PFAFF

1114

Adjustment Manual

Contents .... Chapter - Page

13	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.

13.01 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.

13.02 Tools, gauges and other accessories

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of wrenches 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
- Threads and test material

13.03 Abbreviations

t.d.c. = top dead centre
b.d.c. = bottom dead centre

13.04 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
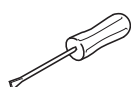
Service, repair, adjustment, maintenance
(work to be carried out by qualified staff only)

13.05 Connecting rod guide

Requirement

Fork **3** should be moved freely by guide unit **1**.

Fig. 13 - 01
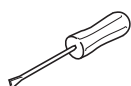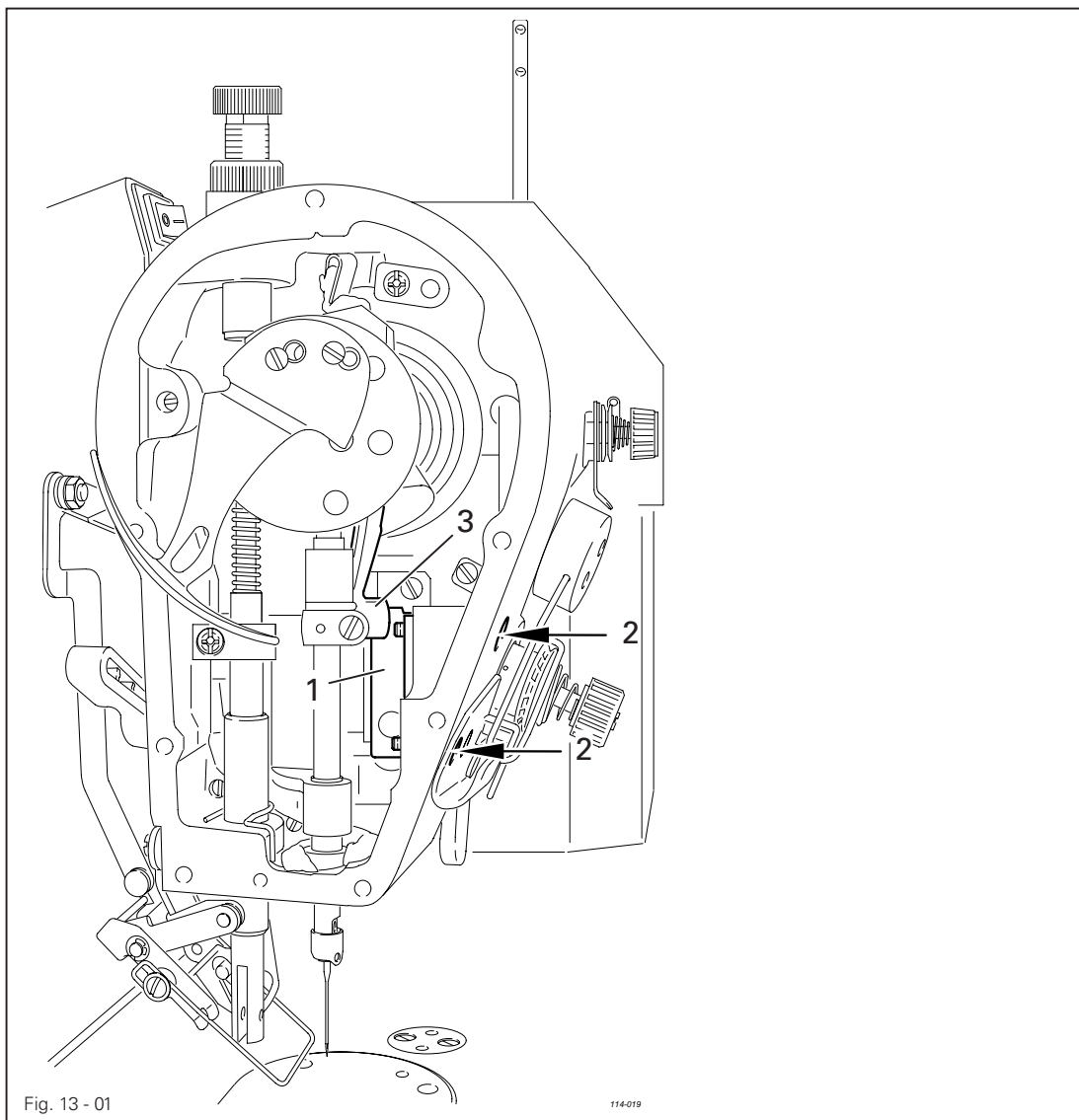
● Align guide unit **1** (screws **2**) in accordance with the **requirement.**

Adjustment

13.06   ## Centring the needle in the needle hole (in the sewing direction)

> **Requirement**
> When the zigzag stitch width and the stitch position are set at "**0**", as seen in the direction of sewing, the needle should enter the needle hole in the centre.
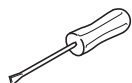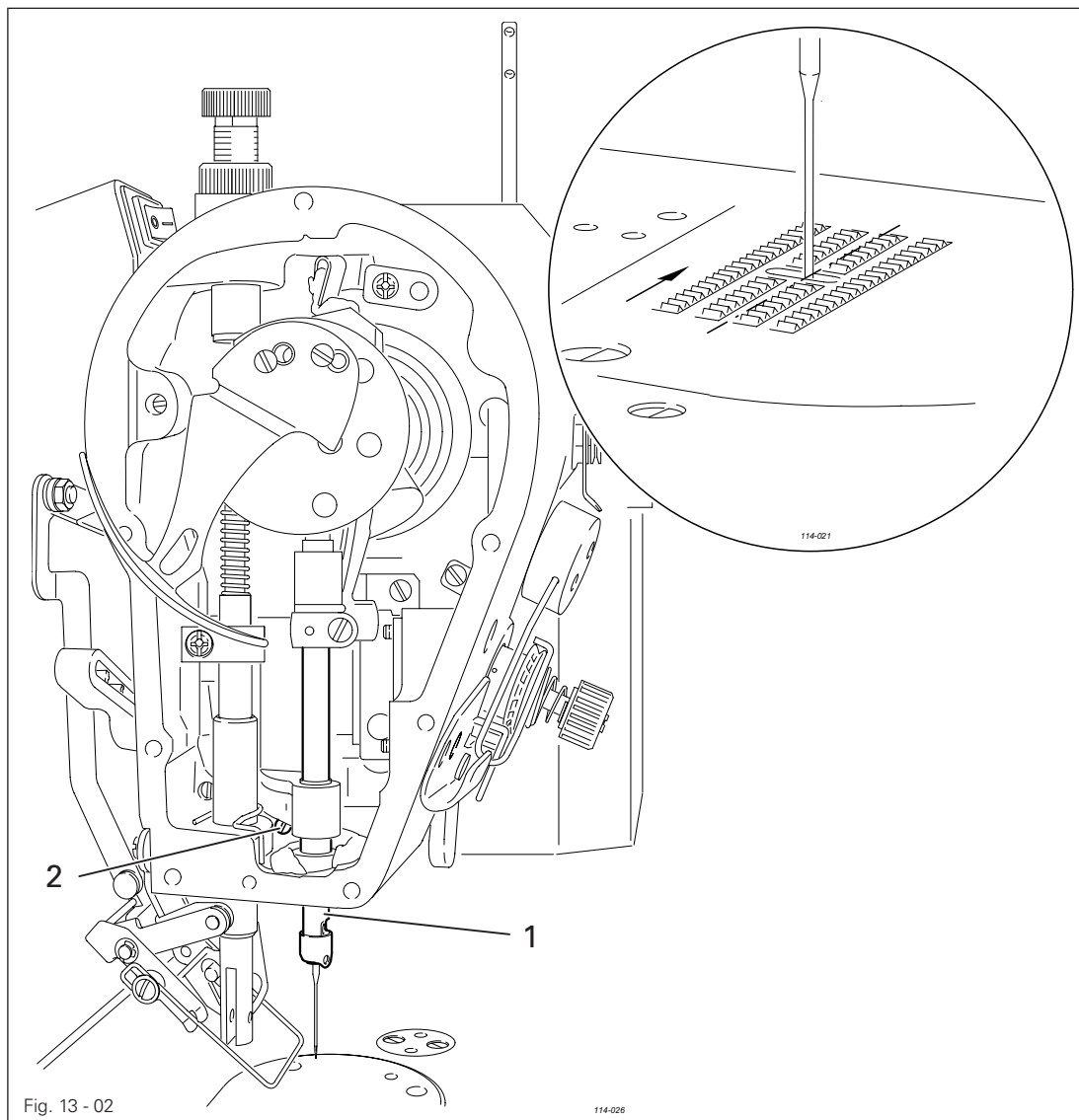
Fig. 13 - 02   *114-026*

- ● Switch on the machine.
- ● Set the zigzag stitch width and the stitch position at "**0**".
- ● Adjust needle bar **1** (screw **2**) in accordance with the **requirement**.
- ● Switch off the machine.

⚠   Screw **3** is sealed by the manufacturer and must not be loosened.

13.07   Needle bar parallel guide

Requirement
Needle bar guide unit **1** should be parallel to needle bar **3**.

Fig. 13 - 03   *114-022*
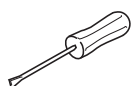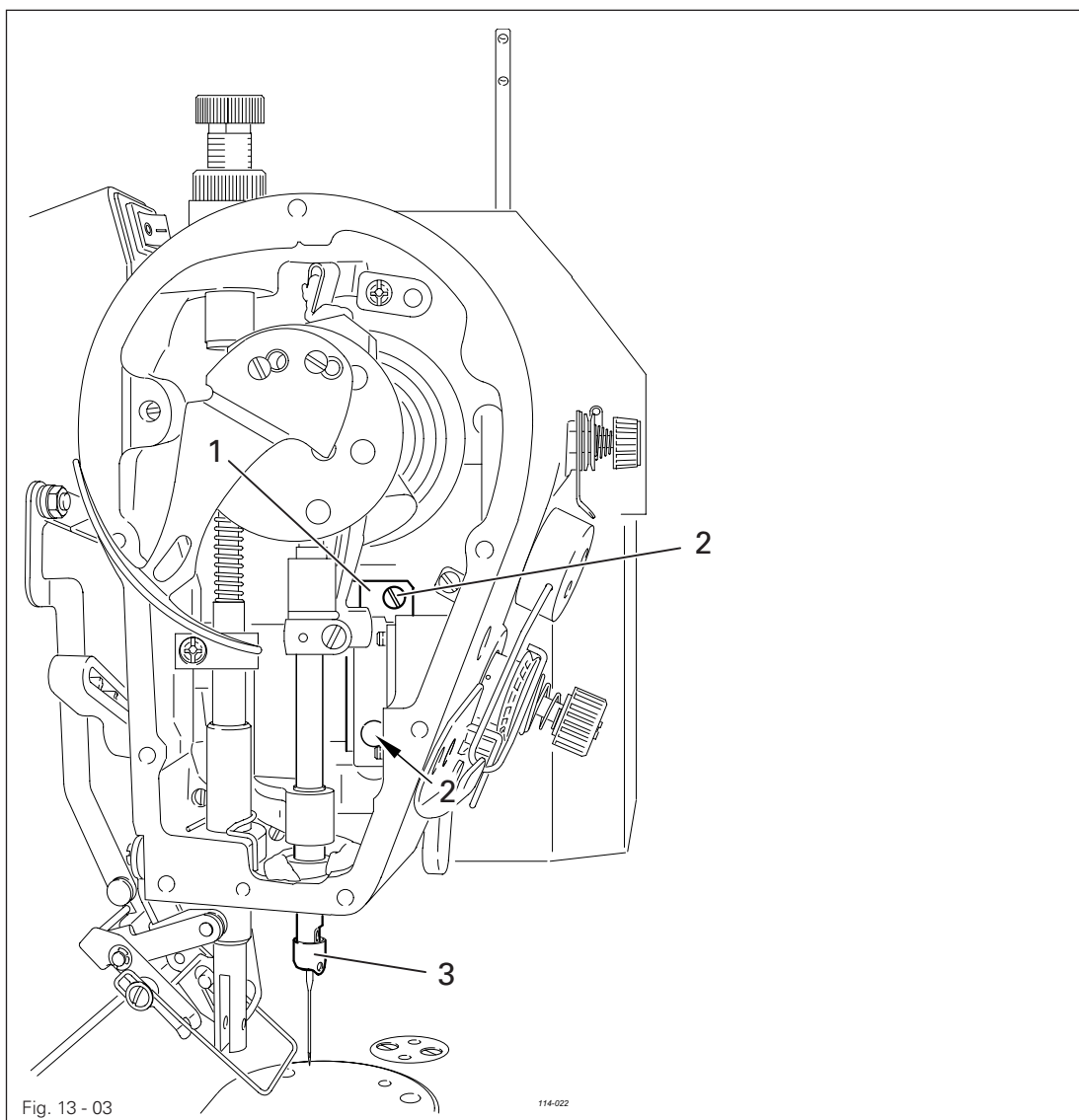
● Adjust needle bar guide unit **1** (screws **2**) in accordance with the **requirement**.

Adjustment

13.08   Needle bar frame

Requirement

1. Bearing ring **1** should be fitted between bearing rings **3** without play but with free movement.
2. It should be possible to move needle bar frame **4** on axis **7N** without connection to the stepping motor.

Fig. 13 - 04   114-081
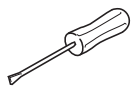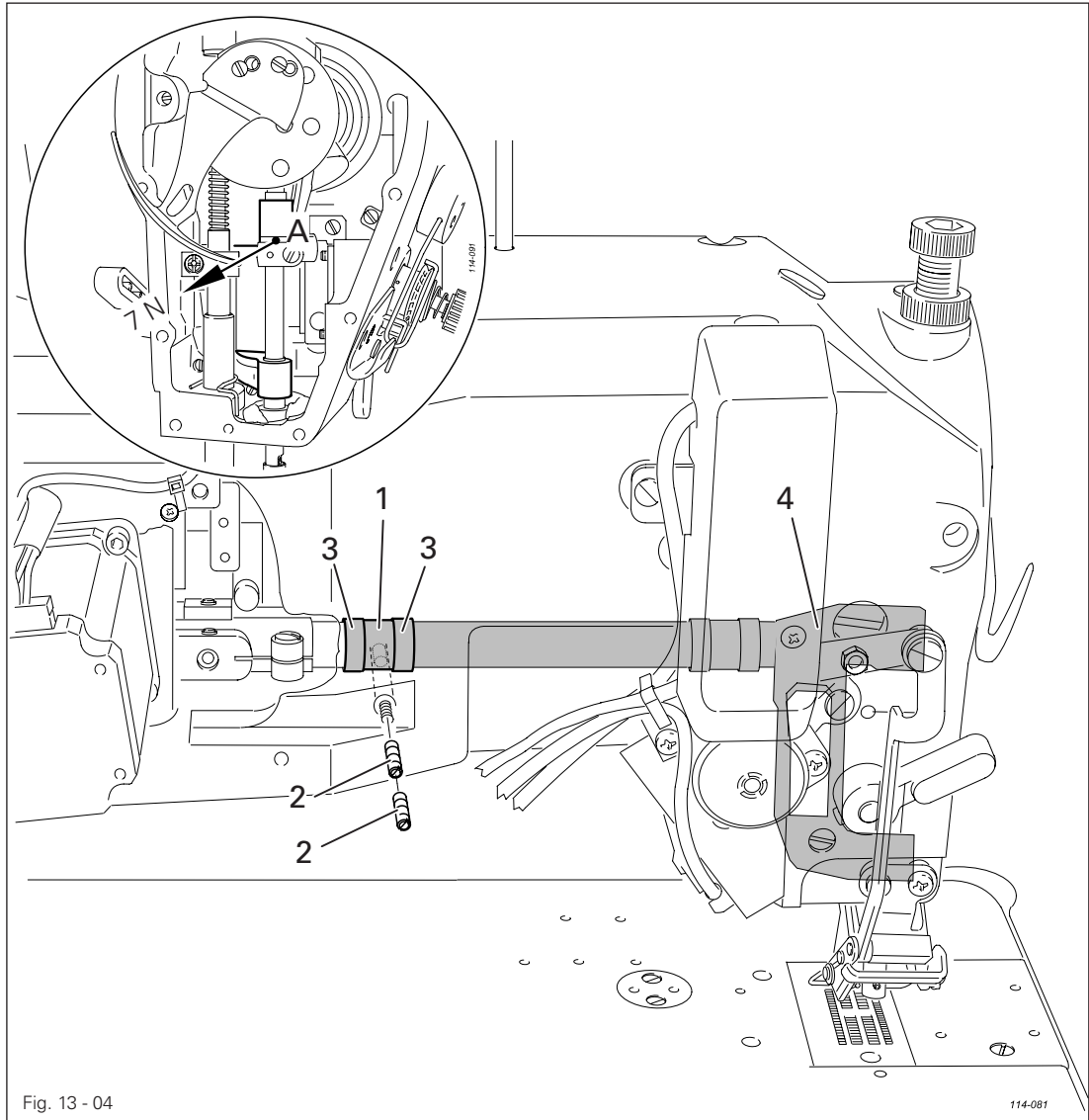
● Adjust bearing ring **1** (screws **2**) in accordance with the requirements.

ℹ️ The adjustment should be checked at reference point **A** with a spring scale.

13.09   Needle height (preliminary adjustment)

Requirement
When the needle bar is at t.d.c., the needle point should be **19 mm** above the needle plate.
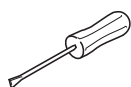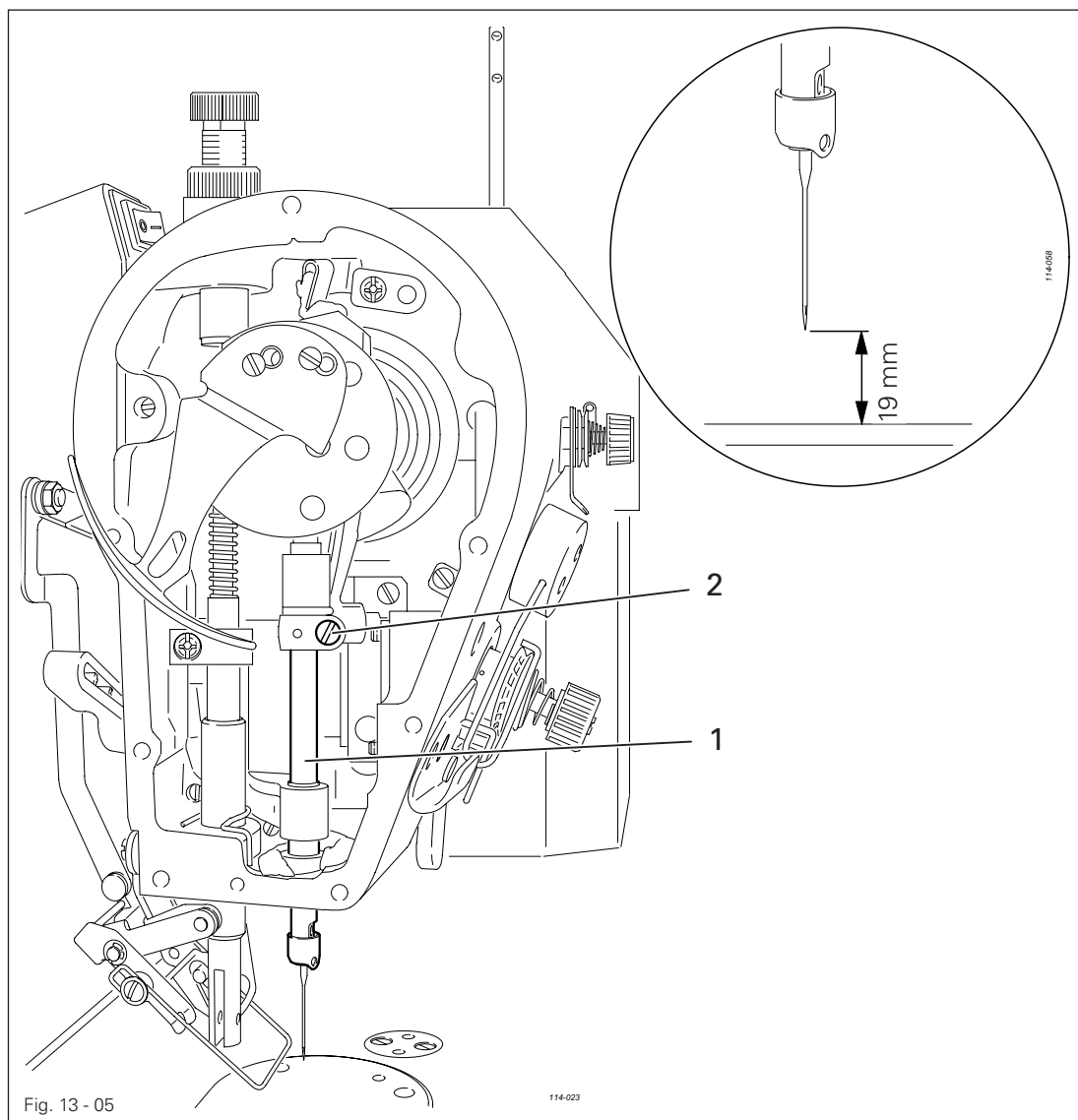
Fig. 13 - 05

● Without twisting it, adjust needle bar **1** (screw **2**) in accordance with the requirement.

Adjustment

13.10   Needle in needle hole centre (crosswise to the sewing direction)

> **Requirement**
> When the standard pattern "straight stitch" has been selected and the stitch position is set at "**0**", the needle, as seen crosswise to the sewing direction, should enter the needle plate in the centre.

114-050

114-077

Fig. 13 - 06
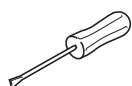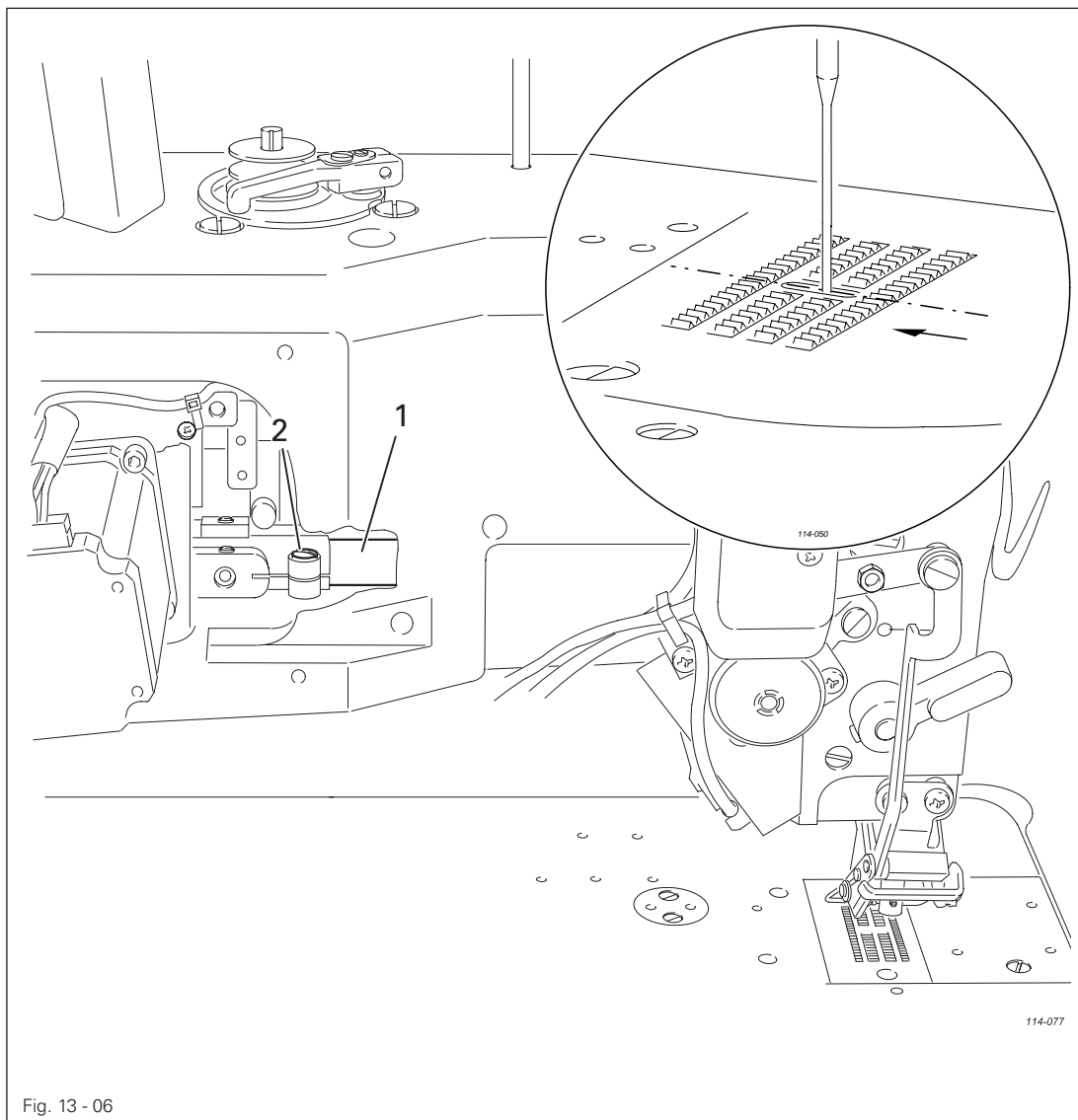
● Switch on the machine.

● Call up the standard pattern "straight stitch" and set the stitch position at "**0**".

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

● Switch off the machine.

                     PFAFF

13.11   Zero position of the bottom feed dog

> **Requirement**
> With the stitch length set at "**0**"**,** when the balance wheel is turned, bottom feed dog **3** should carry out the smallest possible feeding motion.

Fig. 13 - 07
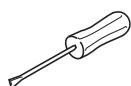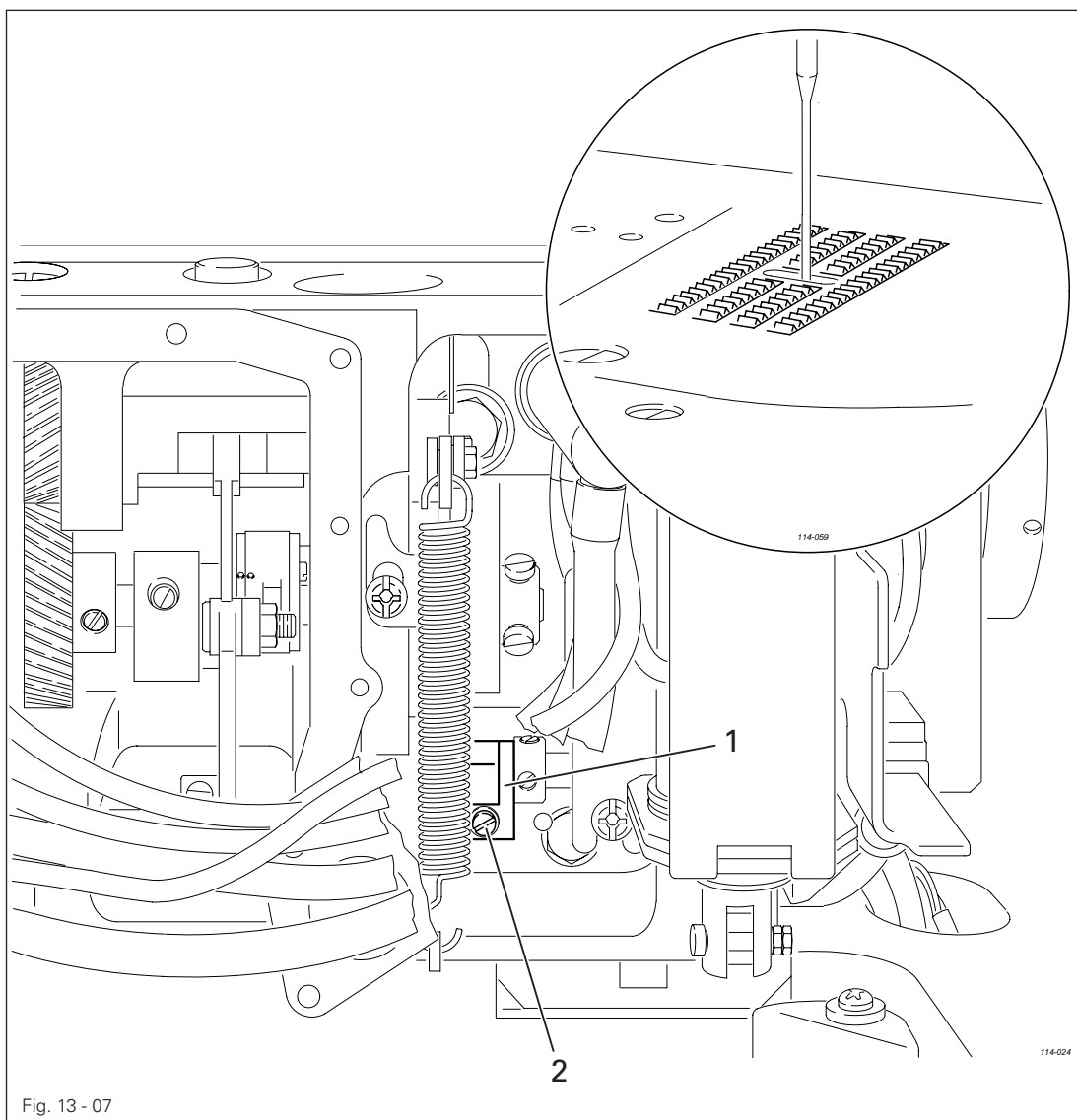
● While turning the balance wheel continuously, adjust crank **1** (screw **2**) in accordance with the **requirement.**

Adjustment

13.12   Feeding motion of the bottom feed dog

> **Requirement**
> With the stitch length set at "**0**" and the needle bar positioned **1** mm before b.d.c.
> (= **20** increments) markings **3** and **4** should be aligned.

Fig. 13 - 08
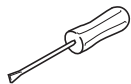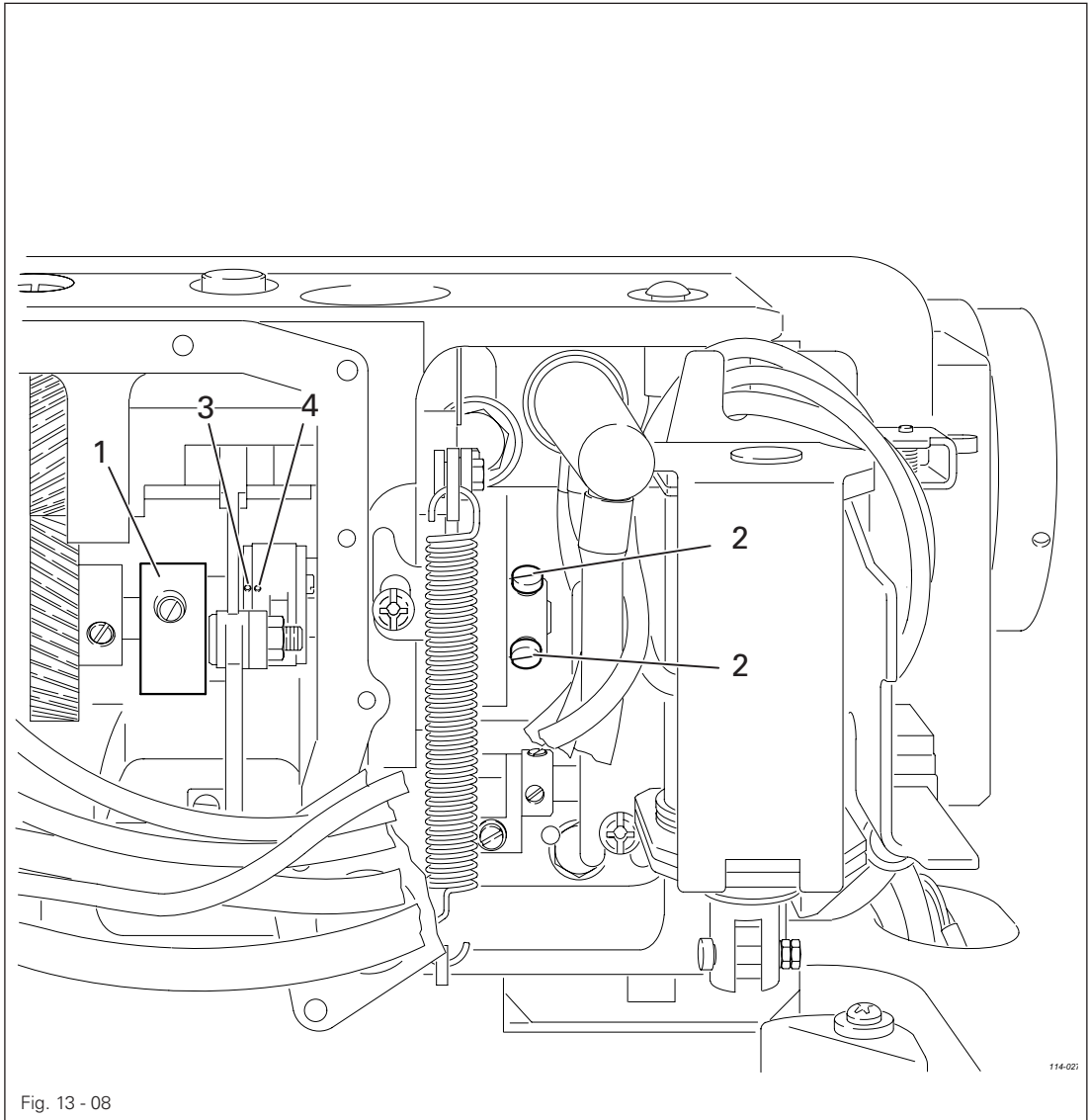
● Adjust eccentric **1** (screws **2**) in accordance with the **requirement**.

13.13   Hook lubrication

Requirement
After a machine running time of about **10** seconds at top speed, a thin film of oil should appear on a paper strip held above the needle plate cutout.

Fig. 13 - 09
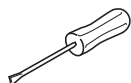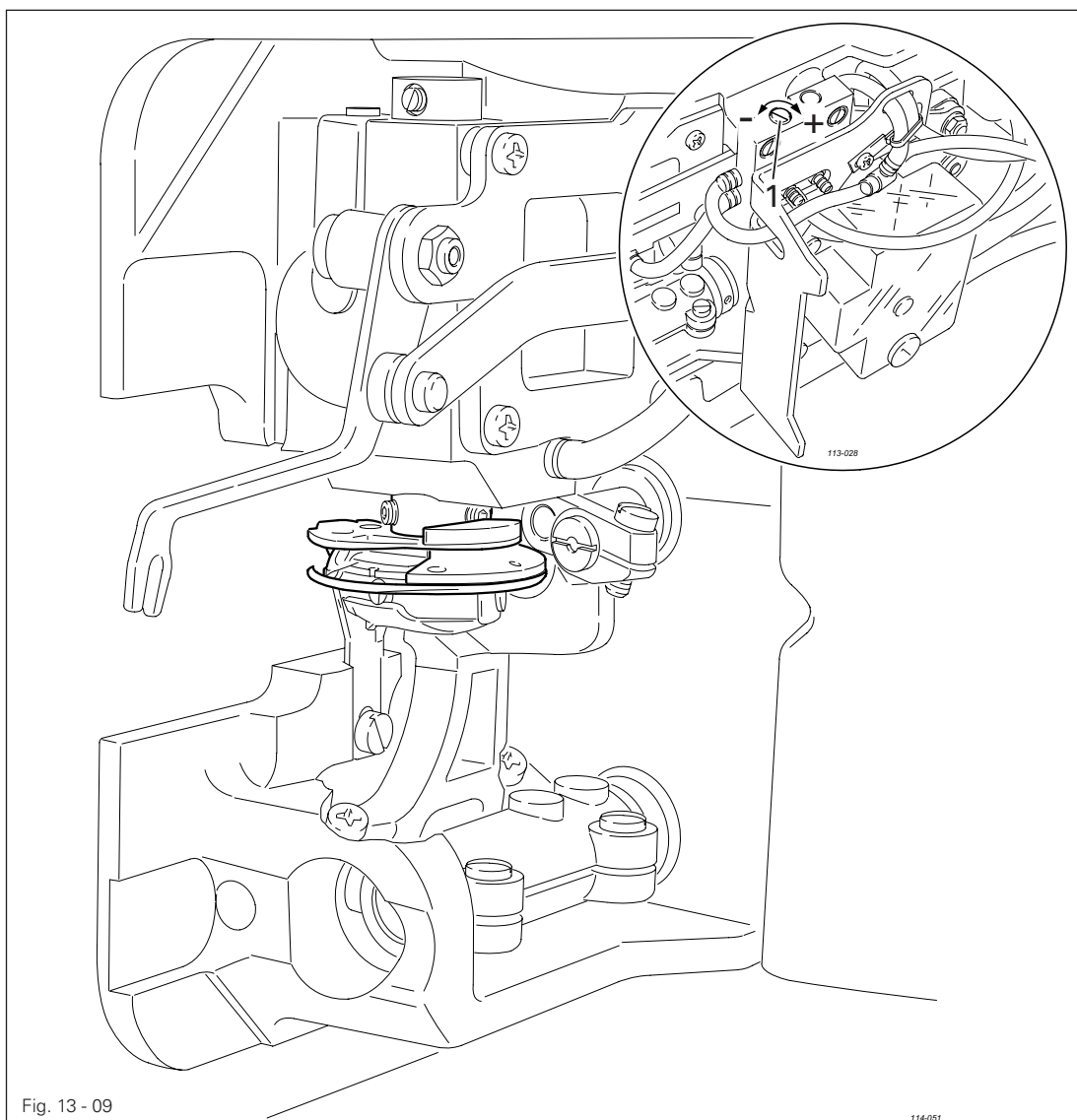
● Adjust screw **1** in accordance with the **requirement**.

Adjustment

13.14   Needle rise, hook clearance and bobbin case position stop

Requirement
1. With the zigzag stitch and the stitch position set at "**0**", when the needle bar is positioned at **2.4** mm after b.d.c., the hook point should be centred to the needle and the needle to hook point clearance should be **0.05 – 0.10 mm**.
2. The front edge of the bobbin case position stop **3** should be level with the edge of holder **5.**

Fig. 13 - 10
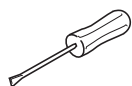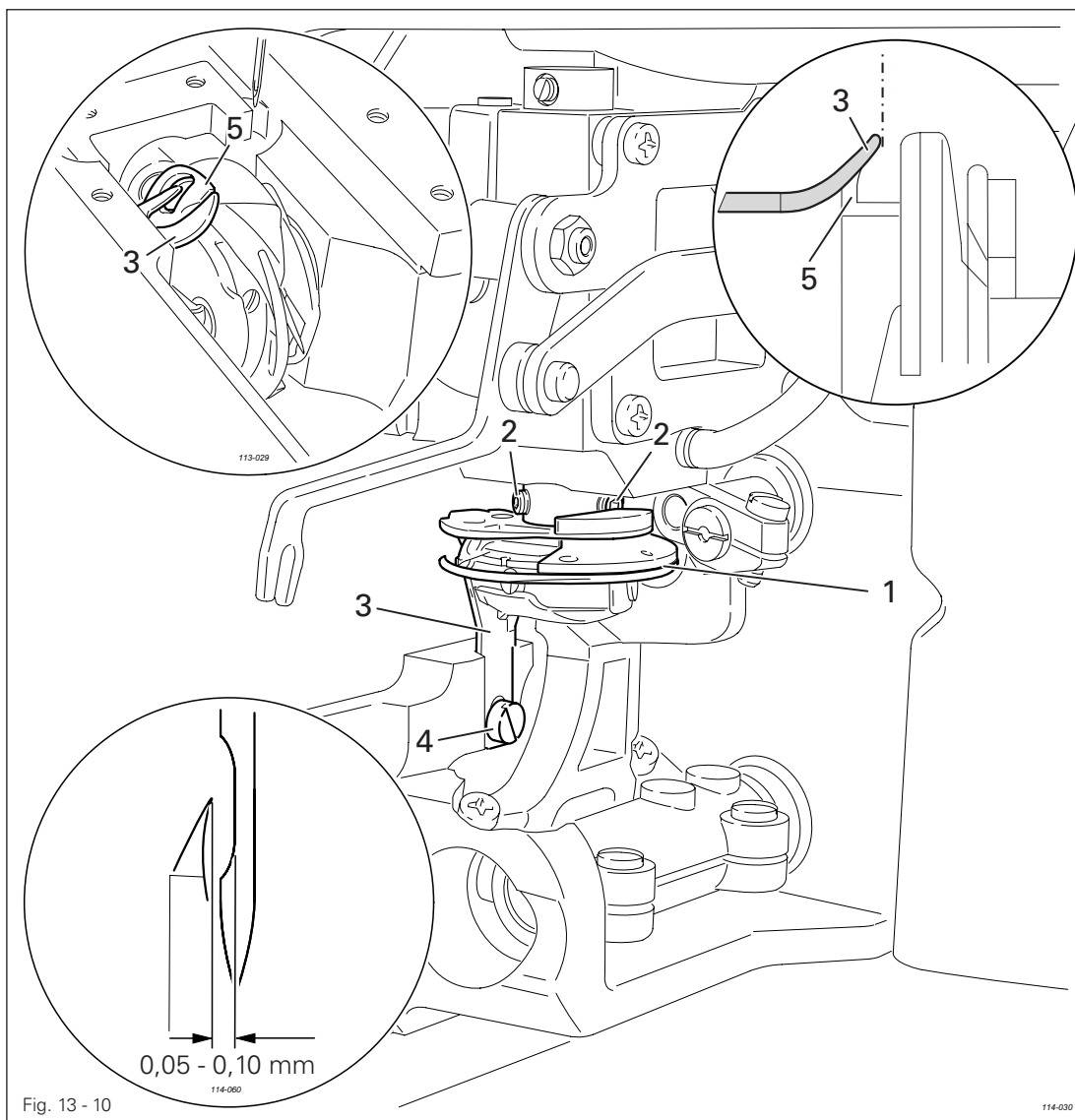
● Adjust hook **1** (screws **2)** in accordance with requirement **1.**

● Adjust bobbin case position stop **3** (screw **4)** in accordance with **requirement 2.**

13.15   Needle height (readjustment)

Requirement

When the zigzag stitch is set at "**0**", the stitch position at "**5**" and the hook point is centred to the needle, the upper edge of the needle eye should be **0.5** mm below the hook point.
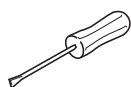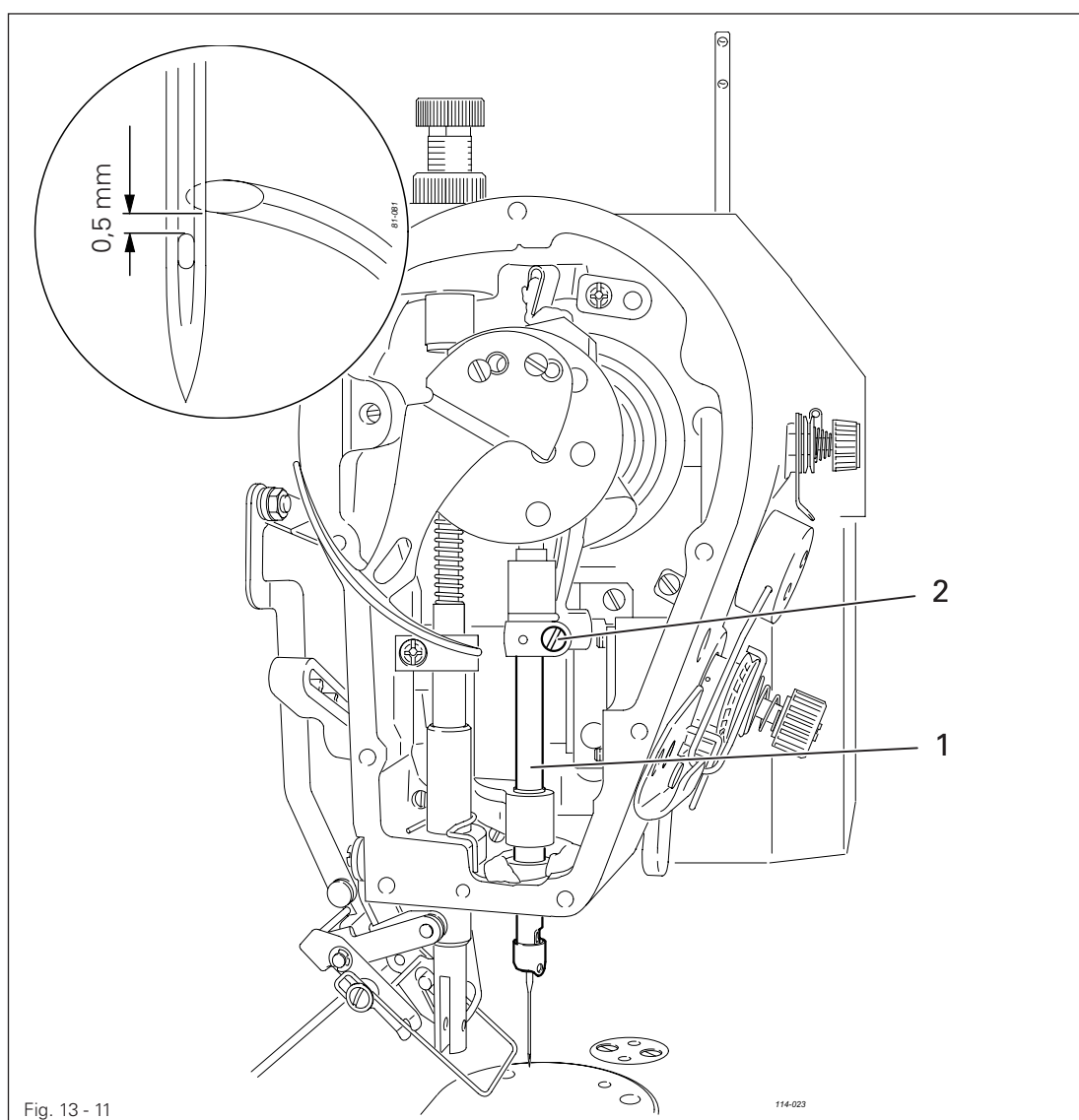
0,5 mm

2

1

Fig. 13 - 11   114-023

● Without twisting it, adjust needle bar **1** (screw **2**) in accordance with the **requirement**.

Adjustment

13.16   Positioning the bottom feed dog

> **Requirement**
> When the stitch length is set at "**0**" and the needle bar is positioned **1** mm after t.d.c
> 1. the bottom feed dog should be **1.2 mm** above the needle plate and be
> 2. positioned at a slight slant (depending on the application) in the centre of the needle plate cutout.

Fig. 13 - 12
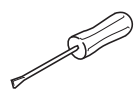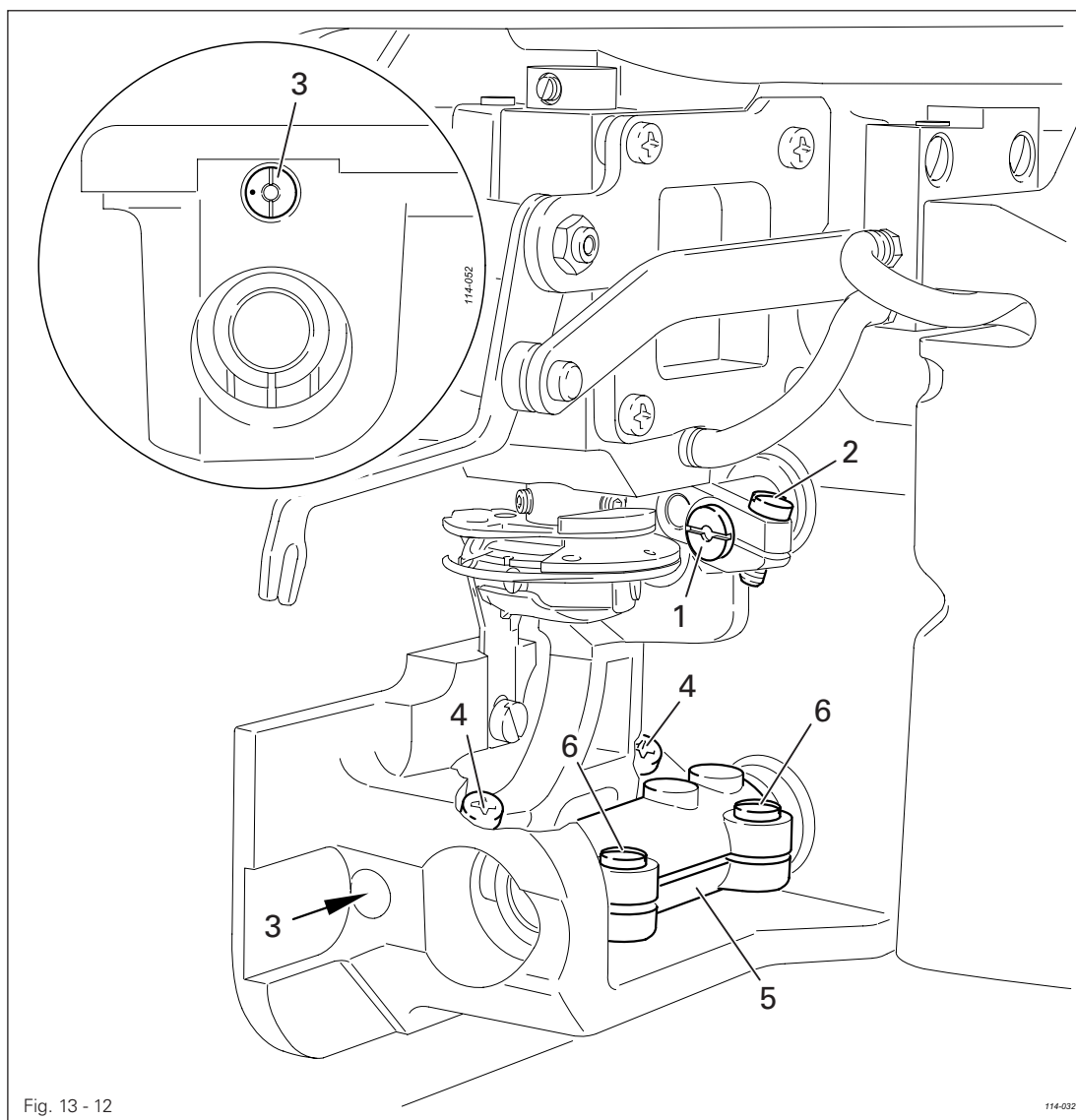
● Adjust eccentric **1** (screw **2**) in accordance with requirement **1**.

● Adjust eccentric **3** (screws **4**) so that the slot is in a vertical position and the marking point is on the left side of the slot (standard setting).

● Adjust crank **5** (screws **6**) in accordance with requirement **2**.

> ℹ️ Depending on the application, to correct an uneven material feed, the standard setting of the slant can be changed with eccentric **3**.

PFAFF

13.17   Presser foot to needle plate clearance

Requirement

When the stitch length and stitch position are set at "**0**" and the hand lever **1** is raised,

1. the needle should penetrate exactly in the centre of the needle hole in the presser foot and

2. there should be a clearance of **5.5 mm** between the presser foot and the needle plate.

Fig. 13 - 13
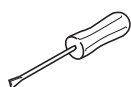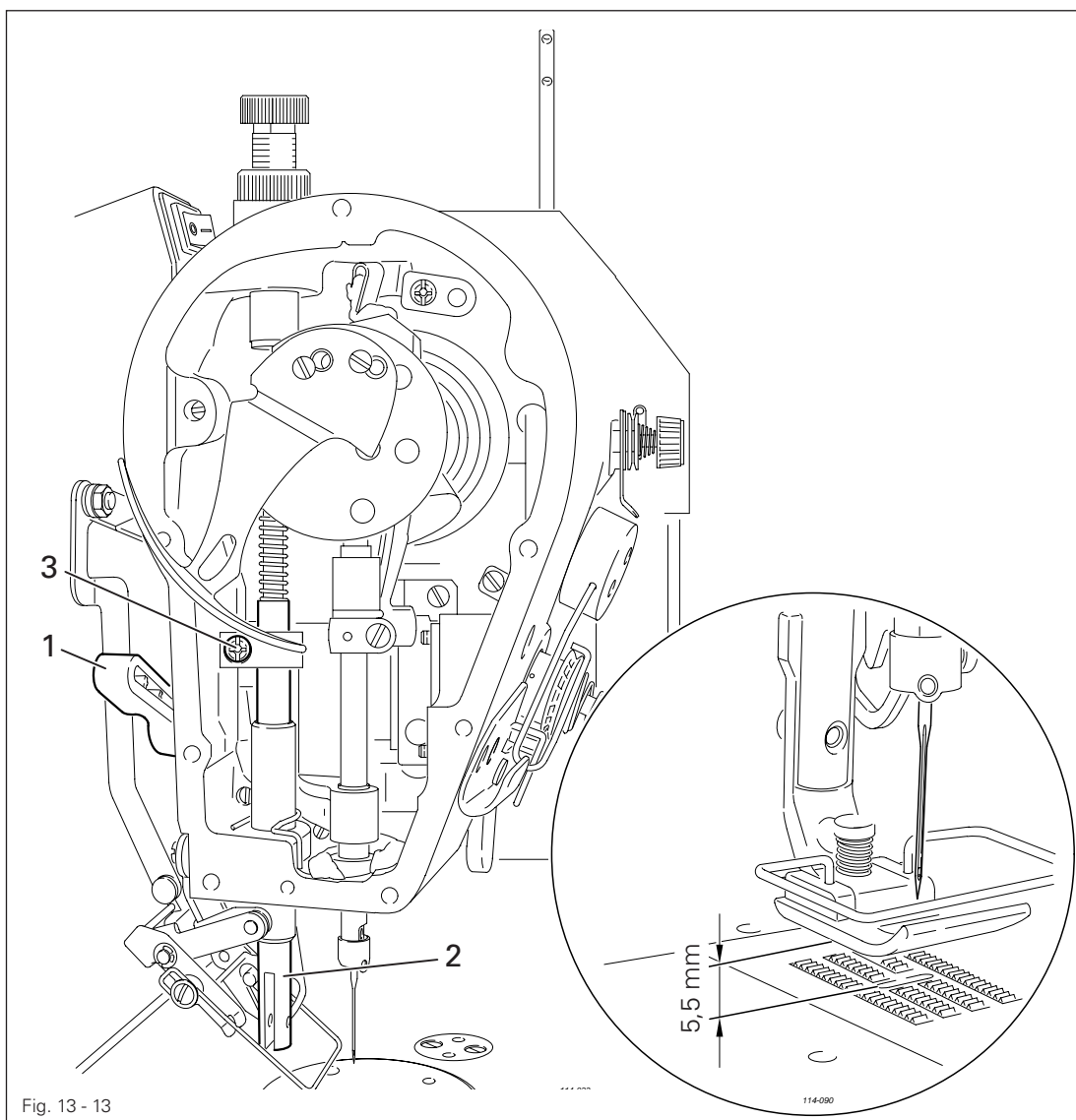
● Switch on the machine.

● Set the zigzag stitch width and the stitch position at "**0**".

● Raise hand lever **1**.

● Adjust presser rod **2** (screw **3**) in accordance with the **requirements**.

● Switch off the machine.

13.18   Presser foot pressure

Requirement
1. No pressure marks should be left on the material.
2. The material should be fed without problems even at max. sewing speed.

Fig. 13 - 14
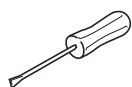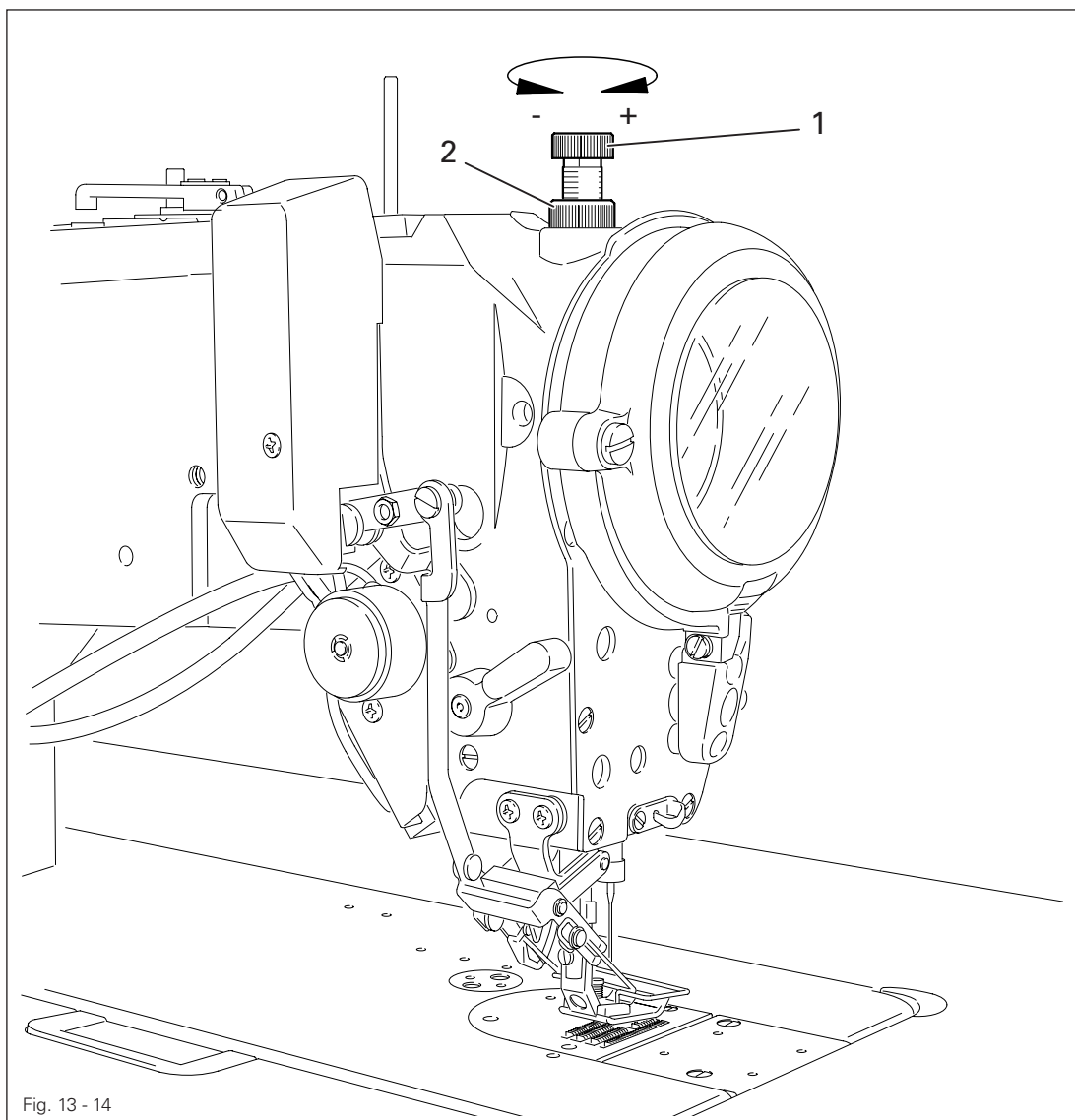
● Adjust screw **1** (nut **2)** in accordance with the **requirements**.

Depending on the application, the pressure on the presser foot can be increased (**+**) or reduced (**-**) with screw **1.**

13.19   Knee lever

Requirement
1. When knee lever **5** is operated, the presser foot should lift **10.0** mm from the needle plate.
2. When knee lever **5** is in its neutral position, there should be noticeable play between screw   **3** and the oil pan.

Fig. 13 - 15
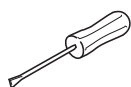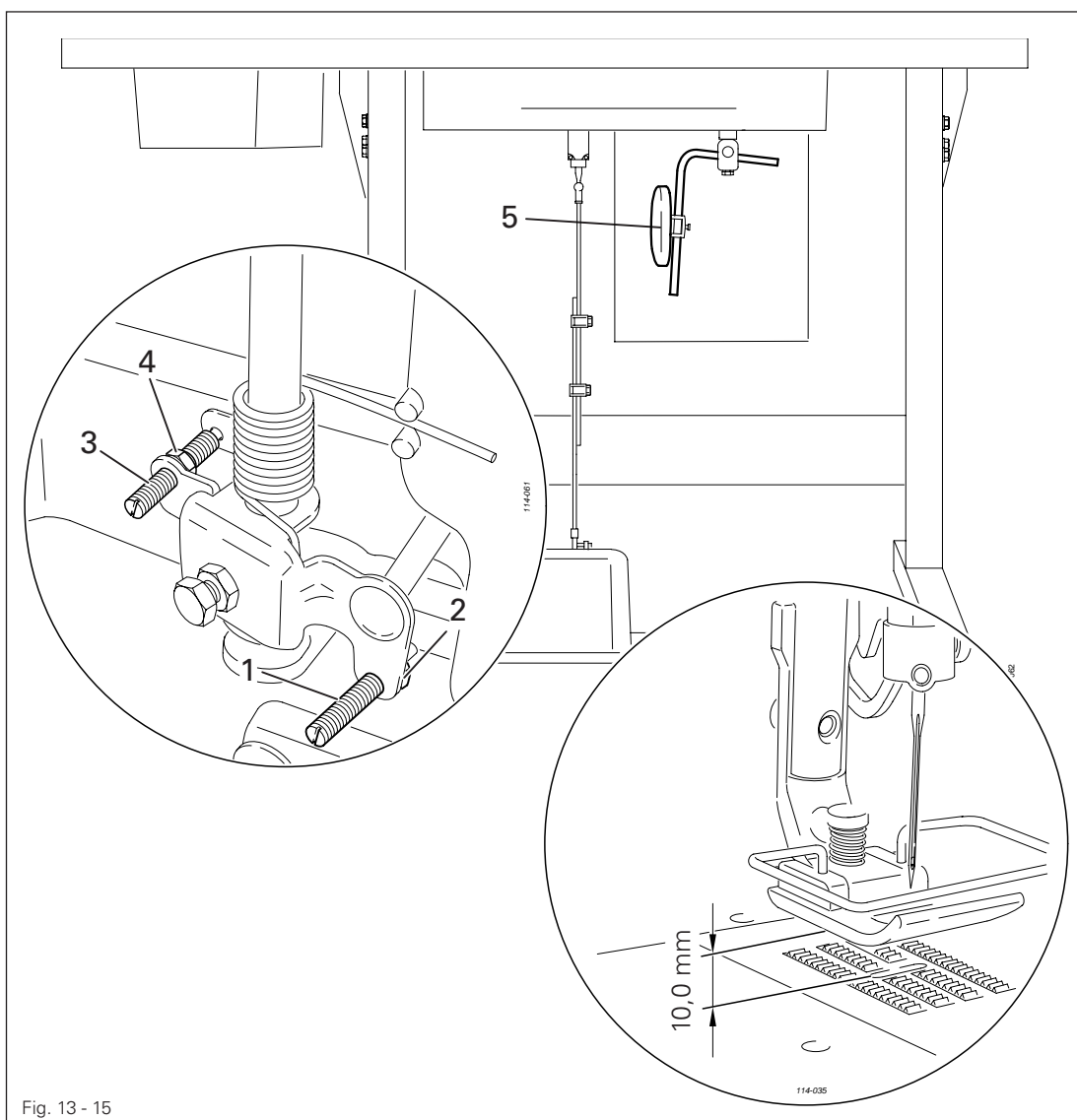
- Adjust screw **1** (nut **2)** in accordance with **requirement 1.**
- Adjust screw **3** (nut **4)** in accordance with **requirement 2.**

Adjustment

13.20   Bobbin winder

Requirement

1. When the bobbin winder is switched on, the bobbin winder spindle must engage reliably.
2. When the bobbin winder is switched off, friction wheel **3** should not be touching drive wheel **1.**

Fig. 13 - 16
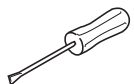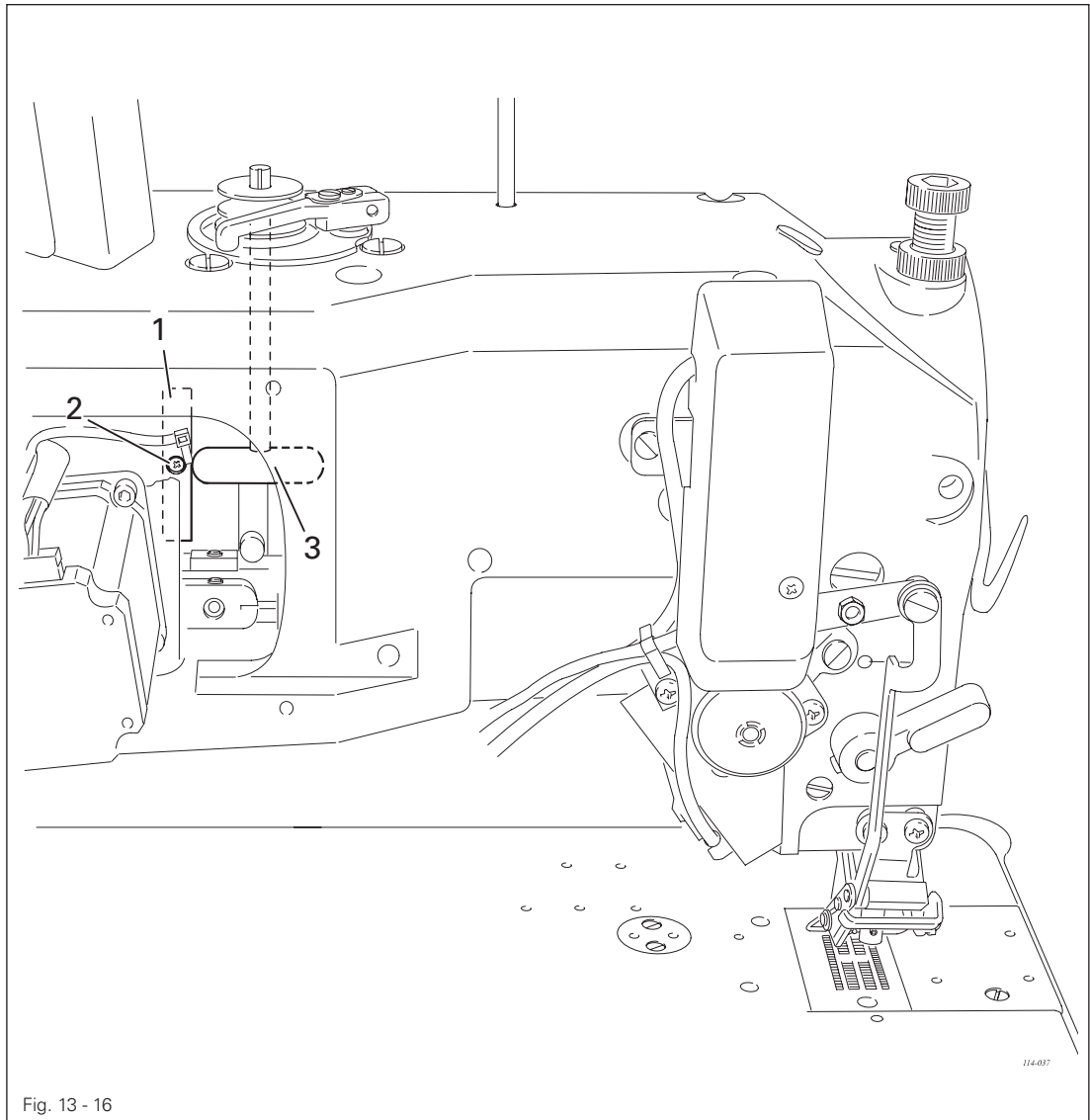
● Adjust drive wheel **1** (screw **2**) in accordance with the **requirements**.

       PFAFF

13.21   Axial position of the control cam

Requirement
1. Control cam **1** should be positioned **1** mm from the cast-iron wall.
2. Adjustment ring **3** should be touching the control cam **1.**

Fig. 13 - 17
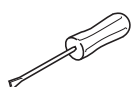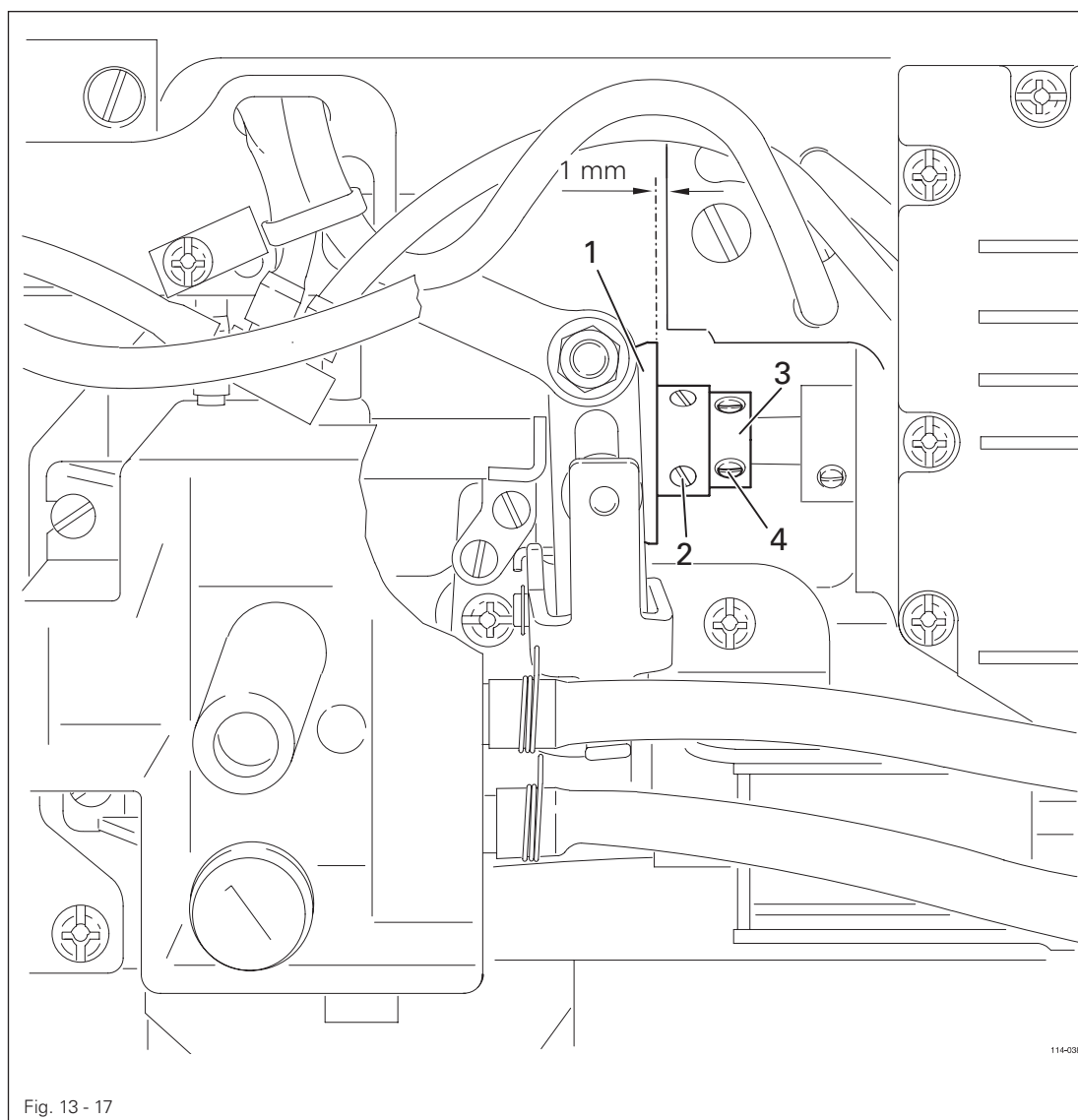
● Adjust control cam **1** (screws **2)** and adjustment ring **3** (screws **4)** in accordance with the requirements.

Adjustment

13.22 Pre-adjusting the control cam

> **Requirement**
> 1. With the needle bar at b.d.c. and markings **7** in the centre of shaft **6,** roller lever **4** should drop smoothly into the opening in control cam **5.**
> 2. Stop **2** should be touching lever **8.**
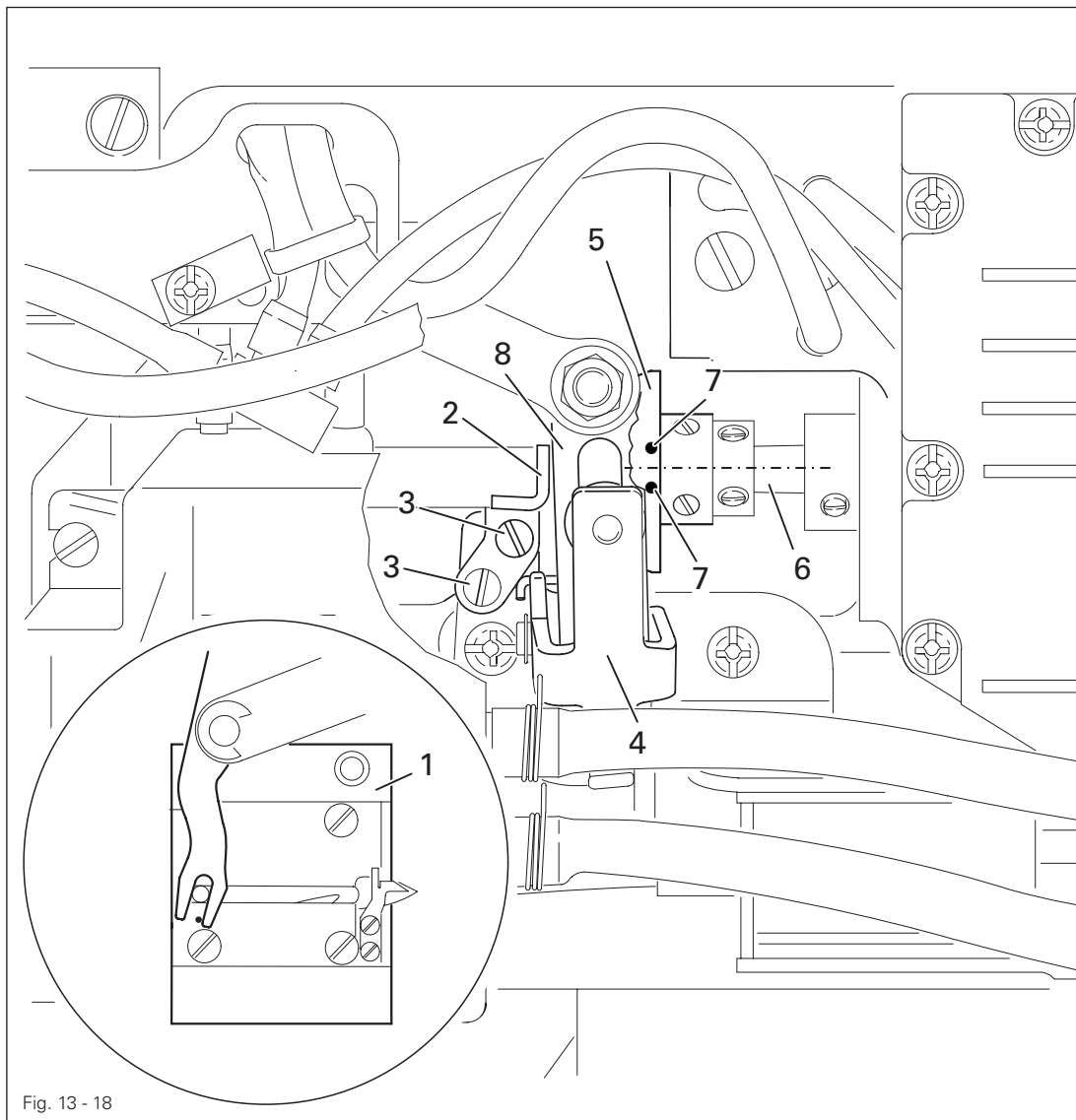
Fig. 13 - 18
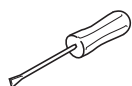
- Remove bearing plate **1** of the thread trimming unit.
- Adjust stop **2** (screws **3**) in accordance with the **requirements**.

For instructions how to fit the bearing plate see Chapter **13.23** Thread catcher position and cutting test.

13.23   Thread catcher position and cutting test

Requirement

1. When the thread trimmer is in its neutral position, the right edge of lever **5** should be level with the marking on bearing plate **4** (see arrow).
2. Thread catcher **7** must move into the thread triangle and pick up the thread reliably.

Fig. 13 - 19
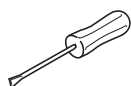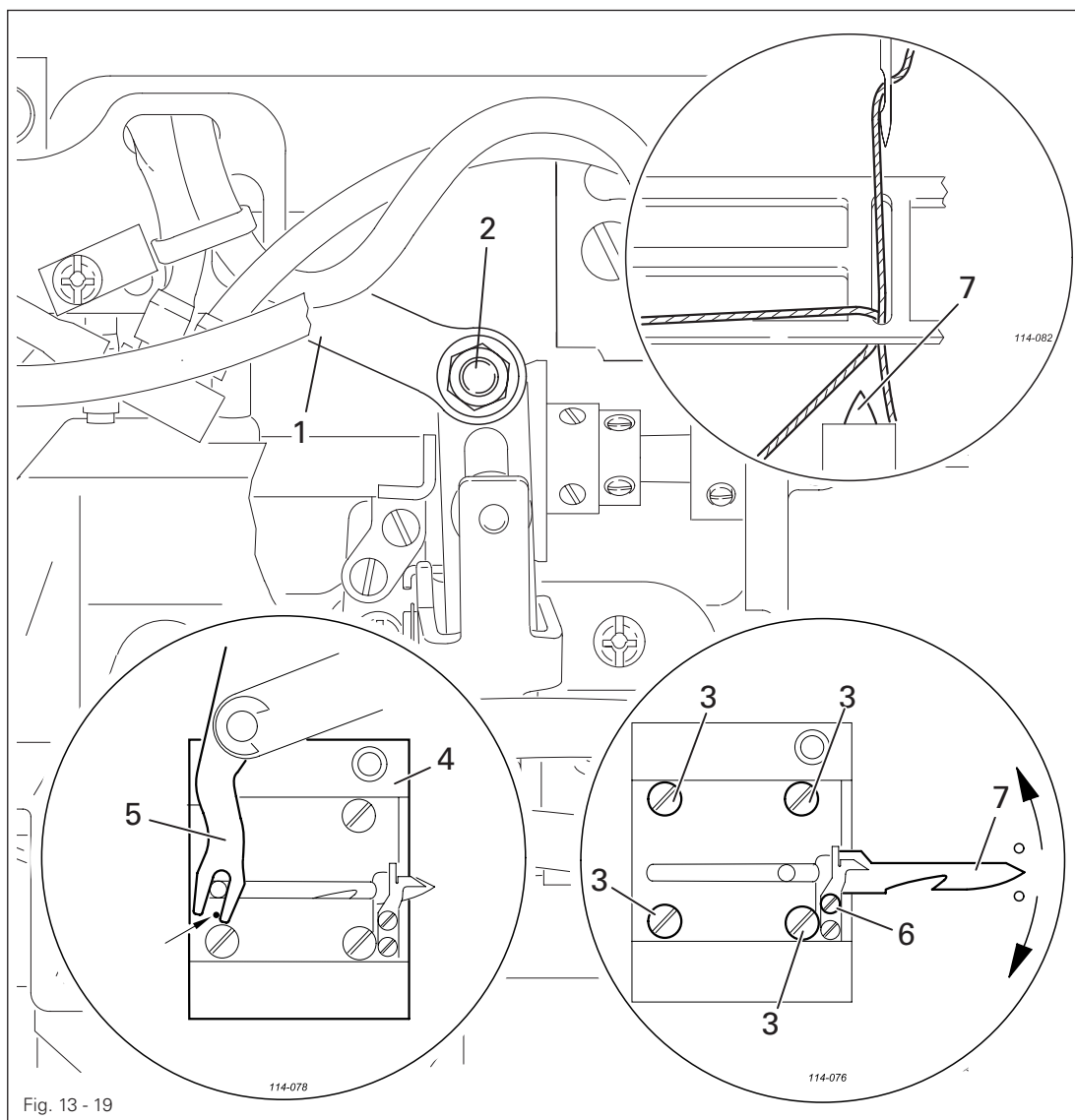
● Adjust connecting rod **1** (nut **2**) in accordance with **requirement 1**.

● Only loosen screws **3** slightly.

● Adjust bearing plate **4** in accordance with **requirement 2**.

● Tighten screws **3**.

Cutting test:

● Remove bearing plate **4** and carry out a cutting test with a double thread.

● Adjust the cutting pressure by turning screw **6**.

● Fit bearing plate **4**.

Adjustment

13.24 Readjusting the control cam

Requirement
1. When the needle bar is positioned **19.5 mm** (= **60** increments) after b.d.c., the thread catcher thread should begin moving forwards.
2. Control cam **1** should be touching adjustment ring **3**.

Fig. 13 - 20
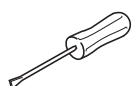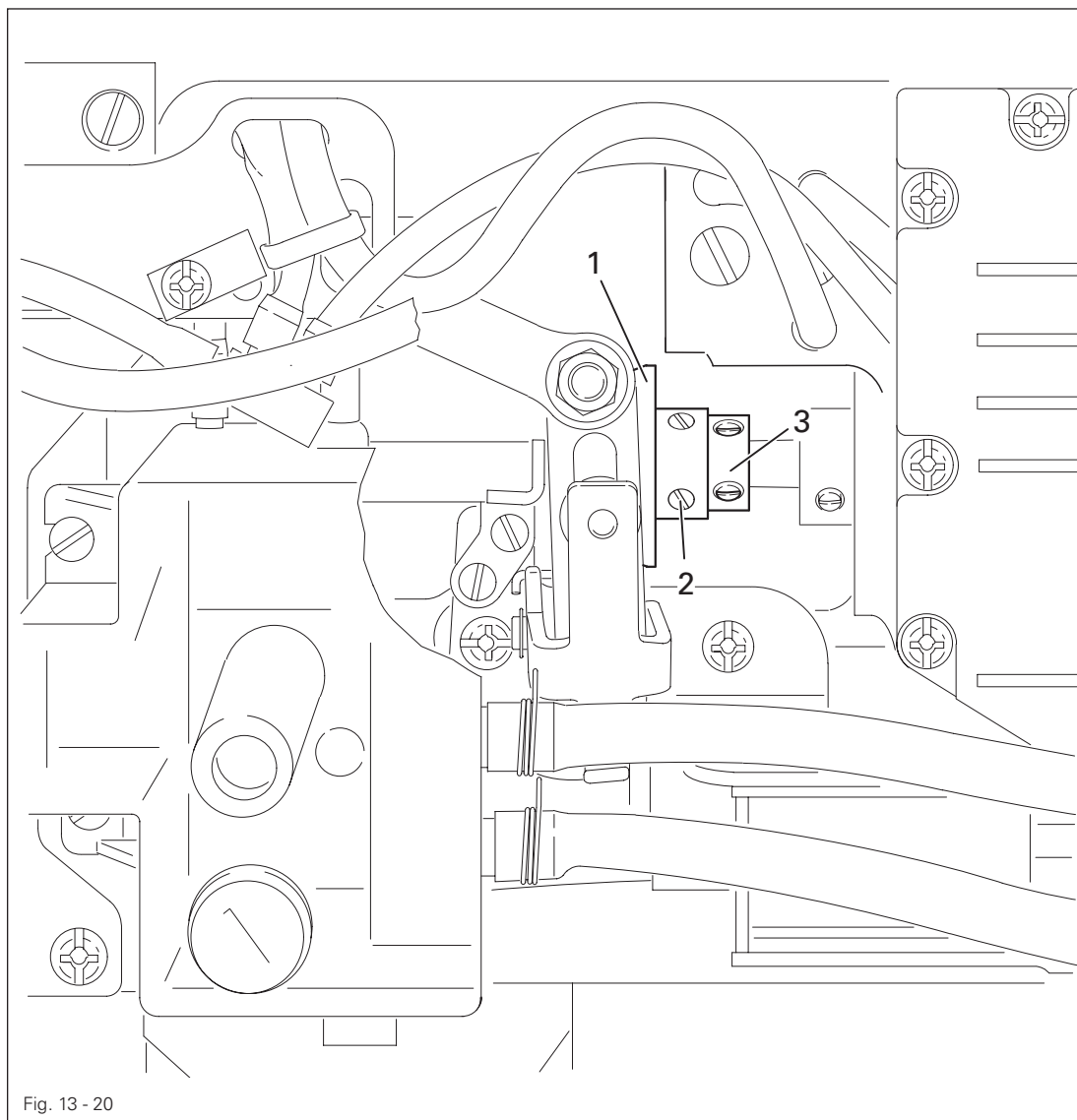
● Turn control cam **1** (screws **2**) in accordance with requirement **1** or adjust it in accordance with **requirement 2.**

13.25   Needle thread tension release

Requirement

If the presser foot is lowered

1. when solenoids **3** are activated, the thread tension should be released,
2. when the solenoids are not activated, the thread tension should be fully effective.

Fig. 13 - 21
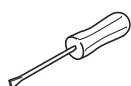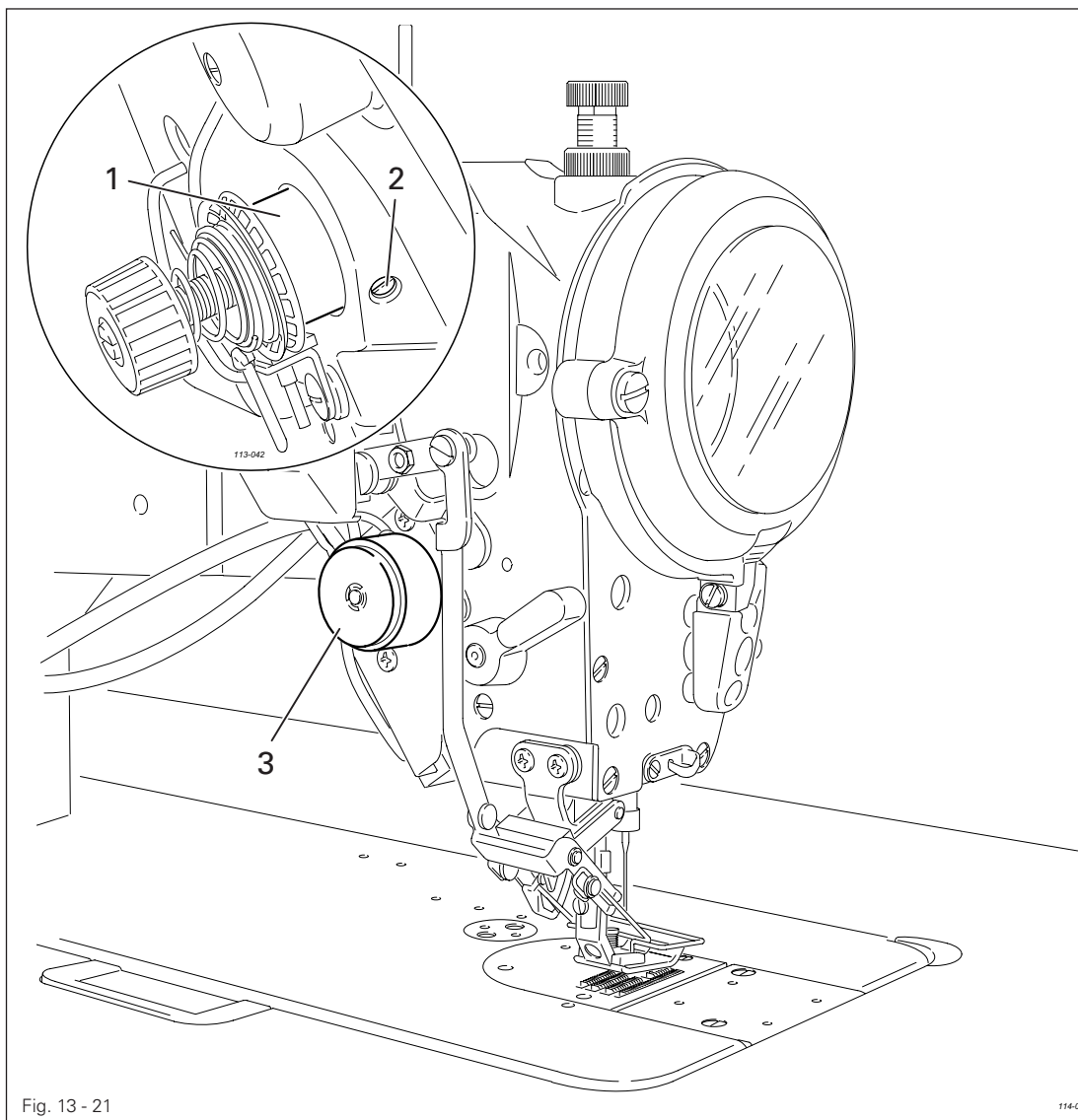
● Adjust tension unit **1** (screw **2)** in accordance with the **requirement**.

13.26   Thread wiper

> **Requirement**
> 1. When the thread wiper is switched off, guide pin **5** should be slightly touching the rear end of the guide unit.
> 2. When the thread wiper is switched on, guide pin **5** should be touching the front end of the guide unit.
> 3. When the needle bar is at t.d.c., the needle should be positioned **2** mm above the thread wiper **3.**
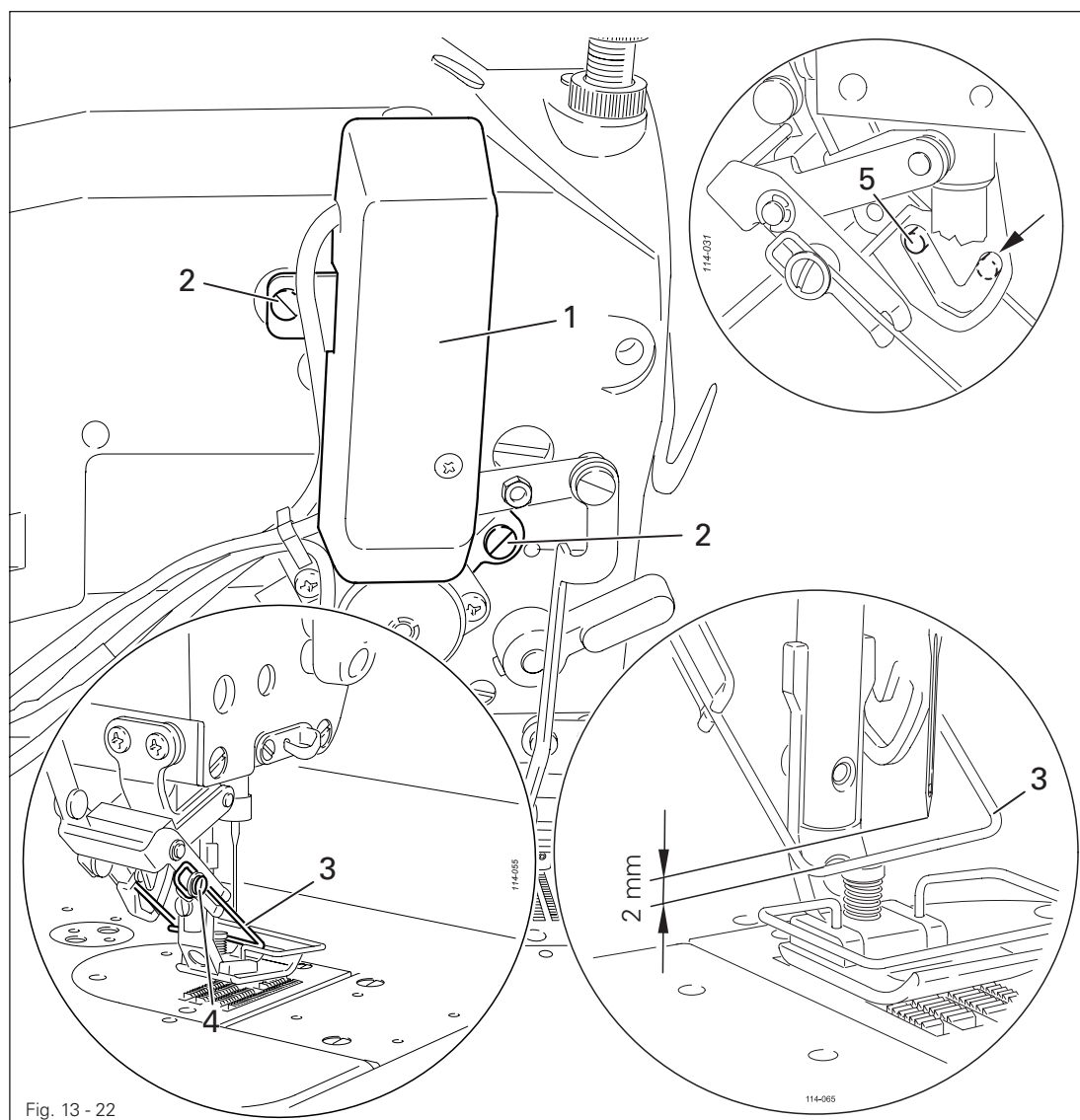
Fig. 13 - 22
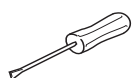
● Adjust case **1** (screws **2**) in accordance with **requirement 1** and **2.**

● Adjust thread wiper **3** (screws **4**) in accordance with **requirement 3.**

ℹ️ If the presser foot was raised by hand lever, during its motion the thread wiper should not touch the presser foot.

13.27 Thread puller

> **Requirement**
>
> In its neutral position thread puller **1** should
>
> 1. be positioned in the middle between points A and B,
> 2. have a clearance of **1** mm to plate **4** and **8** to **12** mm under latch **5**
> 3. have a clearance of at least **1** mm to thread **6.**
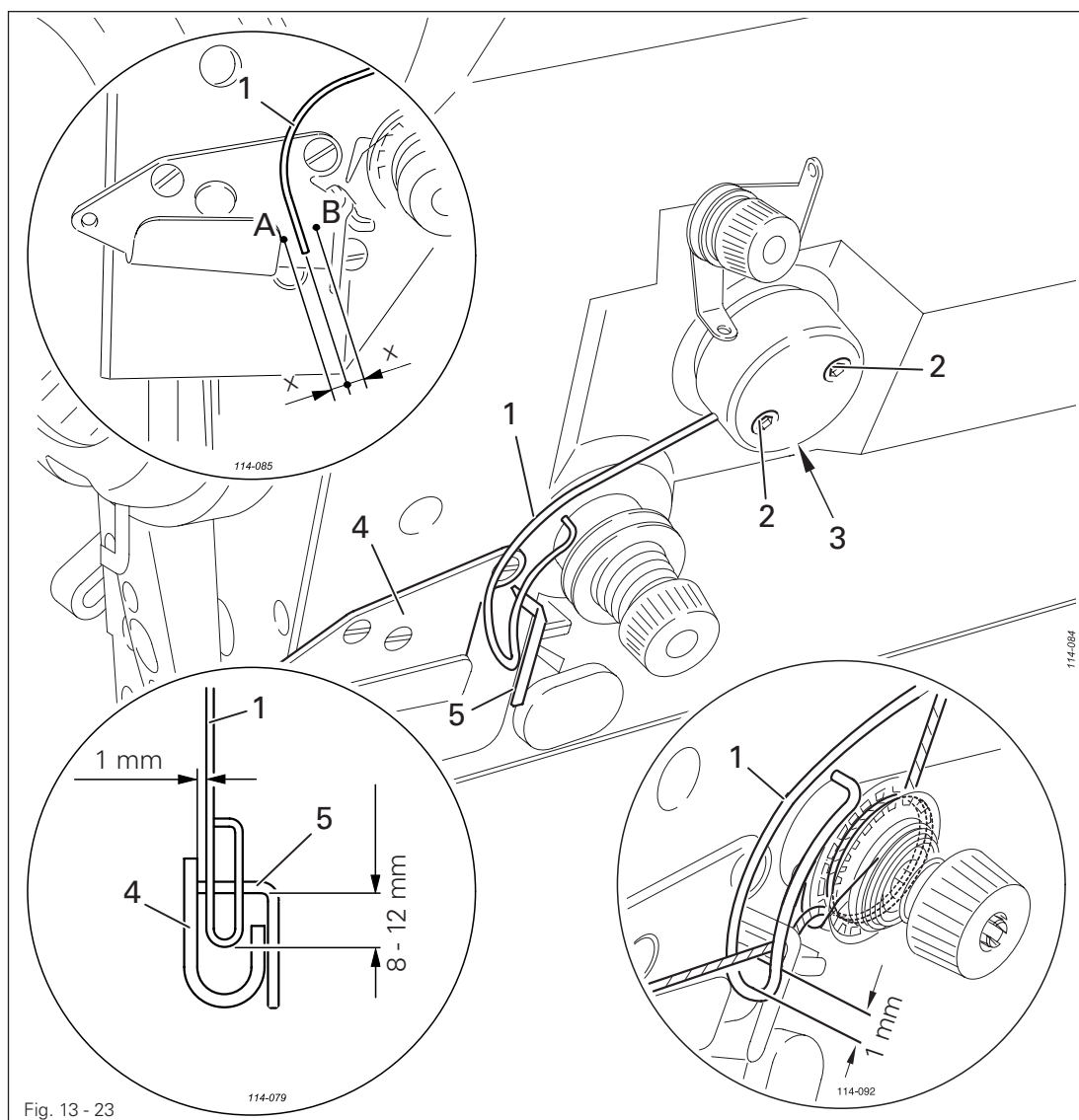
Fig. 13 - 23
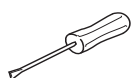
- Adjust thread puller **1** (screws **2**) in accordance with **requirement 1.**
- Adjust thread puller **1** (screw **3**) in accordance with **requirement 2** and **3.**

Adjustment

13.28   Parameter settings

13.28.01   Example of a parameter input

● Switch on the machine.

2x (TE/SPEED)   ● Press the TE/Speed key twice to call up the input mode.
The status text "TE" appears on the display and the pedal functions are locked to avoid the machine starting up accidentally.
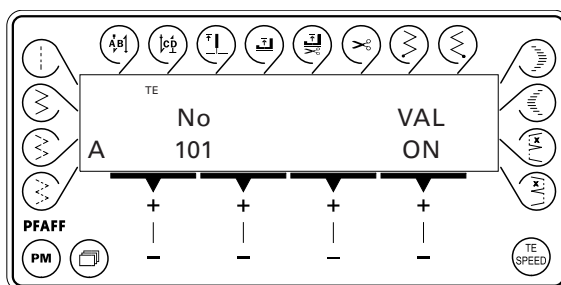
● Select the desired parameter, e.g. parameter "**116**" (soft start stitches) by pressing the corresponding **+/- keys**.
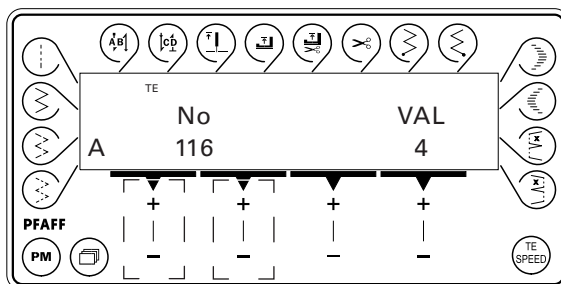
● Select the desired parameter value, e.g. "**8**" (number of soft start stitches) by pressing the corresponding **+/- keys**.
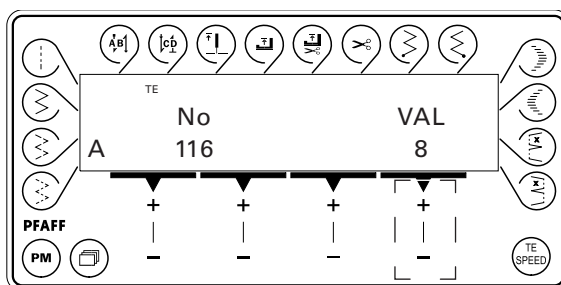
(TE/SPEED)   ● By pressing the **TE/Speed key**, the value is taken over and the sewing mode is called up.

13.28.02   Selecting the user level

● Switch on the machine

2x (TE SPEED)   ● Press the **TE/Speed key** twice to call up the input mode.

```
         (AB) (CD) (T) (J) (J) (>c) (>) (<)
     (|)                                    (  )
     (>)        TE                          (  )
     (>)           No            VAL        (x)
     (>)    A      101           ON         (x)
   PFAFF        ▼      ▼      ▼      ▼
   (PM)(□)     +      +      +      +     (TE
                |      |      |      |      SPEED)
                −      −      −      −
```
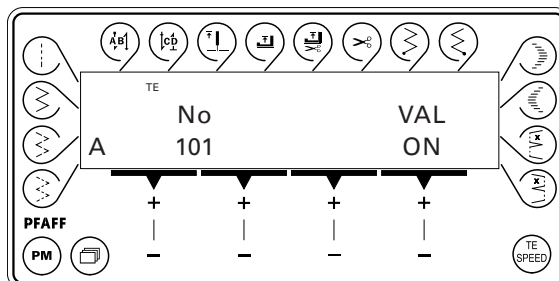
● Select parameter "**798**" by pressing the corresponding **+/- keys**.

```
         (AB) (CD) (T) (J) (J) (>c) (>) (<)
     (|)                                    (  )
     (>)        TE                          (  )
     (>)           No            VAL        (x)
     (>)    A      798           0          (x)
   PFAFF        ▼      ▼      ▼      ▼
   (PM)(□)     +      +      +      +     (TE
                |      |      |      |      SPEED)
                −      −      −      −
```
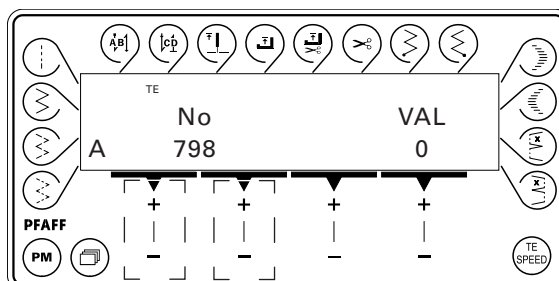
Select the desired user level by pressing the corresponding **+/- keys**:
     "**0**" = operator level **A**
     "**1**" = mechanic level **B**
     "**11**" = service level **C**
The selected user level is shown on the display (see circle).
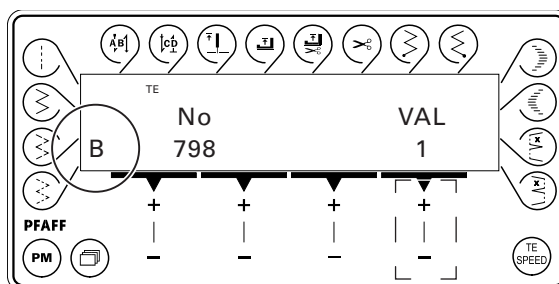
```
         (AB) (CD) (T) (J) (J) (>c) (>) (<)
     (|)                                    (  )
     (>)        TE                          (  )
     (>)           No            VAL        (x)
     (>)    B      798           1          (x)
   PFAFF        ▼      ▼      ▼      ▼
   (PM)(□)     +      +      +      +     (TE
                |      |      |      |      SPEED)
                −      −      −      −
```

(TE SPEED)   ● By pressing the TE/Speed key, the value is taken over and the sewing mode is called up.

ℹ️   After the main switch has been switched off, the machine changes automatically to user level **A**.

Adjustment

13.28.03   List of parameters

Group	Parameter	Description	User level	Setting range	Set value
0	003	Pattern-No	C	0 - 199	1
	004	Stitch position reference point (1 = left; 2 = centre; 3 = right)	C	1 - 3	2
	005	Start position (1 = left; 2 = right)	C	1 - 2	1
	006	Stop position (0 = optional; 1 = left; 2 = right)	C	0 - 2	0
	007	Shell pattern right	C	1 - 4	1
	008	Shell pattern left	C	1 - 4	1
	020	Max.value left needle position [1/10 mm]	C	-50 - 50	-40
	021	Max.value right needle position [1/10 mm]	C	-50 - 50	40
1	101	Control panel key signal (OFF = tone off; ON = tone on)	A	OFF - ON	ON
	102	Start backtacks forwards	C	0 - 9	3
	103	Start backtacks backwards (10 – 13 refer to special backtacks A – D)	C	1 - 13	3
	105	Speed start backtacks	B	200 - 1500	900
	106	Speed start backtacks (ON = using pedal; OFF = constant)	C	OFF - ON	OFF
	108	End backtacks backwards (10 – 13 refer to special backtacks E – H)	C	1 - 13	3
	109	End backtacks forwards	C	0 - 9	3
	110	Speed end backtacks	B	200 - 1500	1000
	116	Soft start stiches (soft start)	A	0 - 10	4
	117	Speed soft start stitches	B	180 - 1200	400
2	220	Speed limit level 12 [min^{-1}]	A	300 - 5000	4600
	221	Speed limit for seam program [min^{-1}]	B	300 - 5000	4600
	222	Constant speed for seam program [min^{-1}]	B	300 - 5000	3000
6	601	Trimming (ON = yes; OFF = no)	B	OFF - ON	ON
	602	ON = trimming with pedal position -1 OFF = trimming with pedal position -2	C	OFF - ON	OFF

PFAFF

Group	Parameter	Description	User level	Setting range	Set value
6	603	ON = pedal rest after trimming OFF = immed. start after seam end	C	OFF - ON	ON
	604	Trimming ON = forwards after half end backtack OFF = backwards too	C	OFF - ON	ON
	605	Speed display (ON = yes; OFF = no)	B	OFF - ON	OFF
	606	Speed level 1 (min.)	B	30 - 550	180
	607	Speed level 12 (max.)	B	300 - 5000	4700
	609	Trimming speed [min^{-1}]	B	60 - 500	180
	624	Start inhibitor (ON = on; OFF = off)	C	OFF - ON	ON
	642	Presser foot switch-on time (tacting) [ms]	C	10 - 200	120
	643	Feed conversion switch-on time (tacting) [ms]	C	10 - 200	100
	651	Automatic lowering of the presser foot (ON = yes; OFF = no)	C	OFF - ON	ON
	660	Bobbin thread count-down counter on (ON = switched on OFF = switched off)	A	OFF - ON	OFF
	665	Start inhibitor ON = when contact closed OFF = when contact open	C	OFF - ON	ON
	668	Thread wiper (ON = on; OFF = off)	B	OFF - ON	ON
7	700	Logical zero mark [increments]	B	0 - 127	45
	702	Needle position [increments] (needle lowered)	B	0 - 63	45
	703	Needle position [increments] (take-up lever raised)	B	100 - 127	117
	705	Needle position [increments] (end of trimming signal)	B	80 - 127	117
	706	Needle position [increments] (start of trimming signal)	B	0 - 80	45

Group	Parameter	Description	User level	Setting range	Set value
7	707	Needle position [increments] (start thread tension release)	B	0 - 80	66
	710	Needle position [increments] (needle raised without trimming)	B	80 - 127	115
	715	On period thread wiper [ms]	B	0 - 2550	120
	718	Standstill brake moment	B	0 - 100	0
	719	Presser foot holding current	B	0 - 100	40
	720	Trimming holding current	B	0 - 100	50
	721	Feed converter holding current	C	0 - 100	40
	722	Acceleration ramp (1 = flat; 20 = steep)	C	1 - 20	20
	723	Brake ramp (1 = flat; 30 = steep)	C	4 - 30	30
	729	Start delay after lowering the presser foot [ms]	B	0 - 2550	120
	730	Lifting delay for presser foot after seam end [ms]	B	0 - 2550	0
	760	No. of stitches to bobbin thread monitor (machine stop at b.d.c. needle bar)	A	0 - 50000	50000
	761	Extension thread tension release/ thread pulling [ms]	B	0 - 2550	0
	797	Hardware test (ON = yes; OFF = no)	B	OFF - ON	OFF
	798	Access level (0 = Level A; 1 = level B; 11 = level C)	A	0 - 255	0
	799	Machine class (1 = 1114)	C	1	1
8	800	Rotation direction of motor, as seen on motor shaft (ON = anti-clockwise / OFF = clockwise)	C	OFF - ON	ON
	805	Rotation direction of stepping motor 2	C	OFF - ON	OFF

PFAFF

Group	Parameter	Description	User level	Setting range	Set value
8	832	Needle position NIS [increments] (needle in material)	C	0 - 127	0
	833	Needle position NAS [increments] (needle out of material)	C	0 - 127	50
	834	Reference point zigzag drive [1/10mm]	C	-50 - 50	0
	880	Starting current main drive	C	1 - 10	8
	881	Filter parameter for positioning control unit	C	0 - 12	5
	884	Proportional amplification of speed control unit (general)	C	1 - 50	35
	885	Integral amplification of speed control unit	C	0 - 50	35
	886	Proportional amplification of positioning control unit	C	1 - 50	30
	887	Differential amplification of positioning control unit	C	1 - 50	30
	889	Time for positioning control (0 = always)	C	0 - 2550	200
	890	Proportional amplification of superordinate speed control unit for the standstill brake	C	1 - 50	25
	891	Proportional amplification of the subordinate speed control unit for the standstill brake	C	1 - 50	20
9	901	Trimming release speed	C	30 - 500	300
	956	Current of stepping motor axis 2	C	31 - 63	48
	957	Current for current reduction of stepping motor axis 2	C	15 - 31	24
	958	Current reduction time stepping motor axis 2	C	0 - 1000	500
	978	Stepping motor 2: Current relief time	C	0 - 990	350

Adjustment

13.29   Explanation of the error messages

Display	Description
Error 1	Pedal operated when machine turned on
Error 4	Reference point of zigzag drive not found
Error 5	Control panel
Error 6	Sewing head recognition system
Error 9	Start inhibitor at standstill (sewing head tilted)
Error 34	Brake path too short
Error 35	Communication with sewing drive unit (parameter limit)
Error 36	Init not ready
Error 41	Incorrect number of reverse stitches in program
Error 60	Power supply **24V** too low
Error 61	Power supply **24V** too high
Error 63	Power supply unit overload (**24V**)
Error 64	Mains voltage
Error 69	No stepping motor start signal
Error 70	Motor blocked
Error 71	Incremental transmitter plug
Error 92	Start inhibitor when motor running (sewing head tilted)
Error 151	System
Error 155	Sewing motor
Error 156	Timeout sewing motor
Error 157	Ramp end
Error 158	Stepping frequency of steppingmotor too high
Error 170	Incorrect transmission
Error 171	Invalid zero mark
Error 175	Interior starting error
Error 222	Dead man's control (communication with sewing drive unit)

13.30   Service functions

The service functions provide help for fault finding and start-up. After the input mode has been called up with the TE/Speed key, with the appropriate authorisation (user level "B" or "C") the menu for selecting service functions can be selected with the Menu key. After the service functions have been selected, the status text "service" appears on the display.

● Switch on the machine.

2x TE SPEED   ● Press the **TE/Speed** key twice to call up the input mode.

● Call up user lever "B" (parameter "**798**" at value "**1**"), see Chapter **13.28.02 Selecting the user level.**

● Press the menu key to callup the service functions.
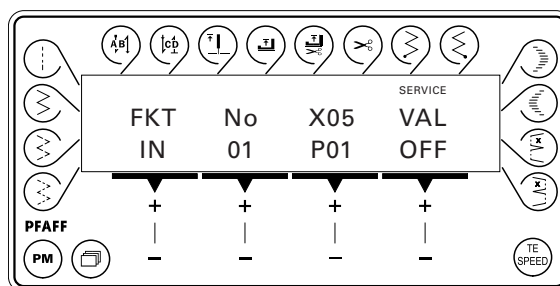
● The individual service functions are displaed under "FKT" and can be selected with tlhe appropriate **+/-** key.

Summary of the service functions

FKT	Description
IN	Read out inputs
	The number of the input "No" can be selected with the corresponding **+/-** key.
OUT	Set/reset outputs
	The number of the output "No" can be selected with the corresponding
	+/- key and set accordingly "VAL"(ON/OFF).
PED	Read out pedal speed control unit
POS	Read out position of main drive
SM2	Move stepping motor SM**2** (zigzag stitch)
	If the type "POS" is selected and the desired value entered with the corresponding **+/-** keys, the stitch length control needle positions in the position entered. If the type "REF" is entered and the selection confirmed with the corresponding **+/-** keys, the needle is moved into the reference position left, centre, right.
	If the type "RUN" is selected and the desired value entered with the corresponding **+/-** keys, the stepping motor moves constantly to and fro between the values P-/P+.

FKT	Description
DM	Adjusting the main drive. If the type "POS" is selected and the desired value entered with the corresponding **+/- keys**, the main drive unit positions in the position entered. If the type "n" is selected and the desired value entered with the corresponding **+/- keys**, the machine runs at the appropriately altered speed. If the type "SC" is selected and the desired value entered with the corresponding **+/-** keys, the value for the stitch count function is changed accordingly. After the type "VER" has been selected, the software version of the motor is displayed.
RES/ PAR	Carry out reset. By confirming the selection with the corresponding **+/- keys**, the values for all parameters are reset (master reset).
RES/ PRG	By confirming the selection with the corresponding **+/- keys**, al seam programs are deleted.
VER	Display software version of the control unit, series number and product number.

PFAFF

13.31   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).**

> ℹ️ 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.de/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!

Fig. 13 - 24
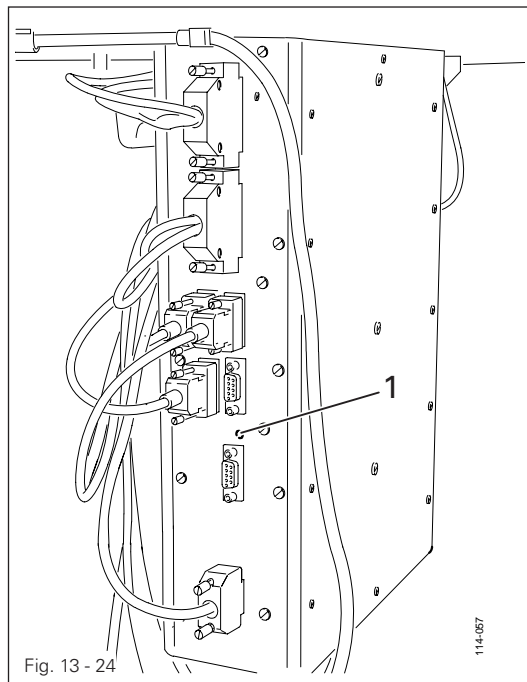
- Switch off the machine.
- Connect the PC (serial interface or appropriate USB-adapter) and the machine control unit (RS**232).** To do so disconnect the plug of the control panel.
- Switch on the PC and start the PFP boot program.
- Select the machine type.
- Press the "programming" button.
- Hold down boot key button **1** and switch on the machine.
- Press "OK" button.
  The software update is carried out, the update status is shown on the bar display of the PFP-boot program.

- During the up-dating procedure the machine must not be switched off.
- 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..

> ℹ️ More information and assistance are available in the file "PFPHILFE.TXT", which can be called up by pressing the button "Hilfe (Help)" in the PFP-boot program.

Circuit diagrams

Reference list for circuit diagrams

|				
A1	Controller Quick P320MS		X46	LED backtacking
A2	Control panel S2		X54	Solenoid valve for thread puller
A14	Sewing head recognition system (OTE)			
			Y1	Solenoid valve for -910/91
B38	Initiator zigzag position		Y2	Solenoid valve for -911/93
			Y3	Solenoid valve for -909/93
H1	Sewing lamp		Y4	Solenoid valve for -900/93
H6	LED backtacking		Y5	Solenoid valve for tension release
			Y14	Solenoid valve for thread puller
M1	Sewing motor			
M2	Stepping motor needle zigzag			
Q1	Main switch			
R6	LED resistance			
S1	Pedal speed control unit			
S21	Backtacking key			
S24	Start inhibitor key			
S43	Thread wiper switch			
X1	Mains switch			
X1A	Control panel S2			
X1B	Sewing head recognition system (OTE)			
X3	Incremental transmitter (sewing motor)			
X4A	Stepping motor needle zigzag			
X4B	Stepping motor			
X5	Inputs			
X8	Sewing motor			
X11A	CAN interface			
X11B	Pedal speed control unit			
X13	Outputs			
X21	Stepping motor needle zigzag			
X31	Backtacking key			
X34	Start inhibitor key			
X38	Initiator zigzag position			
X41	Solenoid valve for -910/91			
X42	Solenoid valve for -911/93			
X43	Solenoid valve for -909/93			
X44	Solenoid valve for -900/93			
X45	Solenoid valve for tension release			

PFAFF

M 1

A 2

SM 2

B 38

Y 3

Y 5

H 6

S 21

Y 14

Y 1

Y 2

S 24

OTE

Y 4

S 1

X1/B
X13
X5
X4/A
X1/A
X8
X3
X11/B

230V
50/60Hz

P 320 MS

A 1

Schrittmotoren

9 poliger D-Sub

Steuergerät A1
Quick P320 MS

9 poliger D-Sub

X4B

Phase 1B	Phase 1A	Phase 2B	Phase 2A			+ 5V	Signal	GND
1	2	3	4	5	6	7	8	9

X4A

Phase 1B	Phase 1A	Phase 2B	Phase 2A			+ 5V	Signal	GND
1	2	3	4	5	6	7	8	9

WH
BN
GN
YE

Lg 700 mm

X21

1	2	3	4

WH
BU
OR
RD
YE
BK

Lg 250 mm

SM
2

M2

SM1 (Zick-Zack)

7   8   9   10

Steuergerät A1
Quick P320MS

Eingänge
25 poliger D-Sub

X5

Pin	Signal
25	+24V
24	UF-Alarm
23	+24V Initiator
18	0V Initiator
16	E8 Ref. Initiator
22	0V
21	0V
20	0V
15	E7
14	E6
13	E13
12	E12
11	E11
10	E10
9	E9
8	E14
7	E16
6	E15
5	E5
4	E4
19	0V
3	E3
2	E2
1	E1
17	0V

X38

GN WH BN

BK BU BN

B38

Initiator Zick-Zack

X34

BN WH
RD BK

S24

Anlaufsperre

X31

WH
BN
RD
BK

S21

Taster

11 12 13 14 15 16 17 18

PFAFF

Steuergerät A1
Quick P320MS

Ausgänge
25 poliger D-Sub

X13

Terminal		Signal
25 A12		
24 A13		30
23 +24V		
14 +24V		29
18 A16		
17 A15		28
13 A11		
12 A10		27
11 A9		
10 A8		26
9 A7		

X54 — TR OR — BK BK — Y14 — Fadenzieher 25
16 A14
15 +24V

X46 — PK — WH — H6 — VR-LED 24
8 A6
22 +24V — BK — R6 5K1

X45 — GN-WH VI — BK — Y5 — Span. Lüftung 23
7 A5
21 +24V

X44 — YE-WH GN — WH — Y4 — Fadenschneider 22
6 A4
19 +24V — BK

X43 — RD-WH YE — RD BU — Y3 — Fadenwischer 21
5 A3
20 +24V — S43 — Y2

X42 — BU-WH BG — WH — VR 20
4 A21
3 A2 — BK

X41 — BR — Y1
X41 — BK BU — RD GN — PFA 19
2 A11 PFA
1 A1 PFA

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