

# PFAFF

## 3371-10/..

### Adjustment Manual

This Adjustment manual applies to machines from software version **0300/009** and serial number **6 001 000** onwards

The reprinting, copying or translation of PFAFF Adjustment Manuals, whether in whole or in part, is only permitted with our previous authorization and with written reference to the source.

**PFAFF Industrie Maschinen AG**

Postfach 3020  
D-67653 Kaiserslautern

Königstr. 154  
D-67655 Kaiserslautern

Contents .....		Chapter – Page
<b>14</b>	<b>Adjustment .....</b>	<b>14 - 1</b>
14.01	Notes on adjustment .....	14 - 1
14.02	Tools, gauges and other accessories .....	14 - 1
14.03	Abbreviations .....	14 - 1
14.04	Explanation of the symbols .....	14 - 1
14.05	Basic position of the machine .....	14 - 2
14.06	Button clamp zero point .....	14 - 3
14.07	Aligning the feeder .....	14 - 5
14.08	Aligning the button clamp .....	14 - 7
14.09	Hook driver .....	14 - 8
14.10	Needle height .....	14 - 9
14.11	Hook-to-needle clearance .....	14 - 10
14.12	Needle rise and needle guard .....	14 - 11
14.13	Aligning the hook race cover .....	14 - 12
14.14	Button clamp height .....	14 - 13
14.15	Button clamp pressure .....	14 - 14
14.16	Position of the thread wiper .....	14 - 15
14.17	Position of the control cam .....	14 - 16
14.18	Position of the control roller .....	14 - 17
14.19	Position of the drive shaft of the thread trimmer .....	14 - 18
14.20	Aligning the stop plate .....	14 - 19
14.21	Adjusting the trimmer solenoid .....	14 - 20
14.22	Adjusting the engaging lever .....	14 - 21
14.23	Position of the thread catcher and knife .....	14 - 22
14.24	Position of the release trip .....	14 - 23
14.25	Position of the release catch .....	14 - 24
14.26	Needle thread tension release .....	14 - 25
14.27	Thread check spring and thread regulator .....	14 - 26
14.28	Bobbin winder drive wheel .....	14 - 27
14.29	Button clamp initiator .....	14 - 28
14.30	Changing the feeder and the jaws of the button clamp .....	14 - 29
14.31	Cold start .....	14 - 30
14.32	Internet update of the machine software .....	14 - 31
14.33	List of parameters .....	14 - 32
14.34	Error messages on the display .....	14 - 40
14.35	Sewing motor errors .....	14 - 41
14.36	OTE-errors .....	14 - 42
<b>15</b>	<b>Circuit diagrams .....</b>	<b>15 - 1</b>

## 14 Adjustment



Please observe all notes from **Chapter 1 Safety** of the instruction manual! In particular care must be taken to see that all protective devices are refitted properly after adjustment, see **Chapter 1.06 Danger warnings** of the instruction manual!



If not otherwise stated, the machine must be disconnected from the electrical power supply.

### 14.01 Notes on adjustment

All following adjustments are based on a fully assembled machine and may only be carried out by expert 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 which have to be completely adjusted. If only specific individual work steps are carried out, both the preceding and following chapters must be observed.

Screws, nuts indicated in brackets ( ) are fastenings for machine parts, which must be loosened before adjustment and tightened again afterwards.

### 14.02 Tools, gauges and other accessories

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of spanners with jaw widths from 7 to 14 mm
- 1 set of Allen keys from 1.5 to 6 mm
- 1 metal ruler, part no. 08-880 218-00
- 1 machine zero point gauge, part number 61-111 637-08
- 1 gauge button, part number 61-111 635-6

### 14.03 Abbreviations

t.d.c. = top dead centre

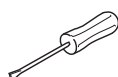
b.d.c. = bottom dead centre

### 14.04 Explanation of the symbols

In this adjustment manual, symbols emphasize operations to be carried out or important information. The symbols used have the following meaning:



Note, information

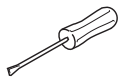
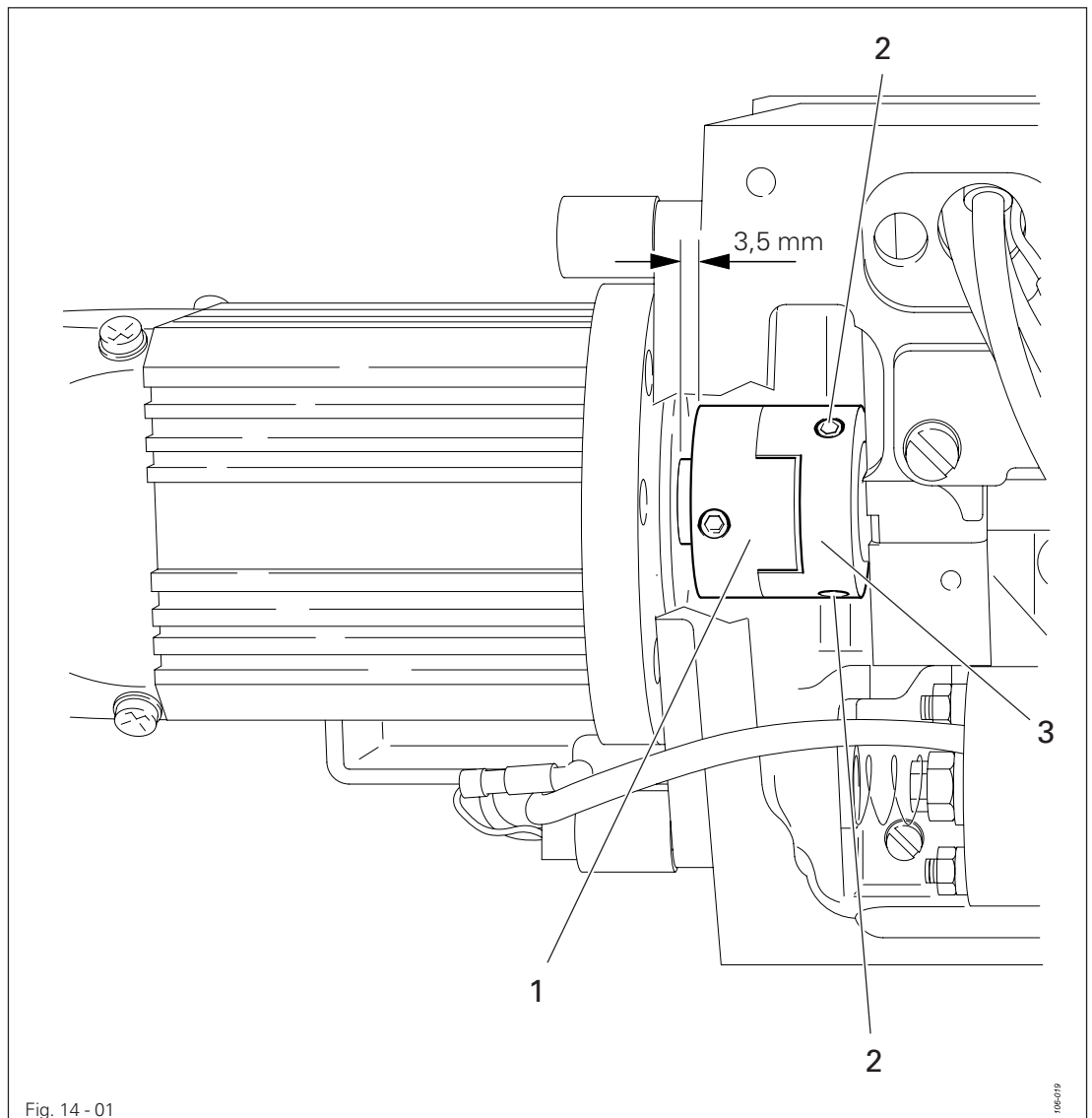


Service, repair, adjustment, maintenance  
(work to be carried out by qualified staff only)

## 14.05 Basic position of the machine

**Requirement**

After the machine has been switched on, it should position in t.d.c. needle bar.



- Switch on the machine.
- Hold coupling part 1 and bring the needle bar (screws 2) into the appropriate position by turning the balance wheel.
- Switch off the machine.



The distance from the clutch 1 to the motor plate should be 3.5 mm.

In the direction of rotation the second screw of the clutch section 3 should be on the surface of the motor shaft.

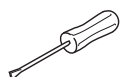
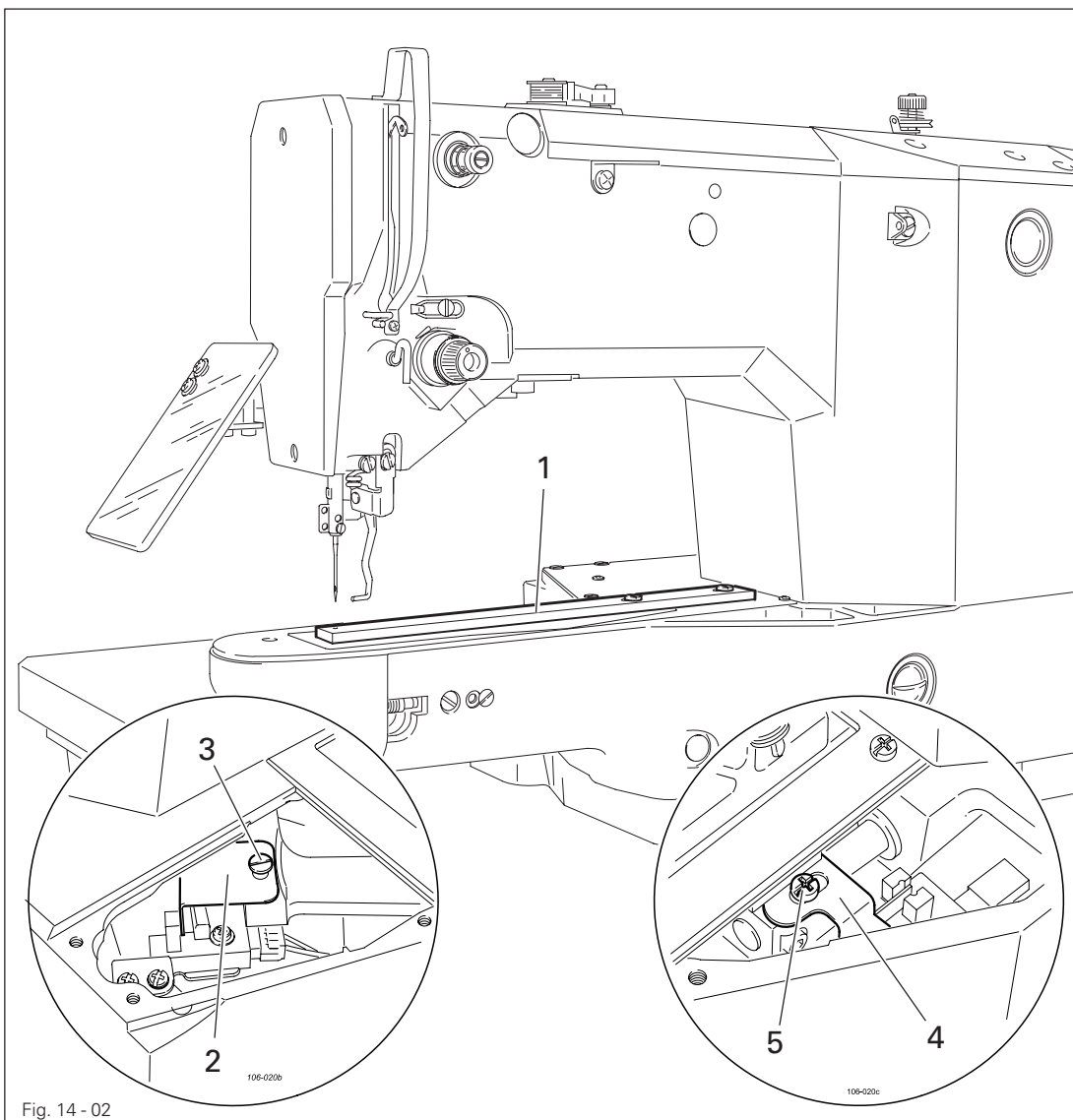
The clutch section 1 should be touching the O-ring of the axial bearing.

## 14.06 Button clamp zero point

### Requirement

After the machine has been switched on and parameter "608" selected,

1. the needle should be centred to the hole in the adjustment gauge,
2. the switch lugs **2** and **4** should be centred to the respective initiator.



- Remove the button clamp holder and the lower feed plate .
- Screw adjustment gauge **1** (part no. 61-111 637-08) to the work clamp drive unit.

### Preliminary adjustment

- Move the button clamp drive unit by hand in accordance with **requirement 1**.
- Adjust switch lug **2** (screw **3**) and switch lug **4** (screw **5**) in accordance with **requirement 2**.

### Fine adjustment

- Switch on the machine.
- In the input mode, select parameter "608", see **Chapter 11.03 Parameter input** in the instruction manual.

- If necessary, enter the access code, see **Chapter 11.05.01 Entering the access code** in the instruction manual.



- With the corresponding **plus/minus key** move the button clamp drive unit in accordance with **requirement 1**, also see **Chapter 11.03 Parameter input**.

- Switch off the machine.
- Remove adjustment gauge 1.
- Fit the lower feed plate and button clamp holder.

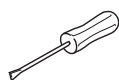
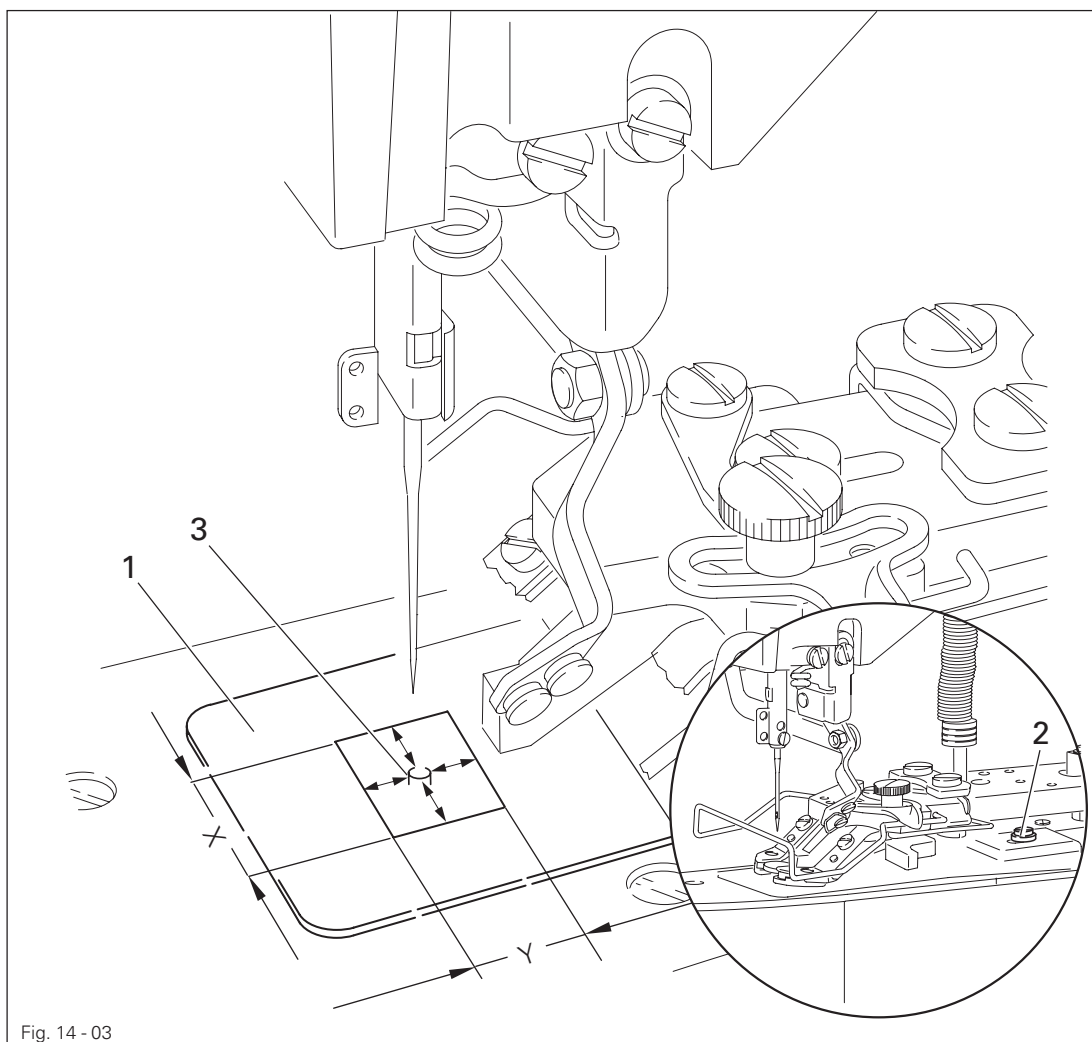


If, during the fine adjustment, the setting is  $\pm 5$  increments above or below the value in **X-** and **Y-direction**, the setting should be checked again in accordance with **requirement 2**.

## 14.07 Aligning the feeder

### Regel

The feeder should be aligned in the "X and Y direction" in such a way that the feeder cut-out does not touch the raised needle hole 3 during sewing.



- Switch on the machine.
- Set the sewing area size (see Chapter 9.07 Adjusting the size of sewing area in the instruction manual)
- In the input mode, select parameter "610", see Chapter 11.03 Parameter input in the instruction manual
- If necessary, enter the access code, see Chapter 11.04.01 Entering the access code in the instruction manual.
- Align feeder 1 (screw 2) so that the raised needle hole 3 is positioned in the centre of the feeder cutout.

### Checking the "Y-direction"



- To check this adjustment, move along the maximum set sewing area size in "Y-direction" by pressing the corresponding plus/minus keys (readjust if necessary).



- Call up parameter "609".



### Checking the "X-direction"

- Move along the maximum set sewing area size in "X-direction" by pressing the corresponding **plus/minus keys**.



- If necessary adjust the position of feeder 1 by entering a correction value "X" with the corresponding **plus/minus keys** in "X-direction" in accordance with the **requirement**.

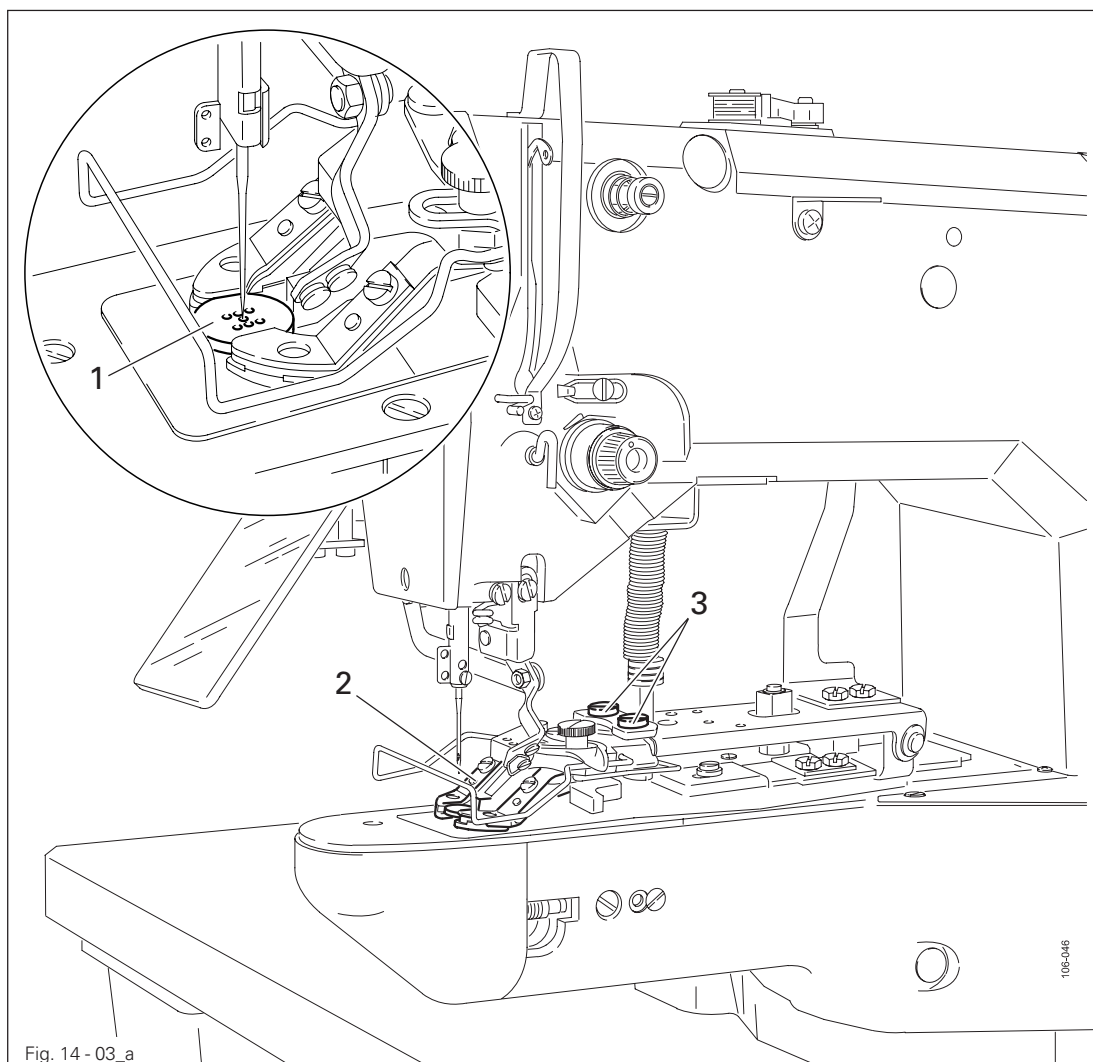


- Conclude the input.

## 14.08 Aligning the button clamp

### Requirement

The button clamp should be aligned in "X" and "Y" direction, so that the needle penetrates the centre of the gauge button.



- Insert gauge button **1** (part number 61-111 635-66) and switch on the machine.
- In the input mode select parameter "609", see **Chapter 11.03 Parameter input** of the instruction manual (machine moves to "0-position").
- If necessary, enter the access code, see **Chapter 11.05.01 Entering the access code** in the instruction manual.
- Adjust button clamp **2** (screws **3**) in "X and Y direction" in accordance with the **requirement**.

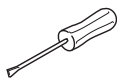
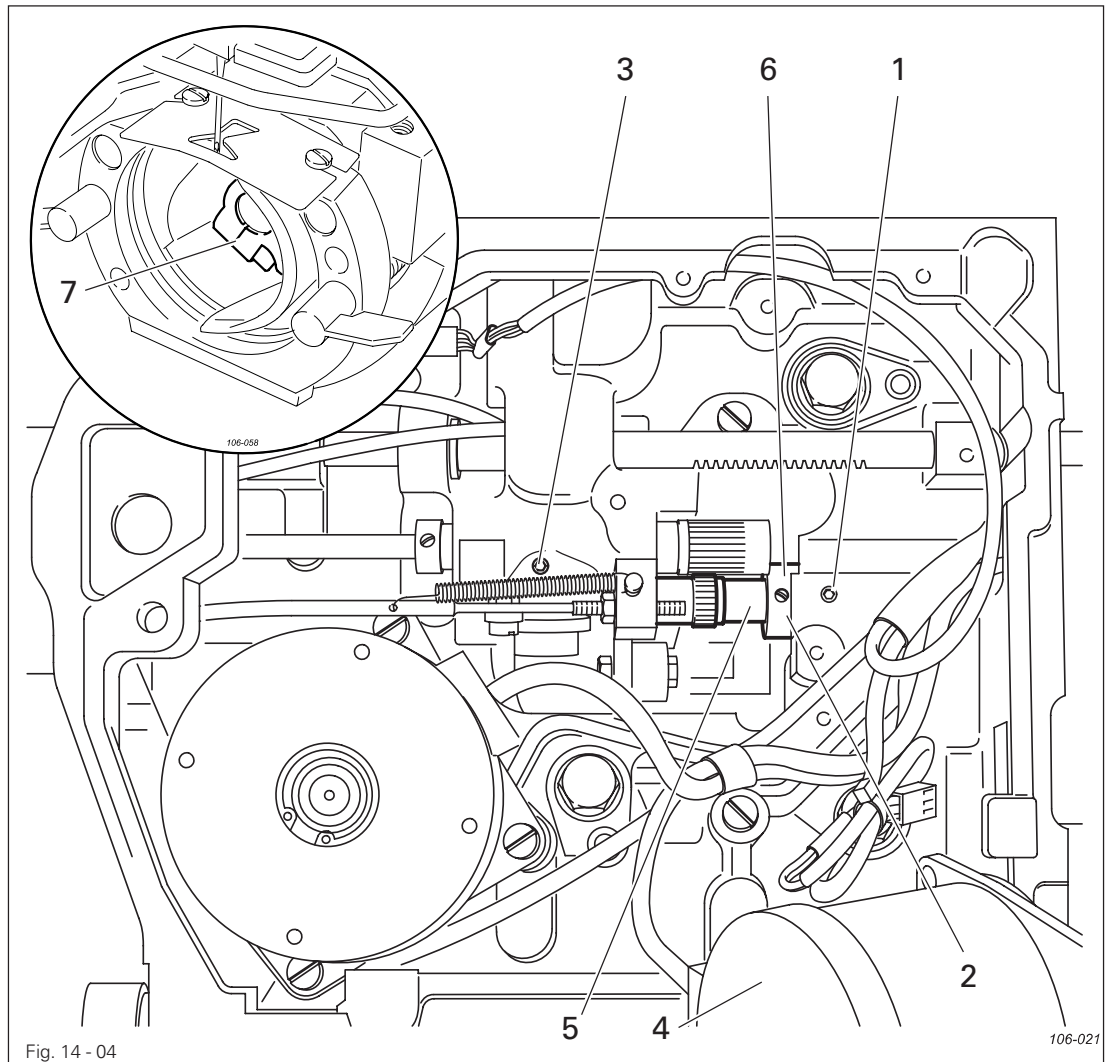


- Conclude the input, remove the gauge button and switch off the machine.

## 14.09 Hook driver

## Requirement

1. When the balance wheel is turned, the machine should not bind.
2. The play of catch 7 should be less than 0.1 mm.



- Remove the hook.
- Loosen screws 1, 2 and 3 (remove motor 4).
- Move the eccentric shaft 5 in accordance with **requirement 1** and twist it in accordance with **requirement 2**.
- Tighten screws 1 and 3.
- Move adjustment ring 6 against the metal edge and tighten screw 2.
- Insert the hook.

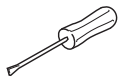
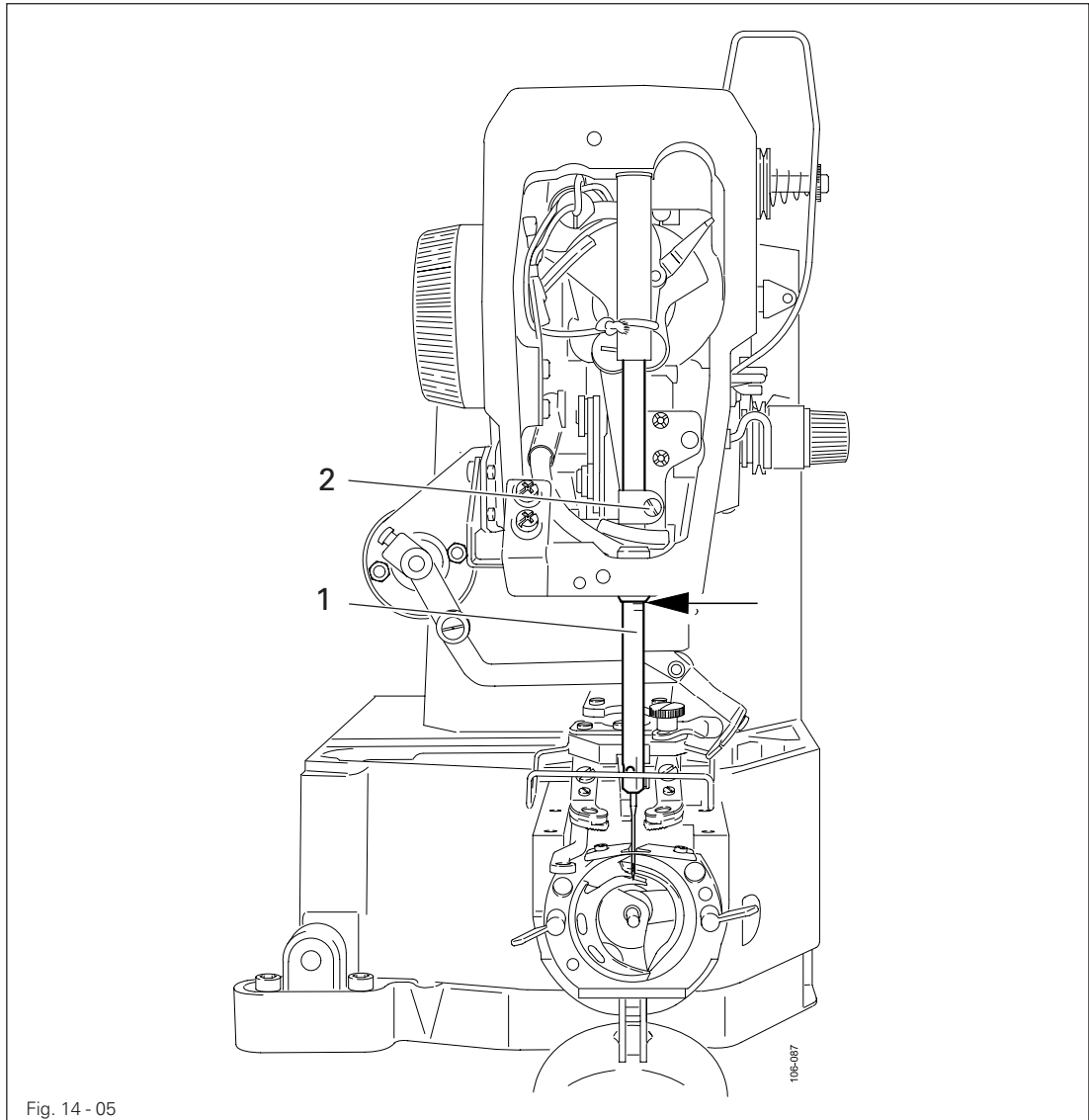


If catch 7 has too much play, the running noise of the machine increases. Too little play may cause the machine to jam.

## 14.10 Needle height

### Requirement

With the needle bar in b.d.c., the upper marking on the needle bar 1 should be flush with the lower edge of the needle bar bush.



- Adjust needle bar 1 (screw 2) in accordance with the **requirement**.

## 14.11 Hook-to-needle clearance

**Requirement**

When the bottom marking of the ascending needle bar is level with the lower edge of the needle bar bush

1. the hook point **5** should be at a distance of **0.05 – 0,1 mm** from the needle groove.
2. the distance between the needle and the tip of the hook race should be **7.5 mm**.

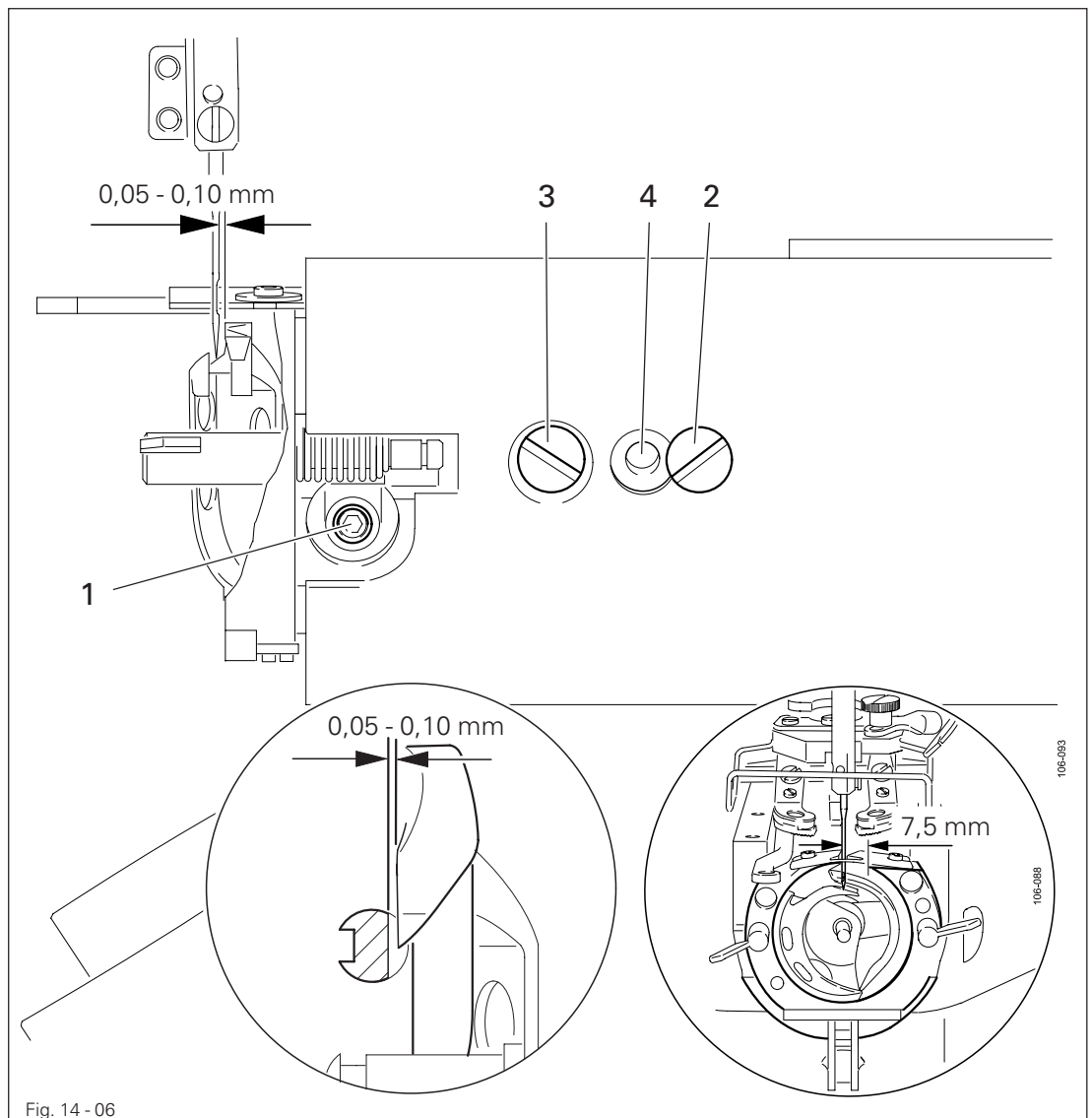
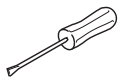


Fig. 14 - 06



- Loosen screws **1, 2** and **3**.
- Turn the eccentric pin **4** in accordance with the **requirements**.
- Tighten screws **2** and **3**.



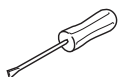
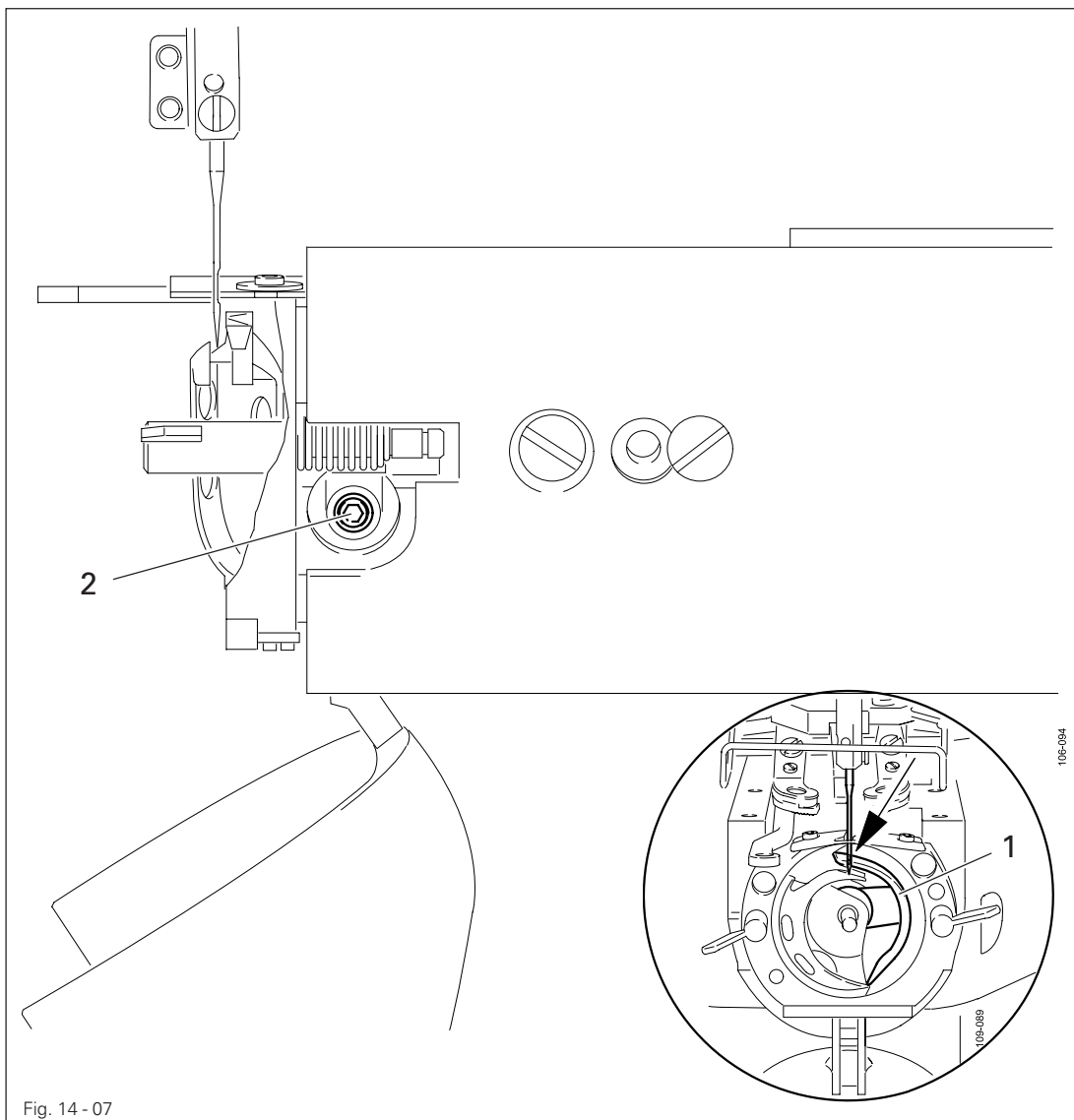
Screw **1** remains loosened for further adjustments.

## 14.12 Needle rise and needle guard

### Requirement

When the bottom marking of the ascending needle bar is level with the lower edge of the needle bar bush

1. the hook point should be centred to the needle and
2. the needle guard (see arrow) should slightly touch the needle.



- Turn catch 1 (screw 2) in accordance with **requirement 1**, or move it in accordance with **requirement 2**.

## 14.13 Aligning the hook race cover

**Requirement**

The needle should be centred to cutout **B** and the rear side of the needle flush to the imaginary line **A**.

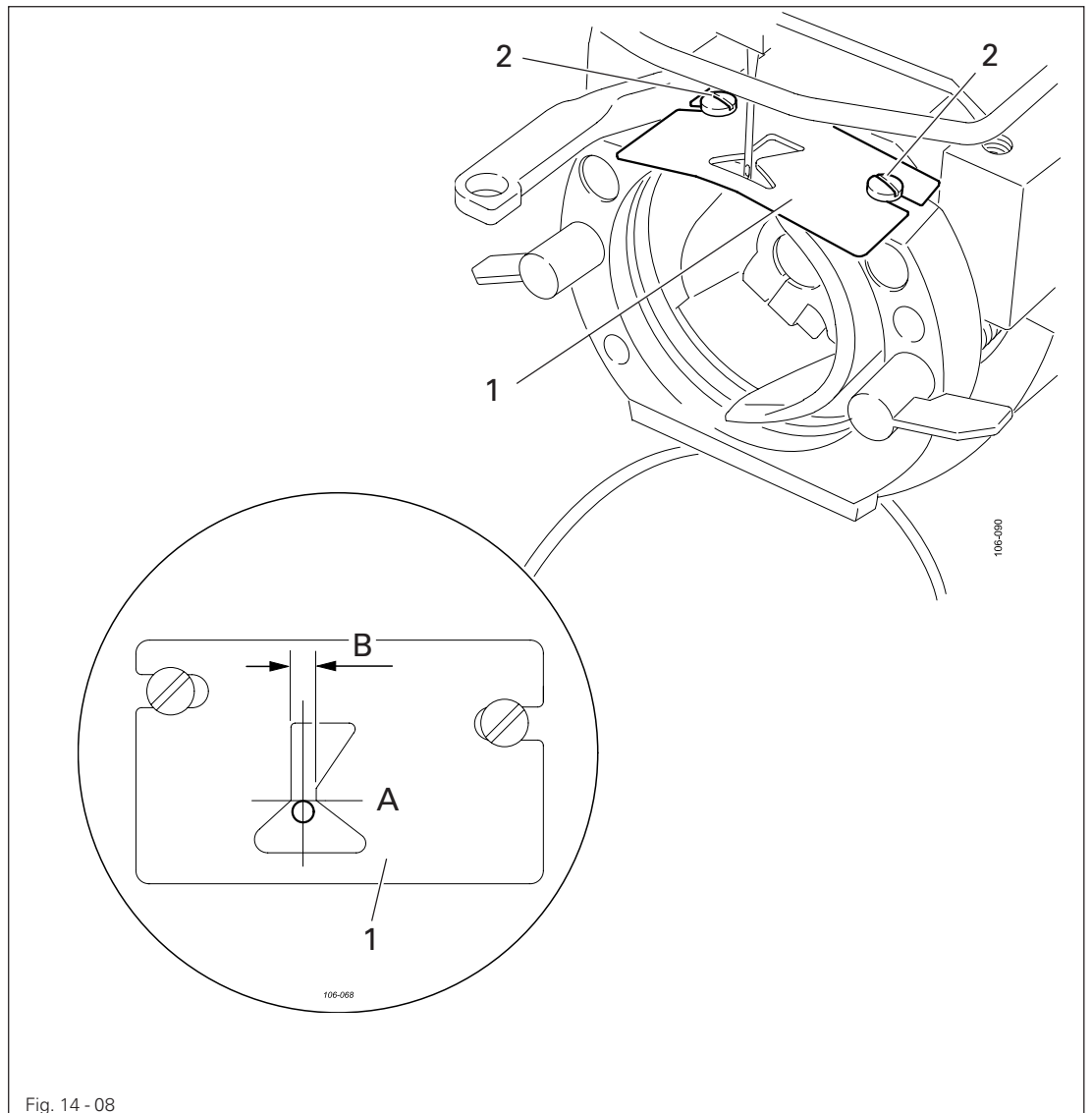
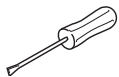


Fig. 14 - 08

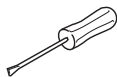
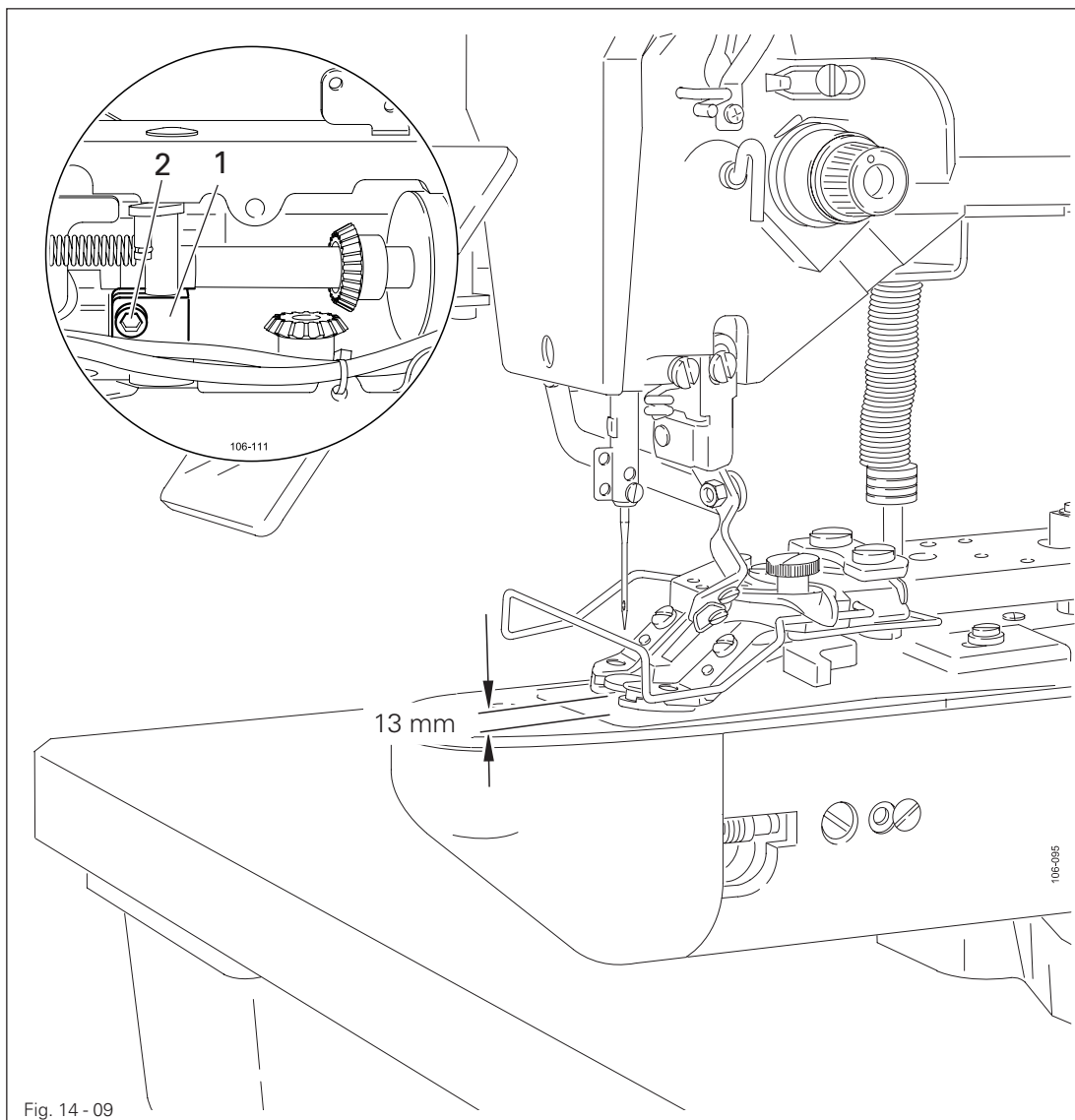


- Move the hook race cover 1 (screws 2) in accordance with the requirement.

## 14.14 Button clamp height

### Requirement

The button clamp should be 13 mm above the upper edge of the needle plate.



- Turn lever 1 (nut 2 and screw 3) in accordance with requirement .



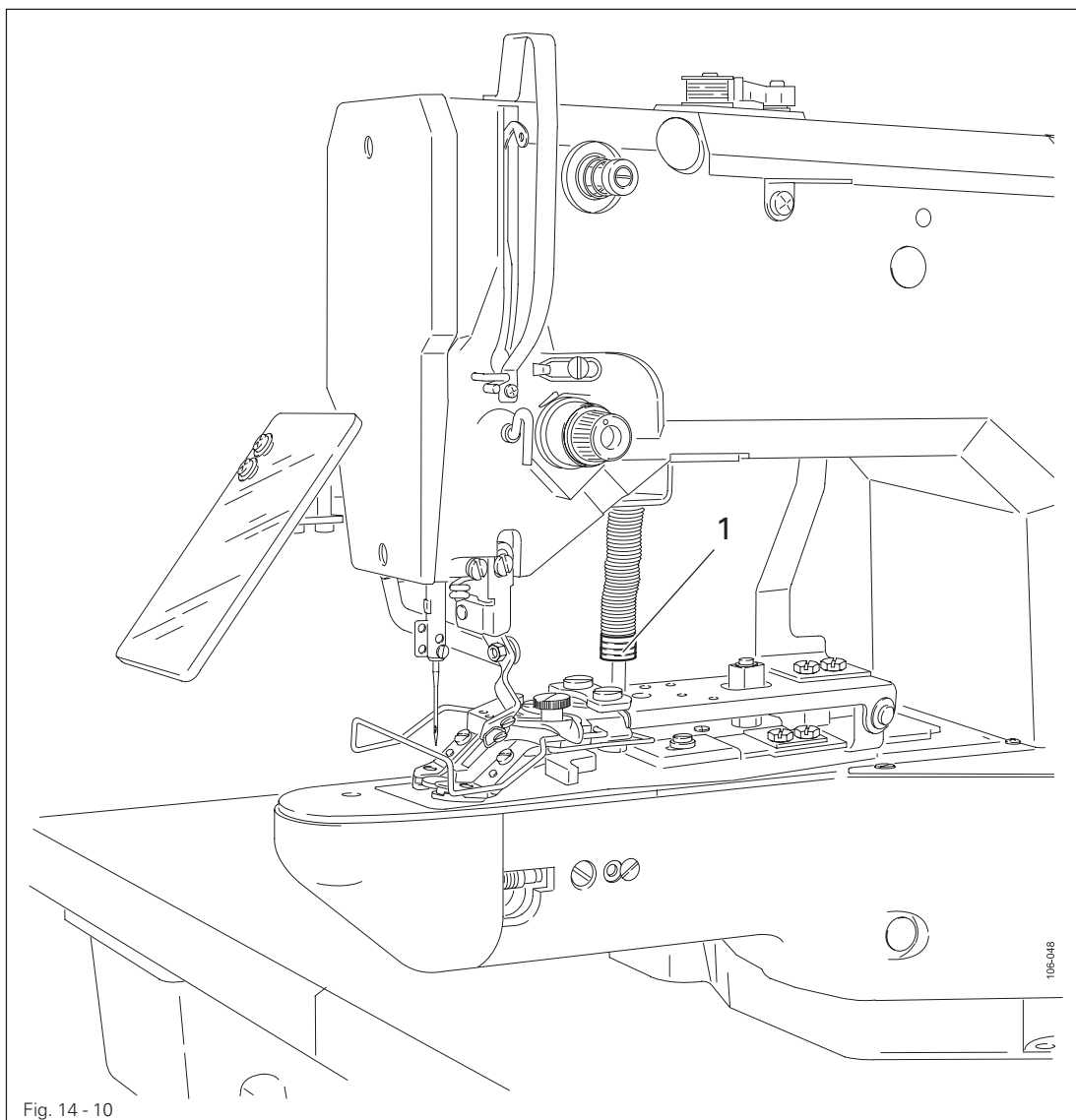
After aligning the button clamp, it is imperative to check the position of the thread wiper, see **Chapter 14.16 Position of the thread wiper!** Danger of needle breakage!



## 14.15 Button clamp pressure

### Requirement

The pressure of the button clamp should be set so that the workpiece can be held reliably without pressure marks.

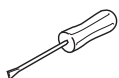
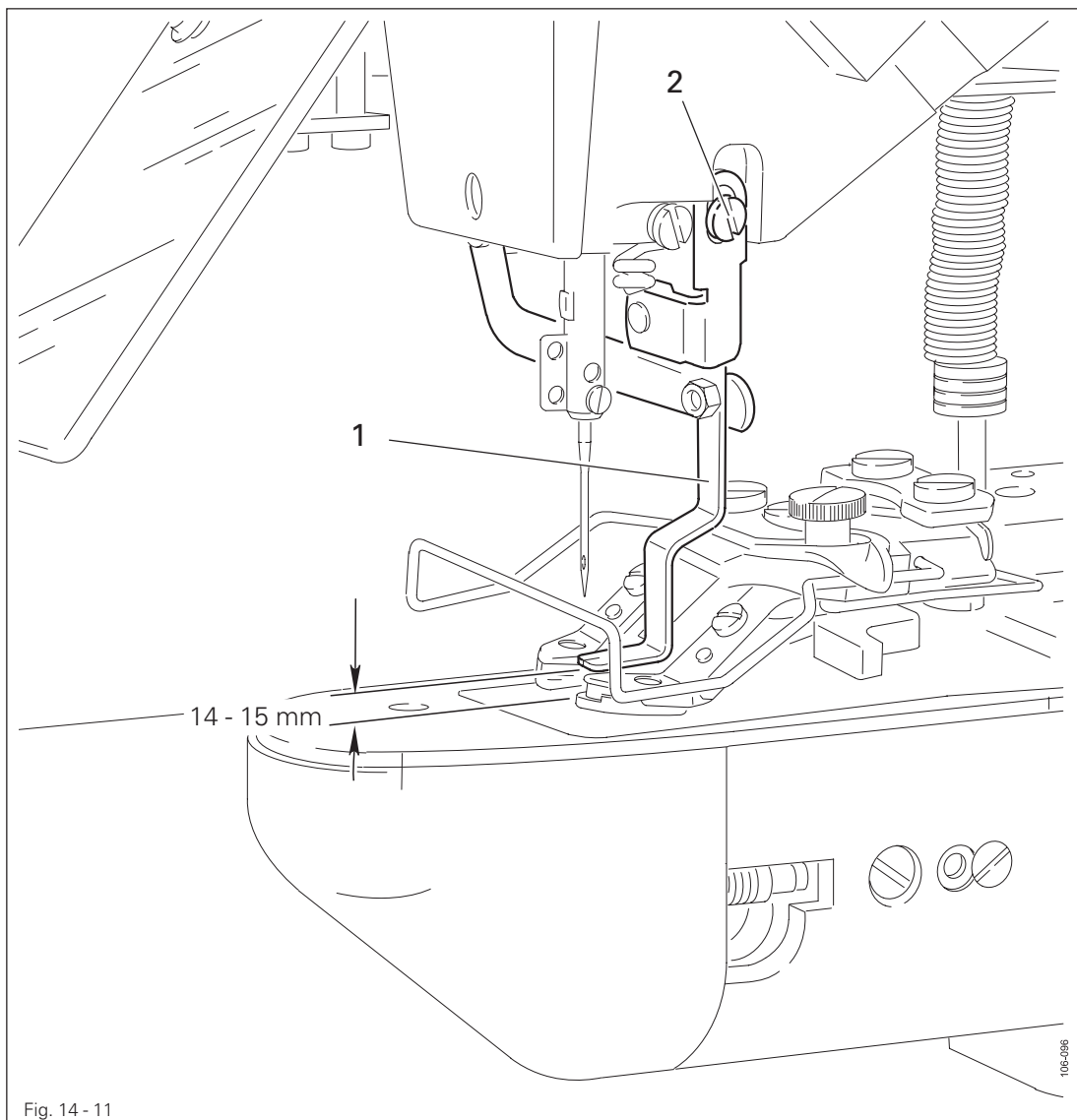


- Adjust milled screw 1 in accordance with the requirement.

## 14.16 Position of the thread wiper

### Requirement

When the thread wiper is centred to the needle, its lower edge should be 14 – 15 mm above the upper edge of the needle plate.

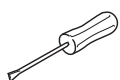
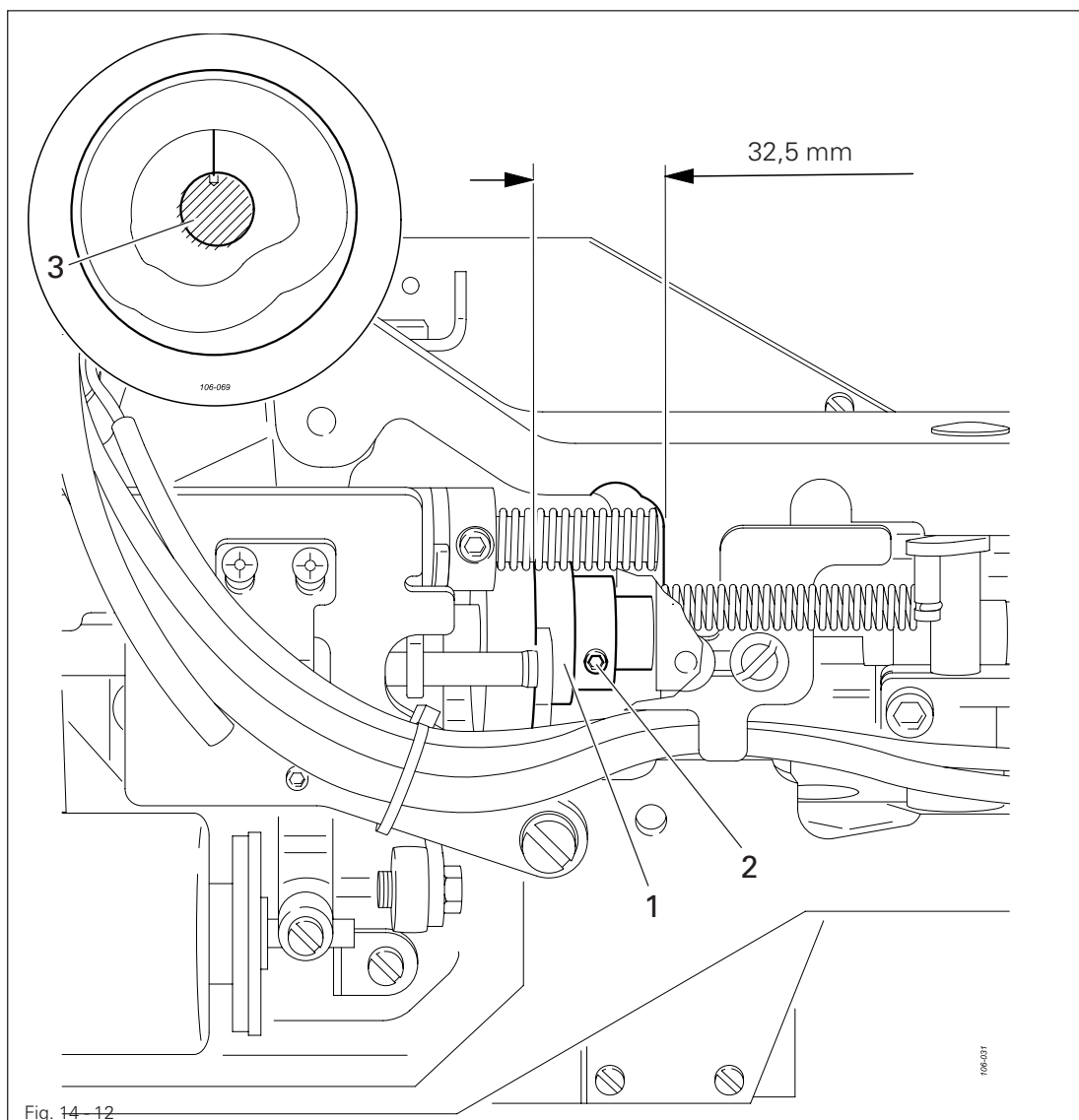


- Bring thread wiper 1 into the appropriate position
- Move thread wiper 1 (screw 2) in accordance with the requirement.

## 14.17 Position of the control cam

## Requirement

1. The markings on control cam 1 and arm shaft 3 should correspond with each other.
2. The outer edge of control cam 1 should be at a distance of 32.5 mm from the metal surface of the case.



- Turn control cam 1 (screw 2) in accordance with requirement 1, or move it in accordance with requirement 2.

## 14.18 Position of the control roller

### Requirement

When the needle bar is at its b.d.c., the control roller should be centred to the running path of control cam 2.

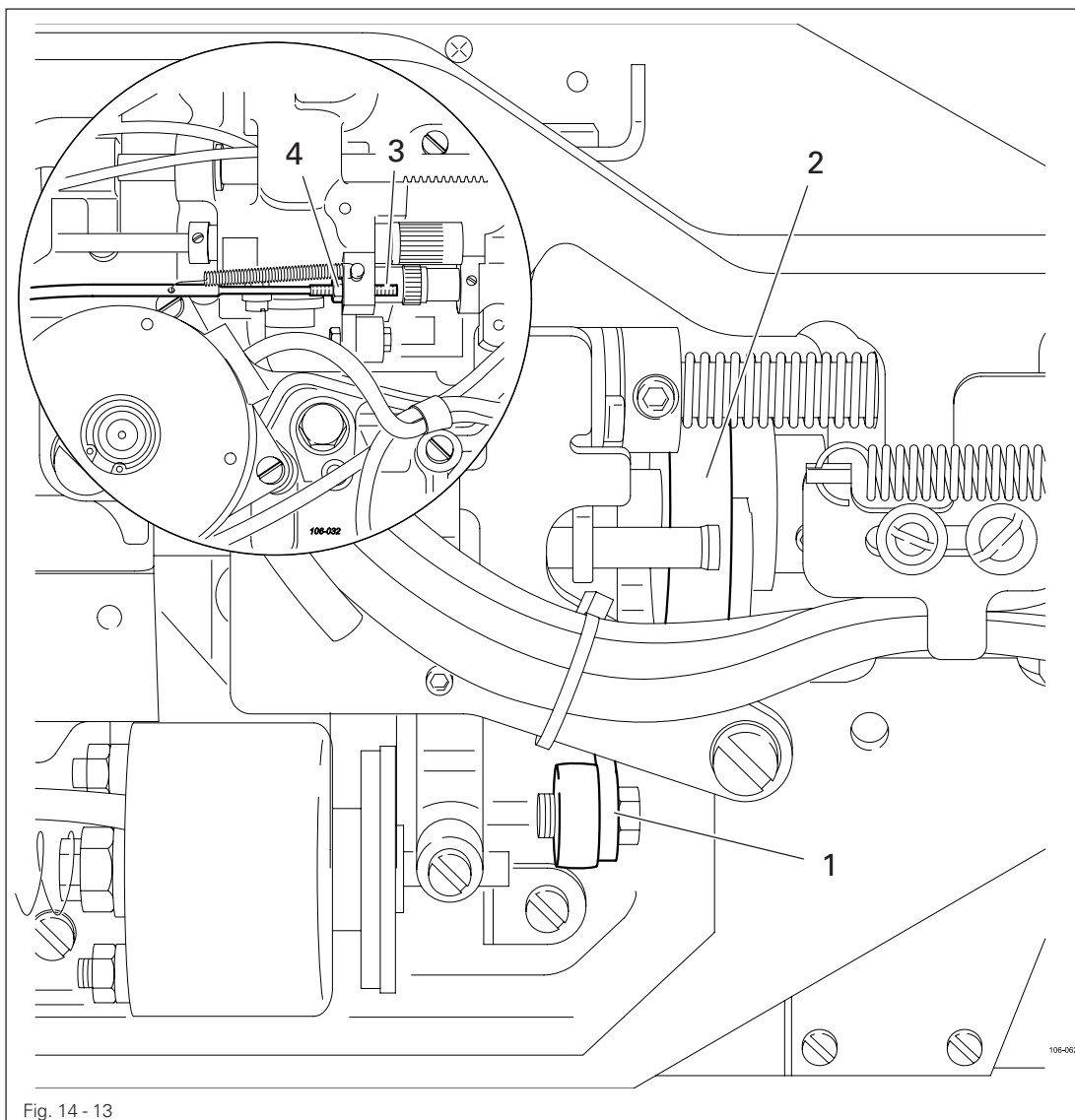
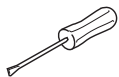


Fig. 14 - 13

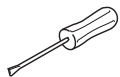
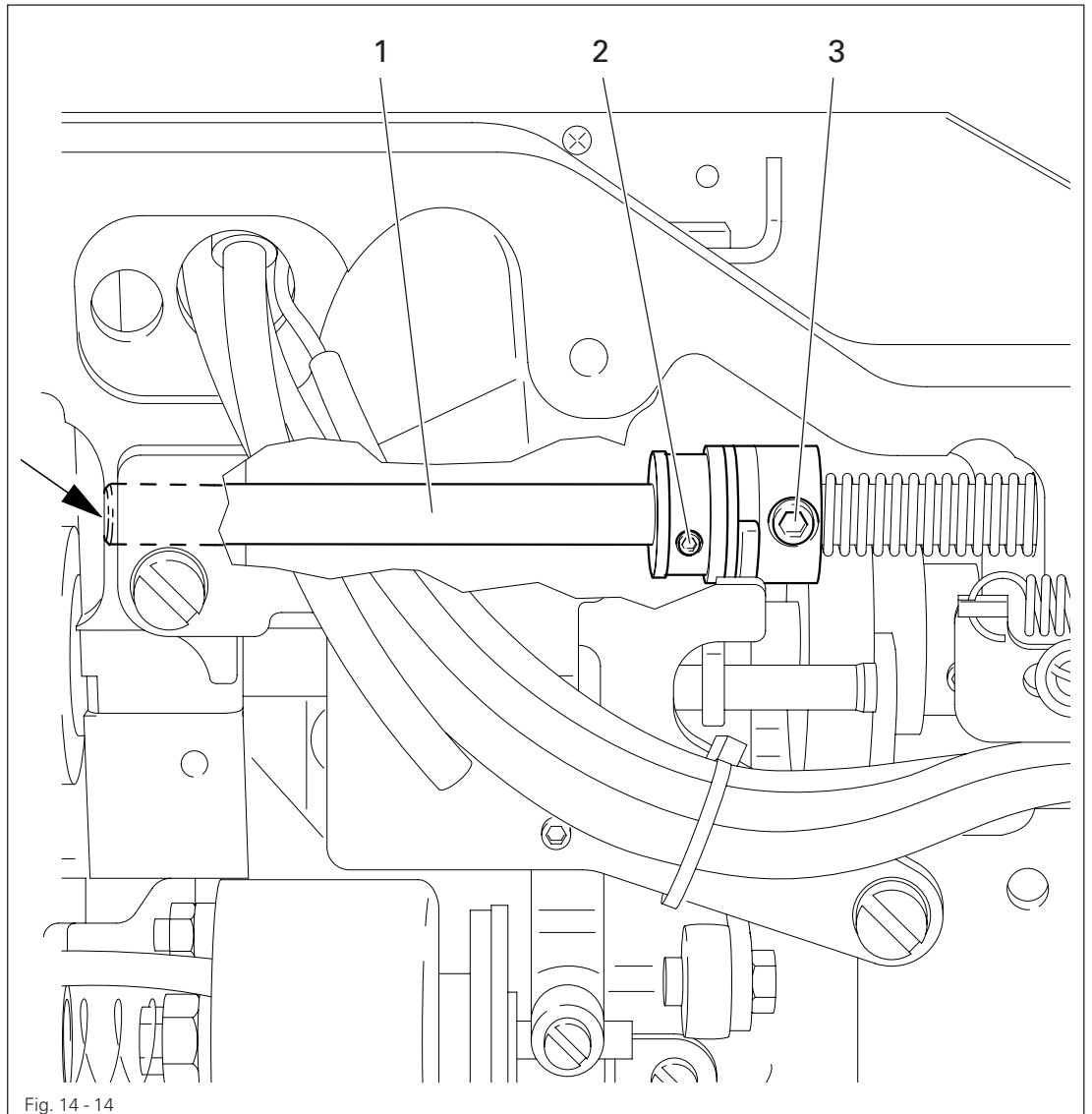


- Turn screw **3** (nut **4**) in accordance with the **requirement**.
- For checking purposes, operate lever **1** by hand to let the control roller fall into the running path of control cam **2**.

14.19 Position of the drive shaft of the thread trimmer

**Requirement**

When the thread trimmer is in its basic position, shaft 1 should be flush with the metal edge of the machine case.



- Move shaft 1 (screws 2 and 3) in accordance with the requirement.

## 14.20 Aligning the stop plate

### Requirement

When the thread trimmer is in its basic position, there should be a clearance of **0.3 mm** between lever 3 and plate 1.

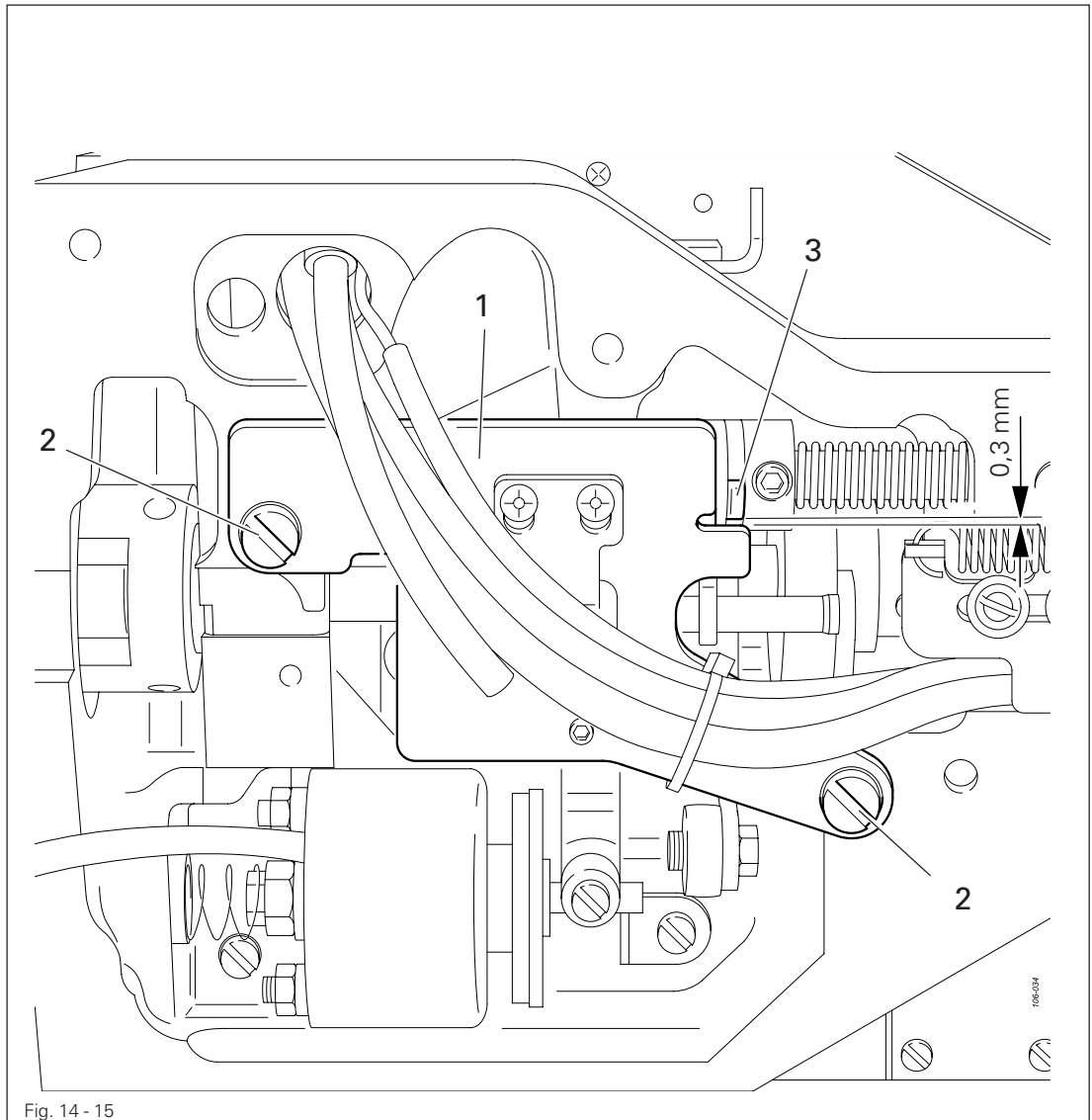
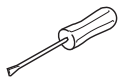


Fig. 14 - 15

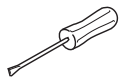
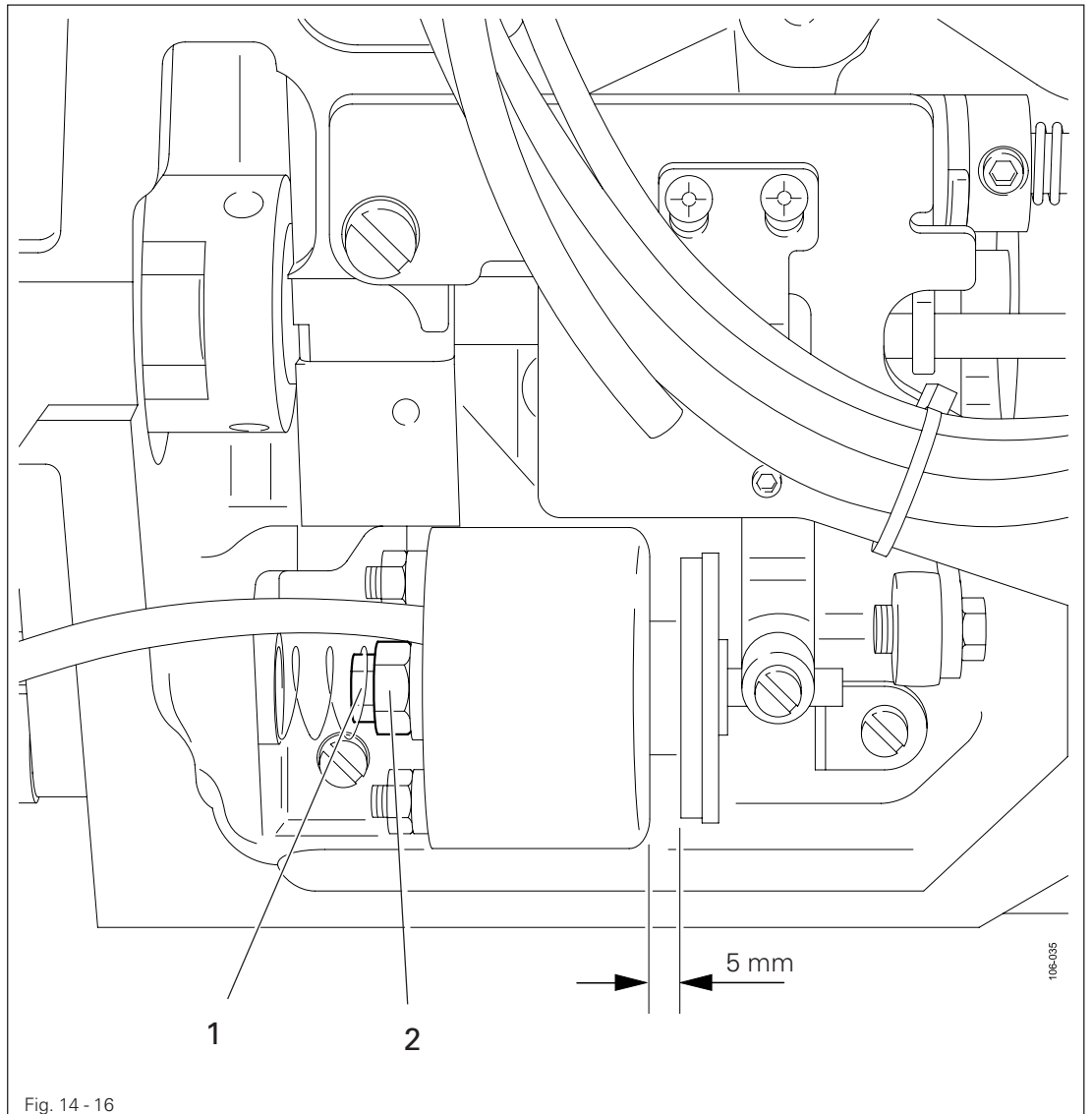


- Move plate 1 (screws 2) in accordance with the requirement.

14.21 Adjusting the trimmer solenoid

**Requirement**

When the thread trimmer is in its neutral position, solenoid 1 should be at a distance of 5 mm from the case.

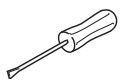
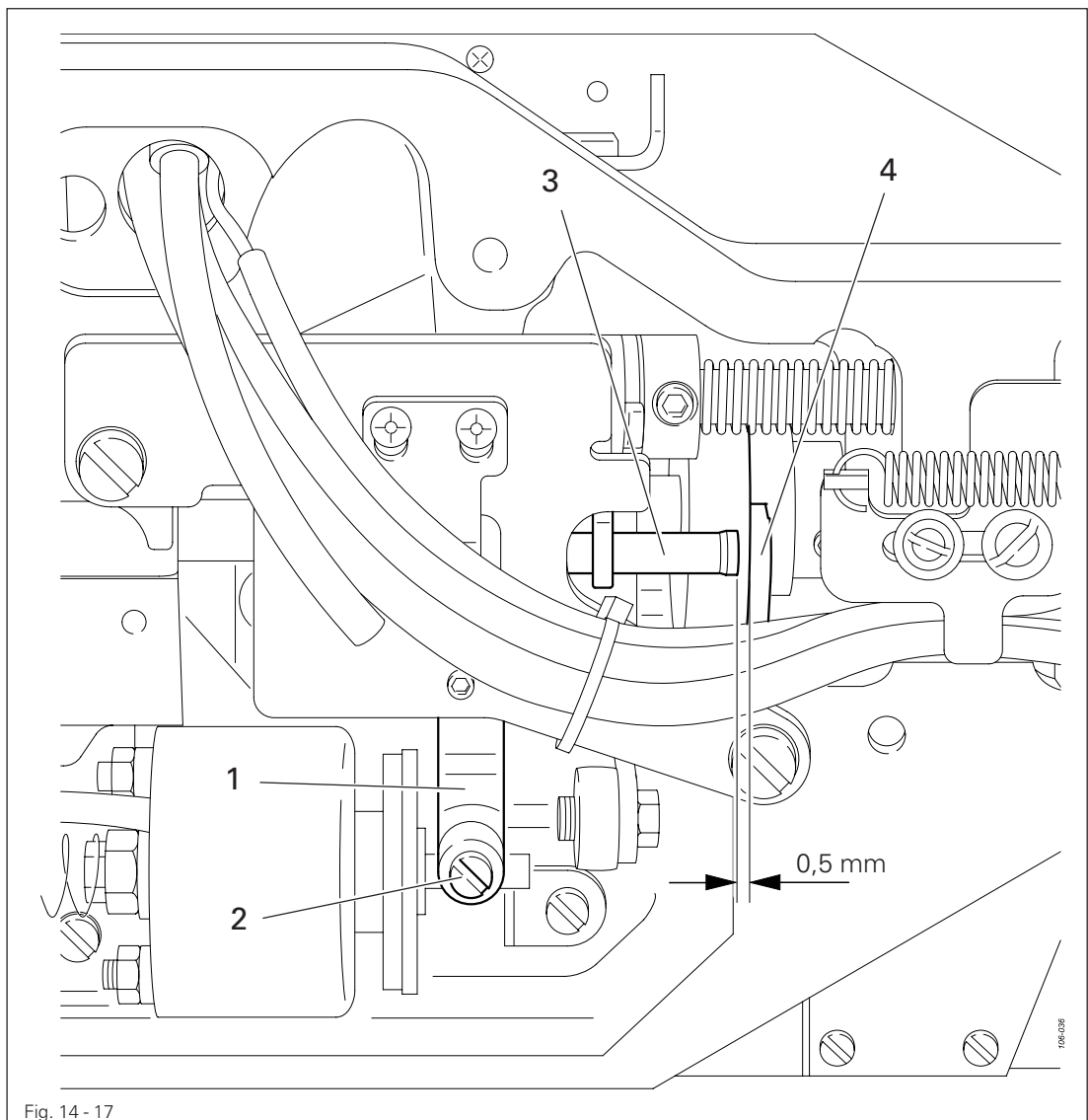


- Turn nut 1 (nut 2) in accordance with the requirement.

## 14.22 Adjusting the engaging lever

### Requirement

When the thread trimmer is in its neutral position, pin 3 should be at a distance of 0.5 mm from release trip 4.



- Move lever 1 (screws 2) in accordance with the requirement.

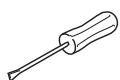
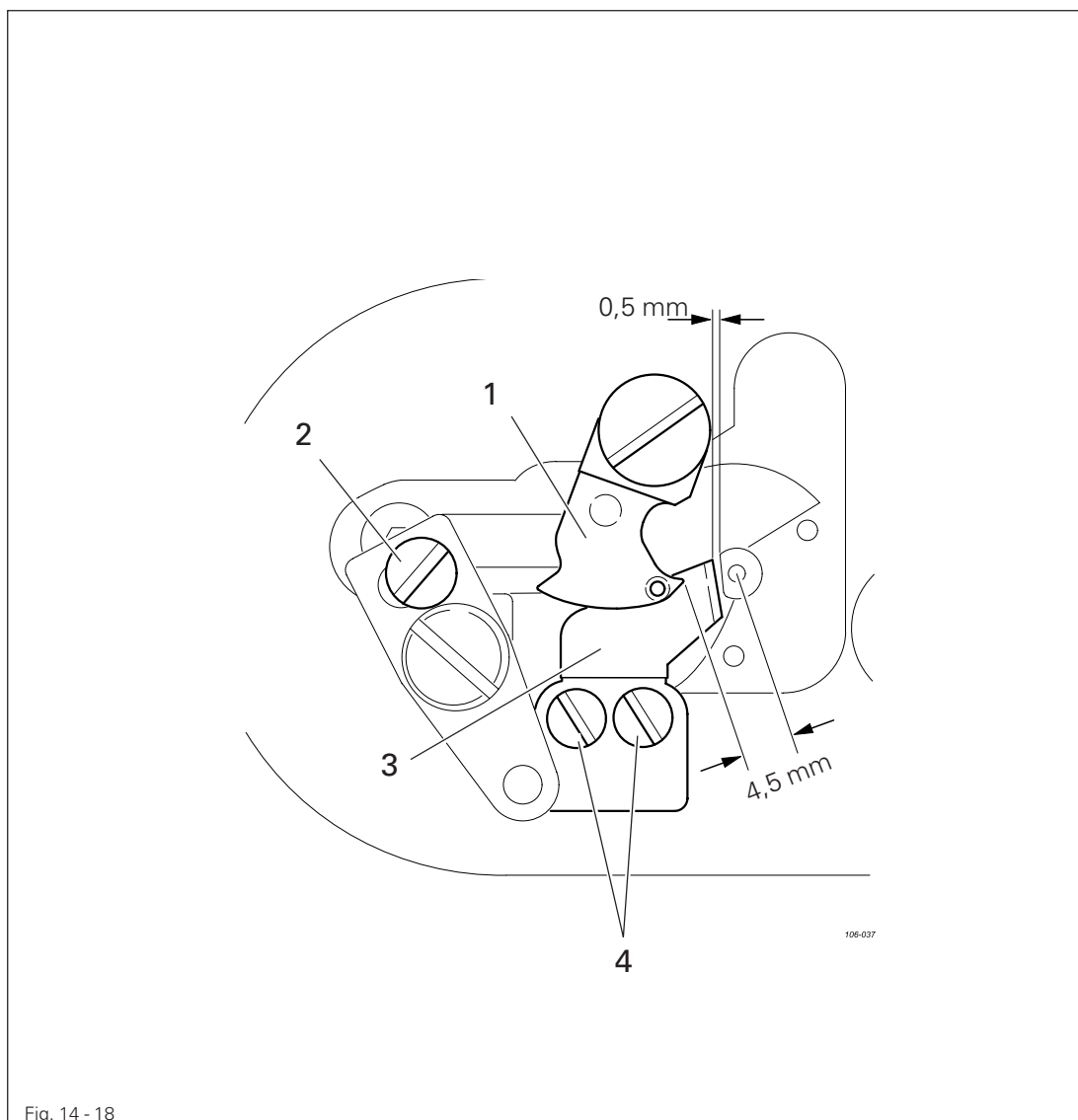


## 14.23 Position of the thread catcher and knife

**Requirement**

When the machine is in its basic position

1. the tip of the thread catcher **1** should be at a distance of **4.5 mm** from the centre of the needle hole.
2. The blade of knife **3** should be at distance of **0.5 mm** from the needle plate insert.



- Adjust thread catcher **1** (screw **2**) in accordance with **requirement 1**.
- Adjust knife **3** (screws **4**) in accordance with **requirement 2**.

## 14.24 Position of the release trip

### Requirement

The slots of trip 1 should be touching screws 2 on the right side.

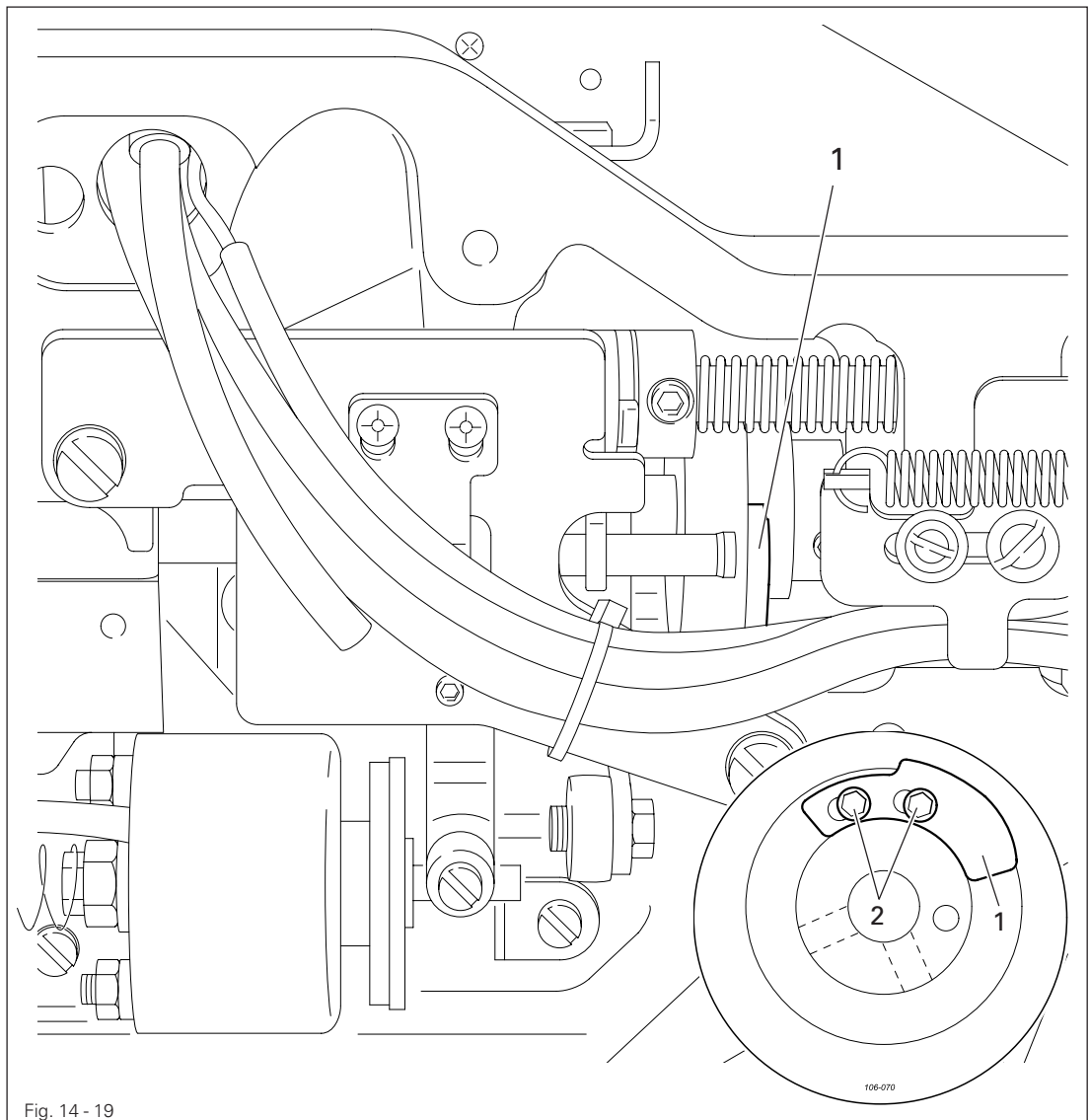
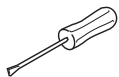


Fig. 14 - 19



- Move trip 1 (screws 2) in accordance with the **requirement**.



If the needle thread is too short after trimming, trip 1 can be slightly readjusted.

## 14.25 Position of the release catch

**Requirement**

When lever 6 is touching release catch 7, there should be a distance of **0.3 mm** between drive lever 5 and pin 1.

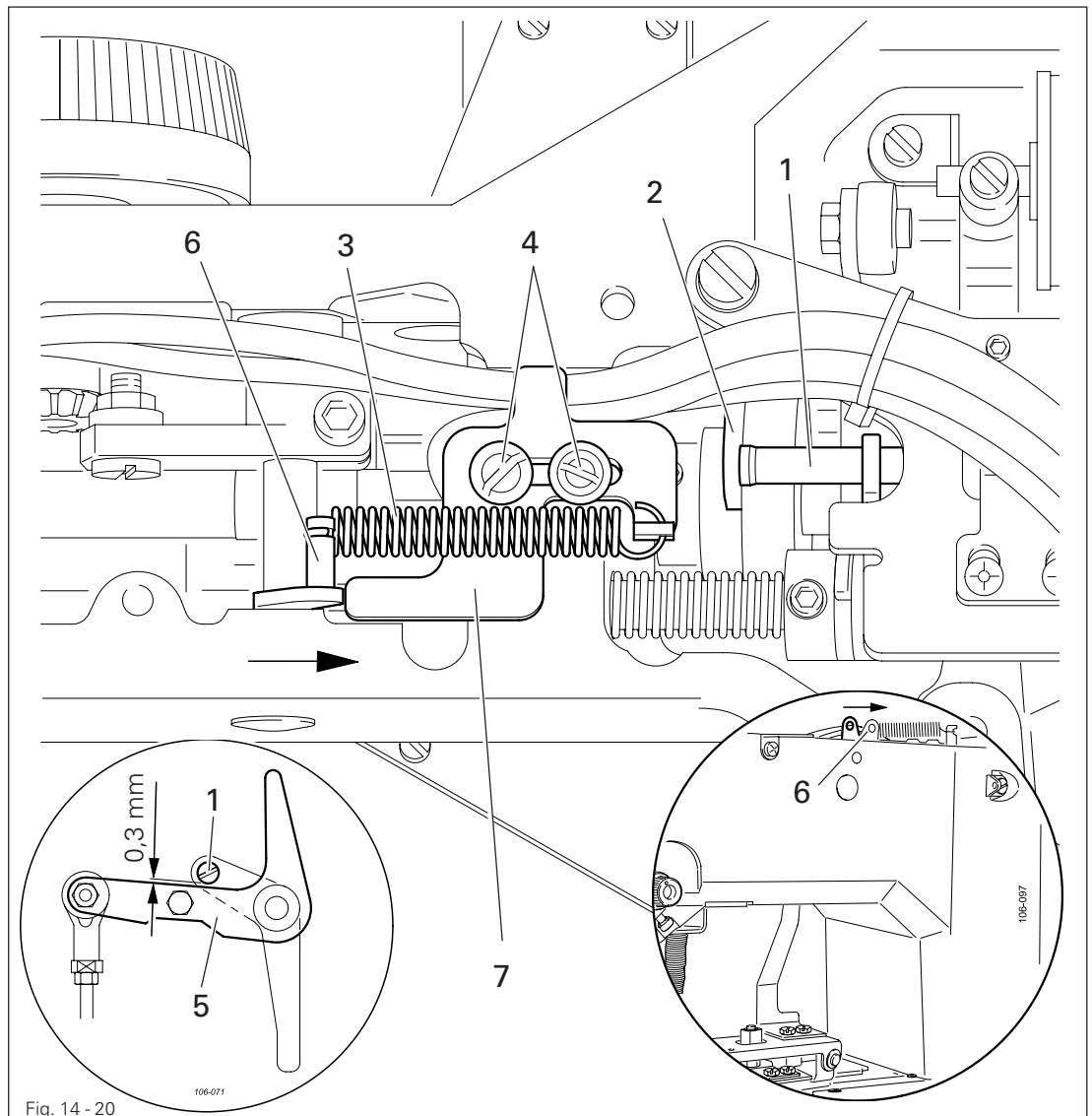
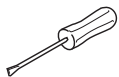


Fig. 14 - 20



- Turn the balance wheel until pin 1 is no longer on the release trip 2.
- Release spring 3 and loosen screws 4.
- In accordance with the requirement, place the feeler gauge between the drive lever 5 and pin 1.
- Push lever 6 lightly in the direction shown by the arrow.
- Move release catch 7 against lever 6 and tighten screws 4.
- Remove the feeler gauge and attach spring 3.



Spring 3 should only be released and attached with suitable tools!  
Danger of injury!

## 14.26 Needle thread tension release

### Requirement

After thread trimming the distance **X** between tension discs **3** should be **0.6 – 0.8 mm** for normal materials and **0.8 – 1.0 mm** for heavy materials.

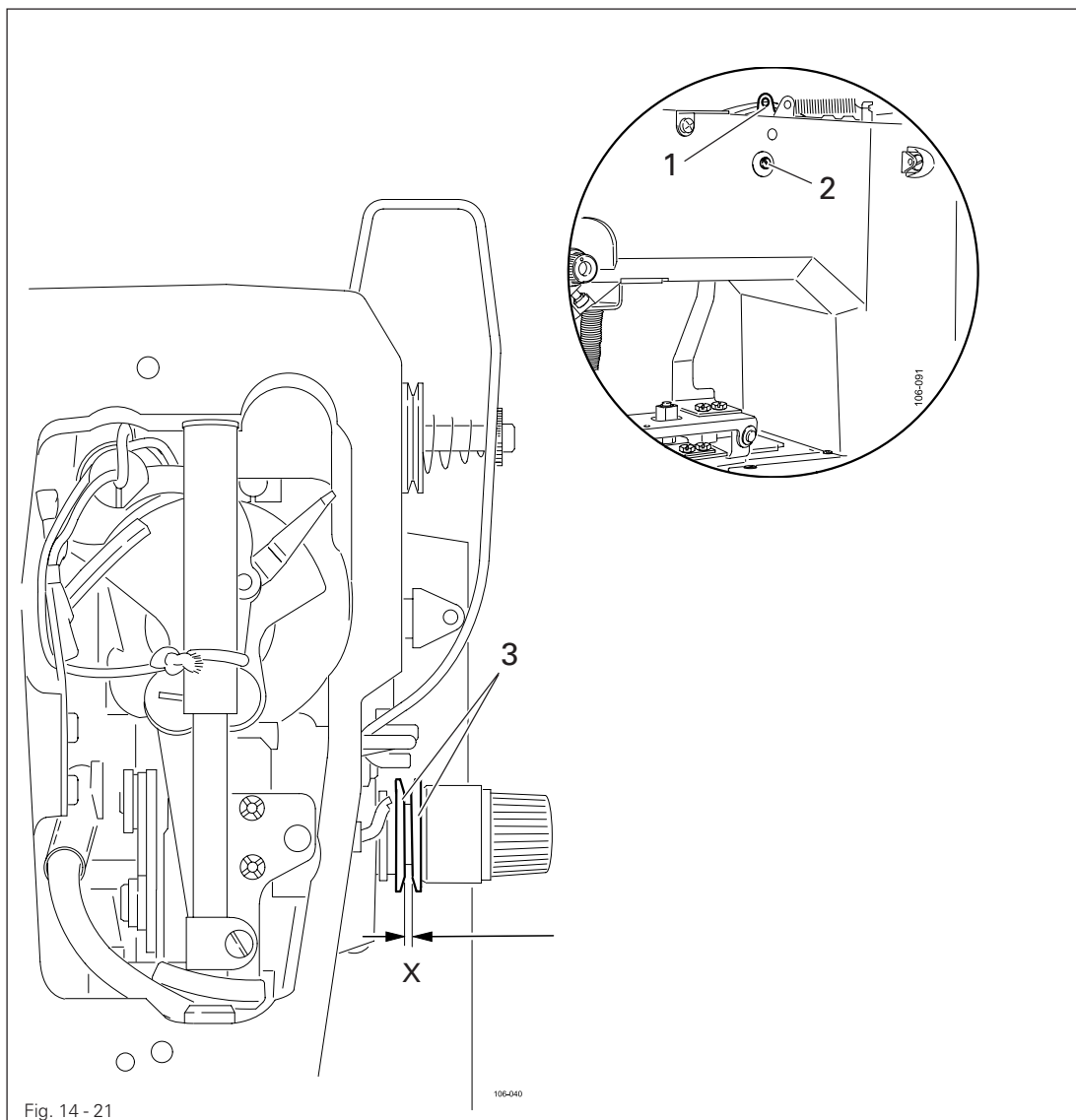
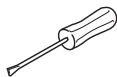


Fig. 14 - 21

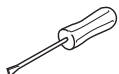
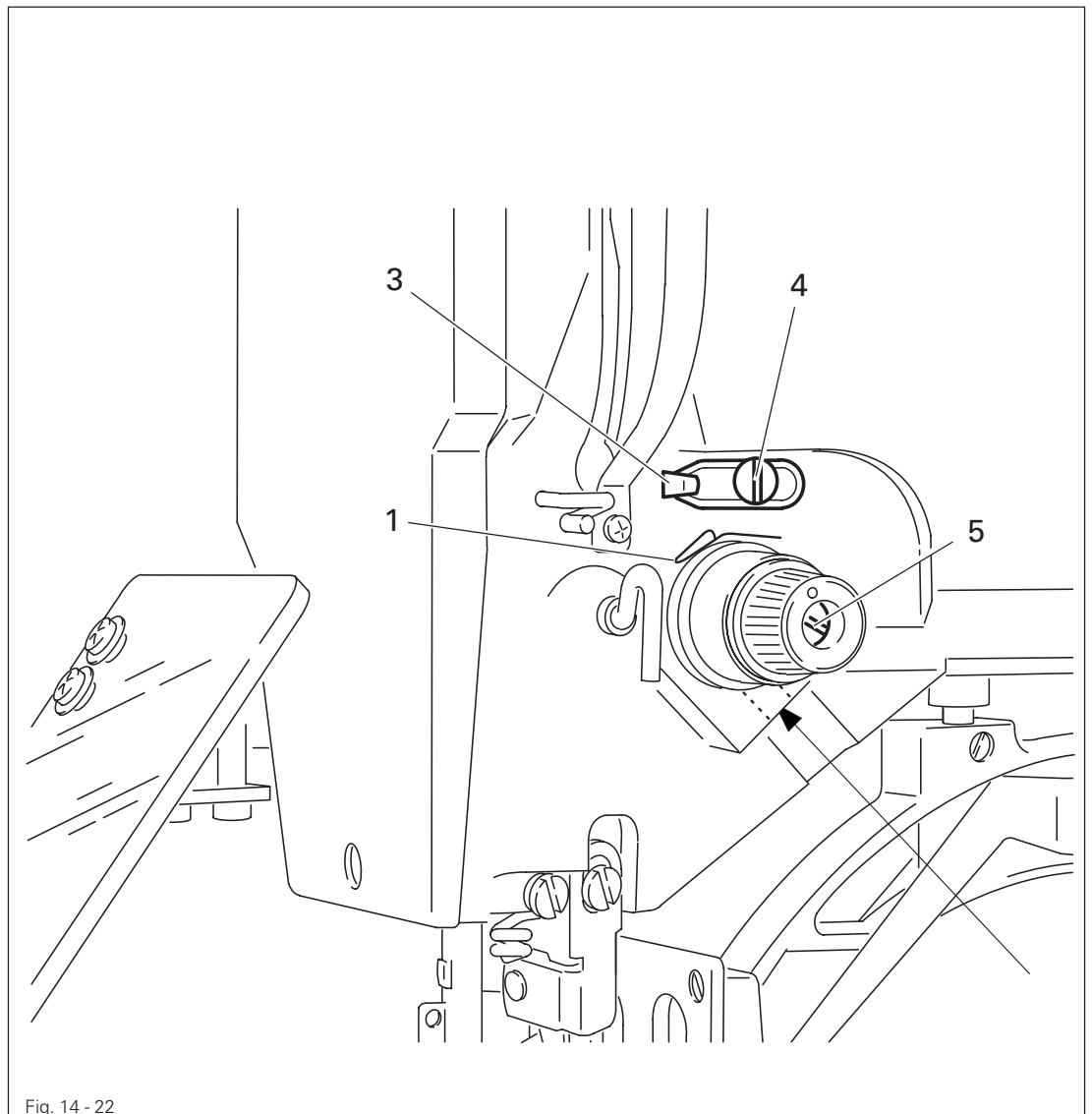


- Bring the machine into the cutting position by hand.
- Move lever **1** (screw **2**) in accordance with the **requirement**.

## 14.27 Thread check spring and thread regulator

## Requirement

1. The thread check spring **1** should have a **6 – 8 mm** stroke.
2. Screw **4** should be positioned in the centre of the slot of thread regulator **3**.



- Adjust thread check spring **1** (screw **2**) in accordance with **requirement 1**.
- Move thread regulator **3** (screw **4**) in accordance with **requirement 2**.

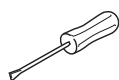
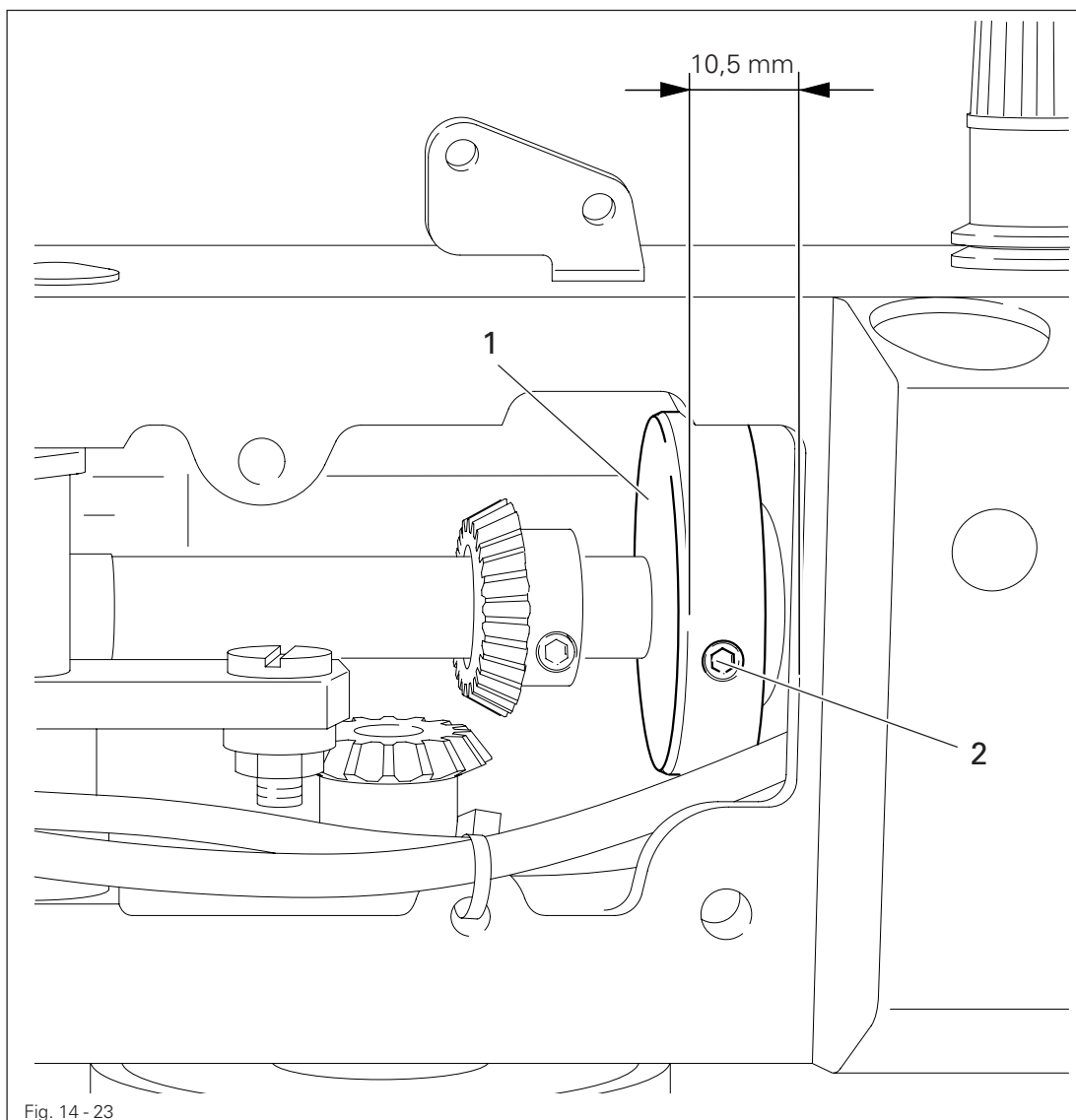


Turn pin **5** to adjust the thread spring resistance. All settings of the thread check spring **1** depend on the material and might have to be corrected to achieve the desired result.

## 14.28 Bobbin winder drive wheel

### Requirement

1. There should be a distance of **approx. 10.5 mm** between drive wheel 1 and the metal edge of the machine case.
2. When the bobbin winder is switched on, its friction wheel should be driven by drive wheel 1. When the bobbin winder is switched off, drive wheel 1 must not touch the friction wheel of the bobbin winder.



- Adjust drive wheel 1 (screw 2) in accordance with the requirements.

## 14.29 Button clamp initiator

**Requirement**

When the button clamp is lowered, the initiator should be actuated (input "3" parameter "601" is in the "Off" position).

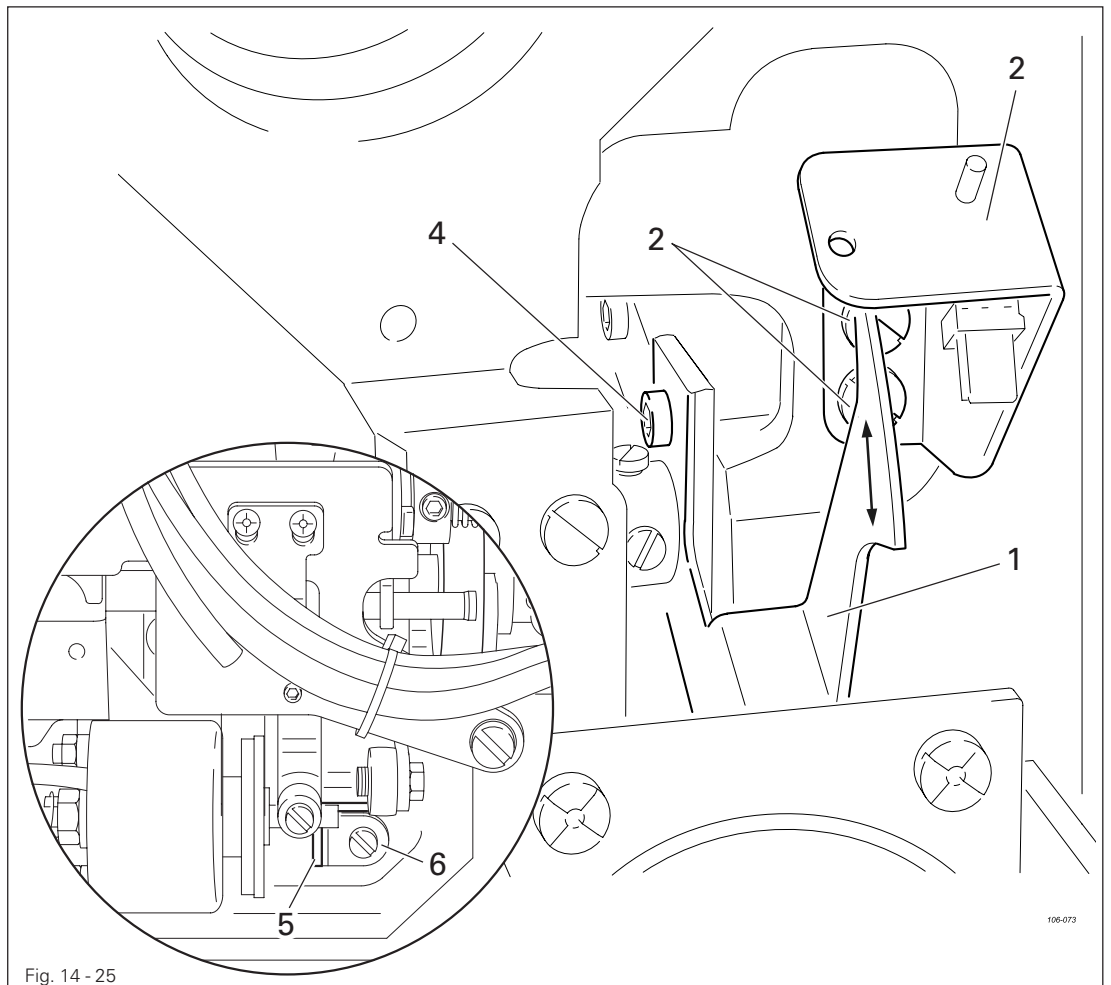


Fig. 14 - 25



- Switch on the machine and press the "TE" key.
- Lower the work clamp by pressing the "tacting forwards" key.
- With the clamp in this position, press the "TE" key.
- In the input mode, select parameter "601", see Chapter 11.03 Parameter input in the instruction manual.
- Select input "3" with the corresponding plus/minus key.
- If necessary, enter the access code, see Chapter 11.05.01 Entering the access code in the instruction manual.
- Move cam switch 1 by hand and check the ON/OFF switch position on the display.
- Adjust support 2 (screws 3) and cam switch 1 (screws 4) in accordance with the requirement.
- Switch off the machine.

## 14.30 Changing the feeder and the jaws of the button clamp

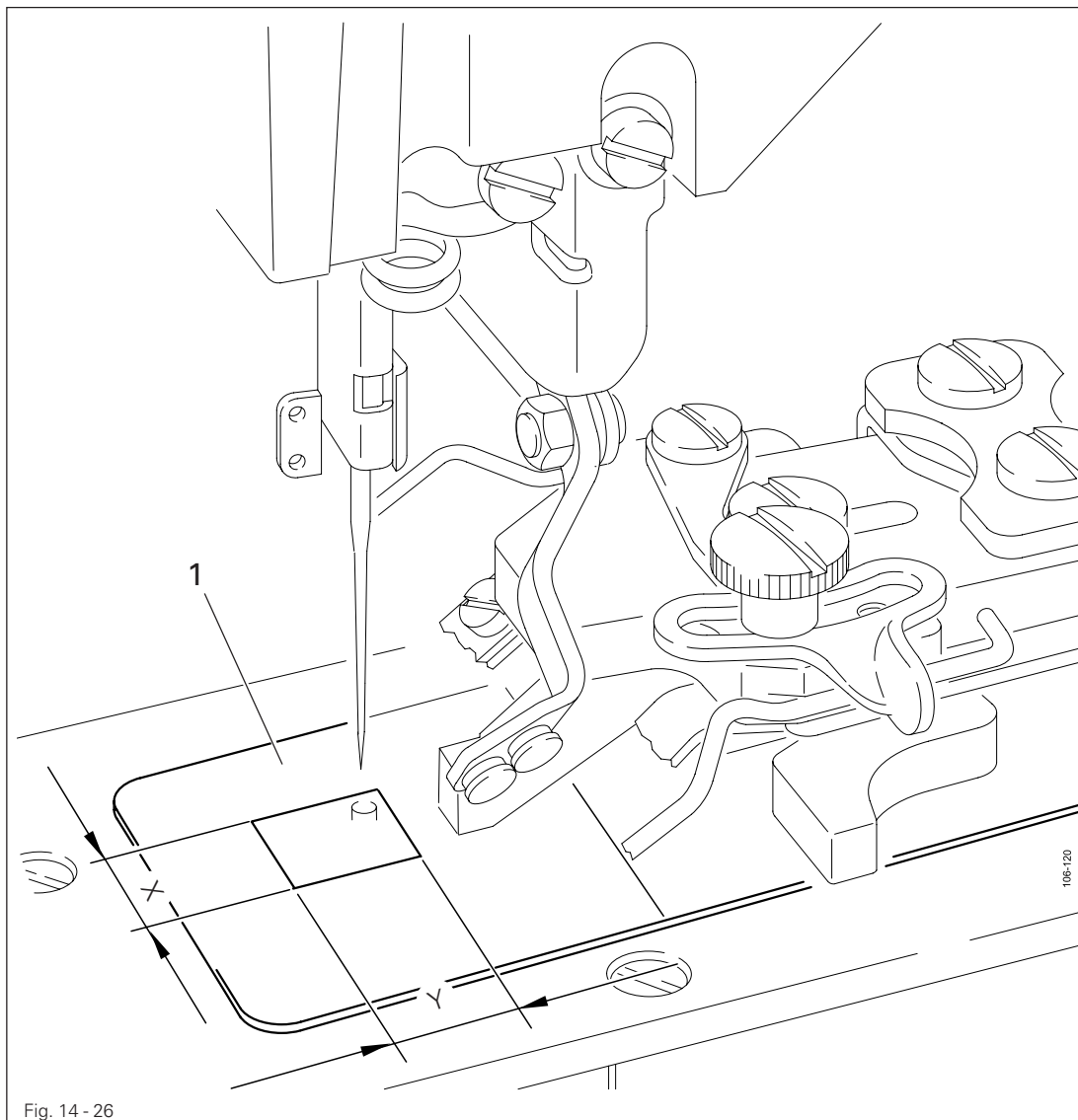
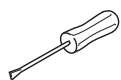


Fig. 14 - 26



- Measure the cutout of the new feeder in X- and Y-direction and adjust the sewing area size, see **Chapter 9.07 Button clamp and sewing area size** of the instruction manual.
- Fit and align the new button clamp jaws, see **Chapter 14.08 Aligning the button clamp**.
- Select the seam program to match the button clamp, see **Chapter 9.06 Selecting a seam program** of the instruction manual.
- Check the seam program by tacting through it, see **Chapter 7.05.03 Function keys** of the instruction manual.



If the actual size of the sewing area differs from the size entered, serious damage can be caused to the machine!



## 14.31 Cold start



When a cold start is carried out, the seam patterns 50 – 99 and all altered parameter settings are deleted! The machine is reset to its condition on delivery, the machine's zero points remain unaffected.

- Switch on the machine.



- Select parameter "607" with the corresponding **plus/minus keys**.

- If necessary, enter the code, see **Chapter 11.05.01 Entering the access code** in the instruction manual.



- With the corresponding **plus/minus key** carry out the reset operation.

- Switch the machine off and on again after approx. 3 seconds.

## 14.32 Internet update of the machine software

The machine software can be updated with PFAFF flash programming. For this purpose the PFP boot program and the appropriate control software for the machine type must be installed on a PC. To transfer the data to the machine, the PC and the machine control unit must be connected with an appropriate null modem cable (part no. 91-291 998-91).



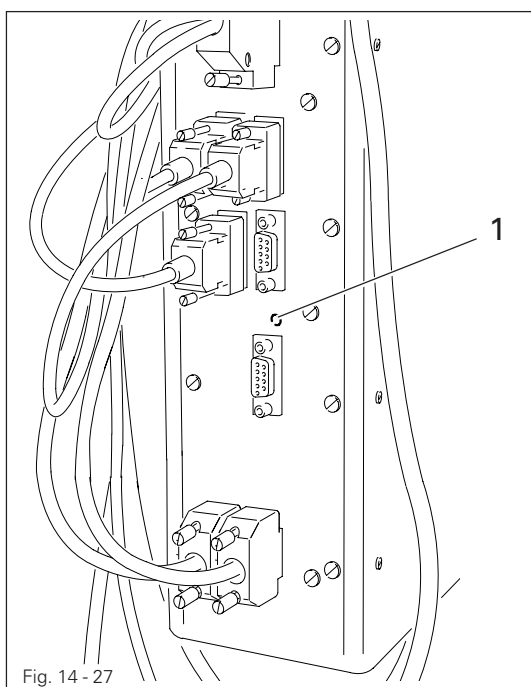
The PFP boot program and the control software of the machine type can be downloaded from the PFAFF-homepage using the following path:  
[www.pfaff-industrial.com/de/service/download/steuerungssoftware.html](http://www.pfaff-industrial.com/de/service/download/steuerungssoftware.html)

To update the machine software carry out the following steps:



While the machine software is being updated, no setting up, maintenance or adjustment work may be carried out on the machine!

- Switch off the machine.
- Connect the PC (serial interface or appropriate USB-adapter) and the machine control unit (RS232). To do so disconnect the plug of the control panel.



- Switch on the PC and start the PFP boot program.
- Select the machine type.
- Press the "programming" button.
- Switch on the machine, keeping the boot key 1 pressed.
- Press the "OK" button.  
The software update is carried out, the update progress is shown on the bar display of the PFP boot program.
- When the update has been completed, switch off the machine and end the PFP boot program.
- End the connection between the PC and the machine control unit and reconnect the control panel to the machine control unit.

- Switch on the machine.  
A plausibility control is carried out and, if necessary, a cold start.



More information and assistance is at your disposal in the file "PFPHILFE.TXT", which can be called up from the PFP boot program by pressing the "help" button.

## 14.33 List of parameters

Group	Parameter	Description	Setting range	Set value
000	001	<b>Maximum speed</b> This parameter is used to fix the max. sewing speed (upper limit).	500 – 2500	2500
	002	<b>Sewing speed for start stitches</b> With this parameter the speeds for the 5 start stitches are fixed.		
		Speed (spm) for start stitch no. 1	500 – 2500	500
		Speed (spm) for start stitch no. 2	500 – 2500	900
		Speed (spm) for start stitch no. 3	500 – 2500	2500
		Speed (spm) for start stitch no. 4	500 – 2500	2500
	Speed (spm) for start stitch no. 5	500 – 2500	2500	
	003	<b>Locking/releasing seam patterns</b> This parameter is used to release (ON) or lock (OFF) the individual seam patterns (0 to 99) to be carried out in the sewing mode.	ON – OFF	ON
004	<b>Switch bobbin thread counter on/off</b> <b>Standard value (pieces per bobbin)</b> In the sewing mode, the bobbin thread counter counts the pieces sewn backwards from the standard value. If the bobbin thread counter is switched on, in the sewing mode a signal is given when the value 0 is reached.	ON – OFF 1 - 9999	OFF 1000	
006	<b>Reversing after thread trimming</b> <b>Reverse position [°]</b> With this parameter it is possible to switch the automatic reversing function after thread trimming on or off. If the reversing function is switched on, the reverse position can be set by turning the balance wheel. The access code is necessary for this adjustment.	ON – OFF 0 – 14	OFF 11	
007	<b>Starting point = scale reference point</b> With this parameter it is possible to choose whether the scale reference point is the starting point (ON) or the zero point (OFF).	ON – OFF	OFF	
008	<b>Speed for the "winding" function</b> This parameter is used to fix the speed for the winding operation.	500 2700	1500	

## Adjustment

Group	Parameter	Description	Setting range	Set value
000	009	<p><b>Via zero point to starting point after end of sequence</b>            With this parameter it is possible to choose that, after the end of the sequence, the X-, Y-drive moves to the seam starting point via the reference initiators.</p>	ON –OFF	OFF
	010	<p><b>Via zero point to starting point after number of program cycles</b>  <b>Number of program cycles</b>            With this parameter it is possible to choose that, after a certain number of program cycles, the X-, Y-drive moves to the seam starting point via the reference initiators.</p>	ON –OFF 1 - 100	OFF
	011	<p><b>Pedal mode</b>            Switchover between level mode (0) and flip flop mode (1).</p>	0 – 1	0
	012	<p><b>Needle or balance wheel position in degrees</b></p>	0 - 360	11
	013	<p><b>NIS "needle in material" [°]</b>            This parameter is used to set the NIS signal. If the function is executed, the position can be entered by turning the balance wheel. If the position is altered, the result is a change in the point of time when the carriage is moved. The access code is necessary for this adjustment.</p>	65 – 166	107
	014	<p><b>Thread trimming speed [min-1]</b>            This parameter is used to fix the speed for thread trimming.</p>	100 – 700	300
	015	<p><b>Reduced current for stepping motors</b>            The reduction function of the holding current at rest with closed work clamp is switched on or off.</p>	ON – OFF	ON
	016	<p><b>Key tone</b>            The key tone, as reaction to a key on the control panel being pressed, is switched on or off. The double tone for incorrect inputs always remains switched on.</p>	ON – OFF	ON

Group	Parameter	Description	Setting range	Set value
000	017	<b>Button clamp solenoid Operating time [10 ms]</b> The time, for which the solenoid is under full current, is entered.	5 – 100	10
	018	<b>Button clamp solenoid duty-cycle [%]</b> At the end of the clamp solenoid operating time (Parameter "017") the solenoid is clocked. The relationship between duration of operation and non-operation is entered here.	5 – 100	20
	019	<b>Thread trimming solenoid operating time [10 ms]</b> The time, for which the solenoid is under full current, is entered.	5 – 100	25
	020	<b>Thread trimming solenoid duty-cycle</b> At present without a function	5 – 100	100
	021	<b>Thread take-up lever t.d.c. [°]</b> The position for the t.d.c. thread take-up lever is entered here. If the function is executed, the position can be set by turning the balance wheel. The access code is necessary for this adjustment.	45 – 53	51
	022	<b>Thread trimming position (in relation to t.d.c. needle) [°]</b> The position, at which the thread trimming solenoid is switched on, is entered here. The adjustment is set by turning the balance wheel. The access code is necessary for this adjustment.	180 - 253	180
	023	<b>Sewing area size X [1/10 mm]</b> To avoid mechanical collisions, the sewing area size of the button clamp in use is entered. The control unit checks the path and, if necessary, issues an error message.	± 33	-23 / +23
	024	<b>Sewing area size Y [1/10 mm]</b> To avoid mechanical collisions, the sewing area size of the button clamp in use is entered. The control unit checks the path and, if necessary, issues an error message.	± 33	-23 / +23

## Adjustment

Group	Parameter	Description	Setting range	Set value
000	025	<b>Thread wiper solenoid operating time [10 ms]</b> The time, for which the solenoid is under full current, is entered.	5 – 100	10
	026	<b>Thread wiper solenoid Duty-cycle [%]</b> No function at present	5 – 100	100
100	101	<b>Software version main processor</b> The software version of the main processor is displayed		0300.xxx
	102	<b>Software version sewing drive unit</b> The software version of the sewing drive module is displayed.		V.xx
	103	<b>Software version control panel</b> The soft- and hardware version of the control panel are displayed.		V.xxx/ H.xxx
200	201	<b>Program number</b> The program number of the program to be processed is selected.	50 - 99	50
	202	<b>Button hole model</b> The button hole model (number of holes in the button) is selected.	2 – 4	2
	203	<b>Coordinates of the first hole</b> The coordinates of the hole are entered.		xx.yy
	204	<b>Coordinates of the second hole</b>		xx.yy
	205	<b>Coordinates of the third hole</b>		xx.yy
	206	<b>Coordinates of the fourth hole</b>		xx.yy
	207	<b>Coordinates of the fifth hole</b>		xx.yy
	208	<b>Coordinates of the sixth hole</b>		xx.yy
	209	<b>Stitch positions</b> The number of stitch positions on one edge are entered.	1 - 20	4
	210	<b>Stitch formation</b> The stitch formation depends on the type of button selected, see <b>Chapter 11.04 Free input of the seam pattern (Teach in)</b> of the instruction manual.	0 – 2 (0 – 3)	0

Group	Parameter	Description	Setting range	Set value
200		Three-hole button: 0 = cycle, 1 = point, 2 = stitching		
		Four-hole button: 0 = normal, 1 = cycle, 2 = arrow, 3 = Z		
	211	<b>Intermediate trimming</b> On four-hole buttons the thread can be trimmed between the second and third hole.	ON - OFF	OFF
600	601	<b>Display inputs</b> With this function the digital inputs can be checked. "IN" shows the input numbers (1 – 16). Under "VAL" the respective switch status is displayed.		
		IN VAL		
	1	IN1, programmable input 1		
	2	IN2, programmable input 2		
	3	E3, button clamp raised		
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	602	<b>Display special inputs</b> With this function it is possible to check the special inputs pedal, reference X (SM1) and reference Y (SM2). "IN" shows the inputs (PED, REFX, REFY). Under "VAL" the respective switch status is displayed.		
		IN VAL		
		PED Pedal (speed control unit -1; 0; +1; 2)		
		REFX Reference input X		
		REFY Reference input Y		

Group	Parameter	Description	Setting range	Set value																																																			
600	603	<p><b>Connect outputs</b>            With this function the outlets can be connected. "OUT" shows the outlet selected (1-16). Under "VAL" the selected output is set (S) with the plus/minus key (+), and reset (R) with the plus/minus key. Interlocks are checked. Non-assigned outlets are not connected.</p> <table border="0"> <tr> <td>OUT</td> <td>VAL</td> <td></td> </tr> <tr> <td>1</td> <td>S/R</td> <td>Solenoid for button clamp open</td> </tr> <tr> <td>2</td> <td>S/R</td> <td></td> </tr> <tr> <td>3</td> <td>S/R</td> <td>Solenoid for thread trimming</td> </tr> <tr> <td>4</td> <td>S/R</td> <td>Solenoid for thread wiper</td> </tr> <tr> <td>5</td> <td>S/R</td> <td></td> </tr> <tr> <td>6</td> <td>S/R</td> <td>Program outlet</td> </tr> <tr> <td>7</td> <td>S/R</td> <td>Program outlet</td> </tr> <tr> <td>8</td> <td>S/R</td> <td></td> </tr> <tr> <td>9</td> <td>S/R</td> <td></td> </tr> <tr> <td>10</td> <td>S/R</td> <td></td> </tr> <tr> <td>11</td> <td>S/R</td> <td></td> </tr> <tr> <td>12</td> <td>S/R</td> <td></td> </tr> <tr> <td>13</td> <td>S/R</td> <td></td> </tr> <tr> <td>14</td> <td>S/R</td> <td></td> </tr> <tr> <td>15</td> <td>S/R</td> <td></td> </tr> <tr> <td>16</td> <td>S/R</td> <td></td> </tr> </table>	OUT	VAL		1	S/R	Solenoid for button clamp open	2	S/R		3	S/R	Solenoid for thread trimming	4	S/R	Solenoid for thread wiper	5	S/R		6	S/R	Program outlet	7	S/R	Program outlet	8	S/R		9	S/R		10	S/R		11	S/R		12	S/R		13	S/R		14	S/R		15	S/R		16	S/R			
	OUT	VAL																																																					
	1	S/R	Solenoid for button clamp open																																																				
	2	S/R																																																					
3	S/R	Solenoid for thread trimming																																																					
4	S/R	Solenoid for thread wiper																																																					
5	S/R																																																						
6	S/R	Program outlet																																																					
7	S/R	Program outlet																																																					
8	S/R																																																						
9	S/R																																																						
10	S/R																																																						
11	S/R																																																						
12	S/R																																																						
13	S/R																																																						
14	S/R																																																						
15	S/R																																																						
16	S/R																																																						
	604	<p><b>Move stepping motors</b>            The stepping motors SM1 (X-axis) and SM2 (Y-axis) are moved individually with the respective plus/minus keys. Interlocks are not checked.</p>																																																					
	605	<p><b>Turn sewing motor</b>            The sewing motor can be operated with a selectable set speed by pressing the pedal. After the sewing motor has been started, the current speed is also displayed.</p>	500 - 2500	500																																																			
	606	<p><b>Thread trimming sequence</b>            The sequence for a complete thread trimming cycle is started with the plus/minus key (+) below CUT and below THR.</p>																																																					



Group	Parameter	Description	Setting range	Set value
600	607	<b>Cold start (RESET)</b> With this function the control unit carries out a cold start (RESET) with which the data is reset. After this function has been selected, the machine must be switched off and then on again.		
	608	<b>Setting zero points</b> With this function and the adjustment gauge, the zero points for the X/Y-drive unit can be set. (stepping motor correction values for the reference points REF <sub>X</sub> , REF <sub>Y</sub> ). The access code is required for this adjustment.		
	609	<b>Setting the button clamp centre X</b> This function is used to set the centre of the button clamp in X-direction. When entering the function, the machine moves to the current button clamp centre, after which it is possible to move to the right or left edge, depending on the set limits (param. "023"). A correction can be made with the plus/minus keys. The relocation value is displayed.		
	610	<b>Setting the button clamp centre Y</b> This function is used to help set the centre of the button clamp in Y-direction. After entering this function, the machine moves to the current button clamp centre, after pressing a key to the front or the rear limit (param. "024"). The button clamp must be shifted manually.		
	611	<b>Automatic button clamp opening off</b> With this function the automatic opening of the button clamp after thread trimming can be switched off. After the machine has been switched off, the automatic button clamp opening function is always activated.	ON - OFF	OFF
	612	<b>Test function continuous start</b>	ON - OFF	OFF

## Adjustment

Group	Parameter	Description	Setting range	Set value
800		The function groups and the functions Programming the Function Keys P, P1-P8 and C1-C3 can be released for manipulation (ON) or locked (OFF). If a function group is suppressed, its parameters cannot be changed until a valid access code has been entered. Once a valid access code has been entered, the suppression is cancelled until the machine is switched off.		
	801	Right of access function group 000	0N – OFF	ON
	802	Right of access function group 100	0N – OFF	ON
	803	Right of access function group 200	0N – OFF	ON
	807	Right of access function group 600	0N – OFF	OFF
	808	Right of access function group 700	0N – OFF	OFF
	809	Right of access function group 800	0N – OFF	OFF
	810	Right of access to keys "P", "P1" – "P8" and "C1" – "C3"	0N – OFF	ON
	811	Access code This parameter is used to alter the access code. Upon delivery the machine is set with the access code "3371".		3371

### 14.34 Error messages on the display

Following error messages are shown on the control panel display.

ERROR: 1	Processor error STACK_OVERFLOW
ERROR: 2	Processor error STACK_UNDERFLOW
ERROR: 3	Processor error UNDEF_OPCODE
ERROR: 4	Processor error PROTECTION_FAULT
ERROR: 5	Processor error ILLEGAL_WORD_OPERAND
ERROR: 6	Processor error ILLEGAL_INSTRUCTION
ERROR: 7	Processor error ILLEGAL_BUS_ACCESS
ERROR: 8	Processor error NMI
ERROR: 10	OTE (Sewing head recognition unit) not attached
ERROR: 11	OTE not programmed (new)
ERROR: 12	OTE check sum error
ERROR: 13	OTE header invalid
ERROR: 14	OTE user data invalid
ERROR: 30(#)	(OTE error see cap. 14.36)
ERROR: 31(#)	(Error Sewing motor see cap. 14.35)
ERROR: 50	Incorrect control panel
ERROR: 51	Incorrect machine class in OTE
ERROR: 52	Incorrect software for main drive
ERROR: 101	Mains voltage
ERROR: 102	Power supply overload
ERROR: 103	24 V too low
ERROR: 201(#)	(Error Sewing motor see cap. 14.35)
ERROR: 202	Pattern too large
ERROR: 203	Overload data transfer sewing motor
ERROR: 204	Tacting function locked
ERROR: 205	Run function locked
ERROR: 206	No NIS
ERROR: 207	Not end of ramp
ERROR: 208	Zero point not found
ERROR: 209	Sewing function locked
ERROR: 210	Bobbin thread fault
ERROR: 211	Stitch too large
ERROR: 301	Raise clamp not completed
ERROR: 302	Lower clamp not completed
ERROR: 303	Raise clamp locked (needle position)
ERROR: 304	Lower clamp locked (needle position)

ERROR: 305	Thread wiper on locked (needle position)
ERROR: 401	Error sewing motor
ERROR: 402	Overload data transfer sewing motor
ERROR: 403	Program station not programmed
ERROR: 404	Program locked
ERROR: 405	Program does not exist
ERROR: 406	No NIS
ERROR: 407	Zero points invalid
ERROR: 408	Machine not in basic position
ERROR: 409	Zero point not found
ERROR: 410	Program too long
ERROR: 411	Incorrect program number
ERROR: 412	Incorrect number of holes in button
ERROR: 413	Coordinates of 2 holes are the same
ERROR: 414	Incorrect number of plies
ERROR: 415	Incorrect stitch formation value

### 14.35 Sewing motor errors

1	Time out
9	Position not reached
34	Brake path too short
35	Communication error
36	Initialisation (Init.) not completed
65	Extint low at Init
66	Short circuit
68	Extint low in operation
69	No increments
70	Motor blocking
71	No incremental connector
73	Motor running interrupted
75	Controller locked
170	Invalid transmission
171	Zero mark invalid
175	Start error
222	Time-out monitoring

## 14.36

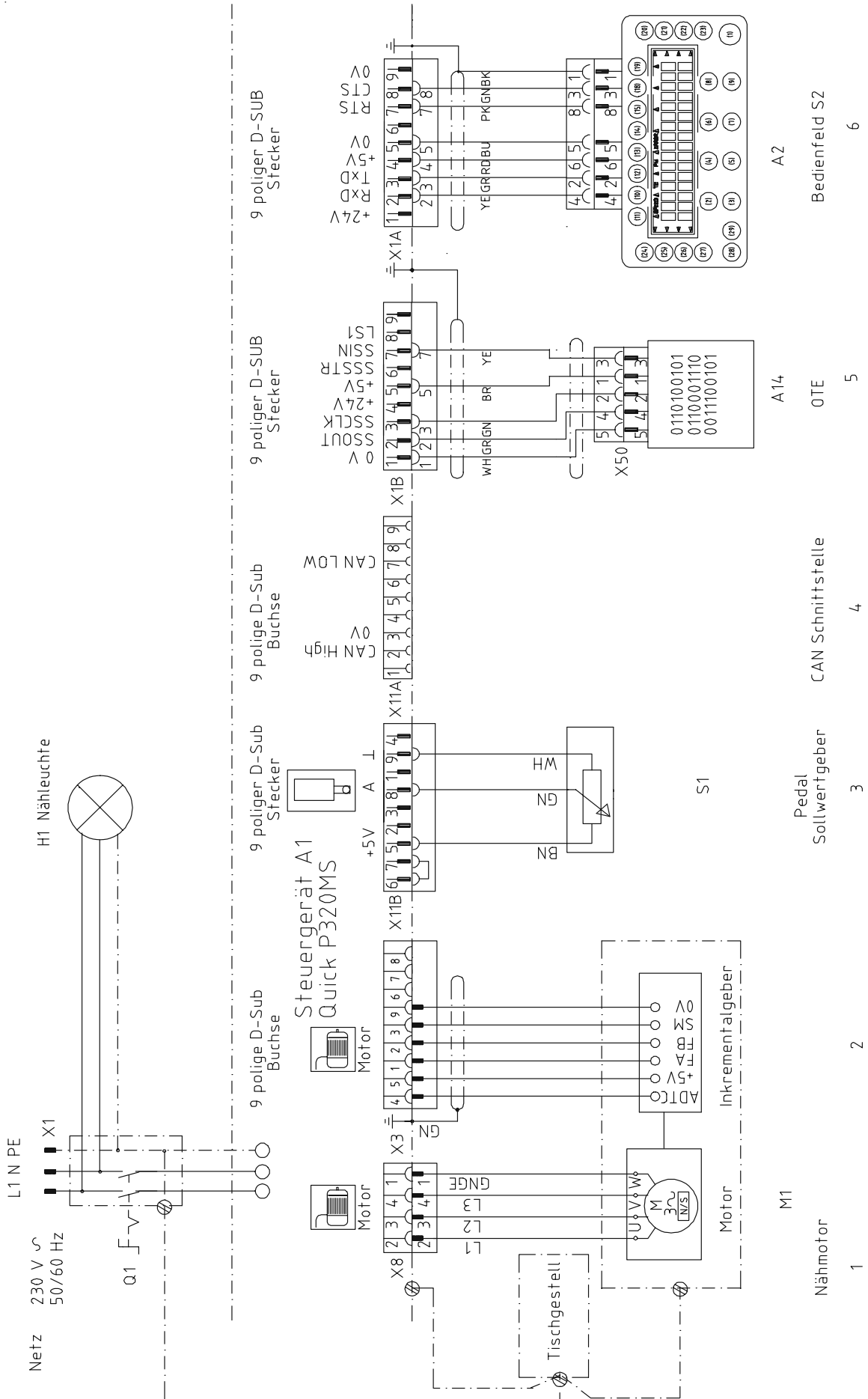
## OTE-errors

- 1 Read error
- 2 Write error
- 3 Full EEPROM
- 4 No EEPROM
- 5 Invalid size
- 6 Invalid address
- 7 Address overflow
- 8 Checksum failed
- 9 Serialnr. changed

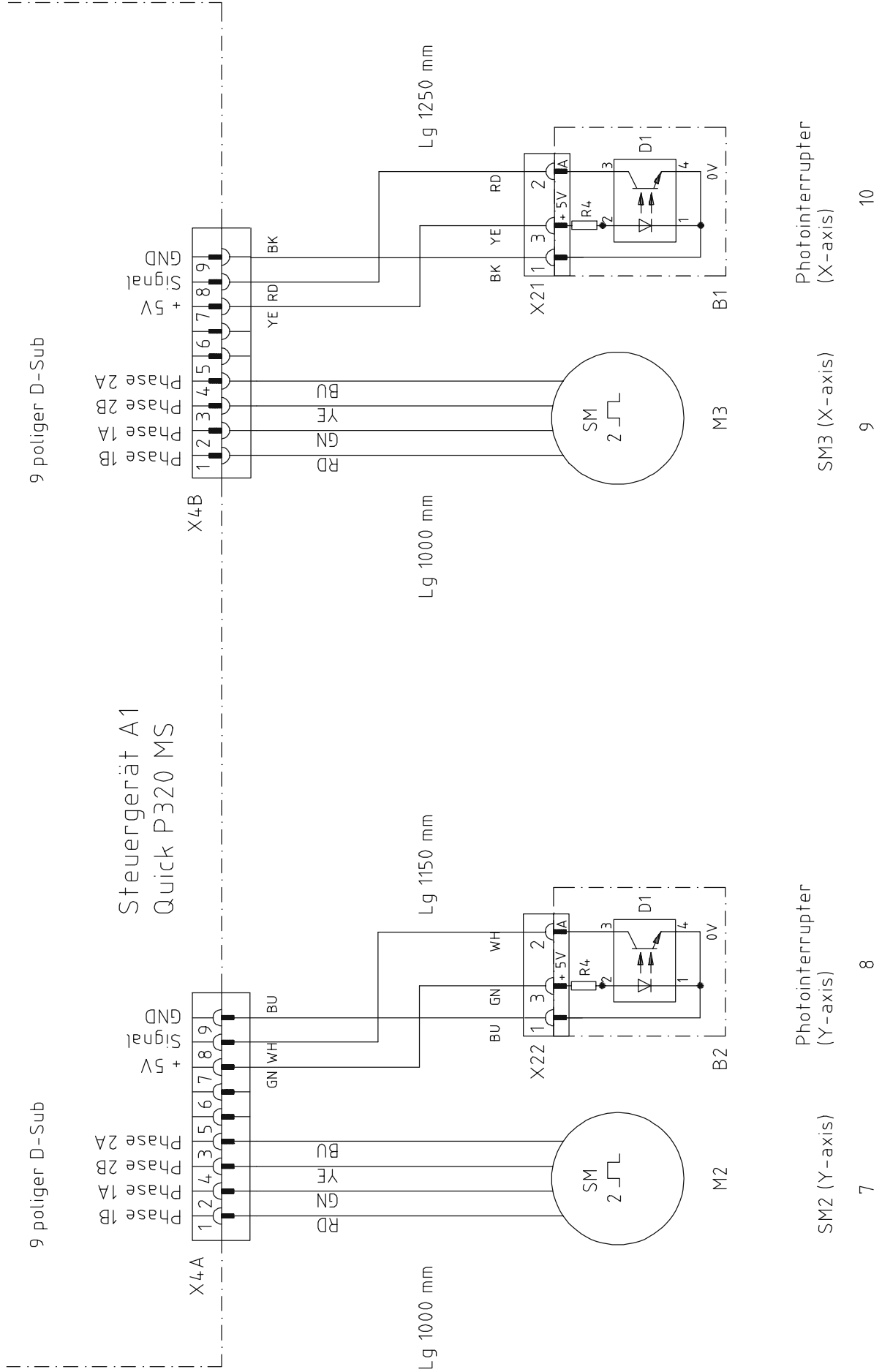
## 15 Circuit diagrams

### Circuit diagram reference list

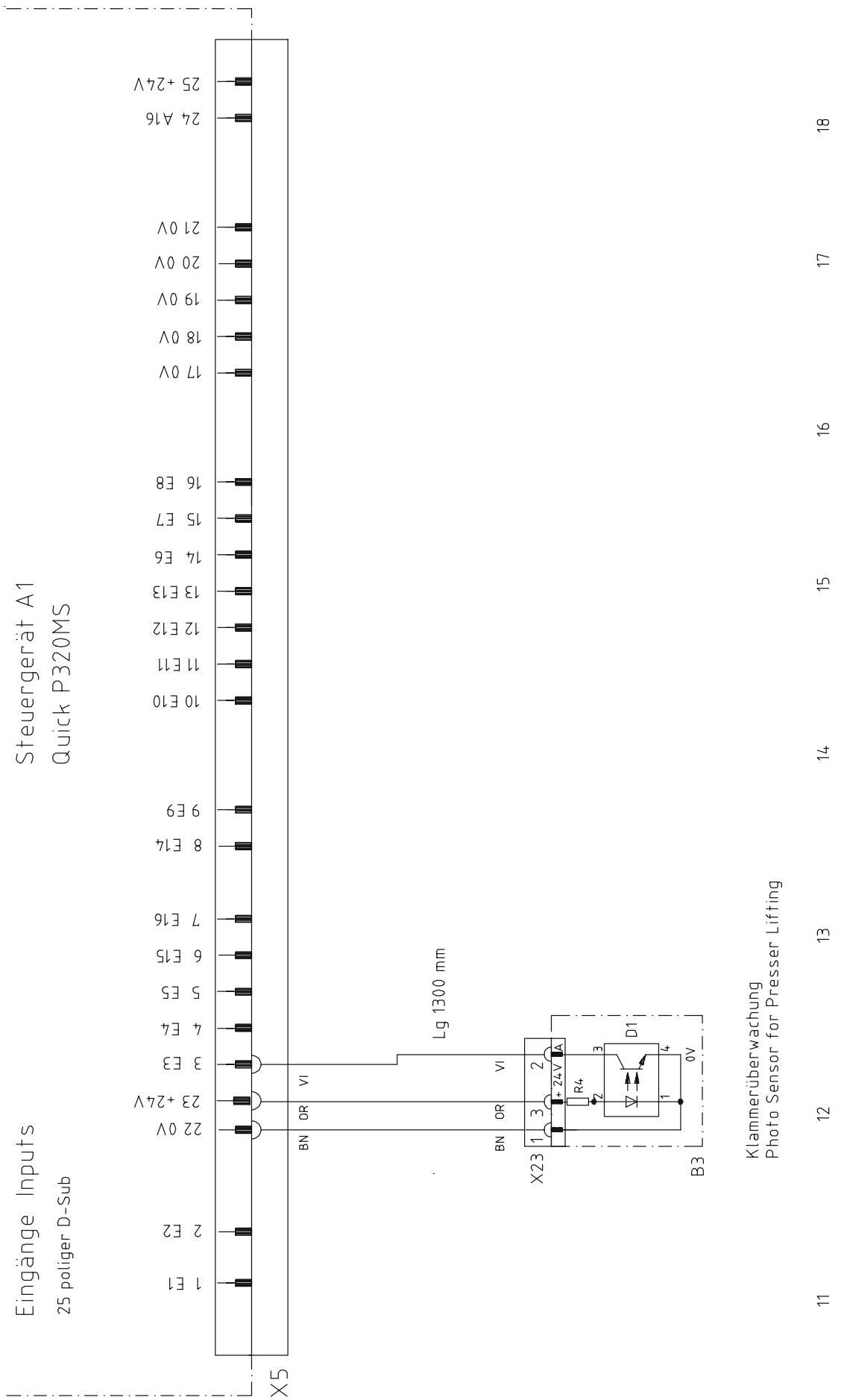
A1	Controller Quick P320MS
A2	Control panel S2
A14	Sewing head recognition system (OTE)
B2	Hybrid light barrier Y axis
B3	Hybrid light barrier X axis
H1	Sewing lamp
M1	Sewing motor
M2	Stepping motor Y axis
M3	Stepping motor X axis
Q1	Main switch
S1	Pedal speed control unit
X1	Mains switch
X1A	Control panel S2
X1B	Sewing head recognition system (OTE)
X3 I	Incremental transmitter (sewing motor)
X4A	Stepping motor + hybrid light barrier Y axis
X4B	Stepping motor + hybrid light barrier X axis
X5	Inputs
X8	Sewing motor
X11A	CAN interface
X11B	Pedal speed control unit
X13	Outputs
X21	Hybrid light barrier X axis
X22	Hybrid light barrier Y axis
X23	Hybrid light barrier clamp monitoring
X41	Clamp open
X43	Thread trimming
X44	Thread wiper
Y1	Clamp open
Y3	Thread trimming
Y4	Thread wiper

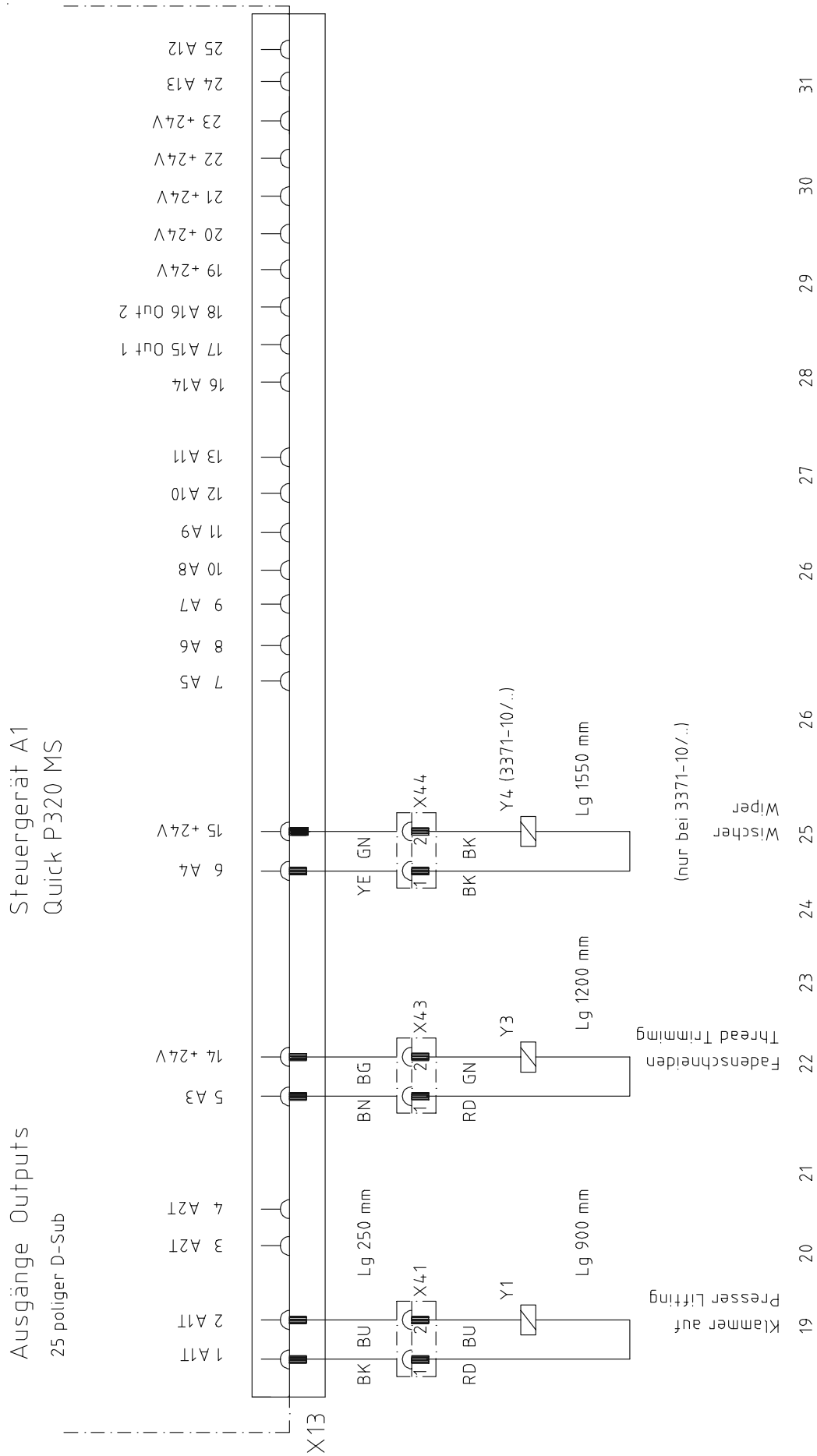


Schrittmotore











# PFAFF

## PFAFF Industrie Maschinen AG

Postfach 3020  
D-67653 Kaiserslautern

Königstr. 154  
D-67655 Kaiserslautern

Telefon: (0631) 200-0  
Telefax: (0631) 17202  
E-Mail: [info@pfaff-industrial.com](mailto:info@pfaff-industrial.com)