



3568 –2/01

Service Manual

SAFETY INSTRUCTIONS

- The machine must only be used for the purpose it was designed for. In case of conversion into another version all valid safety instructions have to be considered.
- Do not operate the machine without the safety devices it is equipped with.
- The machine must only be switched on and operated by persons who have been instructed accordingly.

- When exchanging gauge parts (e. g. needle, presser foot, needle plate, feed dog, bobbin), threading the machine or leaving it, and when making maintenance work, the machine must be disconnected either by actuating the master switch or by removing the mains plug.
In case of mechanically-actuated clutch motors wait for the motor to stand still.
- When carrying out maintenance- or repair work on pneumatic devices the machine must be disconnected from the pneumatic supply source. The only exceptions permitted are adjustments and performance checks made by competent personnel.

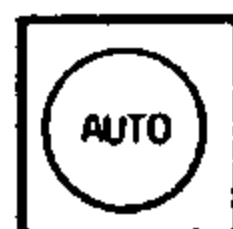
- Work on the electrical equipment of the machine must only be carried out by electricians or other persons who have been instructed accordingly.

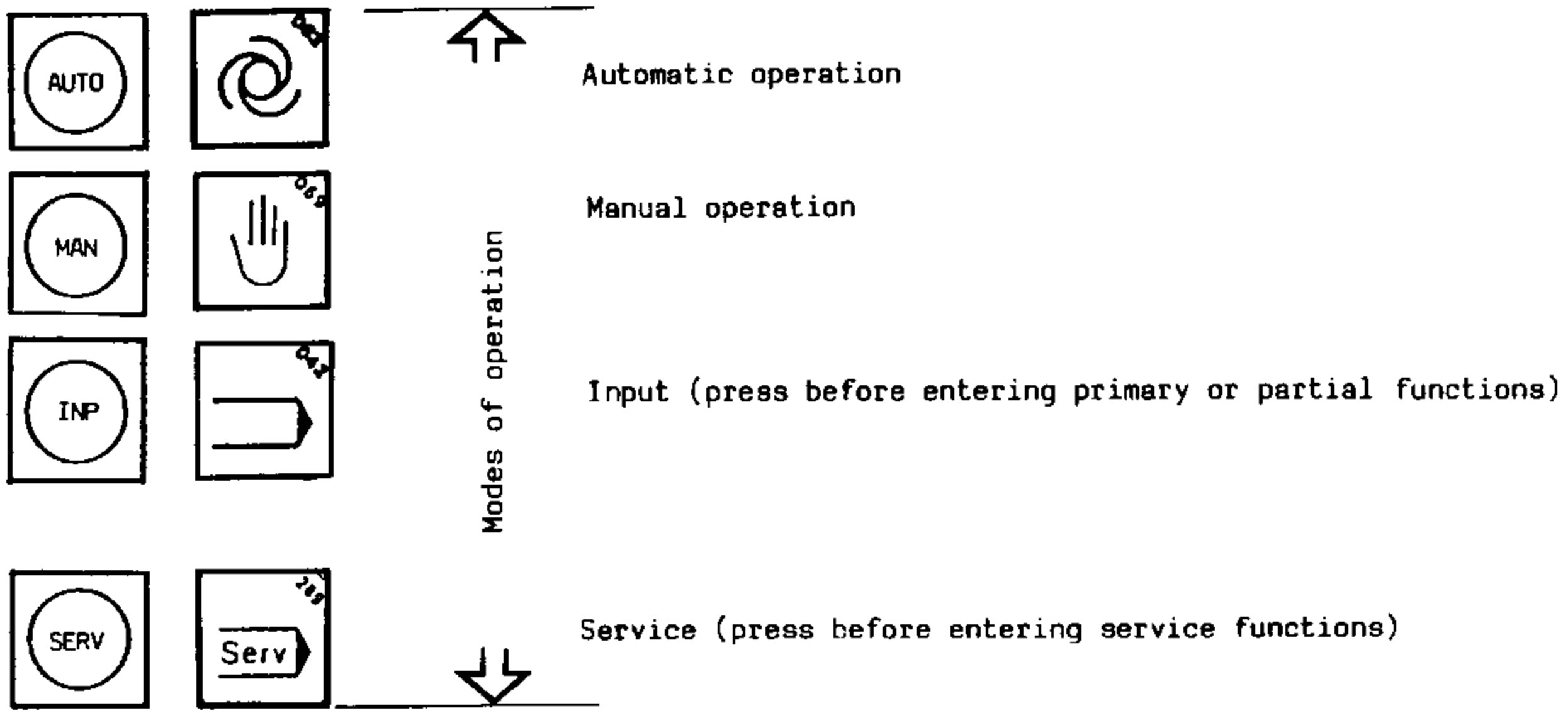
- Apart from the permissible deviations according to DIN 57105 or VDE 0105, work on live parts and equipment is not permitted.



FUNCTIONS OF SWITCHES AND KEYS


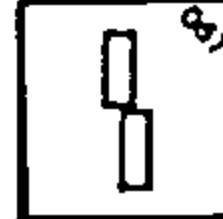
with a comparison of old and new symbols

Example: Old version - New version




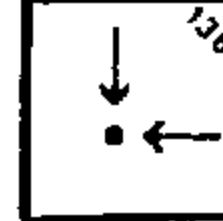


		<ol style="list-style-type: none"> 1. Inquiring primary and partial functions from SERV and INP 2. Adoption of new inputs
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		Error reset (after removal of errors or after bobbin changes)
--	---	---

		Jog sewing jig forwards
--	---	-------------------------


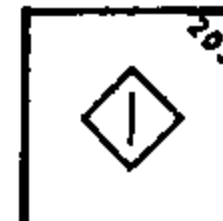
		Jog sewing jig backwards
--	---	--------------------------

		Basic position of sewing program
--	---	----------------------------------

		Needle up position
--	---	--------------------

		Stacker forwards - backwards (to change bobbin)
--	---	---

		Program stop
--	---	--------------

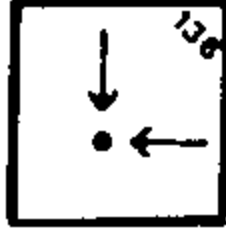
		Start sewing Program continued after stop
--	---	--

NO
SEWING



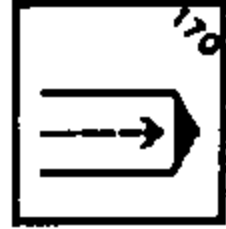
Program without sewing in "AUTO"

FOLDER
ORIGIN



Basic position of edge folder and jig feed

STEP



Function flow in single steps in "MAN" without sewing

ON



Machine on

SEW

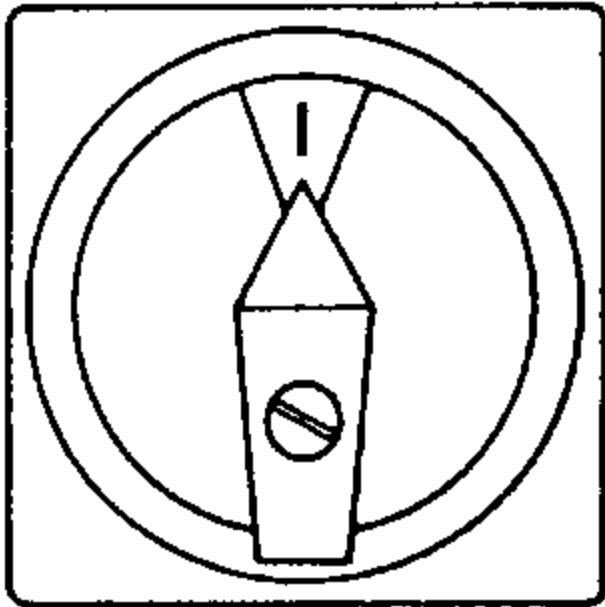


Sewing on in "MAN"

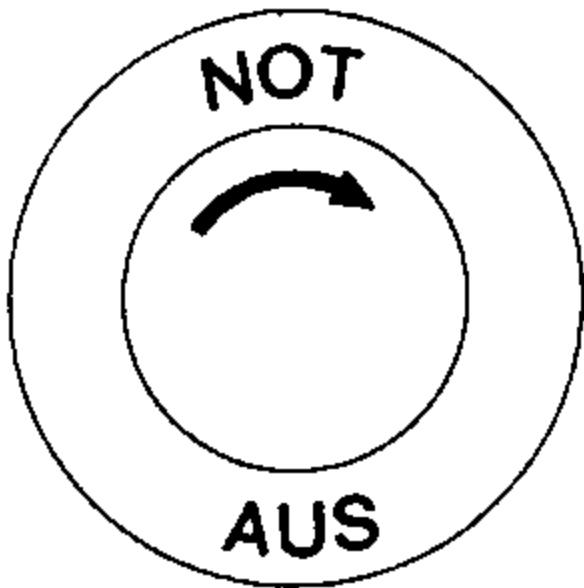
START



STOP cancelled (control panel edge folder)

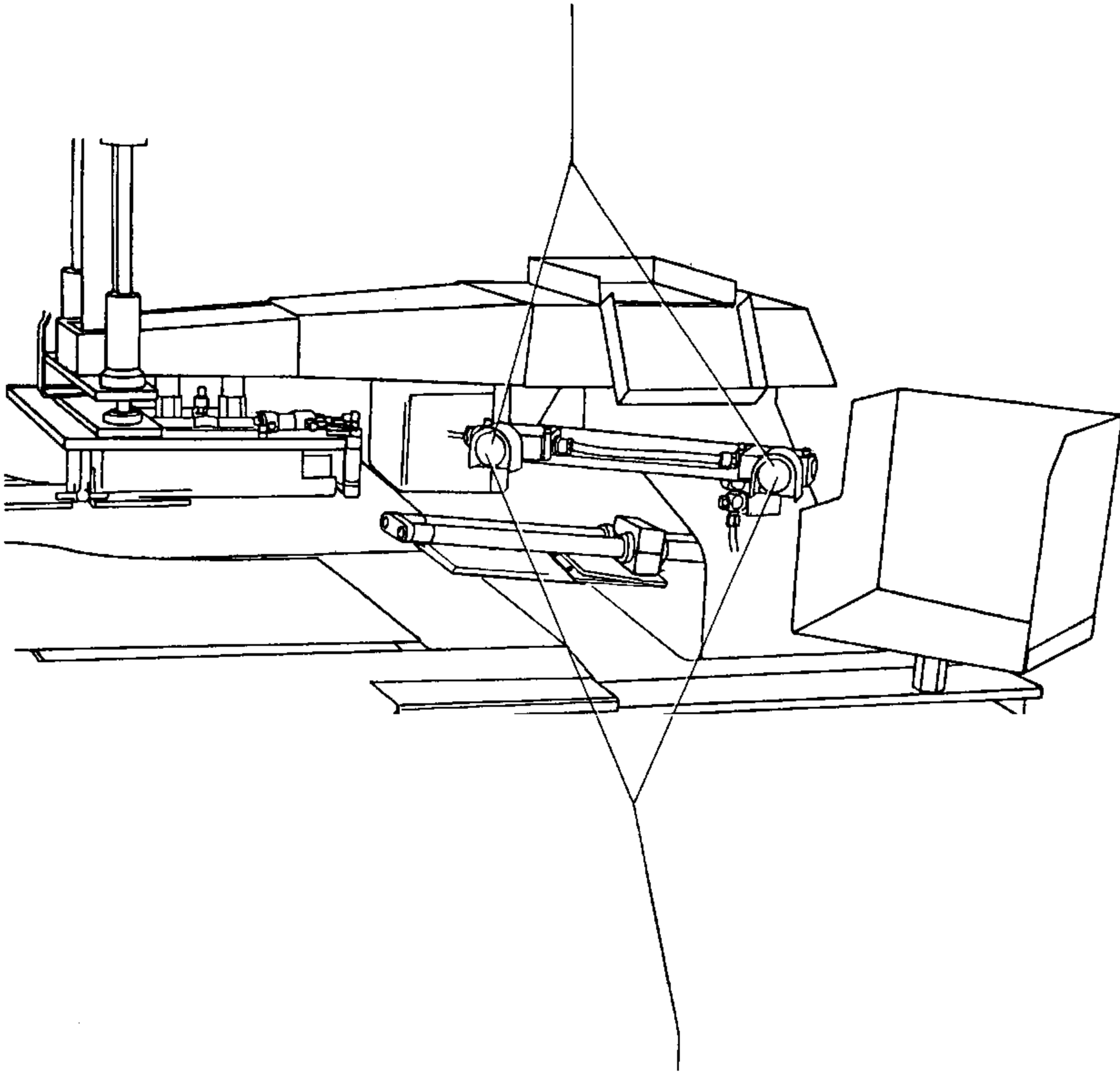


Master switch



EMERGENCY OFF

In "MAN":
Pocket plate forwards (on version with movable pocket plate)
Edge folder and table down (on version with stationary pocket plate)



In "AUTO"
Program start

CONTENTS

For notes on safe machine operation see inside front cover

Function of switches and buttons
Tools, gauges and other equipment

- 1 Installing the machine
- 2 Compressed air and electrical connection
- 3 Checking procedures
- 4 Withdrawing the sewing head
- 5 Notes on adjustment of the sewing machine
- 6 Removing the -900 control unit gear cover and faceplate
- 7 Adjusting the needle bar in relation to the needle hole in sewing direction
- 8 Adjusting the needle-bar parallel guide
- 9 Adjusting the stitch with regulator
- 10 Adjusting the needle bar in relation to the needle hole (transverse direction)
- 11 Adjusting the needle throw
- 12 Adjusting the three needle positions
- 13 Adjusting the hook bearing bracket
- 14 Adjusting the tension of the drive belt in the gearcase
- 15 Adjusting the sewing hook
- 16 Adjusting the needle height in relation to the sewing hook
- 17 Positioning the oil tube in the oil distributor
- 18 Adjusting the needle guard
- 19 Adjusting the counter presser
- 20 Adjusting the bearing bush of the bobbin case opener
- 21 Adjusting the bobbin-case opening eccentric
- 22 Adjusting the oil check valve
- 23 Re-fitting the gear case cover and -900 control unit
- 24 Preliminary adjustment of the control cam

- 25 Adjusting the roller lever
- 26 Adjusting the engaging solenoid
- 27 Adjusting the actuating lever
- 28 Adjusting the engaging lever
- 29 Final adjustment of control cam
- 30 Adjusting the locking spring
- 31 Making a cutting test
- 32 Adjusting the thread catcher
- 33 Adjusting the actuating shaft cylinder
- 34 Adjusting the needle-thread tension release
- 35 Topping up with oil for lubricating the zigzag eccentric
- 36 Adjusting the thread check spring
- 37 Pre-adjustment of the synchronizer
- 38 Pre-adjustment of the switch vane for the intermittent feed
- 39 Adjustment of the proximity switch
- 40 Inserting the sewing head
- 41 Adjusting the presser foot
- 42 Adjusting the secondary tension
- 43 Adjusting the thread puller
- 44 Adjusting the bobbin winder
- 45 Adjusting the balance wheel synchronizer
- 46 Adjusting the switch vane for the intermittent workpiece feed
- 47 Verifying the service functions
 - 47.1 Setting/resetting of outputs
 - 47.2 Stepping motor for X-axis
 - 47.3 Stepping motor for Y-axis
 - 47.4 Sewing motor

- 47.5 Thread trimming sequence
- 47.6 Display of inputs
- 48 Setting the jig control
- 49 Alignment of the jig feed linkage
- 50 Adjusting the sewing jig indexing system
- 51 Alignment of the sewing jig
- 52 Basic adjustments of the folding unit
- 53 Adjusting the height of the loading plate
- 54 Adjusting the height of the folding unit
- 55 Adjusting the pocket plate arm
- 56 Positioning the pocket plate over the loading plate
- 57 Adjusting the clearance between pocket plate and loading plate
- 58 Adjusting the retainer
- 59 Positioning the edge folders
- 60 Adjusting the corner folders
- 61 Setting the operating sequence of the edge folders
- 62 Adjusting the trips of the roller lever valves on the edge folders
- 63 Adjusting the times
- 64 Setting feeding speed and damping action for jig feed
"forwards-backwards"
- 65 Carrying out a sewing test
- 66 Adjusting the seam parallel to the pocket-edge
- 67 Centering the seam on the pocket
- 68 Setting the front seam distance
- 69 Adjusting the pockets stops
- 70 Air filter/lubricator
- 71 Lubrication
- 72 Cleaning the impeller filter on the switch cabinet

TOOLS, GAUGES AND OTHER EQUIPMENT

General tool kit

- 1 Set of screwdrivers with blades from 2 to 10 mm
- 1 Set of open-ended spanners from 6 to 22 mm
- 1 Set of allen keys, 1,5 to 6 mm
- 1 Universal screwdriver with exchangeable blades
(watchmaker's screwdriver)
- 1 Adjustable spanner
- 1 Hammer, 250 grammes
- 1 Brass drift, 8 mm dia. x 250 mm
- 1 Circlip pliers, original Seeger
- 1 Metal rule, 0.3 mm thick
- 1 Rule, 800 mm to 1000 mm
- 1 Tweezers, elbowed
- 1 Bottle of Loctite

Special tools

- 1 Open-ended spanner, 19 mm
- 1 Adjustment pin (5 mm dia.) part No. 13-030 341-05
- 1 Hook bearing bracket adjustment gauge,
part No. 91-129 096-05
- 1 pin-type face spanner 17.5 x 3.5 dia.
- 1 Adjustment pin for ready-point
part No. 95-745 110-15

1 Installing the machine *

Lift the machine off its transit support, if possible with a fork lift truck, and carry it to its location.

Before letting the machine down turn the six rubber cushions 1 (Fig. 1) into feet 2.

Let the machine down and adjust feet 2 until the machine is levelled out. Make sure it is resting evenly on all six feet.

Fit stacker frame to machine front.

2 Compressed air and electrical connection

Connect adaptor 3 (Fig. 2) to the compressed air system with an air hose (6 mm inside dia.) that can withstand the working pressure of the compressor.

The compressed air system must have a working pressure of at least 7 bar.

Open valve 4 (Figs. 2 and 2.1).

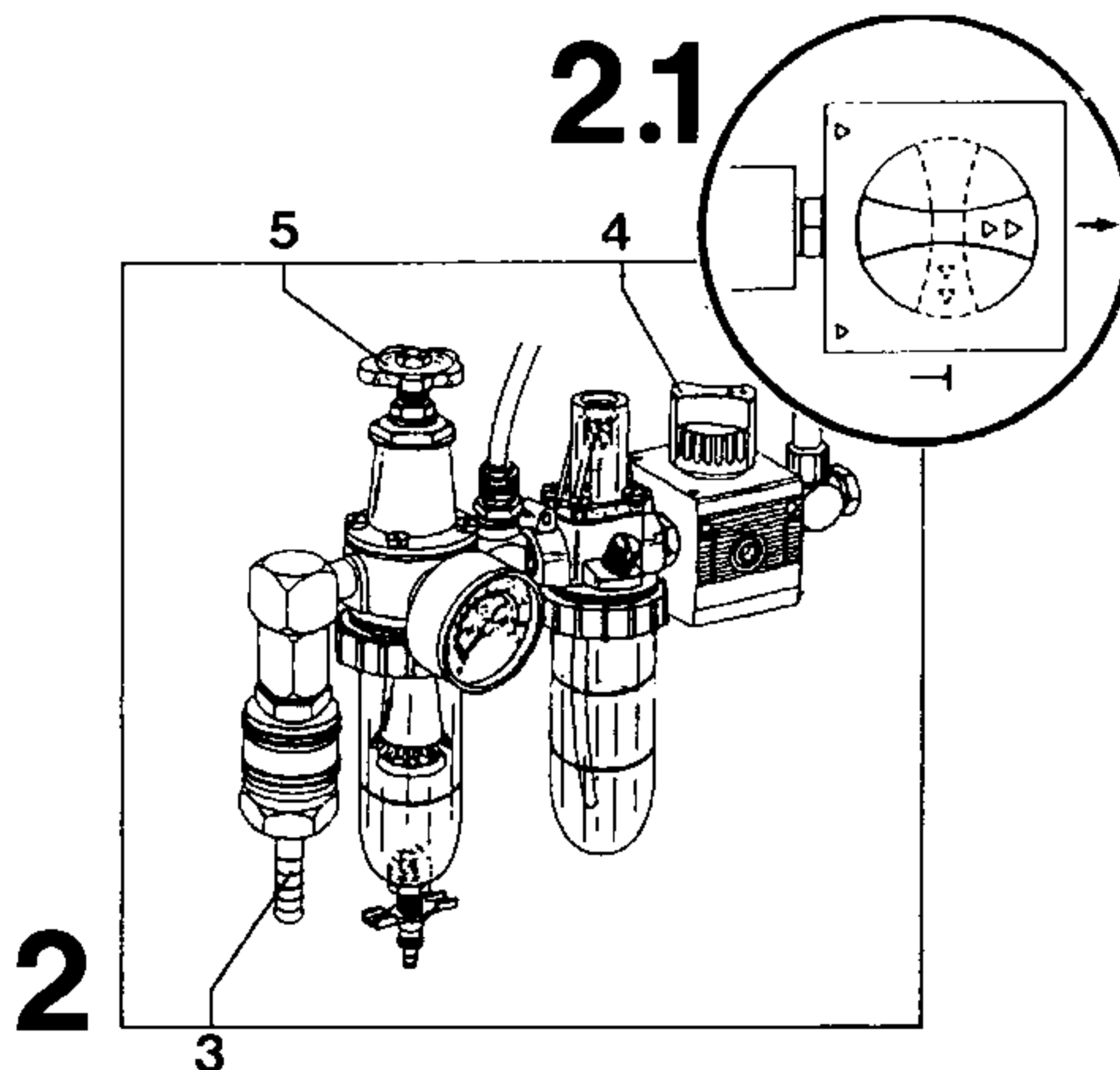
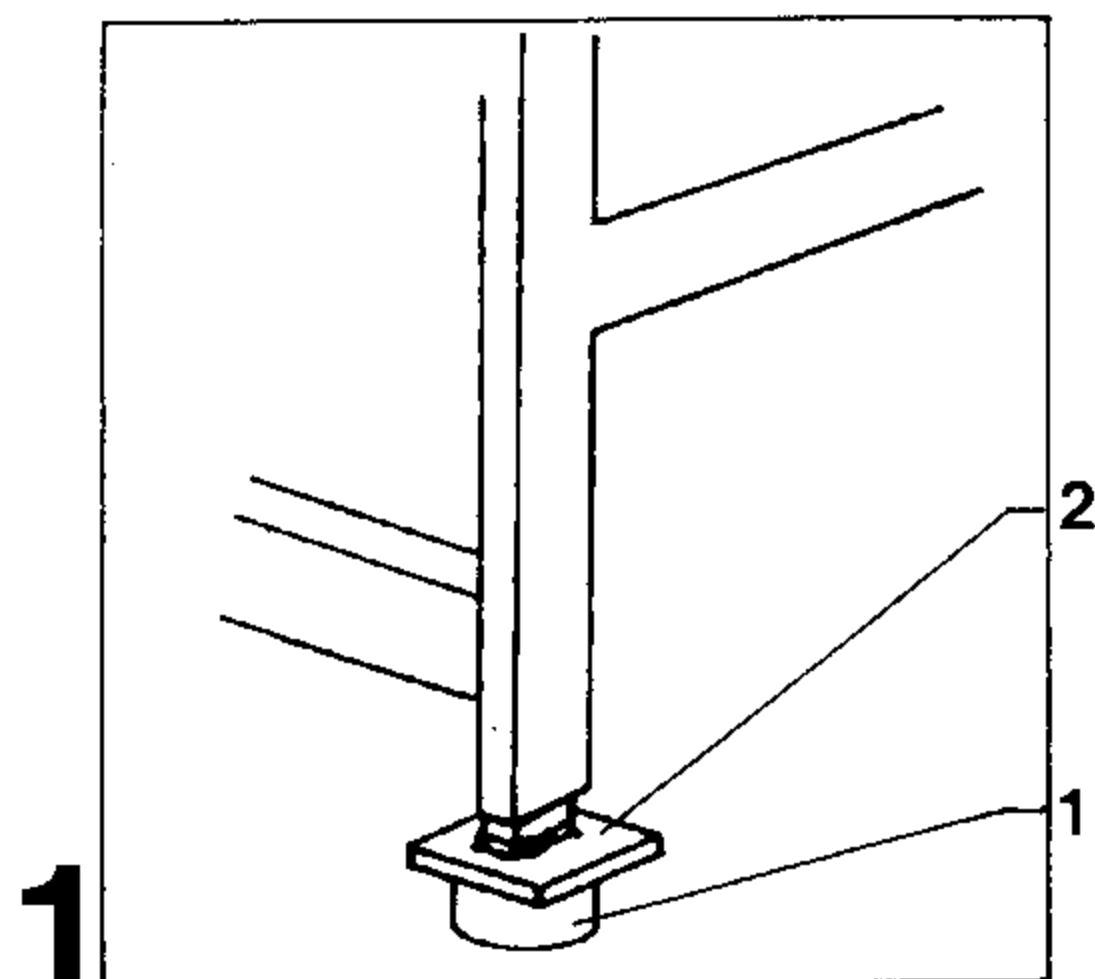
Set a working pressure of 6 bar on regulator valve 5 (Fig. 2).

Check that the mains voltage coincides with that indicated in column 6 of the specification plate (Fig. 3).

If the voltage is correct, insert the plug in a suitably earthed socket.

* In cases of transit damage, inform the carrier and the Pfaff agency responsible.

PFAFF	
<input type="text"/>	T.-Nr. <input type="text"/>
Stromart <input type="text"/>	Frequenz <input type="text"/> Hz
Betriebsspg. <input type="text"/>	V 6
Steuerspg. <input type="text"/>	Trafo <input type="text"/> V
Nennstrom <input type="text"/>	A
Hauptsicherung <input type="text"/>	A
Schaltplan <input type="text"/>	3



3 Checking procedures

3.1 Air filter/lubricator

The oil level must remain between the two marks on container 1 (see arrow in Fig. 1).

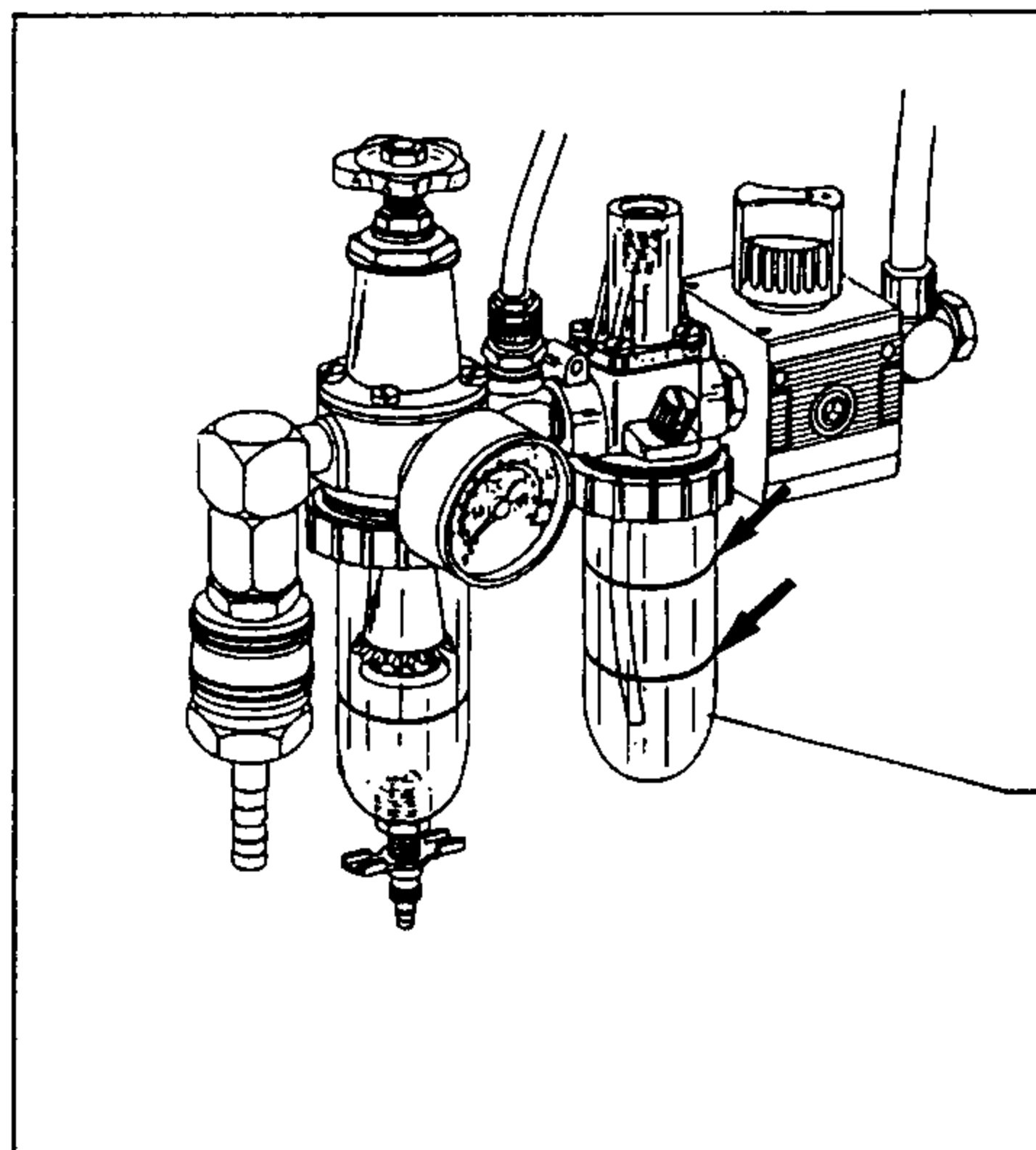
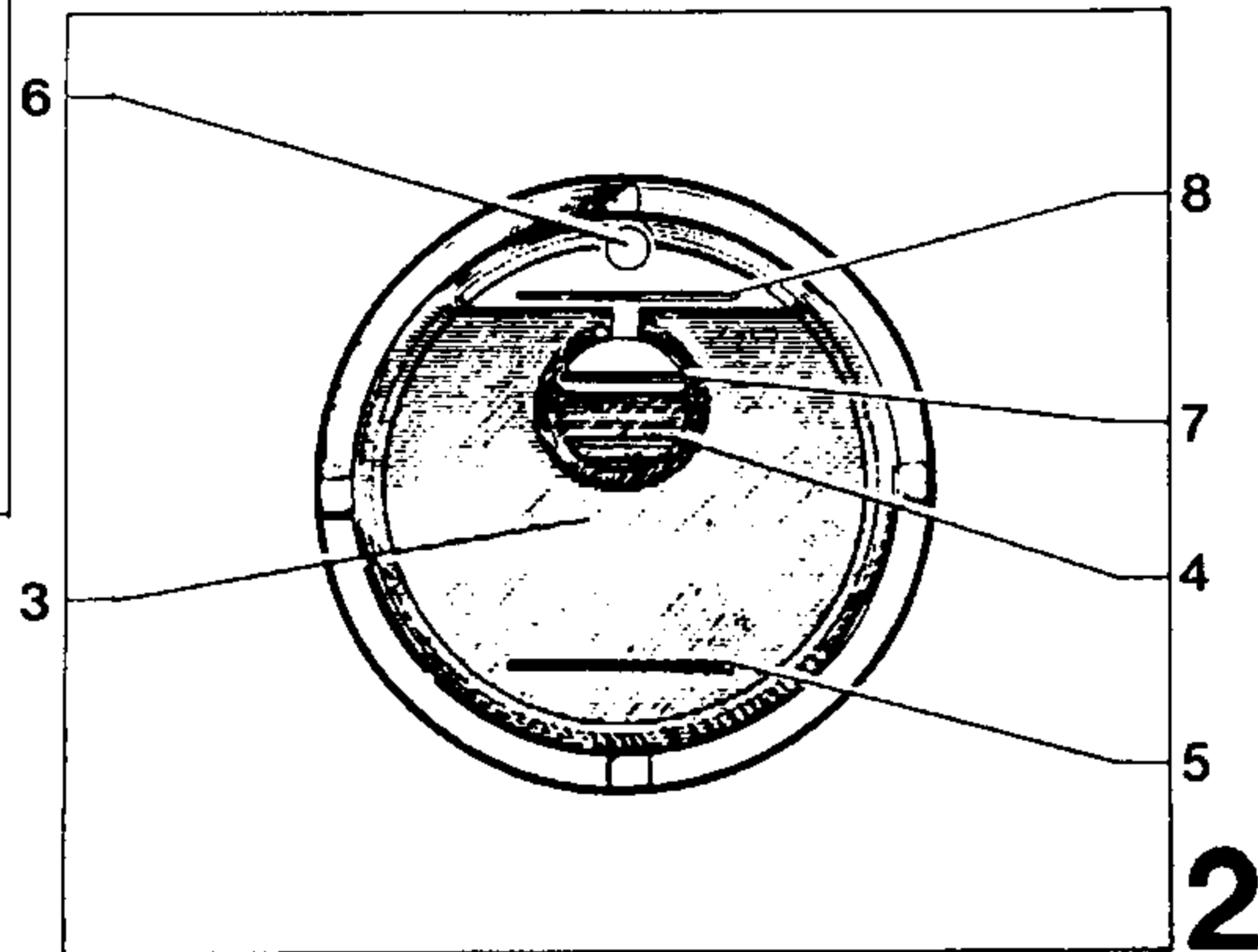
Top up oil according to Section 70.3, if necessary.

3.2 Sewing machine

The two oil levels in sight glass 3 (Fig. 2) must not drop below marks 4 and 5.

If necessary, top up the oil through hole 6 to marks 7 and 8.

We recommend Pfaff sewing machine oil, part No. 280-1-120 144 or an oil with a mean viscosity of $22.0 \text{ mm}^2/\text{s}$ at 40°C and a density of 0.865 g/cm^3 .



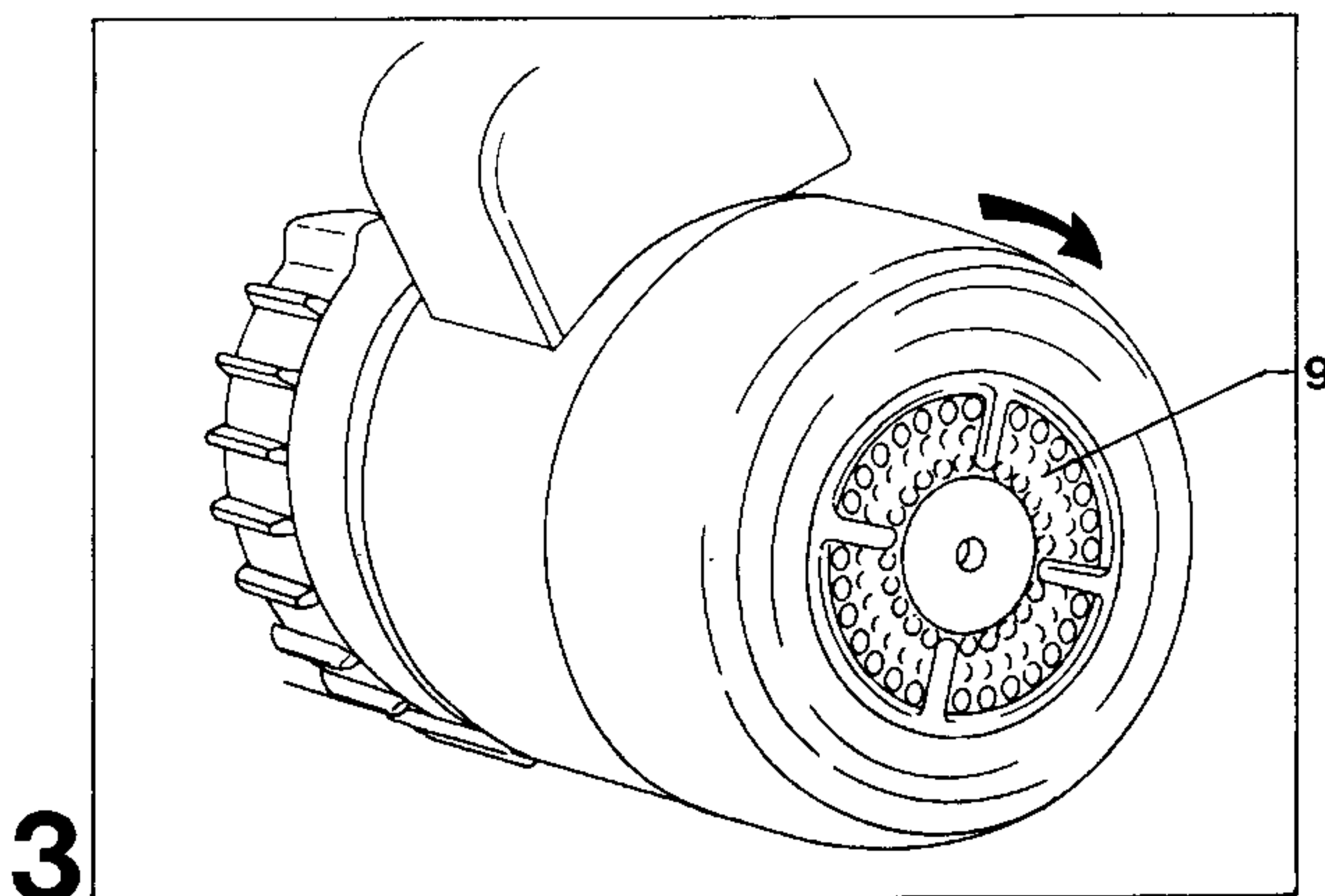
3.3 Rotating direction

Fan 9 (Fig. 3) must rotate as shown by the arrow.

Turn master switch to "1", press button "ON" and turn master switch back to "0" again.

Watch fan 9 as it slows down. If it turns as shown by the arrow the rotating direction is correct.

If it does not, reverse the connections in the mains plug.



3.4 Hook lubrication

If the machine is new or has not been used for a longer period (one or two months) it is imperative to check the oil feed.

When the machine is running at full speed a thin trace of oil must appear on a piece of paper held to the side of the hook raceway after about 10 secs.

Fully close regulating screw 10 (Fig. 4) and unscrew it again by half a turn.

Switch on machine.

Press keys "SERV" and **4**,
- positioning speed is selected.

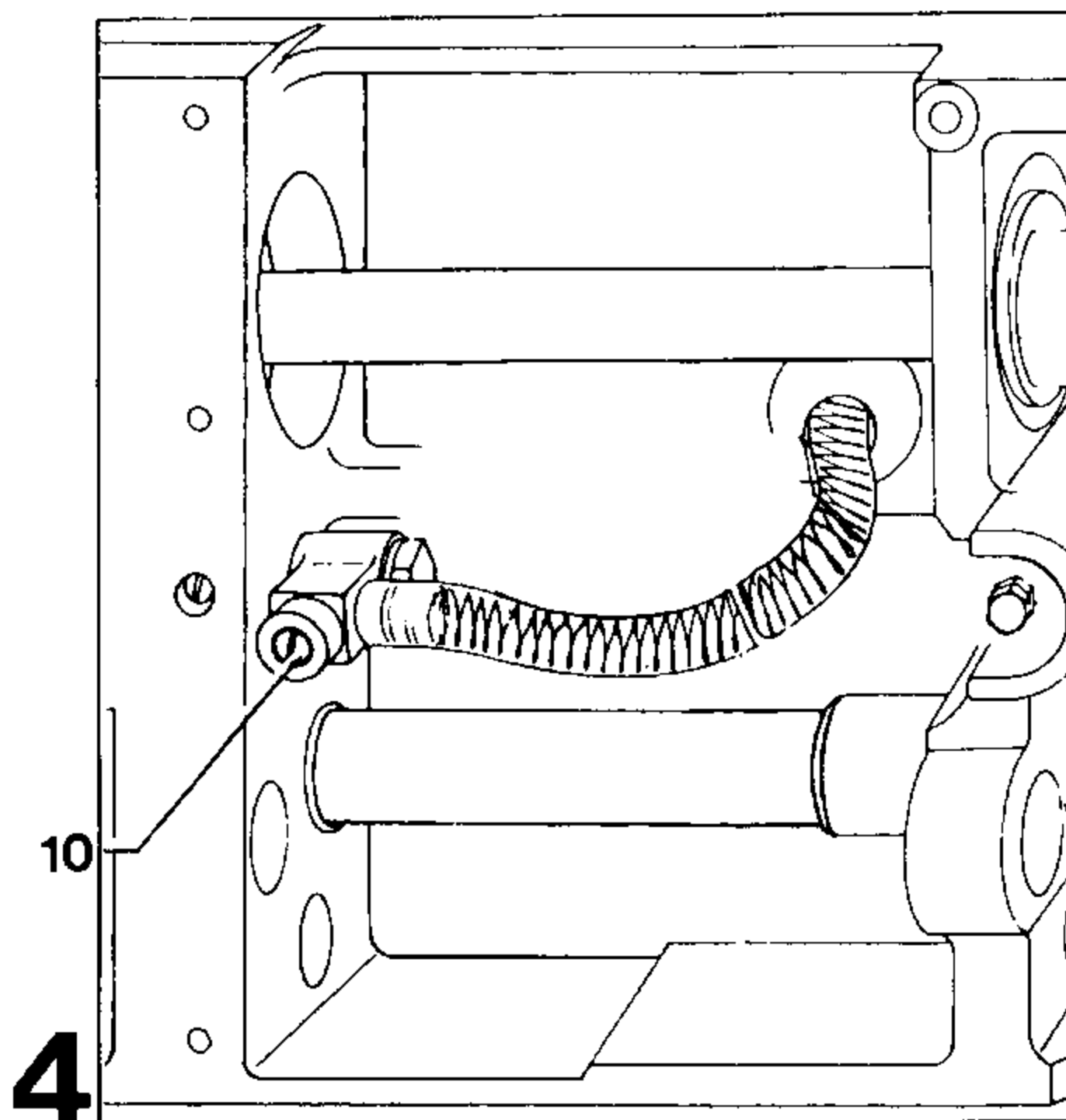
Press keys **1** and **5**,
- max. speed is selected.

Press key "START" and let machine run at top speed for approx. 1 min.

Press key "STOP",
- sewing machine stops.

Hold a piece of white paper to the side of the hook raceway and let the machine run again at top speed for approx. 10 sec. A thin trace of oil must now appear on the paper.

Turn regulating screw 10 inwards for less oil and outwards for more oil.



4 Withdrawing the sewing head
(for repair or adjustment)

Disconnect the compressed air at the air filter/lubricator and remove the mains plug.

Release knurled sleeve 1 (Fig. 1) and disconnect pneumatic coupling 2.

Remove plug 3.

Disconnect both connections at thread trimming cylinder 4 (Fig. 2).

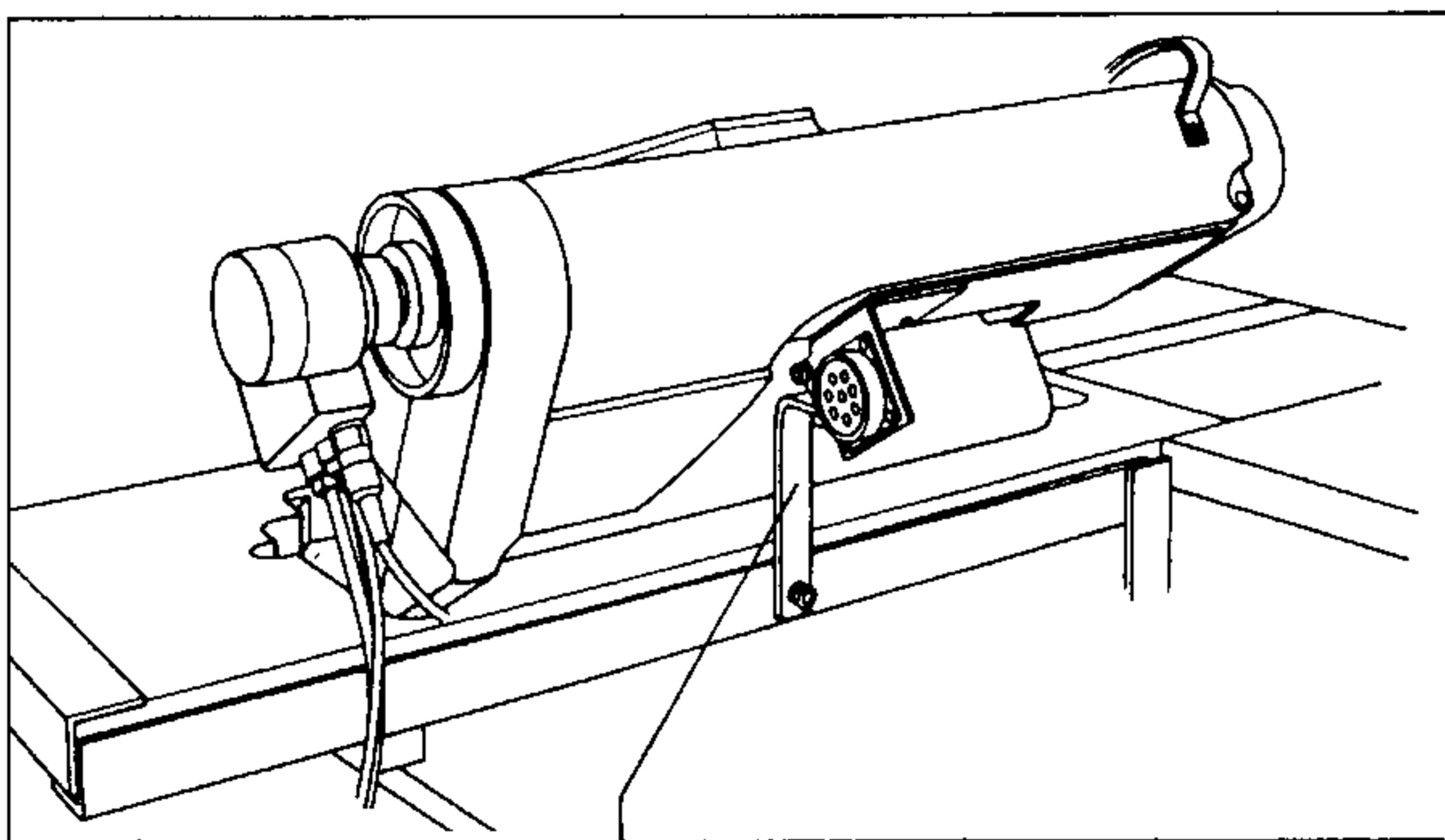
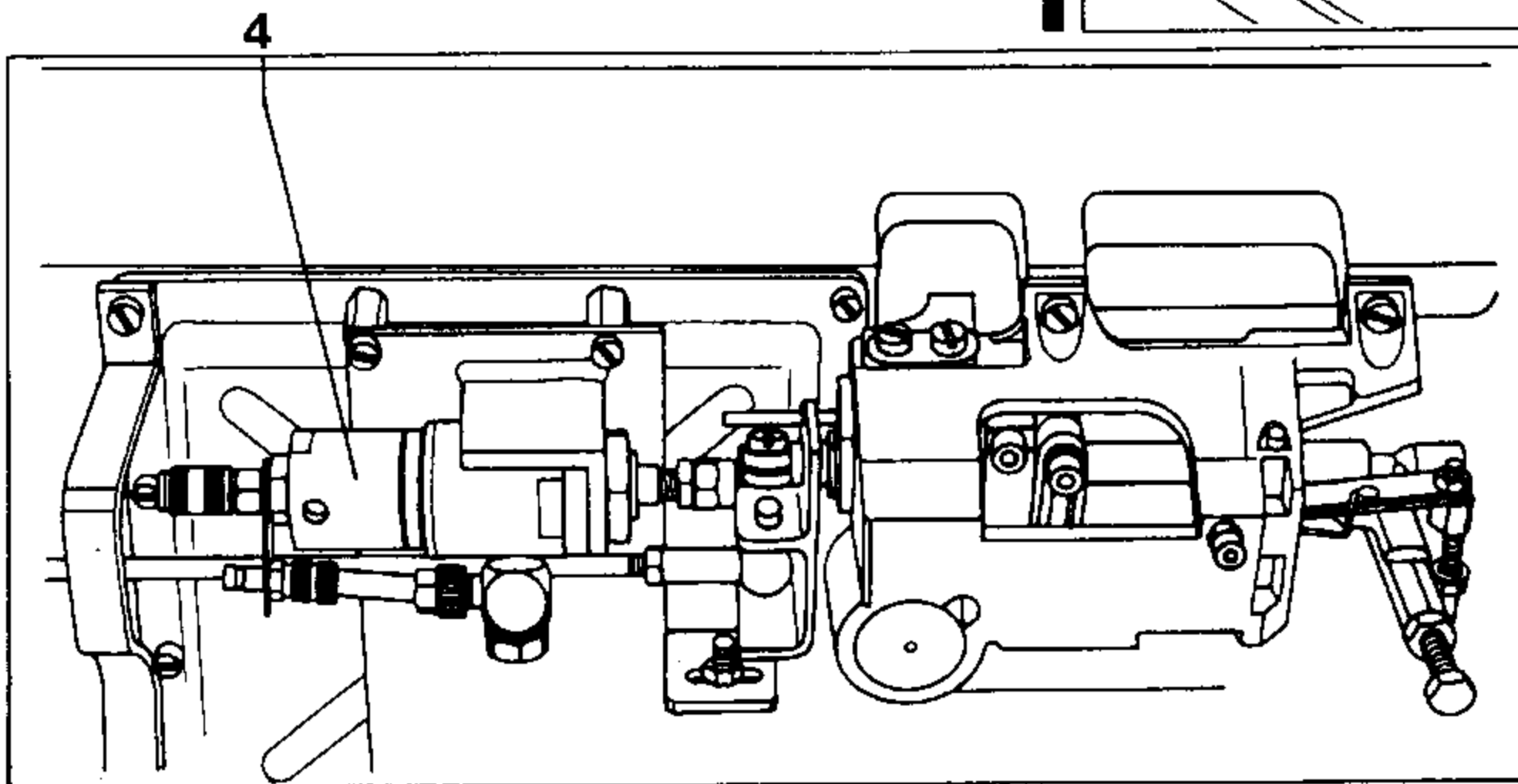
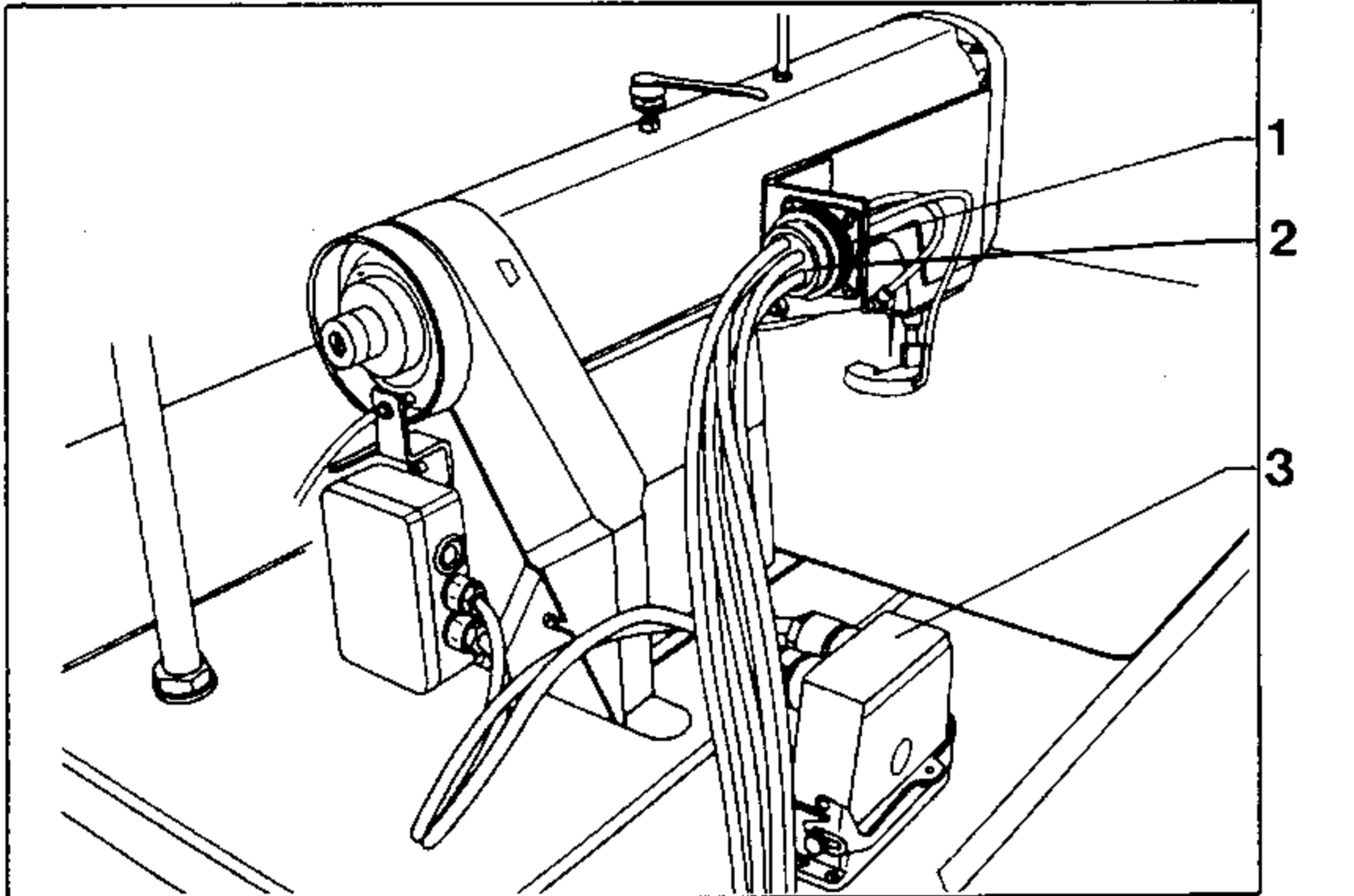
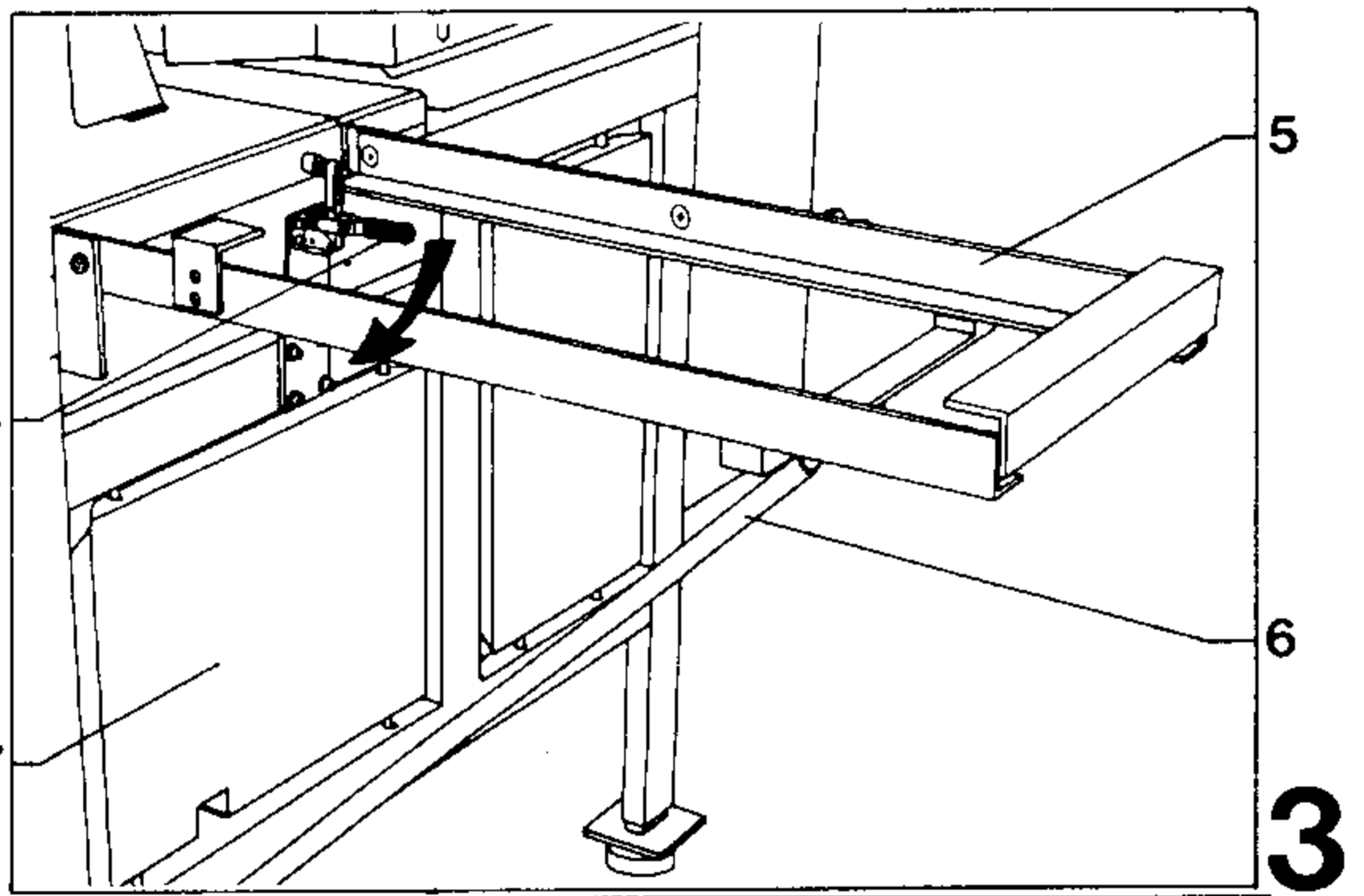
Position frame 5 (Fig. 3) horizontally and insert rest 6.

Raise cover 7 somewhat and remove it; also remove the V-belt.

Set the needle bar at top dead centre.

Tilt locking lever 8 (Fig. 3) as shown by the arrow and pull back the sewing machine.

For working below the machine bed turn the sewing head down and secure it with sewing head support 9 (Fig. 4).



5 Notes on adjustment of the sewing machine

Bearing plate 1 is provided with 4 holes which allow the sewing machine to be blocked in the different adjustment positions (Fig. 1). After positioning the needle bar push the blocking pin into the corresponding adjustment hole so that it engages the cutout behind the bearing plate and blocks the machine.

6 Removing the -900 control unit gear cover and faceplate

Take off circlip 2 (Fig. 2) and disconnect pull rod 3.

Take off linkage rod 4.

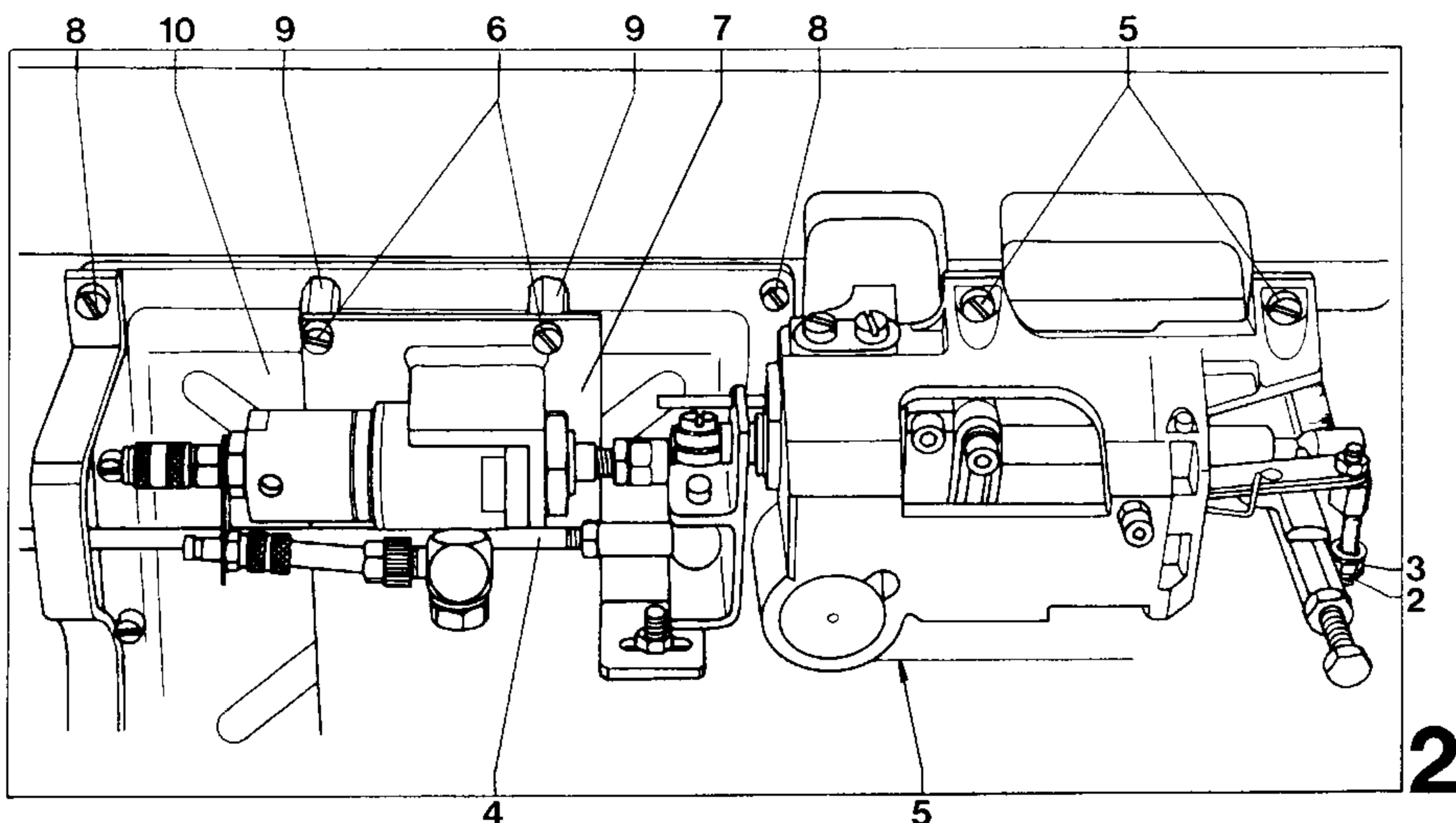
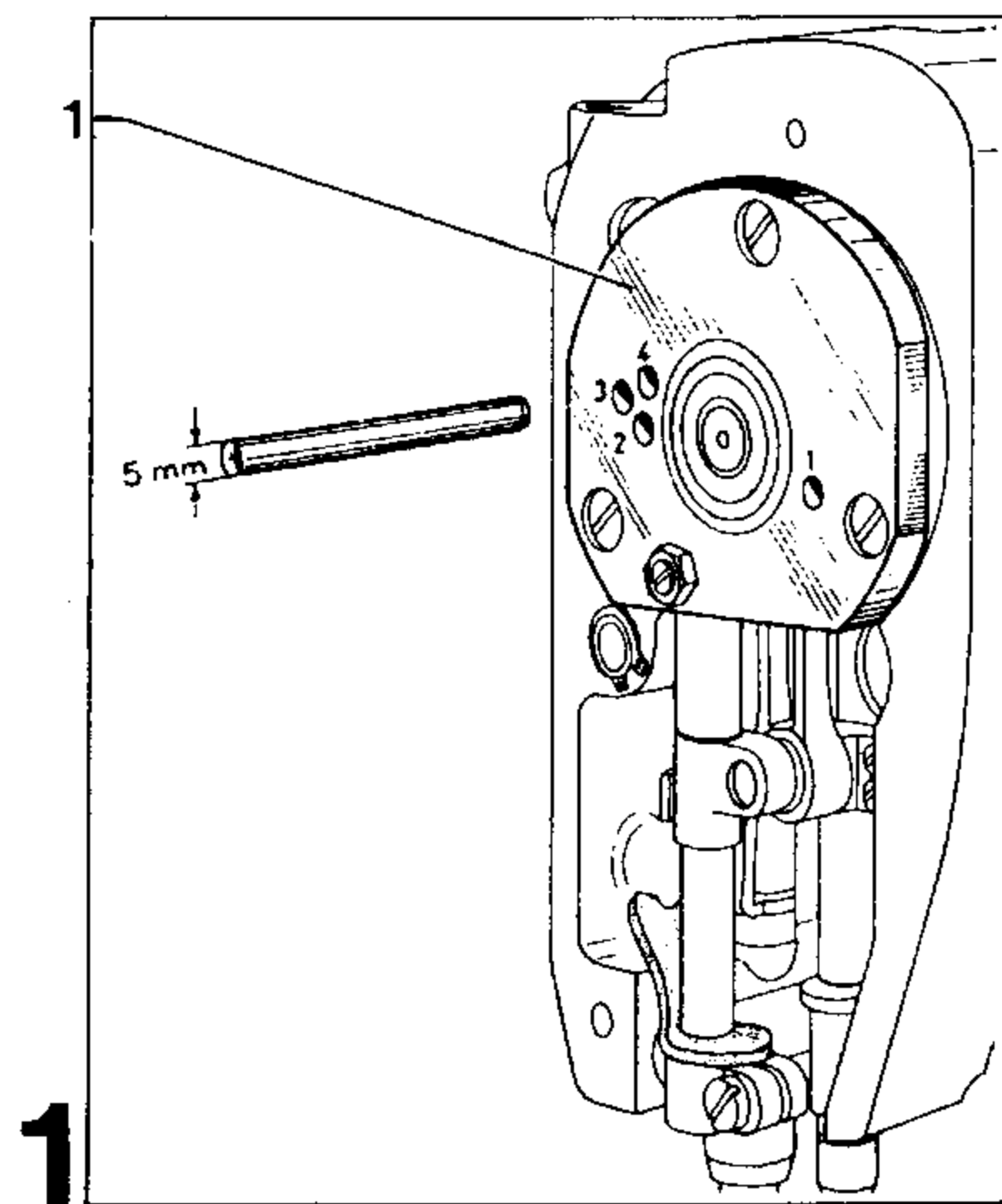
Take out the three screws 5 and remove the complete control unit.

Take out the four screws 6 and remove plate 7.

Take out screws 8 and 9 and remove cover 10.

Remove the faceplate.

Remove the cover at the back of the machine.



7 Adjusting the needle bar in relation to the needle hole in sewing direction

When the plunger of cylinder Z46 is retracted (straight-stitch position) the needle must be positioned exactly in the middle of the needle hole of the hook-bearing adjustment gauge.

Insert a new needle.

Take off the counter presser on the right-hand feed bar and the needle guard off the left-hand feed bar.

Loosen clamp screw 1 (Fig. 1) and swing bobbin case opener 2 to the right.

Remove the bobbin case positioner.

Loosen the two screws of the hook and pull the latter off its shaft.

Loosen the two screws 3 (Fig. 2) and take out the trimmer unit.

Screw on the hook-bearing adjustment gauge so that the figures 418 and 419 can be read from the front (encircled view in Fig. 1).

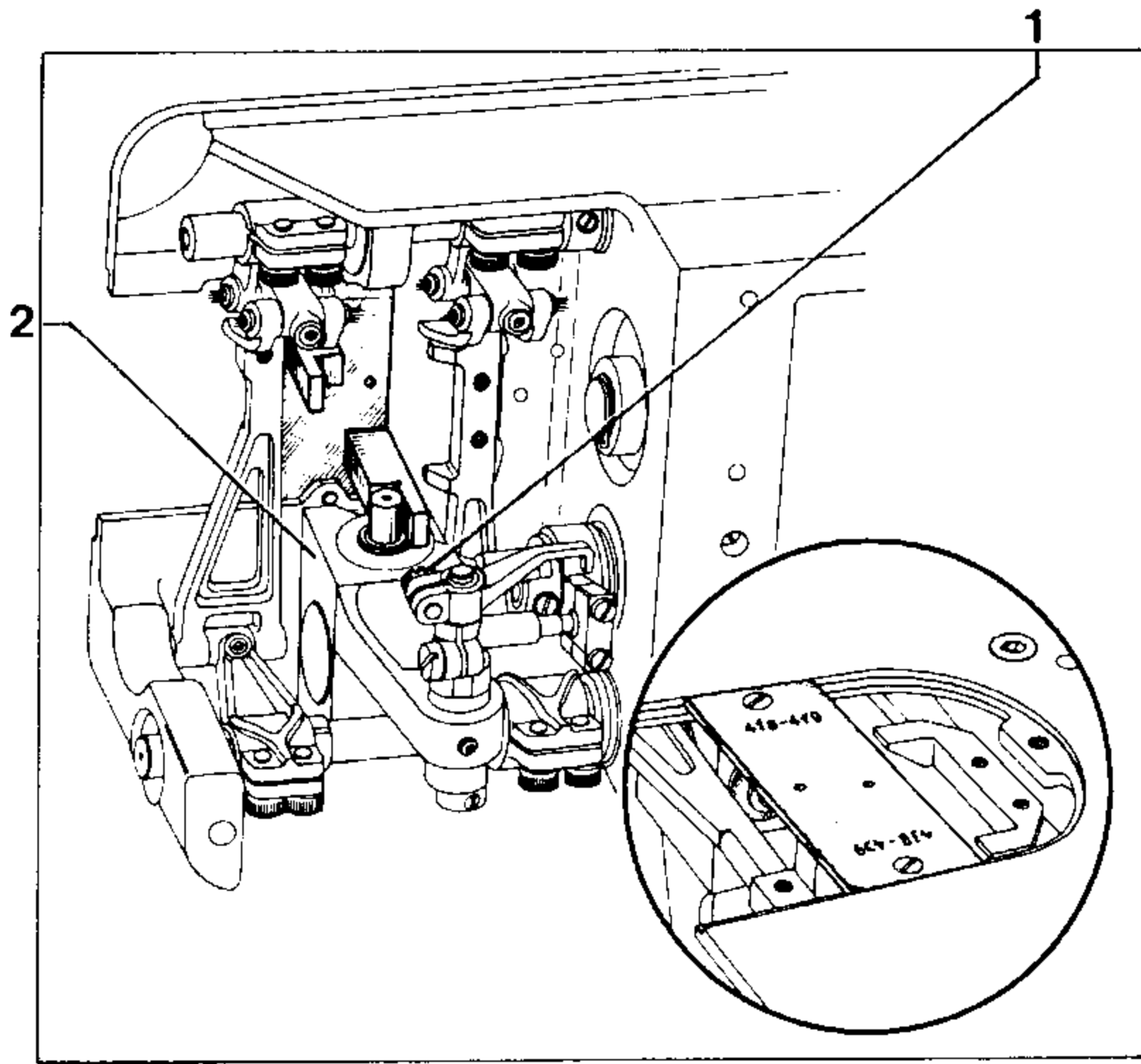
Move the needle bar to its bottom position.

Loosen locknut 4 (Fig. 3) and screw 5 (Fig. 4).

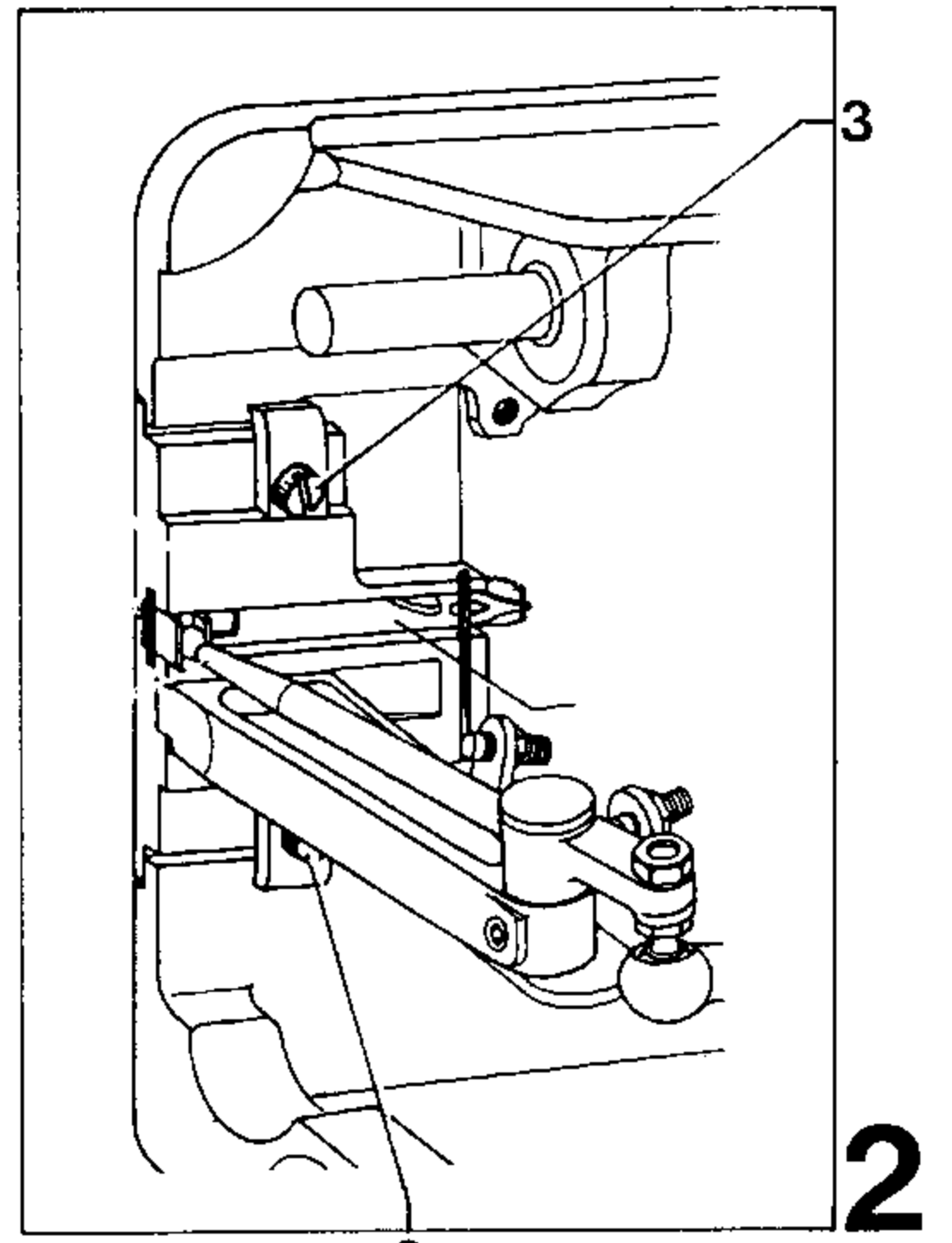
Turn eccentric 6 (Fig. 3) so that the needle, in sewing direction, is exactly centred in the needle hole.

In this position tighten locknut 4 and screw 5.

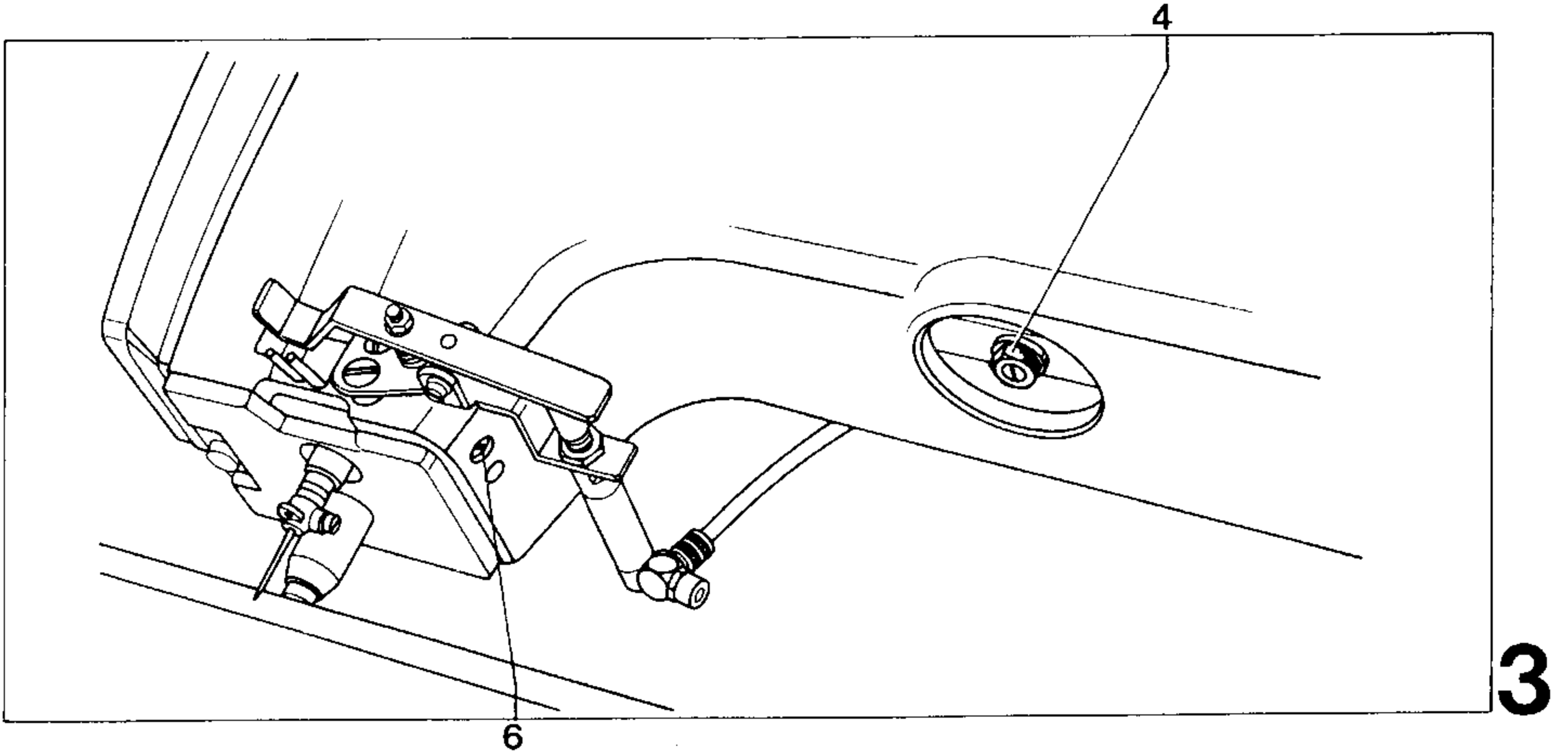
Take out the hook-bearing adjustment gauge again.



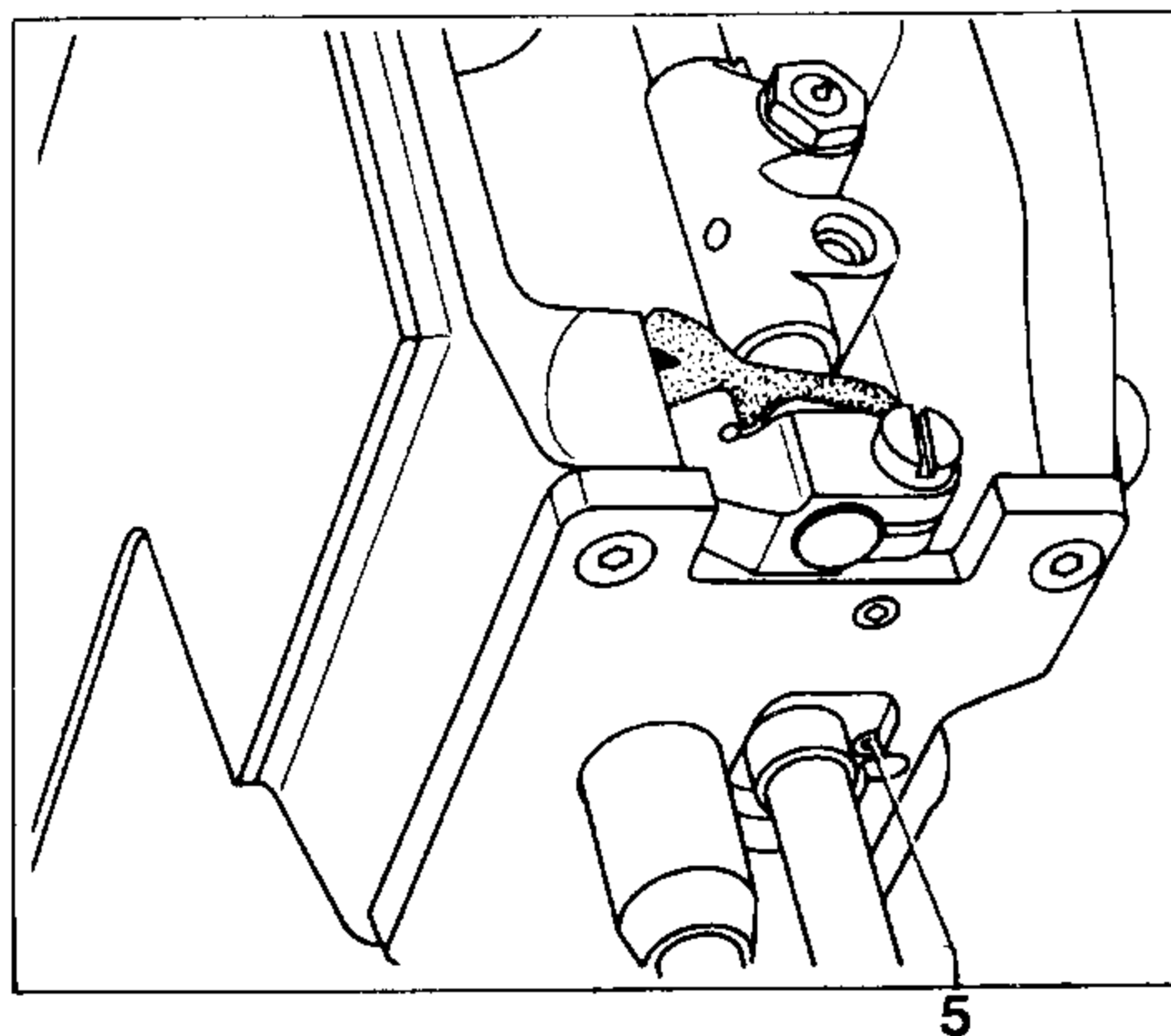
1



2



3



4

5

8 Adjusting the needle-bar parallel guide

Guide bar 1 must be parallel to the needle bar (Fig. 1).

Move the needle bar to t.d.c. and block the machine (insert pin in hole "2").

Loosen clamp screw 2 and screw 3.

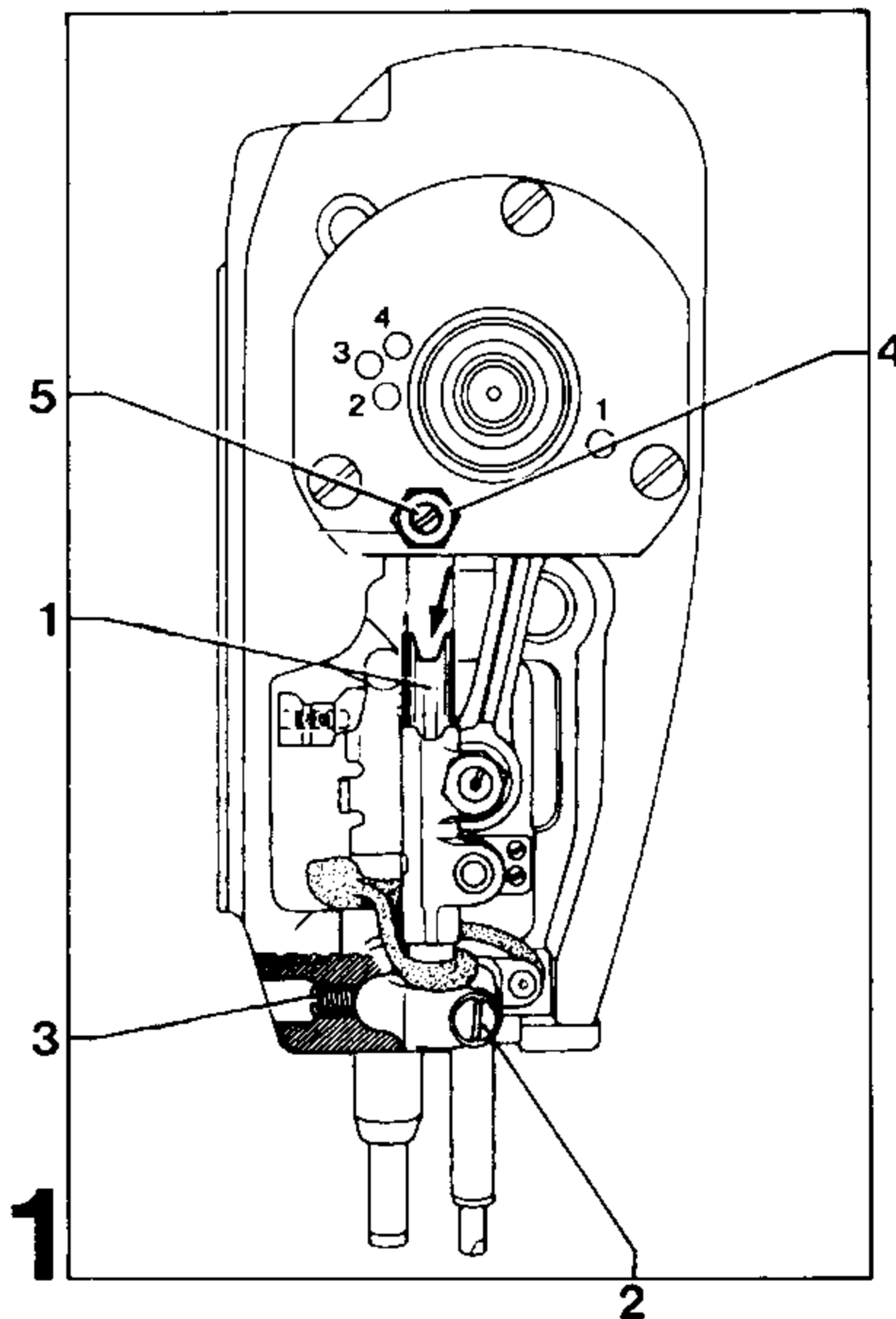
Loosen locknut 4 and position guide bar 1 by turning eccentric stud 5. (Do not turn the eccentric stud through 180°).

Lock the eccentric stud in this position with locknut 4.

Push guide bar 1 up as far as it will go, making sure that the eccentric stud comes to rest in the recess (see arrow in Fig. 1) of the guide bar, then tighten clamp screw 2 again.

Pull the adjustment pin out of the bearing plate.

Move the needle bar to its bottom position and fully tighten screw 3.



9 Adjusting the stitch width regulator

9.1 Zeroing the stitch width

When the plunger of cylinder Z46 is retracted (straight-stitch position) and the balance wheel is turned, the needle bar must not make the slightest zigzag motion.

Loosen clamp screw 1 a little (Fig. 1).

Hold a piece of stiff paper over the needle plate cutout.

Turn the balance wheel until the needle just begins to pierce the paper.

Turn the balance wheel in the opposite direction until the needle just pierces the paper again.

If the second perforation does not coincide exactly with the first, turn stitch-width regulating pin 2 accordingly. (For this purpose, insert a pin into the hole of the stitch-width regulating pin).

Tighten clamp screw 1 securely.

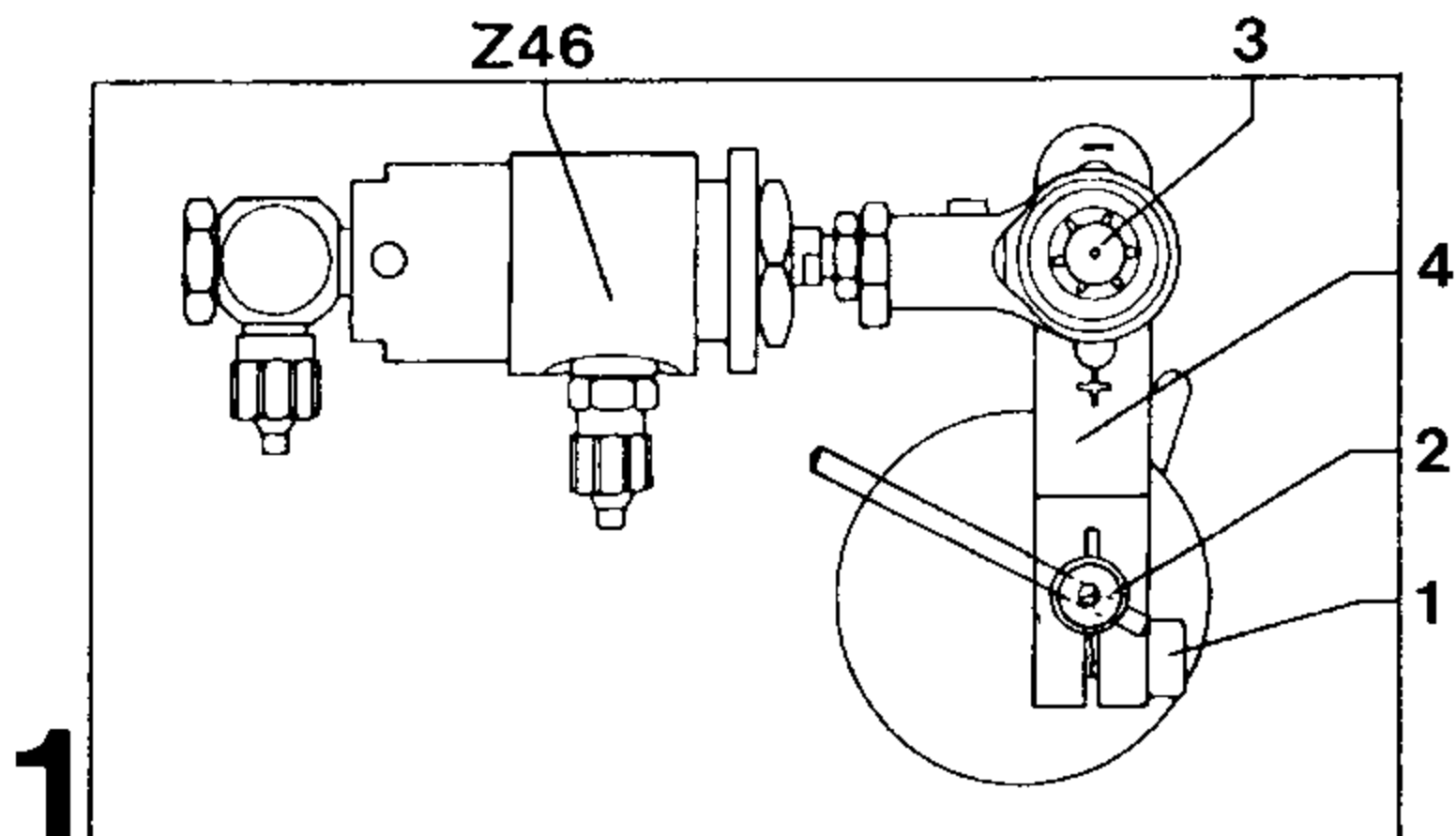
9.2 Limiting the stitch width

The stitch width has to be limited according to the needle hole width of the counter presser.

Loosen the locknut on pin 3 and position the latter in the elongated hole of lever 4 according to the width of the needle hole in the counter presser (Fig. 1).

Move towards "+" to increase, and towards "-" to decrease stitch width.

Tighten the locknut securely.



10 Adjusting the needle bar in relation to the needle hole (transverse direction)

With the plunger of cylinder Z46 retracted (straight-stitch position) the needle must be exactly centred in the needle hole of the hook-bearing adjustment gauge.

Screw on the hook-bearing adjustment gauge.

Move the needle bar to its bottom position and loosen locknut 1 (Fig. 1).

Turn eccentric stud 2 so that the needle is positioned exactly in the middle of the needle hole in the transverse direction.

In this position, tighten eccentric stud 2 with locknut 1.

Remove the hook-bearing adjustment gauge again.

11 Adjusting the needle throw

With the needle at t.d.c. after rising from the right of its throw, the needle bar must no longer move when the zigzag cylinder is actuated.

Loosen the two screws 3 (Fig. 2) just enough to allow eccentric 4 to be turned on its shaft.

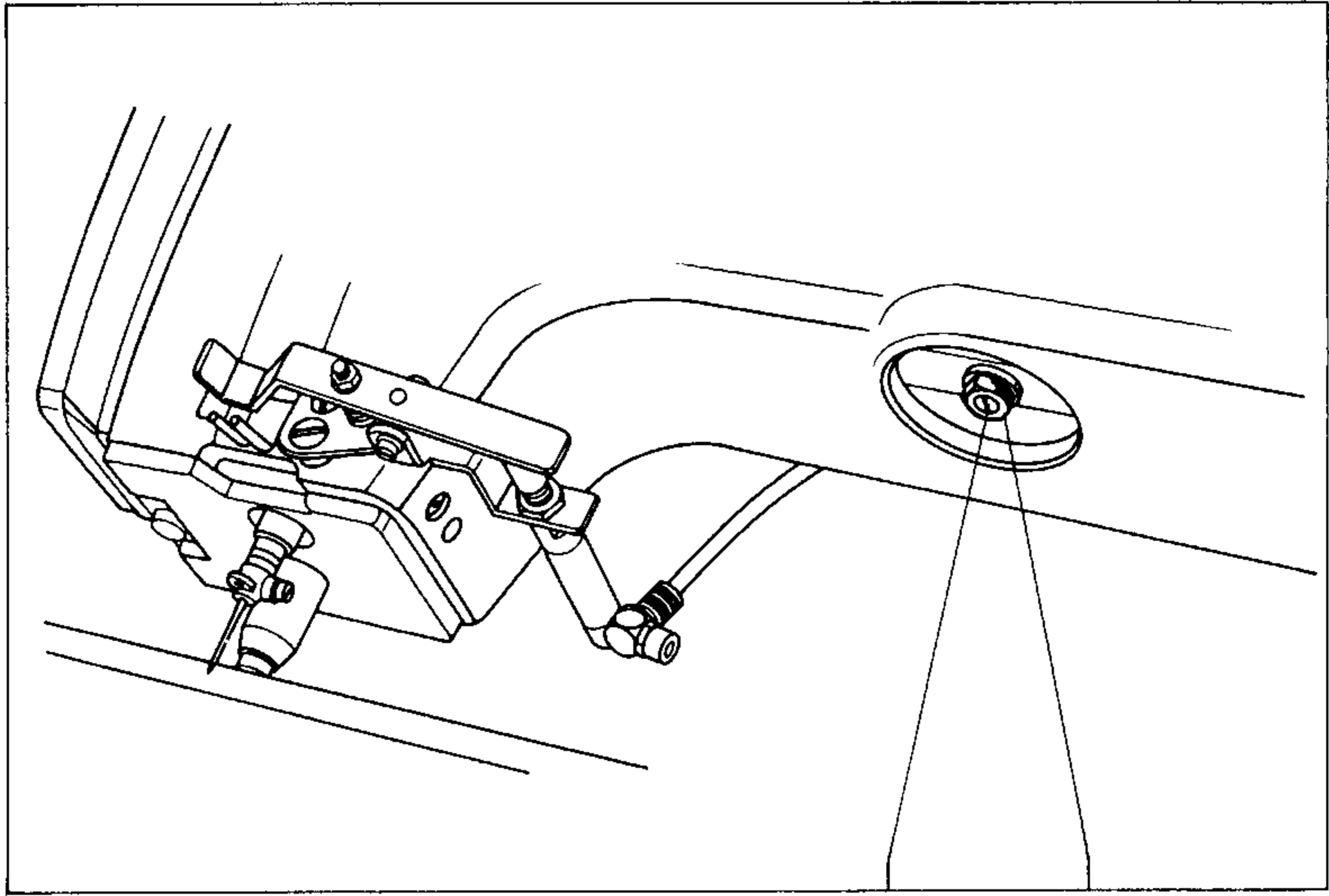
Move the needle bar to t.d.c. and block the machine (insert pin in hole 2).

Position eccentric 4 sideways so that it is roughly 5 mm away from the right-hand inside wall of the casting.

Turn the eccentric on its shaft to a position in which the needle bar no longer moves sideways when the zigzag cylinder is actuated.

Take the pin out of the bearing plate.

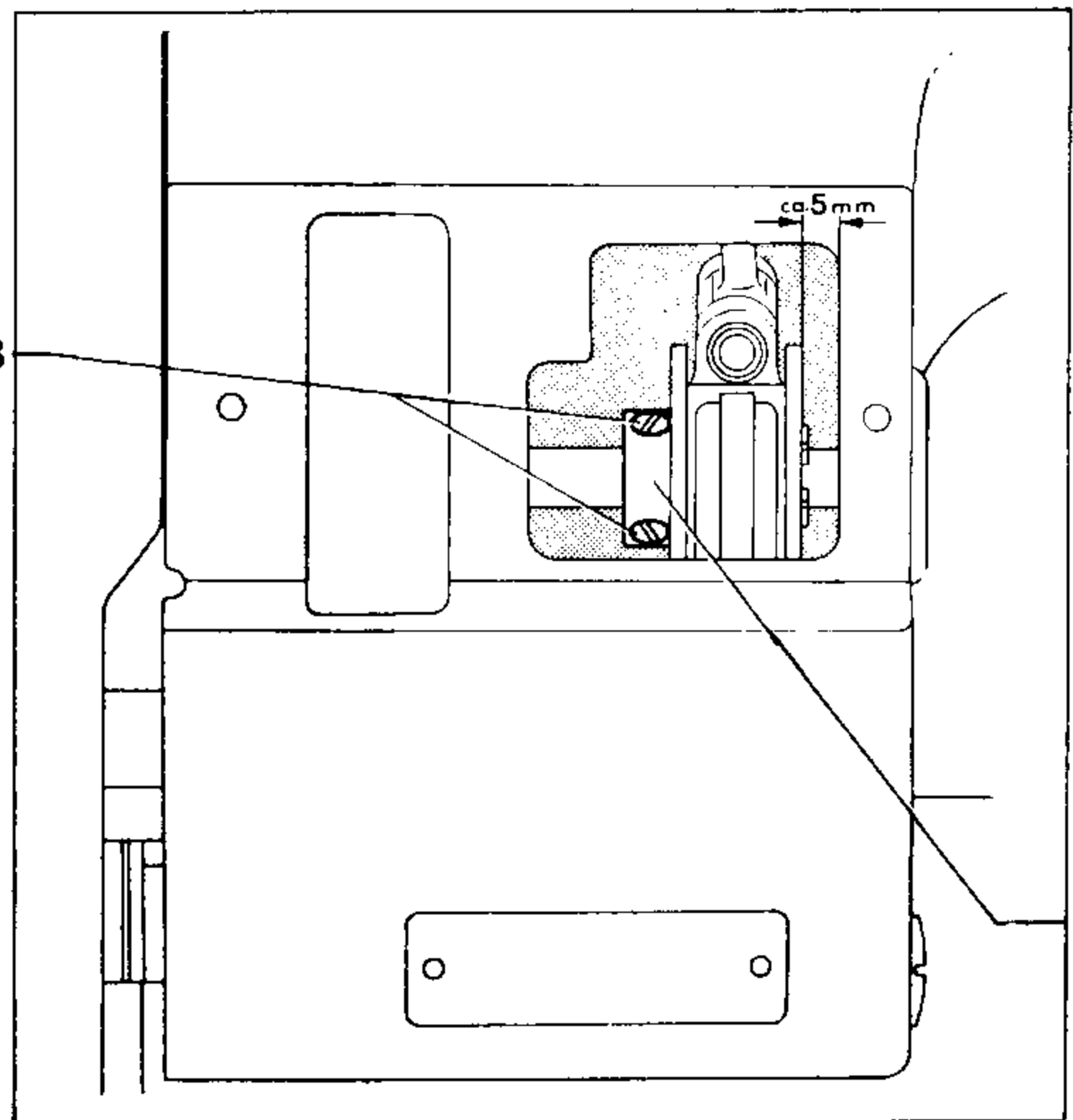
Leave the two screws 3 loose.



1

2

1



3

ca. 5 mm

4

2

12 Adjusting the three needle positions

The right and left perforations of the zigzag stitch must be the same distance from the middle perforation.

Retract the plunger of cylinder Z46 (straight stitch).

Hold a piece of stiff paper firmly over the needle plate cutout.

Turn the balance wheel until the needle just begins to pierce the paper, then withdraw the needle a little.

Extend the plunger of cylinder Z46 (zigzag stitch).

Turn the balance wheel in sewing direction until the needle just begins to pierce the paper again.

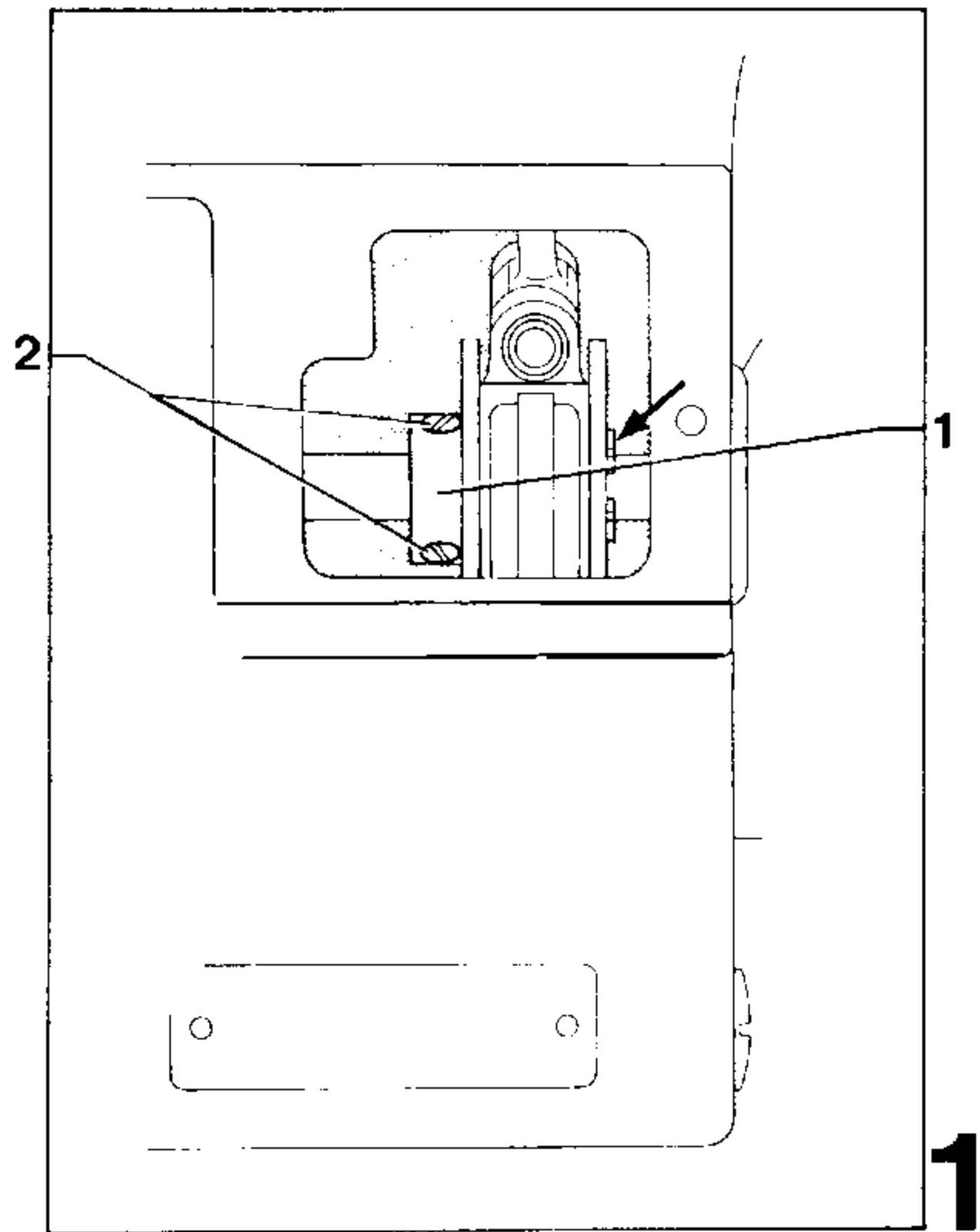
Take the paper out from under the needle, turn the balance wheel a full turn in sewing direction and retract the cylinder plunger (straight stitch).


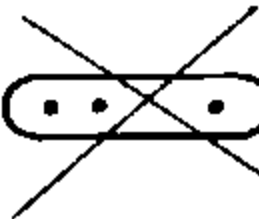
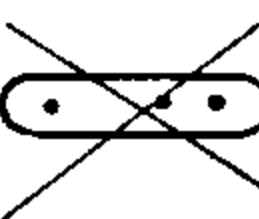
Place the paper under the needle again and position it so that the needle tip enters exactly in the first perforation.

Extend the cylinder plunger again (zigzag) and pierce the paper lightly again.

Re-position zigzag eccentric 1 (Fig. 1) according to the perforations (see Fig. 2). (The zigzag eccentric must not be turned).

After adjustment, tighten the two screws 2 securely and push the circlip (see arrow in Fig. 1) up against the eccentric.



	<p>Richtig Correct Exact Correcto</p>	
	<p>Falsch Incorrect Faux Falso</p>	<p>– Zickzack-Exzenter nach links schieben – move zigzag eccentric to left – Déplacer l'excentrique zigzag vers la gauche – Empuje el excéntrico del zigzag hacia la izquierda</p>
	<p>Falsch Incorrect Faux Falso</p>	<p>– Zickzack-Exzenter nach rechts schieben – move zigzag eccentric to right – Déplacer l'excentrique zigzag vers la droite – Empuje el excéntrico del zigzag hacia la derecha</p>

2

13 Adjusting the hook bearing bracket

The hook shaft must rest against the hook-bearing adjustment gauge both at the top and the side (see arrows in Fig. 1).

Loosen screw 1 and relax the tension of the hook bearing cotter by hitting the screw head lightly with a hammer (encircled view in Fig. 1).

Screw the hook-bearing adjustment gauge in place so that the figures 418 und 419 can be read from the front.

Turn or push the hook bearing bracket so that the hook shaft rests at the top and side against the gauge (see arrows in Fig. 1).

Tighten screws 1 and remove the gauge again.

14 Adjusting the tension of the drive belt in the gearcase

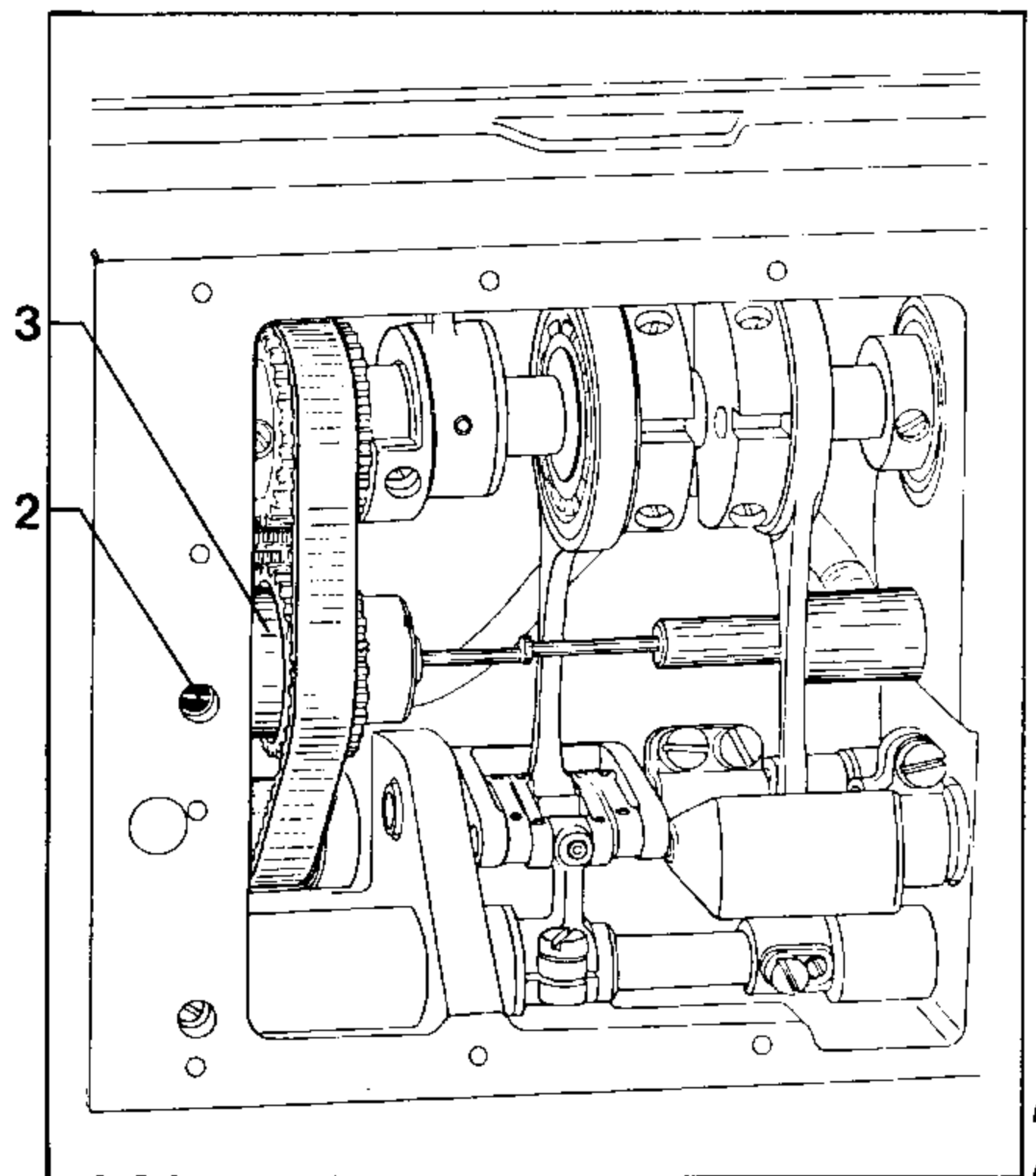
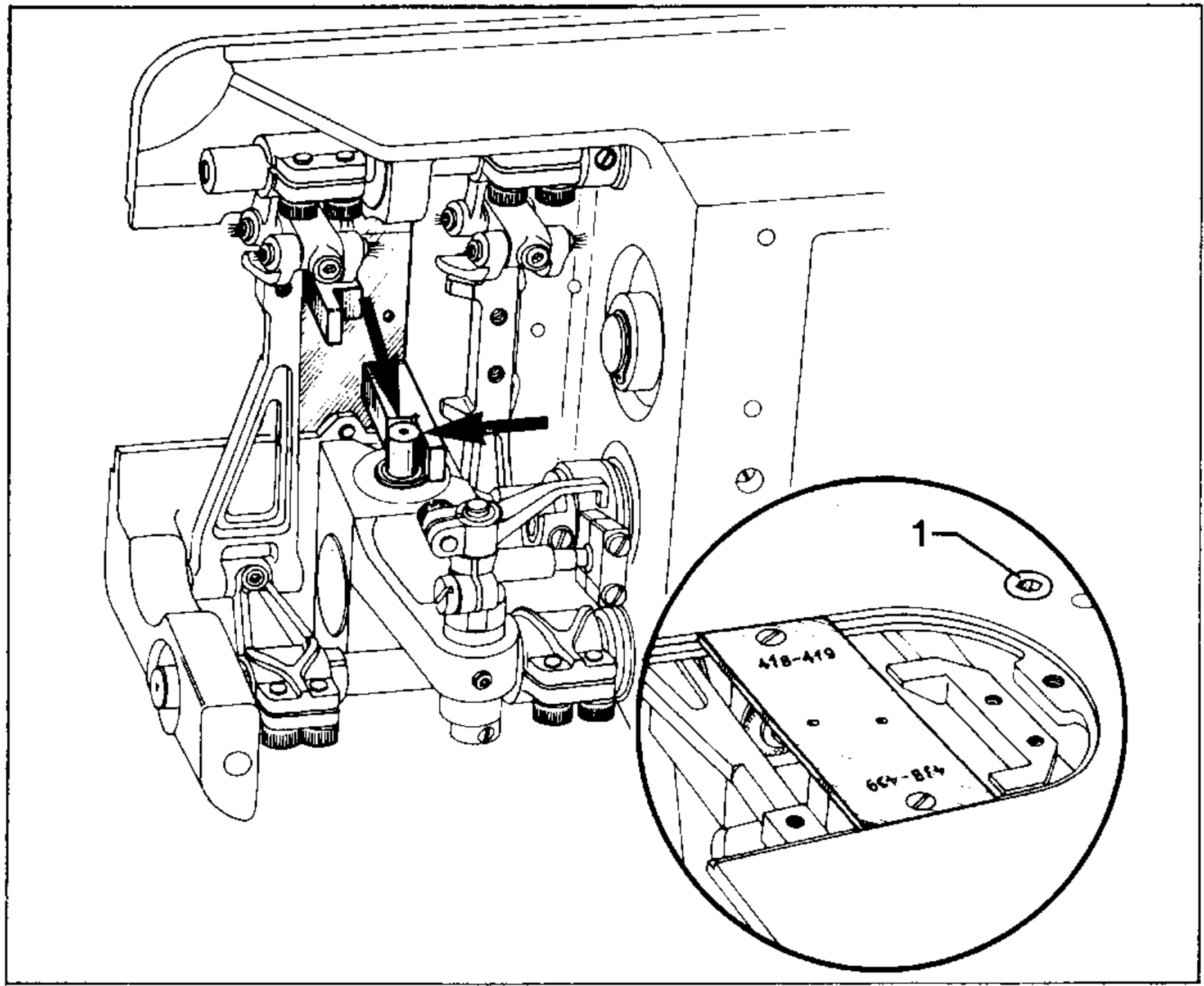
The tension of the drive belt must not be so tight as to cause the machine to bind.

Loosen screw 2 (Fig. 2).

Move eccentric bearing bush 3 to a position in which the drive belt is in the middle of the drive wheel for the bobbin case opening eccentric.

In order to tension the belt, turn the eccentric bearing bush, making sure it does not move axially. Check that the machine does not bind after adjustment.

Tighten screw 2.



15 Adjusting the sewing hook

In the needle-rise position (adjustment pin in hole 1) the hook point must be positioned exactly at the centre of the needle. The clearance between hook point and needle must be 0.1 mm.

Push a new needle into the needle bar as far as it will go and turn it so that the clearance cut faces the hook-bearing bracket.

Fit the hook on the hook shaft and turn it so that the hook point faces upwards.

In this position, hold the hook firmly and block the machine in the needle-rise position (pin in hole 1).

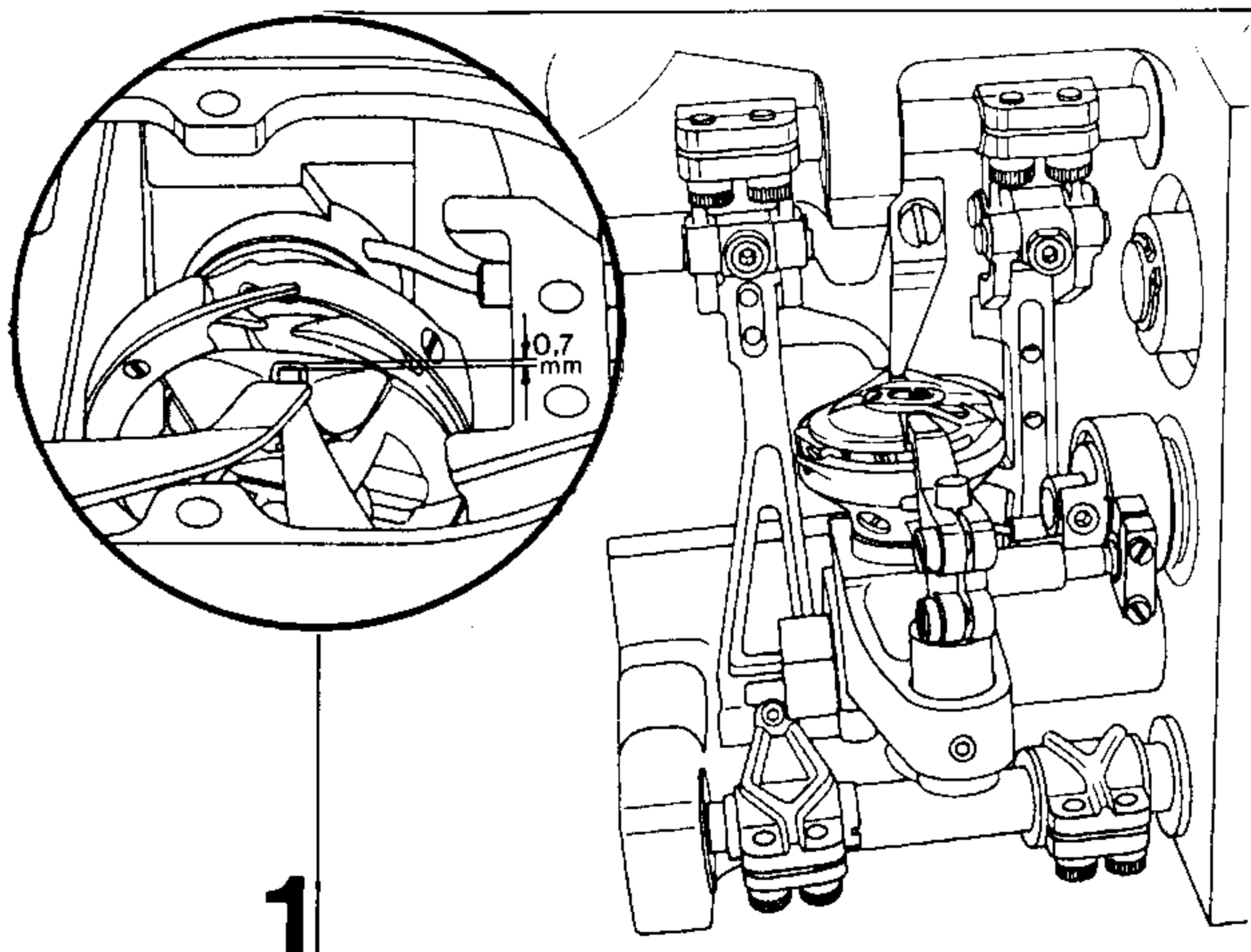
Check that the plunger of the zigzag cylinder is retracted (straight stitch).

Tighten one of the hook fixing screws just enough to allow the hook to be turned on its shaft.

Push and turn the hook on its shaft so that its point is exactly at the middle of the needle and the clearance between hook point and needle is 0.1 mm.

In this position, tighten both hook fixing screws.

Replace the bobbin-case positioner so that the position stop is in place in the slot of the bobbin case base with a clearance of about 0.7 mm (see encircled view in Fig. 1).



16 Adjusting the needle height in relation to the sewing hook

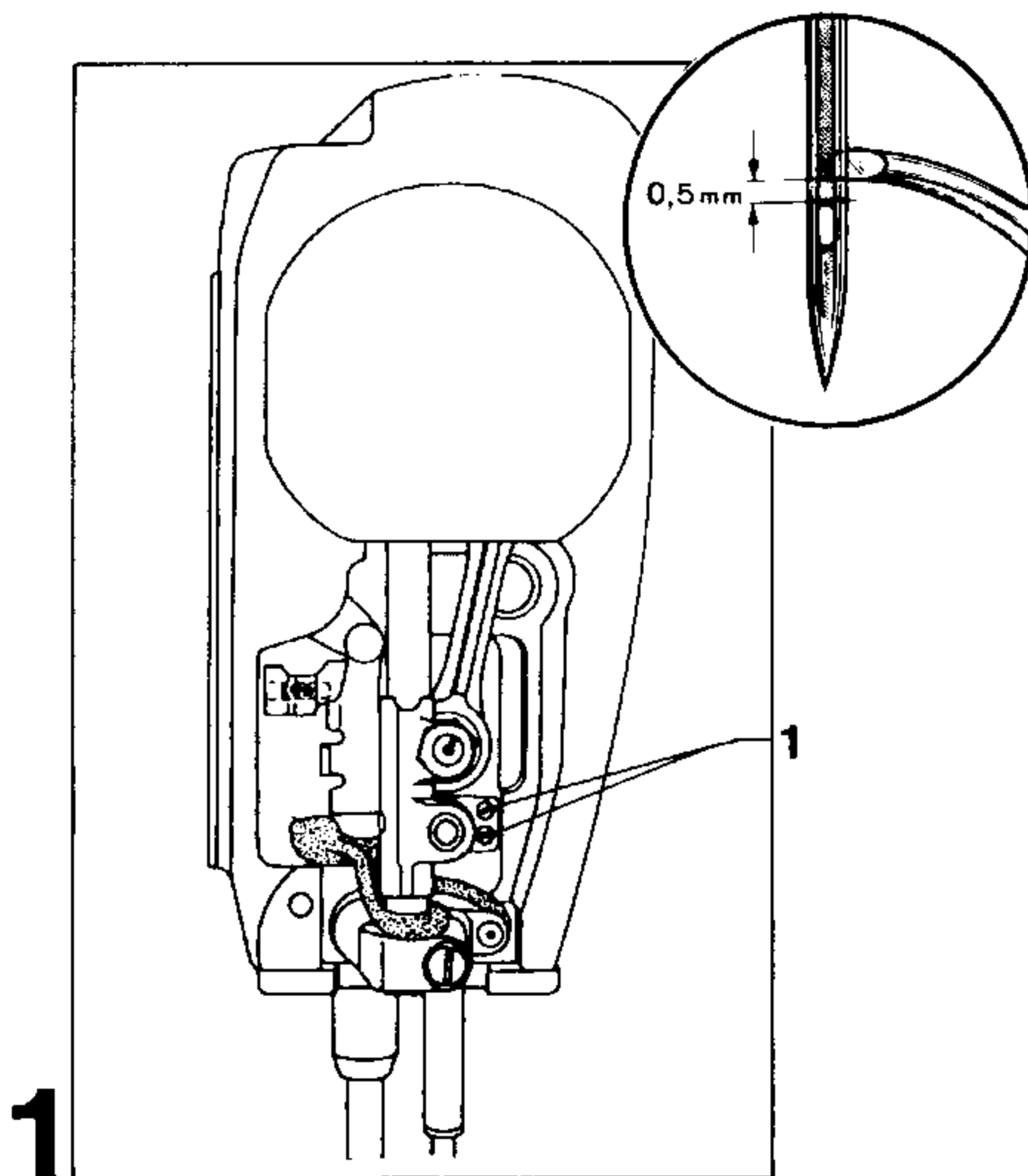
With the machine in zigzag position (zigzag cylinder engaged), the hook point must be 0.5 mm above the needle eye when the needle, coming from the left needle throw, is positioned in needle rise position.

Set zigzag cylinder at position "+".

Turn the balance wheel until the needle, coming from the left needle throw, is positioned in needle rise position (hook point at needle centre line).

Loosen both screws 1 (Fig. 1) and set the height of the needle bar so that the hook point is positioned 0.5 mm above the needle eye.

In this position, tighten screws 1.

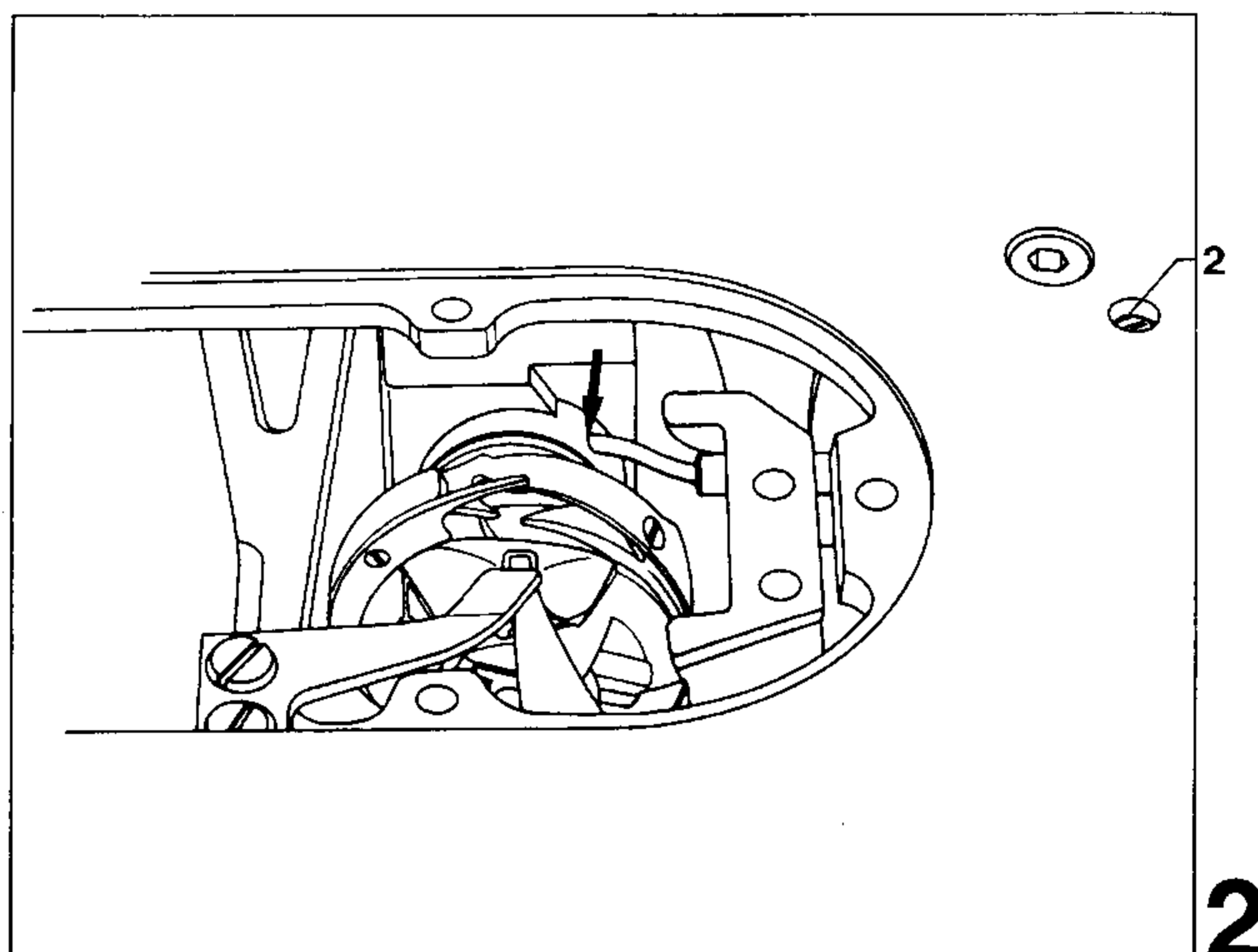


17 Positioning the oil tube in the oil distributor ring

The oil tube must be positioned inside the hole of the oil distributor ring.

Loosen screw 2 and move oil tube 3 into the hole of the oil distributor ring (see arrow in Fig. 2).

Tighten screw 2 again.



When the hook point is at a distance of 3 mm from the needle, needle guard 1 (Fig. 1.1) must be in its farthest forward position and at a clearance of 0.5 mm from the needle. The stroke of the needle guard must be about 5 mm. It must be adjusted in height so that it strikes neither hook gib nor bobbin case base.

Fit needle guard 1.

Loosen screw 2 (Fig. 1) and turn feed regulator crank 3 so that the stroke of the needle guard is about 5 mm.

Tighten screw 2 again.

Move the needle guard by turning the balance wheel and check that it strikes neither hook gib nor hook base. To adjust, loosen the two screws 4 (see encircled view) and adjust the feed bar height accordingly.

Tighten screws 4 again.

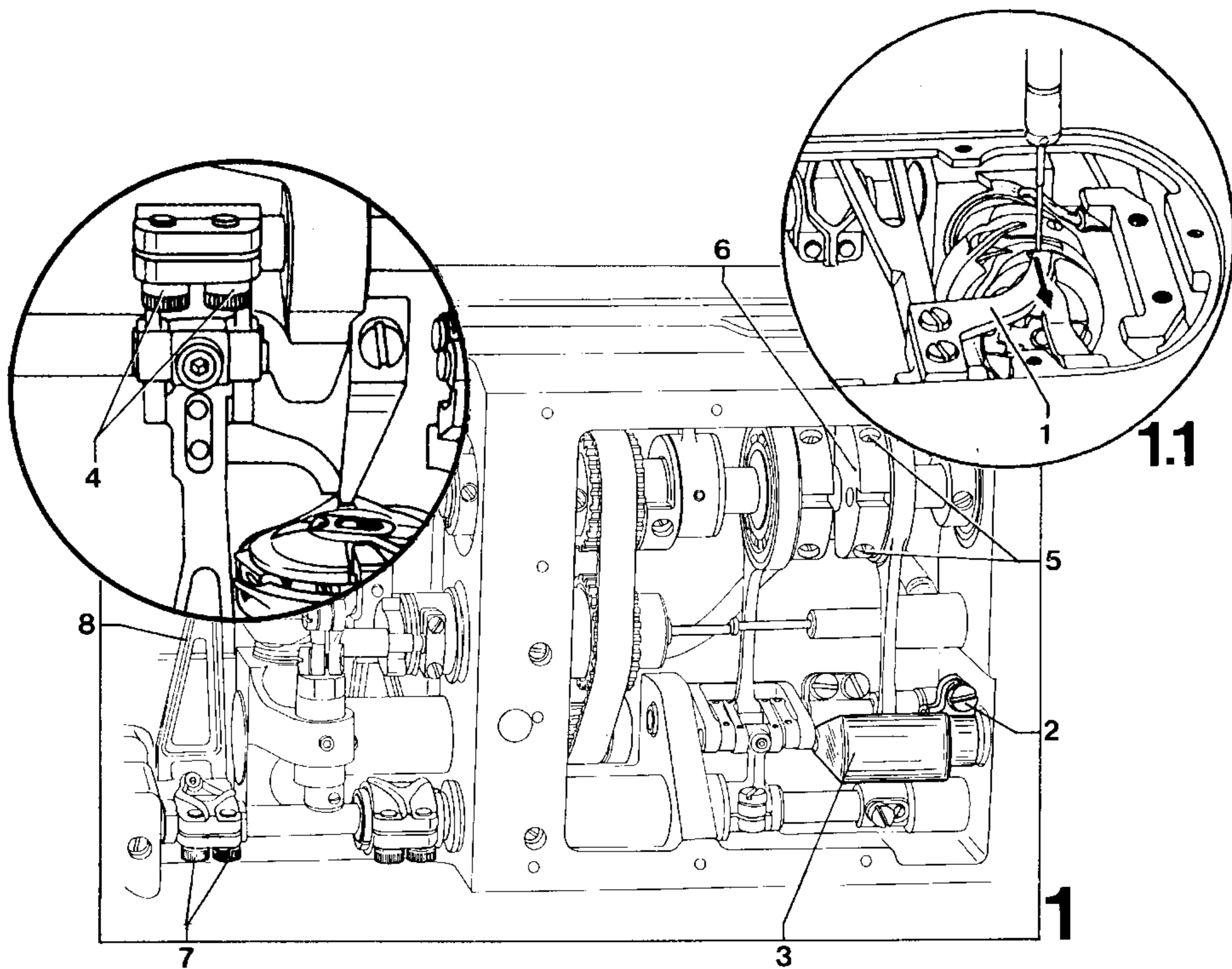
Loosen screws 5 just enough to allow eccentric 6 to be turned on its shaft.

Turn the balance wheel in sewing direction until the hook point is 3 mm from the needle.

Hold the balance wheel and turn eccentric 6 on its shaft until needle guard 1 reaches its foremost position.

Loosen the two screws 7 and position feed bar 8 so that needle guard 1 is 0.5 mm from the needle in its foremost position.

Tighten screws 5 and 7 again.



19 Adjusting the counter presser

19.1 Lifting motion

With the needle bar at b. d. c. the counter presser must just have reached its top position.

Fit counter presser 1 on the right-hand feed bar (see encircled view in Fig. 1).

Loosen the two screws 2 (Fig. 1).

Move the needle bar to b. d. c.

Turn lifting eccentric 3 on its shaft so that the counter presser has just reached the top of its stroke.

In this position, tighten the two screws 2.

19.2 Height

When counter presser 1 is at the top of its stroke surface "a" must be flush and parallel with the bedplate (see encircled view in Fig. 1).

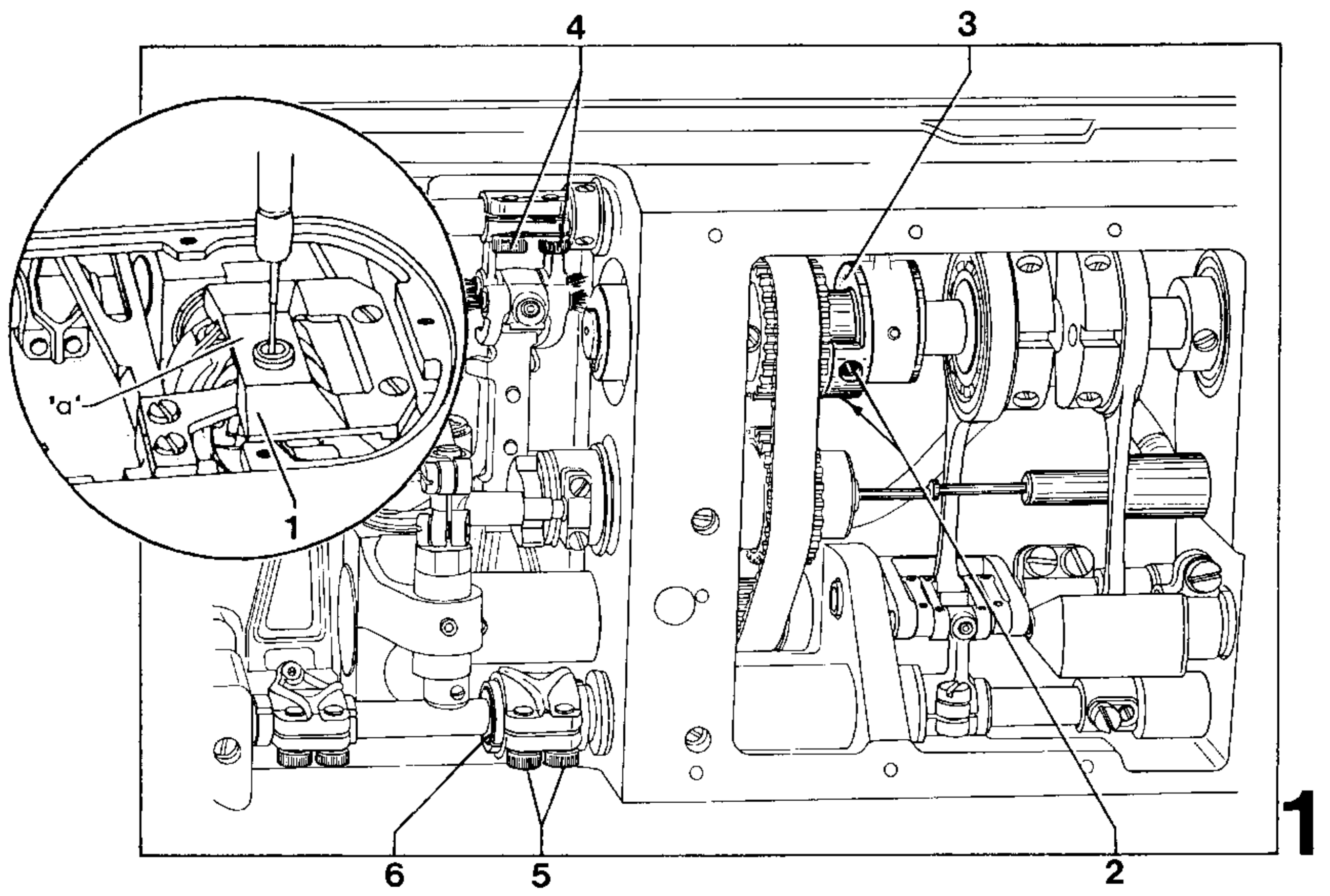
Move counter presser 1 to the top of its stroke.

Loosen the two screws 4 (Fig. 1) and the two screws 5.

Place a ruler across the needle plate cutout.

Adjust the height of the feed bar and turn eccentric bush 6 so that surface "a" of counter presser 1 (see encircled view in Fig. 1) is in parallel contact with the ruler placed on the needle plate cutout.

Tighten the two screws 4 and one of the two screws 5.



19.3 Stroke

The stroke of counter presser 1 (Fig. 2) must be 0.6 to 1 mm, but the exact setting depends on the size of the needle hole.

Loosen screw 7 (Fig. 3) and turn feed regulator crank 8 until the stroke of counter presser 1 is such that the needle touches the back edge of the needle hole when the needle bar is at b.d.c. and is centred in the needle hole when entering the latter.

Tighten screw 7.

19.4 Position in relation to needle

When the needle bar is at b.d.c., counter presser 1 (Fig. 2) must be at its foremost position and the needle touching the back edge of the needle hole.

Loosen the two screws 9 (Fig. 3) just enough to allow eccentric 10 to move on its shaft.

Turn the balance wheel to set the needle bar at b.d.c.

Turn eccentric 10 until the counter presser is in its foremost position.

In this position tighten one of the two screws 9.

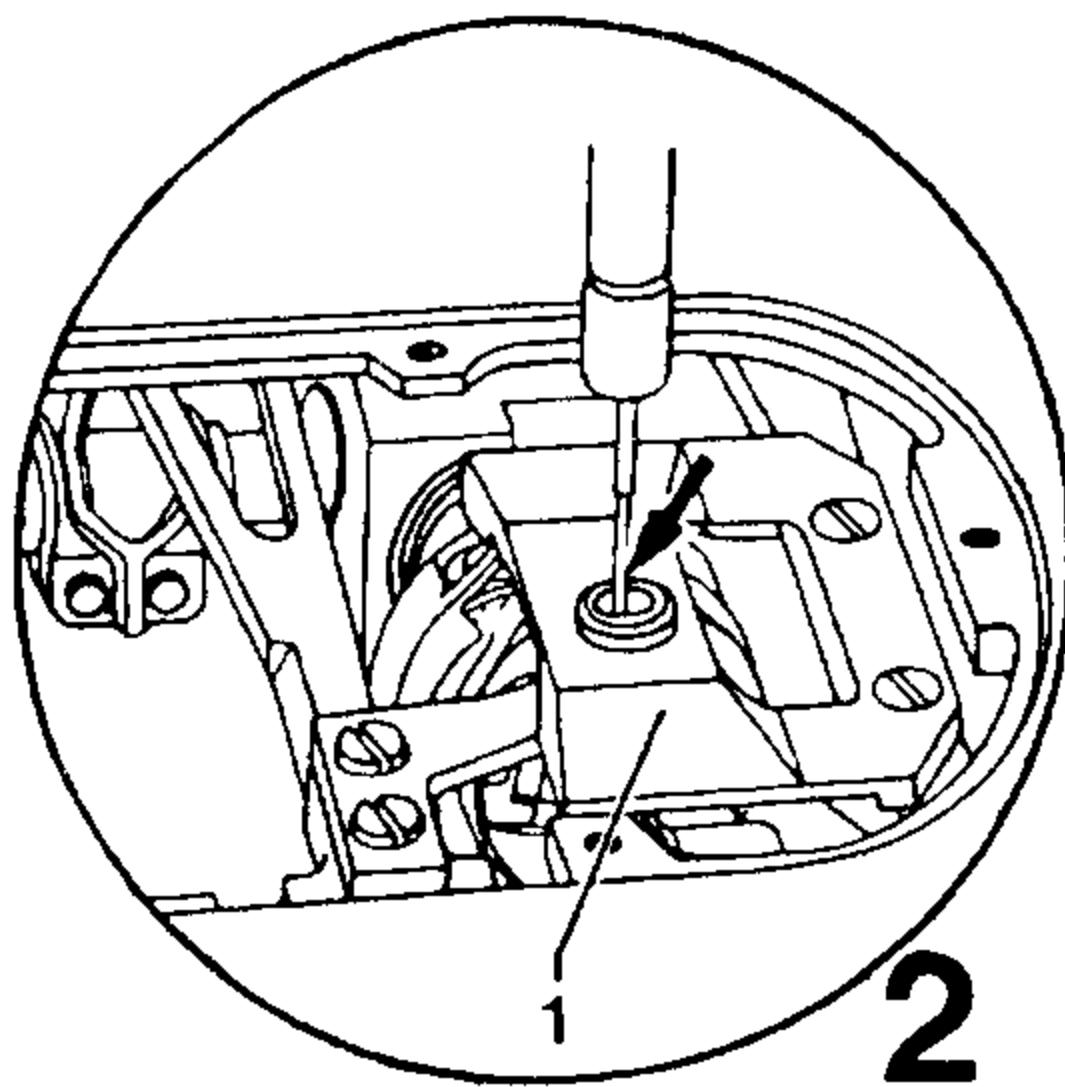
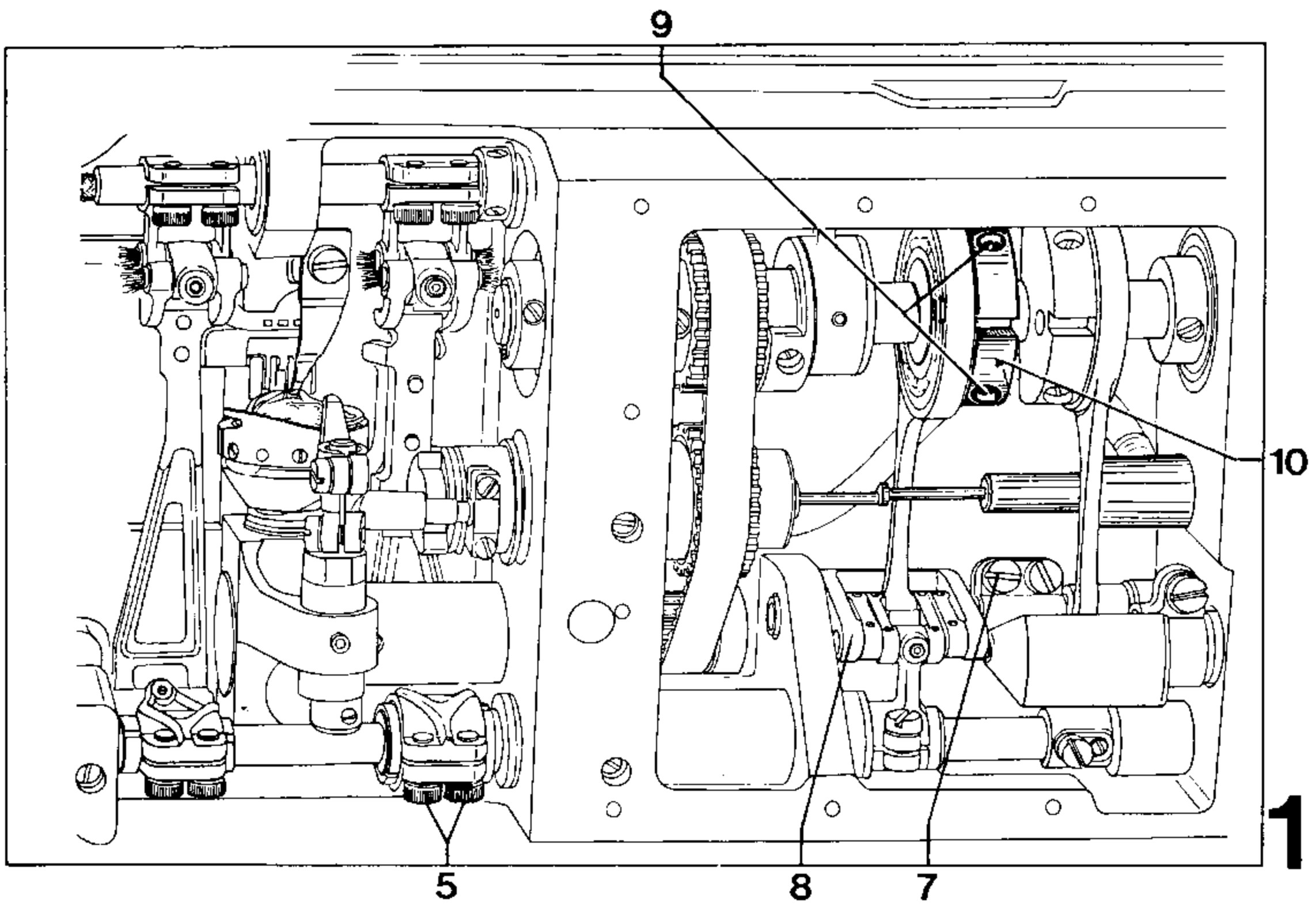
Loosen screw 5 and position the feed bar so that the needle touches the back edge of the needle hole.

Tighten the two screws 5.

Operate the zigzag lever and check that the needle also touches the rear of the needle hole in the left and right positions. If this is not the case, position counter presser 1 on the feed bar accordingly.

Check:

The needle must not be touched by the hook point when a pressure is exerted on it in feeding direction in the needle rise position.



The top edge of bobbin case opening finger 1 must be roughly 0.8 mm above the lower edge of the lug on bobbin case base 2 (Fig. 1).

Bobbin case opener 1 must protrude beyond the lug of the bobbin case base by 0.5 mm (Fig. 1.2).

Also, when the bobbin case opener is at its left point of reversal, positioner 3 must be centred in the slot of the bobbin case base (Fig. 1.3).

Loosen screw 4 (Fig. 1).

Press the bobbin case opener still in its swung-out position, against the clamp crank situated below it and swing in the opener, pushing bearing bush 5 upwards at the same time, so that the opener comes to rest on the right side of bobbin case base 2.

Turn eccentric bearing bush 5 so that bobbin case opener 1 is positioned with its top edge 0.8 mm above the lower edge of the lug on bobbin case base 2 (Fig. 1.1).

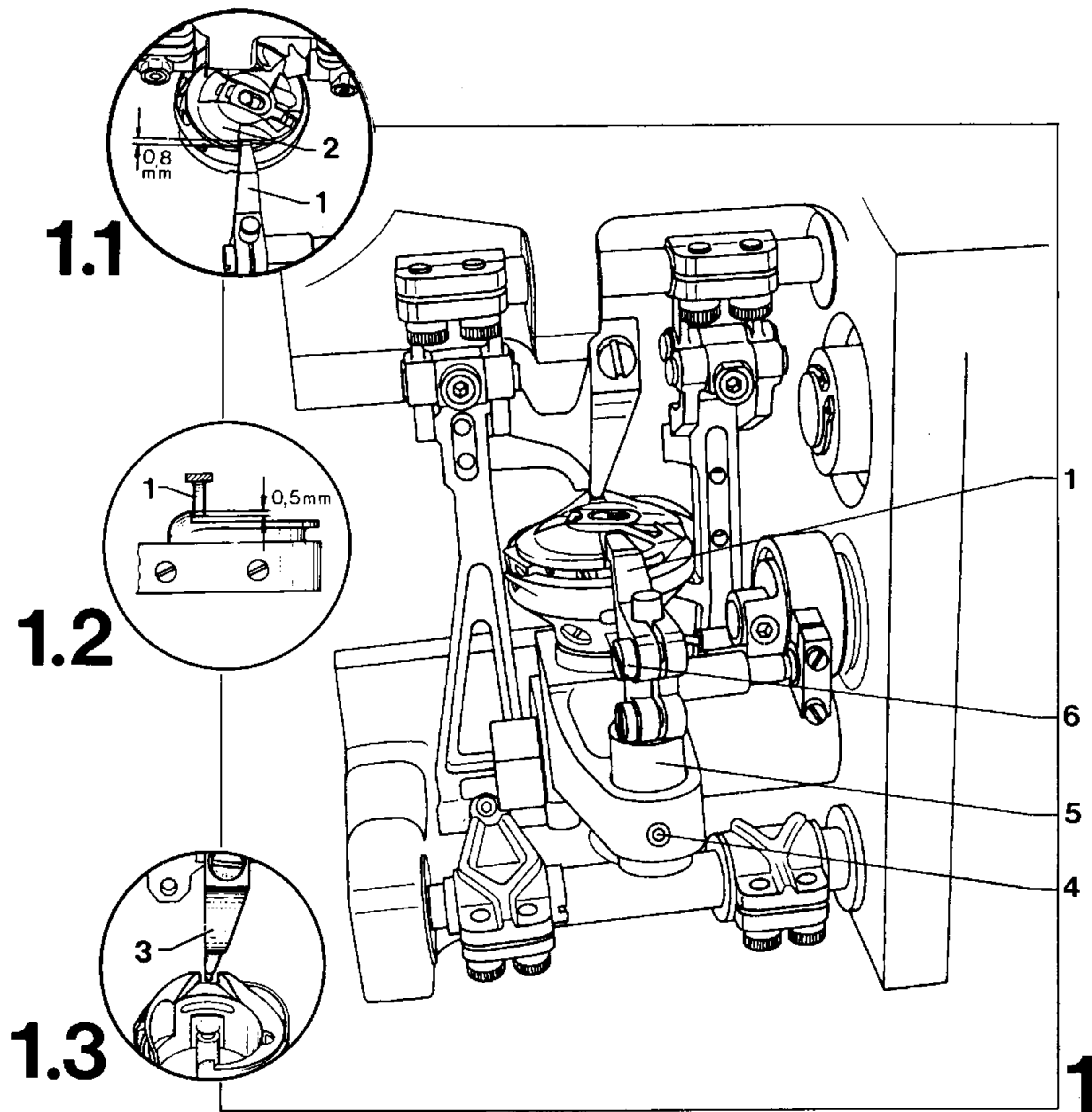
Making sure this position is maintained, reposition bearing bush 5 so that bobbin case opener 1 protrudes by 0.5 mm from the lug of the bobbin case base (Fig. 1.2).

In this position, tighten screw 4.

Turn the balance wheel to bring the bobbin case opener to its left point of reversal.

Now move the bobbin case base together with the bobbin case opener to the right until positioner 3 is in the middle of the slot of the bobbin case base (Fig. 1.3).

In this position, tighten screw 6 (Fig. 1) securely.



21 Adjusting the bobbin-case opening eccentric

In the needle-rise position (adjustment hole 1) bobbin case opening finger 1 must be at its right point of reversal.

Loosen the three screws 2 (Fig. 1).

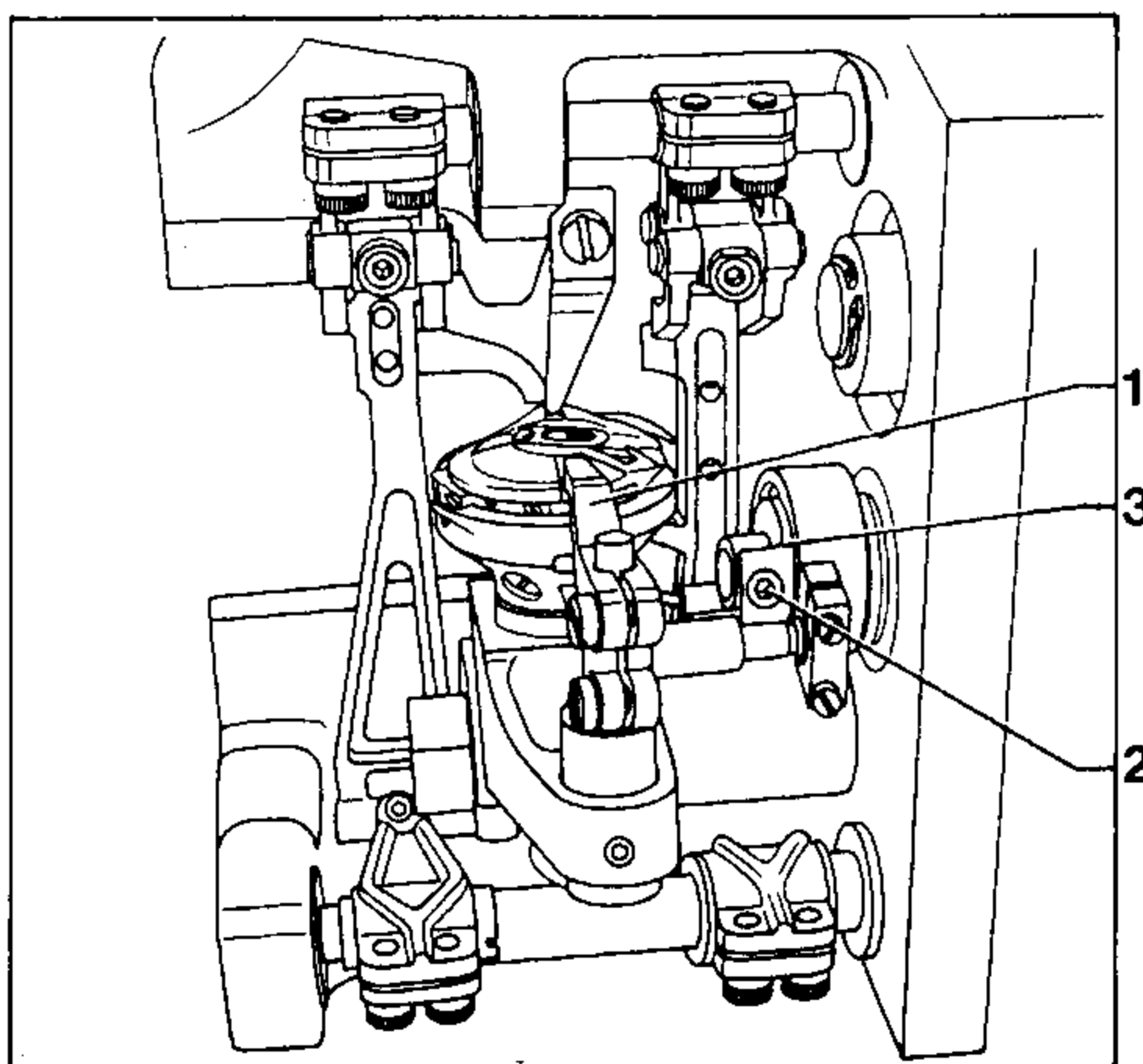
Re-tighten the middle screw just enough to allow bobbin case opening eccentric 3 to be turned on its shaft.

Block the machine in needle-rise position (adjustment pin in hole 1).

Turn bobbin case opening eccentric 3 on its shaft until bobbin case opener 1 is at its right point of reversal.

Pull the adjustment pin out of the bearing plate and tighten the three screws 2 securely.

1



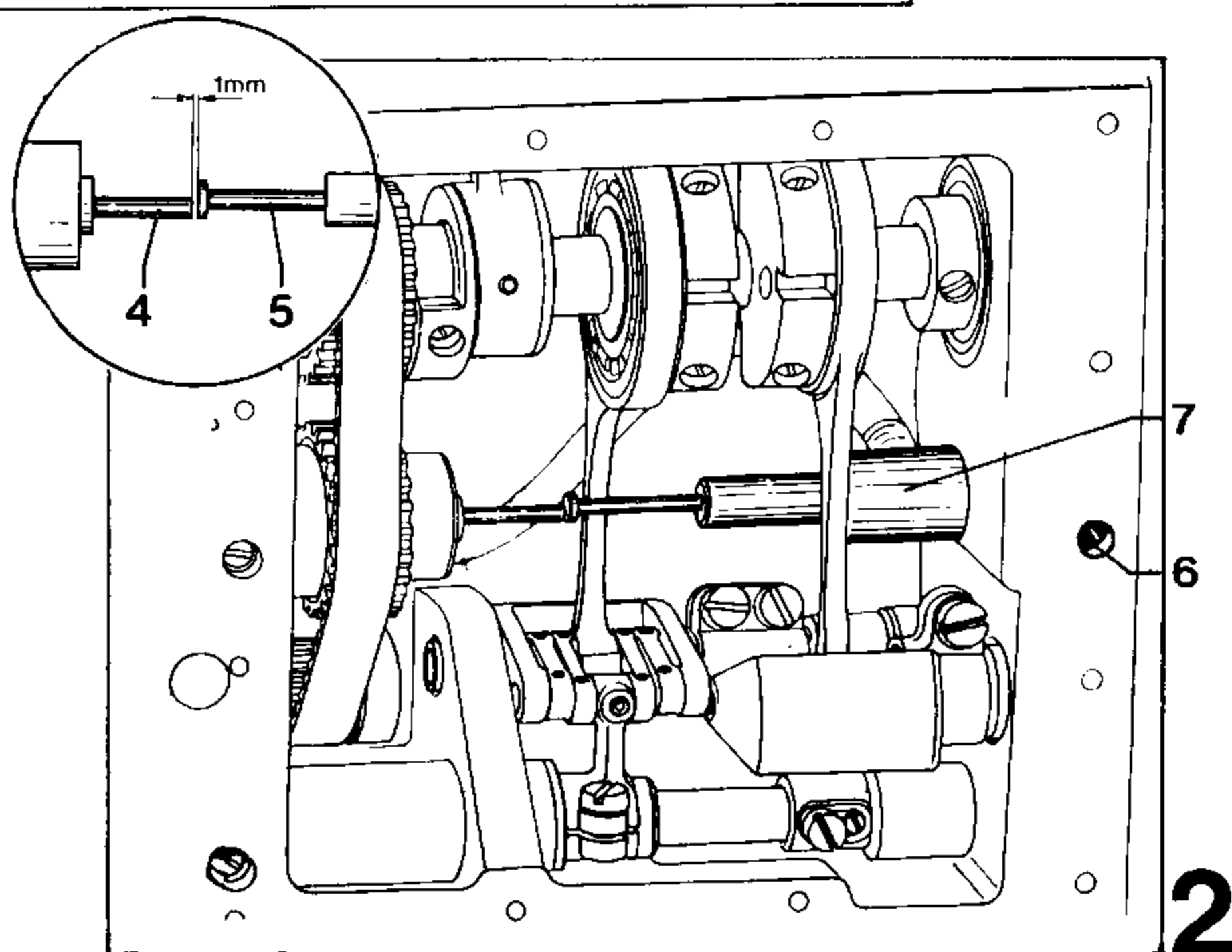
22 Adjusting the oil check valve

There must be a clearance of 1 mm between actuating rod 4 and valve rod 5 (see encircled view in Fig. 2).

Loosen screw 6 (Fig. 2) and push rod 4 to the far left.

Position check valve 7 so that there is a clearance of 1 mm between actuating rod 4 and valve rod 5.

In this position, tighten screw 6.



23 Re-fitting the gear case cover and -900 control unit

If the machine has been in use for a longer period we recommend topping up with 130 cm³ of fresh oil before replacing the gear cover.

Please use Pfaff oil No. 280-1-120 144, or an oil with a mean viscosity of 22 mm²/sec. at 40°C and a density of 0.865 g/cm³.

When topping up the oil you should also replace both lubrication pads which are available under Nos. 91-168 383-05 and 91-168 384-05.

Insert the lubrication pad in such a way that the smallest cutout of the lubrication pad fits over the casting rib inside the gear case.

Fit gear cover 1 (Fig. 1), replacing the gasket if necessary, and thread support 2; insert screws 3 and stud 4 and tighten them evenly crosswise.

Fit plate 5 and secure it with screws 6.

Set the needle at b.d.c.

Replace the control unit, insert screws 7 and tighten them just a little.

Operate engaging solenoid 8 by hand so that roller lever 9 drops into the track of the control cam.

Position the control unit so that roller lever 9 is exactly in the middle of the cam track, then fully tighten the three screws 7.

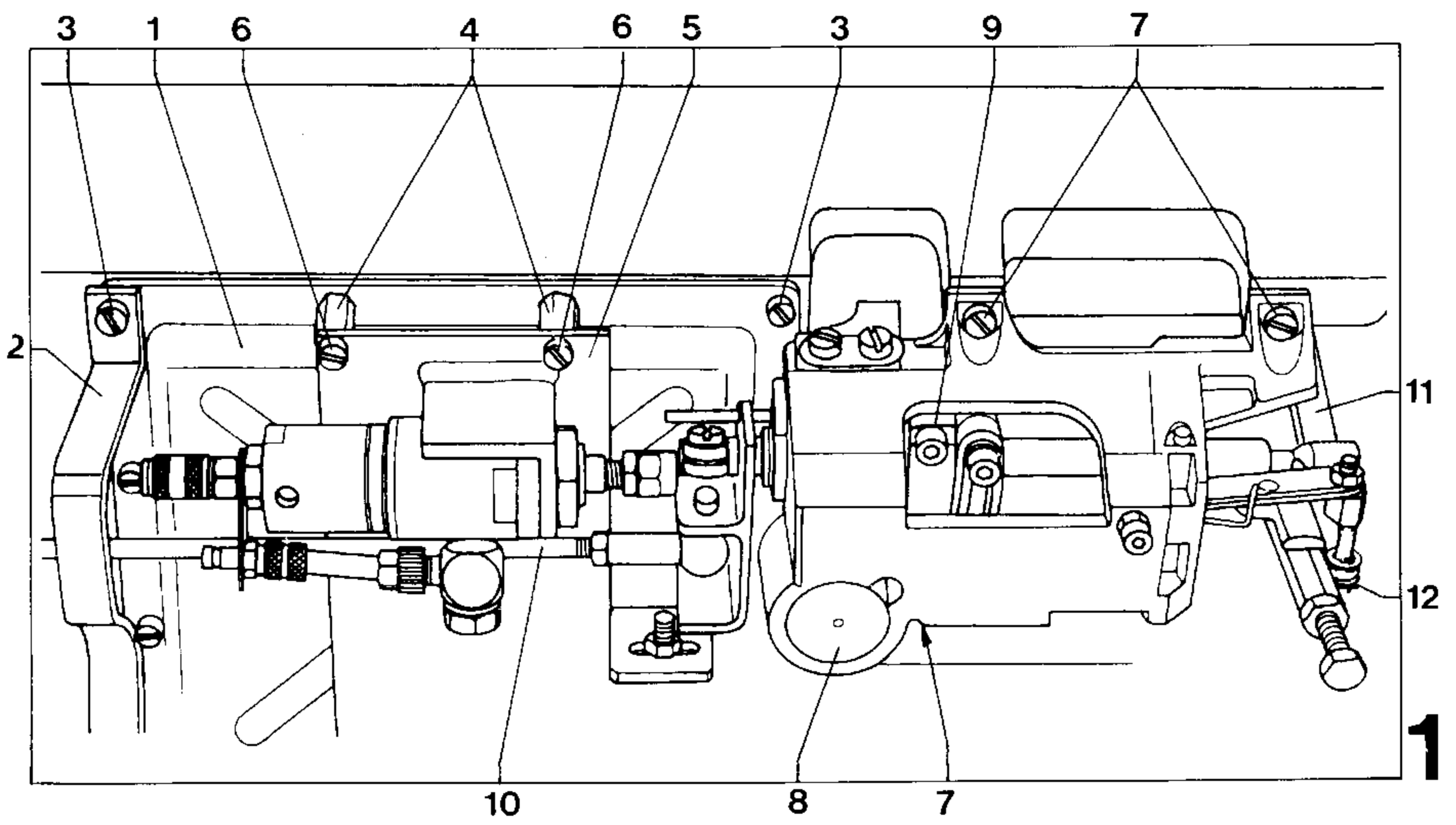
Re-connect linkage rod 10 between the control unit and trimmer unit.

Re-connect pull rod 11 and replace its circlip 12.

Operate the trimmer by hand to check its function, making sure that the arrester releases the engaging lever.

If the engaging lever is not released, loosen the three screws 7 and position the control unit accordingly.

Tighten the three screws 7 again securely.



With the needle bar at top dead centre (t.d.c.) i.e. the blocking pin inserted in hole "2", the highest point of the cam lobe must be exactly under the tip of interlocking latch 1 and the right-hand side of the cam must be flush with the right-hand side of the interlocking latch (see circle in Fig. 1).

Take out the two screws 2 (Fig. 1) and remove both locking spring 3 and its washer.

Loosen screws 4 and 5.

Disconnect the linkage rod between control unit and trimming mechanism.

Position the needle bar at t.d.c. and block the machine (insert pin in hole "2").

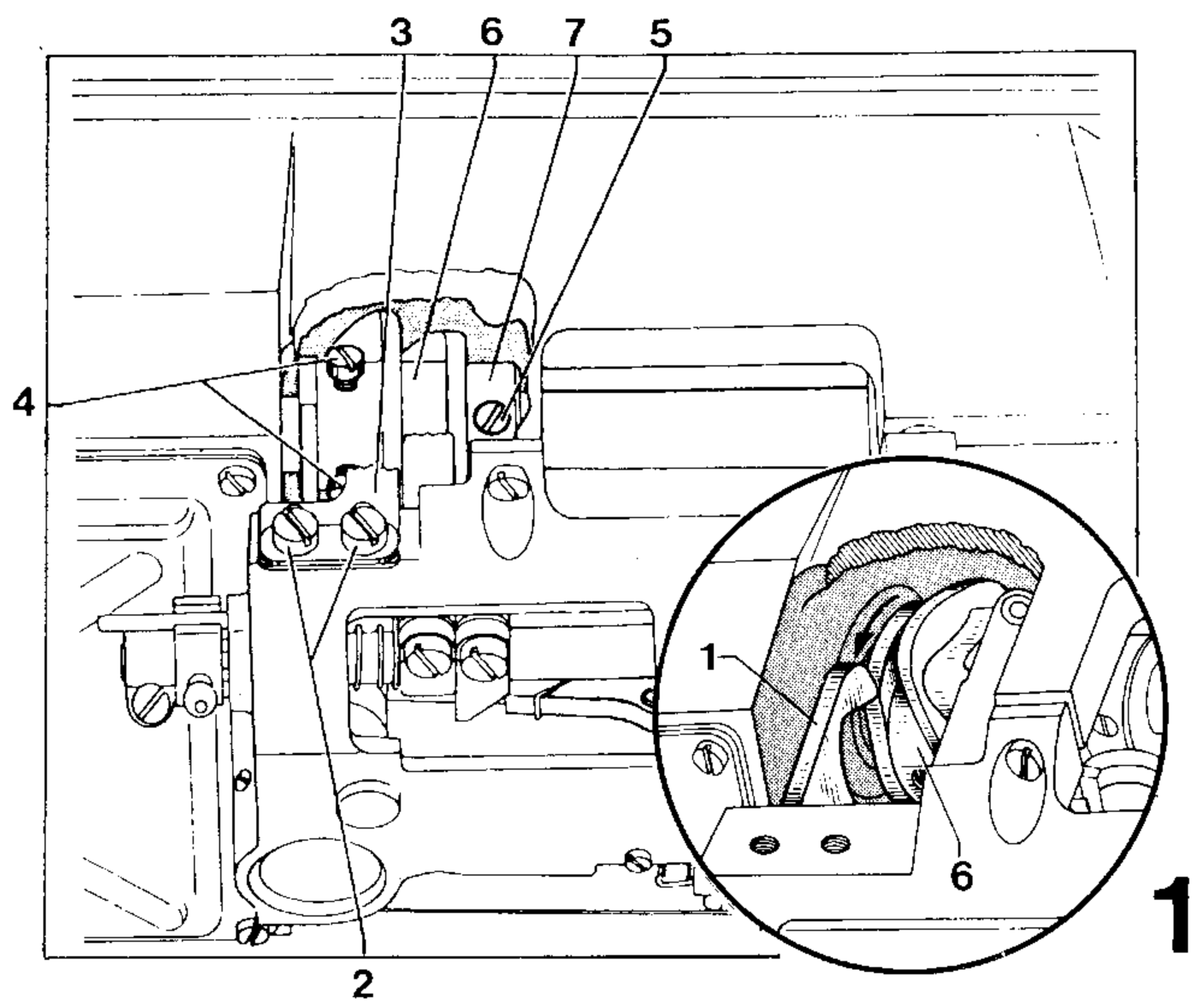
Turn control cam 6 as shown by the arrow until the highest point of the cam lobe is exactly under the tip of interlocking latch 1 (see circle in Fig. 1).

Position cam 6 laterally on its shaft so that its right-hand side is exactly flush with that of the interlocking latch.

In this position, tighten one of the screws 4 (Fig. 1).

Move fixing collar 7 up against the control cam and tighten one of the screws 5.

Pull the pin out of the bearing plate, then tighten the second screws 4 and 5.



25 Adjusting the roller lever

In the needle rise position, i.e. pin inserted in hole "1", the roller of roller lever 1 must drop easily into the track of control cam 2 (see circle in Fig. 1).

Loosen screws 3 and 4 (Fig. 1).

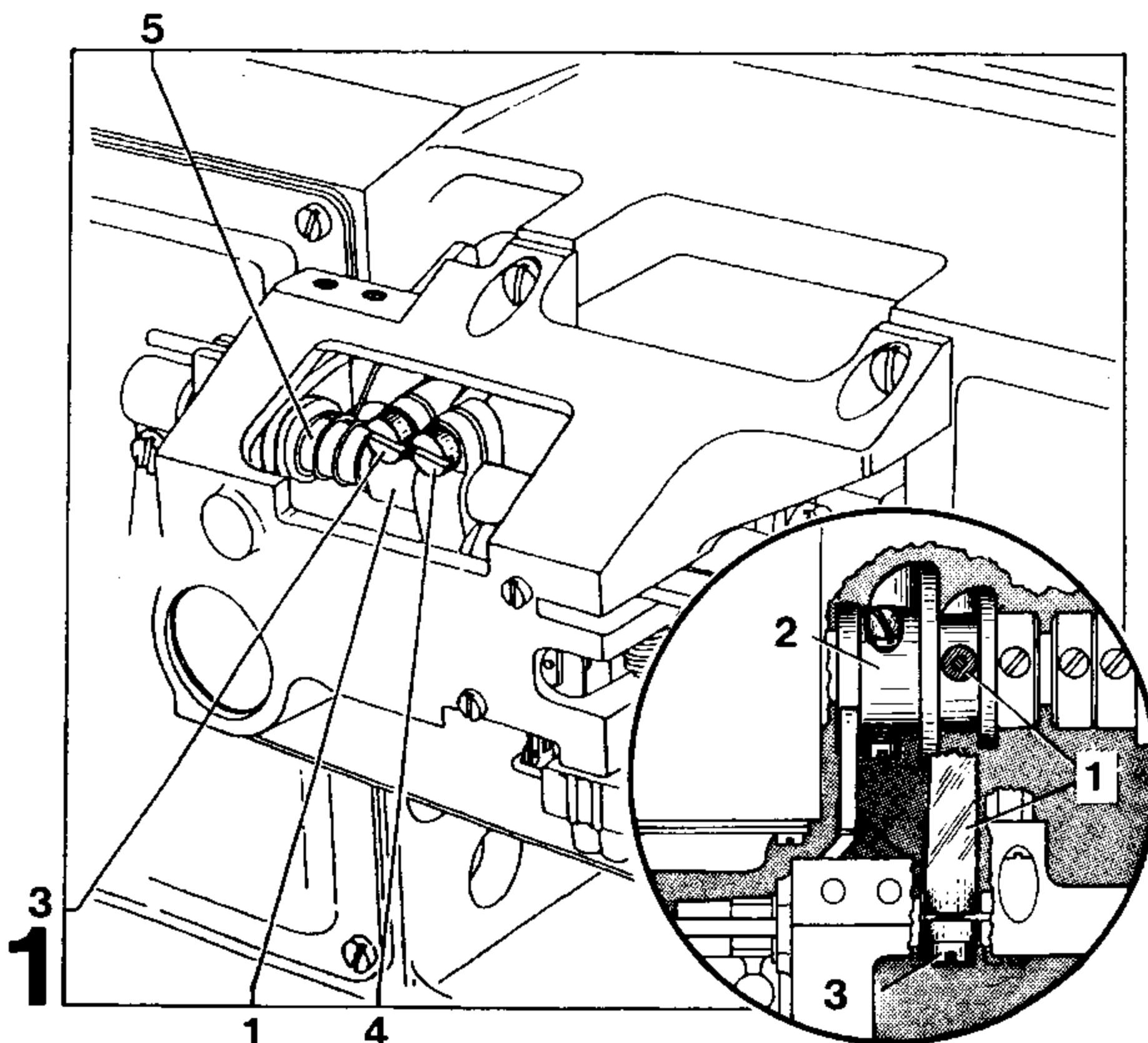
Block the machine at the needle-rise position (insert pin in hole "1").

Make sure that the fixing screw of the collar at the left end of engaging shaft 5 faces front, push the engaging shaft to the right and at the same time move roller lever 1 so that its roller can drop freely into the track of control cam 2.

Push roller lever 1 into the cam track to make sure that the roller touches the bottom of the track.

Convince yourself that the roller is also centred in the cam track, then tighten fixing screw 3 securely.

Leave the blocking pin in hole "1".



26 Adjusting the engaging solenoid

In needle rise position (pin in hole "1") and with the engaging solenoid actuated there must be a clearance of 0.2 to 0.3 mm between engaging lever 1 and interlocking latch 2 (see circle in Fig. 1).

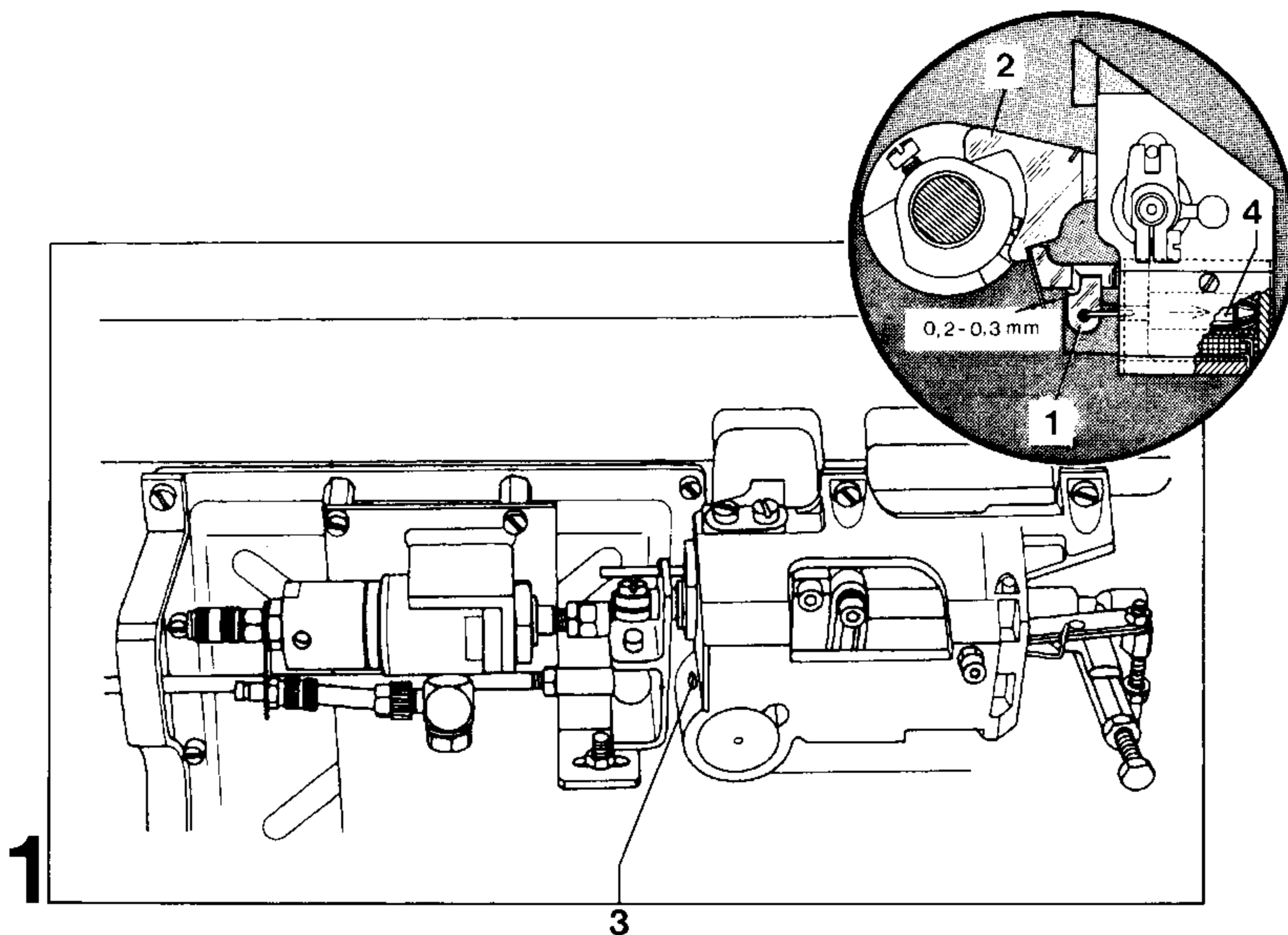
Check that the blocking pin is inserted in hole "1" then loosen screw 3 (Fig. 1).

Reach behind the control unit from below and pull engaging lever 1 downwards until interlocking latch 2 drops behind it (see circle in Fig. 1).

Push solenoid plunger 4 fully into its housing and reposition the housing with the plunger so that there is a clearance of 0.2 to 0.3 mm between engaging lever 1 and interlocking latch 2 (see circle in Fig. 1).

In this position, tighten screw 3 (Fig. 1).

Leave the blocking pin hole "1".



In needle rise position (pin in hole "1") and with roller lever 1 engaged there must be a clearance of 0.2 mm between the roller of the roller lever and the bottom of the cam track (see circle in Fig. 1).

Check that the blocking pin is in hole "1" of the bearing plate and that engaging lever 2 is engaged, i. e. interlocking latch 3 has dropped.

Press roller lever 1 into cam 4 so that the roller is touching the bottom of the cam track, and hold the lever in this position.

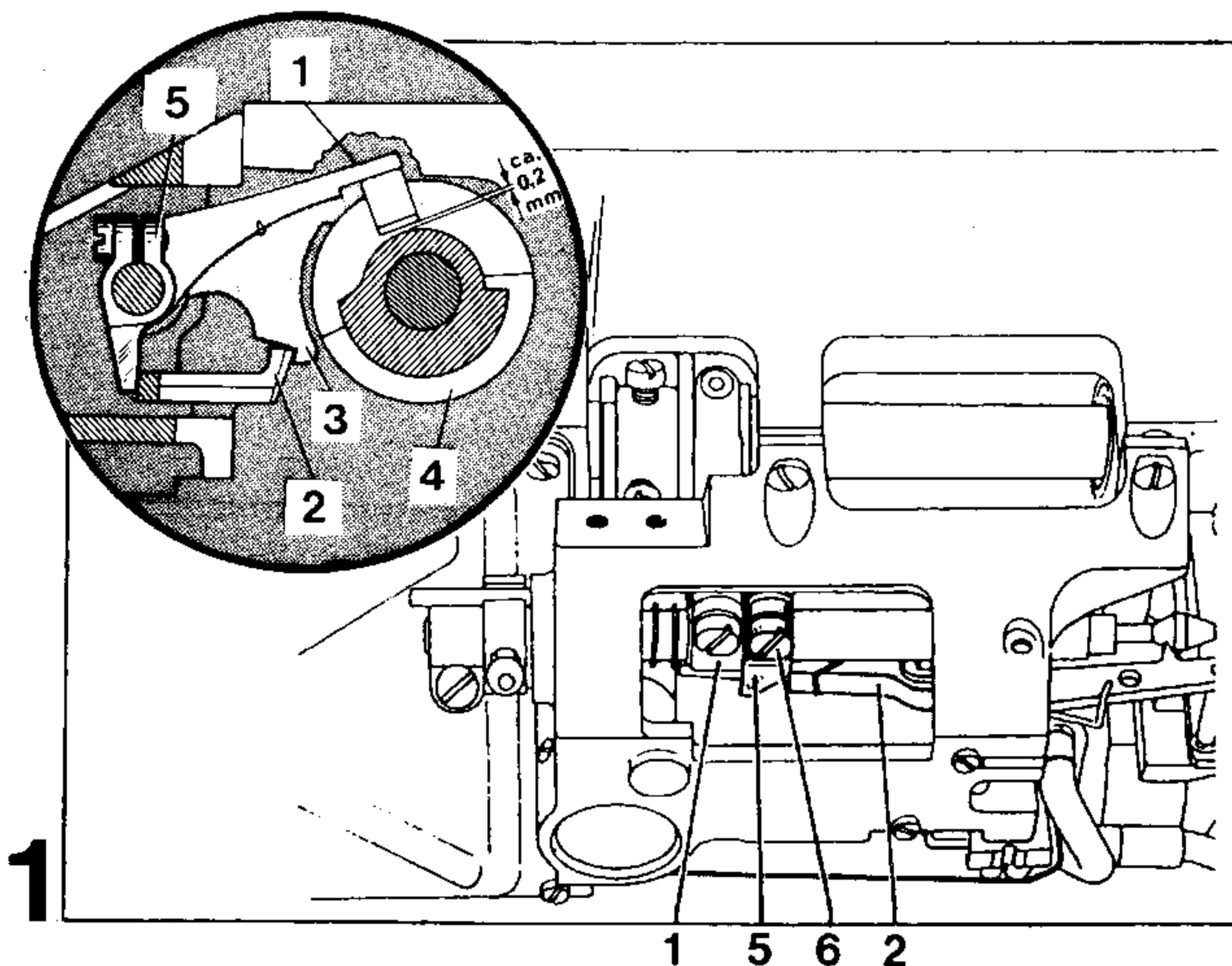
Move actuating lever 5 to the side and against roller lever 1 and tighten screw 6 just a little.

Now turn actuating lever 5 so that it contacts engaging lever 2 at the bottom.

Obtain a clearance of 0.2 mm between the roller and the bottom of the cam track by tapping roller lever 1 (see circle in Fig. 1).

In this position, fully tighten screw 6.

Remove the pin from the bearing plate.



With the needle bar at t.d.c. (pin in hole "2") there must be a clearance of 0.3 to 0.5 mm between the roller of roller lever 1 and the circumference of control cam 2 (see circle in Fig. 1).

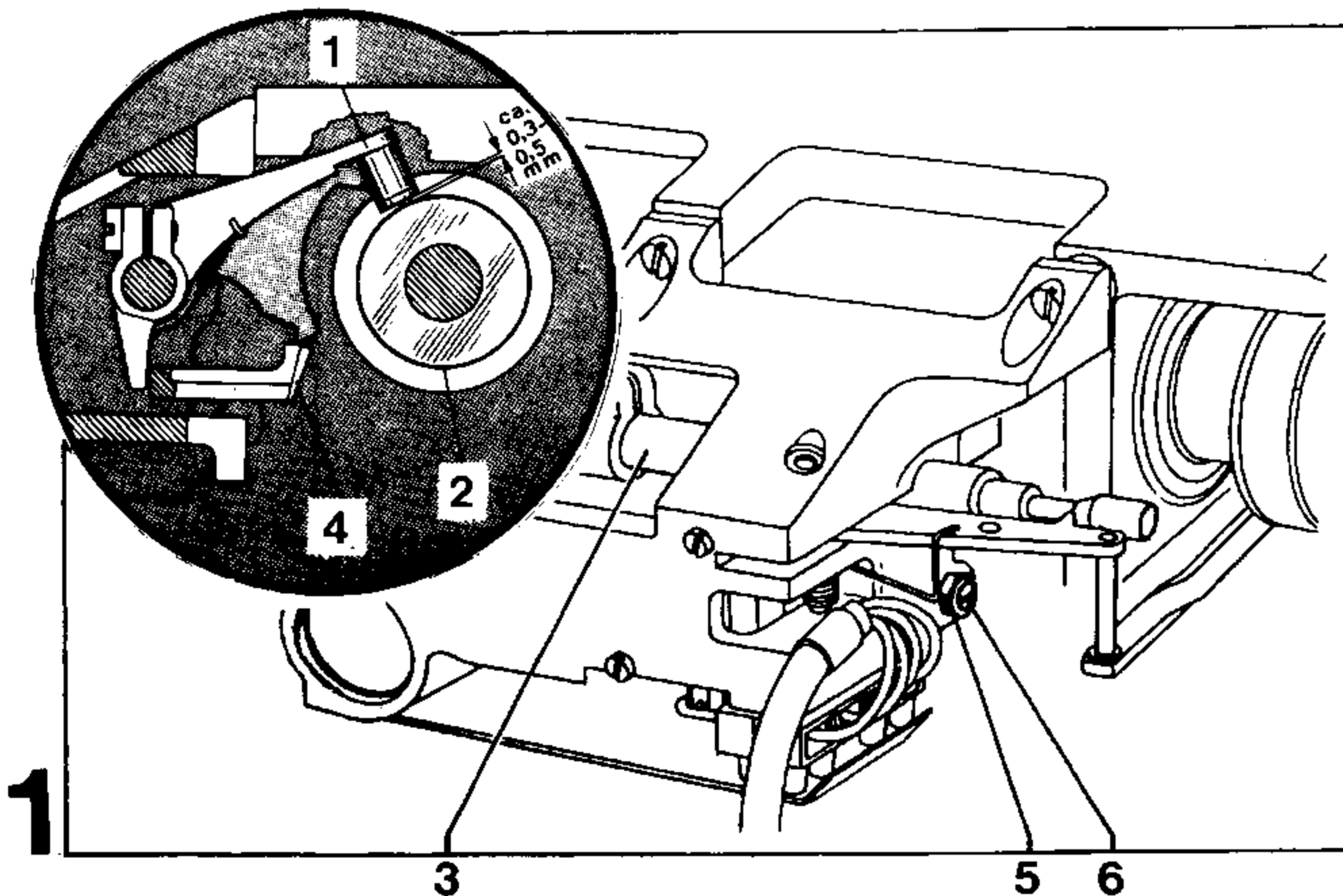
Make sure that engaging shaft 3 and engaging lever 4 are at their starting position. Position the needle bar at t.d.c. and block the machine by inserting the pin in hole "2".

Loosen locknut 5 and turn stop screw 6 (Fig. 1) so that there is a clearance of 0.3 to 0.5 mm between the roller of lever 1 and the circumference of control cam 2 (see circle in Fig. 1).

In this position, lock stop screw 6 in place with locknut 5.

Touch the roller lever lightly to check if the 0.3 to 0.5 mm clearance between roller and cam circumference is still set.

Remove the pin from the bearing plate.



When the back edge of thread pull-off flange 1 (Fig. 1.1) has passed the centre line of bobbin case position finger 2 by 6 mm the thread catcher must begin its forward movement.

Loosen the two screws 3 (Fig. 1) just enough to allow control cam 4 to be turned on its shaft.

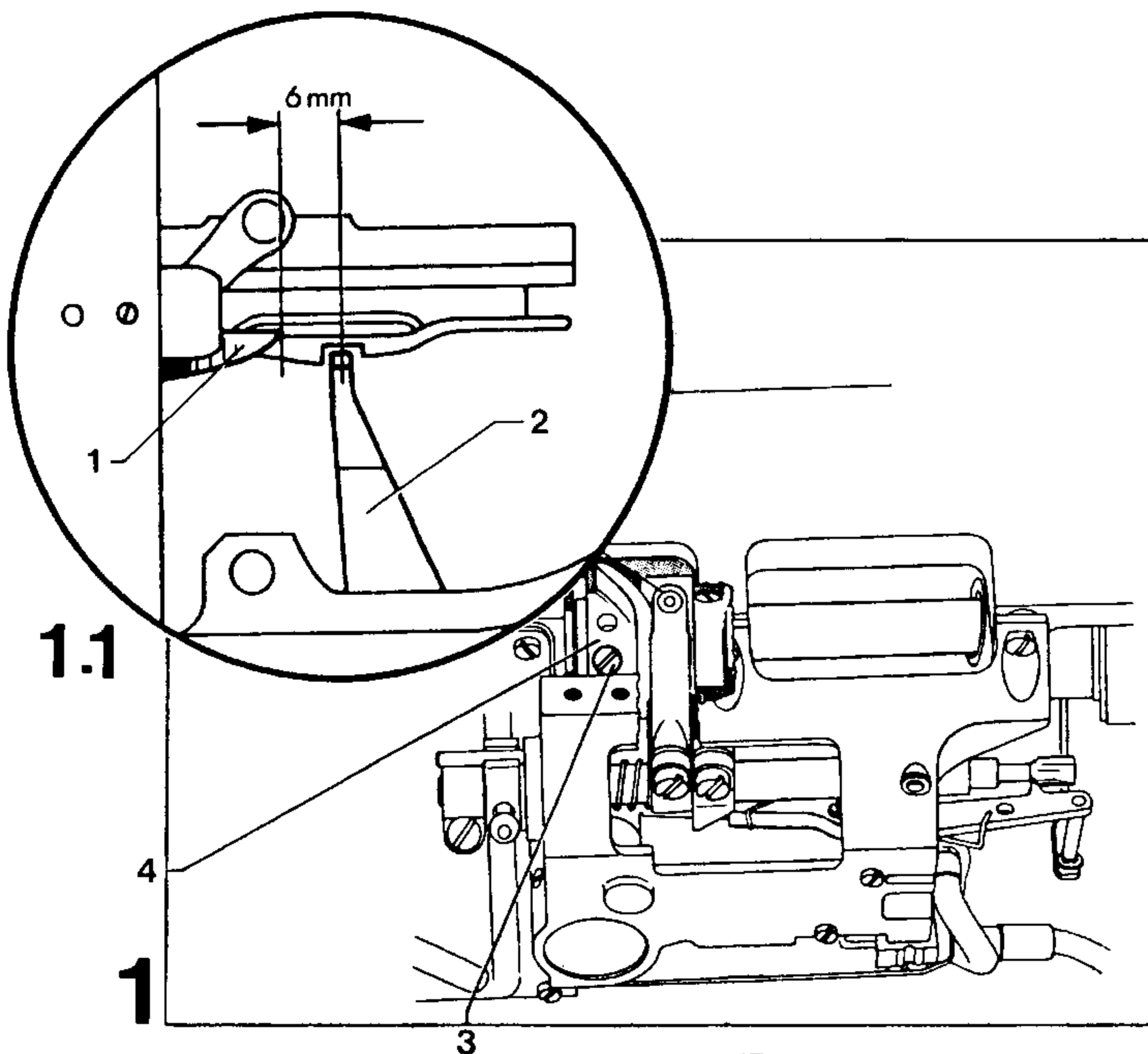
Position the needle bar at b.d.c.

Operate the engaging lever by hand so that the roller lever drops into the control cam.

Turn the balance wheel until there is distance of 6 mm between the back edge of thread pull-off flange 1 and the centre line of bobbin case position finger 2 (Fig. 1.1).

Turn control cam 4 (Fig. 1) in sewing direction until the thread catcher begins its forwards motion.

Ensure that in this position control cam 4 is up against the fixing vollar at the right, then tighten screws 3.



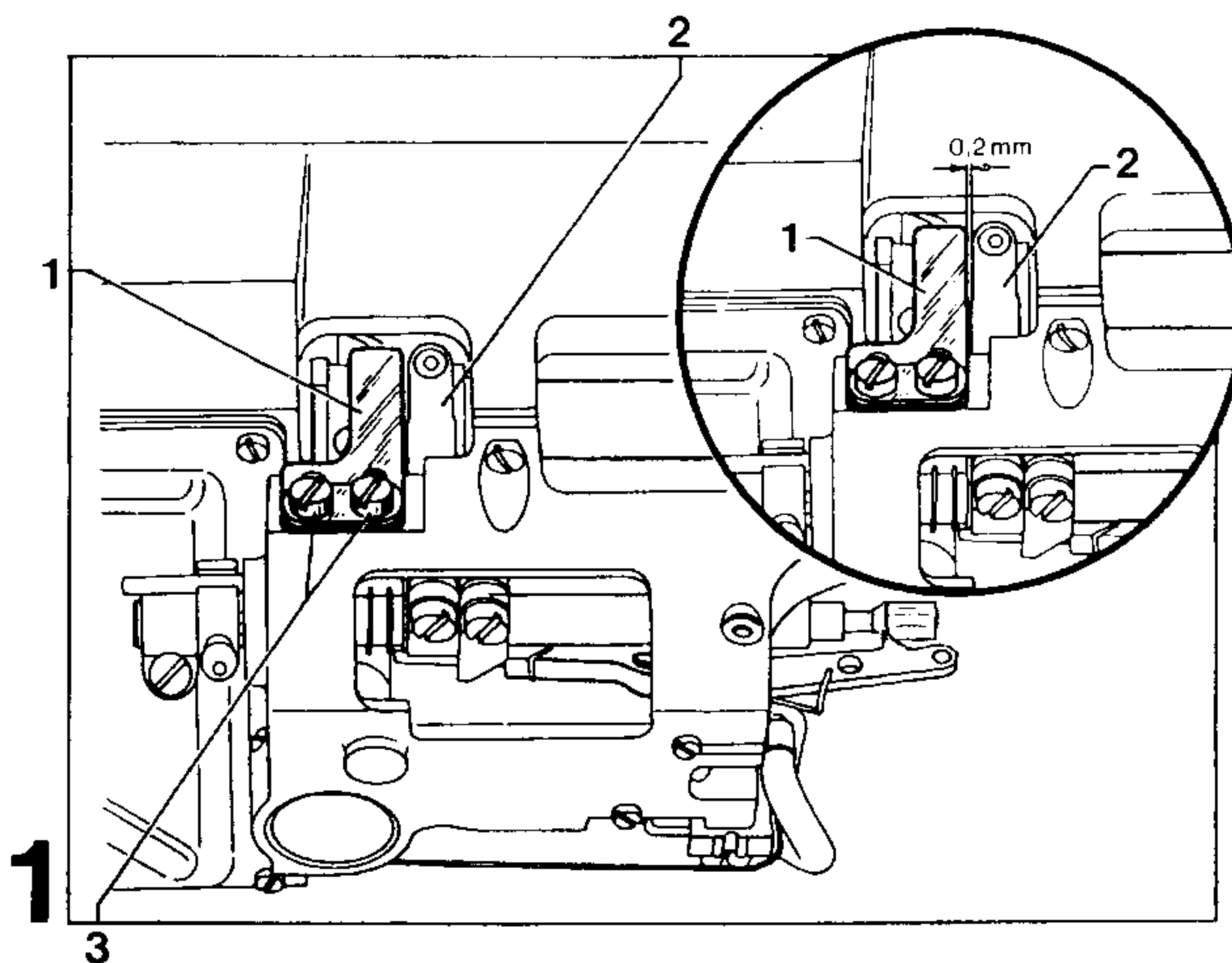
30 Adjusting the locking spring

With the trimming mechanism in its resting position there must be a clearance of 0.2 mm between locking spring 1 and roller lever 2 (see circle in Fig. 1).

Replace locking spring 1 (Fig. 1) with its washer, insert screws 3 and tighten them just a little.

Push spring 1 up far as it will go, then position it laterally so that there is a clearance of 0.2 mm between the spring and roller lever 2 (see circle in Fig. 1).

In this position, tighten both screws 3 (Fig. 1) securely.



31 Making a cutting test

A doubled piece of thread placed in the thread catcher cutout must be cut perfectly when the thread catcher is pushed backwards.

Loosen the two screws 1 (Fig. 1) and pull out the complete trimming unit.

Check the sharpness of the knife edge.

Push catcher 2 across knife 3 until the cutout becomes visible in the thread catcher.

Insert two strands of thread in this cutout and push thread catcher 2 back again. Both threads must then be cut perfectly.

If the threads are not cut, increase the knife pressure by turning screw 4 clockwise.

32 Adjusting the thread catcher

When the trimming mechanism is in its resting position the back edge of thread catcher 2 must protrude abt. 1 mm from mounting plate 5 (Fig. 1.1).

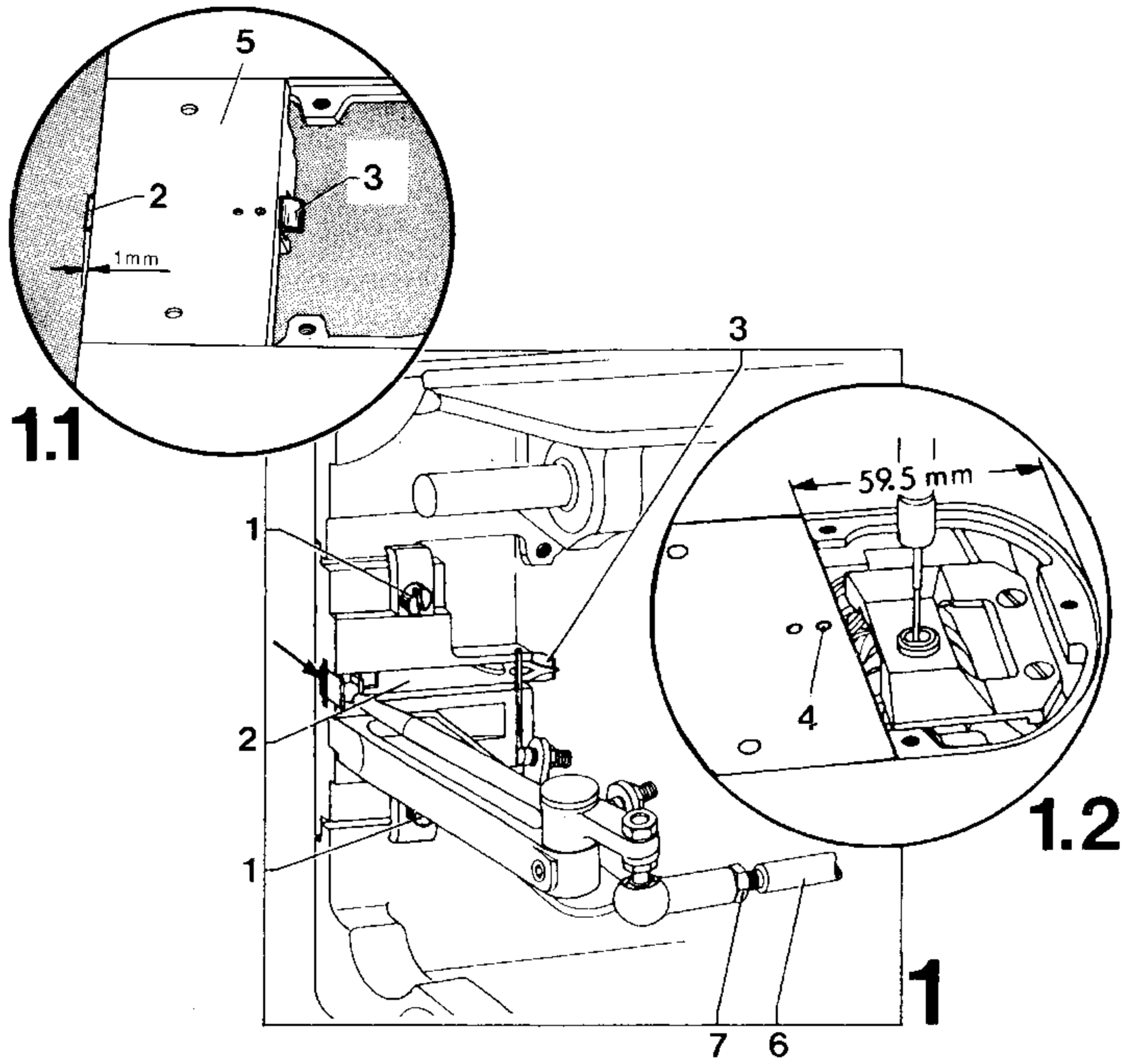
Fit the trimming unit in the bedplate and position it so that the distance between the front edge of the needle plate cutout is 59.5 mm (Fig. 1.2).

Move the needle bar to the top of its stroke.

Fit linkage 6 between trimming unit and control unit and loosen the two locknuts (Fig. 1).

Turn linkage rod 6 so that when the trimming mechanism is in its resting position the back edge of thread catcher 2 protrudes abt. 1 mm from mounting plate 5 (Fig. 1.1).

In this position, lock the linkage rod by tightening nuts 7.



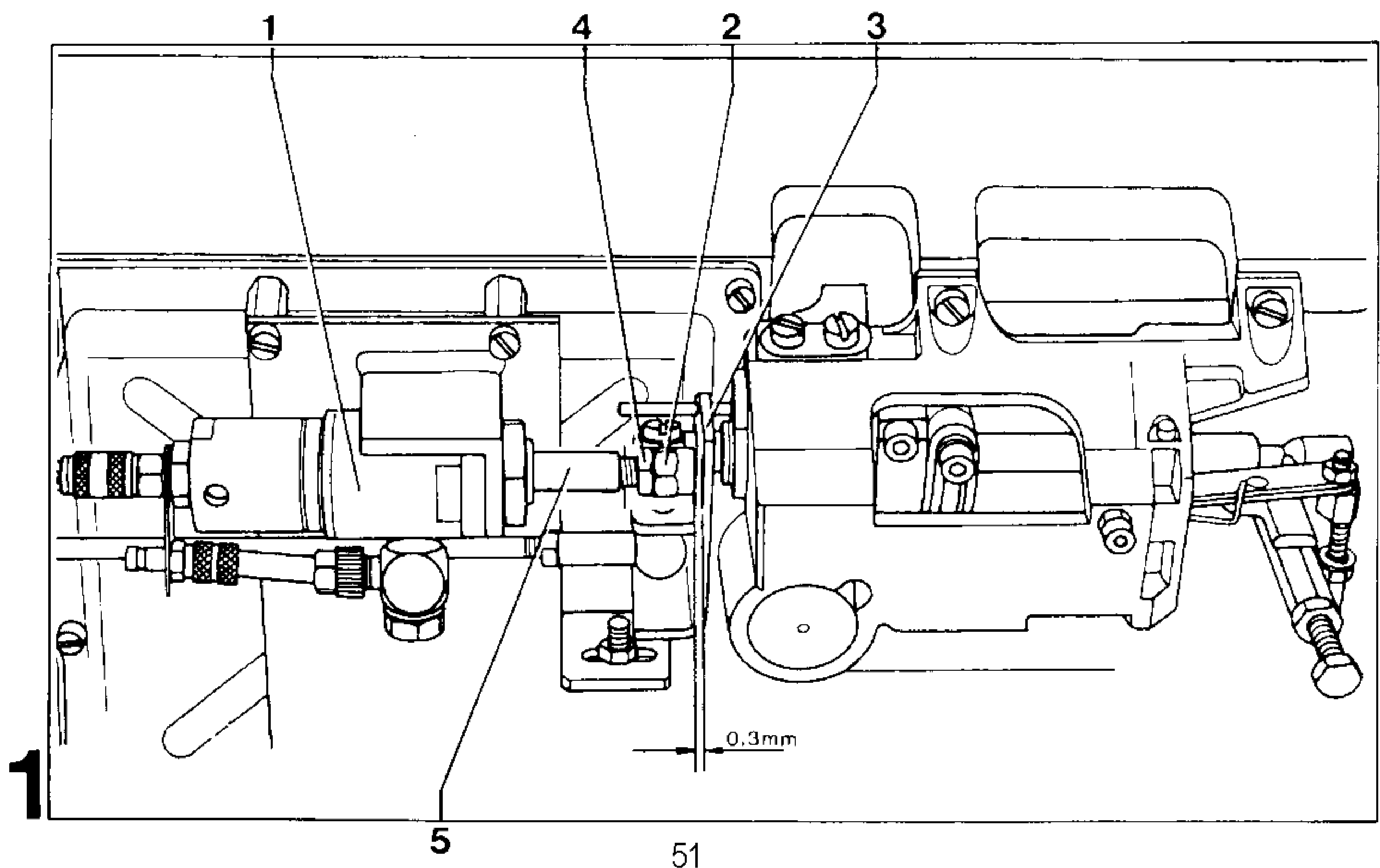
33 Adjusting the actuating shaft cylinder

When the trimming mechanism is in its resting position and cylinder 1 is extended (Fig. 1) there must be a clearance of 0.3 mm between dome nut 2 and lever 3. Switch s32 must also be actuated in this position.

Loosen locknut 4 and fully extend plunger 5.

Turn dome nut 2 until there is a clearance of 0.3 mm between dome nut and lever 3.

Retract plunger 5 and tighten locknut 4.



34 Adjusting the needle thread tension release

34.1 By lifting the presser bar

With the presser bar fully raised there must be a clearance of a least 1 mm between the tension discs (Fig 1.1).

Remove the four screws of the arm cover at the back of the machine and swing out the cover to the right.

Also remove the casting cover on the back of the arm.

Loosen screws 1 to 3 (Fig. 1).

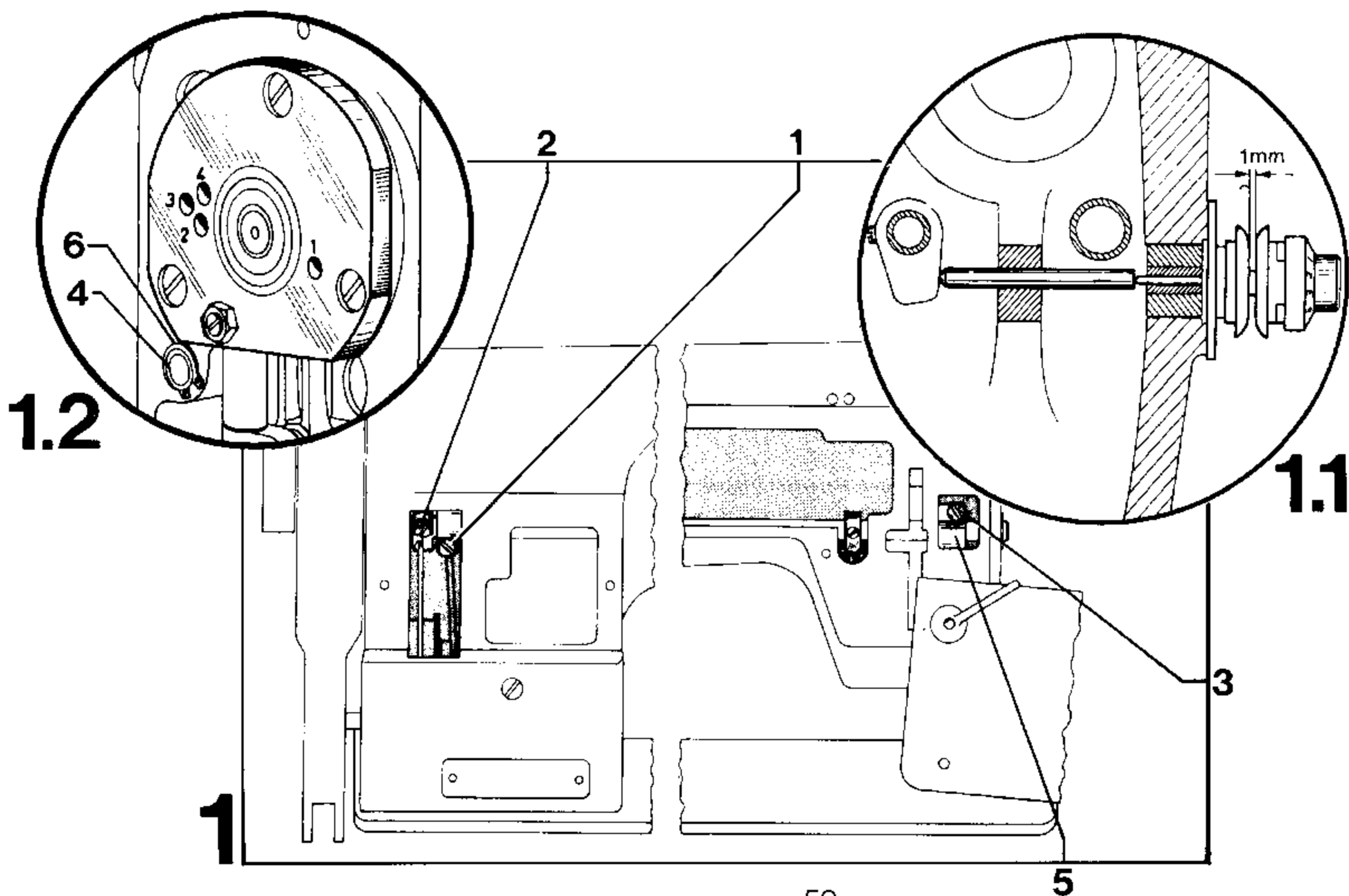
Lift presser bar and lock by inserting a 11-mm-thick spacing washer.

From the face side of the machine insert a screwdriver in sleeve shaft 4 (Fig. 1.2) and turn same to the left until you feel a resistance.

In this position, push crank 5 (Fig. 1) both upwards and against the machine housing and tighten screw 3.

After removing the 11-mm-thick spacing washer, lower the presser bar down to 4 mm by inserting a corresponding washer.

Making sure that circlip 6 (Fig. 1.2) is adjacent to the machine face side, push screw 1 (Fig. 1) upwards and tighten it.



34.2 By operating the thread trimmer

When the trip of release lever 7 is at the highest point of olive 8 the tension discs must be at least 1 mm apart (Fig. 2).

Move crank 9 to the right and upwards as far it will go. Press trip 10 against tension release pin 11 (but not hard enough to release the tension) and tighten screw 2 securely in this position.

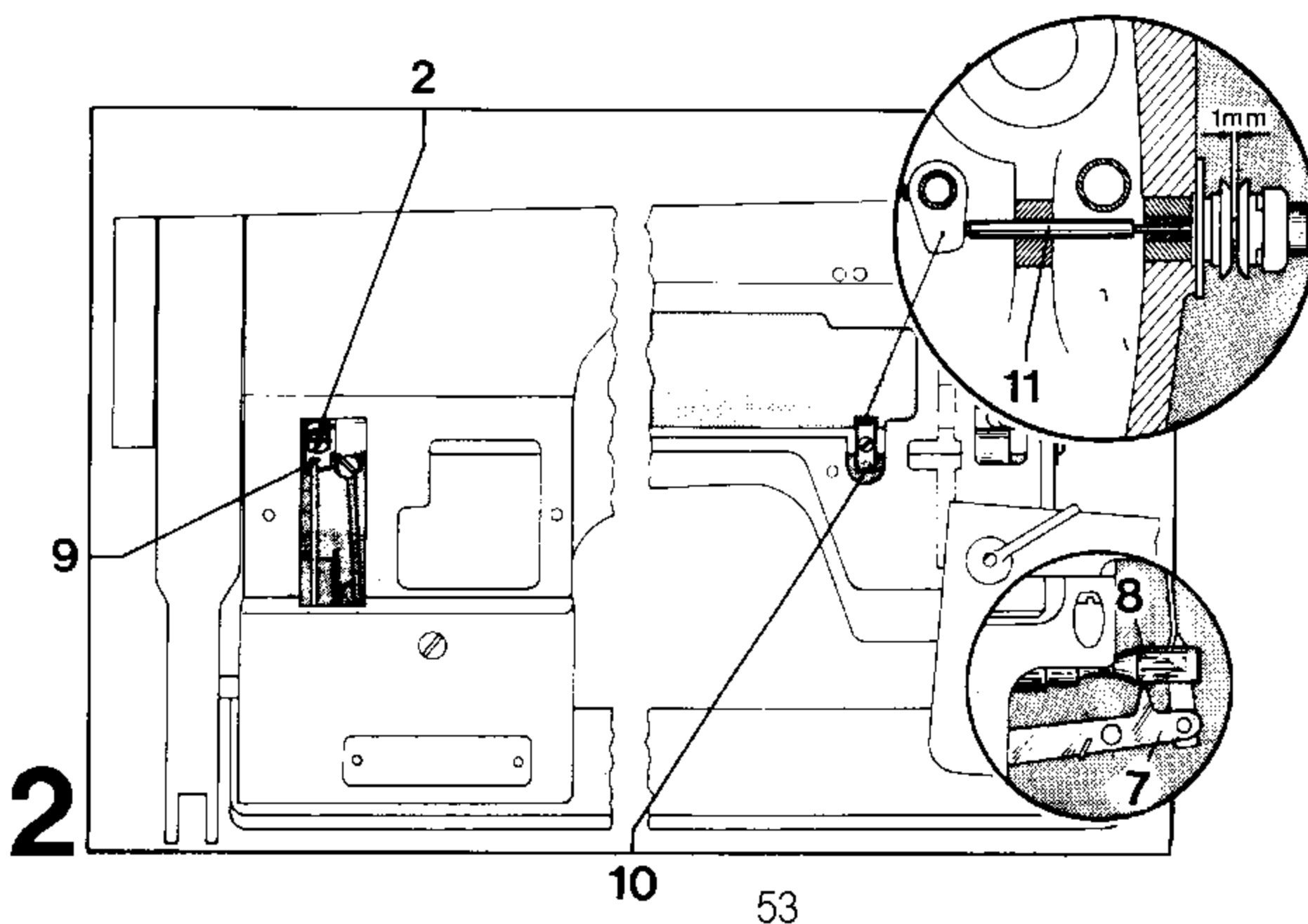
Operate the engaging solenoid on the control unit by hand. Turn the balance wheel in sewing direction until the trip of release lever 7 is at the highest point of release olive 8.

In this position, the two tension discs must be at least 1 mm apart.

Move the engaging shaft to its basic position by hand.

In this position, the needle thread tension must be fully released.

Replace both arm cover and cast cover. Finally lightly grease olive 8.



35 Topping up with oil for lubricating the zigzag eccentric

Pour about 100 cm of oil into the zigzag eccentric housing from the rear of the machine. We recommend Pfaff sewing machine oil, part No. 280-1-120 144 or an oil with a mean viscosity of $22.0 \text{ mm}^2/\text{s}$ at 40°C and a density of 0.865 g/cm^3 .

Clean the contact surfaces of the cover and fit in place with its two screws.

When oil is topped up later the oil for the zigzag eccentric housing is replenished at the same time by means of an overflow hole in the hook oil reservoir. However, it is necessary to continue topping up with oil until the oil level in the small circular glass of the oil reservoir reaches the top mark.

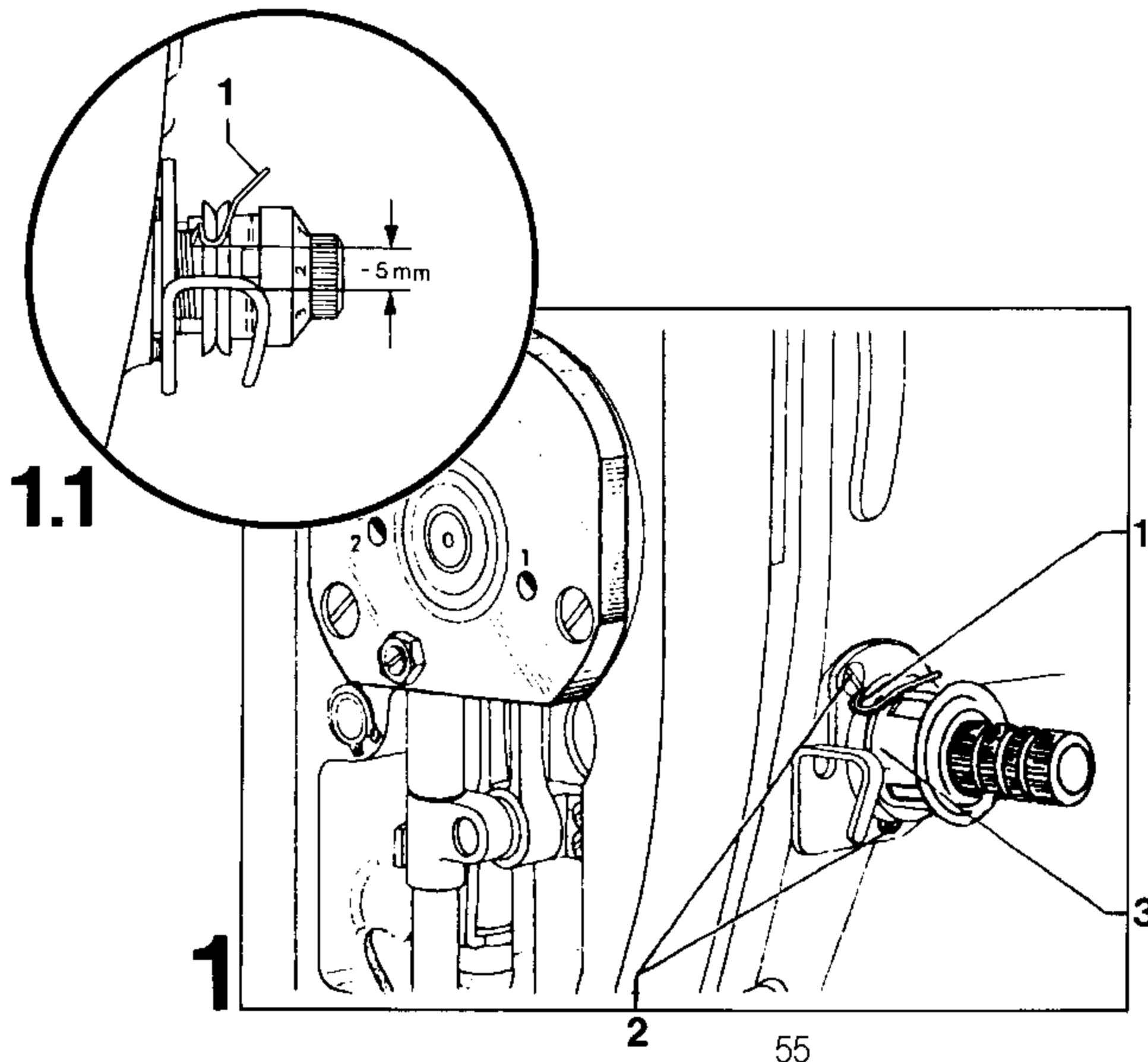
36 Adjusting the thread check spring

The stroke of thread check spring 1 (Fig. 1.1) must be roughly 5 mm.

Loosen the two screws 2 (Fig. 1) just enough to allow thread tension 3 to be turned in its mounting plate.

Turn thread tension 3 so that the stroke of the thread check spring is roughly 5 mm.

In this position, tighten the two screws 2 evenly.



37 Pre-adjustment of the synchronizer

When the needle bar is 4 mm past b. d. c. switch edge "x" of slotted mask 1 (Fig. 1.1) must be aligned with the switching point of synchronizer 2 (Fig. 2).

Set the needle bar at 4 mm past b. d. c.

Loosen screw 3 by roughly half a turn.

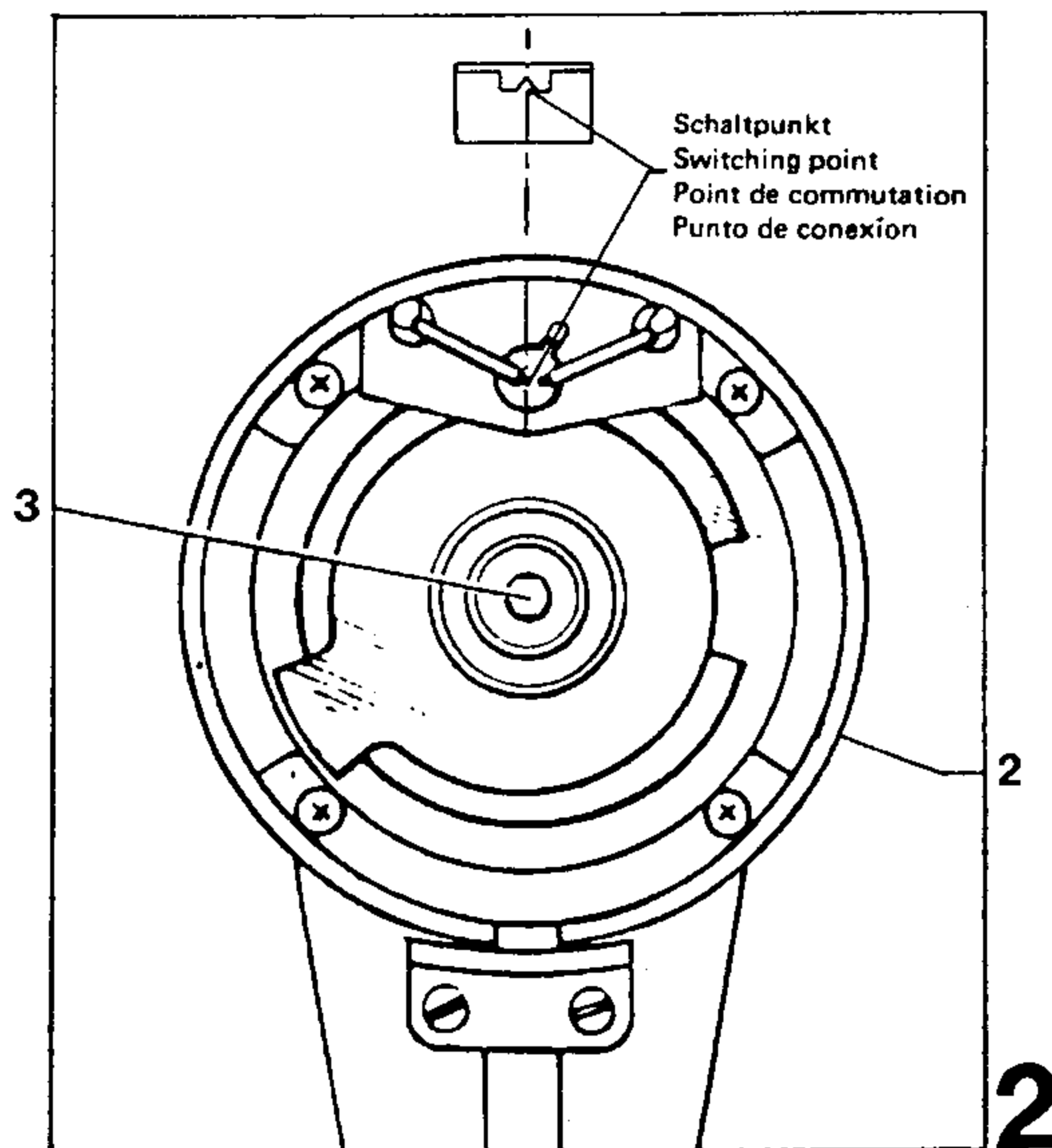
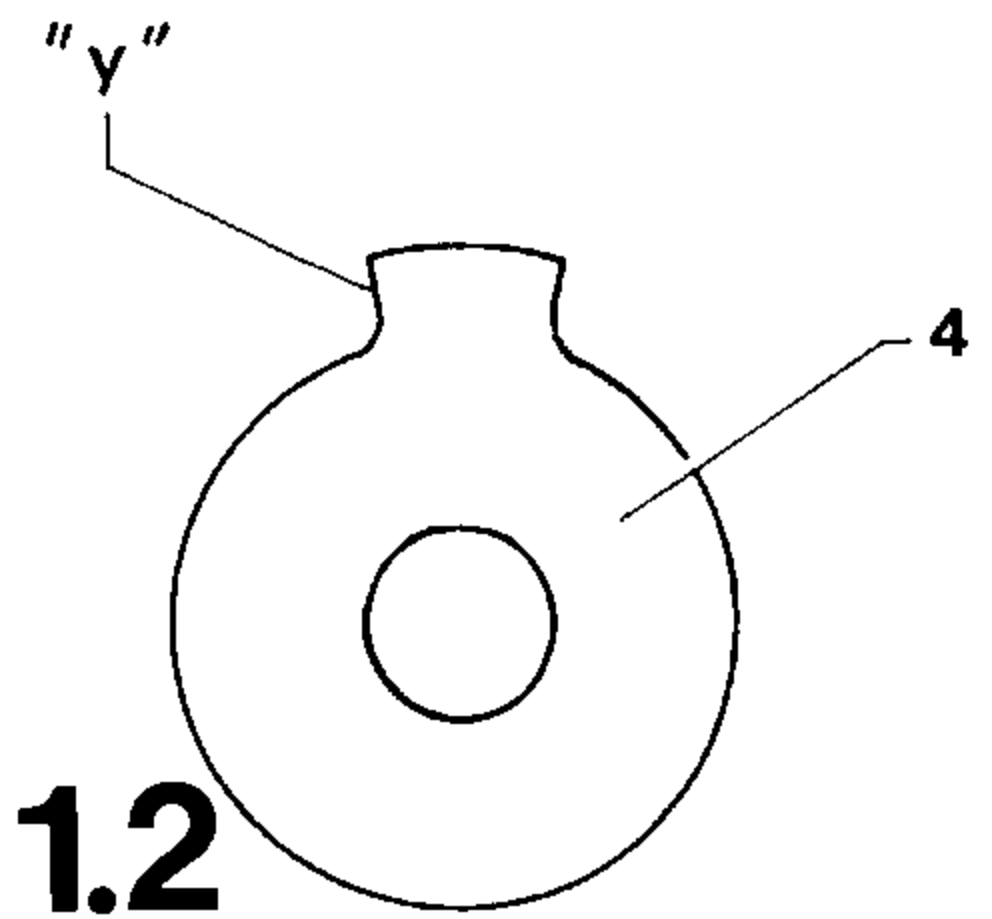
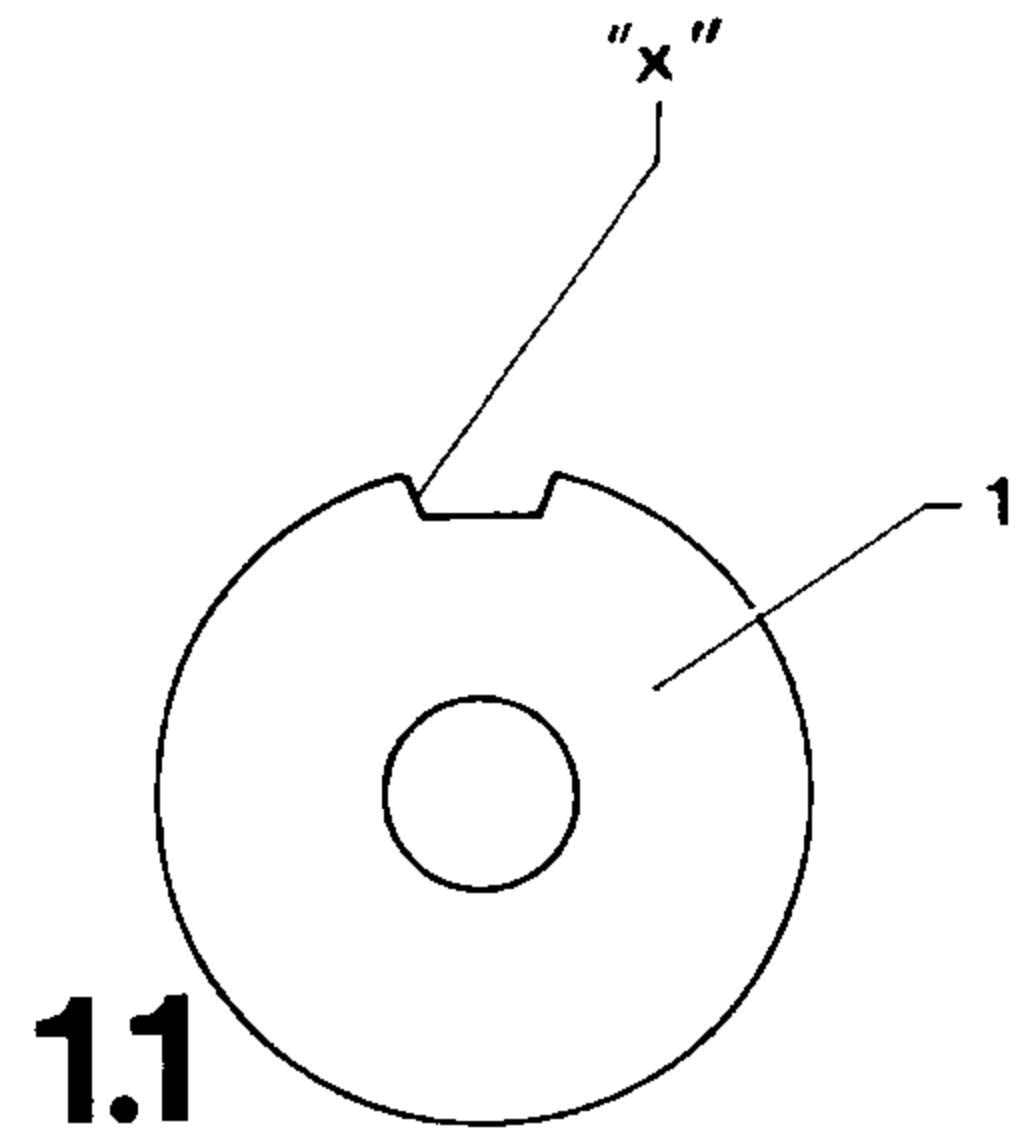
Turn slotted mask 1 (Fig. 1.1) so that switching edge "x" is aligned with the switching point.

When the needle bar is 1 mm past t. d. c. switch edge "y" of mask 4 (Fig. 1.2) must be aligned with the switching point of synchronizer 2 (Fig. 1).

Set the needle bar at 1 mm past t. d. c.

Turn mask 4 (Fig. 1.2), making sure that slotted mask 1 is not turned, so that switching edge "y" is aligned with the switching point.

Finally, tighten screw 3.



38 Pre-adjustment of the switch vane for the intermittent feed

With the needle bar at t. d. c. switch vane 1 (Fig. 1) must cover 2/3 of proximity switch 2.

Mark the position of the synchronizer and take it off after having removed its retaining screws.

Set needle bar at t. d. c.

Loosen screw 3 (Fig. 2) and move switch vane bracket 2 accordingly.

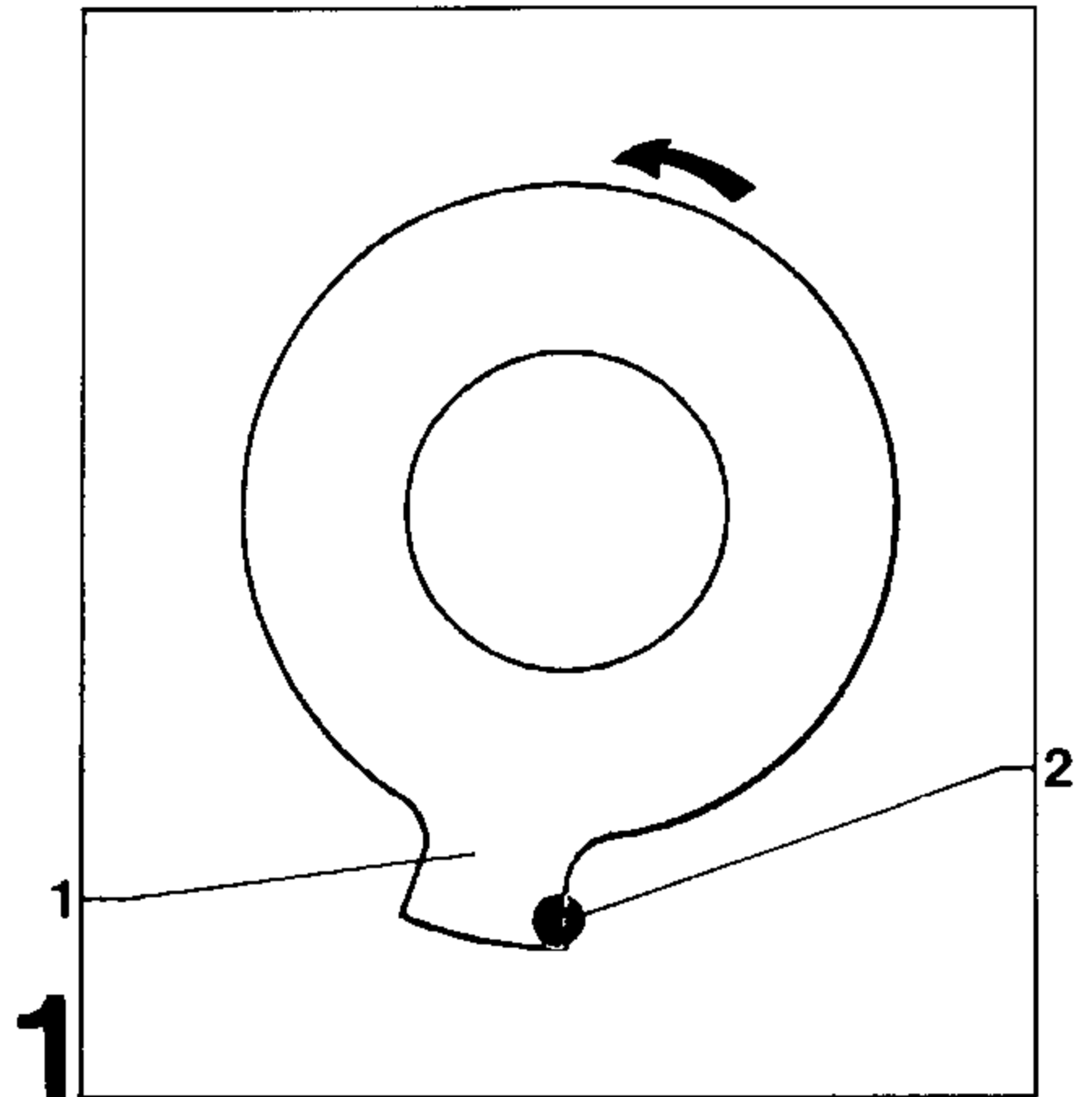
Replace and position the synchronizer afterwards.

39 Adjustment of the proximity switch

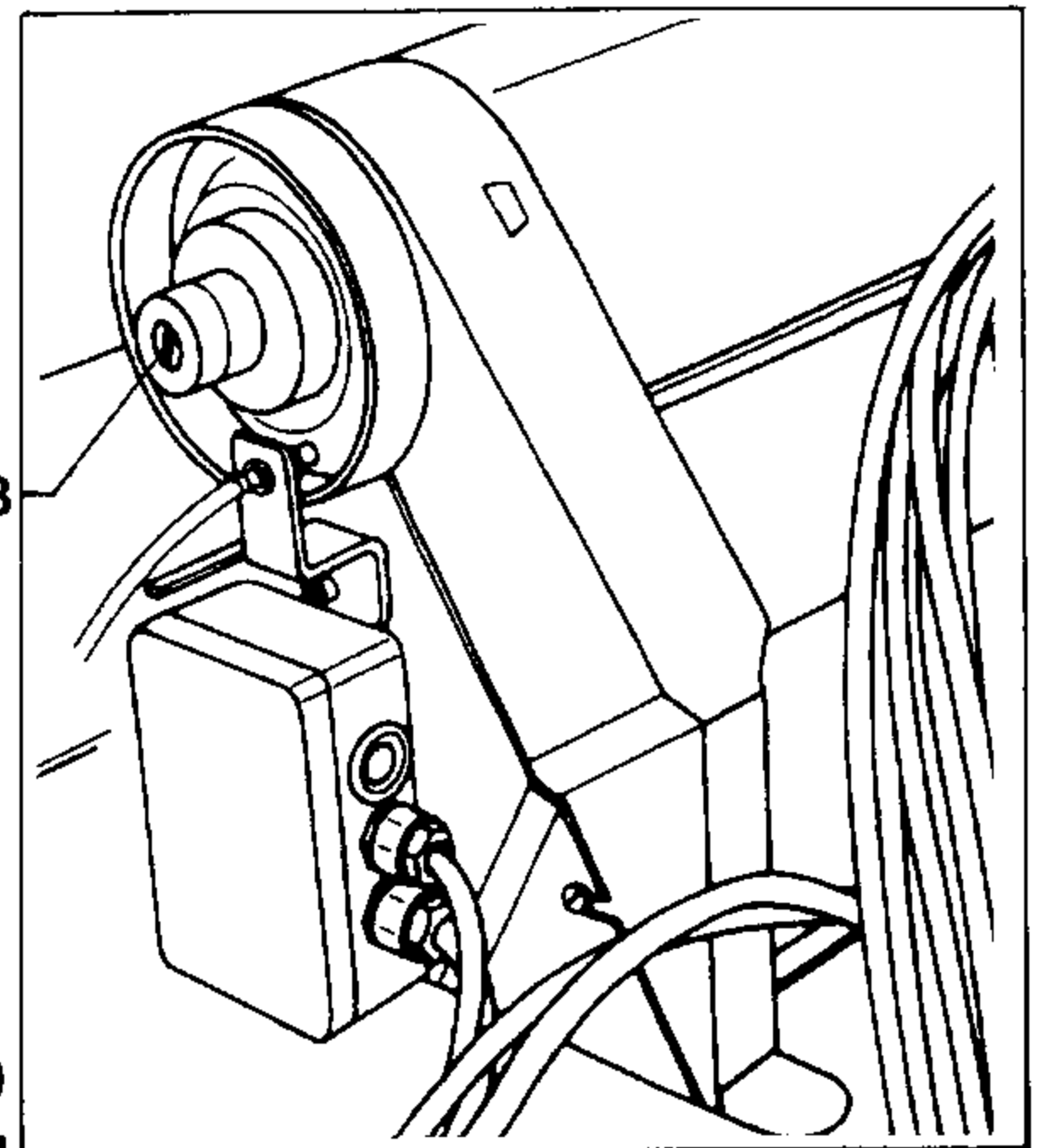
The clearance between proximity switch 2 (Fig. 3) and switch vane 1 must not exceed 0.3 mm.

Loosen both nuts 5 and turn until this clearance is obtained.

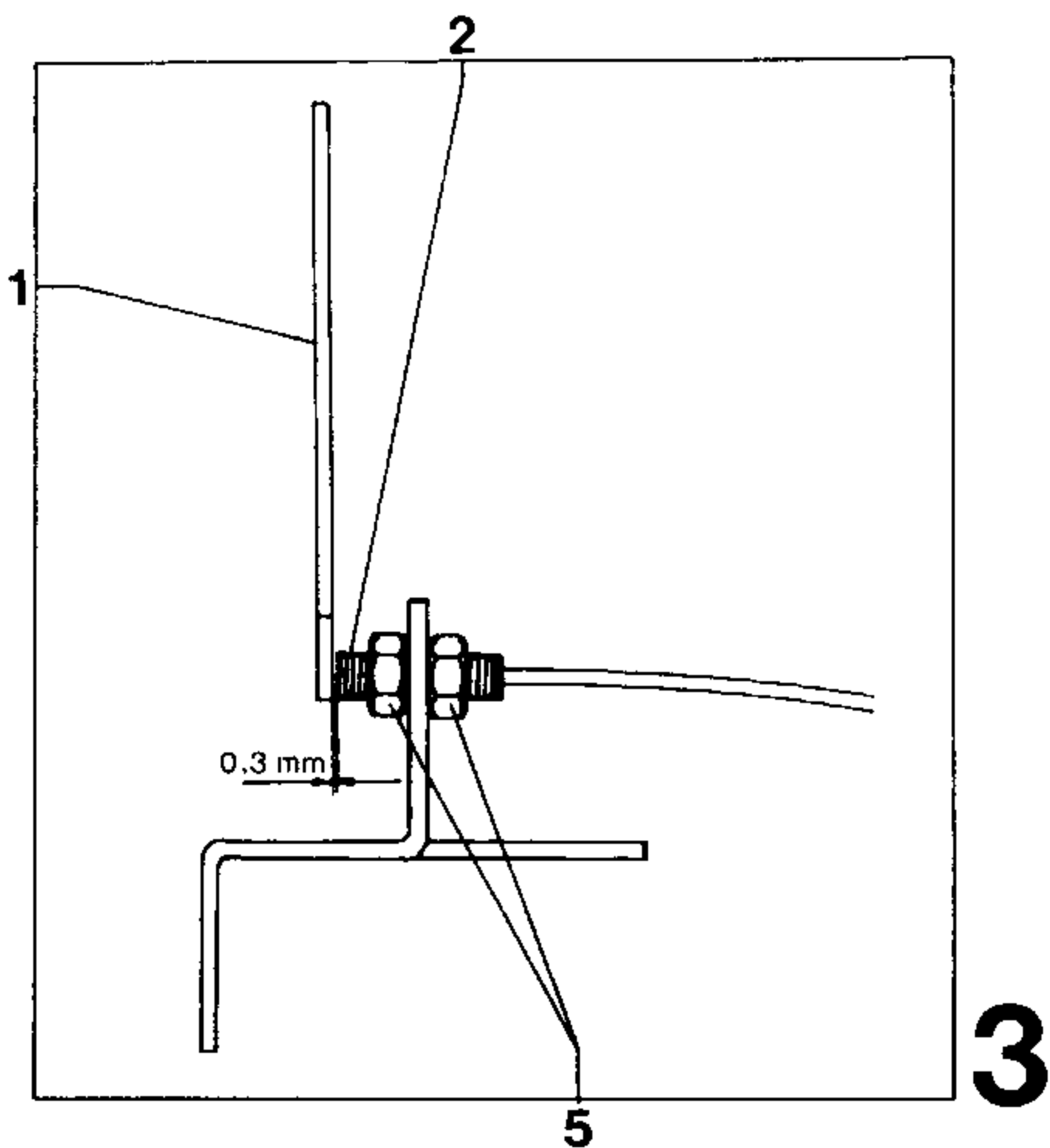
Tighten nuts 5 afterwards.



1



2



3

Inserting the sewing head

Release sewing head support 1 (Fig. 1) from the sewing unit and swing it back to its original position.

Set the needle bar at top dead centre.

Push the sewing unit fully to the front and swing locking lever 2 (Fig. 2) as shown by the arrow.

Fit the V-belt.

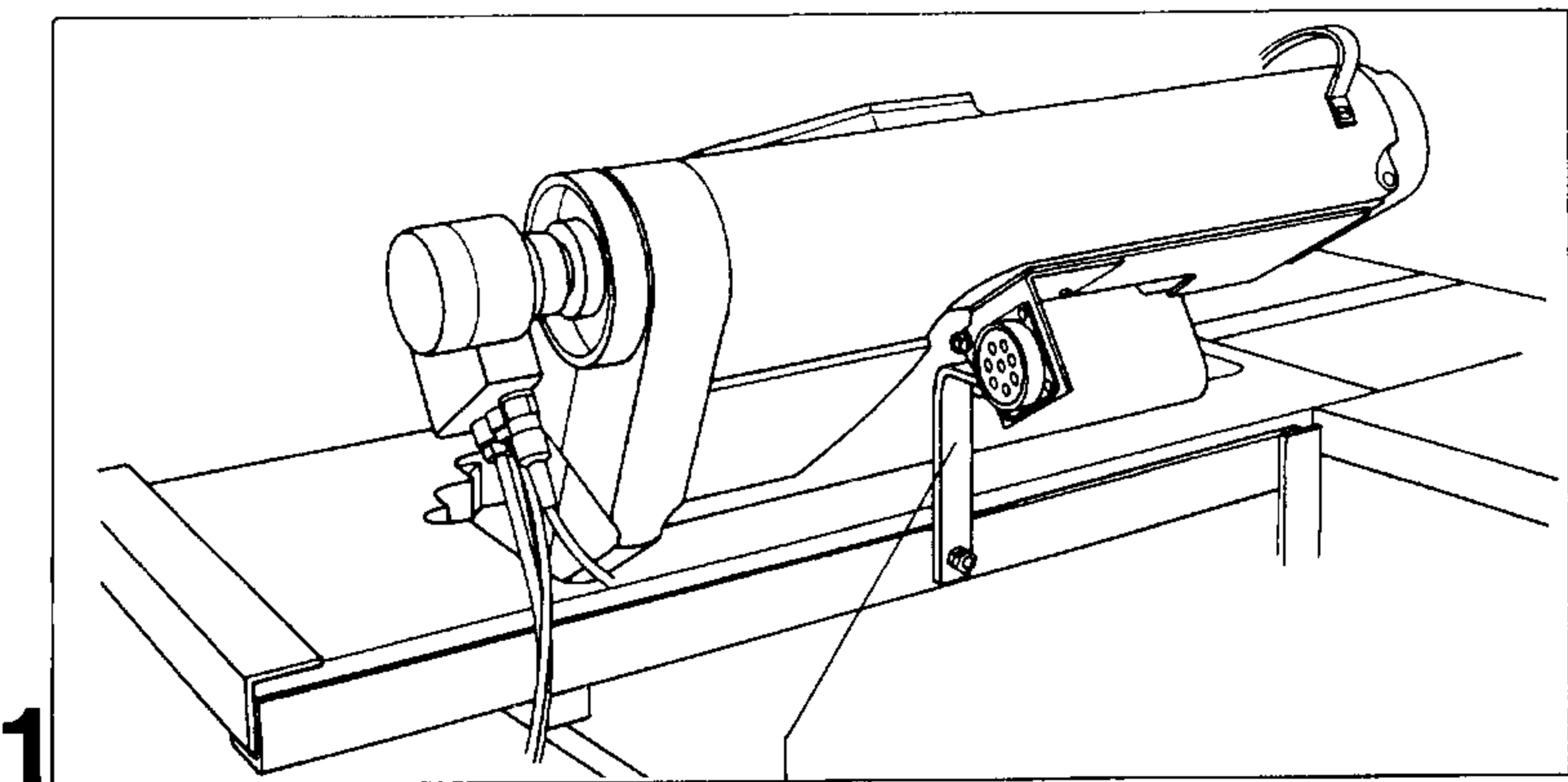
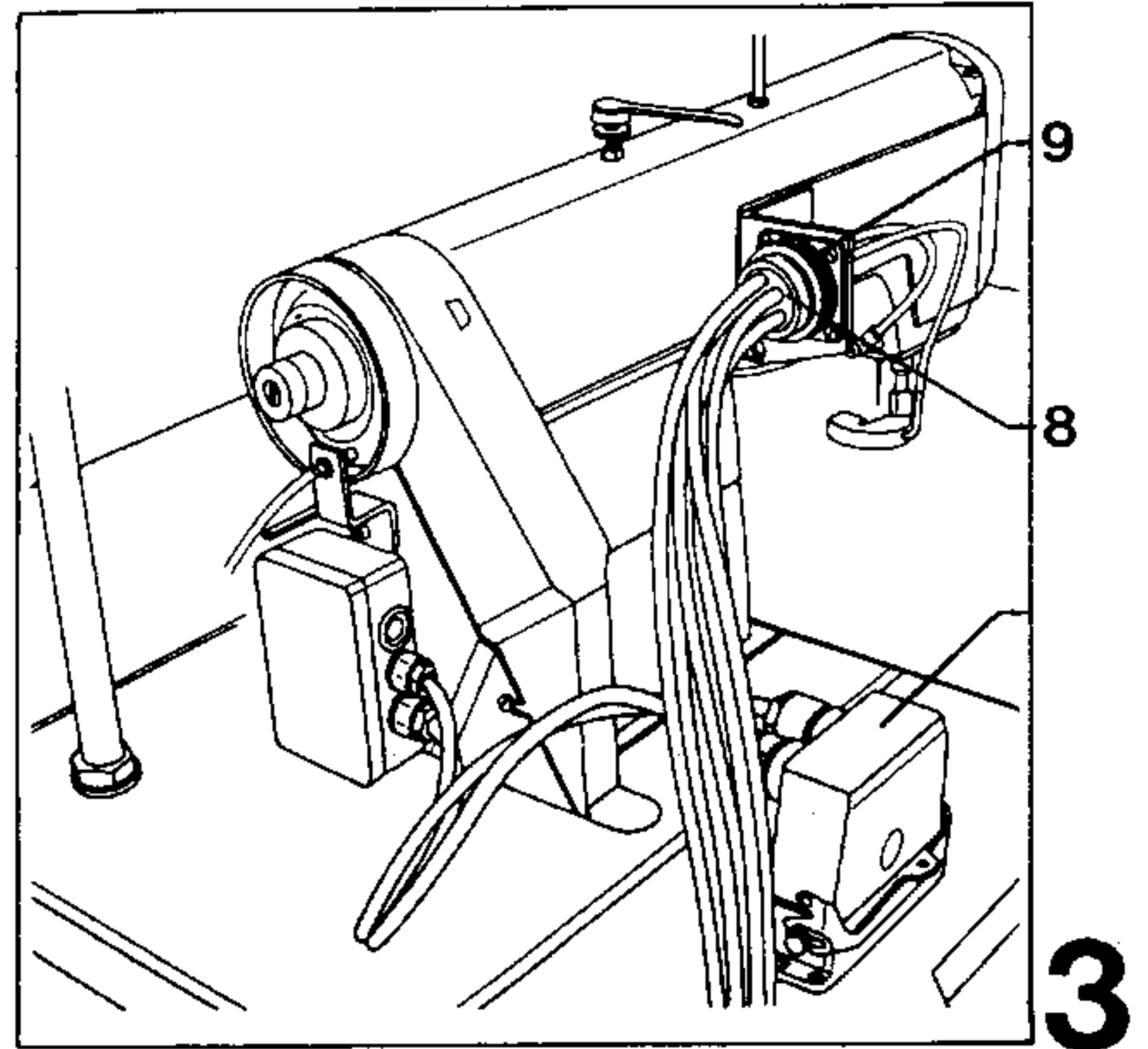
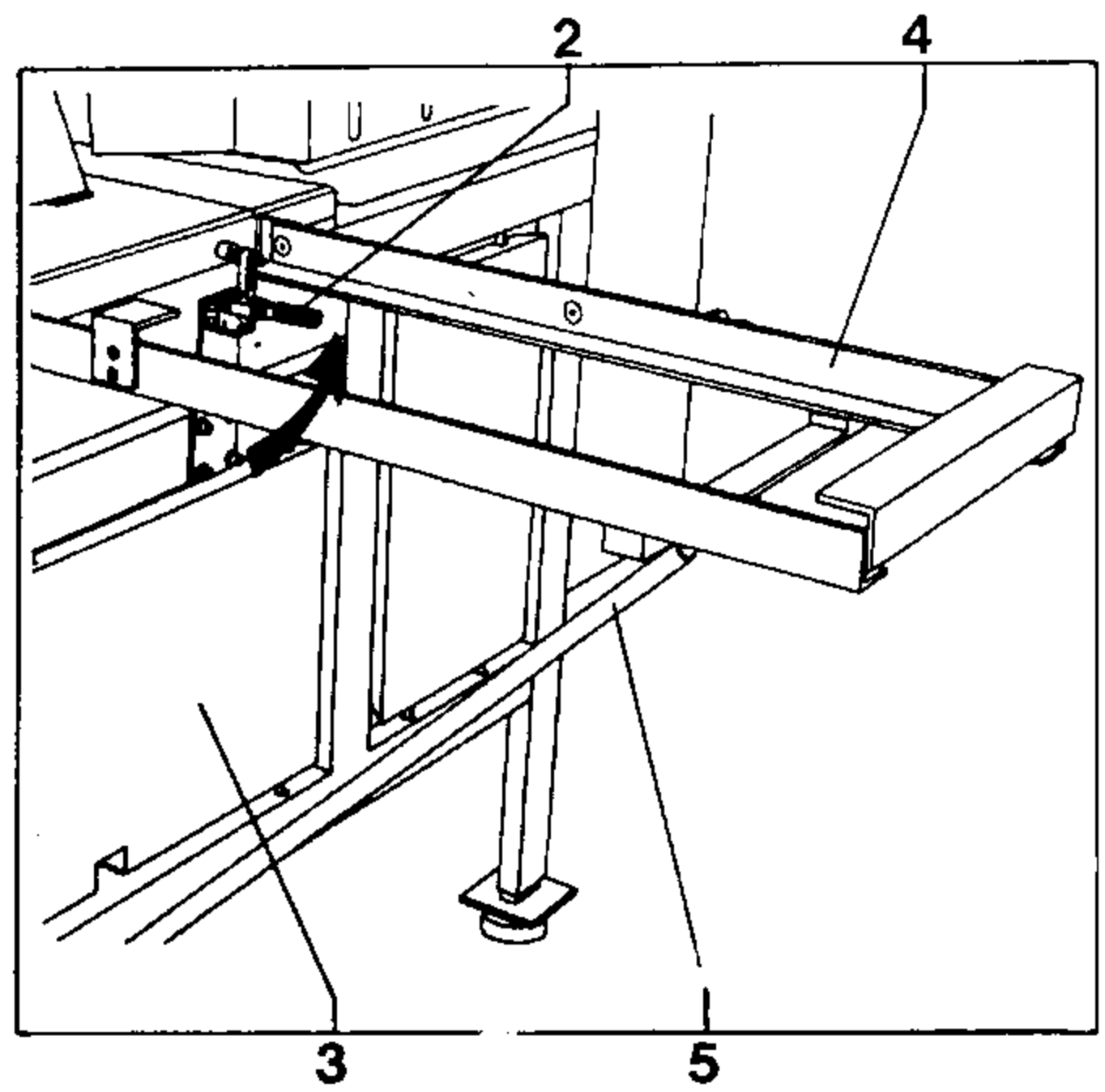
Mount cover panel 3 (Fig. 2).

Release support 5 and turn frame 4 downwards.

Connect pneumatic coupling 8 and tighten knurled sleeve 9.

Insert plug 7 (Fig. 3) and insert the pneumatic supply lines again in their connections.

Afterwards re-connect the compressed air and insert the mains plug.



41 Adjusting the presser foot

With the sewing machine in place the clearance between presser foot and cover plate must be 5 mm in the lowered position and 12 mm in the raised position.

Turn off the compressed air.

Remove arm cover 1 (Fig. 1).

Loosen screw 2.

Adjust the height of the presser bar so that there is a clearance of 5 mm between presser foot and cover plate. Make sure the air nozzle in the presser foot faces the needle.

In this position, tighten screw 2.

Turn on the compressed air again.

Loosen locknut 3 and turn adjusting screw 4 (Fig. 2) so that the clearance between presser foot and cover plate is 12 mm.

Afterwards tighten locknut 3 again.

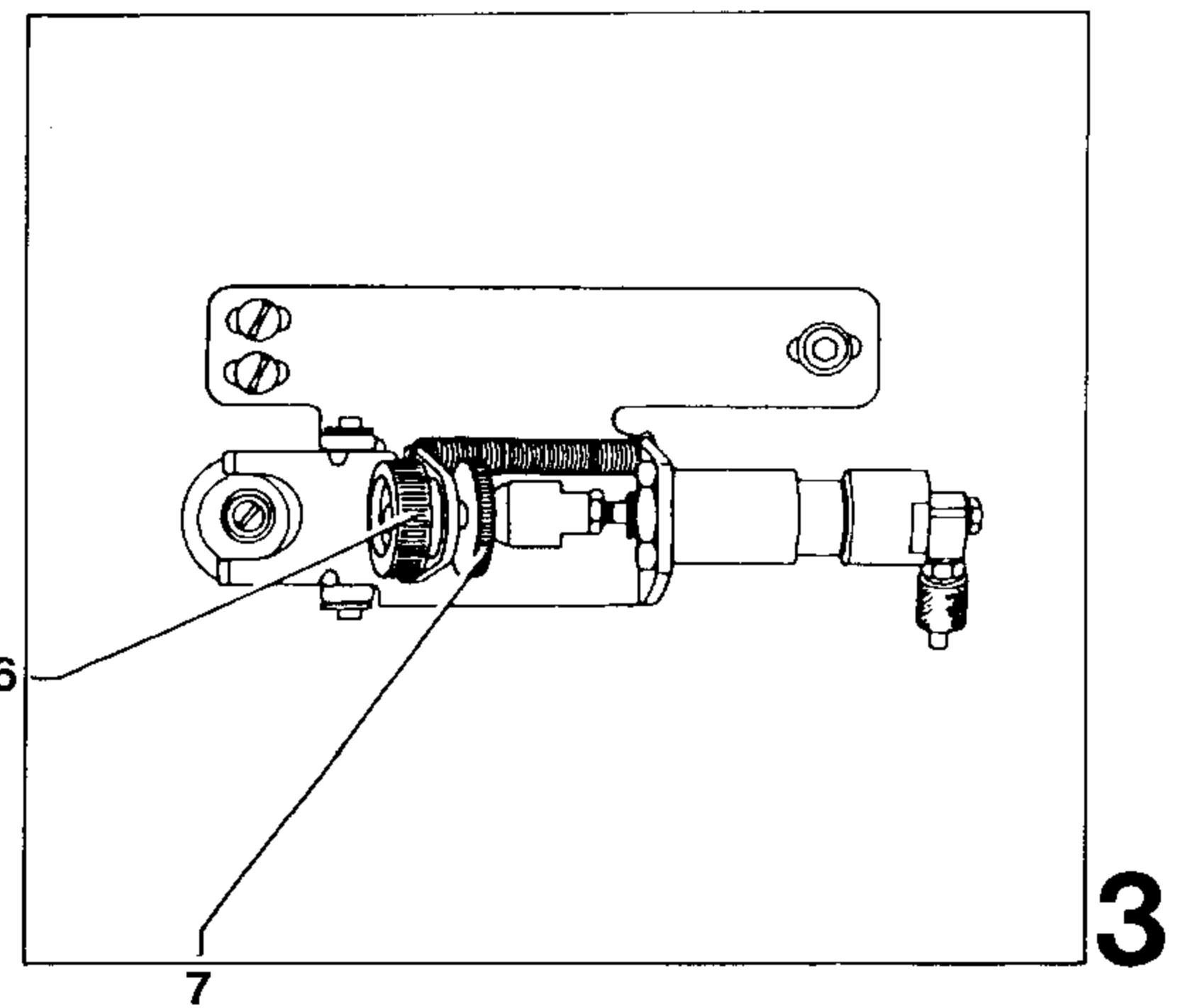
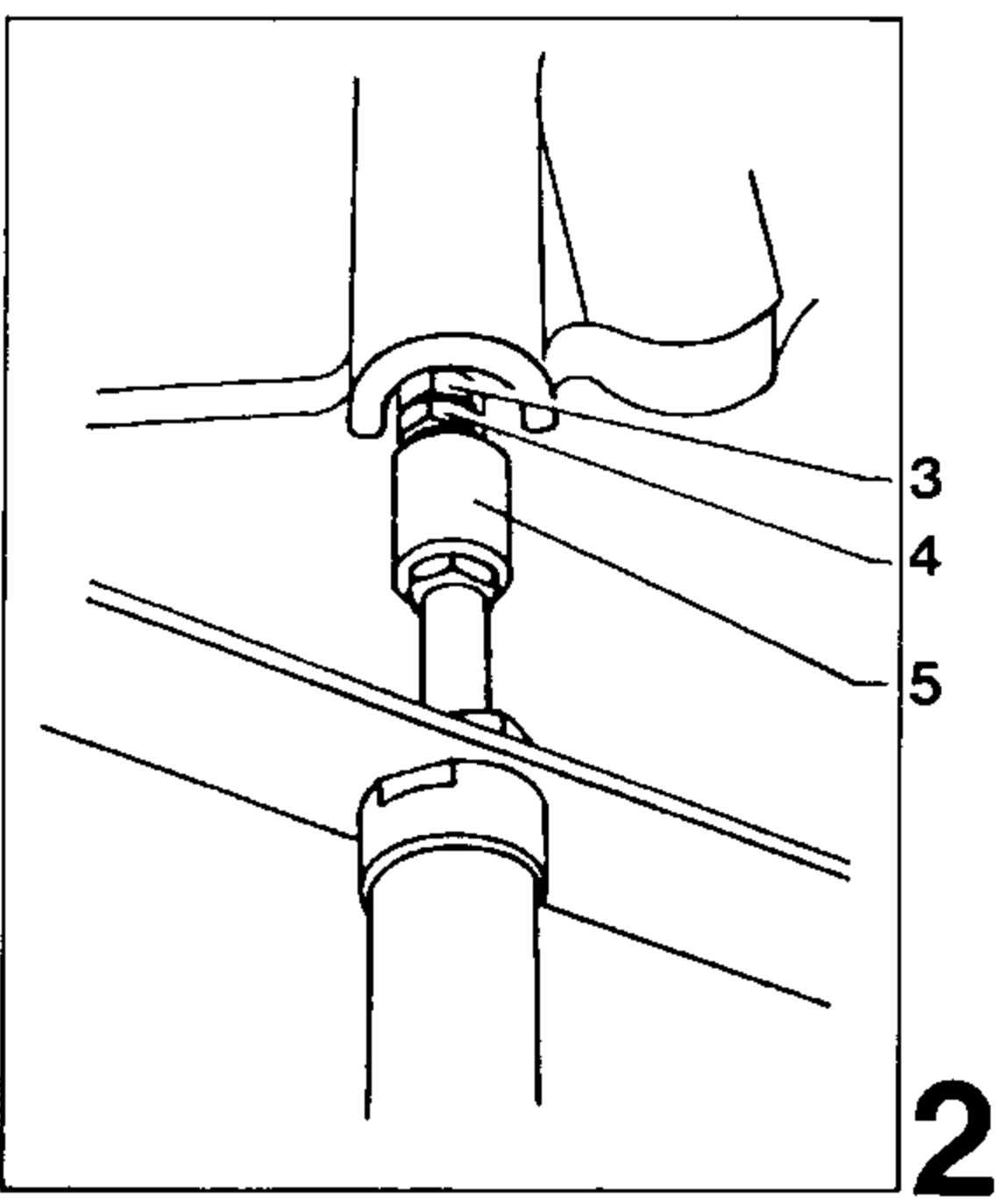
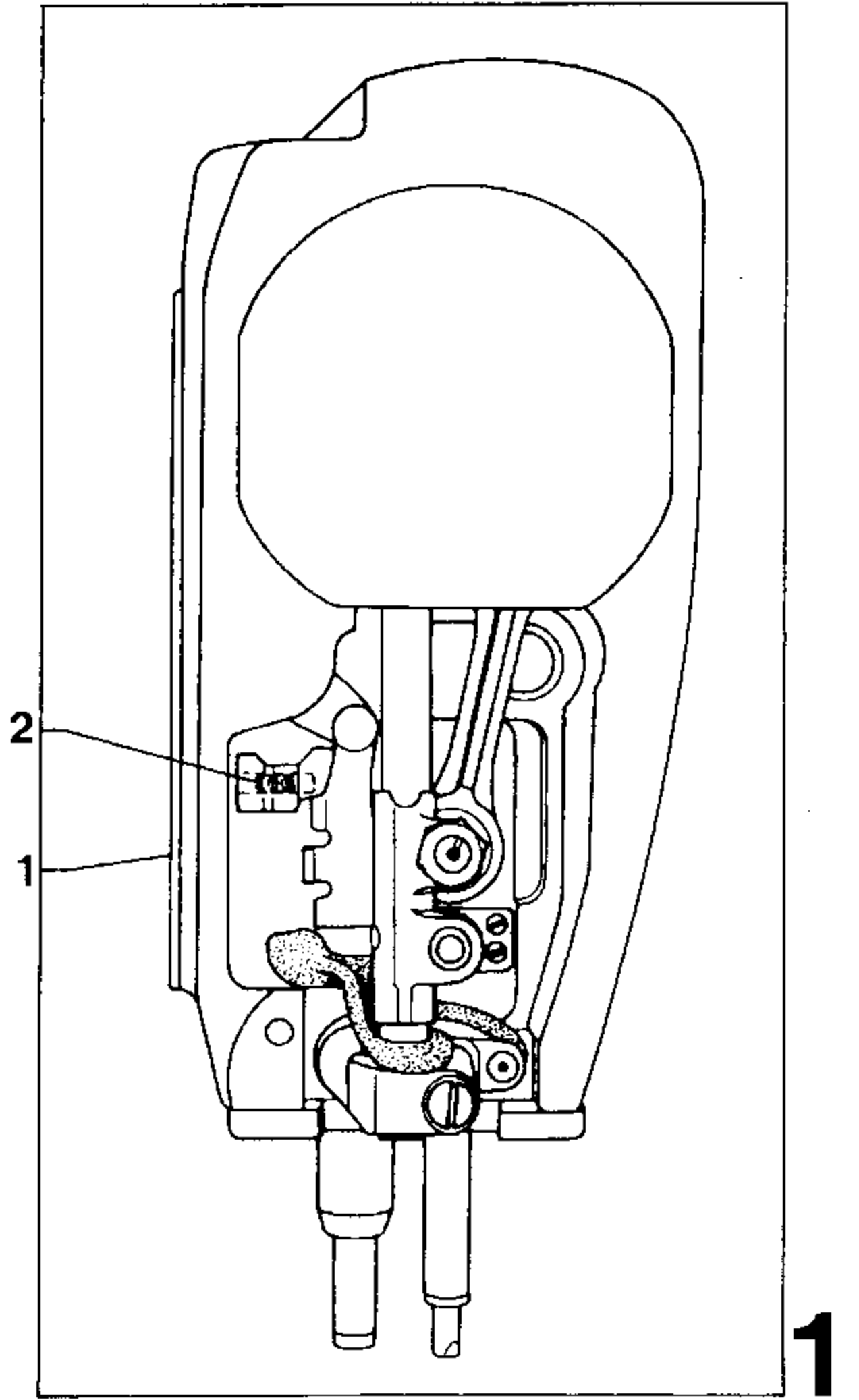
Finally, screw on the faceplate.

Note: With the presser foot lowered there must be a 2-mm distance between adjusting screw 4 and pressure piece 5.

42 Adjusting the secondary tension

The purpose of the secondary tension is to increase the tension of the needle thread at certain seam sections.

Loosen milled nut 6 (Fig. 3) and adjust milled screw 7 as considered necessary according to the sewing results. To increase the tension, turn this screw anti-clockwise, to decrease, turn it clockwise.



43 Adjusting the thread puller

When the sewing cycle is completed, thread puller 1 (Fig. 1) must pull off enough thread for the take-up lever to move to its top position.

Loosen the two screws 2 and position cylinder bracket 3 so that the thread puller pulls off enough thread.

Tighten the screws 2 again.

44 Adjusting the bobbin winder

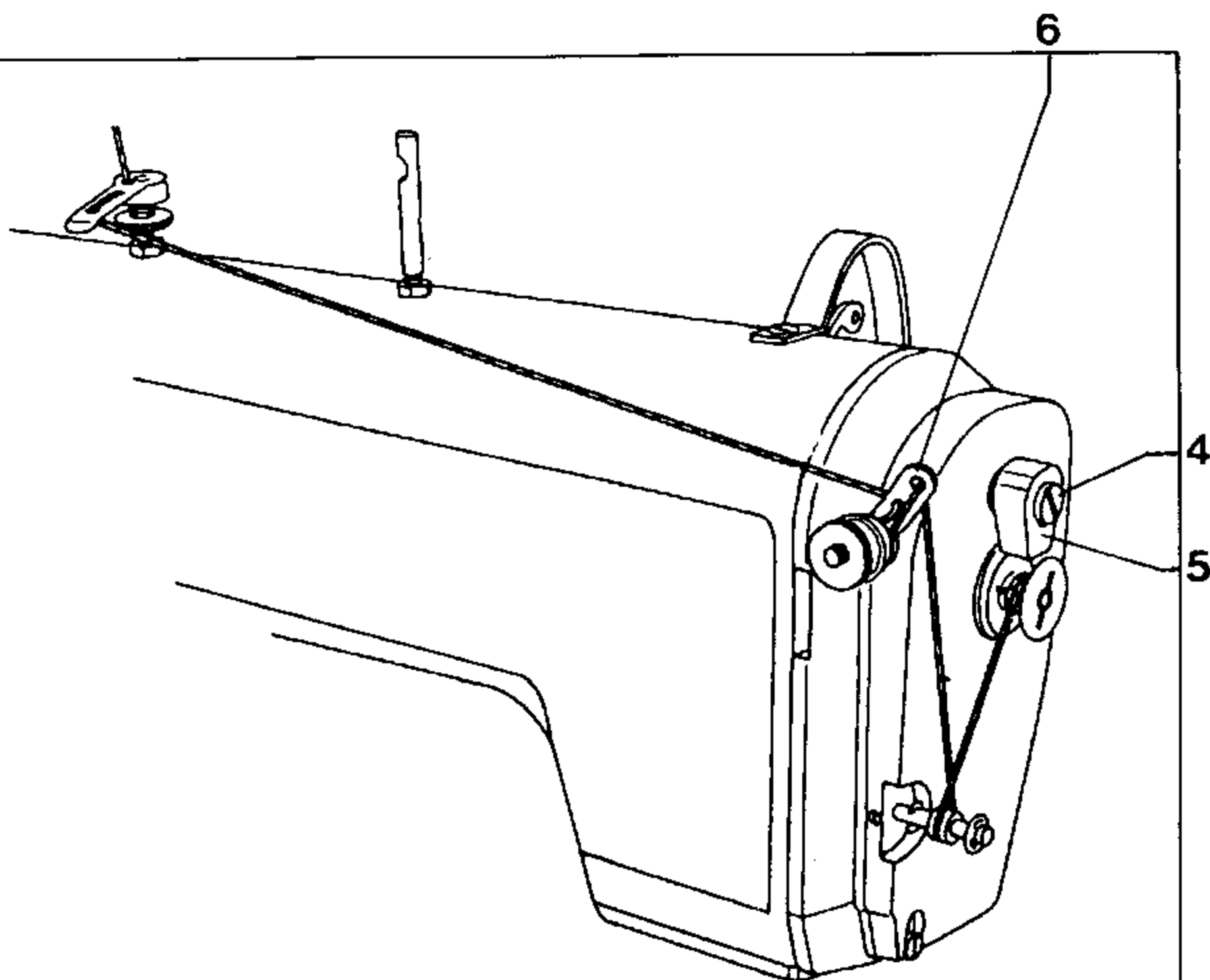
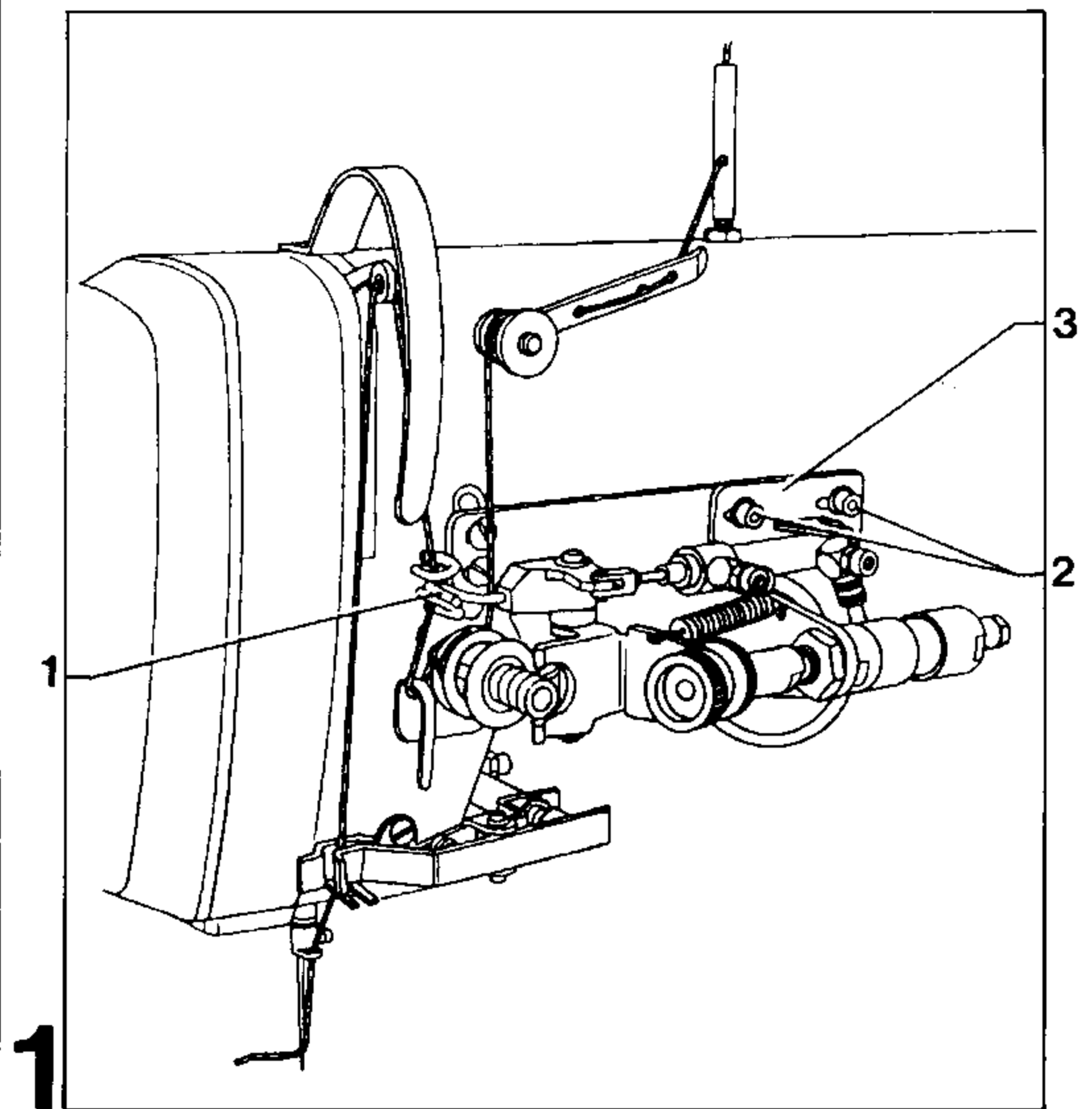
The bobbin winder must switch itself off when the wound thread is roughly 1 mm from the bobbin rim.

Set the amount of thread to be wound by loosening screw 4 (Fig. 2) and positioning stop 5.

Set the stop higher for more thread and lower for less thread.

After adjusting to the required amount tighten screw 4.

If the bobbin is filled unevenly, position thread guide 6 accordingly.



After completion of the sewing cycle the machine must position so that there is a play of 1 to 2 mm between the roller of lever 1 (Fig. 1) and the cutout in the control cam.

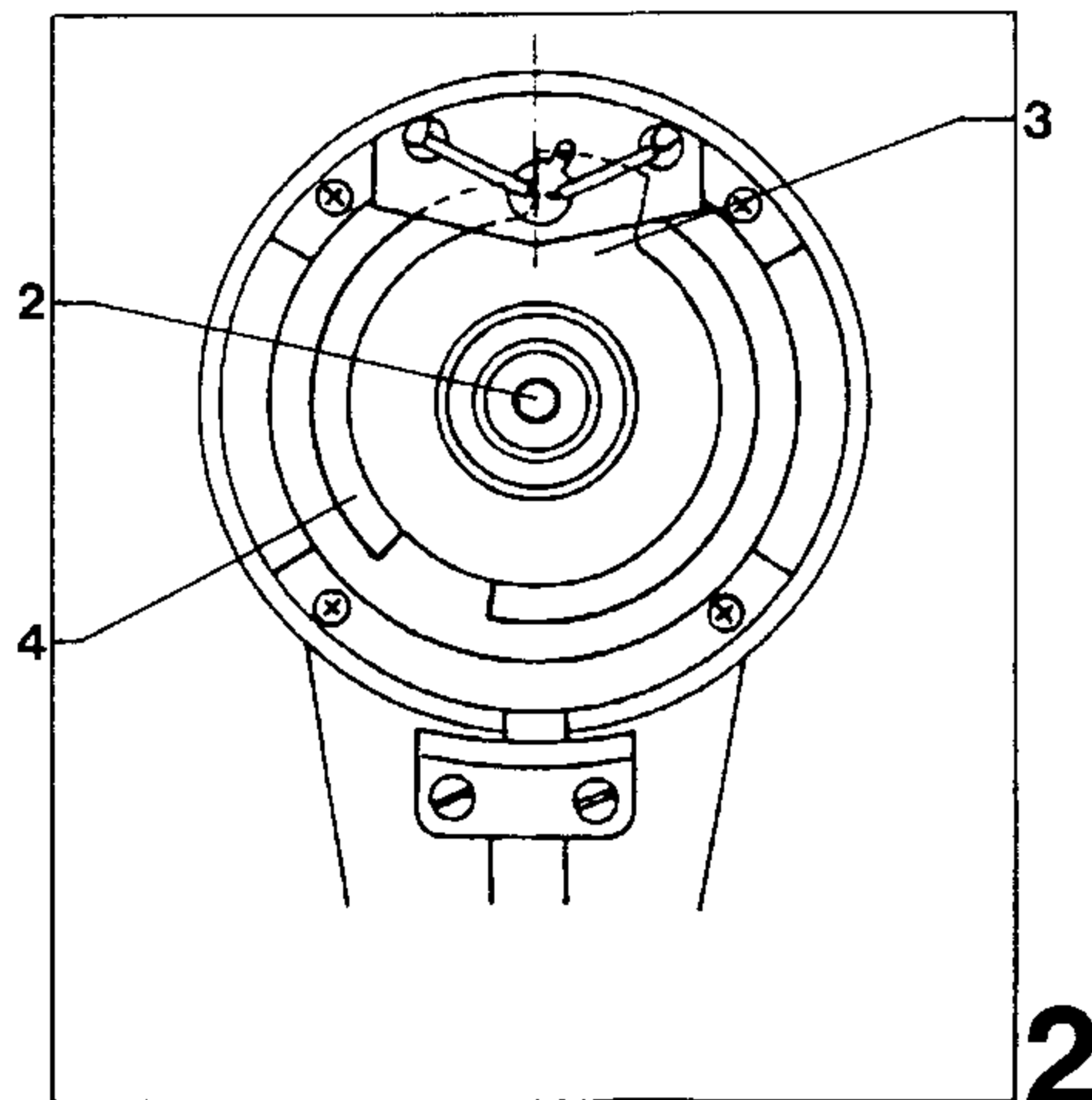
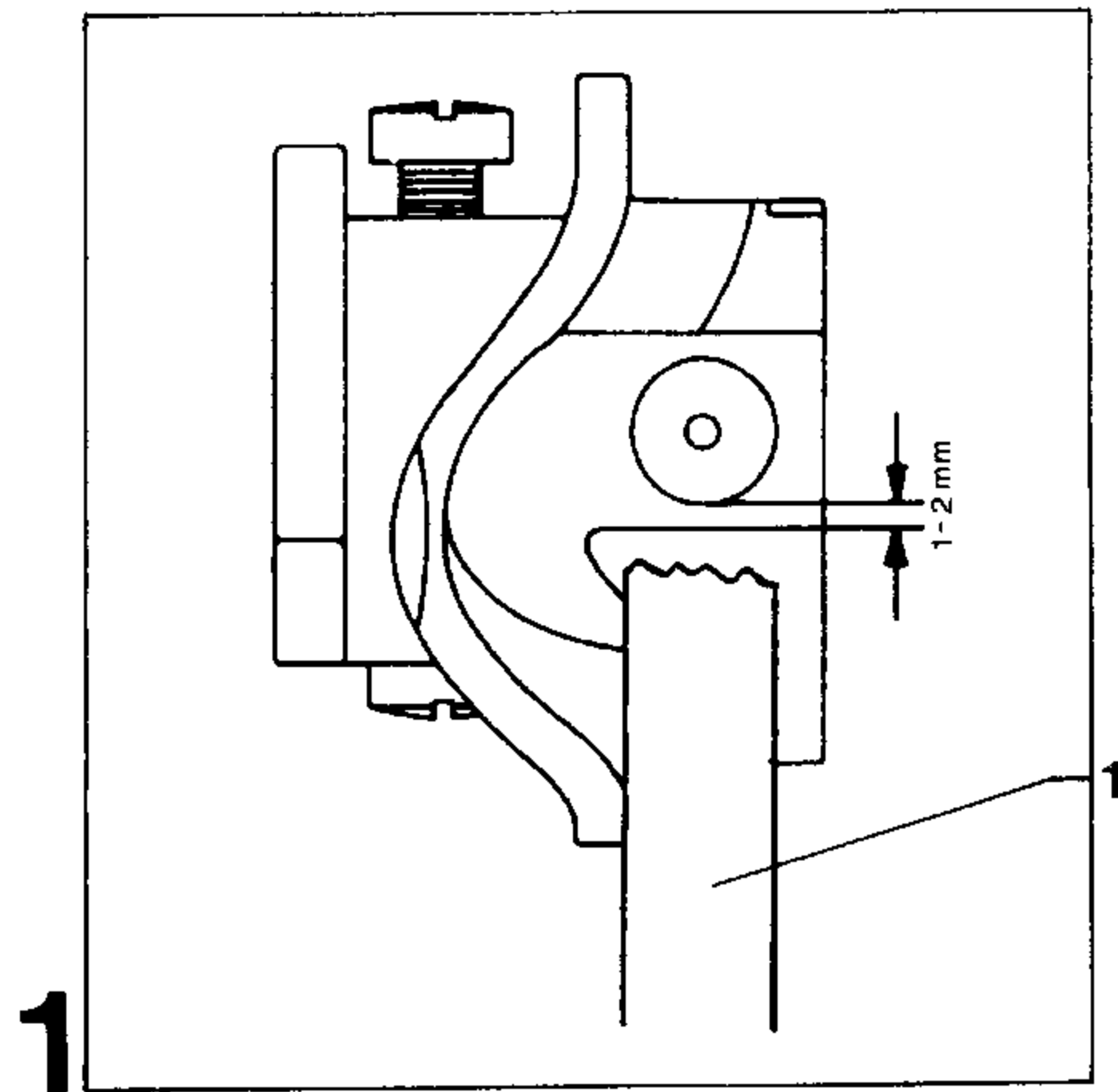
Place a piece of material under the sewing jig and press button "START",
- start sewing.

On completion of the sewing cycle the machine stops at its basic position.

Push the roller lever forwards by hand.

Turn the balance wheel backwards and check that there is a clearance of 1 to 2 mm between the roller of lever 1 and the cutout in the control cam.

To adjust, loosen screw 2 (Fig. 2) by about half a turn and turn mask 3 accordingly. (When doing so, make sure that slotted mask 4 is not moved out of place).



46 Adjusting the switch vane for the intermittent workpiece feed

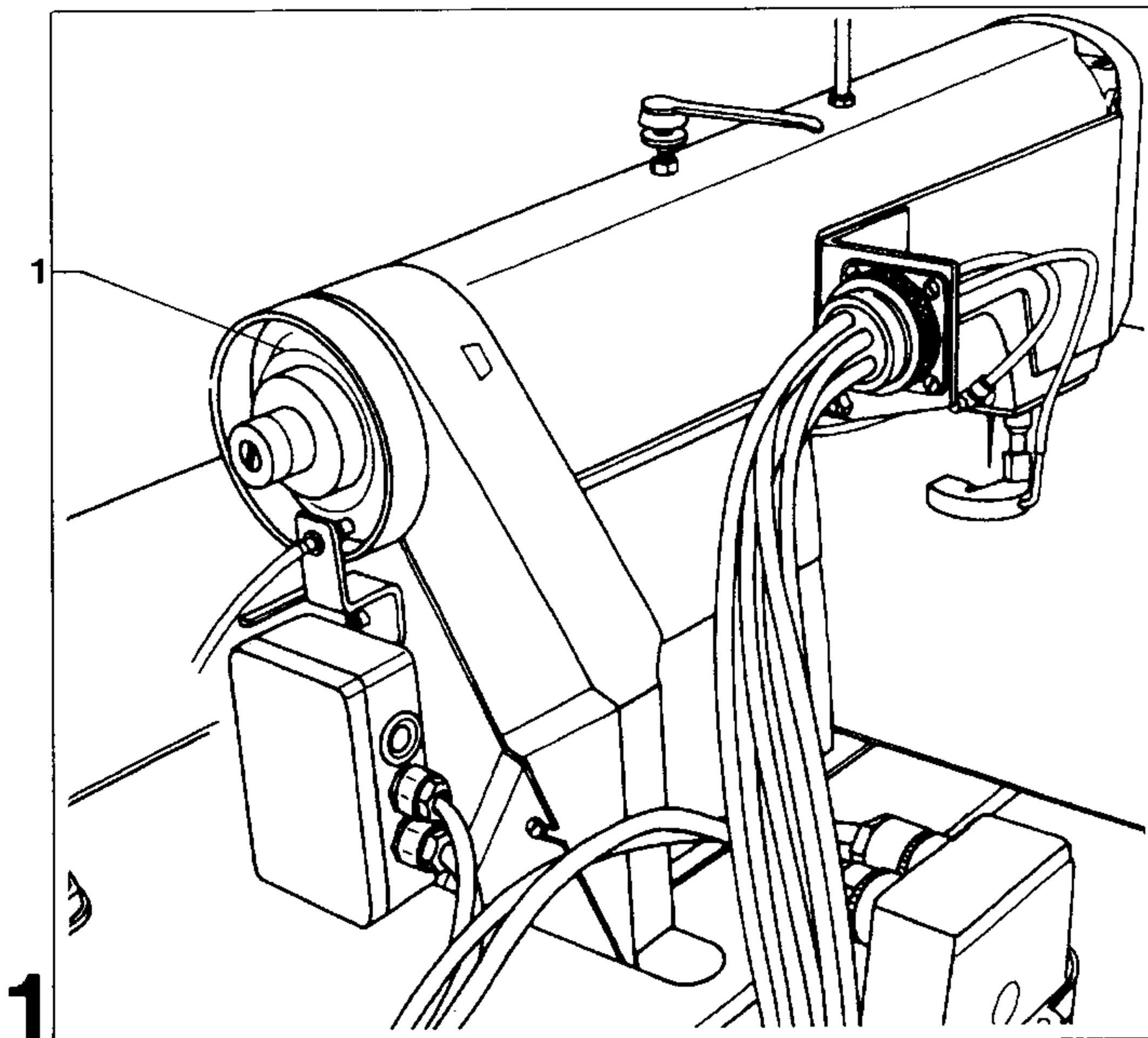
While the needle is in the workpiece the sewing jig must not move.

Pull the thread out of the needle.
Place a piece of paper underneath the sewing jig.

Press keys "INP", [7], [4] and [0].
Thread monitor switched off.

Press keys "MAN" and "SEW",
- sewing is started.

Check the needle penetrations on the paper.
If they are slightly elongated, correct the position of switch vane 1 (Fig. 1).



47 Verifying the service functions

In basic position of the "Service" mode all service functions and their respective numbers can be displayed by pressing key "ENTER".

Switch on the machine.

Press key "SERV".

Press key "ENTER" repeatedly to have the service functions displayed.

List of service functions

Basic position

- | | |
|---|---------------------------|
| 1 | Setting/resetting outputs |
| 2 | Stepping motor for X-axis |
| 3 | Stepping motor for Y-axis |
| 4 | Sewing motor |
| 5 | Thread trimming sequence |
| 6 | Display of inputs |

By pressing a key for another mode, the "Service" mode is finished.

47.1 Service function "I"
(Setting/resetting of outputs)

Outputs can be set or reset. Both backtacking and ready signals are verified. The output to be switched is input with a three-digit number.

The first digit always is a "1" when setting an output, or an "0" when resetting an output. For the last two digits please refer to the following list:

Output	Name	Code
Y1	Presser foot down	* 08
Y2	Thread trimming on	* 09
Y3	Air blast needle cooling on	* 10
Y5	Thread puller function	* 04
Y10	Out 0 (zigzag) on	* 40
Y11	Out 1 (thread tension increase) on	* 41
	Out 2 on	* 42
	Out 3 on	* 43
	Out 4 on	* 44
	Out 5 on	* 45
	Out 6 on	* 46
	Out 7 on	* 47
Y20.1	Pocket plate backwards	* 12
Y20.2	Pocket plate forwards	* 11
Y21.1	Retainer upwards	* 14
Y21.2	Retainer downwards	* 13
K22	Retainer solenoid folder on	* 15
Y23.1	Folder and table upwards	* 17
Y23.2	Folder and table downwards	* 16
Y24.1	Folder slide backwards	* 19
Y24.2	Folder slide forwards	* 18
Y25	Positioning pin upwards	* 20
Y26.1	Jig downwards	* 22
Y26.2	Jig upwards	* 21
Y27.1	Jig feed forwards	* 00
Y27.2	Jig feed backwards	* 23
Y28.1	Indexing system sewing on	* 01
Y28.2	Indexing system feed on	* 02
Y30	Terminal strip folder forwards	* 05
Y40	Fabric feed roller cover up-wards	* 32
Y41	Puller downwards	* 33
Y42	Stacker forwards	* 34
Y43	Air blast stacker on	* 35
K44	Fabric feed roller on	* 36
Y45	Air blast fabric feed assistance on	* 06
K60	Main contactor on	* 37
H101	Lamp "START" on	* 38
H102	Lamp "STOP" on	* 39
H103	Lamp "MANUAL" on	* 24
H104	Lamp "AUTOMATIC" on	* 25
H105	Lamp "CONTROL-ON" on	* 26
H106	Lamp "SUPPRESS" on	* 27
SGRD	Carriage in basic position (only signal)	* 28

47.2 Service function "2"
(Stepping motor for X-axis)

By pressing key "FWD", the stepping motor of the X-axis is controlled in positive direction and by pressing key "BACK" in negative direction. Backtacking actions are taken into account. If the thread is not trimmed, it can be cut when key "NEEDLE POSITION" is pressed. If the needle is not positioned at top dead centre, it can be positioned by pressing key "NEEDLE POSITION". But in doing so, make sure that the needle passage is unobstructed.

47.3 Service function "3"
(Stepping motor for Y-axis)

The same as described under service function "2" applies here with regard to the Y-axis.

47.4 Service function "4"
(Sewing motor)

The sewing motor can be started at a preselected speed by pressing key "START" and is stopped when key "STOP" is pressed.

Press keys "SERV" and **4**,

At keys **0** to **9** the required sewing speed can be preselected in 15 steps. (Speed is indicated in percentage).

Step 1 = key **1** = 20 %

Step 15 = key **1** + **5** = 100 %

From step 1 to 3 the speed changes by 10 % each, and from step 4 to 15 by 5 % each.

Press key "START",
- sewing motor runs.

Press key "STOP",
- sewing motor stops.

In doing so, make sure the needle passage is unobstructed.

47.5 Service function "5"
(Thread trimming sequence)

The thread trimming action can be checked by pressing key "START".
Press keys "SERV" and **5**,
Press key "START",
- thread trimming action takes place.
In doing so, make sure the needle passage is unobstructed.

47.6 Service function "6"
(Display of inputs)

The display shows 24 input terminals at a time. The display appears in three groups of eight, starting at the left with terminal 1. Connected inputs (LED lights up) are indicated with a "1" and disconnected inputs with an "0". Terminals not used as inputs are marked with an "*". The display is made continuously, i. e. condition changes at the input are indicated without delay. When the function concerned is triggered the inputs of the M-OX (A 21) are indicated first.

By actuating "ENTER" another plug-in position can be selected. M-OX (A 21) is followed by M-IN (A 25), M-OE (A 26) and M-DE (A 27). Then the sequence starts anew.

48.1 Alignment of runners and guide rollers

Adjust the height of runner 1 (Fig. 1) in such a way that guide 2 is positioned at right angles to the mounting bracket. There must not be any play between guide rollers 3 and the runner.

Loosen the three screws 4 and the two screws 5 until runner 1 and both roller brackets 6 can be moved against resistance.

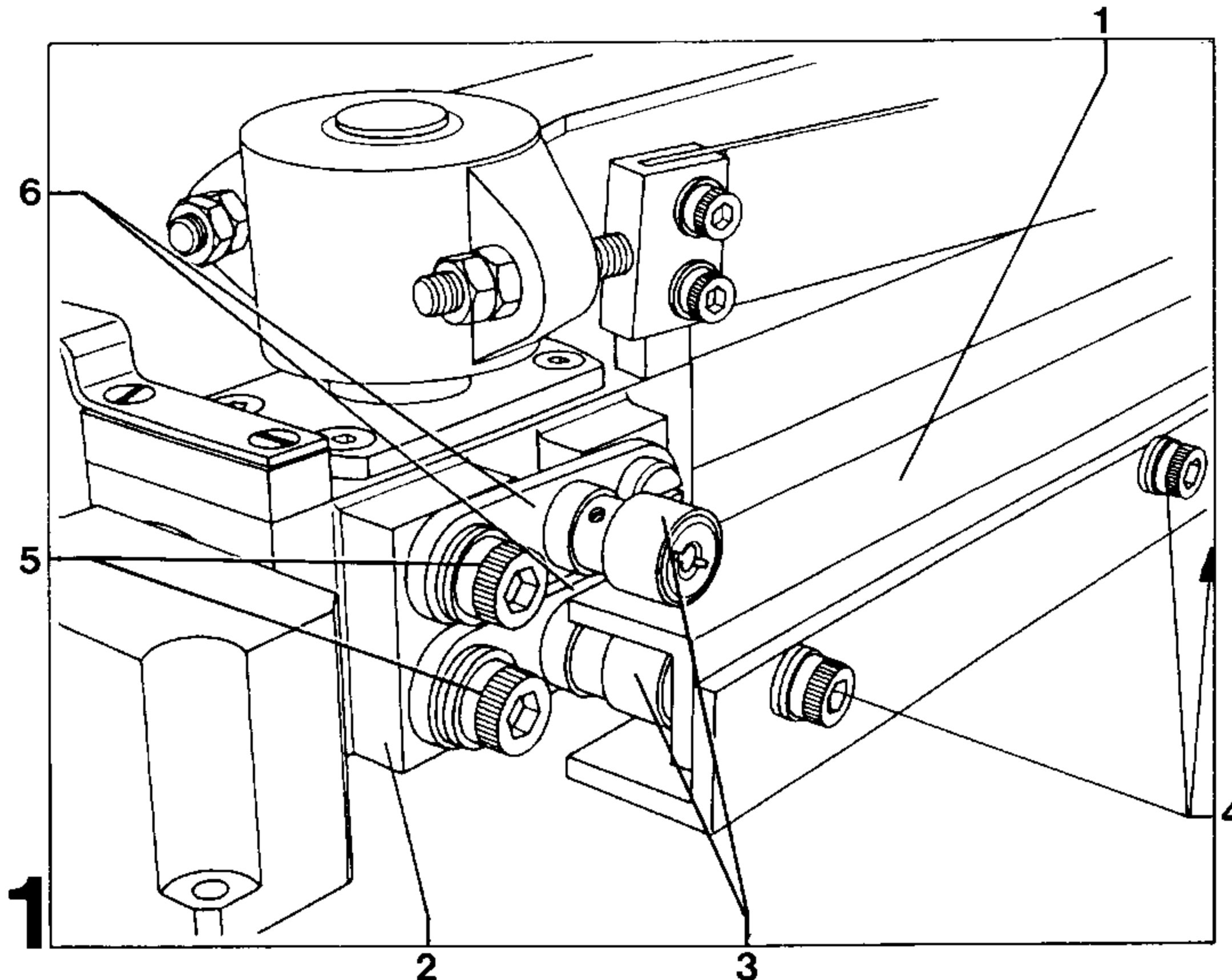
Align runner 1 throughout its length in such a way that guide 2 is positioned at right angles to the mounting bracket.

Tighten screws 4.

Maintaining the right-angled position of guide 2, adjust the two roller brackets 6 in such a way that there is no play between guide rollers 3 and the runner.

In this position, tighten screws 5.

Make this adjustment for both the X- and the Y-axis.



48.2 Setting the ready point

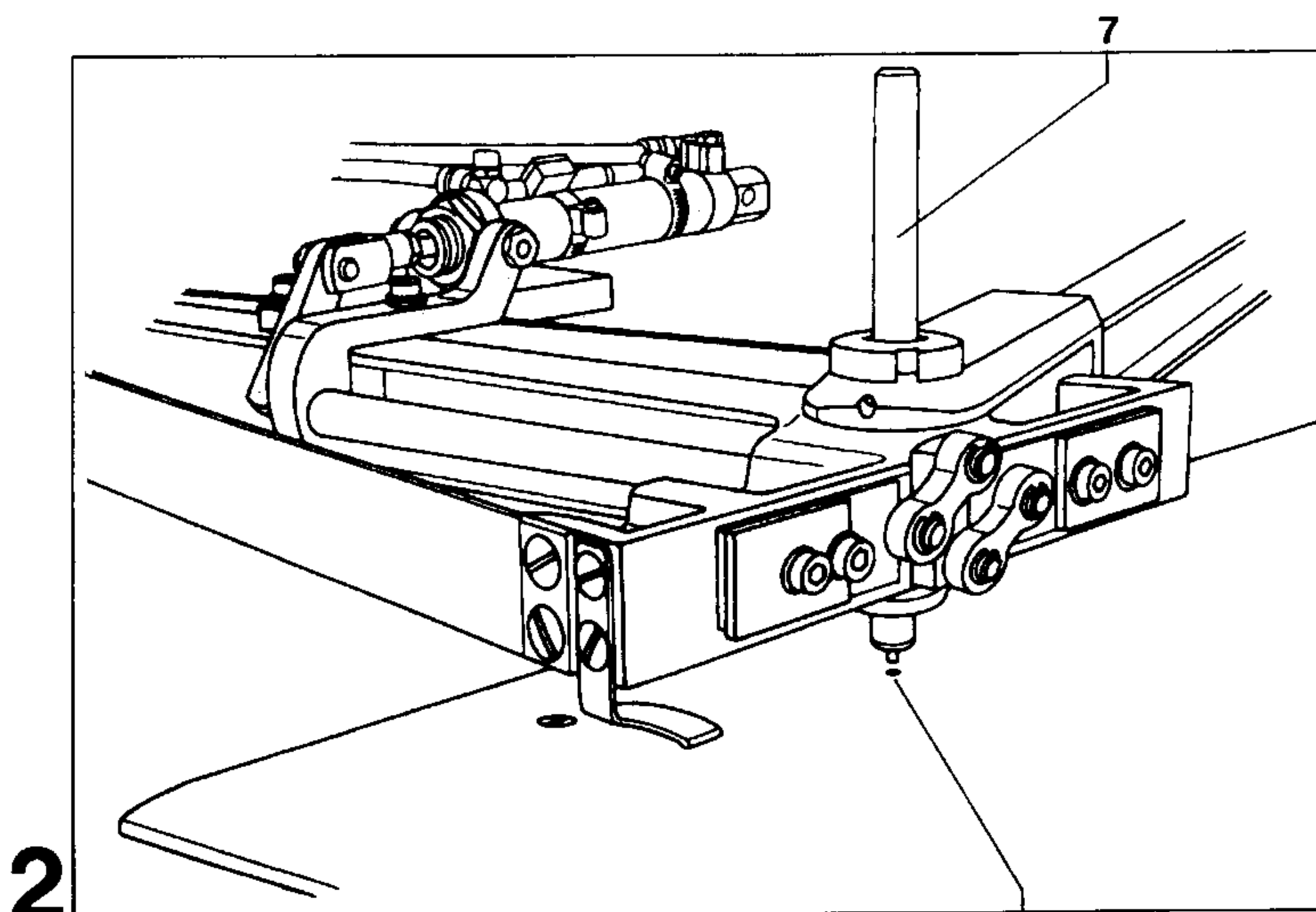
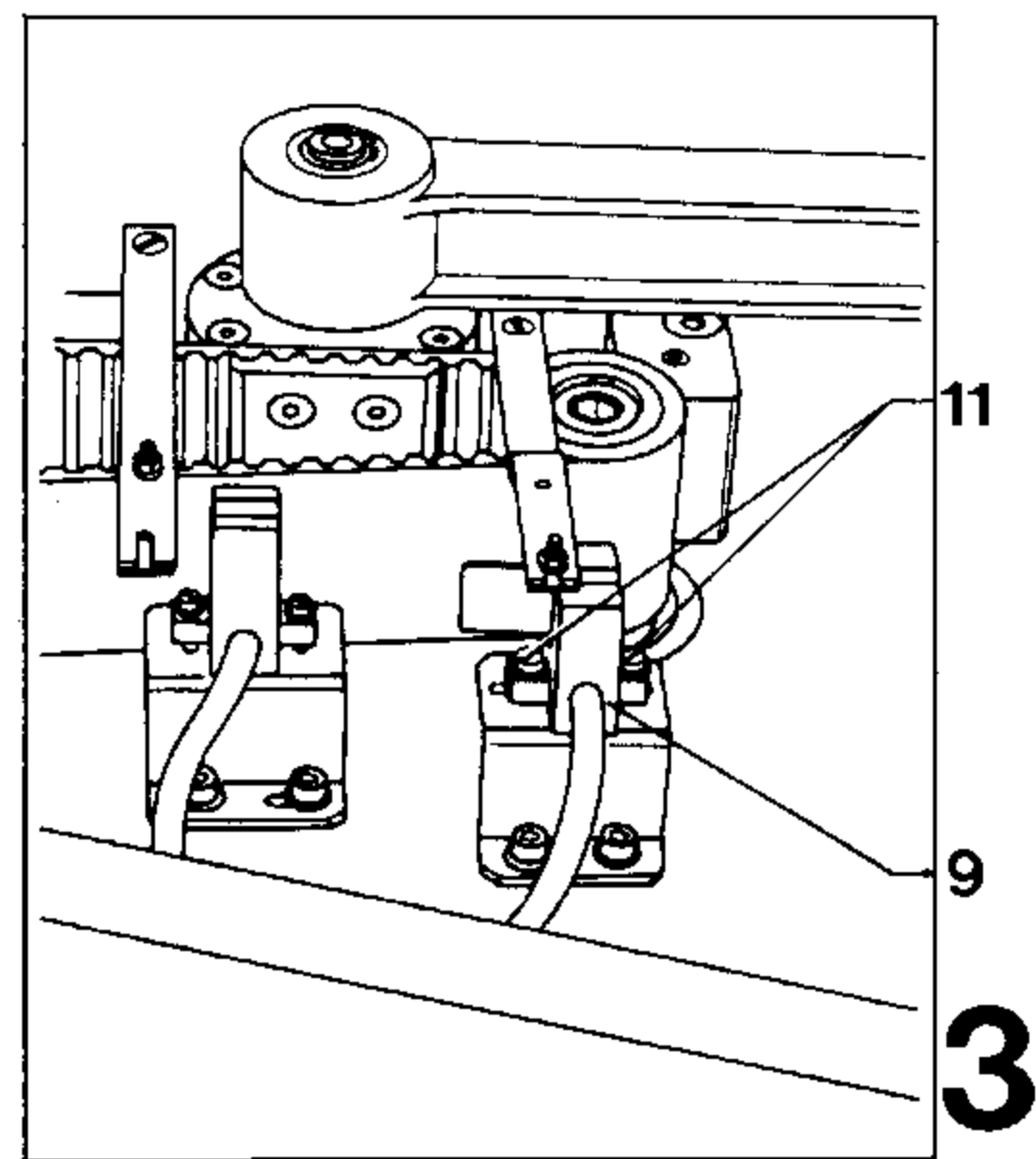
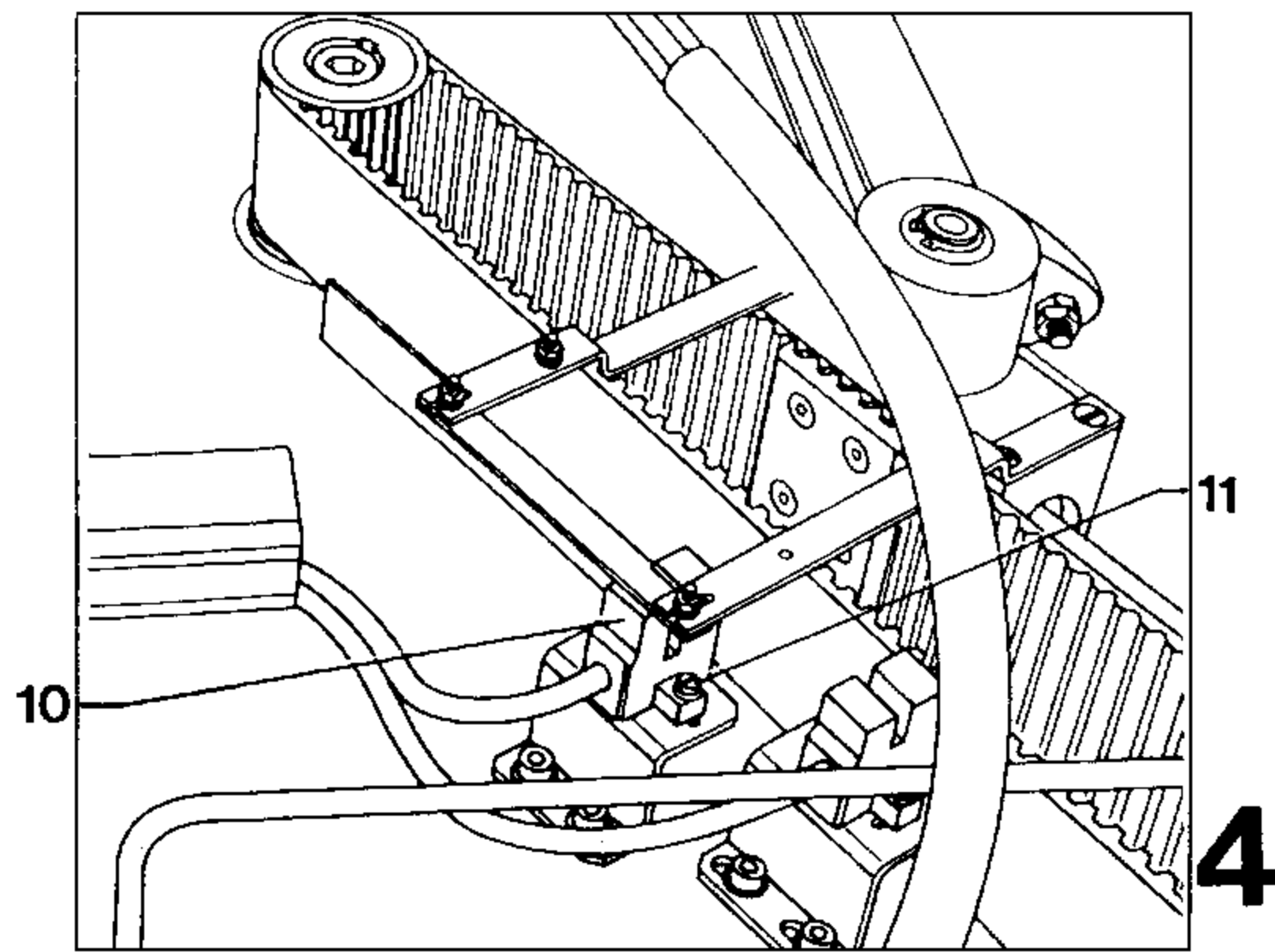
With the sewing jig in basic position, the pin of adjusting gauge 7 (Fig. 2) inserted in the hole of the control linkage must fit into adjusting hole 8.

Switch on the machine.
Press key "ORG",
- sewing jig in basic position.

Insert adjusting gauge 1 in hole of control linkage.

If the pin of the adjusting gauge does not fit into adjusting hole 8, loosen screws 11 and re-position proximity switches 9 (Fig. 3) or 10 (Fig. 4) accordingly.

After re-positioning one of the proximity switches confirm by pressing "ORG" again,
- the sewing jig moves to the corrected basic position.



49 Alignment of the jig feed linkage

In its left and right end position the sewing jig must be at the same distance from machine table and folding table respectively.

Press keys "SERV" and **1**.

Press keys **1**, **2**, **1** and "START",
- sewing jig upwards.

Measure the distance between bearing 1 (Fig. 1) and the machine table.

Remove pneumatic tube No. 15 from the feed cylinder and push the sewing jig under the folder by hand.

In this position, measure the distance between bearing 1 and folding table.

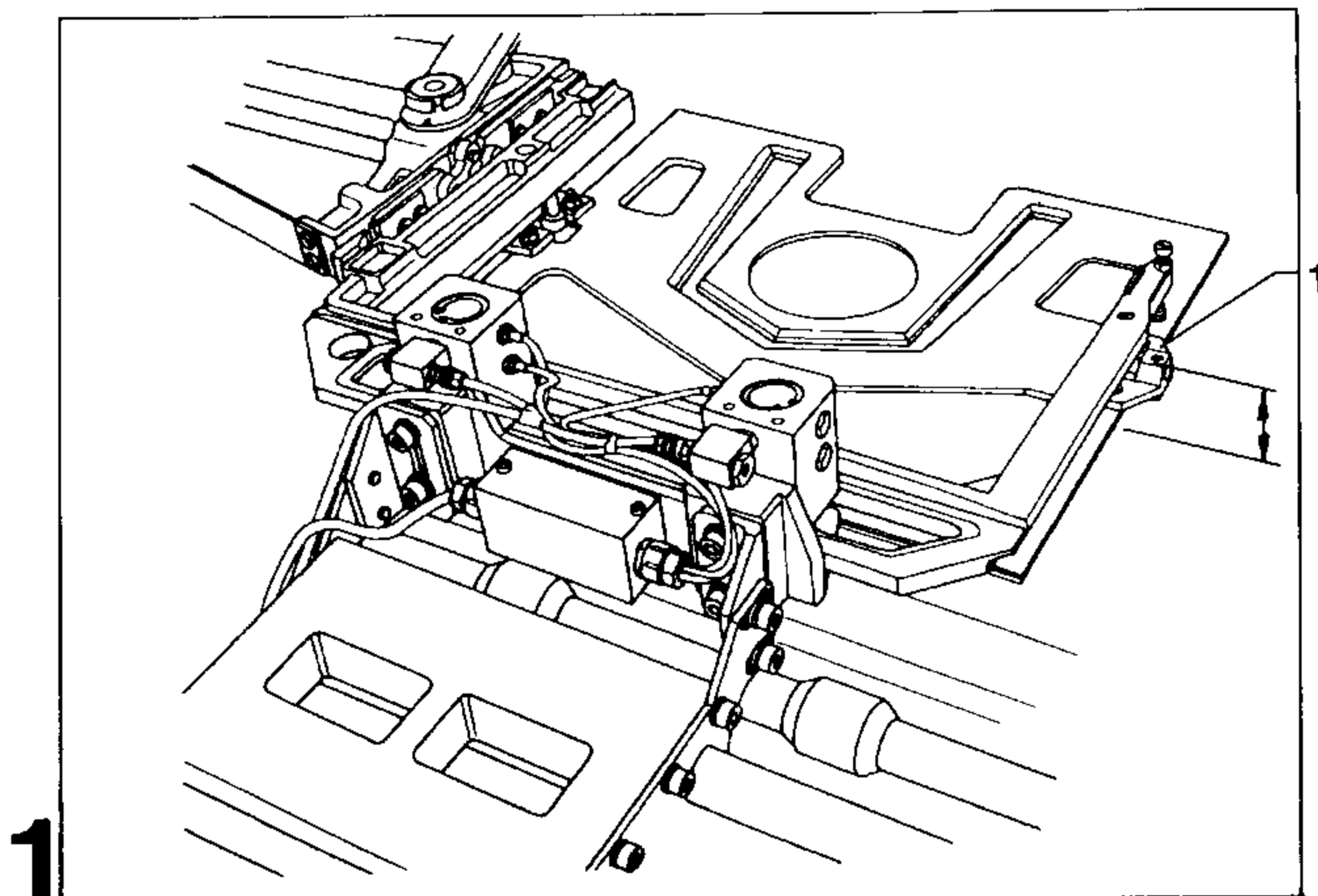
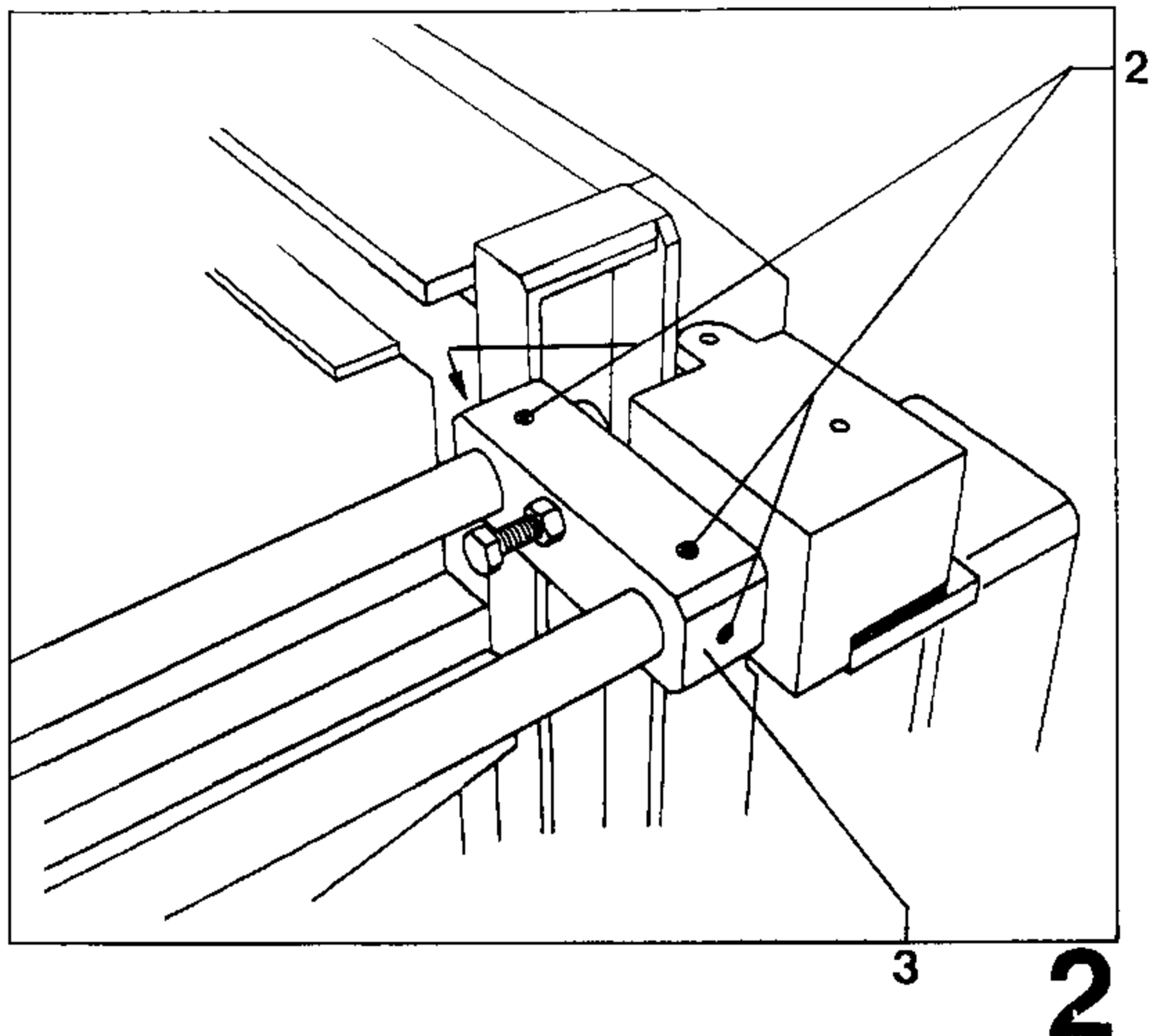
If the two dimensions deviate from each other loosen screws 2 (Fig. 2) and swing bar 3 on its shaft upwards or downwards, as required.

Tighten screws 2 and check this adjustment.

Afterwards return the sewing jig to basic position and refit the pneumatic tube to the feed cylinder.

Press keys **1**, **2**, **2** and "START",
- sewing jig downwards.

To leave the "Service" mode, press keys "MAN" or "AUTO".



With a workpiece placed underneath it, sewing jig frame 1 (Fig. 1) must bear horizontally against the index mounting on the control linkage. Also the sewing jig frame must not strike anywhere when moving to the feed index mounting. At jig indexing "Index feed" - "Index sewing", the sewing jig must not move.

Loosen the four screws 2 (Fig. 1) and the four screws 3 until the index mounting can be shifted against resistance.

Align index bracket 4 in such a way that jig frame 1 is positioned horizontally. Also note that the loading surface of the index bracket is positioned horizontally.

In this position, tighten screws 2 and 3.

Loosen two-hole nut 5 and the lock nut on the plunger of the feed cylinder.

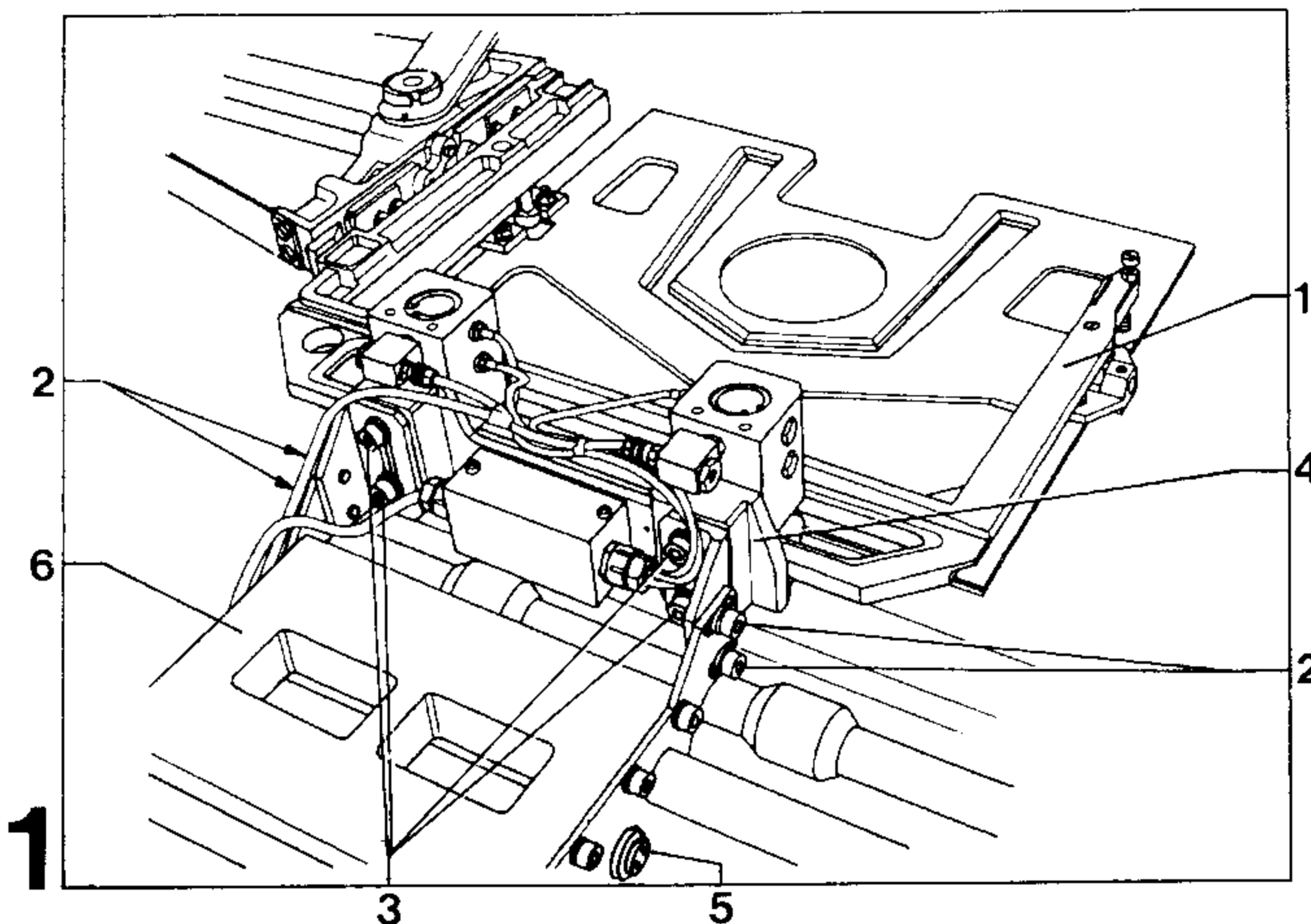
Move feed carriage 6 in such a way that the jig frame rests against the index mounting on the control linkage.

Making sure that the feed cylinder is not displaced tighten two-hole nut 5 and the lock nut.

By actuating keys "FWD" and "BACK" alternately, check to see whether the sewing jig moves when the index changes.

To correct, loosen the four screws 2 and move index bracket 4 accordingly.

Tighten screws 2 afterwards.



51 Alignment of the swing jig

The sewing jig must be aligned in such a way that at no time does the needle strike the edges of the jig slot during the sewing sequence.

Place a piece of fabric under the sewing jig.

Press key "FWD" until the sewing jig has moved with its sewing slot underneath the needle.

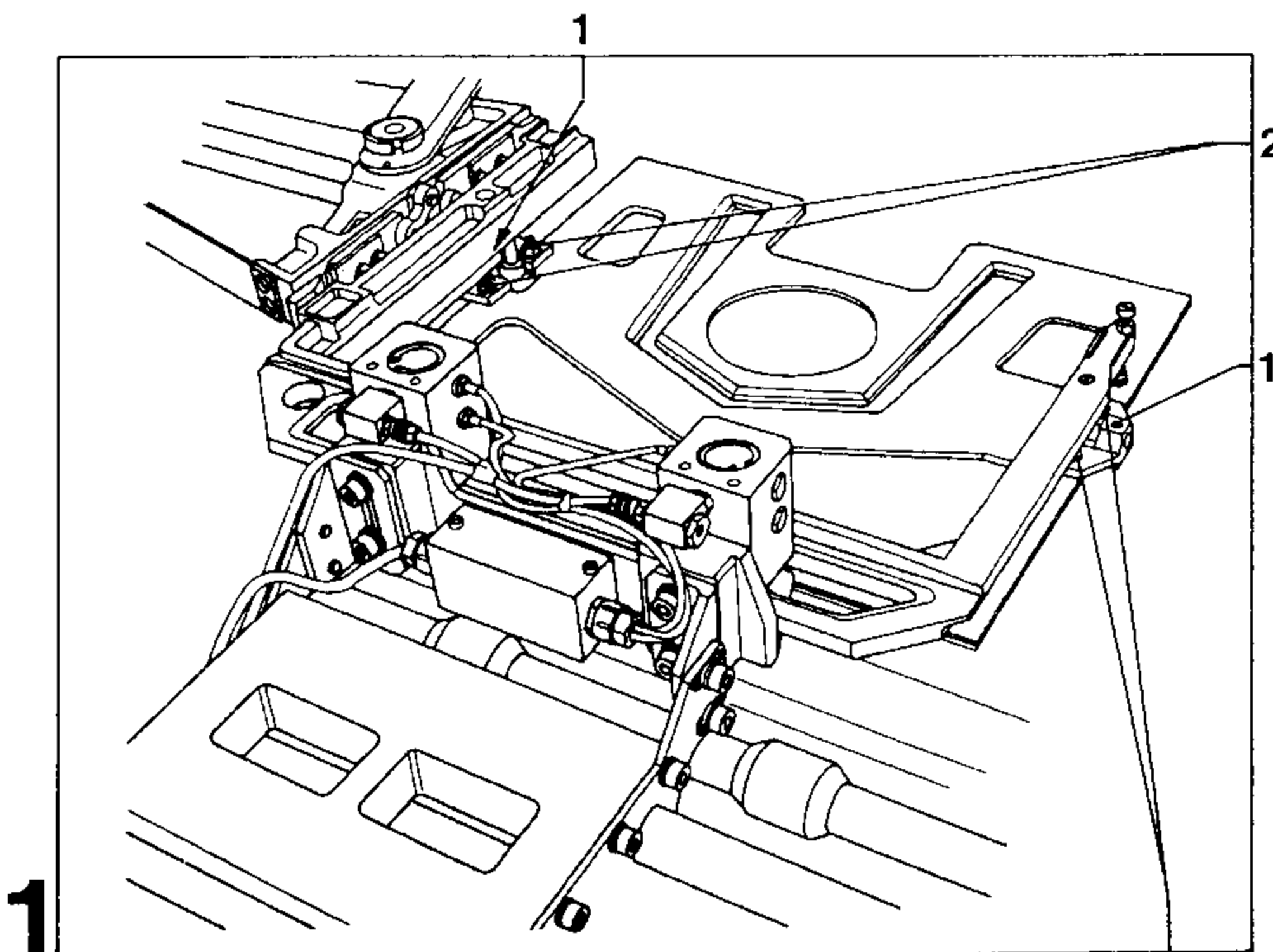
Turn the balance wheel to position the needle point in the jig slot.

Press keys "FWD" and "BACK" to retrace the seam configuration, at the same time watching the needle position in the jig slot.

To correct, loosen the two screws 1 (Fig. 1) and the four nuts 2 and align jig plate 3 accordingly.

After each re-positioning of the sewing jig retrace the seam configuration again.

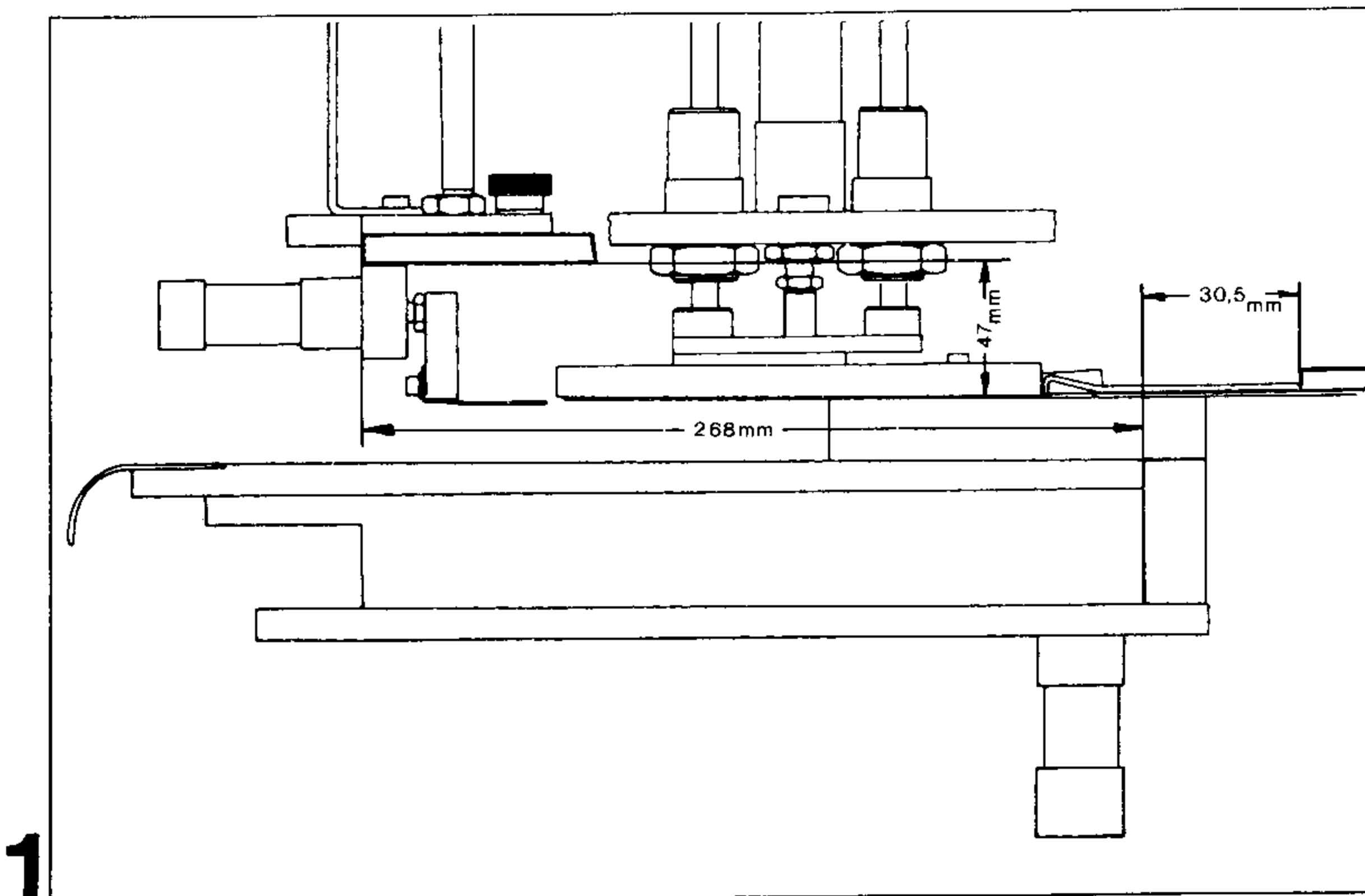
Finally tighten screws 1 and nuts 2, set needle at top dead centre and move the sewing jig to basic position.



52 Basic adjustment of the folding unit

The edge folders are set at the works according to the dimensions in Fig. 1.

If further adjustments are made to the folding unit these basic settings must not be disturbed.



53 Adjusting the height of the loading plate

In its top position, loading plate 1 must be flush with loading plate insert 2.

To check this setting, place a ruler across loading plate and insert (Fig. 1.1).

Disconnect the compressed air at the air filter/lubricator: the loading plate drops.

Loosen the locknuts on the piston rods of cylinders Z4 and Z5 (Fig. 1).

Re-connect the compressed air: the loading plate rises.

Turn the piston rods of cylinders Z4 and Z5 to position loading plate 1 flush with insert 2.

Lower the loading plate again and re-tighten the locknuts on Z4 and Z5.

Check the loading plate for free action, then re-connect the compressed air.

54 Adjusting the height of the folding unit

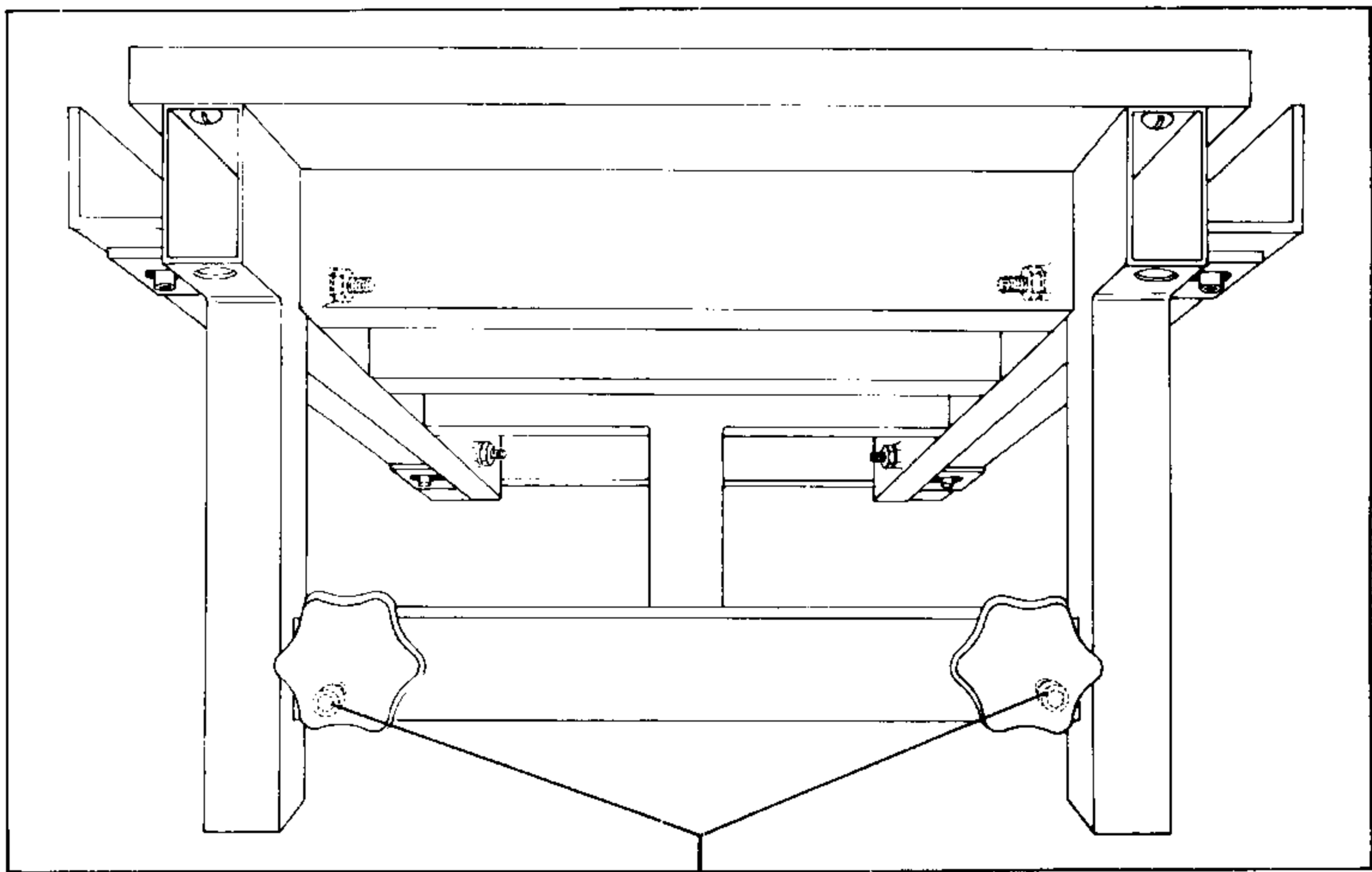
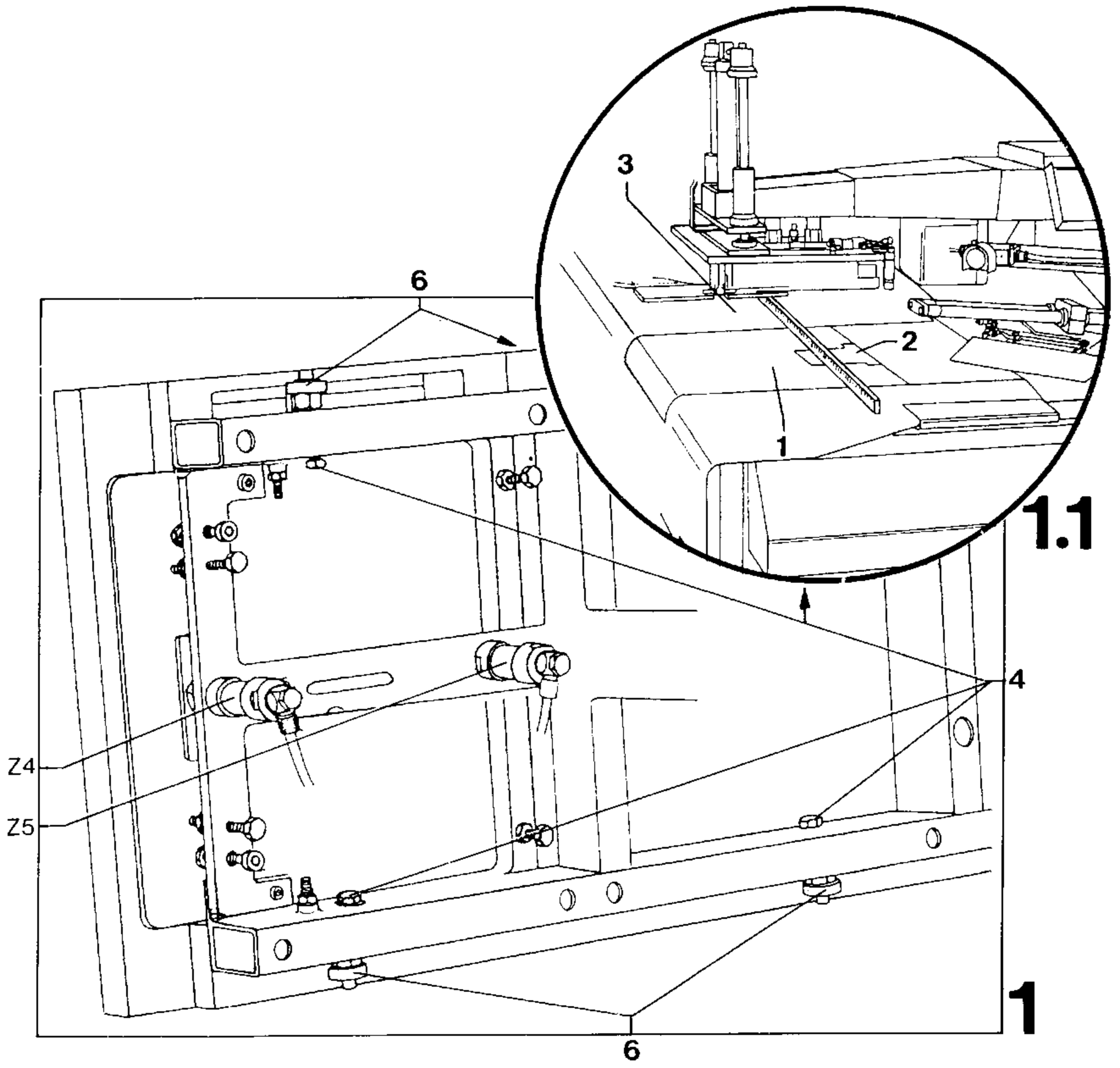
The folding unit must be adjusted so that the loading plate is flush with machine table 3.

To check this setting, place a ruler across machine table and folding plate (Fig. 1.1).

Loosen the four nuts 4 (Fig. 1) and the two screws 5 (Fig. 2).

Turn the eccentric mounting bolts of rollers 6 (Fig. 1) to position the folding unit so that frame 2 is horizontal and flush with table 3 (Fig. 1.1).

Afterwards, tighten the four nuts 4 (Fig. 1) and the two screws 5 (Fig. 2).



55 Adjusting the pocket plate arm

55.1 Height adjustment

In its front position the pocket plate must lie parallel above the loading plate.

Move the pocket plate to its front position.

Loosen the four screws 1 just enough to allow bearing trunnions 2 to be moved (Fig. 1).

Adjust the height of both trunnions 2 so that the pocket plate lies parallel above the loading plate.

55.2 Lengthwise adjustment

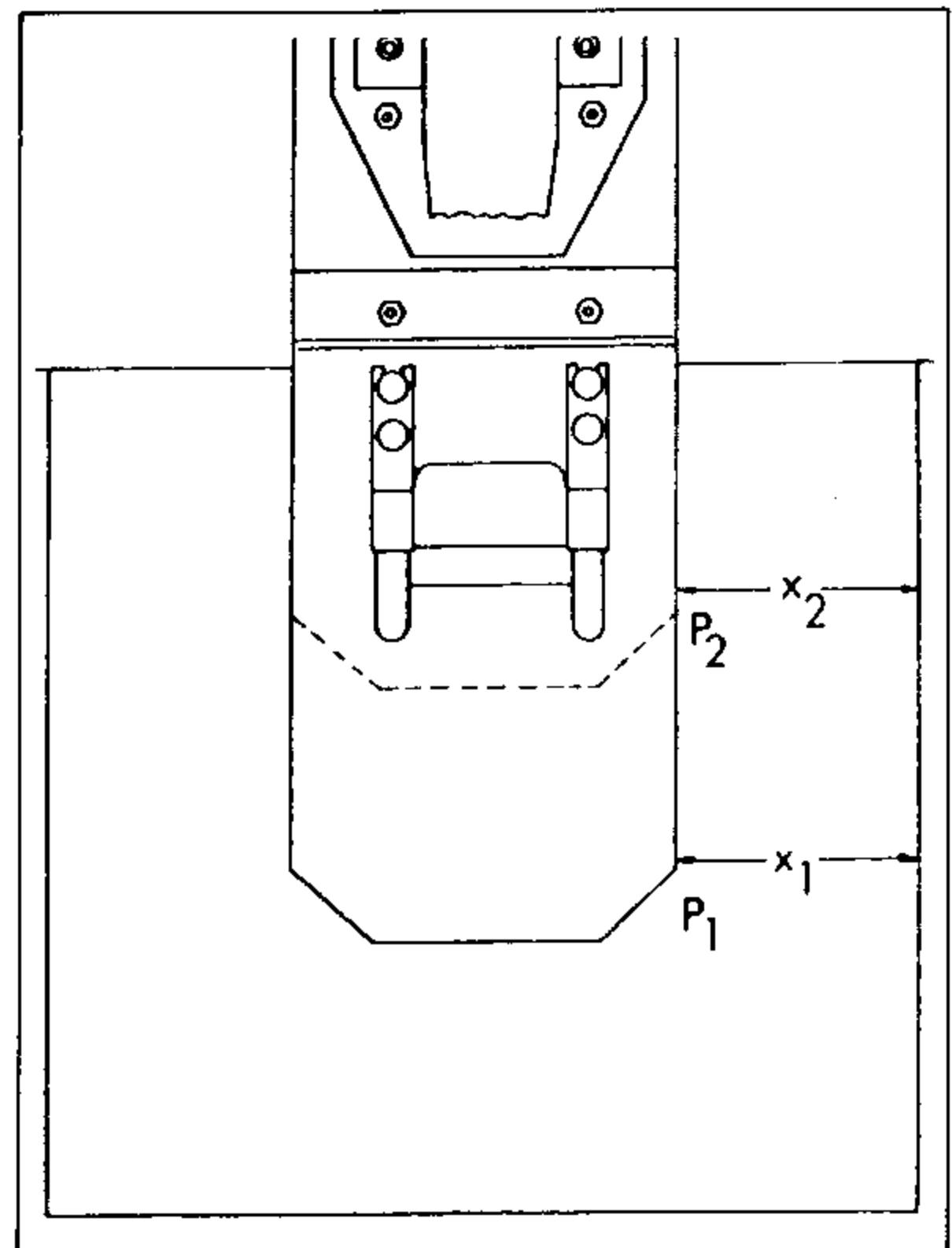
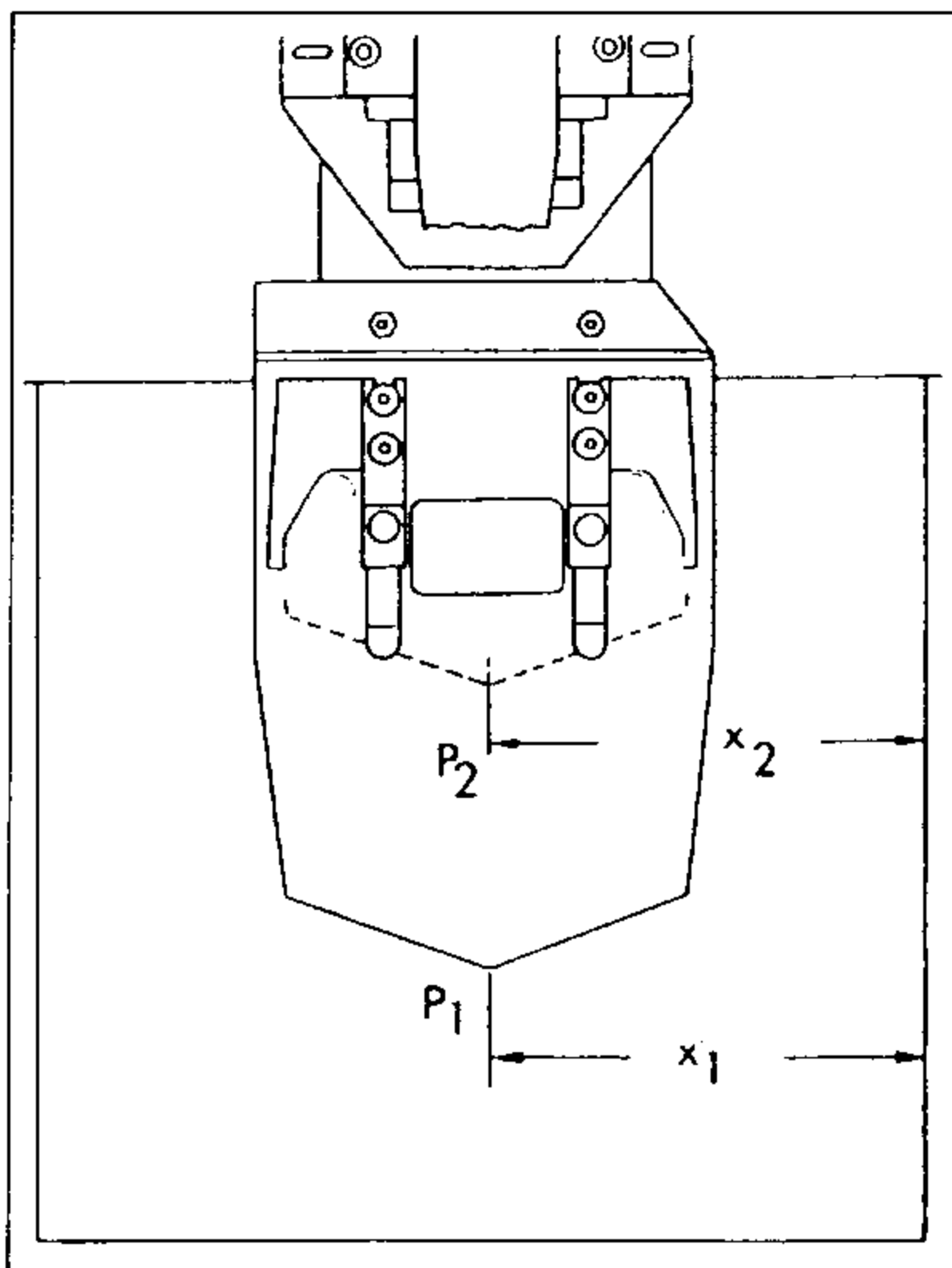
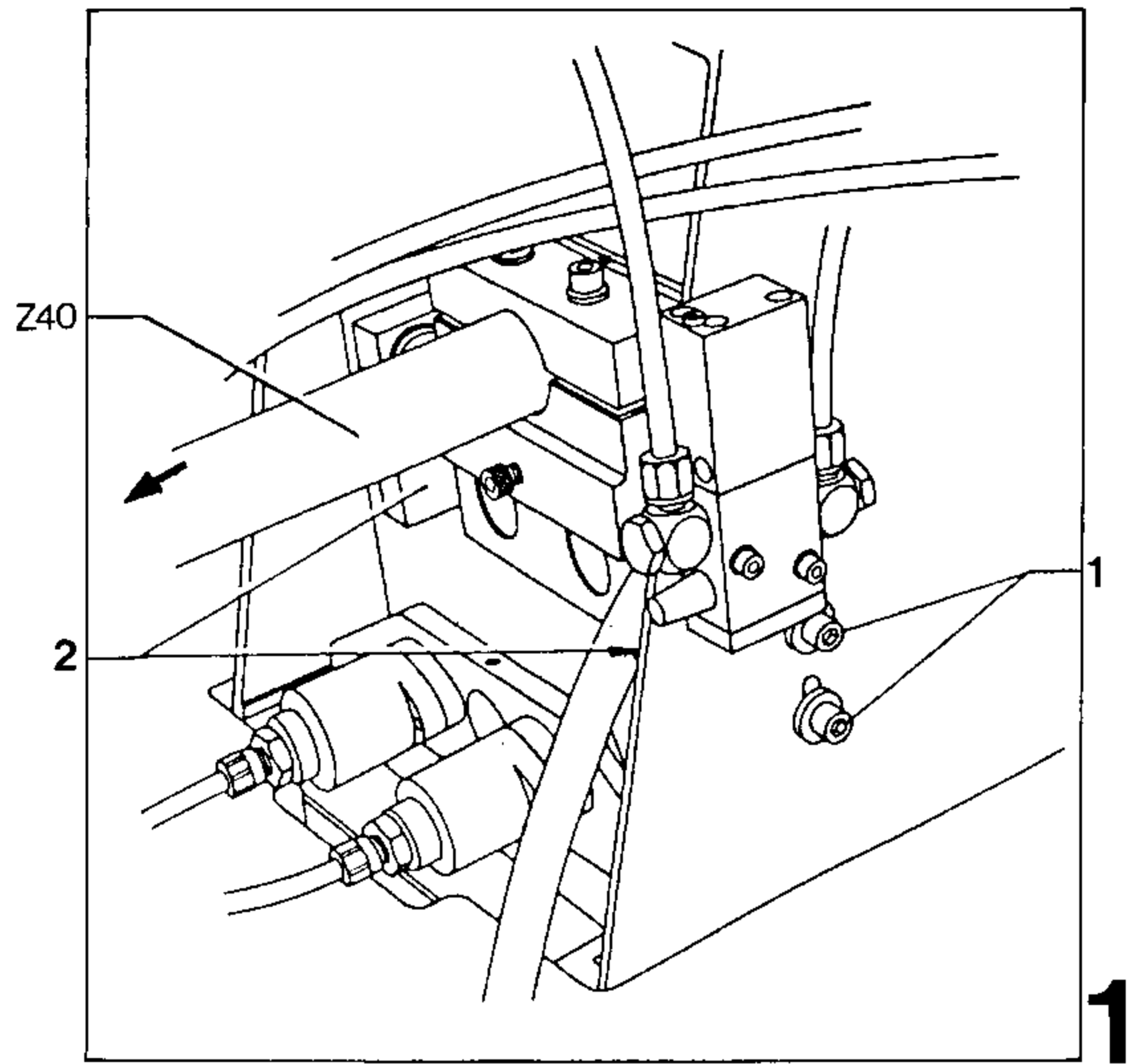
The lengthwise motion of the pocket plate must be parallel to the loading plate.

Disconnect the compressed air at cylinder Z 40 (see arrow in Fig. 1); the pocket plate can now be moved back and forth by hand.

Measure the distance " x_1 " (Fig. 2 or 3) from the point " P_1 " to the loading plate edge, then push the pocket plate back a little and measure the distance " x_2 " from point " P_2 " to the loading plate edge.

If the two distances " x_1 " and " x_2 " do not coincide, the two bearing trunnions have to be turned accordingly.

After adjustment, check the setting described in 55.1 again, then tighten screws 1.



56 Positioning the pocket plate over the loading plate

The pocket plate must be centred and set parallel with the loading plate (Fig. 1). On the version with retaining pins also make sure that the pocket plate is centred over the retaining-pin holes.

Move pocket plate to front position.

Loosen both nuts 1 and position pocket plate accordingly.

Tighten nuts 1 again.

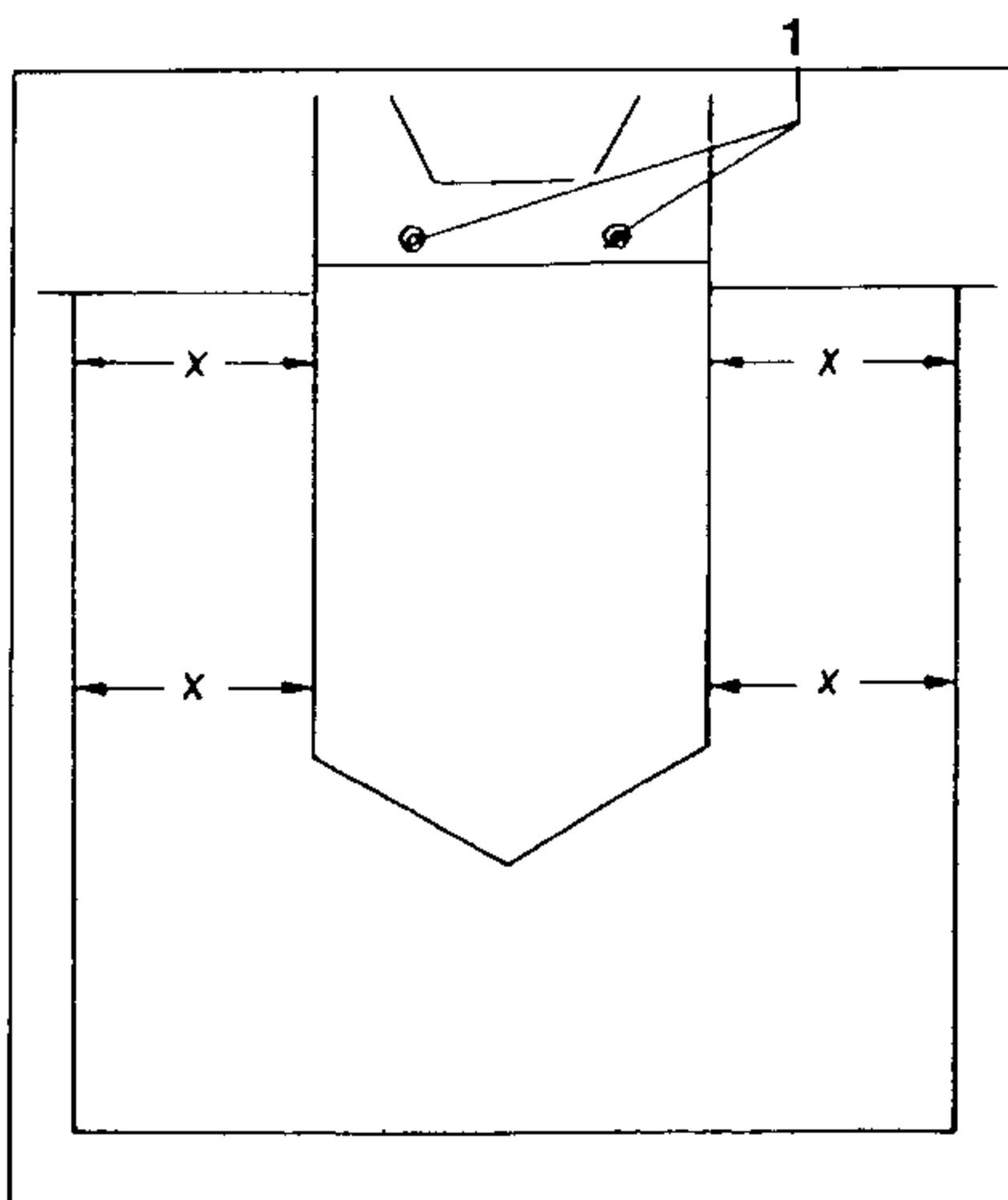
57 Adjusting the clearance between pocket plate and loading plate

With the pocket plate in its front position, clearance "a" (Fig. 2) between pocket plate and loading plate must correspond roughly to the workpiece thickness.

Move the pocket plate to its front position and loosen the locknuts 2 of cylinders Z 16 and Z 17 (Fig. 2.1).

Turn the two stops 3 to obtain the required clearance.

Afterwards lock the two stops by tightening nuts 2.



Adjusting the retainer

In its lowered position, die 1 (Fig. 1) must rest evenly on the pocket plate. Angle strips 2 must be positioned with their lower edges about workpiece thickness below the pocket plate. In addition, angle strips 2 must be at an equal distance of 0.3 to 1 mm (depending on workpiece thickness) from the pocket plate all round.

Set master switch at "1" and press key "ON",
- machine is in "manual mode".

Press both buttons 3 (Fig. 2) at the same time,
- pocket plate engages and moves forwards.

Press key "STEP",
- folder and retainer lowered.

Loosen the four lock nuts 4 (Fig. 1) and turn the four adjusting screws 5, after loosening the two screws 6 a little, in such a way that the retainer rests evenly.

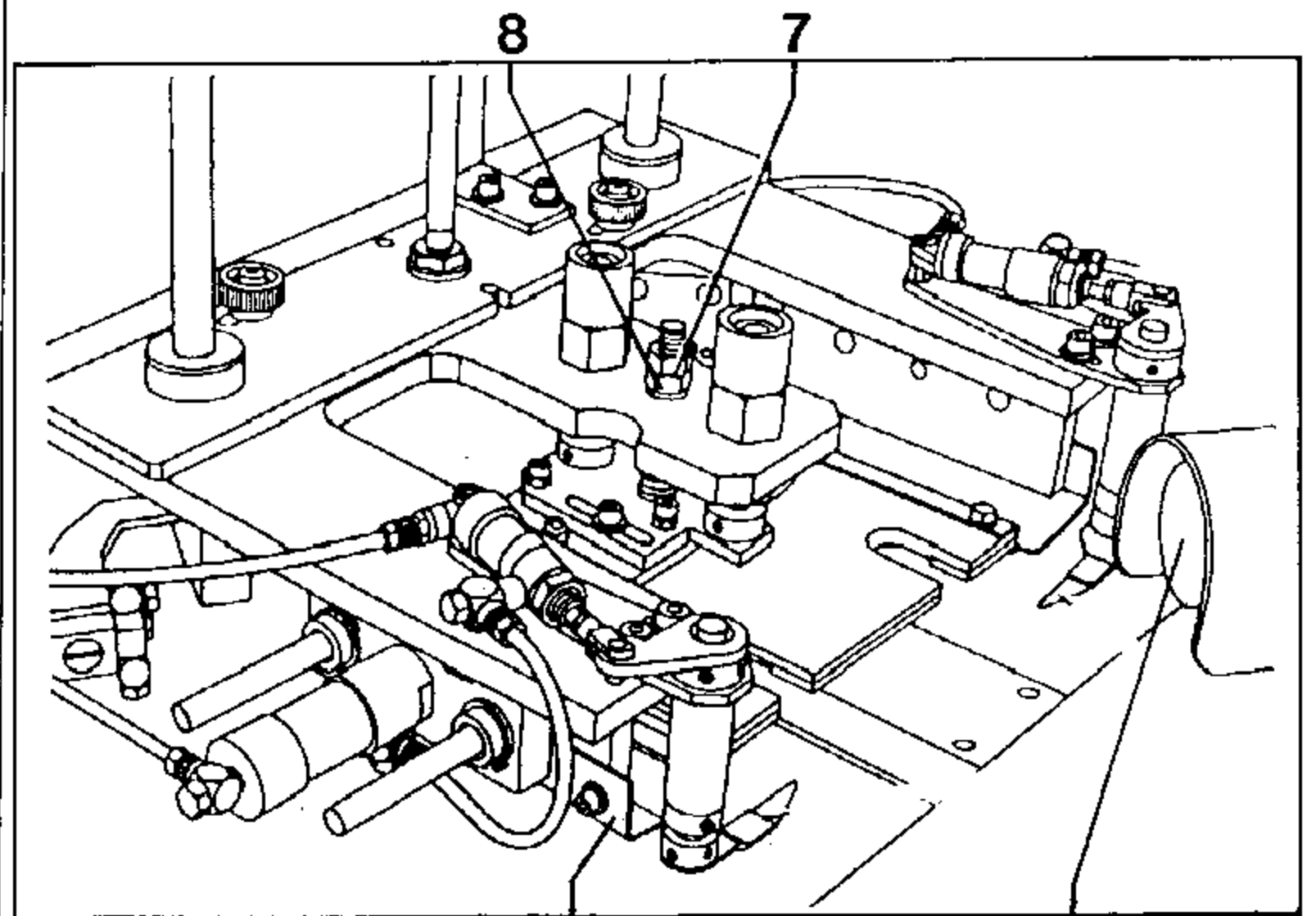
Tighten the four lock nuts 4 again.

Loosen locknut 7 and position the retainer in height by turning nut 8.

Tighten locknut 7.

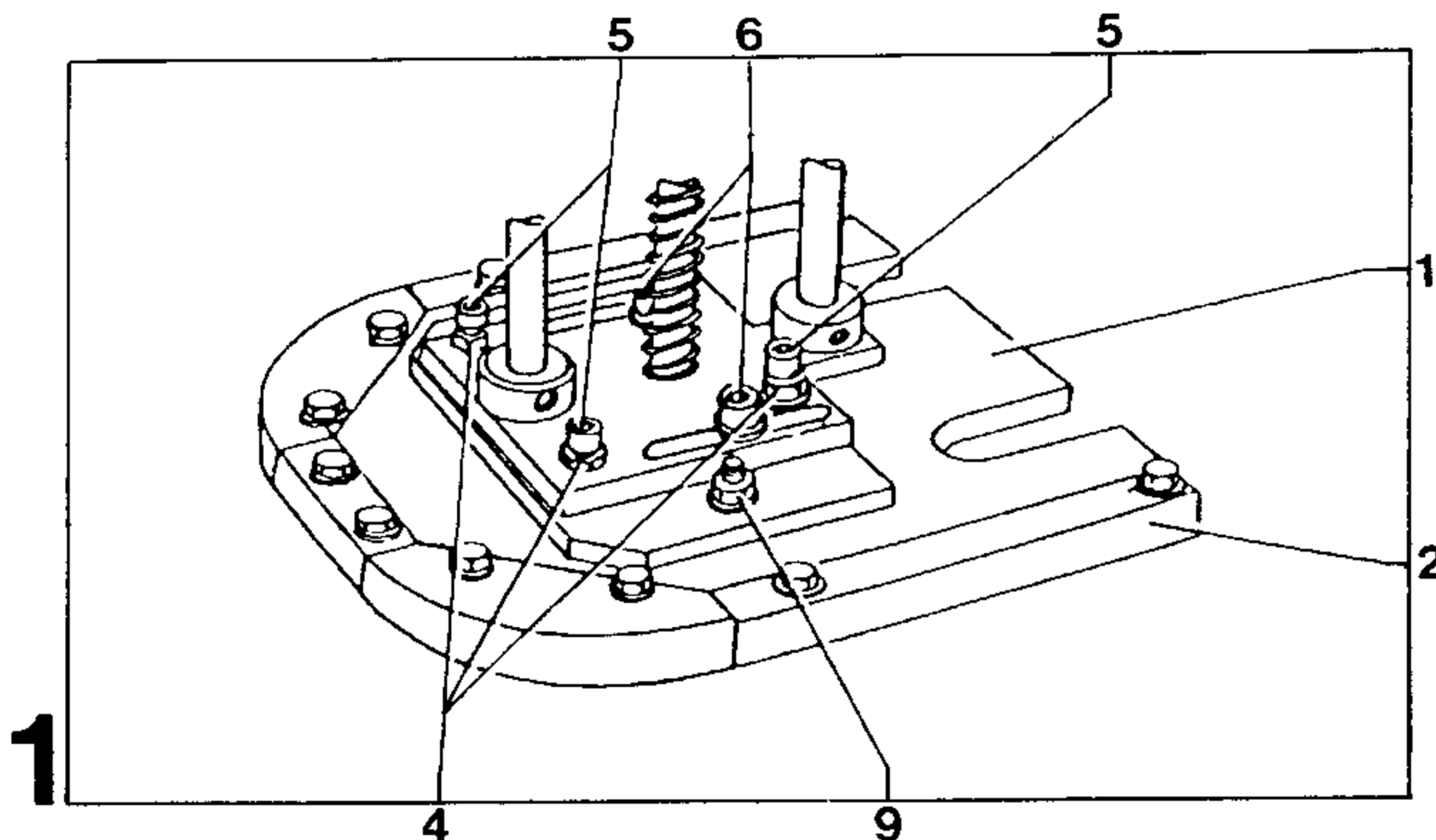
Loosen both nuts 9 and align the retainer in such a way that angle strips 2 are an even distance of 0.3 to 1 mm from the pocket plate all round (check by means of sewing hook mirror).

Tighten screws 6 and both nuts 9.



2

3



1

4

9

When edge folders 1 (Fig. 1) are extended they must be positioned parallel from 0.1 to 0.5 mm (depending on material thickness) beneath the pocket plate or the angle strips of pocket holder 2. Also the front edges of the edge folders must stand parallel with the pocket holder all round.

Switch off the machine and disconnect the compressed air at the air filter/lubricator.

Disconnect quick-release union 3 (Fig. 2).

Take out the four knurled screws 4 (Fig. 3) and remove folding unit.

Fit edge folder blades 1 (Fig. 1).

Loosen screws 6 and position edge folders 7 so that the front edges of the folding blades are parallel with the pocket holder.

Tighten screws 6 again.

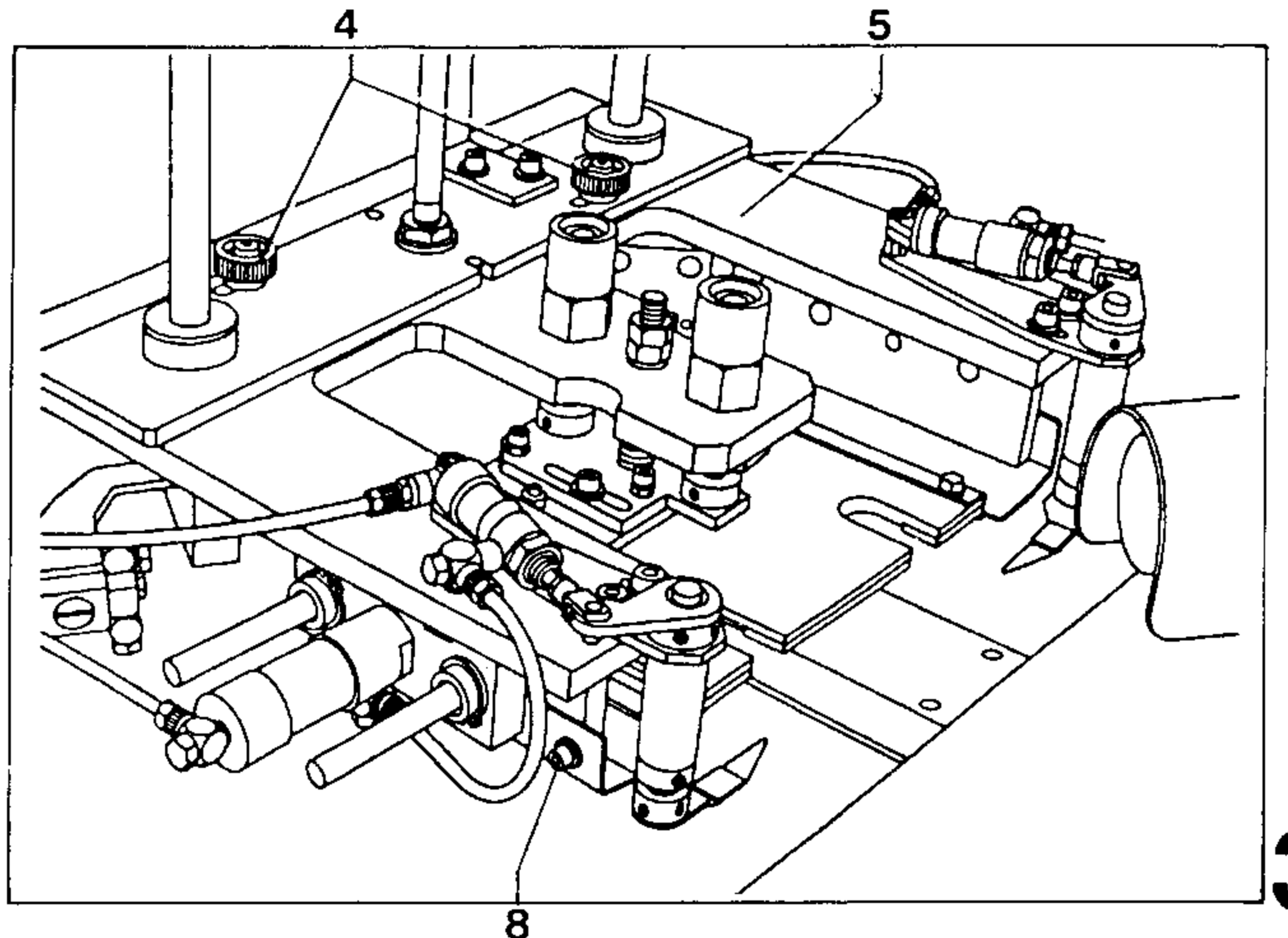
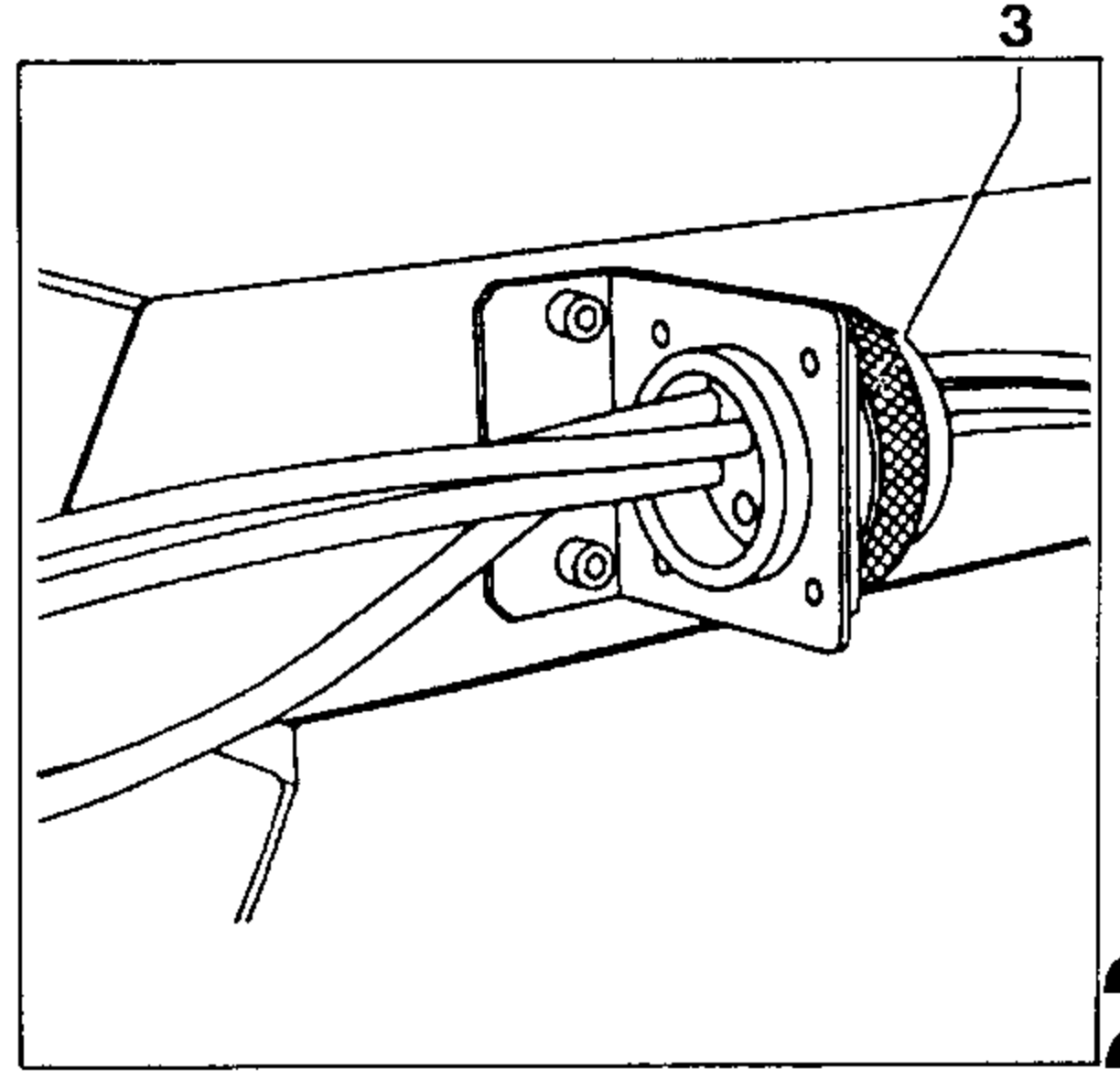
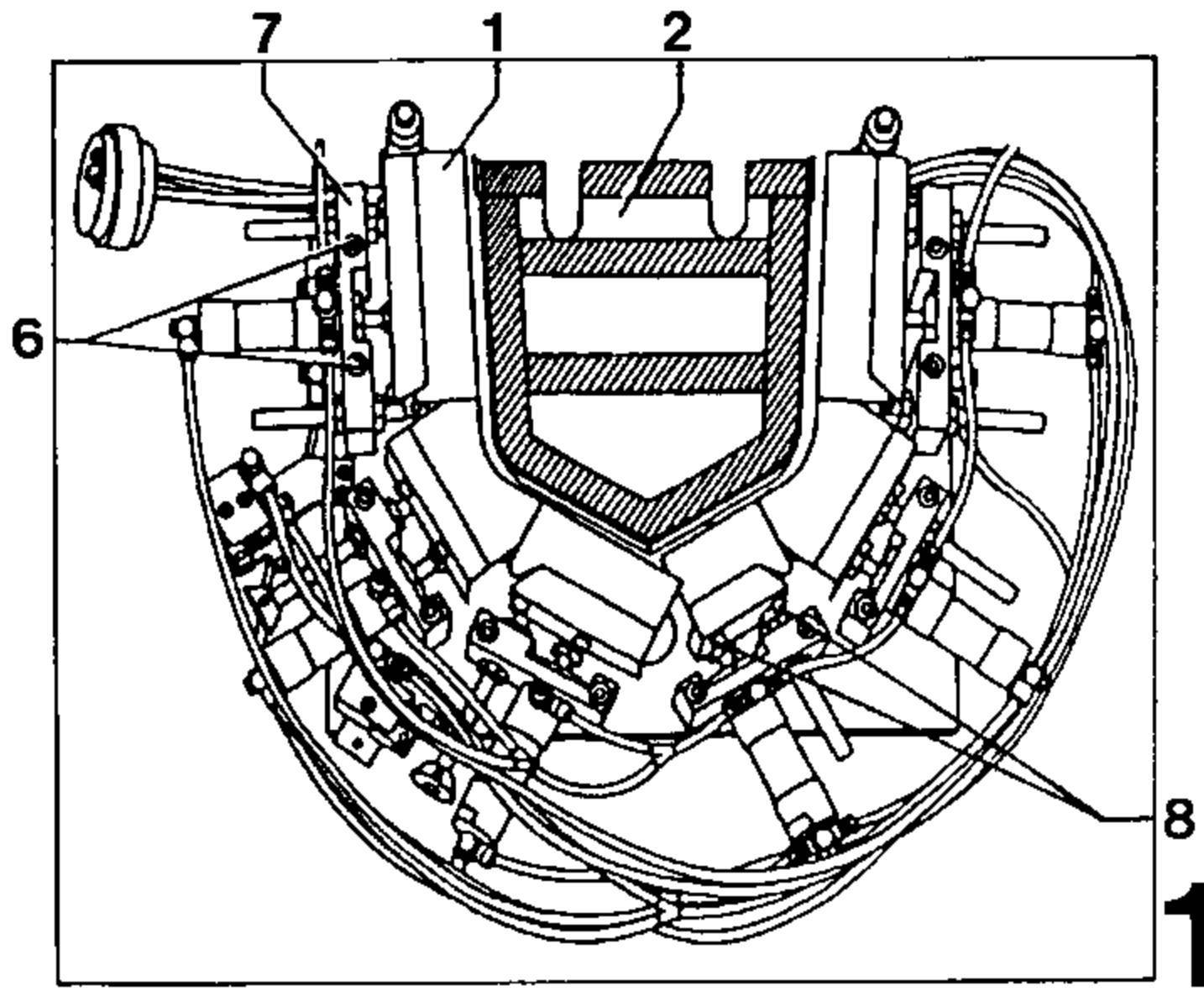
Extend edge folders of second sequence (see table in Fig. 4) by hand.

On rounded or heart-shaped pockets extend edge folders "e" and "f" by hand.

Loosen screws 8 (Fig. 1) and position extended edge folder blades so that they are 0.1 to 0.5 mm beneath angle strips of pocket holder.

Extend edge folders of next sequence and adjust in height so that they are positioned below the edge folders extended before.

Tighten screws 8 and re-fit folding unit.



1)	a + b	a + b	a + b	a + b
2)	c + d + e	c + d	c + d + e	c + d
3)	f	e	f	e
4)	g	f	g	f
5)	h			g

In their engaged position, corner folders 1 (Fig. 1) must be situated with their front edges about 1 to 2 mm behind the slanted edges of the extended edge folders. Their height must be set so that they are 0.3 to 1.5 mm (depending on workpiece thickness) beneath the edge folders.

Disconnect the compressed air at the air filter/lubricator.

Extend the side edge folders by hand and swing the corner folders into place.

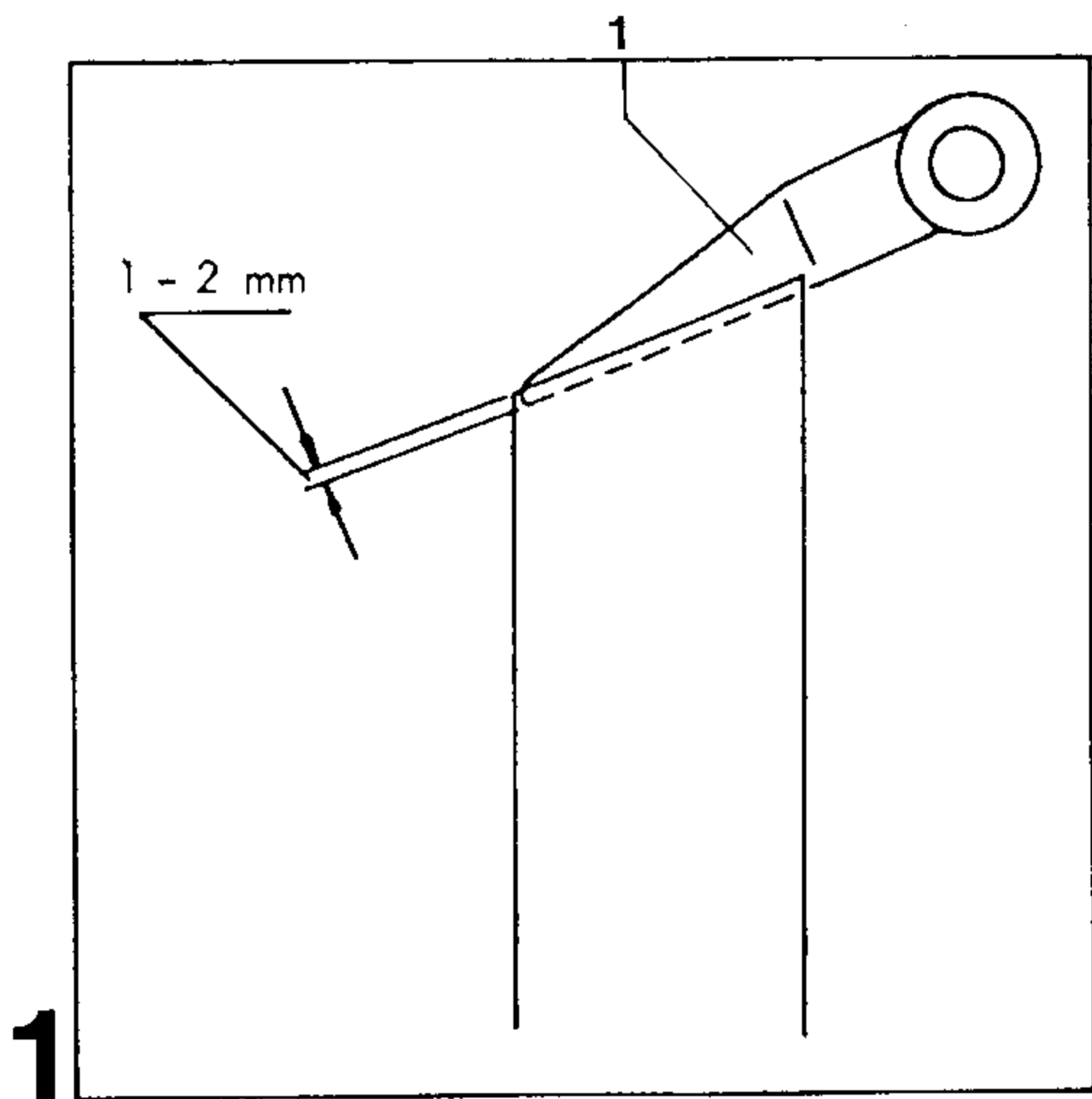
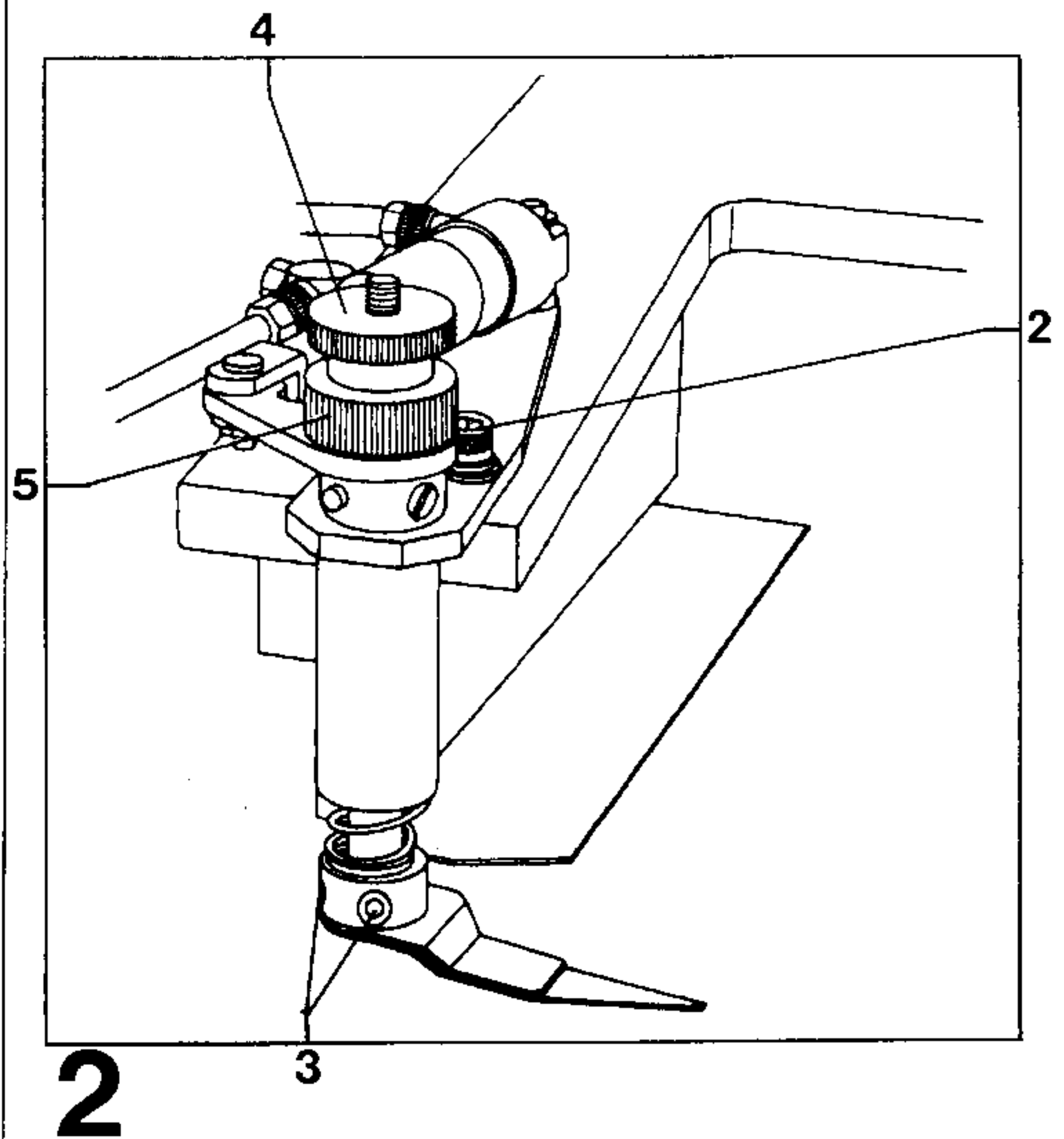
Loosen screws 2 (Fig. 2) and 3.

Position corner folder 1, so that its front edge is positioned 1 to 2 mm parallel behind the slanted edge of the edge folder.

In this position, tighten screws 2 and 3.

Loosen knurled nut 4 and turn knurled nut 5 in such a way that the corner folder is positioned 0.3 to 1.5 mm below the edge folder.

Carry out this adjustment on both corner folders.



61 Setting the operating sequence of the edge folders

In order to achieve proper folding of the pocket it is necessary to set the operating sequence of the edge folders according to the table (see Fig. 1).

The delay time for the second folding step of the edge folders is set at adjusting screw 1 (Fig. 2).

The delay times for the 3rd, 4th and 5th folding step is set on check valves 2 and 3 (Fig. 3).

Turn regulating screws 4 inwards to lengthen the delay time and outwards to shorten it.

62 Adjusting the trips of the roller lever valves on the edge folders

Trips 5 and 6 (Fig. 3) must be adjusted so that roller lever valves 7 and 8 are not actuated until the edge folders are fully extended.

Extend the edge folders fitted with actuating trips.

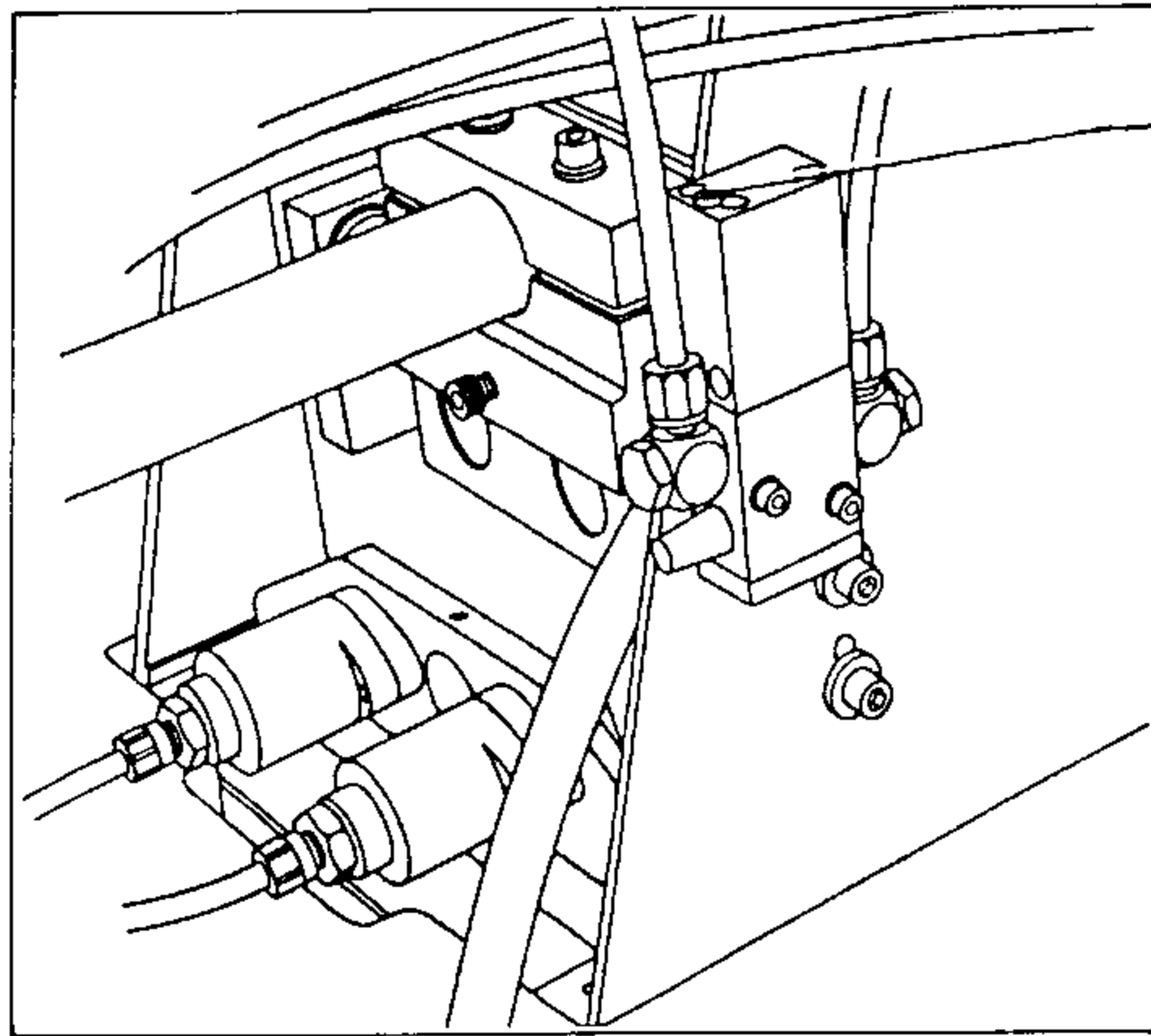
Loosen the retaining screws of trips 5 and 6.

Position the trips so that roller lever valves 7 and 8 are actuated.

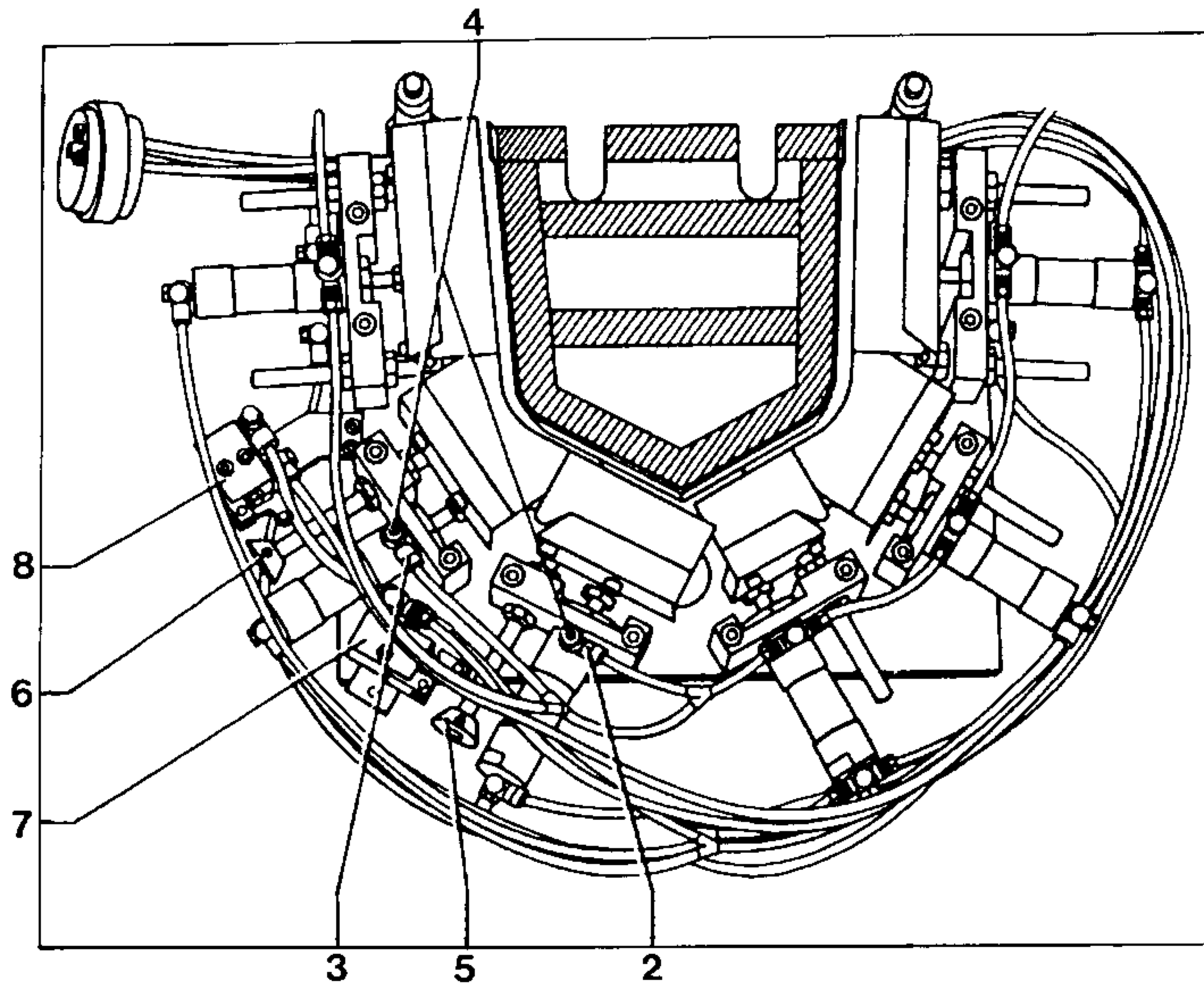
Tighten the retaining screws again.

1)	a + b	a + b	a + b	a + b
2)	c + d + e	c + d	c + d + e	c + d
3)	f	e	f	e
4)	g	f	g	f
5)	h			g

1



2



3

63 Adjusting the times

63.1 Air blast at stacker

The duration of the air blast must be set so that the part is blown reliably over the stacker buck.

Press keys "INP", [6] and [1],

- the lower line of the display shows "TIME OF STACKER AIR BLAST" and the time set in seconds.

Enter a new value at keys [0] to [9] and input it by pressing "ENTER".

63.2 Running time of fabric feed roller

The stacked workpiece must be centered on the stacker buck.

Press keys "INP", [6] and [2],

- the lower line of the display shows "TIME FOR FABRIC FEED ROLLER" and the time set in seconds.

Enter a new value at keys [0] to [9] and input it by pressing "ENTER".

63.3 Positioning pins upwards (on versions with positioning pins)

The time between "folding slide at front" and "folding slide at back" must be set so that the positioning pins are fully extended before the folding slides return.

Press keys "INP", [6] and [3]

- the lower line of the display shows "TIME FOR POSITIONING PINS UPWARDS" and the time set in seconds.

Enter a new value at keys [0] and [9] and input it by pressing "ENTER".

63.4 Table upwards (on versions without positioning pins)

The time between "folding slide at front" and "folding slide at back" must be set so that the folding table is positioned upwards before the folding slides return.

Press keys "INP", [6] and [4],

- the lower line of the display shows "TIME AFTER TABLE UPWARDS" and the time set in seconds.

Enter a new value at keys [0] to [9] and input it by pressing "ENTER".

63.5 Folding slides backwards

The "folding unit upwards" motion must not take place before the folding slides have reached their rear end position.

Press keys "INP", [6] and [5],

- the lower line of the display shows "TIME FOR FOLDING SLIDES BACKWARDS" and the time set in seconds.

Enter a new value at keys [0] to [9] and input it by pressing "ENTER".

63.6 Jig feed forwards

The "feed forwards" motion must not take place before the pocket plate has left the sewing jig area.

Press keys "INP", [6] and [6],

- the lower line of the display shows "TIME FOR FEED FORWARDS" and the time set in seconds.

Enter a new value at keys [0] to [9] and input it by pressing "ENTER".

63.7 Stacker roller cover up

When the puller feed is engaged, the puller must have fed the workpiece to be stacked between stacker roller and counter roller before they engage.

Press keys "INP", [6] and [7],

- the bottom line of the display shows "TIME FOR COVER OF STACKER ROLLER" and the time set in seconds.

Set a new time by pressing keys [0] to [9] and store it by pressing the key "ENTER".

63.8 Puller down

When the puller feed is engaged, the puller must contact the workpiece as soon as the sewing jig has moved out of the puller area.

Press keys "INP" [6] and [8],

- the bottom line of the display shows "PULLER DOWN" and the time set in seconds.

By pressing keys [0] to [9] set a new time and store it by pressing the key "ENTER".

64 Setting feeding speed and damping action for
jig feed "forwards - backwards"

The speed of the jig feed cylinder must be set at 0.8 to 1 mm per second. This corresponds with a duration of 0.6 to 0.8 sec. per cylinder lift at a lift of 655 mm.

The transition from damping lift to end position must be smooth, without rebound.

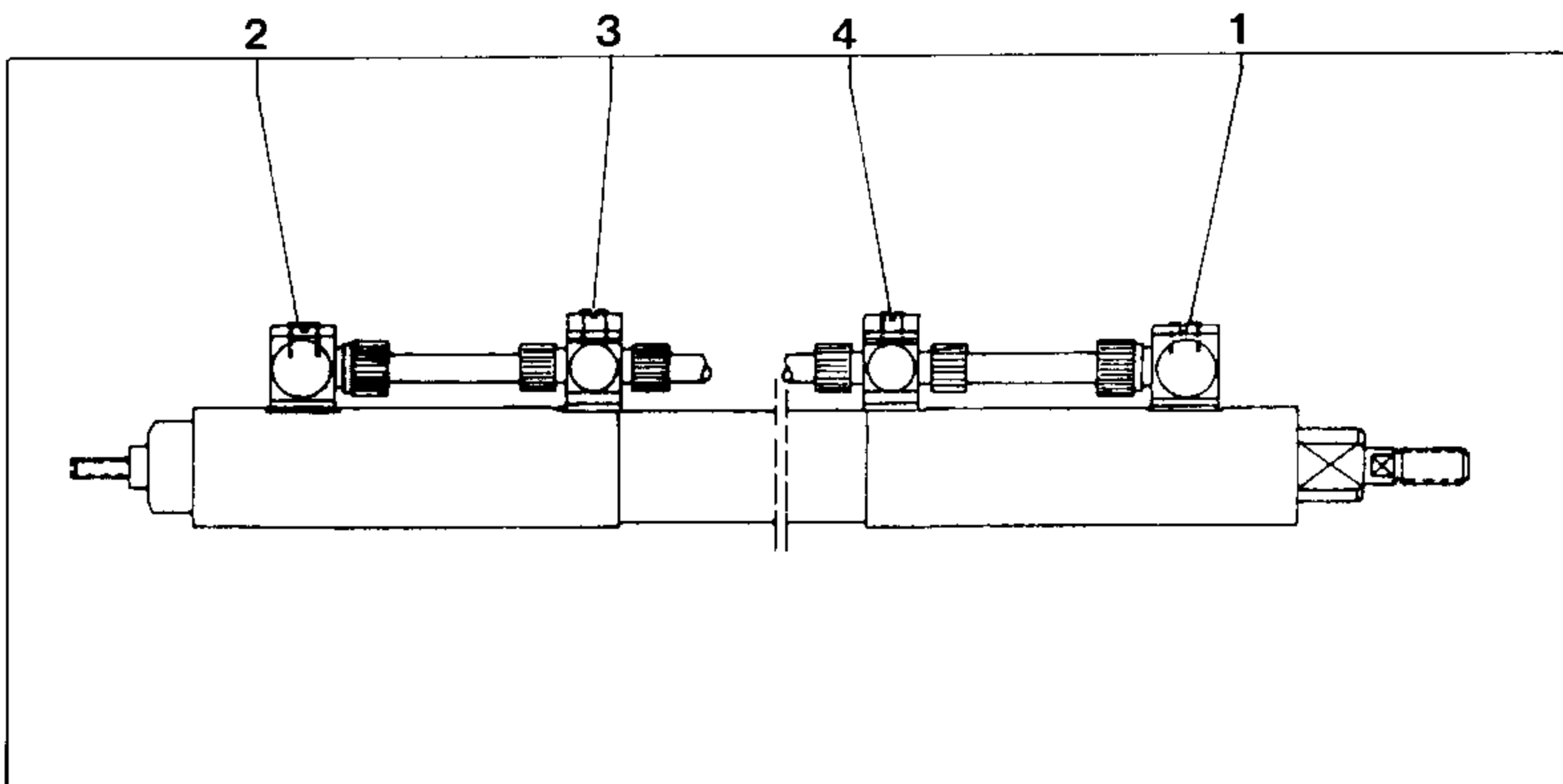
Set the speed for

- jig feed "backwards" at setting screw 1 (Fig. 1), and for
- jig feed "forwards" at setting screw 2.

Turning in clockwise direction decreases the speed, in counter-clockwise direction increases it.

Set the damping action for

- "left" end position at setting screw 3,
- and for
- "right" end position at setting screw 4.



65 Carrying out a sewing test

The seam must be the same distance from the pocket edges on all sides (Fig. 1).

If the seam line is not parallel to the pocket (Fig. 2.1), turn the complete folding station accordingly (see section 66).

If the seam is parallel, but not centred on the pocket (Fig. 2.2), adjust the stop on the transfer cylinder accordingly (see section 67).

If the seam pattern is out of position lengthwise (Fig. 2.3), move the complete folding station forwards or backwards (see section 68).

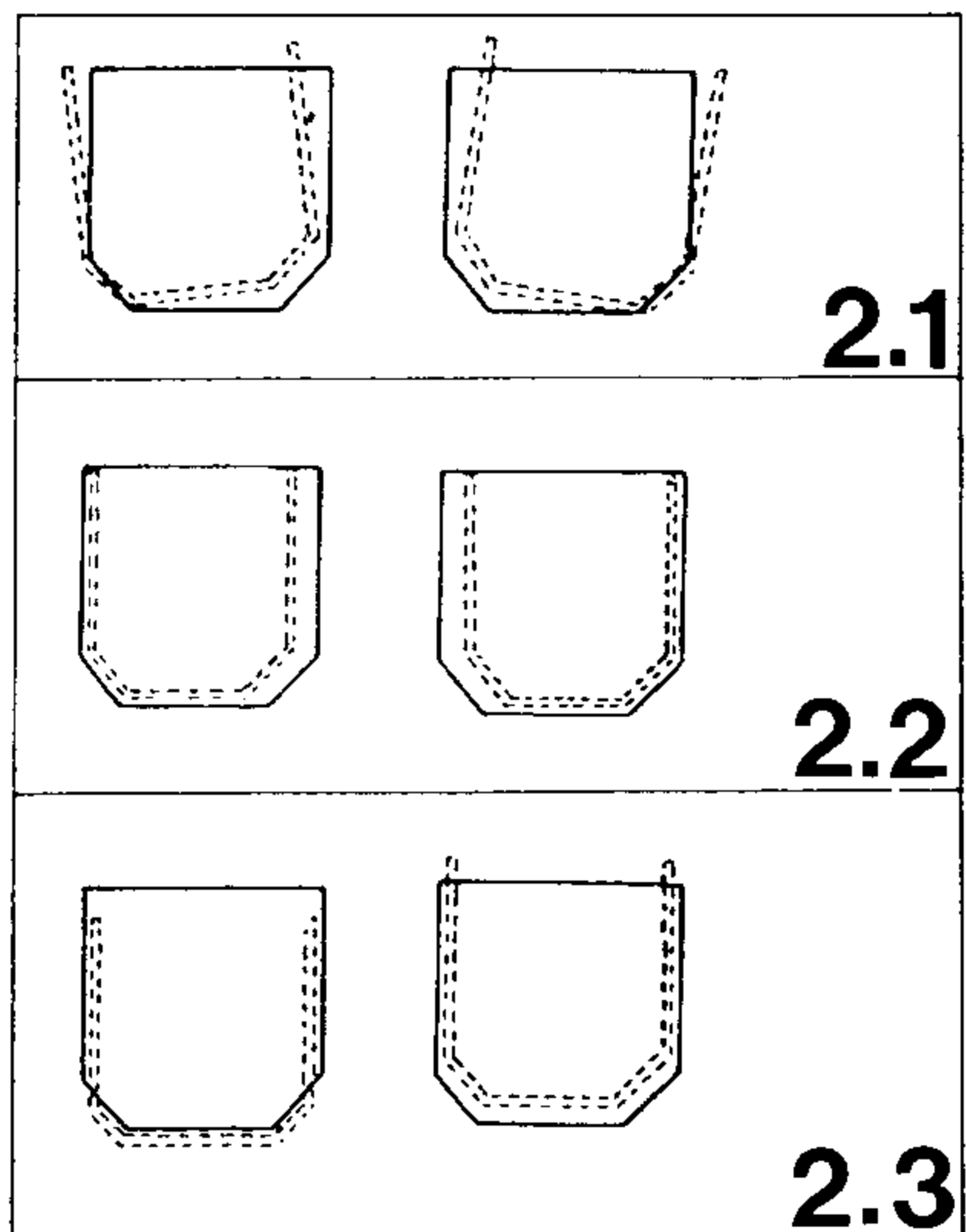
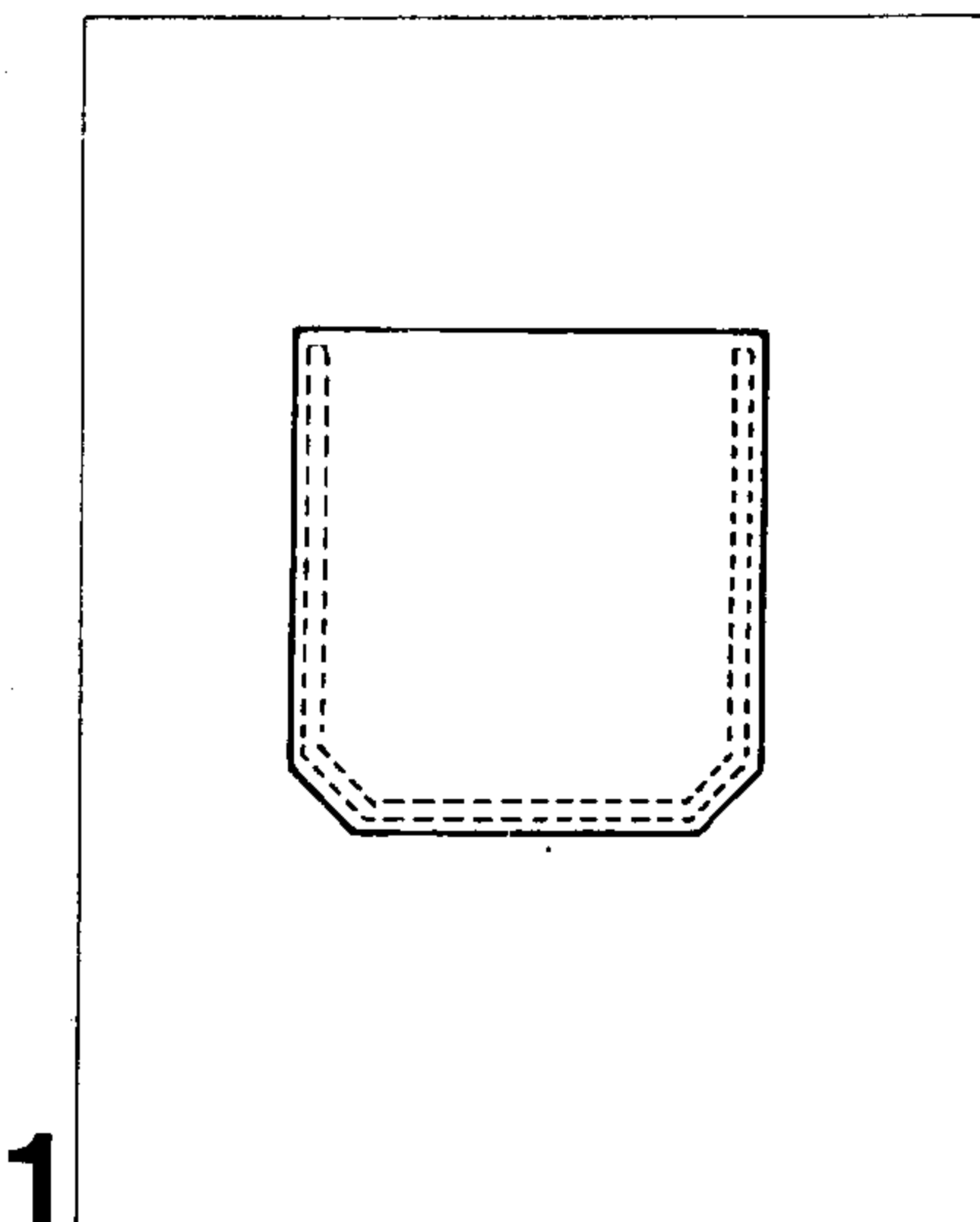
66 Adjusting the seam parallel to the pocket edge

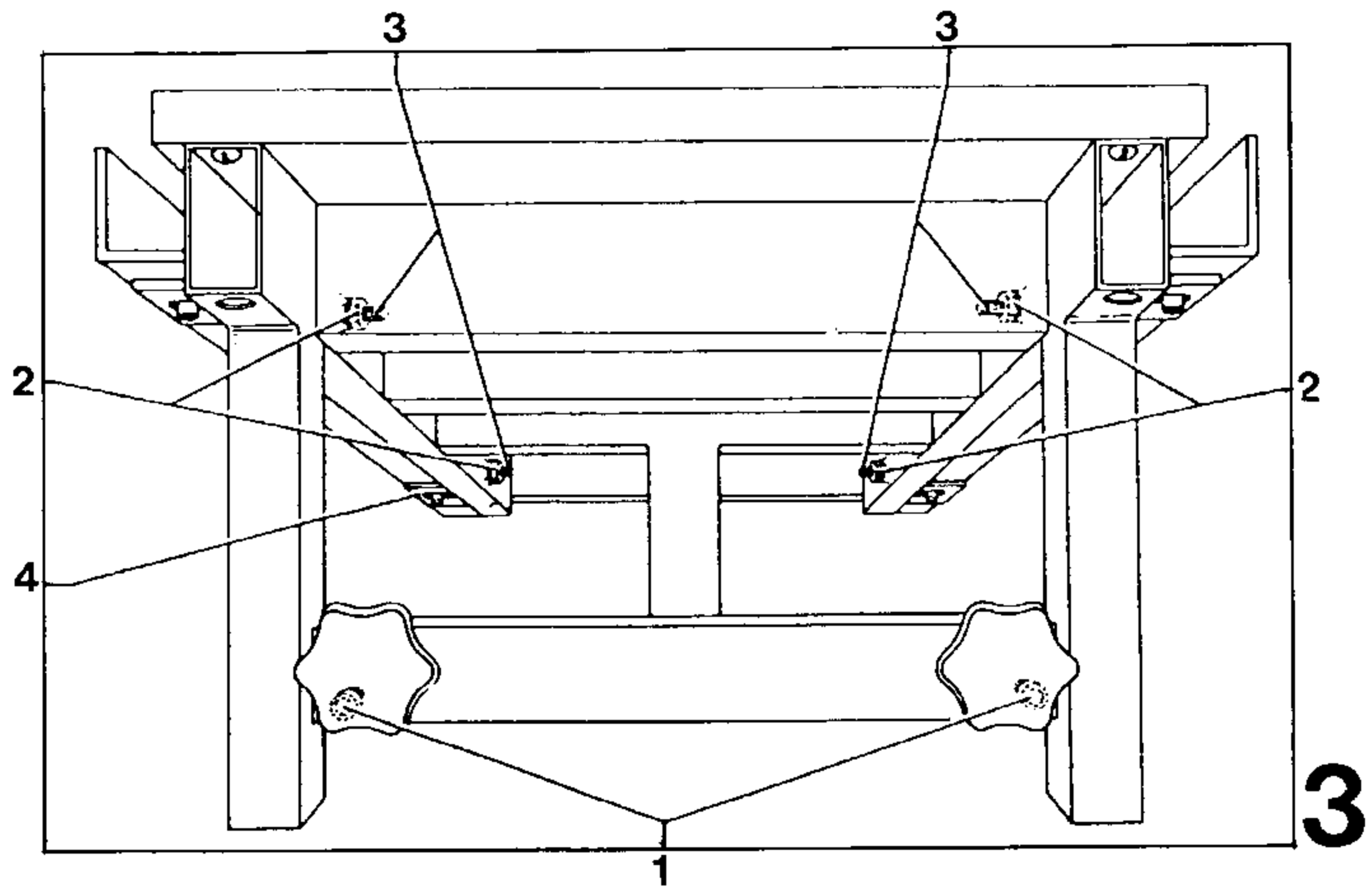
Loosen the two clamp screws 1 and the four locknuts 2 (Fig. 3).

Turn adjusting screws 3 in or out in order to position the folding station laterally so that the seam pattern of the sewn-on pocket is parallel to the pocket edges.

Afterwards tighten the four locknuts 2 and the two clamp screws 1. Make sure that the four adjusting screws 3 rest on stops 4.

Check the adjustment by making a sewing test and re-adjust, if necessary.





67 Centering the seam on the pocket

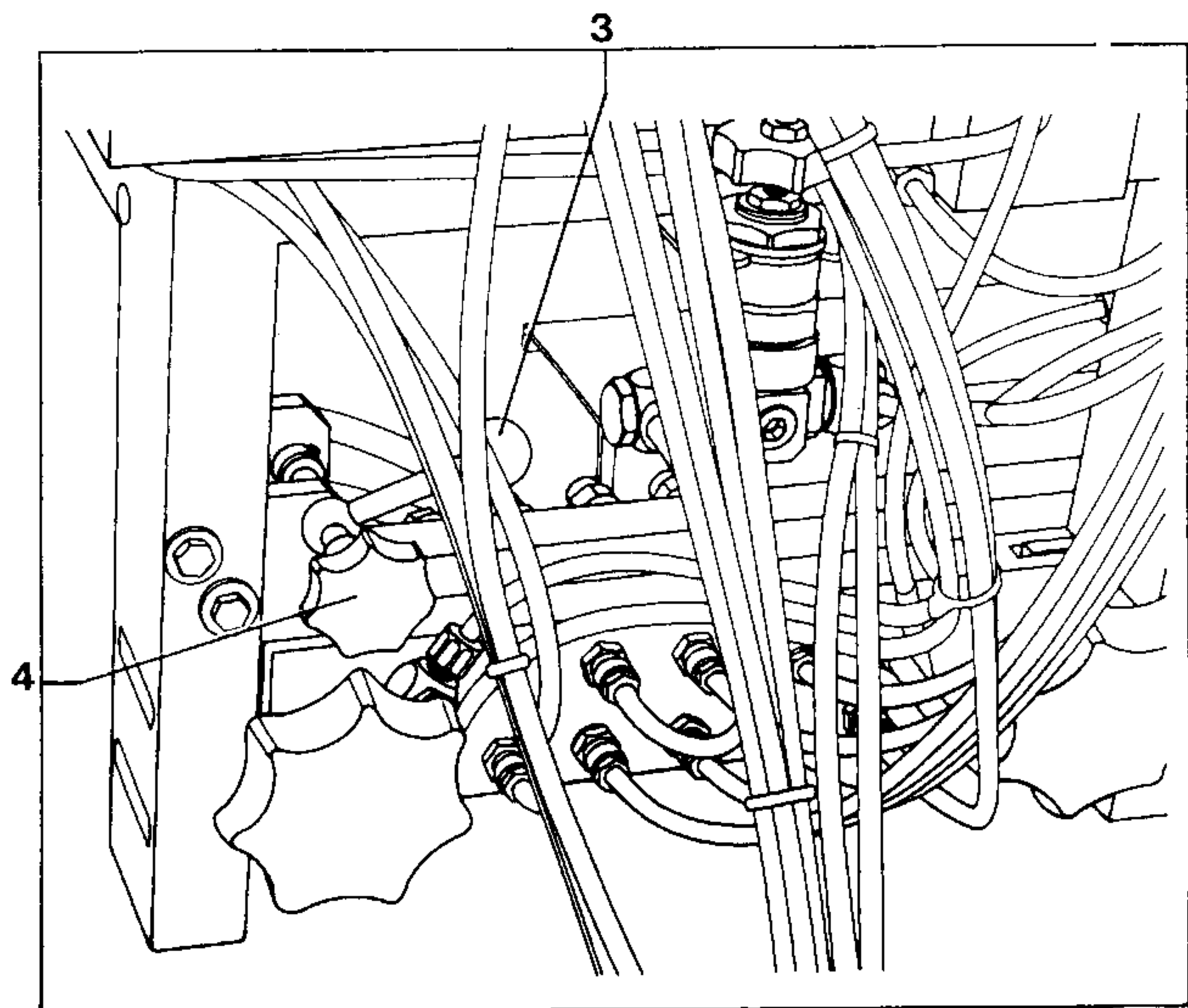
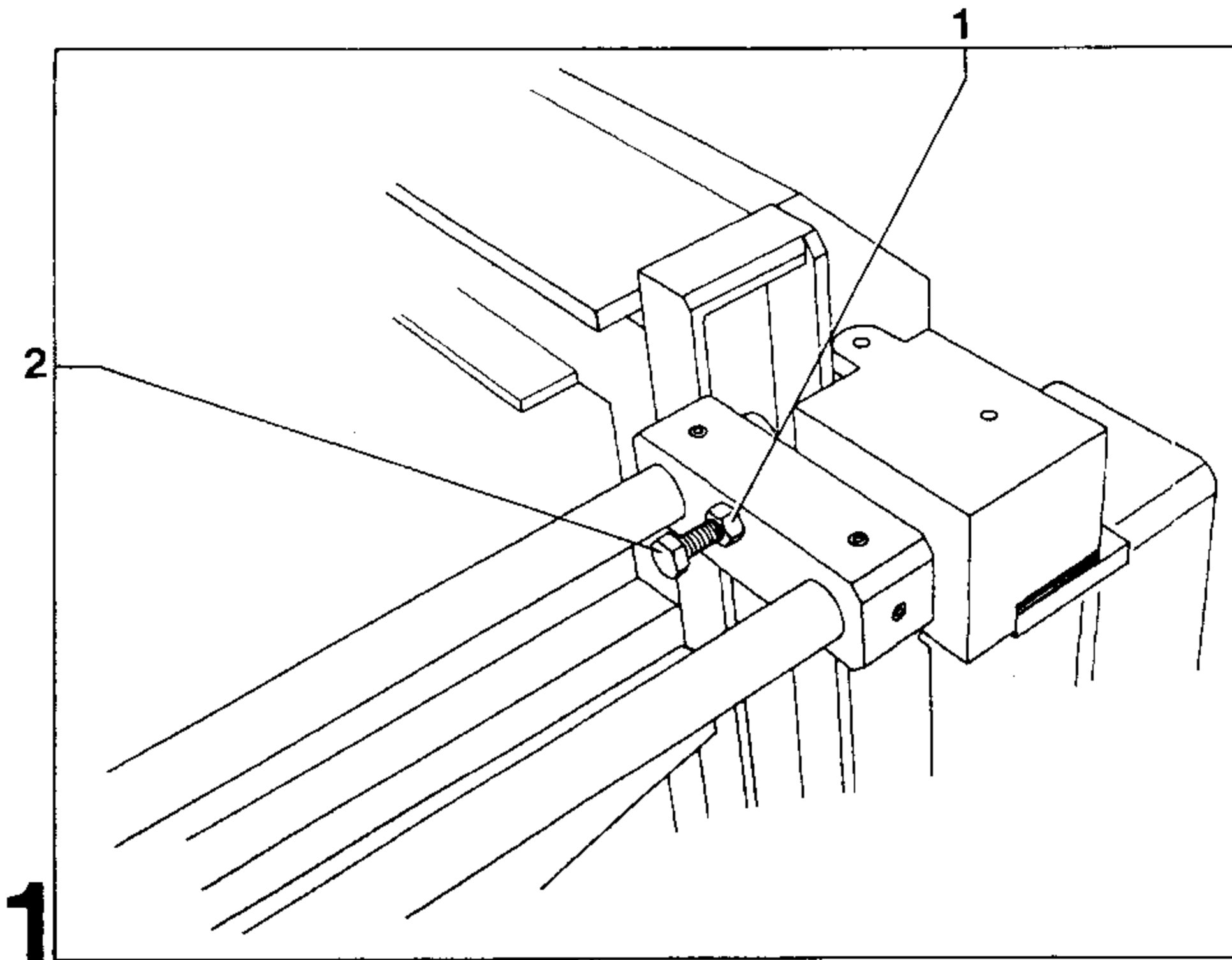
Loosen locknut 1 (Fig. 1) and position stop screw 2 according to sewing result obtained.

Turning the screw inwards,
- left seam margin increased.
Turning the screw outwards,
- right seam margin increased.

68 Setting the front seam distance

Loosen toggle 3 (Fig. 2) and move the folding station forwards or backwards by turning setting screw 4.

Afterwards tighten toggle 4.

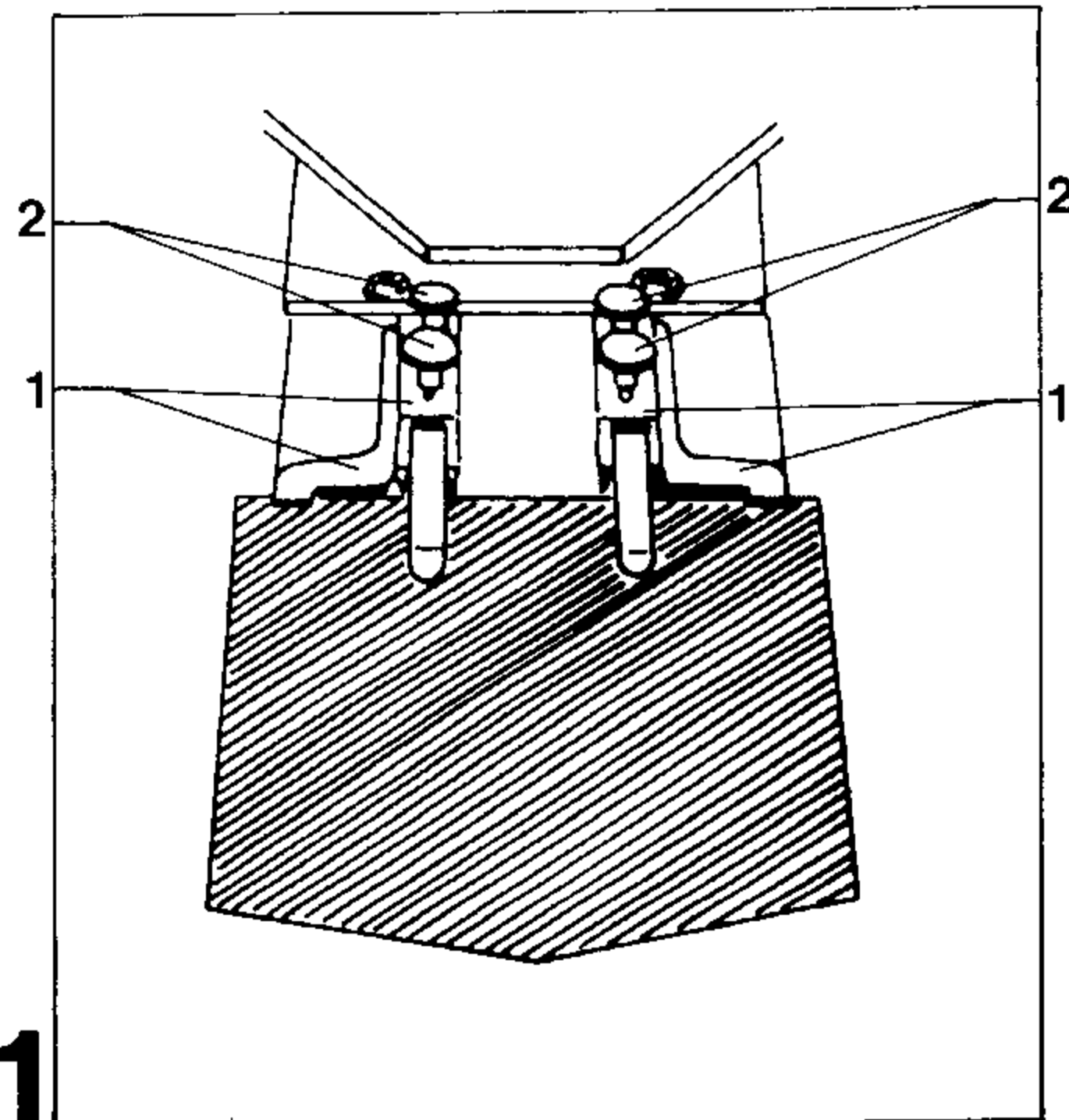


69 Adjusting the pocket stops

By re-positioning pocket stops 1 (Fig. 1) the distance between seam tack and pocket opening can be set.

Loosen screws 2 and adjust stops 1 accordingly.

Move the stops to the rear to increase the distance, and to the front to decrease it.



70 Air filter/lubricator

Check the air filter/lubricator regularly in order to ensure trouble-free running.

70.1 Emptying the bowl of the water trap

The water level must not exceed the mark (see arrow on bowl 1 (Fig. 1)).

Turn draining screw 2 two or three turns out to allow the water to drain off.

Afterwards replace the draining screw.

70.2 Cleaning the air filter

If the working pressure of 6 bars is no longer obtainable, clean the air filter.

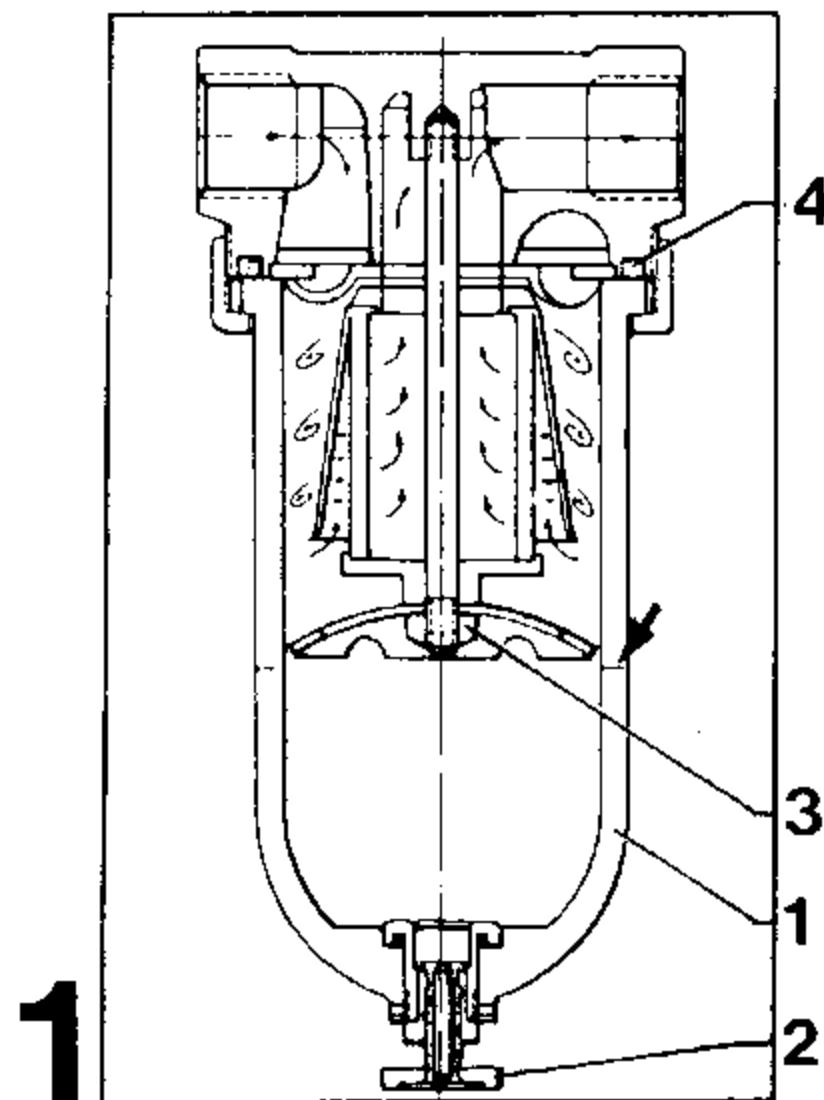
Turn off the compressed air and unscrew and remove watertrap bowl 1. Remove hexagon nut 3 and take out the filter.

Clean the filter with petrol and blow it out from the inside.

To clean the water bowl only use petrol, paraffin or water.

When reassembling make sure that seal 4 is properly inserted in the housing groove.

Re-connect the compressed air.



70.3 Topping up the oil

Turn off the compressed air and take out plug 5 (Fig. 2).

Top the oil up to the mark (see arrow) on container 6.

We recommend Pfaff oil, No. 280-1-120 144, or another pneumatic oil which does not (or only negligibly) cause the sealing materials used to swell or shrink under various operating conditions.

The mean viscosity of the oil must be 22 to 46 mm²/s at 40° C and the density 0.865 to 0.875 g/cm³ at 15° C.

Afterwards replace the plug and turn on the compressed air.

70.4 Regulating the oil drip speed on the vapourizer

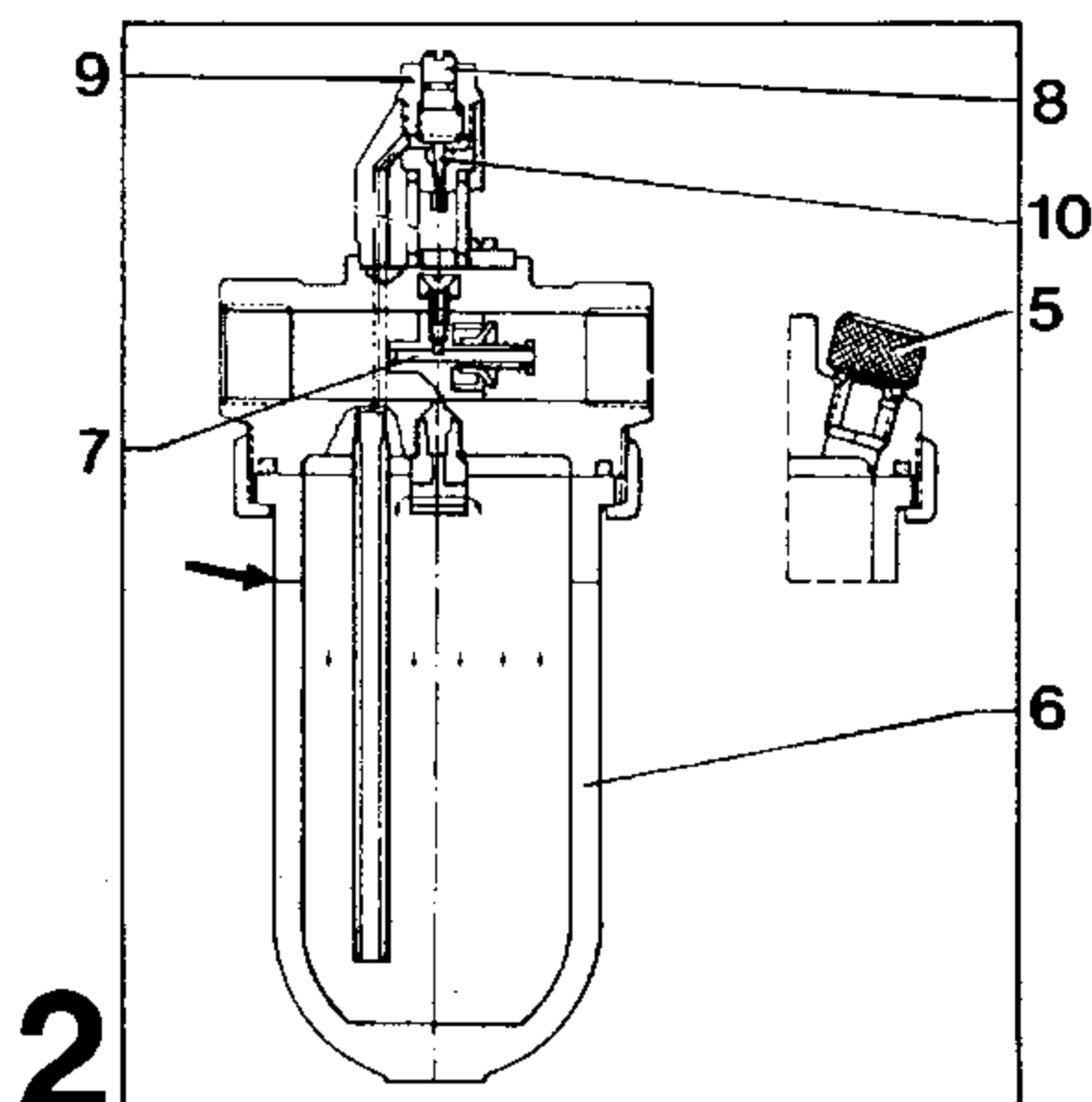
One drop of oil must pass into vapourizer jet 7 for about every 30 operating cycles of the machine (Fig. 2).

Turn regulating screw 8 clockwise for less oil, and anti-clockwise for more oil.

70.5 Cleaning the oil jet

Turn off the compressed air, remove drip feed cap 9, take out oil jet 10 and blow it out with an air gun (Fig. 2).

Replace the oil jet, screw the drip feed cap back on and turn on the compressed air.



71 Lubrication

The two oil levels in sight glass 1 (Fig. 1) must not drop below the marks 2 and 3.

If necessary, top up the oil through hole 4 to marks 5 and 6.

We recommend Pfaff sewing machine oil, part No. 280-1-120 144 or an oil with a mean viscosity of $22 \text{ mm}^2/\text{s}$ at 40°C and a density of 0.865 g/cm^3 .

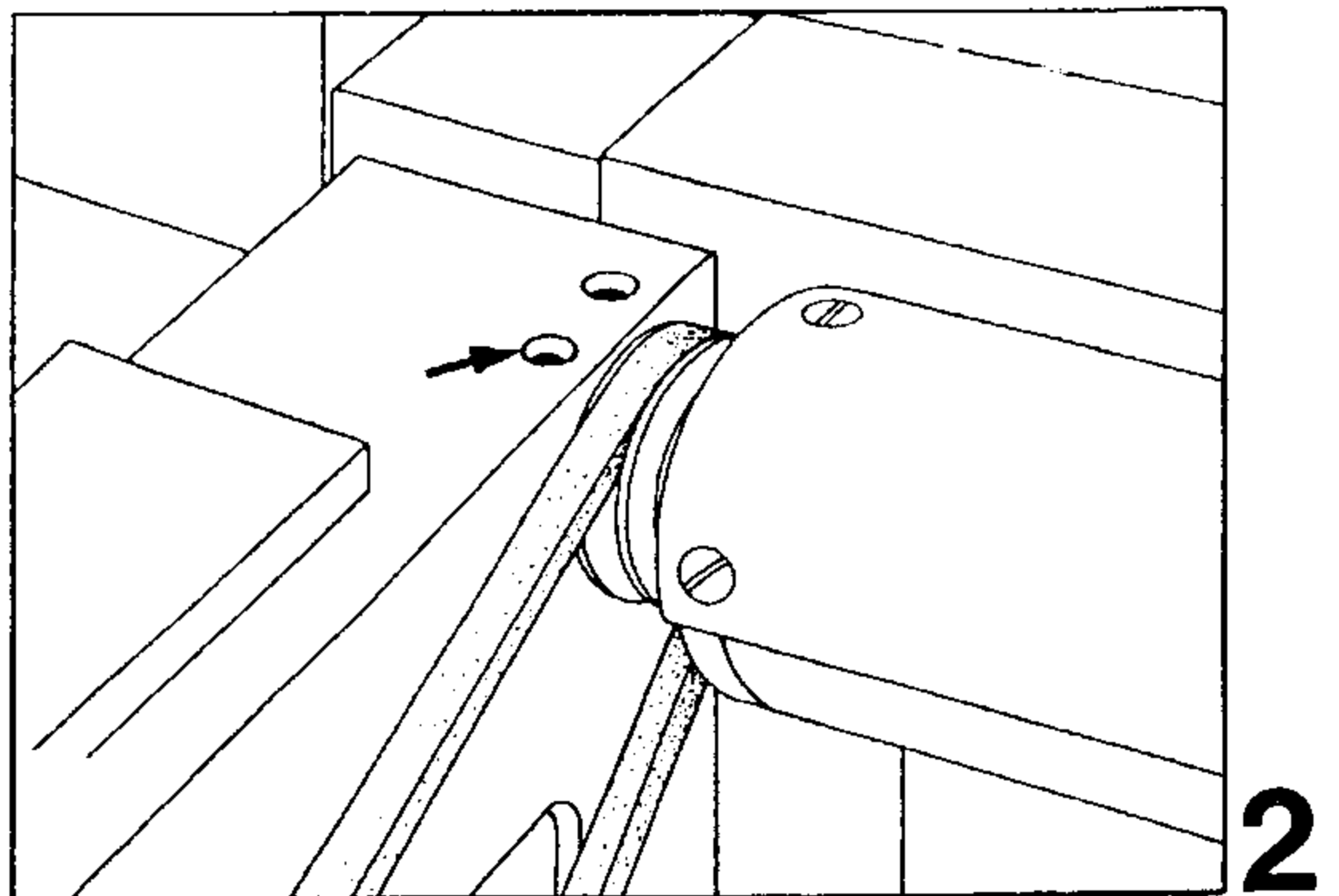
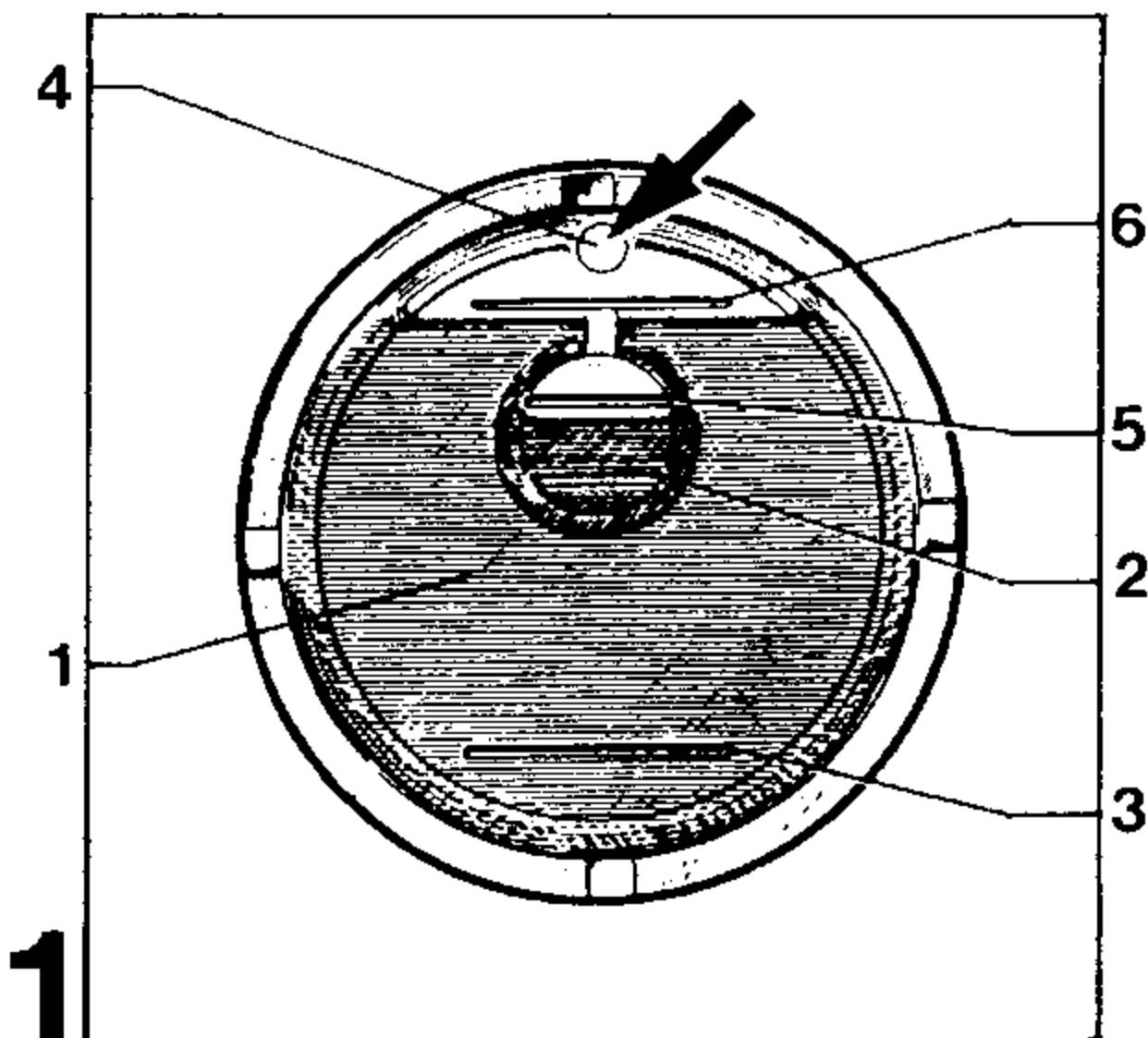
At regular intervals:

- Fill the oil holes at both sides of the feed roller with oil (see arrow in Fig. 2).

We recommend Pfaff oil, part No. 280-1-120 120 or an oil with a mean viscosity of $46 \text{ mm}^2/\text{s}$ at 40°C and a density of 0.878 g/cm^3 .

- Lightly grease or oil the moving parts of the folding station.

- Grease the runners of the jig feed with sodium grease (dripping point at 150°C). We recommend Shell Retinax G, part No. 280-1-120 243.

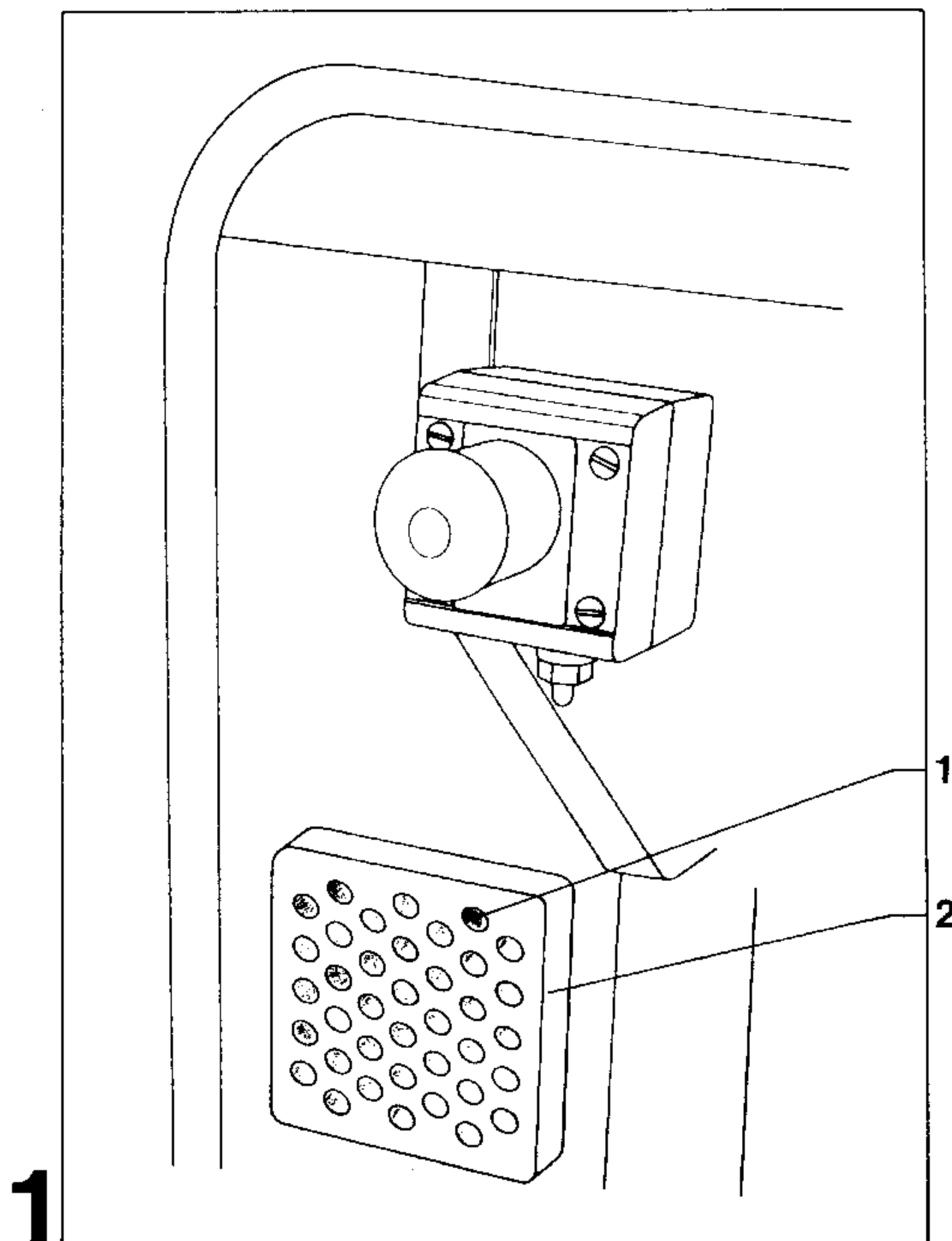


72 Cleaning the impeller filter on the switch cabinet

Clean filter 1 (Fig. 1) at certain intervals depending on the amount of air pollution.

For this purpose remove cover 2, take out filter 1 and blow out with compressed air.

Afterwards place filter in cover and refit the latter.



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