PFAFF® Industrial

1295
1296

ADJUSTMENT MANUAL

This adjustment manual applies to machines from the serial number **7 262 456** and software version **0435/0**02 onwards.

296-12-19 310/002
Adjustment manual engl. 10.15

PFAFF Industriesysteme
und Maschinen GmbH

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13 Adjustment

The illustrations in this chapter show the **PFAFF 1296** two-needle sewing machine.

Various settings must be carried out only on one side with the **PFAFF 1295** single-needle sewing machine, i.e. in the right hook area. An indication is given in the respective chapters.

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!

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. 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 knife widths from 2 to 10 mm
- 1 set of wrenches with jaw widths from 7 to 14 mm
- 1 set of Allen keys from 2 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)
- Top feed lift gauge (order no. 61-111 633-61).

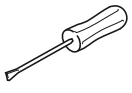
13.02 Abbreviations

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 Adjusting basic machine

13.04.01 Feed dog position crossways to sewing direction

Rule
The bottom transporter should have the same clearance on the right and left in the needle plate cutout.

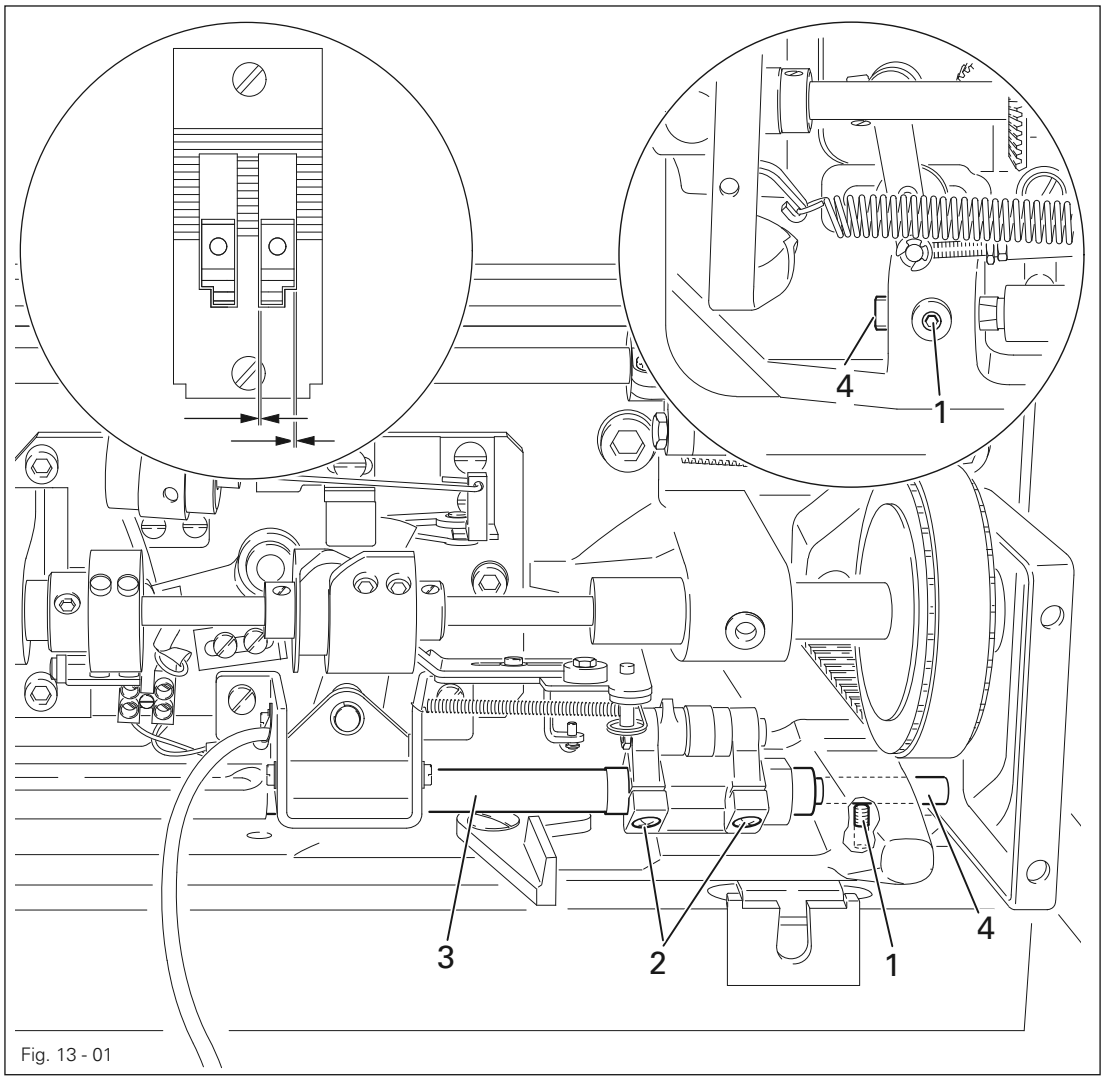
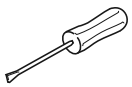


Fig. 13 - 01



- Loosen both of the screws **1** and **2.**
- Adjust the rock shaft **3** according to **rule 1.**
- Tighten the screws **1**

The surfaces of the tacks **4** must face the screws **1** and the rock shaft **3** must have no backlash nor move sluggishly.

- The screws **2** remain loosened for the subsequent adjustments.

13.04.02 Feed dog position in sewing direction

Rule

The bottom transporter may not abut the needle plate cutout in its front and rear turning point with maximum stitch length regulation.

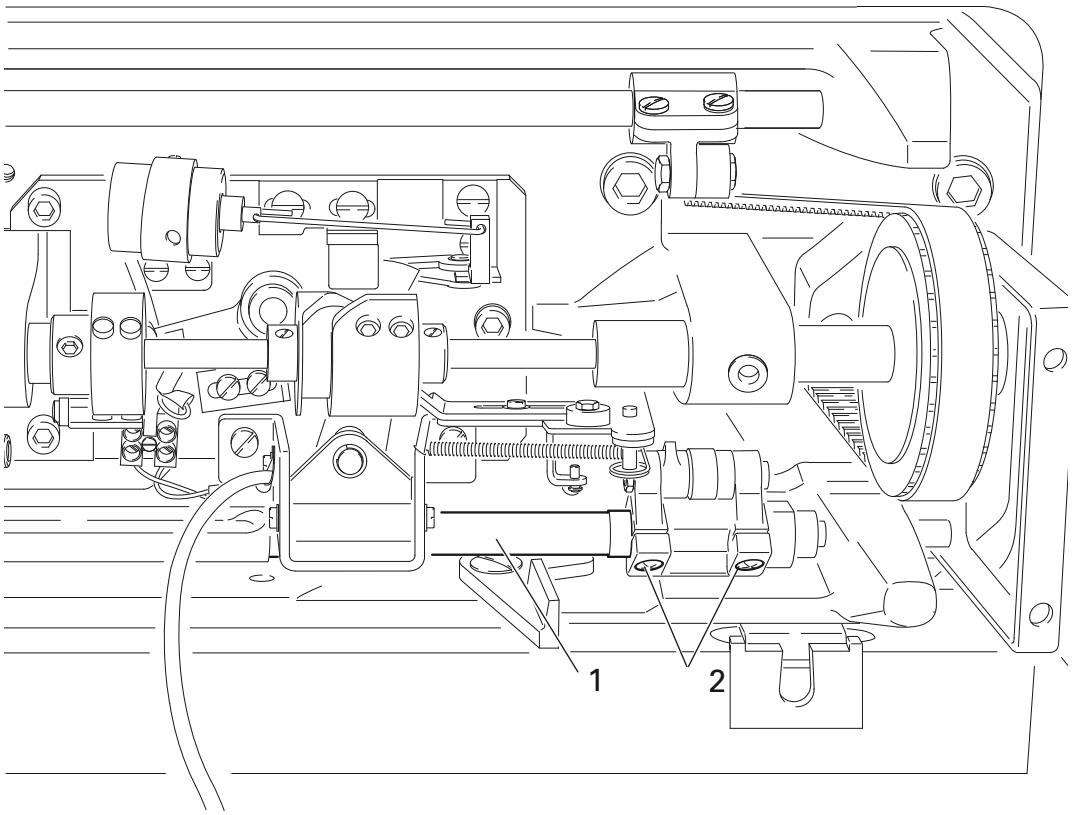


Fig. 13 - 02

- Set the maximum stitch length.
- Turn the rock shaft **1** according to the **rule** and tighten the screws **2.**

13.04.03 Feed dog height

Rule
The bottom transporter should protrude above the needle plate by the tooth height in its upper turning point at stitch length regulation "0".

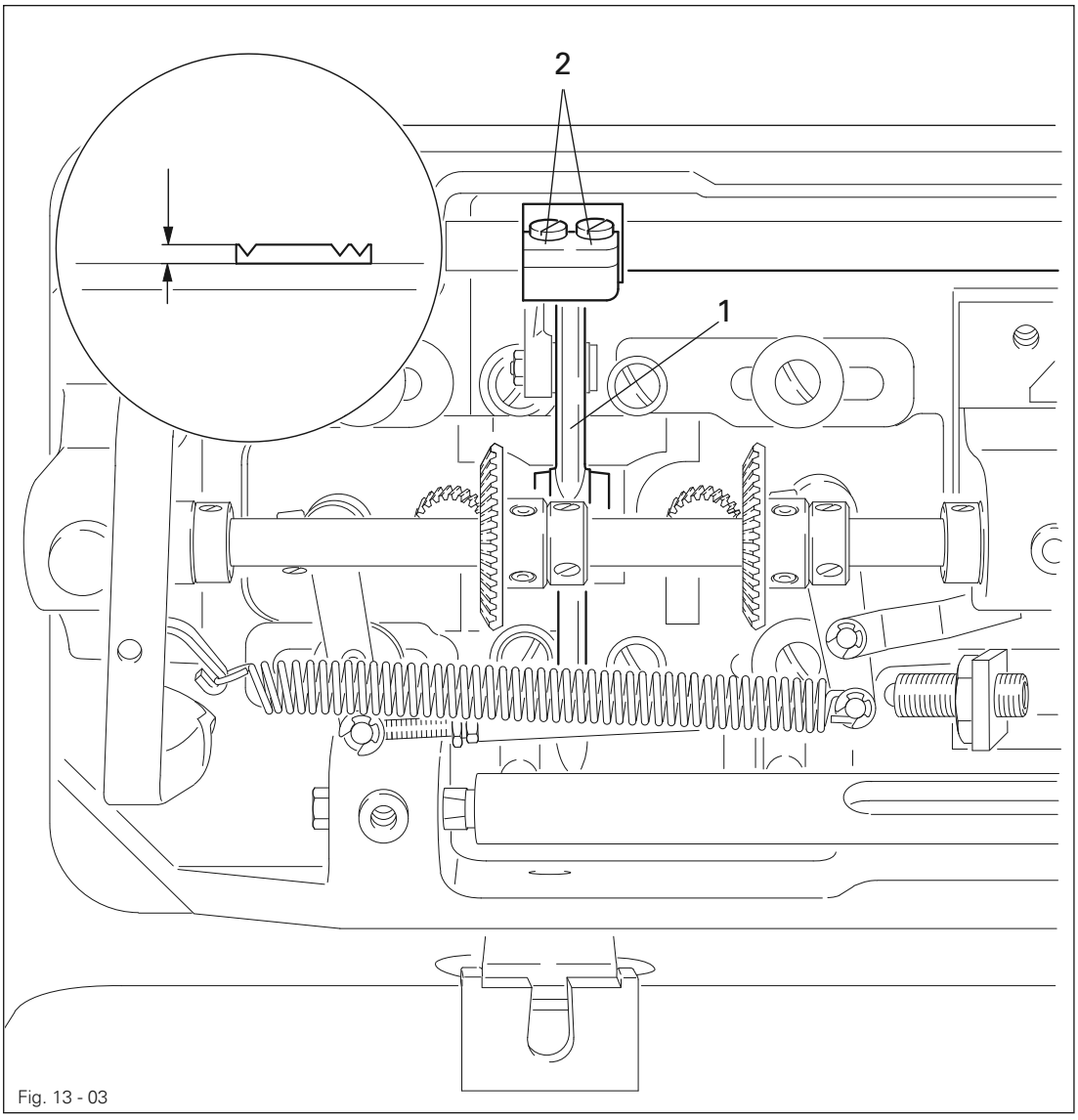


Fig. 13 - 03

- Set the stitch length to "0".
- Move the feed dog to its upper turning point by turning the handwheel.
- Adjust the bracket 1 (screws 2) according to the **rule**.

The feed dog height can be reduced slightly if required in machines without a bottom feed lifting stage (without P).

13.04.04 Needle position to needle hole

Rule
The needle should pierce the middle of the needle hole exactly
(with stitch length regulation "**0**").

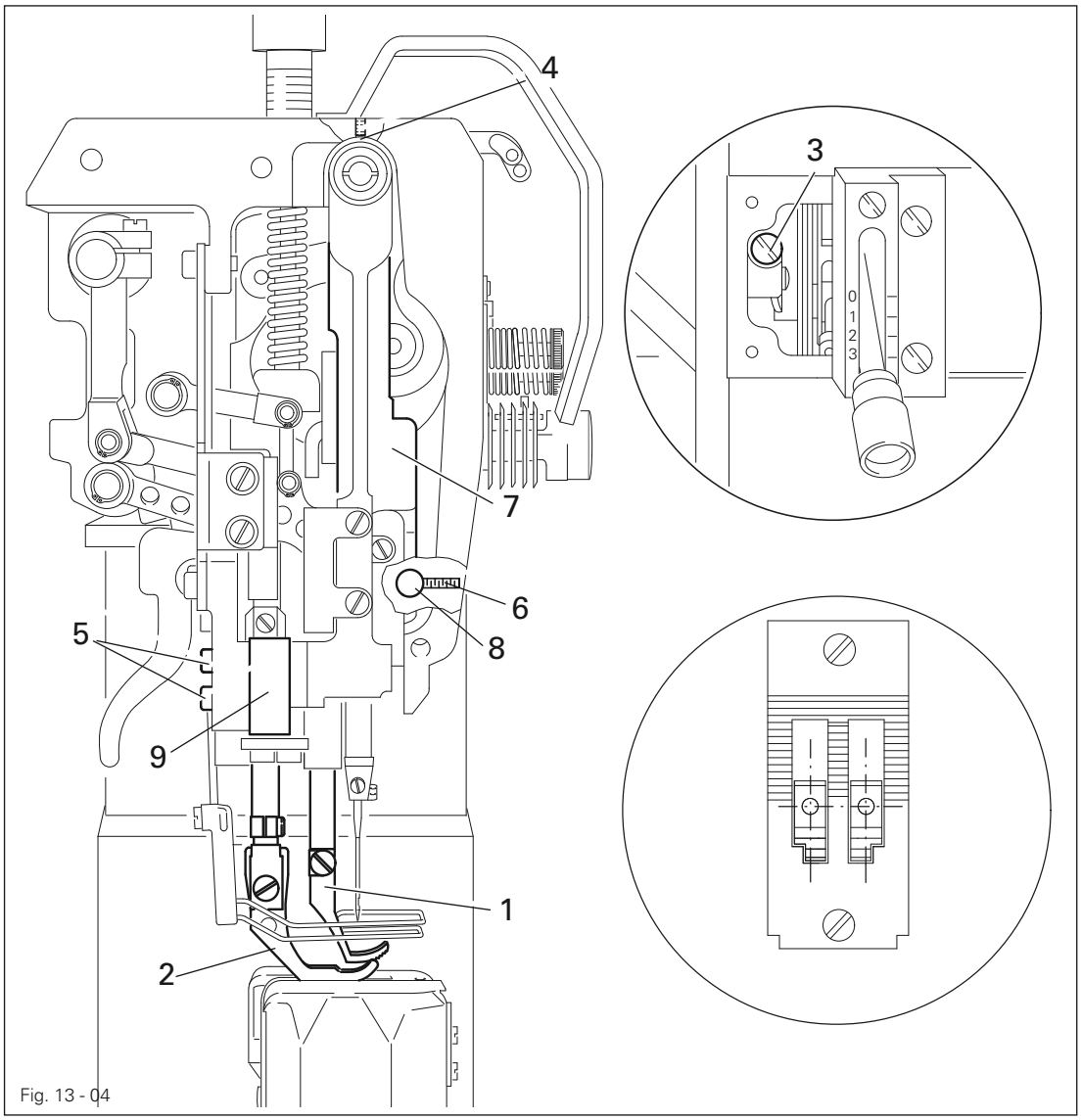


Fig. 13 - 04

- Unscrew the top feed foot **1** and the presser foot **2.**
- Set the stitch length to "**0**" and move the needle bar to t.d.c.
- Insert a new needle, loosen the screws **3, 4, 5** and **6.**
- Move the needle directly over the needle hole by turning the handwheel.
- Move the needle bar frame **7** according to the **rule**.
- Tighten the screws **3, 4** and **5.**
- Move the stop **8** so that it touches the needle bar frame **7** and tighten the screws **6.**

The needle bar frame 7 in the guide 9 and the top feed drive rods should move easily.

13.04.05 Needle height (pre-calibrating)

Rule
When the needle bar is in b.d.c., the clearance between the needle bar and needle plate should be **15 mm**.

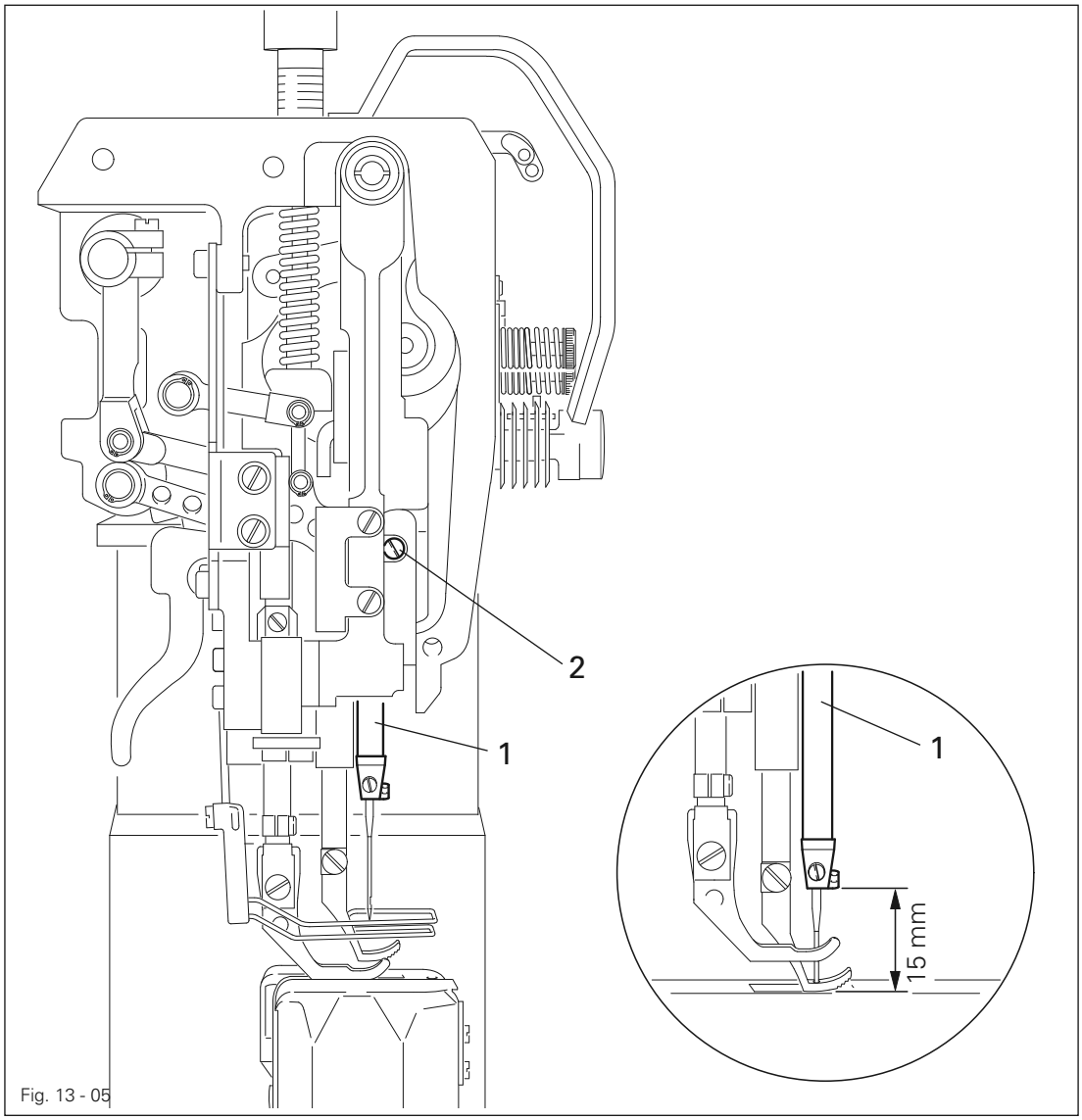


Fig. 13 - 05

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

13.04.06 Bottom and top feed sliding movement

Rule
The top and bottom feed should not move when the reverse-feed lever is activated with maximum stitch length regulation and when the needle bar is in b.d.c.

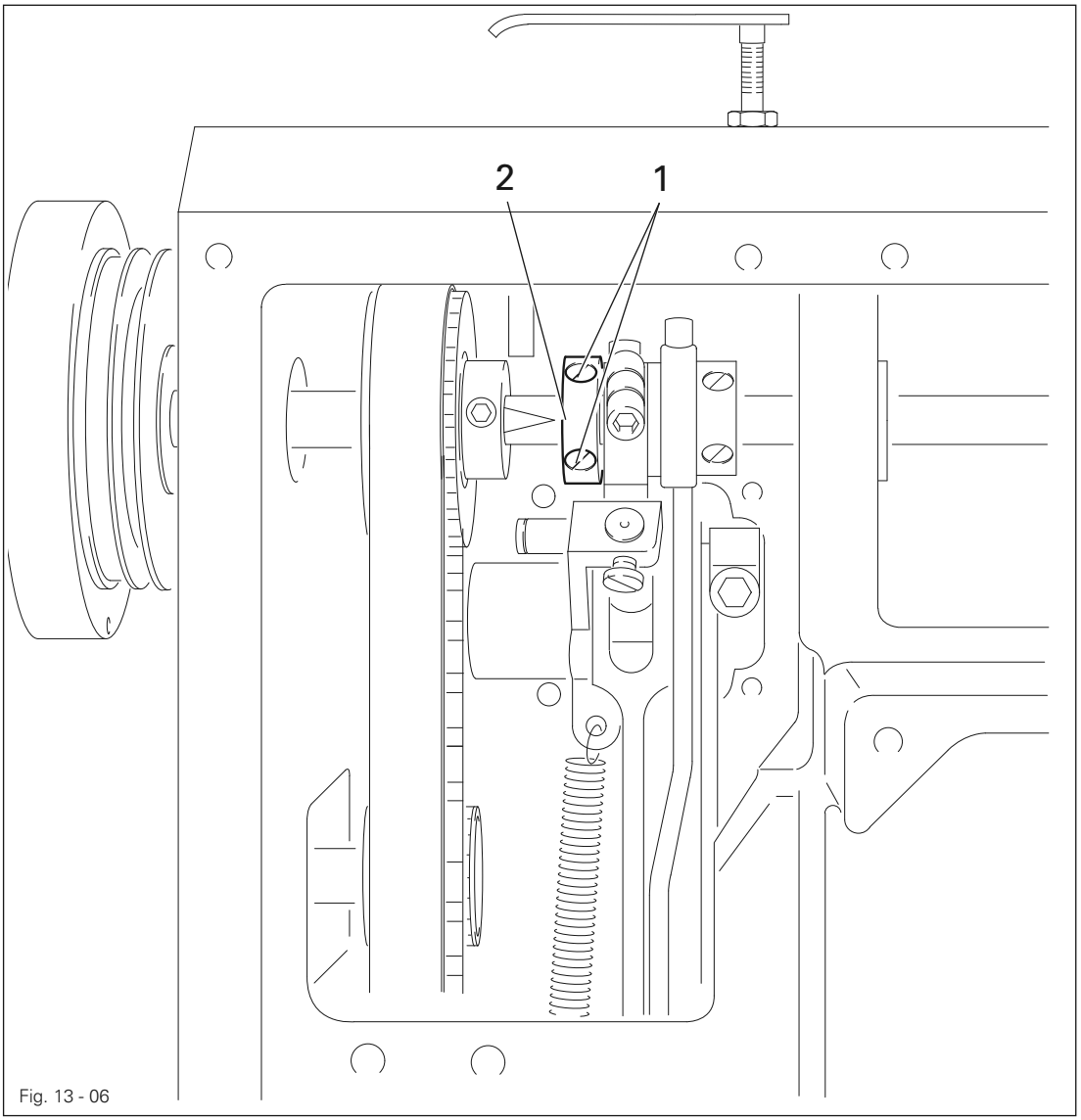
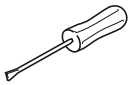


Fig. 13 - 06



- Set the maximum stitch length.
- Loosen the screws **1** only to such an extent that the eccentric **2** is difficult to turn on the shaft.
- Move the needle bar to b.d.c.
- Initially turn the eccentric **2** so that its largest eccentricity is in the "bottom" position. Now turn it a little further in the direction of rotation according to the **rule**.
- Tighten the screws **1.**

13.04.07 Bottom transporter stroke movement (only in machine versions with a P)

Rule

1. The bottom transporter should be in its upper turning point when the needle bar is in b.d.c.
2. The bottom transporter and needle point should reach the surface of the needle plate at the same time with maximum stitch length regulation and when turning the handwheel.

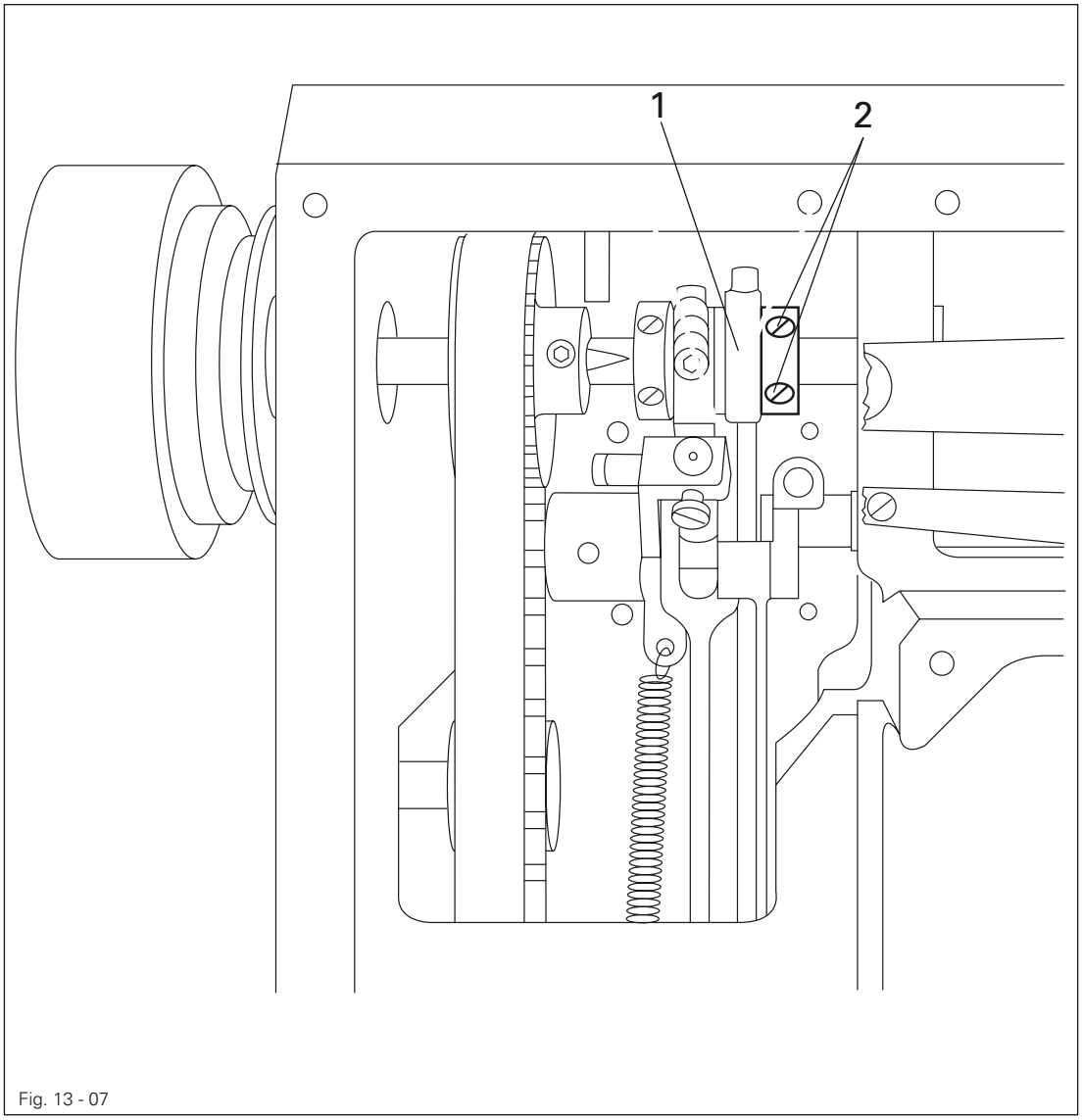
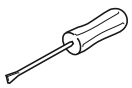


Fig. 13 - 07



- Move the needle bar to b.d.c.
- Turn the eccentric **1** (screws **2**) according to **rule 1.**
- Tighten the accessible screw **2** in this position so that the eccentric **1** is still difficult to turn.
- Turn the eccentric **1** a little further according to **rule 2.**
- Tighten both the screws **2.**

13.04.08 Hook-to-needle clearance, needle bar rise, needle height and needle guard

(The setting of the left hook is omitted with the PFAFF **1255**)

Rule
When the needle rise is positioned **2.0 mm** after b.d.c. of the needle bar with version C and with stitch length regulation "**3**":

1. the hook point should be at the needle midpoint and have a clearance of **0.05** to **0.1 mm** to the needle.
2. The upper edge of the needle eye should be **0.8** to **1.0 mm** under the tip of the hook.
3. The needle guard **8** should lightly touch the needle.

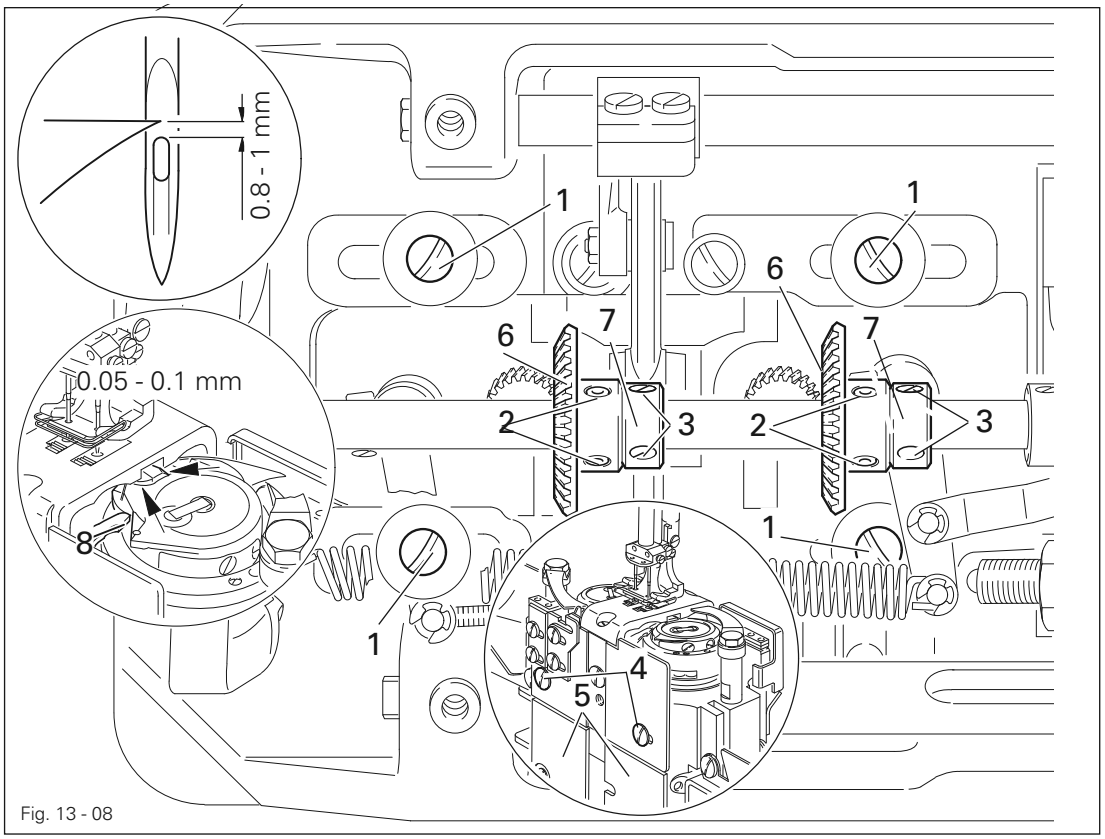


Fig. 13 - 08

- Set the stitch length to "**3**".
- Loosen the screws **1, 2** and **3.**
- Loosen the screws **4** on the front and back.
- Adjust the posts **5** according to **rule 1.**
- Tighten the screws **1** and **4.**
- Move the needle bar to b.d.c. and slide the feeler gauge corresponding to the version with its cutout tightly under the lower needle bar bearing. Move the screw clamp so that it touches the feeler gauge and tighten it.
- Remove the feeler gauge and turn the handwheel in the direction of rotation until the screw clamp rests on the needle bar bearing.
- Set the hook point on the middle of the needle and take care that the needle is not squeezed by the needle guard **8.**
- Tighten the screws **2,** ensuring that the bevel gear **6** is not too tight, but that there is not too much play on the hook.
- Adjust the retaining collar **7** up against the bevel gear **6** and tighten the screws **3.**
- Adjust the needle height according to **rule 2.**
- Align the needle guard **8** according to **rule 3.**

With the PFAFF **1296** it is important to readjust the position of the connecting rod to the thread trimmer after changing the needle gauge (see **chapter 13.05.10 Connecting rod**) .

13.04.09 Top feed lift

Rule
The presser foot **1** and the top feed foot **2** should each lift **7.0 mm** off the needle plate when turning the handwheel at the maximum top feed lift position and when the stitch length is set to **"0".**

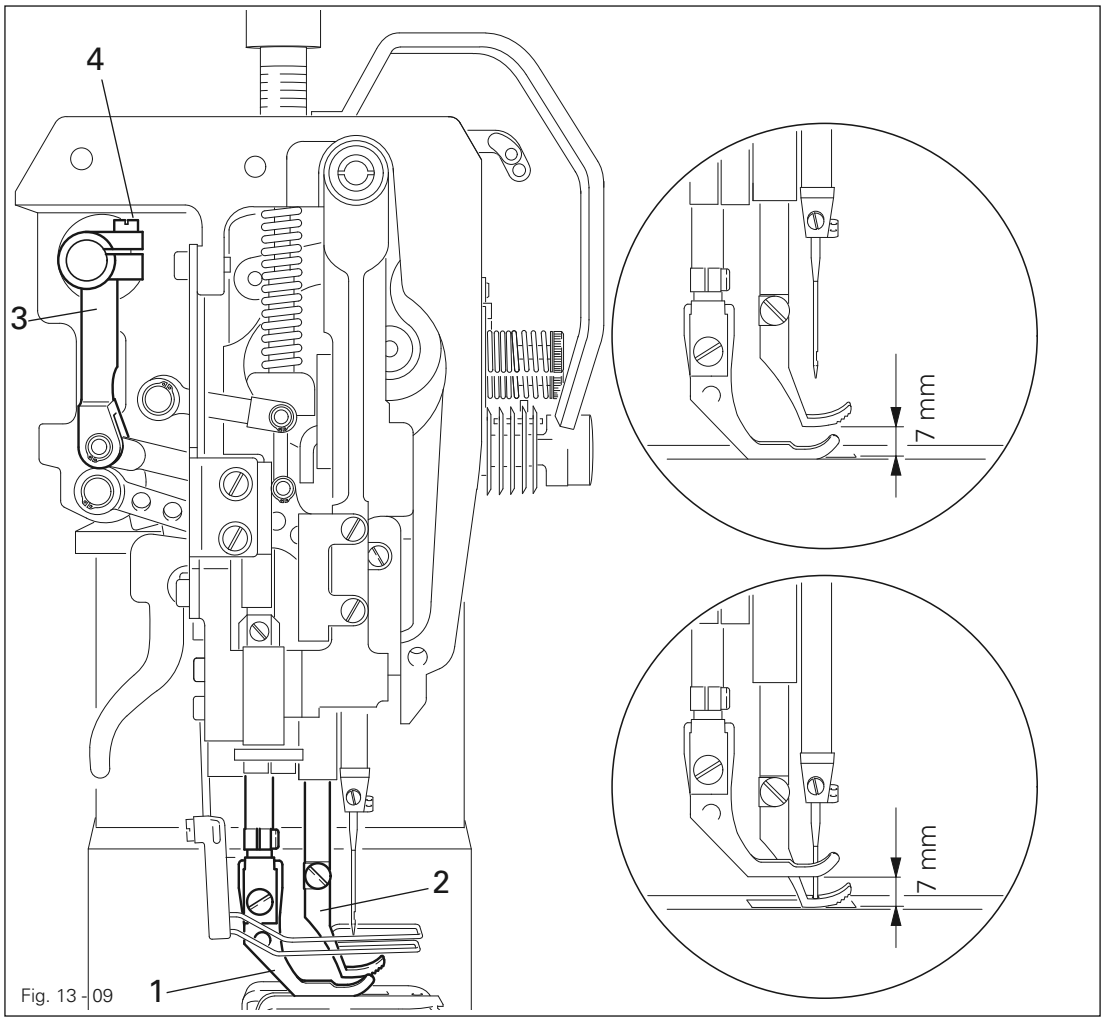
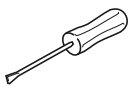


Fig. 13 - 09



- Set the maximum top feed lift and set the stitch length to **"0".**
- Fit the presser foot **1.**
- Turn the handwheel in the direction of rotation until the top feed foot **2** has reached its highest point.
- Turn the crank **3** (screws **4**) according to the **rule**.
- Carry out a check according to the **rule**.

13.04.10 Top feed stroke movement

Rule
The presser foot **6** and the needle point should reach the needle plate at the same time at maximum top feed lift if the presser foot **1** rests on the needle plate.

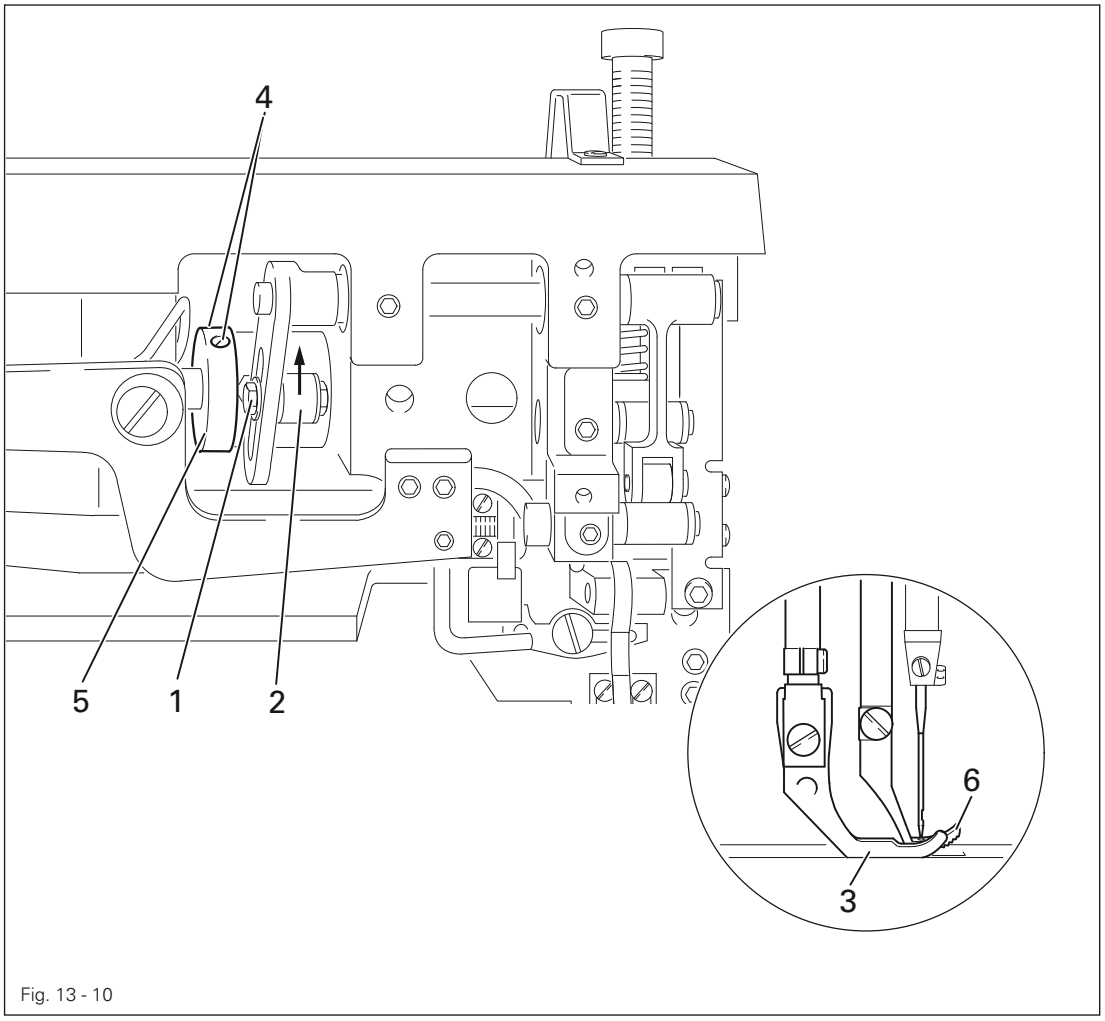
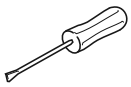


Fig. 13 - 10



- Loosen the screw **1.**
- Slide the lever **2** in its slotted lever until you feel it reach the upper stop (maximum top feed lift); tighten the screw **1.**
- Lower the presser foot **3** onto the needle plate.
- Loosen the screws **4** until the eccentric **5** is difficult to turn.
- Turn the eccentric **5** according to the **rule**.
- Tighten the screws **4.**
- Carry out a check according to the **rule**

13.04.11 Bobbin case opener

Rule
The needle thread should not become jammed between the bobbin case opener **1** and the bobbin case base **3** or between the retaining lug **4** and the retaining dog of the needle plate (see arrow)

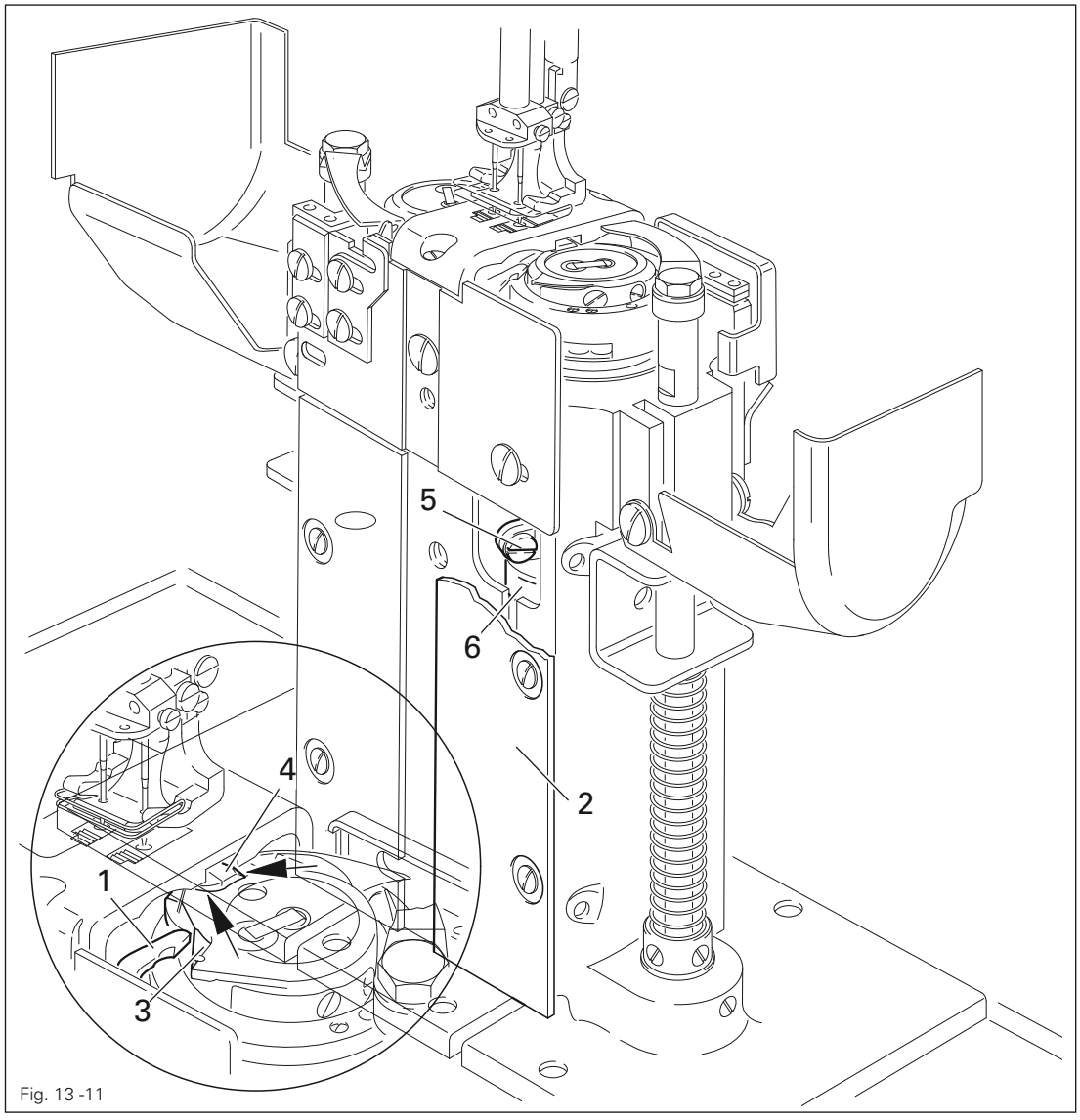
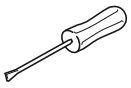


Fig. 13-11



- Unscrew the post cover plates **2** (from the back with the left post).
- Loosen the screws **5** until the bobbin case opener **1** is difficult to turn.
- Thread the machine and insert the testing material.
- Fit the sewing foot.
- Turn the bobbin case opener **1** (screw **5**) according to the **rule**.
- Load the bobbin case opener **1** from above in this position, slide the clamp collar **6** upwards up to the stop and tighten the screw **5.**

13.04.12 Safety clutch

The safety clutch **4** is set ex works. If the thread jams, the safety clutch **4** disengages to avoid damage to the hooks. The process to engage the clutch is described below.

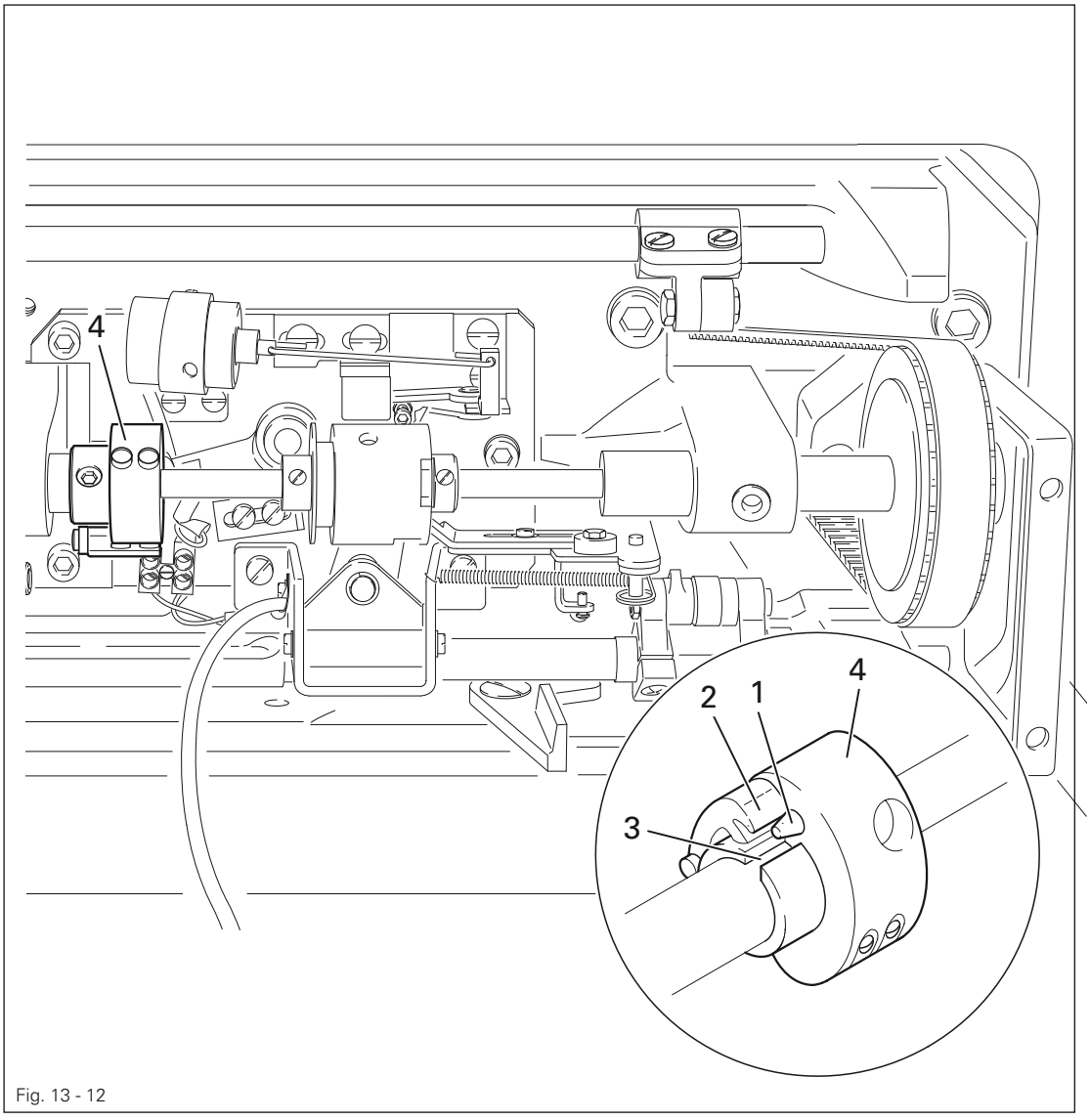


Fig. 13 - 12

- Remove the thread jam.
- Press the catch **1** and turn the handwheel until the pawl **2** engages in the groove **3.**

13.04.13 Needle thread tension release

Rule
When the presser foot is raised, both tension discs should be at least **0.5 mm** apart.

The clearance of **0.5 mm** is the minimum size and may be over **1 mm** with thick types of yarn.

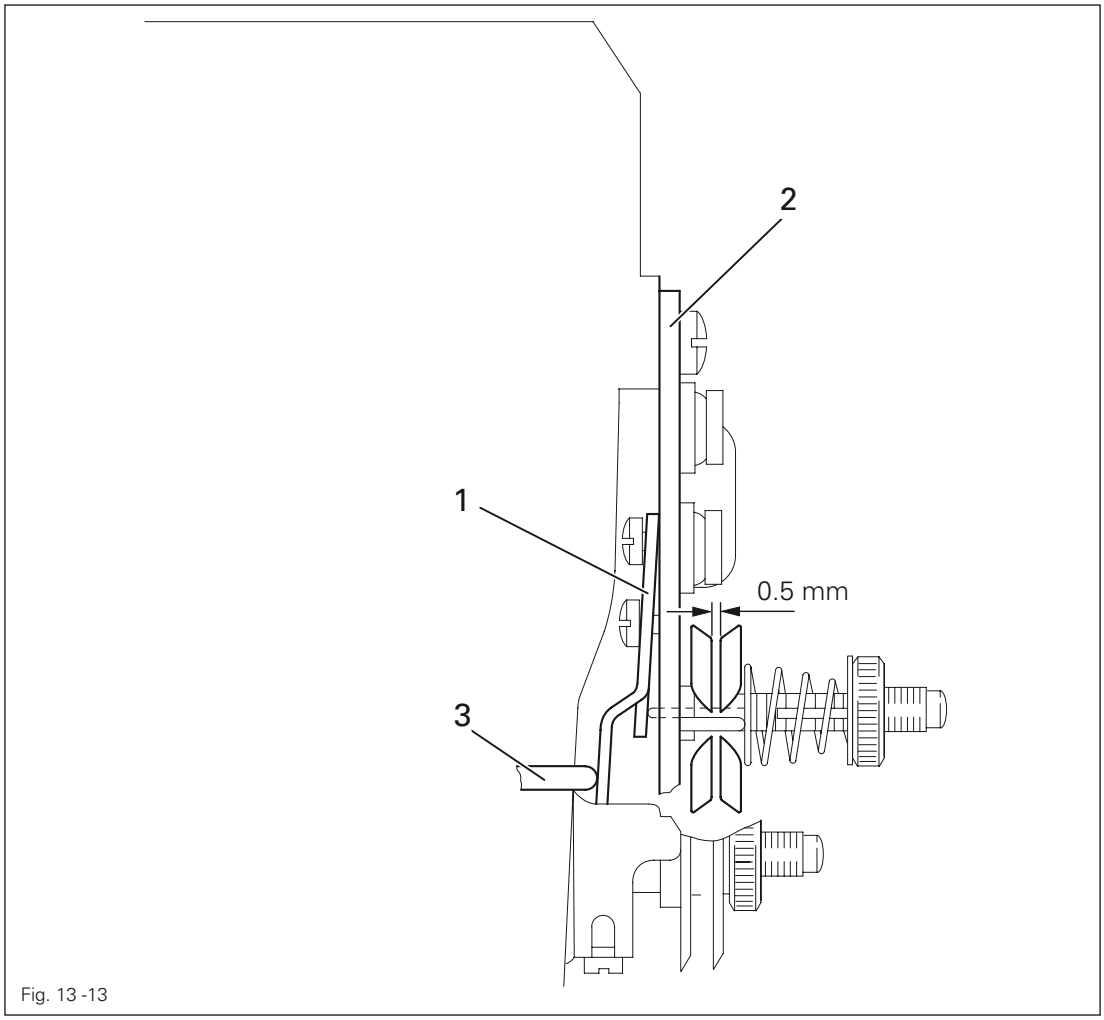


Fig. 13 -13

- Raise the presser foot with the hand lever.
- Align the pressure plate **1** behind the tension mounting plate **2** according to the **rule**.

The release pin **3** must not be loaded with effective tension.

13.04.14 Thread check spring (with the PFAFF 1295 and PFAFF 1296 without thread trimmer -900/56)

Rule
The movement of the thread check spring **5** should be finished when the needle point punctures the material (spring deflection = approx. **7 mm**).

The length of the thread check spring deflection may deviate slightly upwards or downwards for reasons relating to the sewing technology.

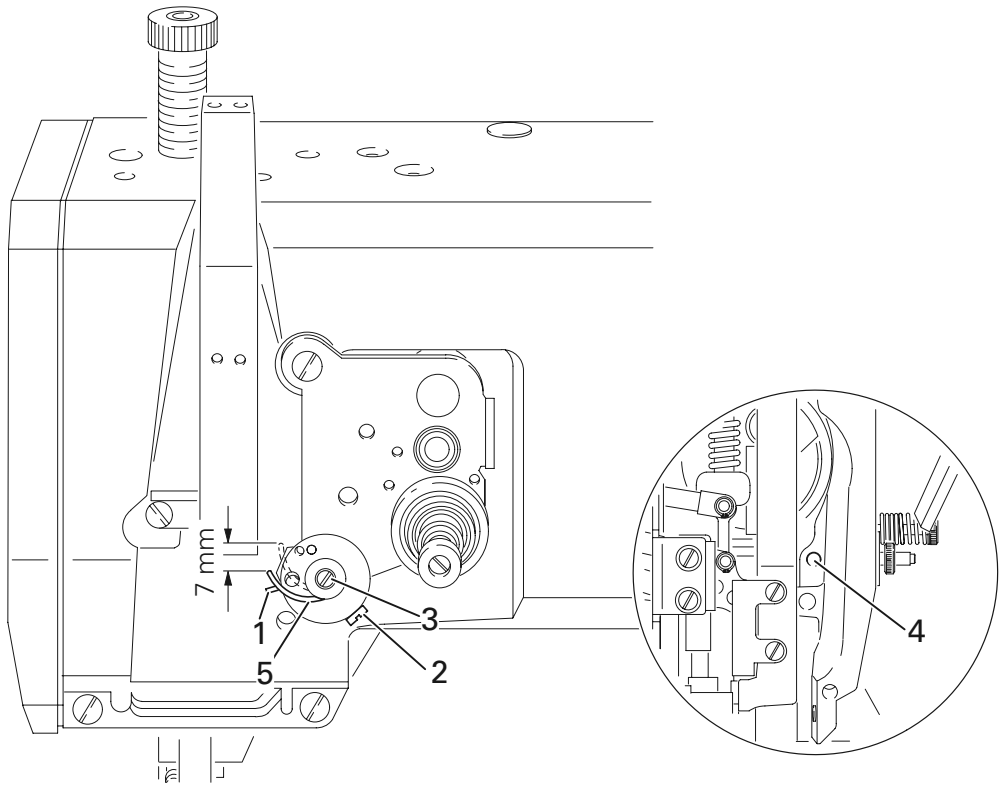


Fig. 13 - 14

- Adjust the stop **1** (screw **2**) according to the **rule**.
- Turn the screw **3** (screw **4**) to set the spring tension

13.04.15 Thread check spring (with the PFAFF 1296 with thread trimmer -900/56)

Rule
The movement of the thread check springs **1** and **6** should be finished when the needle points puncture the material (spring deflection = approx. **7 mm**).

The length of the thread check spring deflection may deviate slightly upwards or downwards for reasons relating to the sewing technology.

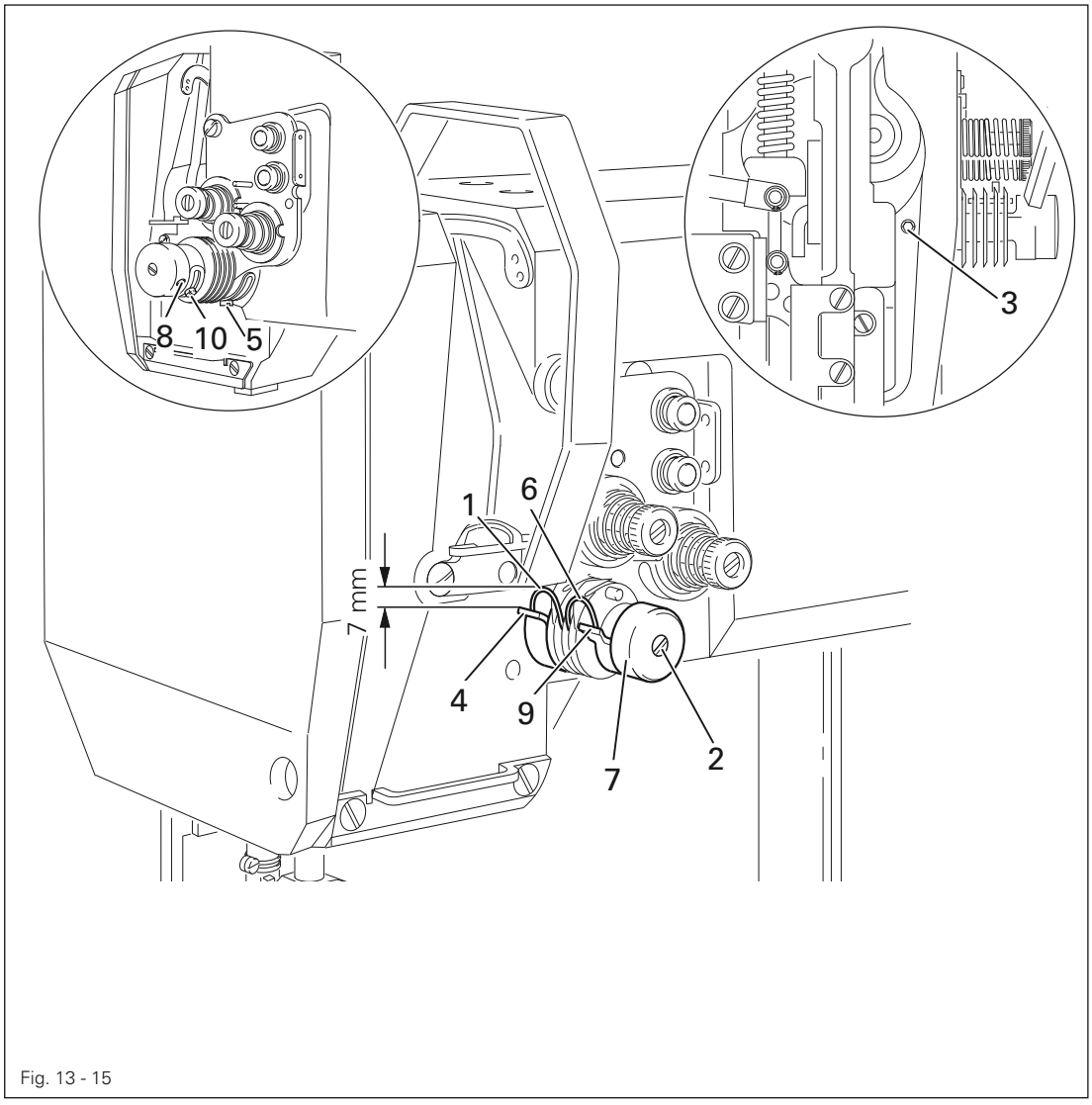


Fig. 13 - 15

- Turn the screw **2** (screw **3**) to set the spring tension of the thread check spring **1.**
- Turn the support **4** (screw **5**) according to the **rule**.
- Turn the screw **7** (screw **8**) to set the spring tension of the thread check spring **6.**
- Turn the support **9** (screw **10**) according to the **rule**

13.04.16 Bobbin winder

Rule

1. When the bobbin winder is switched on, the bobbin winder spindle should be moved easily; when the bobbin winder is switched off, the friction wheel **5 must not touch the drive wheel 1.**
2. The bobbin winder should switch off automatically when the fill amount is still around **1 mm** from the edge of the bobbin.

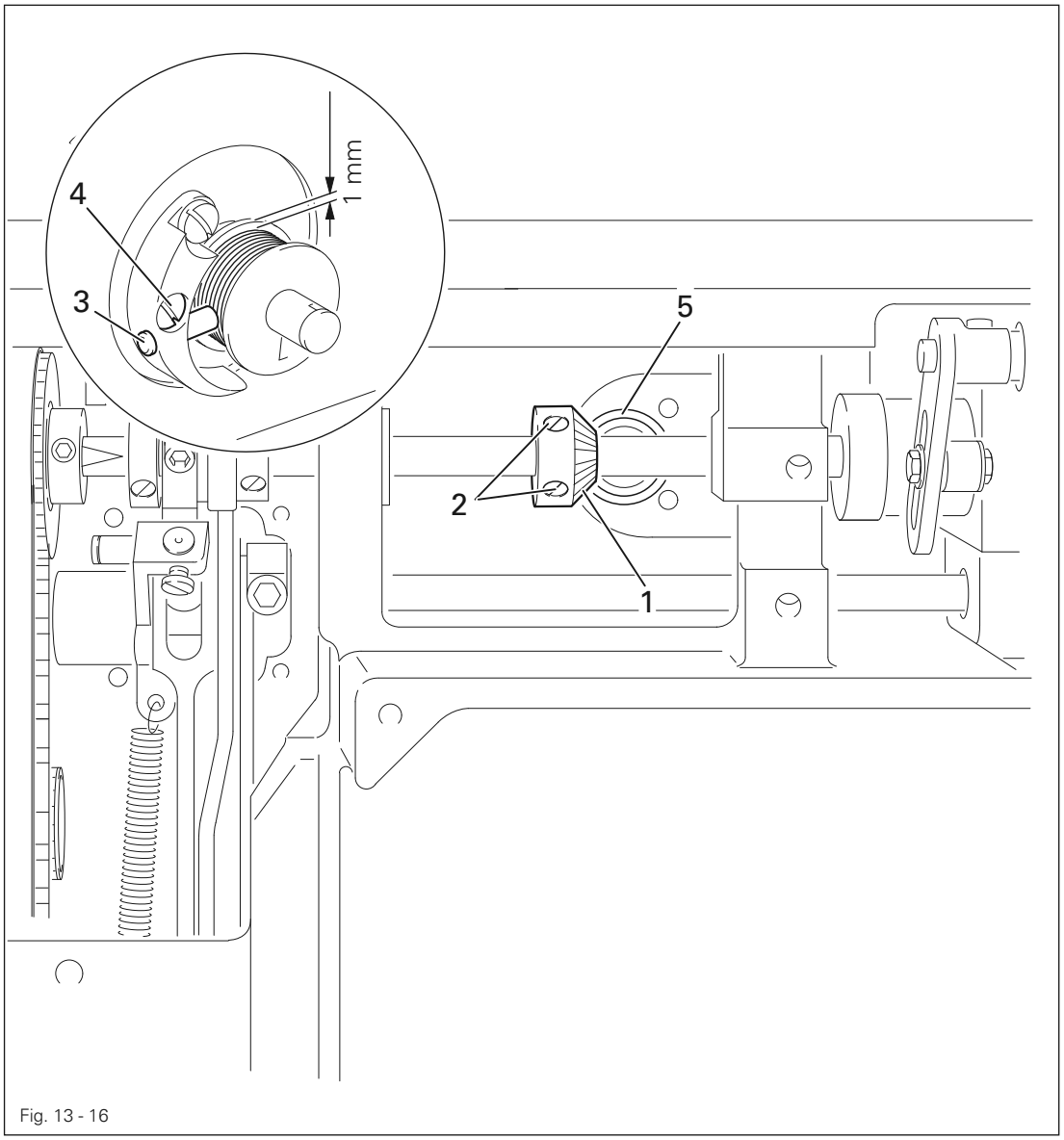


Fig. 13 - 16

- Adjust the drive wheel **1** (screws **2**) according to **rule1.**
- Adjust the bolt **3** (screws **4**) according to **rule 2.**

13.04.17 Presser foot pressure

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

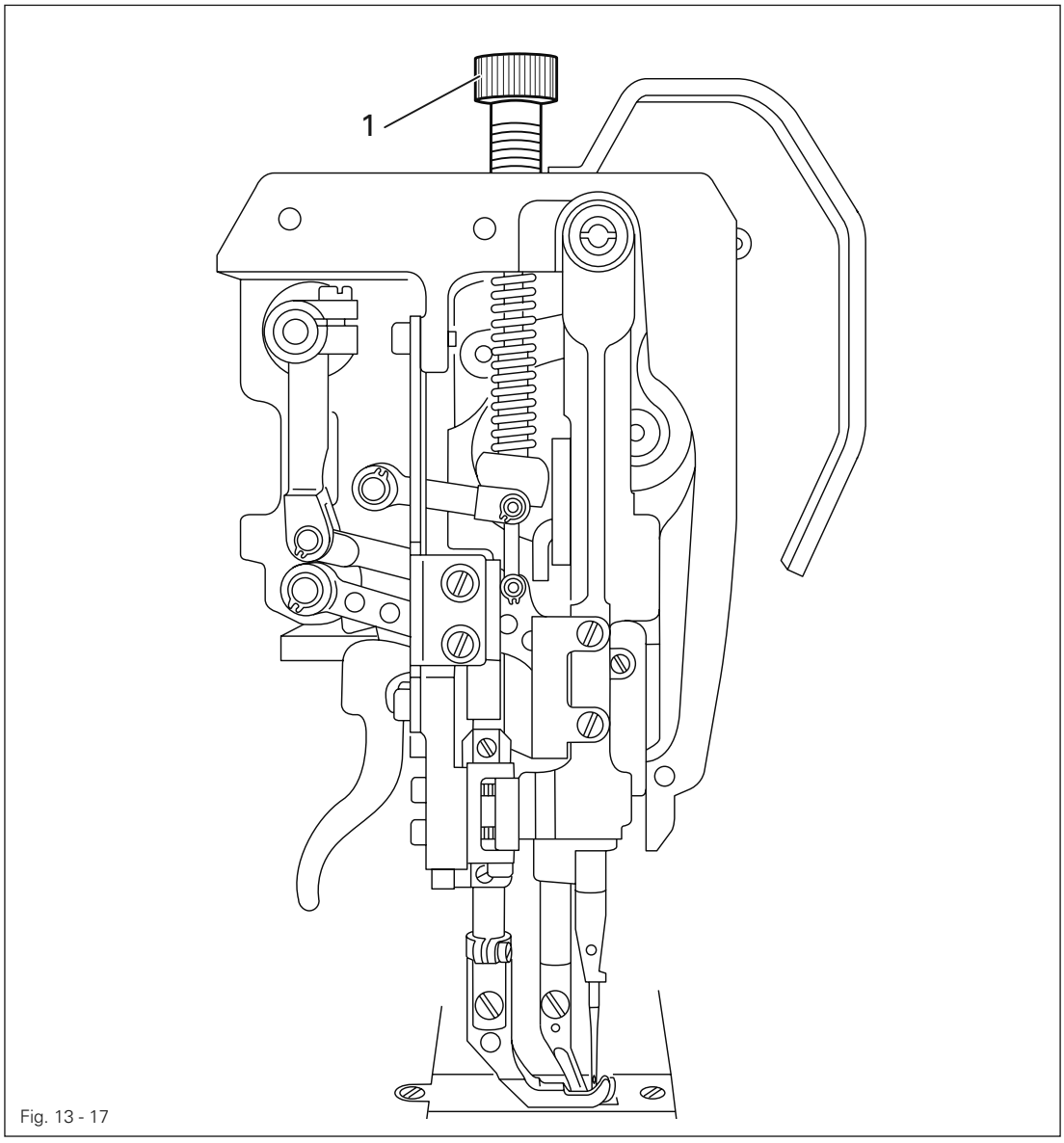
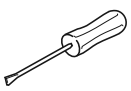


Fig. 13 - 17



● Turn the screw **1** according to the **rule**.

13.05 Adjusting thread trimmer -900/56

13.05.01 Engaging solenoid

Rule

1. The bracket **1** should be fastened in the centre of its range and parallel to the right edge of the mounting plate.
2. The core of the solenoid **3** should protrude approx. **4 mm** out of the magnet housing when the thread trimmer is in the neutral position.

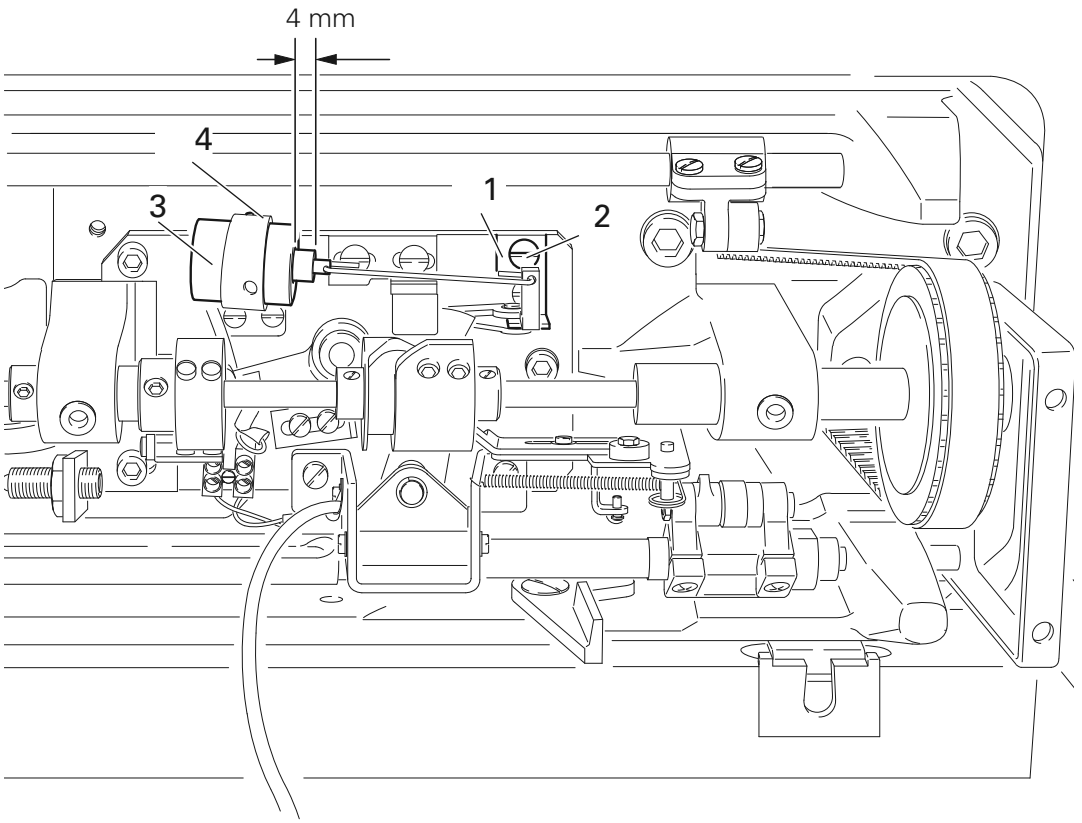
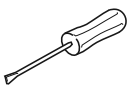


Fig. 13 - 18



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

13.05.02 Control cam (pre-calibrating)

Rule

1. The control cam **1** should be positioned centrally to the bearing support cutout **5**.
2. When the needle bar is at t.d.c., the screws **2** should be visible from the front and run parallel to the bed plate.

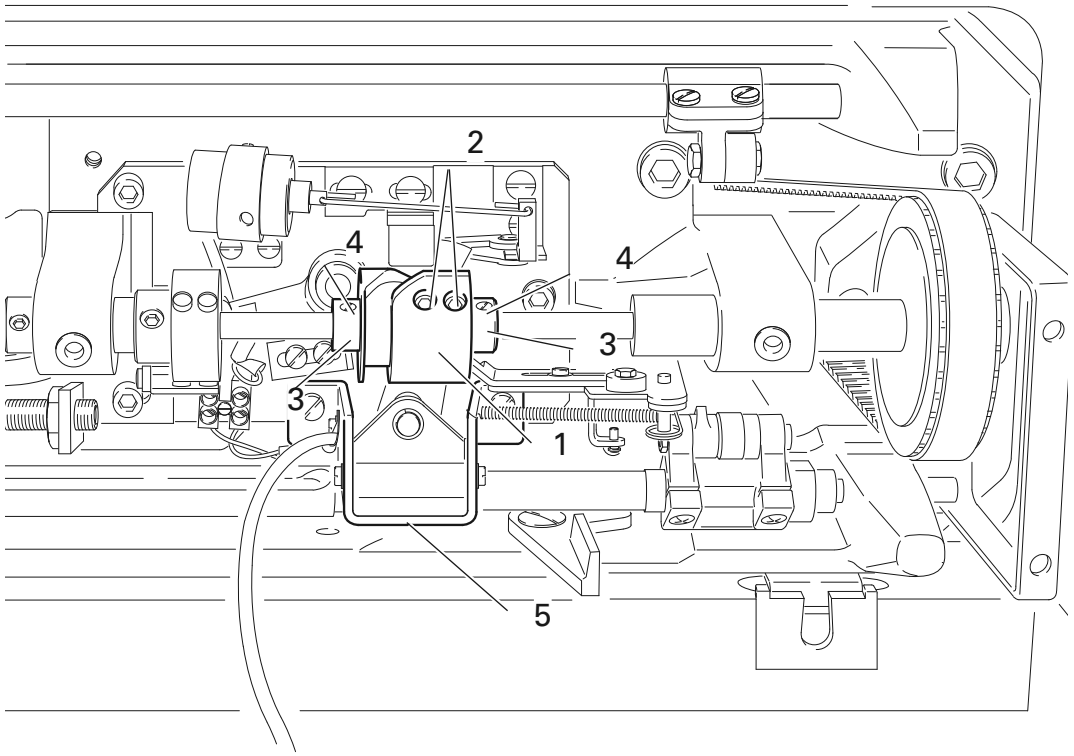
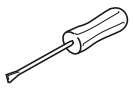


Fig. 13 - 19



● Adjust the control cam **1** (screws **2**) and collars **3** (screws **4**) according to the **rule**.

13.05.03 Tripping lever spring mechanism

Rule
It should be possible to push the tripping lever **3** approx. **1 mm** in the direction of the bed plate when the thread trimmer is in the neutral position (spring mechanism).

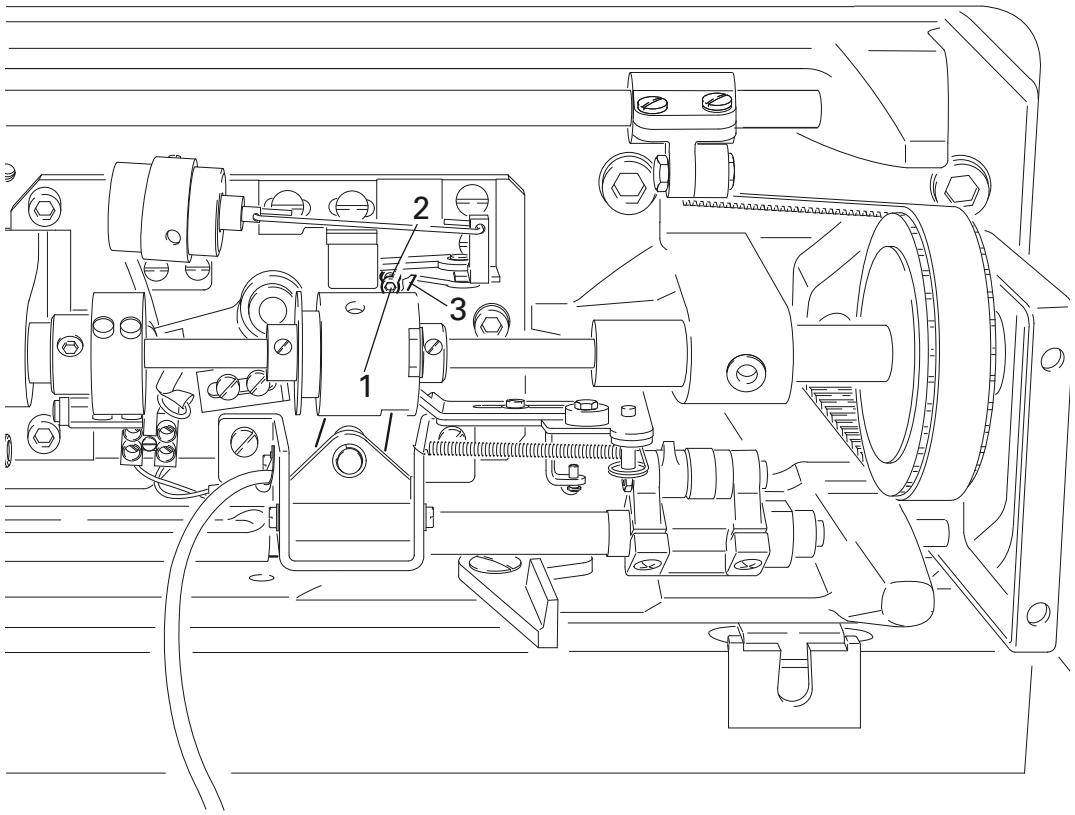
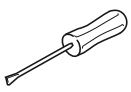


Fig. 13 - 20



● Turn the screw **1** (nut **2**) according to the **rule**.

13.05.04 Tripping lever path

Rule

1. The tripping lever bolt **6** should drop easily into the track of the control cam **7** when the engaging lever **5** is activated.
2. The tripping lever **6** should pass by the right side of the bracket **3** unimpeded and engage in the engaging lever **5** behind the stop **5**.
3. There should be a clearance of approx. **0.2 mm** between the tripping lever bolt **6** and the right inner wall of the control cam track.

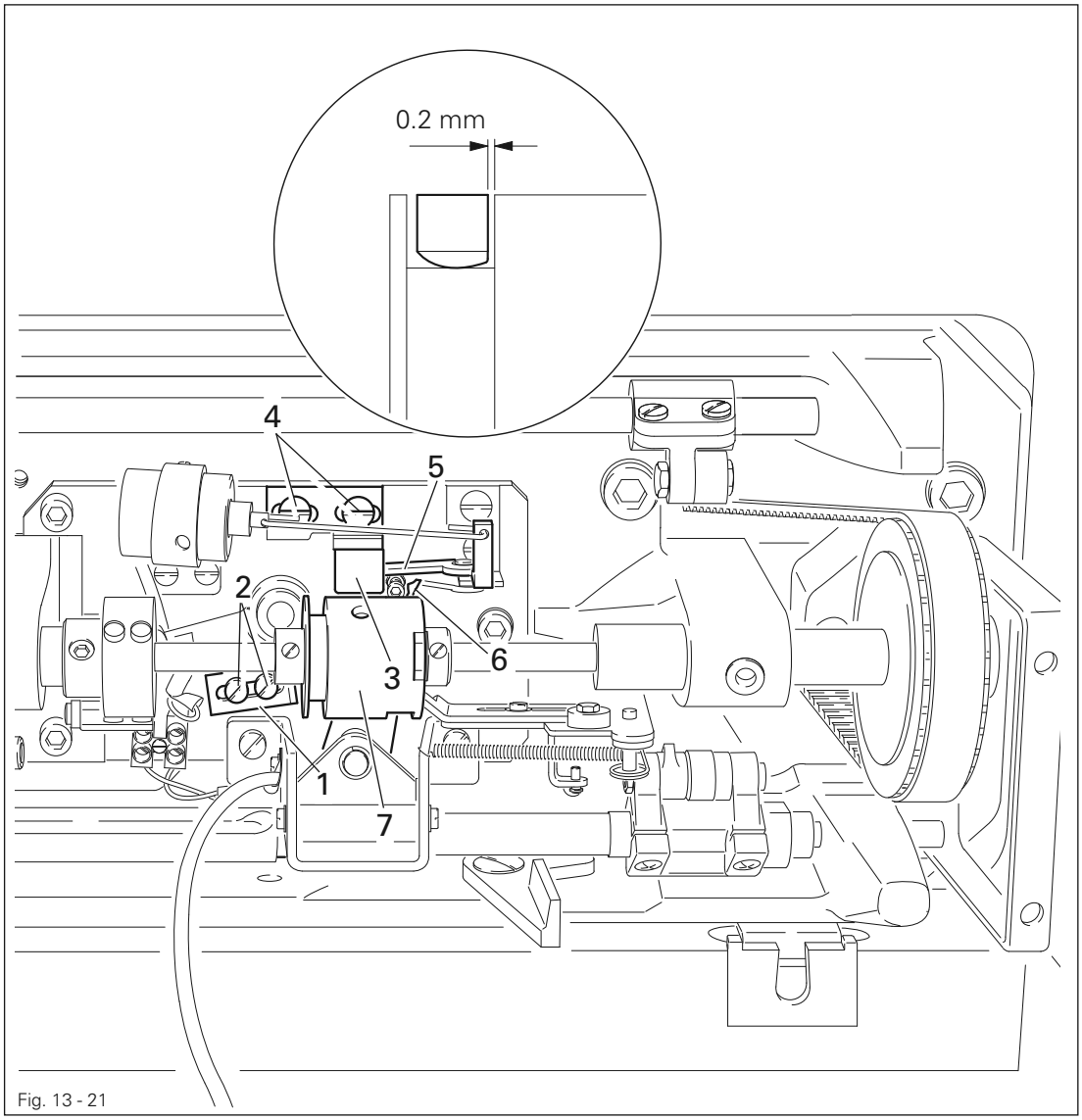


Fig. 13 - 21

● Adjust the bracket **1** (screws **2**) and the bracket **3** (screws **4**) according to the **rule**.

13.05.05 Thread catcher drive rod

Rule

1. The thread catcher drive rod **1** should have a length of **128 mm** less half of the needle gauge with the **PFAFF 1296**.
   The thread catcher drive rod **1** should have a length of **128 mm** with the **PFAFF 1295**.
2. There should be a clearance of approx. **1 mm** between the piston **5** and the lever **6** when the thread trimmer is in the neutral position.

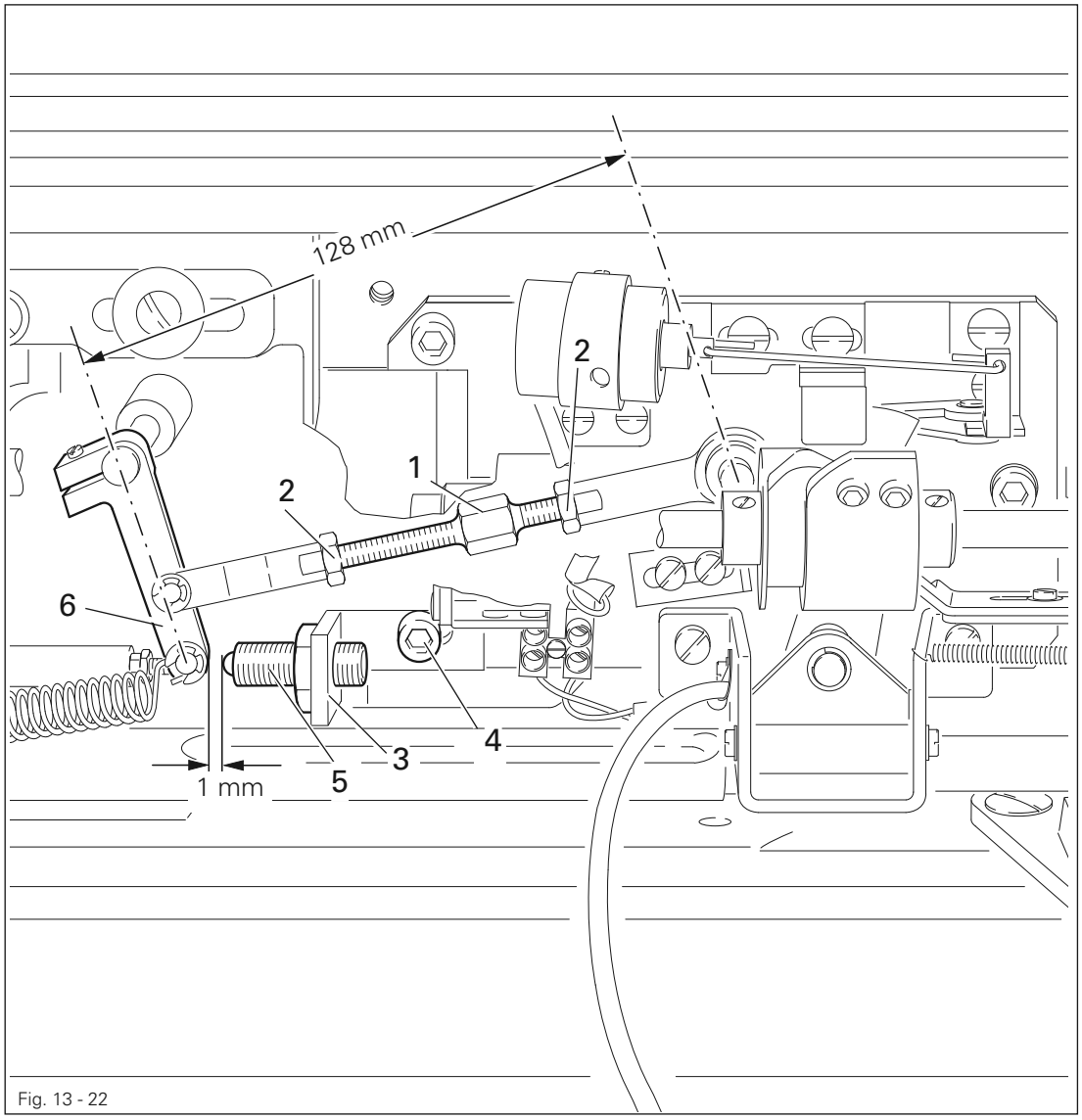


Fig. 13 - 22

- Turn the thread catcher drive rod **1** (nuts **2**) according to **rule 1.**
- Adjust the carrier **3** (screw **4**) in accordance with **rule 2.**

13.05.06 Connecting rod (only with the PFAFF 1296)

Rule
The length of the connecting rod **2** should correspond to the clearance between the shaft **3** and the shaft **4** when the thread trimmer is in the neutral position.

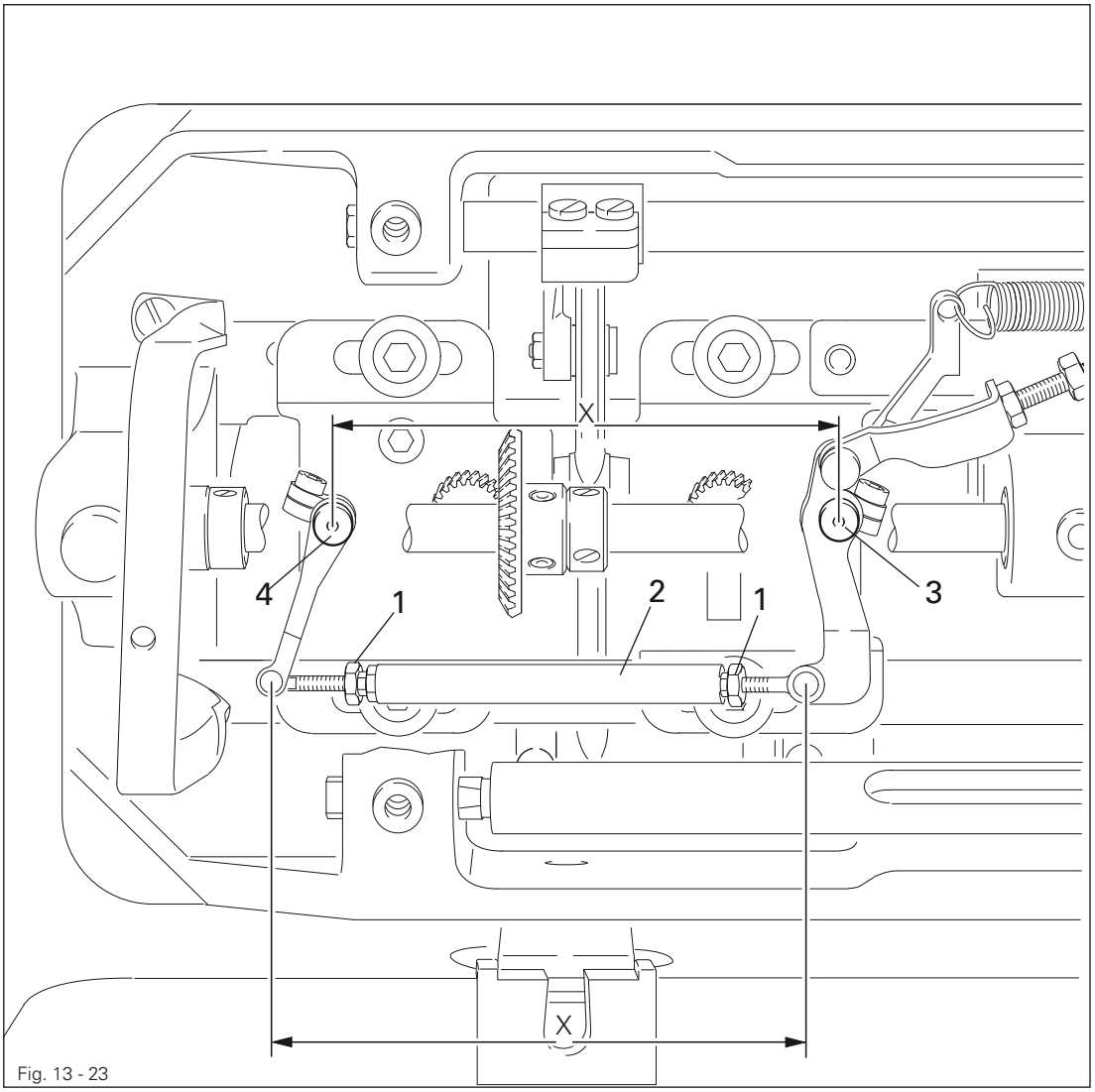


Fig. 13 - 23

- Loosen the nuts **1** (right and left-hand thread) when the thread trimmer is in the neutral position.
- Turn the connecting rod **2** according to the **rule**.
- Tighten the nuts **1.**

13.05.07 Thread catcher height

Rule
There should be a clearance of approx. **0.7 mm** between the underside of the thread catcher **4** and the bobbin case sewing head **5.**

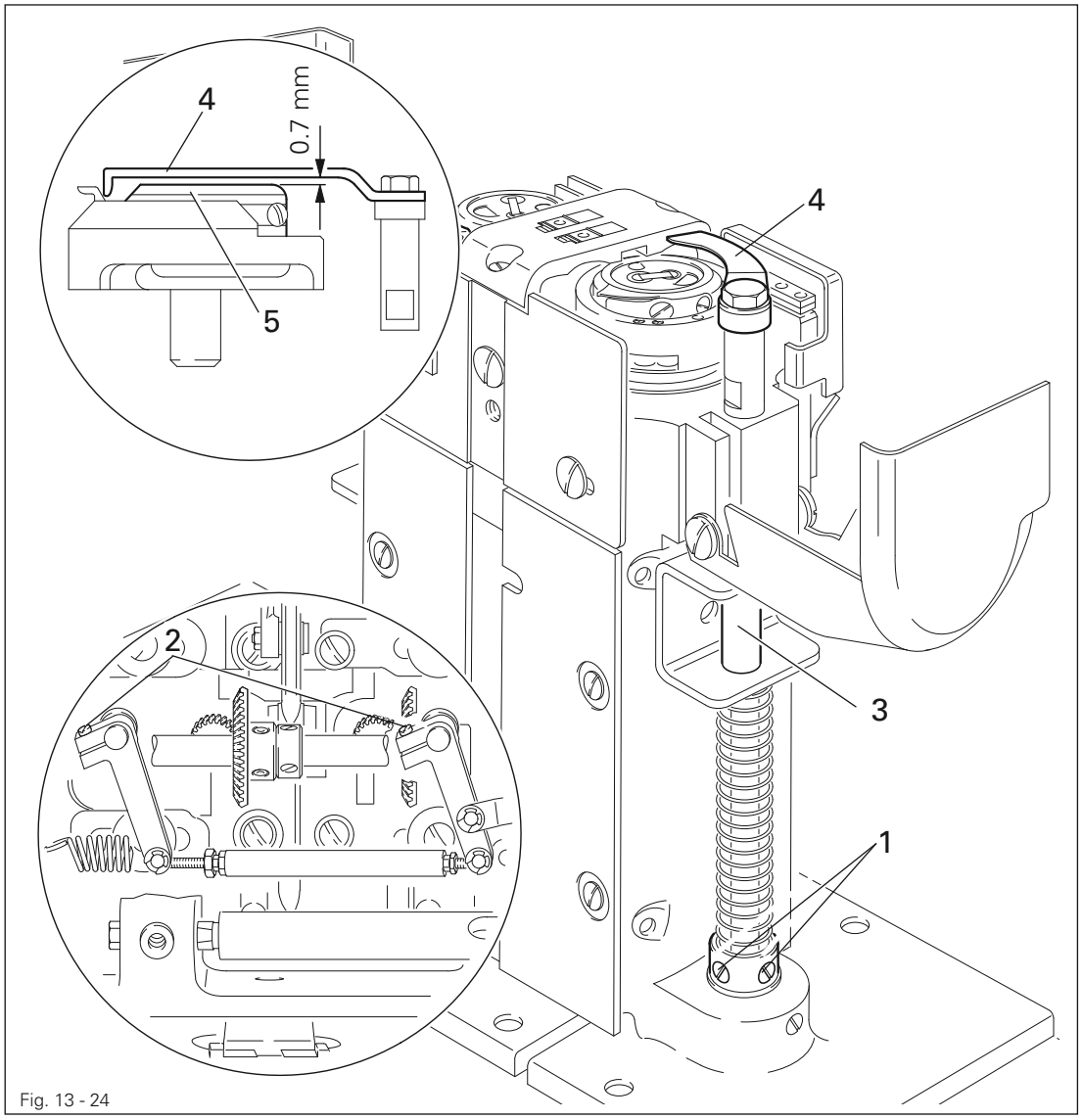


Fig. 13 - 24

- Loosen the screws **1** and **2.**
- Adjust the shaft according to the **rule**.
- Tighten the screws **1.**

The screws **2** remain loosened for the subsequent adjustment.

13.05.08 Thread catcher neutral position

Rule
There should be a clearance of approx. **4 mm** between the tip of the thread catcher **3** and the cutting edge of the knife **4** when the thread trimmer is in the neutral position.

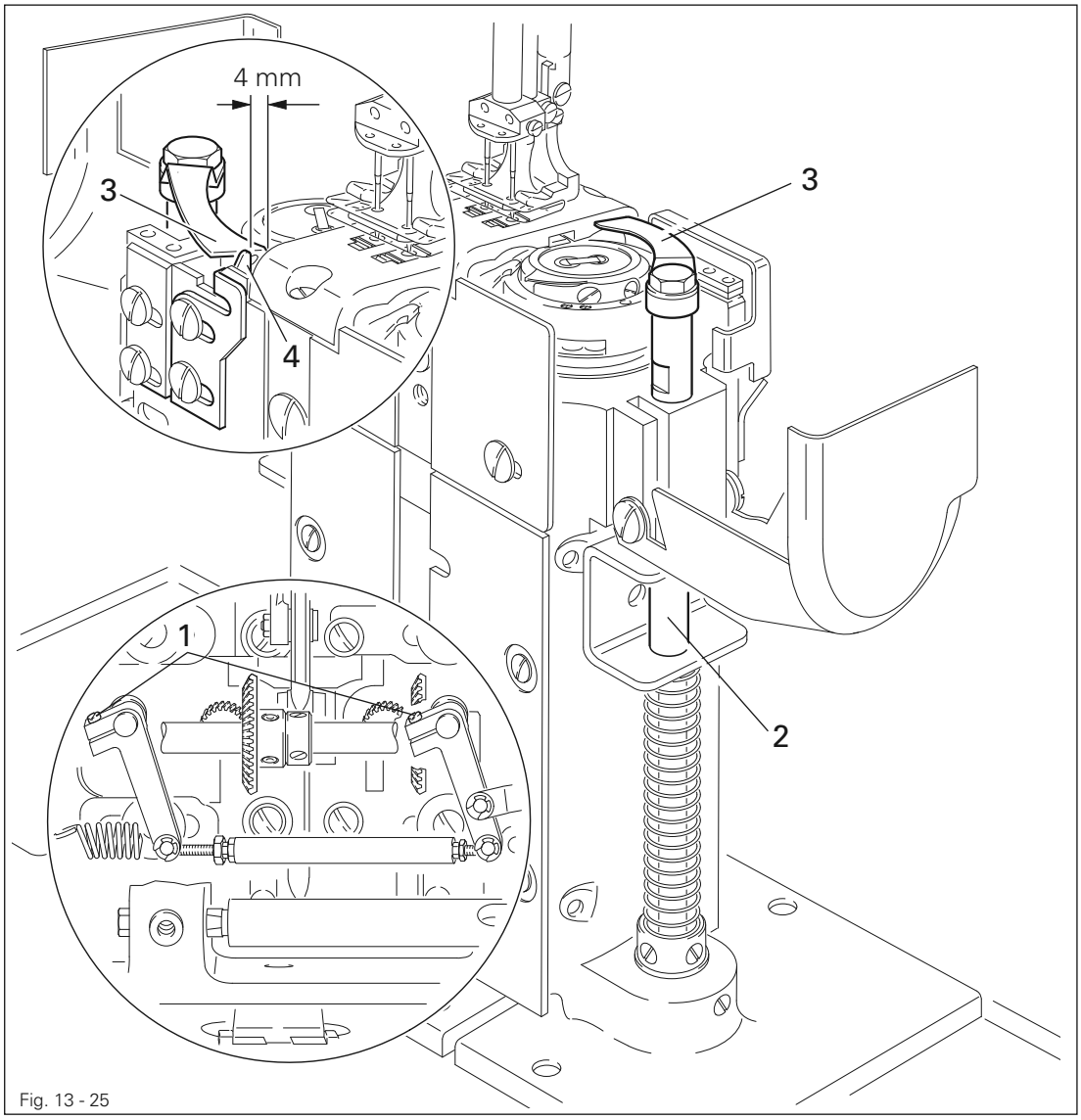


Fig. 13 - 25

- Turn the shaft **2** according to the **rule**.
- Tighten the screws **1.**

When tightening the screws **1,** make sure that the connection elements to the thread catcher drive move freely.

13.05.09 Knife pressure

Rule
The knife **1** should rest gently on the edge of the thread catcher if the front edge of thread catcher **3** is halfway past the cutting edge of the knife.

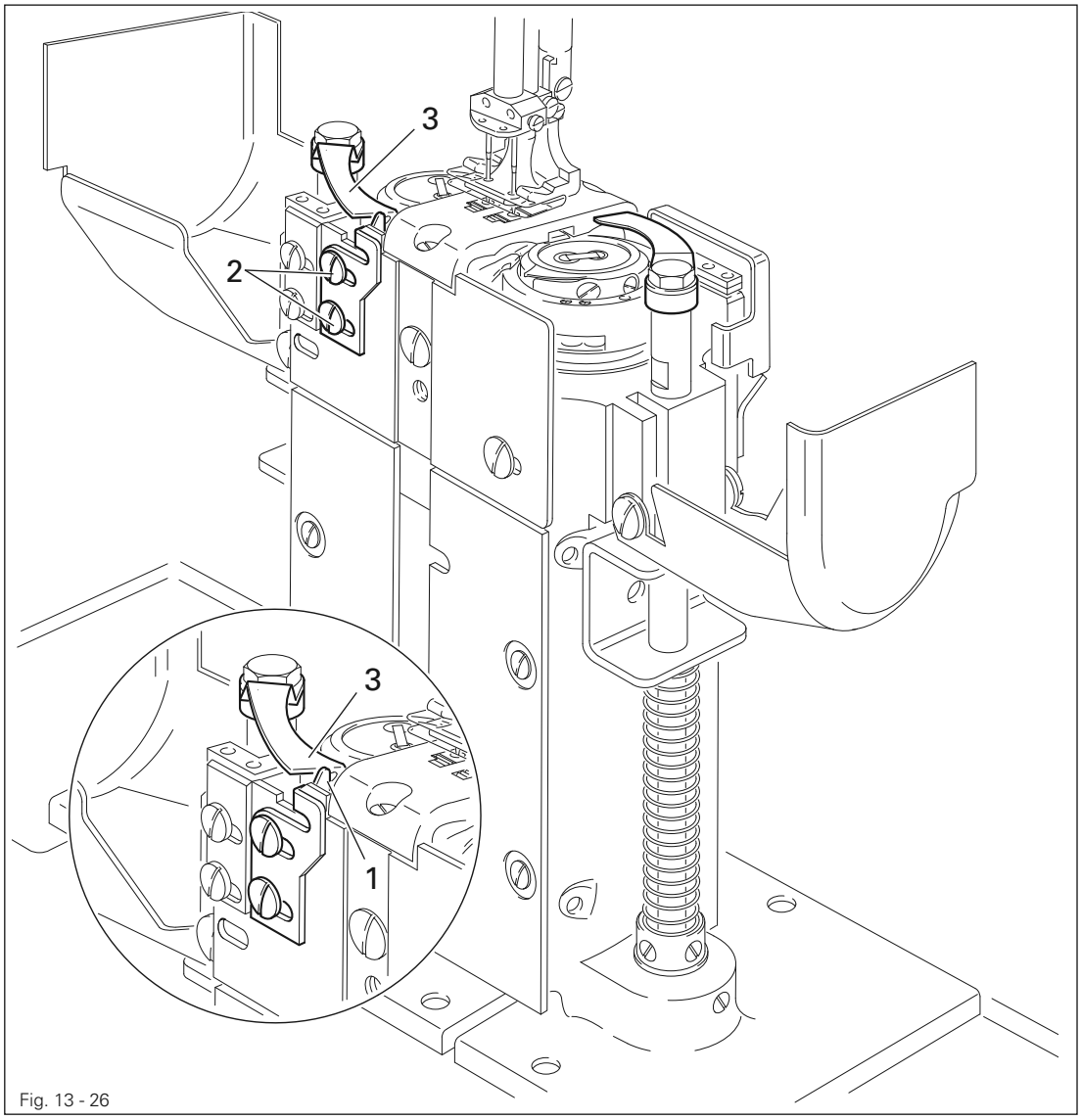
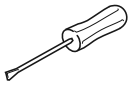


Fig. 13 - 26



● Adjust the knife **1** (screws **2**) according to the **rule**.

13.05.10 Bobbin thread clamp spring

Rule

1. Do not allow the thread catcher **4** to compress the bobbin thread clamp spring **3** at any stage.
2. The bobbin thread should be securely clamped after the cutting operation.
3. It should be easy to insert and remove the bobbin from the hook.

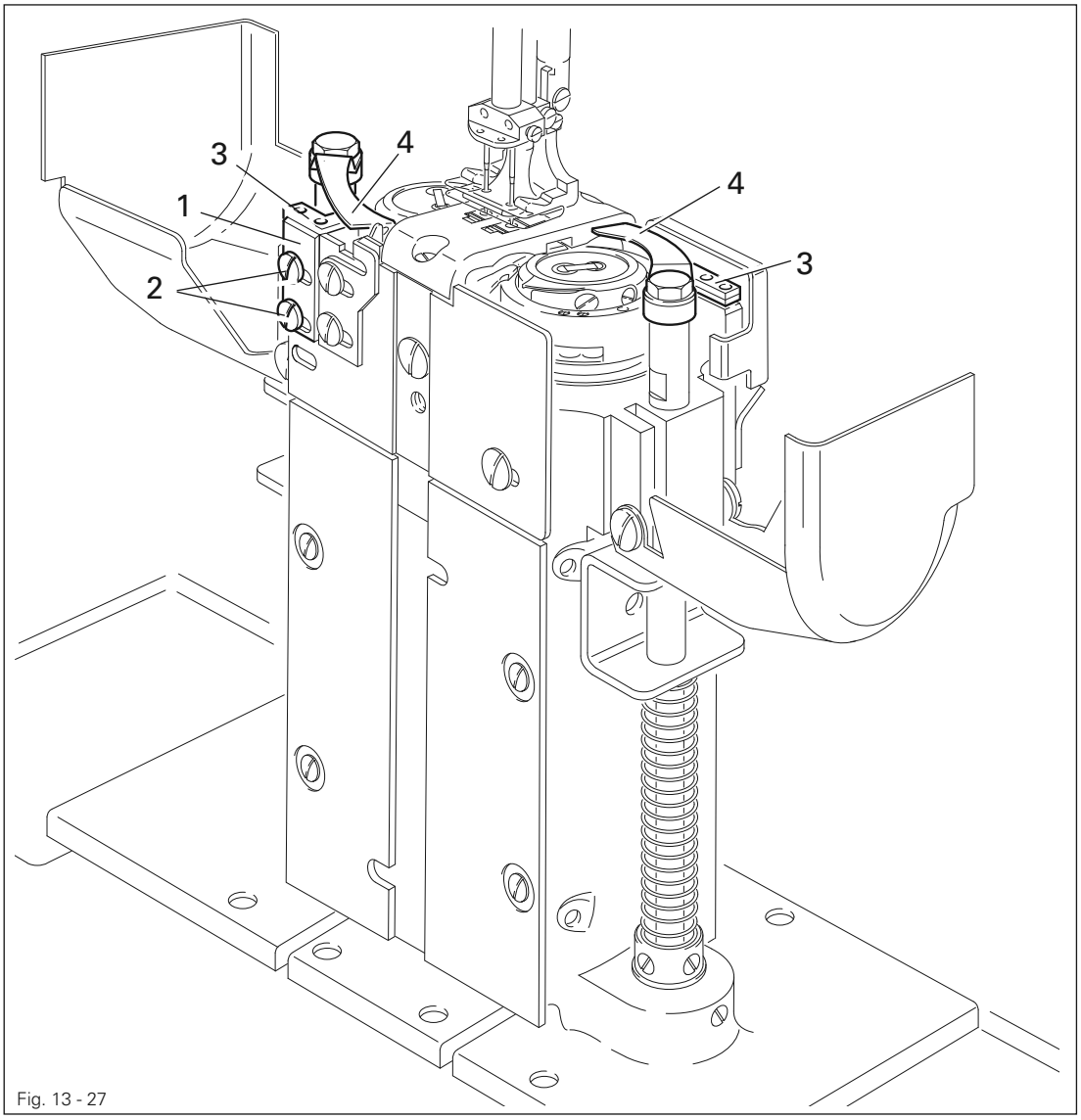
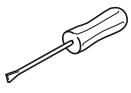


Fig. 13 - 27



- Adjust the bracket **1** (screws **2**) according to **rules 1** and **3.**
- Align the clamp spring **3** according to **rule 2.**

13.05.11 Control cam (pre-calibrating)

Rule
The cutting movement should just have ended when the take-up lever is in its upper turning point.

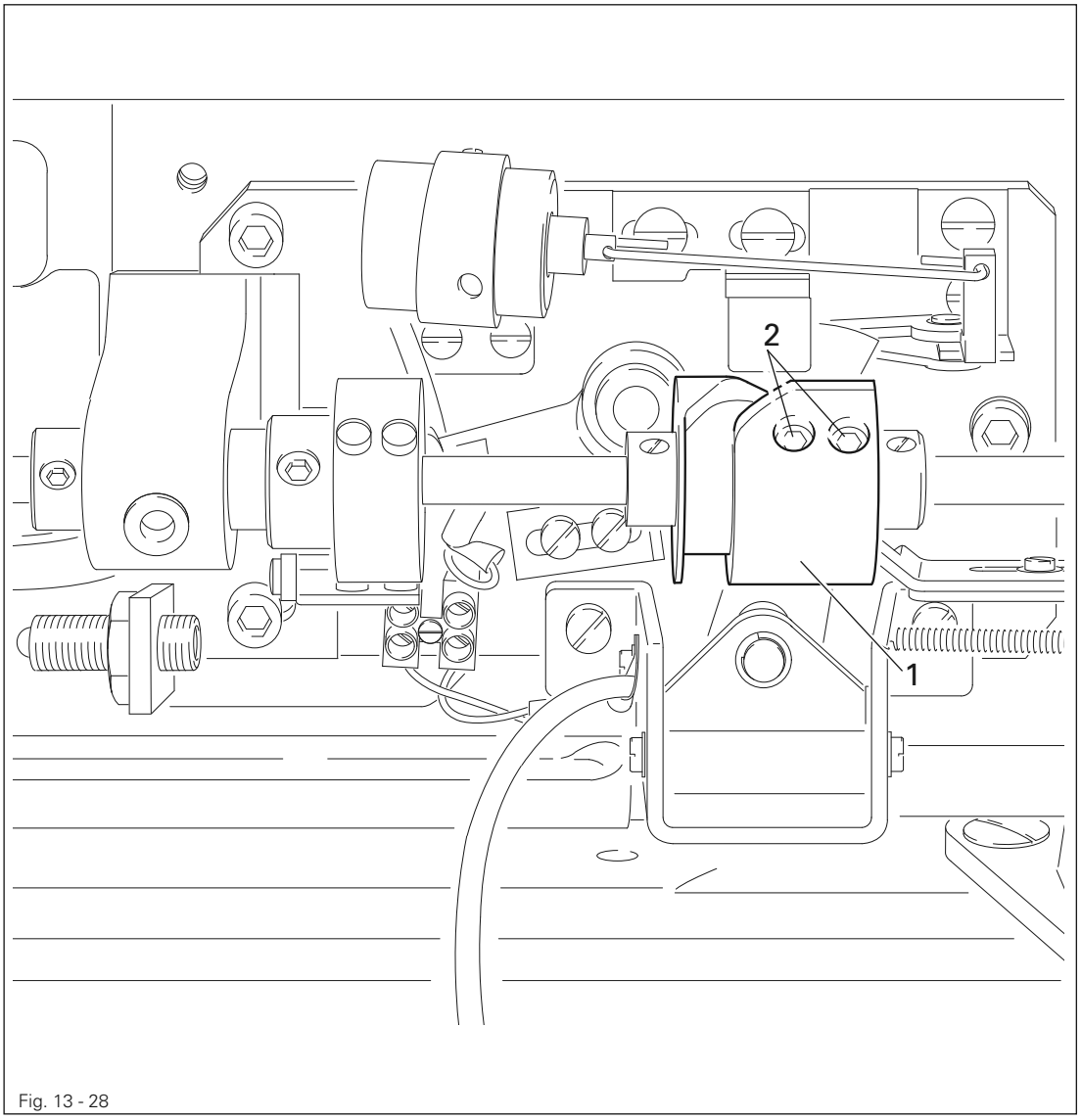


Fig. 13 - 28

● Turn the control cam **1** (screws **2**) according to the **rule**.

13.05.12 Release lever

Rule

There should be a clearance of approx. **1 mm** between the tripping lever **3** and the release lever **5** when the bolt of the tripping lever **3** is dropped into the control cam track **4** and the needle bar is in b.d.c. The needle thread tension should still be effective in this position.

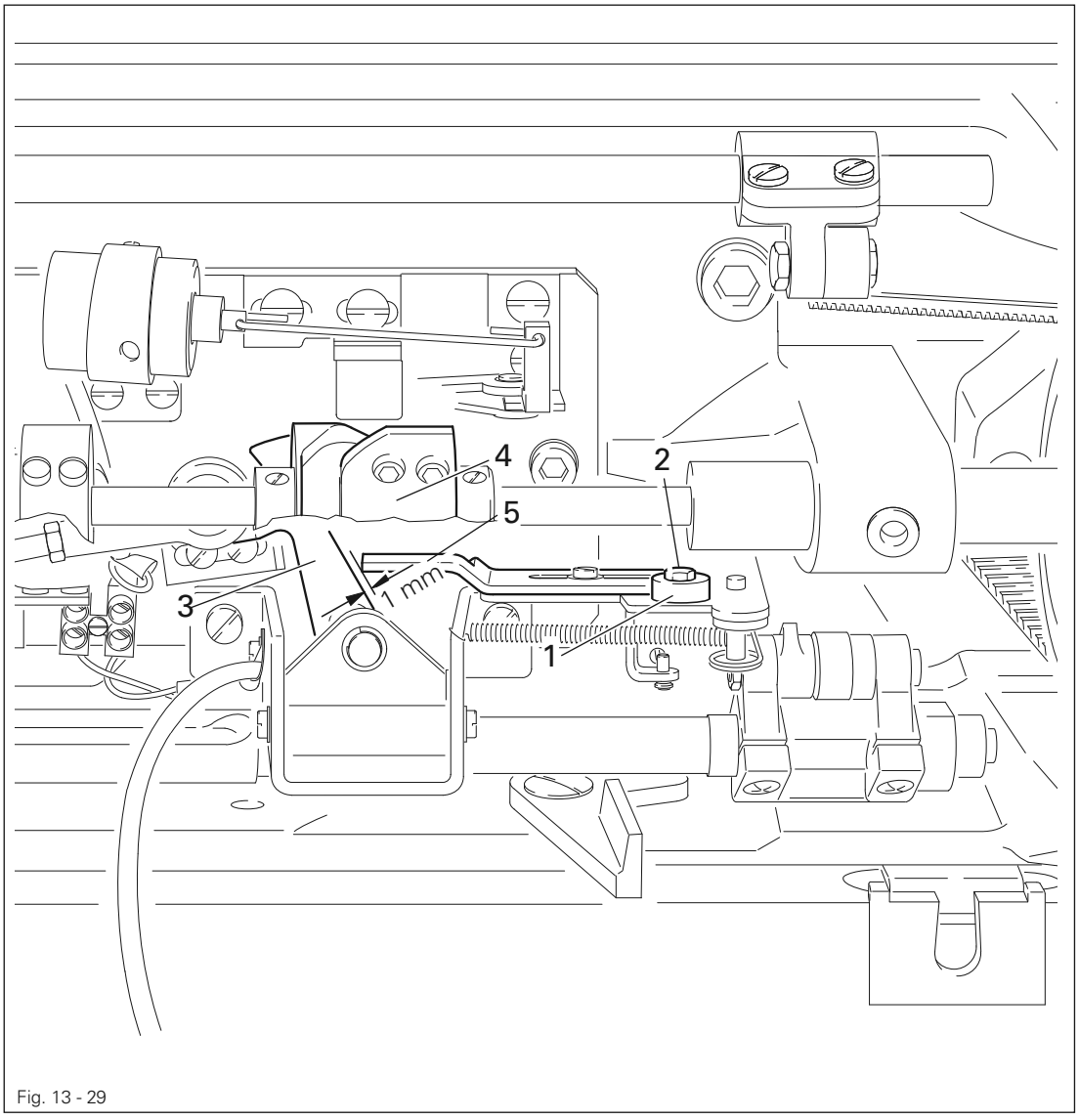
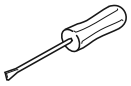


Fig. 13 - 29



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

13.05.13 Release rod

Rule

1. The bolt **3** should abut the lower end of the connecting rod **1** in the elongated hole when the presser foot rests on the needle plate.
2. The tension discs of the needle thread tension may not be separated from each other in this position.

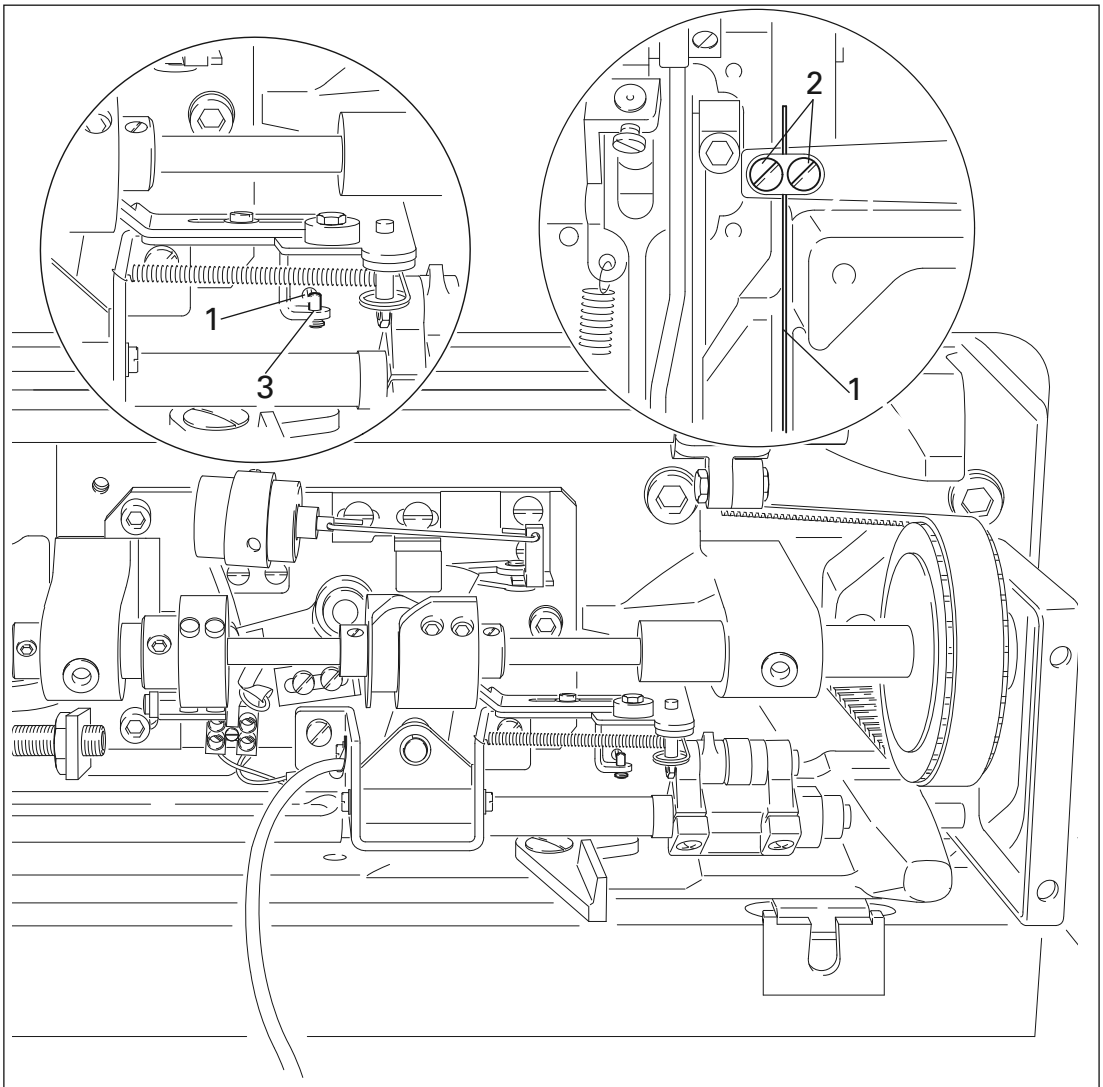
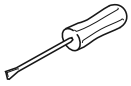


Fig. 13 - 30



● Adjust the connecting rod **1** (screws **2**) according to the **rule**.

13.06 Adjusting lifting lever with subclass -911/97

Rule
When the automatic presser foot lift is activated
1. The presser foot must lift **7 mm** off the needle plate and 2.
   The tension discs of the thread tension must be **0.5 mm** apart.

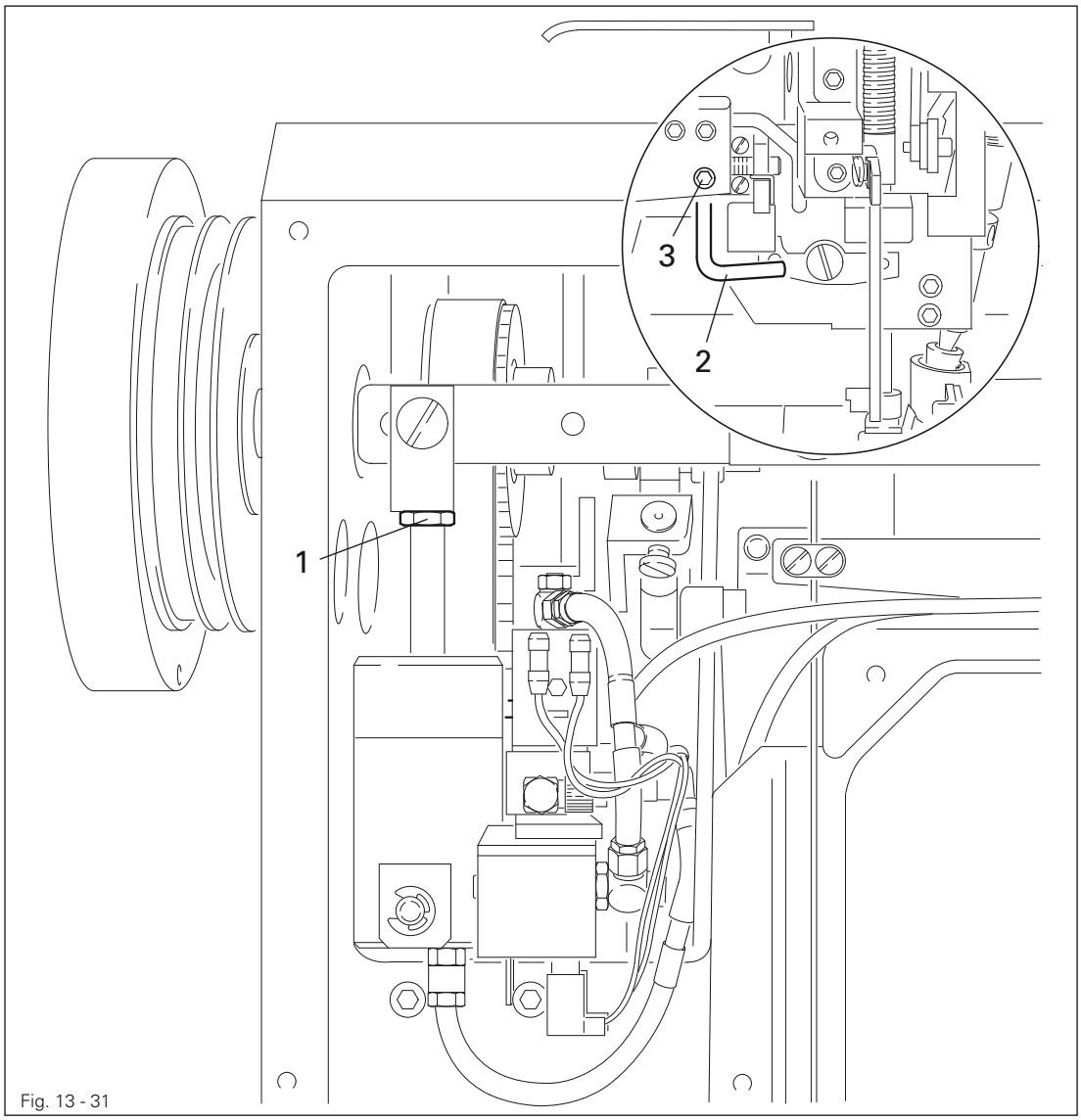


Fig. 13 - 31

- Turn the nut **1** according to **rule 1.**
- Adjust the lever **2** (screw **3**) according to **rule 2.**
- Check if the raised hand lever lowers under its own weight when the automatic presser foot lift is activated; readjust the nut **1** accordingly if necessary.

13.07 Adjusting lifting lever without subclass -911/97

Rule
When the knee lever is activated
1. The presser foot must lift **7 mm** off the needle plate and
2. The tension discs of the thread tension must be **0.5 mm** apart.

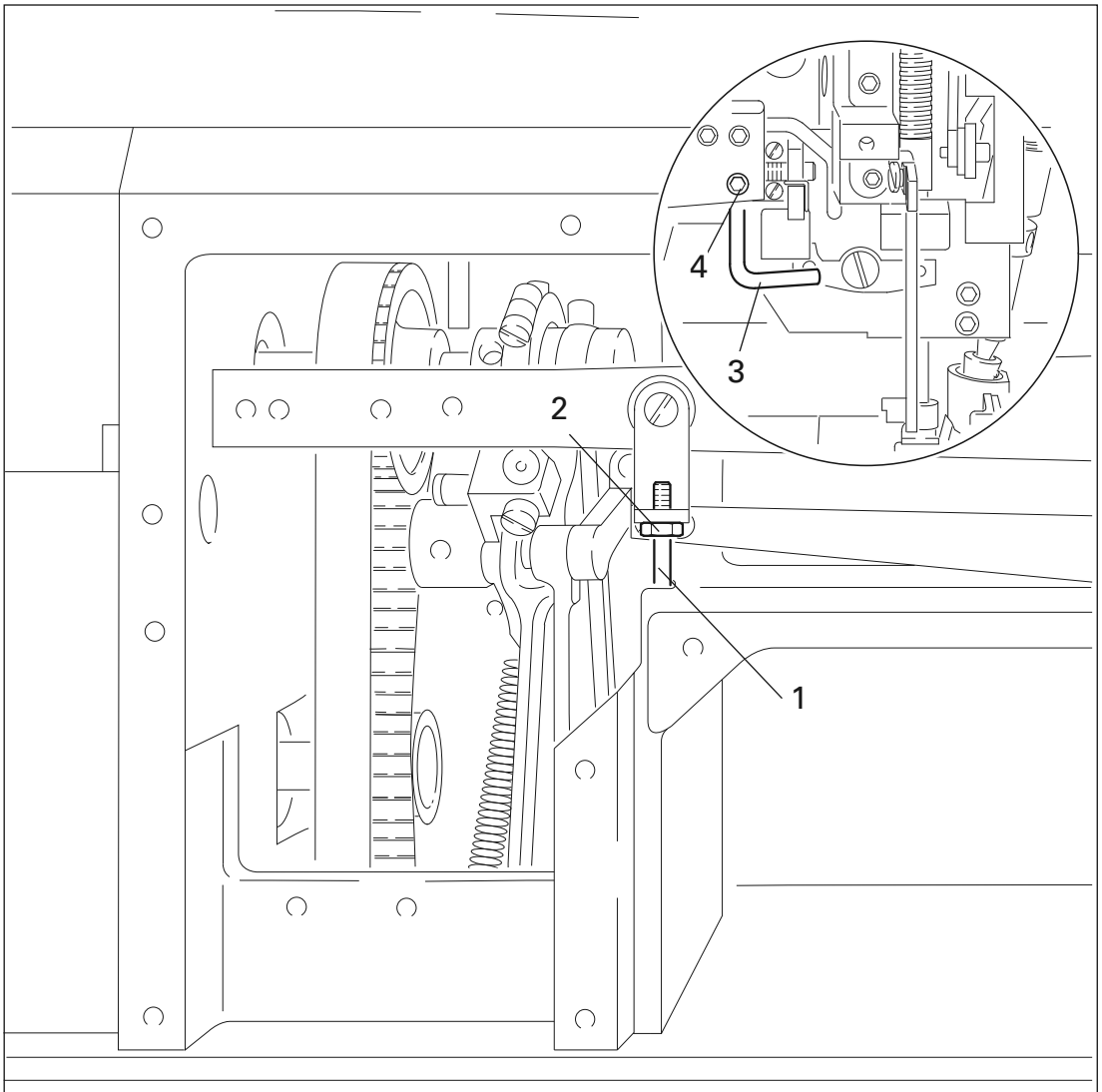


Fig. 11 - 32

- Turn the linkage **1** (nut **2**) according to **rule 1.**
- Adjust the lever **3** (screw **4**) according to **rule 2.**
- Check if the raised hand lever lowers under its own weight when the knee lever is activated; readjust the linkage **1** accordingly if necessary.

13.08 Parameter settings

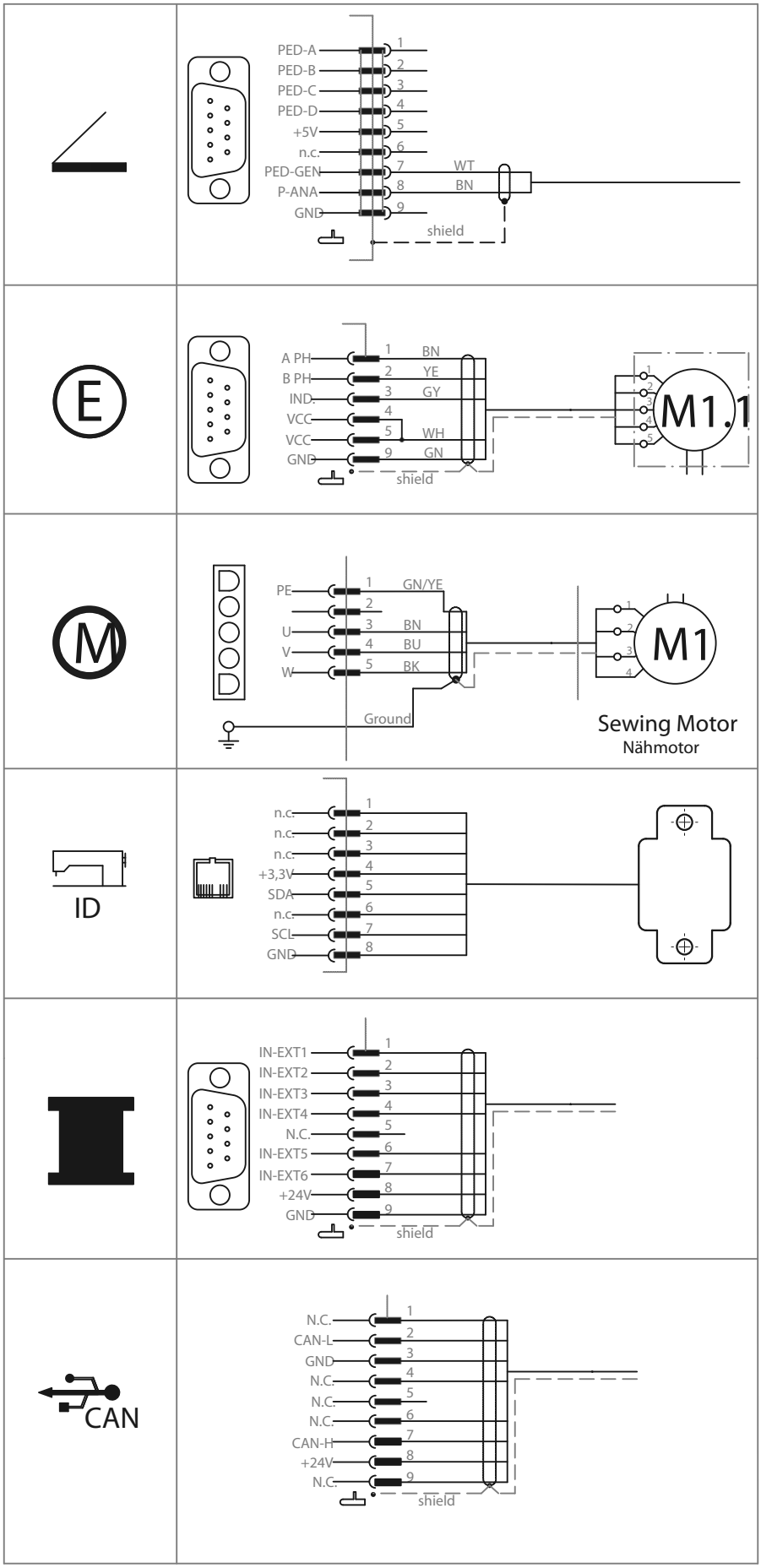
- The separate parameter list for the machine describes how to select the user level and change parameters (see **chapter 1.1.2 Technician level**).

13.09 Internet update of control P40 CD

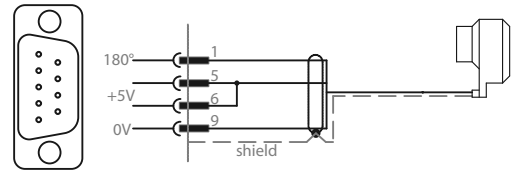
- You need a dongle with the appropriate machine software to be able to perform a control update.
- You can obtain an empty dongle using the order number **72-250 303-91.**
- The **"DongleCopy" PC tool** is needed to upload software onto the dongle.

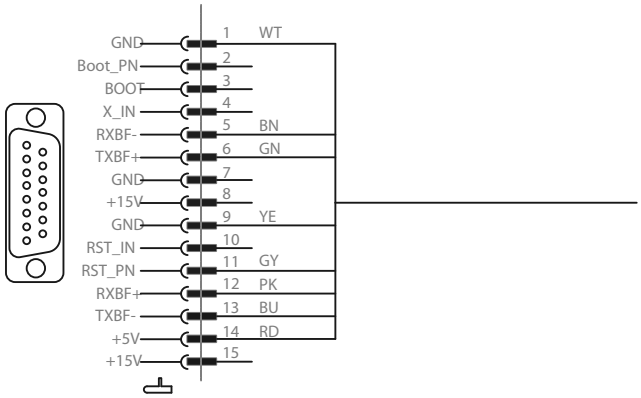
A description of how to perform an Internet update of control P**40** CD as well as the "DongleCopy" PC tool can be downloaded from the Internet address https://partnerweb.pfaff-industrial.com/ .

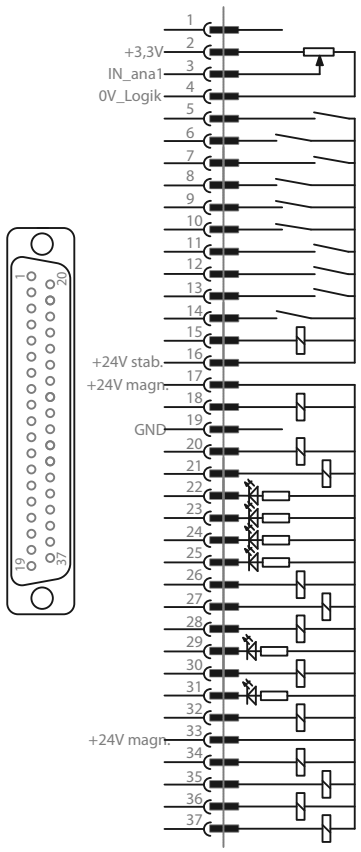
14 Circuit Diagrams 91-191 585-95



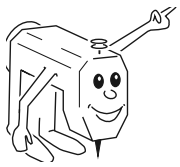
SYNC.







24V only inputs	16
	17
24V power	33
output trimmer	18
output back tack	34
output footlift	35
output thread tension	36



Notes

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