

# 937

## ADJUSTMENT MANUAL

This adjustment manual applies to machines  
from the serial number **8 300 001** and  
software version **0435/005** onwards.

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## 13 Adjustment



Observe and comply with all instructions in the instruction manual's **chapter 1 Safety!** In particular make sure that all safety covers are installed again correctly after making adjustments, see **chapter 1.06 Instruction manual** hazard information!



Unless otherwise stated, the machine must be disconnected from the mains before all adjustment work!  
Risk of injury due to accidental machine start-up!



No screw clamp may be fastened to the needle bar on the PFAFF 937!  
This may damage the special needle bar coating.

### Notes on adjustment

All adjustments in this manual are based on a fully assembled machine and may only be carried out by technical staff trained for this purpose. Machine covers, which have to be removed and replaced to carry out checks and adjustments, are not mentioned in the text. The order of the following chapters corresponds to the most logical work sequence for machines that have to be completely adjusted. Both the preceding and following chapters must be observed if only specific individual work steps are carried out. The screws and nuts indicated in brackets ( ) are fastenings for machine parts, which must be loosened before any adjustment and tightened again afterwards.

### 13.01 Tools, gauges and other accessories

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of wrenches with jaw widths from 7 to 14 mm
- 1 set of Allen keys from 1.5 to 6 mm
- 1 metal ruler, order no. 08-880 218-00
- 1 feed dog setting gauge, order no. 61-111 651-33
- 1 adjustment pin (5 mm diameter), order no. 13-030 341-05
- 1 hook bearing bracket setting gauge, order no. 91-129 996-05

### 13.02 Abbreviations

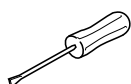
t.d.c. = top dead centre  
b.d.c. = bottom dead centre

### 13.03 Explanation of symbols

Activities to be performed or important information in this adjustment manual are emphasised by symbols. The symbols used have the following meaning:



Note, information



Maintenance, repairs, adjustment, service work  
(only to be carried out by technical staff)

## 13.04 Checking and adjustment aid



It is possible to precisely locate the required needle bar positions through insertion in holes 1 - 5.

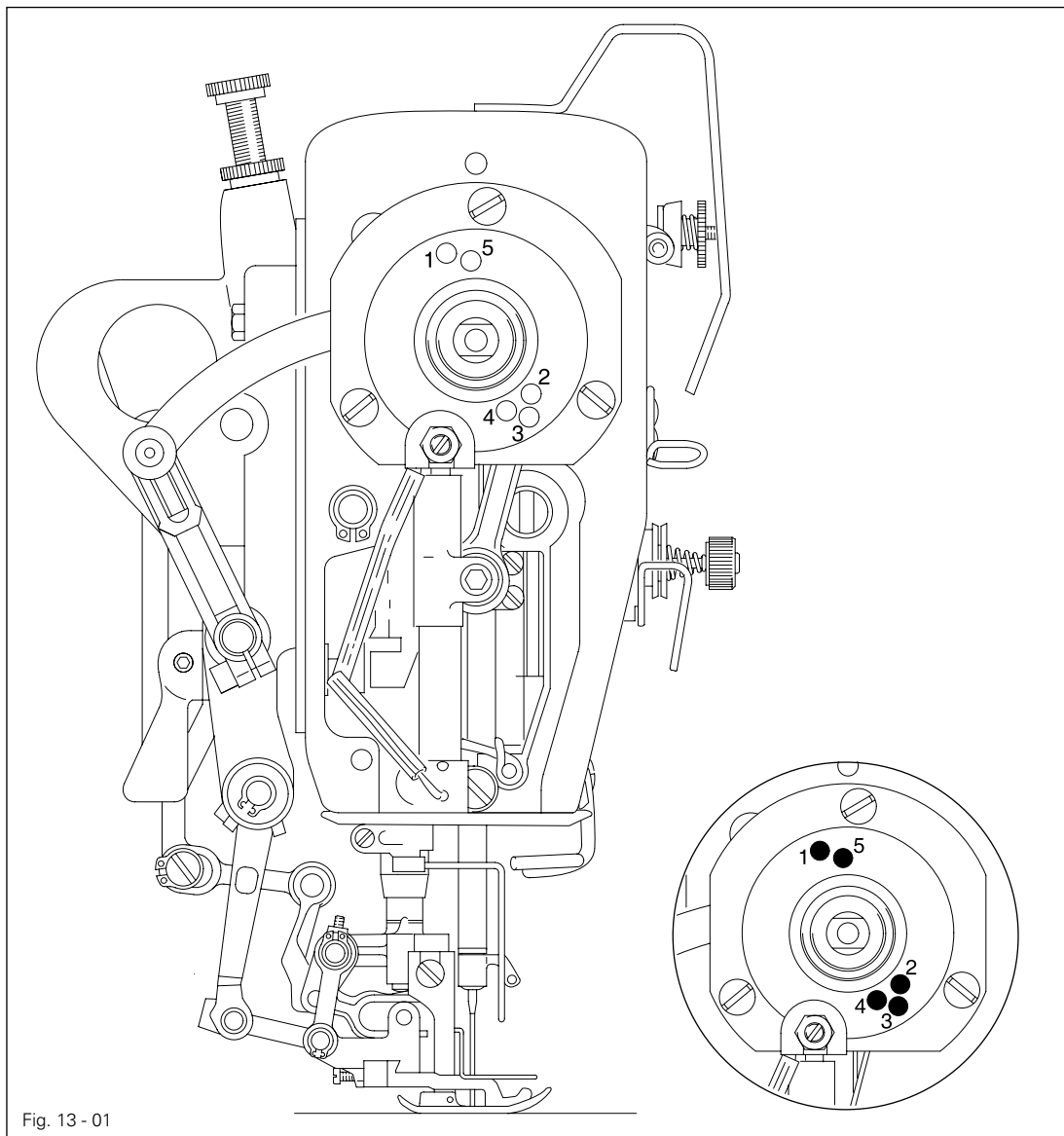
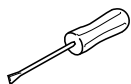


Fig. 13 - 01



- Turn the handwheel until the needle bar has almost reached the required position.
- Place the adjustment pin in the corresponding hole provided and press it down.
- Turn the handwheel slightly back and forth until the adjustment pin engages in the crank cutout behind the bearing plate, thus blocking the machine.

Hole 1	=	2.0 mm after bottom dead centre of the needle bar (2.0 after b.d.c.)
Hole 2	=	top dead centre of the needle bar (t.d.c.)
Hole 3	=	0.25 mm after top dead centre of the needle bar (0.25 after t.d.c.)
Hole 4	=	1.0 mm after top dead centre of the needle bar (1.0 after t.d.c.)
Hole 5	=	4.0 mm after bottom dead centre of the needle bar (4.0 after b.d.c.)

## 13.05 Adjusting basic machine

### 13.05.01 Compensation weight

#### Rule

When the needle bar is in b.d.c., the largest eccentricity of the compensation weight **1** should be in the top position.

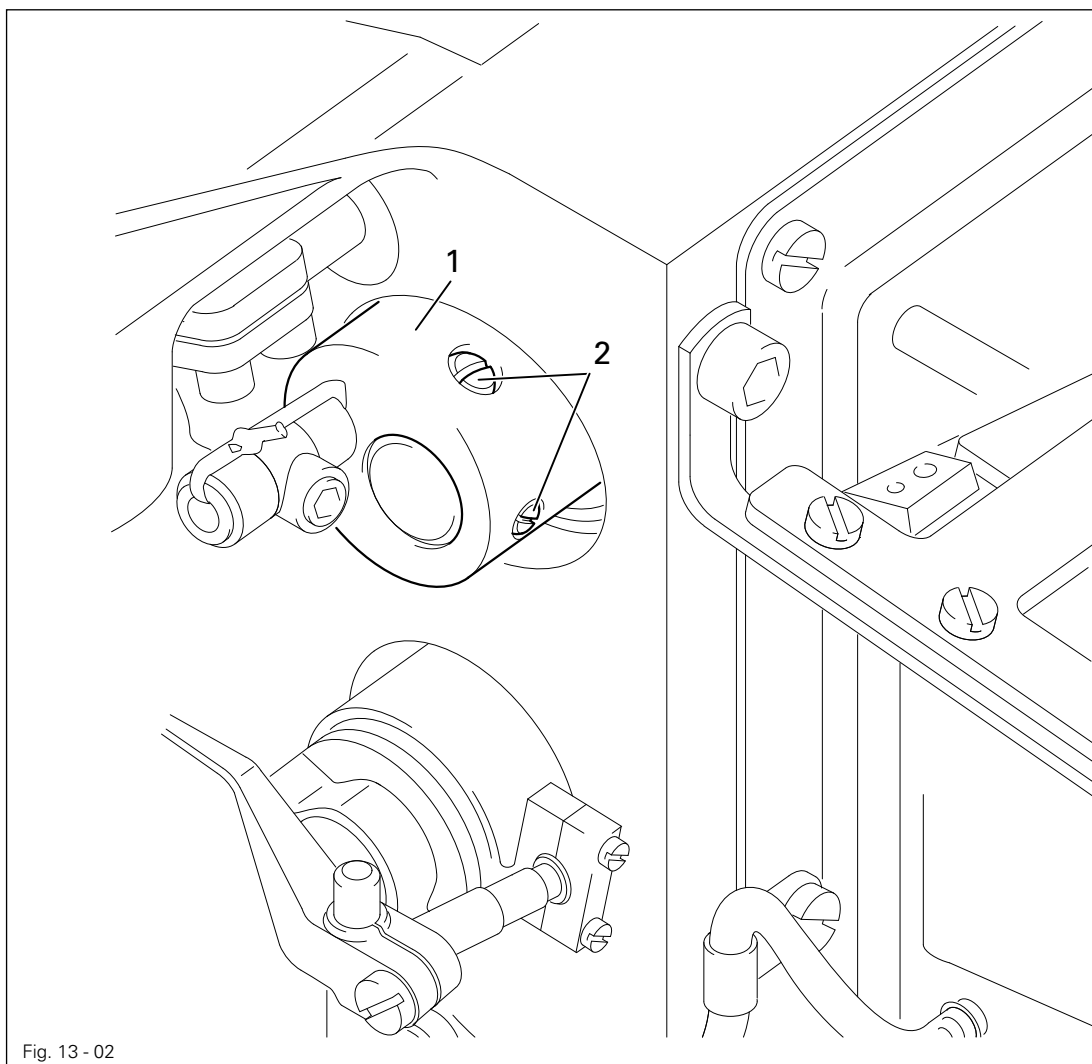
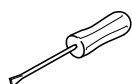


Fig. 13 - 02

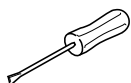
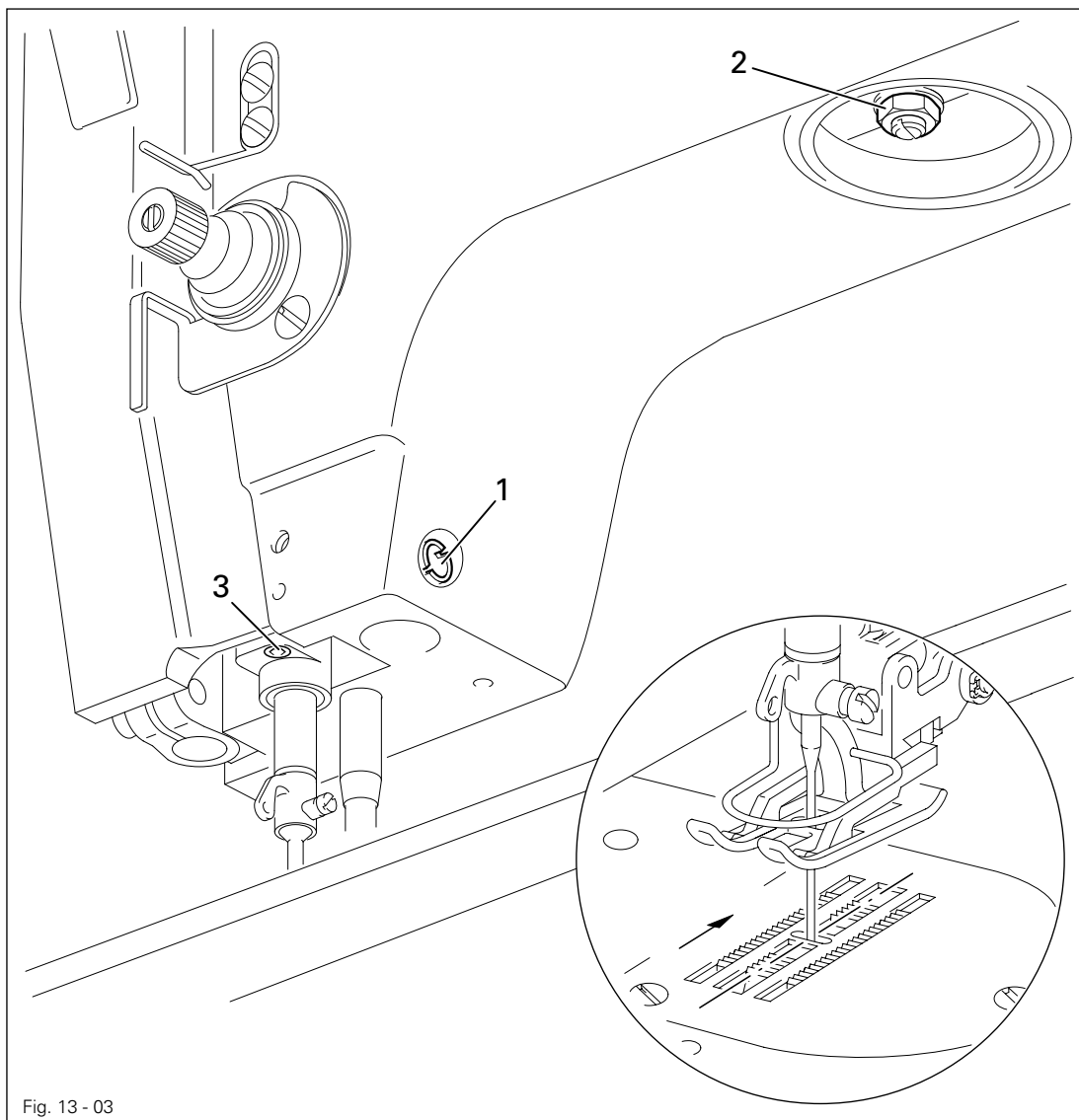


- Move the needle bar to b.d.c.
- Turn the compensation weight **1** (screws **2**) according to the **rule**.

## 13.05.02 Needle in needle hole centre (in sewing direction)

### Rule

At zigzag stitch setting "0" and the "Middle" needle position setting, the needle should pierce the middle of the needle hole looking in the sewing direction.



- Move the needle bar to b.d.c.
- Turn the eccentric pin 1 (nut 2 and screw 3) according to the rule.



## 13.05.03 Needle bar parallel guide

**Rule**

The guide bar 5 should be parallel to the needle bar.

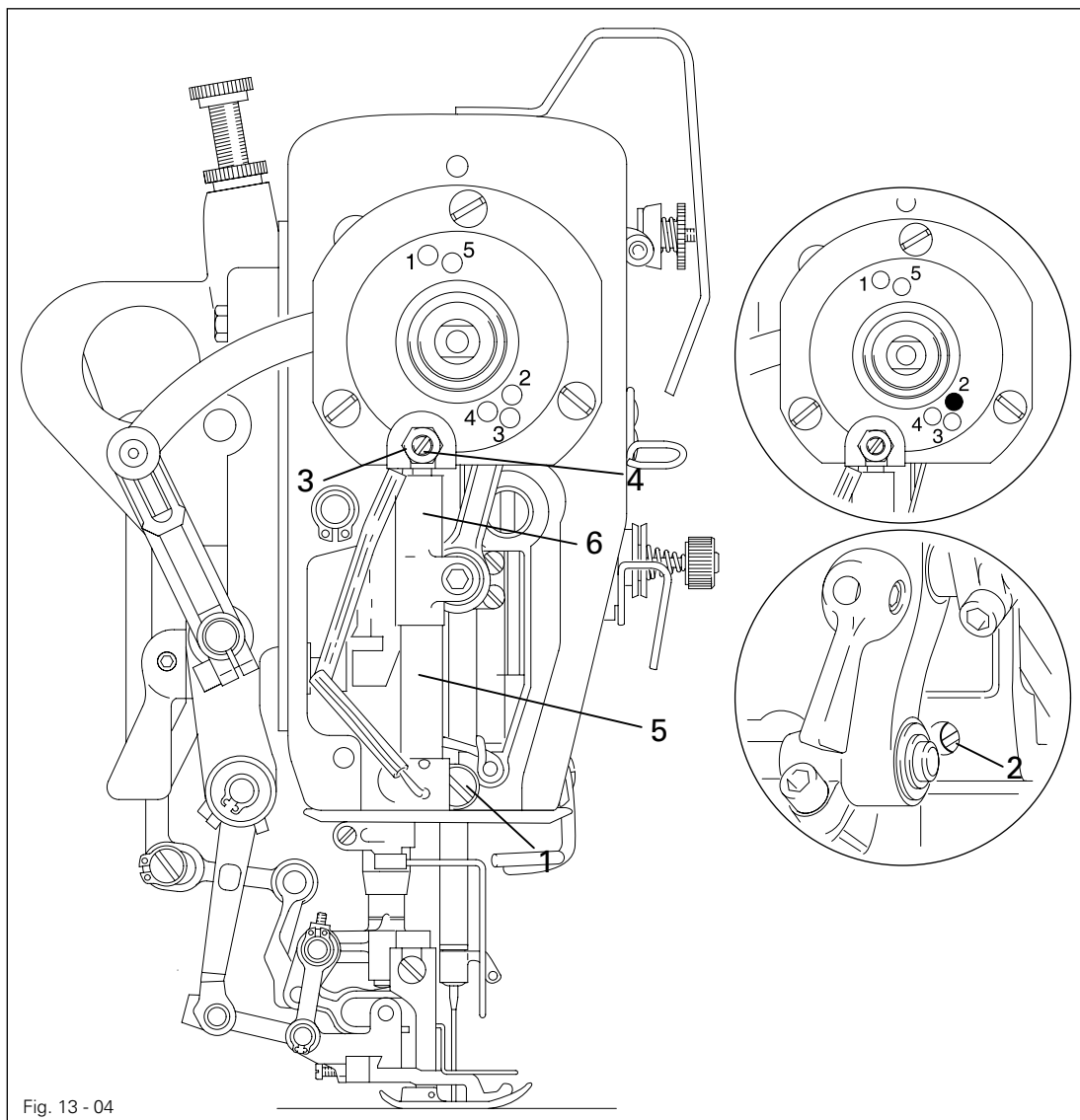
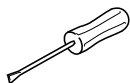


Fig. 13 - 04

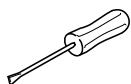
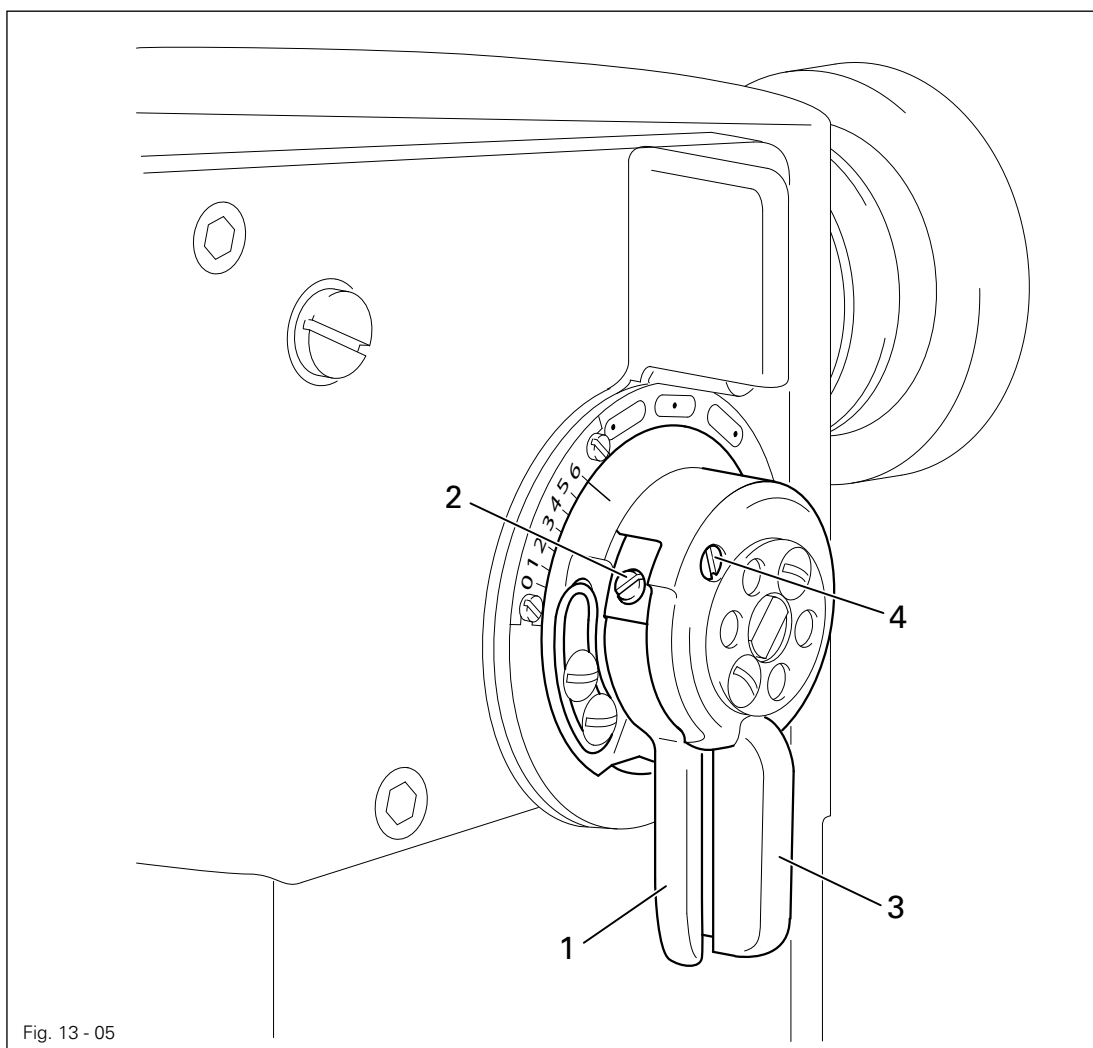


- Move the needle bar to t.d.c. (hole 2).
- Loosen the screws 1 and 2 and the nut 3.
- Position the largest eccentricity of the pin 4 to down.
- Move the cutout of the guide bar 5 until it abuts the eccentric pin 4, turn the eccentric pin 4 according to the **rule** and tighten the nut 3.
- Slide the guide bar 5 down and up again up to the stop. The bushing 6 must not move sideways (re-adjust the eccentric pin 4 if necessary).
- Move the guide bar 5 until it abuts the eccentric pin 4 and tighten the screws 1 and 2.

## 13.05.04 Locking lever

### Rule

The zigzag stitch adjusting lever **3** should lock in any position.



- Loosen the screw **2**.
- Press the locking lever **1** until it pushes up against the zigzag stitch adjusting lever **3**.
- Turn the pivot pin **4** to the left until it stops.
- Release the locking lever **1**.
- The locking lever **1** should be parallel to the zigzag stitch adjusting lever **3**.
- Tighten the screw **2**.

## 13.05.05 Zero stitch and zigzag stitch scale

### Rule

At zigzag stitch setting "0",

1. the needle bar should not move sideways when turning the handwheel,
2. the mark "0" on the scale 1 should match the mark 2.

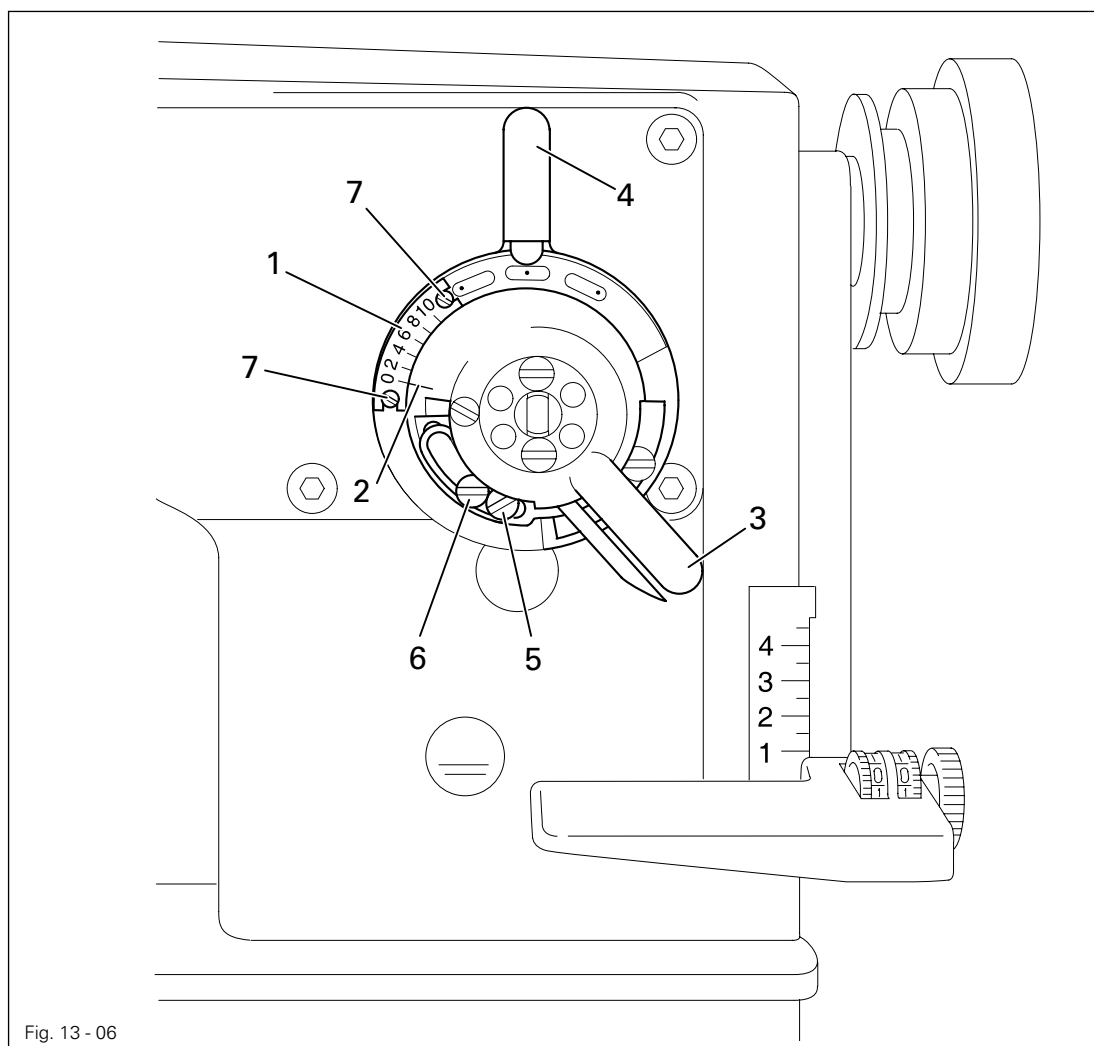
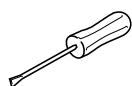


Fig. 13 - 06



- Set the needle position adjusting lever 4 to "Middle" and loosen the screws 5 and 6.
- Allow the machine to run slowly and turn the zigzag stitch adjusting lever 3 to the right until the needle bar no longer moves sideways.
- Switch off the machine, move the screw 5 until it abuts on the right and tighten.
- Loosen the screws 7 and adjust the scale 1 according to rule 2.
- Tighten the screws 7.

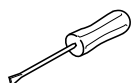
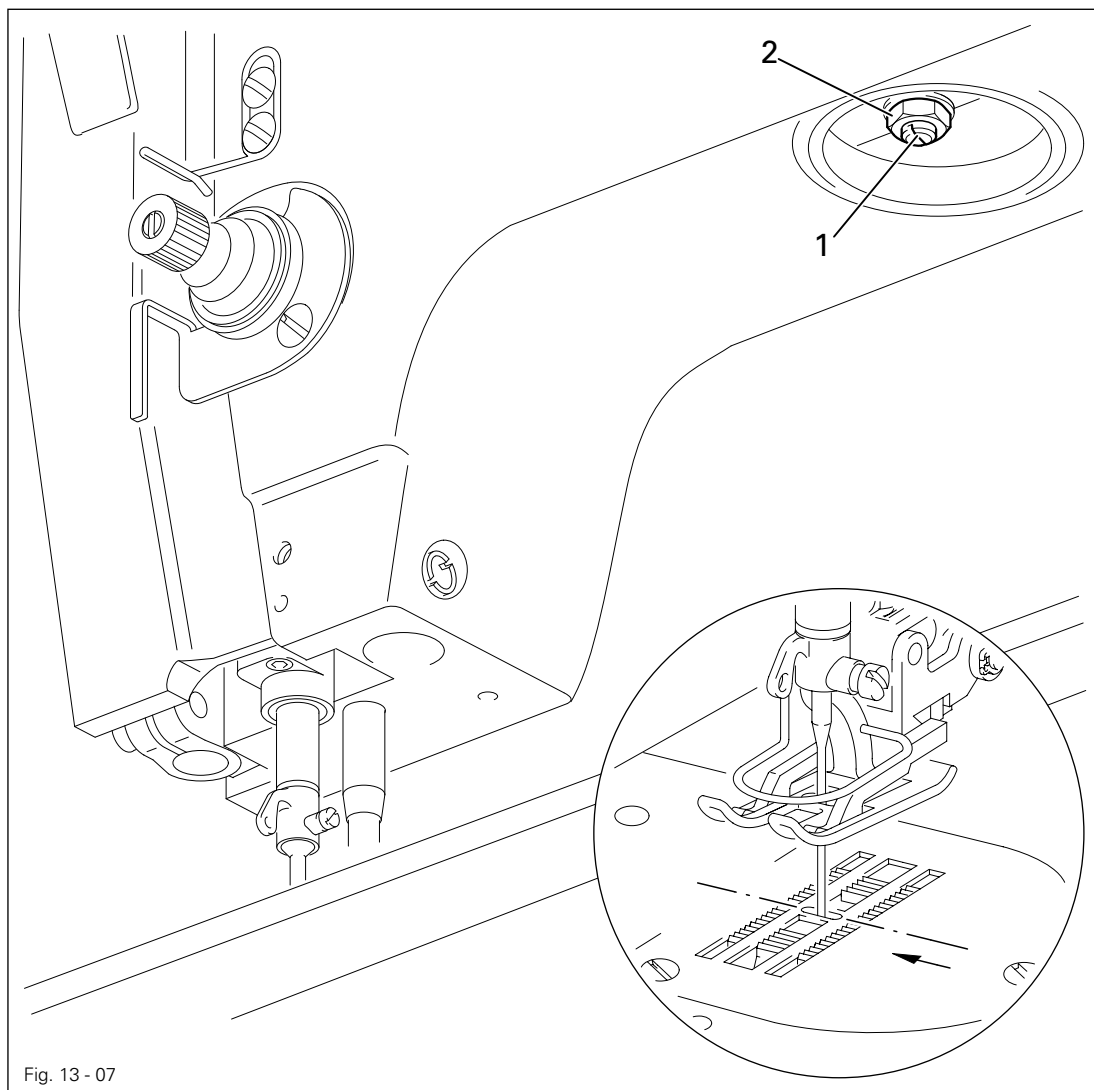


The screw 6 remain loosened for the subsequent adjustments.

## 13.05.06 Needle in needle hole centre (crossways to sewing direction)

### Rule

At zigzag stitch setting "0" and the "Middle" needle position setting, the needle should pierce the middle of the needle hole looking crossways to the sewing direction.



- Turn the eccentric pin 1 (nut 2) according to the rule.

## 13.05.07 Zigzag stitch width

### Rule

At the largest zigzag stitch setting, the mark 1 should match the largest zigzag stitch indication on the scale 2.

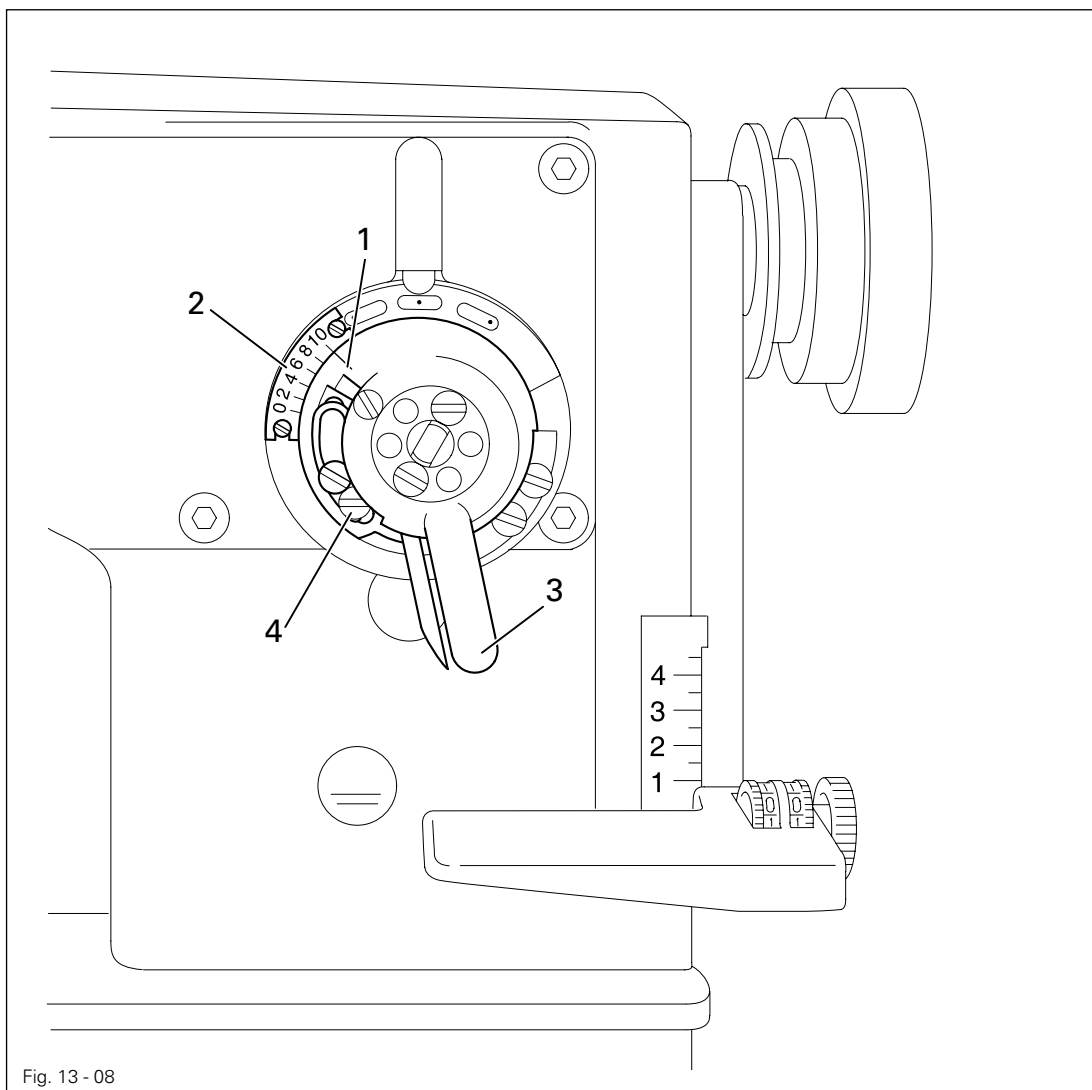
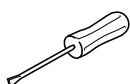


Fig. 13 - 08



- Turn the zigzag stitch adjusting lever **3** according to the **rule**.
- Move the screw **4** until it abuts at the top and tighten.

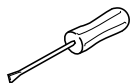
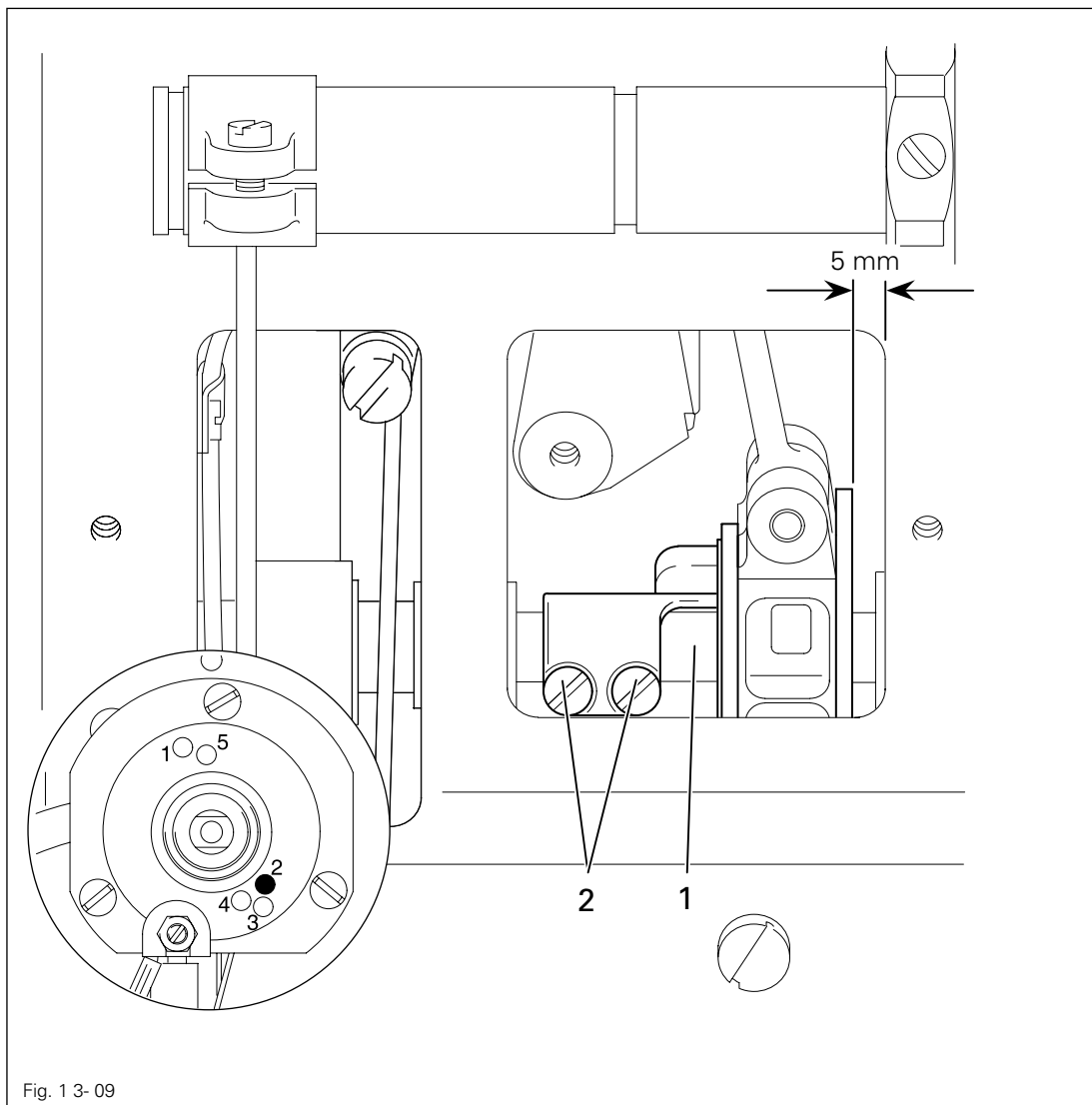


Should the machine be fitted with a needle plate that has a smaller needle hole than the zigzag stitch width on the scale, the zigzag stitch limit must be set according to the needle hole width of the needle plate.

## 13.05.08 Zigzag stitch movement

### Rule

If the needle bar is in t.d.c. coming from the right bottom dead centre (adjustment hole "2"), the needle bar should not move sideways when moving the zigzag stitch adjusting lever back and forth.

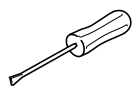
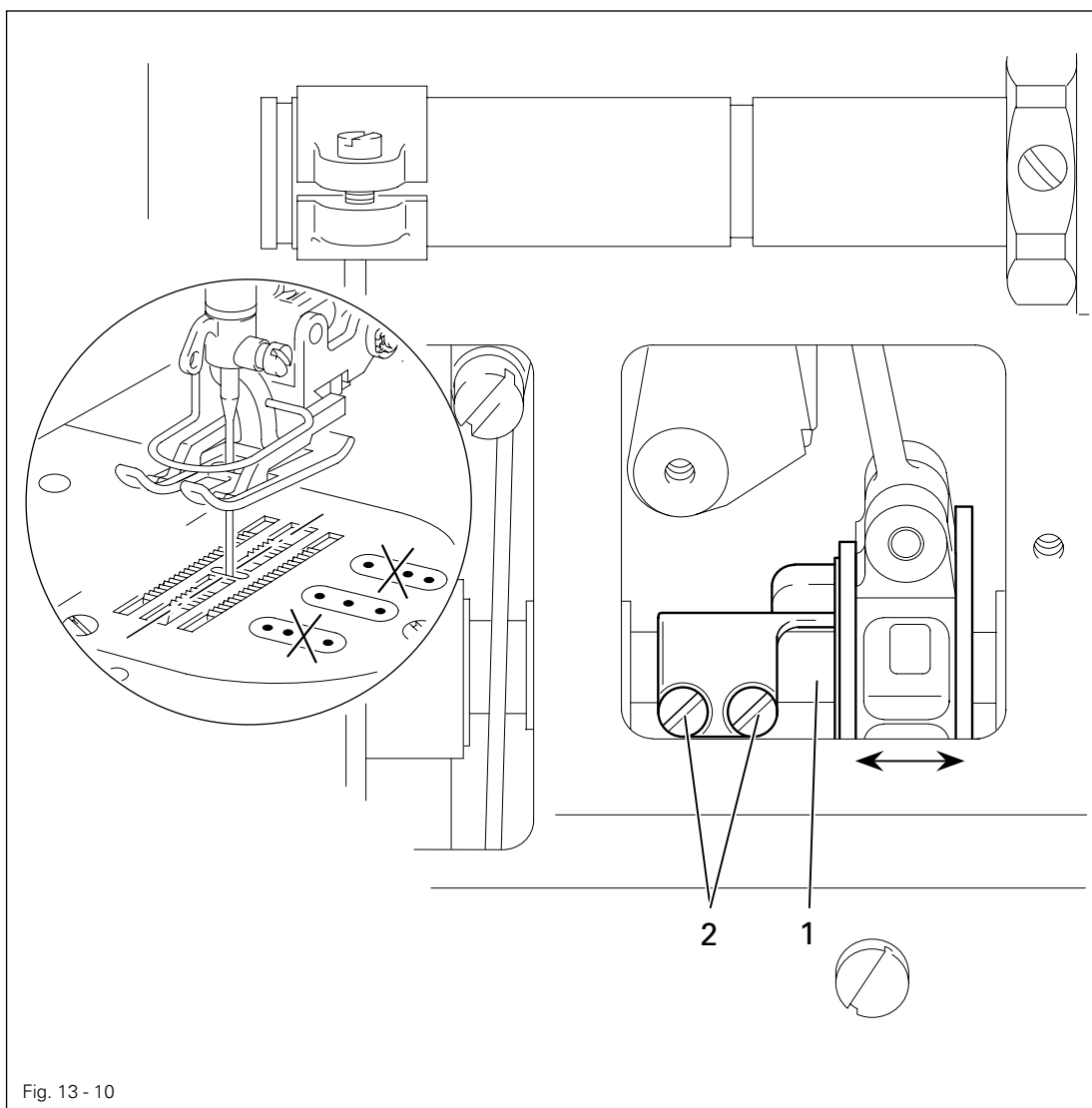


- Move the needle bar to t.d.c. coming from the right bottom dead centre and insert the adjusting pin into hole "2" of the bearing plate (block machine).
- Turn the zigzag eccentric 1 (screws 2) according to the **rule**. Make sure that the zigzag eccentric 1 protrudes about 5 mm from the right inner side of the cast wall.
- Pull the adjusting pin out of the bearing plate.

## 13.05.09 Needle hole symmetry

### Rule

1. At zigzag stitch setting "0", the needle puncture position should be in the middle of the needle hole.
2. At the largest zigzag stitch setting, the needle hole should be the same distance from the middle puncture position on the left and right.

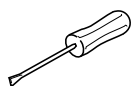
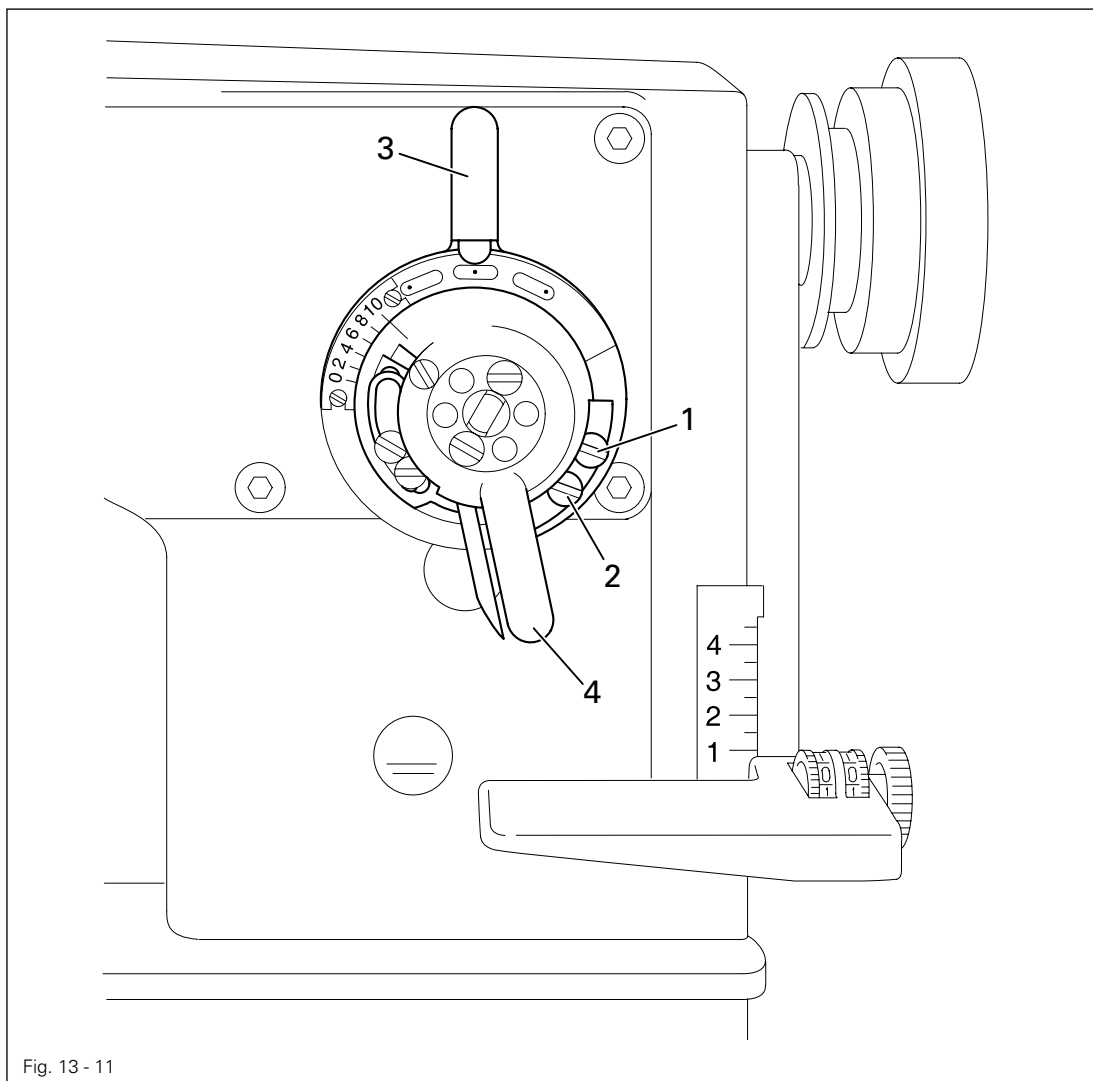


- Let the needle pierce paper in the required zigzag stitch settings.
- Adjust the zigzag eccentric 1 (screws 2) - without turning it - according to the rule.

## 13.05.10 Needle position adjusting lever

### Rule

The left and right deflection of the needle should be the same size at both the largest zigzag stitch setting and the left or right needle position.



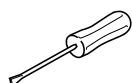
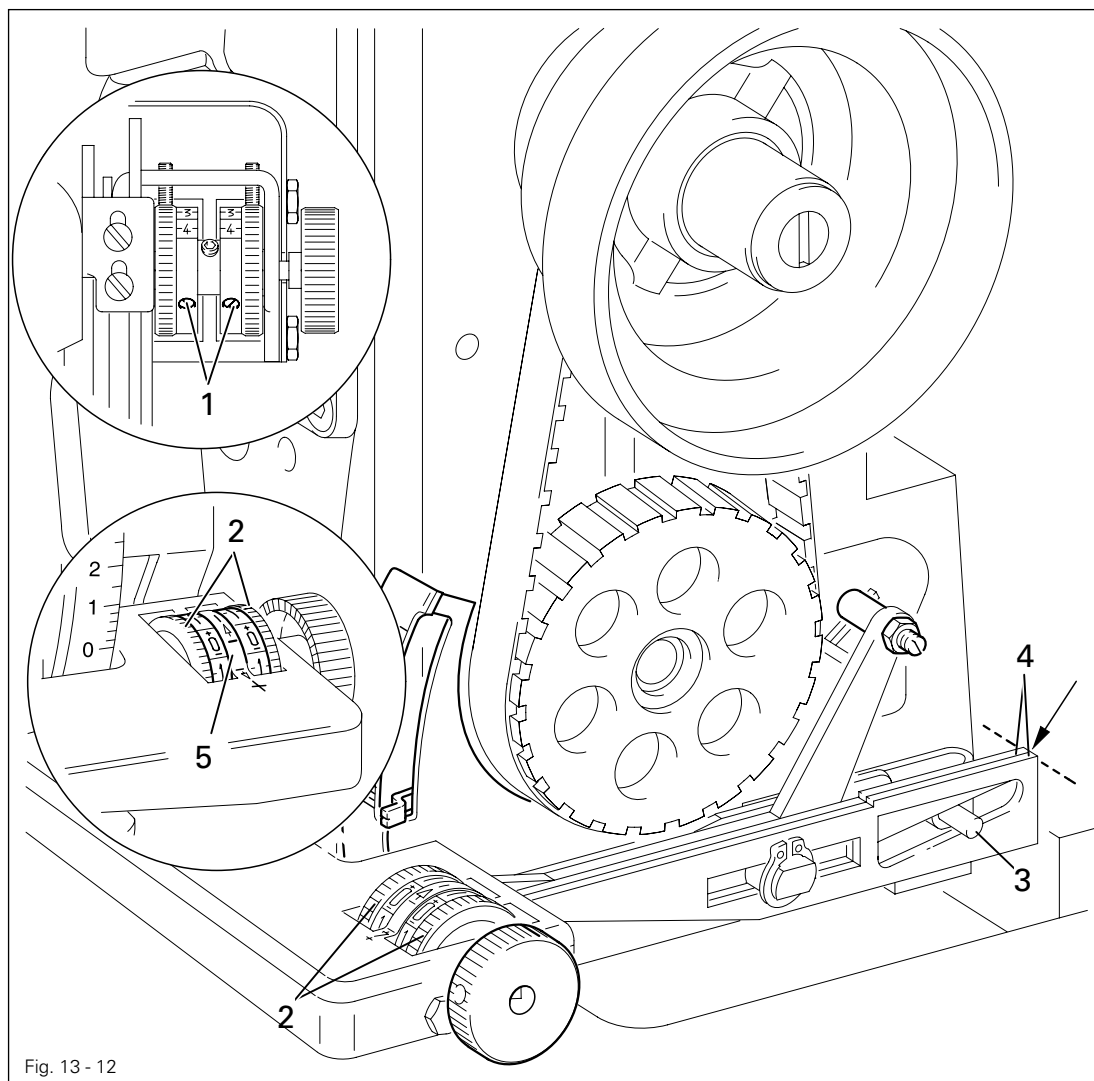
- Loosen the screws 1 and 2.
- Set the needle position adjusting lever 3 to "Middle" and the zigzag stitch adjusting lever 4 to the largest zigzag.
- Place a piece of paper under the presser foot and pierce on the left and right with the needle.
- Set the zigzag stitch adjusting lever 4 to "0" and slide the needle position adjusting lever 3 to the right and left until the needle is positioned exactly over each of the previously punctured holes.
- Move the screw 1 until it abuts in the left needle position and the screw 2 until it abuts in the right needle position and tighten.



## 13.05.11 Thumb wheels for the top feed (in machines without -918/14)

### Rule

If the guide pin **3** is located in the middle of the slotted lever and the ends of the racks **4** are in line, the zero marks of the thumb wheels **2** should be opposite the mark **5**.



- Loosen the screws **1**.
- Turn both of the thumb wheels **2** so that the guide pin **3** is located in the middle of the slotted lever. The ends of both of the racks **4** should be in line.
- Turn both of the scale rings according to the **rule** and tighten the screws **1**.

## 13.05.12 Differential zero setting (in machines without -918/14)

### Rule

The reverse-feed key **11** should be in its highest position at the largest stitch length setting. In addition, the clamp crank **7** with its stop element **8** should abut the top regulating shaft.

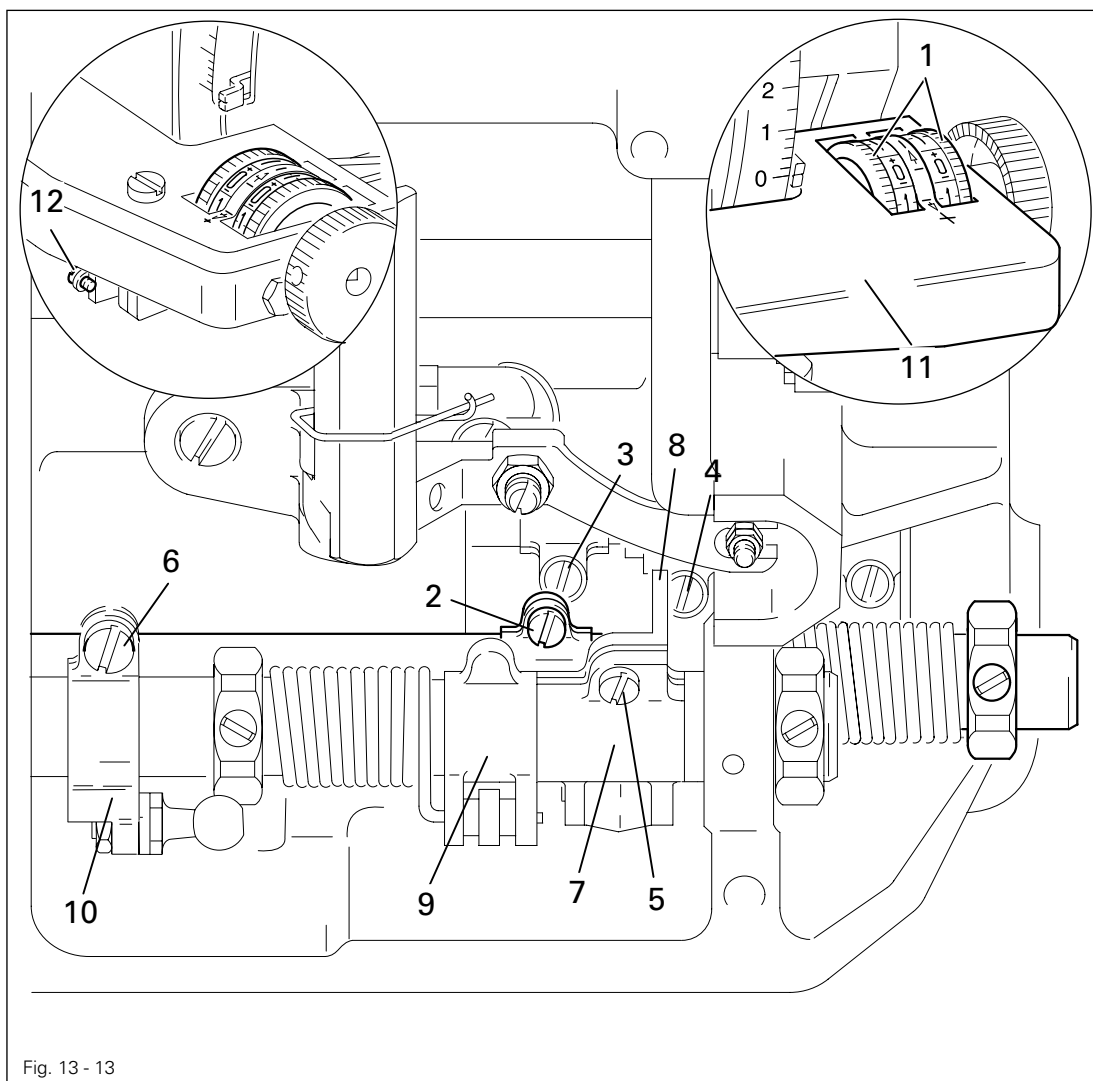
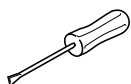


Fig. 13 - 13

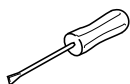
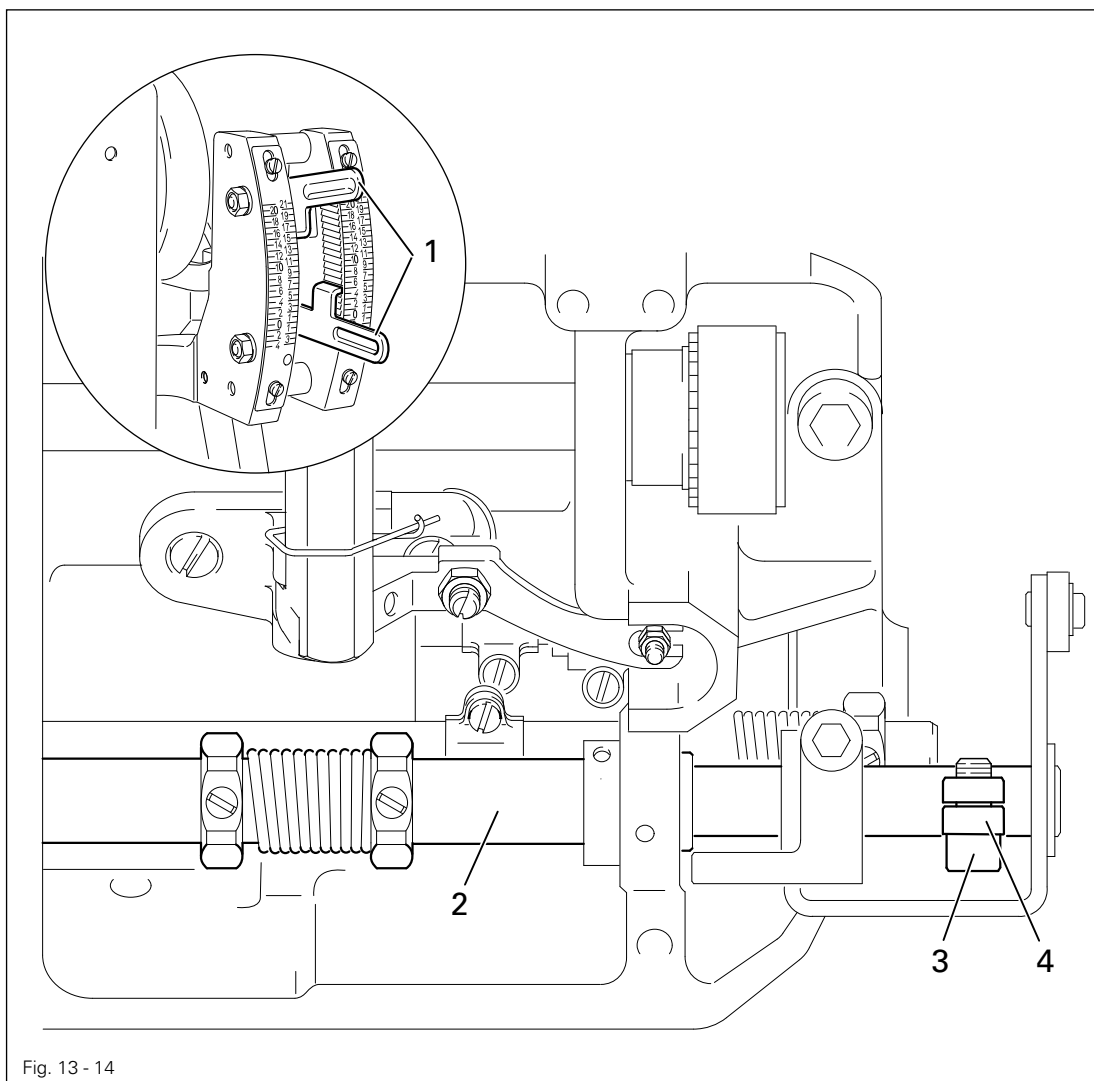


- Unscrew the screw **12** and the needle plate in machines with the stitch length **N24**.
- Set both of the thumb wheels **1** to "0".
- Loosen the screws **2, 3, 4, 5** and **6**.
- Adjust the reverse-feed key **11** and the clamp crank **7** with the stop element **8** according to the **rule** and tighten the screws **4** and **5**.
- Turn the clamp crank **9** so that it is parallel to the clamp crank **7** and tighten the screws **2** and **3**.
- Turn the clamp crank **10** so that it is parallel to the bed plate and tighten the screw **6**.
- Screw in the screw **12** and mount the needle plate in machines with the stitch length **N24**.

## 13.05.13 Top and bottom feed synchronous position (in machines with -918/14)

### Rule

With a stitch length setting of "1.5" and when both of the levers **1** are in position "0", the top feed dog and bottom feed dog should move by the same stroke when turning the handwheel.



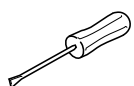
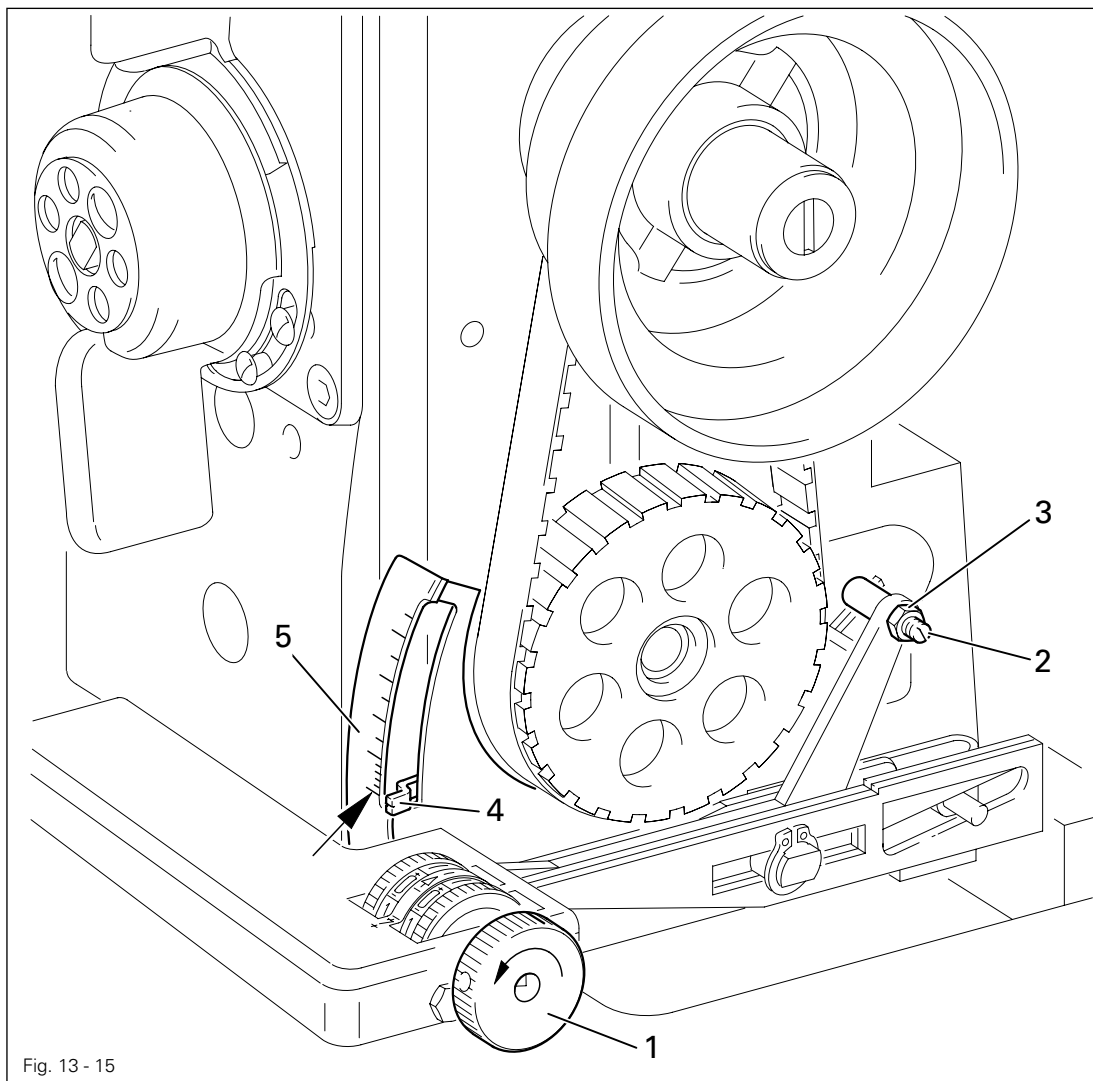
- Set the stitch length to "1.5" and both of the levers **1** to "0".
- Whilst continuously turning the handwheel, turn the shaft **2** (screw **3**) according to the rule.
- Move the clamp crank **4** upwards until it abuts and tighten the screw **3**.

## Adjustment

### 13.05.14 Position of the stitch length adjusting wheel (in machines without -918/14)

#### Rule

With a stitch length setting of "0", the pointer 4 should be opposite the mark "0" of the scale 5.

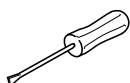
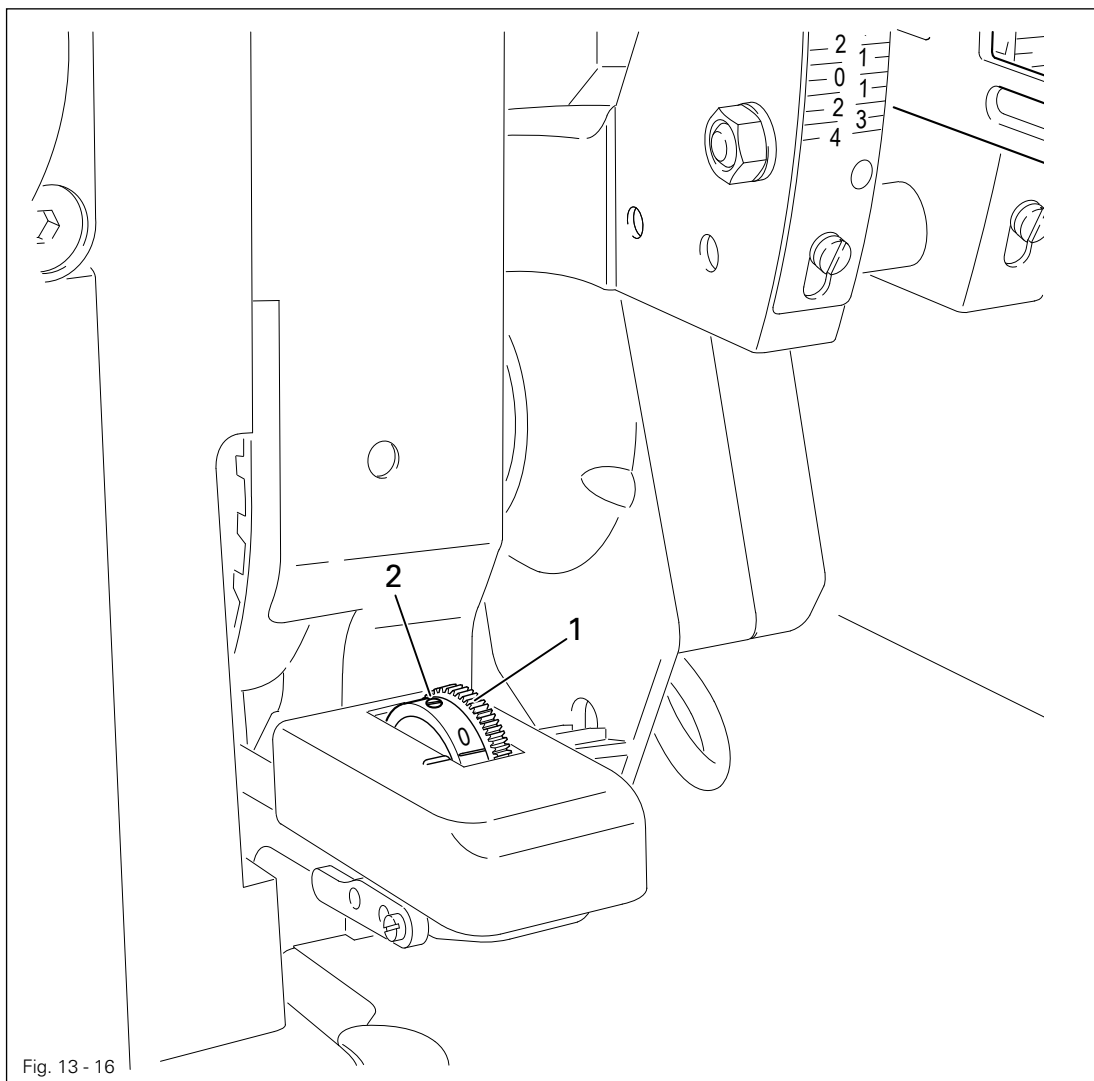


- Turn the stitch length adjusting wheel 1 in the direction of the arrow until it stops.
- Turn the eccentric pin 2 (nut 3) according to the rule.

## 13.05.15 Position of the stitch length adjusting wheel (in machines with -918/14)

### Rule

When the adjusting wheel **1** is turned forwards until it stop, the "0" mark of the adjusting wheel **1** and the mark on the reverse-feed key should match.

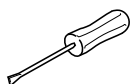
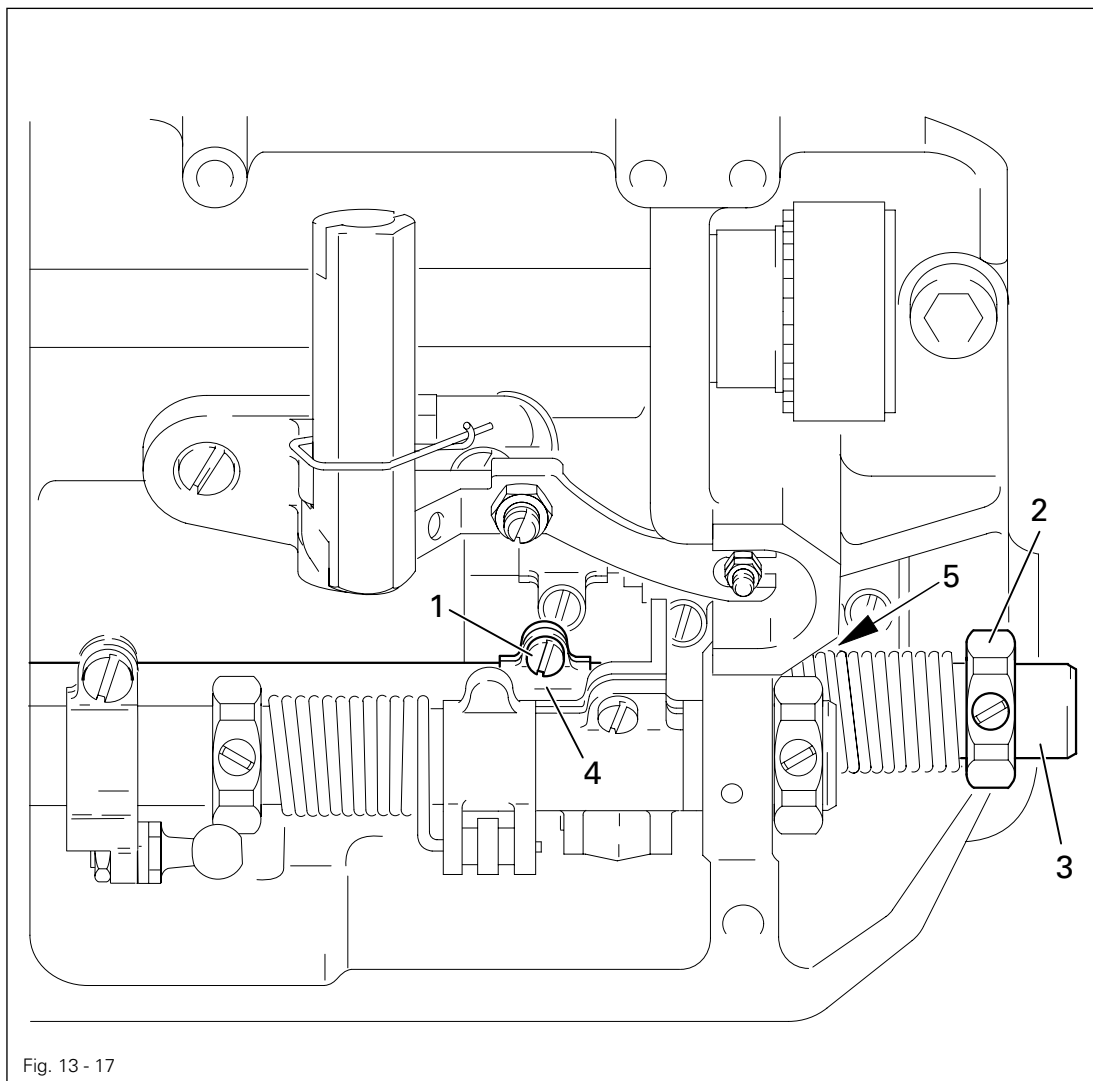


- Turn the adjusting wheel **1** (screw **2**) according to the rule.

### 13.05.16 Bottom feed dog zero position (in machines without -918/14)

#### Rule

The bottom feed dog should not move when turning the handwheel with stitch length setting "0".



- Loosen the screw 1.
- Place the open-ended wrench (SW 27) on the spring tension ring 2 and use it to hold the regulating shaft 3 tightly.
- Whilst continuously turning the handwheel, turn the open-ended wrench on the spring tension ring 2 according to the **rule**.
- Move the adjusting crank 4 until it abuts the circlip 5 on the casting in this position and tighten the screw 1.
- Carry out a check according to the **rule**.

## 13.05.17 Bottom feed dog zero position (in machines with -918/14)

### Rule

The bottom feed dog should not move when turning the handwheel with stitch length setting "0".

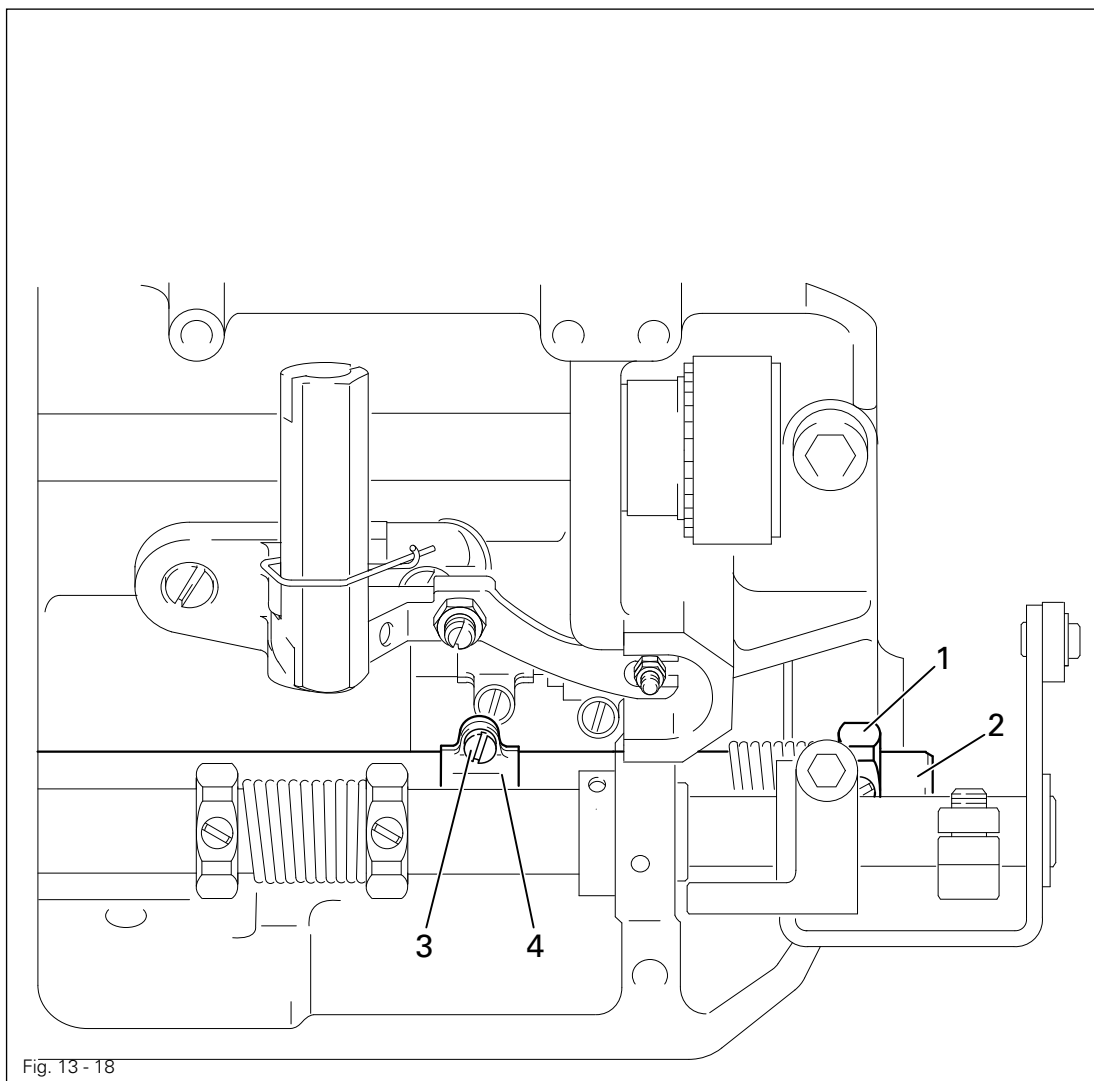
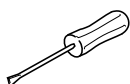


Fig. 13 - 18

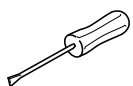
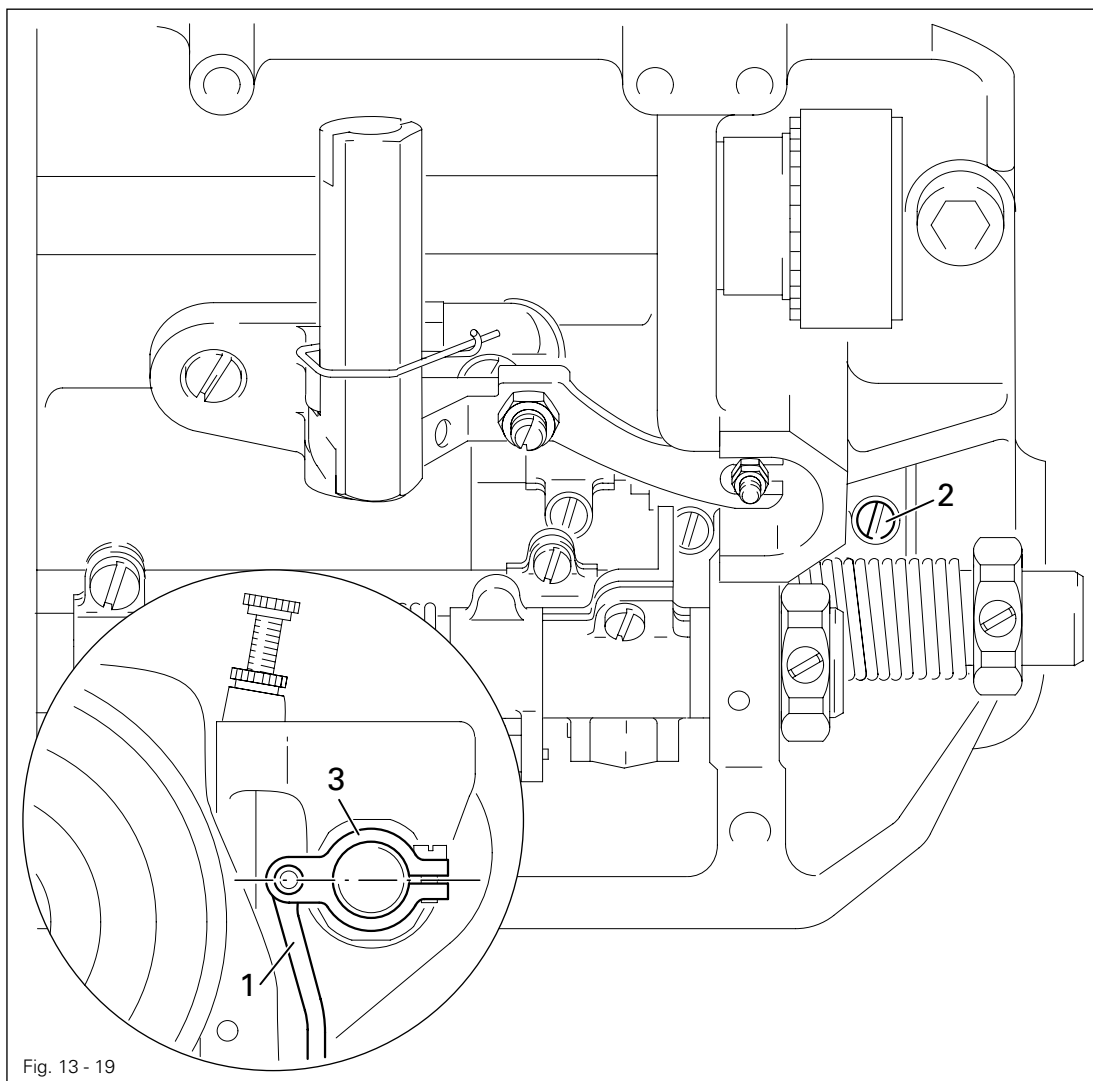


- Set the stitch length to "0".
- Place the open-ended wrench (SW 27) on the spring tension ring 1 and use it to hold the regulating shaft 2 tightly.
- Loosen the screw 3.
- Whilst continuously turning the handwheel, turn the open-ended wrench on the spring tension ring 1 according to the rule.
- Move the adjusting crank 4 until it abuts the casting in this position and tighten the screw 3.
- Carry out a check according to the rule.

### 13.05.18 Top feed dog connecting rod

#### Rule

With a stitch length setting of "0", the crank **3** of the top feed dog connecting rod **1** should be horizontal.



- Adjust the top feed dog connecting rod **1** (screw **2**) according to the rule.



## 13.05.19 Top feed dog zero position

### Rule

If the thumb wheels **3**, or the adjusting lever **3** in machines with **-918/14**, are in position **"0"** and the stitch length is set to **"0"**, the top feed dog should not move when turning the handwheel.

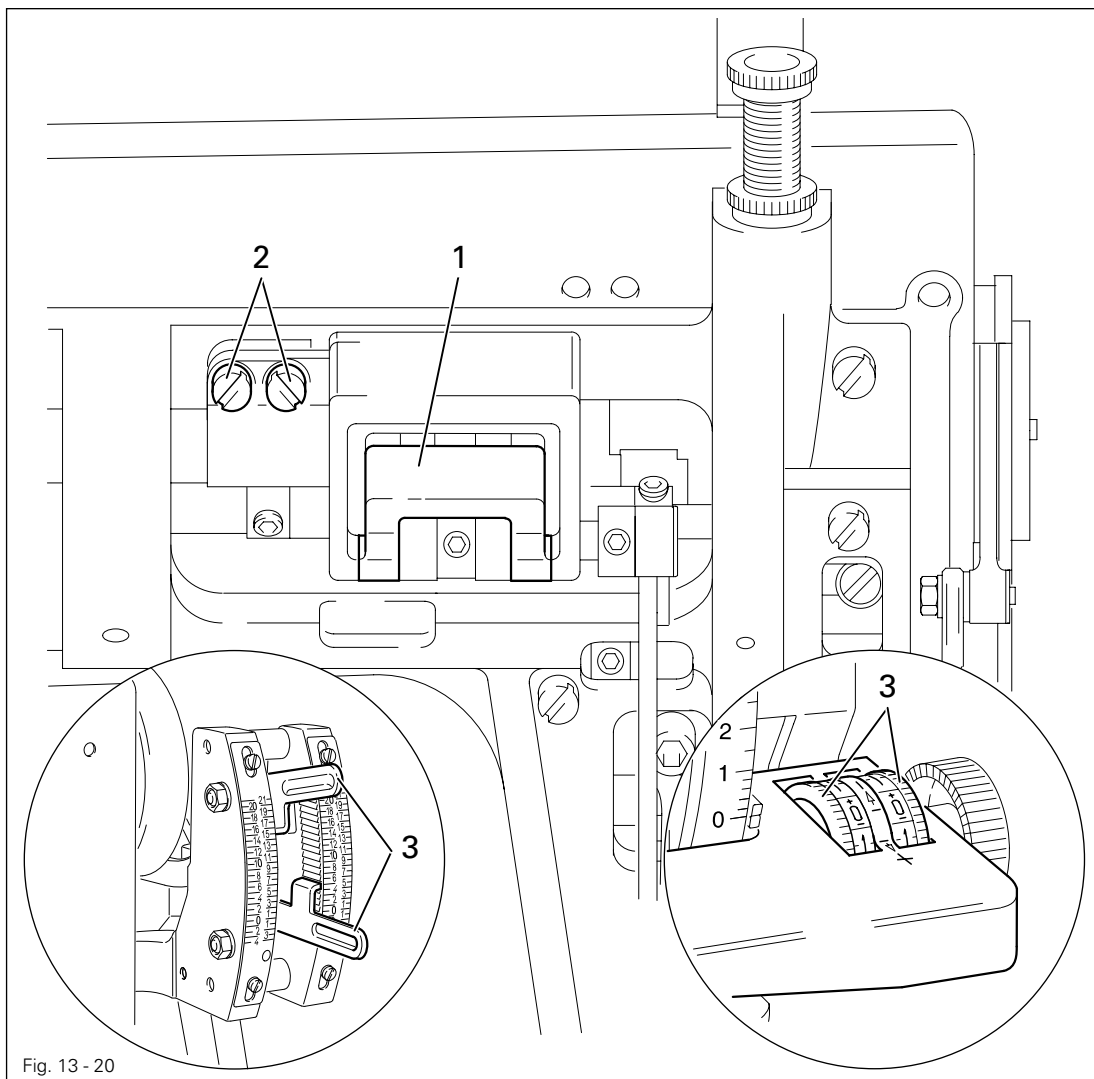
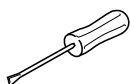


Fig. 13 - 20

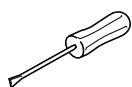
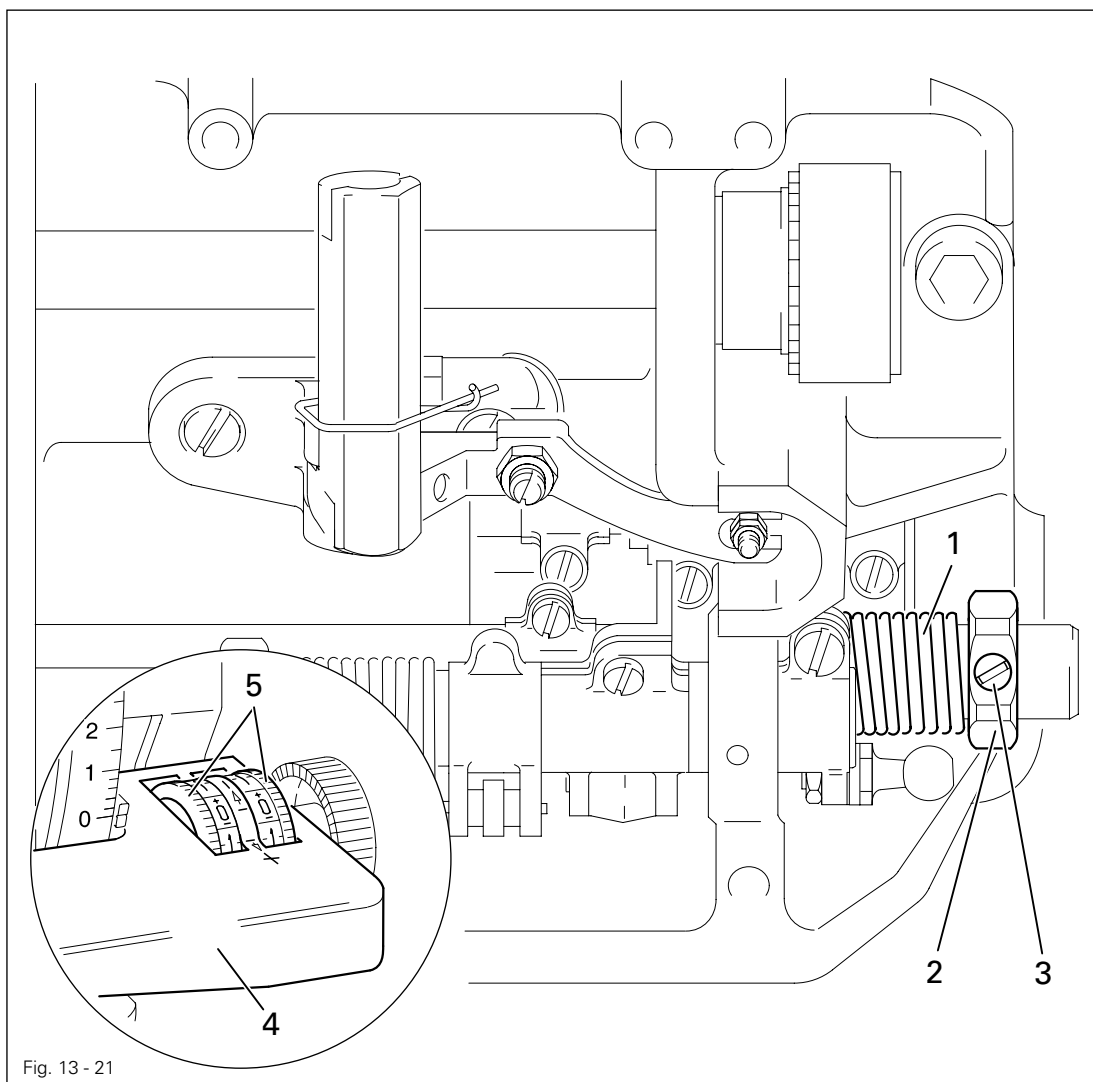


- Turn the deflection crank **1** (screws **2**) according to the **rule**.

### 13.05.20 Torsion spring for the reverse-feed key (in machines without -918/14)

#### Rule

When the presser foot is raised, at the largest stitch length setting and when the thumb wheels **5** are in position "0", the reverse-feed key **4** should automatically go back to its top stop position when the key is pressed.

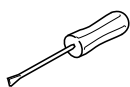
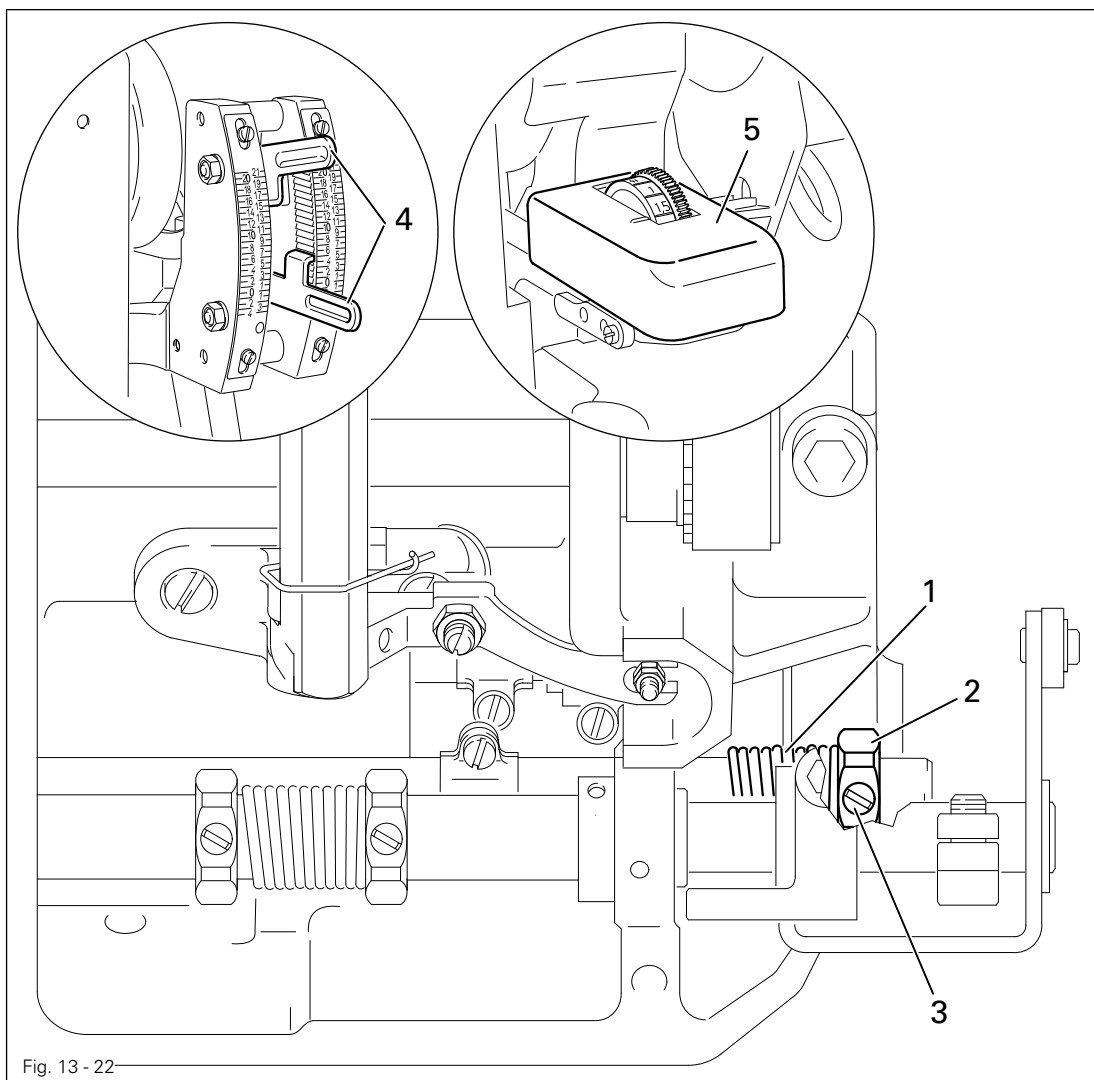


- Turn the torsion spring **1** using the nut **2** (screw **3**) according to the **rule**.

## 13.05.21 Torsion spring for the reverse-feed key (in machines with -918/14)

### Rule

When the presser foot is raised, at the largest stitch length setting and when the lever 4 is in position "0", the reverse-feed key 5 should automatically go back to its top stop position when the key is pressed.



- Turn the torsion spring 1 using the nut 2 (screw 3) according to the rule.

### 13.05.22 Torsion spring for the differential regulating shaft (in machines without -918/14)

#### Rule

When the presser foot is raised, at the stitch length setting "0" and when the thumb wheel 4 is set to "+ 4.5" and the thumb wheel 5 is set to "0", the guide pin 6 should rest in the slotted lever 7.

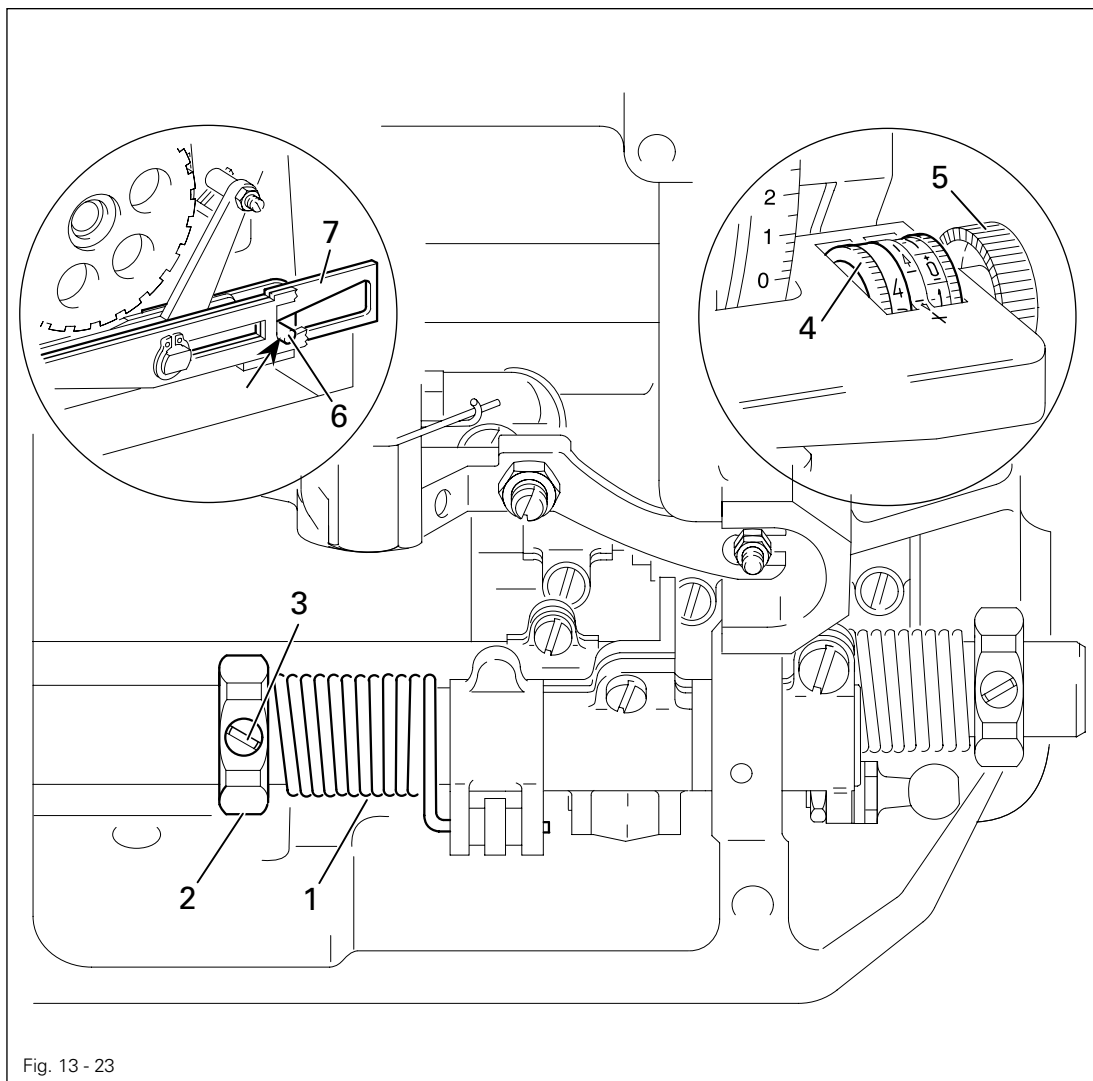
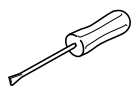


Fig. 13 - 23



- Turn the torsion spring 1 using the nut 2 (screw 3) according to the rule.

## 13.05.23 Torsion spring for the differential regulating shaft (in machines with -918/14)

### Rule

When the presser foot is raised, at the largest stitch length setting and when the lever 4 is moved up to the top until it stops and the lever 5 is in position "0", the pointer 6 should rest on the lever 4.

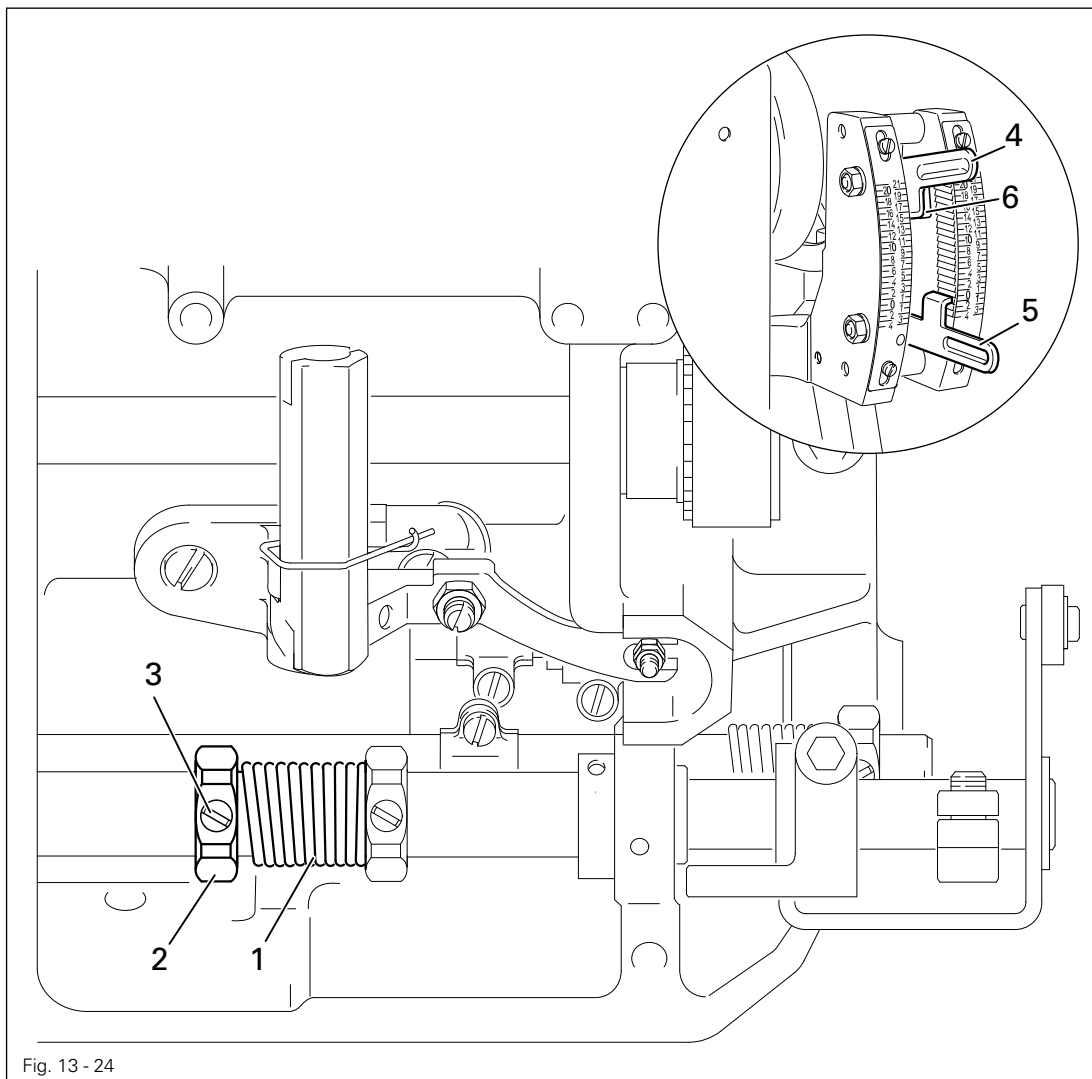
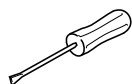


Fig. 13 - 24

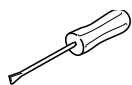
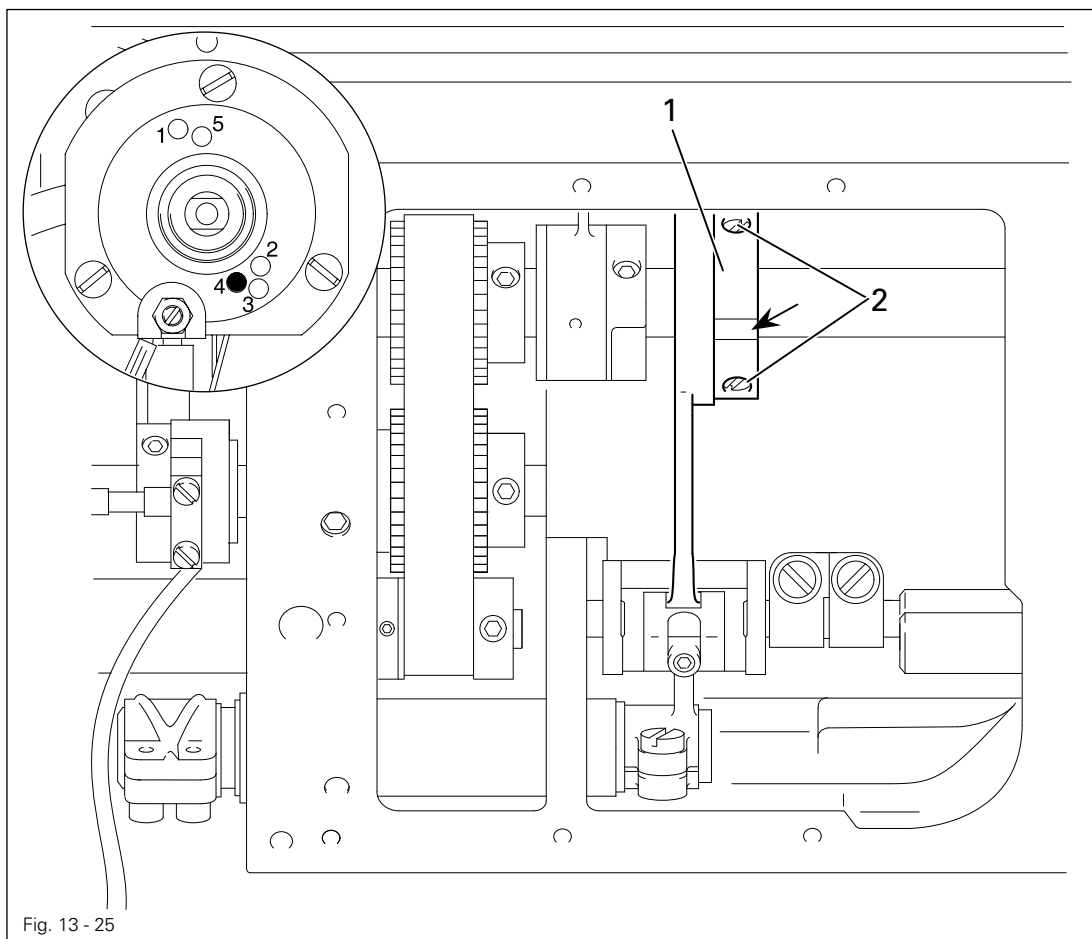


- Turn the torsion spring 1 using the nut 2 (screw 3) according to the rule.

## 13.05.24 Bottom feed dog sliding movement

### Rule

At the largest stitch length setting and a needle bar position 1.0 after t.d.c. (hole 4), the bottom feed dog should not move when the reverse-feed key is pressed.



- Whilst continuously pressing the reverse-feed key, turn the eccentric 1 (screws 2) according to the **rule** (the cutout in the eccentric 1 must be visible).



The eccentric 1 must not be adjusted axially.

## 13.05.25 Bottom feed dog lifting movement

### Rule

At stitch length setting "0" and a needle bar position **0.25 mm** after t.d.c. (hole 3), the bottom feed dog should be at its upper turning point.

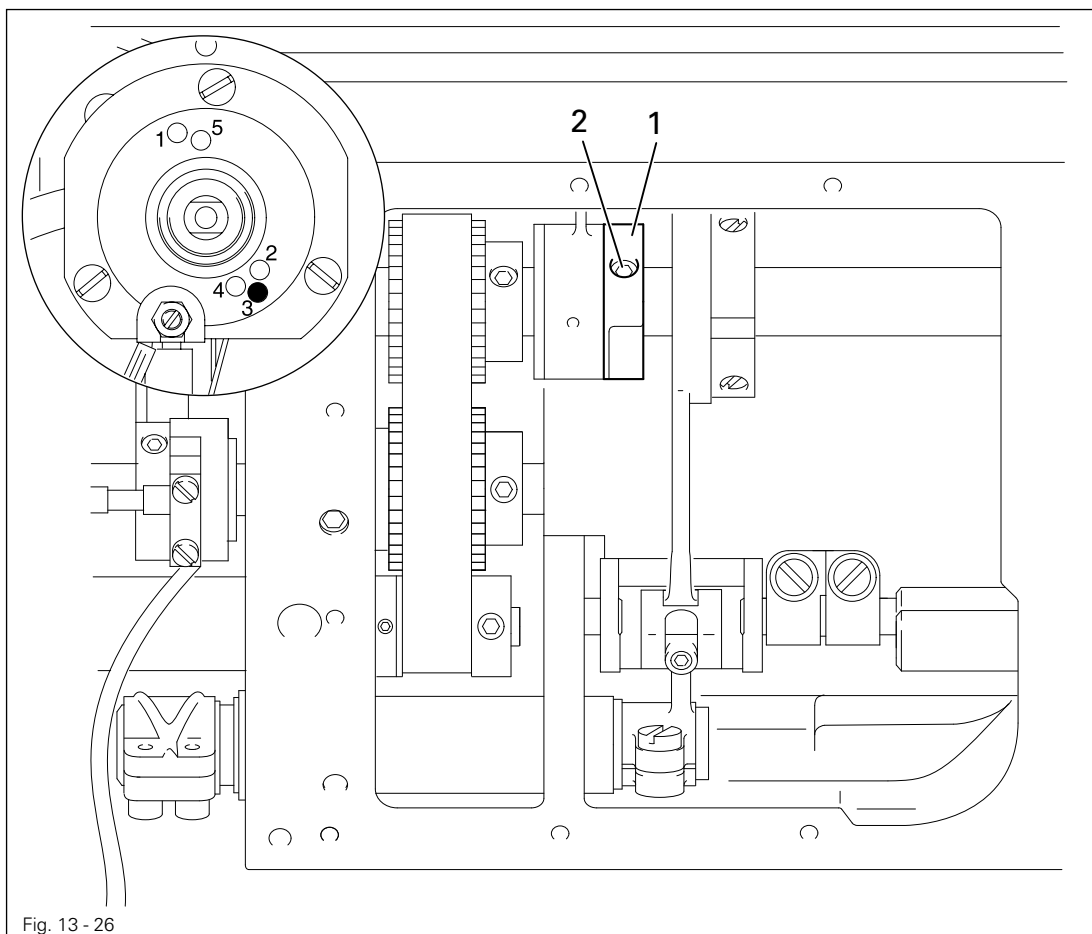
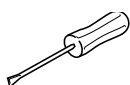


Fig. 13 - 26



- Turn the eccentric 1 (screw 2) according to the rule.

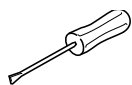
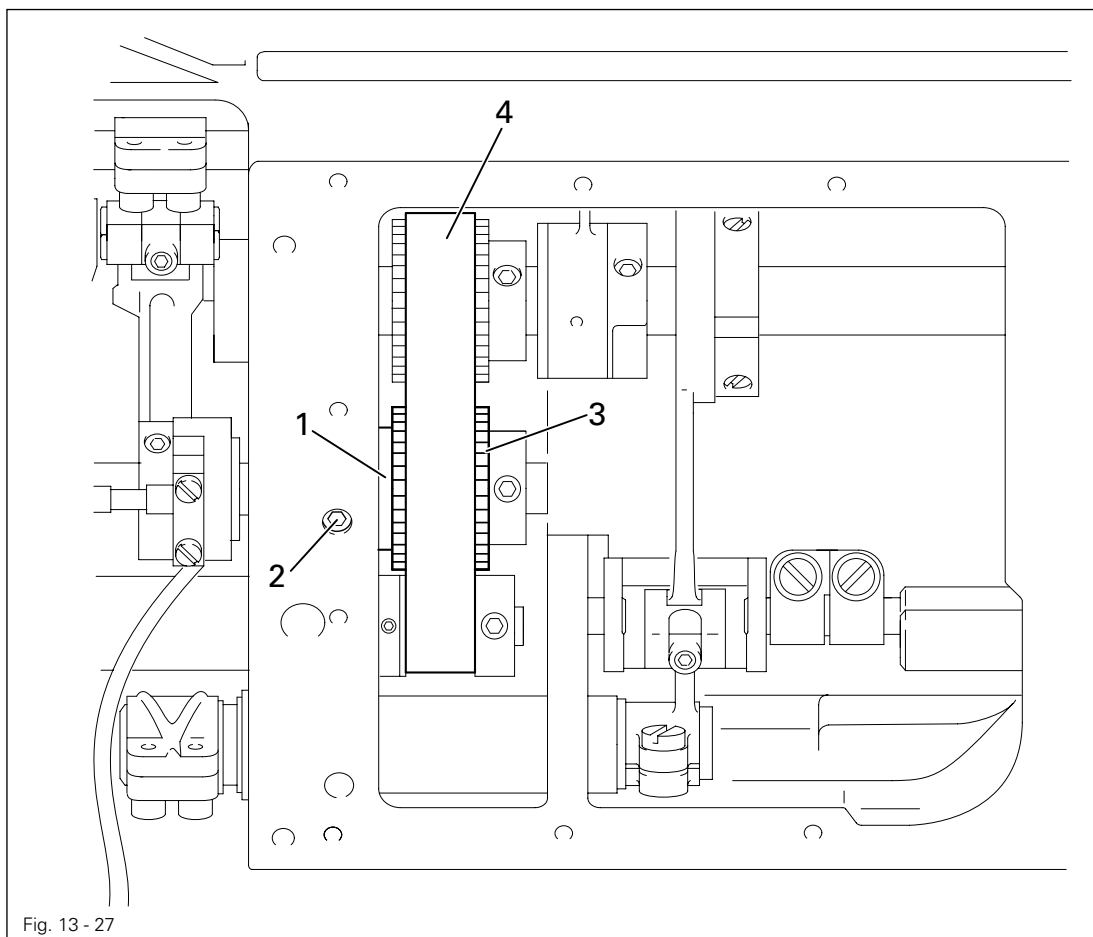


The eccentric 1 must not be adjusted axially.

## 13.05.26 Driving belt in the gear box

### Rule

The driving belt **4** should be tightened so that the machine does not move sluggishly and the gear wheels do not exhibit noticeable backlash.



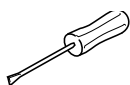
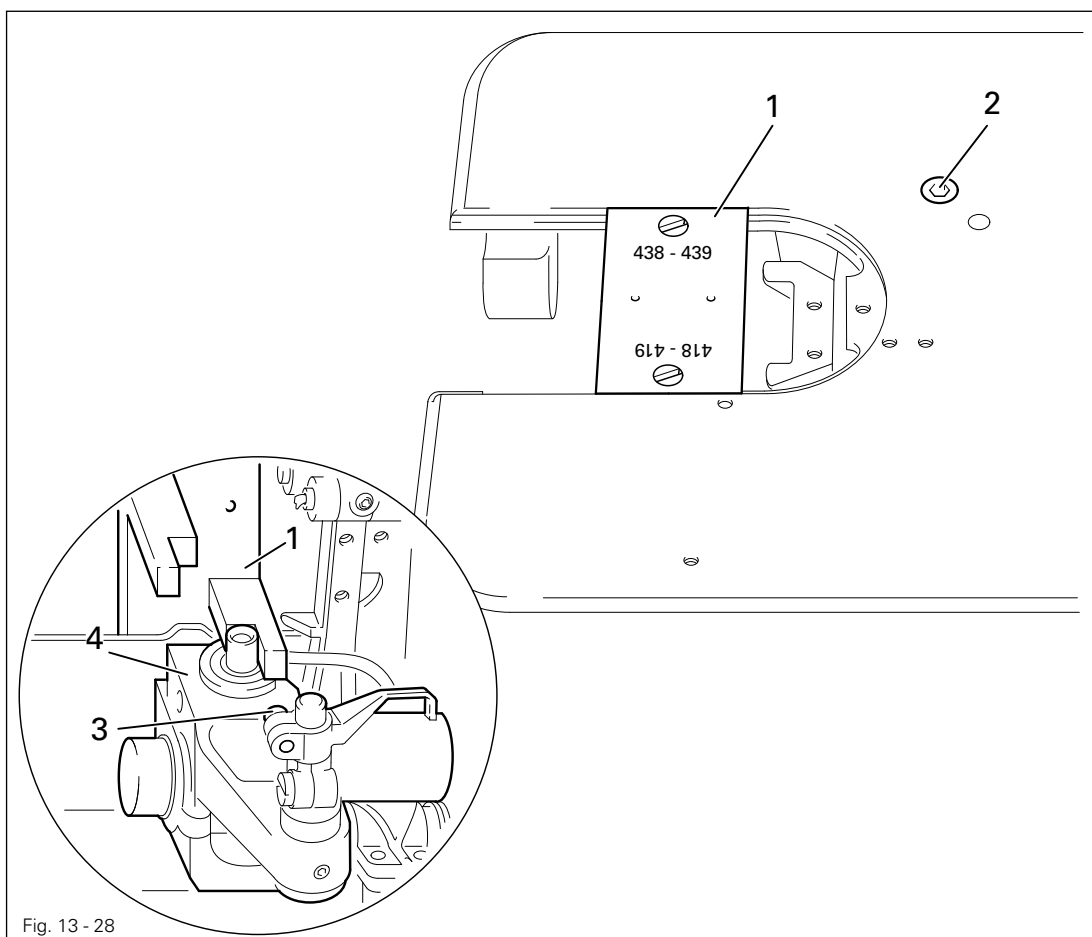
- Adjust the eccentric bearing bush **1** (screw **2**) so that the driving belt **4** is in the middle of the bobbin lifter drive wheel **3** and turn according to the **rule**.



## 13.05.27 Hook bearing bracket

### Rule

The hook shaft should touch the top and side of the hook bearing bracket setting gauge 1.

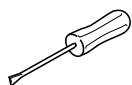
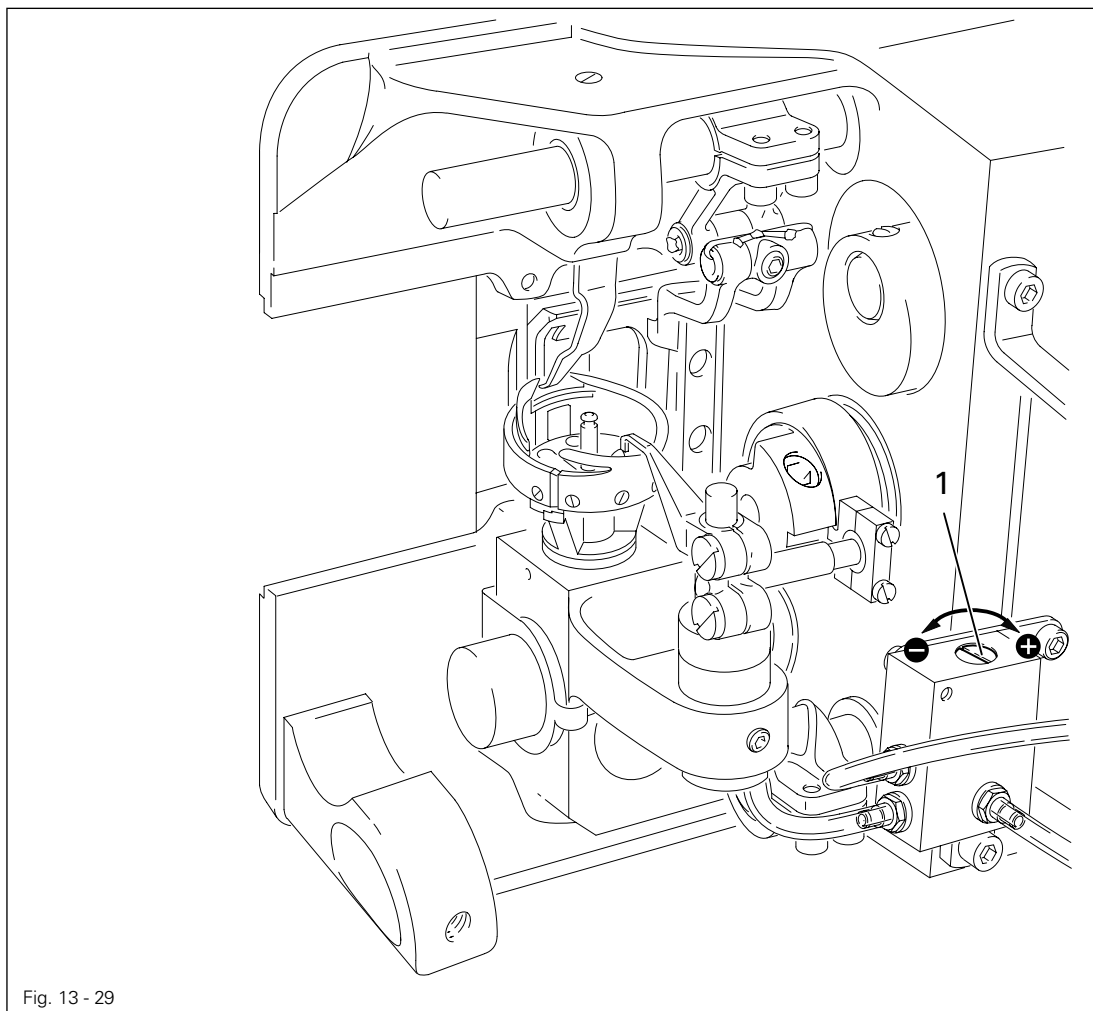


- Loosen the screw 3.
- Swivel the bobbin lifter to the right and remove the hook.
- Loosen the screw 2 and loosen the linear cam underneath by tapping gently on the screw head.
- Screw on the hook bearing bracket setting gauge.
- The numbers "438 - 439" must be legible from the front.
- Adjust or turn the hook bearing bracket 4 according to the rule.
- Tighten the screw 2.
- Adjust the bobbin lifter according to chapter 13.05.32 Bobbin lifter position.

### 13.05.28 Hook lubrication

#### Rule

A light oil strip should appear on a paper strip held over the needle plate cutout after approximately **10** seconds when the machine is running at full speed.



- Turn the screw 1 according to the rule.

## 13.05.29 Pre-calibrating the needle height

### Rule

When the needle position is in t.d.c. (hole 2), the clearance between the needle point and the needle plate should be 19 mm.

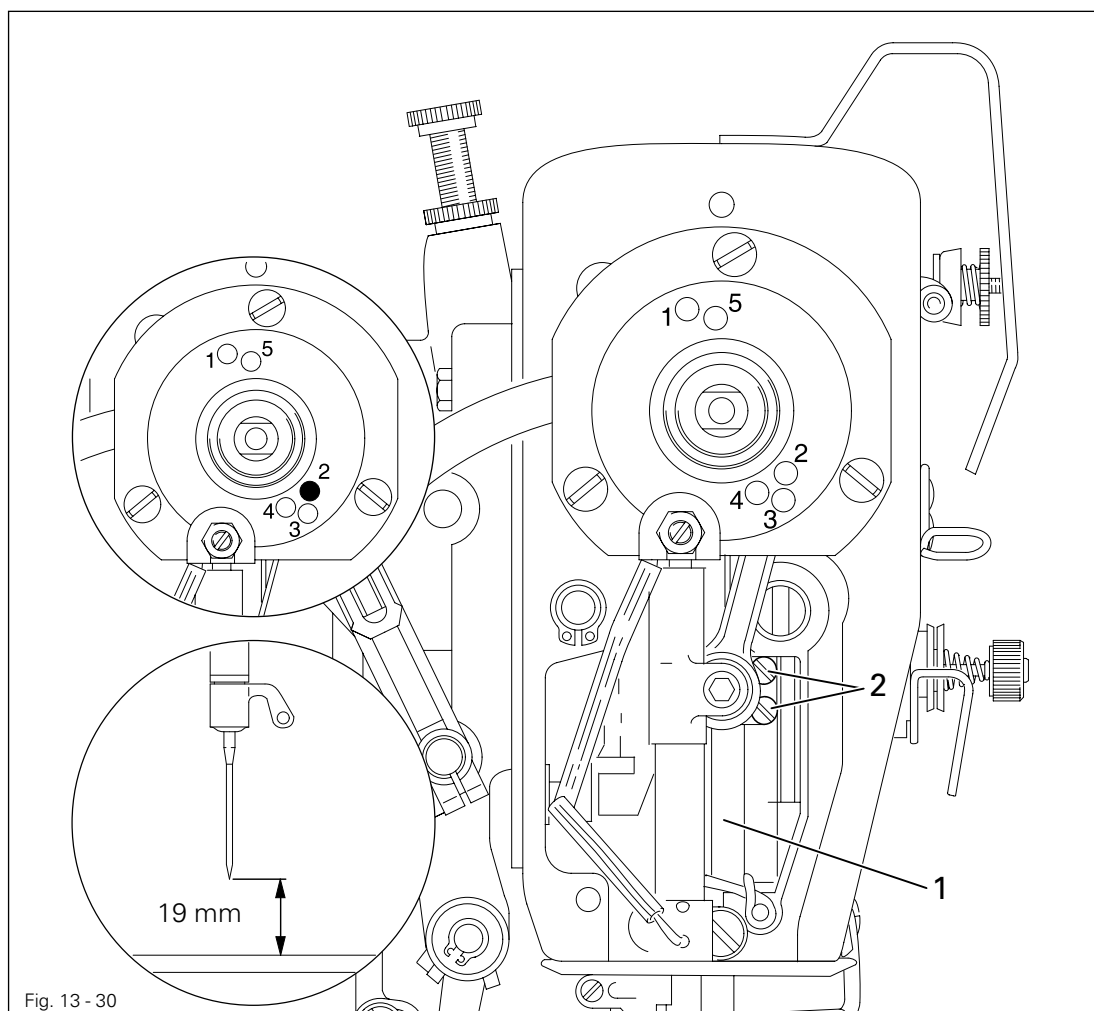
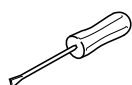


Fig. 13 - 30



- Adjust the needle bar 1 (screws 2) without twisting according to the rule.

## 13.05.30 Needle bar rise, hook-to-needle clearance and lower bobbin position finger

### Rule

1. At the needle position setting "**Middle**", a zigzag setting of "**0**" and a needle bar position **2.0** after b.d.c.(hole **1**), the hook point should be in the middle of the needle and the clearance between the needle and the hook point should be **0.05 to 0.1 mm**.
2. The lower bobbin position finger **3** should be mounted so that there is a clearance of **0.5 mm** between the lower part of the bobbin case and the front edge of the bobbin case position finger (see arrow).

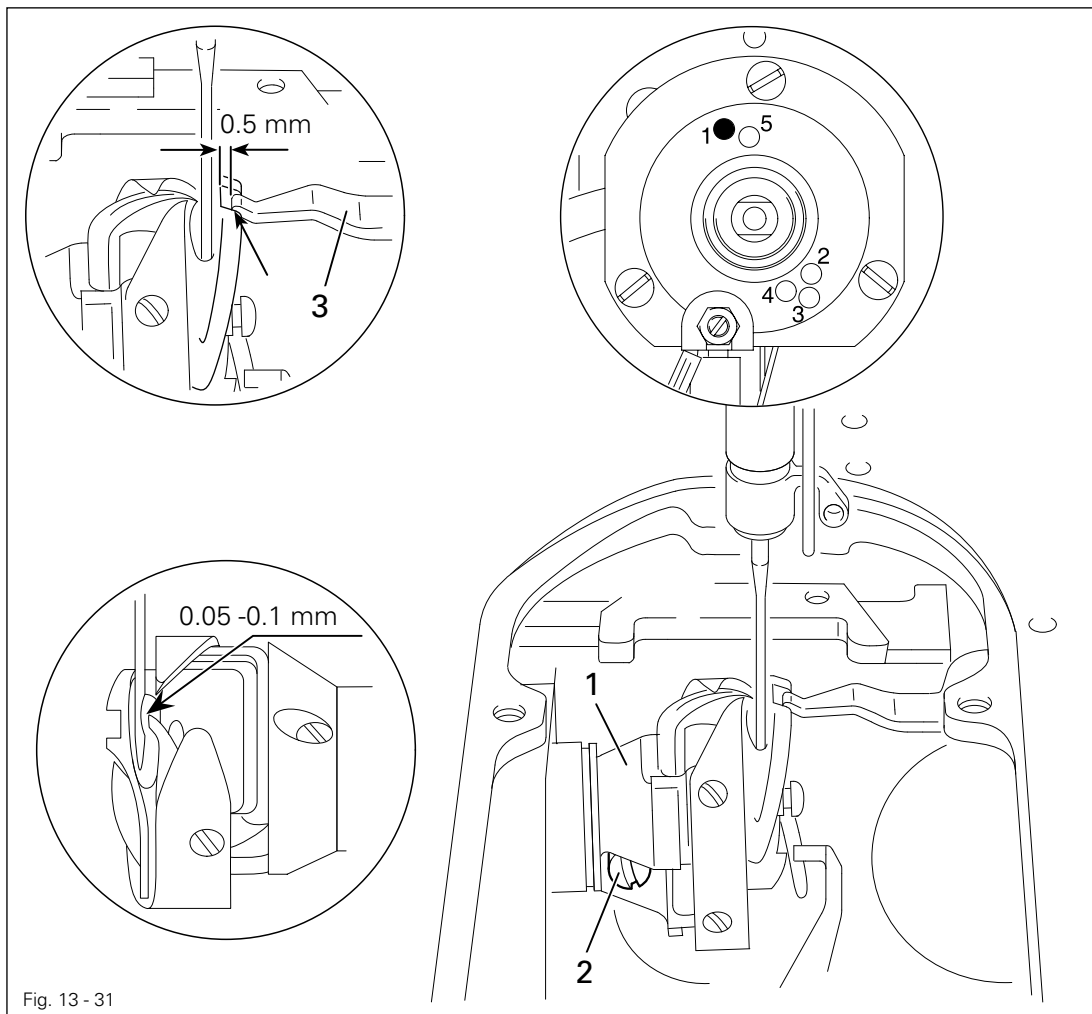
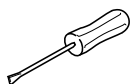


Fig. 13 - 31

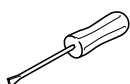
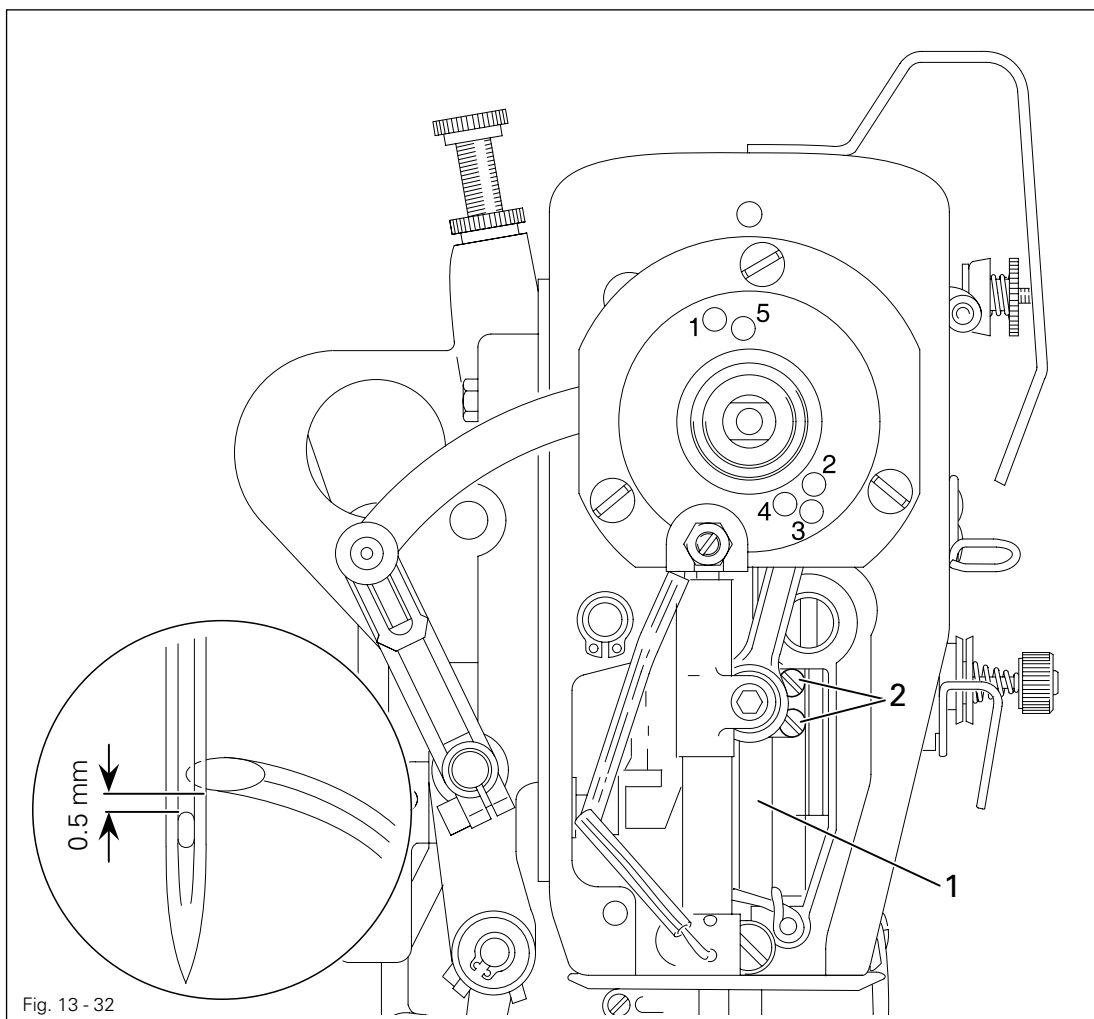


- Adjust the hook (screw **1**) according to **rule 1**.
- Mount the lower bobbin position finger according to **rule 2**.

## 13.05.31 Readjusting needle height

### Rule

If the hook point is in the middle of the needle at zigzag stitch setting "0" and the "Left" needle position setting, the top edge of the needle eye should be 0.5 mm below the hook point.

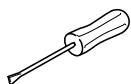
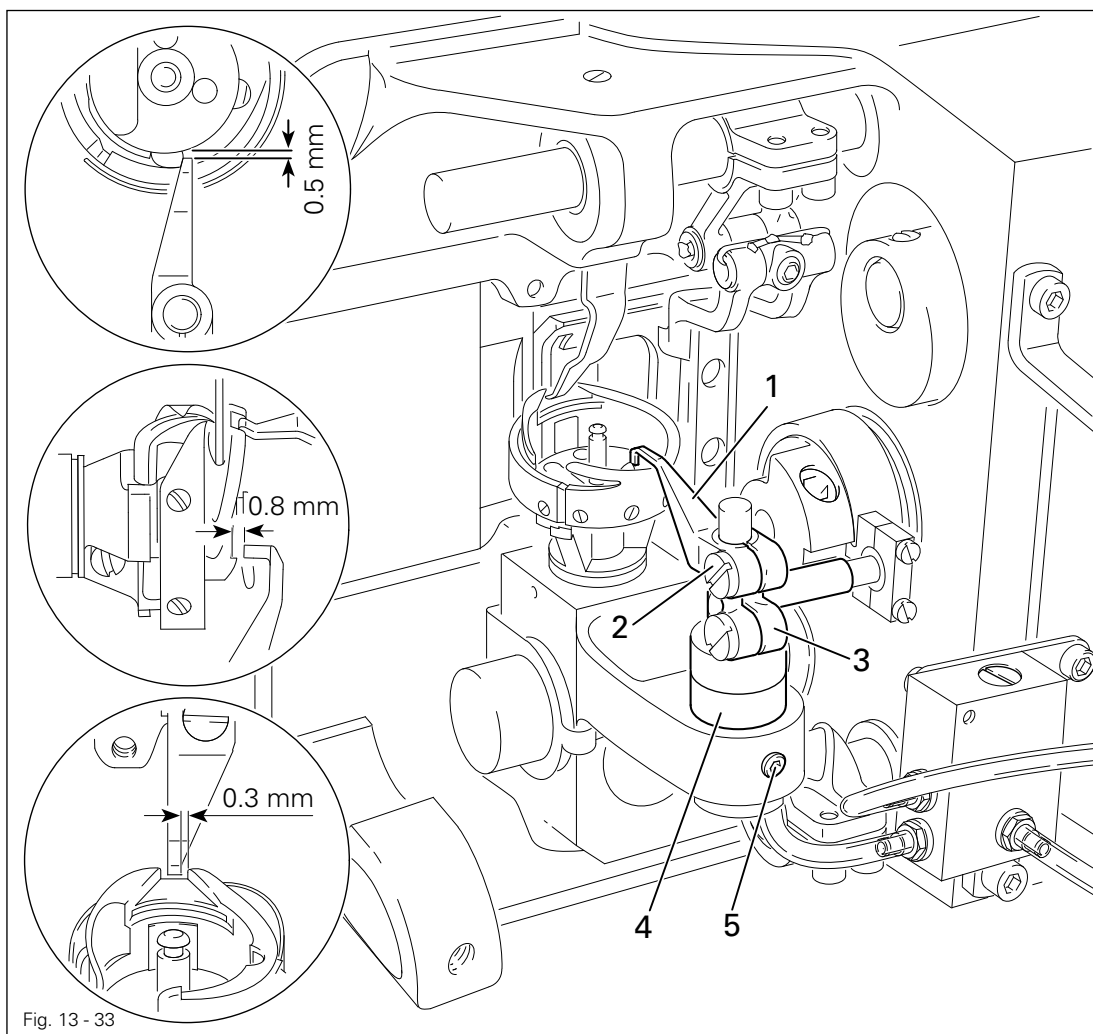


- Adjust the needle bar 1 (screws 2) without twisting according to the rule.

## 13.05.32 Bobbin lifter position

### Rule

1. There should be a clearance of **0.5 mm** between the top edge of the bobbin lifter and the inner edge of the lower part of the bobbin case.
2. There should be a clearance of **0.8 mm** between the bobbin lifter finger and the lower part of the bobbin case.
3. The bobbin case position finger should protrude approx. **0.3 mm** from the right side of the groove in the lower part of the bobbin case in the left reverse position of the bobbin lifter.

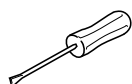
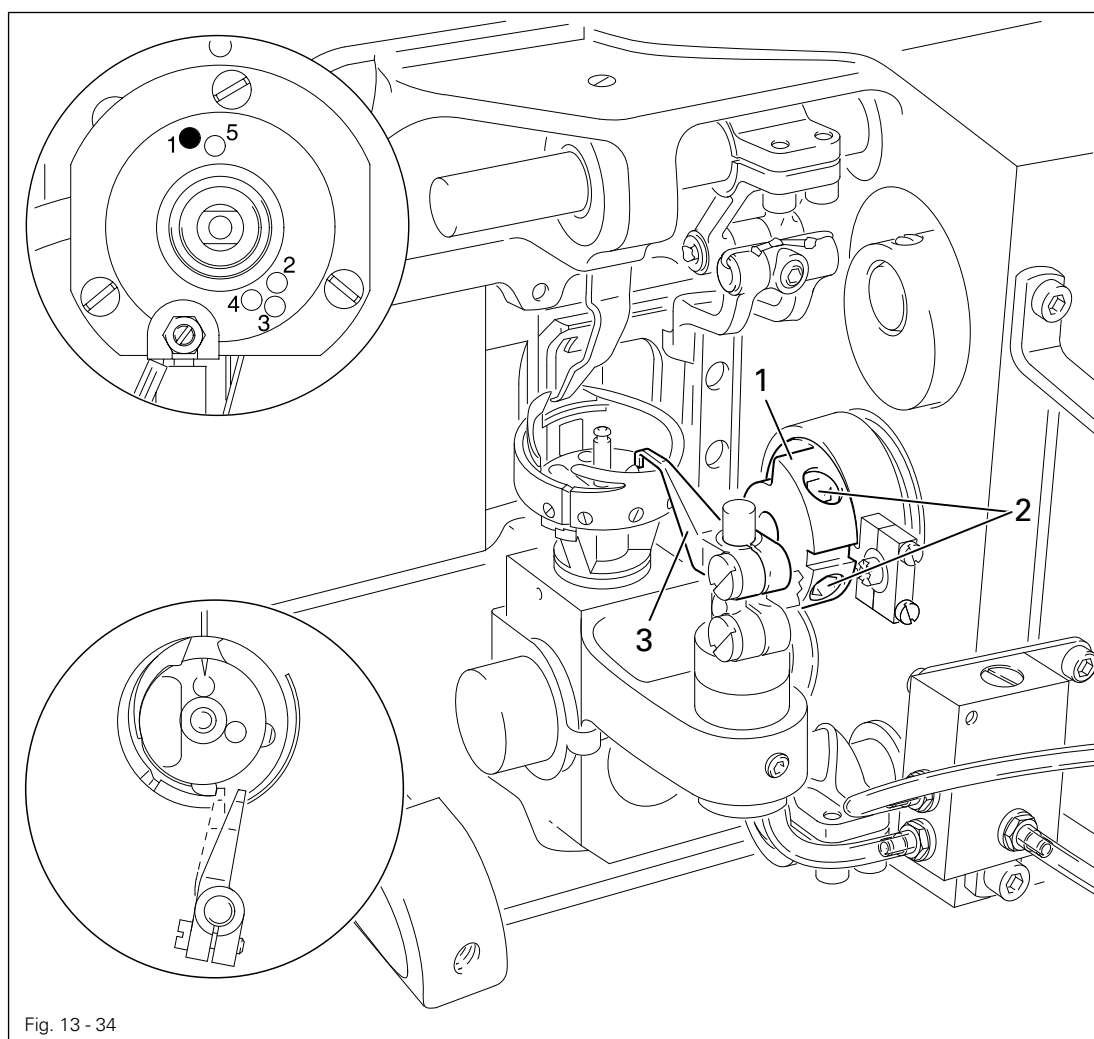


- Loosen the screw 2.
- Mount the bobbin lifter 1 on the right side of the lower part of the bobbin case, press against the clamp crank 3 underneath and gently tighten the screw 2.
- Adjust the eccentric bearing bush 4 (screw 5) according to rules 1 and 2.
- Turn the bobbin lifter 1 according to rule 3 and tighten the screw 2; make sure that the bobbin lifter 1 abuts the clamp crank 3.

## 13.05.33 Bobbin lifter movement

### Rule

When the needle bar is positioned 2.0 after b.d.c. (hole 1), the bobbin lifter 3 should be in the right turning point.



- Turn the eccentric 1 (screws 2) according to the rule.

## 13.05.34 Bottom feed dog height

### Rule

At a stitch length setting of "0" and a needle bar position **0.25 mm** after t.d.c. (hole **3**), the bottom feed dog should be in the middle of the needle plate cutout and abut the feed dog height adjustment gauge along its entire length.

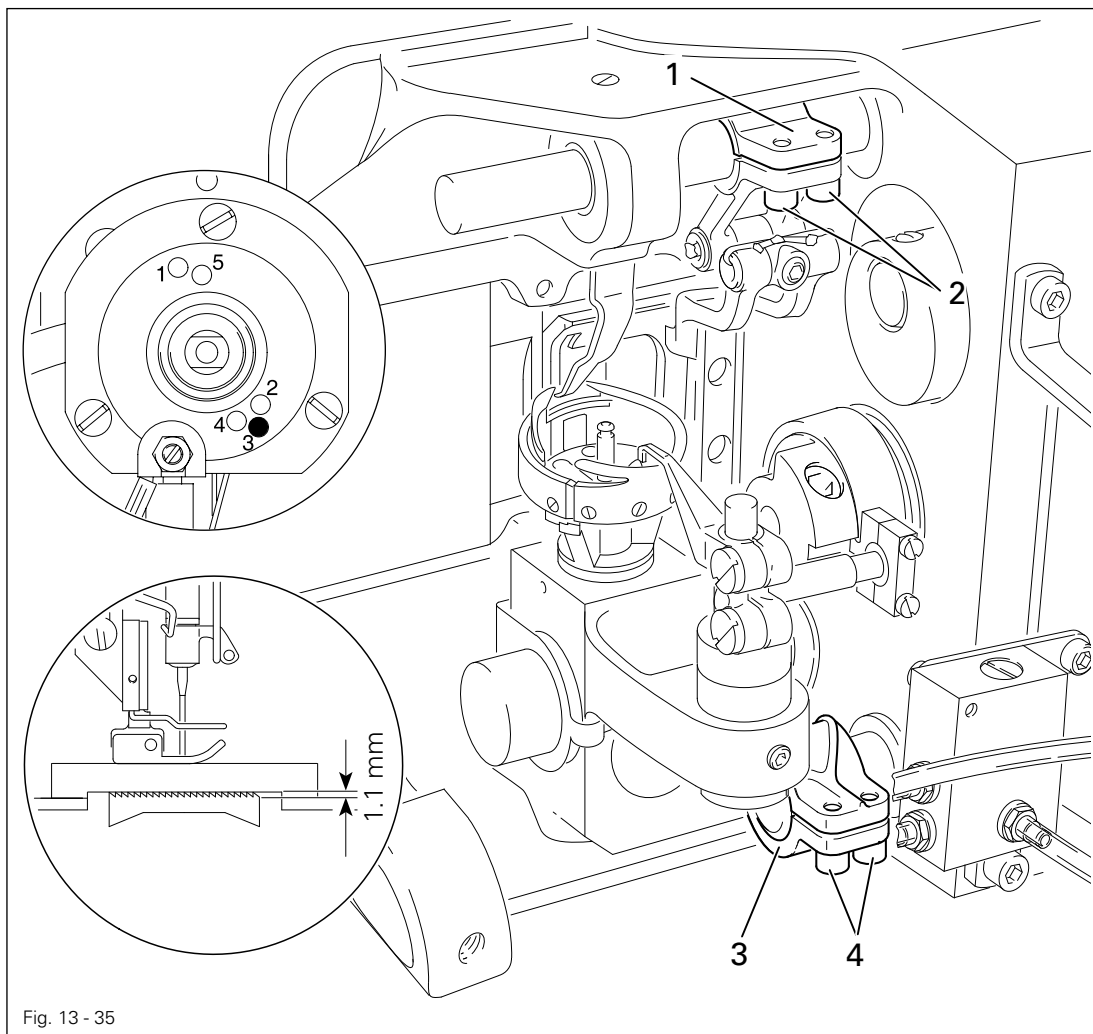
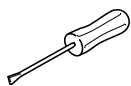


Fig. 13 - 35



- Move the feed dog setting gauge under the presser foot with the cutout down.
- Fit the presser foot.
- Push up the feed bar and place the feed dog in the middle of the needle plate cutout.
- Turn the lifting crank **1** (screws **2**) and the clamp bushing **3** (screws **4**) according to the rule.



## 13.05.35 Clearance between the presser foot and needle plate

### Rule

When the hand lever is raised, the needle should pierce the "middle of the needle hole" of the presser foot exactly and the clearance between the needle plate and presser foot should be **7 mm**.

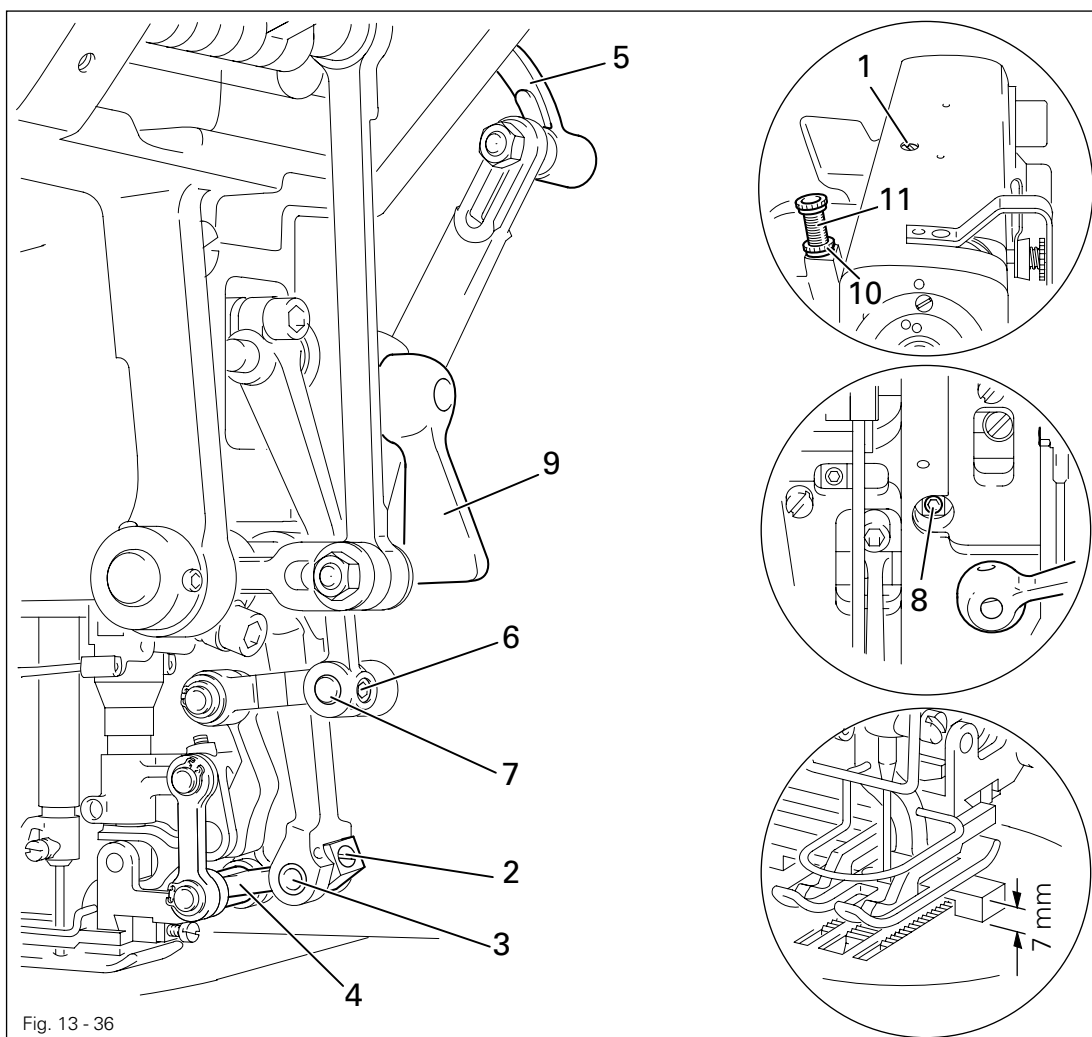
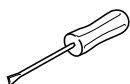


Fig. 13 - 36



- Set the zigzag stitch adjusting lever to "0" and the needle position adjusting lever to "Middle".
- Fit the presser foot on the needle plate, loosen the nut 10 and reduce the pressure on the presser bar by turning the screws 1 and 11.
- Tighten the nut 10.
- Loosen the screw 2, push out the bearing pin 3 and pivot the connecting link 4 out of the yoke of the feed driving lever.
- Move the lever 5 to its outer turning point.
- Move the feed dog setting gauge under the presser foot with the cutout downwards.
- Loosen the screw 6 and push out the eccentric pin 7.
- Loosen the screw 8 and raise the hand lever 9.
- Pierce the needle in the needle hole and align the presser foot according to the rule.
- Push the presser bar lifting piece down and tighten the screw 8.

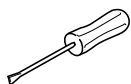
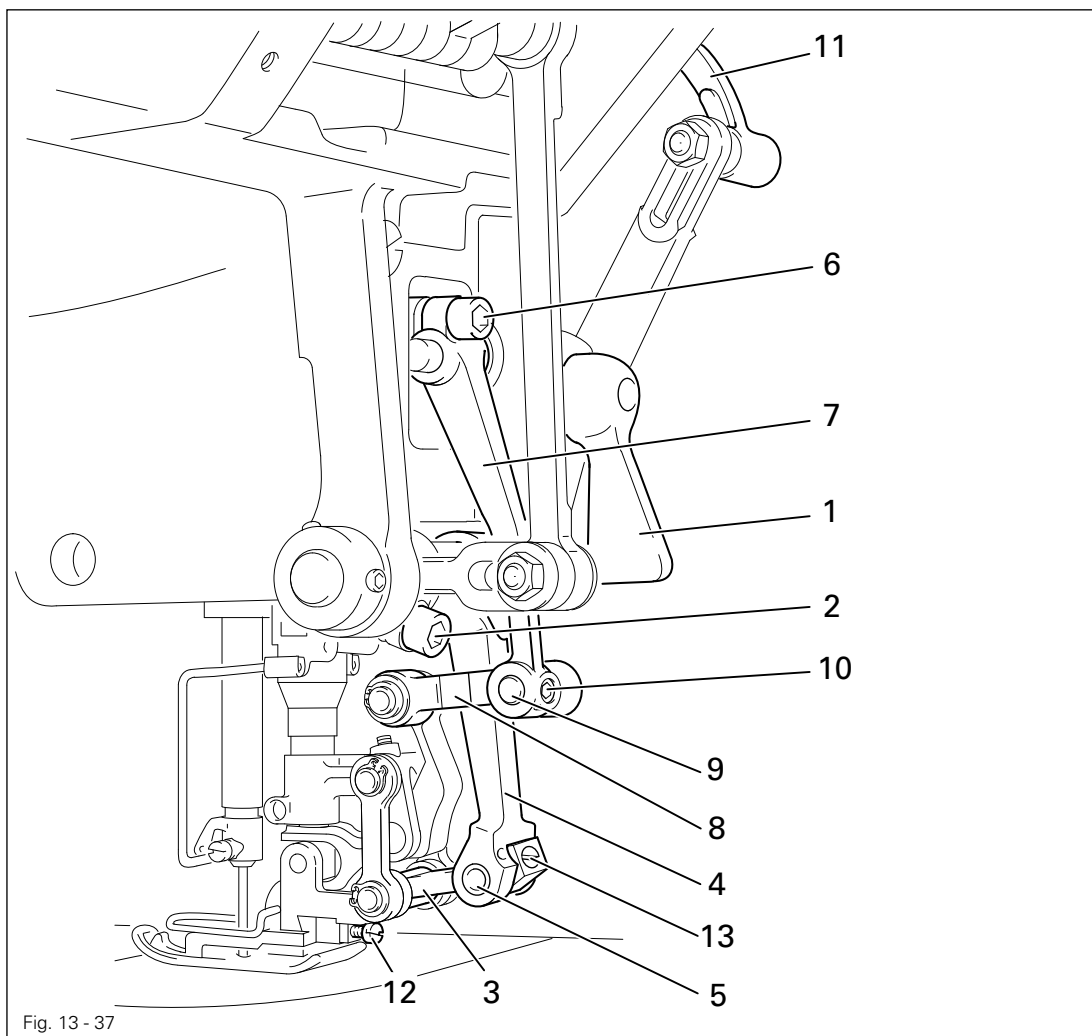


The screws 2 and 6 remain loosened and the bearing pin 3 and the connecting link 4 or the eccentric pin 7 remain dismantled for the subsequent settings.

## 13.05.36 Top feed dog feed driving and connecting lever

### Rule

1. All the moving parts of the top feed dog should move freely and without any backlash.
2. The top feed dog must not touch the presser foot.



- Lower the presser foot with the hand lever 1.
- Loosen the screw 2.
- Pivot the connecting link 3 into the yoke of the lever 4 and insert the pin 5.
- Ensure free movement and, if necessary, align the lever 4.
- Tighten the screw 13.
- Set the stitch length to "0".
- Align the top feed dog foot in the middle of the presser foot cutout in the sewing direction and tighten the screw 2.
- Loosen the screw 6.
- Align the hole of the lever 7 with the elongated hole of the lever 8 without any lateral backlash, if necessary adjust or align the lever 7.
- Insert the pin 9 into the elongated hole of the lever 8 and the hole of the lever 7 with its largest eccentricity downwards and tighten the screw 10.

- Move the lever **11** to its outer turning point.
- Press the lever **7** in the feeding direction until you feel it reach the stop and tighten the screw **6**.
- Loosen the screw **12** and align the top feed dog foot according to **rule 2**.
- Tighten the screw **12**.

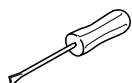
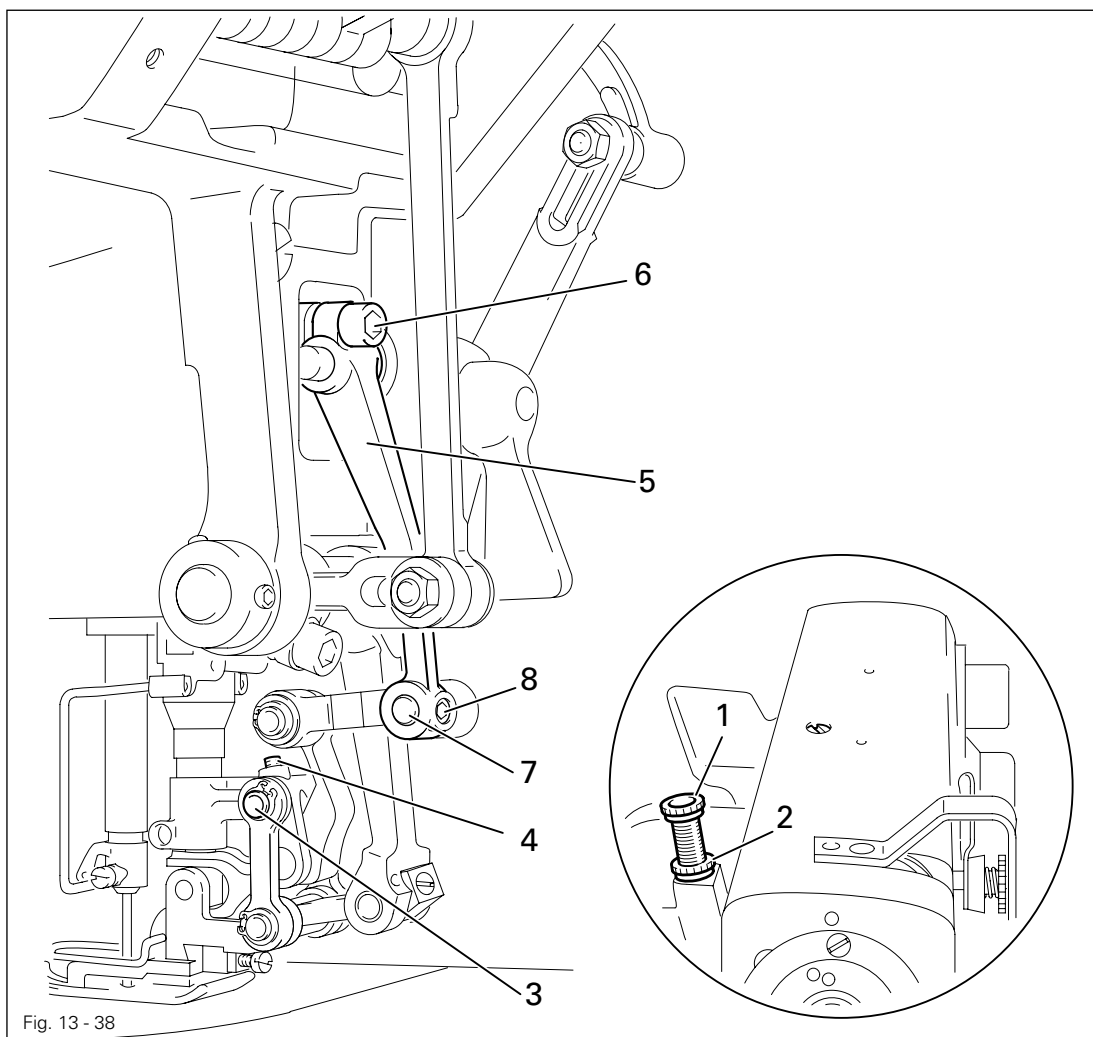
## 13.05.37 Top feed dog lift

### Rule

At stitch length setting "0", when the presser foot is resting on the needle plate and the top feed foot is in its upper turning point, there should be the following clearance between the needle plate and the top feed foot depending on the type of top feed:

**1.3 mm** when the top feed dog is working behind the needle,

**2.0 mm** when the top feed dog is working in front of the needle,

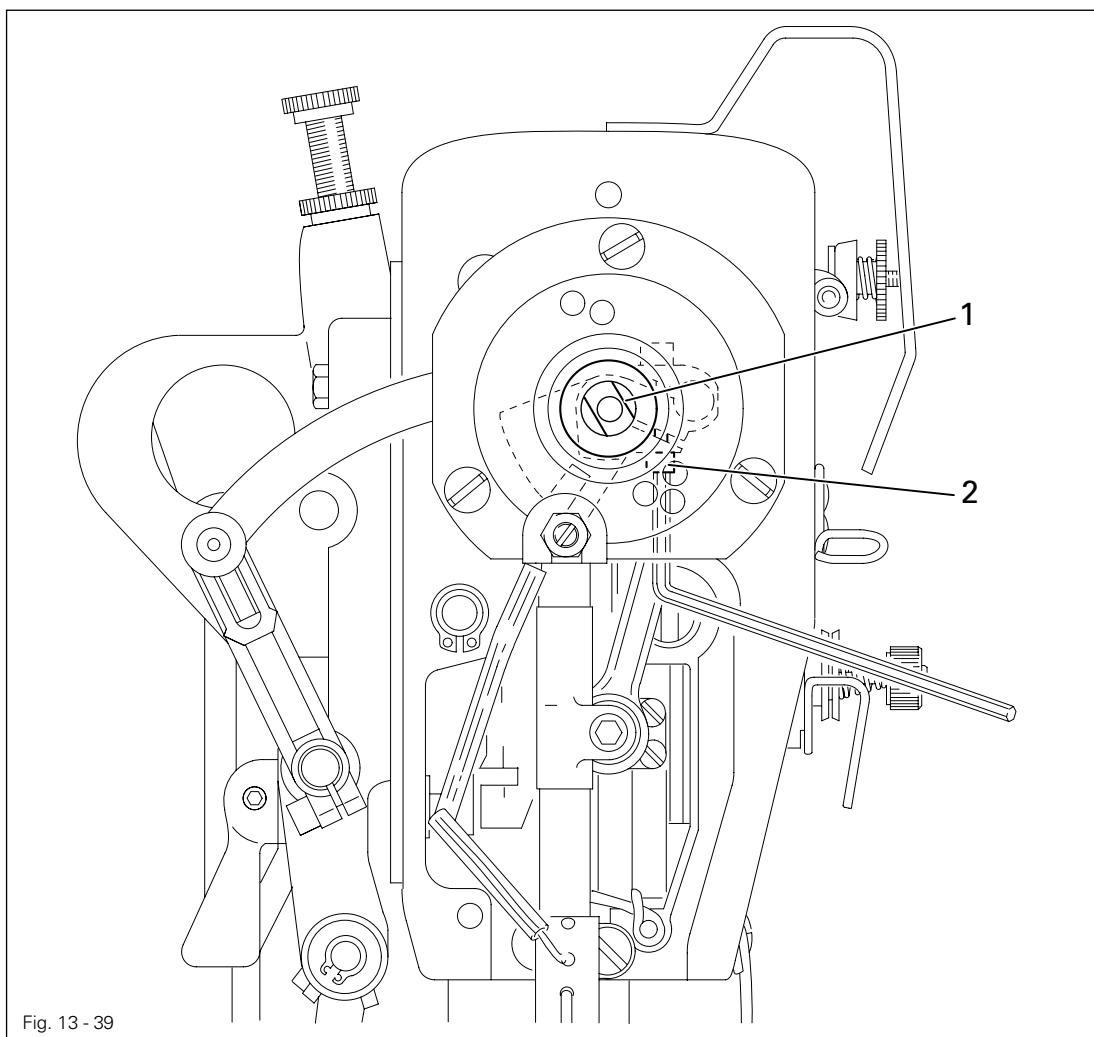


- Loosen the nut 2 and increase the pressure on the presser foot slightly using the screw 1.
- Fit the presser foot onto the needle plate.
- Loosen the screw 4, adjust the eccentricity of the pin 3 to the needle bar and tighten the screw 4.
- Turn the handwheel until the lever 5 is in the rear turning point.
- Loosen the screw 6 and push the lever 5 backwards.
- Push a gauge between the top feed dog foot and the needle plate according to the **rule** and tighten the screw 6.
- Loosen the screw 8 and turn the eccentric pin 7 to make the readjustment.
- Tighten the nut 2 and the screw 8.

## 13.05.38 Top feed dog lifting movement

### Rule

The top feed dog should fit on the bottom feed dog when the upwardly moving bottom feed dog has reached the top edge of the needle plate at stitch length setting "2".

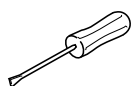
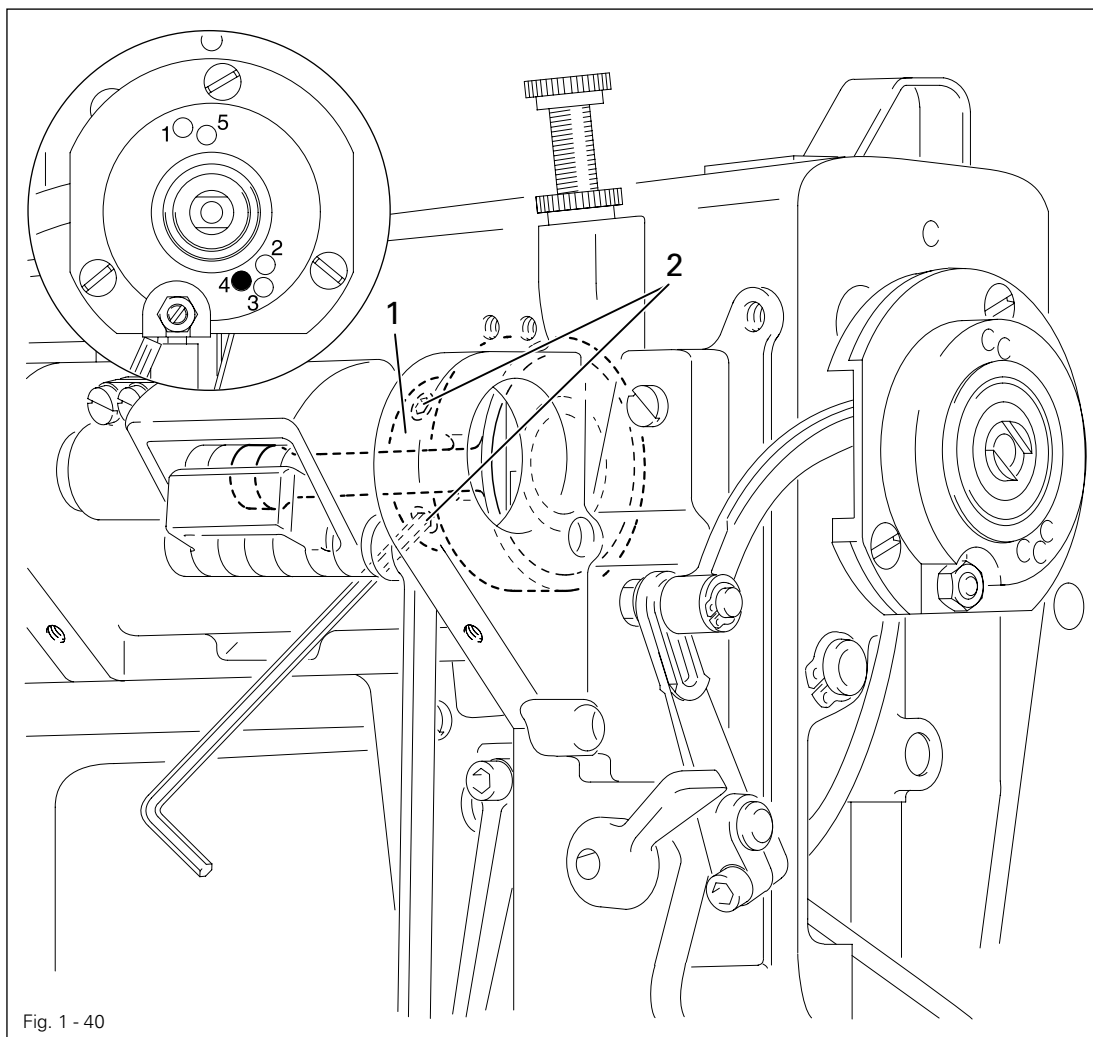


- Turn the eccentric pin 1 (screw 2) according to the rule.

### 13.05.39 Top feed dog sliding movement

#### Rule

At the largest stitch length setting and a needle bar position 1.0 after t.d.c. (hole 4), the Top feed dog, vibrating presser feed dog should not move when- reverse-feed key is pressed.

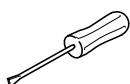
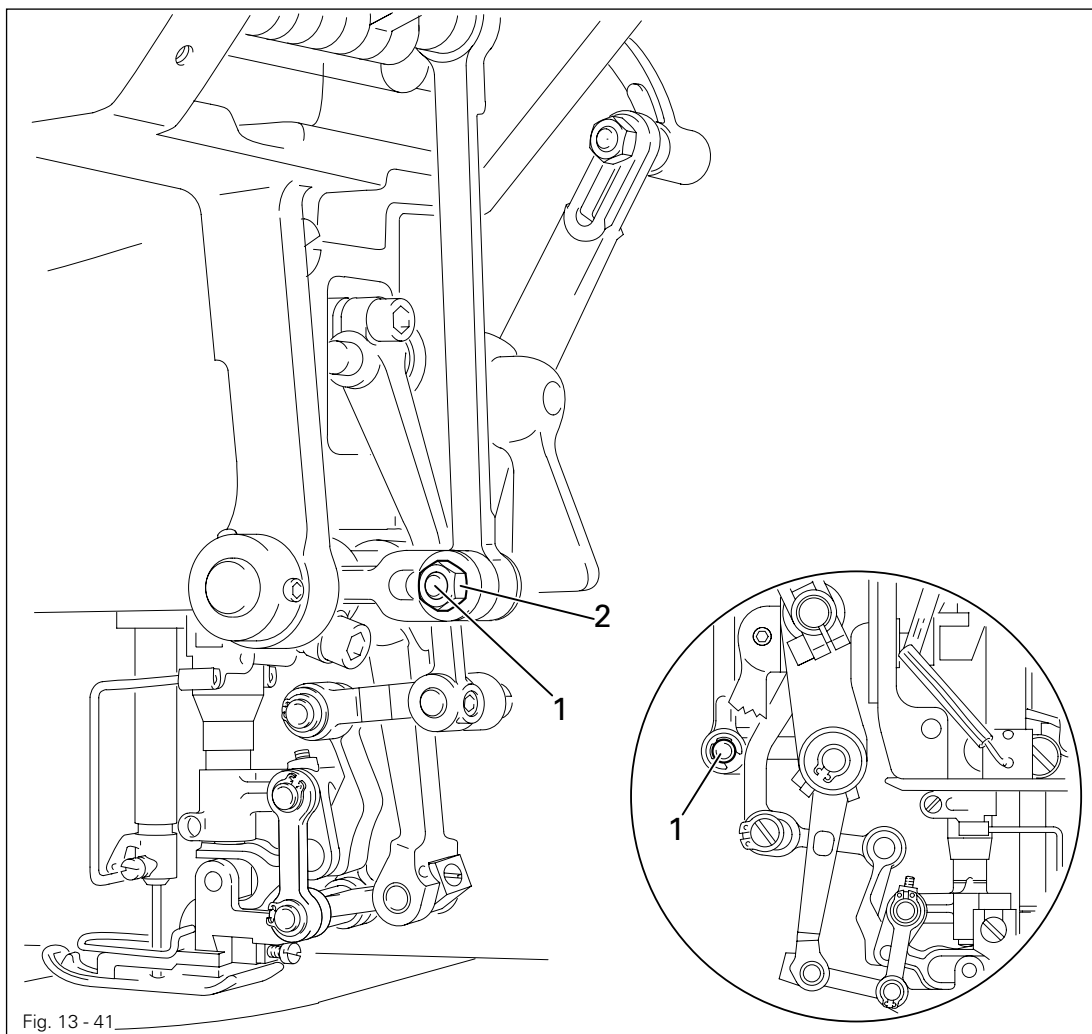


- Raise the presser foot.
- Turn the eccentric 1 (screws 2) so that the second screw is visible from the rear looking in the direction of rotation.
- Turn the eccentric according to the **rule**.

## 13.05.40 Feed difference

### Rule

If the two top feed thumb wheels are in position "0" and the largest stitch length is set, the sliding movement of the top feed dog and bottom transporter should be the same when turning the handwheel.

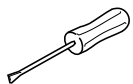
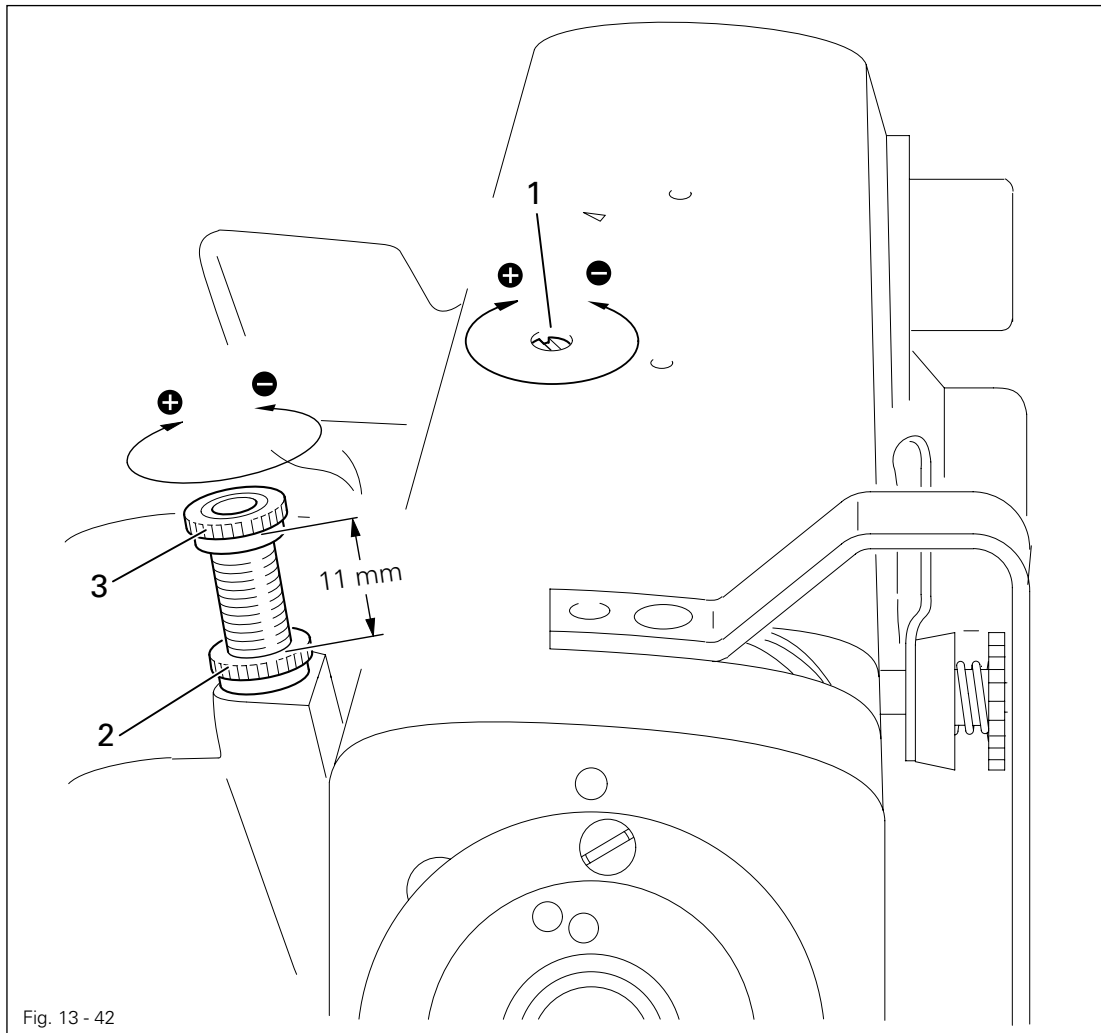


- Adjust the pin 1 (nut 2) in the elongated hole according to the rule.

### 13.05.41 Top feed dog and presser foot pressure

#### Rule

The material should be fed properly even at top sewing speed. No pressure marks should appear on the material.



- Position the top edge of the screw 1 approx. **13 mm** below the top edge of the housing.
- Loosen the nut 2.
- Turn the screw 3 so that there is a clearance of approx. **11 mm** between the collar thereof and the machine housing.



The pressure on the top feed dog (screw 1) and the presser foot (screw 2) can be increased (+) or reduced (−) as required.



## 13.05.42 Thread deflection bow

### Rule

When the needle bar is in b.d.c., the top edge of the thread guide hole should be at the same level as the lower edge of the thread deflection bow.

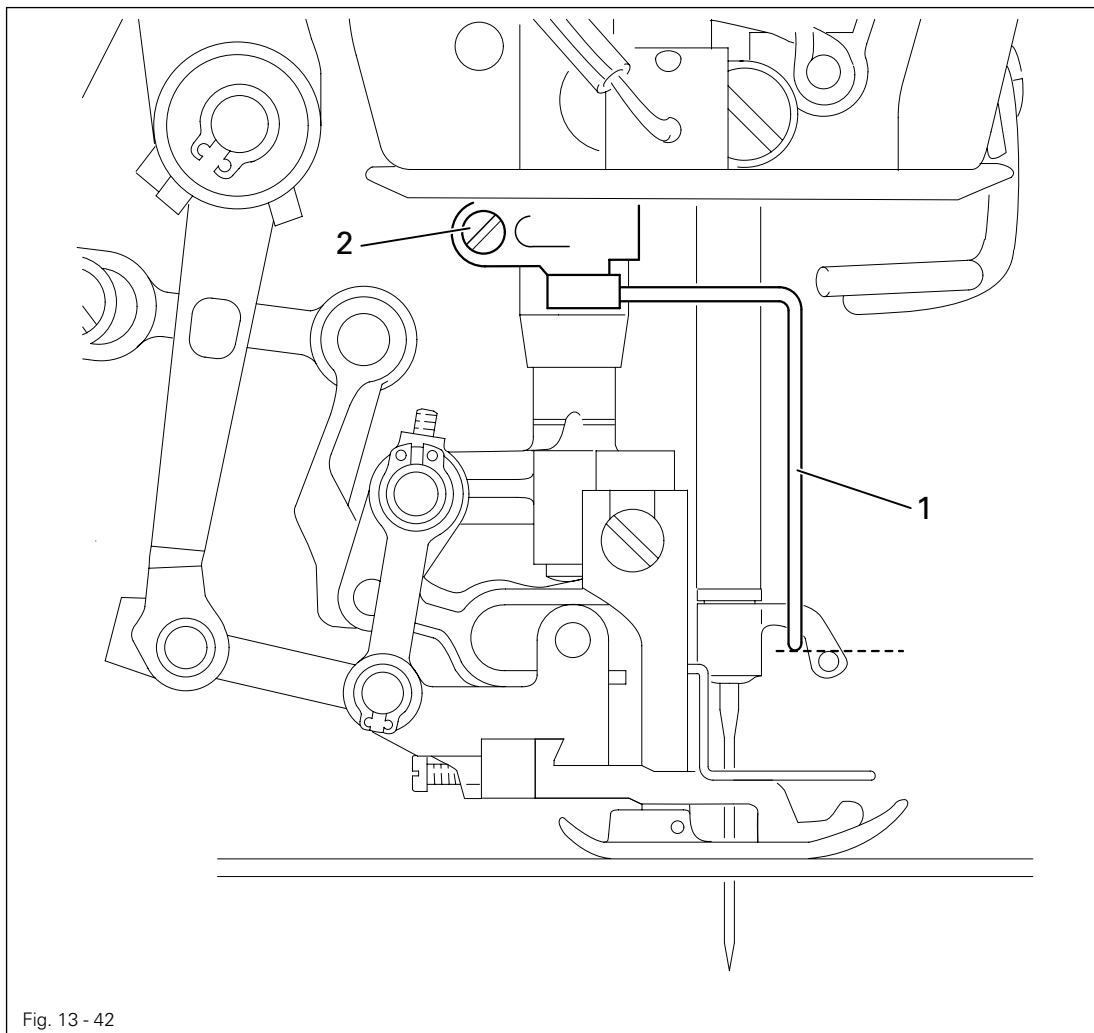
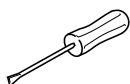


Fig. 13 - 42

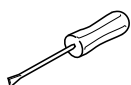
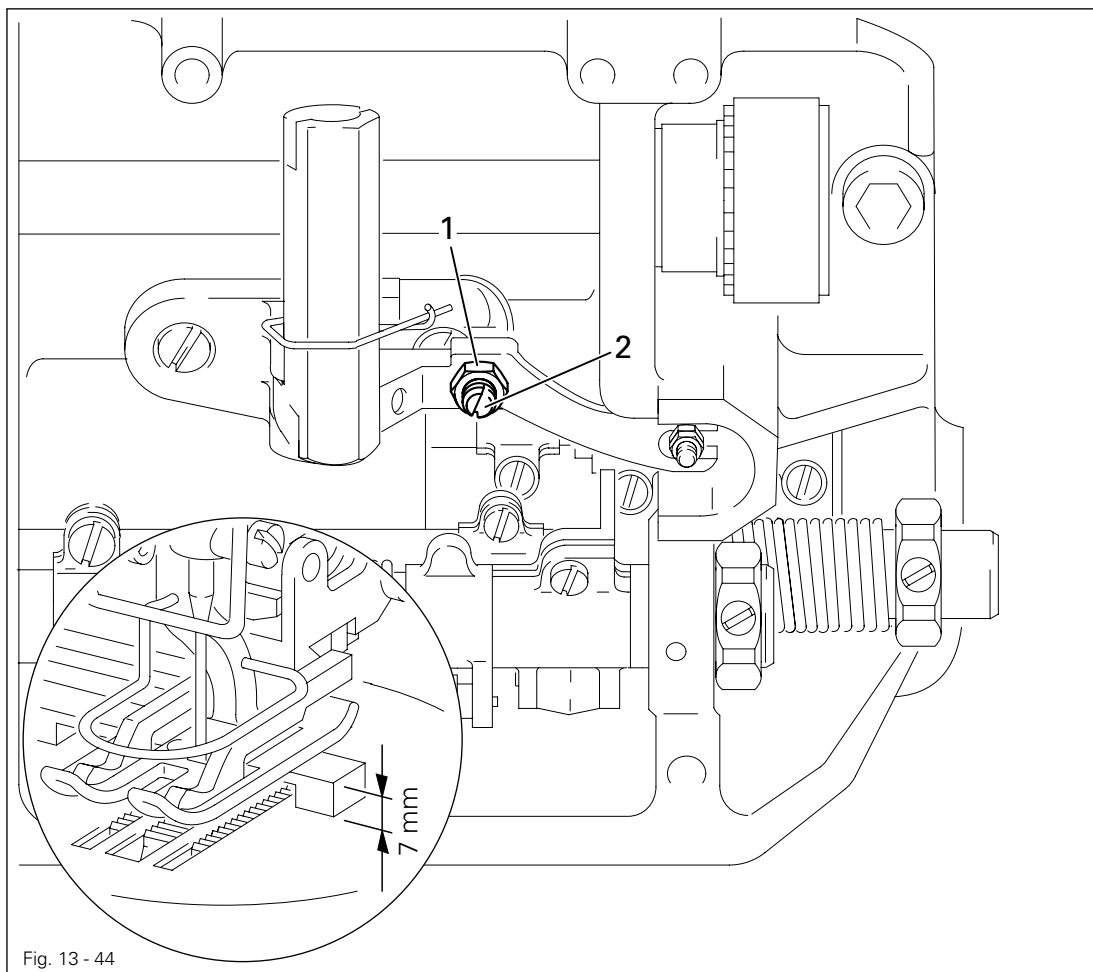


- Adjust the thread deflection bow 1 (screw 2) according to the **rule**, making sure that it is parallel to the bed plate.

### 13.05.43 Knee lever travel limit

#### Rule

The hand lever should lower automatically and the presser foot should have lifted **7 mm** off the needle plate when the knee lever is activated.

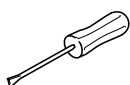
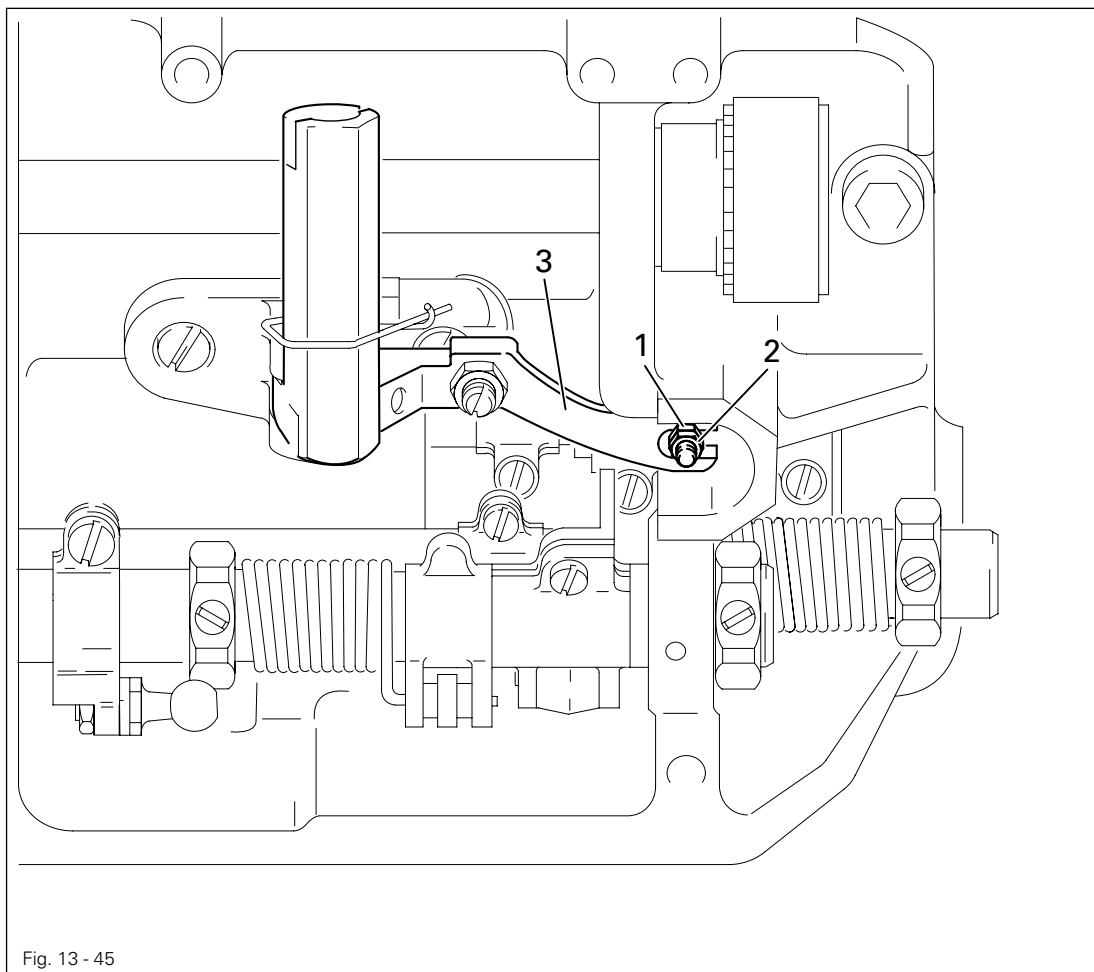


- Move the feed dog setting gauge under the presser foot with the cutout down and fit the presser foot.
- Loosen the nut **1** and unscrew the screw **2** a few turns.
- Move the knee lever to the right until it stops and hold firmly, making sure that the presser foot does not lift off the feed dog setting gauge.
- Screw in the screw **2** until it stops, then unscrew it by one turn.
- Tighten the nut **1**.

## 13.05.44 Knee lever backlash

### Rule

There should be noticeable backlash between the nut **1** and the fork **3** when gently activating the knee lever.

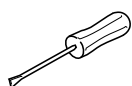
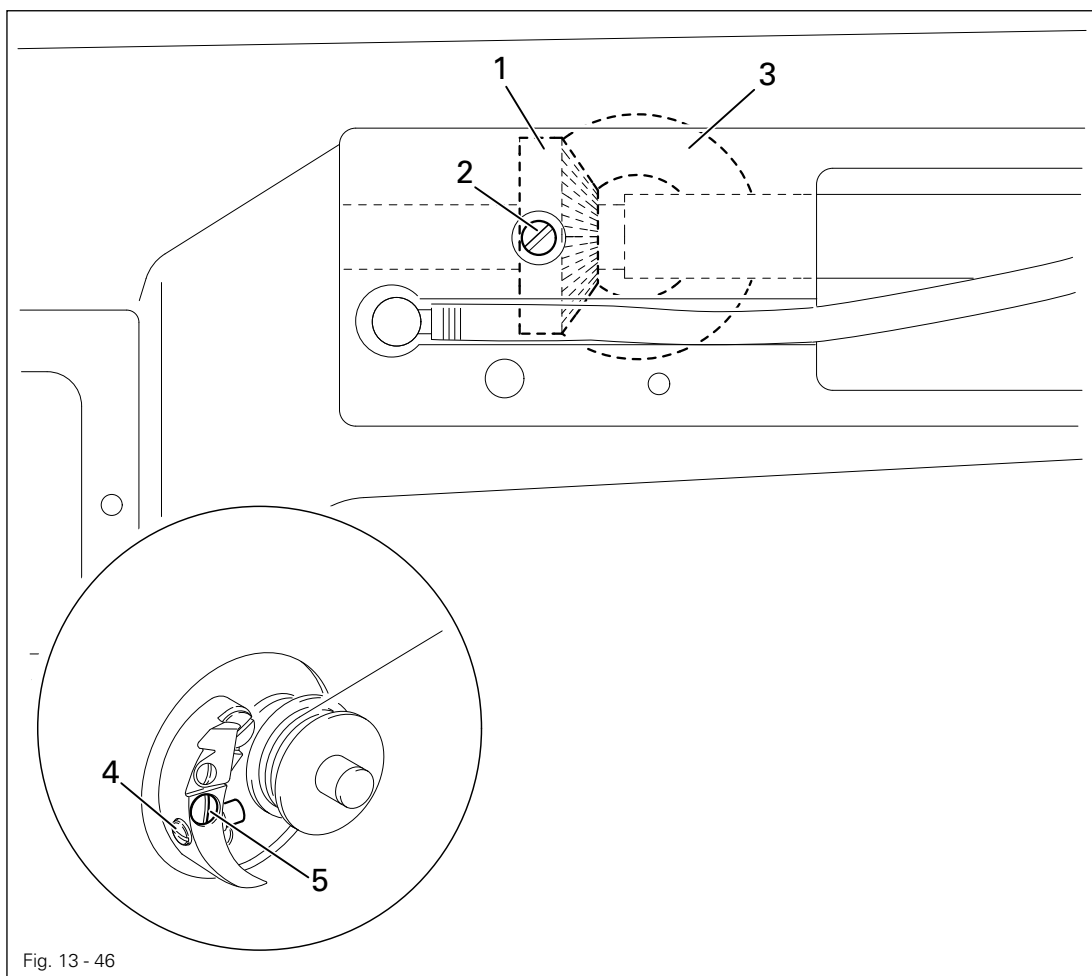


- Turn the nut **1** (lock nut **2**) according to the rule.

## 13.05.45 Bobbin winder

### Rule

1. When the bobbin winder is switched on, the bobbin winder spindle should be moved easily, whereas when the bobbin winder is switched off, the friction wheel **3** must not touch the drive wheel **1**.
2. The bobbin winder should switch off automatically if the thread fill is approx. **1 mm** away from edge of the bobbin.



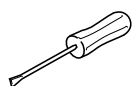
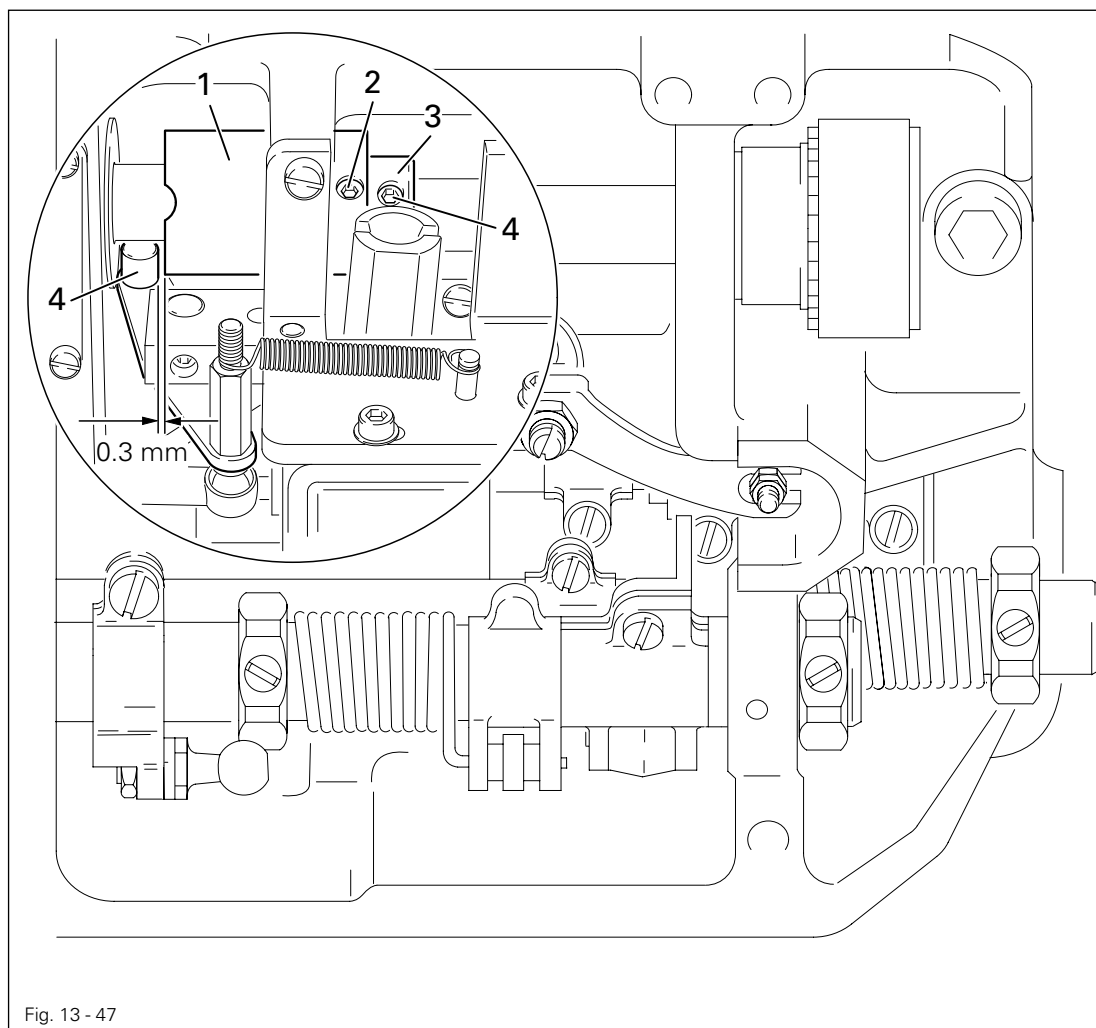
- Adjust the drive wheel **1** (screw **2**) according to **rule 1**.
- Place a bobbin on the bobbin winder, thread the bobbin and switch on the bobbin winder.
- Adjust the pin **3** (screw **4**) according to **rule 2**.

## 13.06 Adjusting thread trimmer -900/24

### 13.06.01 Axial control cam position

#### Rule

1. The roller **5** should have a clearance of **0.3 mm** to the control cam **1**.
2. The retaining collar **3** should abut the control cam **1**.

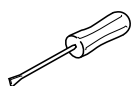
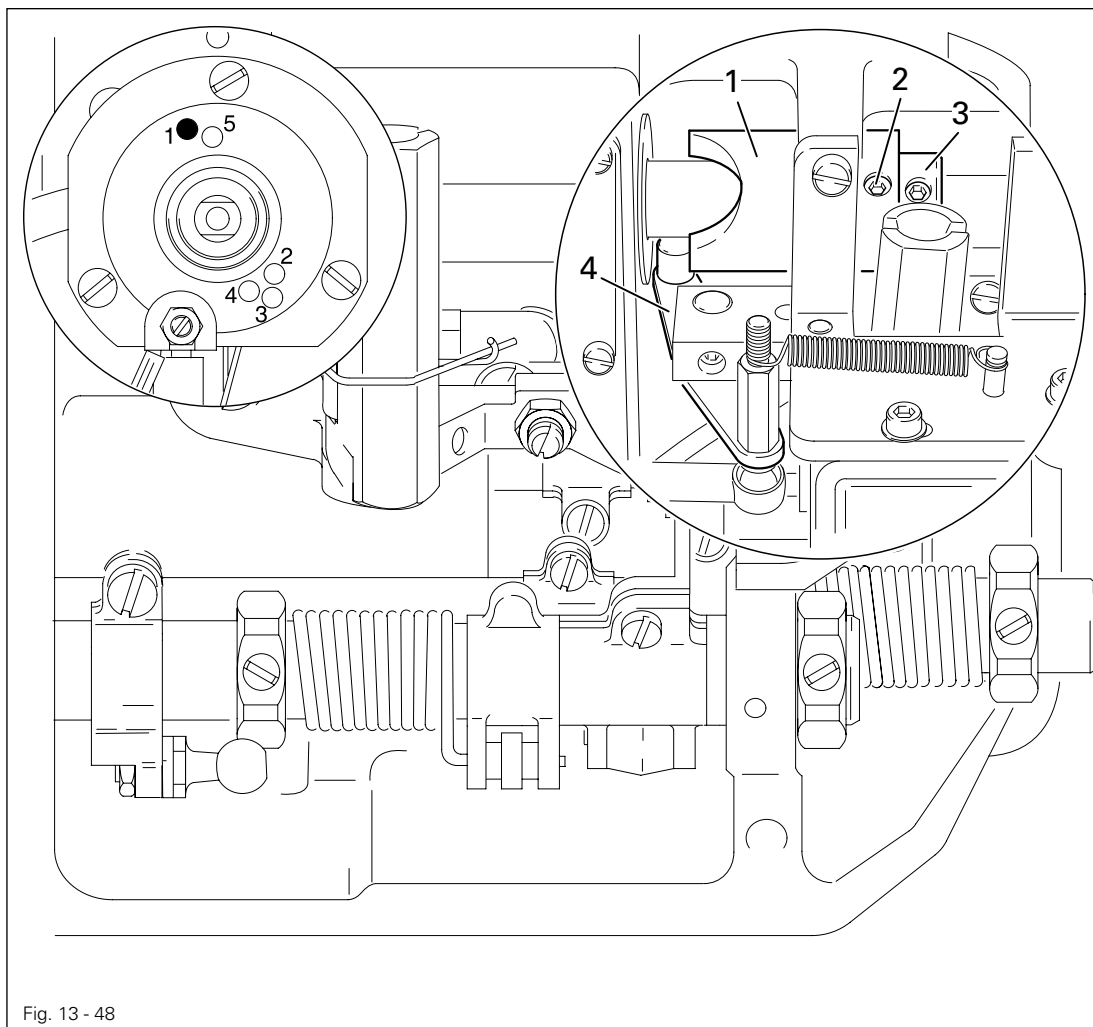


- Adjust the control cam **1** (screw **2**) and the retaining collar **3** (screw **4**) according to the rules.

## 13.06.02 Control cam (pre-calibrating)

### Rule

1. The roller lever 4 should engage in the corresponding control cam cutout in the needle rise position (hole 1).
2. The control cam 1 should abut the retaining collar 3.

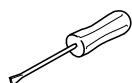
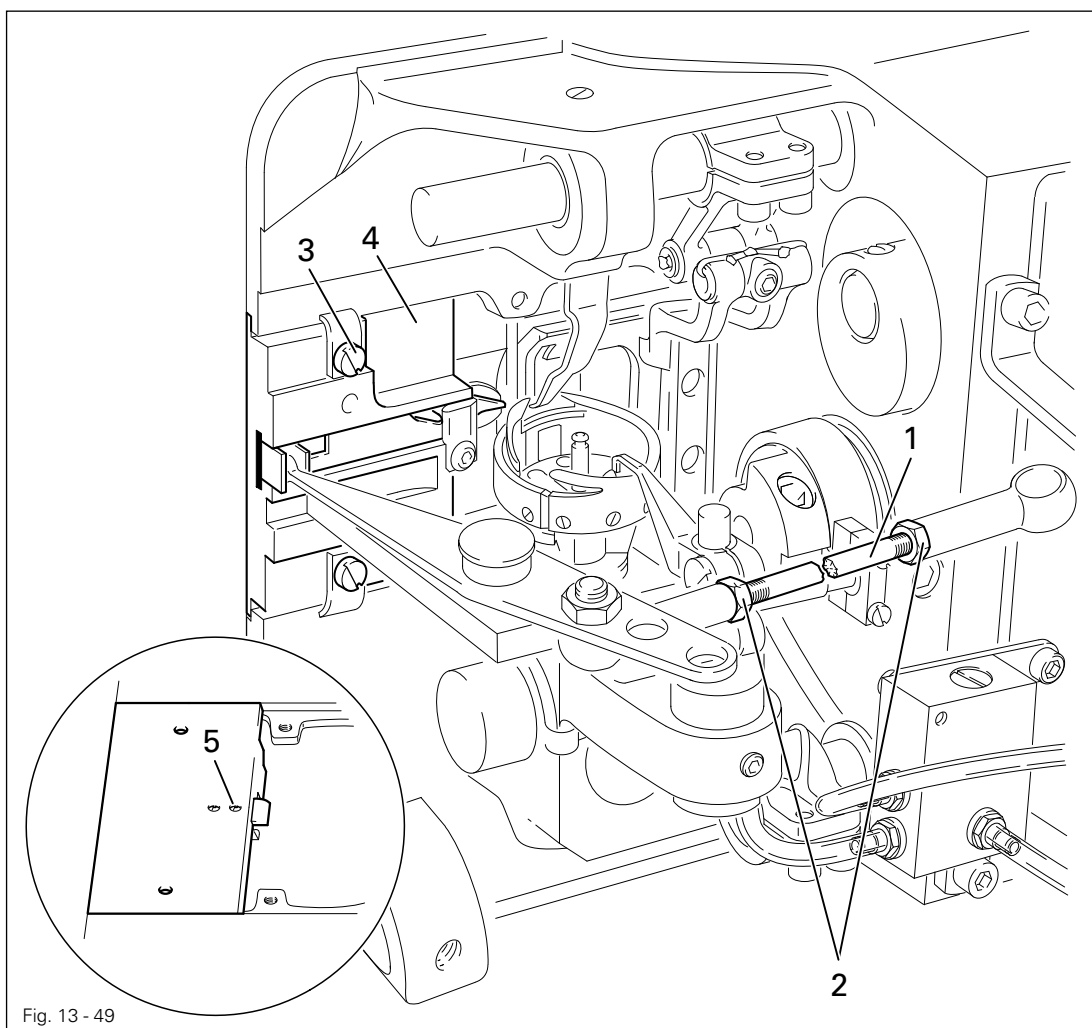


- Turn the control cam 1 (screws 2) according to **rule 1** and adjust according to **rule 2**.

## 13.06.03 Thread catcher position and test cut

### Rule

When the thread trimmer is in the neutral position, the edge of the thread catcher 6 should be flush with the edge of the mounting plate 4.



- Turn the connecting rod 1 (nuts 2, left and right-hand thread) according to the rule.
- Remove the connecting rod 1 to perform a test cut, loosen the screws 3 and remove the mounting plate 4.
- Perform a test cut with double thread.
- Adjust the cutting pressure by turning the screw 5.
- Insert the mounting plate 4 so that the edge of it is flush with the edge of the bed plate.
- Tighten the screws 3 and insert the connecting rod 1.

## 13.06.04 Control cam (recalibrating)

### Rule

1. The thread catcher **5** should start its forward movement when the end of the hook plate **3** is positioned at the level of the right edge of the bobbin case position finger **4**.
2. The control cam **1** should abut the retaining collar **6**.

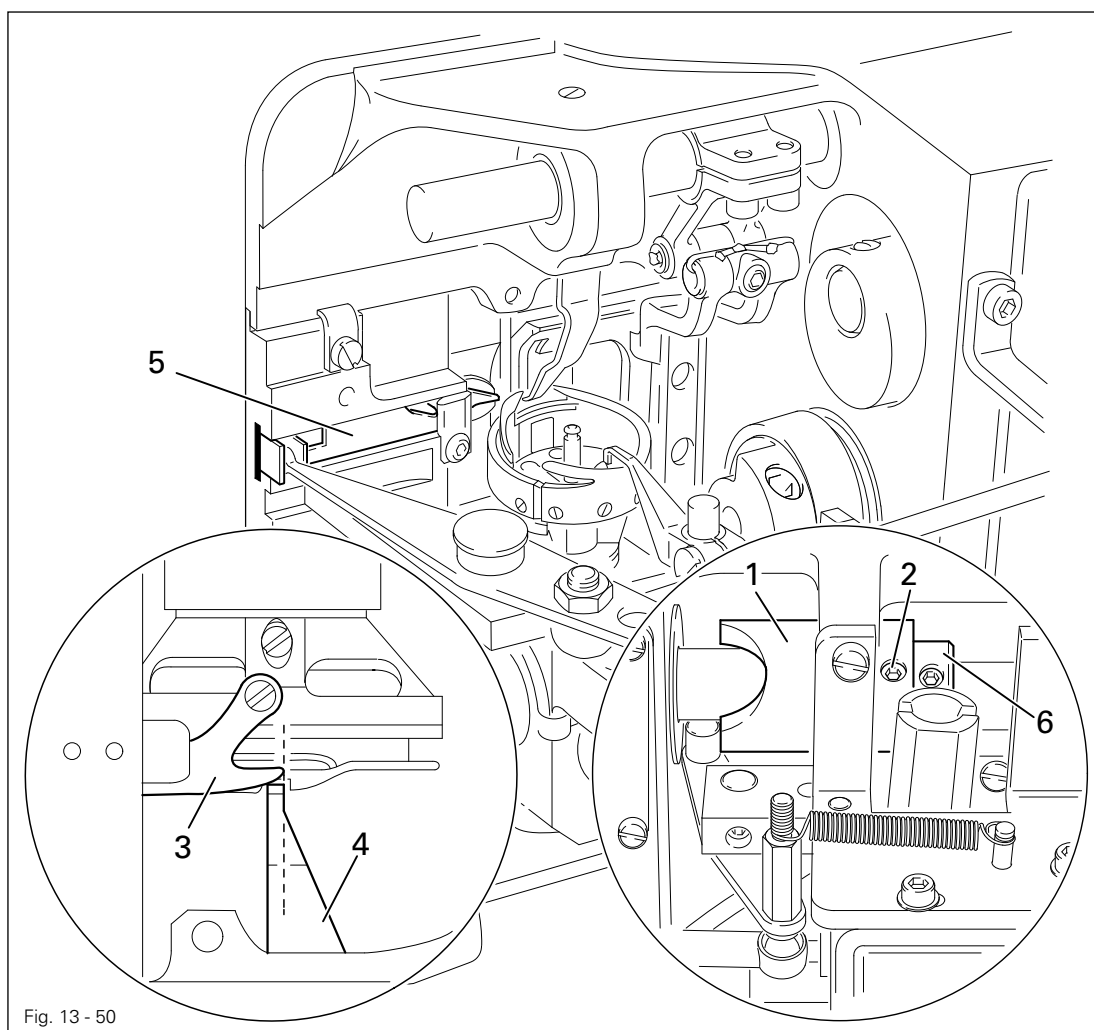
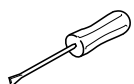


Fig. 13 - 50



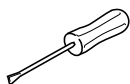
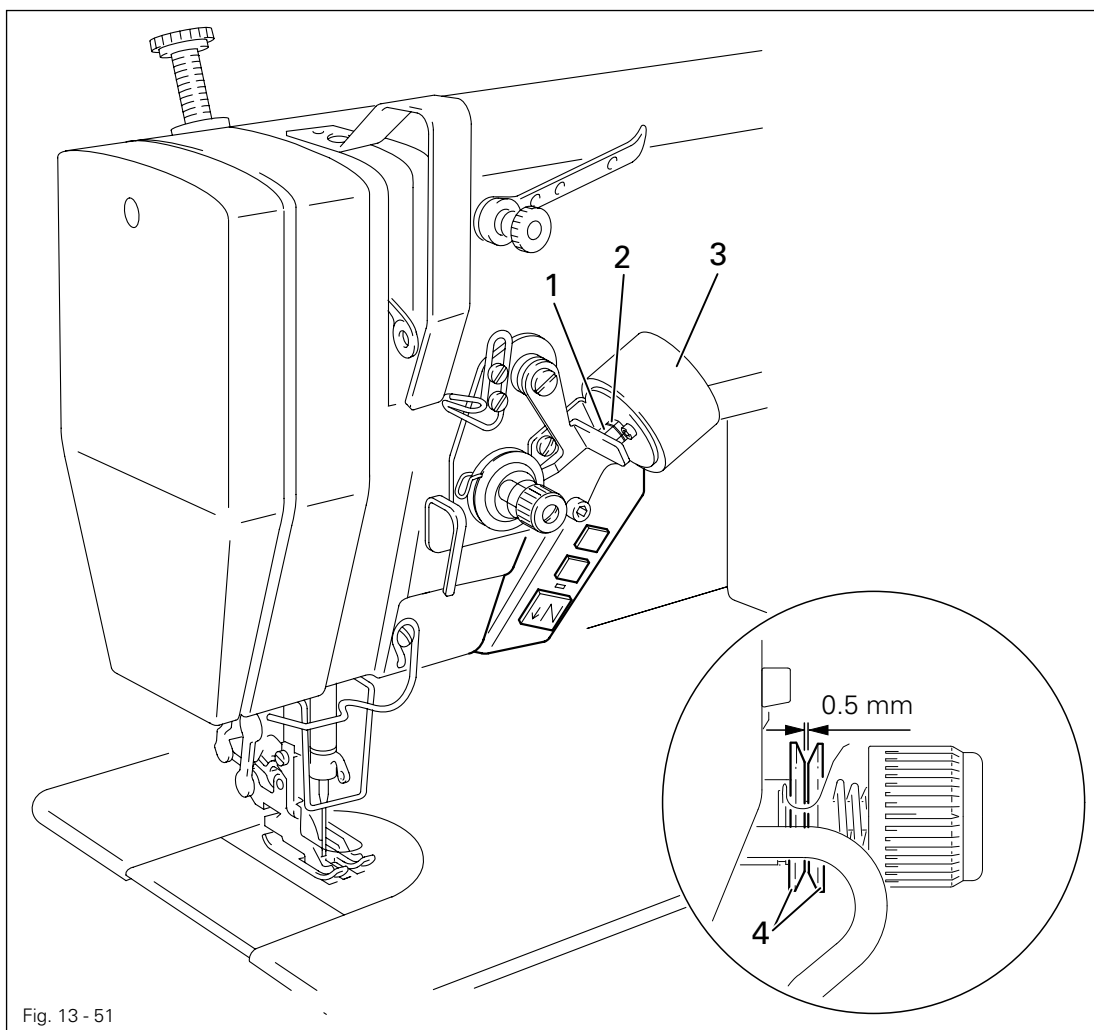
- Move the needle bar to b.d.c.
- Turn the control cam **1** (screws **2**) according to **rule 1** and adjust according to **rule 2**.



## 13.06.05 Needle thread tension release

### Rule

1. When the magnet **3** is activated, the tension discs **4** should be at least **0.5 mm** away from each other.
2. When the thread trimmer device is in neutral position and the presser foot is on the needle plate, tension should be fully activated.



- Unscrew the thread wiper.
- Turn the nut **1** (lock nut **2**) according to the rules.
- Screw on the thread wiper again.

### 13.07 Parameter settings

- The separate parameter list for the machine describes how to select the user level and change parameters (see **chapter 1.1.2 Technician level**).


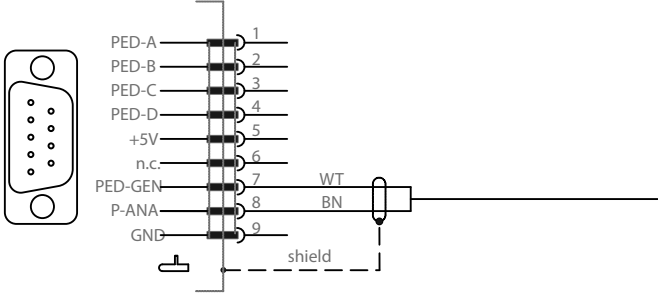

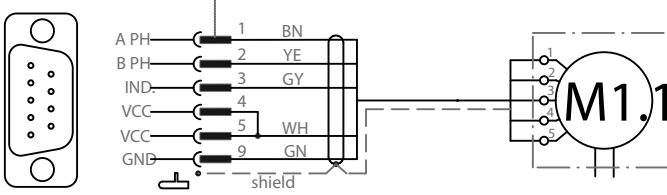

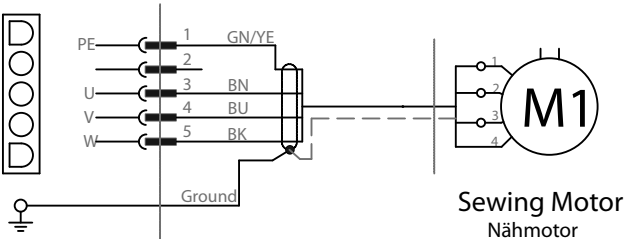

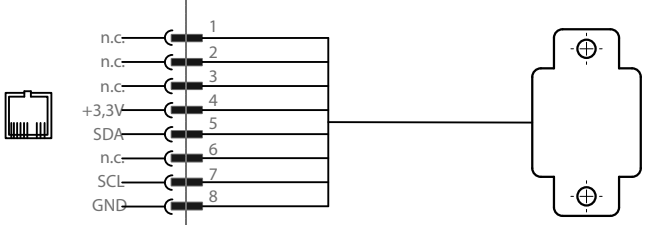

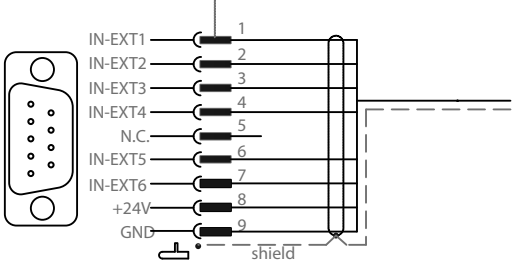

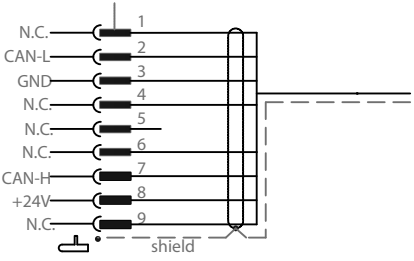
### 13.08 Internet update of control P40 CD

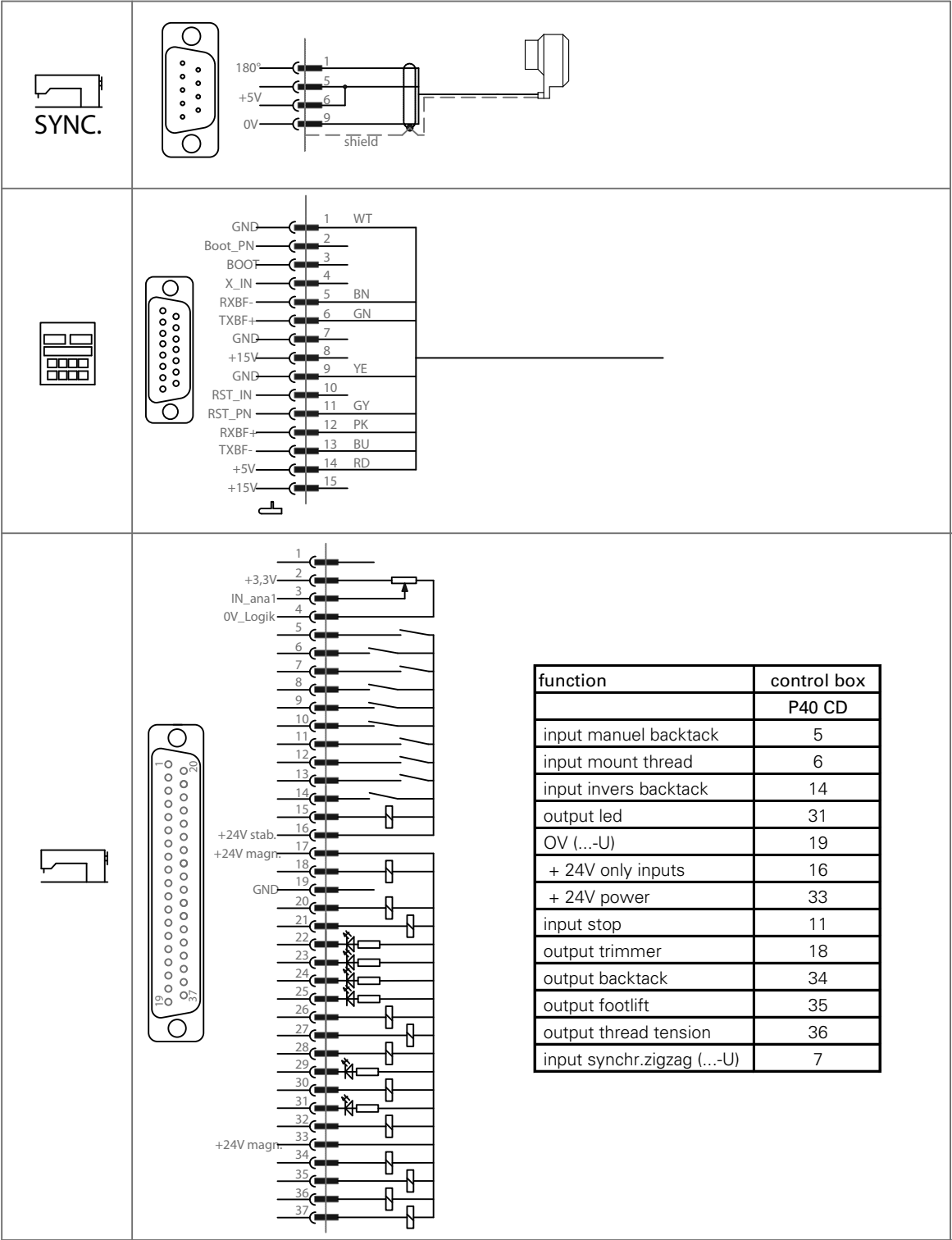
- You need a dongle with the appropriate machine software to be able to perform a control update.
- You can obtain an empty dongle using the order number **72-250 303-91**.
- The "DongleCopy" PC tool is needed to upload software onto the dongle.



A description of how to perform an Internet update of **control P40 CD** as well as the "DongleCopy" PC tool can be downloaded from the Internet address <https://partnerweb.pfaff-industrial.com/>.

14      Circuit Diagrams 91-191 584-95



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