

**PFAFF**® 441-0  
442-0

# Service Manual

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**PFAFF INDUSTRIEMASCHINEN GMBH KAISERSLAUTERN**

## Technical data

Maximum sewing speed: 5000 s.p.m.

Balance wheel: 65 mm eff. dia.

Drive: clutch motor 0.550 kW (3/4 HP)  
lever-operated Stop motor 0.550 kW (3/4 HP)  
electronic Stop motor 0.550 kW (3/4 HP)

Needle system: 134 (for 7 mm fabric clearance)  
134-35 (for 9 mm fabric clearance)

Fabric clearance: 7 or 9 mm

## Important note

The adjustment procedures described in this Service Manual are based on a two-needle machine. When adjusting a single-needle machine, simply ignore the adjustment procedure for the left needle and the left sewing hook.  
A separate Service Manual is available for adjusting the Pfaff 441-0-705/03 and -755/03.

## Tools, gauges and other items required for adjusting Pfaff machines 441-0 and 442-0

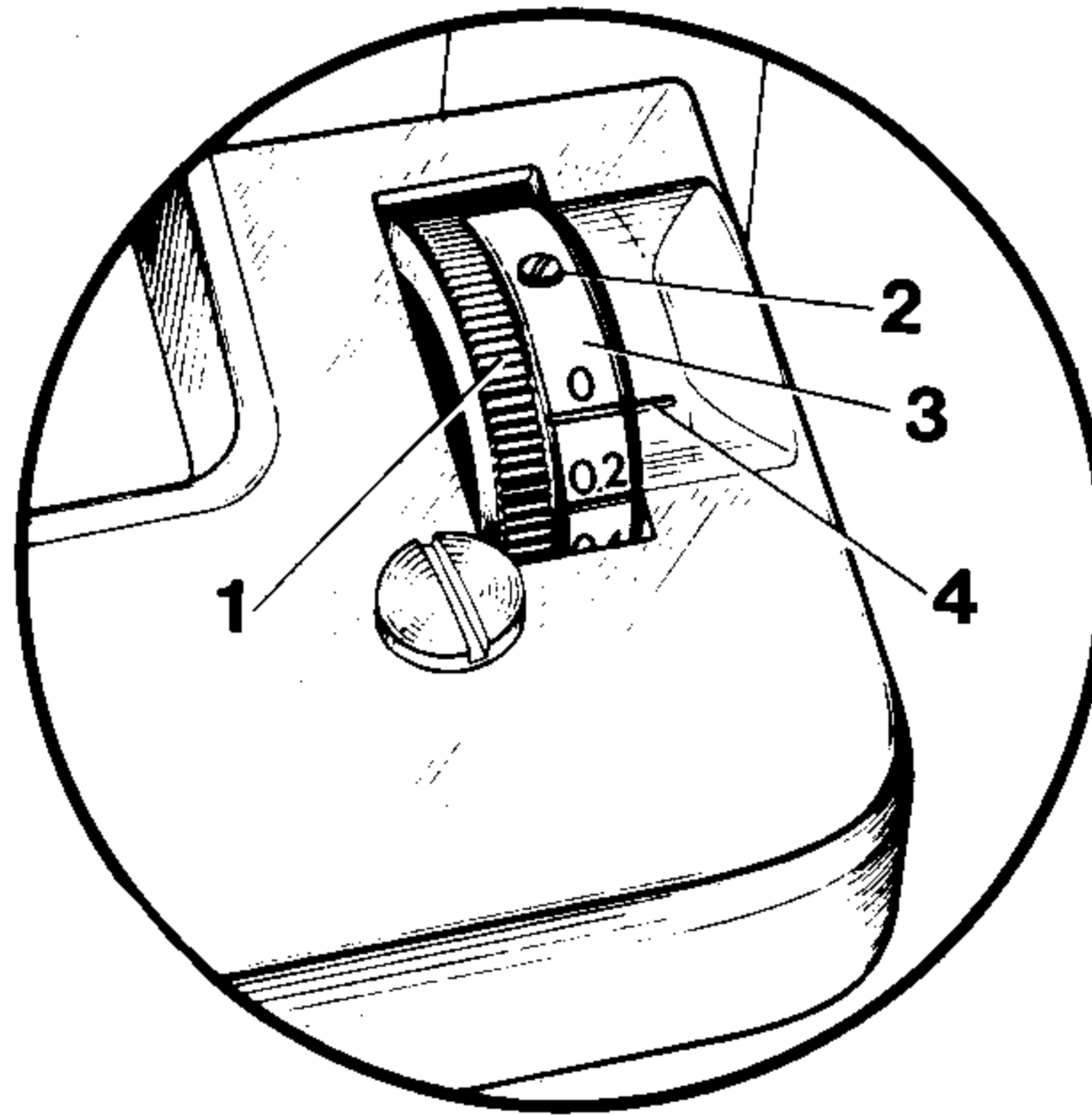
- 1 set of screwdrivers with blades from 2 to 10 mm wide
  - 1 set of wrenches with openings from 7 to 14 mm wide
  - 1 set of allen keys from 2 to 6 mm
  - 1 feed dog gauge, part No. 91-129 995-05
  - 1 adjusting gauge, part No. 91-129 573-91
  - 1 C-clamp, part No. 880 137/00
  - 1 metal rule
  - 1 wrapper of needles: system 134 (for 7 mm fabric clearance)  
system 134-35 (for 9 mm fabric clearance)
  - 2 strips of white paper
- Sewing thread and testing material

1

## Scale ring in reverse-feed control

Correct setting:

With the stitch length set at "0", the "0" mark on scale ring 3 should be opposite mark 4.

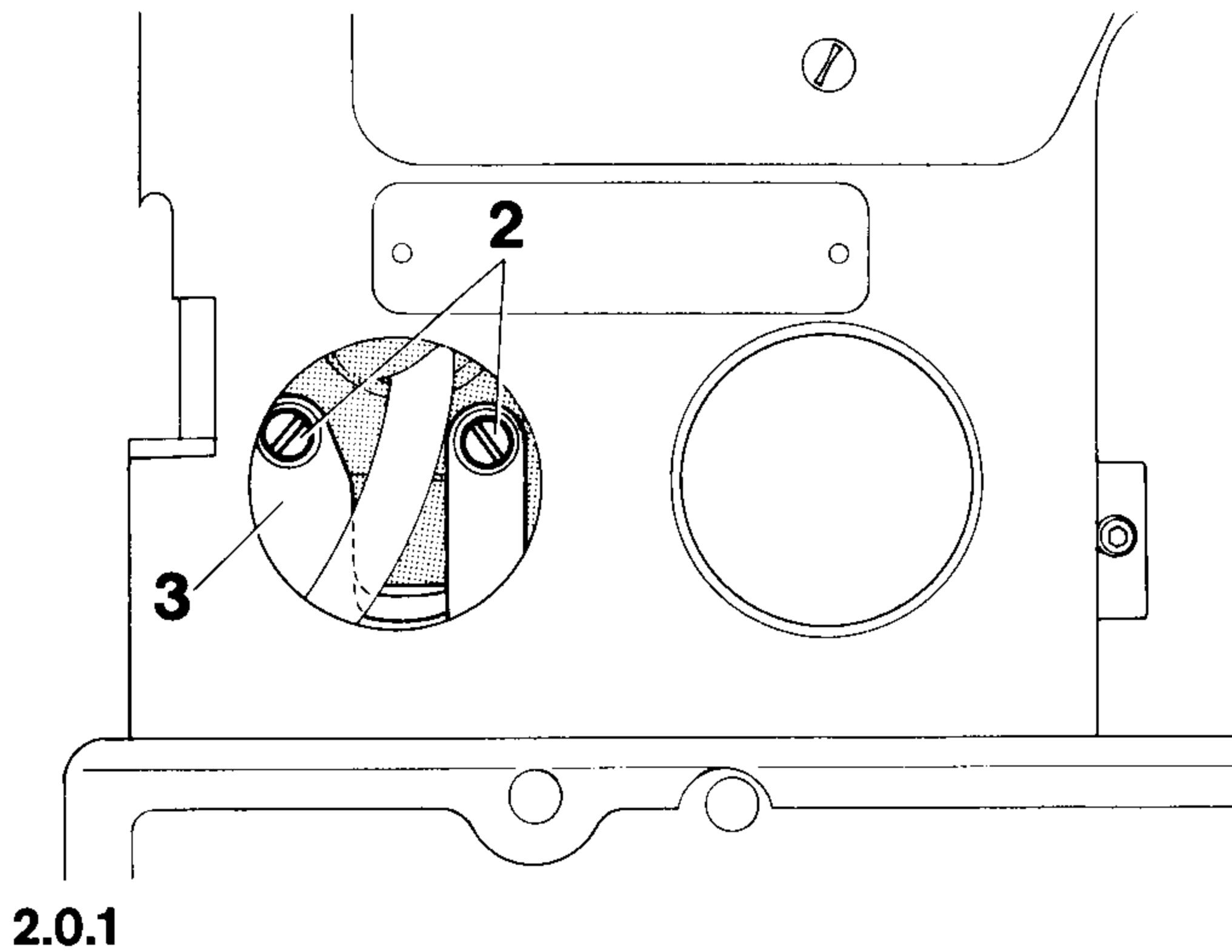


### 1.0.1

- 1.1 Take the needles out of the needle holder.
- 1.2 Remove the knee lever together with its coupling sleeve.
- 1.3 Turn knurled disc **1 as far as it will go** in the direction in which the reverse-feed control starts to move downwards.
- 1.4 **Loosen screw 2 and turn scale ring 3 until the "0" mark is opposite mark 4.**
- 1.5 In this position, tighten screw 2.

Correct  
setting:

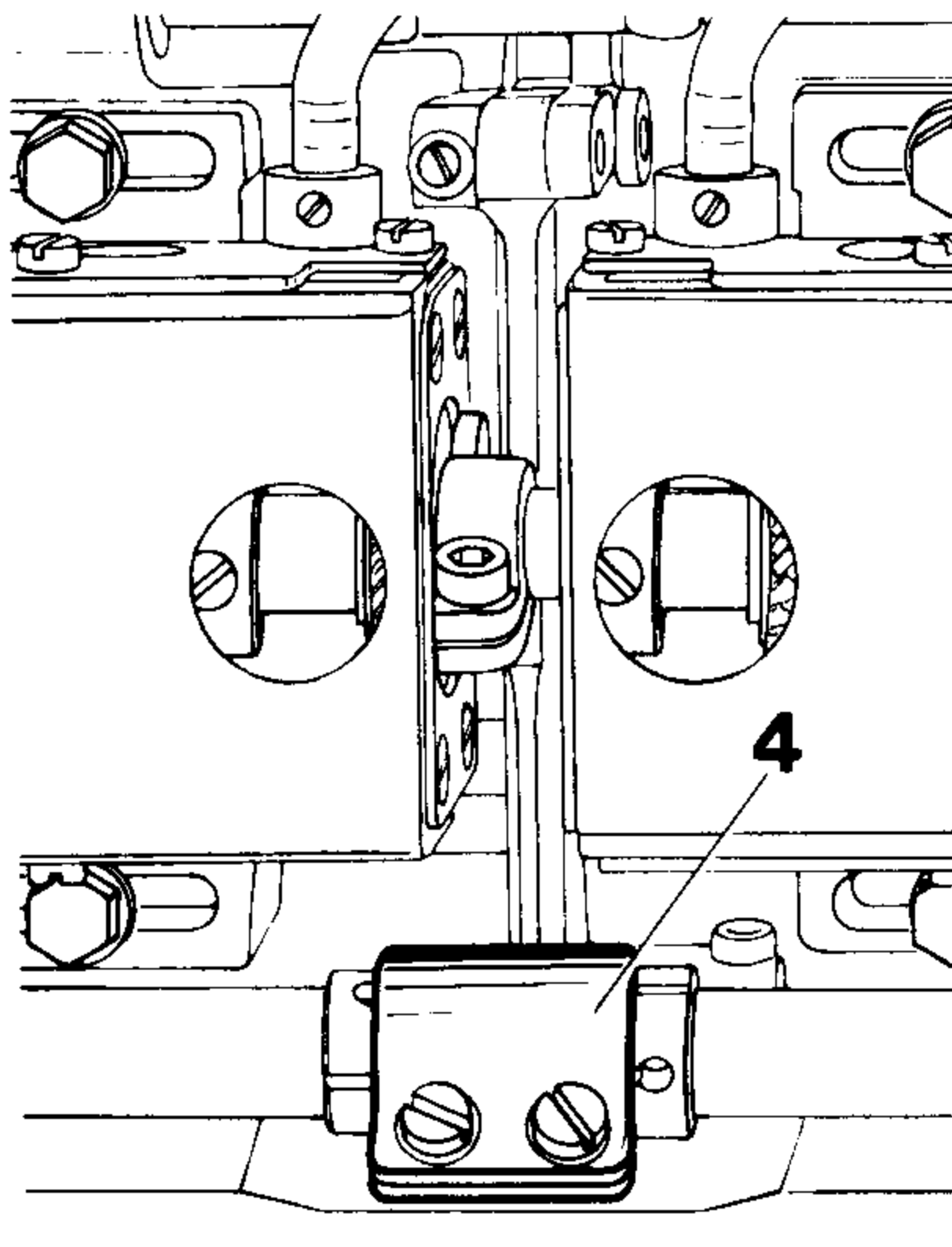
The feed dog must not move forward when you turn the balance wheel with the stitch length set at "0".



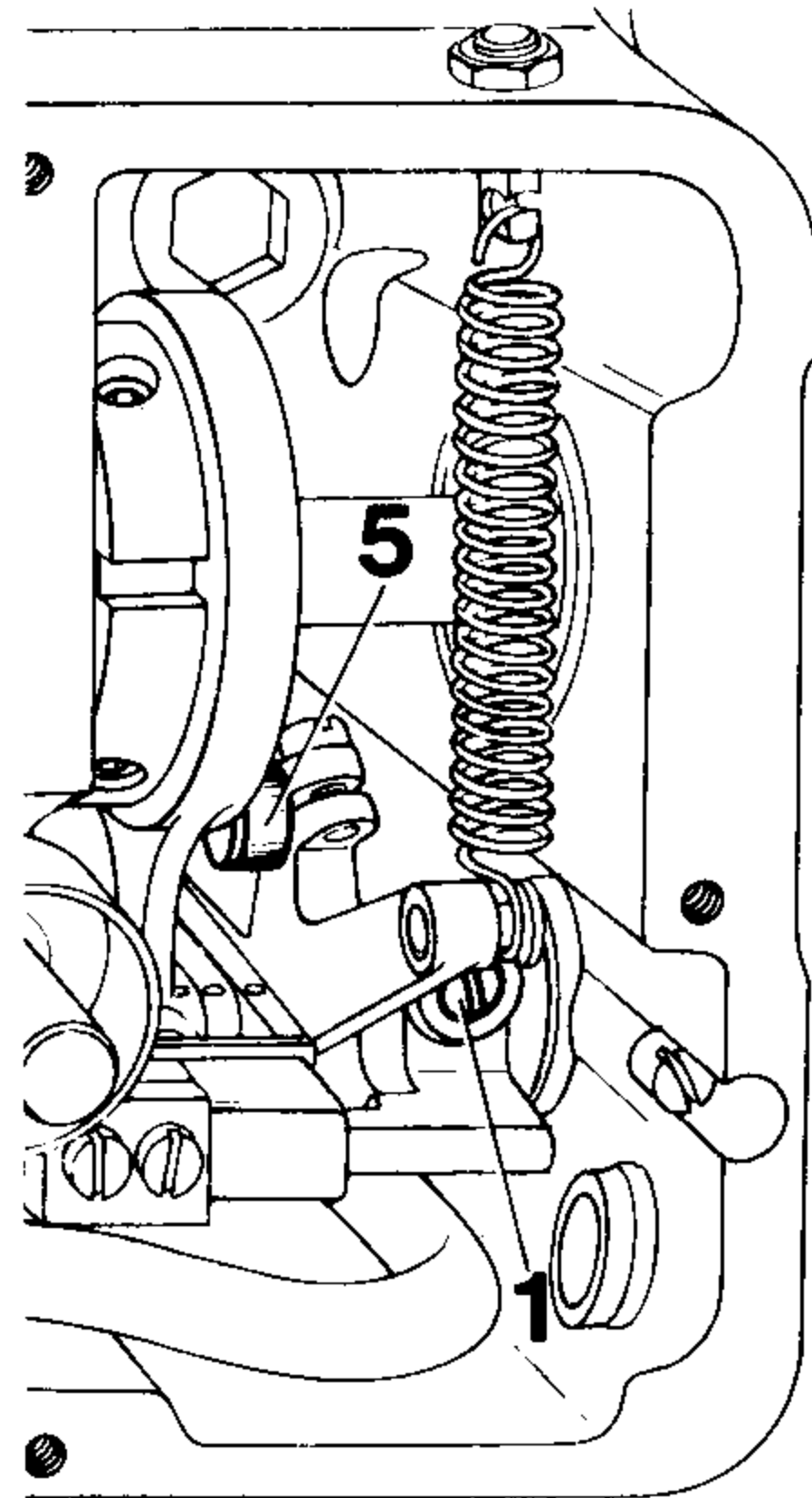
- 2.1 Remove the left upper plastic plug on the back of the arm standard.
- 2.2 Unscrew the gearcase cover on the underside of the machine base (collecting the oil, if any, in a container).
- 2.3 Loosen screw 1 of the counter-balance.
- 2.4 Make sure the stitch length is set at "0", then loosen both clamp screws 2 (Fig. 2.0.1) just sufficiently to allow crank 3 to be turned on its shaft against resistance.

2.5

To facilitate adjustment, insert a screwdriver in the slot of feed rock shaft crank 4 (Fig. 2.0.2).



**2.0.2**



**2.0.3**

2.6

**Turn the balance wheel and simultaneously adjust rod 5 (Fig. 2.0.3) connected to crank 3 (Fig. 2.0.1) until the feed dog (or rather the screwdriver in the feed rock shaft crank) is completely motionless.**

2.7

In this position, tighten both clamp screws 2 securely.

2.8

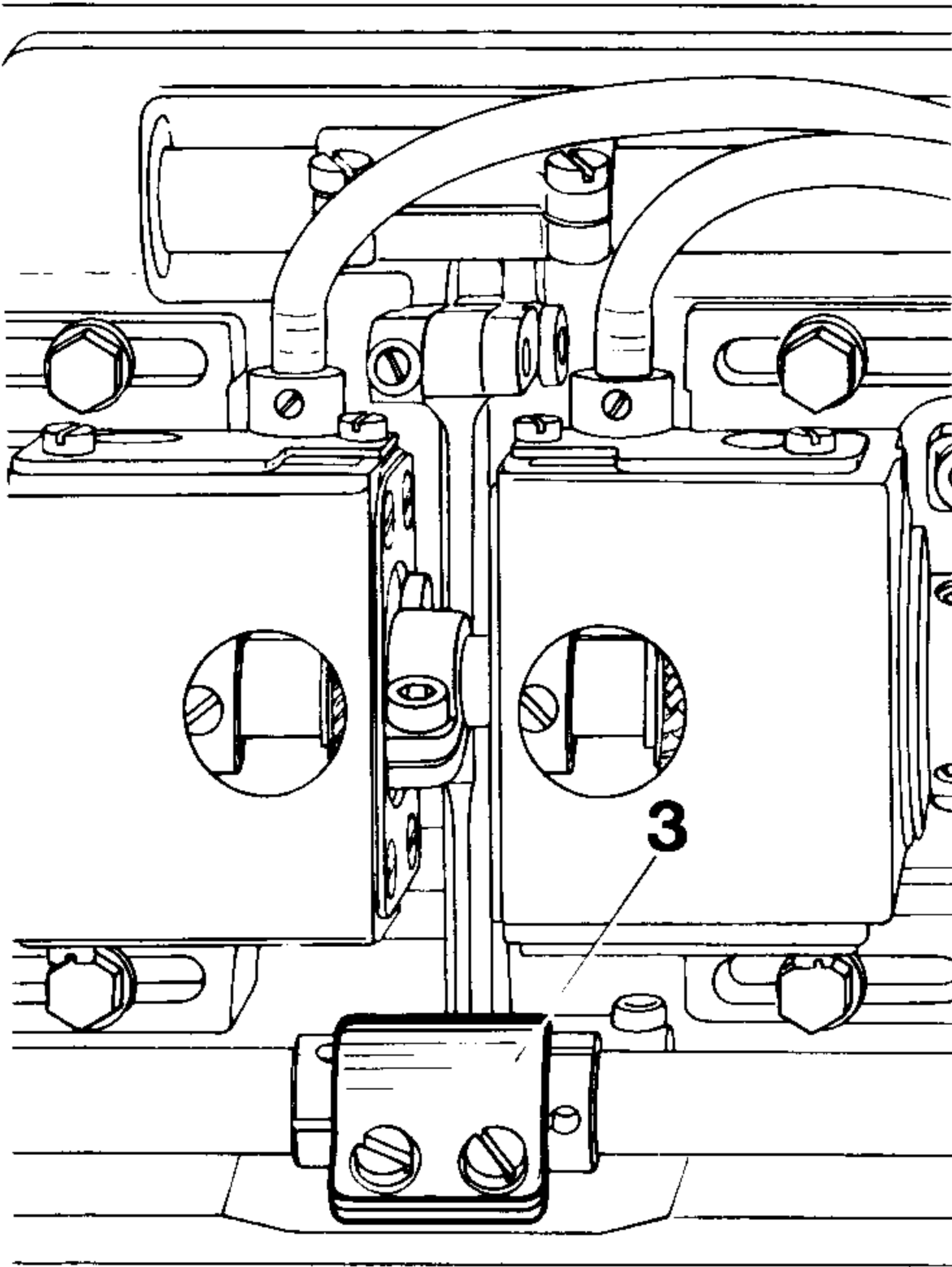
Leave the screwdriver in the slot of feed rock shaft crank 4 (Fig. 2.0.2) for the subsequent adjustments.

2.9

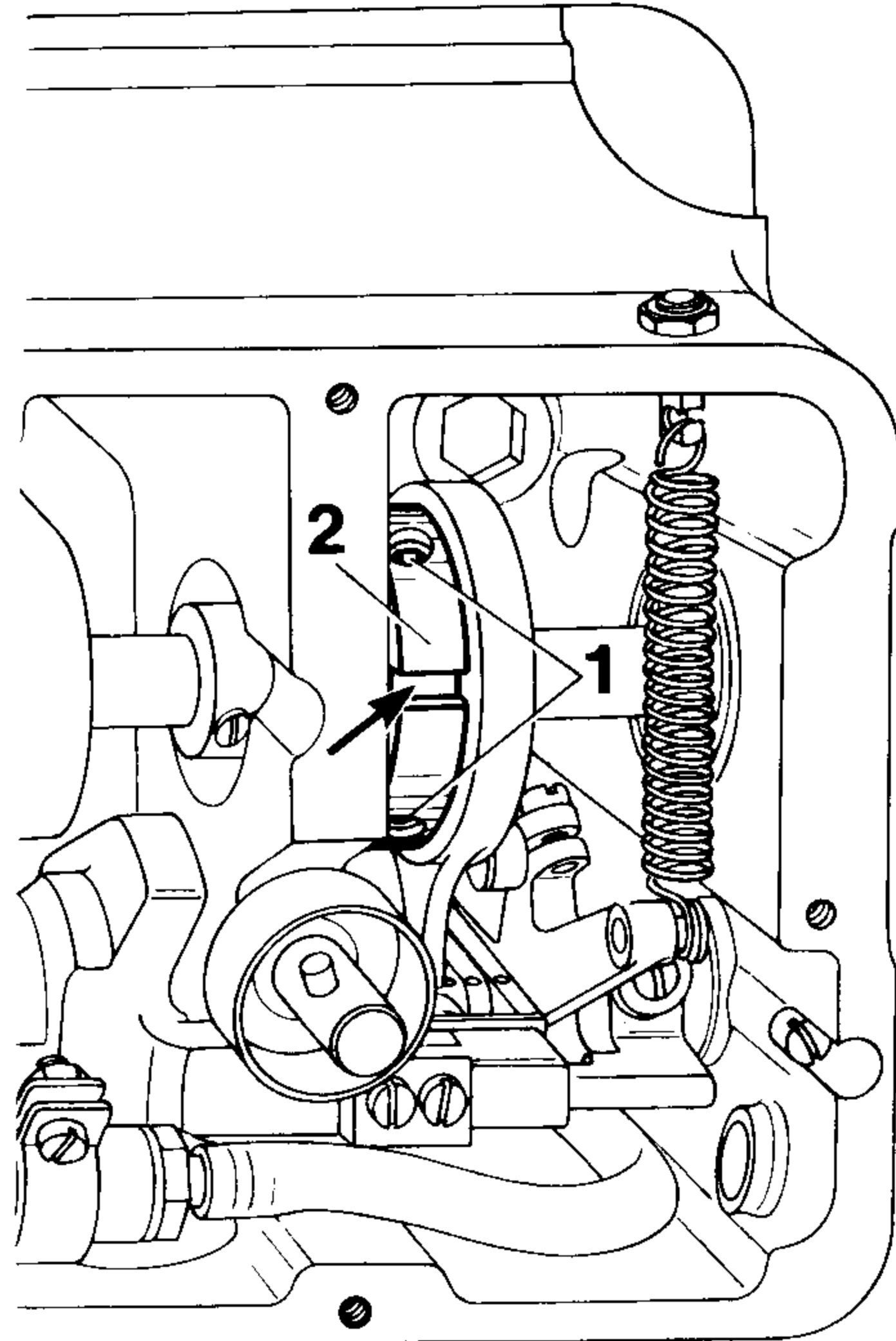
Check this adjustment (see "Correct setting").

Correct setting:

With the machine set for its longest stitch and the needle bar positioned at bottom dead center, the feed dog should not move when the reverse-feed control is operated.



3.0.2



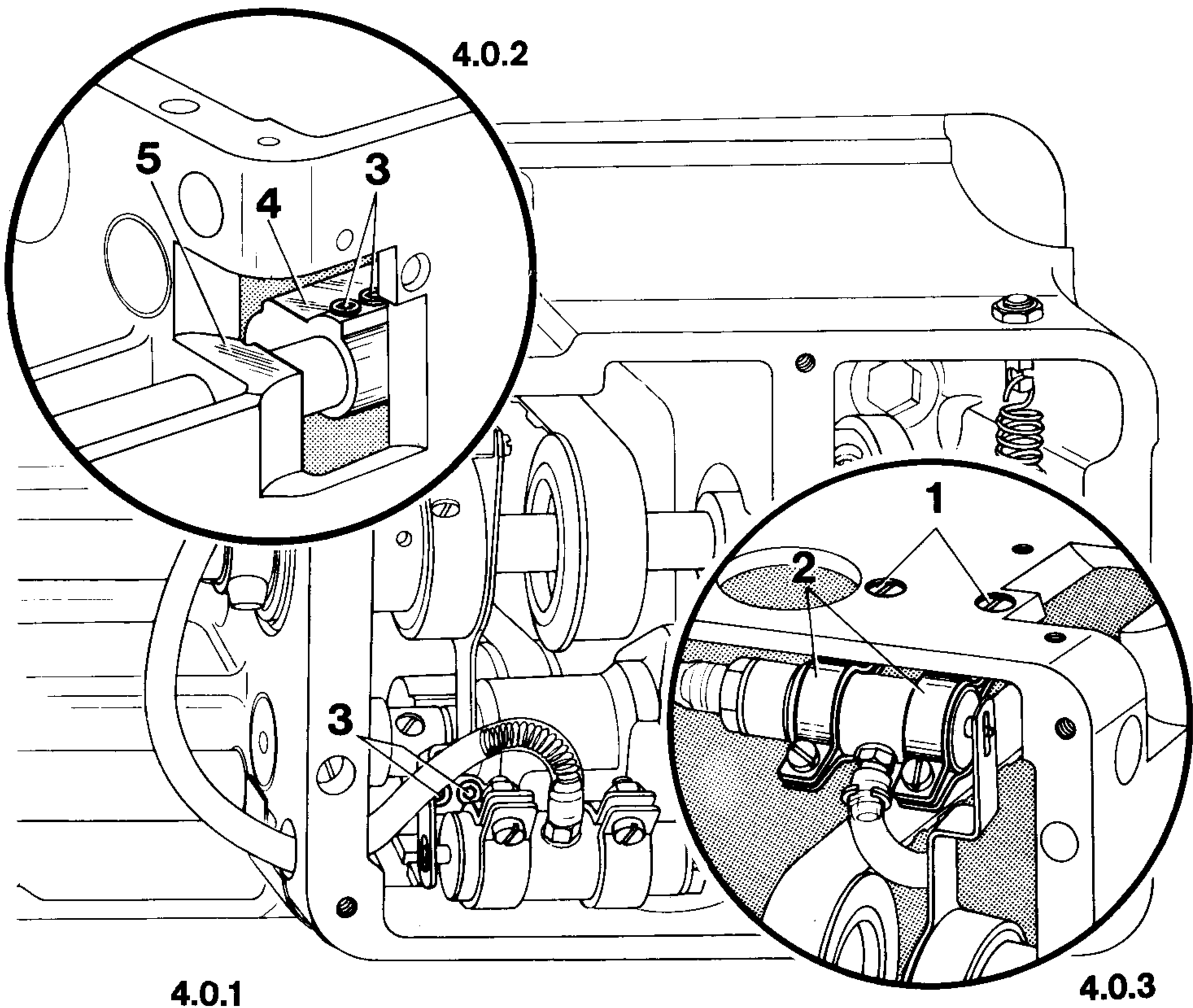
3.0.1

- 3.1 Loosen both screws 1 (Fig. 3.0.1) in feed driving eccentric 2 just sufficiently to allow the eccentric to be turned on its shaft against resistance.
- 3.2 Bring the needle bar to bottom dead center.
- 3.3 Push the C-clamp onto the needle bar, push it up against the needle bar frame and tighten its screw.
- 3.4 Set the machine for its longest stitch.
- 3.5 **Move the reverse-feed control up and down and simultaneously turn feed driving eccentric 2 until its notch (see arrow in Fig. 3.0.1) is visible and the feed dog (or rather the screwdriver in feed rock shaft crank 3) is completely motionless.**
- 3.6 In this position, securely tighten the accessible screw 1.
- 3.7 Remove the C-clamp from the needle bar.
- 3.8 Also tighten the second screw 1.
- 3.9 Pull the screwdriver out of the slot in feed rock shaft crank 3.
- 3.10 Check this adjustment (see "Correct setting").

#### 4 Lower needle bar driving crank

Correct setting:

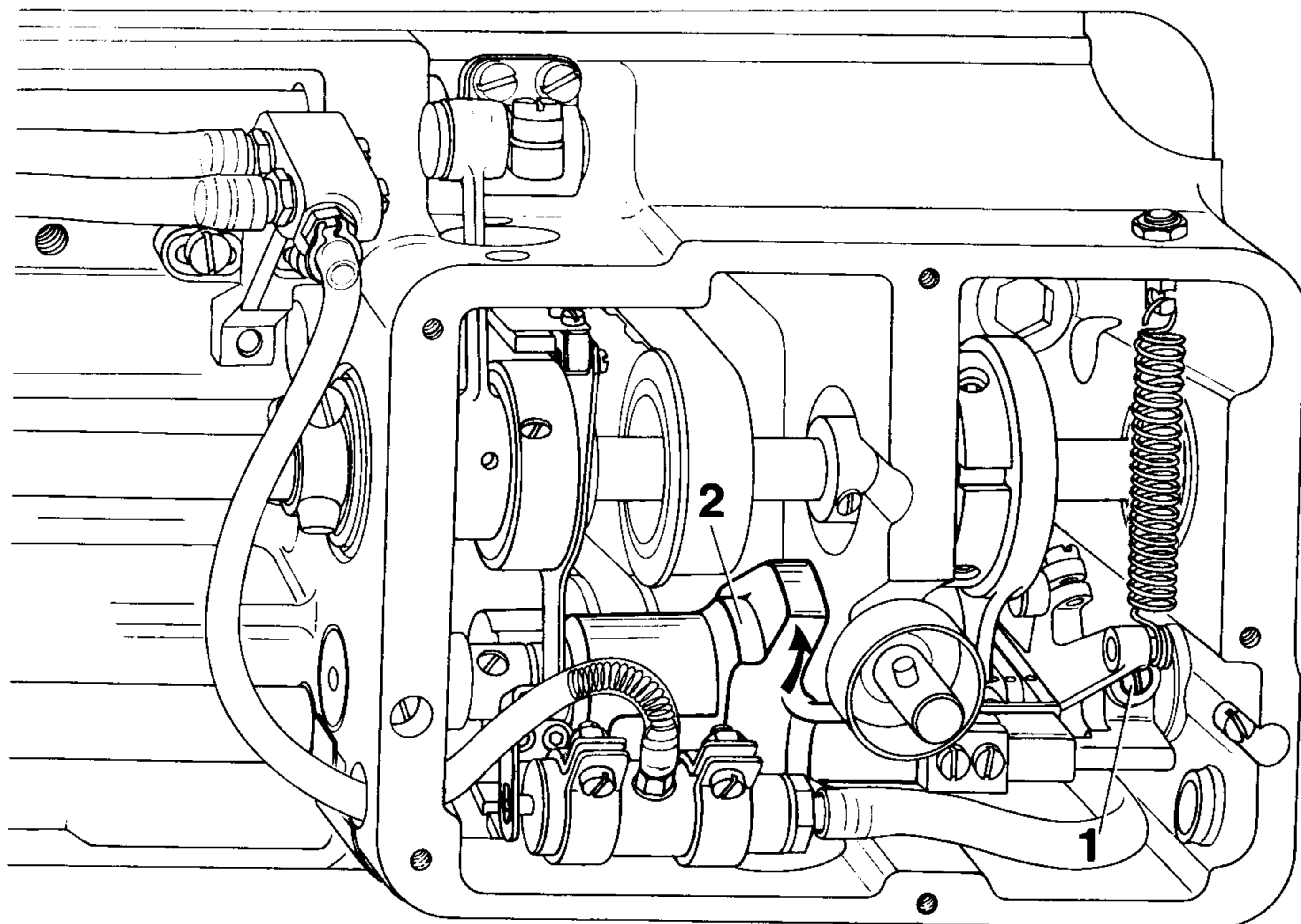
With the stitch length set at "0", the flat surface of lower needle bar driving crank 4 should be so positioned that its edge is parallel to the edge of bedplate cutout 5 (fig. 4.0.2).



- 4.1 Take out screws 1 of clip bracket 2 and remove the bracket.
- 4.2 Set the machine for its longest stitch.
- 4.3 Loosen screws 3.
- 4.4 Set the stitch length at "0".
- 4.5 **Turn lower needle bar driving crank 4 so that the edge of its flat surface is parallel to the edge of bedplate cutout 5.**
- 4.6 In this position, tighten the accessible screw 3.
- 4.7 Again set the machine for its longest stitch and tighten the second screw 3, too.
- 4.8 Replace bracket 2 and tighten screws 1.

Correct  
setting:

With the machine set for its longest stitch, counter-balance 2 should move freely when the reverse-feed control is operated.



5.0.1

- 5.1 Set the machine for its longest stitch.
- 5.2 Make sure screw 1 of counter-balance 2 is loose (Fig. 5.0.1), move the latter as far as it will go, turning it in the direction indicated by an arrow.
- 5.3 Turn the counter-balance back by abt. **1 mm** again, and in this position tighten screw 1.
- 5.4 Check this adjustment (see "Correct setting").

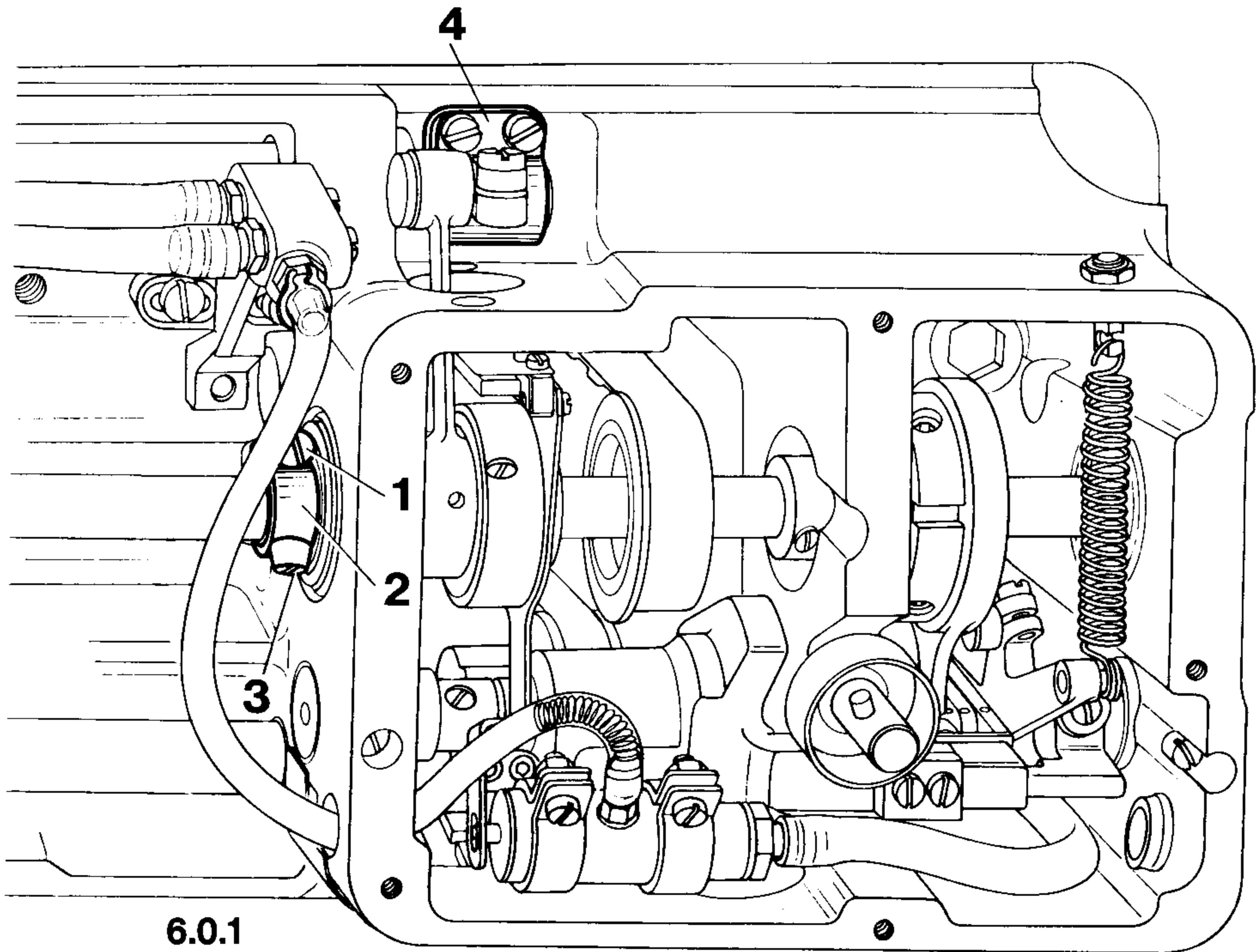


## 6

**Bottom feed lifting motion**

Correct setting:

When the needle bar is at bottom dead center, the feed dog should be at its highest point.

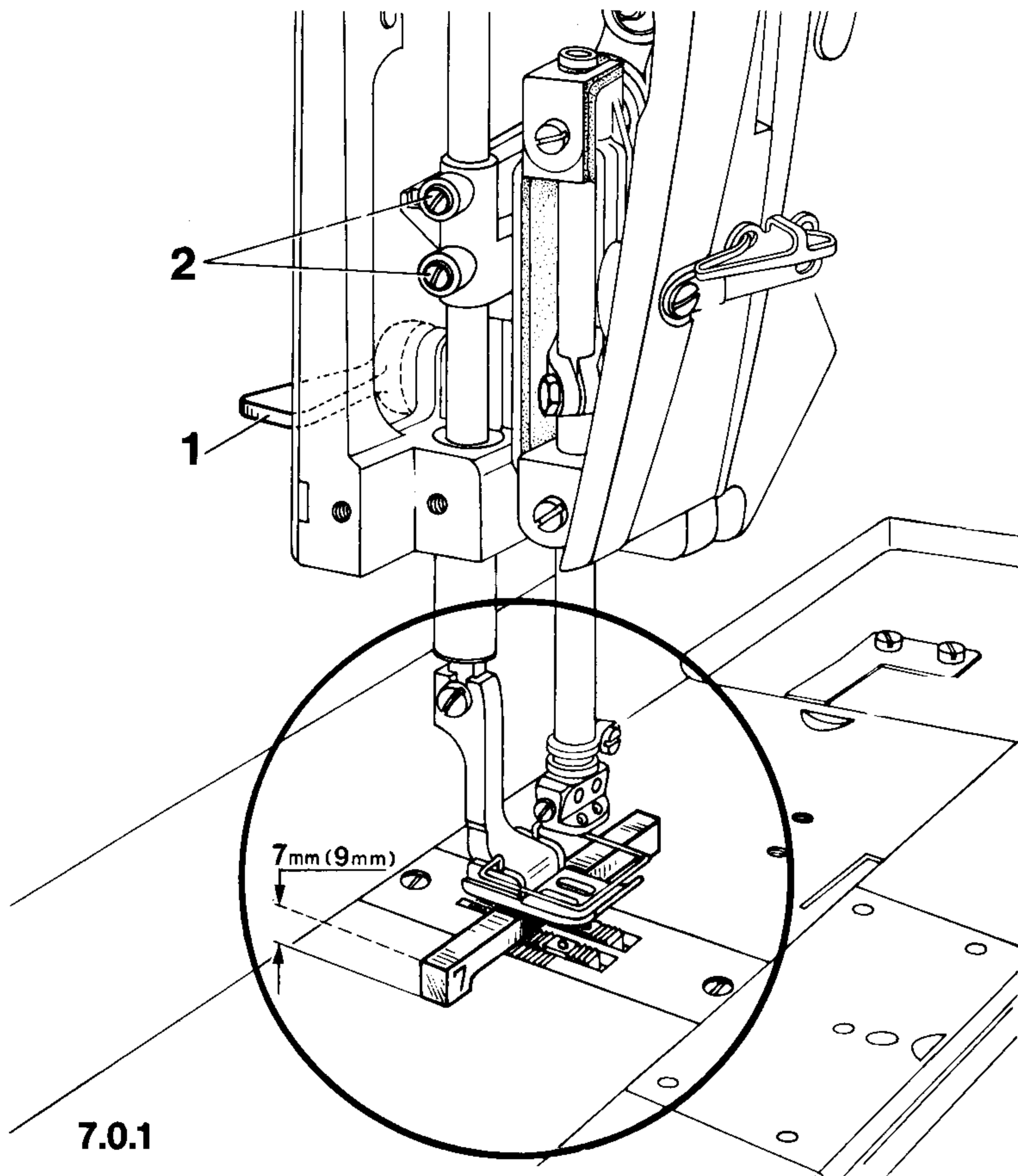


- 6.1 Set the stitch length at "0".
- 6.2 Loosen clamp screw 1.
- 6.3 Turn out screw 3 in collar 2 by half a turn.
- 6.4 Insert a screwdriver in the slot of bottom feed lifting crank 4 and bring the needle bar to bottom dead center.
- 6.5 Push the C-clamp onto the needle bar, push it up against the needle bar frame and tighten its screw.
- 6.6 **Turn collar 2 on the collar of the lifting eccentric until the feed dog (or screwdriver) is at top dead center.**
- 6.7 In this position, tighten clamp screw 1.
- 6.8 Remove the C-clamp from the needle bar and tighten screw 3.
- 6.9 Pull the screwdriver out of the slot of bottom feed lifting crank 4 and check this adjustment (see "Correct setting").

## 7 Clearance between presser foot and needle plate

Correct setting:

With presser bar lifter 1 raised, there should be a clearance of 7.0 mm (needle system 134) or 9.0 mm (needle system 134-35) between presser foot and needle plate.

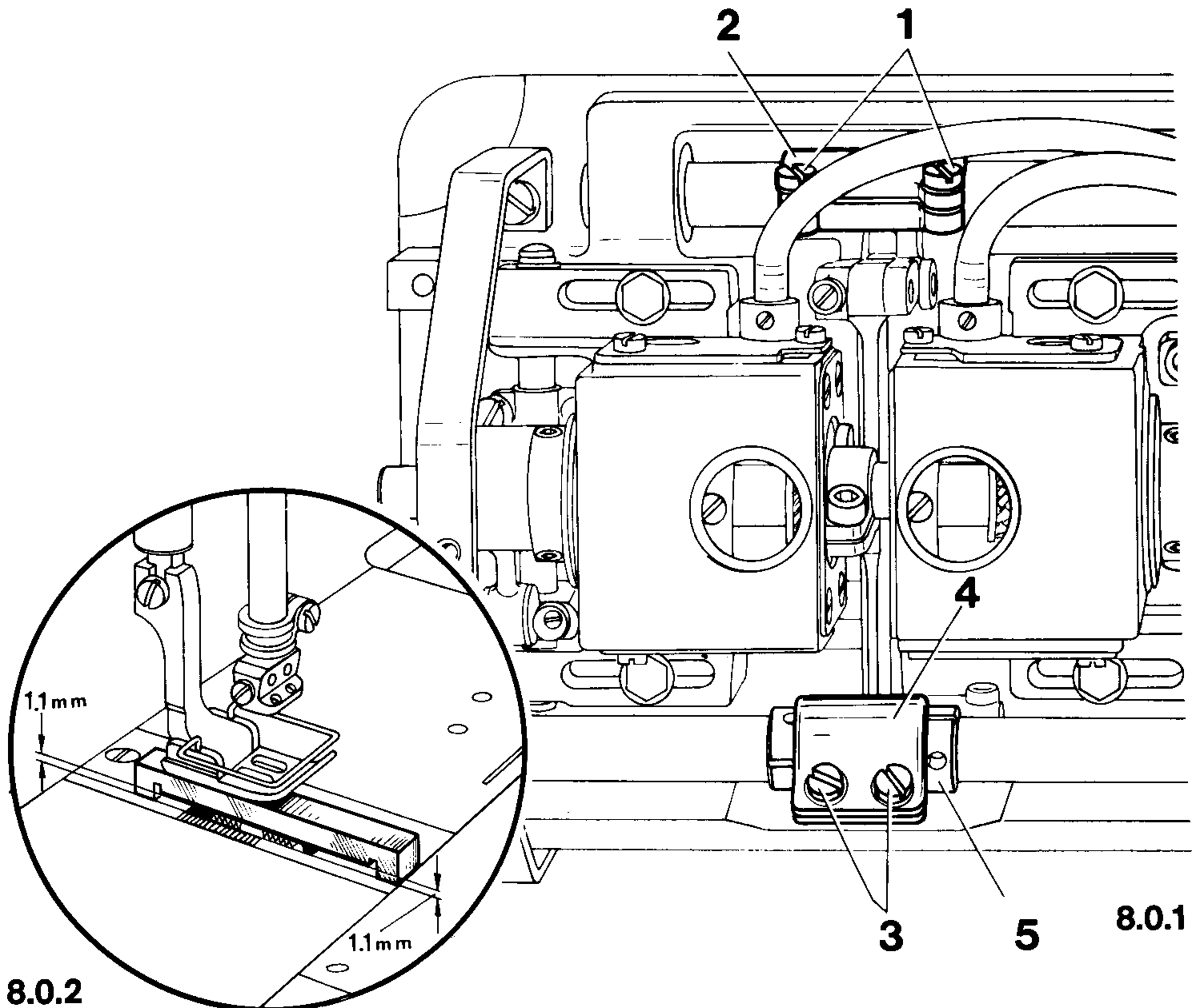


- 7.1 Take out the two screws of the face cover and remove the latter.
- 7.2 Unscrew the cover on the back of the machine arm.
- 7.3 Raise presser bar lifter 1 and screw on the presser foot.
- 7.4 Loosen both screws 2 in the presser bar collar.
- 7.5 Push the 7-mm (or 9-mm) thick part of the gauge under the presser foot so that its recess faces downwards (Fig. 7.0.1).
- 7.6 **Push the presser foot down onto the gauge and adjust it laterally so that its sides are parallel to the edges of the needle plate slot.**
- 7.7 In this position, tighten both screws 2.
- Note: Adjust the presser foot pressure by turning regulating screw 4 (Fig. 9.0.1) in or out when you make a sewing test.

## 8 Feed dog height

Correct setting:

With the stitch length set at "0" and the needle bar positioned at bottom dead center, the feed dog should be centered in its slots and contact the gauge throughout its entire length (Fig. 8.0.2).

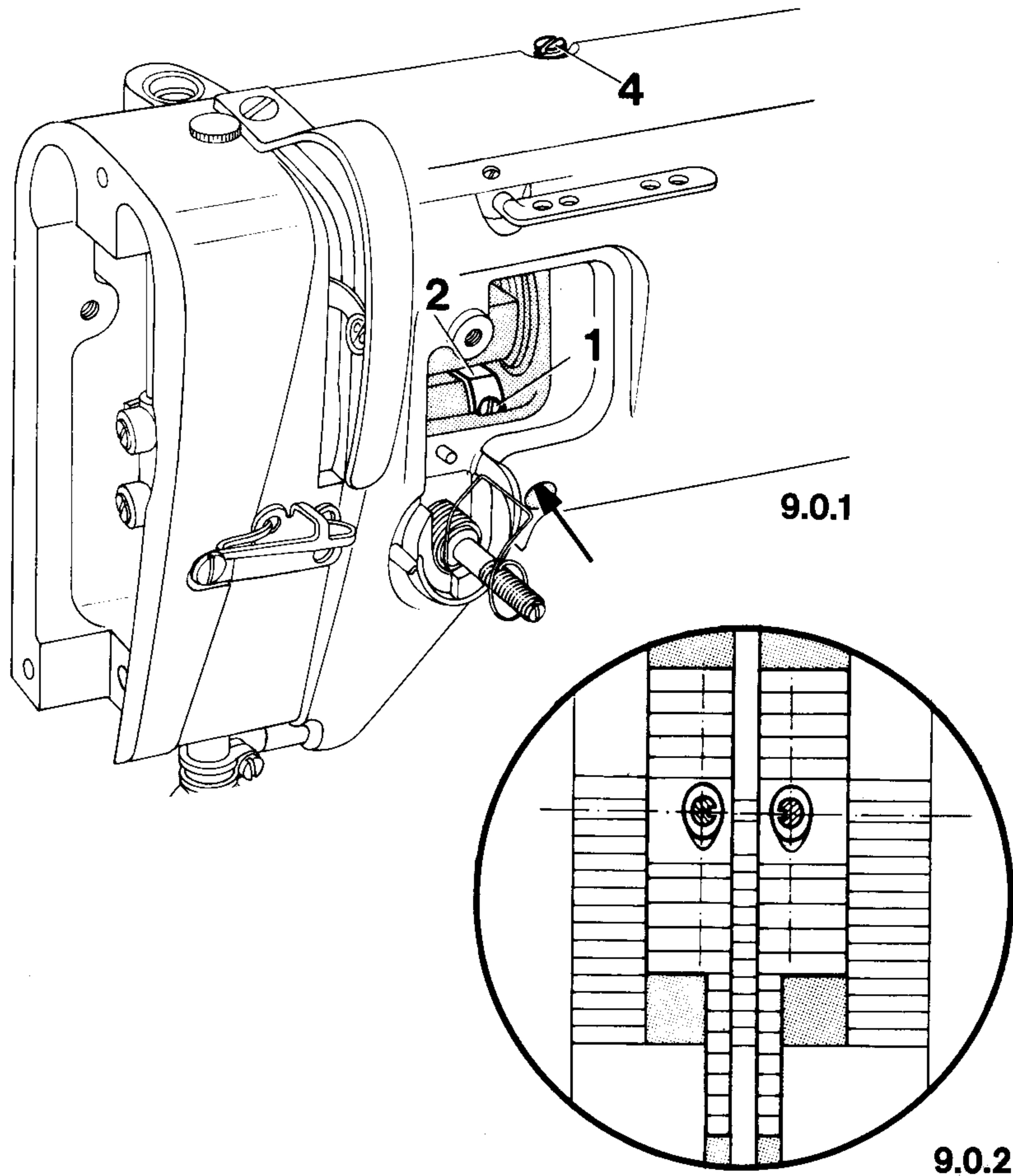


- 8.1 Set the stitch length at "0".
- 8.2 Bring the needle bar to bottom dead center.
- 8.3 Loosen clamp screws **1** of feed lifting crank **2** and clamp screws **3** of feed rock shaft crank **4**.
- 8.4 Place the machine feed gauge so under the presser foot that its recess faces downwards and its front edge is flush with the front edge of the needle plate.
- 8.5 Lower the presser bar lifter to rest the presser foot on the gauge.
- 8.6 **Center the feed dog in its slots.**
- 8.7 Push the feed bar upwards until the feed dog contacts the gauge, and hold it in this position.

- 8.8 **Turn eccentric bushing 5 located under feed rock shaft crank 4 until the feed dog is in contact with the gauge throughout its entire length (Fig. 8.0.2); the feed dog now protrudes 1.1 mm from the needle plate surface.**
- 8.9 In this position, tighten clamp screws 1 and 3, making sure that the feed dog is still centered in its slots.
- 8.10 Check this adjustment (see "Correct setting").
- 8.11 Raise the presser bar lifter and remove the gauge from under the presser foot.

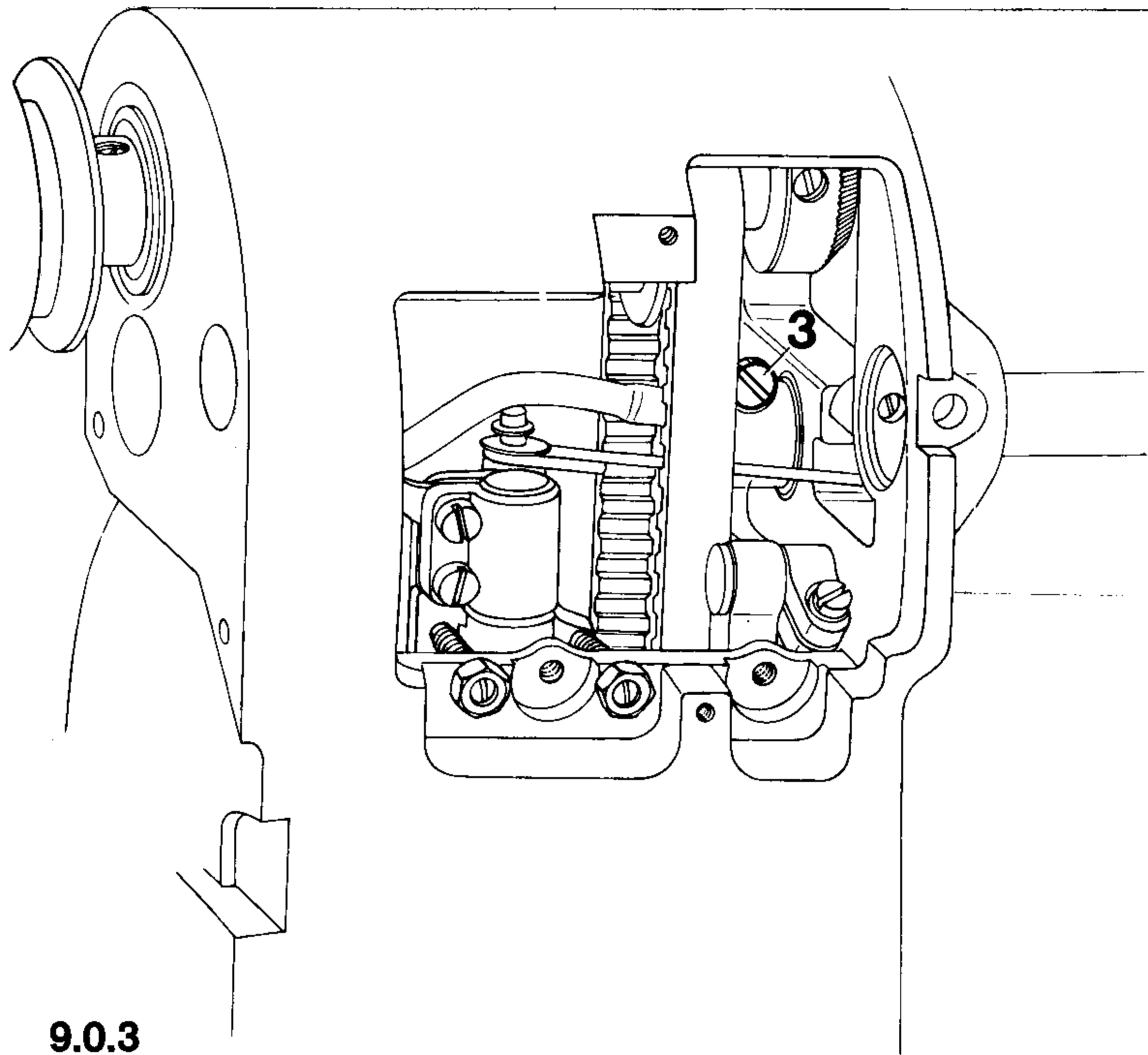
Correct setting:

With the stitch length set at "0", the needles should be centered exactly in the respective needle holes. (It is recommended to insert two new needles)



- 9.1 Unscrew the cover on the back of the machine arm near the balance wheel.
- 9.2 Unscrew the presser foot and the thread tension base plate.
- 9.3 Set the stitch length at "0", and bring the needle bar to top dead center.
- 9.4 Insert two needles into the needle holder so that their long grooves face each other (note the needle system).
- 9.5 Loosen screw 1 in collar 2 on the needle bar driving shaft which is accessible through the aperture (see arrow in Fig. 9.0.1).
- 9.6 Also loosen clamp screw 3 in the needle bar driving crank (Fig. 9.0.3).

- 9.7 Turn the balance wheel to position the needles above the needle holes.
- 9.8 **Turn the balance wheel while moving the needle bar frame sideways until both needles are centered in their needle holes both lengthwise and crosswise (Fig. 9.0.2).**
- 9.9 In this position, push collar 2 to the right as far as it will go and tighten screw 1.
- 9.10 Also tighten clamp screw 3, making sure the needle bar driving shaft has no end play.
- 9.11 Check this adjustment (see "Correct setting").



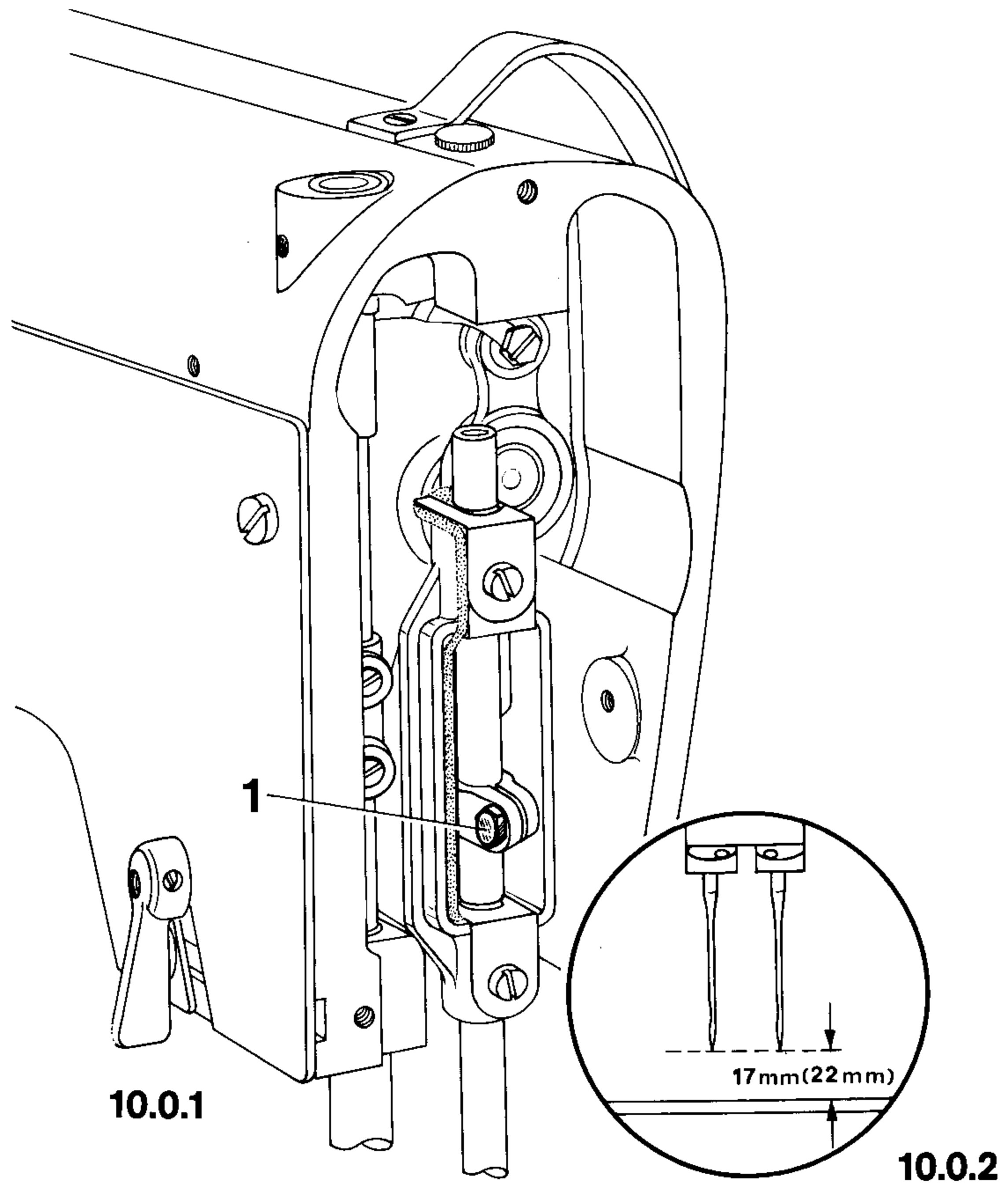
# 10

## Preliminary adjustment of needle bar height

Correct setting:

When the needle bar is at top dead center, there should be a clearance of 17 mm between needle point and needle plate on Model S machines, and a clearance of 22 mm on Model L machines.

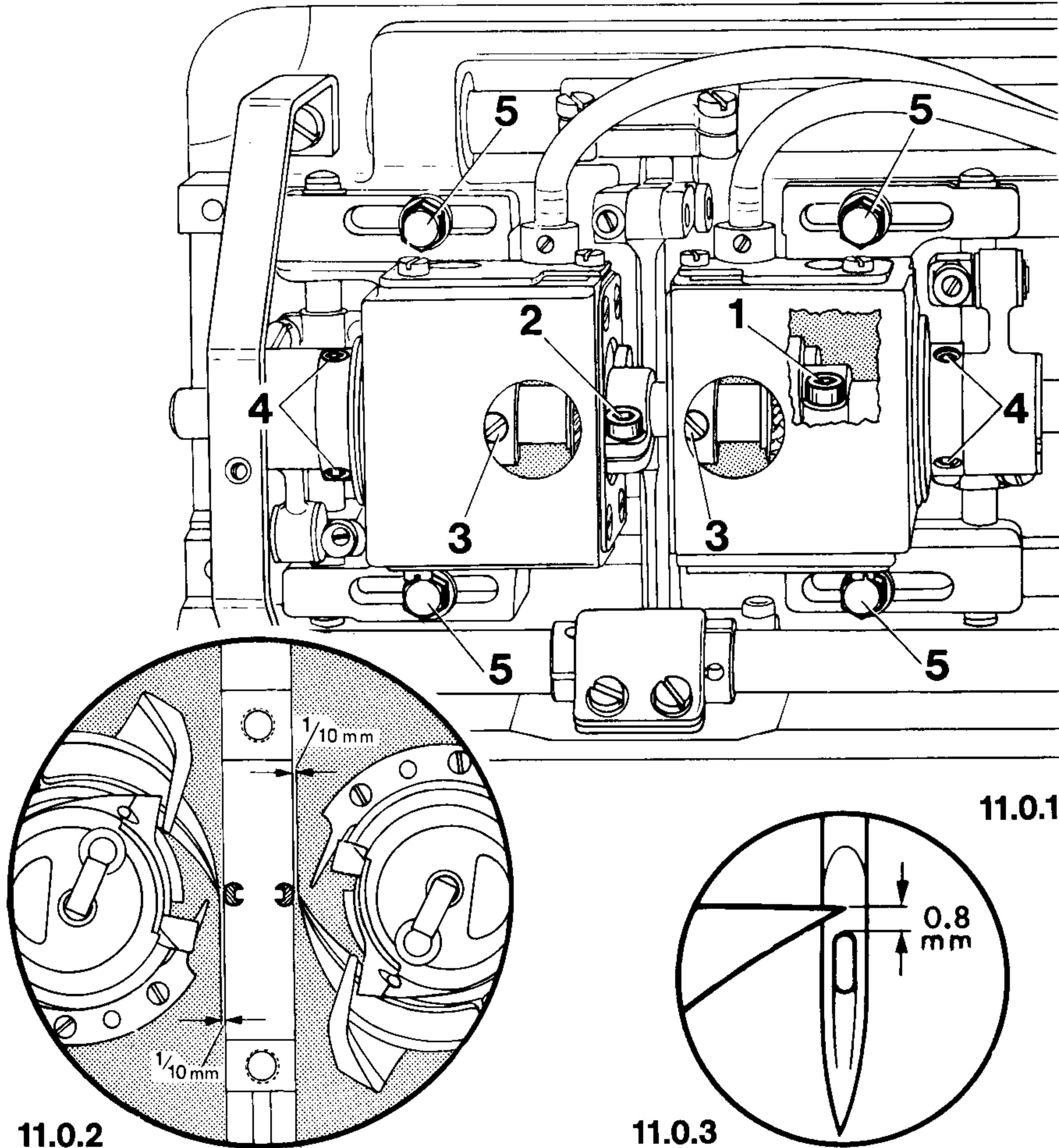
Model S = 33 mm needle bar stroke  
Model L = 38 mm needle bar stroke



- 10.1 Bring the needle bar to top dead center.
- 10.2 Loosen hexagon screw 1 in the needle bar connecting stud.
- 10.3 **Adjust the needle bar vertically until there is a clearance of 17 mm between needle point and needle plate on Model S machines, or a clearance of 22 mm on Model L machines. Make sure the needle bar is not turned in the process.**
- 10.4 In this position, tighten hexagon screw 1.

Correct  
setting:

With the stitch length set at "0" and the needle bar positioned 1.8 mm past bottom dead center (needle rise position) each hook point should be exactly opposite the center line of the respective needle, the lateral clearance between hook point and needle being 0.1 mm. Also, in this position, the hook points should be positioned 0.8 mm above the top edge of the respective needle eye.



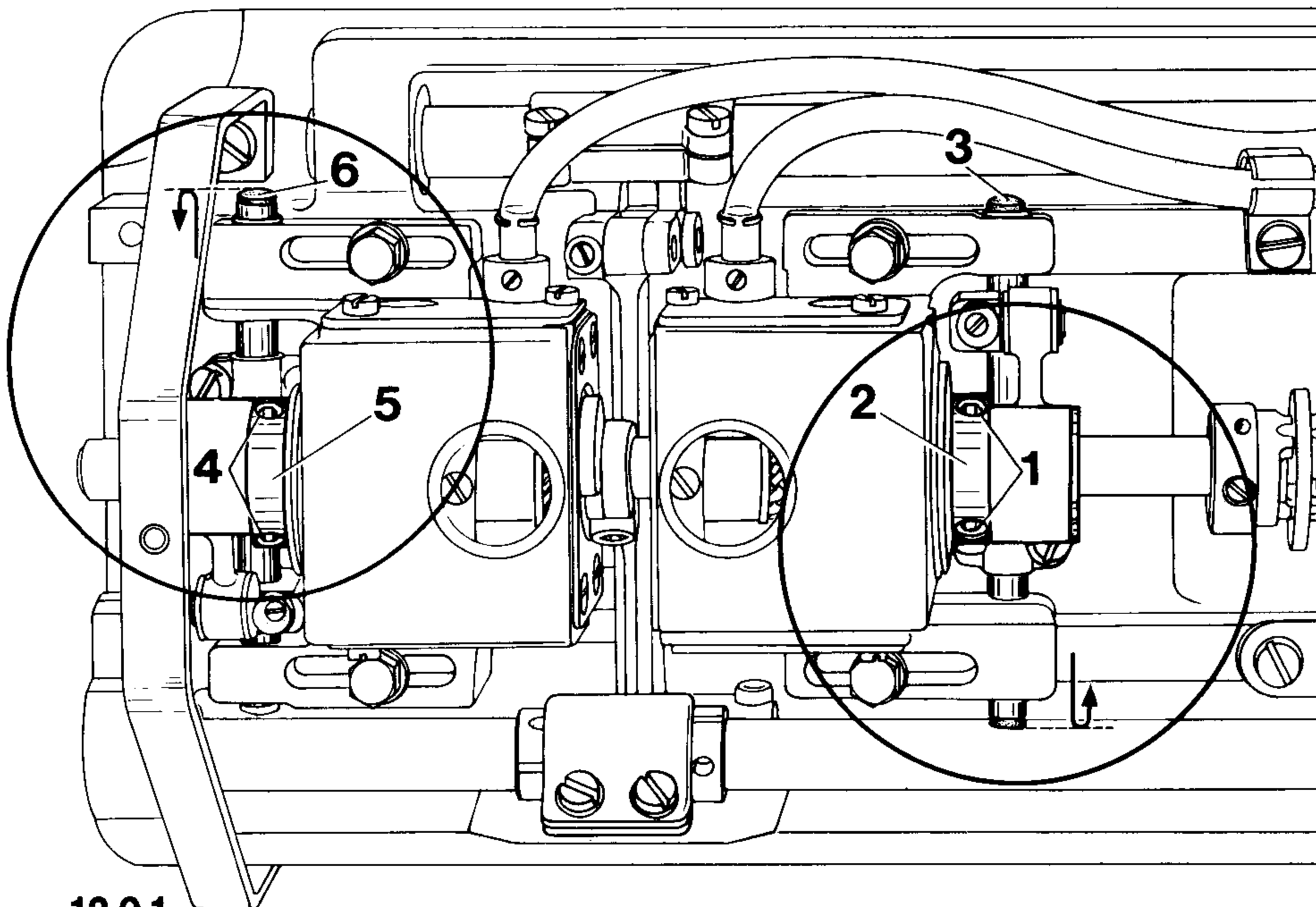
- 11.1 Set the stitch length at "0".
- 11.2 Unscrew the needle plate and the feed dog.
- 11.3 Loosen allen screw 1, which is accessible through the hole in the bevel gear case cover, and allen screw 2 between both bevel gear cases.
- 11.4 Loosen both screws 3, which are accessible through the holes in the bevel gear cases.



- 11.5 Loosen screws **4** of the bobbin case opener eccentrics.
- 11.6 Also loosen hexagon screws **5** of the hook bearing brackets.
- 11.7 Bring the needle bar to bottom dead center.
- 11.8 Push the 1.8-mm-thick blade of the gauge onto the needle bar immediately below its lower bearing, push the C-clamp up against the blade and tighten its screw.
- 11.9 Pull out the gauge and turn the balance wheel in its normal direction until the C-clamp contacts the needle bar bearing.
- 11.10 **Turn both hooks on their shafts so that their points are opposite the center line of the respective needle.** In this position (needle rise position), the hook points should be positioned 0.8 mm above the top edge of the respective needle eye. If necessary, adjust the needle bar height.
- 11.11 **Adjust the hook bearing brackets laterally until there is a clearance of 0.1 mm between the hook points and the needles.**
- 11.12 In this position, securely tighten hexagon screws **5**.
- 11.13 Adjust the left part of the main drive shaft so that the clutch has a play of 0.5 mm.
- 11.14 In this position, tighten allen screws **1** and **2**, making sure that the bevel gears are neither set too close nor have too much play.
- 11.15 Tighten one each of screws **4** of the bobbin case opener eccentric.
- 11.16 Push the bushings up against the bevel gears and tighten both screws **3** on each.
- 11.17 Remove the C-clamp from the needle bar.
- 11.18 Check this adjustment (see "Correct setting").
- 11.19 Do not tighten the second screws **4** as yet.

Correct  
setting:

When the take-up lever is at bottom dead center, shaft 3 of the right bobbin case opener should be exactly at its rear point of reversal, as seen in the direction of feed (see arrow).



12.0.1

- 12.1.1 Screw on the feed dog.
- 12.1.2 Also screw on the needle plate, making sure that the lugs of both bobbin case bases enter the appropriate slots on the underside of the needle plate.
- 12.1.3 Loosen screw 1 in the right bobbin case opener eccentric, which was tightened previously.
- 12.1.4 Turn the balance wheel to bring the take-up lever to bottom dead center.
- 12.1.5 **Turn the right bobbin case opener eccentric 2 on its shaft until shaft 3 is exactly at its rear point of reversal (see arrow).**
- 12.1.6 In this position, tighten screws 1 securely.

## 12.2 Left bobbin case opener eccentric

Correct setting:

When the take-up lever is at bottom dead center, shaft 6 of the left bobbin case opener should be exactly at its front point of reversal, as seen in the direction of feed (see arrow).

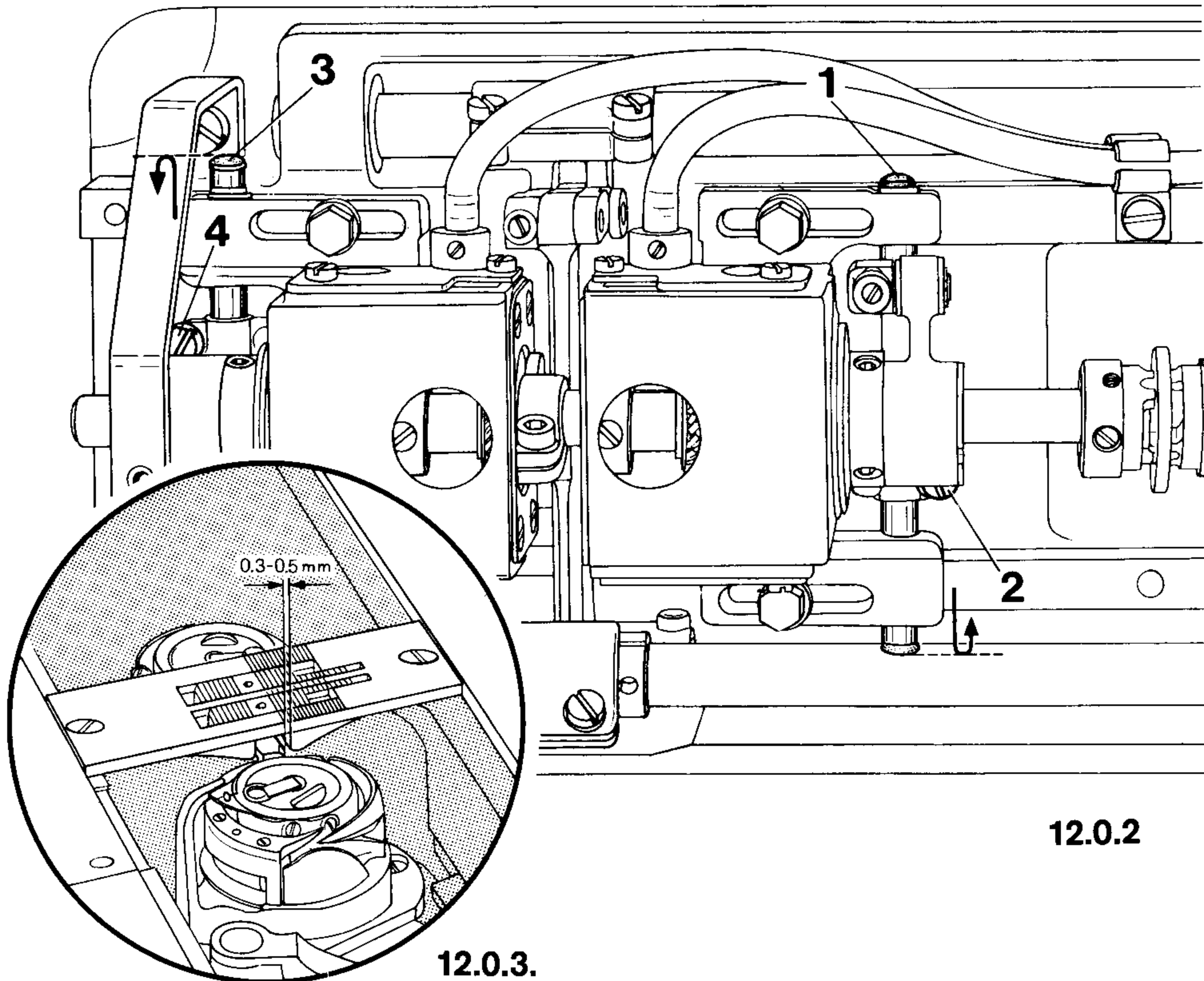
- 12.2.1 Loosen screw 4 in the left bobbin case opener eccentric, which was tightened previously.
- 12.2.2 Turn the balance wheel to bring the take-up lever to bottom dead center.
- 12.2.3 **Turn the left bobbin case opener eccentric 5 on its shaft until shaft 6 is exactly at its front point of reversal (see arrow).** In this position, tighten screw 4 securely.

## 12.3

### Right bobbin case opener

Correct setting:

When shaft 1 of the right bobbin case opener is at its rear point of reversal (see arrow), as seen in the direction of feed, there should be a clearance of 0.3 to 0.5 mm between the lug of the right bobbin case base and the rear edge of the needle plate slot.



- 12.3.1 Bring the needle bar to bottom dead center.
- 12.3.2 Turn the balance wheel in its normal direction until shaft 1 of the right bobbin case opener is at its rear point of reversal (see arrow).
- 12.3.3 Loosen clamp screw 2 of the connecting crank on the right shaft 1.
- 12.3.4 **Reposition the connecting crank on its shaft so that there is a clearance of 0.3 to 0.5 mm between the lug of the right bobbin case base and the rear edge of the needle plate slot.**
- 12.3.5 In this position, tighten clamp screw 2, making sure that the connecting crank is not tilted.
- 12.3.6 Check this adjustment (see "Correct setting").

## 12.4 Left bobbin case opener

Correct setting:

When shaft **3** of the left bobbin case opener is at its front point of reversal (see arrow), as seen in the direction of feed, there should be a clearance of 0.3 to 0.5 mm between the lug of the left bobbin case base and the front edge of the needle plate slot.

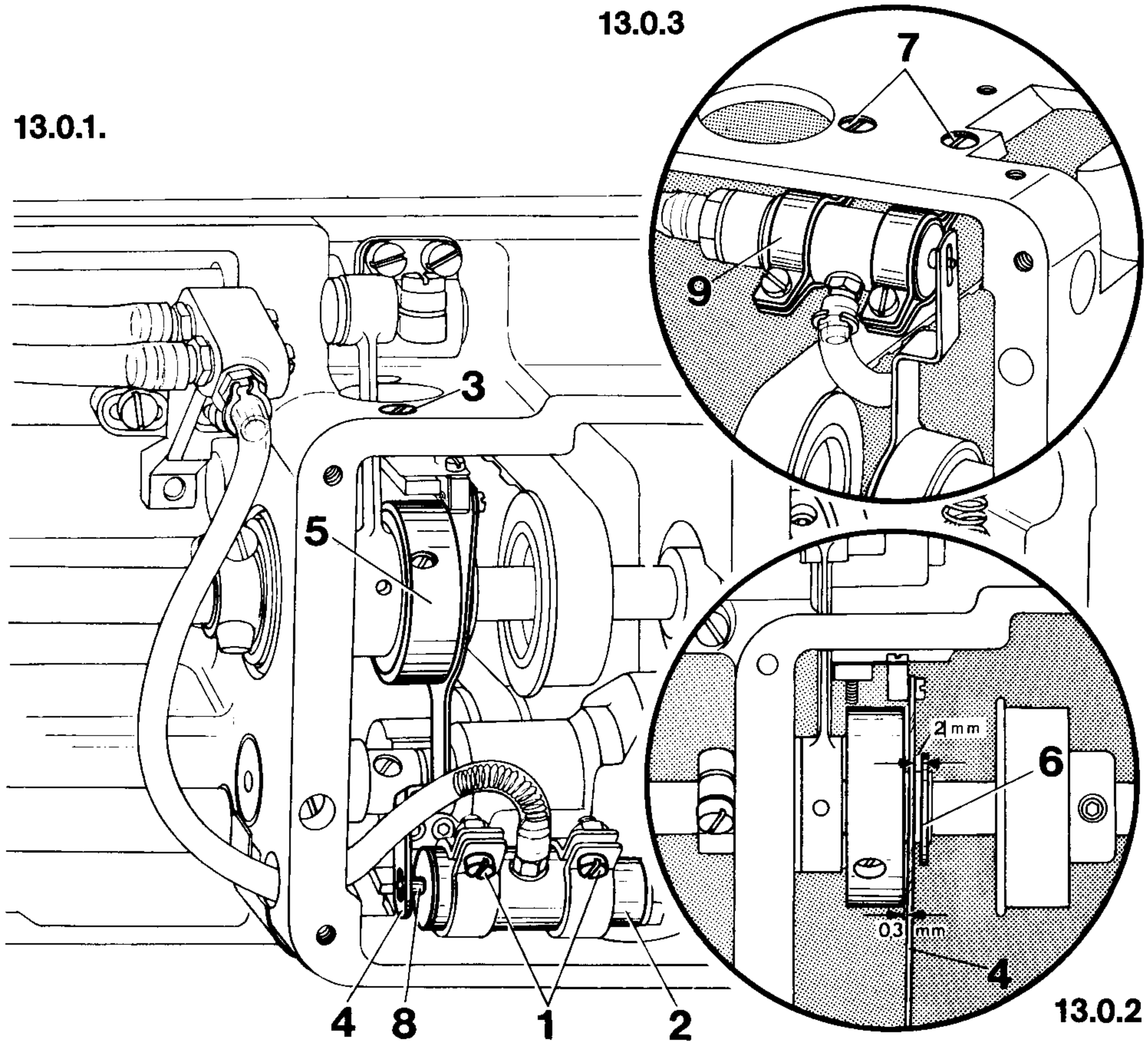
- 12.4.1 Bring the needle bar to bottom dead center.
- 12.4.2 Continue turning the balance wheel in its normal direction until shaft **3** of the left bobbin case opener is at its front point of reversal (see arrow).
- 12.4.3 Loosen clamp screw **4** of the connecting crank on the left shaft **3**.
- 12.4.4 **Reposition the connecting crank on its shaft so that there is a clearance of 0.3 to 0.5 mm between the lug of the left bobbin case base and the front edge of the needle plate slot.**
- 12.4.5 In this position, tighten clamp screw **4**, making sure that the connecting crank is not tilted.
- 12.4.6 Check this adjustment (see "Correct setting").

Correct setting:

When the machine is in its inoperative position there should be a clearance of **0.3 mm** between actuating lever **4** and lifting eccentric **5** at the point where they are closest together (Fig. 13.0.2). Also, there should be a clearance of **2.0 mm** between actuating lever **4** and circlip **6**. Furthermore, operating pin **8** should be centered in the elongated hole and its circlip should lightly contact the actuating lever.

## 13.0.1.

## 13.0.3

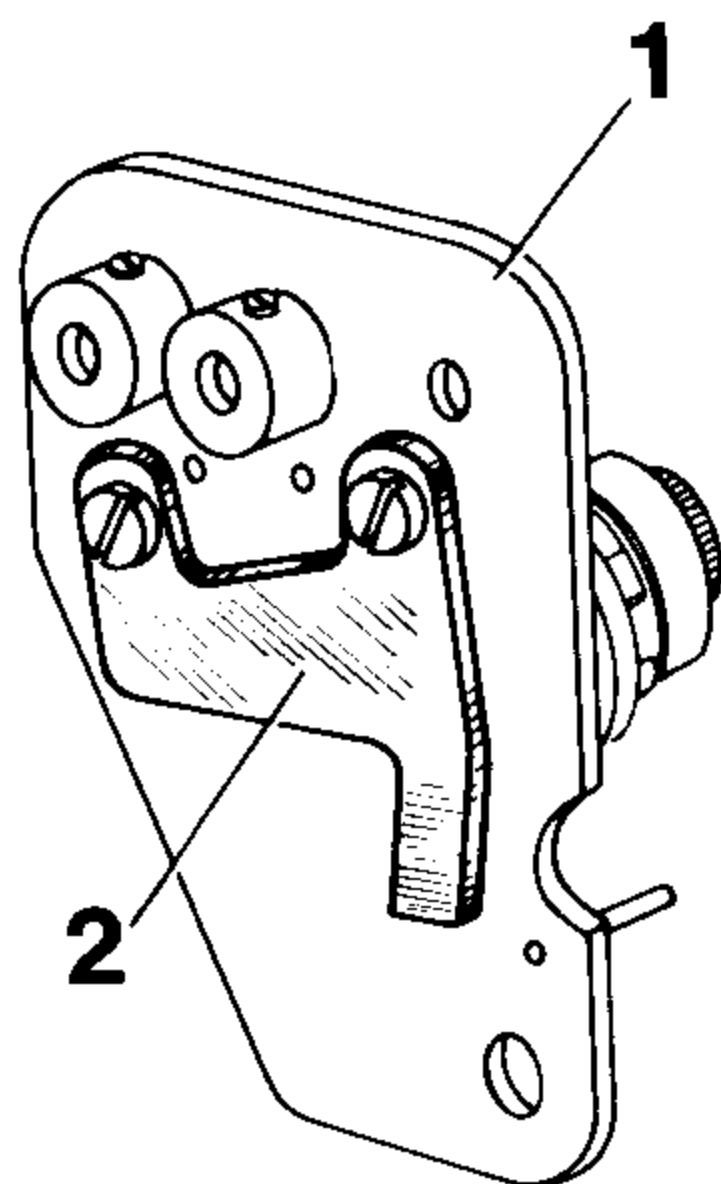


- 13.1 Loosen both clamp screws **1** and push oil check valve **2** to the right.
- 13.2 Also loosen screw **3**.
- 13.3 **Adjust actuating lever **4** so that there is a clearance of abt. 0.3 mm between it, when at rest, and lifting eccentric **5**.**
- 13.4 In this position, tighten screw **3**.
- 13.5 **Reposition circlip **6** so that, when the machine is at rest, there is a clearance of abt. 2.0 mm between actuating lever **4** and circlip **6**.**

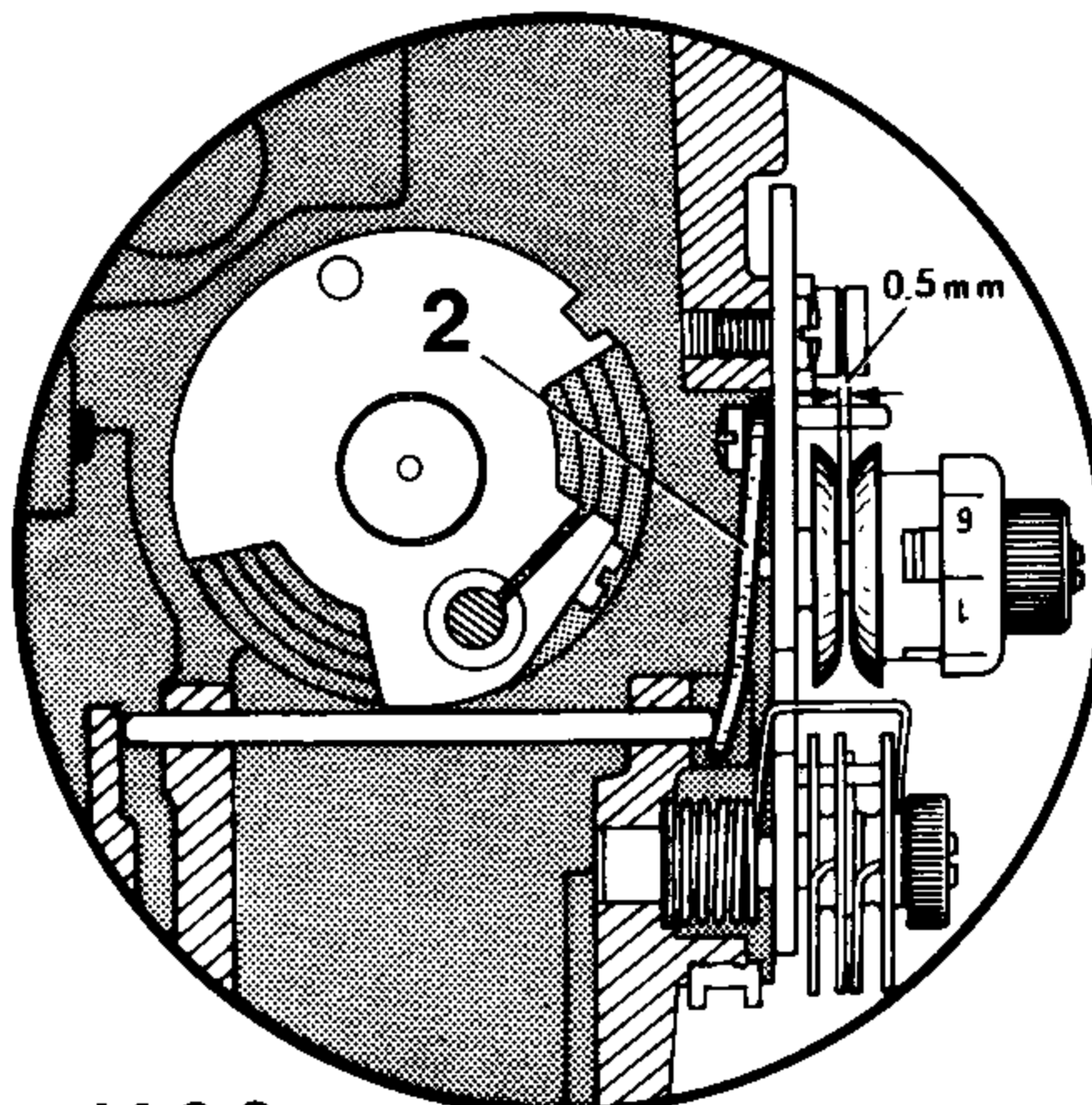
- 13.6 Loosen screws 7.
- 13.7 Push operating pin 8 toward the right until pressure is felt. Adjust bracket 9 so that operating pin 8 is centered in its elongated hole.
- 13.8 In this position, tighten screws 7.
- 13.9 **Reposition oil check valve 2 so that the circlip on operating pin 8 lightly contacts actuating lever 4. Make sure operating pin 8 is still at the point where pressure is felt.**
- 13.10 In this position, tighten clamp screws 1.
- 13.11 Screw on the lateral gearcase cover.
- 13.12 Carefully clean the gasket face on the gearcase and the gasket of the gearcase cover.
- 13.13 Replace the gearcase cover and screw it down, tightening its five screws crosswise.

Correct setting:

When the presser bar lifter is raised, both tension discs should be at least 0.5 mm apart.



14.0.1



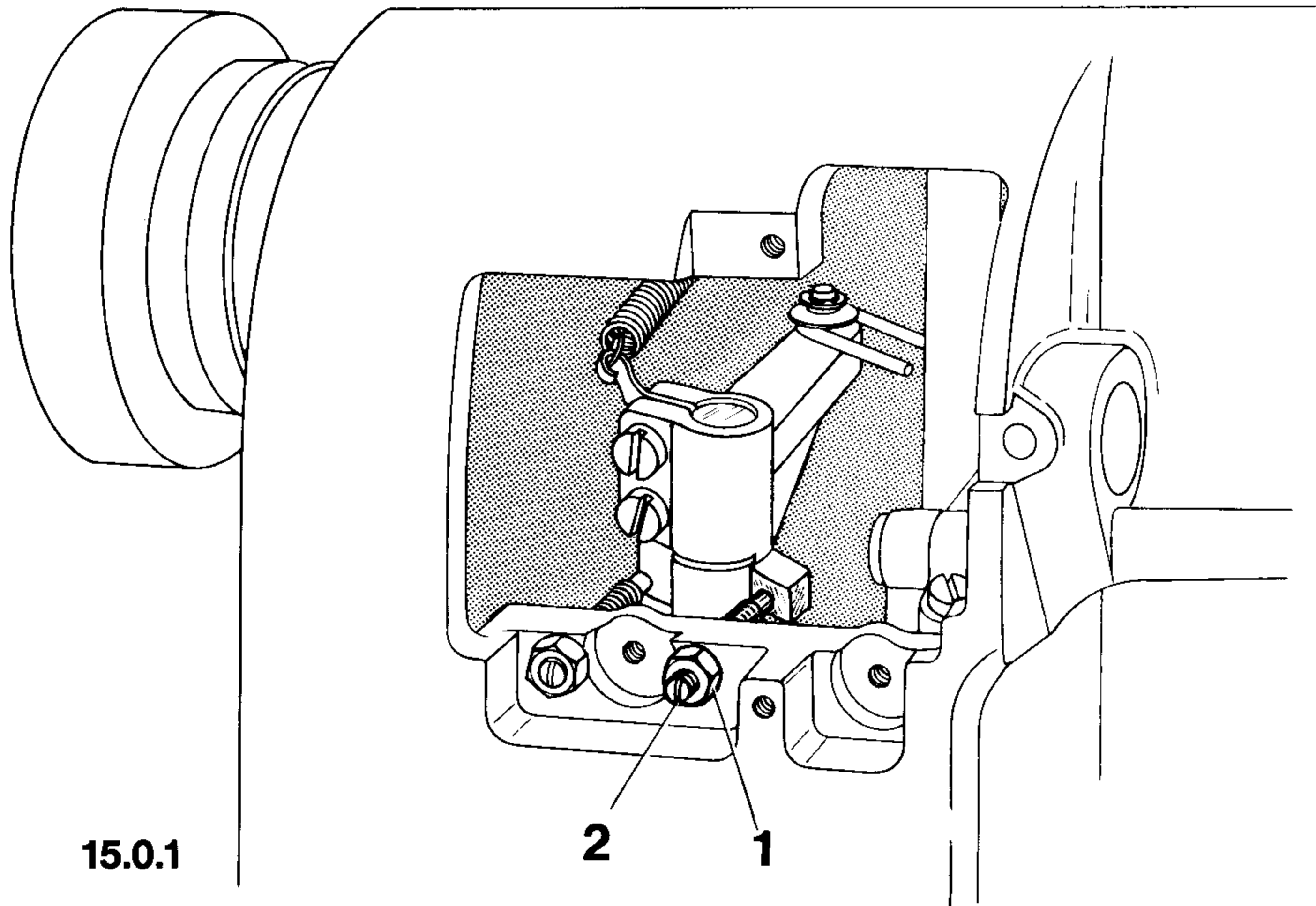
14.0.2

- 14.1 Raise the presser bar lifter, then screw on the presser foot.
- 14.2 Screw tension base plate 1.
- 14.3 Check to make sure both tension discs are at least 0.5 mm apart.
- 14.4 If the tension discs are either too far apart or too close together, remove tension base plate 1 again and bend tension release lever 2 accordingly.
- 14.5 After the adjustment, replace tension base plate 1.
- 14.6 Check this adjustment (see "Correct setting").



Correct  
setting:

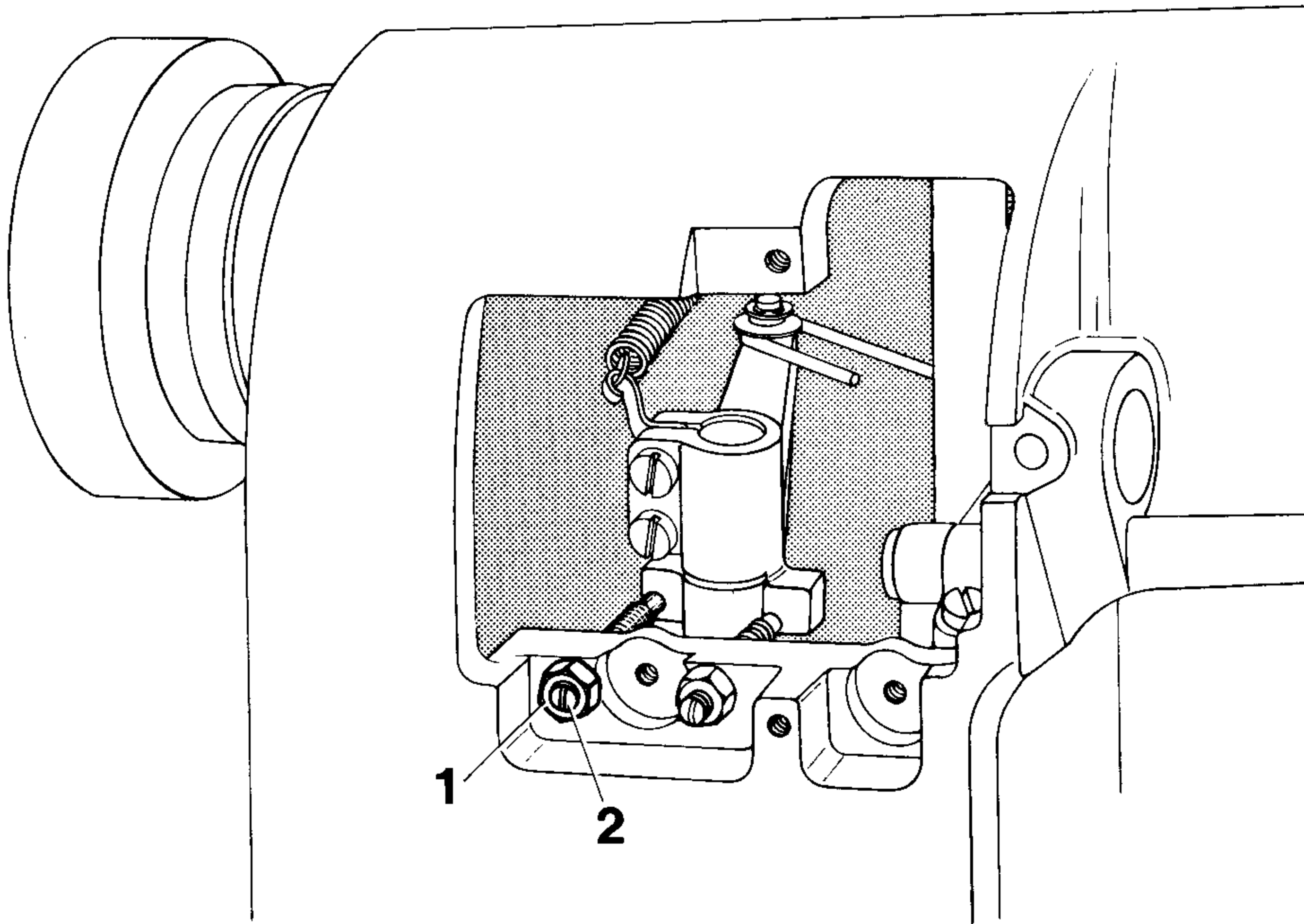
When operated, the knee lever should have a small amount of play before the presser foot starts rising.



- 15.1 Push the knee lever joint onto the vertical knee lever shaft, push it upwards and turn it to the right as far as it will go.
- 15.2 Insert the knee lever into the knee lever joint.
- 15.3 Lower the presser foot onto the needle plate by means of the presser foot lifter.
- 15.4 Loosen locknut **1** of the right stop screw **2** and turn the stop screw out a few turns.
- 15.5 Then turn stop screw **2** in again until the presser foot starts to lift clear of the needle plate.
- 15.6 **In this position, turn stop screw 2 out by one turn and lock it in position by tightening nut 1.**
- 15.7 Check this adjustment (see "Correct setting").

Correct setting:

When the knee lever is fully operated, the presser bar lifter should drop by its own weight and the presser foot should be lifted from the needle plate by a little more than 7.0 mm (or 9.0 mm).

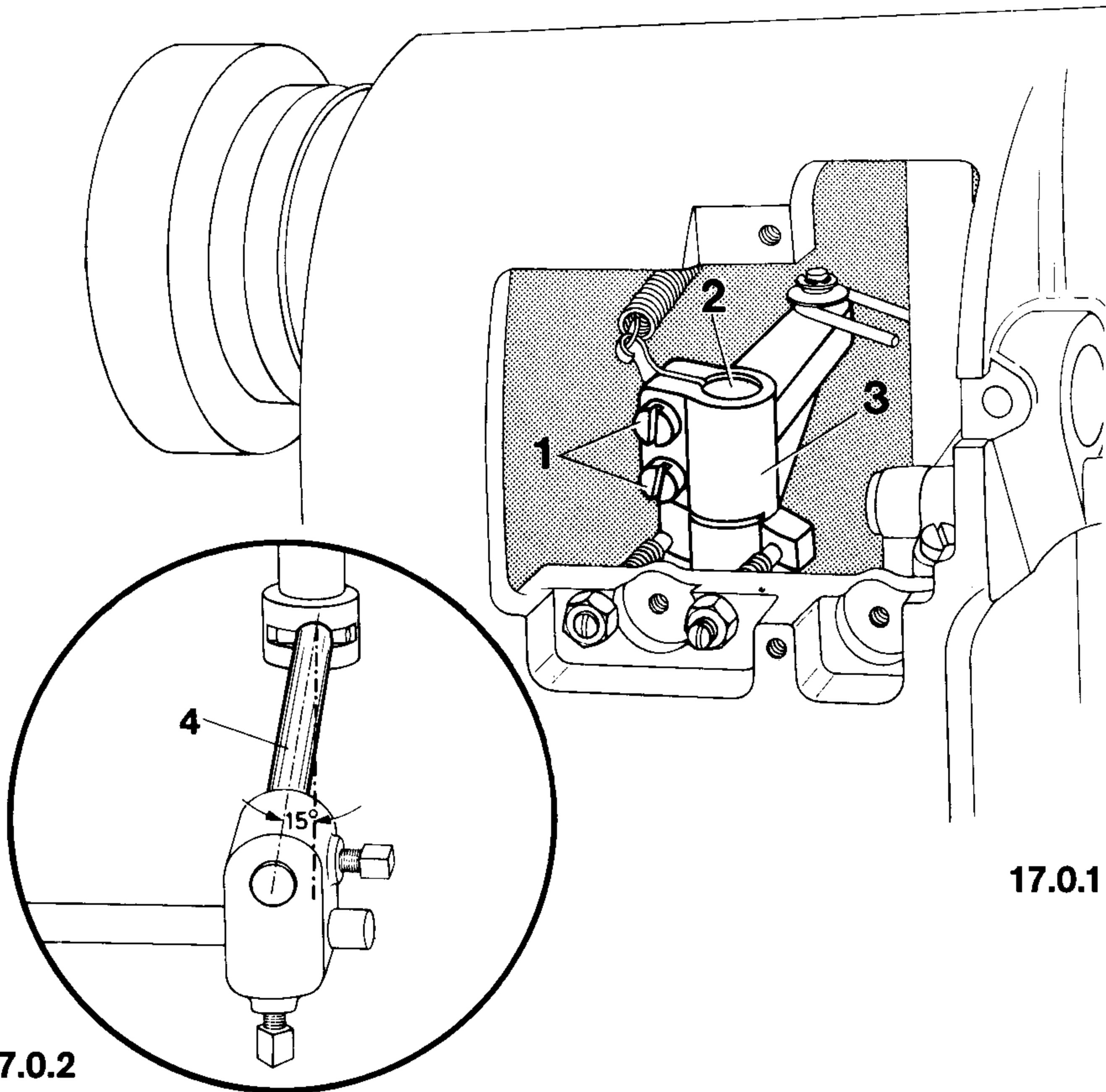


### 16.0.1

- 16.1 Loosen locknut **1** of stop screw **2**.
- 16.2 Turn stop screw **2** out a few turns.
- 16.3 Raise the presser bar lifter, place the 7-mm-(or 9-mm) thick blade of the gauge under the presser foot and lower the presser bar lifter again.
- 16.4 **Move the knee lever to the right until a noticeable resistance is felt; however the presser foot must not be lifted off the gauge.**
- 16.5 **Hold the knee lever at this position and turn stop screw **2** in as far as it will go, then back out by one turn, and lock it in place with locknut **1**.**
- 16.6 Check this adjustment (see "Correct setting").

Correct setting:

When in its rest position, knee lever connecting rod 4 should be at abt. 15° to the left of an imaginary line extending at right angles to the front edge of the bedplate.



17.0.1

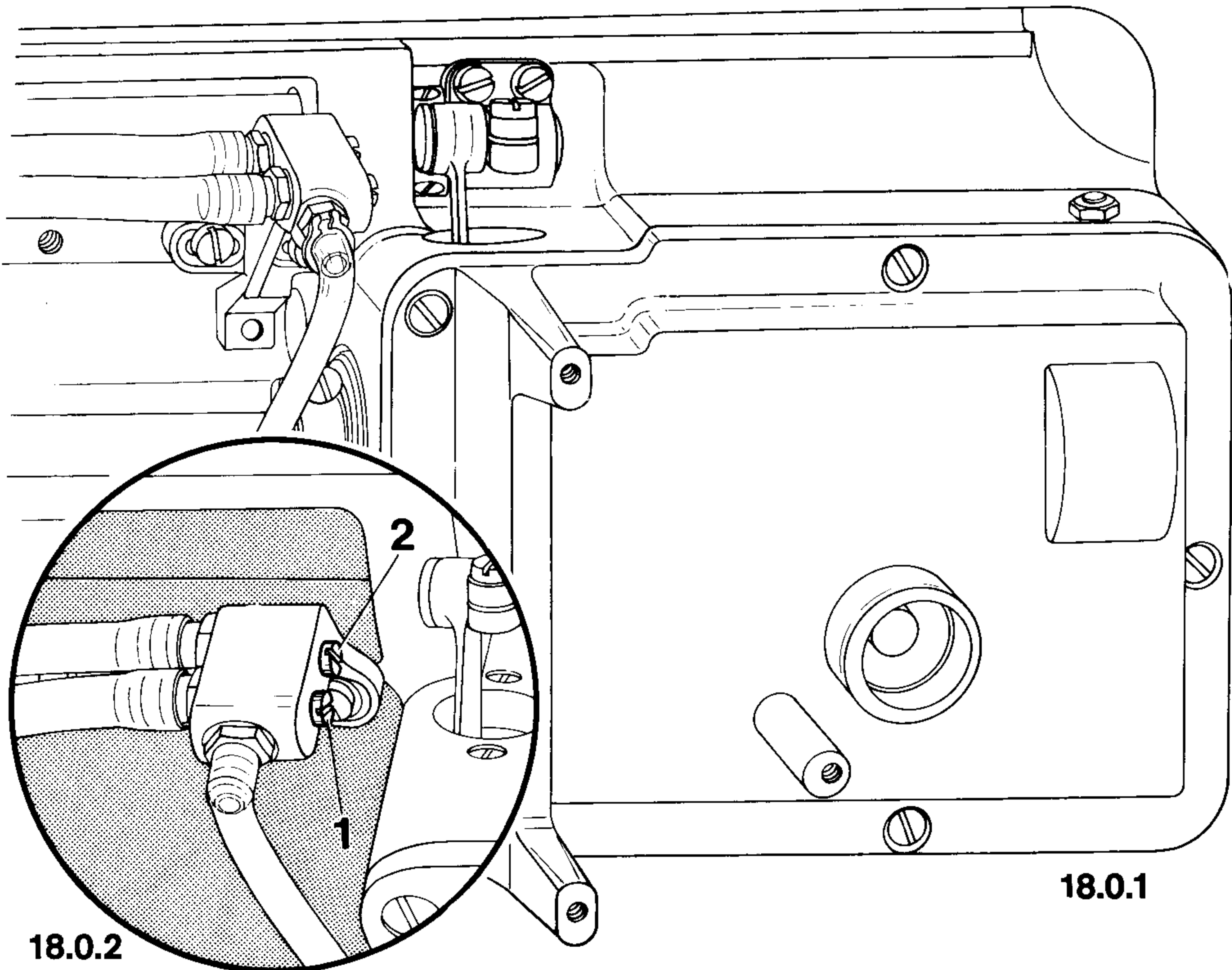
17.0.2

- 17.1 Lower the presser foot onto the needle plate by means of the presser bar lifter.
- 17.2 Loosen both clamp screws 1 just sufficiently to permit the vertical knee lever shaft 2 to be turned in crank 3 against resistance.
- 17.3 **Adjust the knee lever so that knee lever connecting rod 4, when at rest, is positioned at abt. 15° to the left of an imaginary line extending at right angles to the front edge of the bedplate.**
- 17.4 In this position, securely tighten clamp screws 1 in crank 3, making sure that the vertical knee lever shaft 2 has no vertical play.
- 17.5 Check this adjustment (see "Correct setting") and pull the knee lever out of its joint.

## 18 Hook lubrication

Correct setting:

After the machine has run at full speed for about ten seconds, a fine trace of oil should appear opposite each hook on a piece of paper placed vertically behind them.

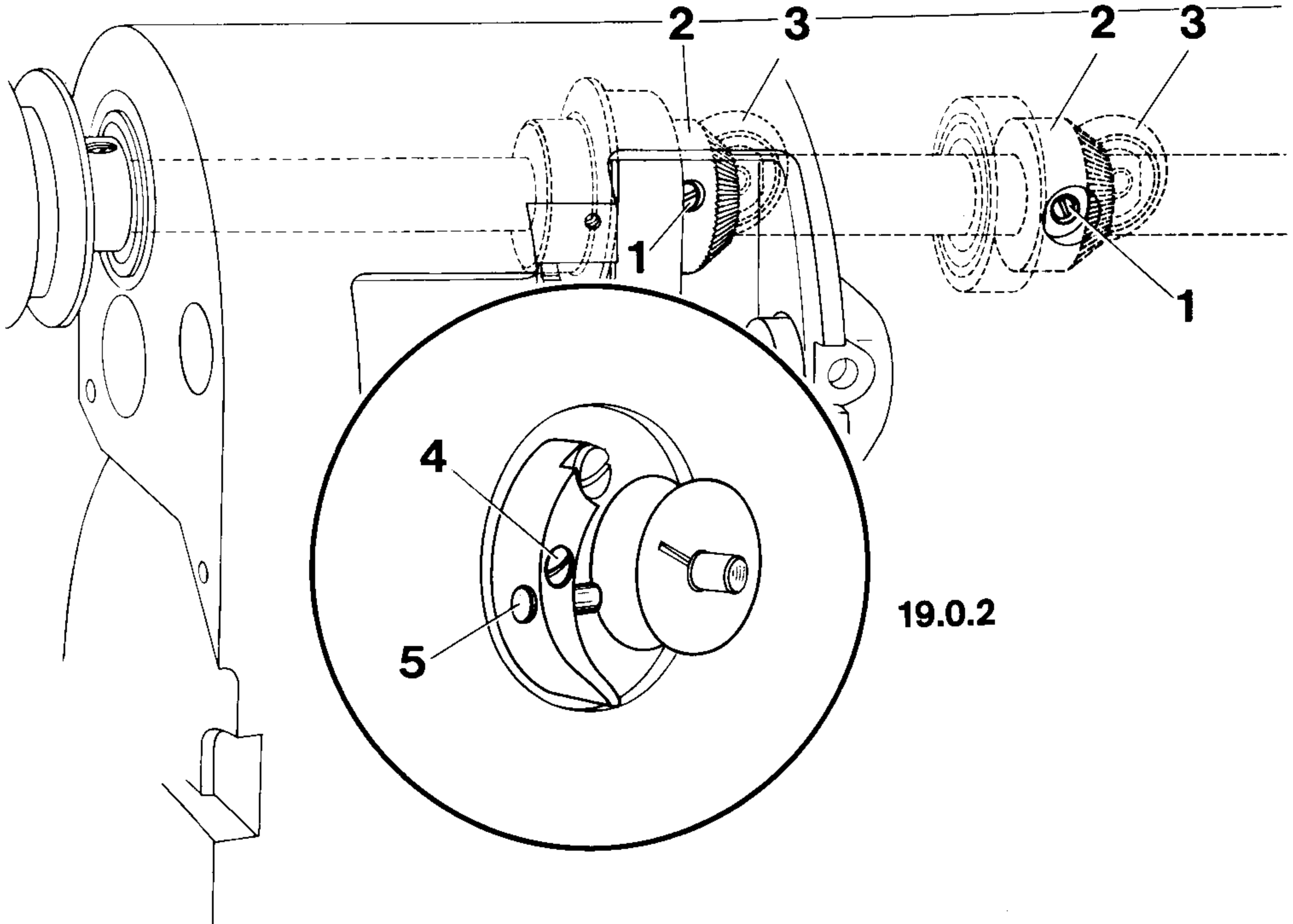


- 18.1 Check the oil level at the oil sight glass and, if necessary, top up the reservoir until the oil level is in line with the upper mark. (Use oil no. 280-1-120 114.)
- 18.2 Turn in regulating screws 1 and 2 of the oil check valve as far as they will go, and then back out by half a turn.
- 18.3 Turn on the master switch and let the machine run about one minute.
- 18.4 Place a piece of paper vertically behind the hooks. Then check to see if a fine trace of oil has appeared on the paper opposite each hook raceway.
- 18.5 **If too much oil is emitted, turn in regulating screw 1 for the right hook or 2 for the left hook somewhat. If too little oil is emitted, turn out the respective screw a little.**
- 18.6 Check this adjustment (see "Correct setting").

Correct setting:

When the bobbin winders are engaged, the winder spindles should be driven reliably; when the bobbin winders are disengaged, however, friction wheels **3** must not contact drive wheels **2**. Furthermore, each bobbin winder should stop automatically when the thread wound on the bobbin has reached a point abt. 1.0 mm below its rim.

## 19.0.1



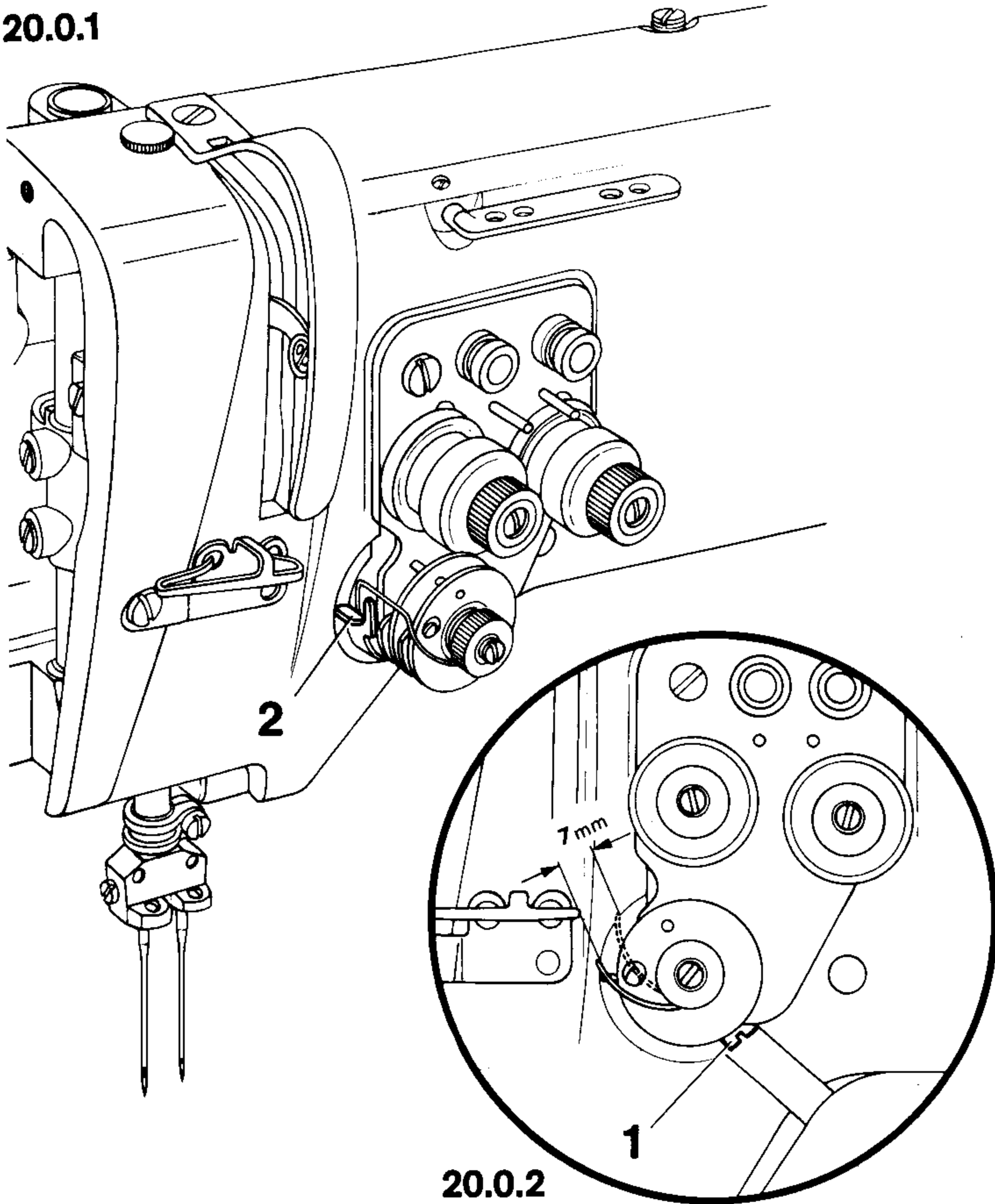
## 19.0.2

- 19.1 Engage both bobbin winders.
- 19.2 Loosen screws **1** of both drive wheels which are accessible from the back of the machine arm.
- 19.3 Adjust the position of drive wheels **2** on the arm shaft so that both winder spindles will be driven reliably when the bobbin winders are engaged, but that friction wheels **3** will not be in contact with drive wheels **2** when the bobbin winders are disengaged.
- 19.4 In this position, tighten screws **1**.
- 19.5 Loosen screw **4** of the right stop latch.
- 19.6 **If the bobbin is too full, push regulating stud **5** toward the right; if it is not full enough, push it toward the left.**
- 19.7 After the adjustment, tighten screw **4** again.
- 19.8 Repeat the same adjustment for the left bobbin winder.
- 19.9 Check this adjustment (see "Correct setting").

Correct setting:

The thread check spring should have completed its stroke when the needle points enter the material (which amounts to a stroke abt. 7 mm long).

## 20.0.1



## 20.0.2

Note: Actual sewing conditions may make it necessary to increase or decrease the stroke of the thread check spring.

- 20.1 Thread the needles and place a piece of fabric under the presser foot.
- 20.2 Operate the presser bar lifter to lower the presser foot onto the material.
- 20.3 Loosen screw 1 in the elongated hole of stop 2.
- 20.4 Turn the balance wheel to sew a few stitches and bring the take-up lever to its highest point.
- 20.5 **Continue turning the balance wheel in its normal direction to cause the thread check spring to make a return stroke of 7 mm.**
- 20.6 In this position, bring stop 2 in contact with the thread check spring and tighten screw 1.
- 20.7 Check this adjustment (see "Correct setting").

**21 Final worksteps**

- 21.1 Screw on the two covers on the back of the machine arm.
- 21.2 Replace the left upper plastic plug on the back of the arm standard.
- 21.3 Screw on the face cover and the belt guard.
- 21.4 Make a sewing test and at the same time turn regulating screw **2** (Fig. 9.0.1) to adjust the presser foot pressure so that the fabric is fed properly even at top speed.

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