

5622_{-840/..}

ADJUSTMENT MANUAL

This instruction manual applies to machines
from the serial number **2 815 203** and
software version **0435/002**.

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13 Adjustment



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



Unless otherwise stated, the machine must be disconnected from the power supply before all adjustment work!

Risk of injury due to accidental machine start-up!

13.01 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.

13.02 Tools, gauges and other accessories

- 1 set of screwdrivers with knife widths of 2 to 10 mm
- 1 set of wrenches with jaw widths from 6 to 22 mm
- 1 set of Allen keys of 1.5 to 6 mm
- 1 metal ruler (order no. 08-880 218-00)
- Needle rise gauge (order no. 61-111 600-01)
- Screw clamp (order no. 61-111 600-35)
- Needles, system (62-59)
- Thread and testing material

13.03 Abbreviations

t.d.c. = top dead centre

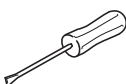
b.d.c. = bottom dead centre

13.04 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



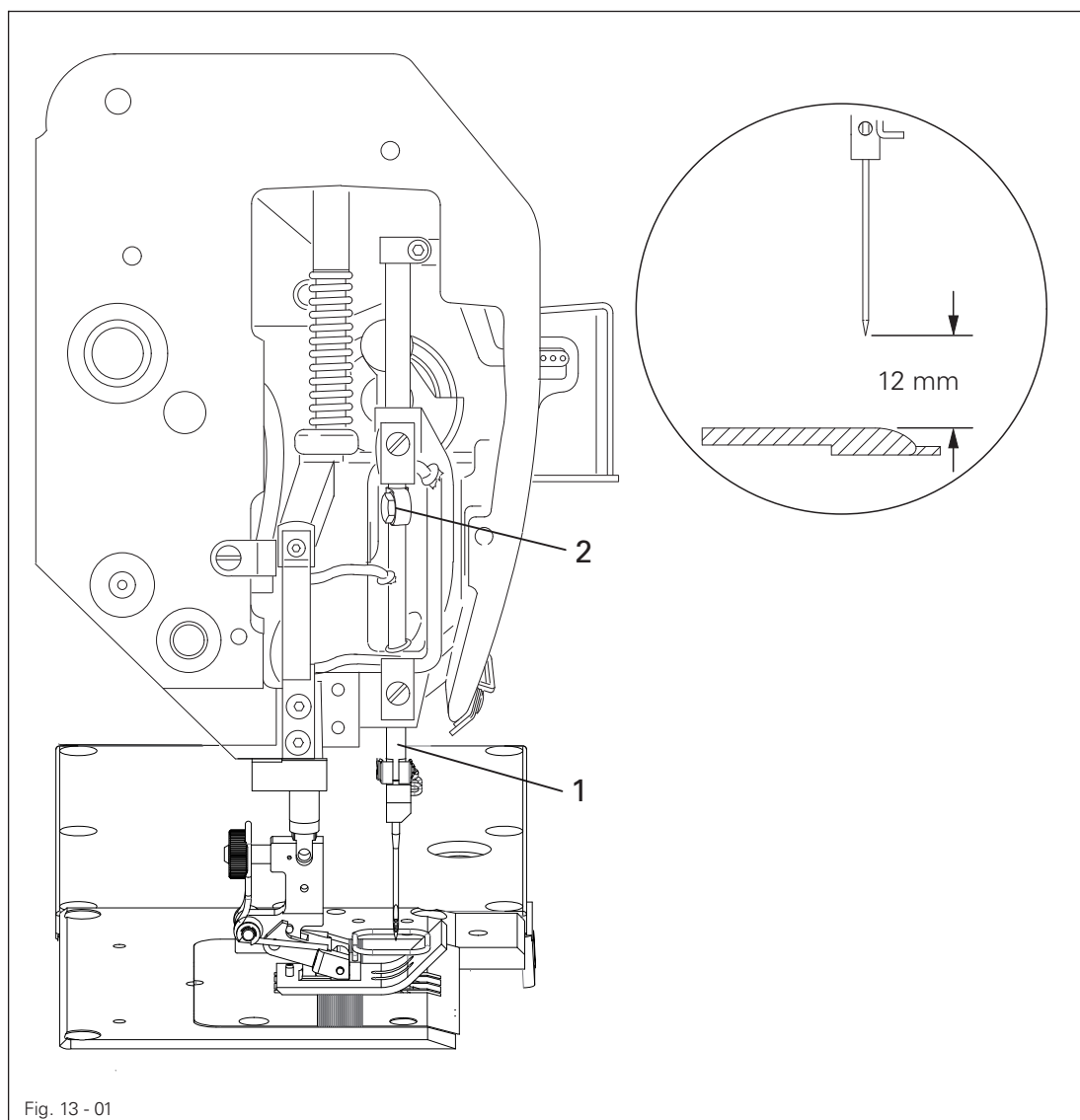
Maintenance, repairs, adjustment, service work
(only to be carried out by technical staff)

13.05 Adjusting basic machine

13.05.01 Needle height (pre-calibrating)

Rule

When the **needle bar is at t.d.c.**, the clearance between the needle point and needle plate should be approx. **12 mm** with a needle bar stroke of **36 mm**.



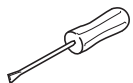
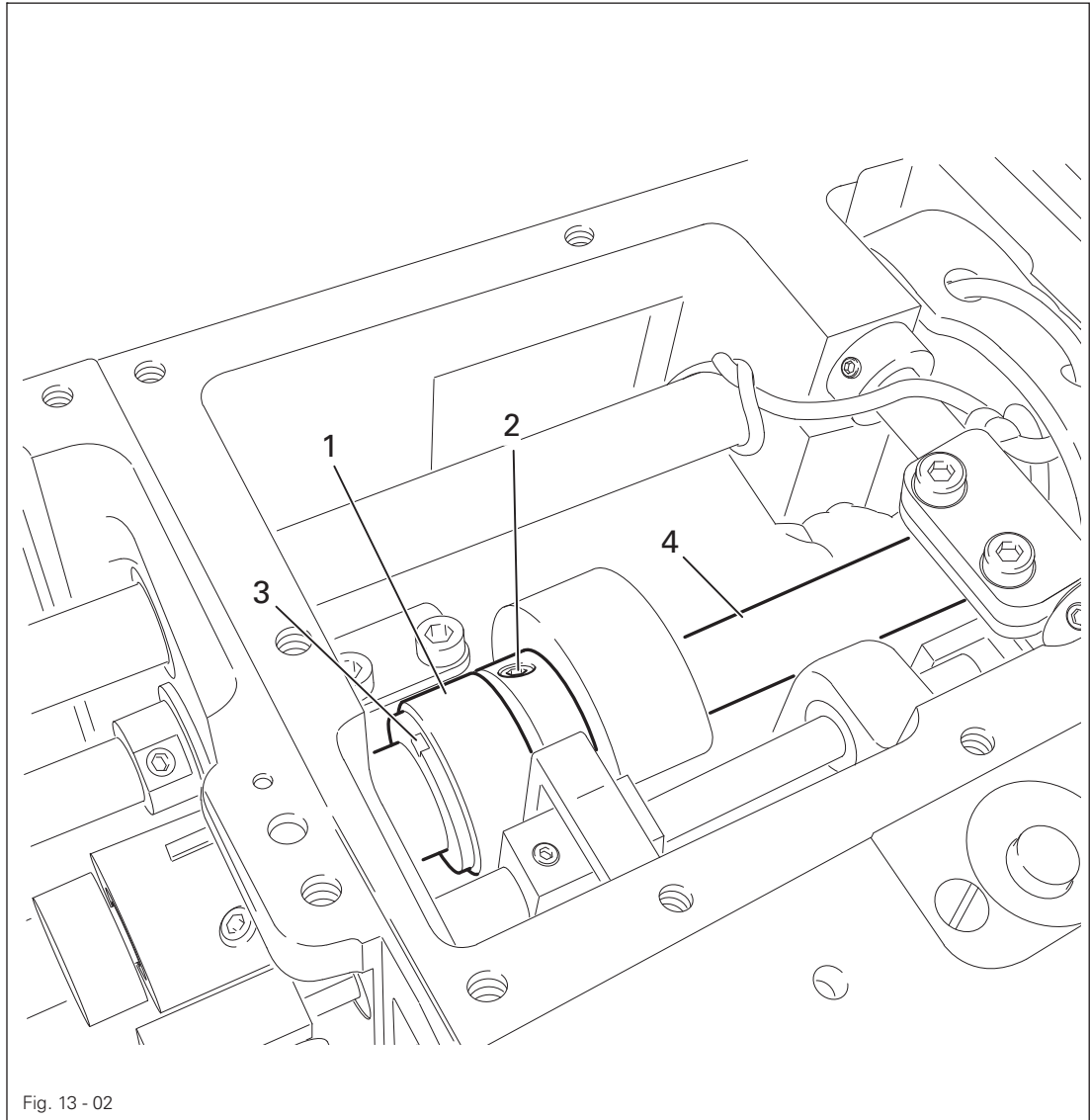
- Adjust the needle bar 1 (screw 2) without twisting according to the rule.

Adjustment

13.05.02 Feed lifting eccentric

Rule

When the needle bar is in **b.d.c.**, the groove **3** should be positioned vertically above the shaft **4**.



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

13.05.03 Spreader driving eccentric

Rule

1. When the needle bar is in b.d.c., the groove 5 of the eccentric 1 should be positioned vertically above the shaft 3.
2. The spreader holder 4 should move 6 mm.

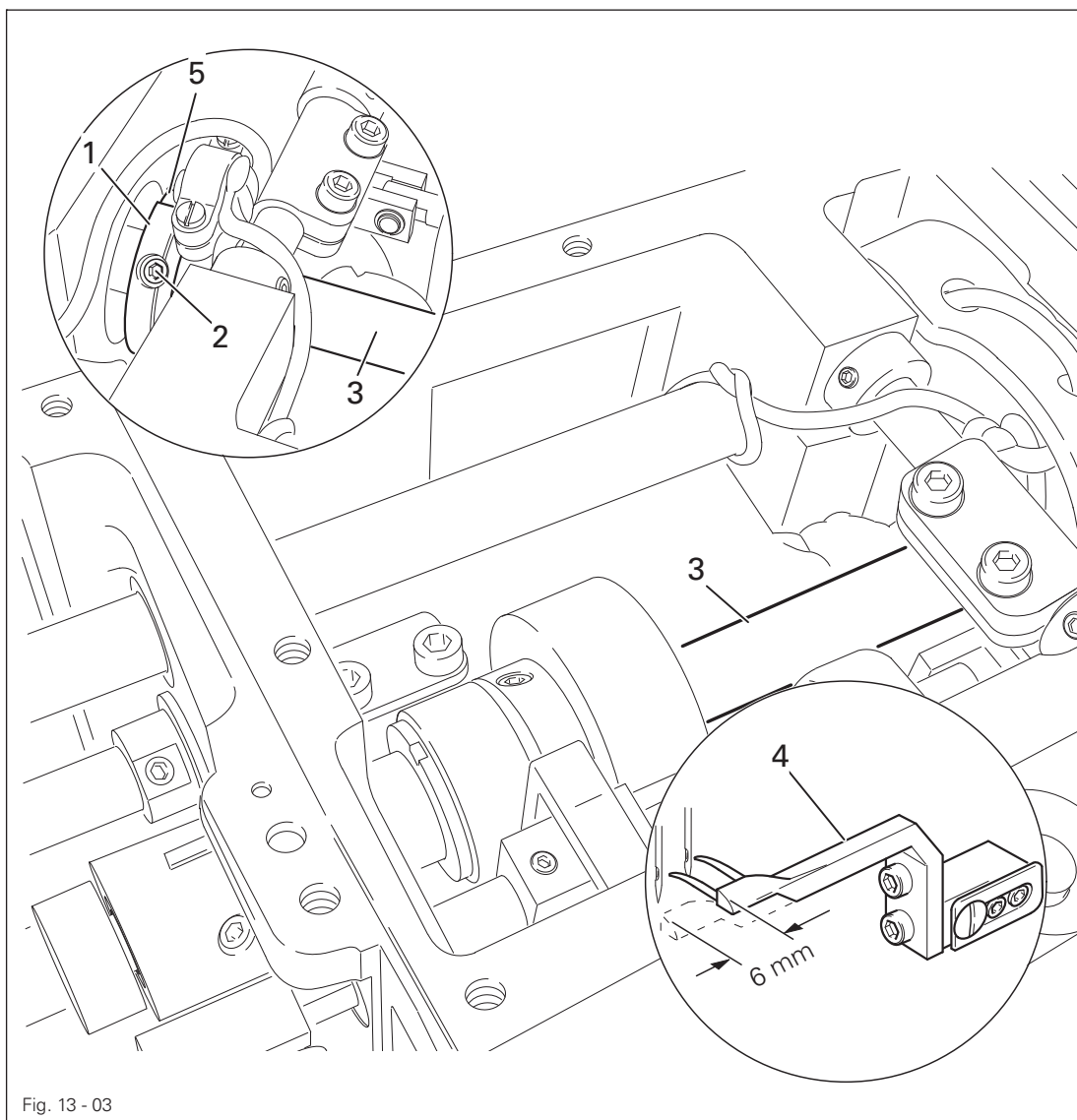
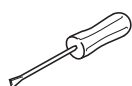


Fig. 13 - 03



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

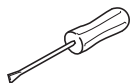
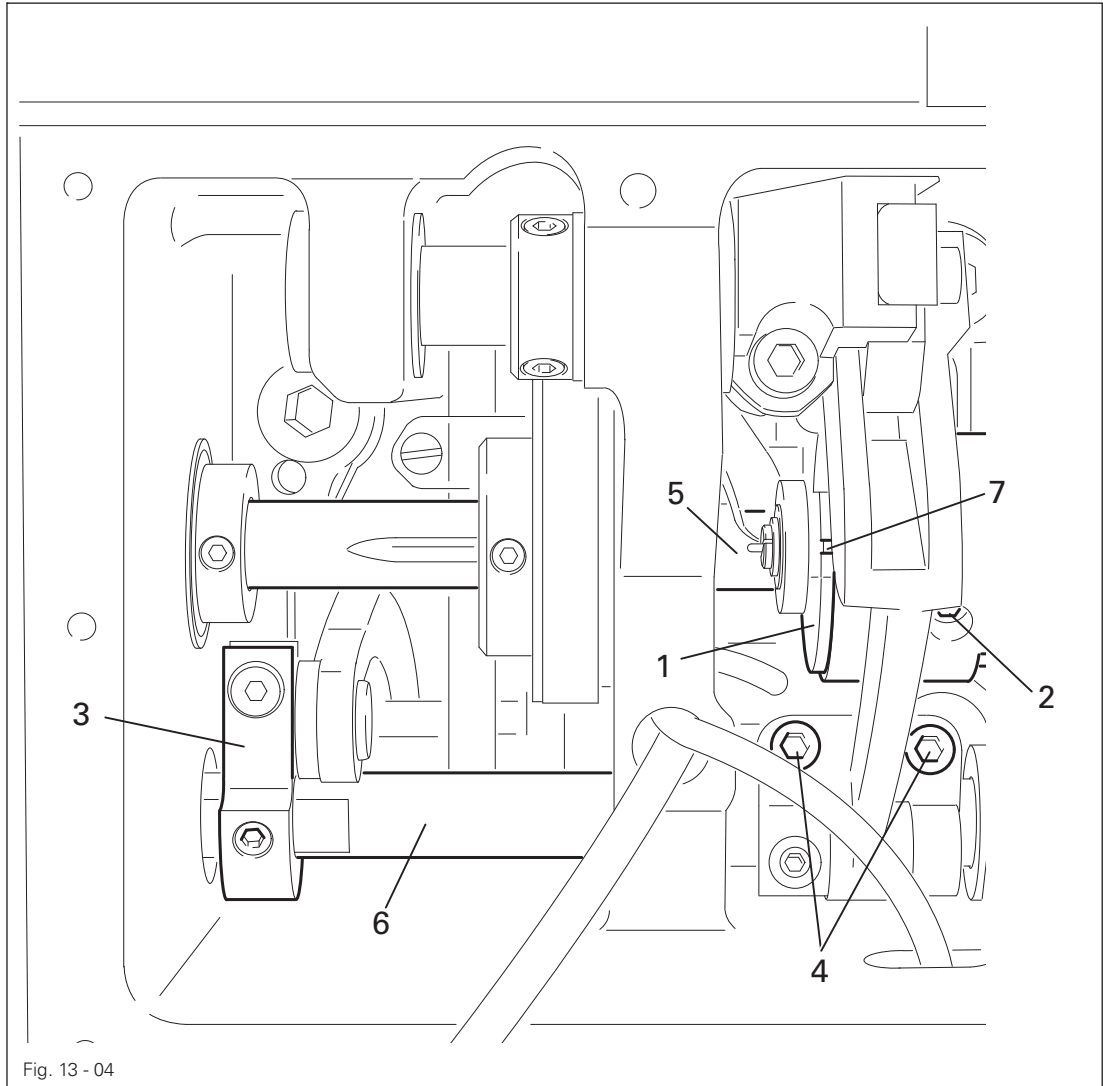
Adjustment

13.05.04 Feed driving eccentric and drive to needle bar frame

Rule

When the needle bar is in **b.d.c.**,

1. the groove **7** of the eccentric **1** should be positioned vertically above the shaft **5** and
2. the crank **3** should be positioned vertically to the shaft **6**

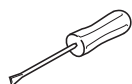
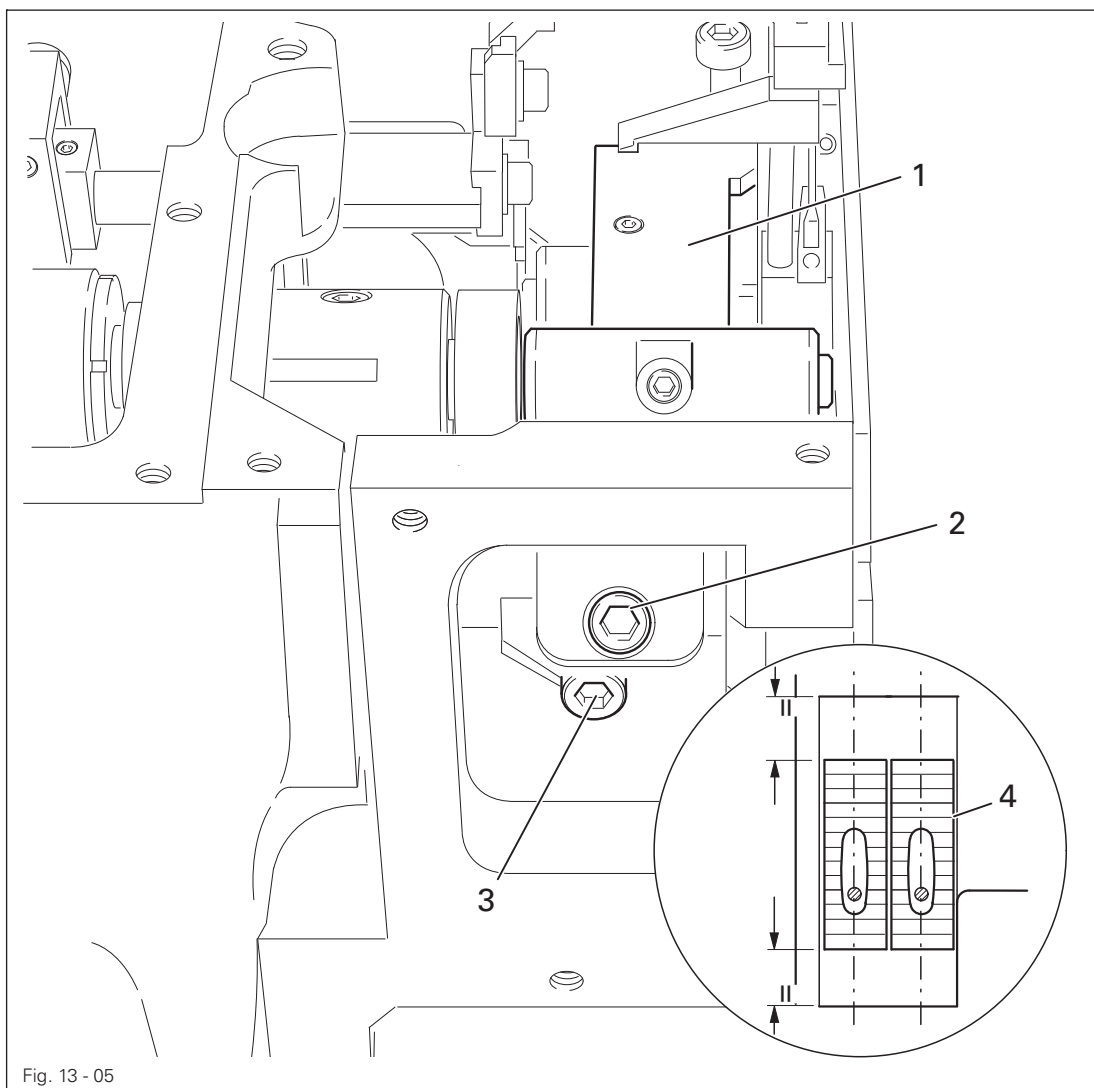


- Turn the eccentric **1** (screws **2**) according to rule 1.
- Turn the crank **3** (screw **4**) according to rule 2.

13.05.05 Feed dog position

Rule

The feed dog 4 should move laterally and longitudinally in the centre of the needle plate recess at maximum stitch length.



- Align the attachment 1 (screws 2 and 3) according to the rule.

13.05.06 Feed dog height

Rule

When the needle bar is in **b.d.c.** and with maximum stitch length regulation, the front teeth of the feed dog 2 should be positioned 1.1 mm above the needle plate.

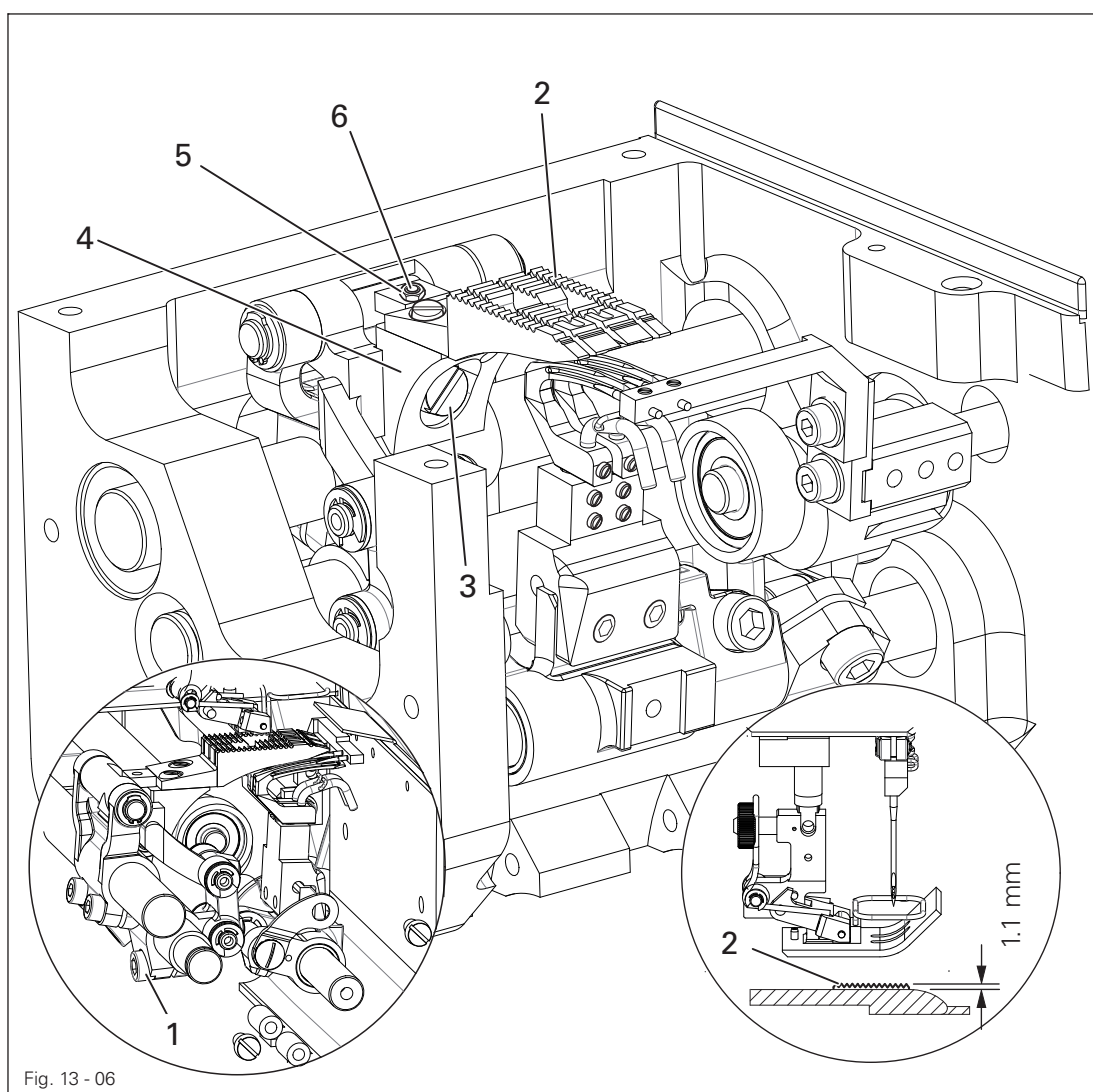
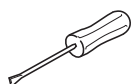


Fig. 13 - 06



- Loosen the screw 1.
- Place the feed dog 2 in parallel.
- Tighten the screw 1.
- Loosen the screw 3
- Adjust the feed bar 4 according to the rule
- Tighten the screw 3.
- Loosen the nut 5 on the stop screw 6.
- Screw in the stop screw 6 up to the stop and secure it with the nut 5.

13.05.07 Needle position to needle hole

Rule

1. The needle should pierce the middle of the needle hole crossways to the sewing direction.
2. When the needle bar is in **b.d.c.**, there should be a clearance of **0.8 mm** between the needle and the front edge of the needle hole.

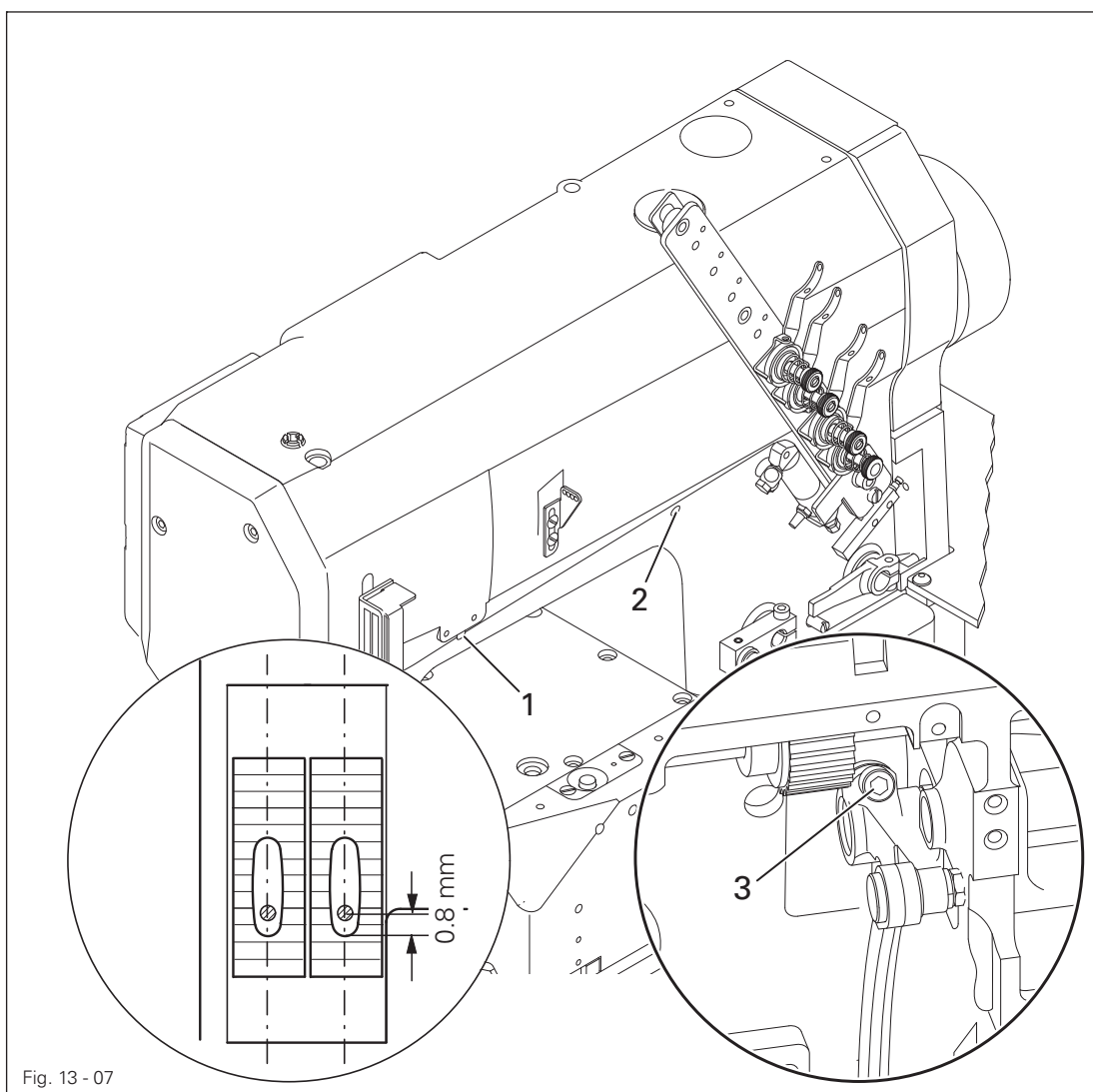
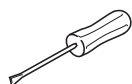


Fig. 13 - 07



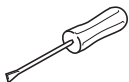
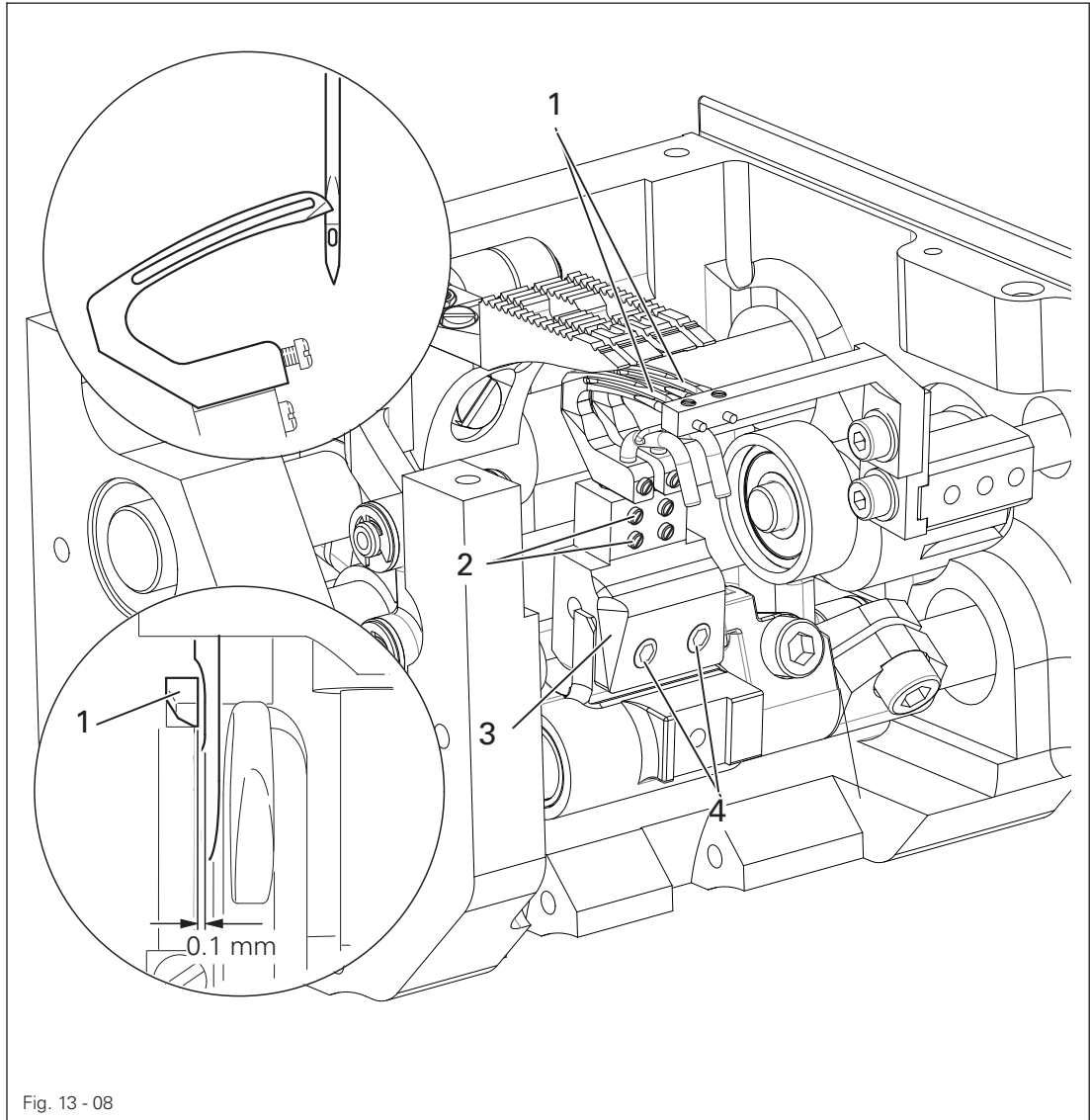
- Align the needle bar frame (screws **1**, **2** and **3**) according to **rule 1**.
- Adjust the needle bar (screw **3**) according to **rule 2**.

13.05.08 Hook position crossways to sewing direction

Rule

The hooks **1** should be parallel to the needle plate recess.

1. If the hook points are at the needle midpoint,
2. there should be a clearance of **0.1 mm** between the hook point and the needle.



- Set the hook point at the needle midpoint by turning the handwheel.
- Align the hook **1** (screws **2**) according to **rule 1**.
- Align the bracket **3** (screws **4**) according to **rule 2**.

13.05.09 Readjusting hook position to sewing direction (needle bar rise) / hook eccentric

Rule

When the needle bar is positioned **5.0 mm after b.d.c.** and stitch length regulation is **4.5 mm**, the hook point should be at the needle midpoint.

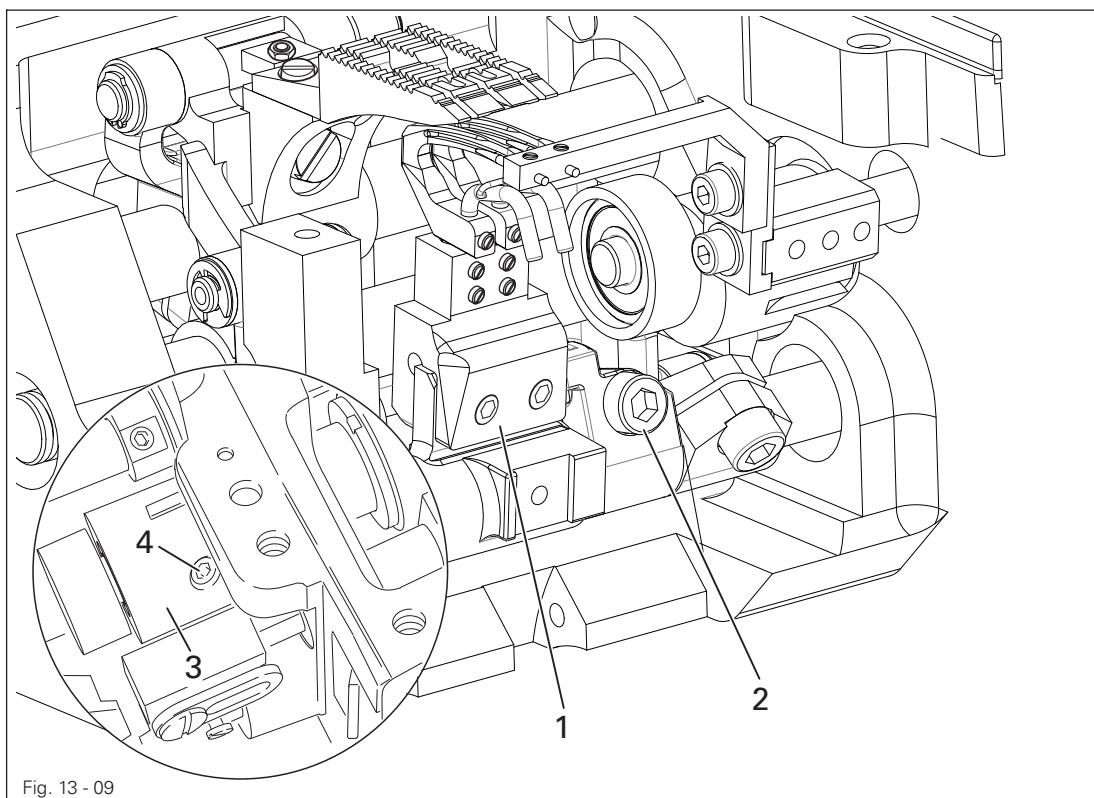
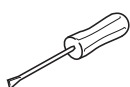


Fig. 13 - 09



Adjusting the maximum stitch length

- Move the needle bar to a position **6.0 mm after b.d.c.** by turning the handwheel.
- Secure the c-clamp to the needle bar in this position so that the upward movement of the needle bar is blocked.
- Adjust the bracket **1** (screw **2**) according to the **rule**.

Checking the hook driving eccentric

- Turn the handwheel against the direction of rotation until the c-clamp lays flat again.
- Measure the clearance between the hook point and the edge of the needle - the clearance should correspond to the needle size
- In the event that this differs, turn the handwheel in the direction of rotation until the c-clamp lays flat again and make the following adjustment:
- Measured value is larger than the needle size, turn the eccentric **3** (screw **4**) so that the hook moves to the left by half the value of the measured difference.
- Measured value is smaller than the needle size, turn the eccentric **3** (screw **4**) so that the hook moves to the right by half the value of the measured difference.
- Restore the setting indicated in the **rule** after a correction has been made to the eccentric **3**.

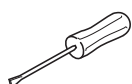
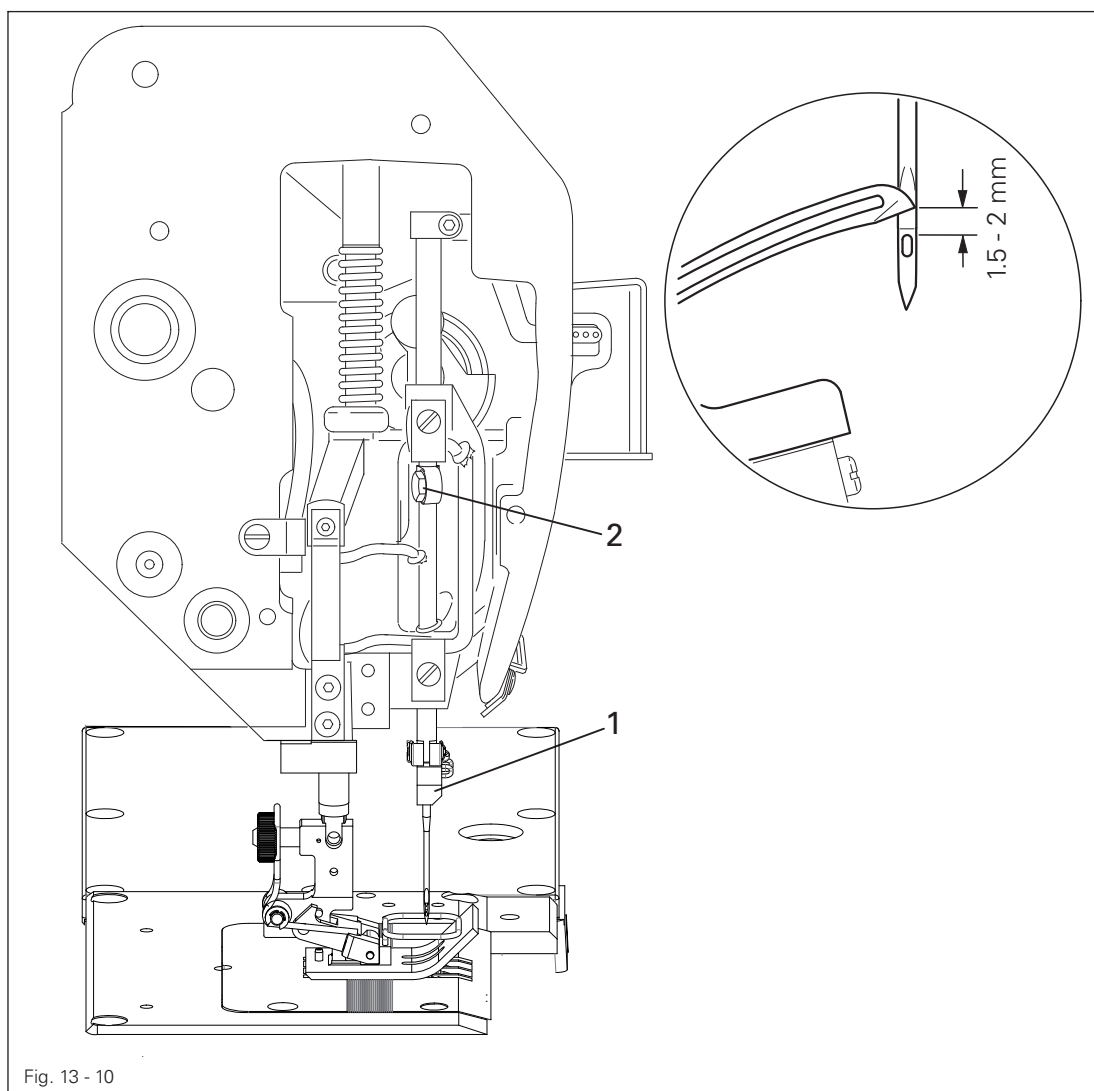


Maintain stitch length regulation for the next setting.

13.05.10 Readjusting needle height

Rule

If the hook point aligns with the front of the needle at maximum stitch length coming from behind, the lower edge of the hook should be positioned 1.5 – 2 mm above the needle eye.

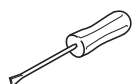
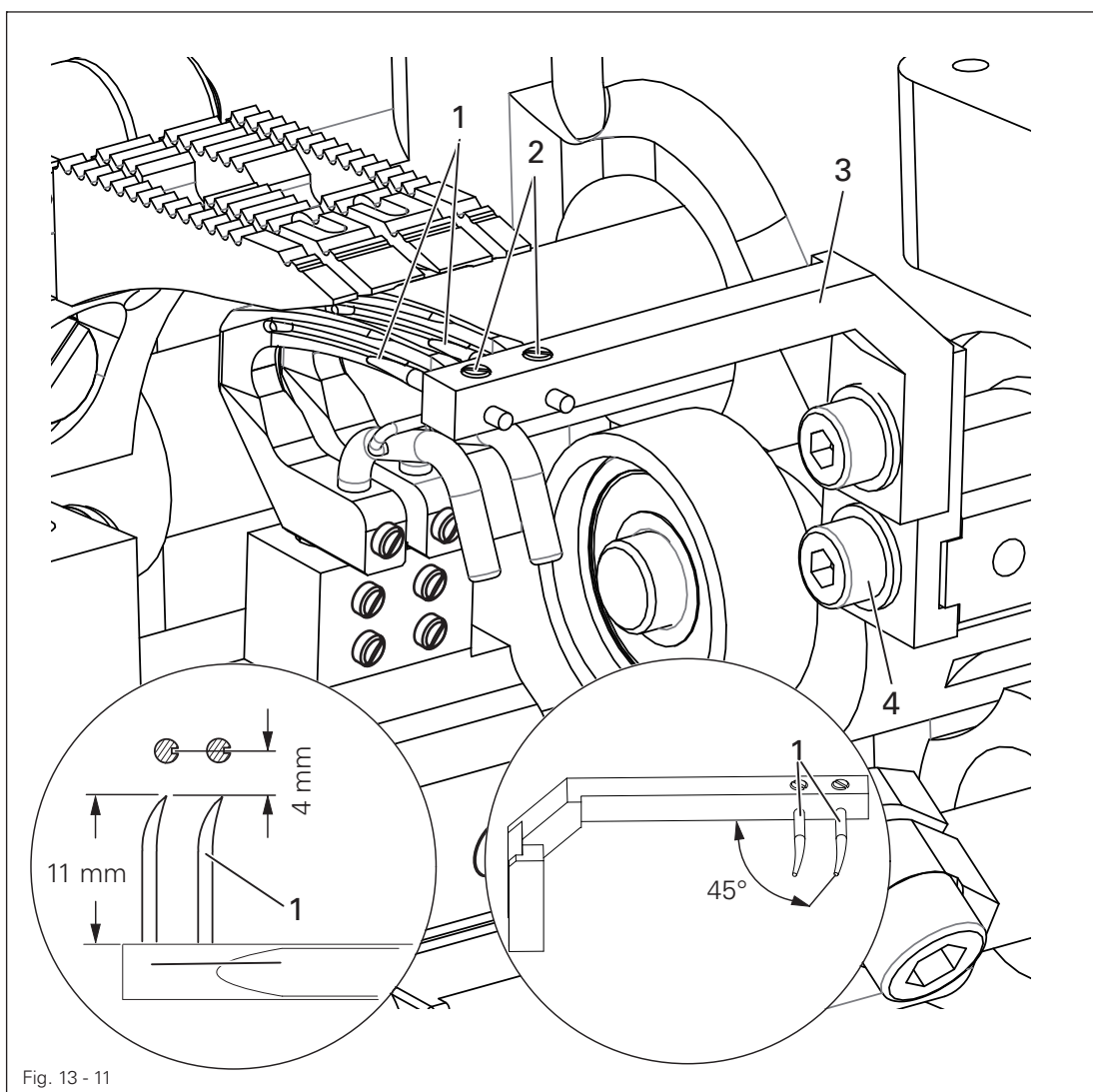


- Adjust the needle bar 1 (screw 2) according to the rule.
- Check the hook position in the sewing direction, see chapter 13.05.09 Hook position in sewing direction.

13.05.11 Spreader position in sewing direction

Rule

1. The spreader tip should be inclined approx. **45° downwards** and be **11 mm** away from the spreader holder.
2. The clearance between the tip of spreader **1** and the needle should be **4 mm** with maximum stitch length regulation and the needle bar positioned in b.d.c.



- Adjust the spreader **1** (screws **2**) according to **rule 1**.
- Adjust the bracket **3** (screw **4**) according to **rule 2**.

13.05.12 Spreader position crossways to sewing direction

Rule

1. The tips of the spreader **1** should be **0.1 mm** away from the hook at the side.
2. The tips of the spreader **1** should be positioned **0.1 mm** above the back of the hook.

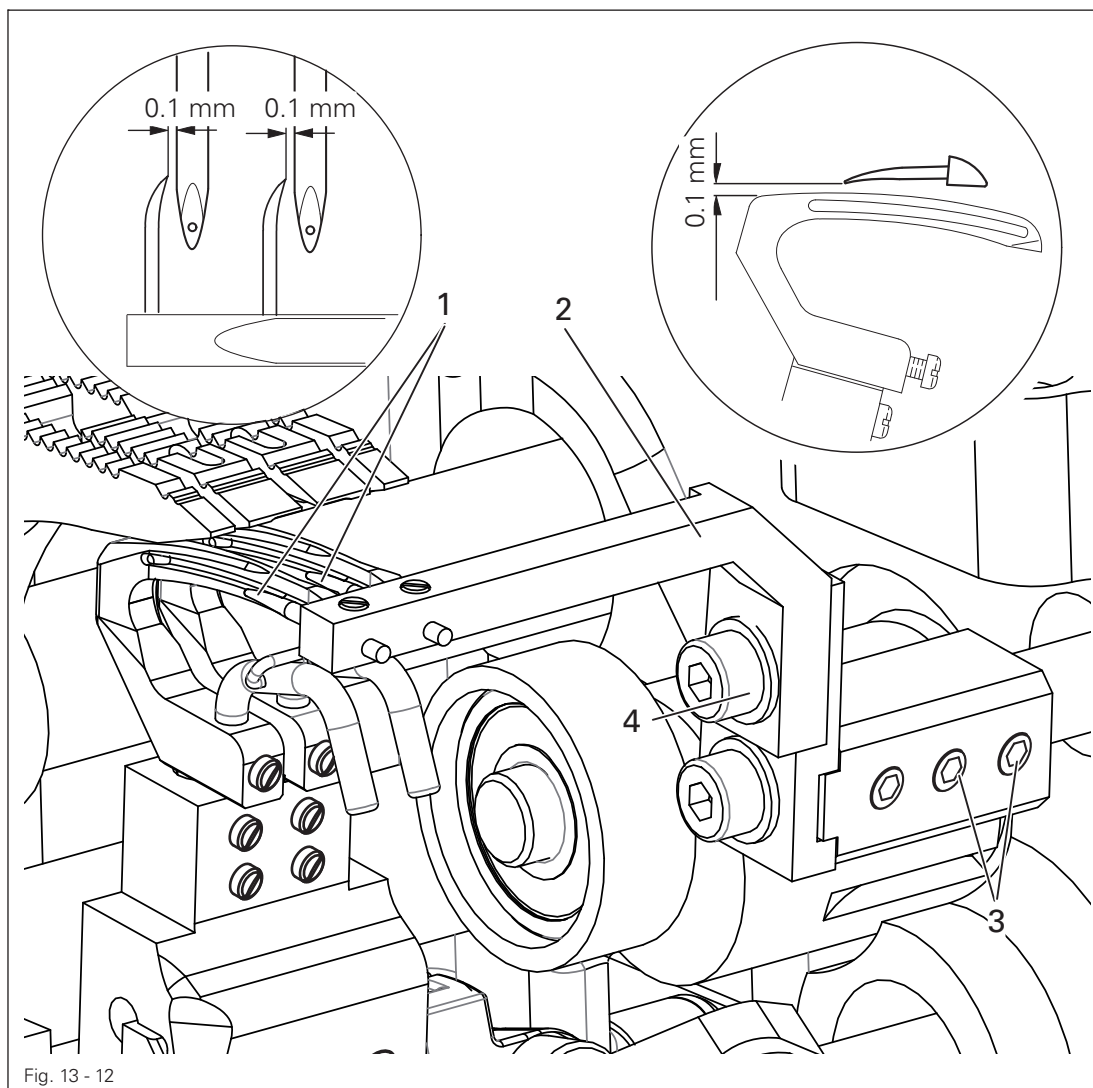
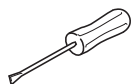


Fig. 13 - 12



- Place the hook eye next to the tips of the spreader **1** by turning the handwheel.
- Align the bracket **2** (screws **3**) according to **rule 1**.
- Turn the handwheel until the tips of the spreader **1** are positioned above the back of the hook.
- Adjust the bracket **2** (screw **4**) according to **rule 2**.

13.05.13 Needle guard and thread-loop support

Rule

If the hook point is positioned at the needle midpoint coming from behind, the

1. guard **1** should rest gently on the needle and the lower edge of it should be positioned **0.5 mm** above the needle point.

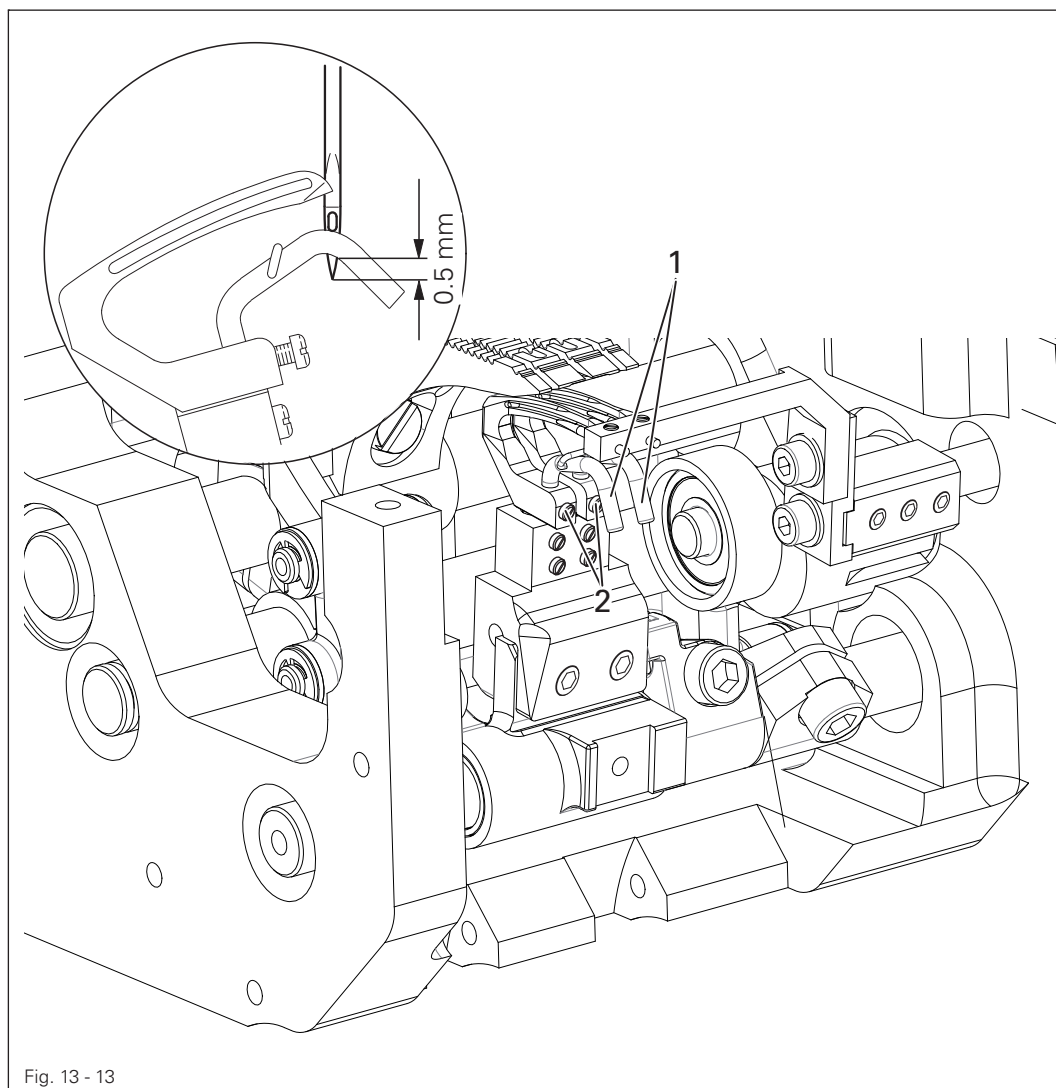
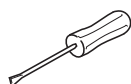


Fig. 13 - 13

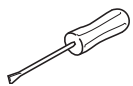
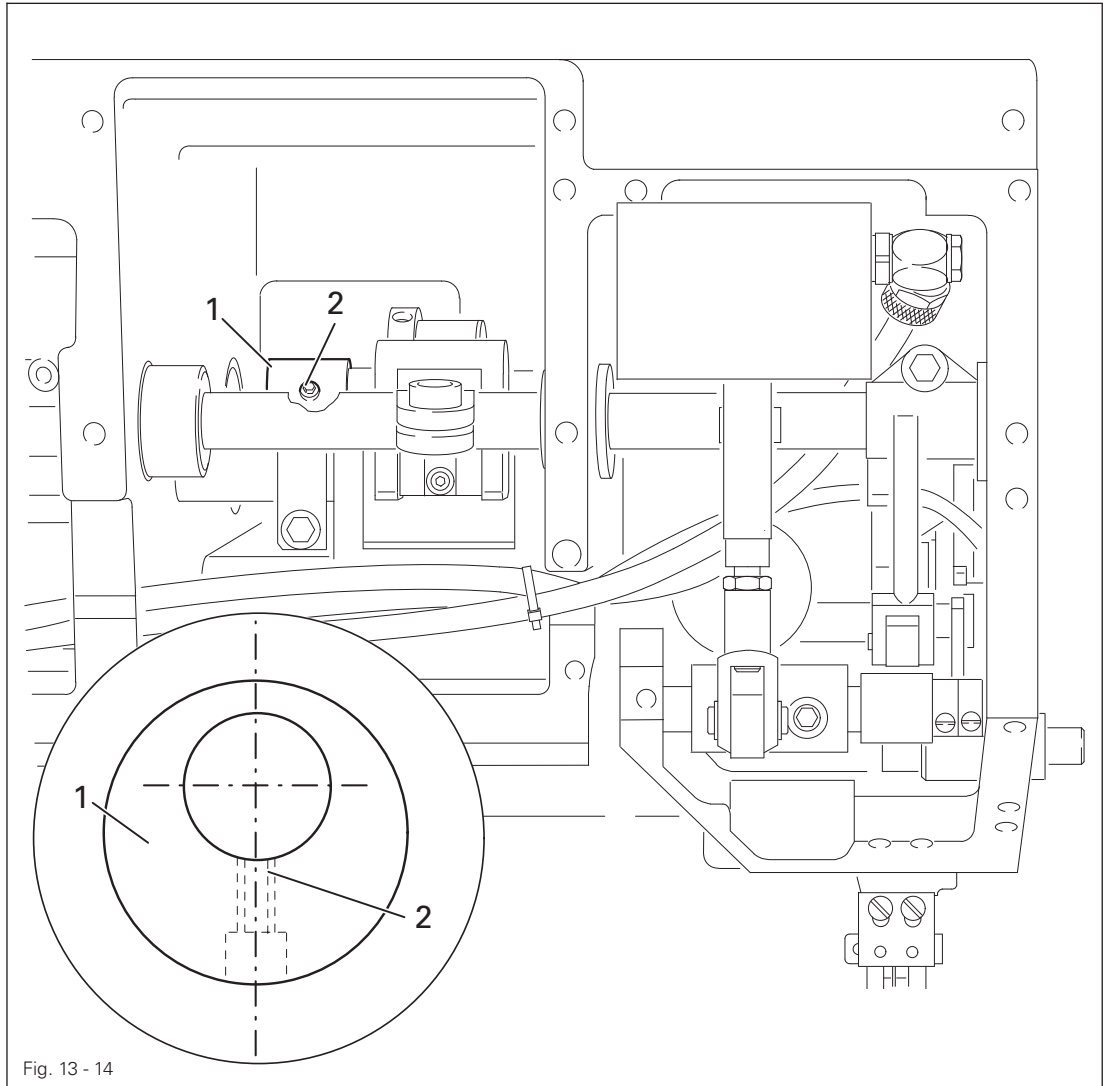


- Align the guard **1** (screws **2**) according to rule 1.

13.05.14 Compensation weight

Rule

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

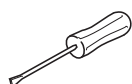
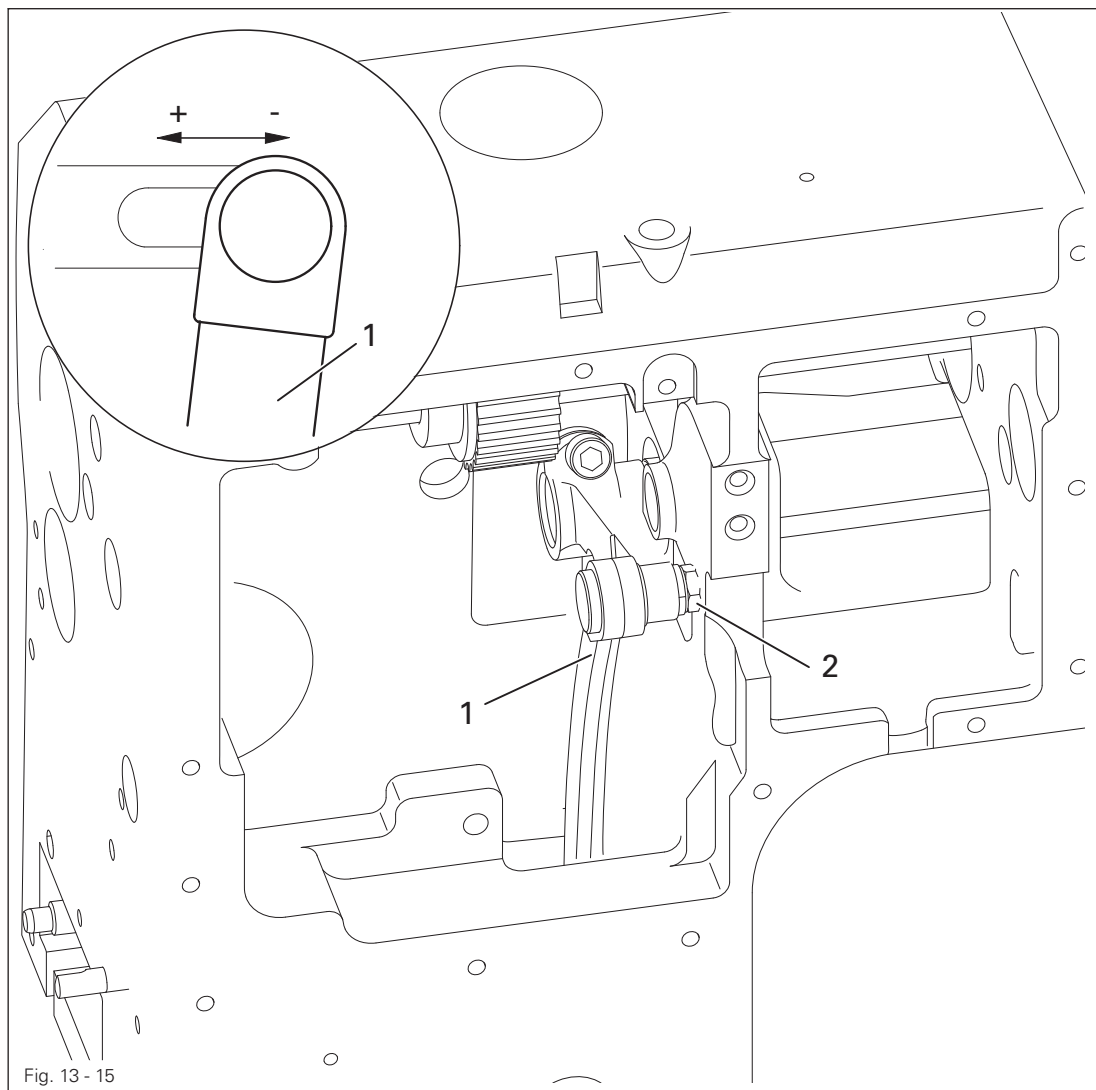


- Turn the compensation weight **1** (screw **2**) according to the rule.

13.05.15 Feed difference

Rule

The needle and bottom transporter should feed in the same way with maximum stitch length regulation and when turning the handwheel.

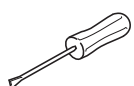
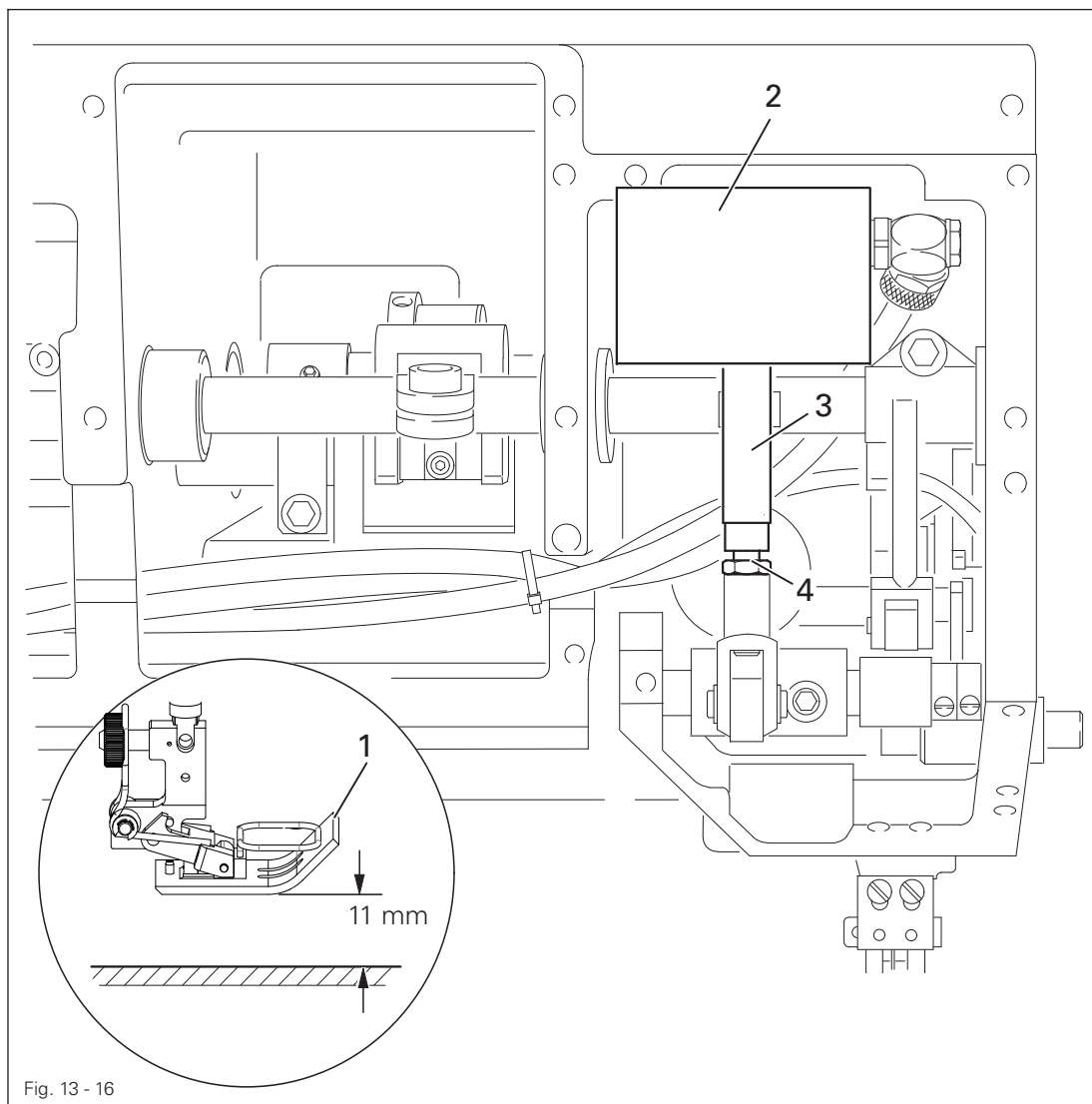


- Adjust the connecting rod 1 (nut 2) according to the rule.
- Connecting rod by "+" = larger needle feed or
by "-" = smaller needle feed.

13.05.16 Clearance between presser foot and needle plate

Rule

There should be a clearance of approx. **11 mm** between the presser foot **1** and needle plate when the presser foot **1** is raised.

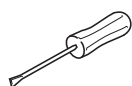
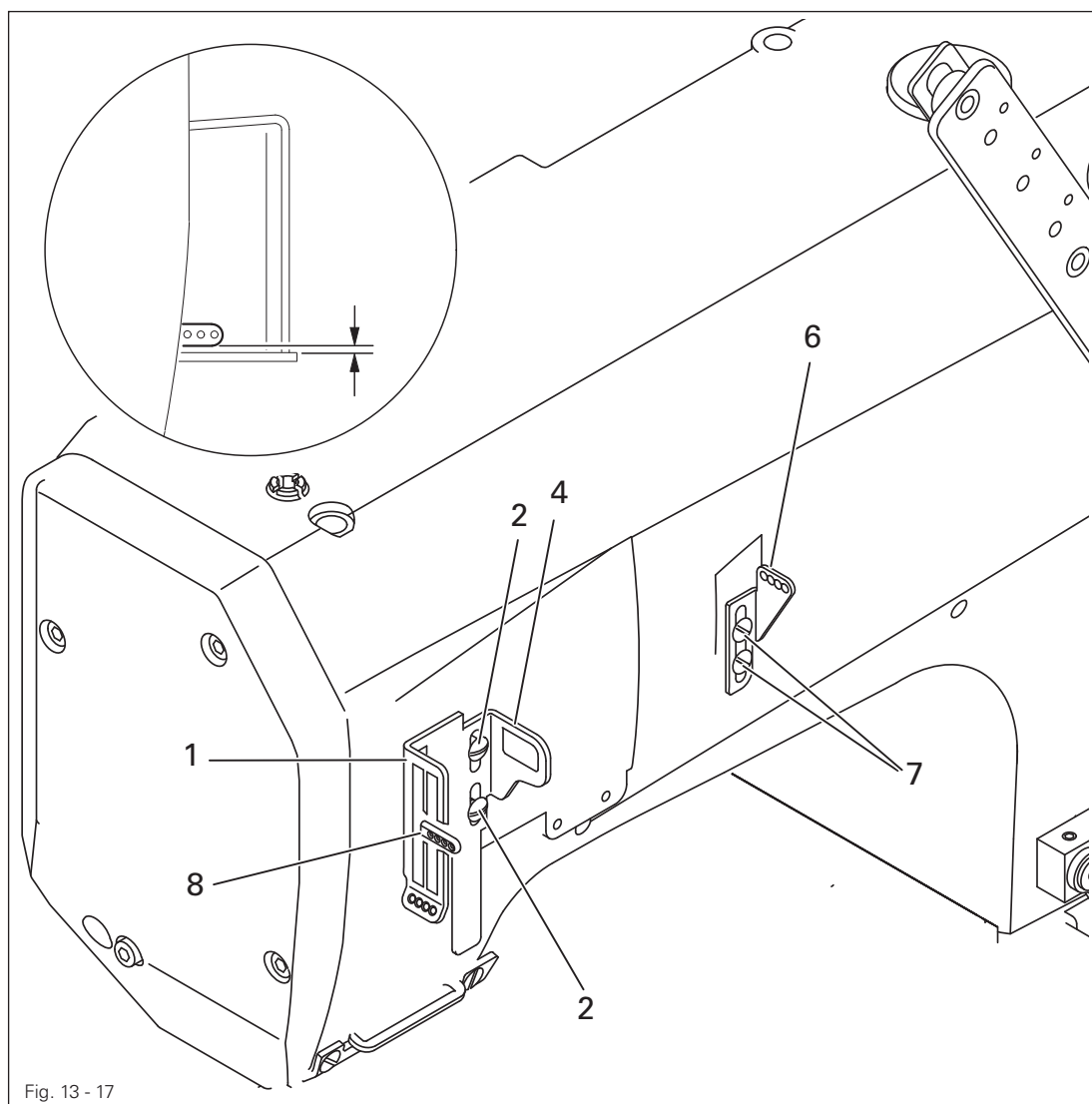


- Raise the presser foot **1** above the cylinder **2**.
- Turn the piston rod **3** (nut **4**) according to the rule.

13.05.17 Needle thread regulation and take-up lever guard

Rule

1. When the needle bar is in b.d.c., is in b.d.c., there should be a clearance of approx. **1 mm** between the thread lever **8** and the take-up lever guard **1**.
2. The thread lever **8** should be positioned centrally to the take-up lever guard **1** looking from the side.
3. The screws in the elongated holes of the slack thread regulator **4** and thread guides **6** should be centred.



- Adjust the take-up lever guard **1** (screws **2**) according to **rules 1 and 2**.
- Adjust the thread regulator **4** (screws **5**) and the thread guide **6** (screws **7**) according to **rule 3**.

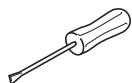
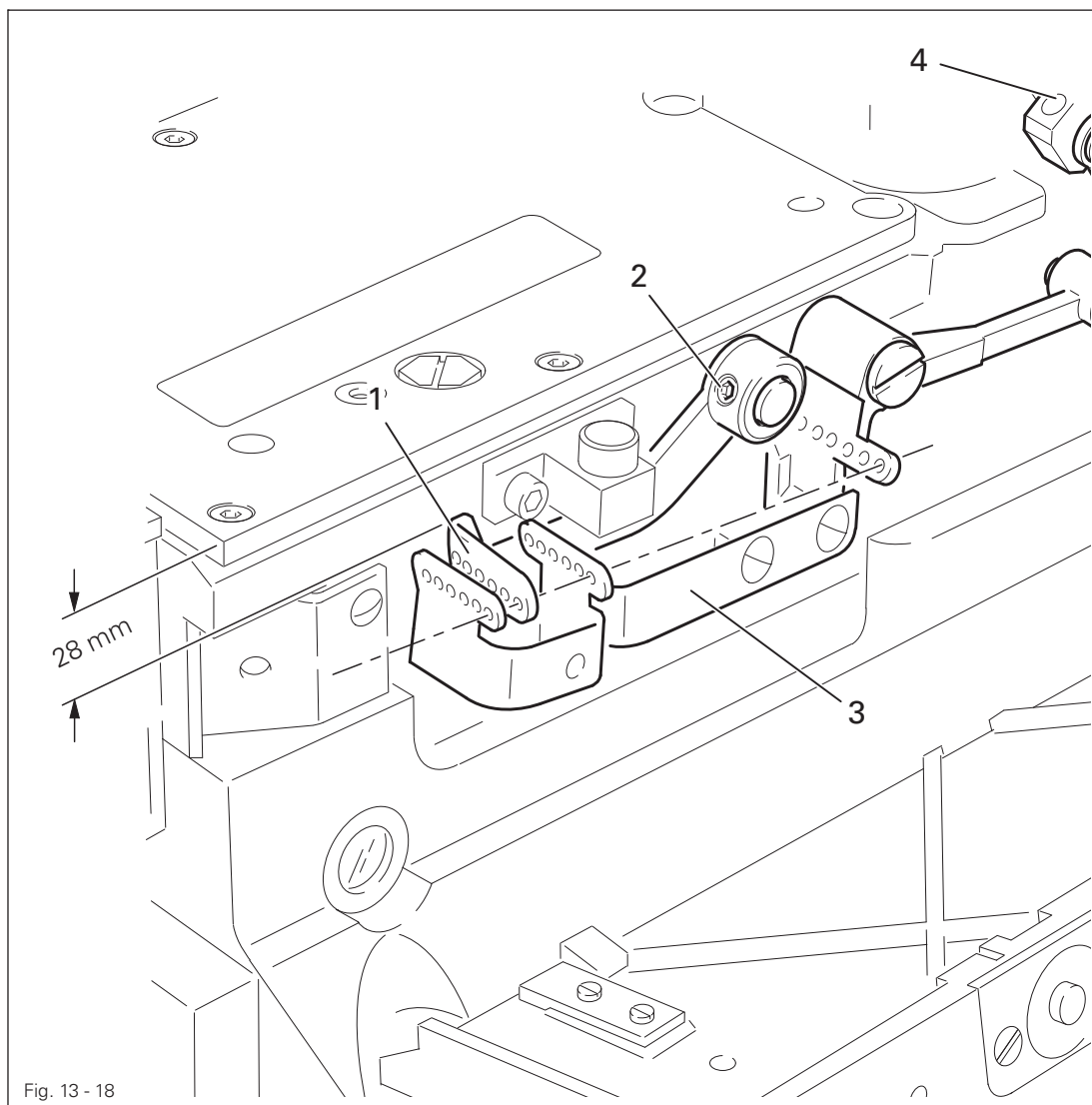


Depending on the material and thread.

13.05.18 Looper thread regulation

Rule

1. The clearance between the thread puller **1** in its upper turning point and the upper edge of the bed plate should be **28 mm** with maximum stitch length regulation.
2. The eyes of the thread puller **3** should align with the eyes of the thread puller **1**.



- Adjust the thread puller **1** (screws **2**) according to **rule 1**.
- Adjust the thread puller **3** (screw **4**) according to **rule 2**.

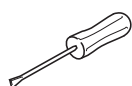
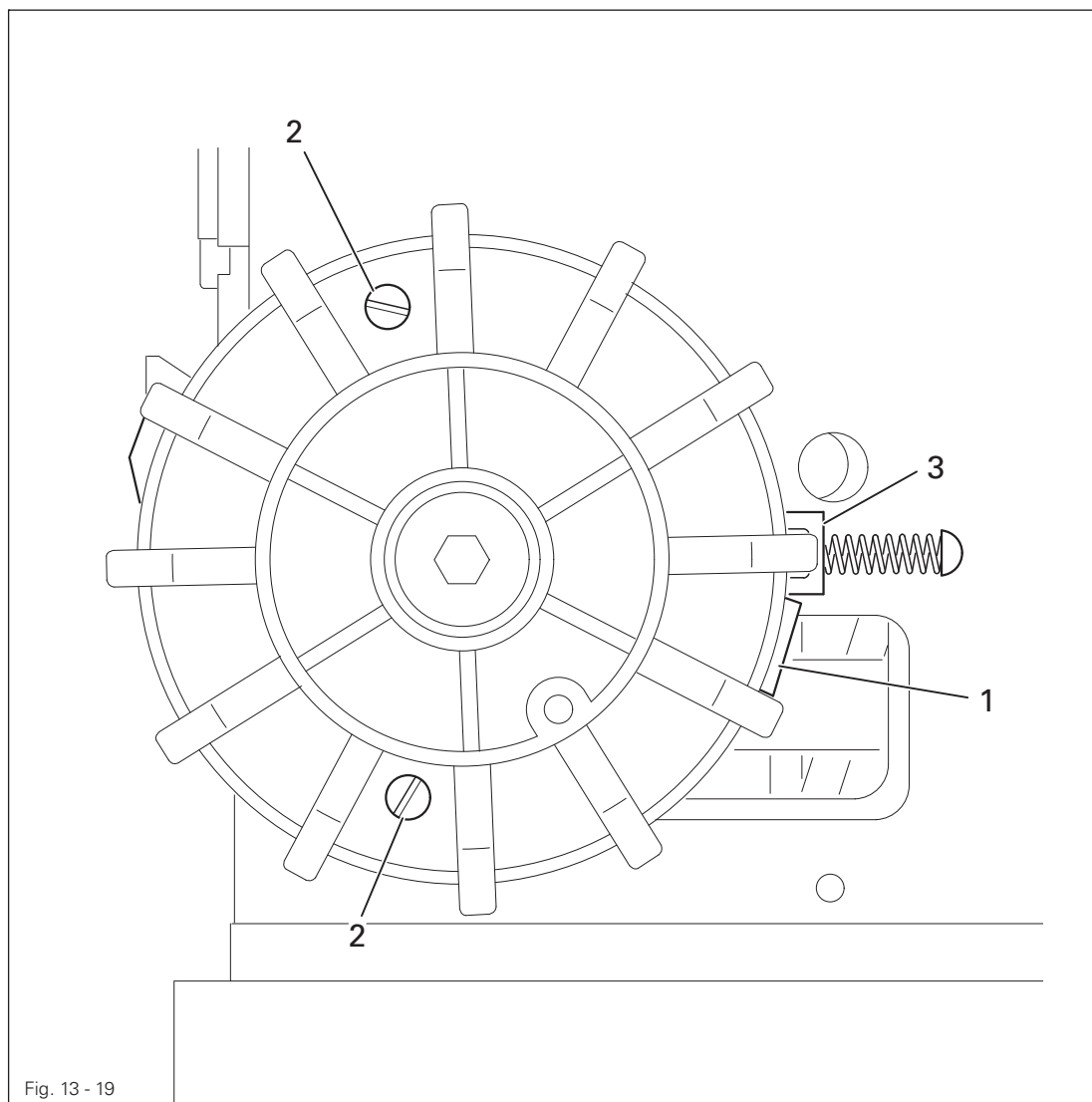


The setting of the thread puller **3** is dependent on the sewing conditions. More or less thread can be pulled if required depending on the corresponding setting.

13.05.19 Stitch length limitation

Rule

The stop element 1 should rest on the stop 3 at the desired maximum stitch length.



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

13.06 Parameter settings

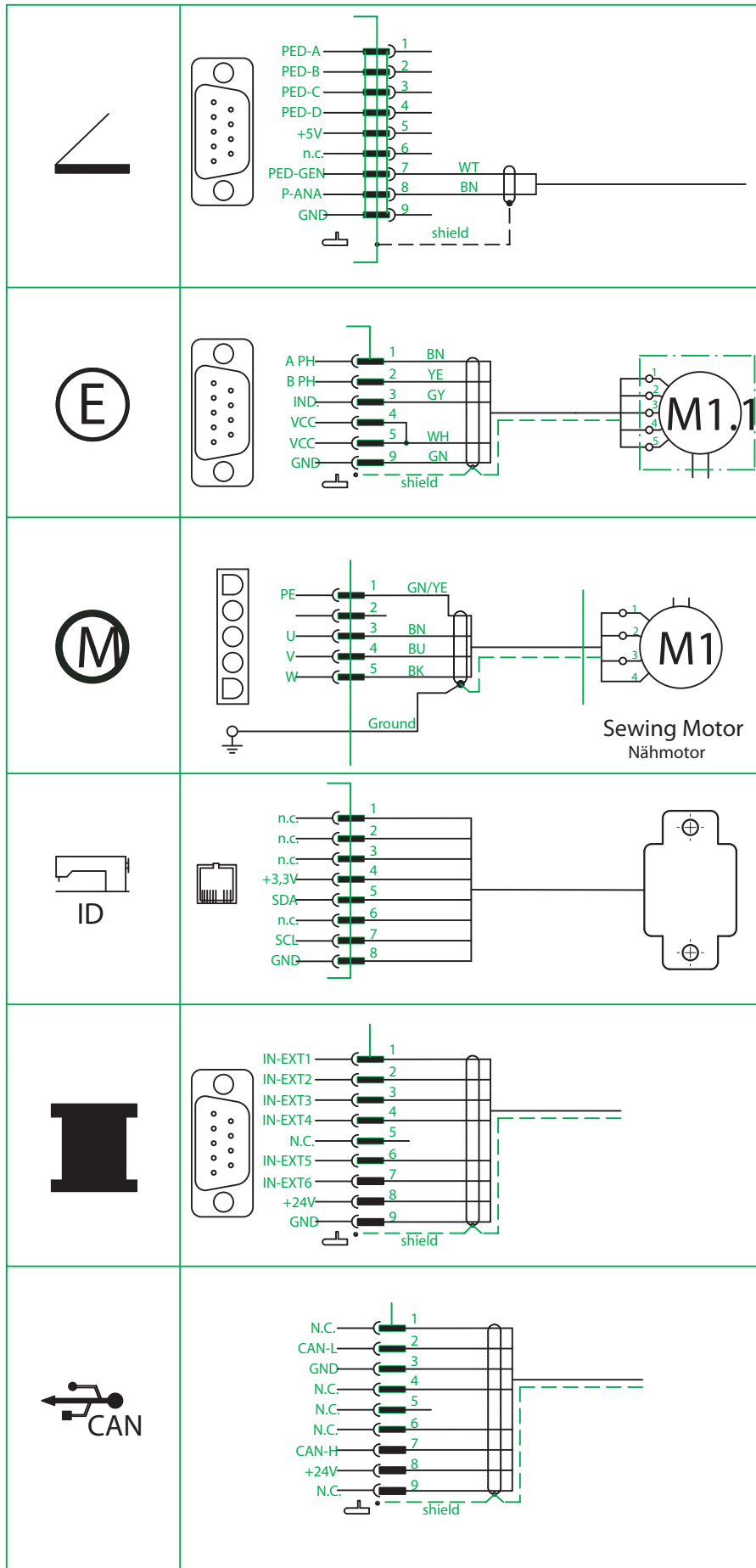
- The separate parameter list for the machine describes how to select the user level and change parameters (see **chapter 1.1.2 Technician level**).

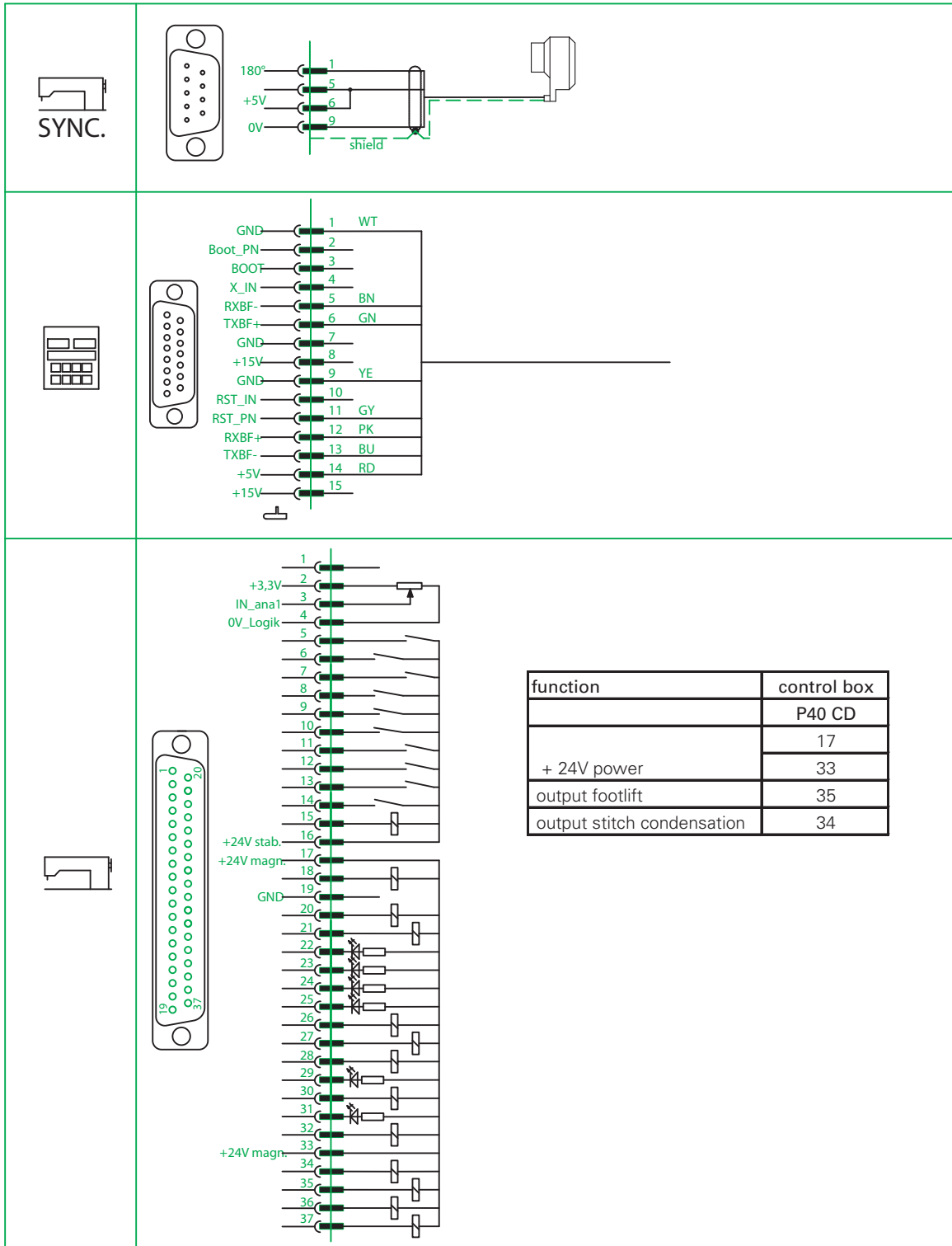
13.07 Internet update of control P40 CD

- 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/> .







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