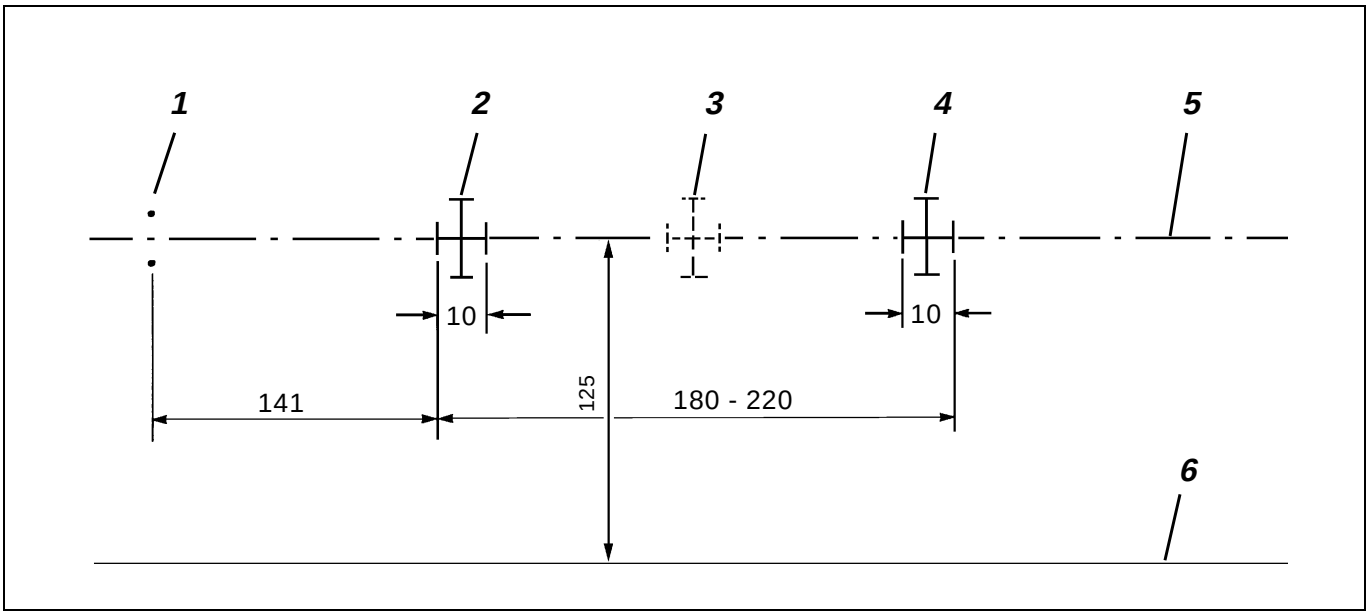
11. Marker Lights

The light markers 2 and 4 limit the sewing area.
Alternatively, a 3rd marker light, which can be supplied on request, can be attached (Order no. see Table).

Subclass	Order no.
745-26 745-28B 745-28D 745-28F	0794 003031
745-28A	0794 022068

The multifaceted mask built into the lamp optics makes possible the following applications:

- Via the small H-light markers a clearance of 10 mm between breast dart and flap edge can be achieved when positioning jacket fronts.
  By setting the marker lights higher, the clearance can be increased to a maximum of 15 mm.
- Turn the marker light 90°.
  By setting it higher or lower, clearances from 15 mm up to a maximum of 25 mm can be set with the large H-light marker.



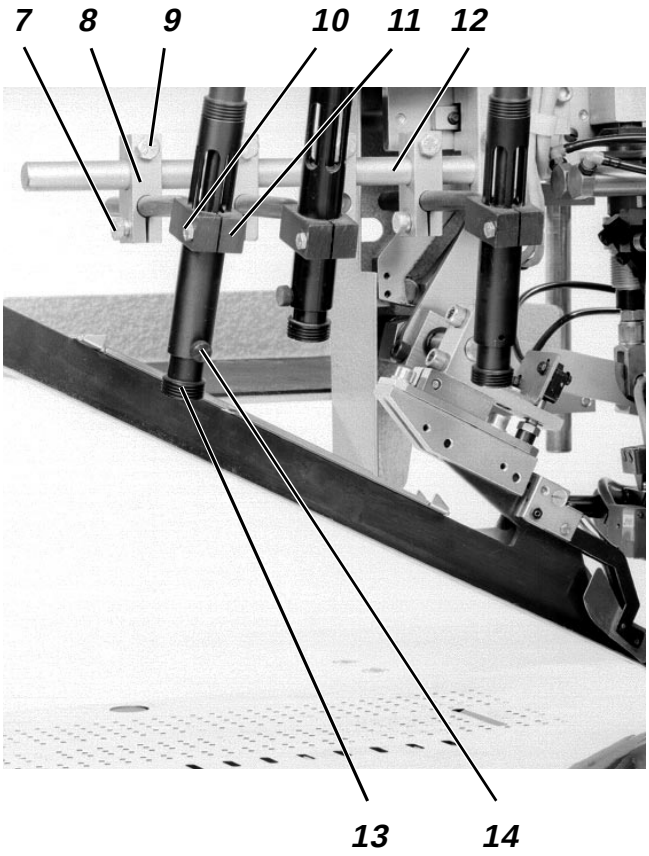
1 : Needles forward
2 : light marker - forward positioning point
3 : 3rd marker light (on request)
4 : Light marker - rear positioning point
5 : Center of the pocket opening
6 : Reference line

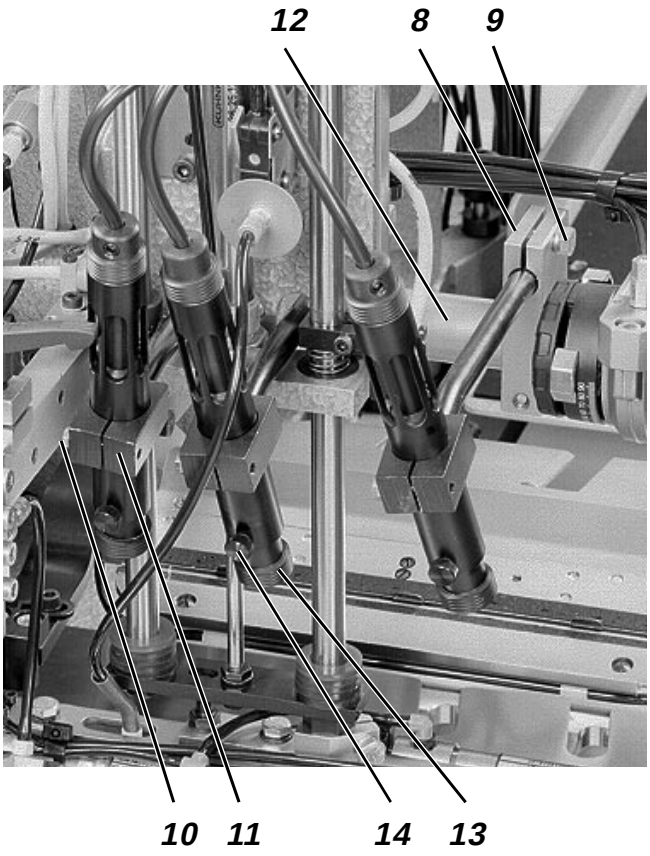
After raising or turning the marker lights it is essential to observe the following points:

- Reset the lamp holder.
- Align the light markers congruent to the center of the pocket opening.
- Keep to the maximum sewing area.

Focusing the light markers

- Loosen clamping screw 14 slightly.
- Focus the light marker by setting the tube 13 higher or lower.
- Tighten clamping screw 14.





Aligning the light markers

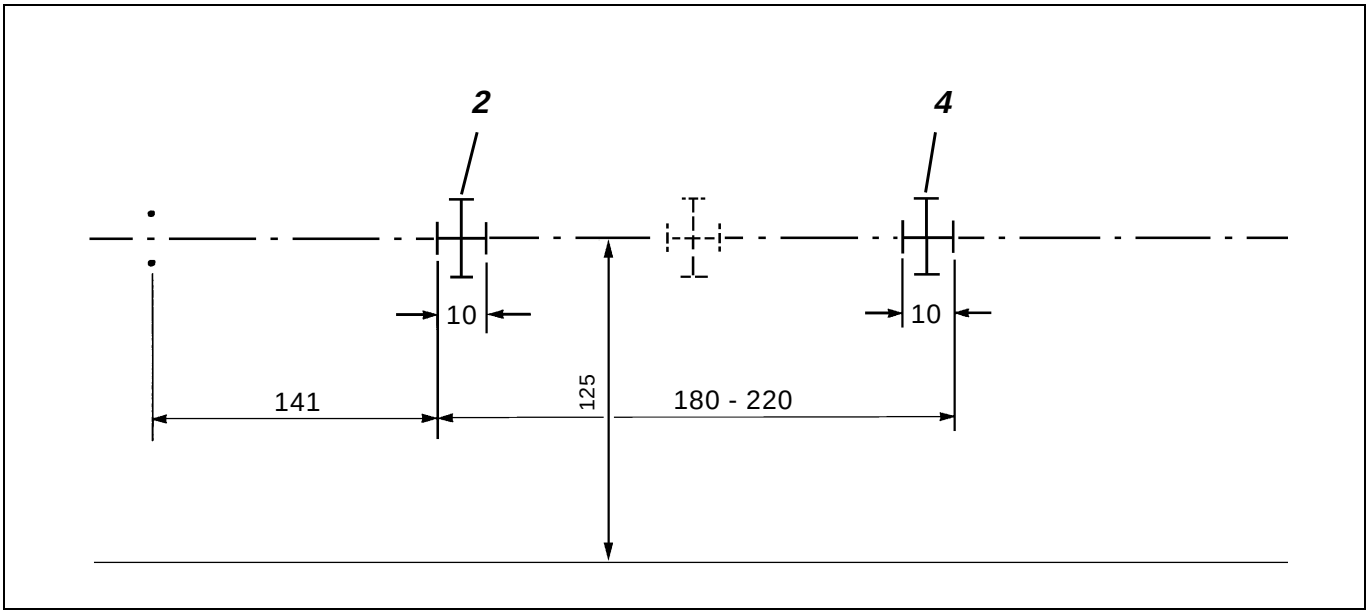
All light markers must be aligned to the cutting line (center of the pocket opening 5).

The clearance between the lengthwise lines of the H-light markers and the reference line 6 must be 125 mm.

- Loosen clamping screws 10 of the lamp holders 11 slightly.
- Set the lamps higher or lower in the lamp holders 11.
  There must be a clearance of 10 mm between the crosswise lines of the small H-light marker (see sketch).
- Turn the lamps in the lamp holders 11.
  The crosswise line of the H-light marker must lie parallel to the reference line 6.
- Tighten clamping screws 10.

- Loosen the clamping screws 7 on the the mounting blocks 8 slightly.
- Set the clearance of the light markers to the reference line 6 by pushing in or pulling out the lamp holder 11.
- Tighten clamping screws 7.

- Loosen clamping screws 9.
- Move the mounting block 8 on support axle 12.
  The to-be-set clearances of the light markers to the forward lying needles are to be found in the sketch.
- Tighten clamping screws 9.



Checking the precise position of the light markers

Light marker 2 (seam beginning):

- At the controls turn on the forward positioning point.
- Show the desired seam beginning with a chalk mark on the sewing piece.
- Position the sewing piece with the chalk mark at the forward crosswise line of the light marker 2.
- Start the sewing sequence.
  The seam must begin at the chalk mark.
- To correct: Realign the marker light 2 after loosening its bracket.

Light marker 4 (seam end):

- At the controls turn on the rear positioning point.
- Check the alignment of the light marker 4 for the seam end analogously.

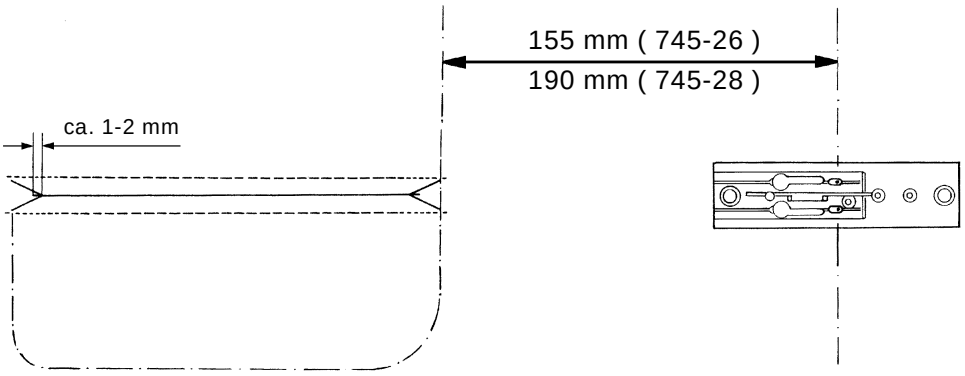
12. Knife Brackets for the Incisions at the Corners

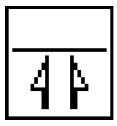
Caution Risk of Injury !

Keep hands clear of the area of the corner knives.
The rapidly rising corner knives can cause serious injuries through cuts.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.

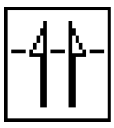
Presetting

- The clearance between the cutting edges of the corner knives in the knife bracket " seam end " and the forward-lying needles should be 155 or 190 mm (see sketch).
- At the seam beginning the knife incisions must end in front of the first and at the seam end in front of the last stitch (see sketch). With the flap sewn on this corresponds to the forward edge of the flap and the rear edge of the flap.





- Turn the main switch on !
  Activate the testing programm **" Setting the Corner Knife Adjustment ".**
  The further operations are described in the **Short Description DAC** Chapter 6.3.5.

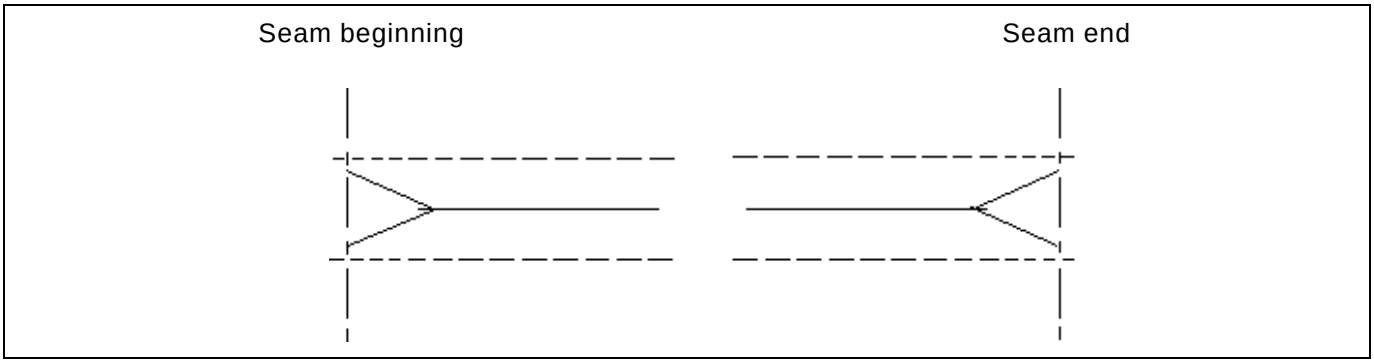


- With 745-28 set the angle of the corner knives to straight corners.

- Lift the corner knives.
  At the widest point of the corner knives check the clearance of 155 or 190 mm.
  If the clearance is not correct reset the position of the corner knives (see Chapter 12.1).

12.1 Adjusting the Position of the Corner Incisions

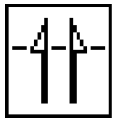
- At the controls set the longest sewing distance.
- Conduct a seam trial.
  It is a help to first iron on a piece of nonwoven fleece to the sewing piece. This makes the corner incisions plainly visible.
- Check the seam and cut pattern.
- To correct: Conduct the following settings.



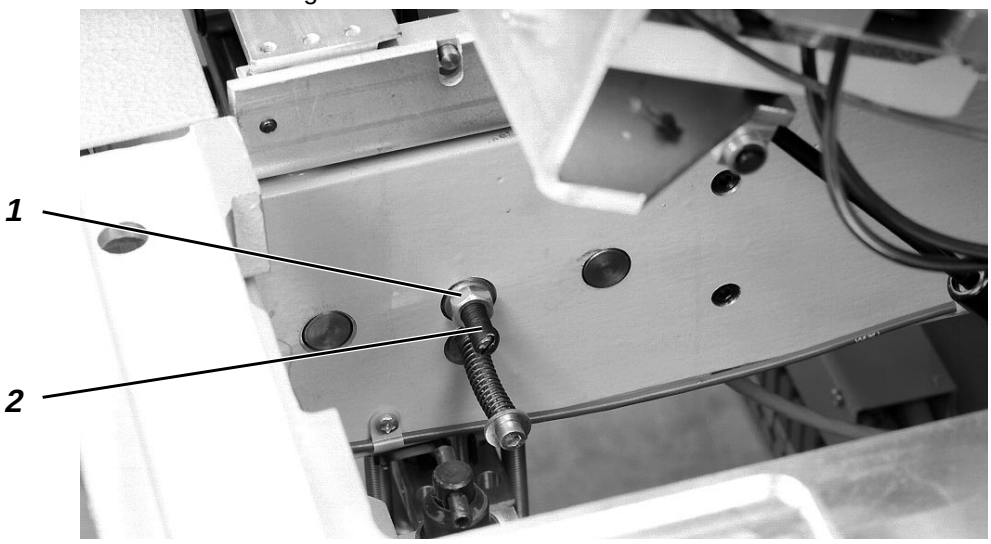
Caution Risk of Injury !

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


- Set the correction values for seam beginning (NA) and seam end (NE) to the median value 0 (no correction) (see **Short Description DAC** Chapter 5.3).
- Tilt the machine head back.
  The stopper screw 2 and the lock nut 1 are to be found in the area under the hooks.
- Loosen lock nut 1.

- Activate the testing programm **" Setting the Corner Knife Adjustment "**.
  See **Short Description DAC** Chapter 6.3.5 .
- Lift the corner knives.
- Set the stopper screw 2.
  Set the clearance dimension 155 or 190 mm with stopper screw 2.
  Measure the clearance at the widest point of the corner knife.
- Tighten lock nut 1.

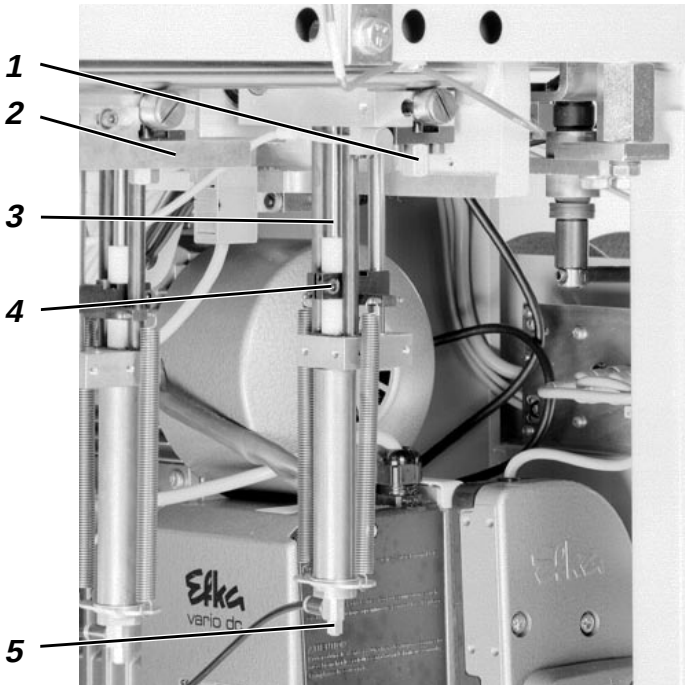


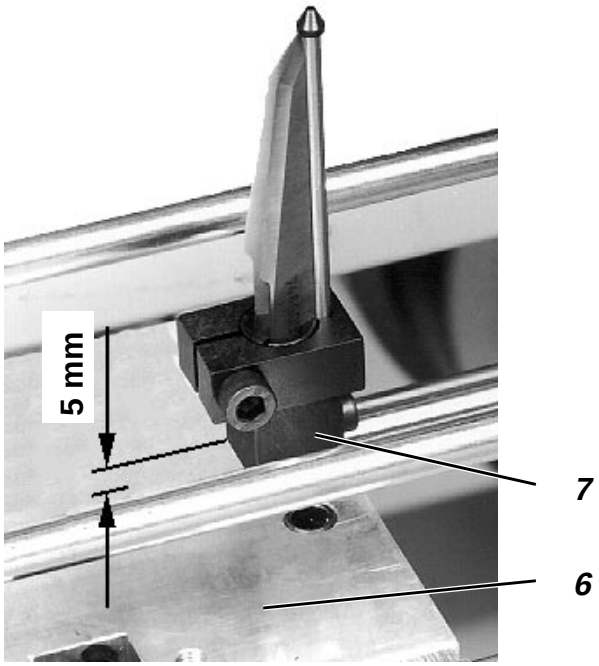
Adjusting the corner incision of the knife bracket " seam beginning "

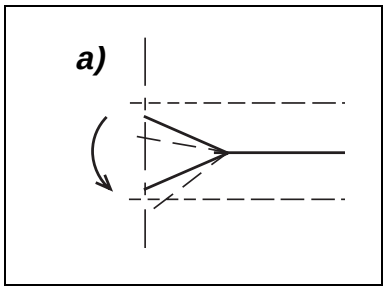
The knife bracket " seam beginning " must cut in up to **in front of** the first stitch.

– Activate the testing program **" Setting the Corner Knife Adjustment "**.
  See **Short Description DAC** Chapter 6.3.5 .
– Set the minimum clearance of the corner knives.
– Lift the corner knives.
  Check the clearance of 55 mm with **745 - 26** or 90 mm with **745 - 28**.
  Measure the clearance at the widest point of the corner knife.

  If the clearance is not correct set the switching plate 2 accordingly and check the clearance again.



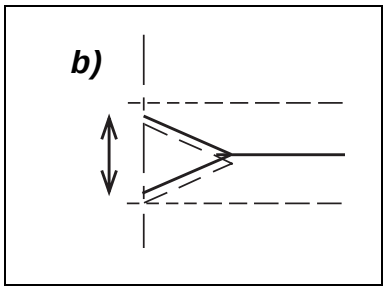




Aligning the corner incisions to the seams (745-26)

The corner incisions must lie symmetric to the seams (illustration a).
The clearance of the incision ends to the seams must be the same on both sides (illustration b).

– Loosen screw 4.
– Turn rod 3 accordingly.
  Set a clearance of approx. 5 mm between the block 6 and the knife bracket 7 with the cylinder retracted. The safety clearance prevents a striking of the piston rod in the cylinder.
– Tighten screw 4 fest.



– Turn nut 1.
  The nut is self-locking.
  Set the same clearance between the incision end and the seam on both sides.

Setting the stroke speed of the corner knives

– Regulate the stroke speed with the one-way restrictor valves 5.
  The lifting motion should be rapid, but not jerky.

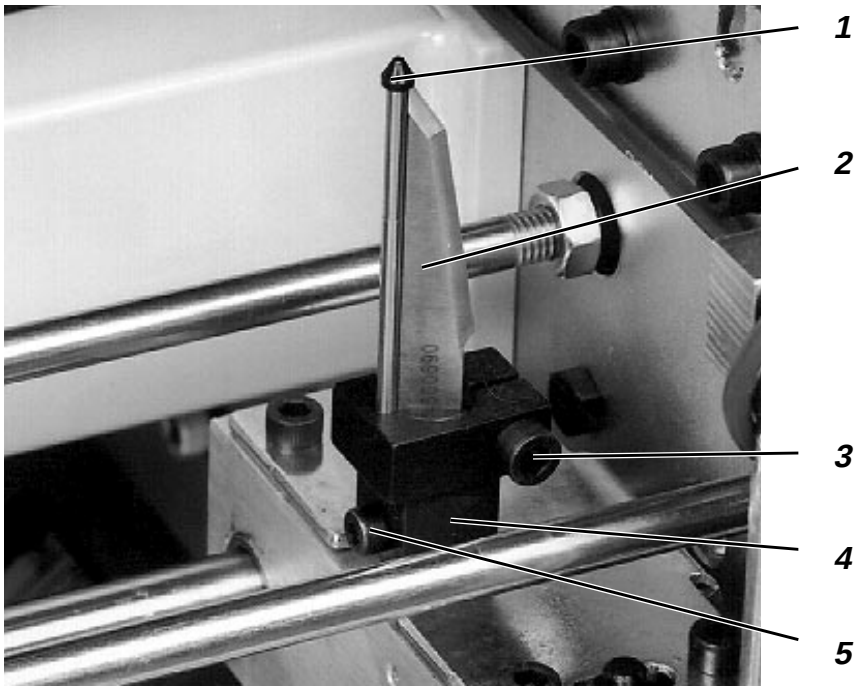
12.2 Replacing Corner Knives (745-26)

Blunt corner knives are to be replaced by a knife set to be found in the accessories pack.
Please see Chapter 1 of these service instructions for the order numbers of the corner knife sets.

Caution Risk of Injury !

Turn the main switch off.
Replace the corner knives only with the main switch turned off.

Danger of injuries from cuts!
Keep hands clear of the sharp blades of the corner knives.



- Screw the screw 5 out.
- Pull the knife bracket 4, complete with corner knives 2 and the awl 1, from the knife bar.
- Screw the knife bracket 4 into a vise for secure working.
- Loosen clamping screw 3.
  The clamping collar in knife bracket 4 is loosened.
- Remove the awl 1 and both corner knives 2.
- Insert new corner knives into the slits in the knife bracket 4.
  Attention!
  The angle-ground blades must face to the outside.
- Insert the awl 1 into the hole provided.
- Push both corner knives into the knife bracket 4 up to the stop.
  Hereby bring the corner knives to the back until they touch the awl 1.
- Tighten clamping screw 3.
- Insert the knife bracket 4 onto the knife bar up to the stop.
- Tighten screw 5.

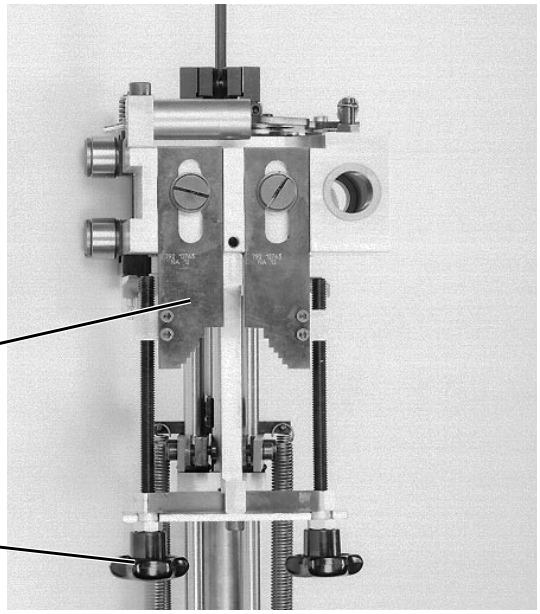
12.3 Adjusting the Knife Brackets for Angled Corner Incisions (745 -28)

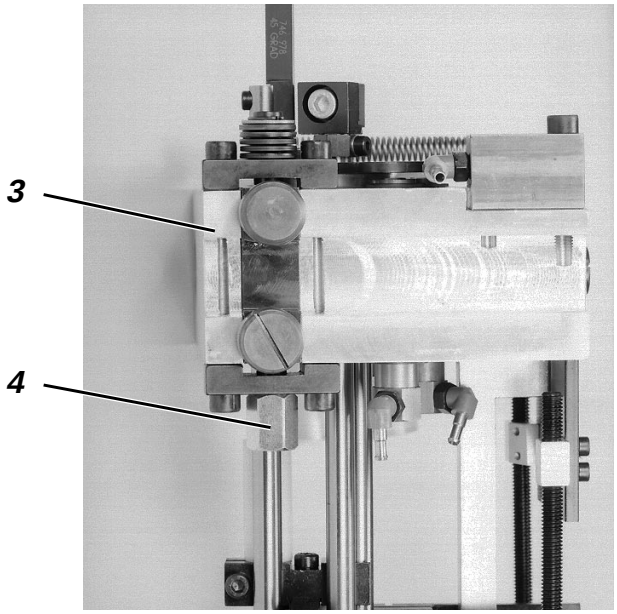
Caution Risk of Injury !

Keep hands clear of the area of the corner knives.
The rapidly rising corner knives can cause serious injuries through cuts.
Conduct setting work with the sewing machine running only while exercising the greatest possible caution.

Position of the corner incisions

The setting of the clearance between the cutting edges of the corner knives in the knife bracket " seam end " and the forward-lying needles occurs as described for straight corner incisions.

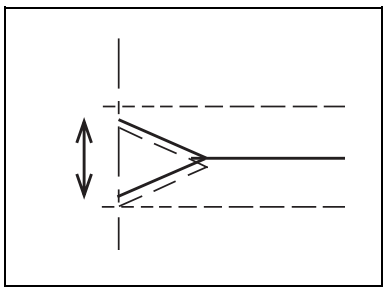




– Turn the star knobs 2.
  Set stopper plates 1 flush with the top of the knife bracket 3.
  In this position the stopper plates 1 lie about at the center of the slot.
– Set the clearance dimension.
  See Chapter 13.1
  The clearance dimension is 190 mm.

Adjusting the corner incision of the knife bracket " seam beginning "

The knife bracket " seam beginning " must cut in up to **in front of** the first stitch.



– Set the knife bracket " seam beginning " as described in Chapter 12.1.

Aligning the corner incisions to the seams

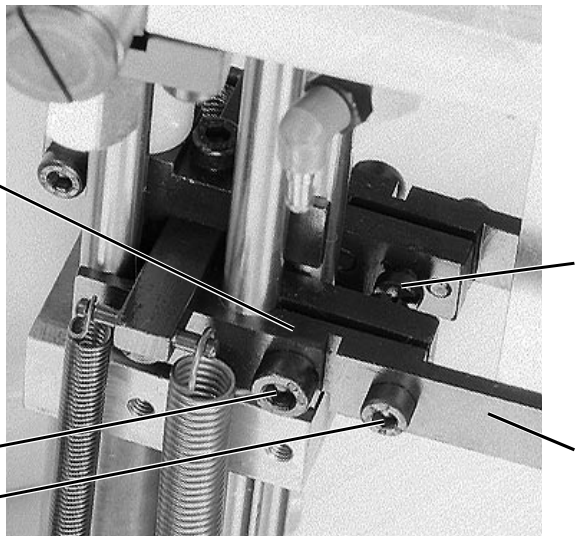
The clearance of the incision ends to the seams must be the same on both sides.

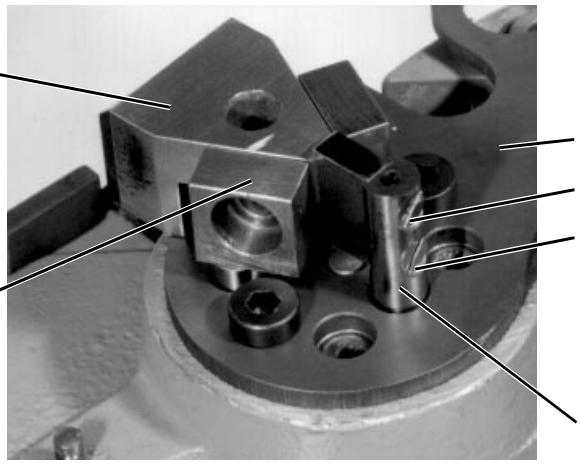
– Turn nut 4.
  The nut is self-locking.
  Set the same clearance between the incision end and seam on both sides.

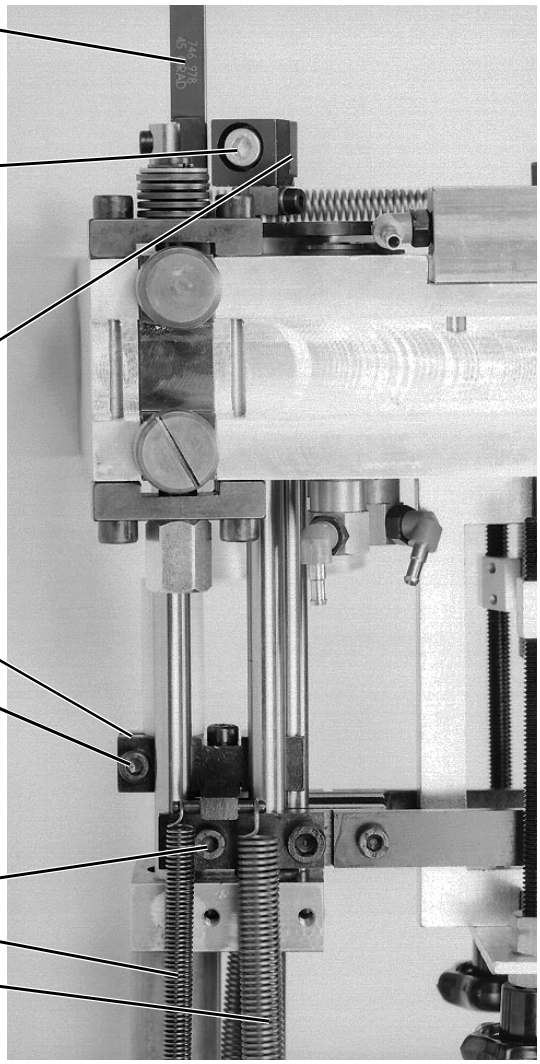
Setting the awl rod and the knife bars

The setting oocurs with a gauge (Order no. see Chapter 1, side 4).

- Remove screws 7 and loosen 14 and 15.
- Remove the clamping piece 9, corner knives and awl 6.
- Loosen clamping screw 2 and 12 and the adjusting screws 3 of the forked pieces 1.
- Insert gauge 4 in the groove of the awl rod and tighten screw 14 and 15.
- Set the forked pieces 1 and tighten screws 16.
  The knife bars should be guided tight but still have ease of movement.
  To check: Detach the draw springs 17 and 18.
- Set the awl rod 19 and tighten screws 12.
  When the forked piece 11 is in its lower rest position the gauge 4 should touch on the catch lever 13.
- Set the knife bar.
  The top edges of knife bracket 5 and the gauge 4 should be uniform.
- Align knife bracket 5.
  The knife bracket 5 should lie parallel to the outer edges of the gauge 4.
  Turn the awl rod and knife bars accordingly.
- Tighten clamping screws 2 and 12 again.
- Check the ease of movement of the knife bars and the awl rod.





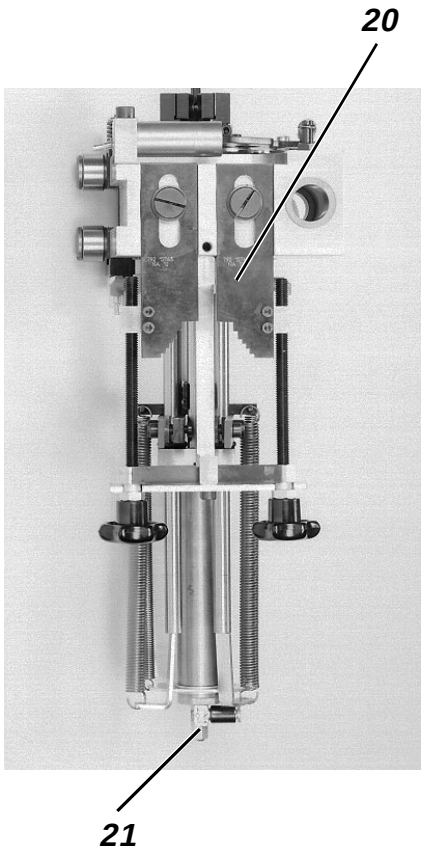


Setting the forked pieces to the stopper strips

The forked pieces are formed to a stop at their rear. Dependent on the set angle and left or right seam pattern, they strike at differing heights on the stopper plates 20 when the cylinder 36 is operated.

- Activate testing program **" Setting the Corner Knife Adjustment "**. See **Short Description DAC** Chapter 6.3.5.
- Lift the corner knives.
- Set both adjusting screws 3 accordingly.
  The stops 10 are to be set so that they, by straight corner incisions in the step 0°, touch unimpaired in the steps of the stopper plates 20 and have sufficient surface to lay on.
- Set the various angles in the testing program and check if the stops touch unimpaired in the steps of the stopper plates 20 at all angles and have sufficient surface to lay on.
  If this is not the case, then both adjusting screws 3 are to be set to an adjusting setting.

Setting the throttle valves



- Regulate the stroke speed of the awl rod with the the one-way restrictor valves 21.
  The lifting movement should be rapid but not jerky.
- Regulate the swing movement of the catch lever with the one-way restrictor valves. The valves are to be found immediately in front of the solenoid valves. The movement should be rapid, the rods of the catch cylinder must catch securely.

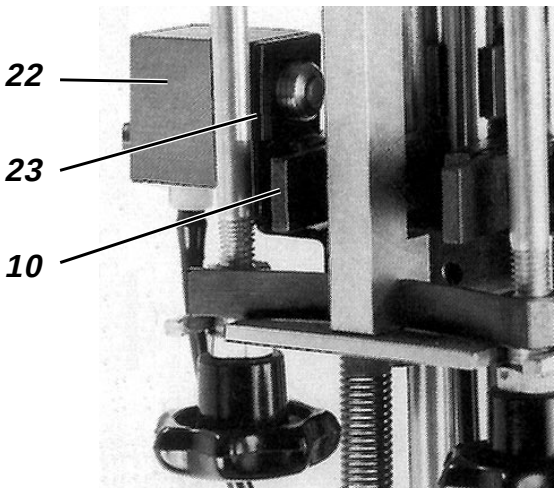
Replacing the corner knives

- Loosen screws 7.
- Remove the knives and insert the new knives between clamping piece 9 and knife bracket 5.
  ATTENTION !
  The angle-ground surfaces must face to the outside.
  Push the knife into knife bracket 5 up to the stop and thereby bring it to lay on against the awl 6.
- Tighten screws 7.

Knife lock - right (Optional equipment for 745 - 28 A)

Order no. : 0792 007872

- Set bracket 23.
  The piston rod of the cylinder 22 must catch over the stops 10 lying below.



13. Guidance and Transport of the Knife Brackets

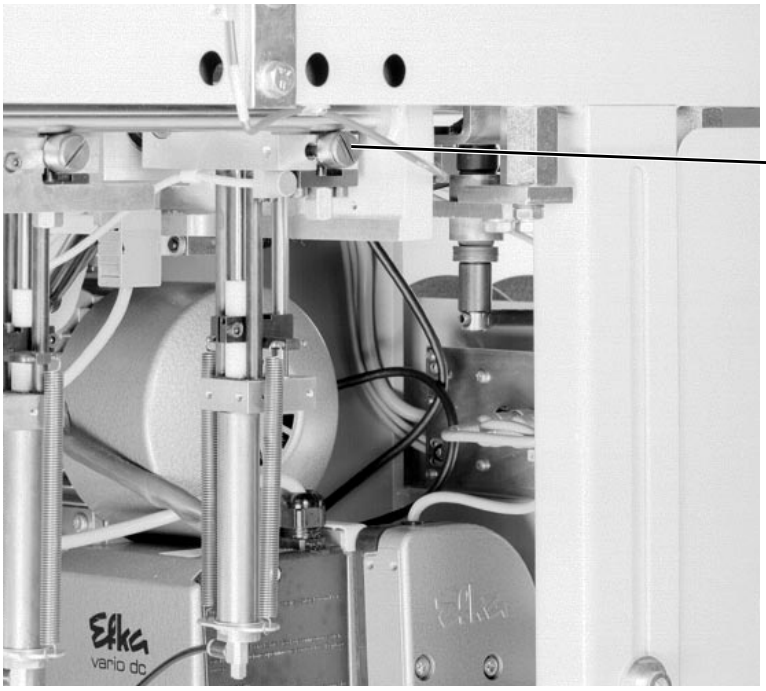
The advance of the knife bracket (seam beginning) occurs via a step motor.

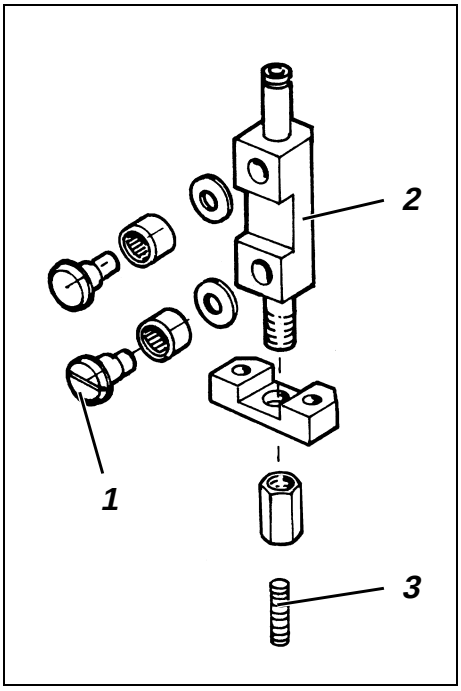
Caution Risk of Injury !

Keep hands clear of the area of moving machine parts.

13.1 Rollers

The knife brackets are guided on the guide axles at the left by ball sleeves and at the right by rollers.
The rollers 1 are set tight at the factory.





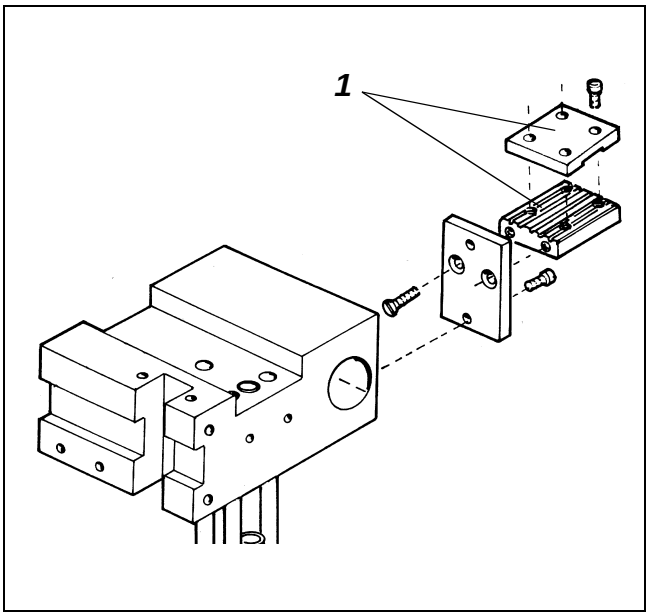
Caution Risk of Injury !

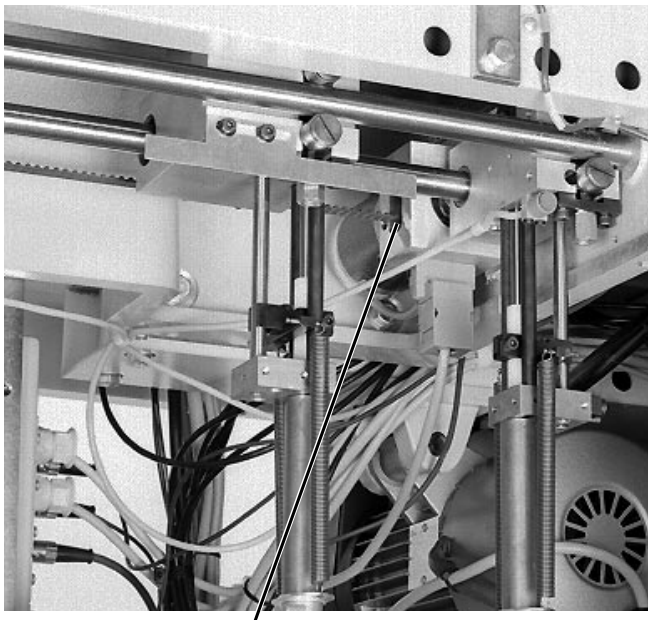
Turn the main switch off.
Set the play of the rollers 1 only with the main switch turned off.

To remove play:

- Loosen the **lower** roller 1.
  For this loosen the set screw 3 (Allan screw) in the roller holder 2.
- Set the eccentrically bearinged roller 1 tight by turning.
- Tighten set screw 3.

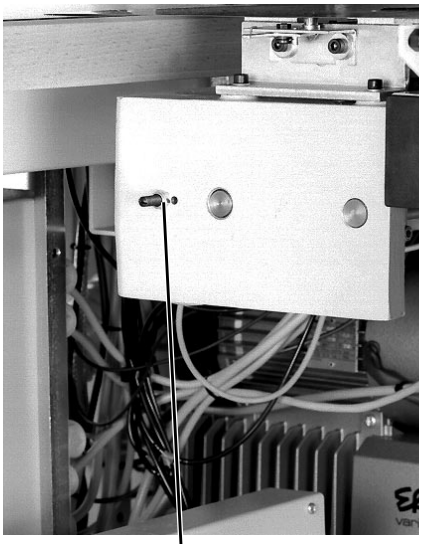
13.2 Timing Belt Tension and Replacing the Timing Belt





Caution Risk of Injury !

Turn the main switch off.
Replace the timing belt only with the main switch turned off.



Timing Belt Tension

At the middle of the distance S it must be possible to bend in the timing belt approx. 10 mm under a test load of FV = 3500g.
(see Chapter 2.4)

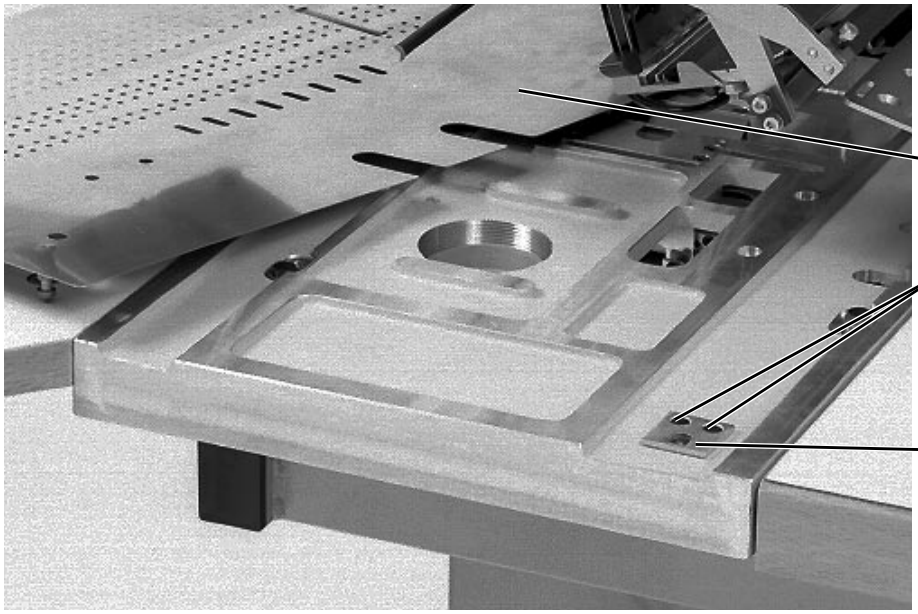
To correct:

- Corret the timing belt tension at the nut 3.
  The nut 3 is equipped with a self-locking thread.

Replacing the timing belt

For ease of replacement the timing belt is split.
It is held together by the timing belt clamp 1.

- Loosen the 4 clamping screws on the timing belt clamp.
- After loosening the timing belt clamp 1 pull the timing belt out of the housing.
- Push one timing belt end through the opening 2 onto the timing belt pulley of the step motor and place around the timing belt pulley.
- For the connection of the two timing belt ends, slacken the timing belt tension slightly at nut 3.
- Connect the two timing belt ends with the timing belt clamp 1.
- Set the timing belt tension (see above).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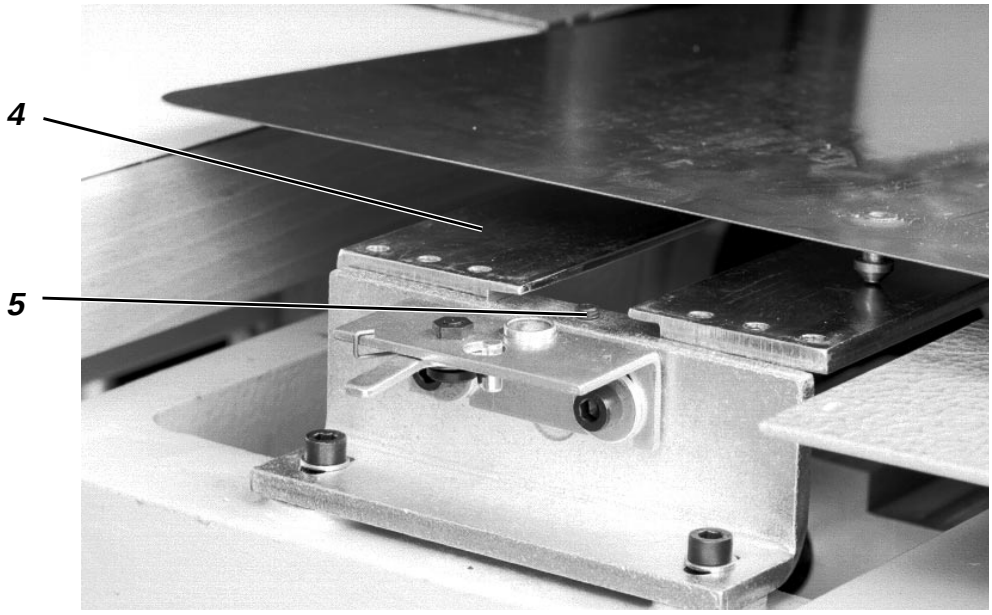
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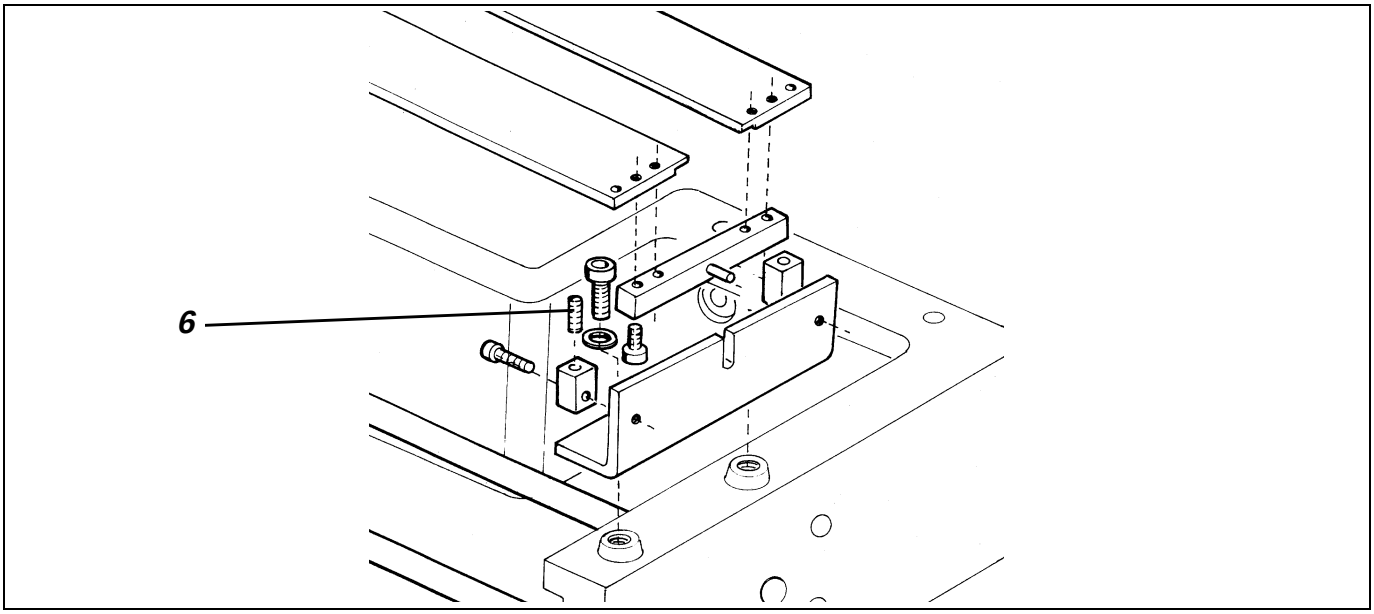

6

14. Setting the Cloth Slider Plate and Feed Plate

Align the cloth slider plate 1 so that its recess has the same clearance to both sides of the needle plate elevation.

The feed plate 4 must build one level with the base plate of the machine head.

Caution Risk of Injury !

Turn the main switch off.
For safety reasons the cloth slider plate 1 is only released in the transport carriage end position and with the main switch turned off.

- Remove the cloth slider plate 1 (see Operating Instructions).
- Loosen screws 2 slightly.
- Set the cloth slider plate 1 forward by moving the mounting plate 3.
- Tighten screws 2 again.
- Set the feed plate 4 at one level with the table top at the back by turning the adjusting screw 5.
- Set the feed plates 4 at one level with the table top at the front by turning adjusting screws 6 (2-off).

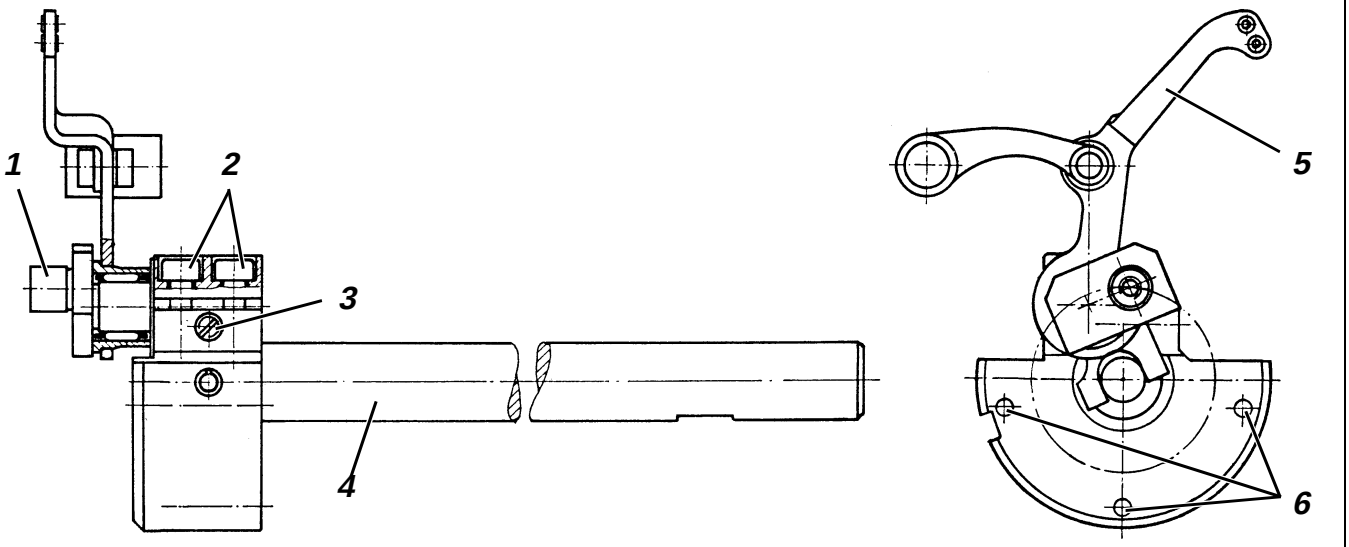
15. Machine Head

15.1 Crank Pin on the Arm Shaft

The clearance of the eccentric crank pin 1 to the arm shaft 4 determines the size of the needle bar stroke and thus the upper dead center of the commonly and separately switchable needle bars.

ATTENTION !

The crank pin 1 is precisely set at the factory!
After a replacing of the thread lever or when the needles no longer switch off correctly, then the crank pin 1 is to be reset.



The setting of the crank pin 1 occurs with the gauge 13 (Order no. 0246 002591). The crank and the arm shaft need not be removed for the setting.

Caution Risk of Injury !

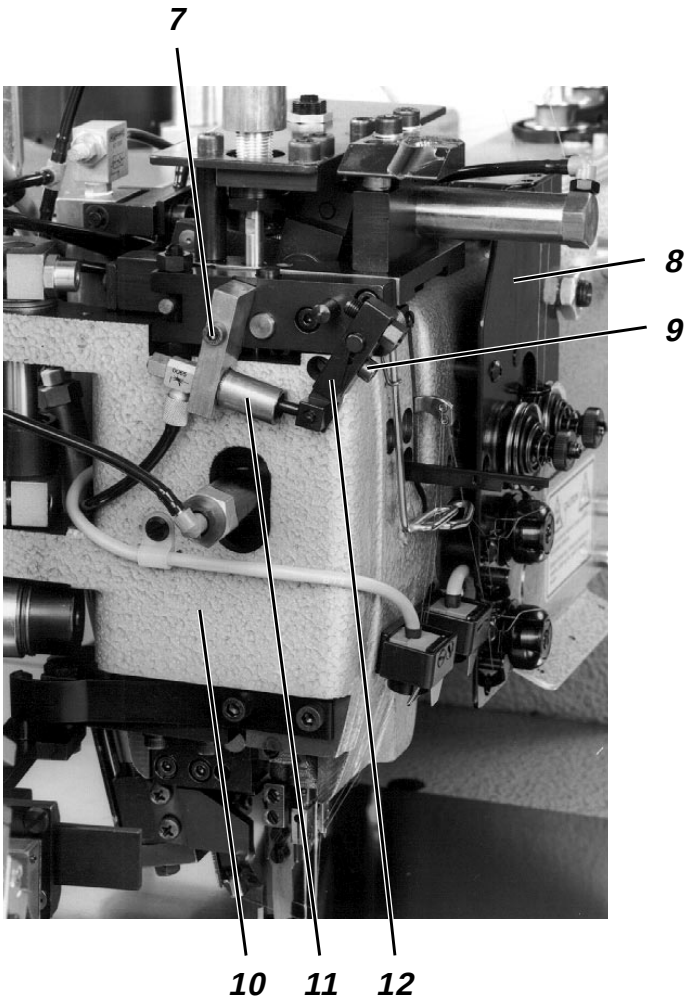
Turn the main switch off.
Set the crank pin only with the main switch turned off.

- Turn the main switch off.
- Loosen screws 7 and 9.
- Remove cylinder 11 with swing lever 12.
- Remove the head cover 10 after loosening the mounting screws.
- Remove the needle bar link (see Chapter 15.2.4).

- Loosen the needle tie rod from crank pin 1 after screwing out its mounting screw (Attention: Left-hand thread!) and pull off with the needle cage.
- Turn the handwheel until the Allan screws 2 show downward. The Allan screws 2 are accessible in this position.
- Loosen Allan screws 2.

- Swing the thread tension plate 8 away to the side after loosening its mounting screws. The hole in the machine arm to be found underneath is freely accessible.
- Loosen the support screw 3 accessible through the hole.
- Insert gauge 13 with its pins into the seating holes 6.
- Turn the crank pin 1 so that it catches in the recess of the gauge.
- Press crank pin 1 on.
  The thread lever 5 must be tight except for a lubricating mist gap.
- Tighten the Allan screws 2 and support screw 3.
- Remove gauge 13.

- Check the ease of movement of the machine by turning the handwheel.
- Push the needle tie rod with the needle cage on to crank pin 1 and tighten its mounting screw (Attention: Left-hand thread!).
- Attach the needle bar link and set (see Chapter 15.2.4).
- Attach the head cover 10 and cylinder 11 with swing lever 12 again.



15.2 Needle Bar Link

For securing the seam the seam beginning and the seam end are executed with stitch condensation and seam bartacking (swinging the needle bar link) or only stitch condensation.

- Activate stitch condensation or bartacking at the seam beginning and seam end at the controls.
  See Short Description **DAC** Chapter 5.5
- With 1.4 mm stitch length in stitch condensation the bartacking is generally sewn with a stitch length of 0.8 mm.

15.2.1 Setting the Needle Bar Link to the Needle Bars

For a sure switching on and off of the needle bars the needle bar link must be precisely set to the needle bars.
The setting is made with the gauge 3 (Order no. 0246 000919).

Caution Risk of Injury !

Turn the main switch off.
Check and correct the setting of the needle bar link to the needle bars only with the main switch turned off.

Checking the setting

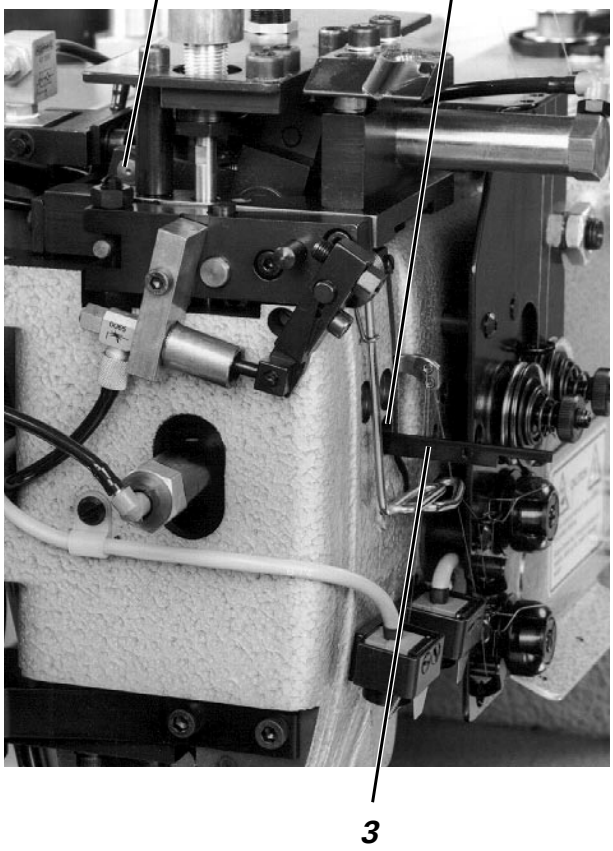
- Press latch 1 down.
  Switch the needle bars in by turning the handwheel.
- Insert the 2.6 mm high setting side of the gauge 3 into the hole 2 on the machine arm.
  The gauge must be able to be inserted without play between needle bar link 9 and the clamping collars 10 of the needle bar.
- Bring the needle bars into the high position by turning the handwheel.
  A slight resistance must be felt.
- Insert the 2.8 mm high setting side (marked by the hole).
  With a correct setting this side of the gauge can **not** be inserted between the needle bar link and the clamping collars.
- Turn the handwheel.
  The handwheel should **not** be able to be turned beyond the upper dead center.

Correcting the setting

- Loosen screws 6.
- Loosen lock nuts 7.
- Set the clearance between the needle bar link 9 and the clamping collars 10 by turning the adjusting screws 4 and 8.

  Reduce the clearance: Turn the lower adjusting screw 8 clockwise
  Increase the clearance: Turn the upper adjusting screw 4 counterclockwise

  Each adjusting screw lying opposite must first be screwed back. After the setting is made, turn the adjusting screw lying opposite against the pin 5.
- Tighten screws 6.
- Tighten lock nuts 7.
- Check the setting with gauge 3 again.
- Check the setting of the center knife and, if necessary, reset (see Chapter 15.13).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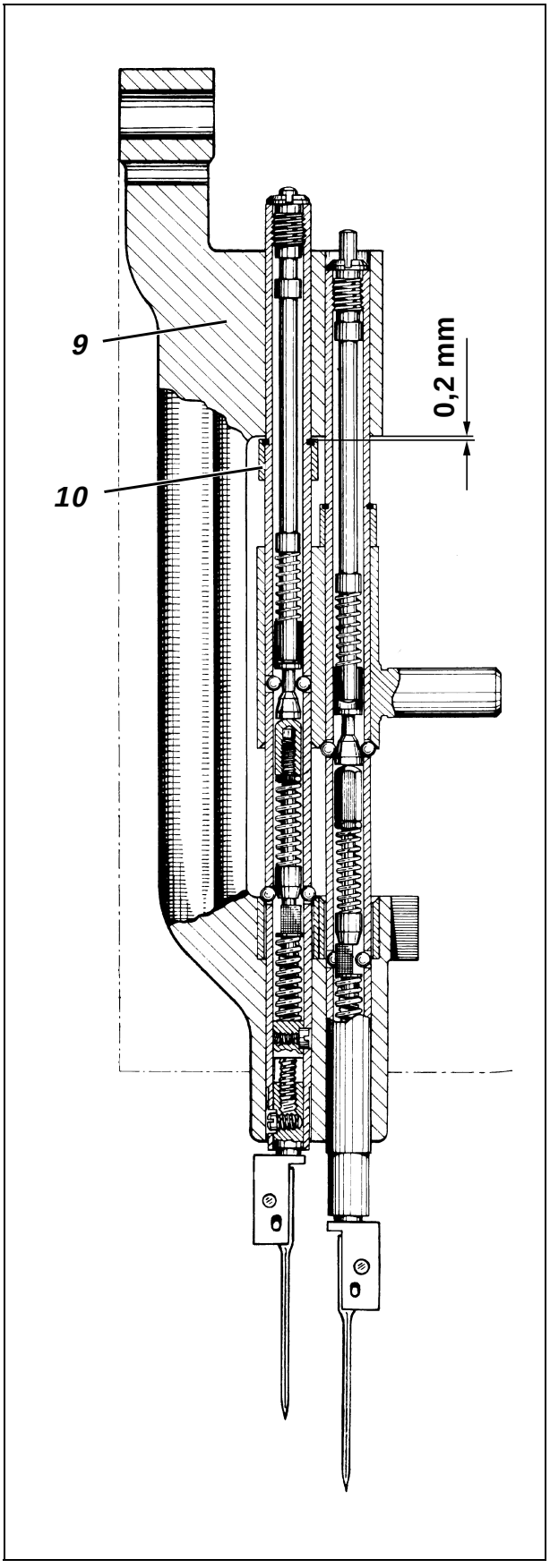
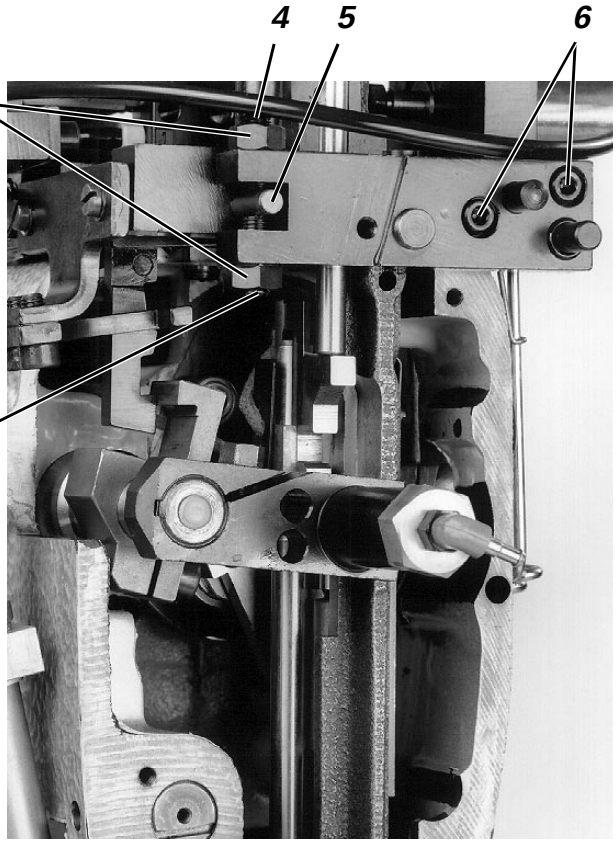

9
10
0,2 mm


4
5
6
7
8

15.2.2 Switching the Needle Bars On

With the cylinder 6 not operated the needle bars are switched off and arrested in the high position.

The extending piston rod of the cylinder 6 operates the latch 3.
The coupling in of the needle bars occurs at that moment when the the crosshead reaches its upper dead center.

Caution Risk of Injury !

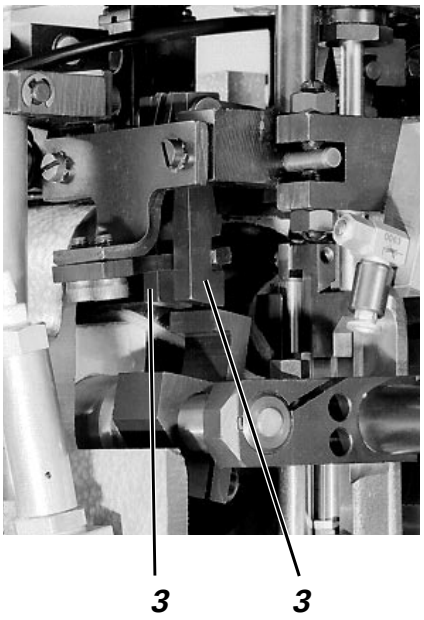
Turn the main switch off.
Conduct the setting only with the main switch turned off.

ATTENTION !

The subclass 745 - 28 is equipped with 2 latches.
The 2nd latch is to be set analogously.

Switching the needle bars on manually:

- Press latch 3 down and hold operated.
- Couple the needle bars in by turning the handwheel.
- If the latch 3 is not held operated the needle bars couple out again at the next revolution in the high position.



In the highest (unoperated) position of the latch 3:

The clearance between the lower edge 2 of the catch 1 and the edge 4 of the latch must be **0.5 mm**.

- Set the clearance by moving the cylinder 6.

In the lowest (operated) position of the latch 3:

The swing lever 9 must, with its lower edge 8, move past approx. **1 mm** above the edge 4 of the latch.

- Loosen the lock nut on adjusting screw 7.
- Pull latch 3 back against catch 1.
  Push latch 3 down manually into its lowest position and **hold fast**.
- Turn the handwheel until the swing lever 9 moves into the recess on latch 3.
  The lower edge 8 of the swing lever lies opposite the edge 4 of the latch.
- Set the clearance between both edges by turning the adjusting screw 7.
  Measure the clearance with a feeler gauge.
- Tighten the lock nut on adjusting screw 7.

Position of the swing lever 9:

When cylinder 6 is vented the latch 3 catches with its tappet 4 under the catch 1.

At its farthest swing to the back (in direction of the arrow) the swing lever 9 must still just push the latch 3 off the catch 1.

- Swing swing lever 9 out of the area of latch 3 by turning the handwheel.
- Release latch 3.
  The latch catches with its tappet 10 under the catch 1.

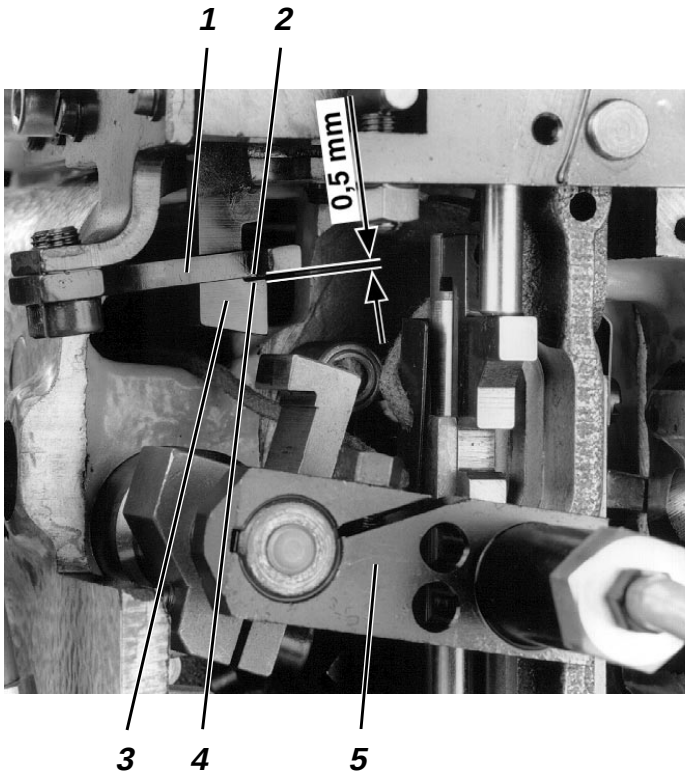
Loosen clamping screw 13 slightly.

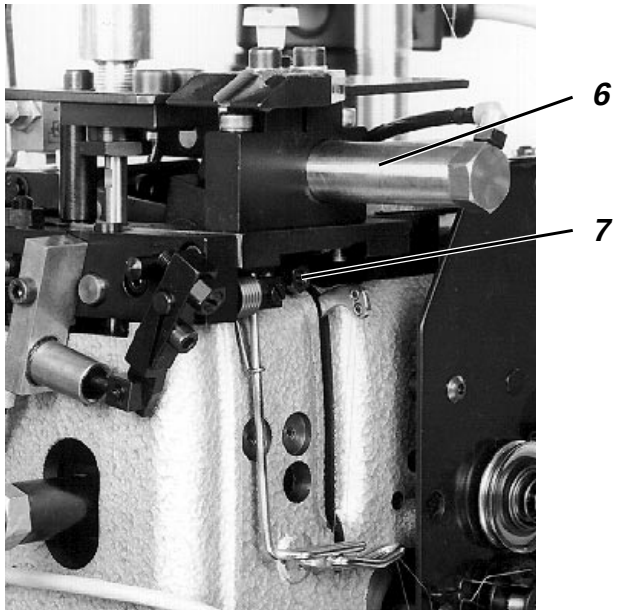
Continued on the next page !

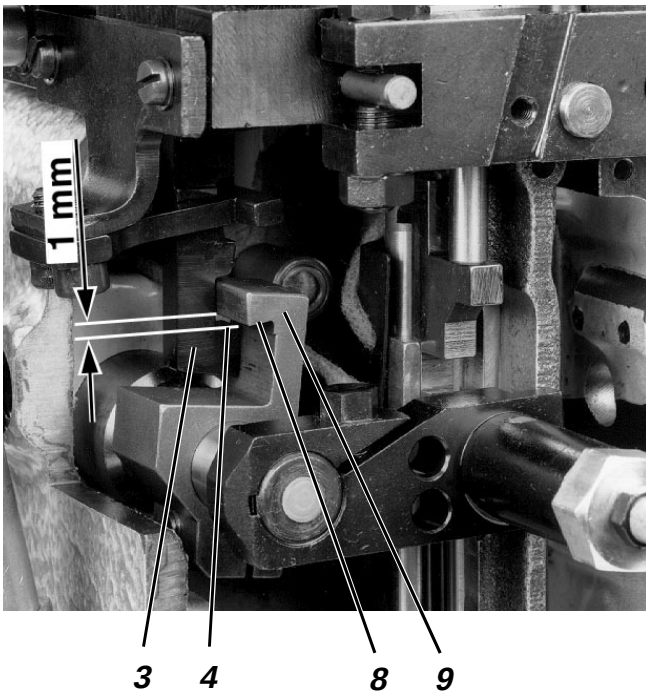
– Turn the handwheel until the swing lever 9 reaches its farthest swing to the back (in direction of the arrow).
– Turn swing lever 9 on the shaft 11 so that the tappet 10 of the latch is still just pushed off the catch 1.
– Tighten clamping screw 13.
– Attach all removed parts (head cover, cylinder with swing lever for the thread puller) again.

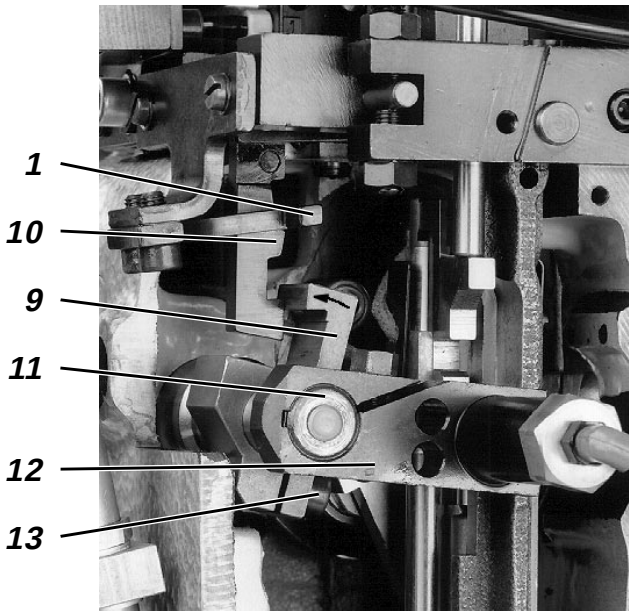
Position of the needle bars to the center knife:

– The needle bars must move counter to the center knife. With the needles lying low the drive lever 12 must lie at its upper dead center.
– It is essential to conduct a precise setting as per Chapter 15.13.









15.2.3 Swing Movement

The swinging of the needle bar link at the seam beginning and seam end occurs via the cylinder 2.

After the setting of the eccentric axle 4, the seam bartacking plus needle transport result in a swing range of approx. 3.5 mm.
The slit 7 must lie in the lower semicircle of eccentric axle 4.

In the idle position of the cylinder 2 (spring return) the clearance of the needles (needle thickness Nm 100) to the front edges of the needle hole must be 0.2 to 0.3 mm.

The needle transport occurs compulsory after the entry into the material.

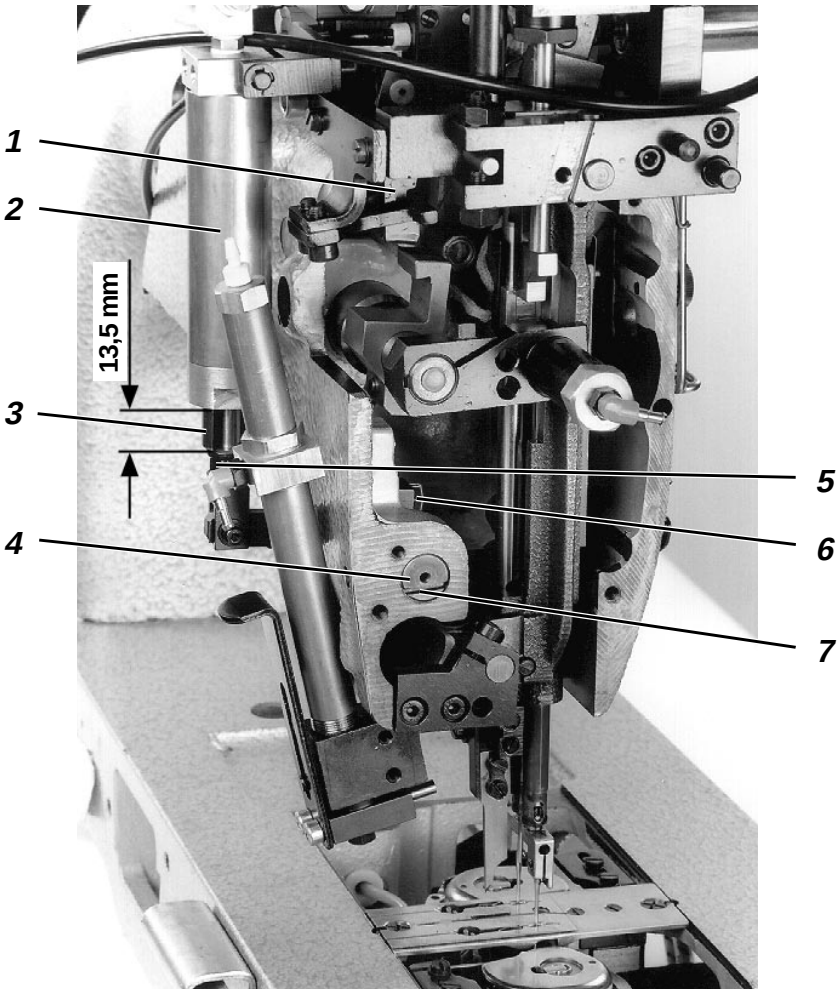
– Step back on the left pedal.
  The transport carriage runs into its rear end position.

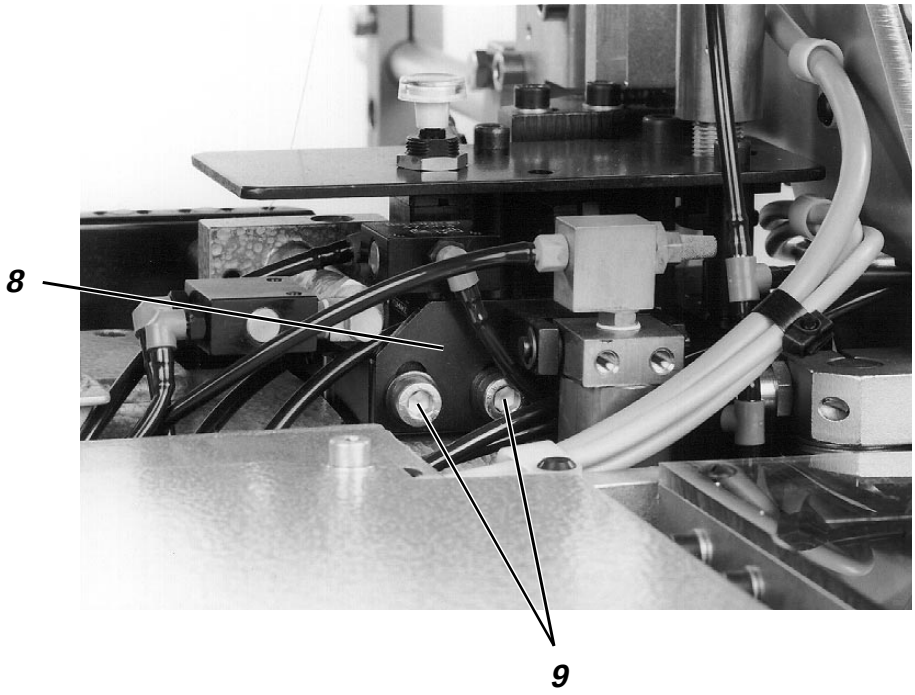
Caution Risk of Injury !

Turn the main switch off.
Set the swing movement of the needle bar link only with the main switch turned off.

– Remove the cylinder and the swing lever for the thread puller and the head cover with folder.
– Clamp a suitable spacer 3 (13.5 mm thick) between cylinder 2 and nut 5 of the piston rod.
– Press latch 1 down.
  Bring the needle bars into the low position by turning the handwheel.
– Loosen clamping screw 6.
– Turn the eccentric axle 4 until the needles enter the center of the needle holes.
  The slit 7 must thereby lie in the lower semicircle of the eccentric axle 4.
– Tighten clamping screw 6.
– Remove spacer 3.
  The needles lie in the forward position.

– The clearance from the front edges of the needle (needle thickness Nm 100) to the front edges of the needle hole must be 0.2 to 0.3 mm.
– Loosen screws 9 slightly.
– Set the clearance by setting the mounting plate 8 higher or lower.
– Tighten screws 9.


1
2
13,5 mm
3
5
6
4
7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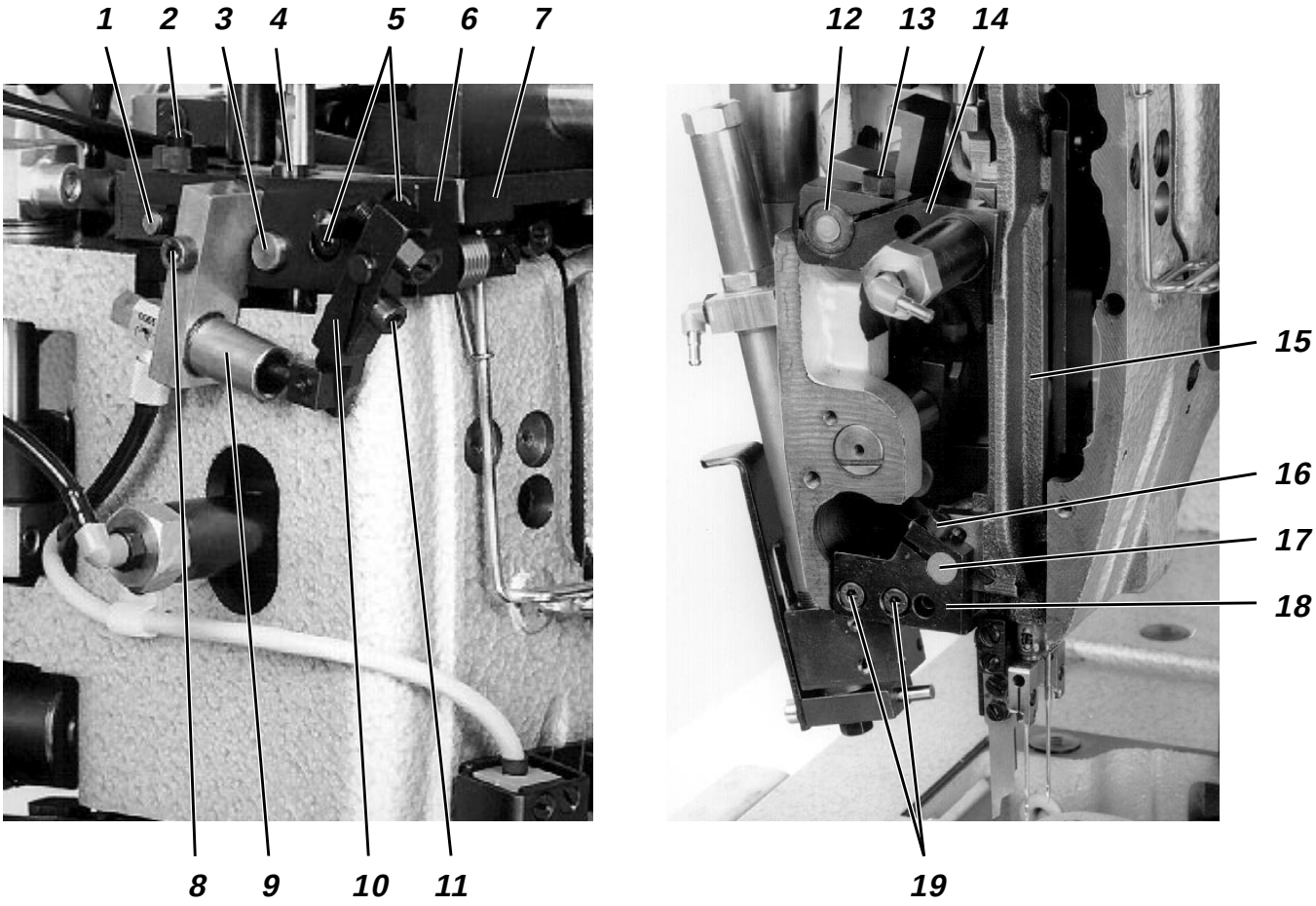
9

15.2.4 Removing and Attaching the Needle Bar Link

Caution Risk of Injury !

Turn the main switch off.
Remove or attach the needle bar link only with the main switch turned off.



Removing the needle bar link

- Loosen screws 8 and 11.
- Remove cylinder 9 with swing lever 10.
- Remove the head cover after loosening the mounting screws.
- Loosen clamping screw 13 slightly.
- Pull the knife drive lever 14 off of shaft 12 (Attention wedge!).
- Loosen screws 19.
- Remove guide plate 18.
- Loosen screws 5.
- Pull the mounting plate 7 with needle bar link 15 carefully from the stopper pin 1.
  Turning back and forth slightly makes pulling off easier.
- If necessary, loosen an adjusting screw 2.

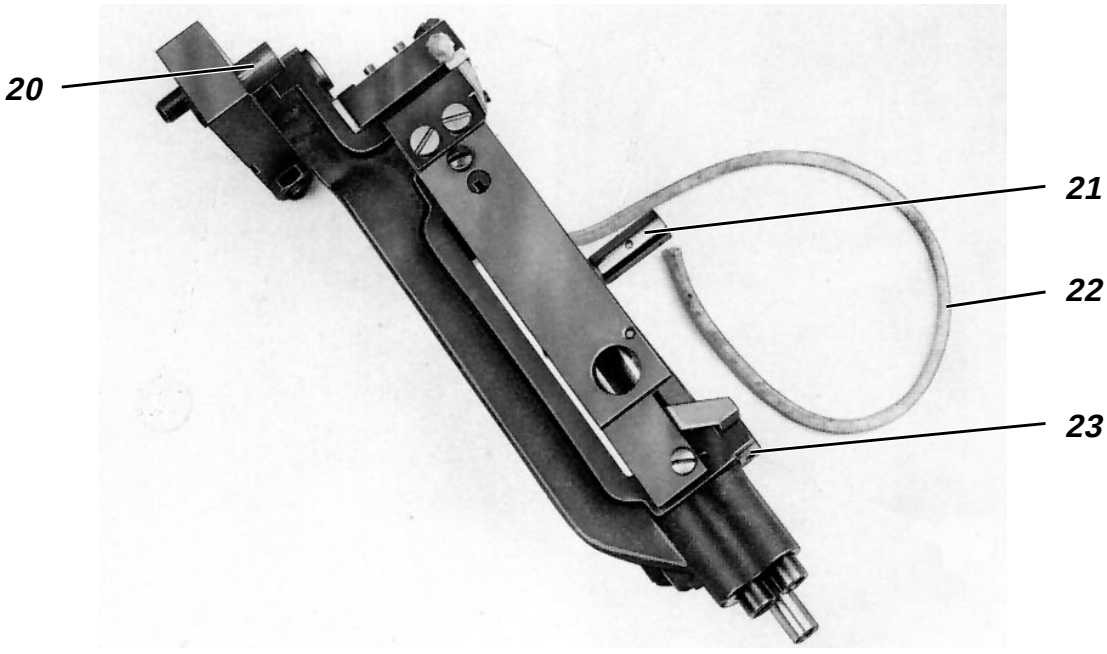
ATTENTION !

Do **not** loosen both adjusting screws 2.
With the adjusting screws 2 the link frame is set at the factory so that the crosshead does not strike.

– Loosen clamping screw 4 slightly.
– Pull out bearing bolt 3.
– Remove the mounting plate 6 from the needle bar link 15.

Attaching the needle bar link

– Fasten the needle bar link 15 to mounting plate 6 with bearing bolt 3.
– Tighten clamping screw 4.
  There must be room for lubricating mist between the mounting plate 6 and the needle bar link 15.
– Insert needle bar link.
  The pin of the crosshead 21 must catch in the needle tie rod.
  The pin 20 must catch in plate 7.
  The sliding pad 23 must catch with its hole over the pin of the tie rod for the link swiveling movement.
– Screw in screws 5 and tighten only slightly (for a setting to be made later).
– Remove the cover found on the head of the machine arm after loosening the mounting screws.
– Stick the oil wick 22 under the oil felt in the machine arm with a screwdriver.
  The oil wick 22 serves for the lubrication of the needle bars.
– Fasten guide plate 18 with the screws 19.
– Loosen clamping screw 16 slightly.
– Press bolt 17 in until the needle bar link 15 lies tight except for a lubricating mist gap.
– Tighten clamping screw 16.
– Check the ease of movement of the machine by turning the handwheel.
– Attach all removed parts (head cover, cylinder 9 with swing lever 10) again.



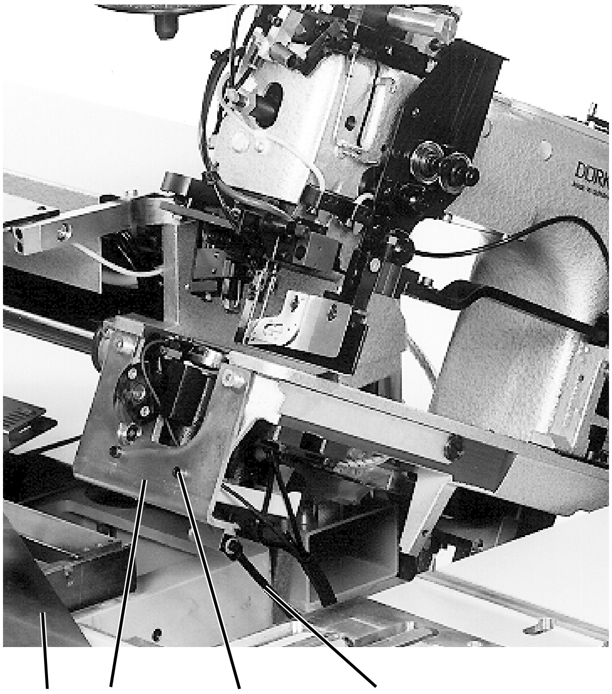
15.3 Tilting the Machine Head to the Side

For maintenance work the machine head can be tilted to the side. For this the transport carriage must be in its rear end position.

For work on the hook other components are also to be removed.

Caution Risk of Injury !

Turn the main switch off.
Tilt the machine head to the side only with the main switch turned off.



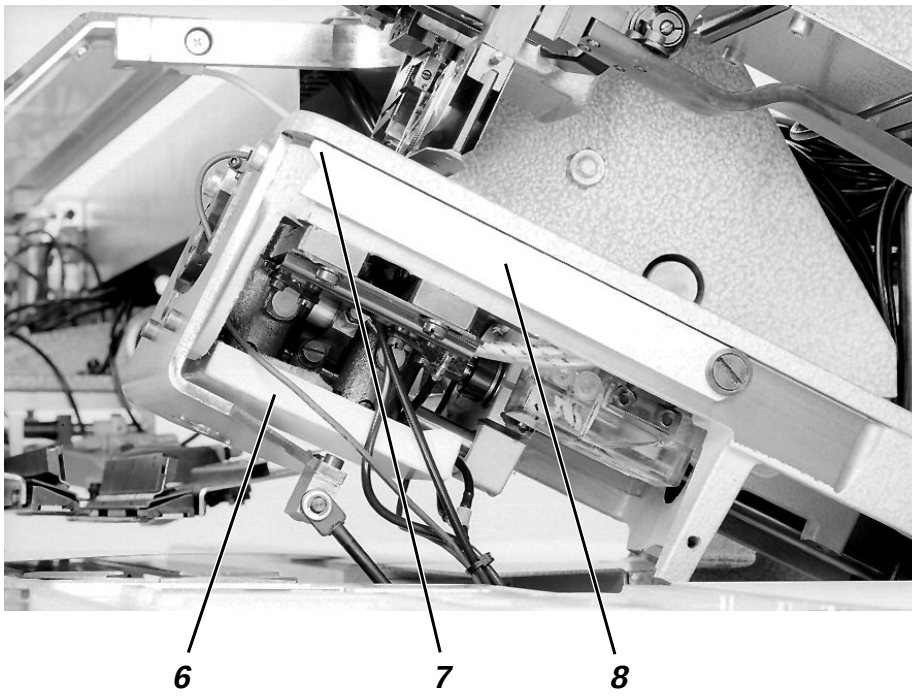
1 2 3 4 5

Tilting the machine head

- Swing the folding station away to the side.
- Lift the cloth slider plate 1 at the front and swing away to the left.
- Tilt the V-belt cover to the side.
- Turn the arresting lever 5 under the table top counterclockwise out of its catch.
  The machine head is unlocked.
- Lift the machine head in the area of the head cover and carefully tilt to the side.
  The gas-operated damper 4 holds the machine head in its position.

Returning the machine head

- Carefully tilt the machine head down.
- Turn the arresting lever 5 clockwise into its catch.
  The machine head is locked.
- Swing the V-belt cover back and let catch.
- Swing the cloth slider plate 1 back and let catch.
- Swing the folding station back and let catch.



Establishing free space at the hook

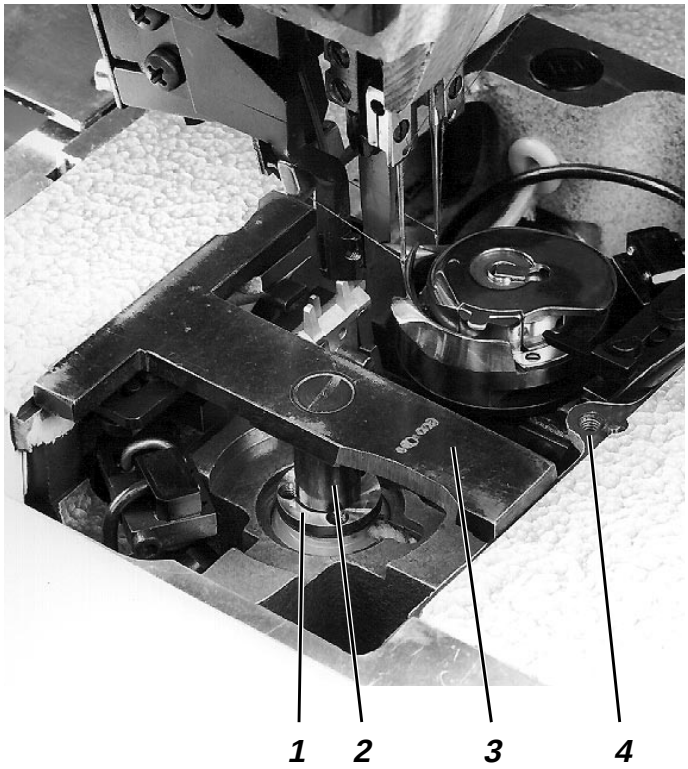
- Tilt the machine head to the side.
- Swing the support 8 down.
  The nose 7 must be inserted into the hole on the frame.
- Loosen screws 3 (4-off).
- Lay angle 2 with the gas-operated damper 4 down.
  The support 8 holds the machine head in its position.
- Remove oil baffle 6.
  The hook is now freely accessible.

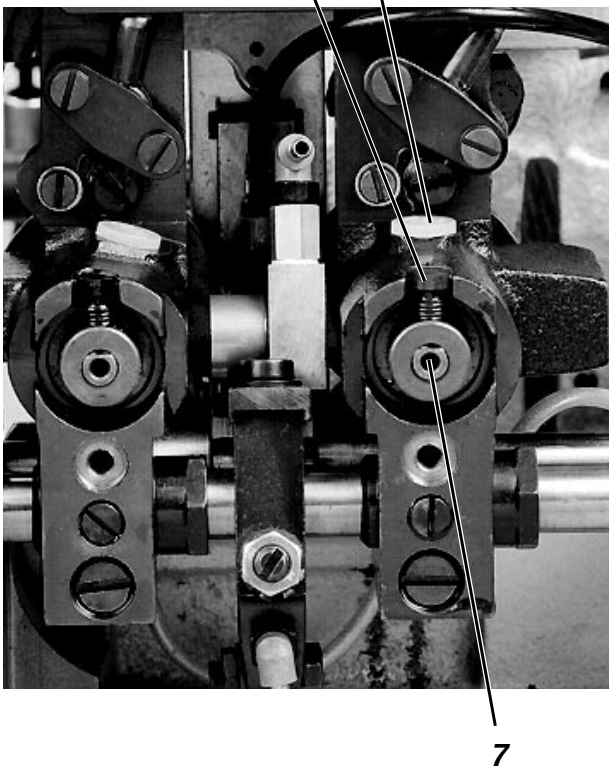
- Attach oil baffle 6 again.
- Attach angle 2 with the gas-operated damper 4 again and tighten the screws 3 (4-off) again.
- Swing support 8 up.
- Tilt the machine head down.

15.4 Hook Shaft Height

The clearance between the needle plate support 4 and the tappet 1 of the hook shaft must be 17.7 mm.

The exact height of the hook shaft is set with the gauge 3 (Order no. 0244 001001).





Caution Risk of Injury !

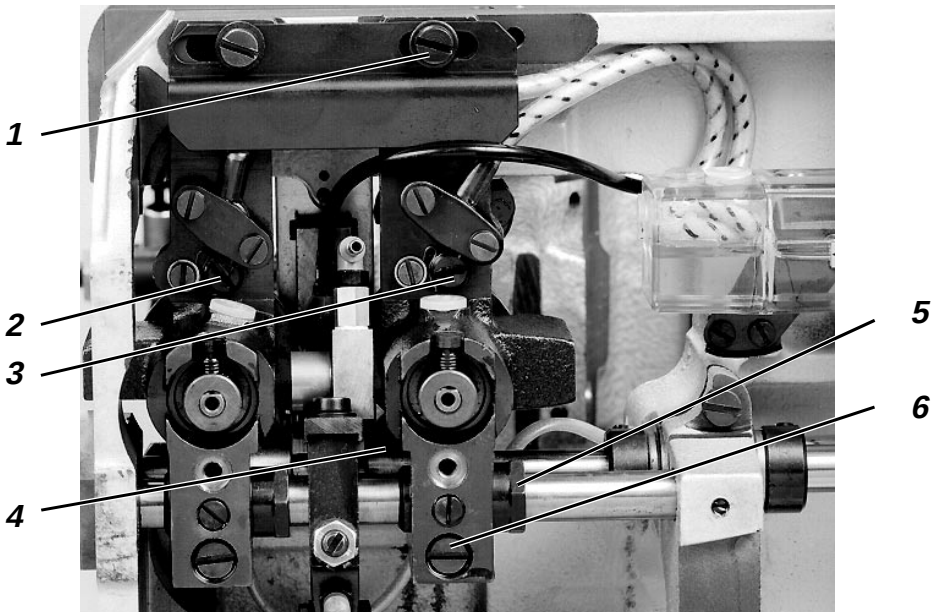
Turn the main switch off.
Set the hook shaft height only with the main switch turned off.

- Remove the needle plate.
- Remove both hooks (see Chapter 15.10).
- Place the gauge 3 on the needle plate support 4.
  The measuring sleeve 2 of the gauge must catch over the pin of the hook shaft.
- Tilt the machine head to the back.
- Remove the plastic plugs 6.
  Loosen the screws to be found under the plastic plugs.
- Loosen screws 5.
- Remove the press pins 7.
- Slide the hook shaft with its tappet 1 under the measuring sleeve 2 of the gauge.
- In this position tighten the screws to be found under the plastic plugs 6.
- Push the press pins 7 against the hook shaft up to the stop.
- Tighten the screws 5 on the surfaces of the press pins 7.
- Attach the hook and needle plate again.

15.5 Play in the Hook Drive, Hook Lubrication

The play between the worm and worm wheel should be as small as possible. The ease of movement must, however, remain assured.

After each setting of the hook drive in the axial direction, the play in the gears must be set again.



Caution Risk of Injury !

Turn the main switch off.
Set the play only with the main switch turned off.

- Loosen screw 6.
- Loosen screw 1 slightly.
- Loosen the clamping screws of the worm wheel 4 slightly.
- Move the worm wheel 4 axially.
  The clearance between the worm wheel 4 and the inside of the hook housing must be **0.3 mm**.
  The clearance must exist, with the right hook housing, at the right and, with the left hook housing, at the left of the worm wheel.
- Measure the clearance with a feeler gauge.
- Set the play by turning the eccentric bushing 5.
  The play between worm wheel and worm should be small, but still perceptible.
  Increase play: Turn the bushing 5 upward
  Decrease play: Turn the bushing 5 downward
- Check the looping stroke (see Chapter 15.6) and clearance hook point - needle (see Chapter 15.8) and correct, if necessary.
- Tighten screws 1 and 6.

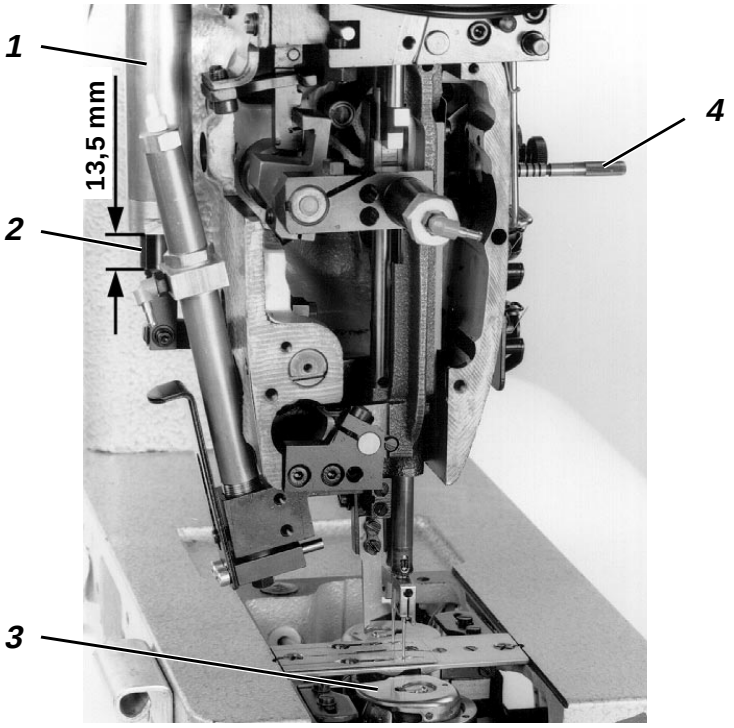
Hook lubrication

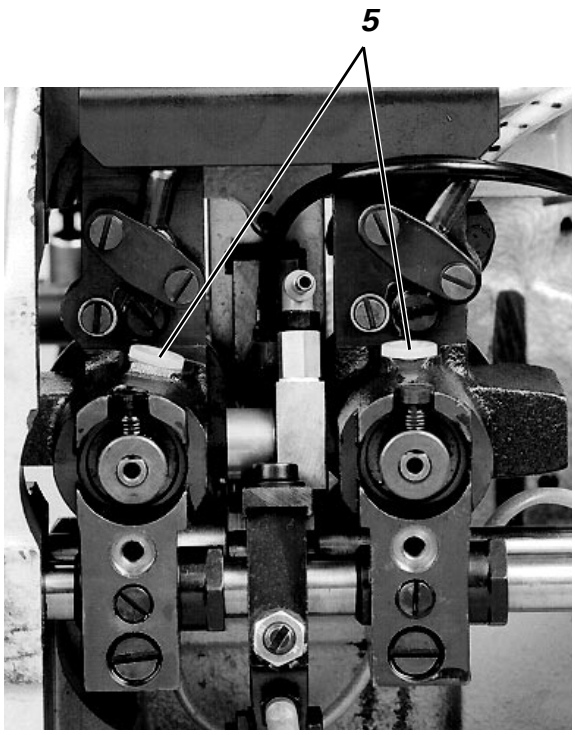
- Adjust screws 2 and 3.
  The required oil quantity is set at the factory with the screws 2 and 3. It should only be throttled or increased in exceptional cases.

15.6 Looping Stroke

The looping stroke is the path of the needle bars from lower dead center to the point where the hook points lie at the center of the needle.

The looping stroke is 2 mm.
It is set with the timing pin 4 (Order no. 0211 000700).





Caution Risk of Injury !

Turn the main switch off.
Set the looping stroke only with the main switch turned off.

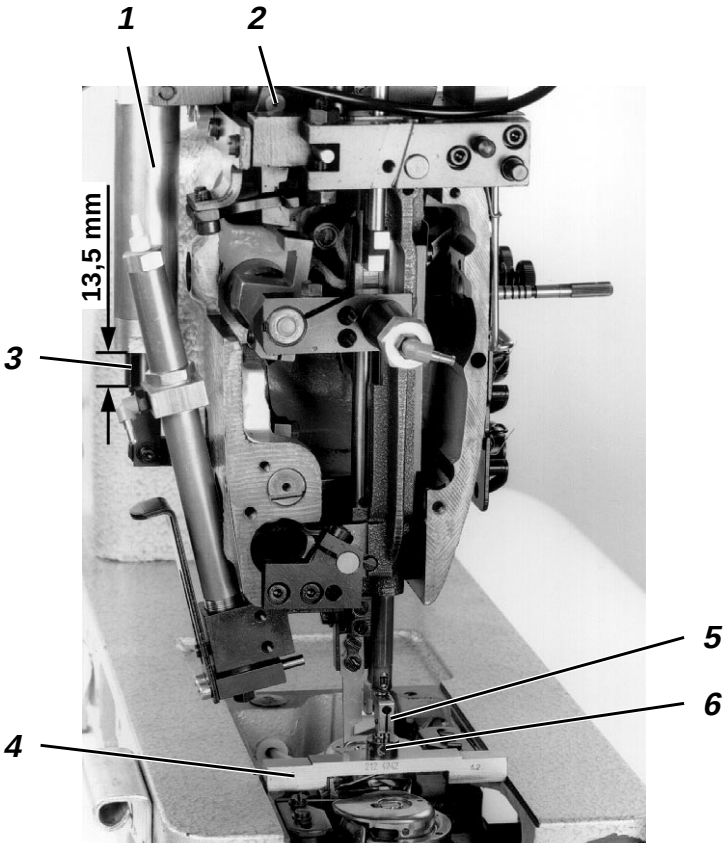
- Remove the folder and needle plate.
- Remove the bobbin case tops 3 with the bobbins.
- Swing the needles to the needle hole center.
  For this, clamp a suitable spacer 2 (13.5 mm thick) between the cylinder 1 and its piston rod.
- Tilt the machine head up at the side.
- Remove the plastic plugs 5.
- Loosen the screws to be found under the plastic plugs 5.
- Swing the machine head back.
- Insert the timing pin 4 through the hole in the machine arm.
  The timing pin 4 must catch in the groove on the arm shaft crank.
- Turn the hook manually until the hook points lie at the center of the needle.
- Tilt the machine head up at the side.
- Tighten the first of the screws found under the plastic plugs 5.
- Remove the timing pin 4.
- Tighten the second of the screws found under the plastic plugs 5.
- Press the plastic plugs 5 into the holes again.
- Remove spacer 2.

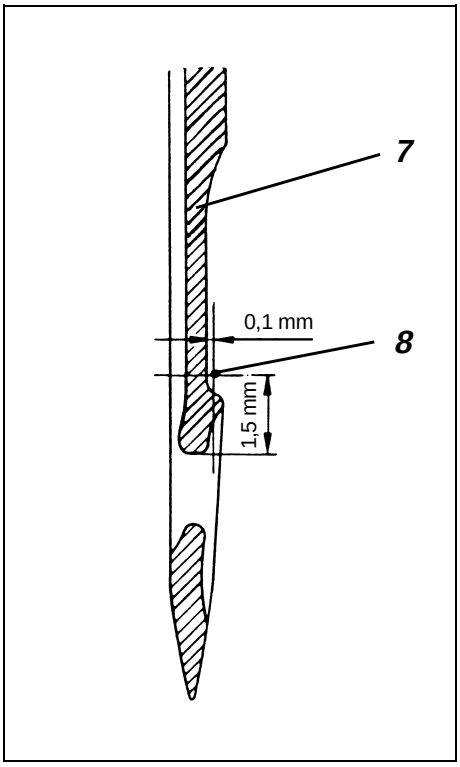
15.7 Height of the Needle Holders

To set the needle holders 5 the needle 7 must lie over the needle hole center and in looping stroke position.

The clearance from the upper edge of the eye of the needle to the hook point 8 must be 1.5 mm in this position (see sketch).

The setting is made with the measuring bridge 4 (Order no. 0212 004942) and the setting pin 6 (Order no. 0216 001070).

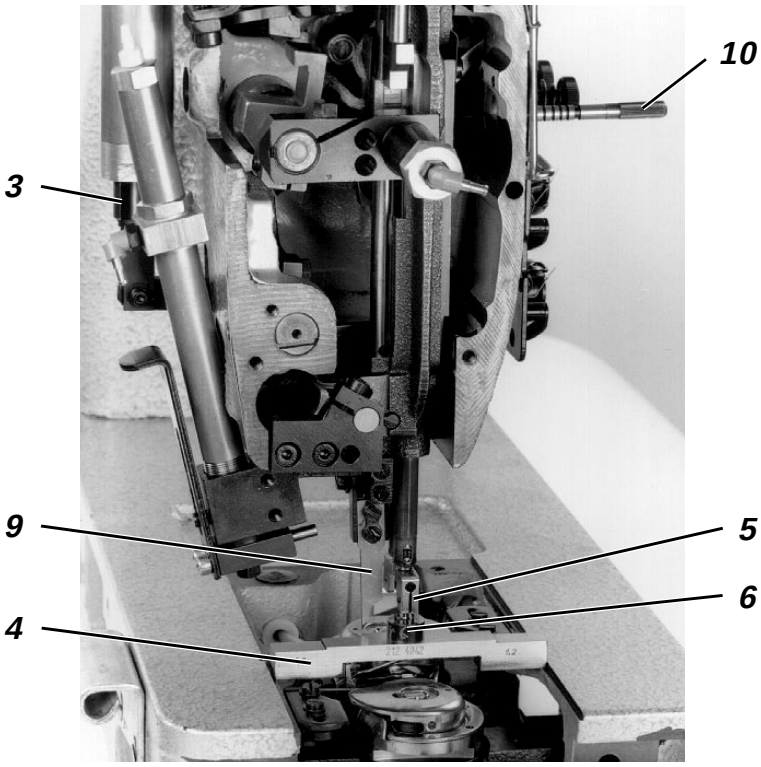




Caution Risk of Injury !

Turn the main switch off.
Set the height of the needle holders only with the main switch turned off.

- The looping stroke must be set as per Chapter 15.6.
- Remove the folder and the needle plate.
- Swing the needles to the needle hole center.
  For this, clamp a suitable spacer 3 (13.5 mm thick) between the cylinder 1 and its piston rod.
- Remove the needles from the needle holders 5.
- To turn the needle holders switch off one of the needle bars.
  For this, press latch 2 down and hold pressed.
  By simultaniously turning the handwheel switch on both needle bars.
- Turn the handwheel farther.
  In front of the upper dead center manually press the needle bar to be switched off under the needle holders 5.
  A slight resistence becomes perceptible.



Caution Risk of Injury !

Danger of injuries from cuts!
When working on the needle holders 5 keep hands clear of the area of the center knife 9.

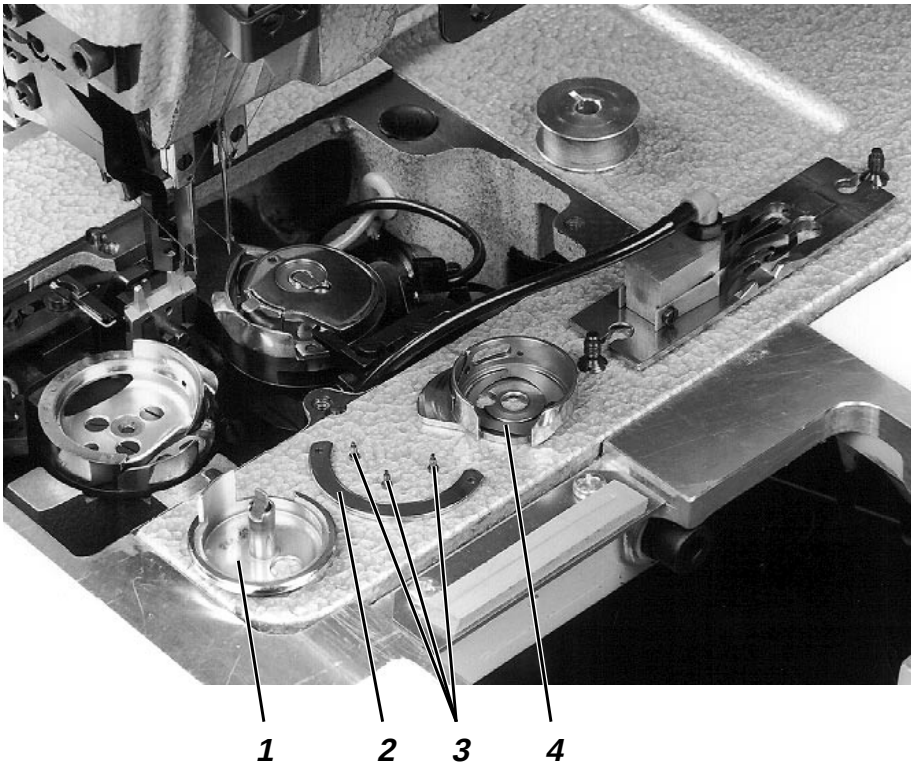
- Under the needle holders 5 press the needle bar to be switched off. At the same time turn the handwheel backwards. The needle bar switches off.
- Bring the needle bar into the looping stroke position (see Chapter 15.6).
- Insert the timing pin 10 through the hole in the machine arm. The timing pin 10 must catch in the groove of the arm shaft crank.
- Push the setting pin 6 into the needle holders 5 up to the stop.
- Tighten screw 13.
- Screw out screw 11.
- Turn the needle holders 5 downward. The measuring bridge 4 should allow itself to be pushed under the setting pin 6 with least possible play.
- If necessary, turn the needle holders 5 back (higher) accordingly. The front surfaces 12 of the needle holders 5 must hereby face forward and lie at one level.
- Screw screw 11 into the needle holders 5 and tighten.
- Remove the timing pin 10 and setting pin 6.
- Remove spacer 3.

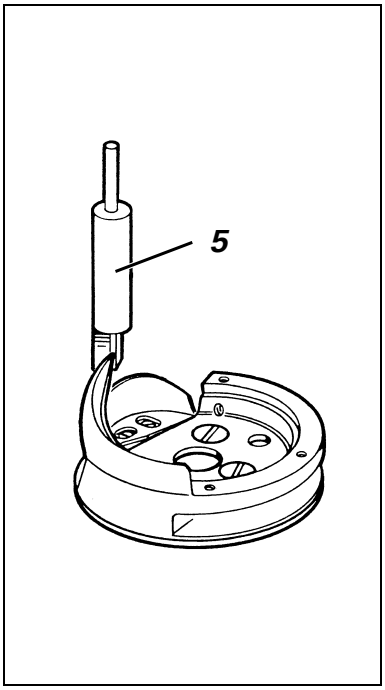
15.8 Clearance of the Hook Points to the Needles

The clearance of the hook points to the needles must be 0.1 mm.
It is precisely set at the factory with setting pin 5
(Order no. 0244 001014).

The set clearance makes possible work with needles of the needle thicknesses Nm 90 to Nm 110.
A correction of the clearance of the hook points to the needles is not necessary when changing between these needle thicknesses.
After a needle change only the needle guard must be adjusted (see Chapter 15.9).

The setting of the left hook point is to be made with the needle bar link swung forward.
The right hook point is set with the needle bar link swung to the back.



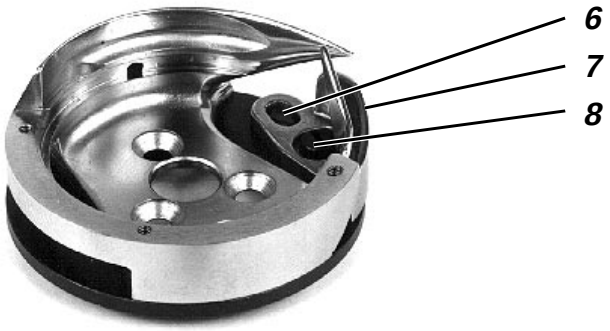


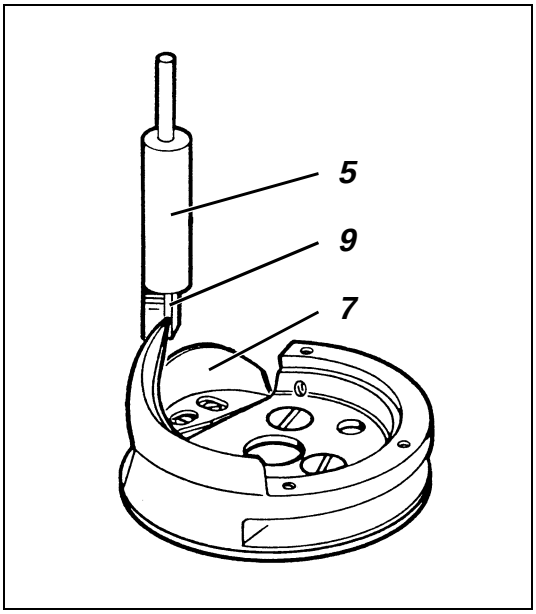
Caution Risk of Injury !

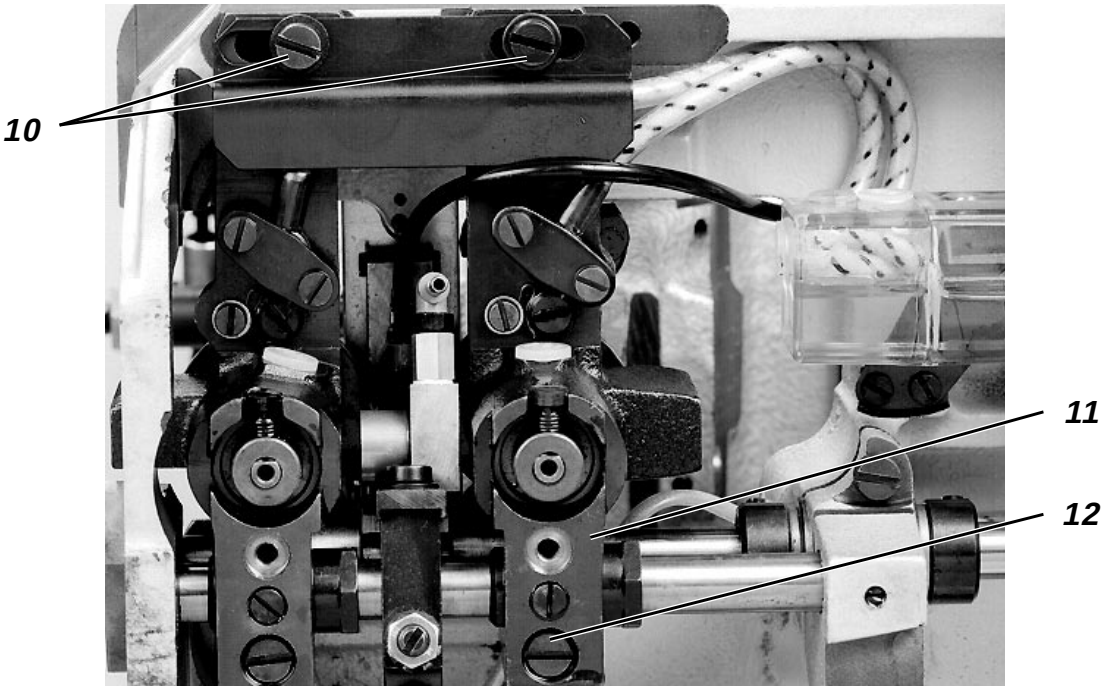
Turn the main switch off.
Set the clearance of the hook points to the needle only with the main switch turned off.

- The looping stroke and the needle holders must be set as per Chapters 15.6 and 15.7.
- Remove the folder and needle plate.
- Remove the bobbin case top 4 with bobbin.
- Screw out the mounting screws 3 of the hook cover 2.
- Remove the hook cover 2.
- Take the bobbin case bottom 1 out of the hook.
  For this turn the handwheel back and forth slightly.
  Attention!
  Do not use force to remove the bobbin case bottom 1.

- Loosen screw 8.
- Set the needle guard 7 back by turning the eccentric bolt 6.
- Remove the needle from the needle holder.
- Insert the setting pin 5 into the needle holder up to the stop.
- Tilt the machine head up at the side.
- Loosen screws 10 and 12.
- Move the hook bracket 11 sideways.
  The hook point should gently touch the measuring surface 9 of the setting pin 5, but should not displace it.
- Tighten screws 10.
- Tighten screws 12.



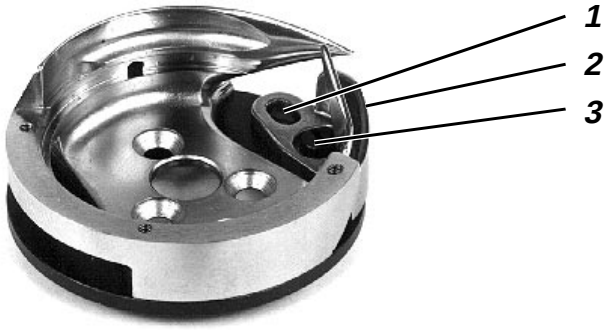


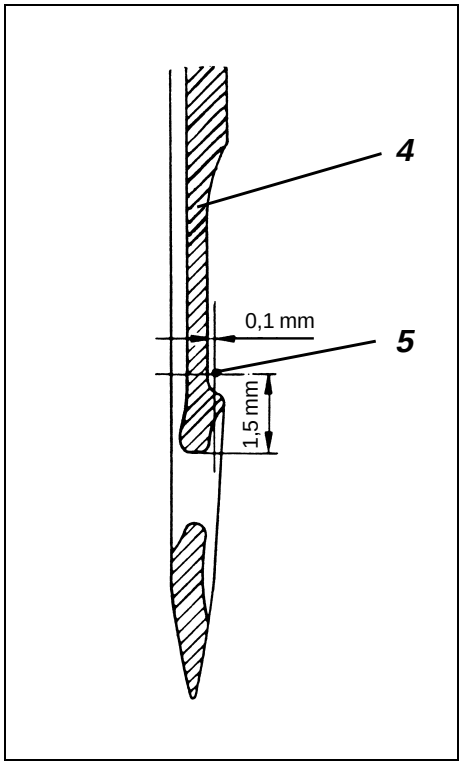


15.9 Needle Guard

The needle guard 2 prevents a deflection of the needle 4 into the path of the hook point 5.
Before the hook point 5 reaches the needle the needle tip must lay onto the needle guard 2. The needle should not allow itself to be pressed into the path of the hook point 5.

With the hook point lying at the center of the needle there must be a clearance of 0.1 mm between the furrow of the needle and the hook point 5.



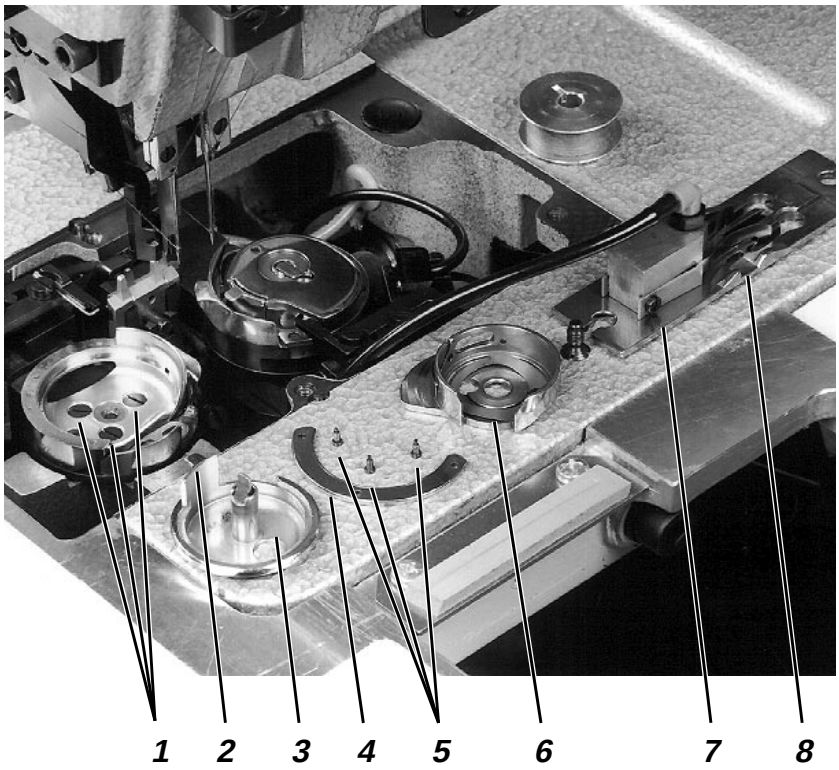


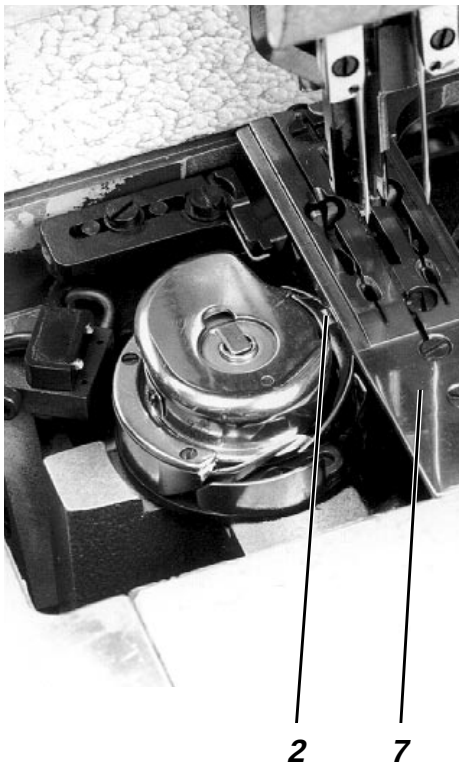
Caution Risk of Injury !

Turn the main switch off.
Set the needle guard only with the main switch turned off.

- The looping stroke and the needle holders must be set as per Chapters 15.6 and 15.7.
- Remove the hook cover and bobbin case bottoms (see Chapter 15.10).
- Loosen screw 3.
- Set the needle guard 2 by turning the eccentric bolt 1.
- Tighten screw 3.

15.10 Replacing the Hook





Caution Risk of Injury !

Turn the main switch off.
Replace the hook only with the main switch turned off.

- Remove the needle plate 7 after loosening the mounting screws.
- Remove the bobbin case top 6 with bobbin.
- Loosen screws 5 on the hook cover 4.
- Remove hook cover 4.
- Take the bobbin case bottom 3 out of the hook.
  For this turn the handwheel back and forth slightly.
  Attention!
  Do not use force to remove the bobbin case bottom.
- Loosen the mounting screws 1 of the hook.
- Lift the hook from the hook shaft and remove.
- Place a new hook on the hook shaft.
  The position of the hook on the hook shaft is determined by the arrangement of the holes in the hook bottom.
  This assures that the hook point again lies at the center of the needle after completion of the looping stroke.
- Insert the bobbin case bottom 3 in the new hook.
  Attention!
  The support nose 2 of the bobbin case bottom must hereby catch in the cutout 8 of the needle plate 7.
- Mount hook cover 4 and fasten with the screws 5.
- Attach the needle plate 7 again.

15.11 Bobbin Case Retaining Wire

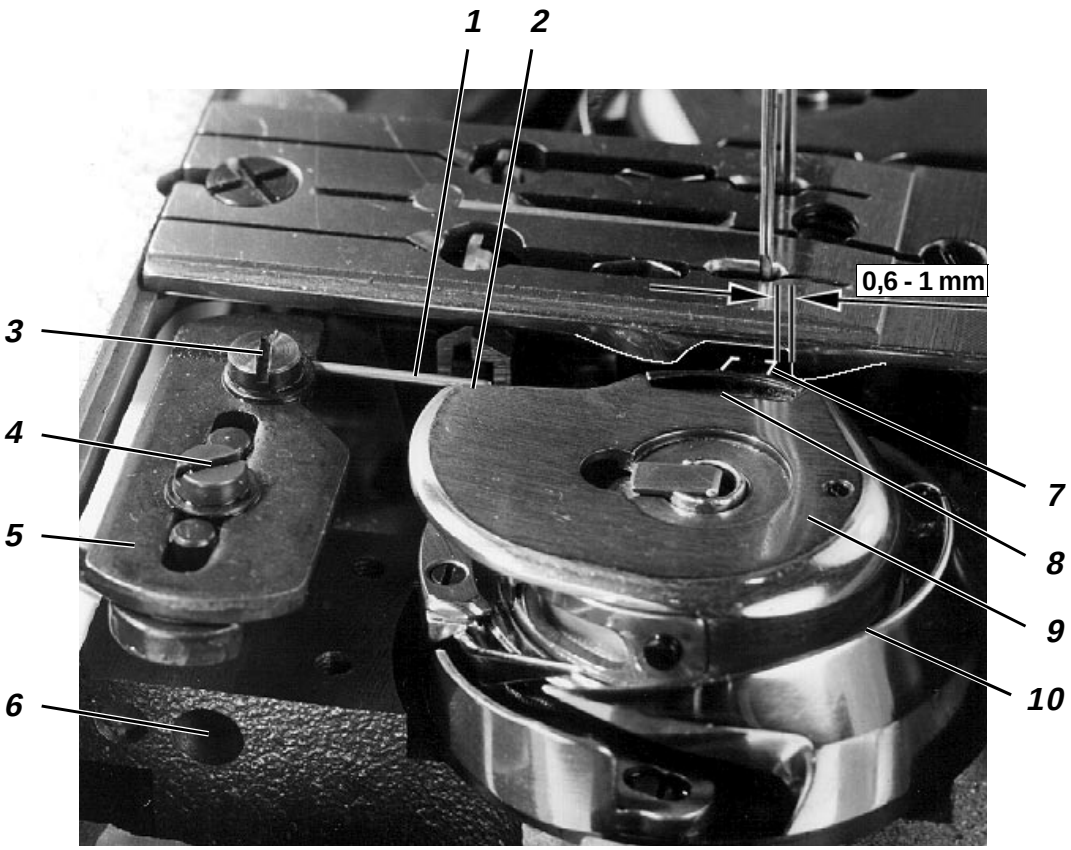
Function

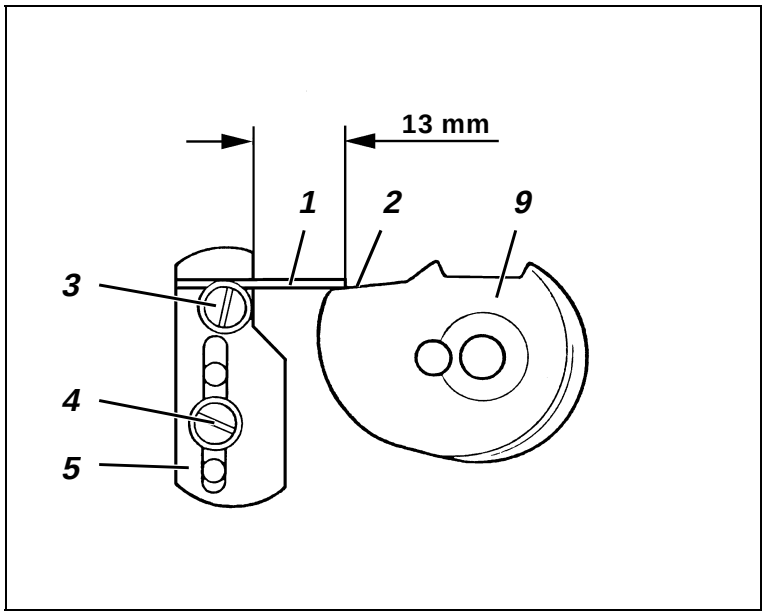
The bobbin case retaining wire 1 holds the bobbin case top and bottom in a specific position counter to the turning motion of the hook.

The needle thread loop led around the hook is pulled through between the spring-mounted retaining wire 1 and the edge 2 of the bobbin case top.
Here the retaining wire 1 insures an unimpaired run of the thread over the nose 7 of the bobbin case bottom and through the cutout of the needle plate.

Settings

- Between the edge 7 of the support nose and the edge of the needle plate cutout there must be a thread throughput gap of 0.6 to 1 mm.
  In this position the edge 8 of the bobbin case top lies about parallel to the needle plate.
  The gap assures a throughput for thicker sewing threads, too.
  At the same time a sufficient jumping back of the bobbin case top during the throughput of the thread at the edge 2 is made possible.
- The retaining wire 1 must extend 13 mm out of the plate 5 and lay on exactly in front of the edge 2 of the bobbin case top 9.





Caution Risk of Injury !

Turn the main switch off.
Set the bobbin case retaining wire only with the main switch turned off.

- Loosen clamping screw 3 slightly.
- Set retaining wire 1.
  Retaining wire 1 must extend 13 mm out of the plate 5.
- Tighten clamping screw 3.

- Loosen screw 6 (see photo pg. 87).
- Set the height of the plate 5.
  The retaining wire 1 must lay on in front of the edge 2 of the bobbin case top 9.

ATTENTION !

During the hook turning motion the back of the hook 10 should not strike under the retaining wire 1.
Set the height of plate 5 accordingly.

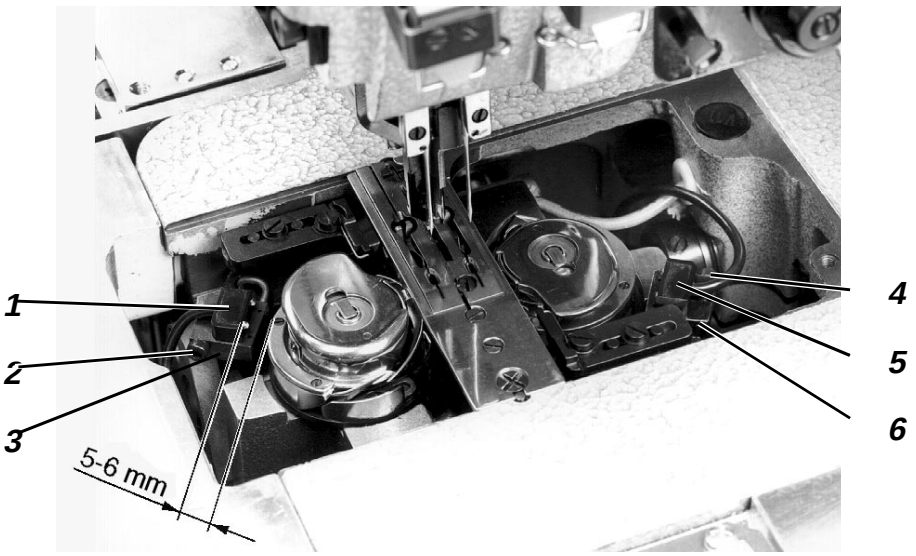
- Tighten screw 6.

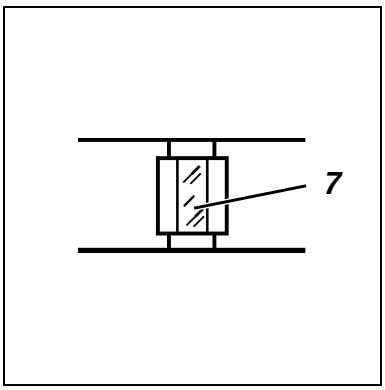
- Loosen screw 4.
- Move plate 5.
  The clearance between the support nose 7 and the edge of the needle plate cutout must be 0.6 to 1 mm.
- Tighten screw 4.

15.12 Aligning the Light Barriers of the Remaining Thread Monitor

The light barrier mountings 3 and 6 are set at the factory so that a sufficient safety clearance of 5-6 mm to the movings hooks is provided.

The alignment of the reflected light barriers occurs in program P51.





ATTENTION !

The remaining thread monitor is only effective when the function is activated.
See Short Description **DAC** Chapter 6.2.

Checking the alignment

- Turn the main switch on.
  Activate the setting program **" Setting the Underthread Monitor "**.
  (see Short Description **DAC** Chapter 6.3.1)
- Insert an empty bobbin into the bobbin case bottom.
- Turn the empty bobbin manually.
- If the infrared beam of the light barrier strikes the reflecting surface 7 of the bobbin hub, then this is shown by an arrow between the reflecting head and the underthread bobbin.
  A signal is heard at the same time.
- If no reflection is shown when turning the empty bobbin, then the alignment of the light barrier is to be corrected.
- Press the **F1** key.
  This exits from the setting program.

Correcting the alignment

- Clean the lenses of the light barriers 1 and 5 and the reflecting surfaces 7 of the bobbin hub with a **soft** cloth.
- Loosen clamping screw 2 or 4.
- Align light barrier 1 or 5 respectively by a slight movement on the bracket 3 resp. 6.
  The infra-red beam of the light barrier 1 or 5 must strike the bobbin hub unhindered through the light opening in the bobbin case.
- Tighten clamping screw 2 or 4.
- Check the alignment of both light barriers again.

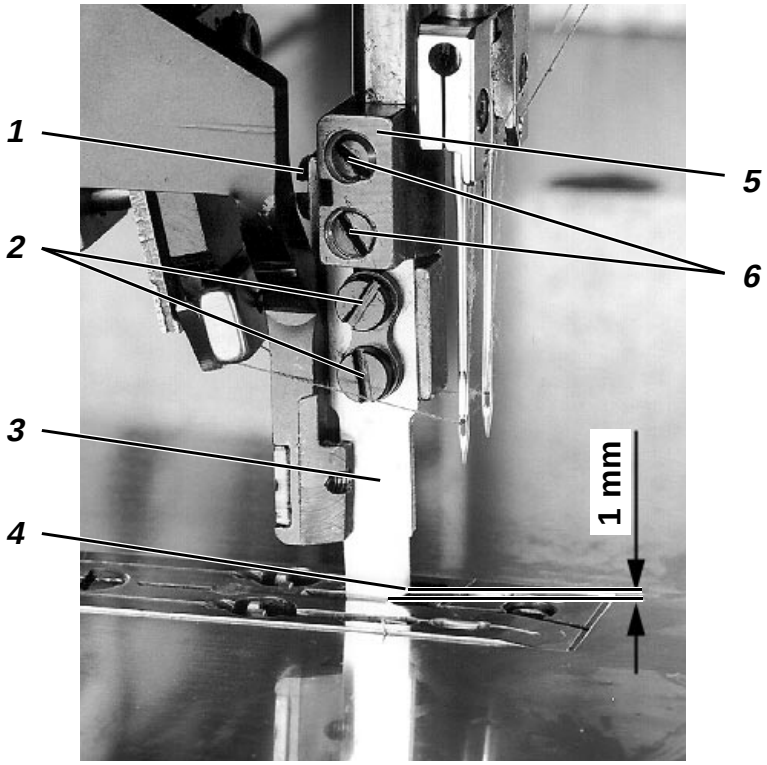
15.13 Center Knife

Caution Risk of Injury !

Turn the main switch off.
Set the center knife only with the main switch turned off.

Position of the center knife at lower dead center

The forward edge 4 of the moving knife 3 must lie 1 mm above the cutting edge of the fixed knife at the lower dead center.



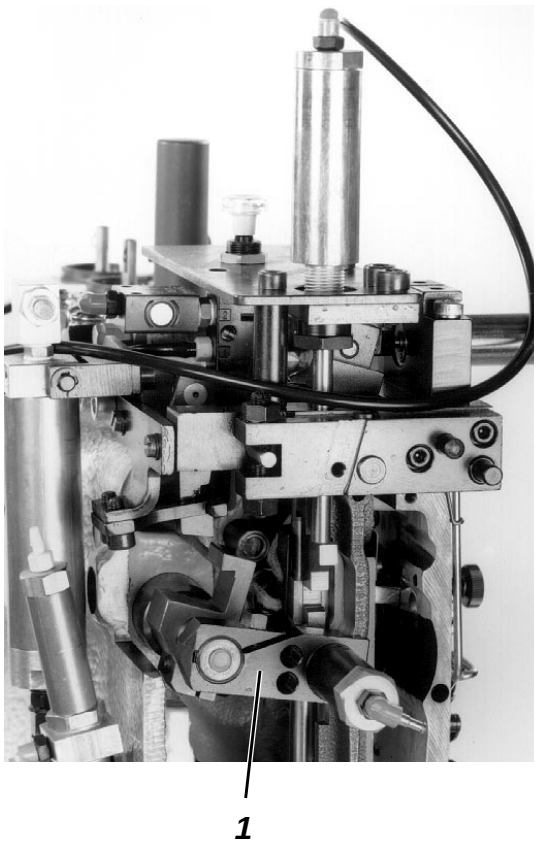
- Loosen screws 2.
- Set the height of the center knife 3.
- Tighten screws 2.

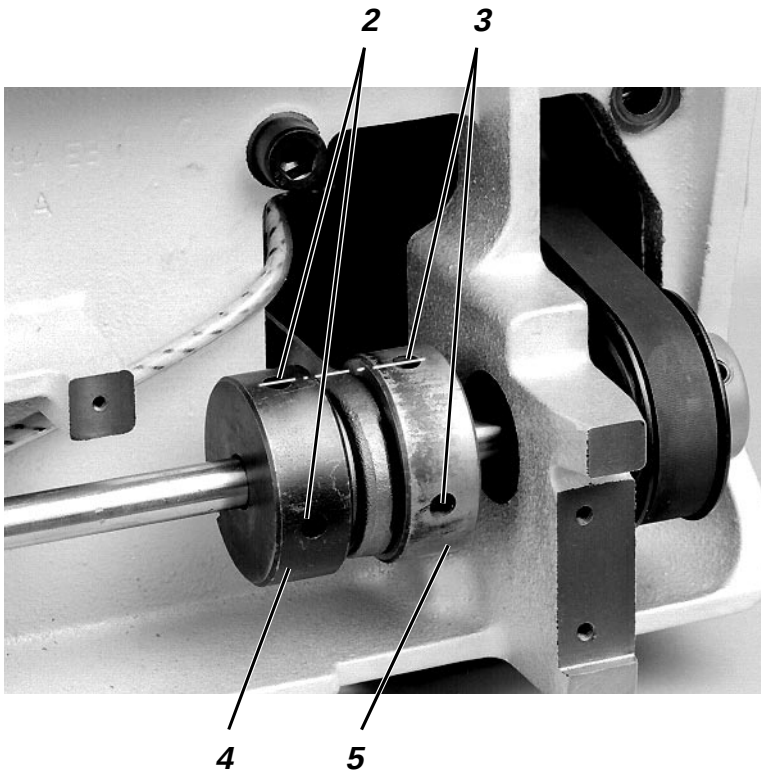
- Loosen screw 1.
- Loosen screws 6.
- Set the knife holder 5 with the center knife 3 to the left against the fixed knife in the needle plate.
  The center knife 3 must lay on parallel and with a light pressure.
- Tighten screw 1 and screws 6.

- Conduct a cutting trial.
- To correct: Set the center knife 3 to cut by turning the knife holder 5 slightly to the left.

Center knife movement

The center knife must move counter to the needle bars.
When the needles lie at their lower dead center the knife bar drive lever 1 must be at the upper dead center.





- Tilt the machine head up to the side.
- Loosen clamping screws 2.
- Turn the eccentric 4 so that the center knife moves counter to the needle bars.
- Tighten clamping screws 2.

- Loosen clamping screws 3.
- Turn the counter disc 5 into the same position as the eccentric 4. The clamping screws of the eccentric 4 and of the counter disc 5 must lie inline.
- Tighten clamping screws 3.
- Tilt the machine head down.

Knife bar drive lever

- Remove the cylinder with swing lever for the thread puller after loosening the mounting screws.
- Remove the head cover after loosening the mounting screws.

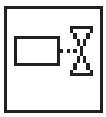
- Move the knife bar drive lever 8 into its lower dead center by turning the handwheel.
- Loosen clamping screw 7 slightly.
- Slide the knife bar drive lever 8 in the axial direction on the shaft 6. The clearance between the piston rod of the vented triggering cylinder 9 and the knife bar bridge 5 must be 0.5 mm.
- Check the clearance with a feeler gauge.
- Tighten clamping screw 7.

- Loosen nut 2.
- Screw in the engaging cylinder 1 until the piston rod 3 presses the knife bar bridge 5 down 0.5 mm.
  Check the dimension with a feeler gauge between the link frame 10 and knife holder 11.
- Tighten nut 2.

ATTENTION !

For a precise setting push in the knife holder 11 up to the collar of the knife bar.

- Set the knife bar drive lever 8 at its upper dead center by turning the handwheel.
- Remove the bobbin winder cover after loosening the mounting screws.
- Loosen the screws 12 of the stroke lever 13.
- Let air into the triggering cylinder 9 and engaging cylinder 1.
  Turn the main switch on.
  Activate the testing program **" Selecting Output Elements "**.
  (see Short Description **DAC** Chapter 6.4.6)
  Y11 = Select the center knife.
  Run the cylinder in and out by pressing the **F4** key in tapping operation.

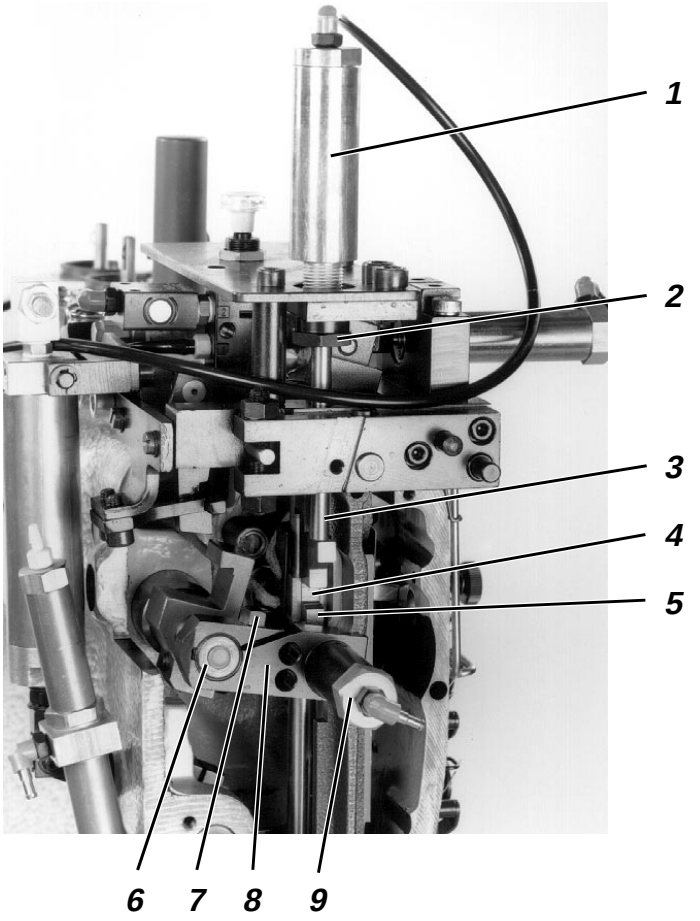


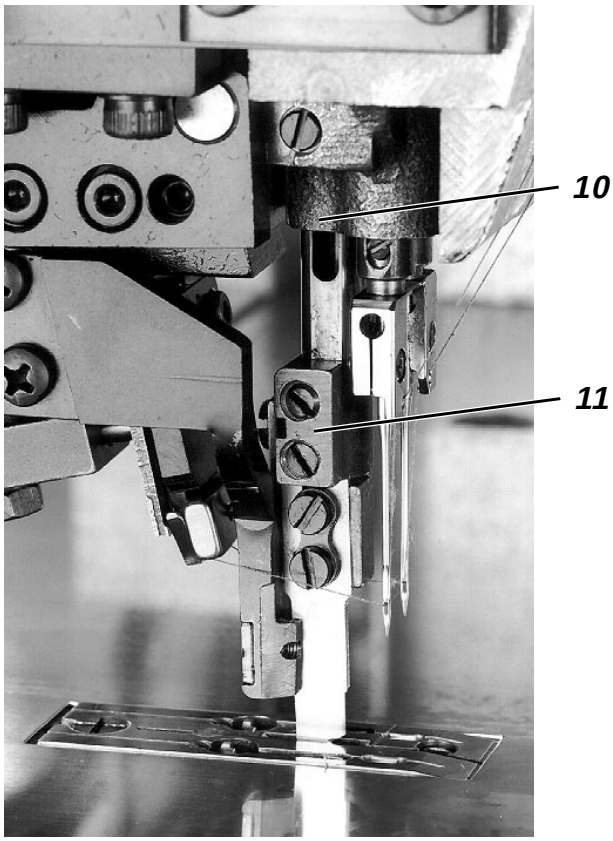
- The piston rod of the triggering cylinder 9 catches in groove 4.
- Turn the knife bar drive lever 8 slightly on the shaft 6.
  In the upper dead center of the knife bar drive lever there must be a clearance of 0.5 mm between the knife bar bridge 5 and the extended piston rod 3.
- Tighten screws 13 and attach the bobbin winder cover.
- The piston rod 3 extended during the machine function is released. A striking of the knife bar bridge 5 during the stroke movement is prevented.

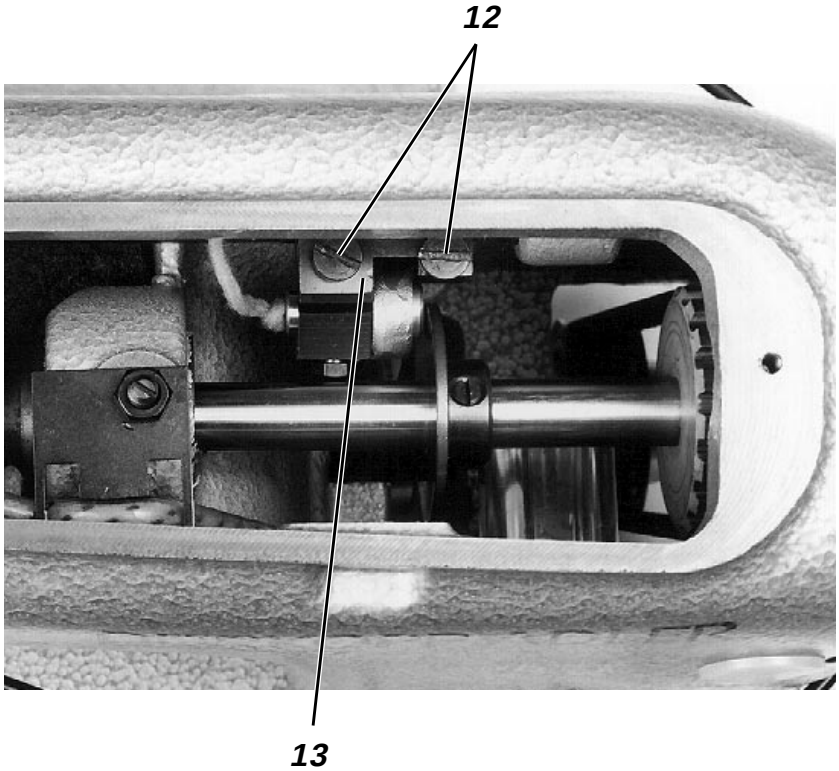
ATTENTION !

The swing lever for the switching on of the needle bars was also changed. Reset the swing lever (see Chapter 15.2.2).

– Move the knife bar bridge 5 into its lower dead center by turning the handwheel.
  Prerequisite:
  The piston rod of the triggering cylinder 9 must have caught in the groove 4.
– Check the free movement of the knife bar bridge 5 at the link frame.





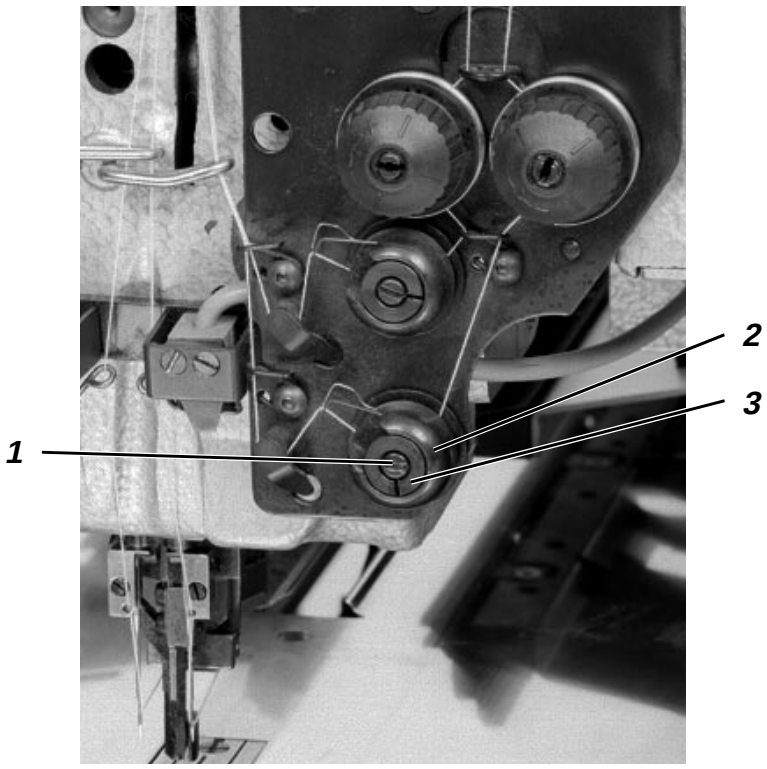


15.14 Thread Controller Springs

Base setting

The thread controller springs must hold the needle threads tensioned until the needle tips enter the material.

If the needle threads are already loose when the needles enter, then there is a danger that the needles, during their downward movement, will enter into the threads.



Caution Risk of Injury !

Turn the main switch off.
Set thread controller springs only with the main switch turned off.

Spring swing

- Loosen screw 1.
- Set the regulator 3 by turning.
- Tighten screw 1.

Spring tension

- Loosen screw 1.
- Turn bushing 2.
  Turning clockwise: Increase spring tension
  Turning counterclockwise: Decrease spring tension
- Tighten screw 1.

15.15 Trimming and Clamping Device for the Needle Threads

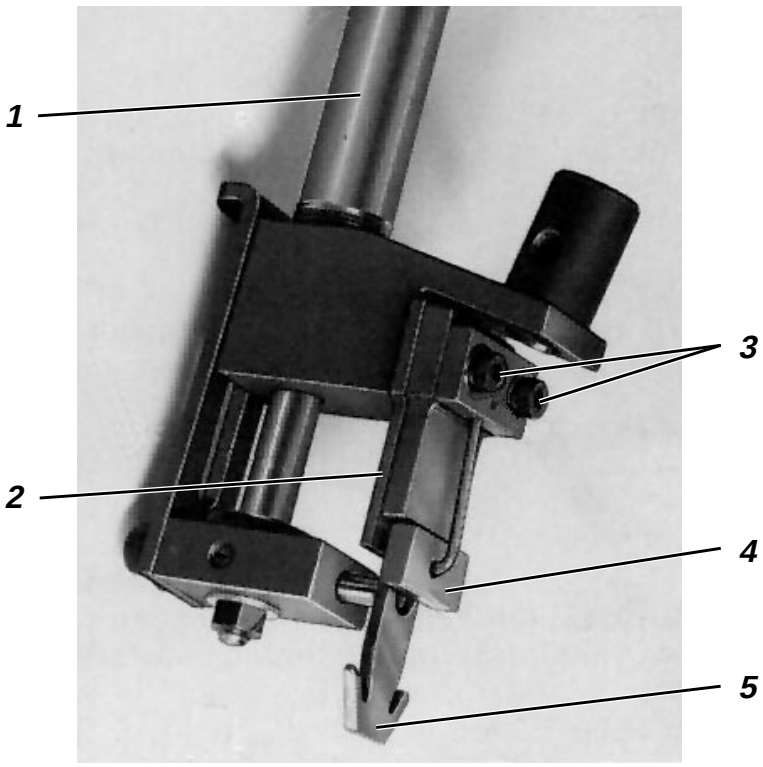
Function

- After the seam end and during drawing forward of the thread the **long stroke** of the cylinder 1 is switched on.
  The thread catcher 5 lowers and takes up the needle threads.
- After a predetermined time the thread catcher 5 runs rapidly up (spring return of the cylinder).
  The needle threads are clamped onto the clamping piece 4 and trimmed at the knife 2.
- After the first stitches of the next seam the clamped needle threads are released.
  The release occurs through the **short stroke** of the cylinder 1.
- The spring-mounted clamping piece 4 causes the thread catcher 5 to lay flat onto the knife 2.
  Because of this the knife 2 automatically lies at cut.
  Setting is not necessary.

Replacing the knife and thread catcher

After a certain period of operation the knife 2 loses its sharpness. The blunt knife must be removed for regrinding.

When changing to a different needle spacing the thread catcher 5 must also be changed.



Caution Risk of Injury !

Turn the main switch off.
Remove the knife 2 and thread catcher 5 only with the main switch turned off.

- Loosen screws 3.
- Remove the thread catcher 5 or knife 2.
- Insert a new thread catcher or reground knife.
- Tighten screws 3.

15.16 Trimming and Clamping Device for the Underthreads

Function

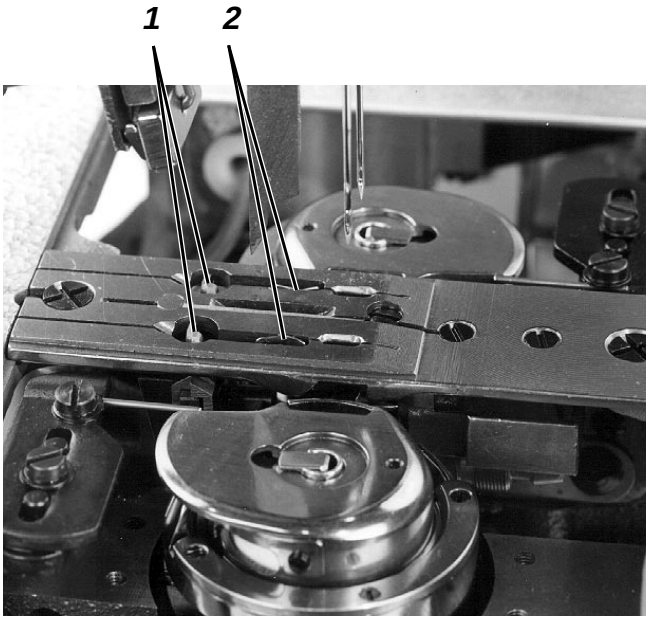
- After the seam end the underthreads are pulled through the thread grooves of the needle plate into the opened underthread shears 1 and underthread clamp 2 during the drawing forward of the thread.
- The underthread clamp 2 is under the needle plate.
  It opens pneumatically.
- The underthreads are pulled between the needle plate wall and the opened spring clamping plates 5.
- The spring clamping plates 5 close.
- The underthread shears 1 cuts the underthreads off.
- During each work cycle the underthread shears 1 are cleaned by a jet of air.
  This prevents a clamping in of lint and thread ends.

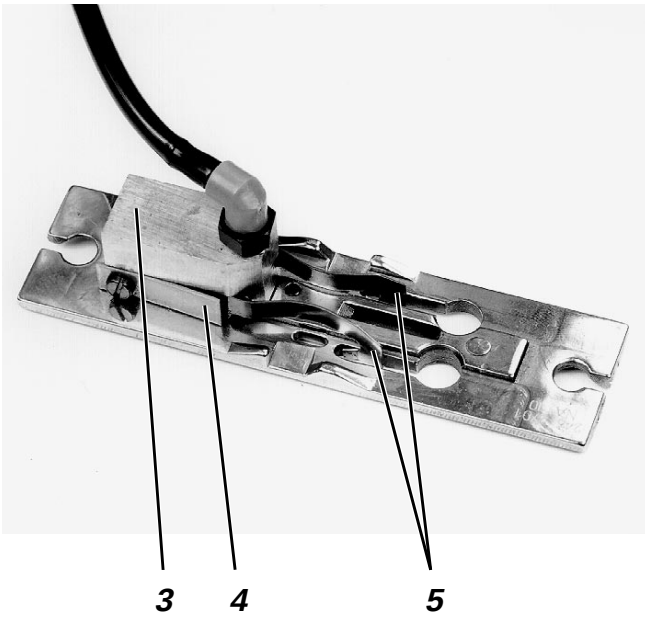
Setting

The upper edge of the underthread shears 1 must lie at the same height as the top of the needle plate.

An underthread shears lying too high can cause damage to the material.
The underthreads are not cut off if the underthread shears lie too low.

The limit plates 4 mounted on the cylinder 3 determine the opening width of the spring clamping plates.
With the spring clamping plates 5 pneumatically opened both hook points must move past at a safe clearance.





Caution Risk of Injury !

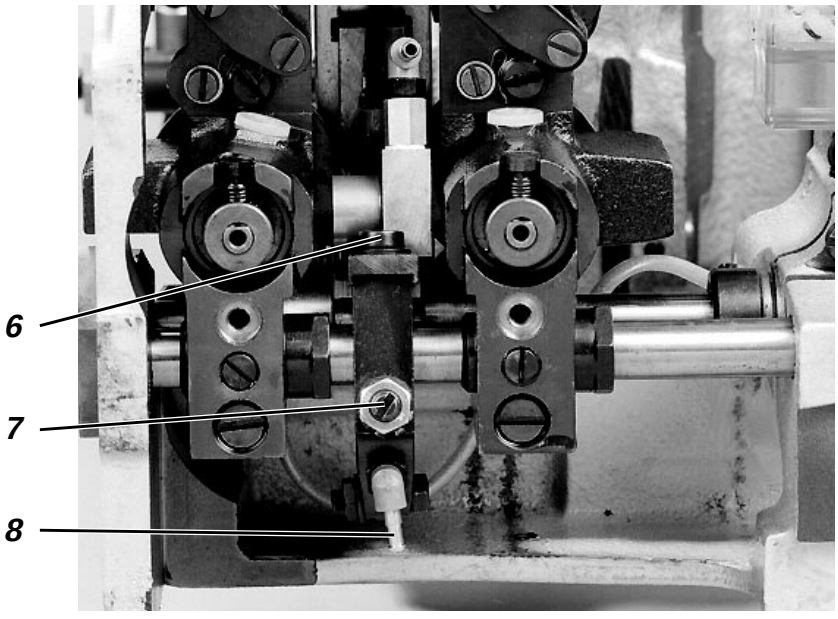
Turn the main switch off.
Set the trimming and clamping device for the underthreads only with the main switch turned off.

- Loosen screw 7.
- Align the opening of the underthread shears 1 centered to the thread grooves of the needle plate.
- Tighten screw 7.

- Loosen screw 6.
- Set the underthread shears 1 higher or lower.
  The top of the underthread shears must lie level with the top of the needle plate.
- Tighten screw 6.

- Align the spring clamping plates 5.
  The spring clamping plates must lie flat and with light spring pressure on the needle plate wall.
- Check the safety clearance of the hook points to the pneumatically opened spring clamping plates.
- If necessary, align the limit plates 4 accordingly.

- Regulating the air jet for the cleaning of the underthread shears.
  The compressed air supply occurs via the connection 8.
  The throttle valve lies directly on the solenoid valve.
  The stitch formation should not be disturbed by the air jet.
  Light sewing pieces (e.g. lining materials) should not be blown up on the needle plate.
  Reduce the air jet accordingly.



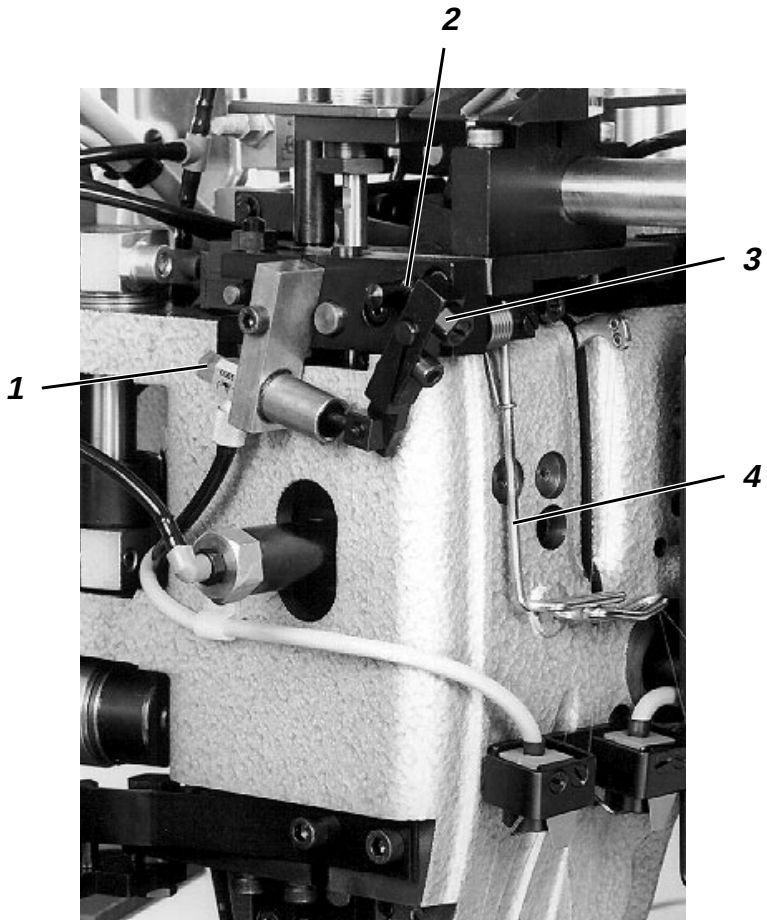
Replacing the underthread shears

- Loosen screw 6.
- Remove the pressure spring.
- Remove the knife along with the guide rail.

15.17 Thread Puller for the Needle Threads

The thread puller 4 pulls forward a certain needle thread quantity out of the opened thread tension.
The drawn-forward needle thread quantity must be large enough to meet the following conditions:

- At the beginning of sewing the downward-moving needles should not pull the needle threads out of the needle thread clamp.
- At the same time a secure pulling-on of the stitches must still be assured at the beginning of sewing.



Caution Risk of Injury !

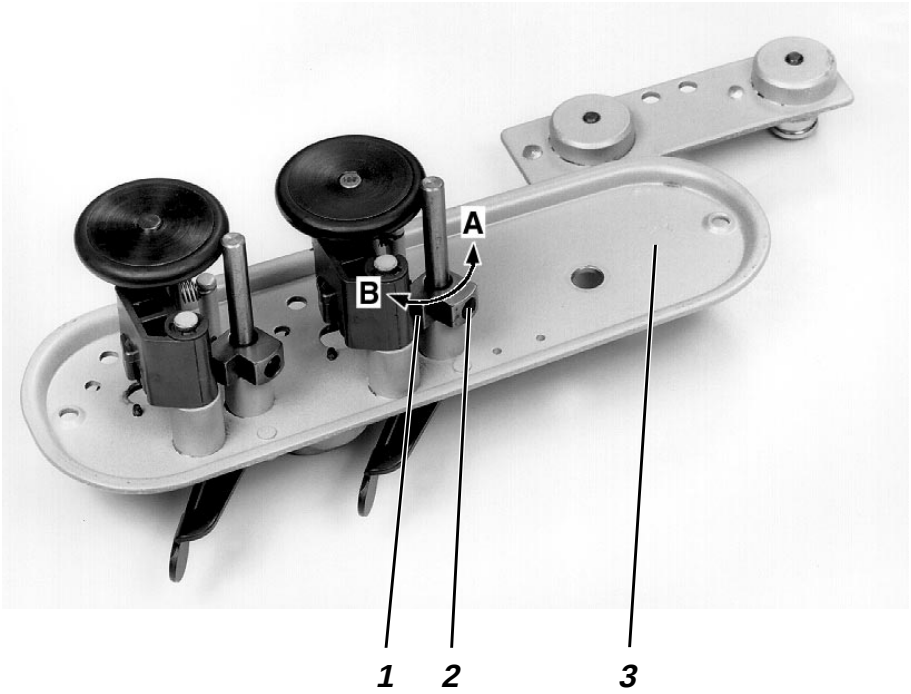
Turn the main switch off.
Set the thread puller only with the main switch turned off.

- Loosen lock nut 3.
- Set the swing width of the thread puller 4 by turning the stopper screw 2.
- Tighten lock nut 3.

- Set the movement speed of the thread puller 4 at the throttle valve 1.
  The movement should be rapid, but not jerky.

15.18 Bobbin Winder

The winding procedure must end automatically when the bobbin is filled up to approx. 0.5 mm in front of the edge.



Caution Risk of Injury !

Turn the main switch off.
Set the bobbin capacity only with the main switch turned off.

Correcting the bobbin capacity

- Remove the bobbin winder cover 3 after loosening the mounting screws.
- Loosen clamping screw 2 slightly.
- Set the bobbin capacity by turning the switching cam 1.
  Turning in direction of the arrow **A**: Decrease bobbin capacity
  Turning in direction of the arrow **B**: Increase bobbin capacity
- Tighten clamping screw 2.
- Attach the bobbin winder cover 3 again.

15.19 Replacing the Needle Holders

– Step back on the left pedal.
  The transport carriage runs into its rear end position.

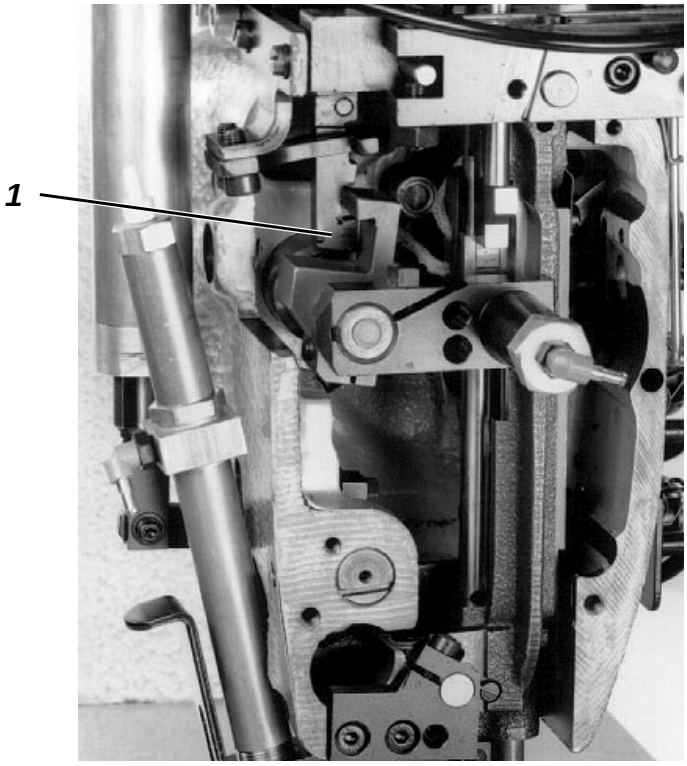
Caution Risk of Injury!

Turn the main switch off.
Replace the needle holders only with the main switch turned off.

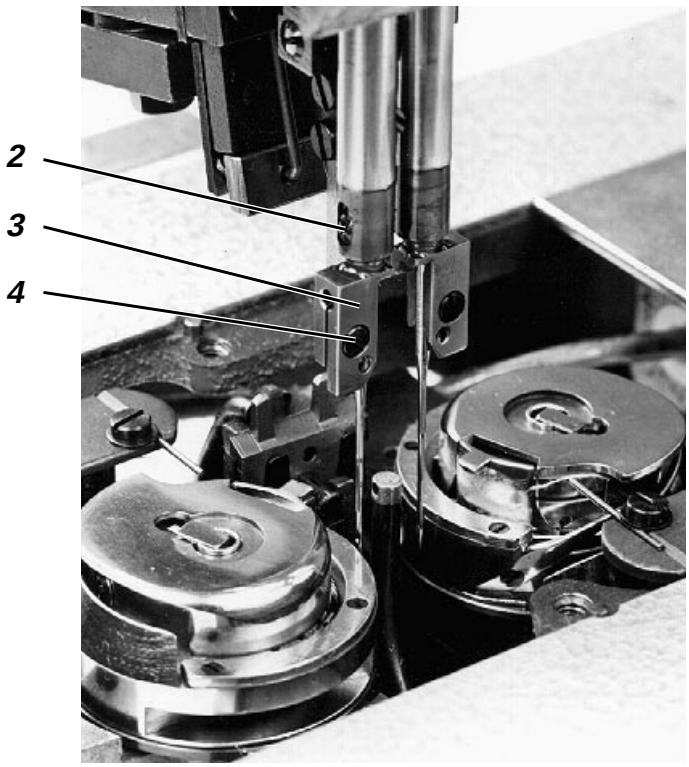
– Remove the folder after loosening the clamping screw.
– Loosen screw 4 slightly.
– Remove the needle from the needle holders 3.

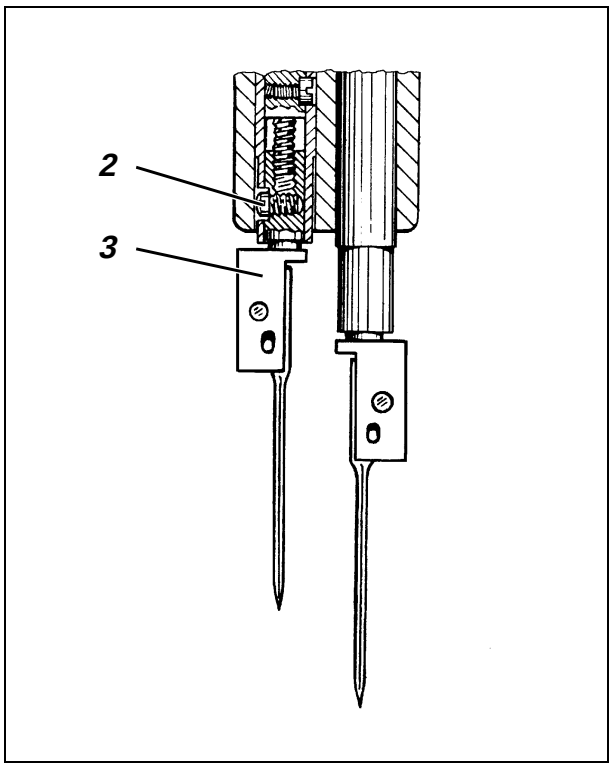
ATTENTION !

Replacing a needle holder is only possible when the affected needle bar is in the low position.
The other needle bar must be switched off.



– Press latch 1 down and hold down.
– Turn on both needle bars by turning the handwheel.
– Turn the handwheel farther.
– Before reaching the upper dead center press under the needle holder on the needle bar to be switched off manually.
  A slight resistence is felt.
– Turn the handwheel back while pressing.
  The needle bar switches off.



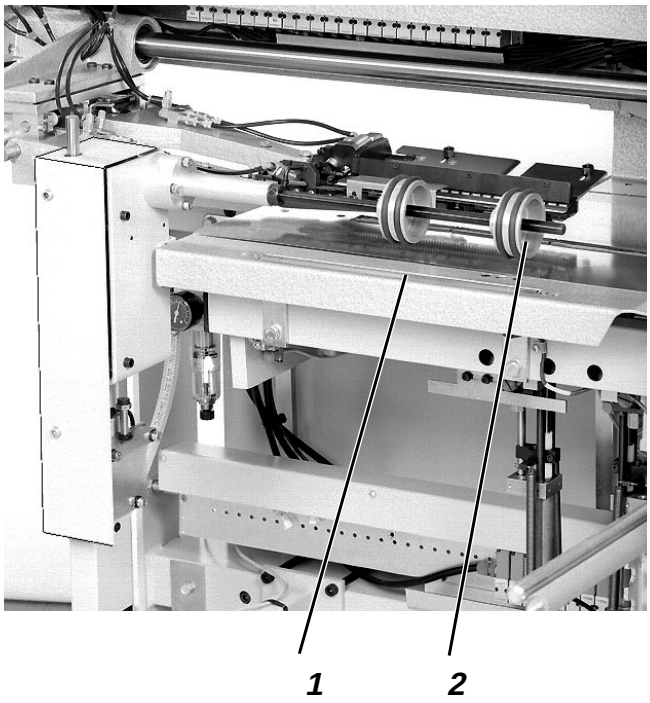


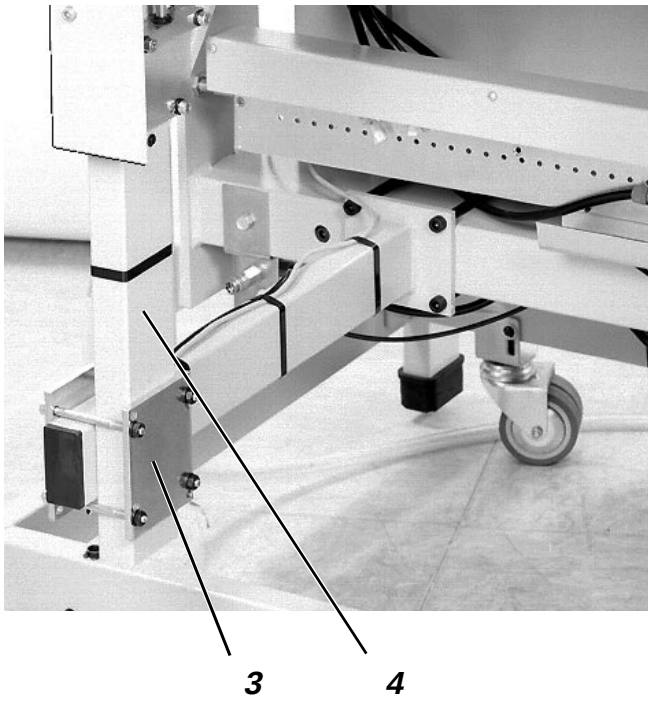
- Loosen screw 2.
- Screw the needle holders 3 out of the needle bar.
- Screw new needle holders into the needle bar.
- Set the height of the needle holder 3 (see Chapter 15.7).
- Tighten screw 2.
- Check the entry of the needle into the needle hole of the needle plate.
- Check the sideways clearance of the needle to the hook and set as necessary (see Chapter 15.8).
- The replacement of the second needle holder occurs in the same manner.

16. Setting the Optional Equipment

16.1 Pull-Off Device and Bundle Clamp

The pull-off device (Order no.: 0794 014001) transports the finished sewing piece out of the machine so that it hangs down on the bundle clamp (Order no.: 0794 002201).





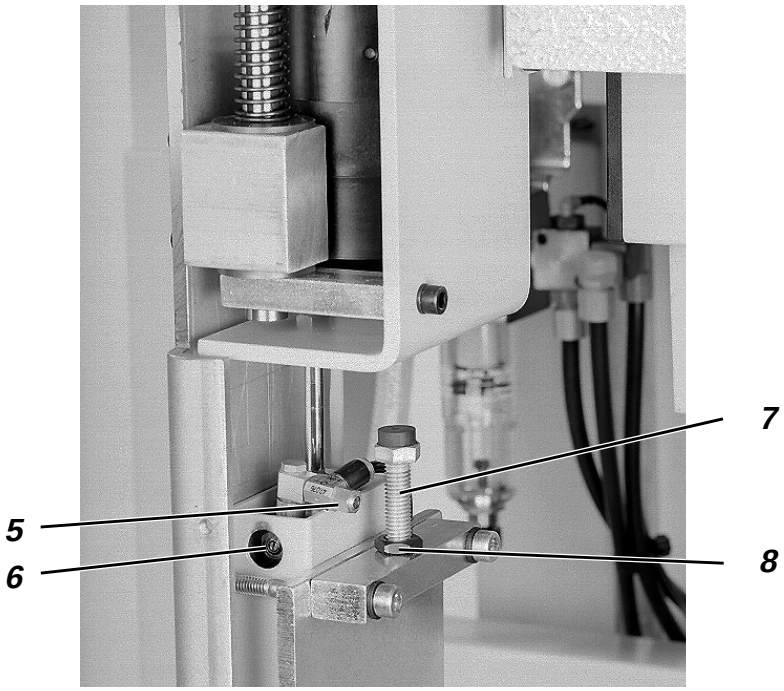
Caution Risk of Injury !

Turn the main switch off.
Set the pull-off device only with the main switch turned off.

Setting the height of the transport rollers

- Loosen the 4 mounting screws on the clamping piece 3.
- Align spar 4 so that the transport rollers 2 and roller 1 lie vertical over each other.
  The clearance between the roller and the transport roller should be approx. 25 mm.
  The transport rollers 2 must move up and down unimpaired. The swinging-up of the cover hood should not be hindered.
- Tighten the mounting screws on the clamping piece 3.

- Loosen lock nut 8.
- Set stopper screw 7.
  The lowered transport rollers 2 must lay onto roller 1 without pressure.
- Tighten lock nut 8 again.



Setting the throttle valves

– Set the lowering speed of the transport rollers 2 with the one-way restrictor valves 5 and 6.
  The lowering movement should be rapid, but not jerky.

Setting the roll speed and activation period

The roll speed and the activation period of the transport rollers are set at the controls.

– Activate the setting and testing program **" Checking the Smoother Function "**.
  See **Short Description DAC** Chapter 6.3.3.

  Factory setting: v = 15 (max. roll speed)

16.2 Stacker Addition

The stacker addition (Order no.: 0794 014001) is used in combination with the throw-over stacker. This is necessary for sewing pieces which are positioned crosswise or are so short that the throw-over stacker does not catch them.

The transport rollers 1 transport the small sewing pieces into the stacker opening of the throw-over stacker.

Caution Risk of Injury !

Turn the main switch off.
Set the stacker addition only with the main switch turned off.

Setting the height of the transport rollers

– The height of the transport rollers is set as described in Chapter 16.1.

Setting the roll speed and activation period

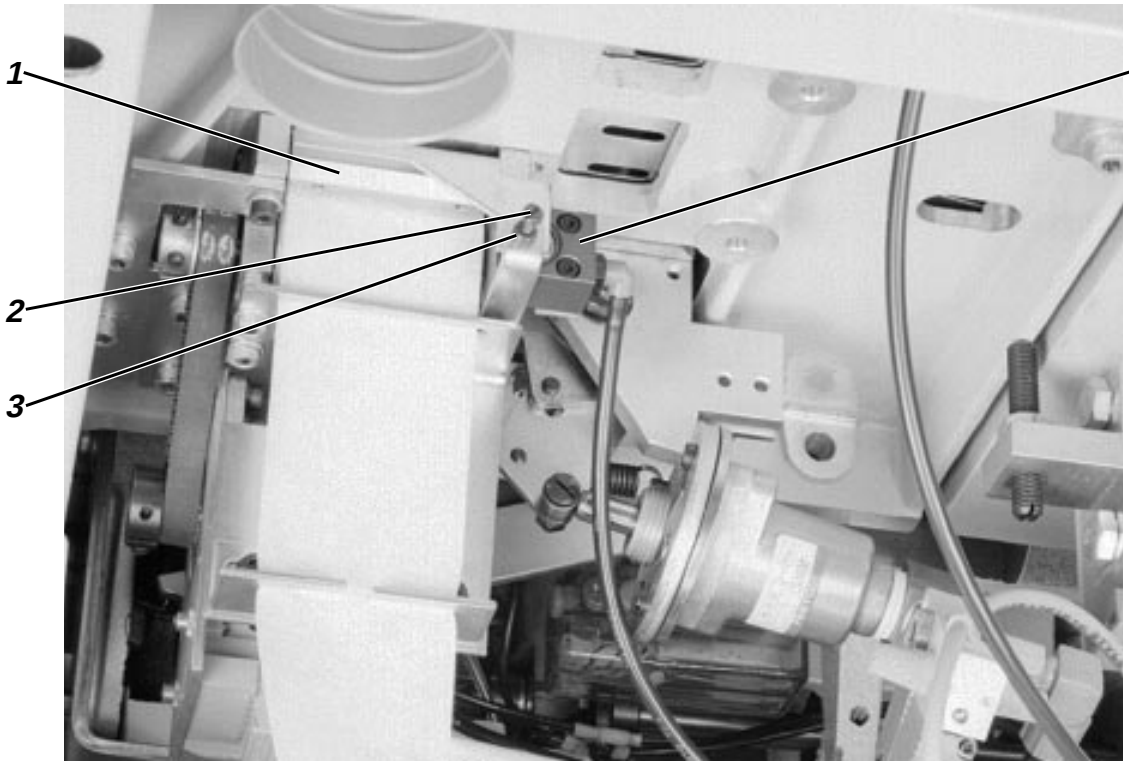
The roll speed and the activation period of the transport rollers are set at the controls.

– Activate the setting and testing program **" Checking the Smoother Function "**.
See **Short Description DAC** Chapter 6.3.3.

Factory setting: v = 5 (min. roll speed)

16.3 Length-Controlled Feed and Trimming Device for Reinforcement Strips

The length-controlled feed and trimming device for reinforcement strips (Order no.: 0794 014301) is used e.g. when sewing inner and outer jacket pockets.



Caution Risk of Injury !

Turn the main switch off.
Set the feed and trimming device only with the main switch turned off.

Setting the clamp-on pressure

During of the advance the clamping plate 1 operated by cylinder 4 holds the reinforcement strip clamped.
During the transport and sewing sequences the clamping plate 1 is raised.

- Loosen lock nut 3.
- Set the clamp-on pressure of the clamping plate 1 by turning the stopper screw 2.
  The reinforcement strips must still just be securely transported.
- Tighten lock nut 3.

Setting the tape length

The tape length is set at the controls.

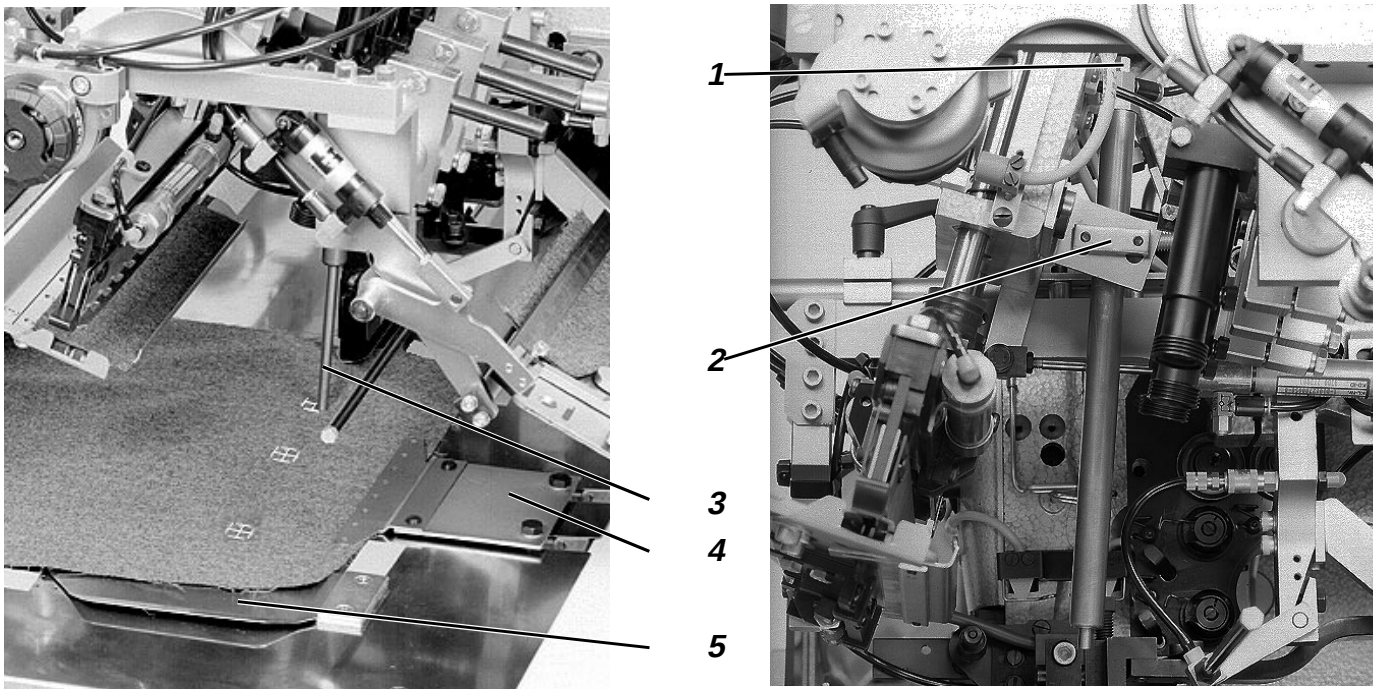
- Activate the pocket program.
  See **Short Description DAC** Chapter 5.5.

16.4 Holder, Pocket Bag and Waistband Clamp

With this device (Order no.: 0794 001223) the fullness resulting from darts in the area of the pocket opening is smoothed and securely held.

The device consists of the following components:

- Holder 3
- Clamping plate 5 for pocket bag pieces
- Waistband clamp 4

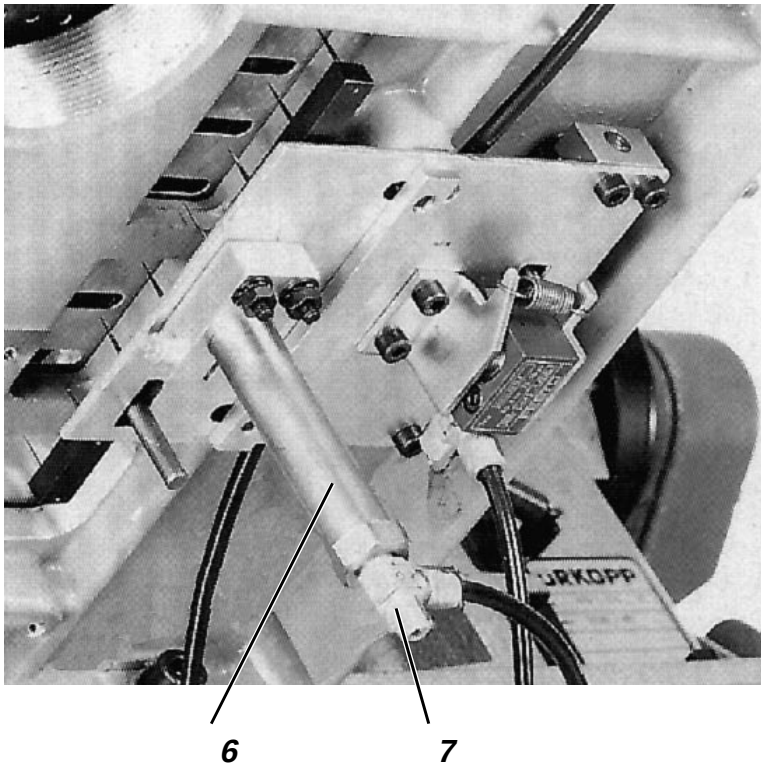


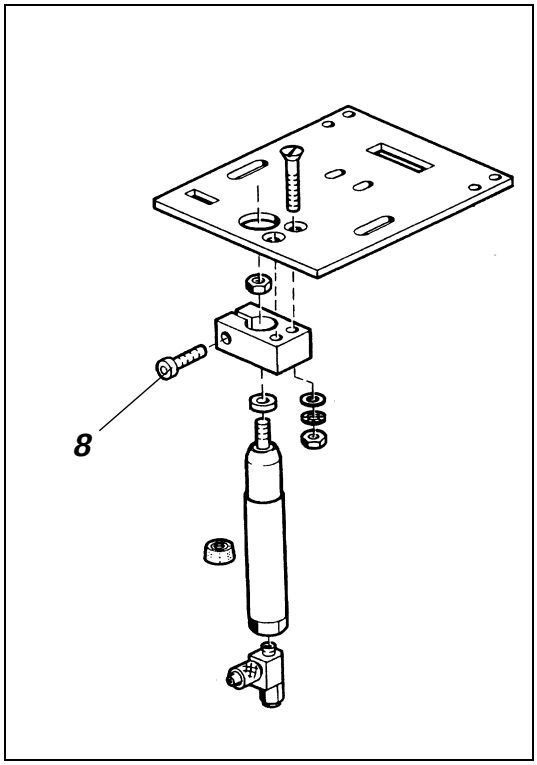
Caution Risk of Injury !

Turn the main switch off.
Set the holder and waistband clamp only with the main switch turned off.

Setting the holder 3

- Loosen the screws on the clamping piece 2.
- Set the height of the holder 3.
  With the knee switch operated the extended piston rod must press on the cloth slider plate.
- Align the holder 3 to the back (in direction of the machine head).
  The piston rod should hold the seat of the trousers clamped, not the pocket bag lying underneath.
- Tighten the screws on the clamping piece 2.
- Regulate the lowering speed of the holder 3 with throttle valve 1.
  The lowering movement should be rapid, but not jerky.





Setting cylinder 6

- Loosen screw 8.
- Set cylinder 6.
  When the cylinder is extended the needles should not extend out of the waistband clamp 4.
- Tighten screw 8.

- Regulate the movement speed of the cylinder 6 with throttle valve 7.
  The movement should be rapid, but not jerky.

16.5 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.

16.5.1 Setting the Opening

The material must securely enter the opening x between the stacked-goods support 2 and clamping pipe 3 during the sewing sequence.

The stop screw 4 limits the position of the opened (swung away from the stacked-goods support 2) clamping pipe 3.
It thus determines the opening x of the stacker.
The opening x can be set up to a maximum of 240 mm.
At delivery it is 170 mm.

- Loosen lock nut 5.
- Turn stop screw 4 until the desired opening x is reached.
- Tighten lock nut 5.

16.5.2 Setting the Height of the Counterholder

With the stacker open, the counterholder 7 lies under stacked-goods support 2.
The clearance y between the counterholder 7 and stacked-goods support 2 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 8.
- Set the counterholder 7 to the desired height.
- Tighten clamping screws 8.

16.5.3 Setting the Position of the Placement Plate

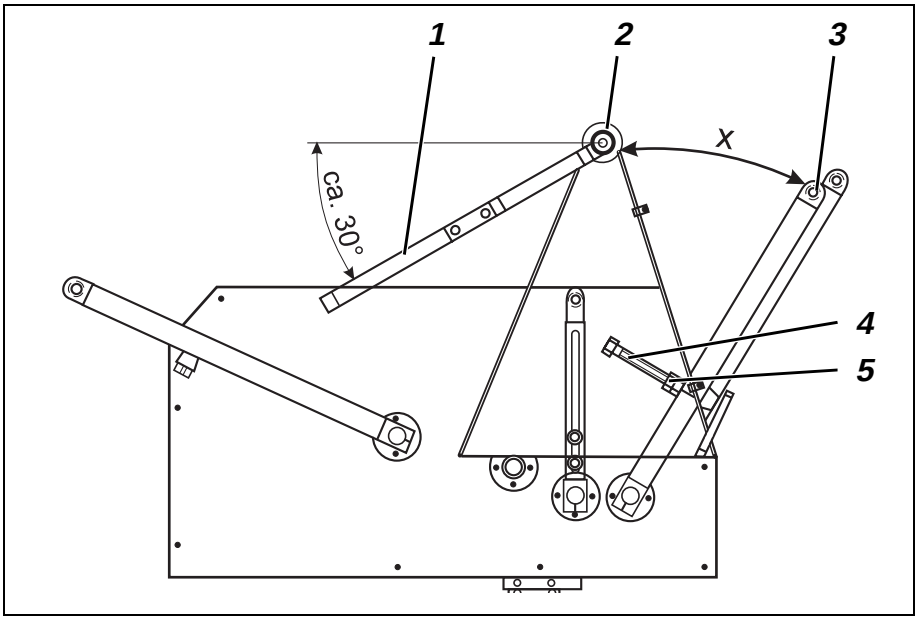
The placement plate 1 must have its angle set so that the material lies smooth after being pulled out.

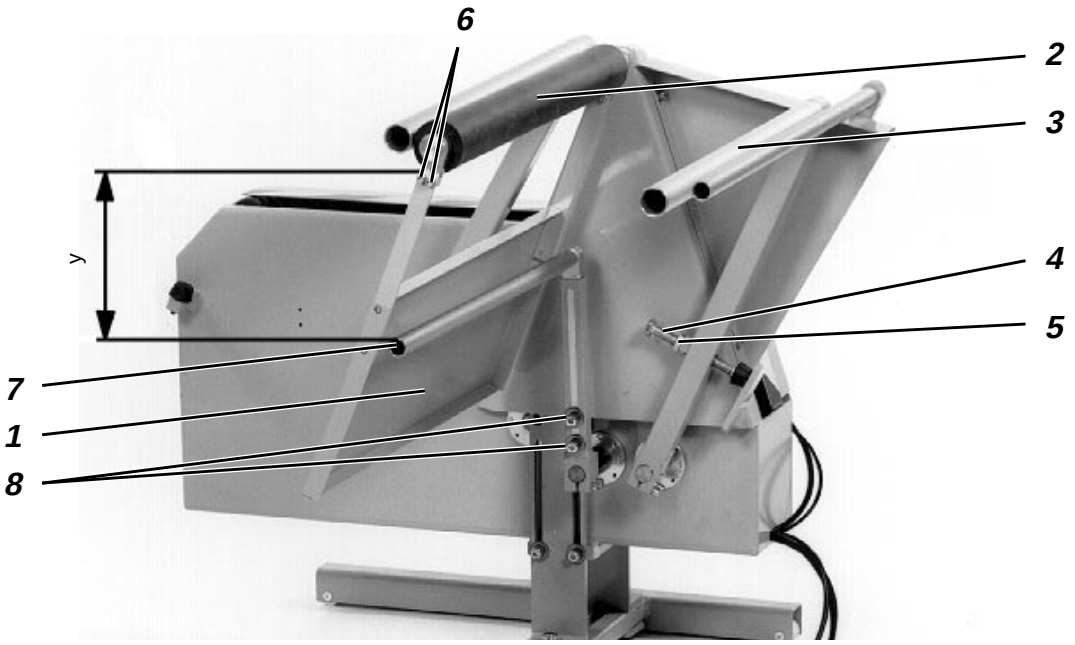
- Loosen both clamping screws 6.
- Swing placement plate 1 into the desired position.
  Base setting: Placement plate 1 should lie at an angle of approx. 30° (see sketch).
- Tighten clamping screws 6.

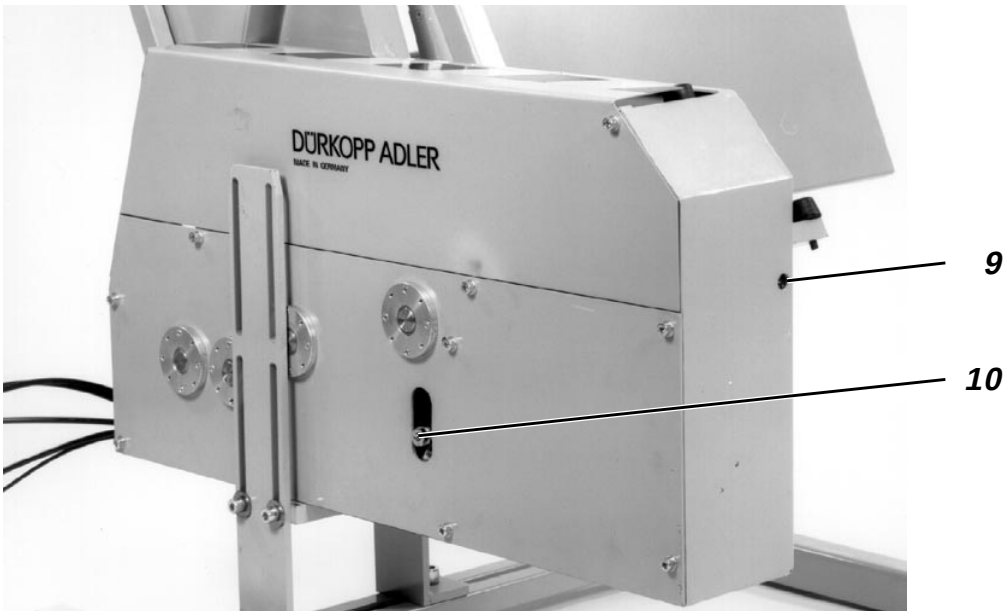
16.5.4 Setting the Speed of the Smoother Movement

The pull-out and return movements of the smoother are to be quick but not jerky.
The speeds of the movements are regulated at the one-way restrictors 9 and 10.

One-way restrictor 9:	Regulating return movement
One-way restrictor 10:	Regulating pull-out movement


1
2
3
X
ca. 30°
4
5


6
2
3
y
4
5
7
1
8


DÜRKOPP ADLER
9
10

16.6 Pneumatic Quick Clamp Adjustment

The pneumatic quick clamp adjustment simplifies the setting of the transport clamps by frequent changeover of the folder between single and dual piping.

Sewing unit		Order no.
745 - 26	B	0792 005941
745 - 28	A	0792 005981
745 - 28	B	0792 005941

The clearance between the outside edges 2 of the folder sole and the inside edges 1 of the lowered transport clamps is determined as follows:

- For dual piping by the position of the cylinder 7 with air.
- For single piping by the position of the stop 9.

Caution Risk of Injury !

Turn the main switch off.
Set the quick clamp adjustment only with the main switch turned off.

Folder for dual piping

- Insert the folder for dual piping.
  0792 005981 The elongated pin 3 operates the valve 4 for the quick clamp adjustment.
  0792 005941 The valve 4 for the quick clamp adjustment is operated by the toggle switch 5.

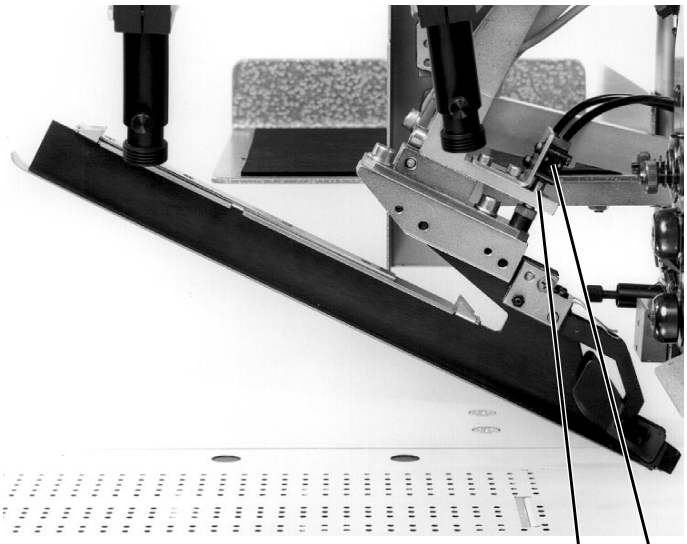
  The correct clearance of the transport clamps to the folder sole is set automatically.
- Move the transport carriage manually until the transport clamps lie at the height of the folder sole.

- Loosen clamping screw 8.
- Set cylinder 7.
  The clearance between the folder sole and the inside edges of the lowered transport clamps is:
  by 10, 12 mm needle spacing = 1 mm
  byi 14, 16, 20 mm needle spacing = 1.5 mm
- Tighten clamping screw 8.

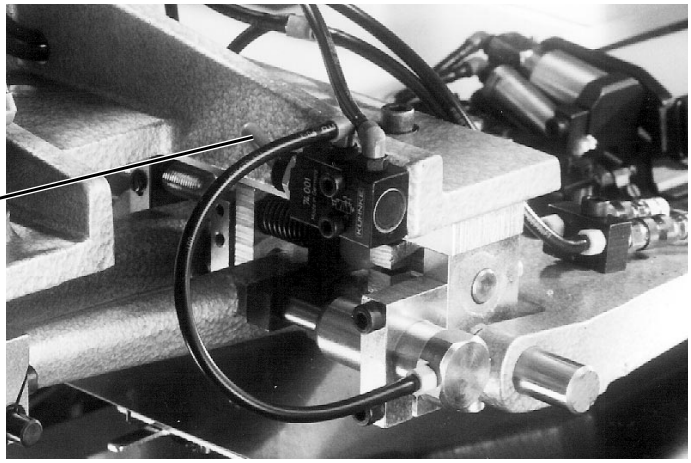
Folder for single piping

- Insert the folder for single piping.
- Loosen the clamping screws on the stop 9.
- Move stop 9 in the appropriate direction.
  The clearance between the folder sole and the inside edges of the lowered transport clamps is:
  by 10, 12 mm needle spacing = 1 mm
  by 14, 16, 20 mm needle spacing = 1.5 mm
- Tighten the clamping screws on the stop 9 again.

1 2



3 4



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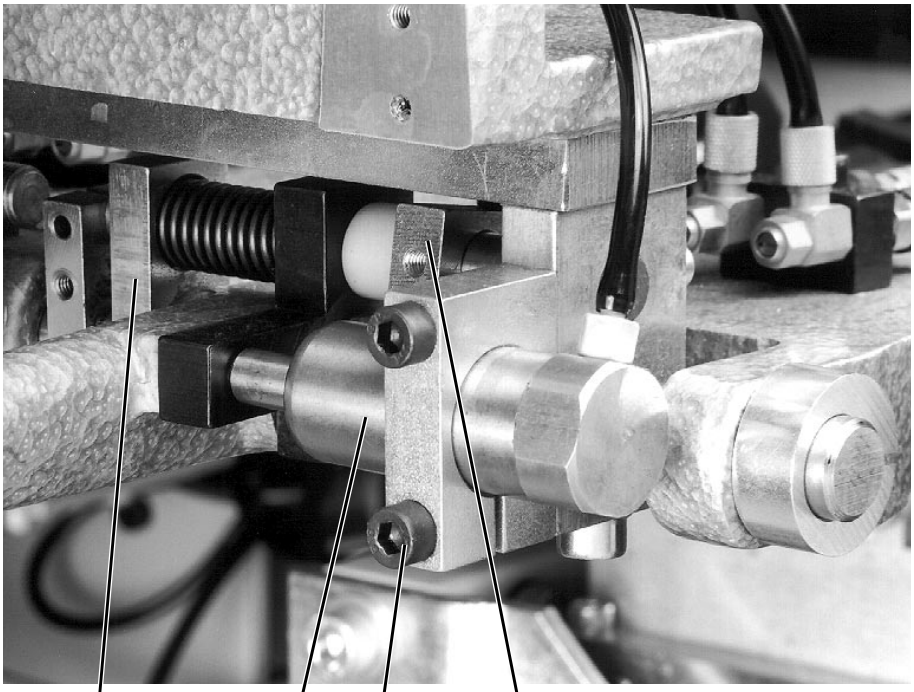

6 7 8 9

17. Maintenance

Caution Risk of Injury !

Turn the main switch off.
The maintenance of the sewing unit may only occur when it is switched off.

The maintenance work to be conducted by the operating personnel of the sewing unit daily and weekly (cleaning and lubricating) is described in Part 1: Operating Instructions. It is listed in the following table only for the sake of completeness.

Work to be conducted	Operating Hours			
	8	40	160	500
Machine Head				
Remove lint accumulations, sewing dust and thread rests from the area of the hook and needle plate	X			
Oil the oiling points (see Operating Instructions Chapter 3.2)		X		
Check the oil level in the oil reservoirs		X		
Check the oil feed at the viewing window	X			
Check the hook lubrication		X		
Clean the lenses of the remaining thread monitor	X			
Clean the reflecting foils	X			
Drive Unit and Transport Carriage				
Check the condition and tension of the V- and timing belts			X	
Clean the filter at the front and back of the step motor output	X			
Clean the motor ventilator sieve	X			
Pneumatic System				
Check the water level in the pressure regulator	X			
Clean the filter insert in the maintenance unit				X
Check the system for leaks				X
Optional Equipment				
Clean the filter bag of the suction device	X			