

335

ADJUSTMENT MANUAL

This adjustment manual applies to machines from the serial number **7 262 530** and software version **0435/002** onwards.

Reprinting, reproduction and/or translation of PFAFF adjustment manuals (including parts thereof) is only permitted with our prior agreement and citation of the source.

PFAFF Industriesysteme und Maschinen GmbH

Hans-Geiger-Str. 12 - IG Nord

D-67661 Kaiserslautern

	Contents	Page
13	Adjustment	5
13.01	Tools, gauges and other accessories	5
13.02	Abbreviations	5
13.03	Explanation of symbols	5
13.04	Adjusting basic machine	6
13.04.01	Feed dog position crossways to sewing direction.....	6
13.04.02	Feed dog position in sewing direction	7
13.04.03	Needle position to needle hole	8
13.04.04	Needle height (pre-calibrating)	9
13.04.05	Bottom and top feed sliding movement	10
13.04.06	Hook-to-needle clearance, needle bar rise, needle height and needle guard	11
13.04.07	Top feed lift.....	12
13.04.08	Top feed stroke movement	13
13.04.09	Needle thread tension release	14
13.04.10	Thread check spring.....	15
13.04.11	Bobbin winder.....	16
13.04.12	Presser foot pressure	17
13.05	Adjusting thread trimmer -900/52	18
13.05.01	Control cam (pre-calibrating)	18
13.05.02	Tripping lever height	19
13.05.03	Feed regulator pin	20
13.05.04	Engaging solenoid.....	21
13.05.05	Feed regulator pin height.....	22
13.05.06	Front turning point of thread catcher	23

Table of Contents

	Contents	Page
13.05.07	Aligning thread catcher laterally	24
13.05.08	Control cam (pre-calibrating)	25
13.05.09	Knife.....	26
13.05.10	Test cut.....	27
13.06	Parameter settings	28
13.07	Internet update of control P40 CD	28
14	Circuit Diagrams 91-191 585-95	29

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!

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)

Adjustment

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 recess.

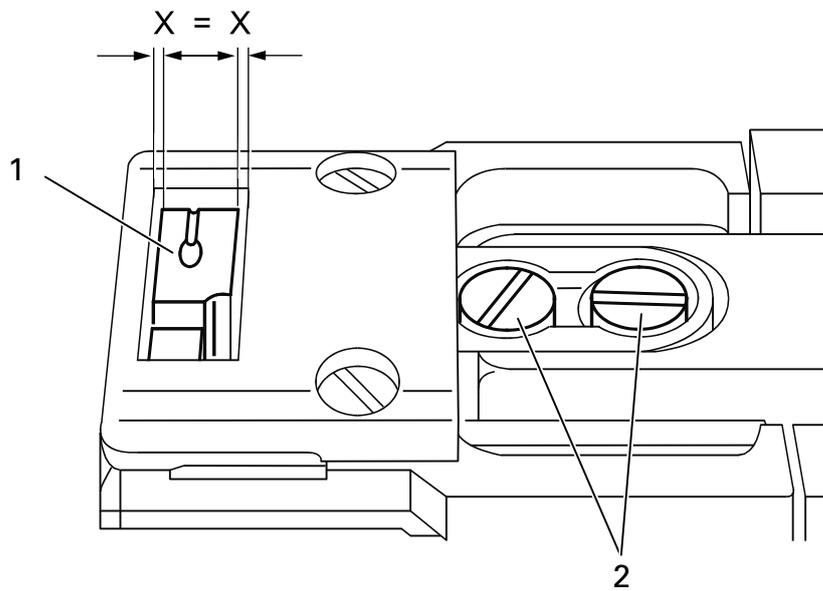
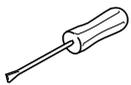


Fig. 13 - 01



- Adjust the bottom transporter 1 (screws 2) according to the rule.

13.04.02 Feed dog position in sewing direction

Rule

The bottom transporter 4 should have the same clearance at the front and back in the needle plate recess in forward and reverse feed at the maximum stitch length setting.

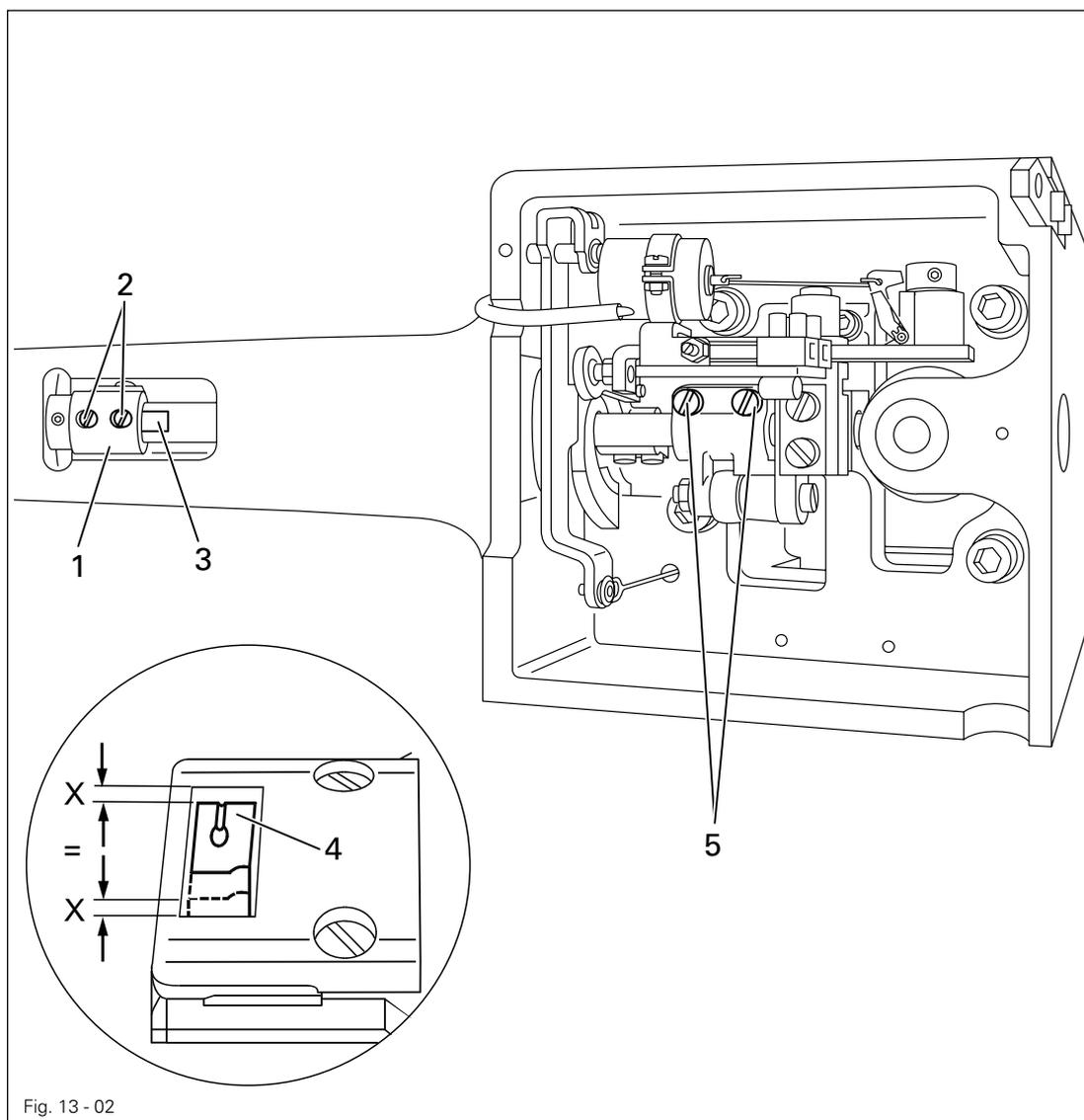


Fig. 13 - 02



- Set the maximum stitch length.
- Place the clamping piece 1 (screws 2) as far as possible to the left on the clamping surface 3 of the rock shaft. The left-hand screw must still be on the clamping surface.
- Adjust the bottom transporter 4 (screws 5) according to the rule.

13.04.03 Needle position to needle hole

Rule

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

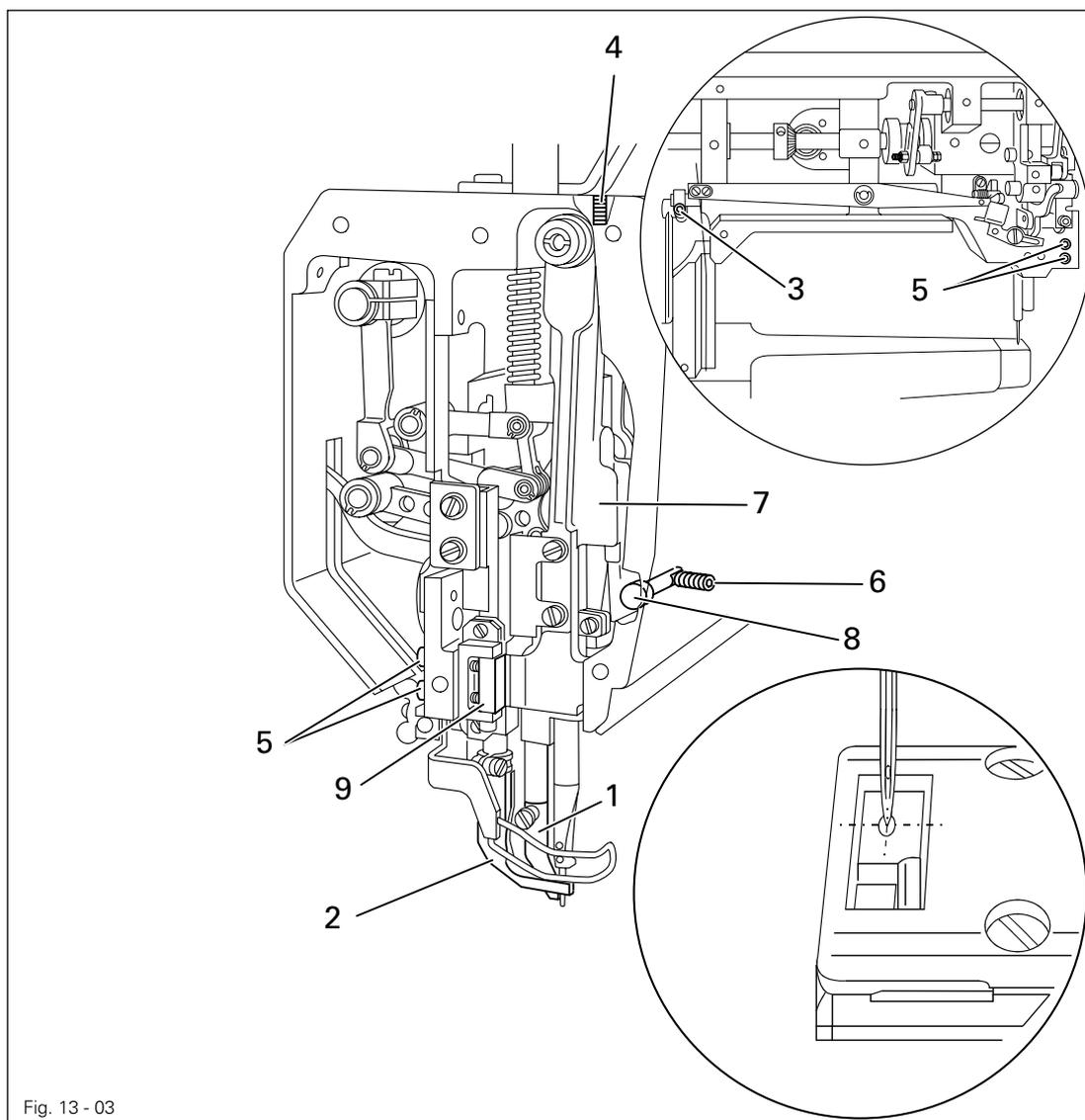


Fig. 13 - 03



- 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 screw 6.



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

13.04.04 Needle height (pre-calibrating)

Rule

The clearance between the needle bar and needle plate should be **15 mm** when the needle bar is in b.d.c.

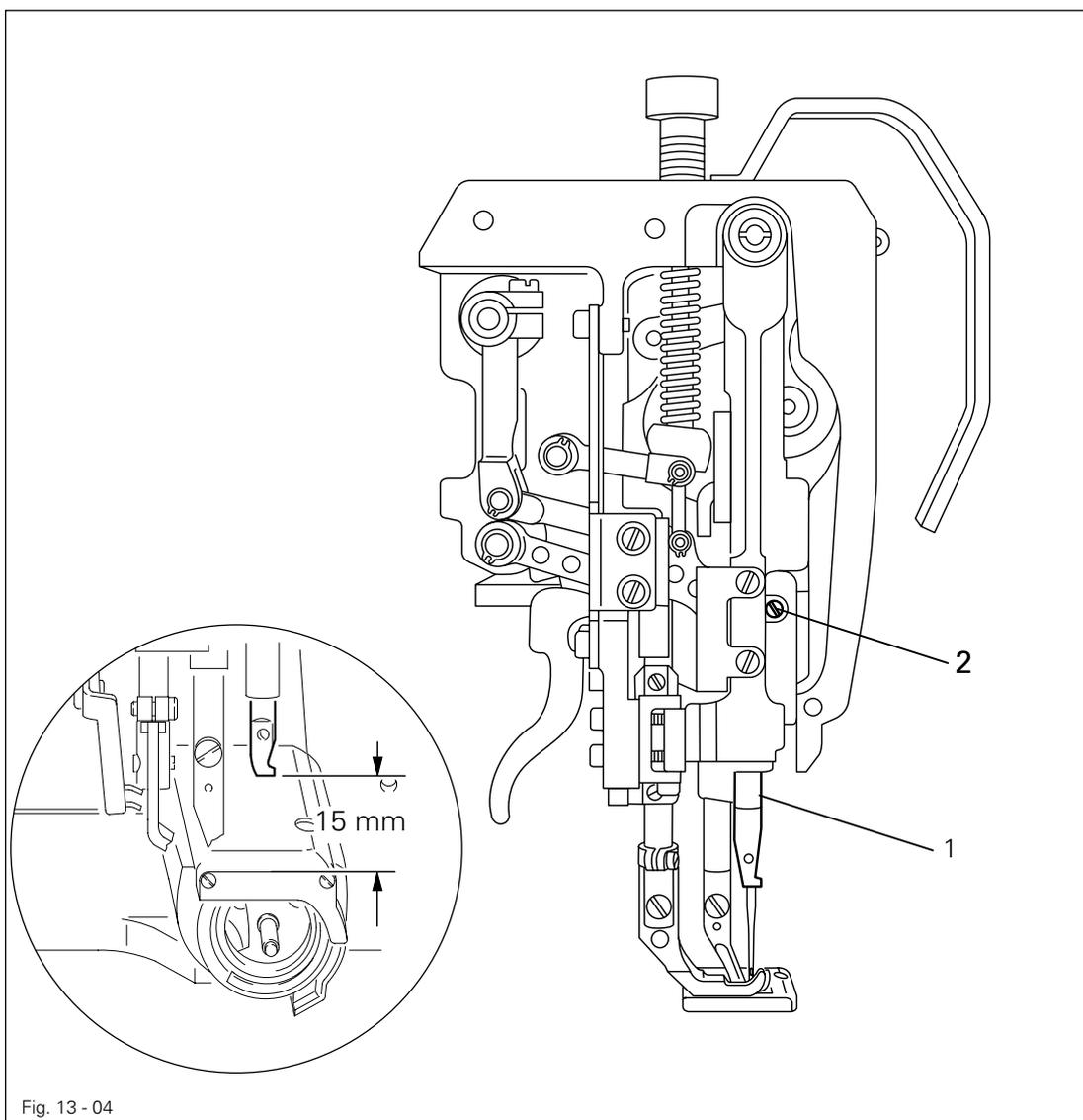
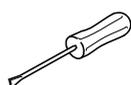


Fig. 13 - 04



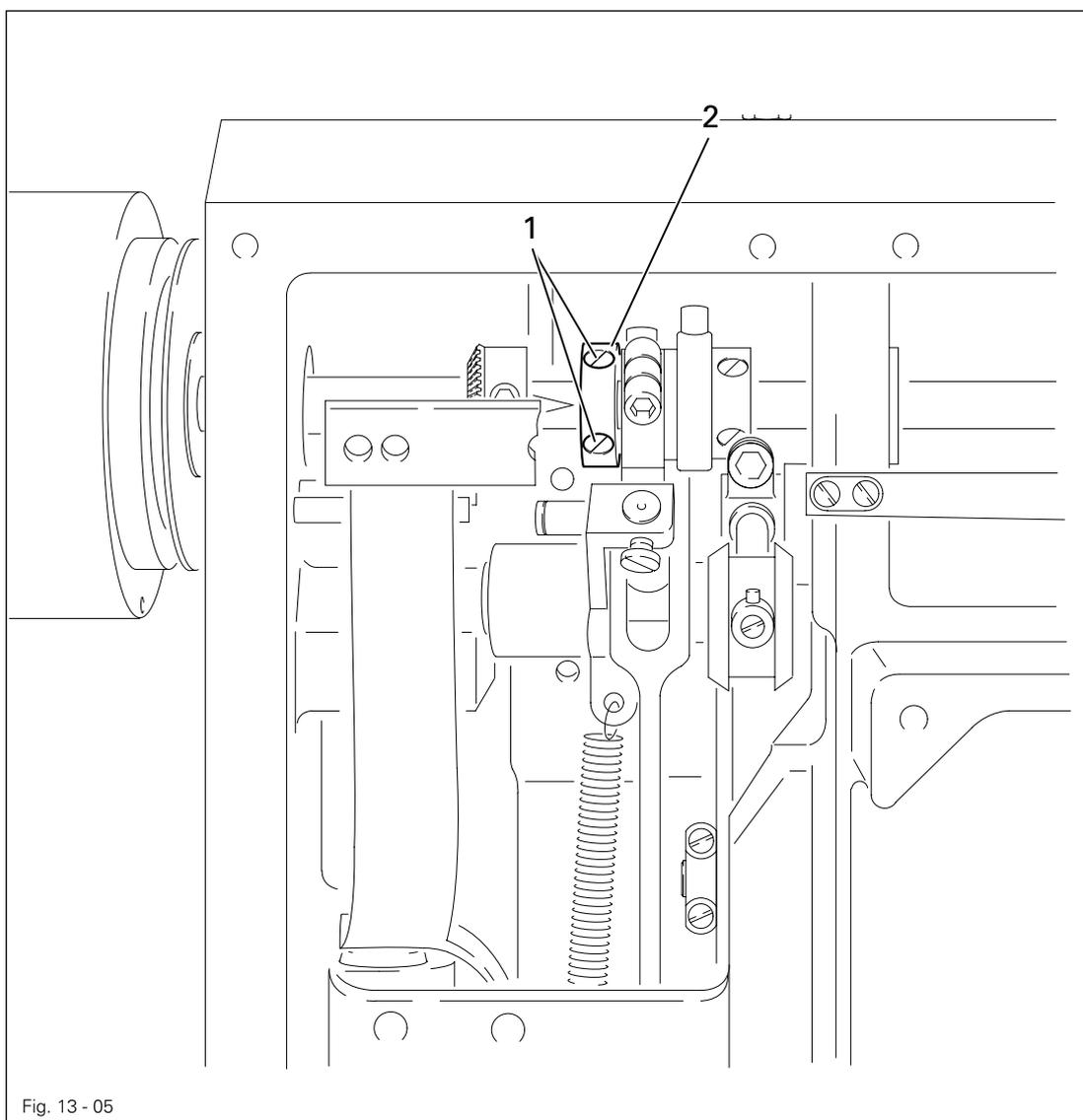
- Adjust the needle bar 1 (screw 2) without twisting according to the rule.

Adjustment

13.04.05 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.



- 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 to b.d.c.
- While retaining this position, initially position the eccentricity of the eccentric **2** to "up" and then adjust it slightly so that it complies with the **rule** when the reverse-feed lever is activated.
- Tighten the screws **1**.

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

Rule

With the needle rise positioned **1.8 mm** after b.d.c. of the needle bar and with stitch length regulation **"3"**:

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

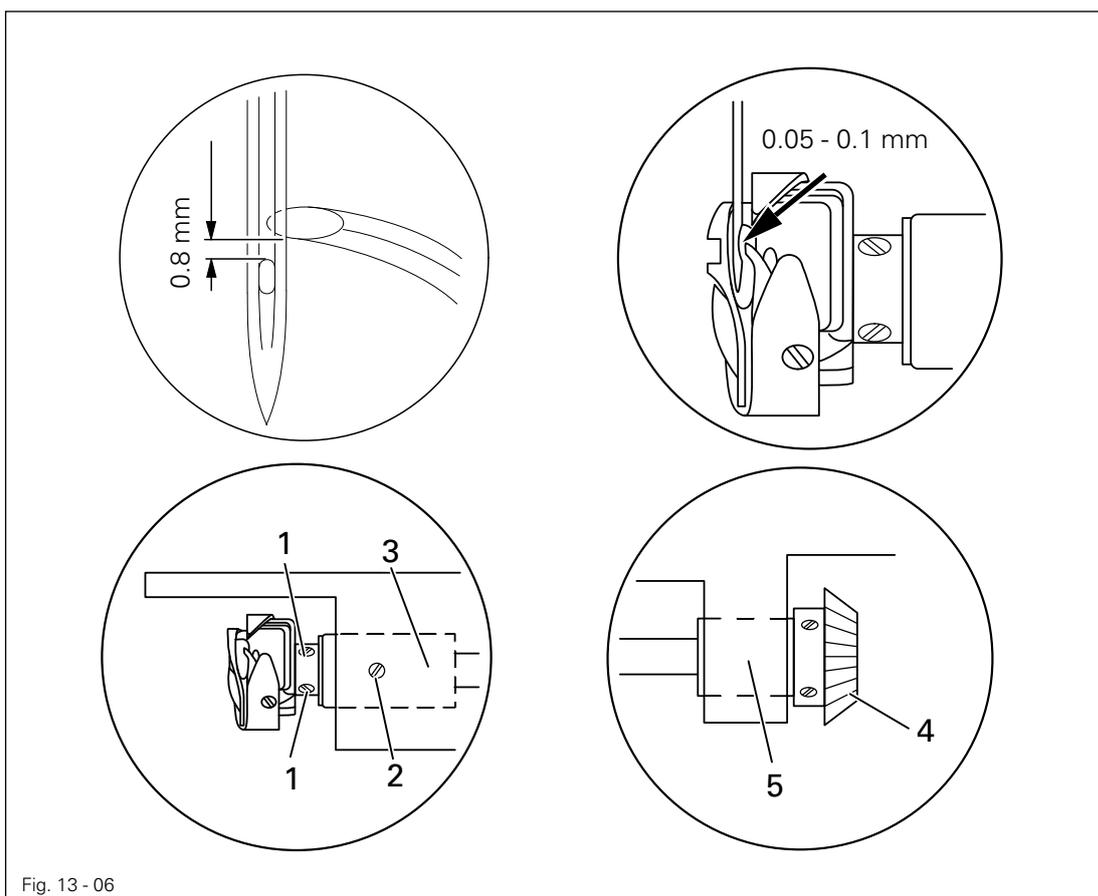


Fig. 13 - 06



- Set the stitch length to **"3"**,
- Loosen the screws **1** and **2** (screw **2** is located on the back of the machine).
- Move the needle bar to b.d.c. and slide the **1.8 mm** thick feeler gauge 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.
- Adjust the hook on the hook shaft according to **rule 1**
- Turn the hook according to **rule 2** (readjust the needle height if necessary), see chapter **13.04.04 Needle height (pre-calibrating)**.
- Move the hook shaft bearing **3** until it abuts the hook and tighten the screw **2**.
- Move the bevel gear **4** until it abuts the bearing **5** and tighten the screws **1**.



The setting of the end play of the hook shaft and hook shaft bearing **3** is omitted in machines with thread trimmer **-900/52**.

Adjustment

13.04.07 Top feed lift

Rule

The presser foot 1 and 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".

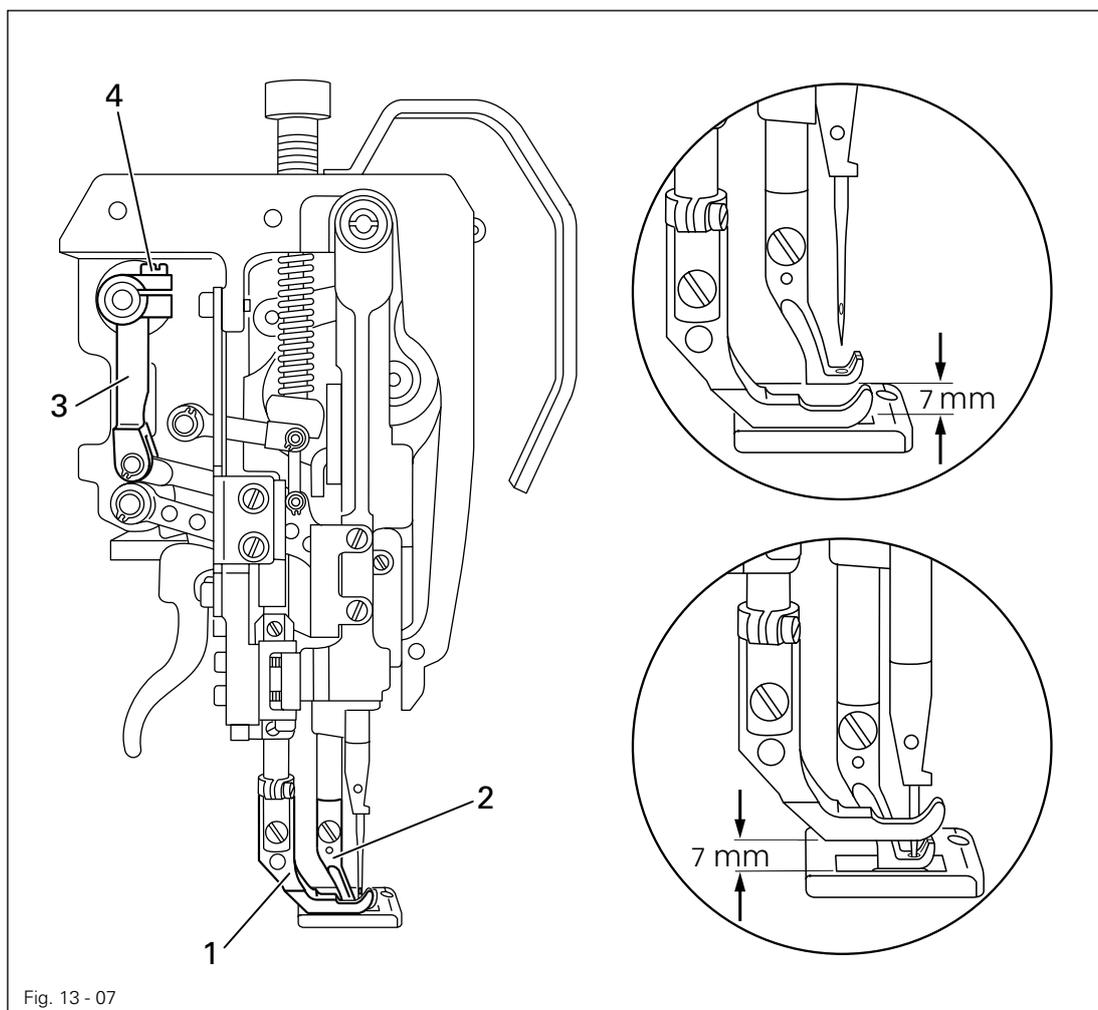


Fig. 13 - 07



- 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.

13.04.08 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.

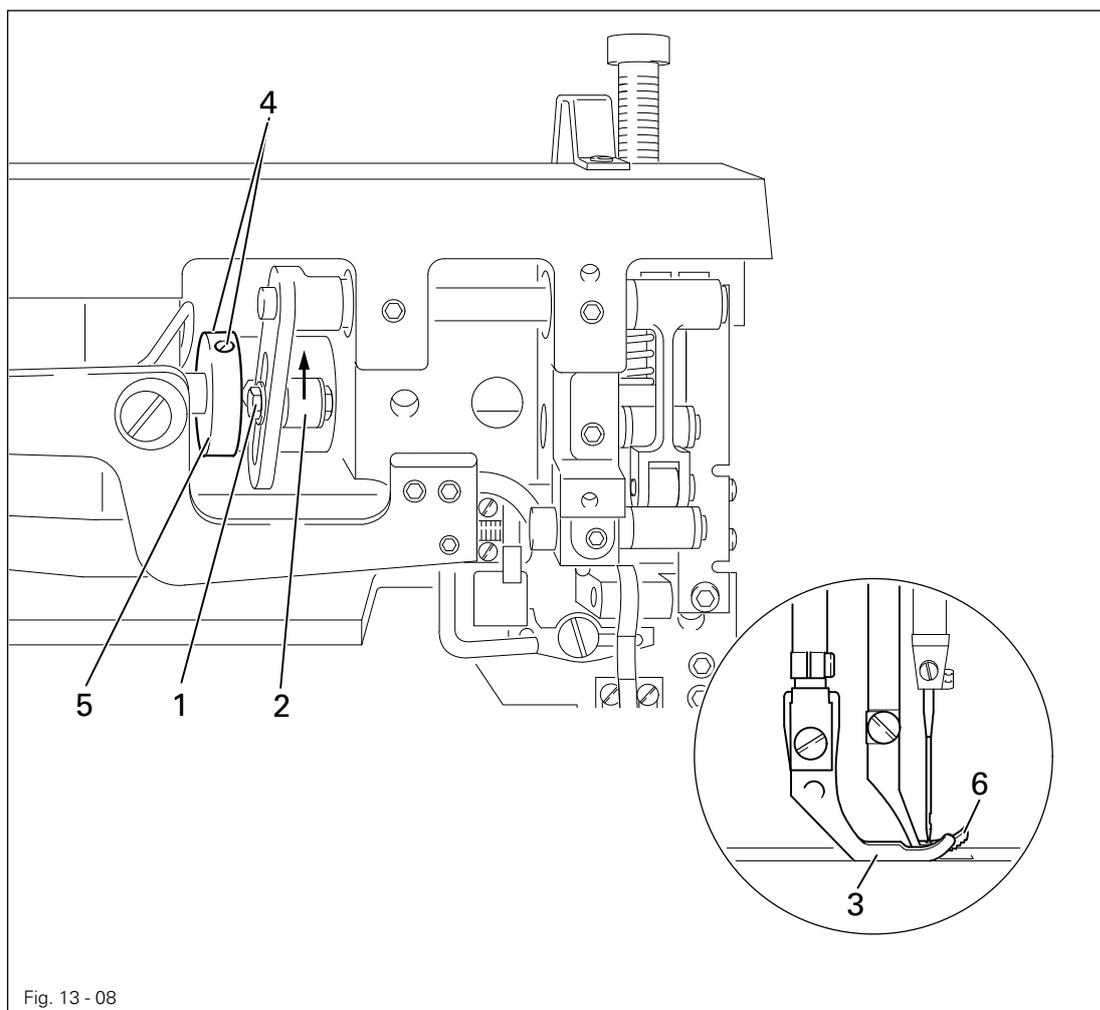


Fig. 13 - 08



- 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**.

Adjustment

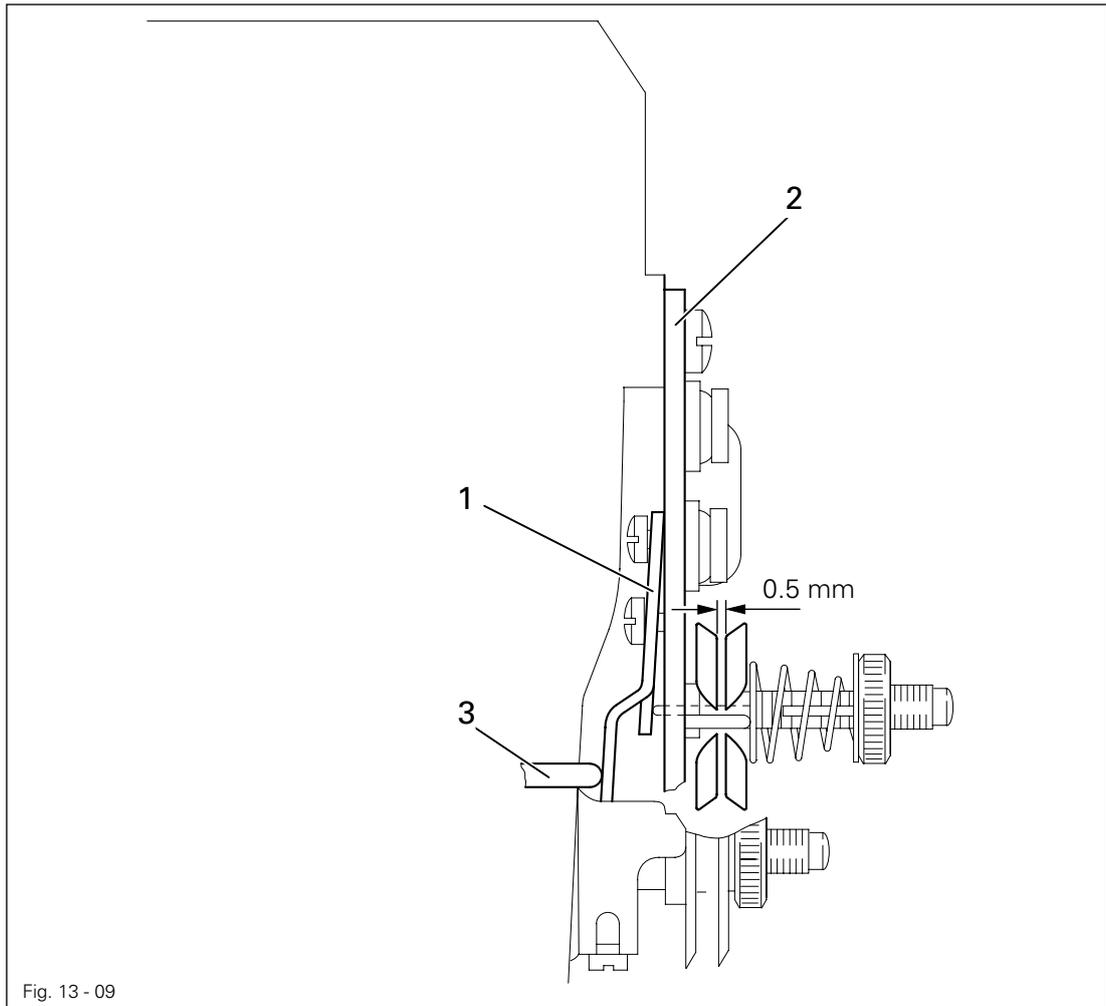
13.04.09 Needle thread tension release

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.



- 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.

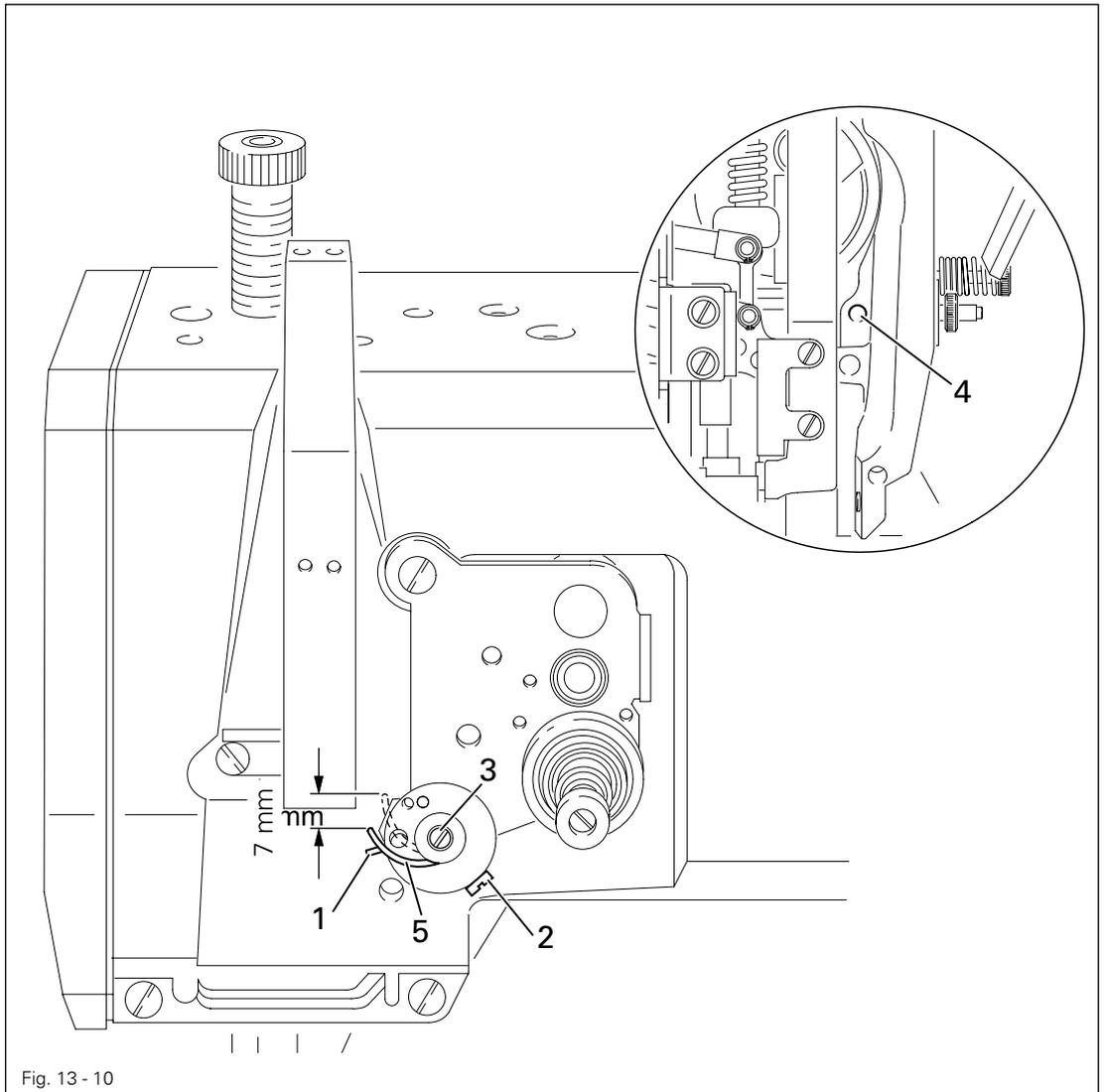
13.04.10 Thread check spring

Rule

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



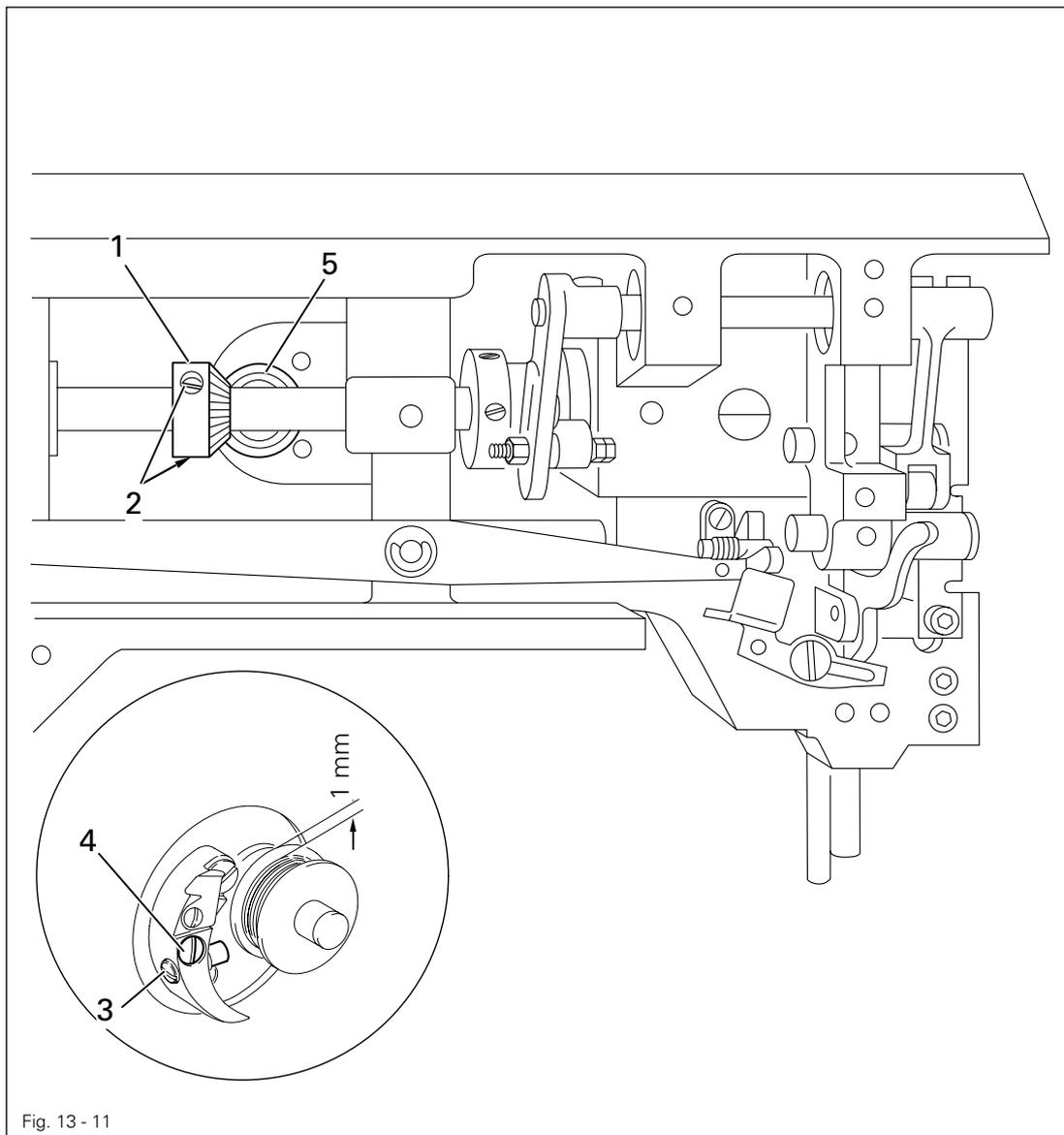
The length of the thread check spring deflection may deviate slightly upwards or downwards for reasons relating to the sewing technology.



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

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.

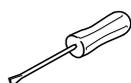
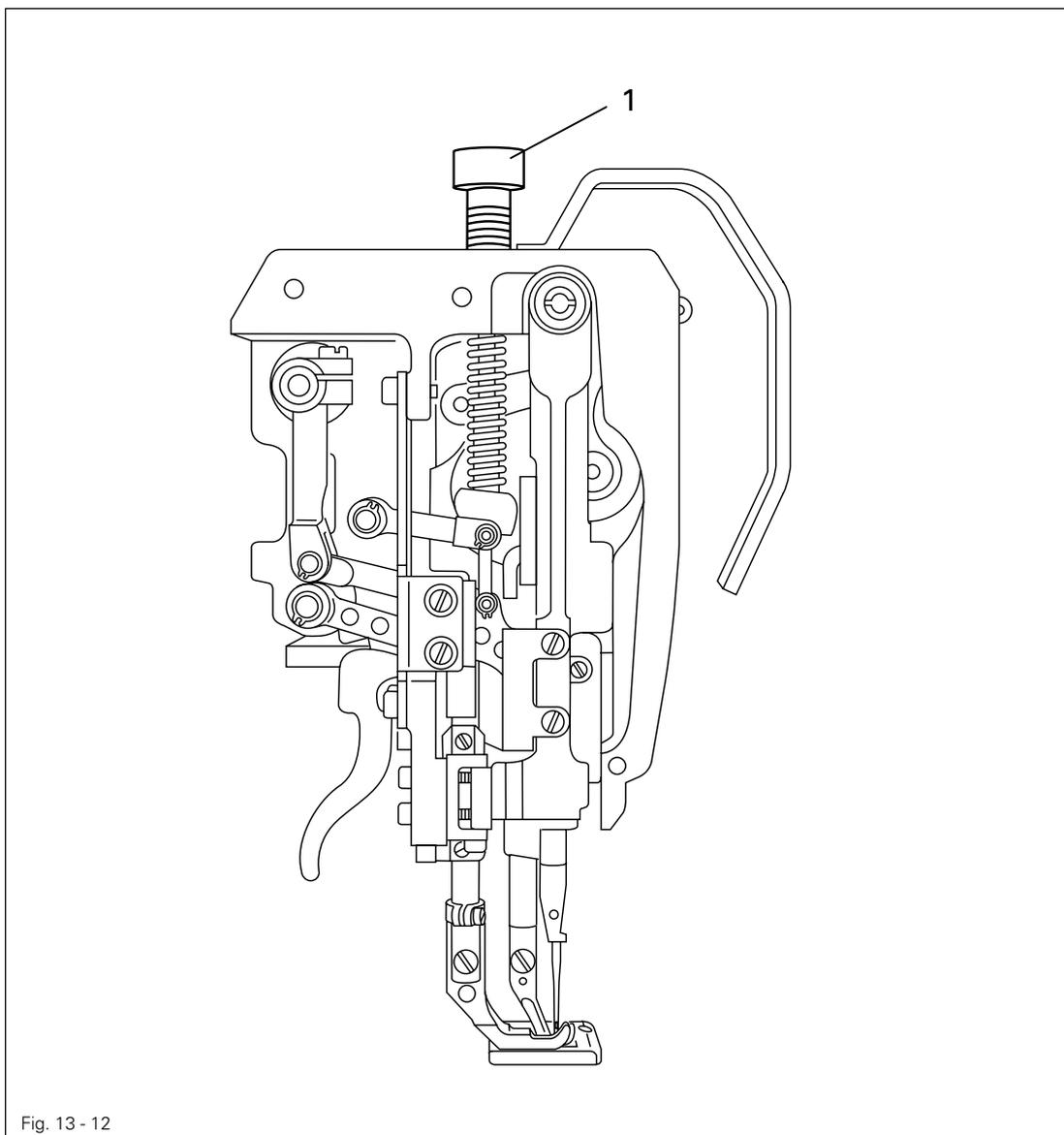


- Adjust the drive wheel **1** (screws **2**) according to **rule 1**.
- Adjust the bolt **3** (screws **4**) according to **rule 2**.

13.04.12 Presser foot pressure

Rule

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



- Turn the screw 1 according to the rule.

13.05 Adjusting thread trimmer -900/52



Ensure that the stitch length is limited to 5.5 mm in all machines with thread trimmer -900/52!

13.05.01 Control cam (pre-calibrating)

Rule

The groove 4 of the control cam 2 should stand vertical under the feed regulator pin 5 when the thread lever is in b.d.c.

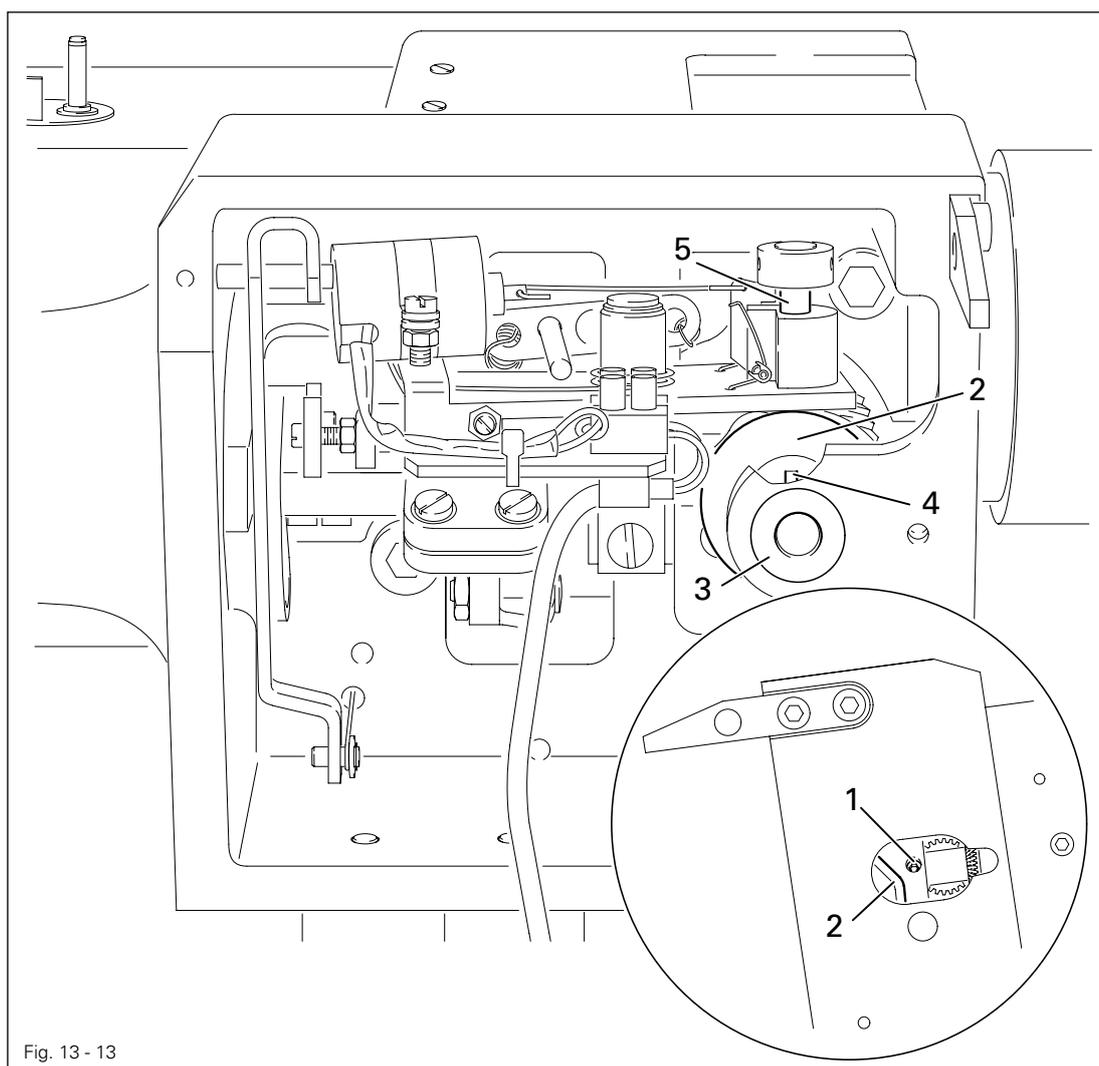


Fig. 13 - 13

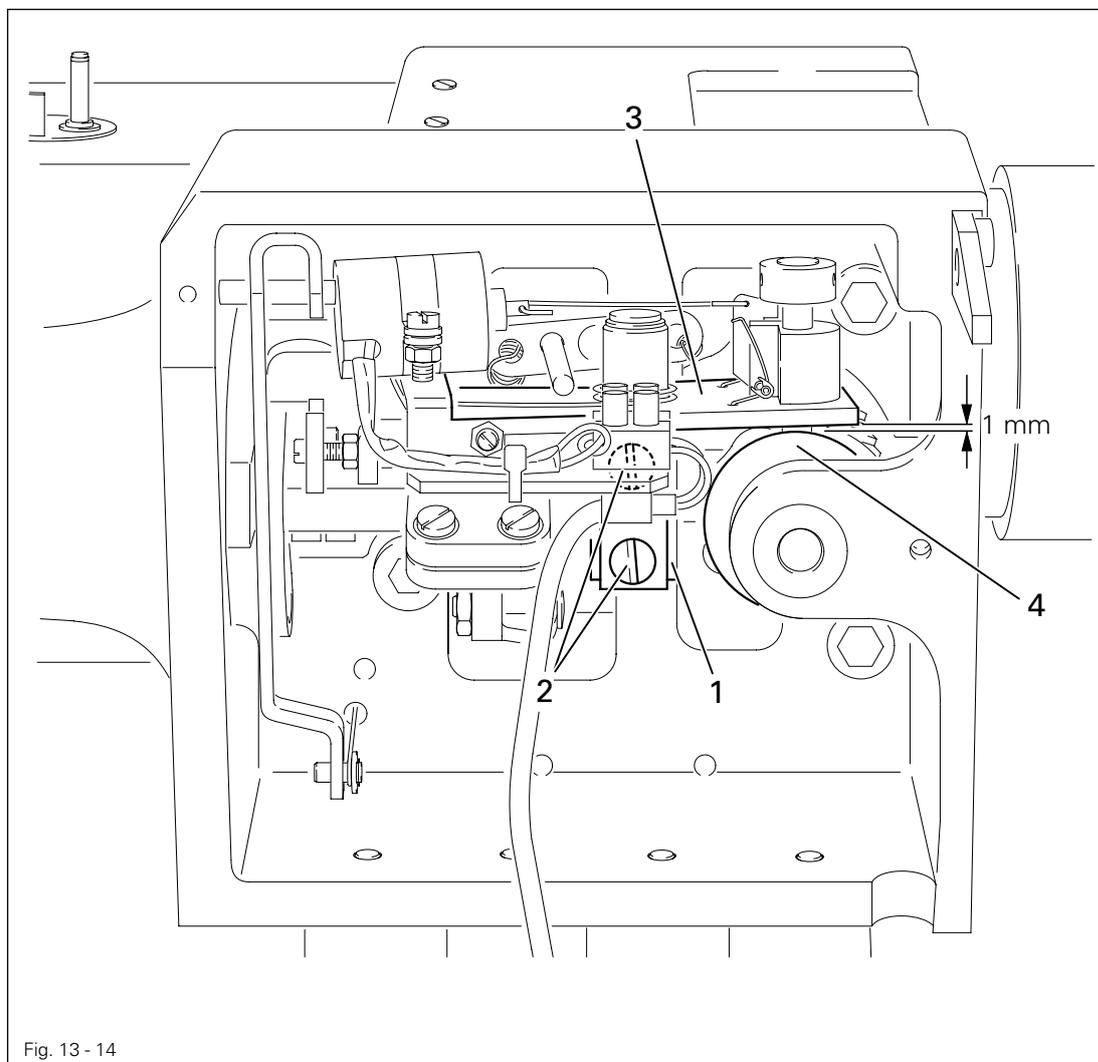


- Loosen the screws 1 through the hole in the machine housing.
- Move the thread lever to b.d.c.
- Turn the control cam 2 according to the rule.
- Move the control cam 2 down so that it touches the bearing 3 and tighten the accessible screw 1.
- Make the second screw 1 accessible and tighten it.

13.05.02 Tripping lever height

Rule

There should be a clearance of **1.0 mm** between the tripping lever **3** and the control cam **4** when the needle bar is in b.d.c.



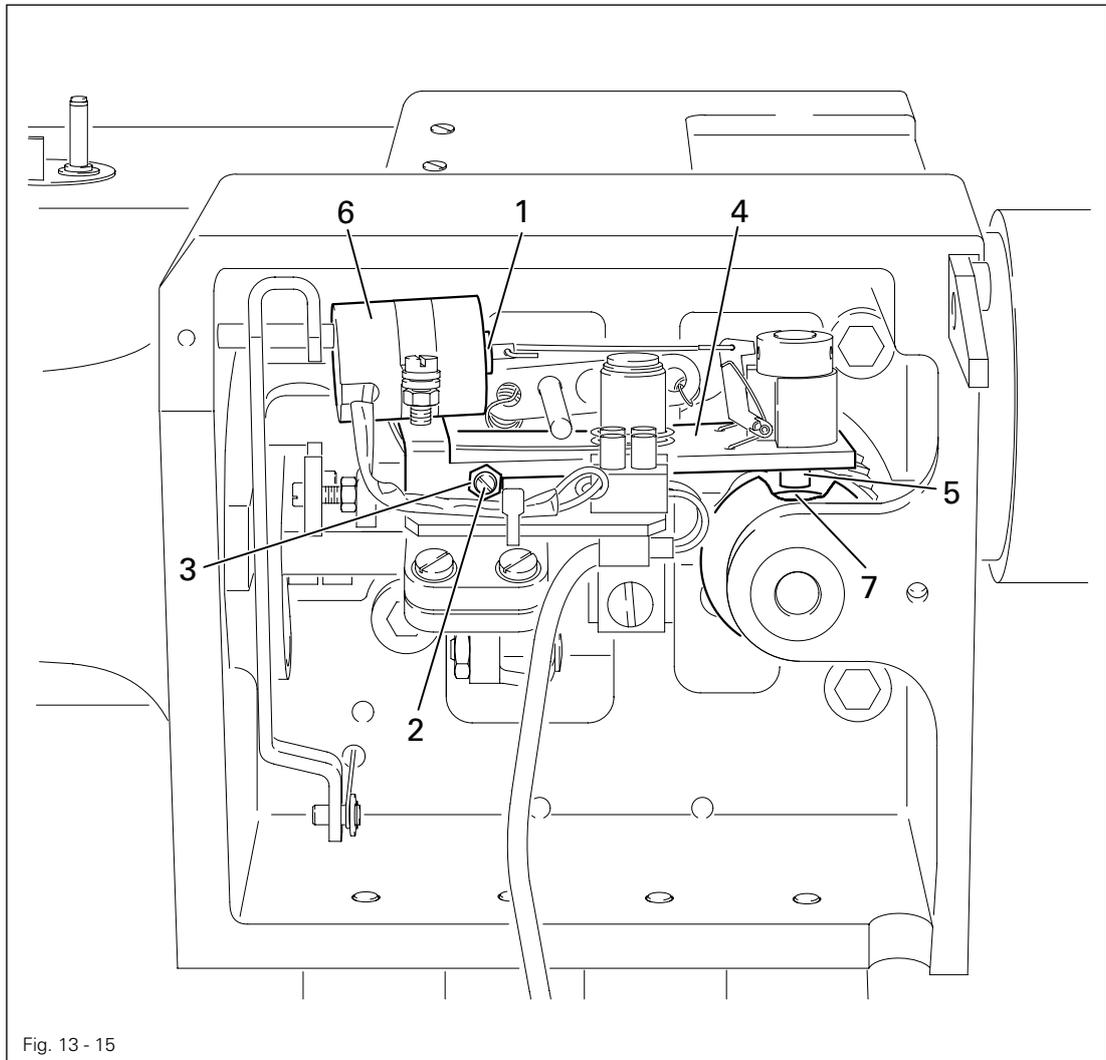
- Move the needle bar to b.d.c.
- Adjust the carrier **1** (screws **2**) of the tripping lever **3** in the elongated hole according to the **rule**.

Adjustment

13.05.03 Feed regulator pin

Rule

The feed regulator pin **5** should be able to drop easily into the control cam track **7** when the engaging solenoid **6** is activated when the needle bar is in b.d.c.



- Move the needle bar to b.d.c.
- Activate the field core **1** manually.
- Turn the screw **2** (nut **3**) until it slightly touches the tripping lever **4**.
- Loosen the screw **2** approx. half a rotation until the movement of the feed regulator pin **5** complies with the **rule**.

13.05.04 Engaging solenoid

Rule

There should be a clearance of approx. **0.5 mm** between the pawl **7** and the retaining collar **6** when the needle bar is in b.d.c and the field core **1** is activated up to the stop.

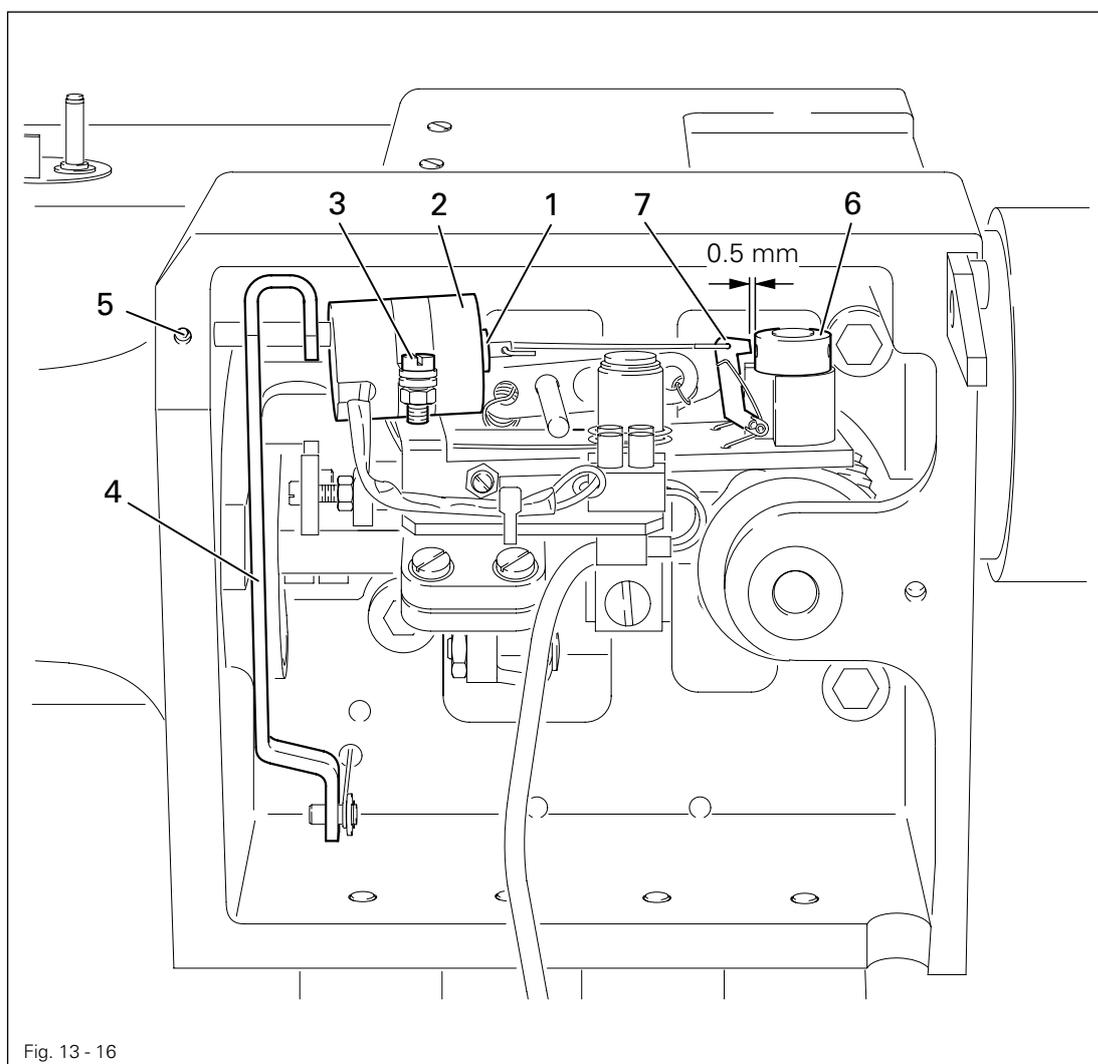


Fig. 13 - 16



- Move the needle bar to b.d.c.
- Slide the field core **1** up to the stop.
- Adjust the magnet housing **2** (screw **3**) according to the rule.



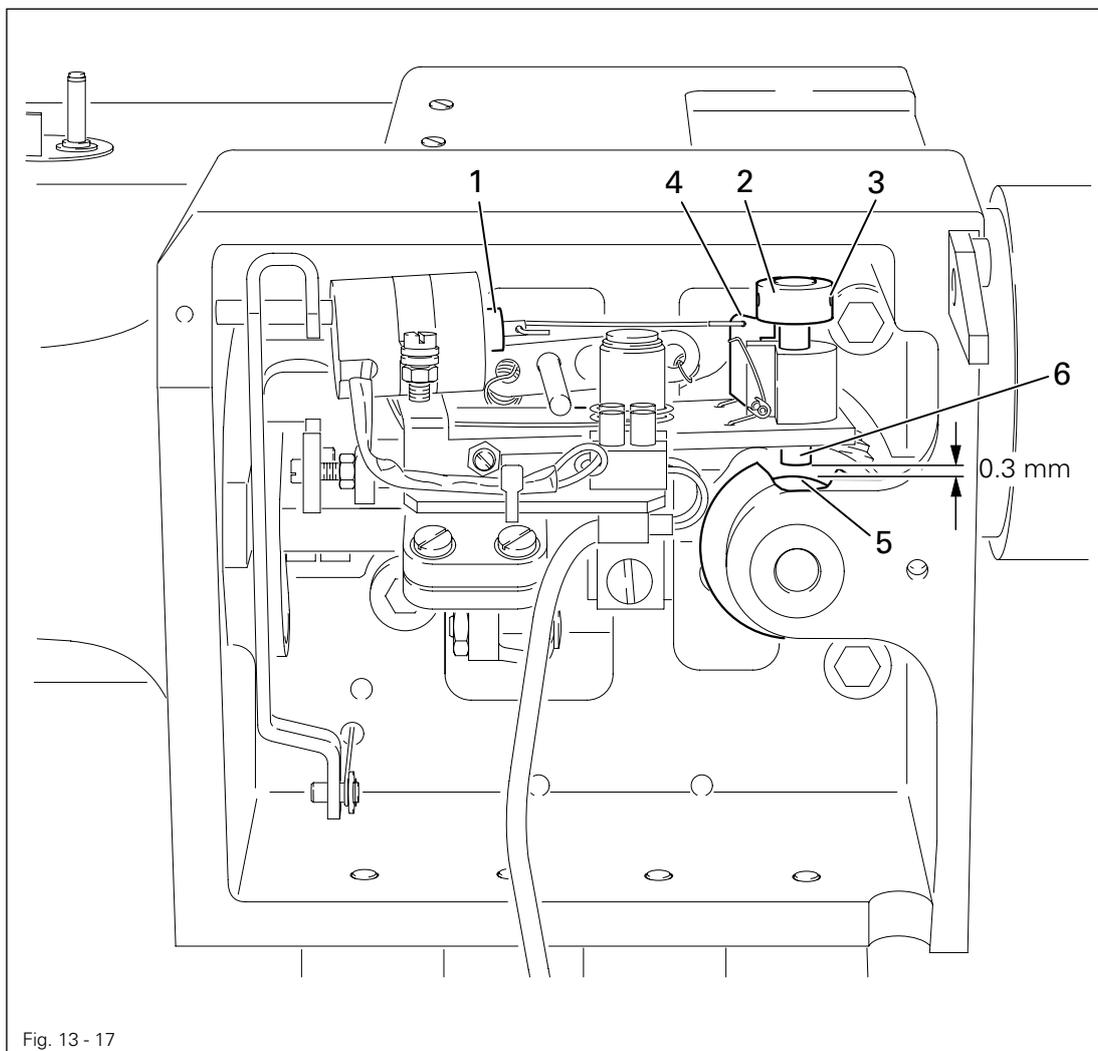
If the magnet housing **2** comes into contact with the lever **4**, move the lever **4** (screw **5**) slightly to the left.

Adjustment

13.05.05 Feed regulator pin height

Rule

When the thread trimmer is in the neutral position and the pawl **4** is engaged, there should be a clearance of **0.3 mm** between the highest point of the control cam **5** and the feed regulator pin **6**.



- Move the needle bar to t.d.c.
- Activate the field core **1**.
- Adjust the retaining collar **2** (screws **3**) according to the **rule**.

13.05.06 Front turning point of thread catcher

Rule

When the thread catcher **3** is in the front turning point, the rear edge of the thread catcher cutout should still be **1 mm** above the front edge of the bobbin case position finger **6**.

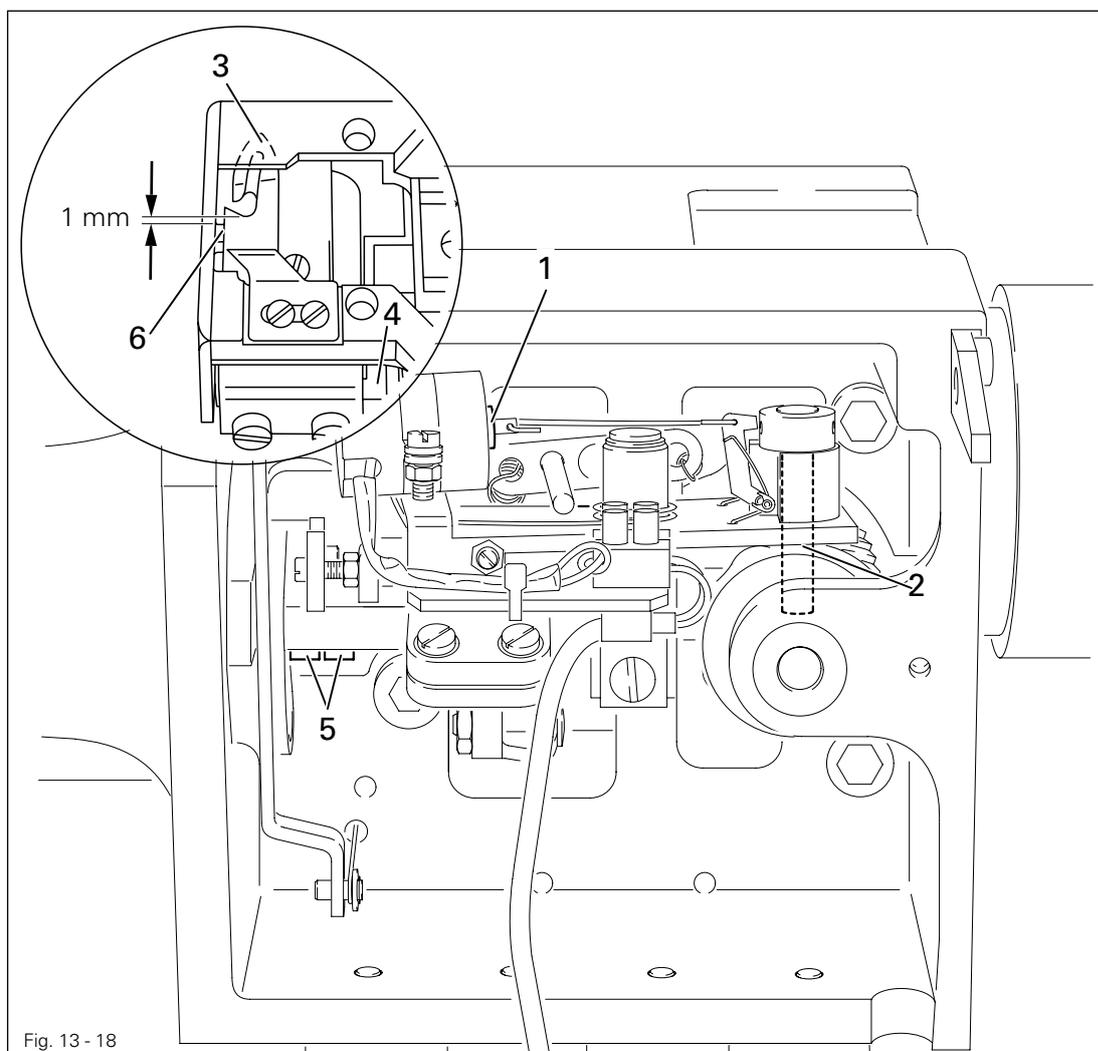


Fig. 13 - 18



- Move the needle bar to b.d.c.
- Activate the field core **1** so that the feed regulator pin **2** drops into the cam track.
- Move the thread catcher **3** to its front turning point by turning the handwheel (direction of rotation).
- Set the thread catcher **3** according to the **rule** by turning the thread catcher carrier **4** (screws **5**).

13.05.07 Aligning thread catcher laterally

Rule

The thread catcher tip **4** should point exactly at the middle of the needle when the needle bar is in b.d.c.

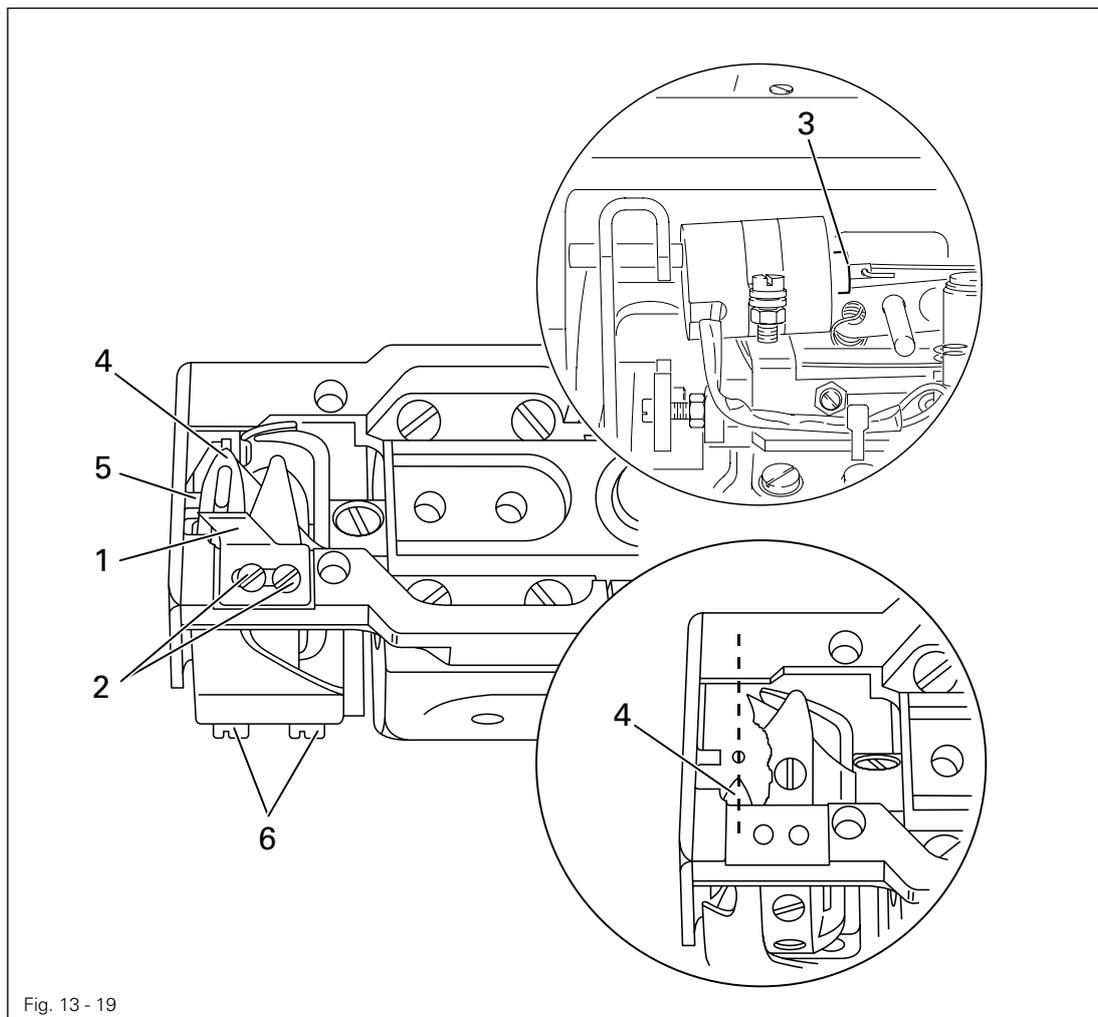


Fig. 13 - 19



- Remove the knife **1** (screws **2**).
- Move the needle bar to b.d.c.
- Activate the field core **3** manually and turn the handwheel until the needle bar is positioned at t.d.c. Please ensure that the thread catcher **4** does not touch the bobbin case position finger **5** as it moves.
- Align the thread catcher **4** (screws **6**) laterally according to the rule.



The knife **1** remains dismantled for additional settings.

13.05.08 Control cam (pre-calibrating)

Rule

If the end of the thread guard 2 is 2 mm behind the middle of the bobbin case position finger 3 looking in the feeding direction, the clearance between the thread catcher tip 4 and the thread guard 2 should be approx. 4 mm.

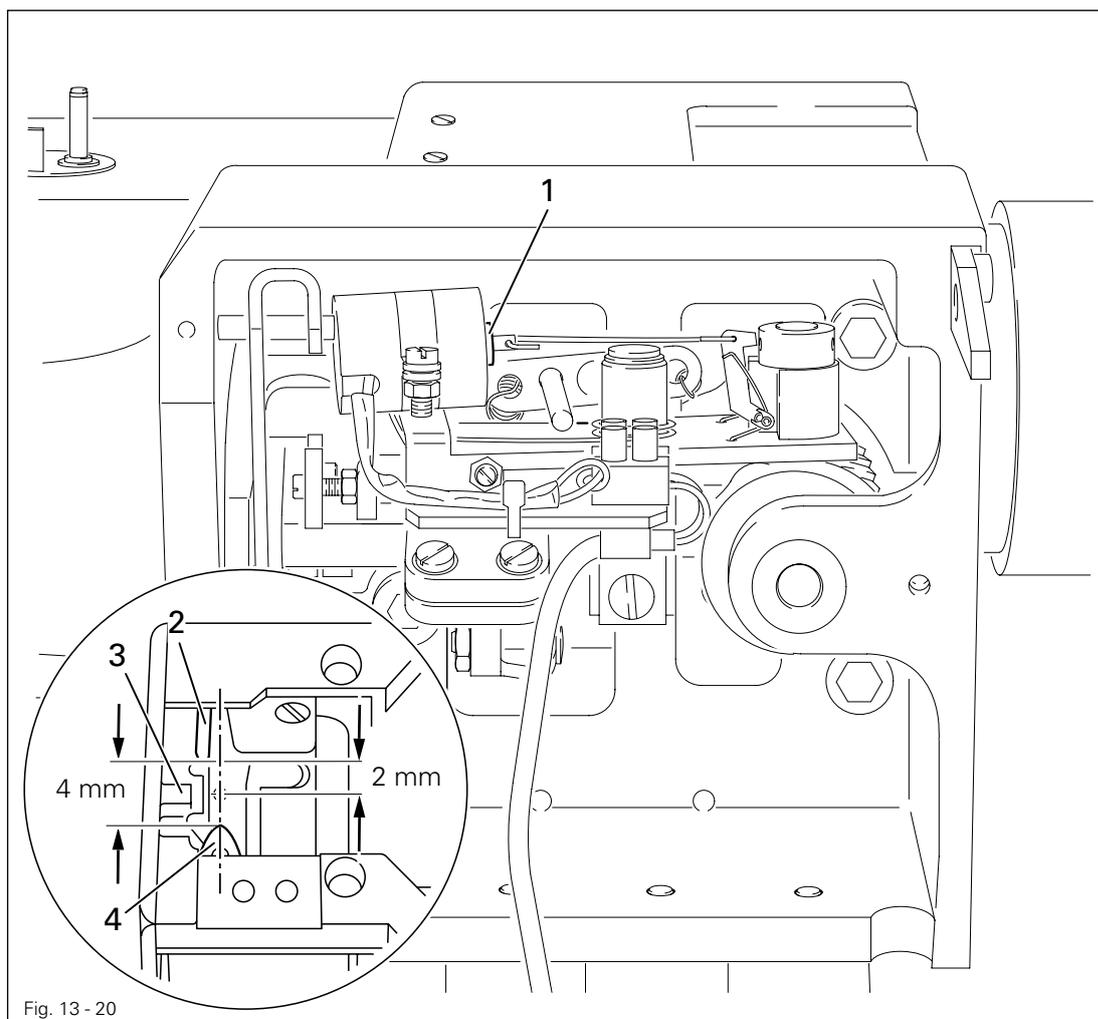


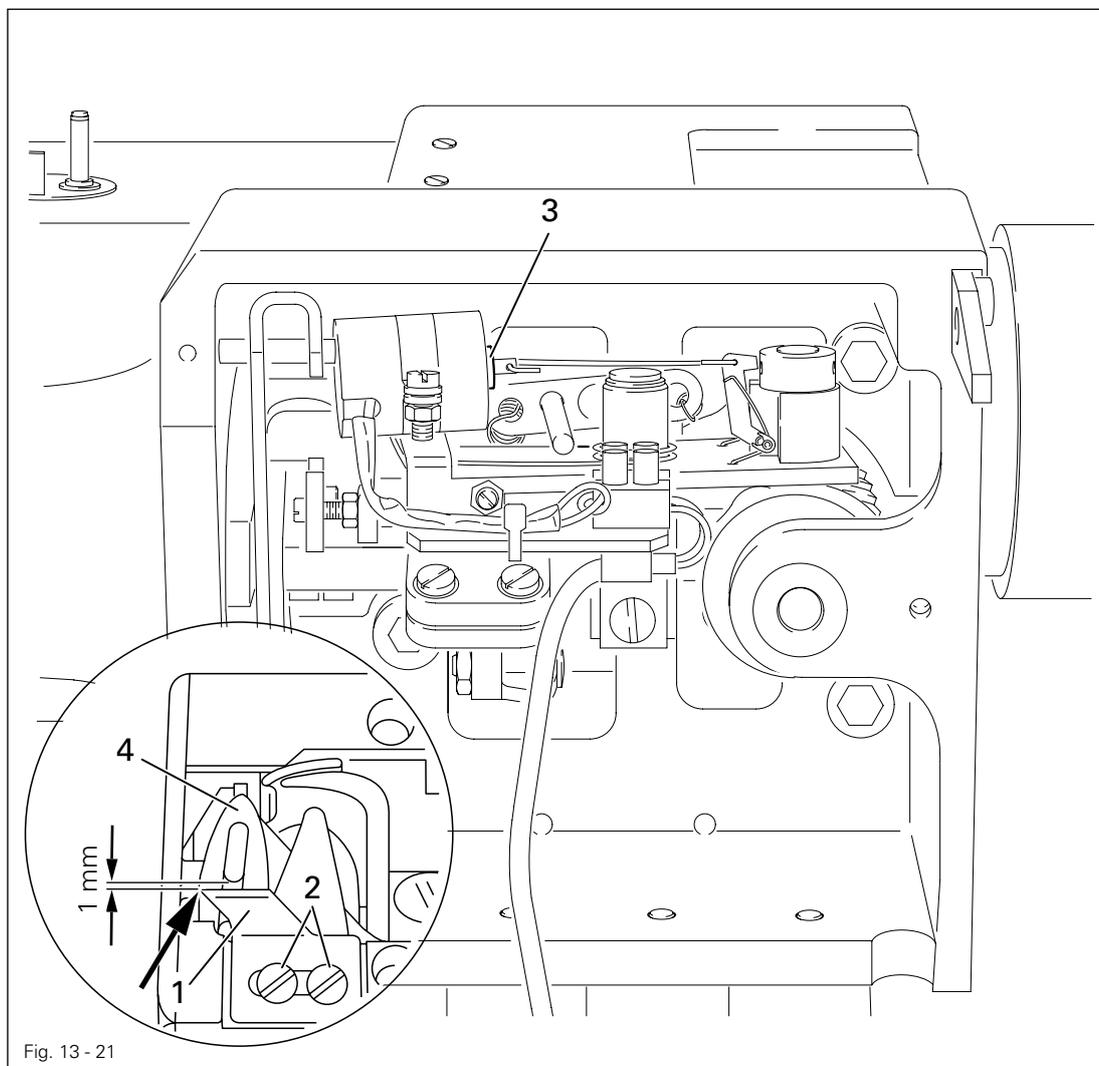
Fig. 13 - 20



- Move the needle bar to b.d.c. with the handwheel.
- Activate the field core 1 manually.
- Continue turning the handwheel (direction of rotation) until the end of the thread guard 2 is 2 mm behind the middle of the bobbin case position finger 3 looking in the feeding direction.
- Check the rule and readjust the control cam accordingly if necessary, see chapter 13.05.01 Pre-calibrating control cam.

Rule

If the rear edge of the thread catcher cutout is **1 mm** in front of the knife edge, the left knife edge should be flush with the thread catcher edge (see arrow in circle).



- Unscrew the knife **1** (screws **2**).
- Move the needle bar to b.d.c. and activate the field core **3**.
- Turn the handwheel in the direction of rotation until the thread catcher tip **4** is at the same level as the knife edge.
- Align the knife **1** laterally according to the **rule** (see arrow).
- Tighten the screws **2**.
- Check that the back of the thread catcher is not twisted at the knife edge by turning the handwheel.
- Readjust the thread catcher **4** if necessary, see chapter **13.05.07 Aligning thread catcher laterally**.

13.05.10 Test cut

Rule

The knife should be parallel to the thread catcher and both threads must be cut properly.

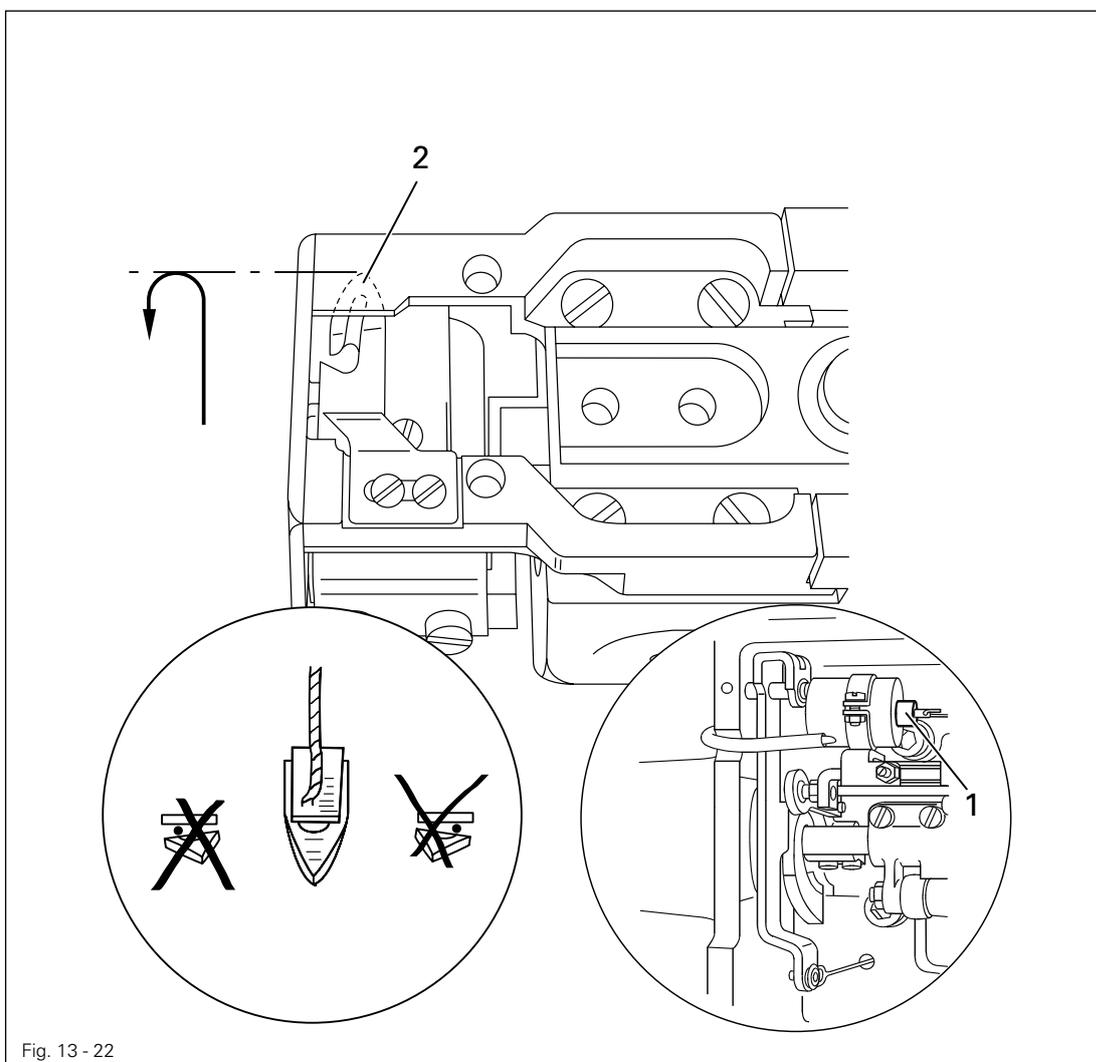


Fig. 13 - 22



- Move the needle bar to b.d.c. and activate the field core 1.
- Turn the handwheel (direction of rotation) until the thread catcher 2 is at its front turning point.
- Pull a doubled-up length of thread into the thread catcher cutout 2 and carry out a test cut by continuing to turn the handwheel.
- Check that both threads have been cut properly.
- Readjust the thread catcher 2 accordingly if necessary, see chapter 13.05.07 **Aligning thread catcher laterally**.

13.06 Parameter settings

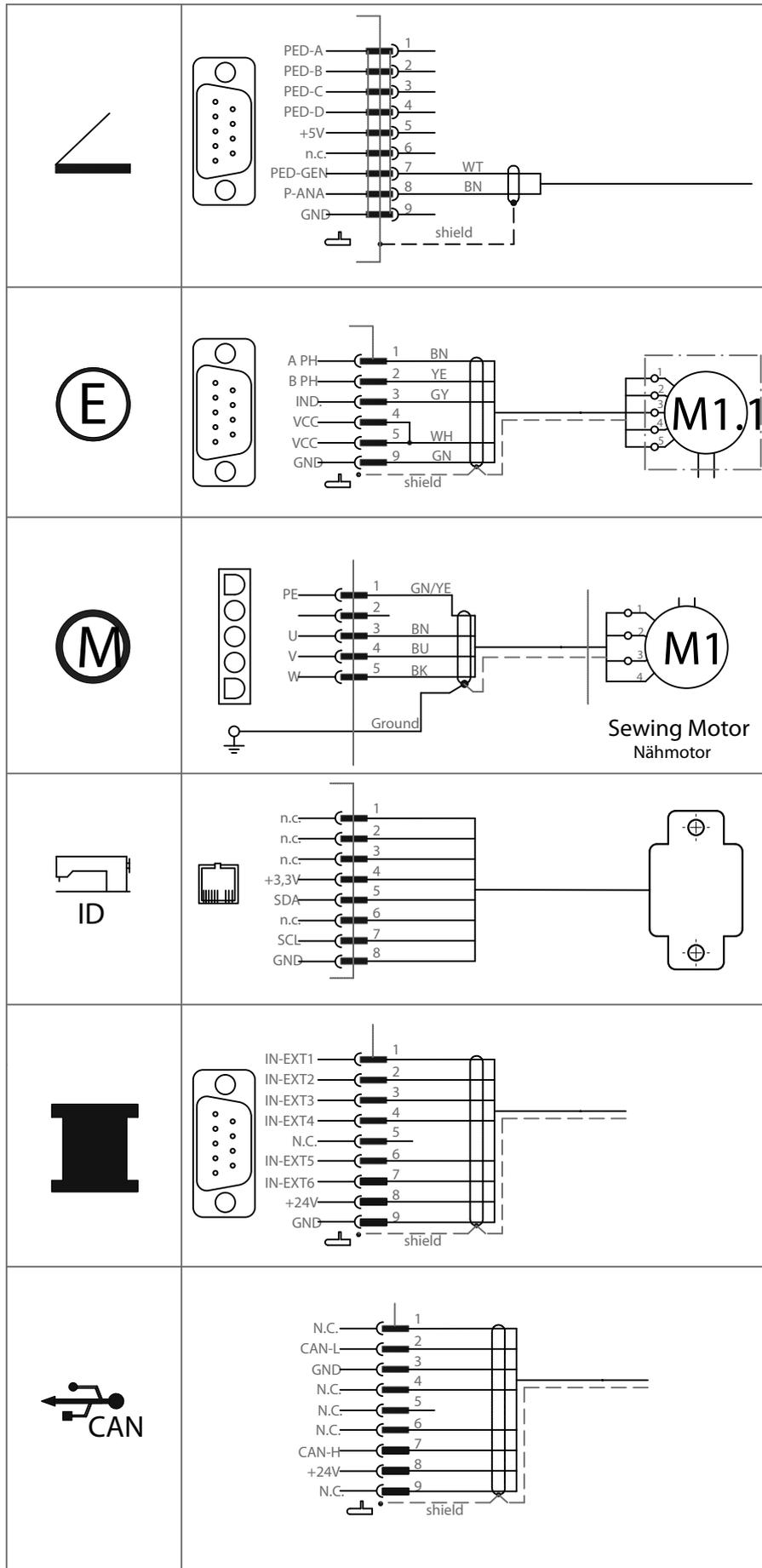
- The separate parameter list for the machine describes how to select the user level and change parameters (see **chapter 1.1.2 Technician level**).

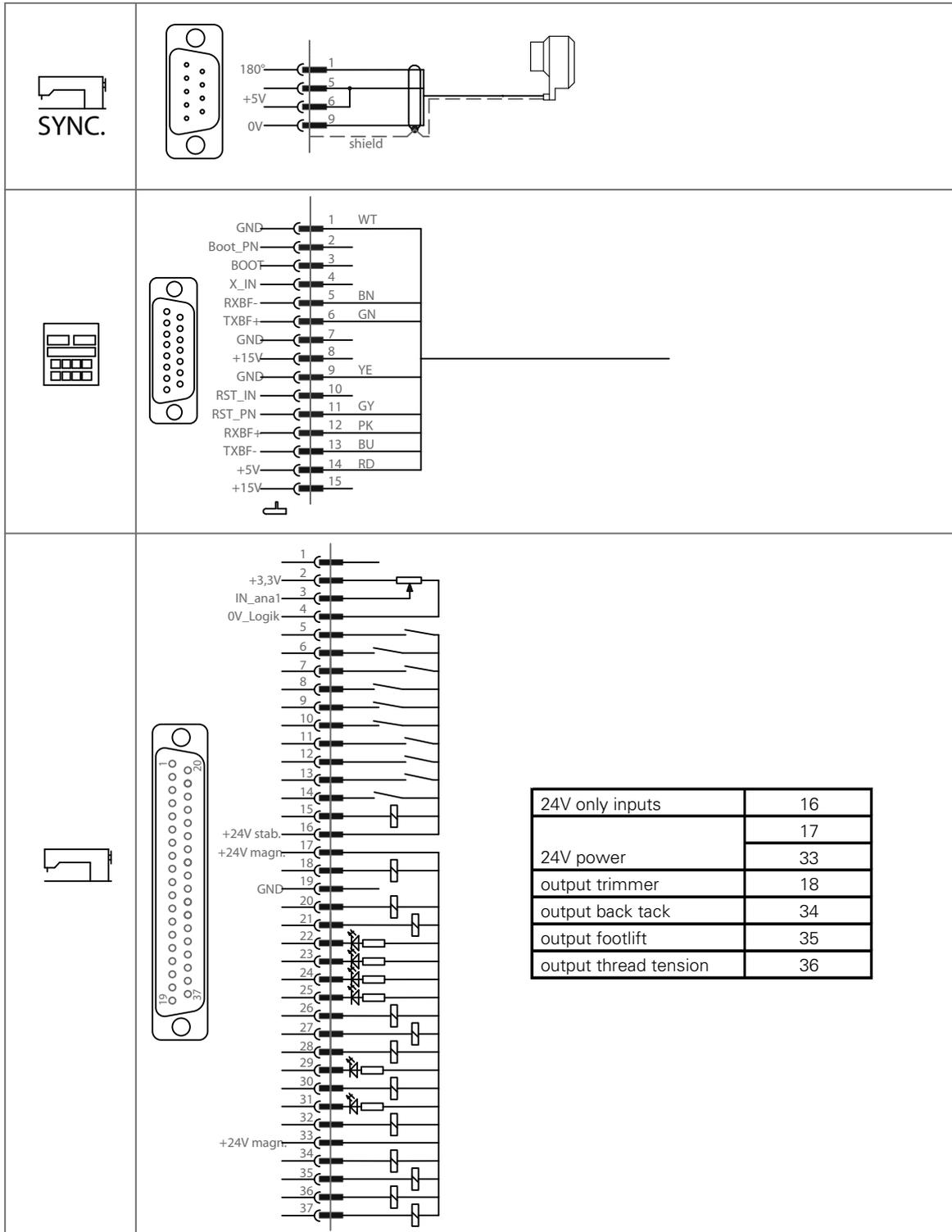
13.07 Internet update of control P40 CD

- 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/> .







Europäische Union
Wachstum durch Innovation – EFRE

PFAFF Industriesysteme und Maschinen GmbH

Hans-Geiger-Str. 12 - IG Nord
D-67661 Kaiserslautern

Tel.: +49-6301 3205 - 0
Fax: +49-6301 3205 - 1386
E-mail: info@pfaff-industrial.com