PFAFF

# 3371-10/01

## Adjustment Manual

This Adjustment Manual is valid for machines from the following serial numbers onwards:

# 6 001 000 →

296-12-18 584/002
Justieranleitung engl. 09.04

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# 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

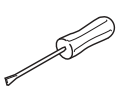
## 14.03 Abbreviations

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.

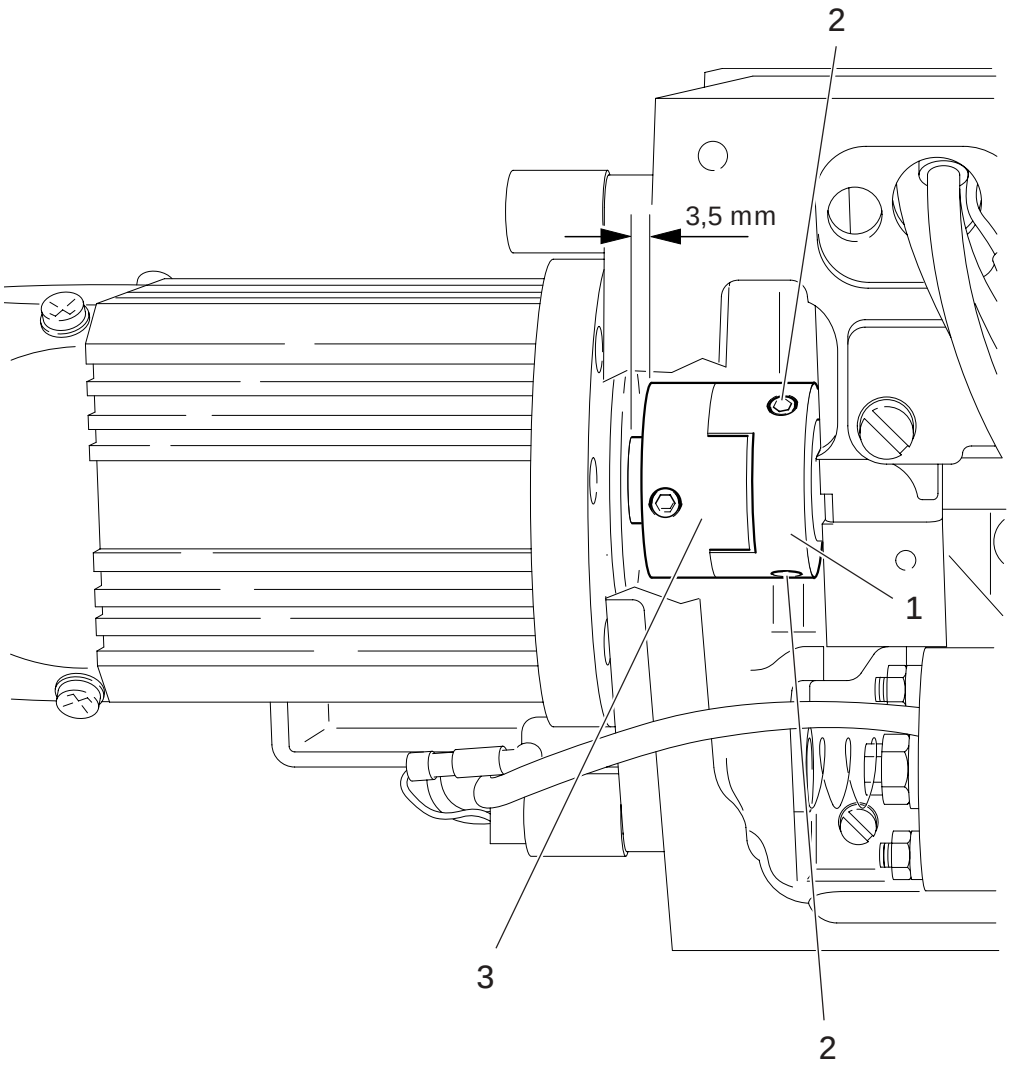



Fig. 14 - 01

- 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.
Coupling part 1 should be touching the O-ring of the thrust bearing.

## 14.06 Button clamp zero point

Requirement

After the machine ahs 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.

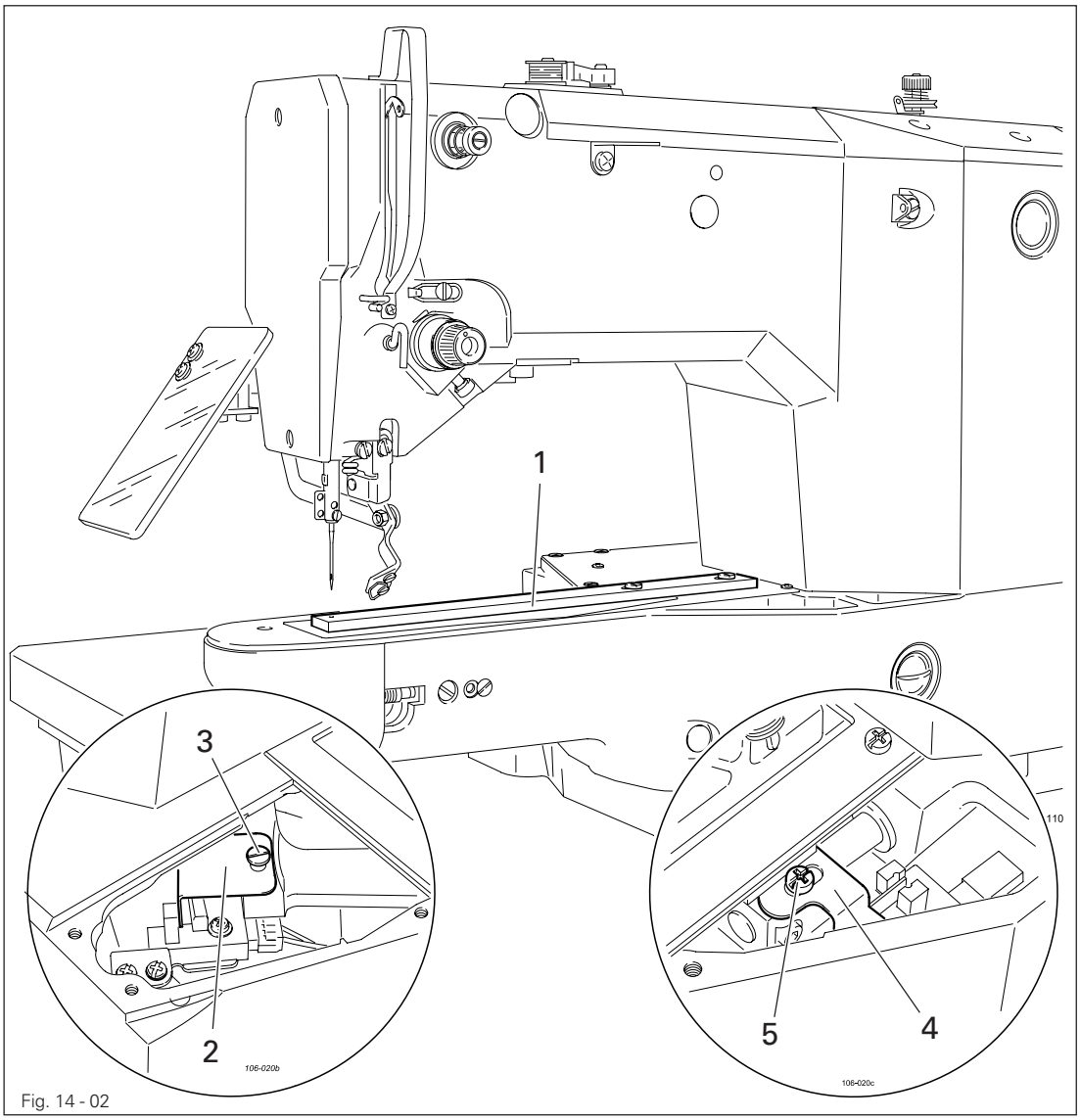



Fig. 14 - 02

- 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.

## 14.07 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.

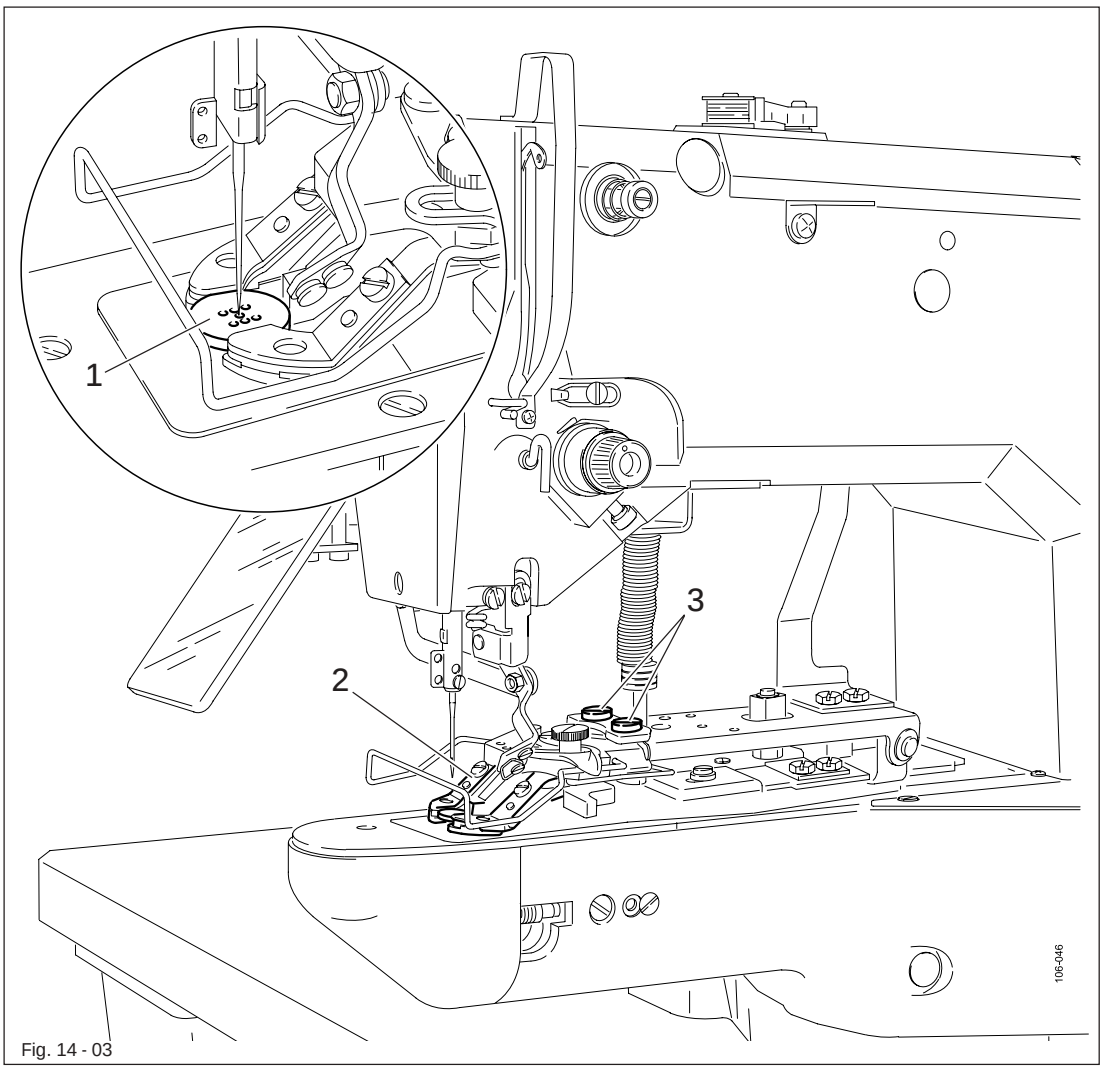


Fig. 14 - 03

- Insert gauge button **1** and 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 "609", 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 plus/minus keys move the button clamp 2 in the X-direction in accordance with the requirement.
- Select parameter „610“ and move button clamp 2 (screws 3) in the X- and Y-direction in accordance with the requirement.
- Conclude the input, remove the gauge button and switch off the machine.

## 14.08 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.

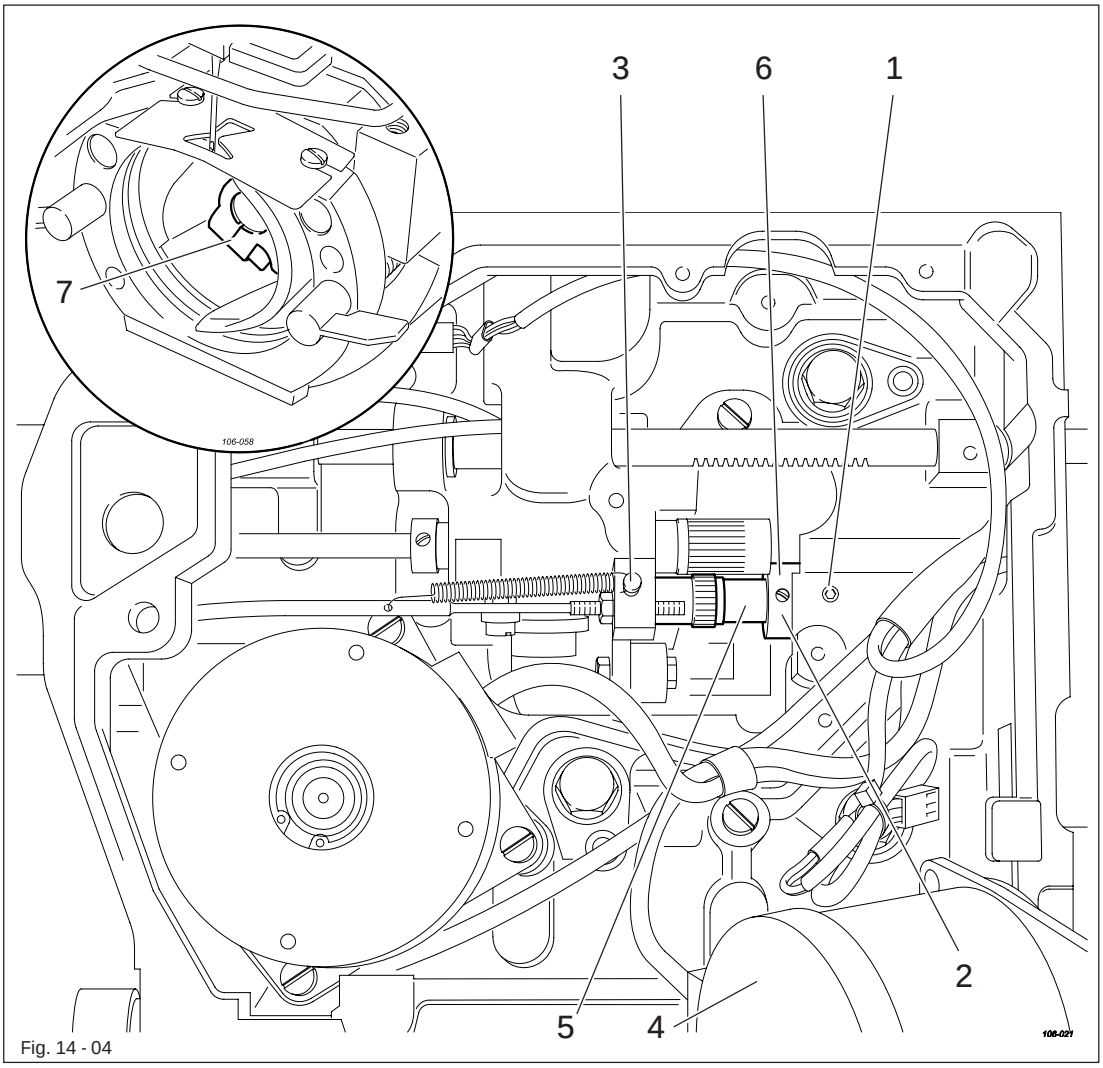


Fig. 14 - 04

- 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.

## 14.09 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.

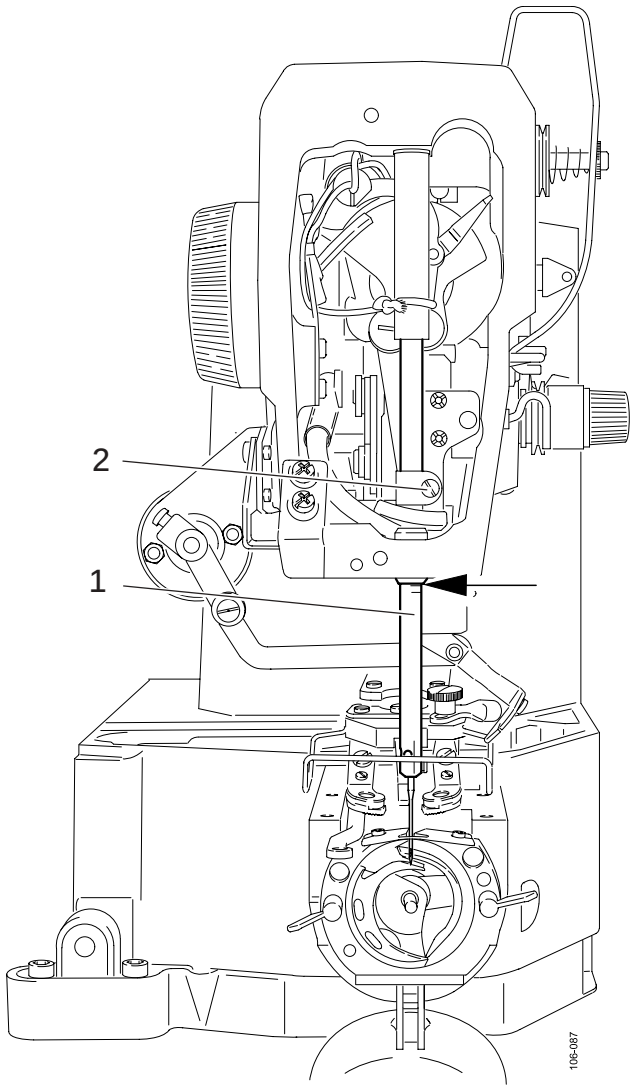
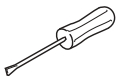



Fig. 14 - 05



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

## 14.10 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.

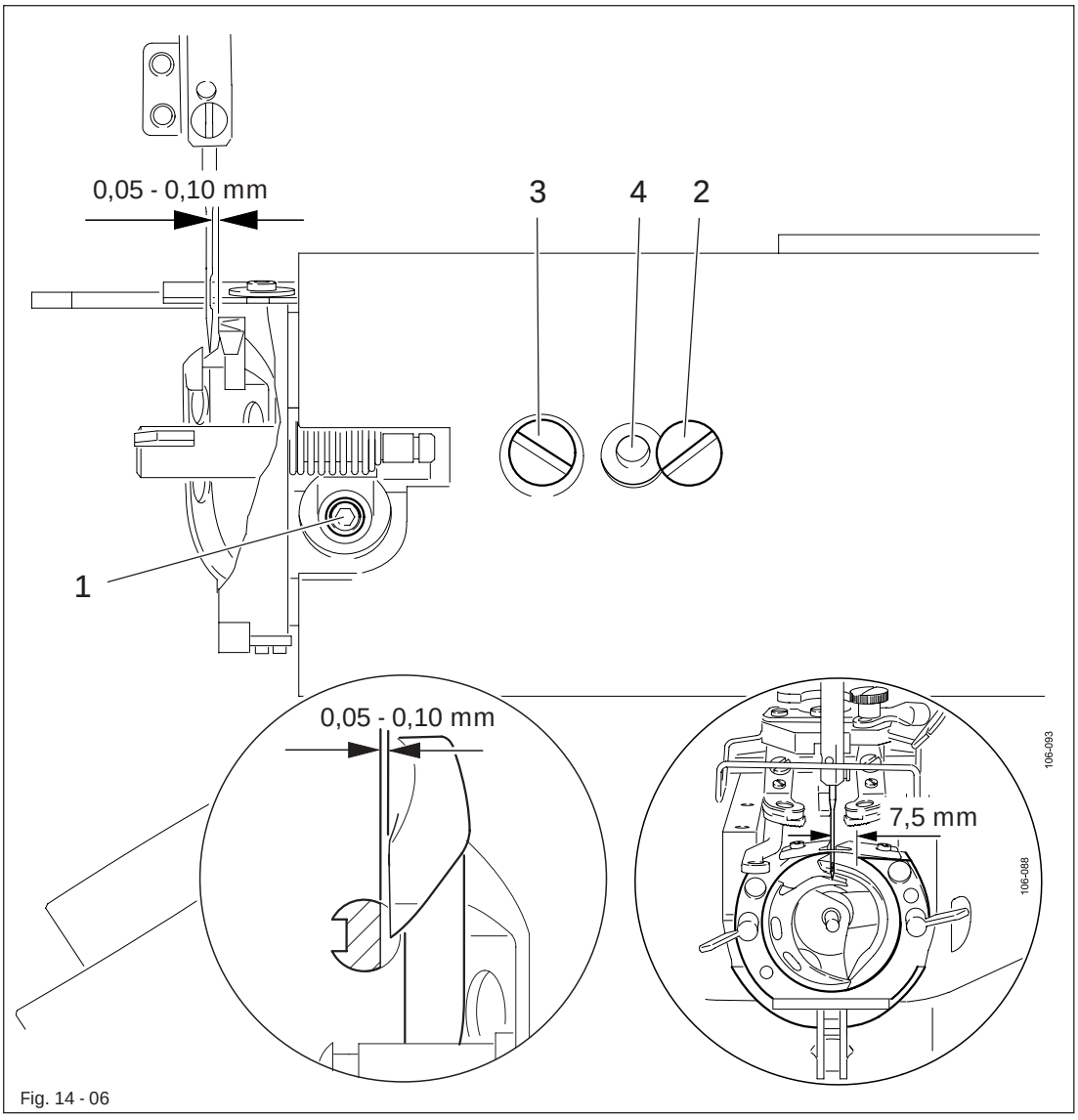



Fig. 14 - 06

- 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.

## 14.11 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.

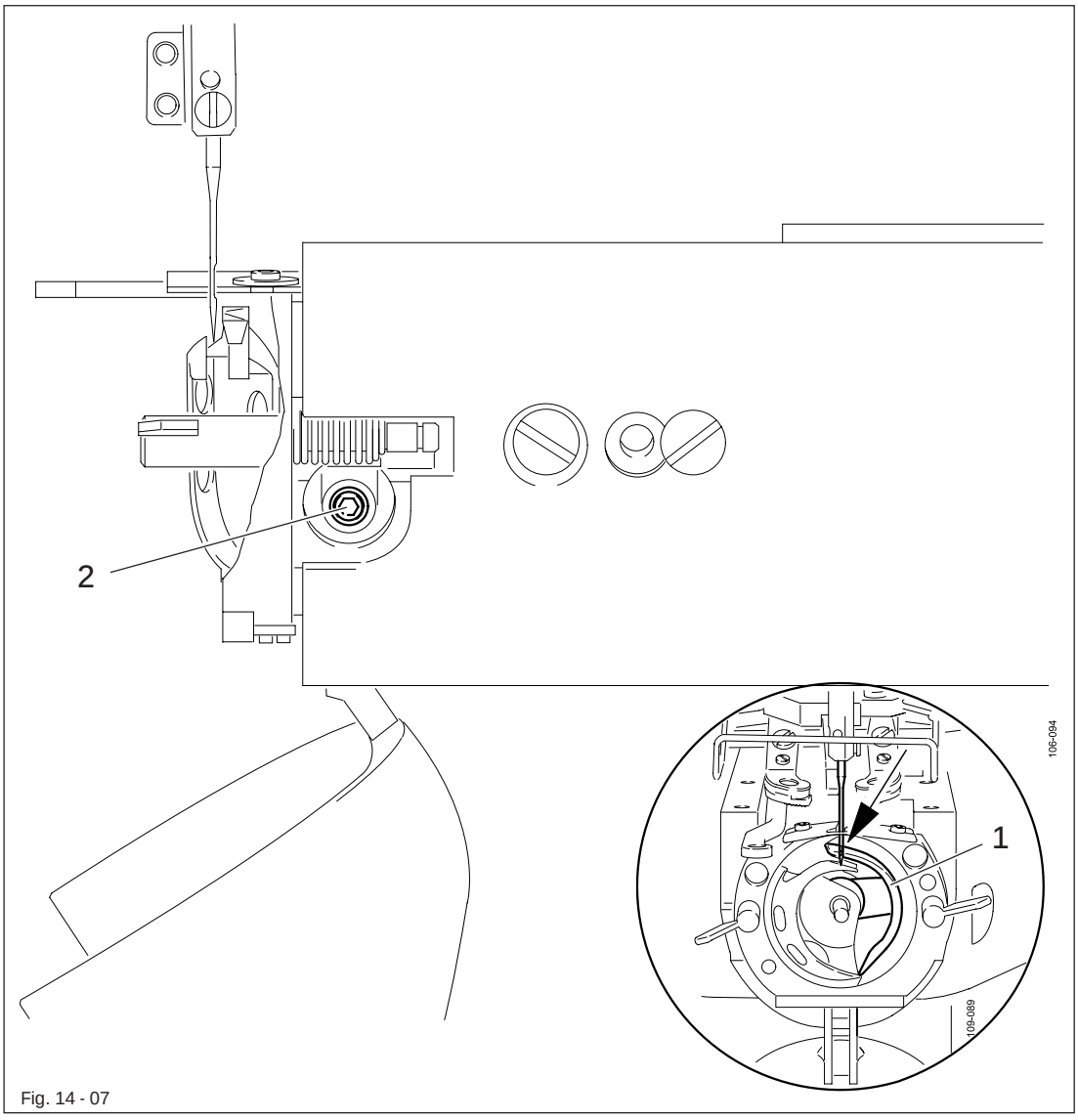
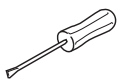



Fig. 14 - 07



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

## 14.12 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.

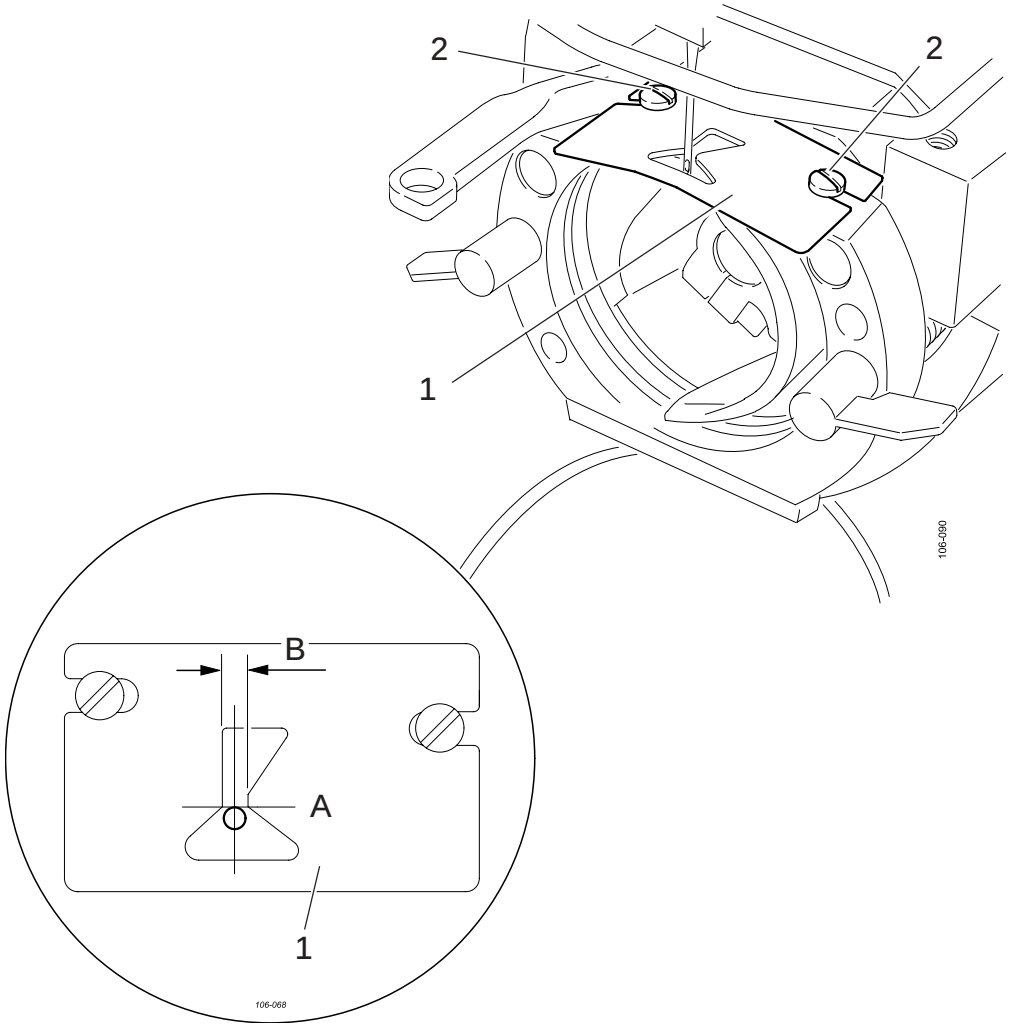



Fig. 14 - 08

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

## 14.13 Button clamp height

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

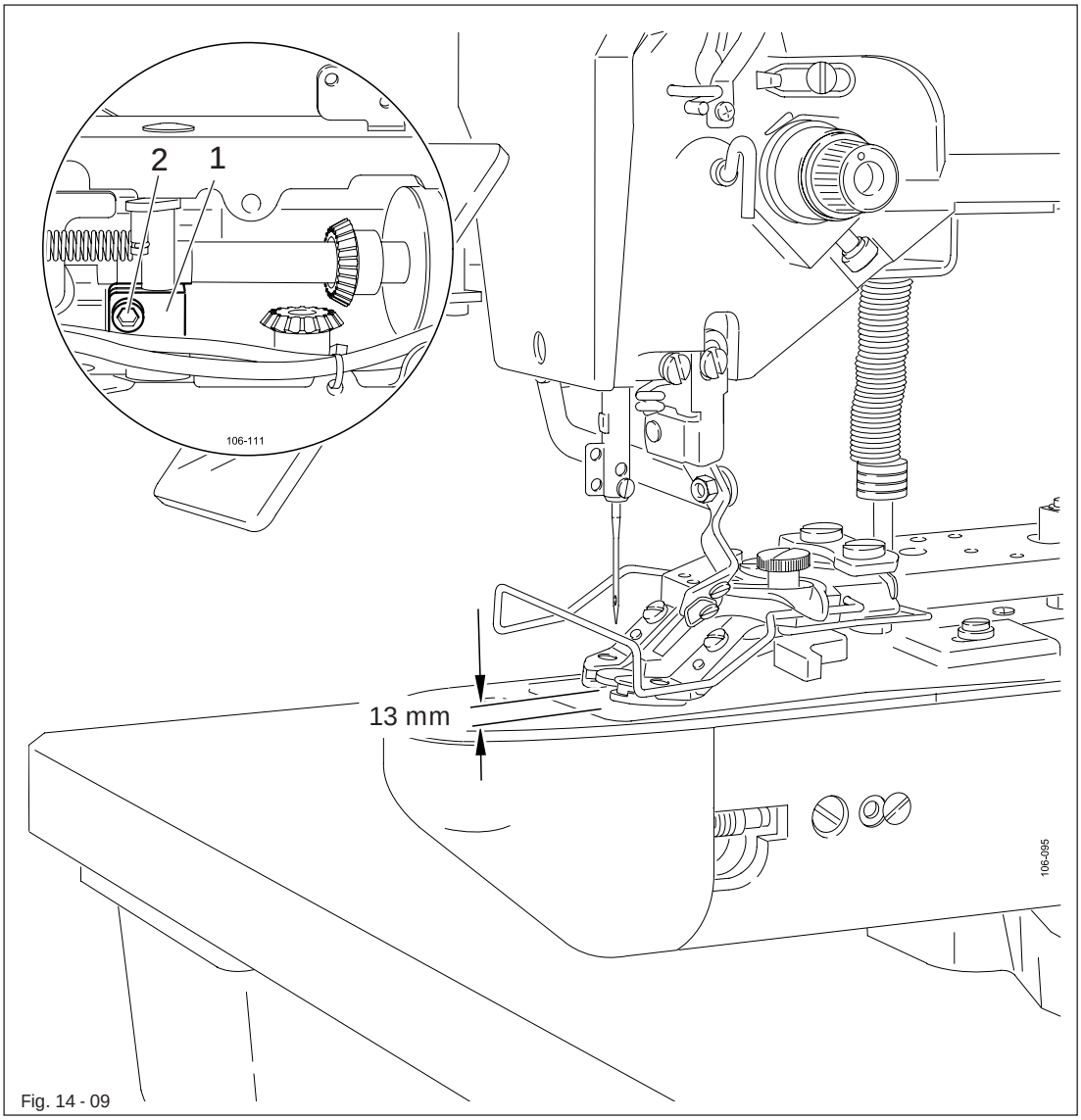



Fig. 14 - 09

- 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 14.15. Position of the thread wiper! Danger of needle breakage!

## 14.14 Button clamp pressure

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

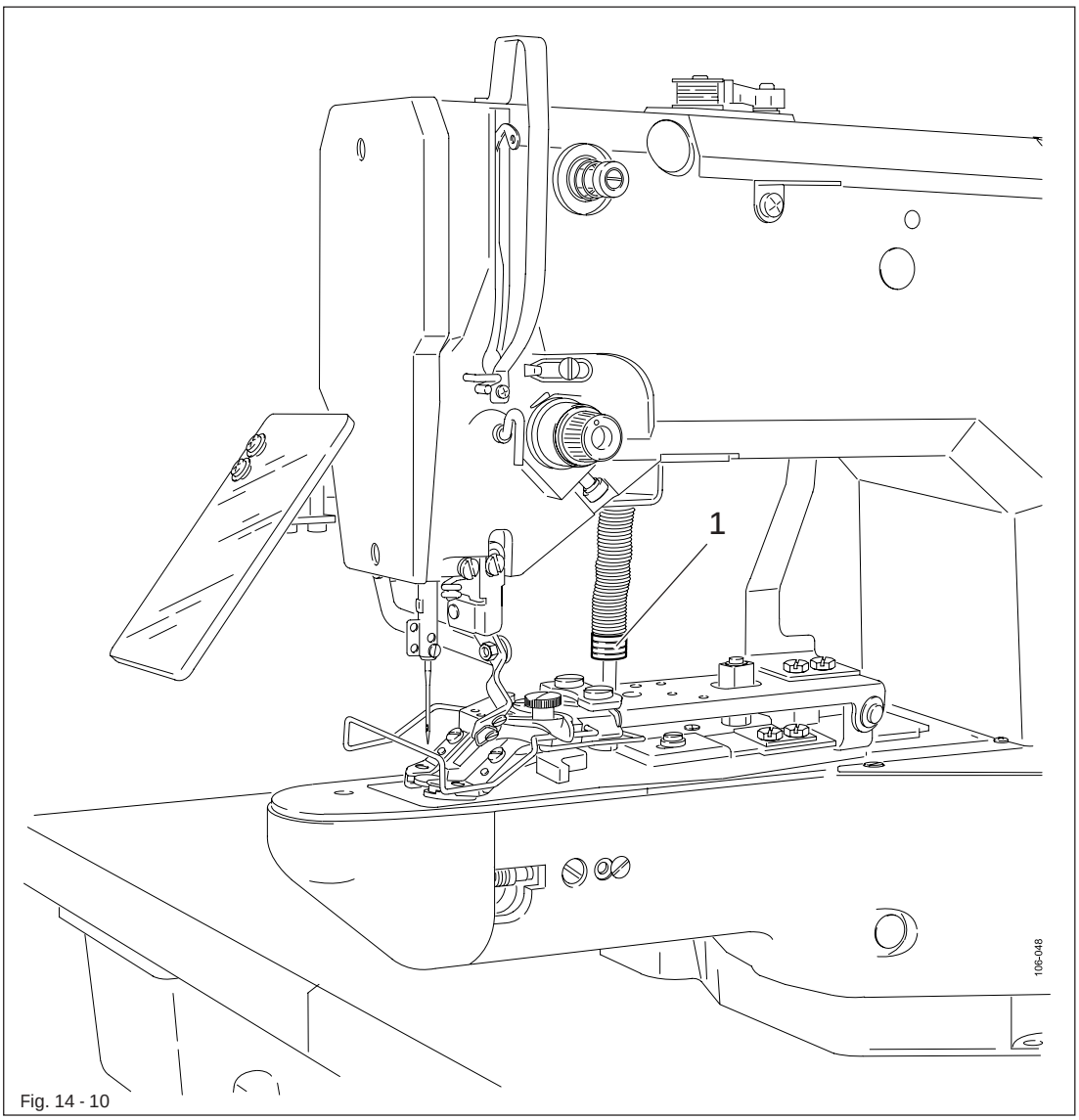



Fig. 14 - 10

- Adjust milled screw 1 in accordance with the requirement.

## 14.15 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.

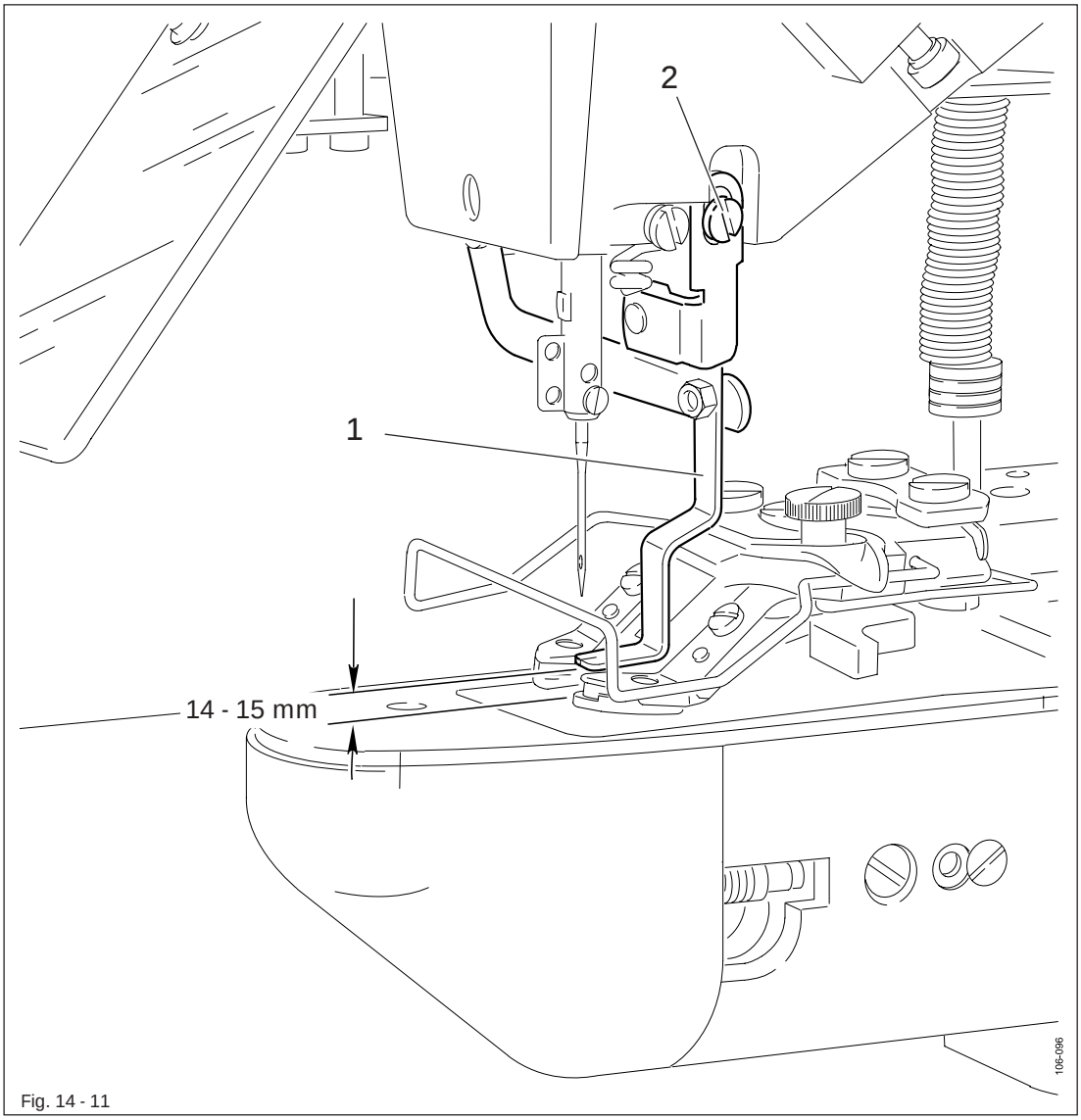
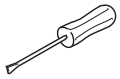



Fig. 14 - 11



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

## 14.16 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.

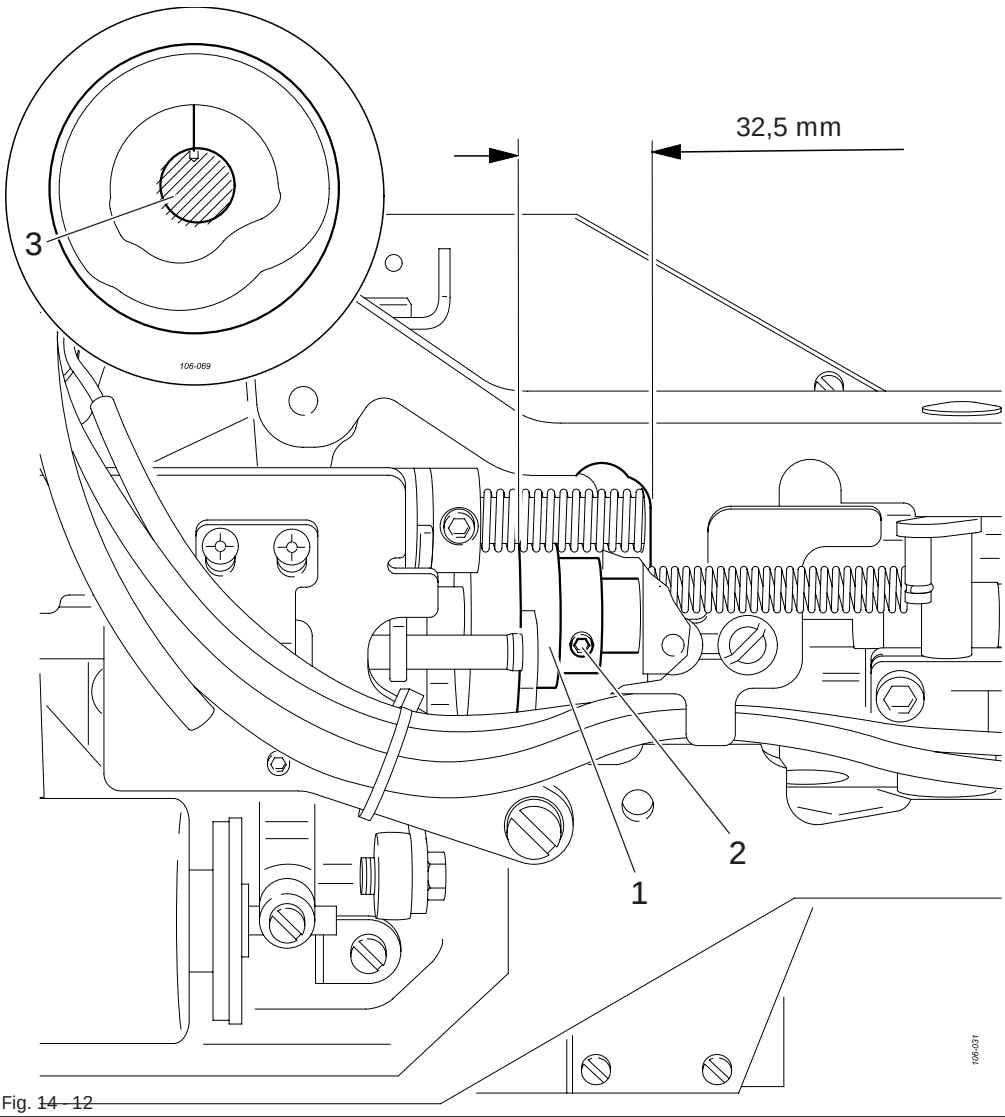



Fig. 14 - 12

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

## 14.17 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.

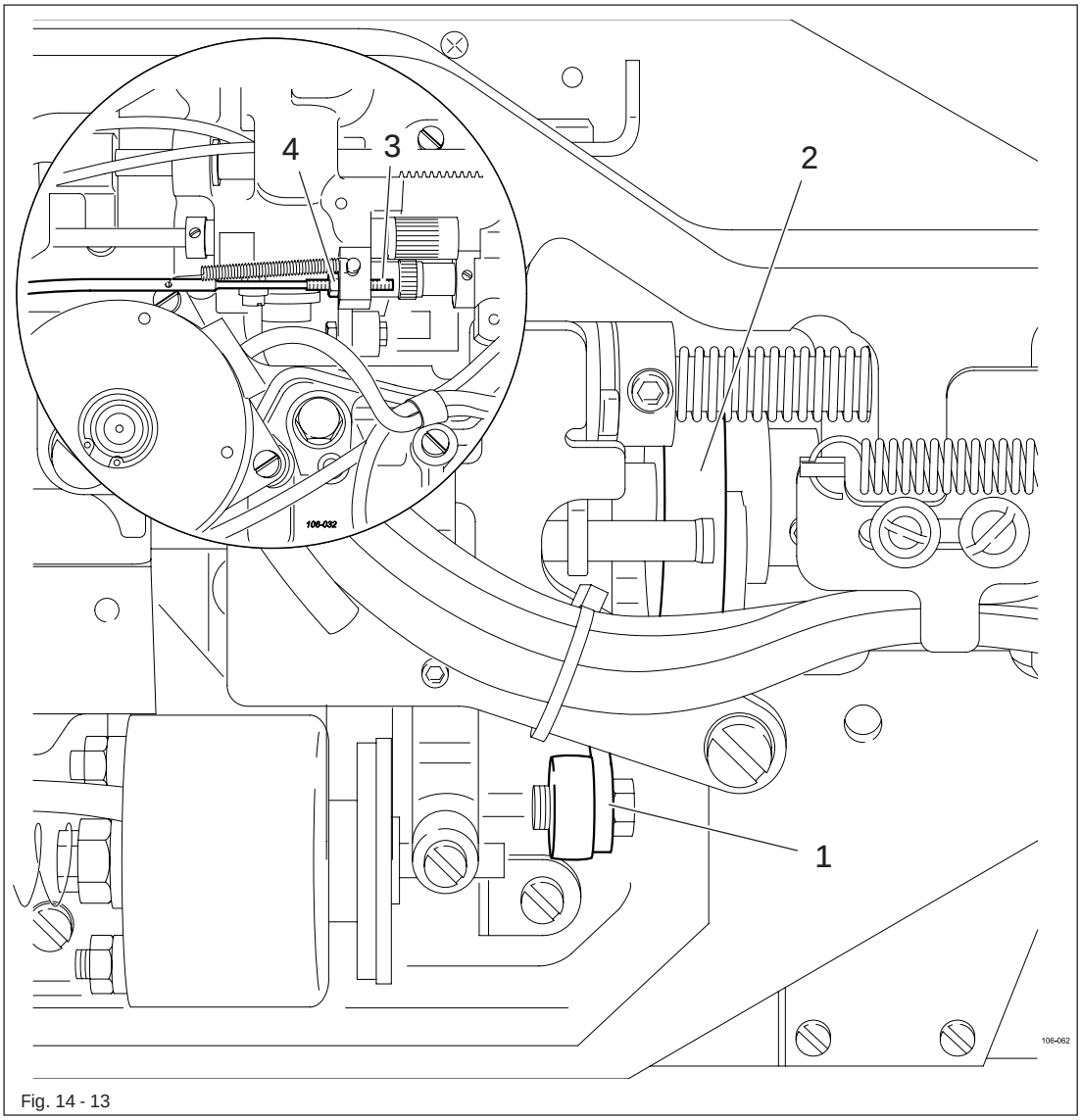



Fig. 14 - 13

- 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.

## 14.18 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.

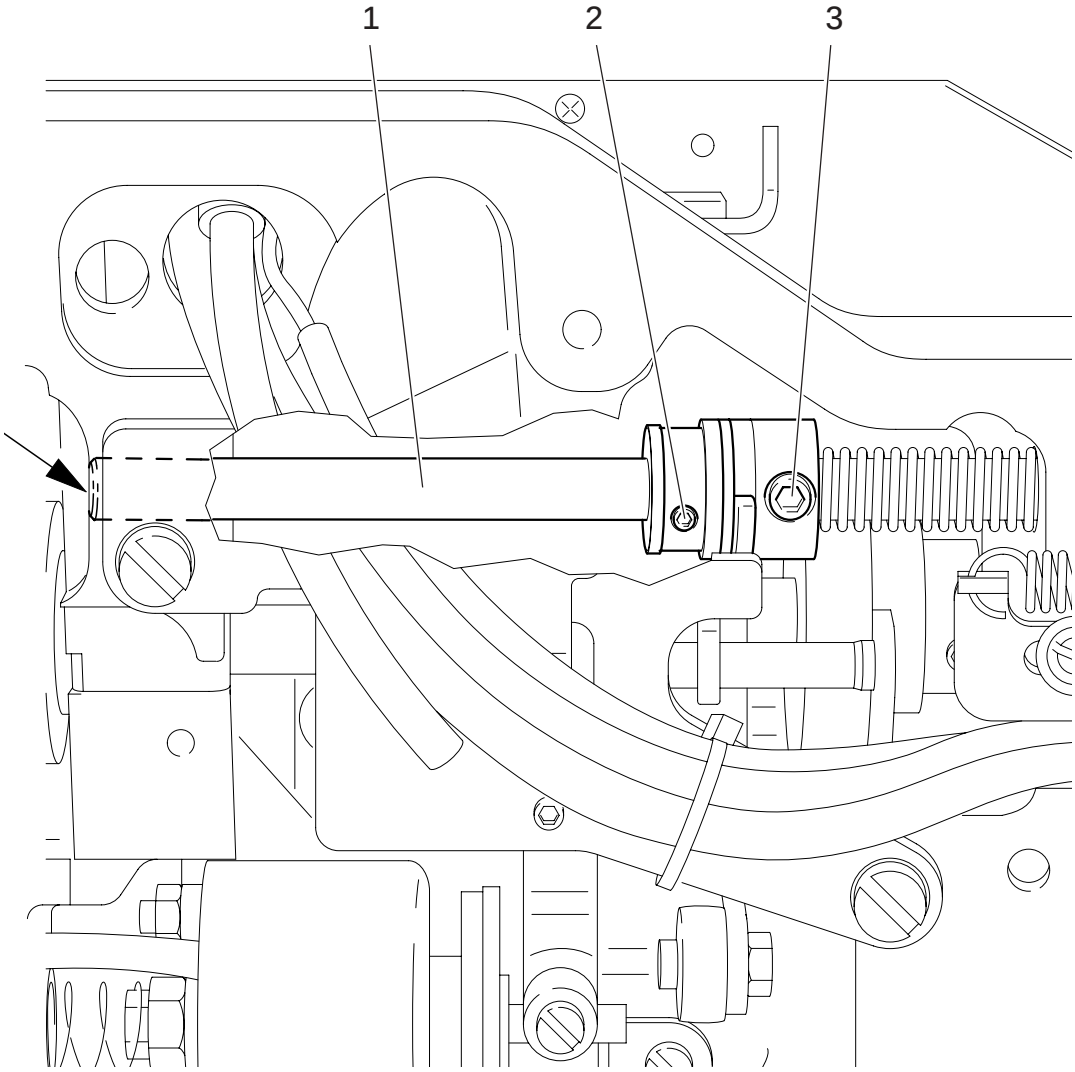
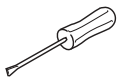



Fig. 14 - 14



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

## 14.19 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.

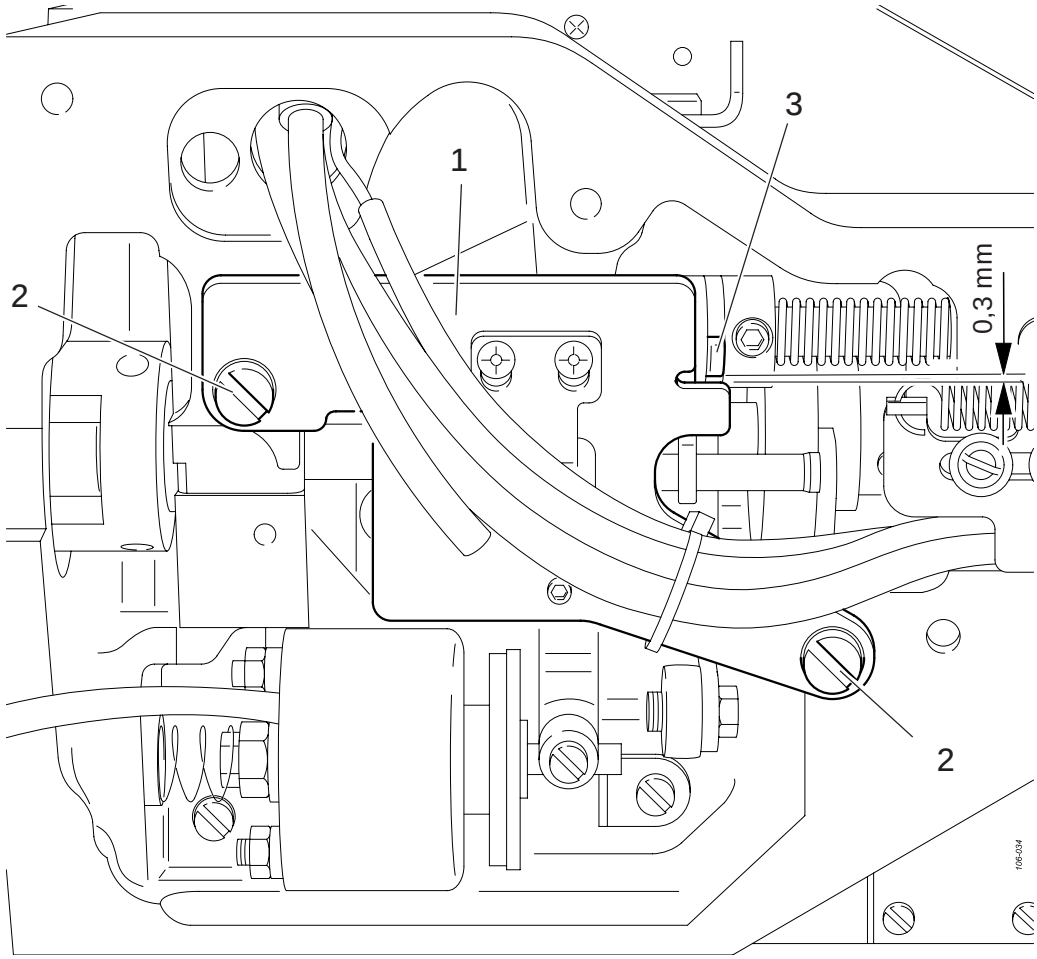
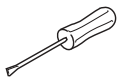



Fig. 14 - 15



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

## 14.20 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.

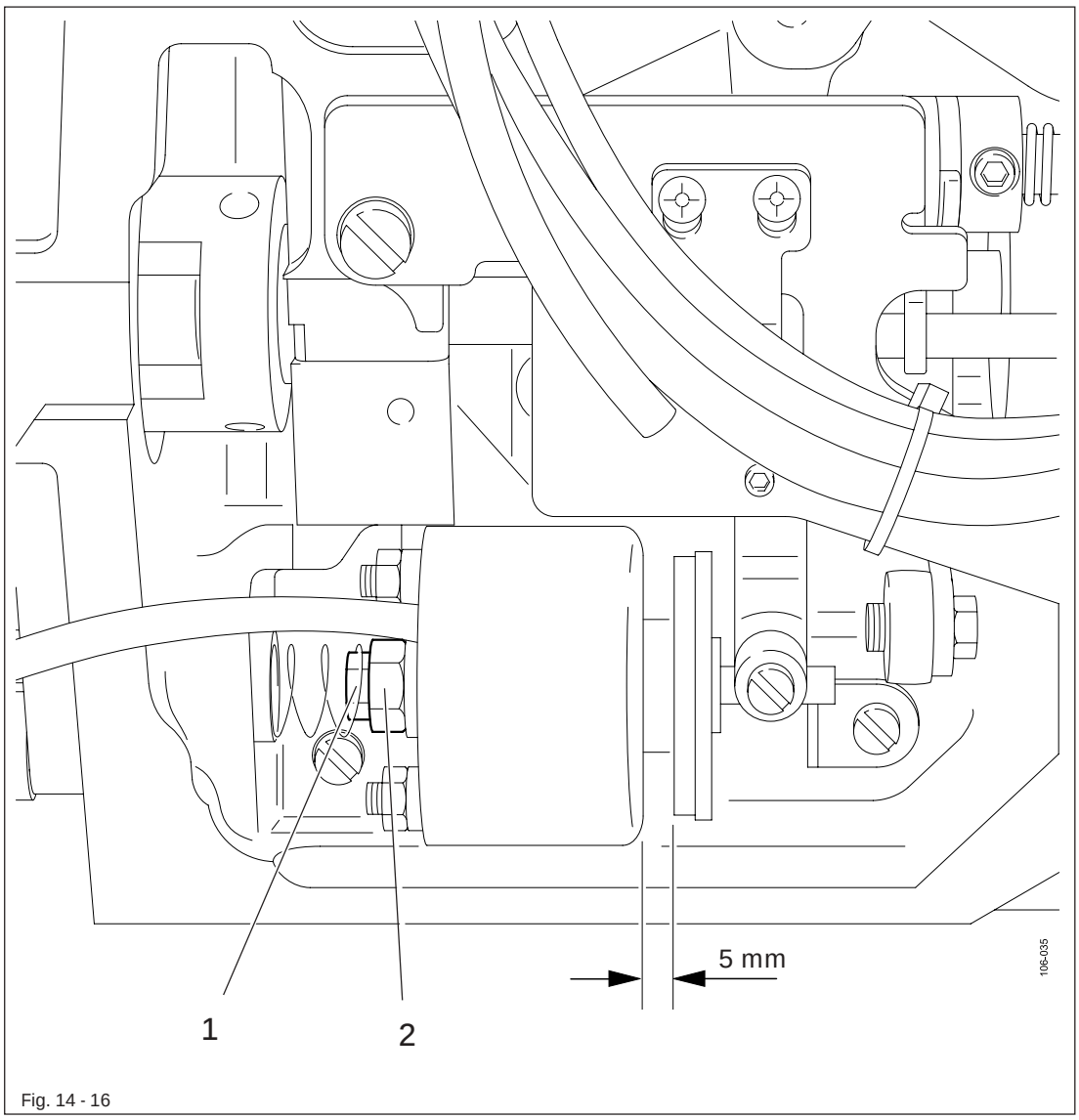
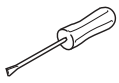



Fig. 14 - 16



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

## 14.21 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.

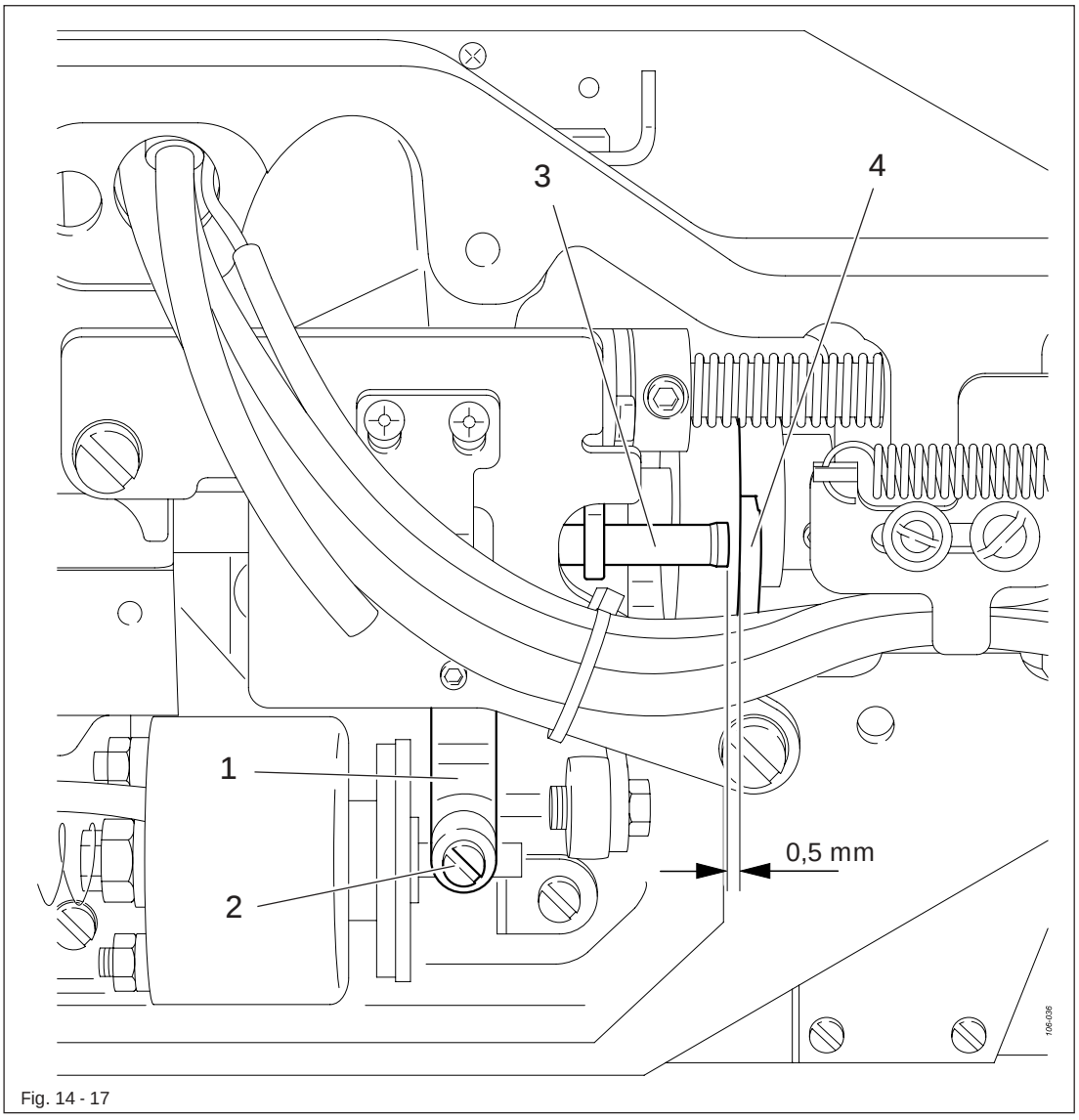
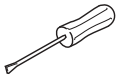



Fig. 14 - 17



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

## 14.22 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.

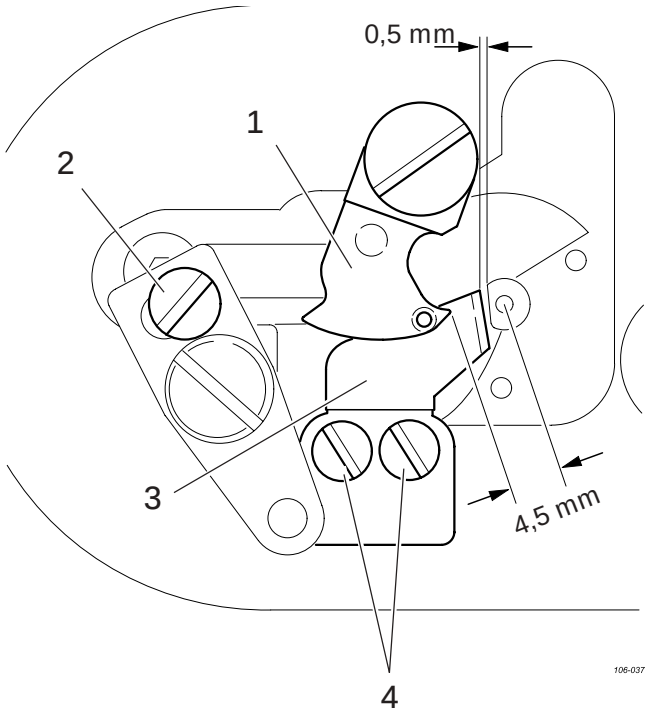
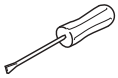



Fig. 14 - 18



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

## 14.23 Position of the release trip

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

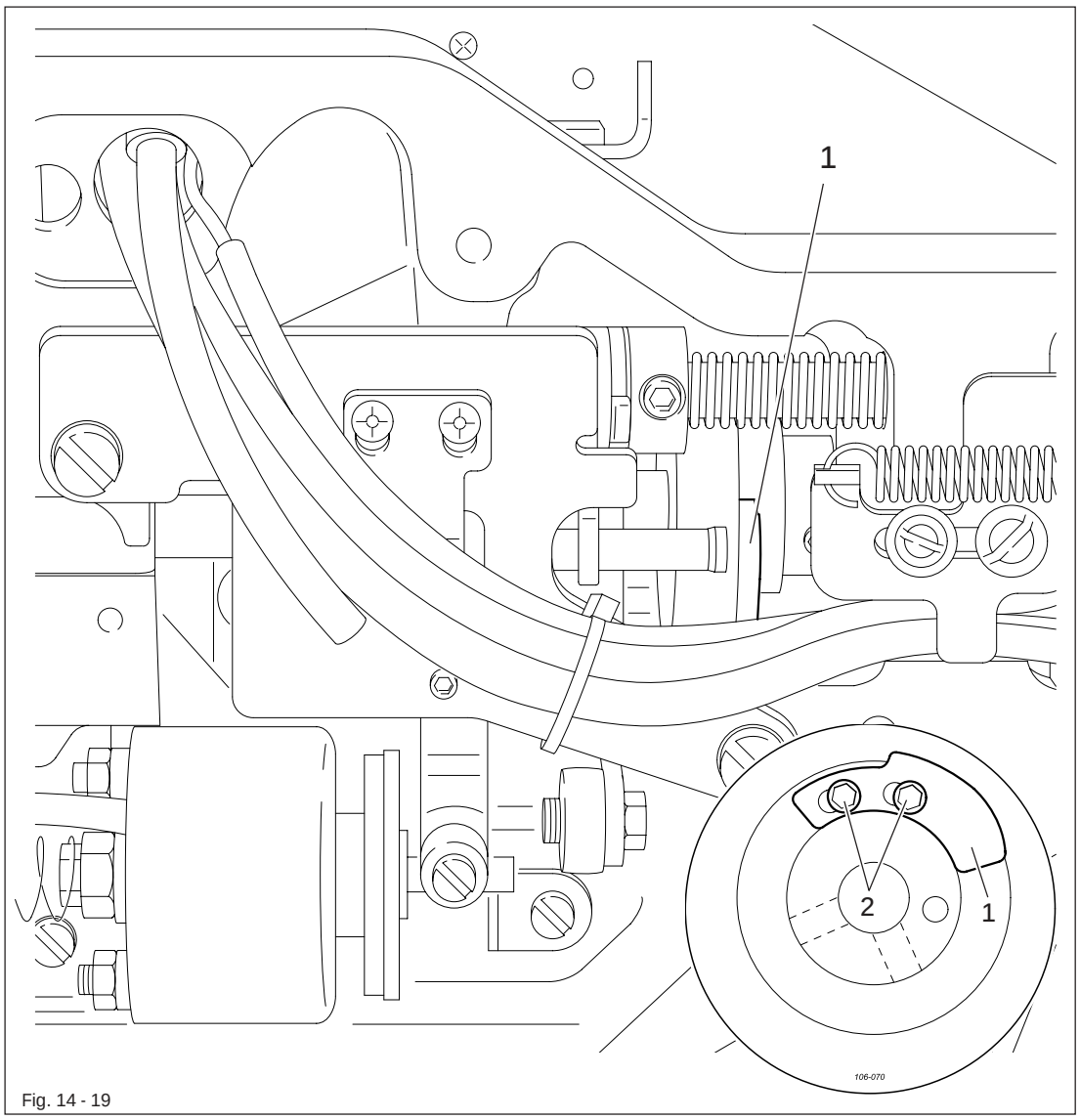



Fig. 14 - 19

- 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.

## 14.24 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.

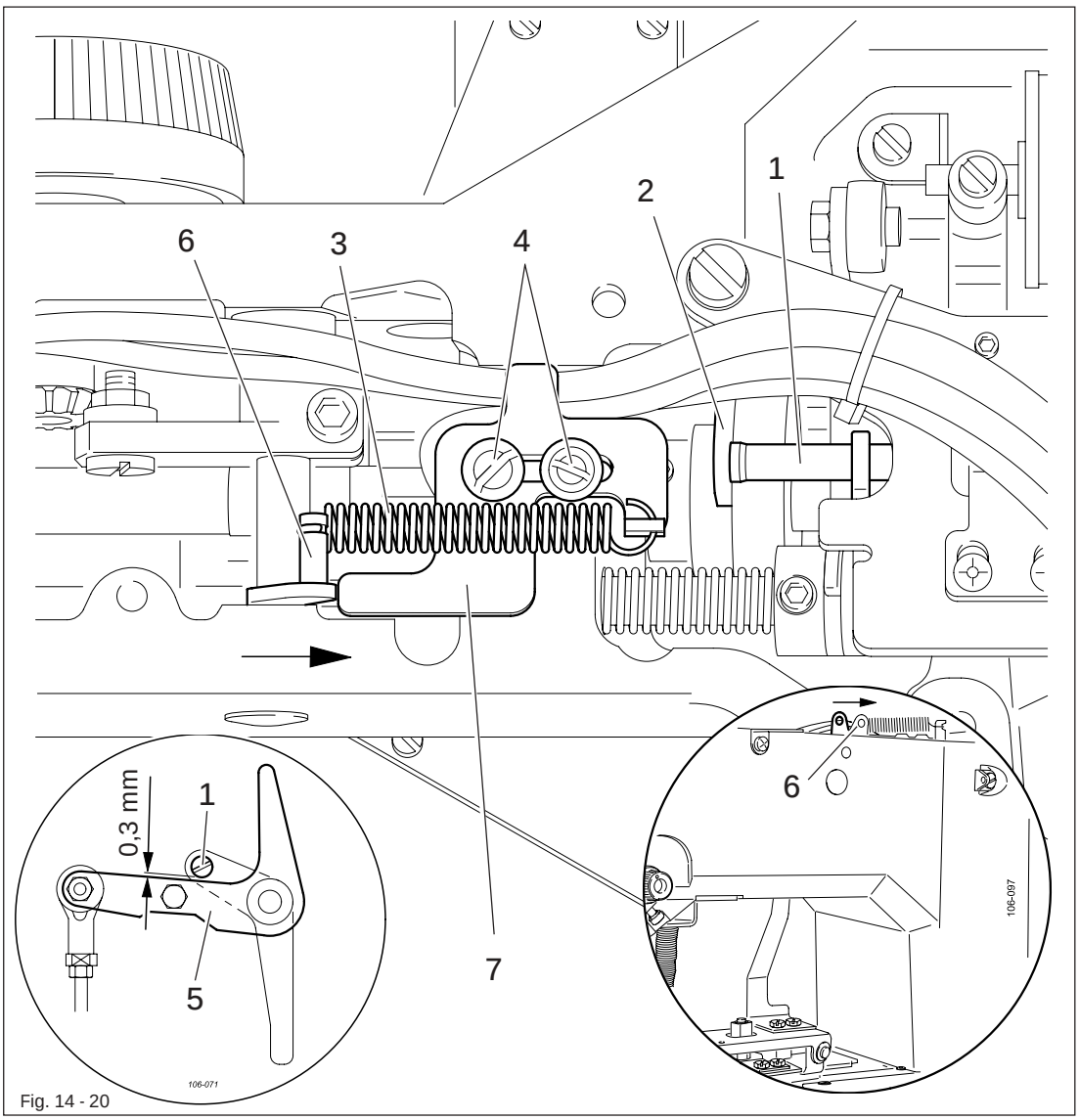



Fig. 14 - 20

- 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!

## 14.25 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.

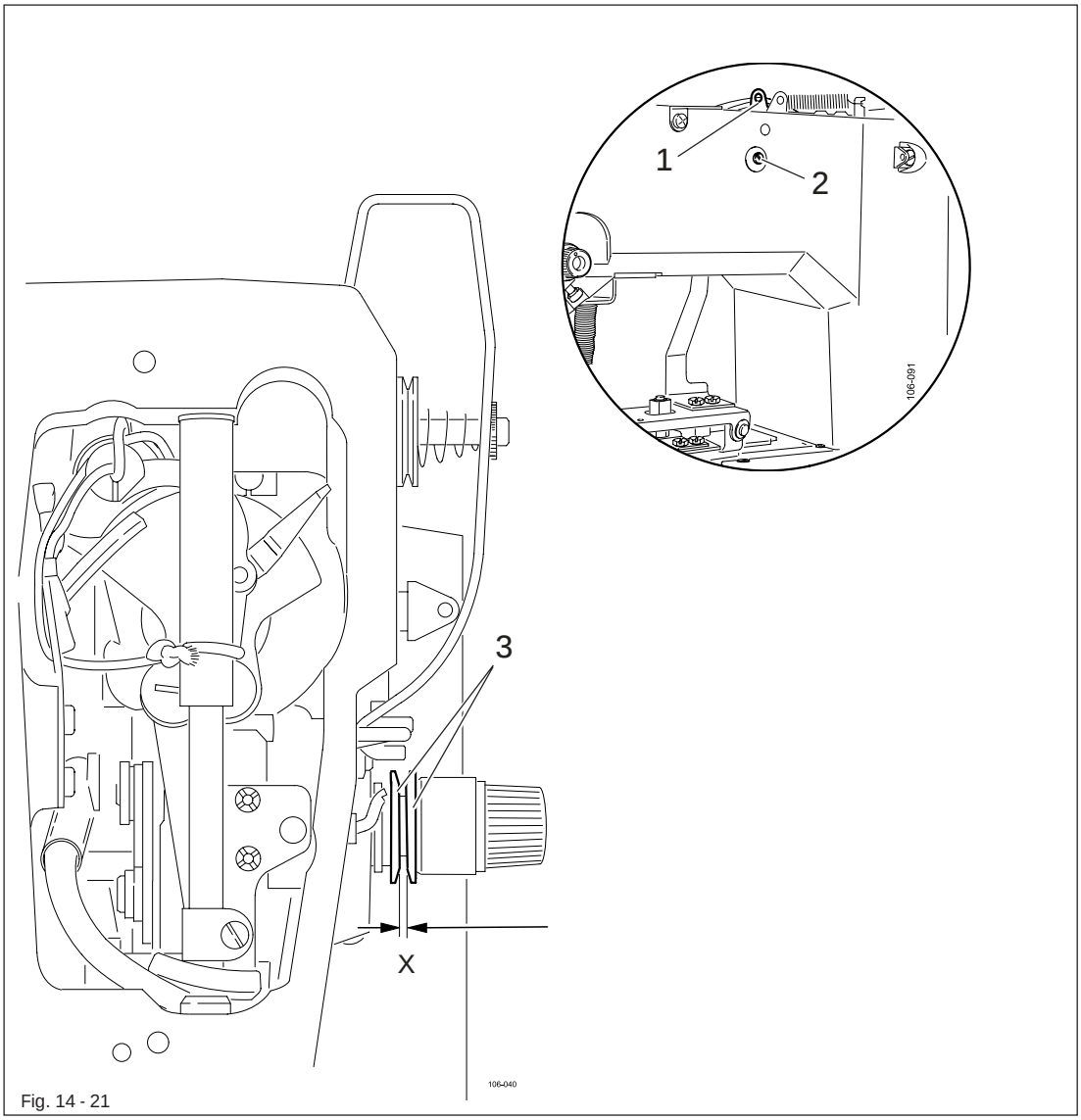



Fig. 14 - 21

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

## 14.26 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.

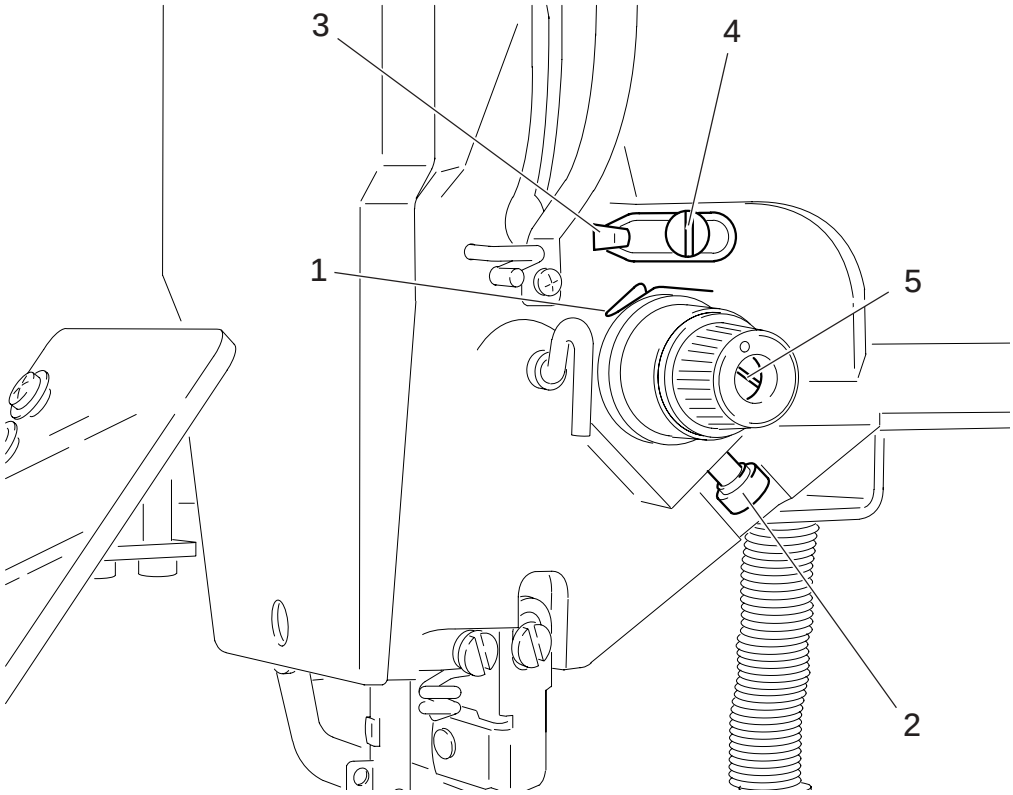
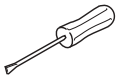



Fig. 14 - 22



- 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.

## 14.27 Bobbin winder drive wheel

Requirement

1. The 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.

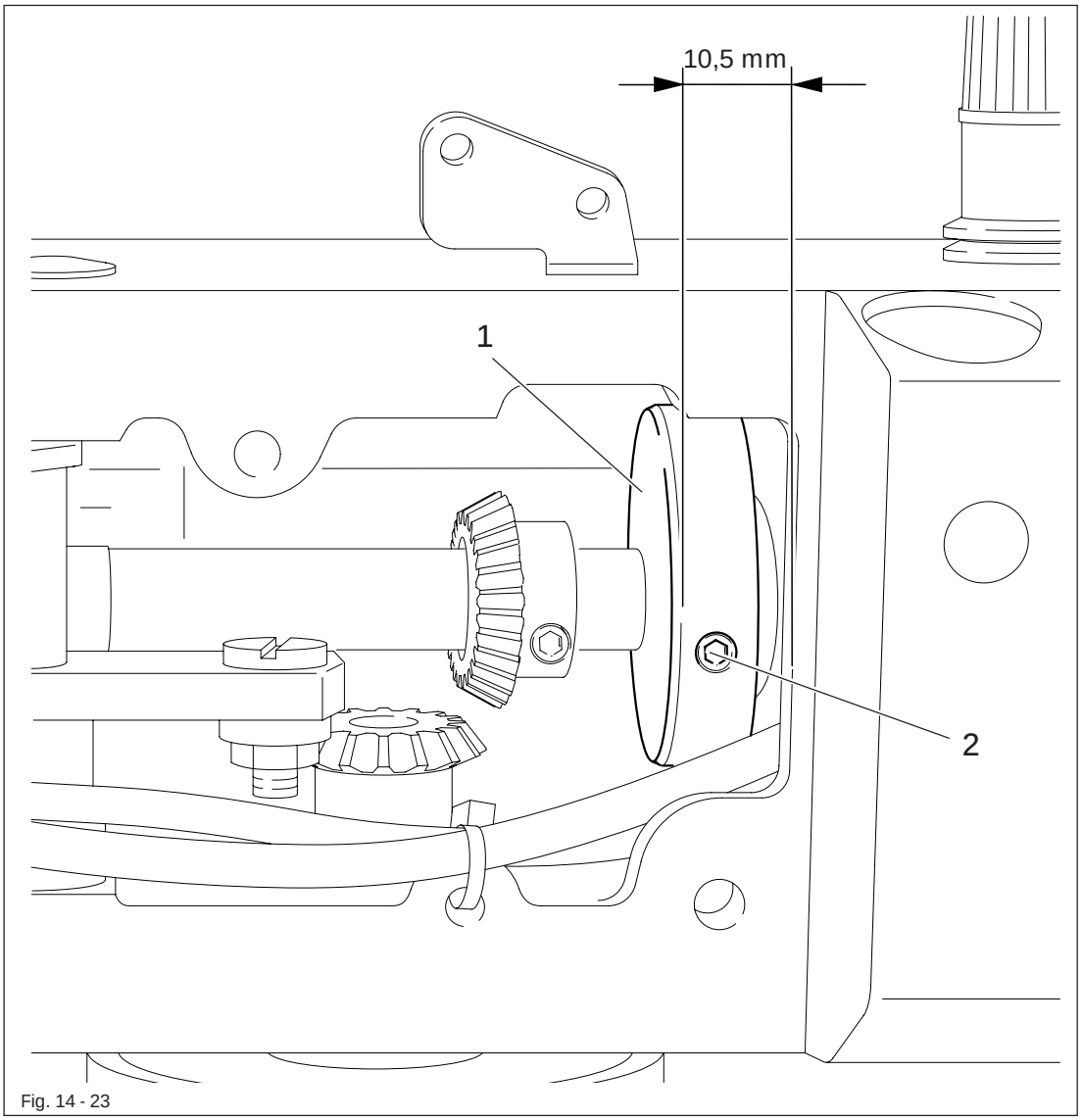
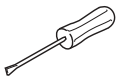



Fig. 14 - 23



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

## 14.28 Bobbin winder

Requirement
The bobbin winder should switch off automatically, when the thread level is about 1 mm from the edge of the bobbin.

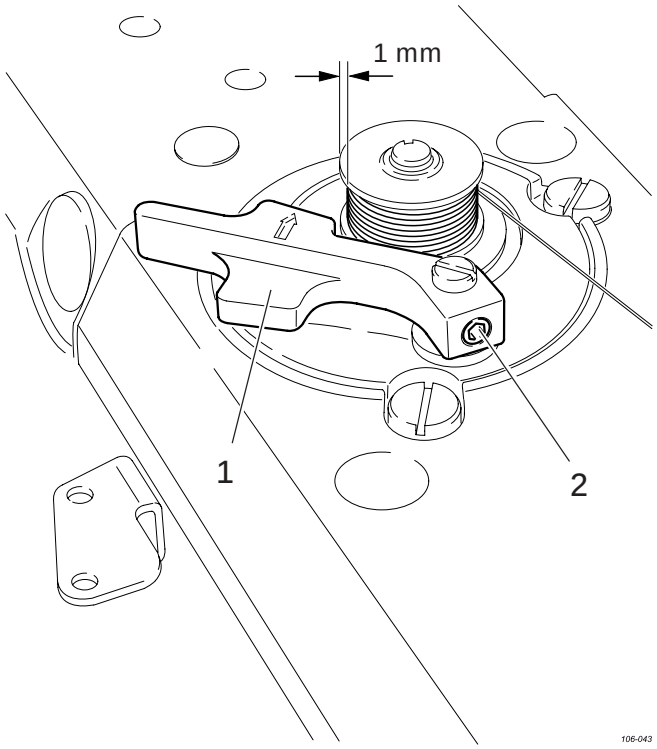
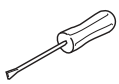



Fig. 14 - 24



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

## 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).

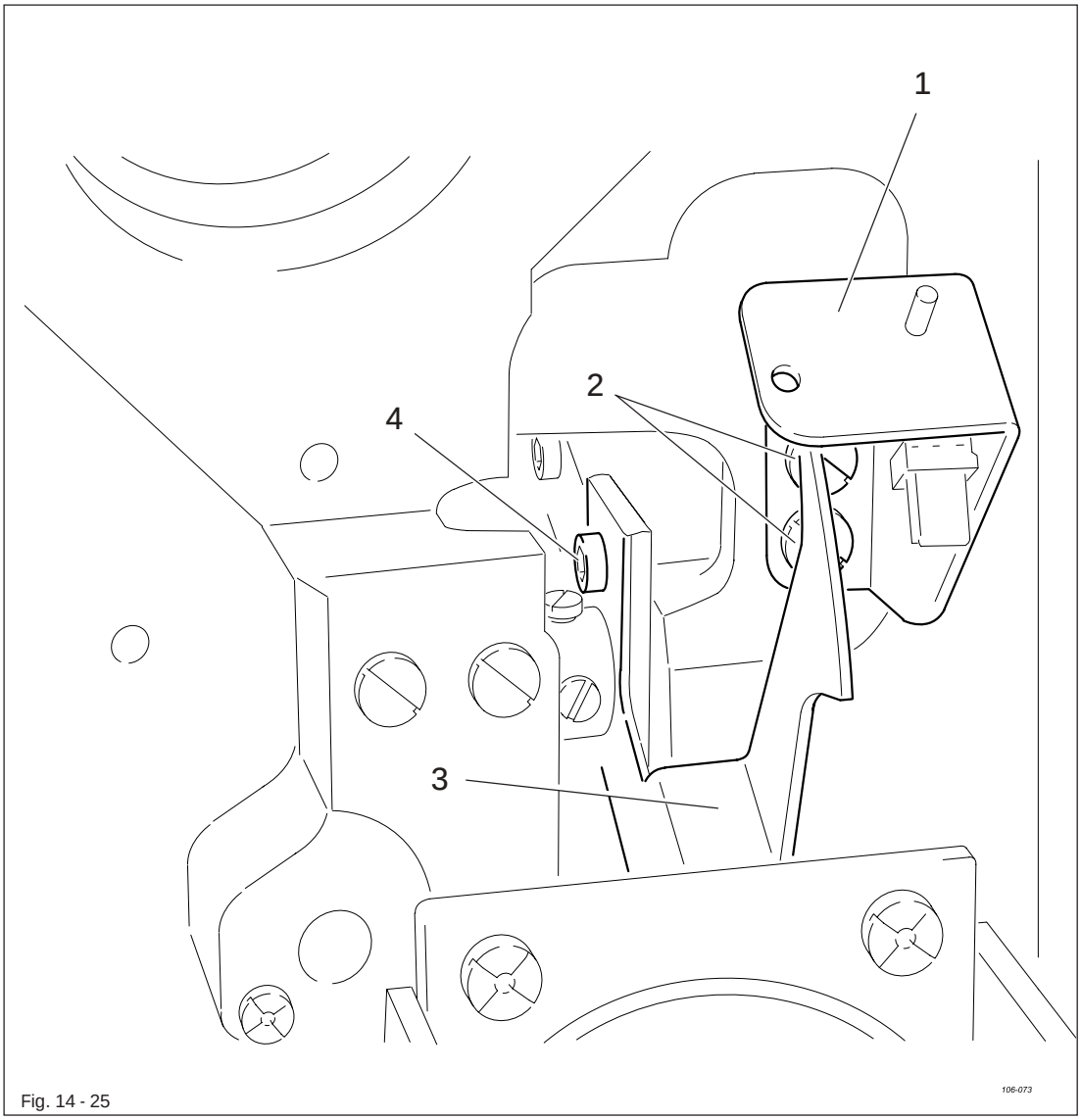
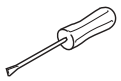



Fig. 14 - 25



- Switch on the machine.
- 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.
- Adjust bracket 1 (screws 2) and switch lug 3 (screws 4) in accordance with the requirement.
- Switch off the machine.

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

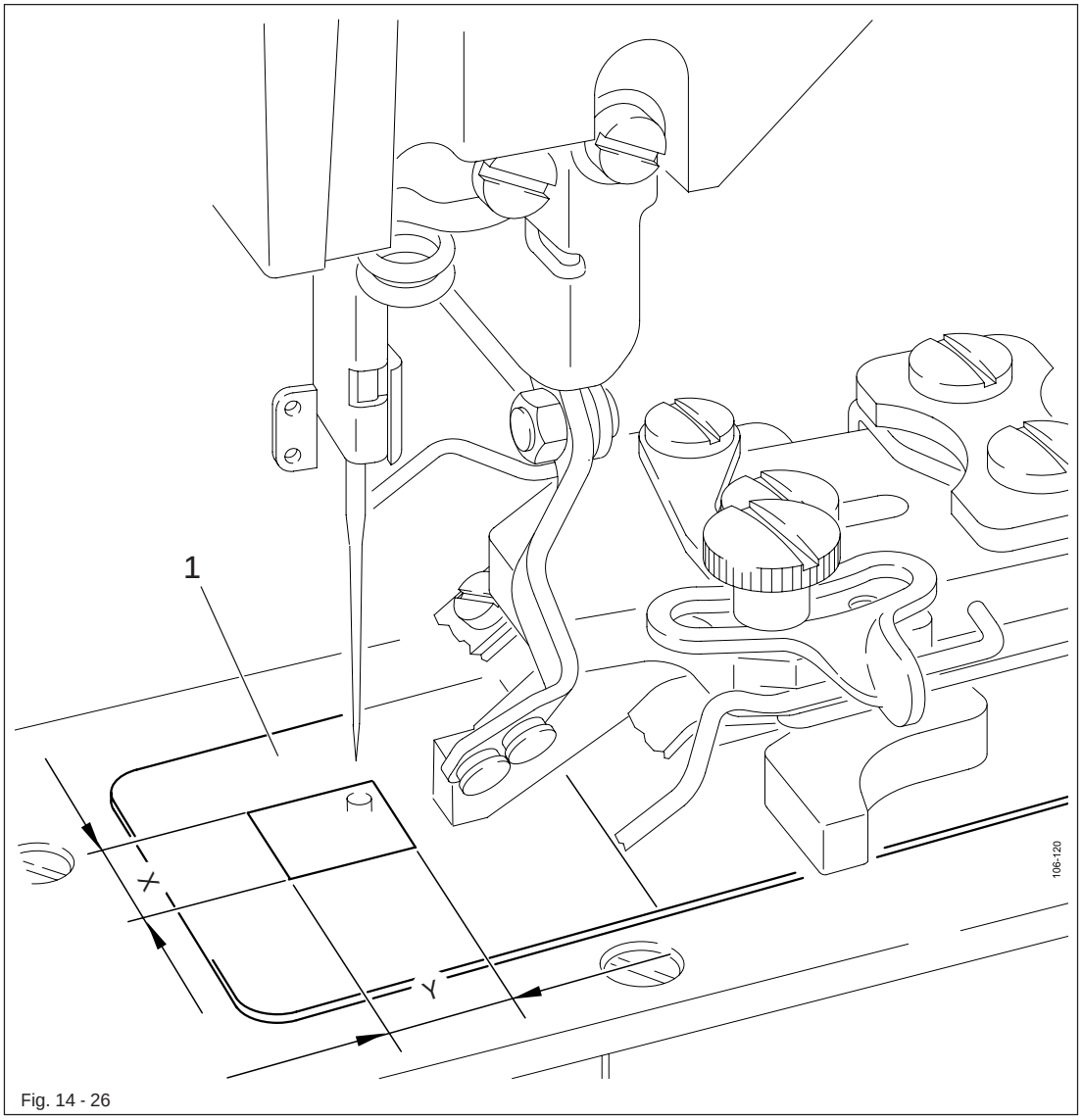



Fig. 14 - 26

- 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 14.07 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

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.

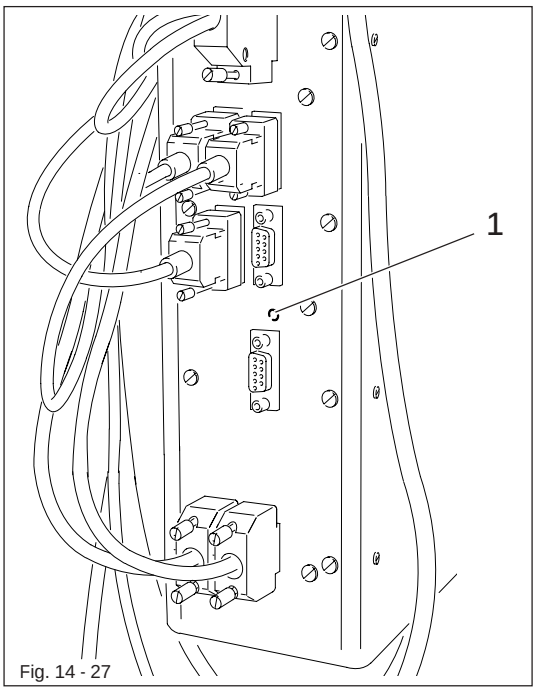


Fig. 14 - 27

- 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 | Maximum speed<br>This parameter is used to fix the max. sewing speed (upper limit). | 200 – 2500 | 2500 |
| | 002 | Sewing speed for start stitches<br>With this parameter the speeds for the 5 start stitches are fixed. | | |
| | | Speed (spm) for start stitch no. 1 | 200 – 2500 | 400 |
| | | Speed (spm) for start stitch no. 2 | 200 – 2500 | 900 |
| | | Speed (spm) for start stitch no. 3 | 200 – 2500 | 2500 |
| | | Speed (spm) for start stitch no. 4 | 200 – 2500 | 2500 |
| | | Speed (spm) for start stitch no. 5 | 200 – 2500 | 2500 |
| | 003 | Locking/releasing seam patterns<br>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 | |
| | 004 | Switch bobbin thread counter on/off<br>Standard value (pieces per bobbin)<br>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<br>1 - 9999 | ON<br>1000 |
| | 006 | Reversing after thread trimming<br>Reverse position [°]<br>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<br>0 – 45 | ON<br>11 |
| | 007 | Starting point = scale reference point<br>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 | Speed for the "winding" function<br>This parameter is used to fix the speed for the winding operation. | 200 2700 | 1000 |

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 000 | 009 | Via zero point to starting point after end of sequence<br>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. | ON –OFF | OFF |
| | 010 | Via zero point to starting point after number of program cycles<br>Number of program cycles<br>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. | ON –OFF<br>1 - 100 | OFF |
| | 011 | Pedal mode<br>Switchover between level mode (0) and flip flop mode (1). | 0 – 1 | 0 |
| | 013 | NIS "needle in material" [°]<br>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. | 65 – 166 | 107 |
| | 014 | Thread trimming speed [min-1]<br>This parameter is used to fix the speed for thread trimming. | 100 – 700 | 200 |
| | 015 | Reduced current for stepping motors<br>The reduction function of the holding current at rest with closed work clamp is switched on or off. | ON – OFF | ON |
| | 016 | Key tone<br>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. | ON – OFF | ON |

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 000 | 017 | Button clamp solenoid<br>Operating time [10 ms]<br>The time, for which the solenoid is under full current, is entered. | 5 – 100 | 20 |
| | 018 | Button clamp solenoid duty-cycle [%]<br>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 | 25 |
| | 019 | Thread trimming solenoid operating time [10 ms]<br>The time, for which the solenoid is under full current, is entered. | 5 – 100 | 25 |
| | 020 | Thread trimming solenoid duty-cycle<br>At present without a function | | |
| | 021 | Thread take-up lever t.d.c. [°]<br>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 | Thread trimming position (in relation to t.d.c. needle) [°]<br>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 | Sewing area size X [1/10 mm]<br>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. | 10 – 400 | 45 |
| | 024 | Sewing area size Y [1/10 mm]<br>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. | 10 – 200 | 45 |

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

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

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 600 | 603 | Connect outputs<br>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.<br>OUT VAL<br>1 S/R Solenoid for button clamp open<br>2 S/R<br>3 S/R Solenoid for thread trimming<br>4 S/R Solenoid for thread wiper<br>5 S/R<br>6 S/R Program outlet<br>7 S/R Program outlet<br>8 S/R<br>9 S/R<br>10 S/R<br>11 S/R<br>12 S/R<br>13 S/R<br>14 S/R<br>15 S/R<br>16 S/R | | |
| | 604 | Move stepping motors<br>The stepping motors SM1 (X-axis) and SM2 (Y-axis) are moved individually with the respective plus/minus keys. Interlocks are not checked. | | |
| | 605 | Turn sewing motor<br>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. | 200 - 2500 | 200 |
| | 606 | Thread trimming sequence<br>The sequence for a complete thread trimming cycle is started with the plus/minus key (+) below CUT and below THR. | | |

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 600 | 607 | Cold start (RESET)<br>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 | Setting zero points<br>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 REFX, REFY). The access code is required for this adjustment. | | |
| | 609 | Setting the button clamp centre X<br>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 | Setting the button clamp centre Y<br>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 | Automatic button clamp opening off<br>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 | |

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 700 | | These parameters influence the control of the sewing motor and should only be altered by appropriately instructed persons. | | |
| | 701 | P-quota speed controller | 1 – 50 | 10 |
| | 702 | I-quota speed controller | 0 – 100 | 35 |
| | 703 | P-quota position controller | 1 – 50 | 30 |
| | 704 | D-quota position controller | 1 – 100 | 25 |
| | 705 | Time for position controller | 0 – 100 | 25 |
| | 706 | P-quota position controller for rest brake | 1 – 50 | 25 |
| | 707 | D-quota position controller for rest brake | 1 – 50 | 15 |
| | 708 | Maximum moment for rest brake | 0 – 100 | 5 |
| | 709 | Minimum machine speed | 2 – 64 | 2 |
| | 710 | Maximum machine speed | 1 – 35 | 27 |
| | 711 | Maximum motor speed | 1 – 35 | 27 |
| | 712 | Positioning speed | 2 – 40 | 30 |
| | 713 | Acceleration ramp | 1 – 50 | 35 |
| | 714 | Brake ramp | 1 – 50 | 30 |
| | 715 | Reference position (NIS) | 1 – 127 | 38 |
| | 716 | Time-out | 0 – 255 | 40 |
| | 717 | Starting current motor | 3 – 10 | 6 |
| | 718 | Anti-vibration filter | 1 – 10 | 3 |
| | 719 | Logical rotation direction allocation | 0 – 255 | 255 |
| | 720 | NIS – deformation flag position | 0 – 127 | 64 |
| | 721 | High level motor configuration | 0 – 255 | 1 |
| | 722 | not assigned | | 0 |
| | 723 | not assigned | | 0 |
| | 724 | not assigned | | 0 |

| Group | Parameter | Description | Setting range | Set value |
|---|---|---|---|---|
| 700 | 725 | not assigned | | 0 |
| | 726 | not assigned | | 0 |
| | 727 | not assigned | | 0 |
| | 728 | not assigned | | 0 |
| | 729 | not assigned | | 0 |
| | 730 | not assigned | | 0 |
| 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 | OFF |
| | 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" | ON – OFF | ON |
| | 811 | Access code<br>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. 14.35) |
| ERROR: 31(#) | (Error Sewing motor see cap. 14.34) |
| ERROR: 50 | Incorrect control panel |
| ERROR: 51 | Incorrect machine class in OTE |
| ERROR: 101 | Mains voltage |
| ERROR: 102 | Power supply overload |
| ERROR: 103 | 24 V too low |
| ERROR: 201(#) | (Error Sewing motor see cap. 14.34) |
| 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) |

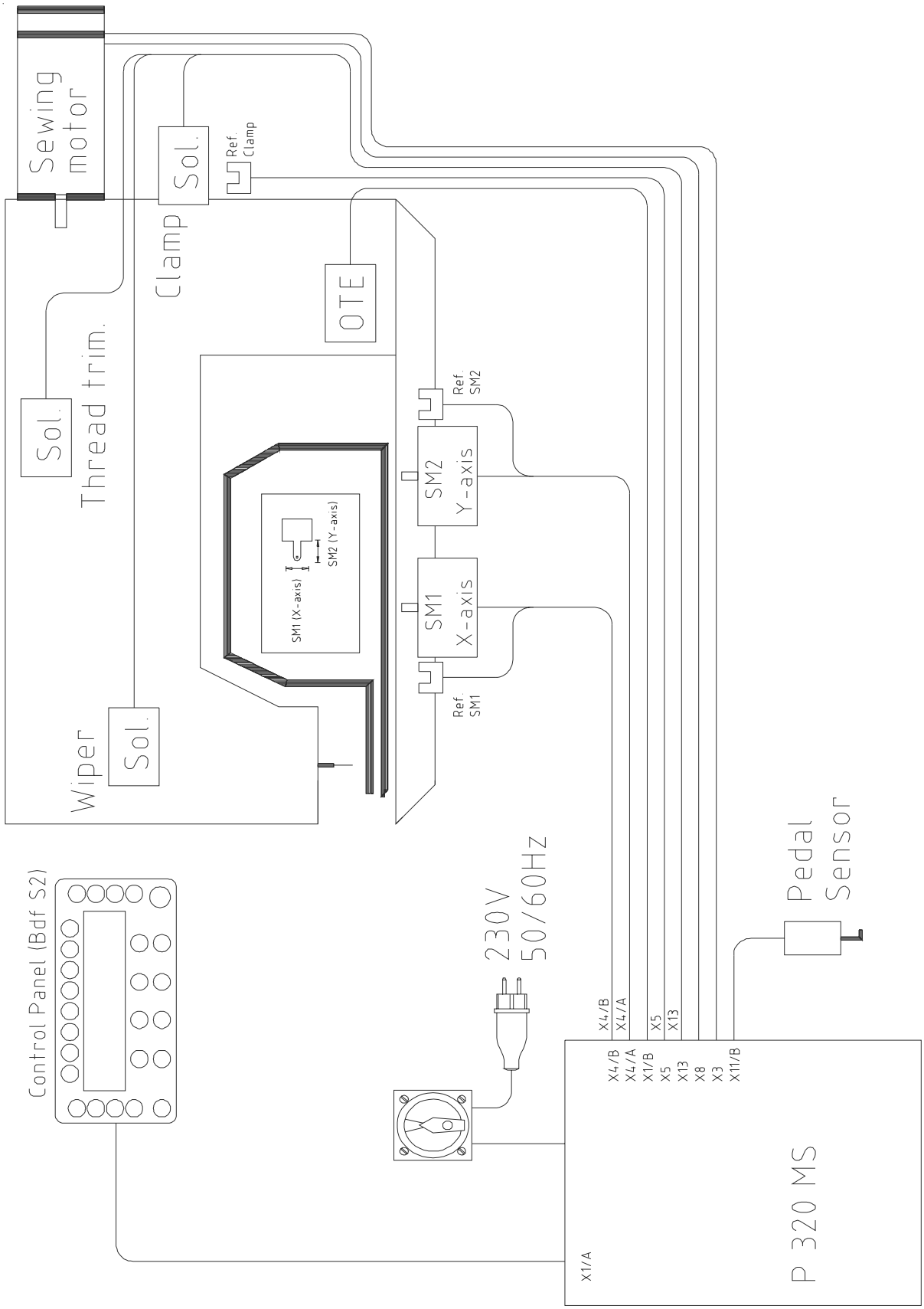
| | |
|---|---|
| ERROR: 305 | Thread wiper on locked (needle position) |
| ERROR: 401 | Error sewing motor |
| ERROR: 402 | Overload data transfer sewing motor |
| ERROR: 403 | Program station not programmed |
| ERROR: 404 | Program locked |
| ERROR: 405 | Program does not exist |
| ERROR: 406 | No NIS |
| ERROR: 407 | Zero points invalid |
| ERROR: 408 | Machine not in basic position |
| ERROR: 409 | Zero point not found |

## 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 falled |
| 9 | Serialnr. changed |


Sewing motor
Sol.
Clamp
Ref. Clamp
OTE
Sol.
Thread trim.
Ref. SM2
SM2 Y-axis
SM2 (Y-axis)
SM1 (X-axis)
SM1 X-axis
Ref. SM1
Sol.
Wiper
Control Panel (Bdf S2)
230V 50/60Hz
Pedal Sensor
X4/B
X4/A
X5
X13
X4/B
X4/A
X1/B
X5
X13
X8
X3
X11/B
X1/A
P 320 MS

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