

PFAFF®

5489-H

Provisional Service Manual

for

PFAFF 5489-H-814/01-739/01

(Lap-felling machine)

VOL 7.91

Innovation made by **PFAFF**

Service Manual for the PFAFF 5489-H-814/01-739/01

Notes on safe machine operation:

The machine must only be used for the purpose it has been designed for.
When converting it to another version, all valid safety rules must be followed.
Service and repair work must only be performed by qualified personnel.
Work on live parts is not permitted, apart from exceptions according to DIN 57 105 and VDE 0105.

Tools, gauges and other equipment needed for adjusting the Pfaff 5489

1 set of screwdrivers with blades from 2 to 10 mm wide

1 set of hexagon allen keys ranging from 1.5 to 6.0 mm

1 set of spanners from 7 to 14 mm wide

1 spanner, 22 mm wide

1 metal rule

1 C-clamp No. 08-880137-00

1 adjustment pin (5 mm dia.) No. 13-030341-05

1 gauge No. 61-111642-19 or 08-880179-00

1 gauge No. 61-111643-06

1 packet of needles

Needle system: 4463-35

in version -911/..., 5463-35

in version H without -911/..., UY 128 GAS

in version -814/01 HO, 4463 KK

in version -814/02 HO, 4463-8 FL and 4463-8 FR

Spacing washers: 0.3, 0.5, 0.8 or 1.2 mm thick

Spacers: 0.3 or 0.6 mm thick (for subcl. -911/..)

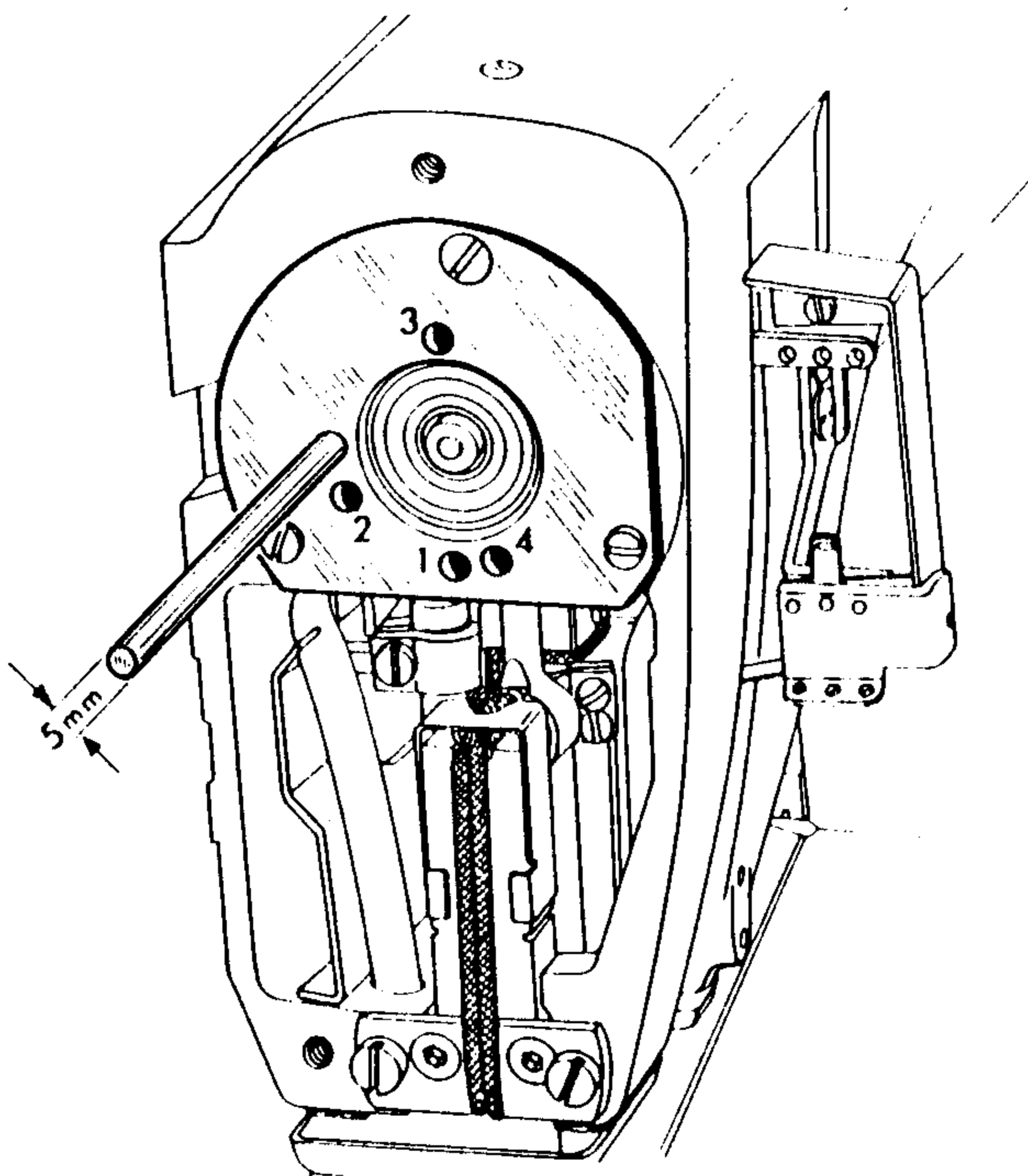
Thread and material for testing purposes

1 Checking and adjusting aid

1.0 By inserting the adjustment pin in holes 1 to 6, the machine can be blocked with the needle bar at the required positions.

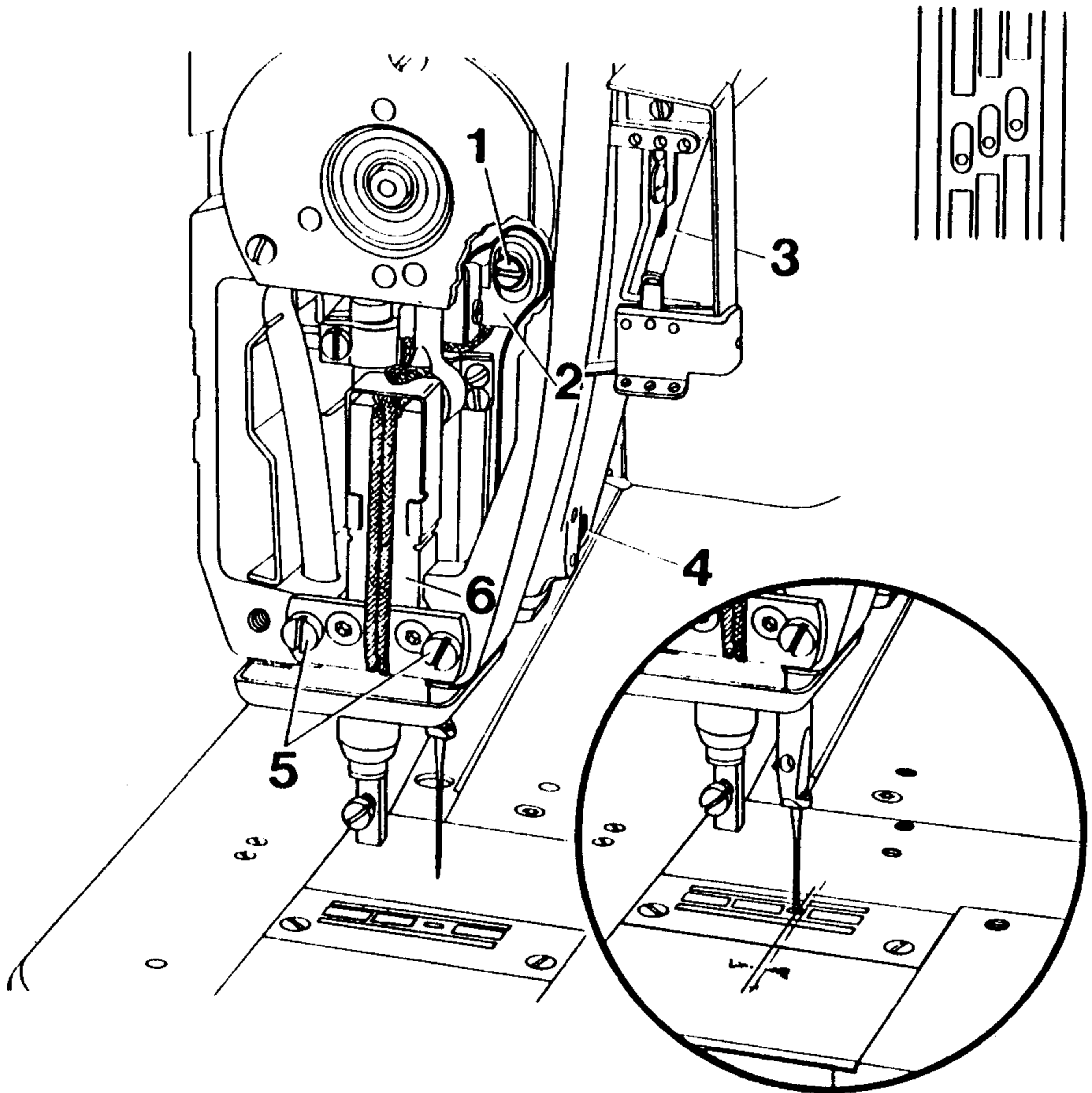
Procedure:

- 1.1 Turn the balance wheel until the needle bar is close to the required position.
- 1.2 Insert the 5 mm thick adjustment pin in the appropriate hole and push against it.
- 1.3 Turn the balance wheel forward or backward a little until the pin enters the crank cutout behind the bearing plate, thus blocking the machine.



2 Position of needle in needle hole

2.0 The needle must be centered in the needle hole in crosswise direction and must be 0.8 mm from the front edge of the needle hole.

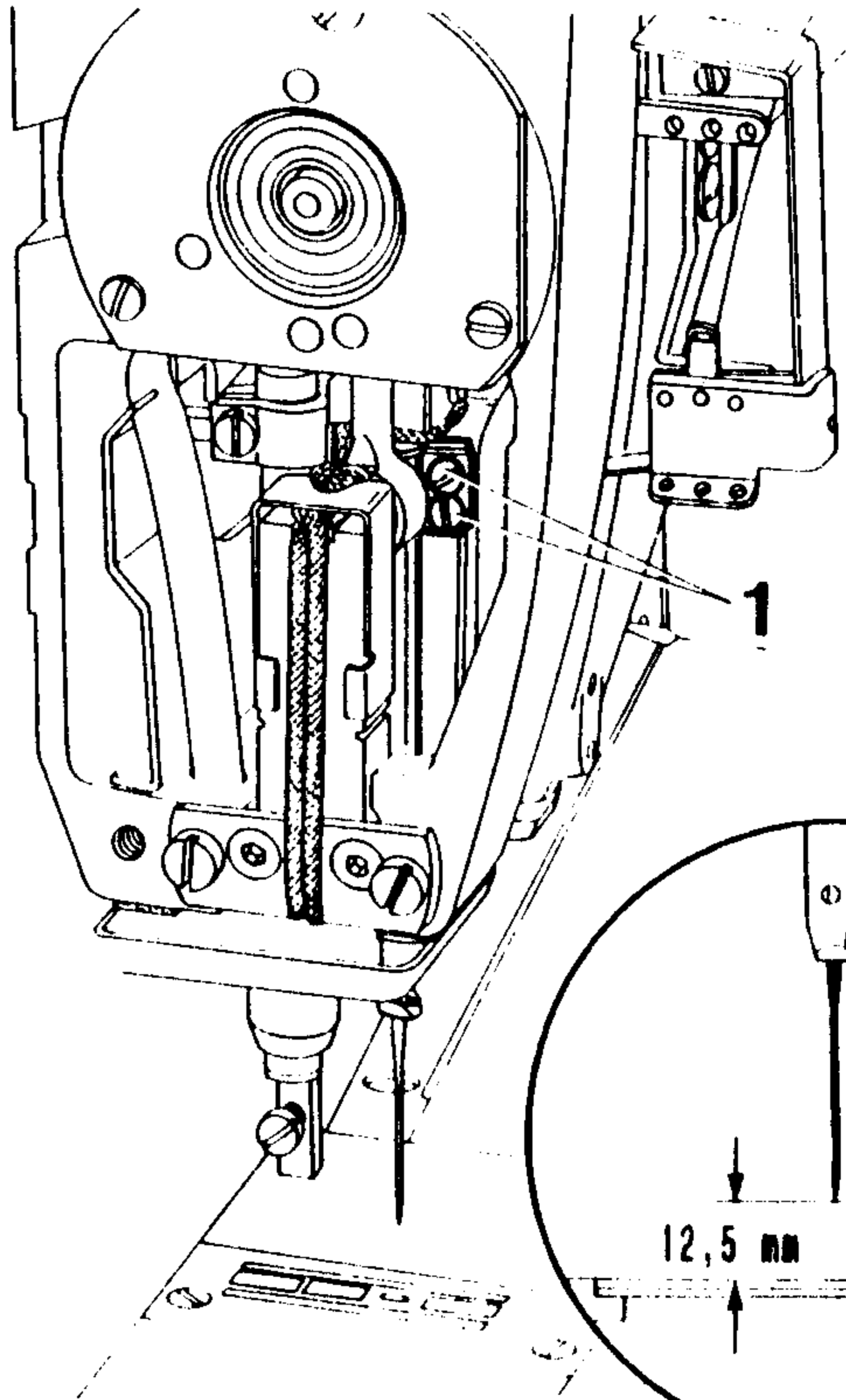
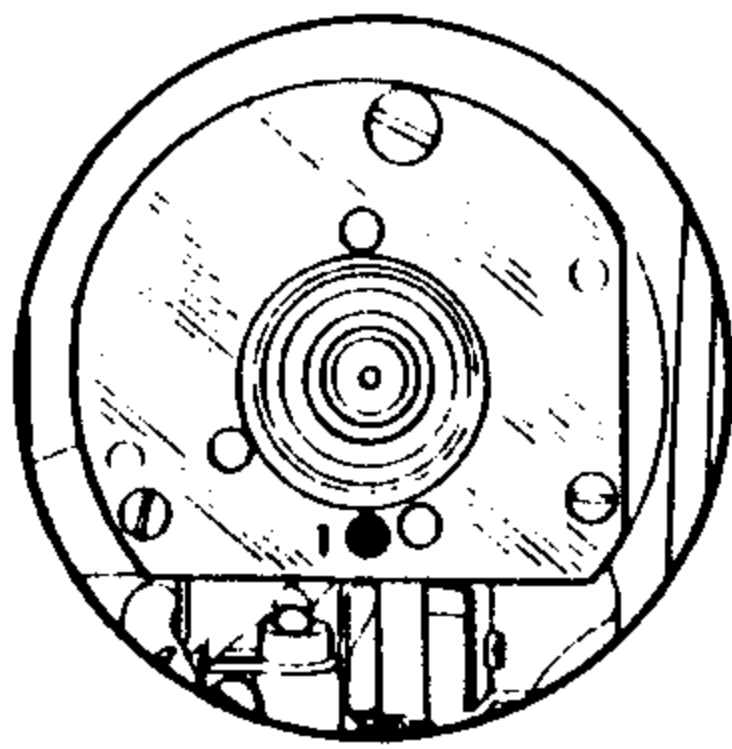


Adjustment clue:

- 2.1 Insert a new needle.
- .2 Loosen screws 1, 3 and 4.
- .3 Adjust needle bar frame according to "2.0".
- .4 Tighten screw 4.
- .5 Tighten screw 1.
- .6 Turn the balance wheel a few turns to make sure that no twist has occurred in the needle bar frame.
- .7 Tighten screw 3.

3 Preliminary adjustment of needle bar height.

3.0 With the needle bar at top dead center (pin in hole 1) the needle point must be positioned 12.5 mm above the needle plate.



Needle bar stroke
5480 R = 27 mm
5480 = 30 mm
5480 H = 33 mm

12,5 mm

33 mm needle bar stroke

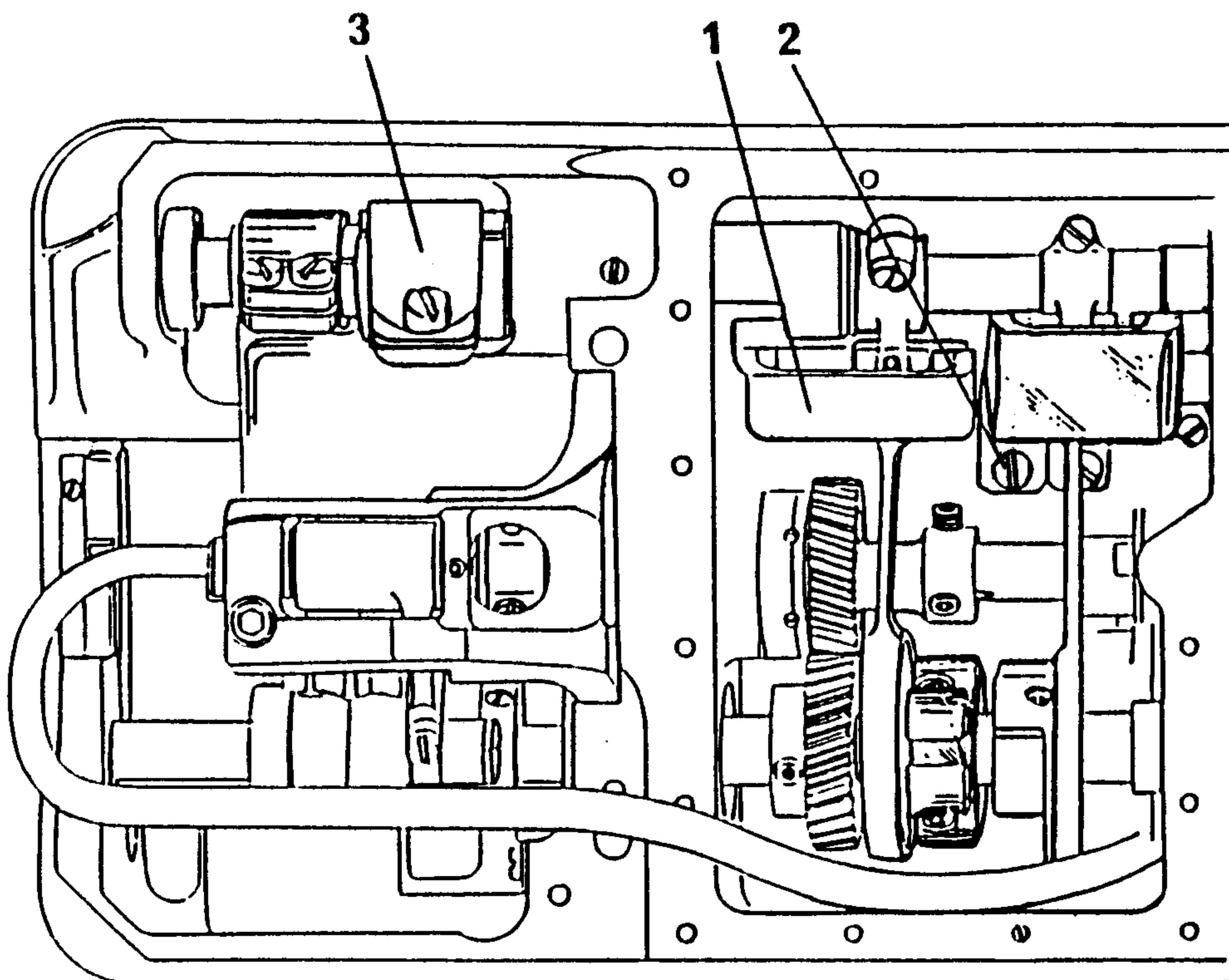
Adjustment clue:

3.1 Needle bar (screws 1).

4 Neutralizing the feed motion

4.1 Neutralizing the main feed dog

4.1.0 With the stitch length set at "0" the main feed dog (crank 3) must make no feeding movement *when handwheel is turned.*

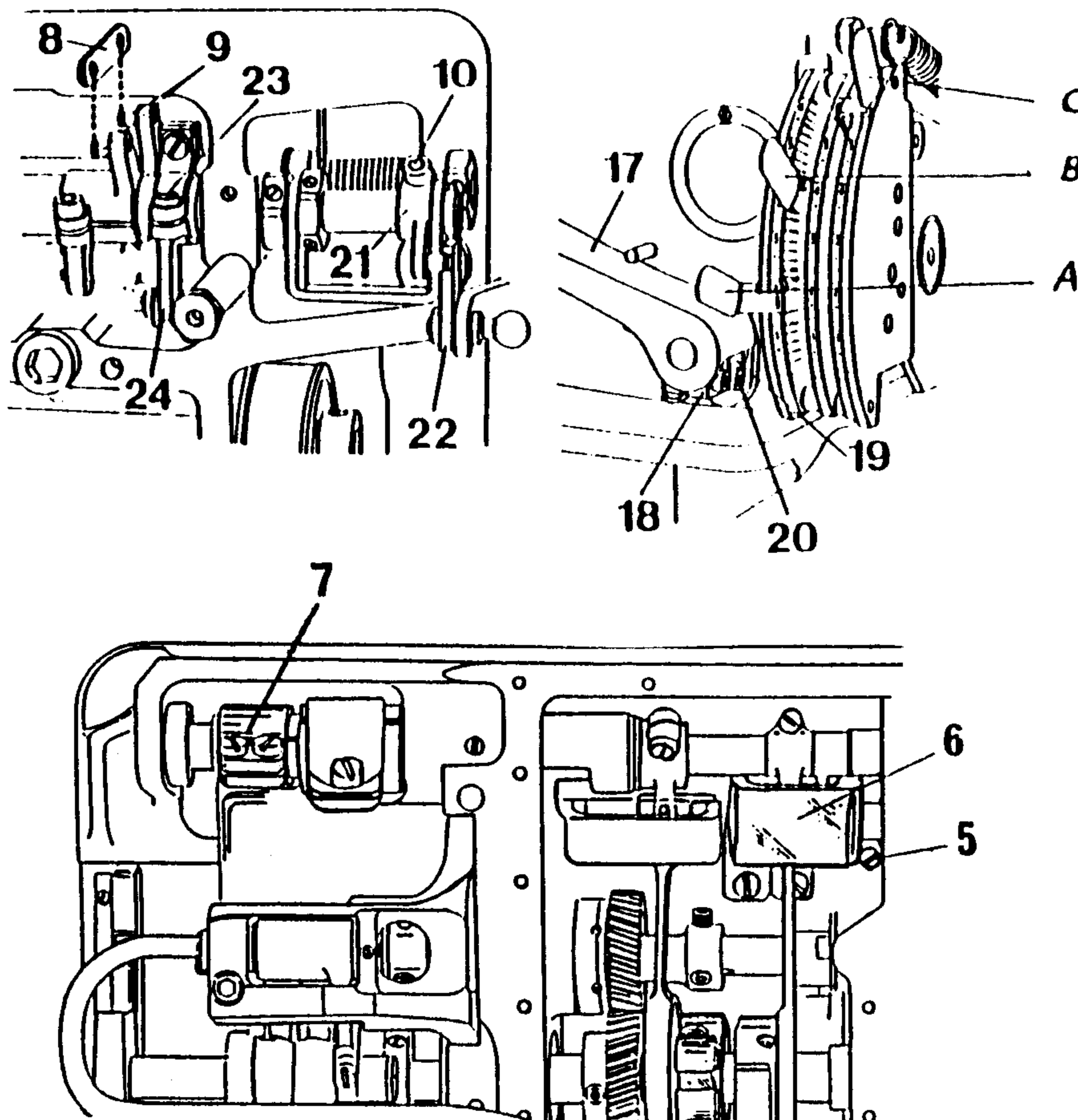


Adjustment clue:

- 4.1.1 Loosen screws for stitch length limitation: see section 8, screws 4, 5 and 7.
- .2 Set stitch length at "0".
- .3 Adjust crank 1 according to "4.1.0" (screw 2).
- .4 Check the adjustment according to "4.1.0".

4.2 Neutralizing the differential feed dog

4.2.0 With the stitch length set at "0" the feed dog (crank 7) must make no feeding movement **when handwheel is turned**

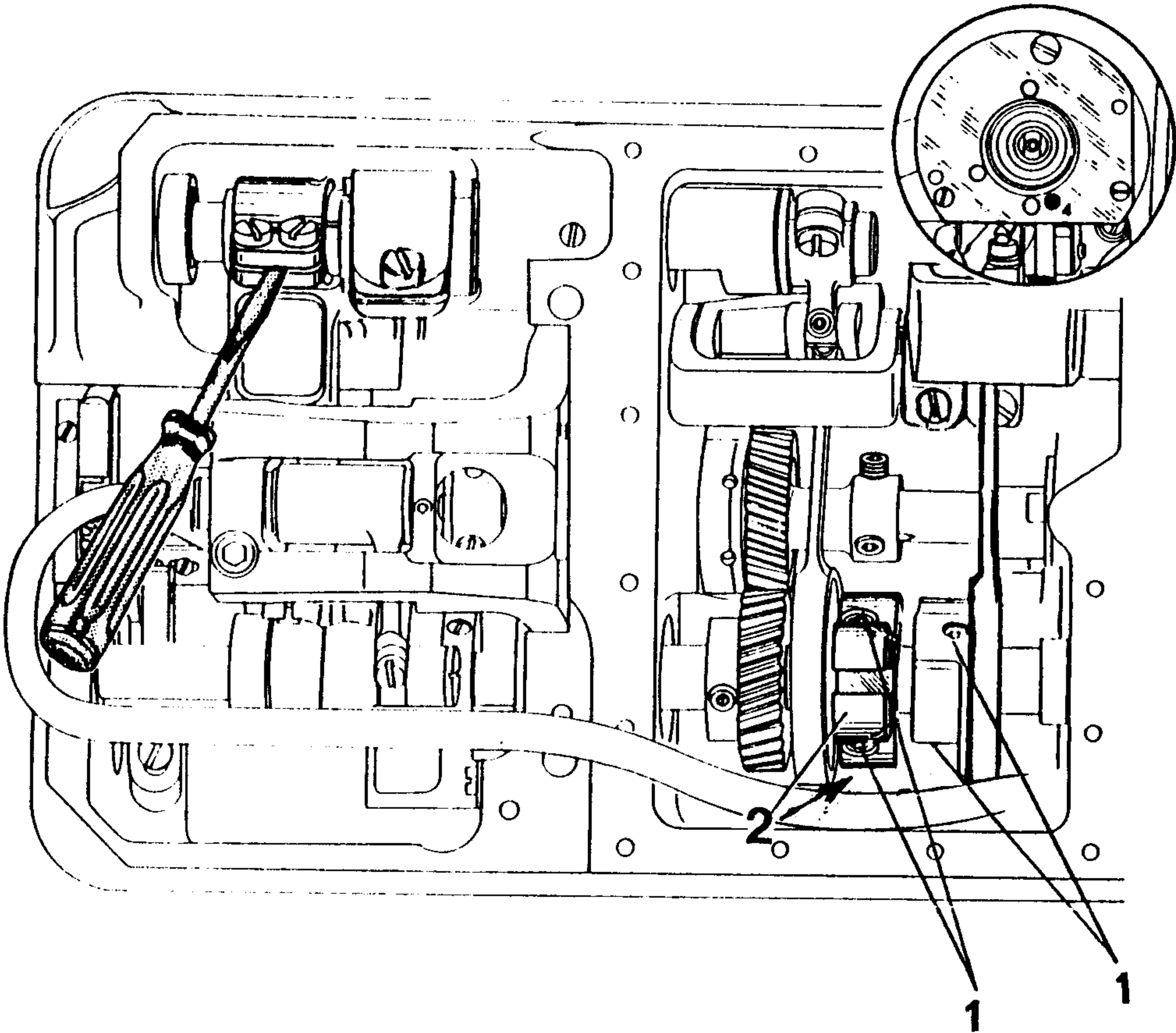


Adjustment clue:

- 4.2.1 Loosen screws 10 and 5.
- .2 Set levers A, B and C at "0".
- .3 Push gauge 8 (N° 91-069 375-15) on pins 9.
- .4 Adjust crank 6 according to "4.2.0" (screw 5).
- .5 Set lever 21 against lever 22 axially and radially (screw 10).
- .6 Remove gauge 8.

5 Feed driving motion (Main and differential feed dogs)

5.0 With the stitch length set at its maximum and the needle bar positioned 0.8 mm before top dead center (pin in hole 4) the feed dogs must not move when the stitch regulators are operated.

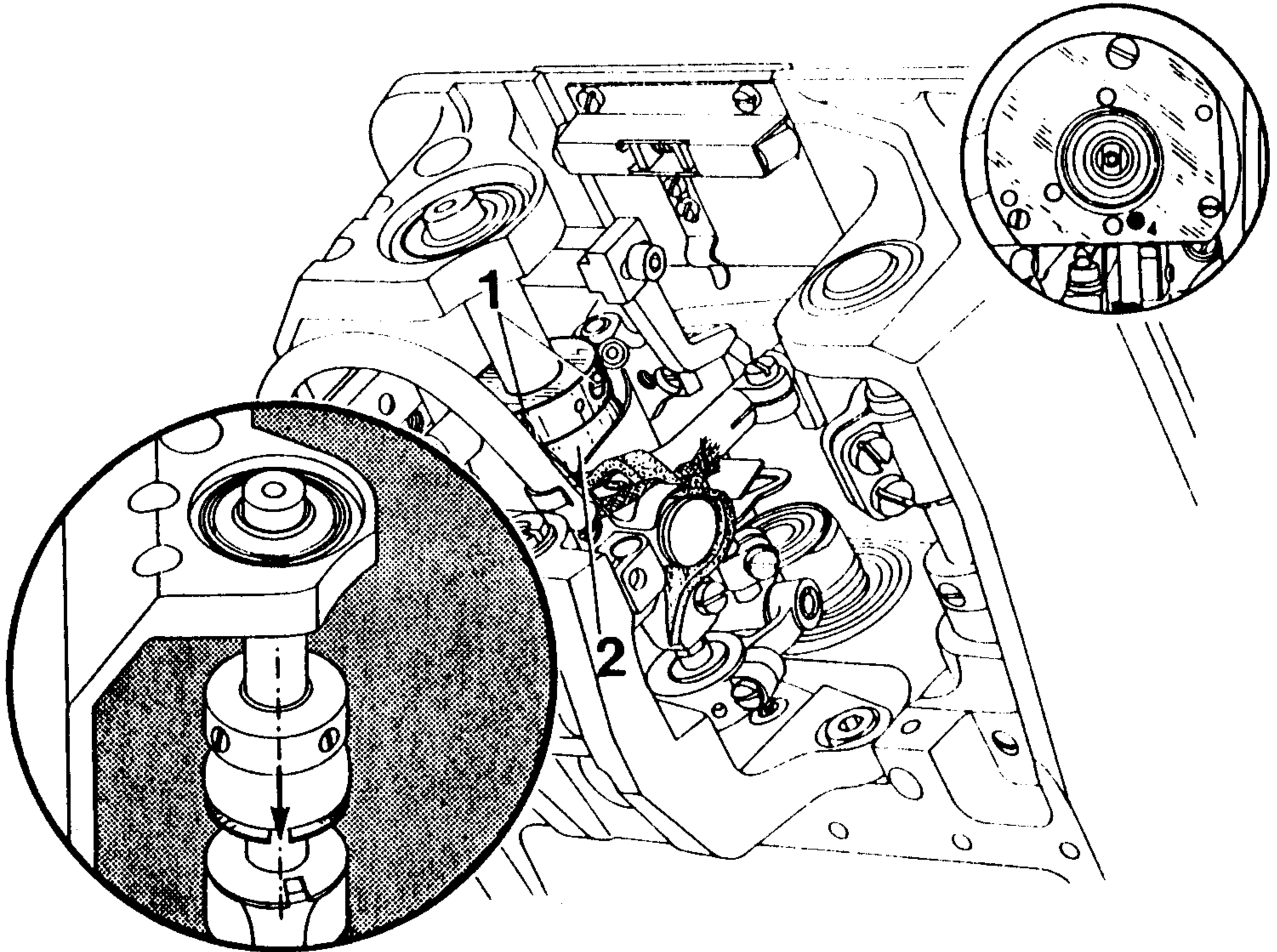


Adjustment clue:

5.1 Reposition both eccentrics 2 (screws 1).

6 Feed lifting motion (main and differential feed dogs)

6.0 With the needle bar at a position 0.8 mm before top dead center (pin in hole 4), the slots in feed lifting eccentrics 2 must face down (see arrow).



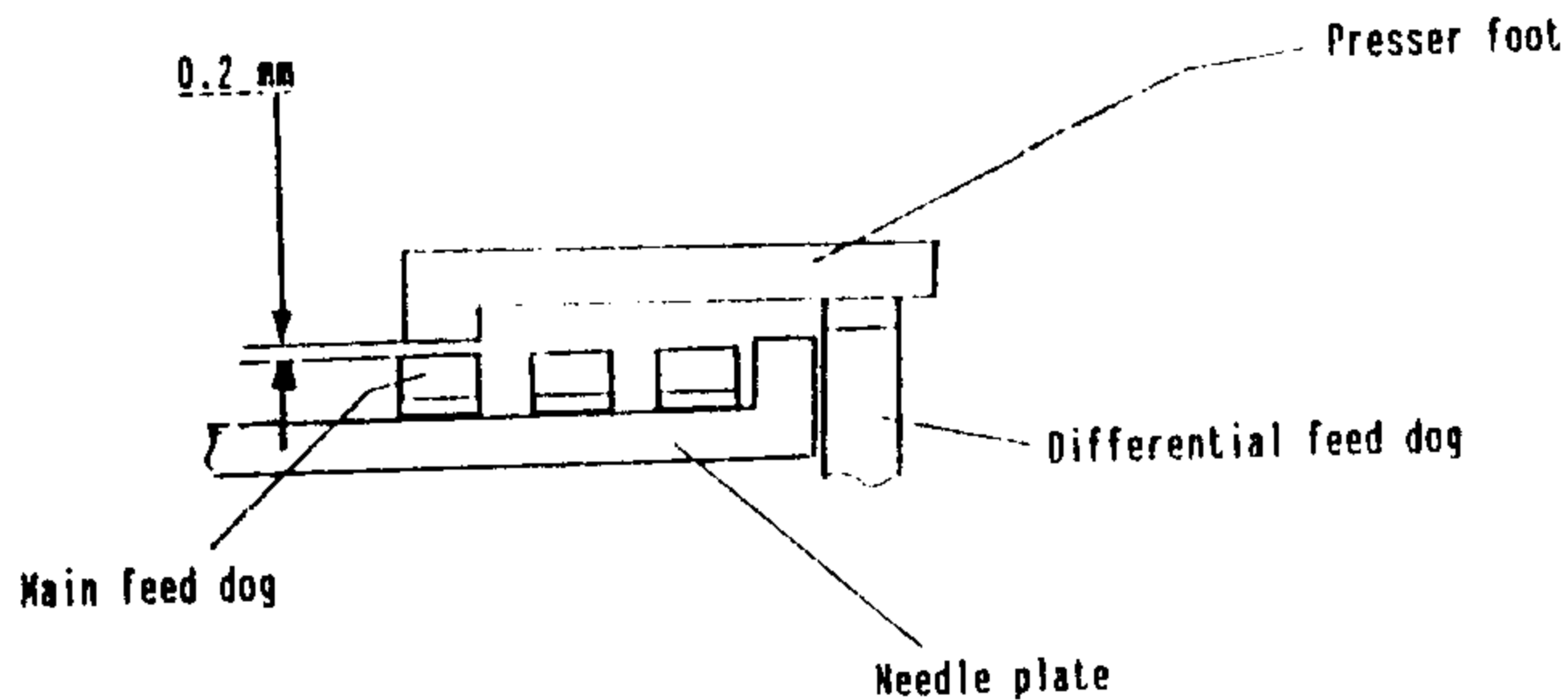
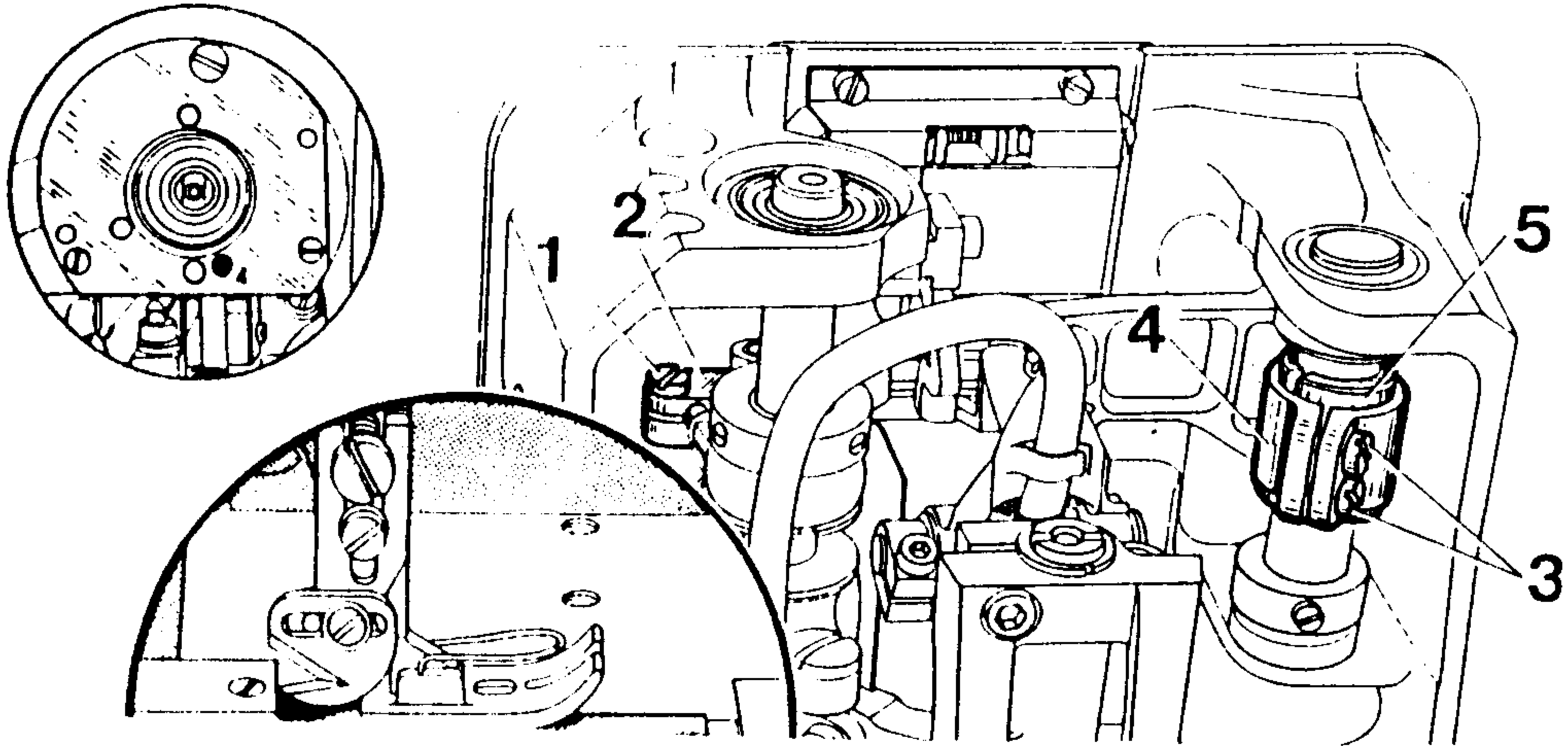
Adjustment clue:

6.1 Set both eccentrics 2 according to "6.0" (screws 1).

7 Feed dog height

7.0 With the stitch length set at its maximum and the needle bar positioned 0.8 mm before top dead center (pin in hole 4), the feed dogs must be centered in their needle palte slots and set in lateral position as follows:

- Height of main feed dog behind the needle: 1.4 mm
in front of the needle: 1.1 mm;
- With a 0.2 mm gauge positioned between the main feed dog and the left side of the presser foot, the differential feed dog must rest on all its length against the presser foot (see illustration).



Adjustment clue:

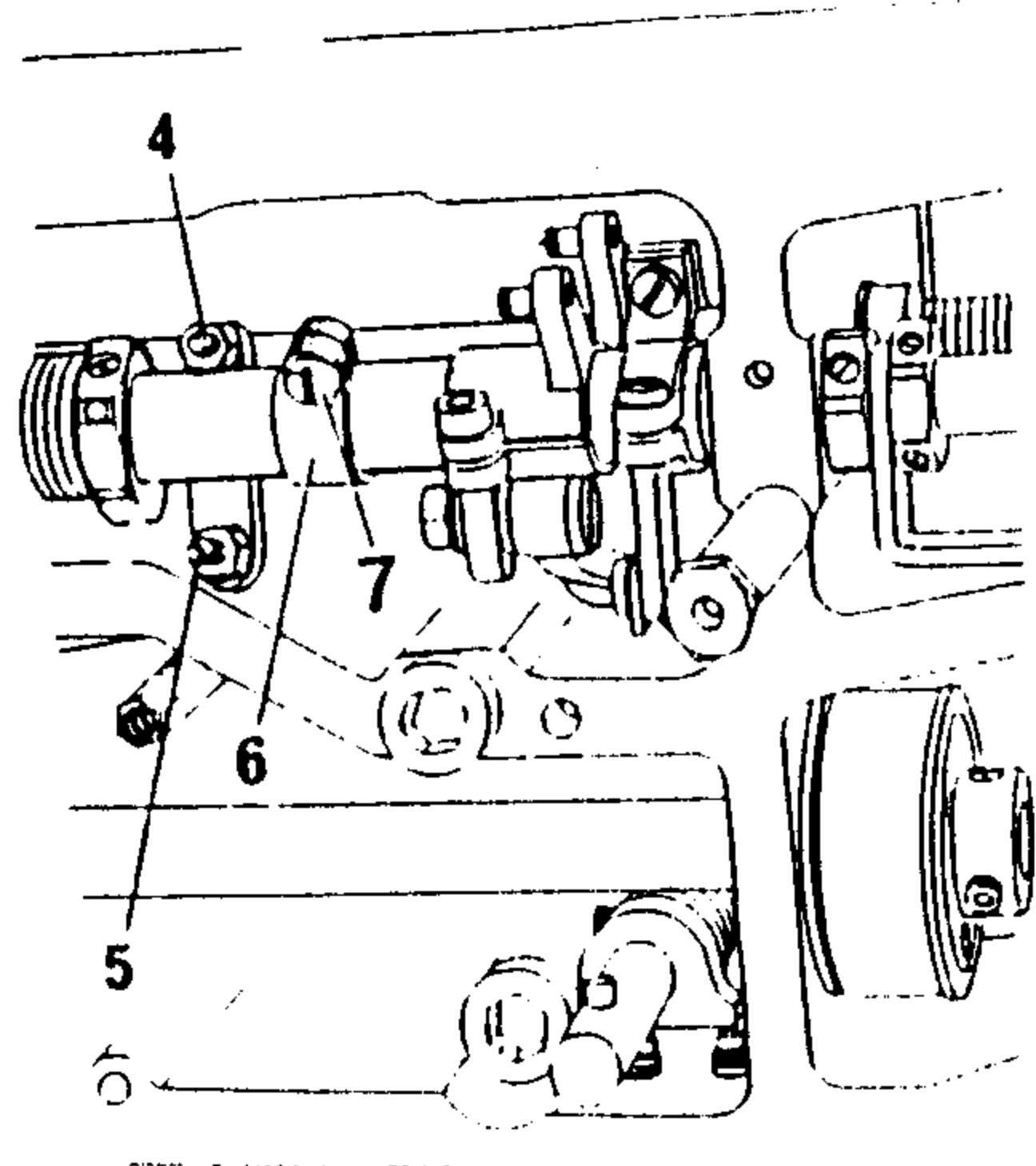
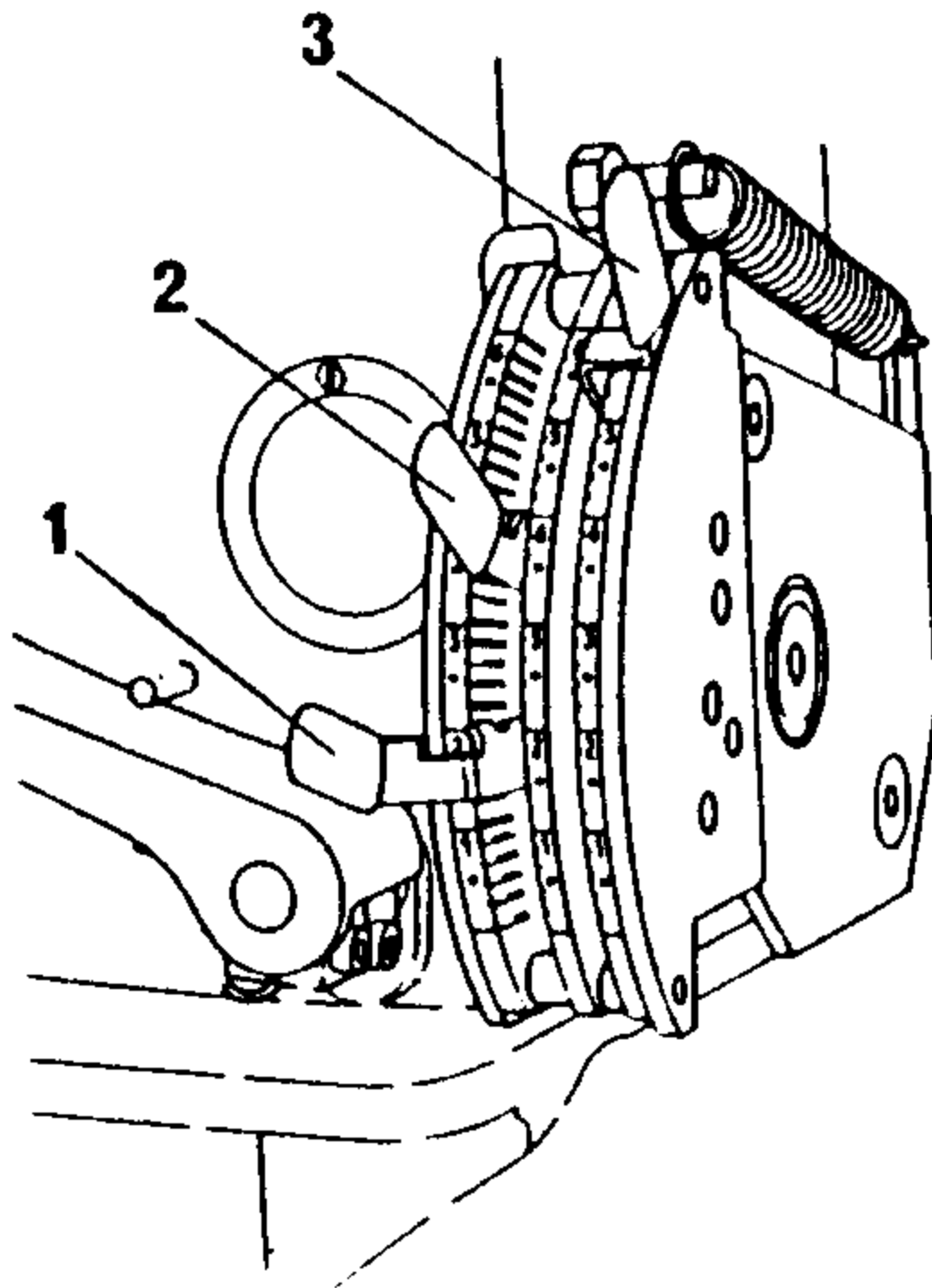
- 7.1 Height adjustment at rear: crank 2 (screw 1).
at front: eccentric sleeve 5 (screws 3).
- .2 Differential feed dog: After loosening its retaining screws

8 Stitch length limitation

8.01 The main feed stroke must be limited to 3.8 mm.

8.02 The differential feed stroke must be limited to:

- a minimum of 3.8 mm
- a maximum of 6.0 mm

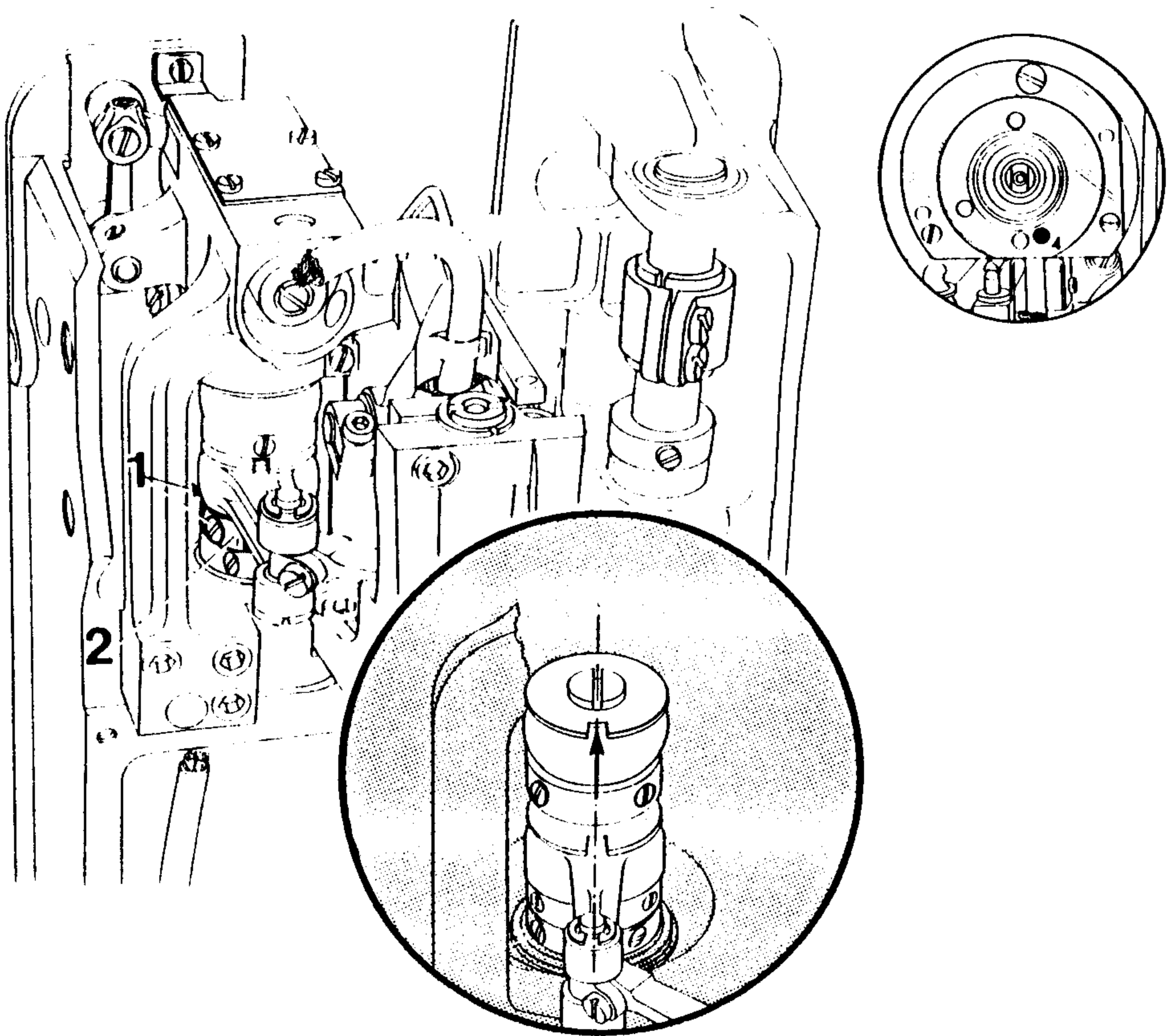


Adjustment clue:

- 8.1 Set limitation lever 3 at "6".
- .2 Set levers 1 and 2 at "3.8".
- .3 Fix the upper actuating shaft in this position with screws 4 and 5.
- .4 Rest crank 6 against the upper actuating shaft (screw 7).

9 Looper avoiding motion

9.0 With the needle bar positioned 0.8 mm before top dead center (pin in hole 4), the slot in the avoiding motion eccentric must be positioned exactly below the center line of the shaft (see arrow).

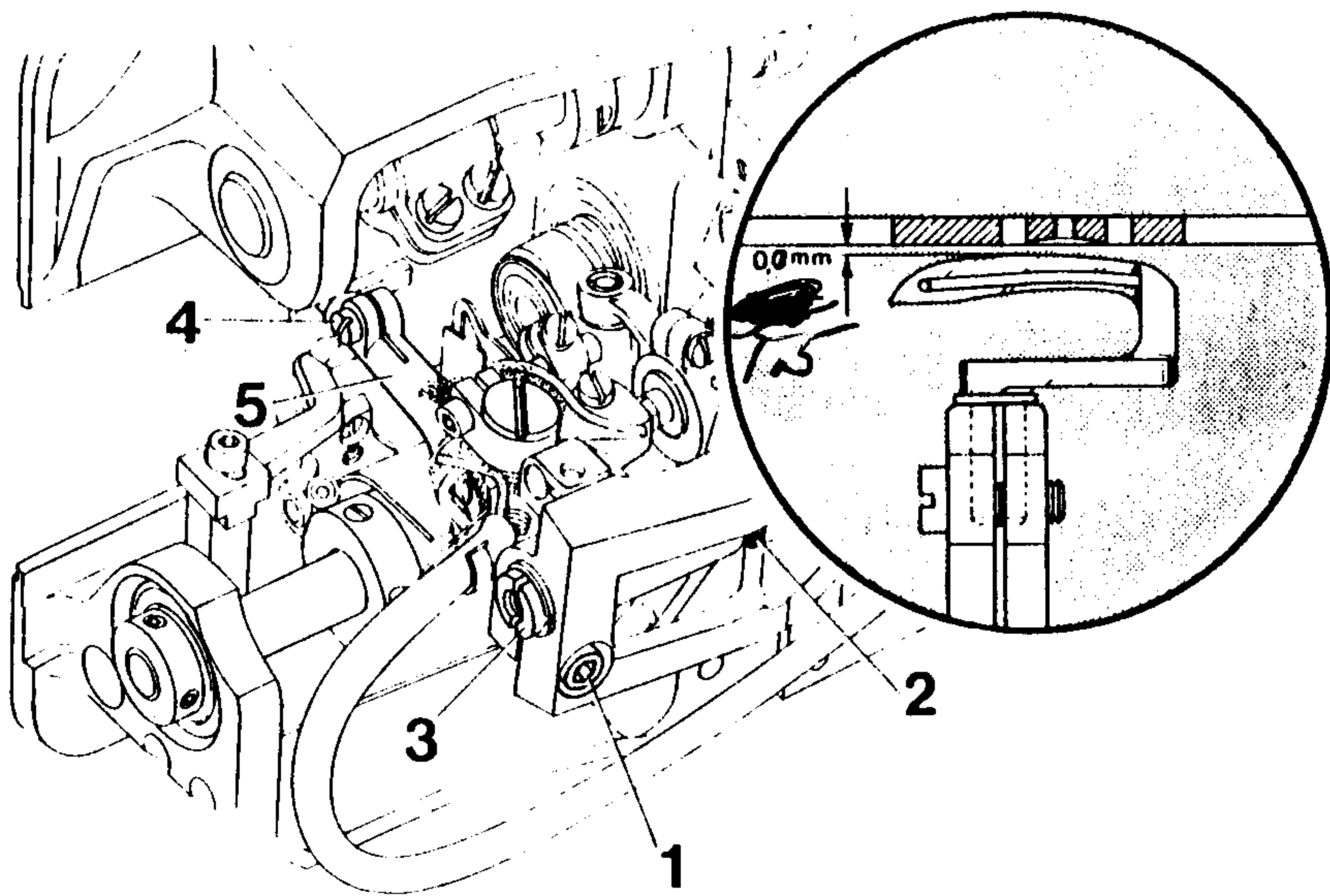


Adjustment clue:

9.1 Set eccentric 2 according to "9.0" (screws 1).

10 Looper height

10.0 At vertical position of the looper: distance of *1.5* mm to the needle plate supporting surface.

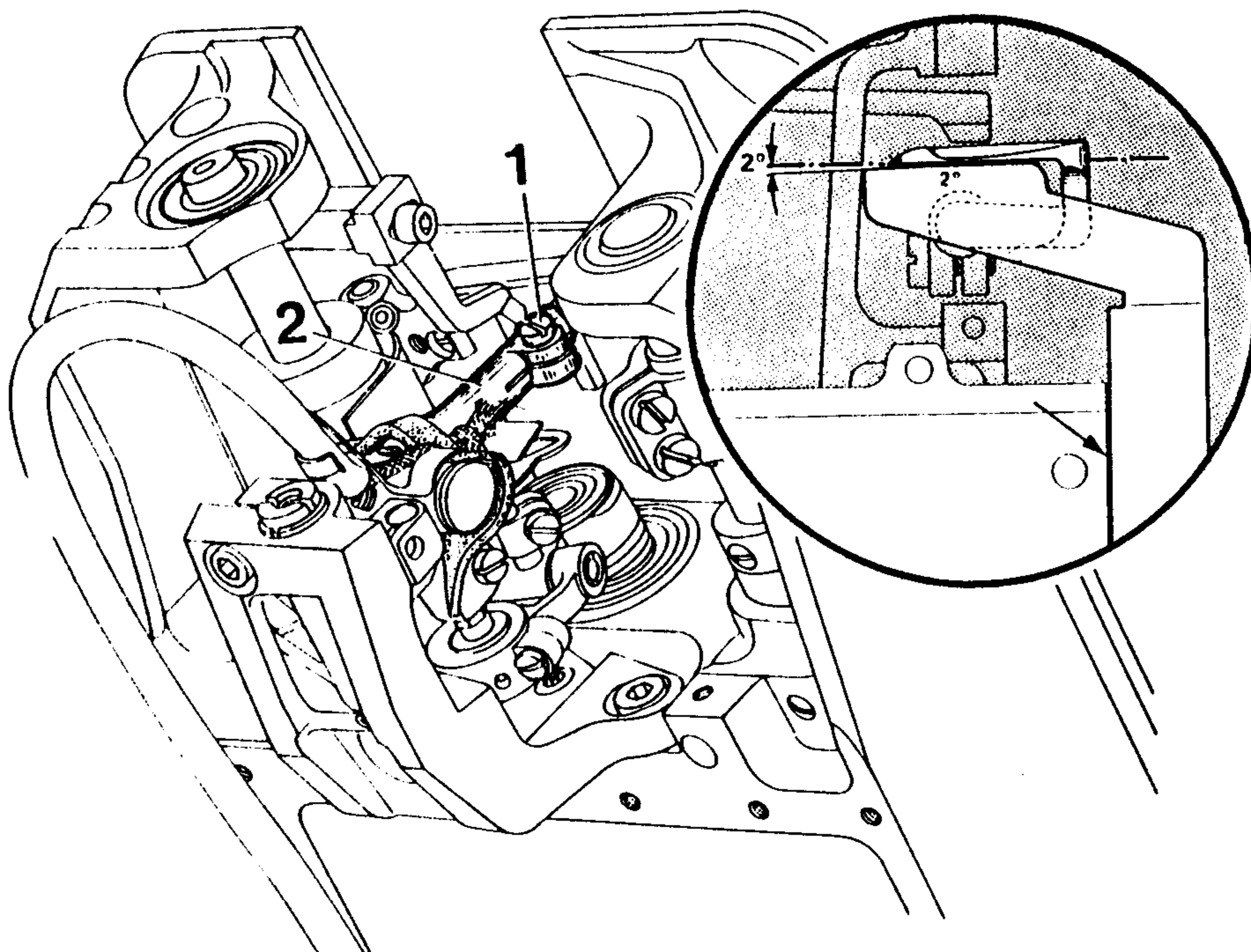


Adjustment clue:

10.1 Eccentric stud 3 (screws 1 and 2).

11 Looper angle

11.0 The looper must be at an angle 2° left of the imaginary centerline of the machine (use gauge 61-111 643-06).

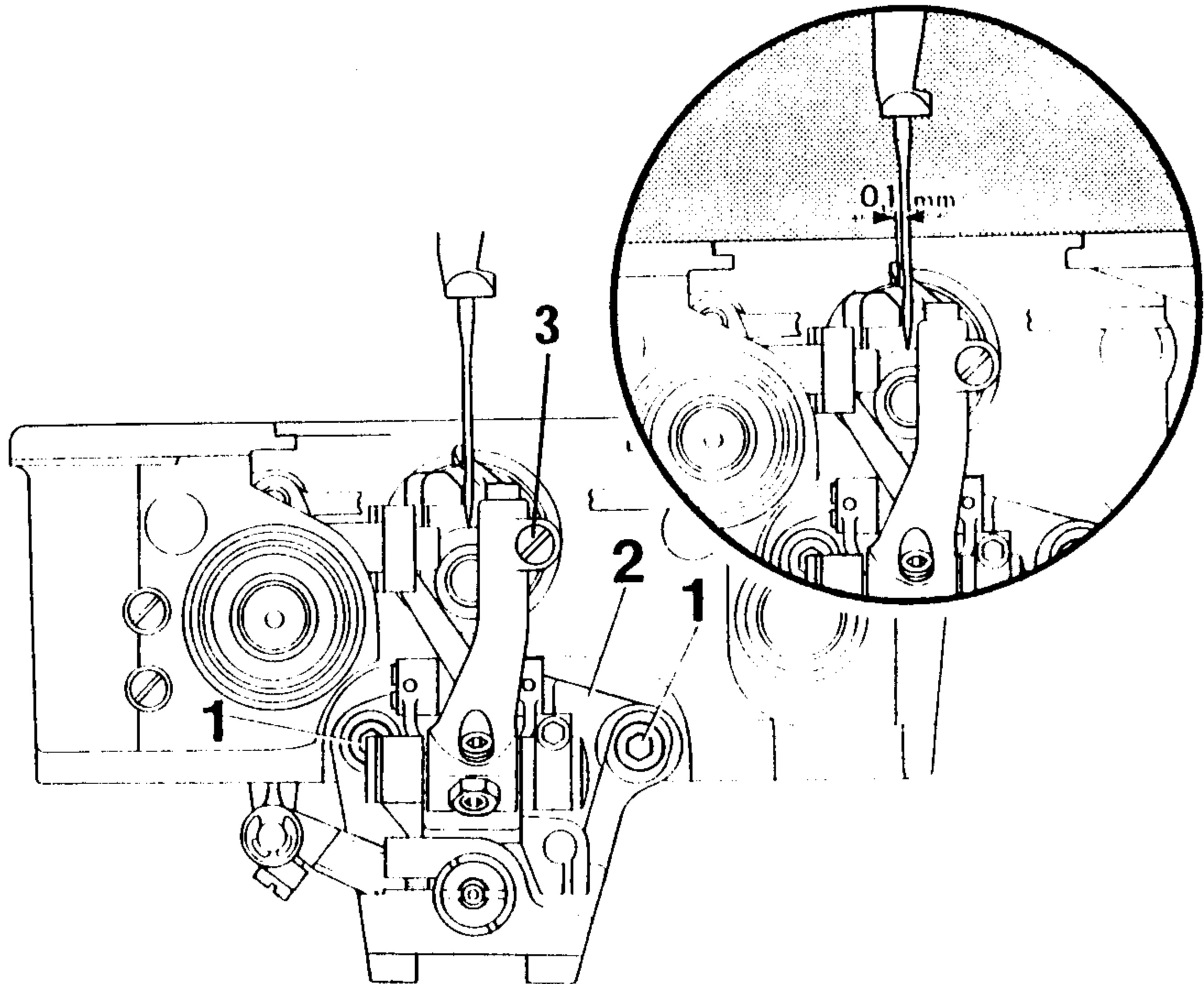


Adjustment clue:

- 11.1 Set looper holder 2 vertical (turn balance wheel).
- .2 Screw 1.

12 Looper-to-needle clearance in sewing direction
(preliminary adjustment)

12.0 Clearance in sewing direction: 0.1 mm.

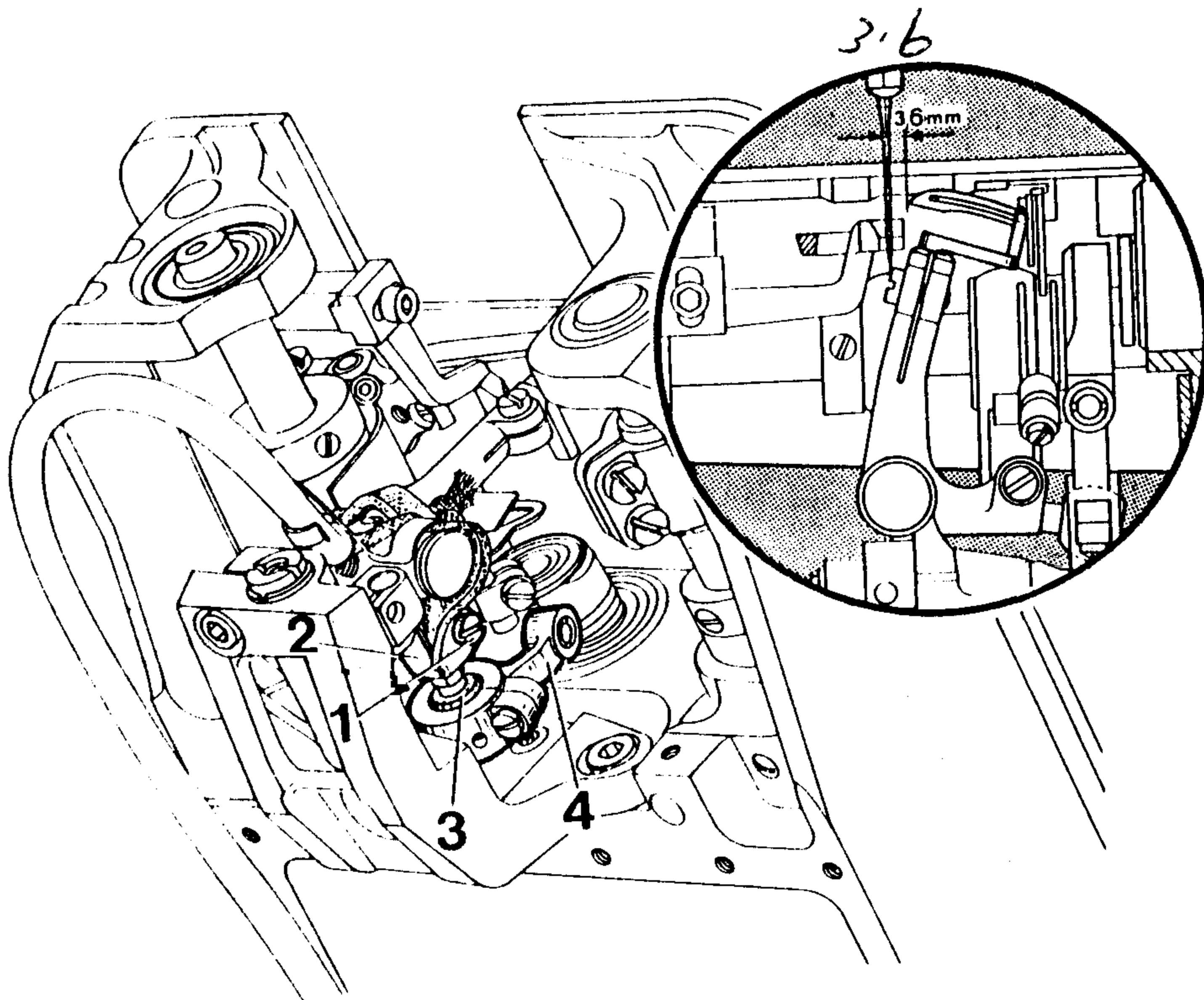


Adjustment clue:

- 12.1 Left looper: Move looper bearing 2 (screws 1).
- .2 Adjust other loopers by turning them (screw 3).

13 Looper-to-needle clearance in lateral direction

13.0 Clearance of 3.6 mm at right point of reversal.

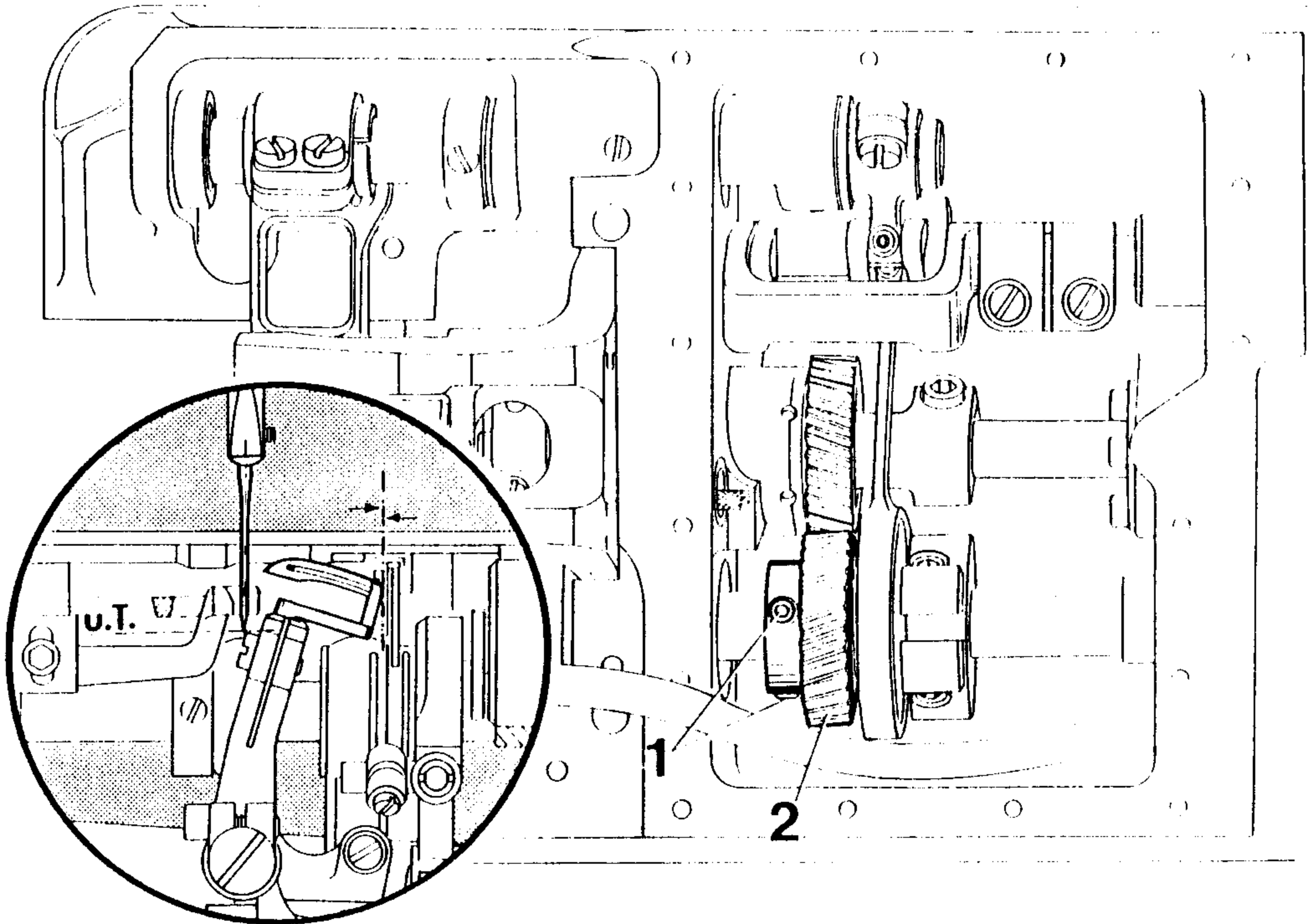


Adjustment clue:

- 13.1 Adjust eccentric ball stud 3 accordingly (screw 1), using a 6 mm spanner.
- .2 Make sure the connecting rod 4 is positioned vertically.

14 Timing the looper

14.0 When the needle bar reaches a position 0.5 mm before bottom dead center, the looper must be at its right point of reversal.

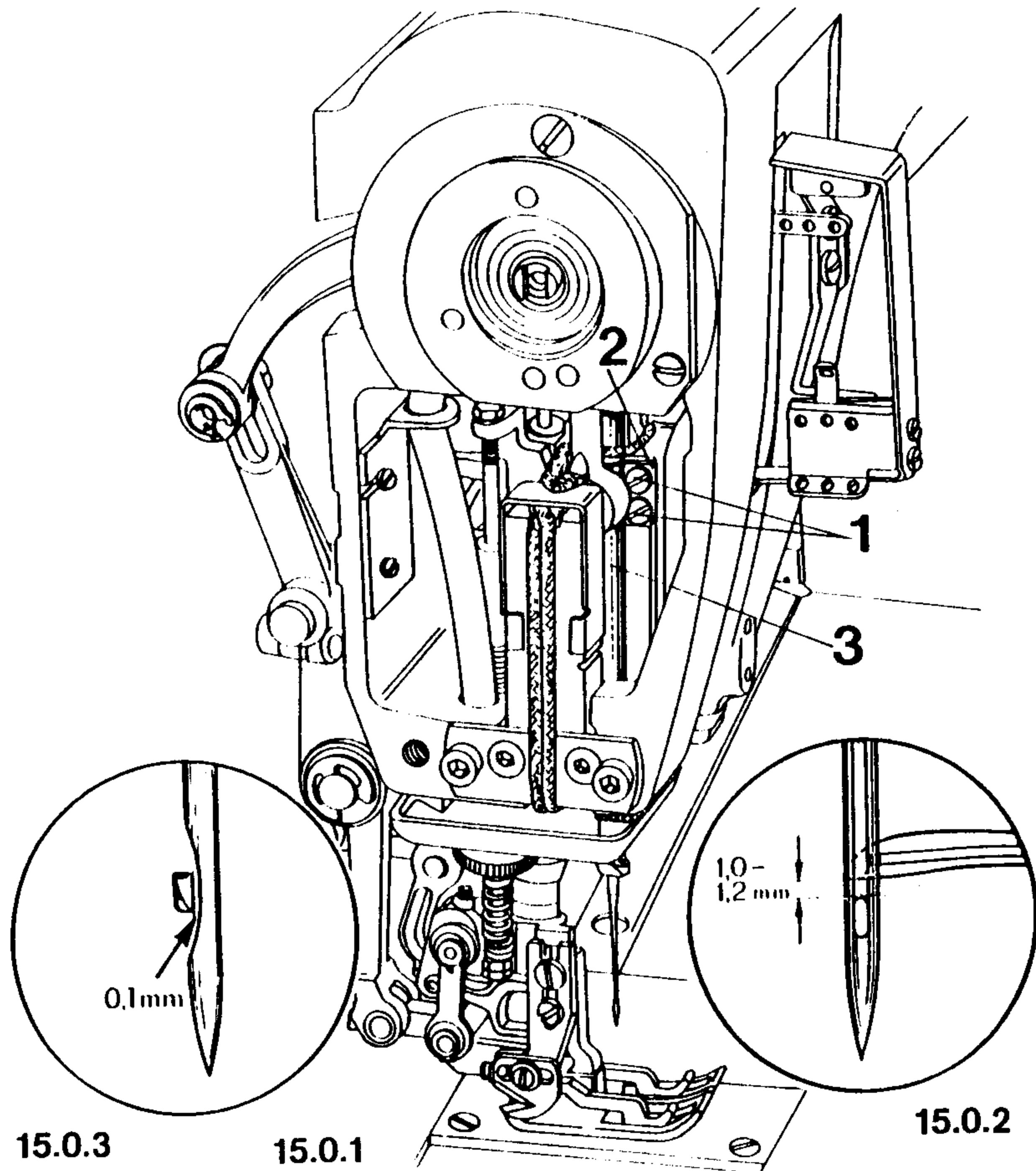


Adjustment clue:

- 14.1 Turn the balance wheel in sewing direction until the point of the advancing looper is at the left-hand side of a Nm 140 needle.
- .2 In this position, attach C-clamp N° 08-880 137-00 to the needle bar so that its upward movement is blocked.
- .3 Turn the balance wheel in the opposite direction until the C-clamp contacts the needle bar bush again.
- .4 In this position, the looper point must be at the right-hand side of the needle.
- .5 Correct by repositioning gear 2 (screws 1).

15 Needle bar height and looper-to-needle clearance (final adjustment)

- 15.01 When the point of the advancing looper is in line with the left side of the needle, the top edge of the needle eye must be positioned 1.0 to 1.2 mm below the looper point (see Fig. 15.0.2).
- 15.02 Clearance of 0.1 mm between looper and needle in sewing direction (see Fig. 15.0.3).

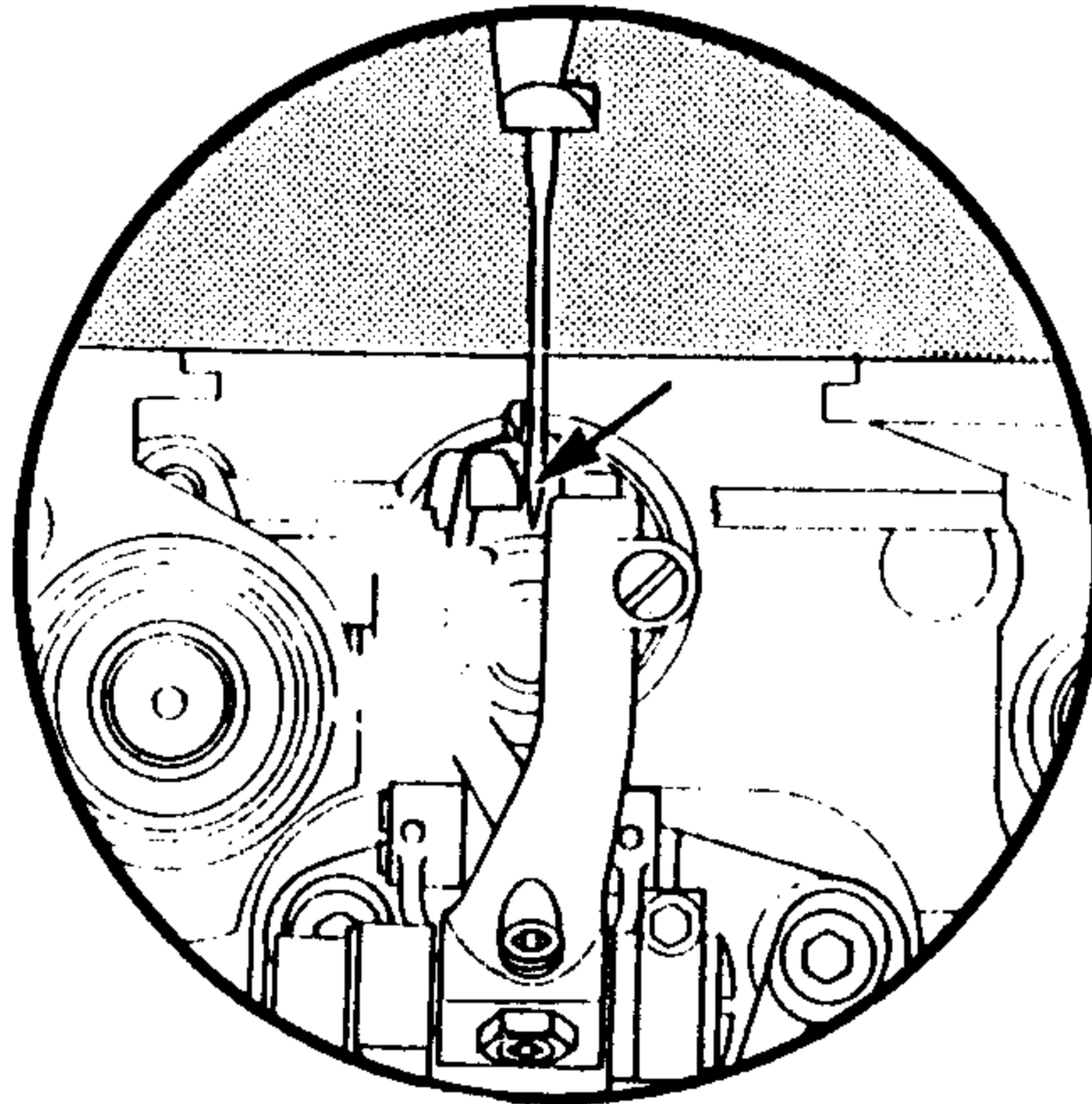


Adjustment clue:

- 15.1 Set height by re-positioning needle bar 3 vertically (screws 1).
.2 Looper-to-needle clearance in sewing direction: See section 12.

16 Clearance between rear needle guard and needle

16.0 The needle must still contact the rear needle guard slightly when the point of the advancing looper is in line with the right side of the needle.

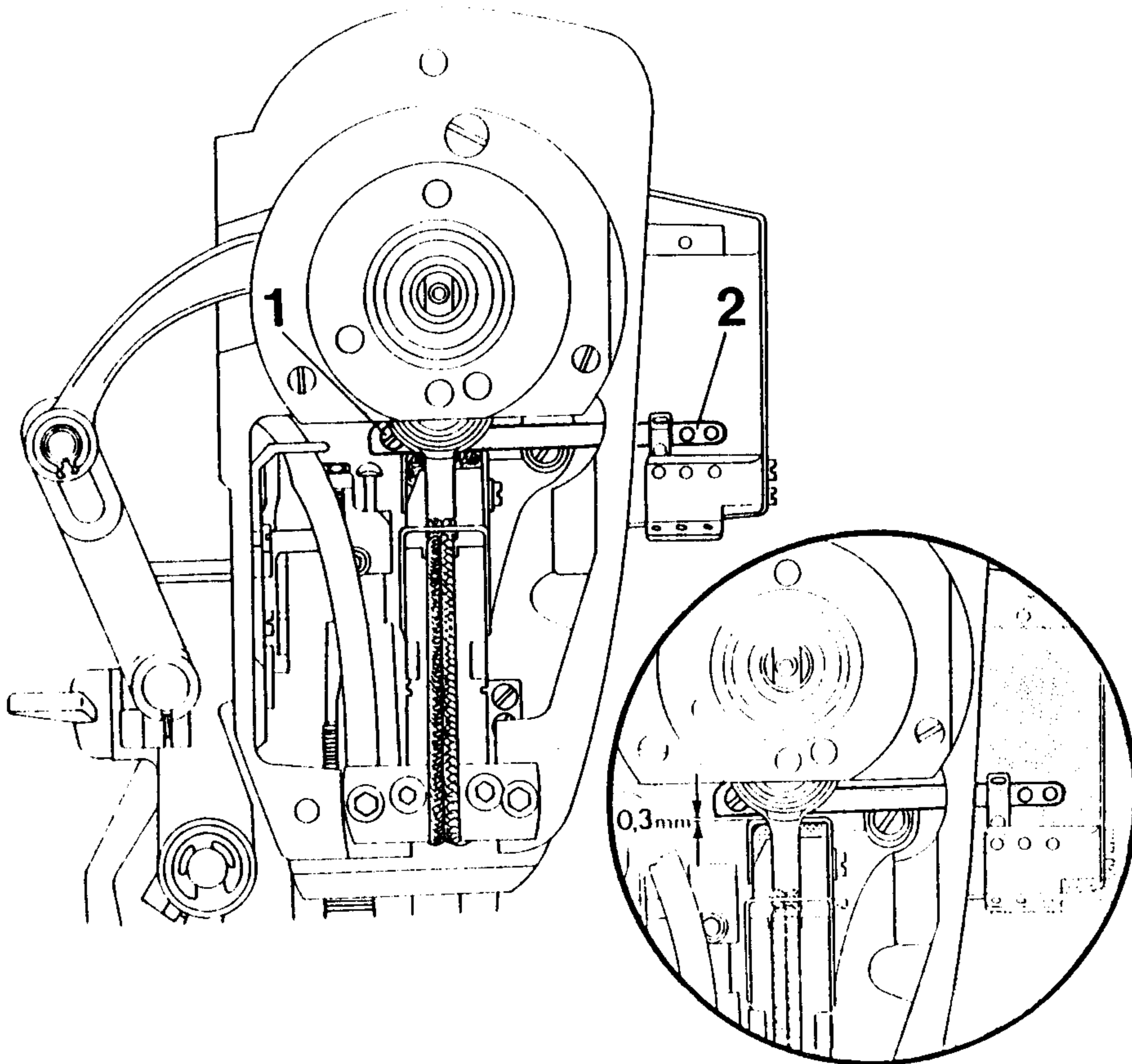


Adjustment clue:

- 16.1 Effectiveness of the needle guard is always restricted to one particular stitch length set to the main feed dog.
- .2 The stitch length of the main feed is therefore fixed to 3.8 mm.
- .3 The height of the needle guard is determined by the feed dog height.
- .4 Adjust needle guard according to "16.0"; re-work accordingly, if required.

17 Take-up lever

- 17.01 Clearance of 0.3 mm to needle bar frame with needle bar at bottom dead center.
- 17.02 The take-up lever must be centered in its slot.

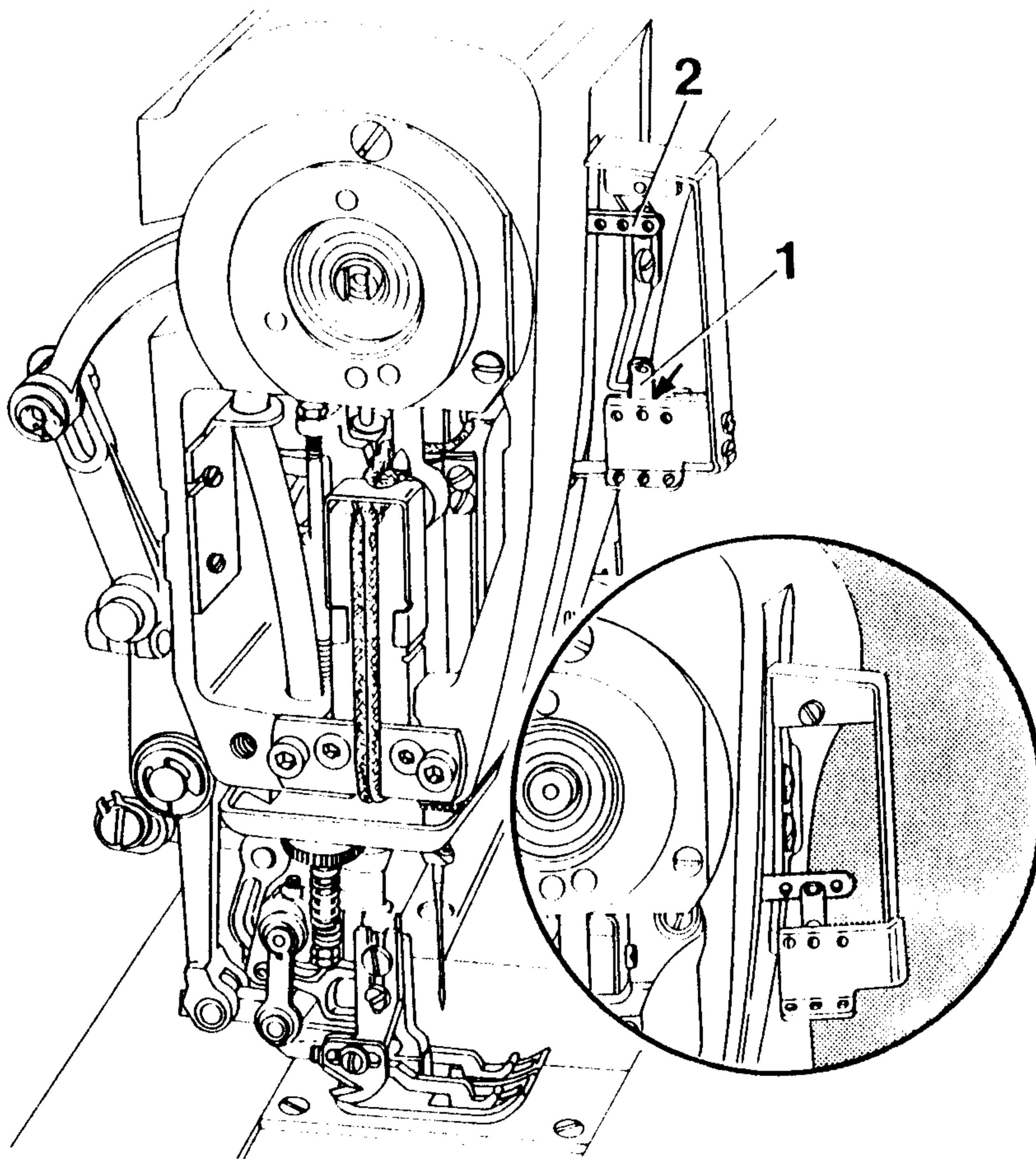


Adjustment clue:

17.1 Take-up lever 2 (screw 1).

18 Needle thread regulator

18.0 With the needle bar at bottom dead center, the eye of needle thread regulator 1 must be in line with the middle hole of take-up lever 2.



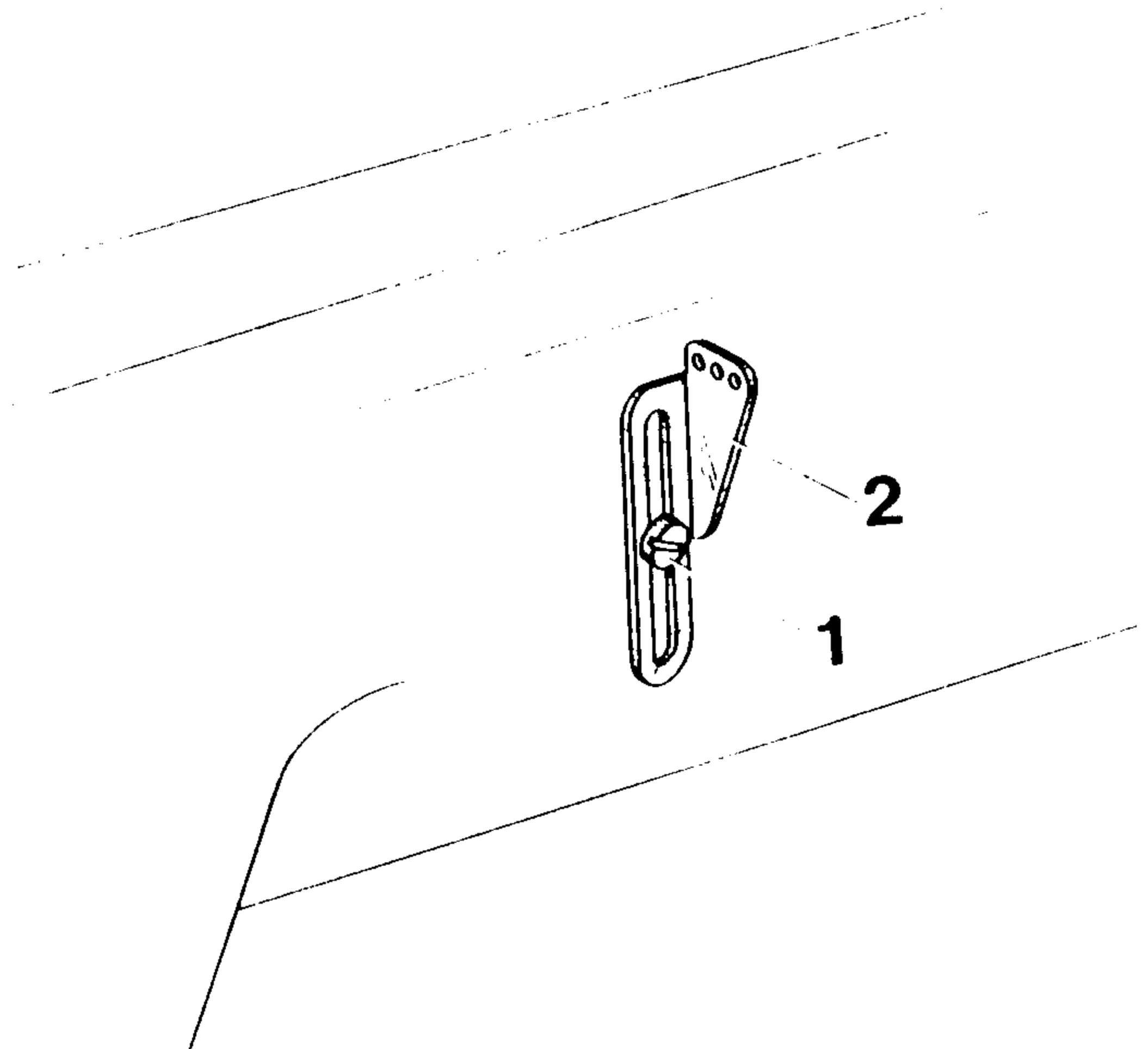
Adjustment clue:

18.1 Adjust needle thread regulator 1 accordingly.

19 Adjustable thread guide

19.0 The adjustable thread guide must be fixed in the middle of its elongated hole.

This basic setting may have to be modified, depending on the type of thread and the stitch length used.

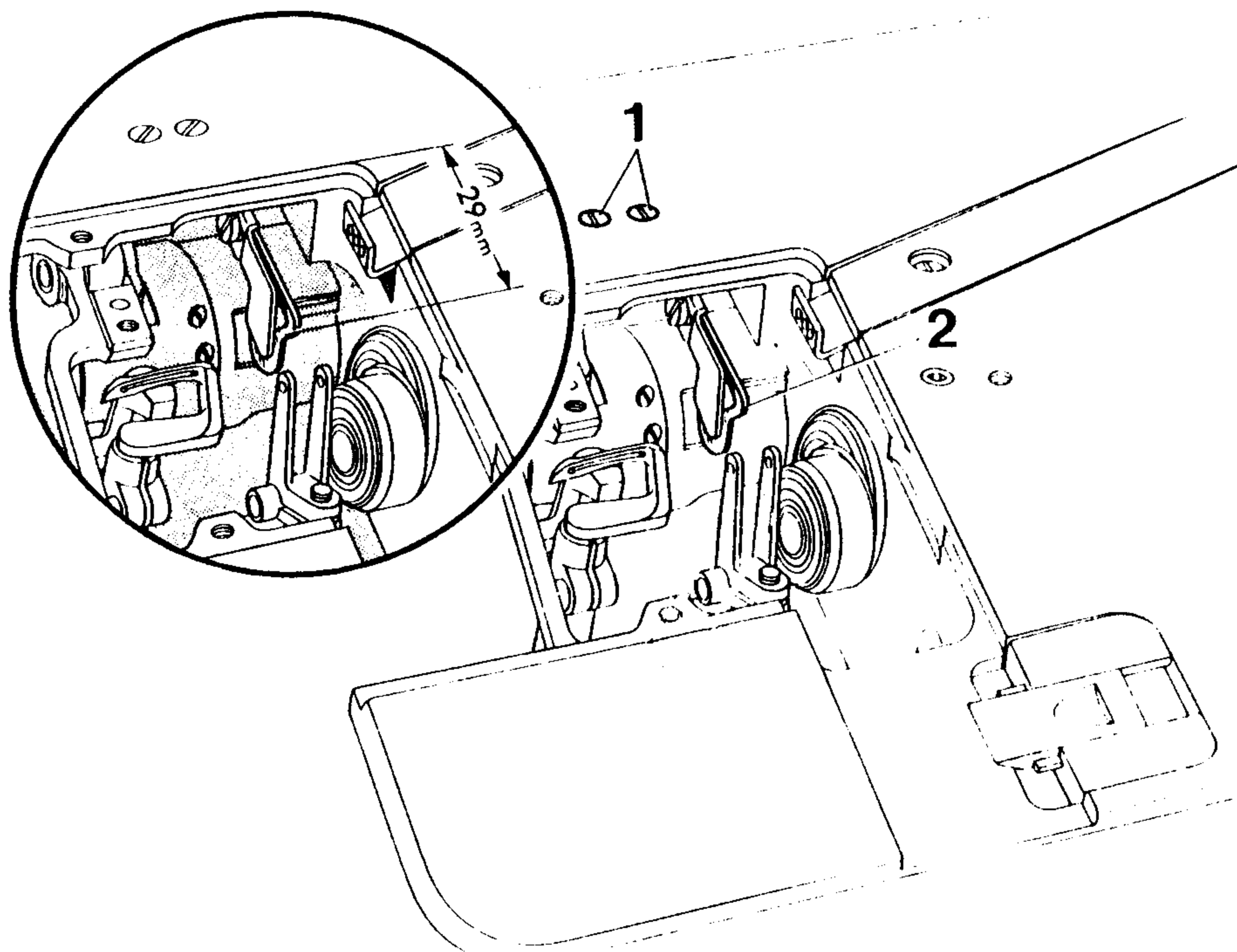


Adjustment clue:

19.1 Thread guide 2 (screw 1).

20 Primary looper thread regulator

21.0 The distance between the front edge of regulator 2 and the rear edge of the needle plate cutout must be 29 mm.

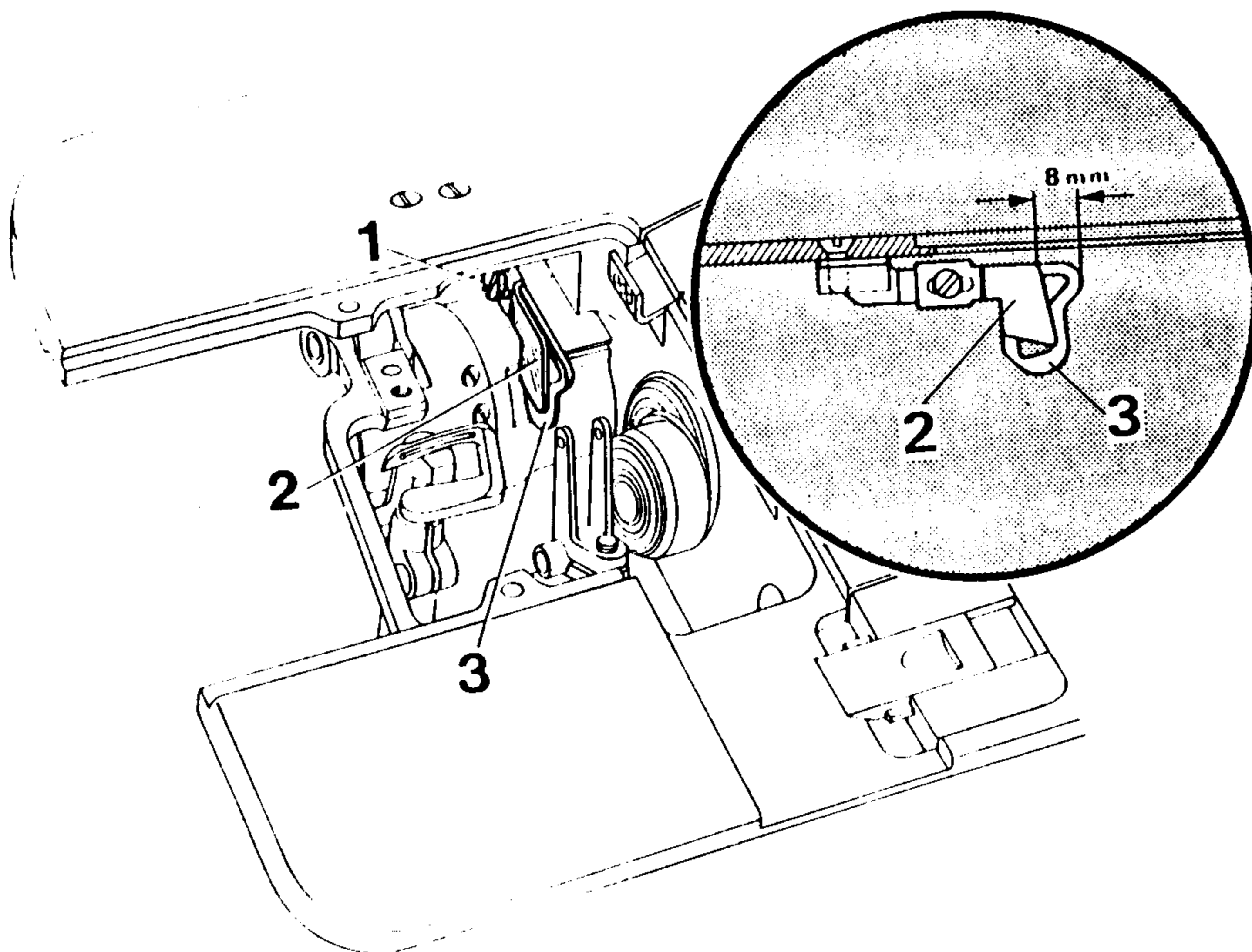


Adjustment clue:

20.1 Thread regulator 2 (screws 1).

21 Secondary looper thread regulator

21.0 The front edge of secondary looper thread regulator 2 must be about 8.0 mm from the front edge of primary looper thread regulator 3.

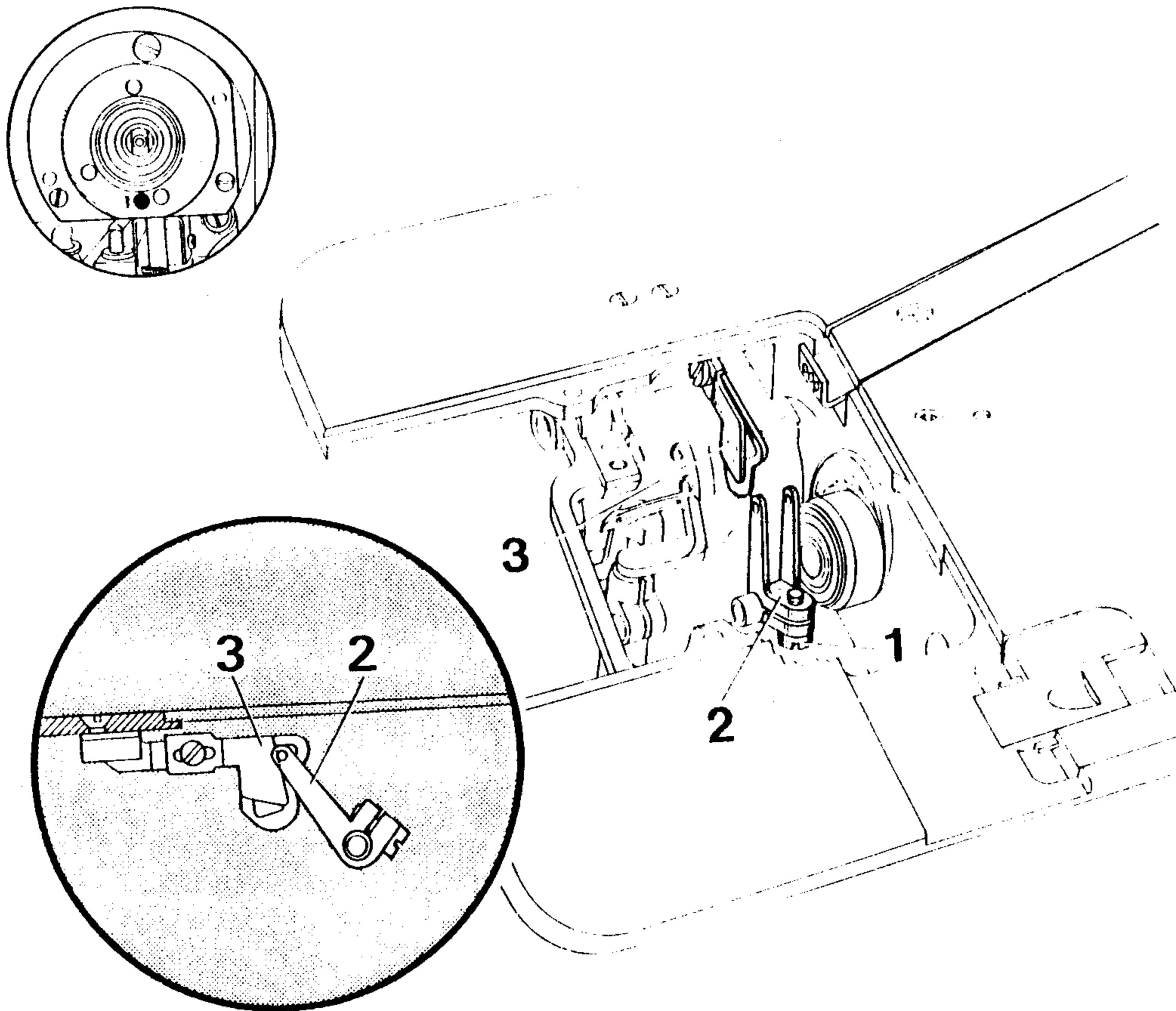


Adjustment clue:

21.1 Regulator 2 (screw 1).

22 Looper thread puller 2

22.0 With the needle bar at top dead center (pin in hole 1), both eyes of looper thread puller 2 must be exactly at the front edge of secondary looper thread regulator 3.

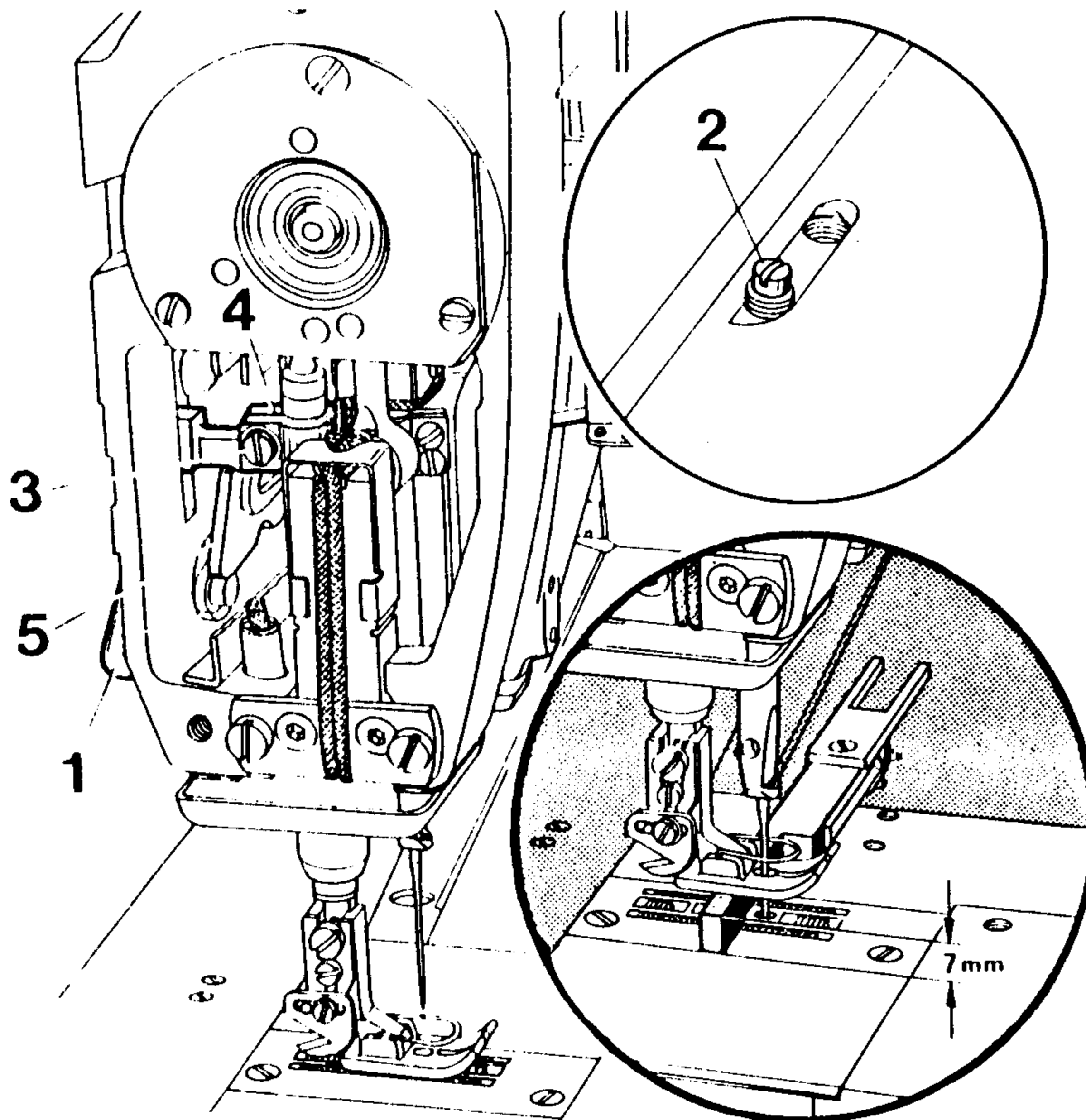


Adjustment clue:

22.1 Thread puller 2 (screw 1).

23 Clearance between presser foot and needle plate: presser foot pressure

- 23.01 With presser bar lifter 1 raised, there must be a clearance of 7.0 mm between presser foot and needle plate.
- 23.02 Presser bar pressure screw 2 must be flush with the casting.

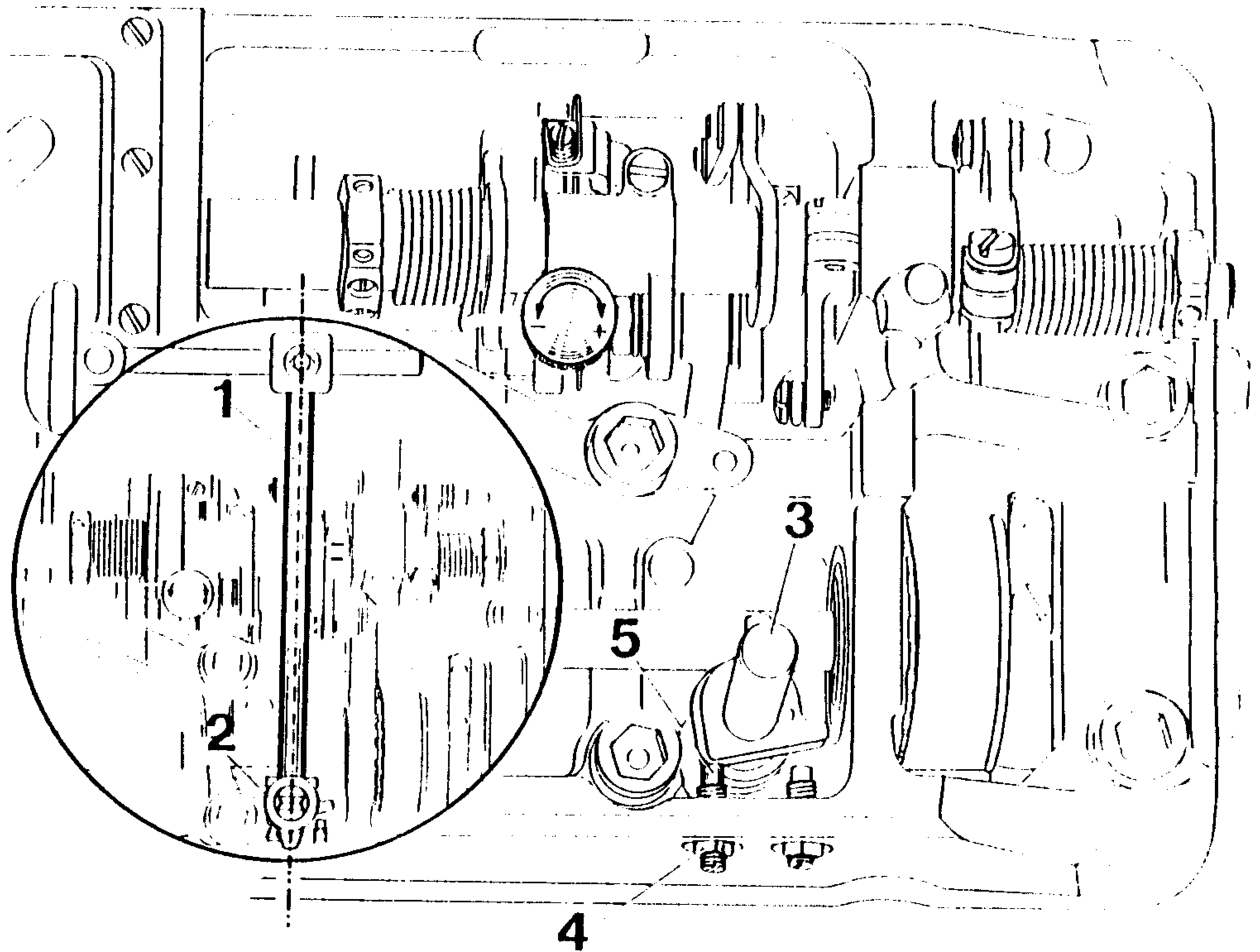


Adjustment clue:

- 23.1 Reduce presser foot pressure (screw 2).
.2 Raise presser bar lifter 1.
.3 Rest presser foot on 7 mm gauge and adjust relative to needle
.4 Set lifting bracket 4 onto raised presser bar lifter 5 (screw 3).
.5 Screw in screw 2 according to "23.02".

24 Knee lever rest position

24.0 In rest position, knee lever connecting rod 1 must be roughly at right angles to the front edge of the bedplate.

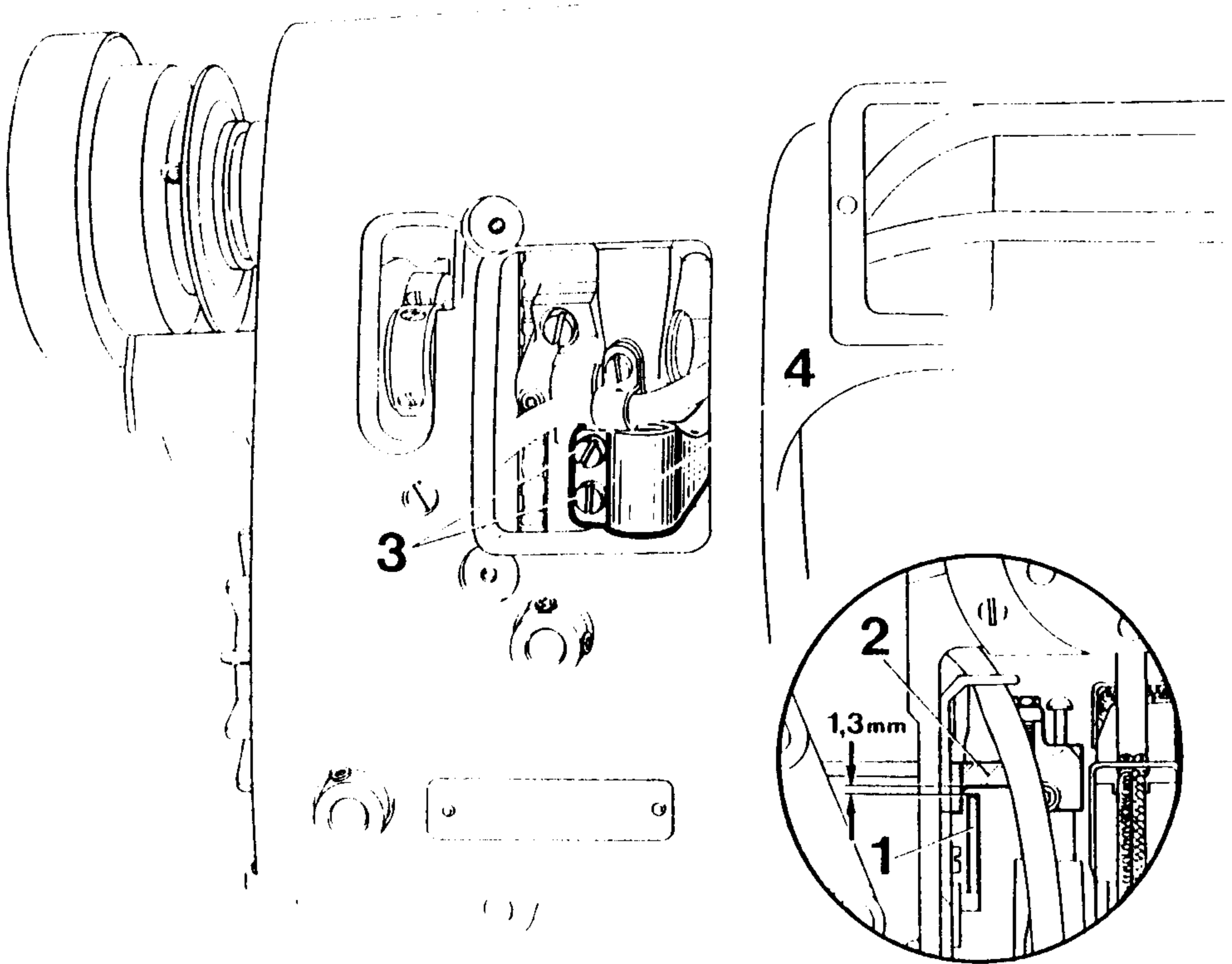


Adjustment clue:

24.1 Stop screw 5 (nut 4).

25 Knée lever play

25.0 When the presser foot rests on the needle plate and the feed dog is beneath the needle plate, there must be a clearance of about 1.3 mm between lifting lever 1 and lifting collar 2.

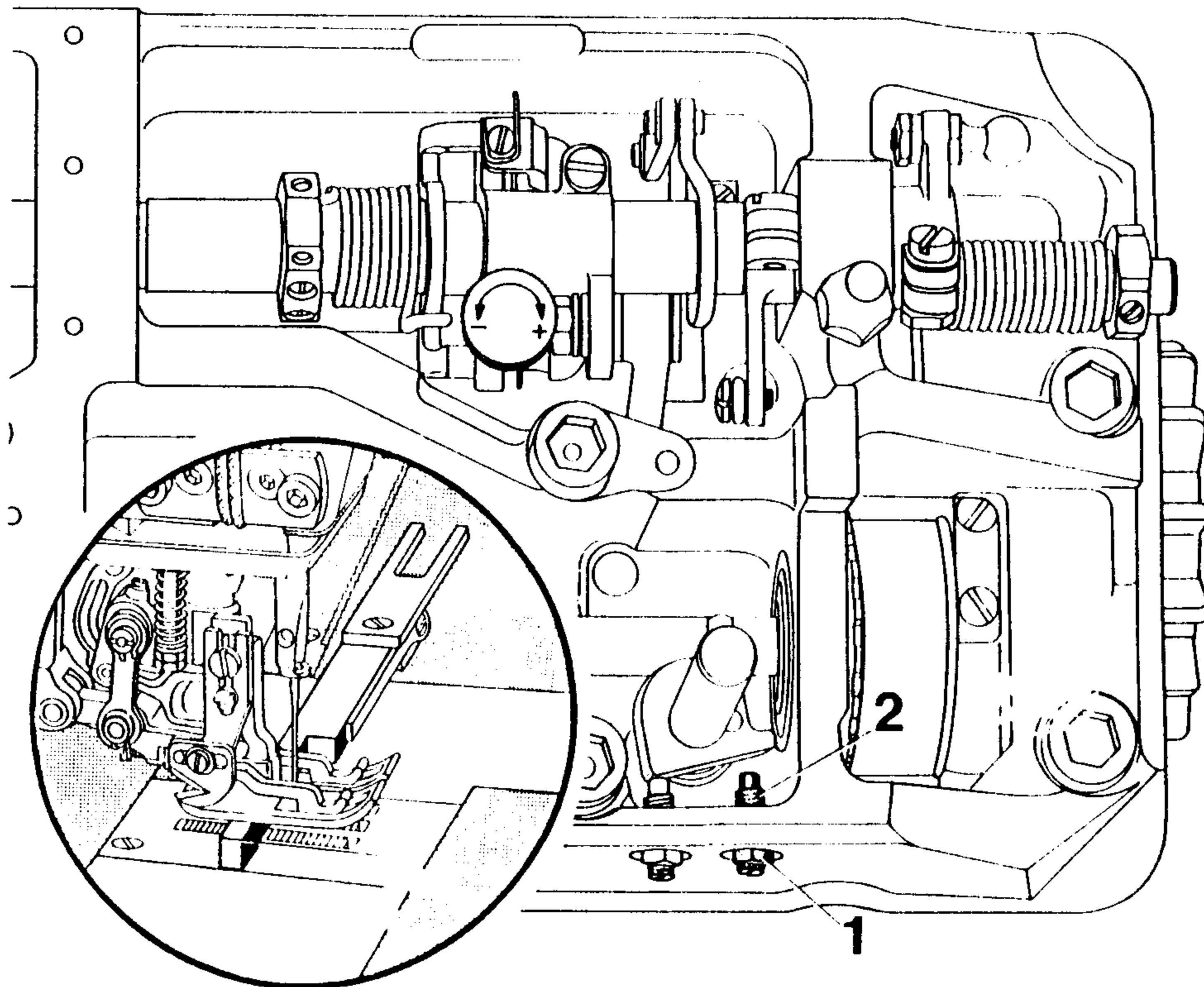


Adjustment clue:

25.1 Crank 4 (screws 3).

26 Knee lever stroke limitation

26.0 When the knee lever is fully operated, the presser foot must be lifted off the needle plate by about 9 mm.

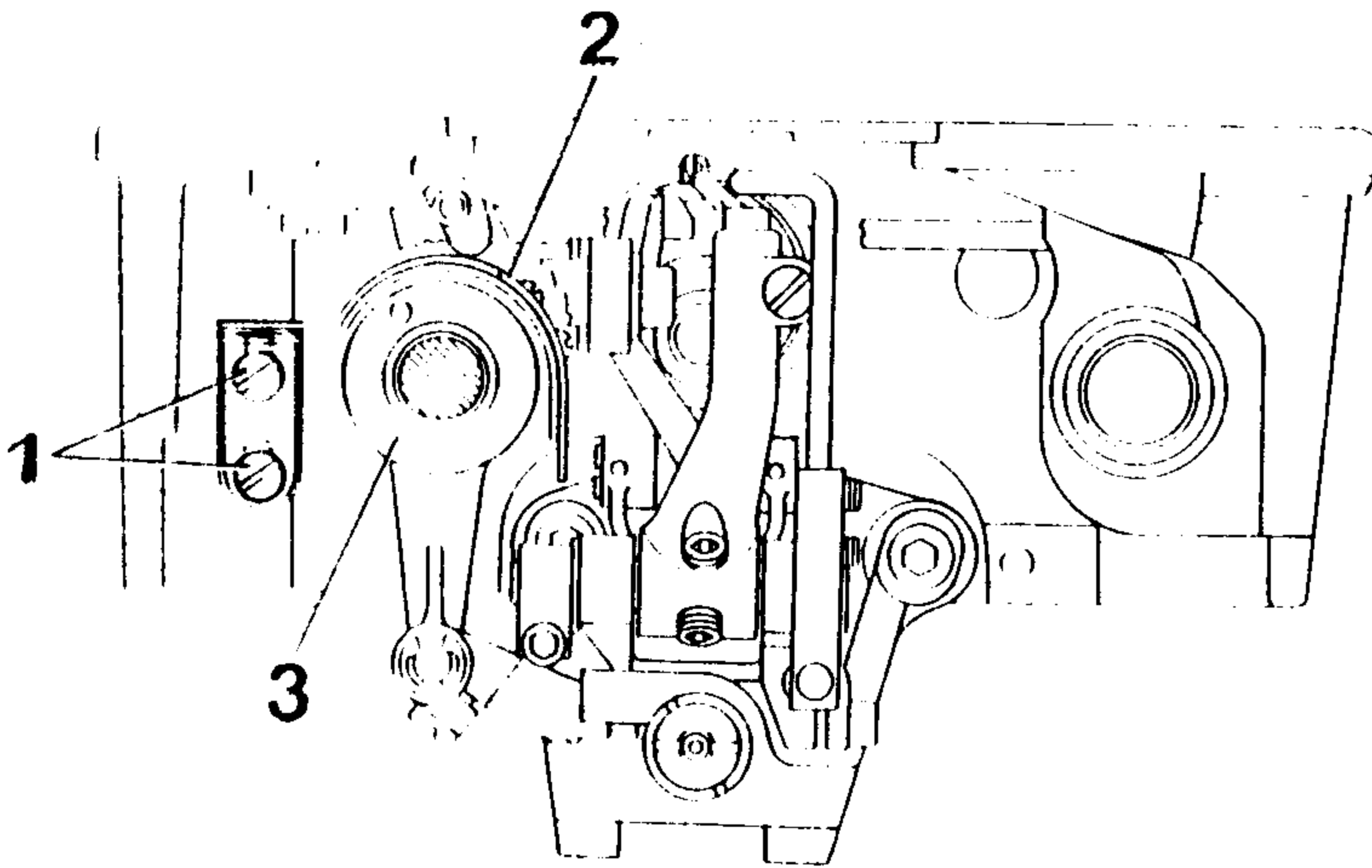


Adjustment clue:

26.1 Stop screw 2 (nut 1).

27 Guard 2 of looper-avoiding-motion eccentric

27.0 Eccentric 3 must not touch guard 2 during any phase of its motion.

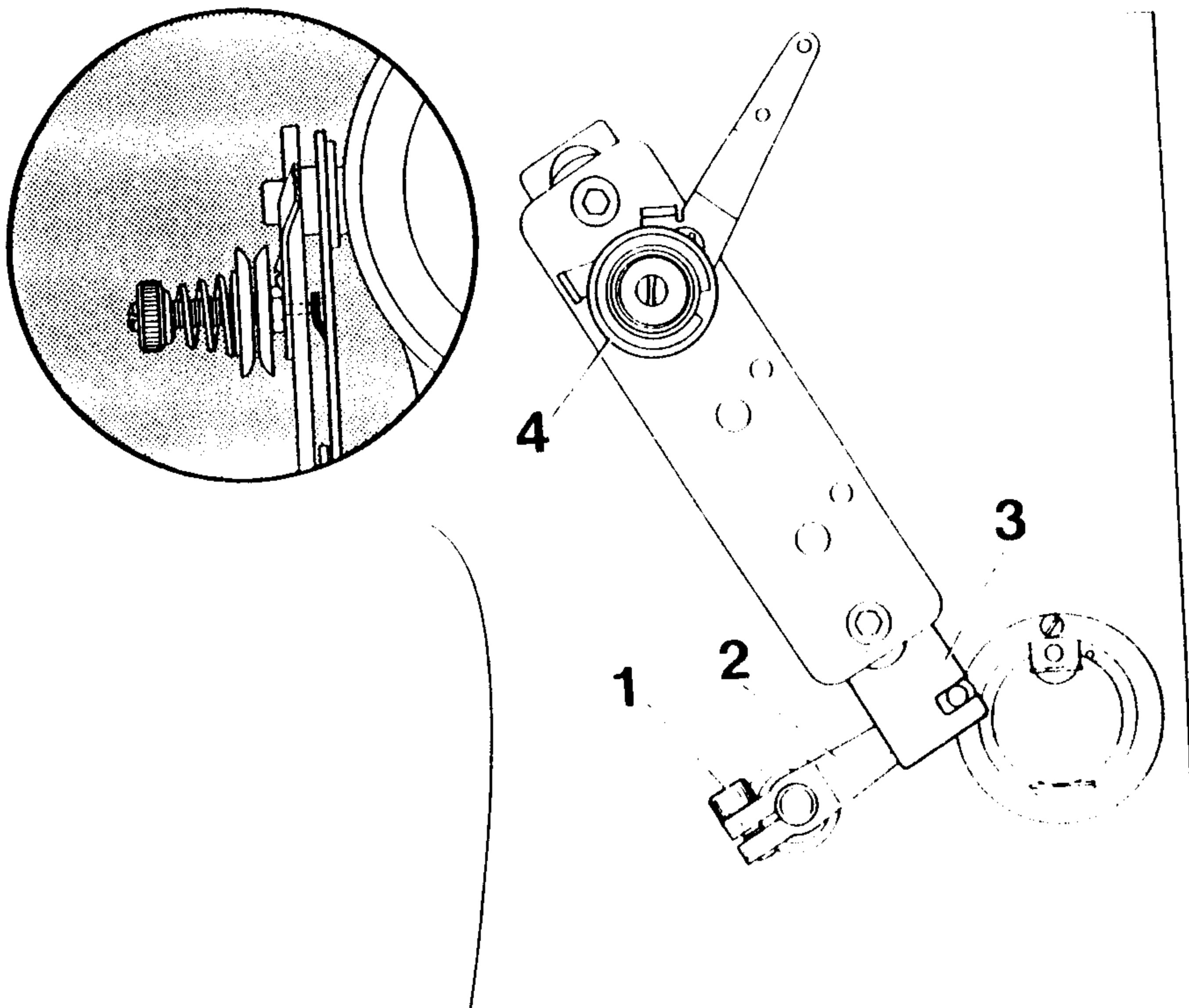


Adjustment clue:

27.1 Guard 2 (screws 1).

28 Tension release

28.0 When the presser foot is raised by means of the knee lever by about 5 mm, thread tension 4 must release.



Adjustment clue:

28.1 Lever 2 (screw 1).

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Pfaff, D-6750 Kaiserslautern, Postfach 3020/3040, Telefon (06 31) 2 00-0, Telex 45753
Telefax (06 31) 17 202