

3734-12/31

INSTRUCTION MANUAL

This instruction manual applies to machines from the following serial numbers onwards:

2 721 275 →



This Instruction Manual is valid for all models and subclasses listed in the chapter "**Specifications**".

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**PFAFF Industriesysteme
und Maschinen AG**

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1 Safety

1.01 Directives

This machine is constructed in accordance with the European regulations contained in the conformity and manufacturer's declarations.

In addition to this Instruction Manual, observe also all generally accepted, statutory and other regulations and legal requirements and all valid environmental protection regulations!

The regionally valid regulations of the social insurance society for occupational accidents or other supervisory organisations are to be strictly adhered to!

1.02 General notes on safety

- This machine may only be operated by adequately trained operators and only after having completely read and understood the Instruction Manual!
- All Notes on Safety and Instruction Manuals of the motor manufacturer are to be read before operating the machine!
- The danger and safety instructions on the machine itself are to be followed!
- This machine may only be used for the purpose for which it is intended and may not be operated without its safety devices. All safety regulations relevant to its operation are to be adhered to.
- When exchanging sewing tools (e.g. needle, roller presser, needle plate, or bobbin), when threading the machine, when leaving the machine unattended and during maintenance work, the machine is to be separated from the power supply by switching off the On/Off switch or by removing the plug from the mains!
- Everyday maintenance work is only to be carried out by appropriately trained personnel!
- Repairs and special maintenance work may only be carried out by qualified service staff or appropriately trained personnel!
- Work on electrical equipment may only be carried out by appropriately trained personnel!
- Work is not permitted on parts and equipment which are connected to the power supply! Exceptions to this are only to be found in the regulations EN 50110.
- Modifications and alterations to the machine may only be carried out under observance of all the relevant safety regulations!
- Only spare parts which have been approved by us are to be used for repairs! We expressly point out that any replacement parts or accessories which are not supplied by us have not been tested and approved by us. The installation and/or use of any such products can lead to negative changes in the structural characteristics of the machine. We shall not be liable for any damage which may be caused by non-original parts.

1.03 Safety symbols



Danger!
Points to be observed.



Danger of injury for operating and specialist personnel!



Caution

Do not operate without finger guard and safety devices. Before threading, changing bobbin and needle, cleaning etc. **switch off main switch.**

1.04 Important points for the user

- This Instruction Manual is a component part of the machine and must be available to the operating personnel at all times.
- The Instruction Manual must be read before operating the machine for the first time.
- The operating and specialist personnel is to be instructed as to the safety equipment of the machine and regarding safe work methods.
- It is the duty of the user to only operate the machine in perfect running order.
- It is the obligation of the user to ensure that none of the safety mechanisms are removed or deactivated.
- It is the obligation of the user to ensure that only authorized persons operate and work on the machine.

Further information can be obtained at your PFAFF agent.

1.05 Operating and specialist personnel

1.05.01 Operating personnel

Operating personnel are persons responsible for the equipping, operating and cleaning of the machine as well as taking care of faults arising in the sewing area.

The operating personnel is obliged to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual!
- never use any working methods which could limit the level of safety in using the machine!
- not wear loose-fitting clothing or jewellery such as chains or rings!
- also ensure that only authorized persons have access to the potentially dangerous area around the machine!
- always immediately report to the person responsible any changes in the machine which may limit its safety!

1.05.02 Specialist personnel

Specialist personnel are persons with a specialist education in the fields of electrics, electronics and mechanics. They are responsible for the lubrication, maintenance, repair and adjustment of the machine.

The specialist personnel is obliged to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual!
- switch off the On/Off switch before carrying out adjustments or repairs and ensure that it cannot be switched on again unintentionally!
- never work on parts which are still connected to the power supply! Exceptions are contained only in the regulations EN 50110.
- replace the protective coverings and close the electrical control box after all repairs or maintenance work!

1.06

Danger



A working area of **1 meter** is to be kept free both in front of and behind the machine while it is in operation so that it is always easily accessible.



Never reach into the sewing area while sewing! Danger of injury by the needle!



Never leave objects on the table or in the needle plate area while adjusting the machine settings! Objects can become trapped or be slung away! Danger of injury!

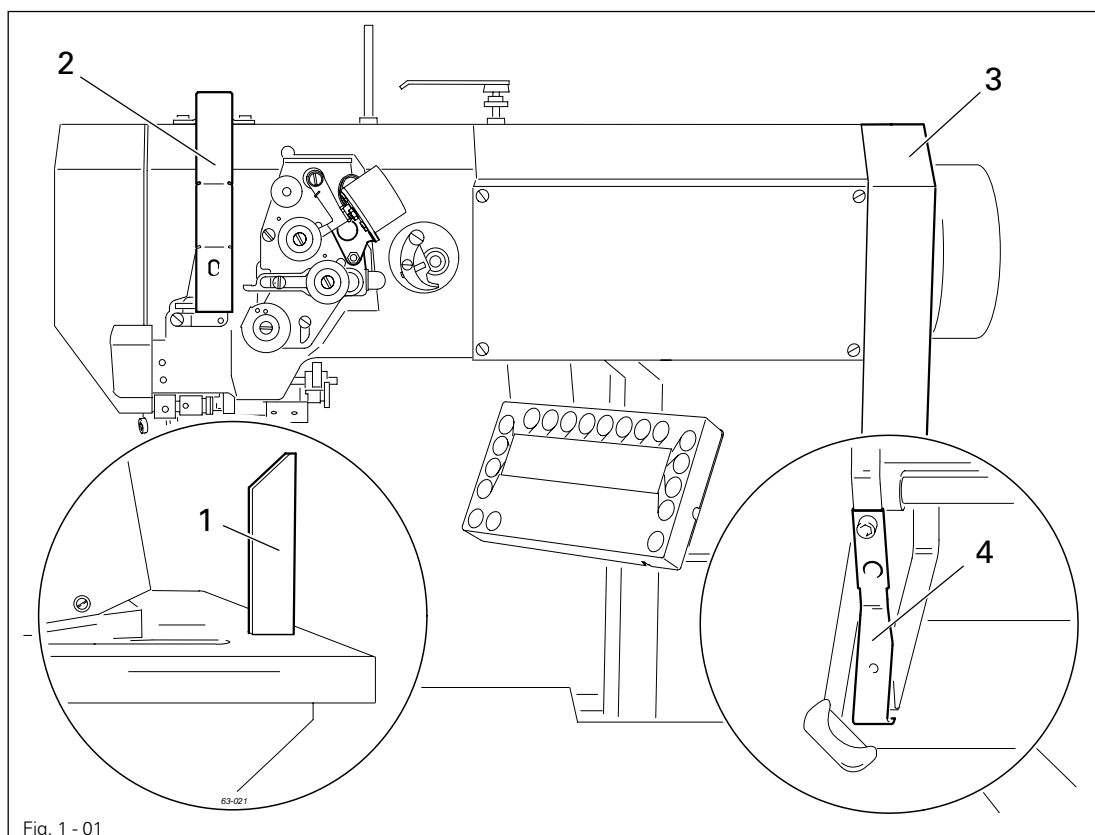


Fig. 1 - 01



Do not operate the machine without support **1!**
 Danger due to top-heavy sewing head!
 Machine can tip over backwards when tilted!



Do not operate the machine without its take-up-lever guard **2!**
 Danger of injury due to the motion of the take-up lever!



Do not operate the machine without cover **3!**
 Danger of injury from moving drive belts!



Do not operate the machine without tilt lock **4!**
 Danger of crushing between sewing head and table top!

2

Proper use

The PFAFF 3734-12/31 is a high-speed, single needle, postbed sewing machine (post to the right of the needle) with forwards and reverse feeding feed-wheel and driven puller.

This machine is used for sewing lockstitch seams in the clothing industry.



Any and all uses of this machine which have not been approved of by the manufacturer are considered to be inappropriate! The manufacturer cannot be held liable for any damage caused by the inappropriate use of the machine! The appropriate use of the machine includes the observance of all operational, adjustment, maintenance and repair measures required by the manufacturer!

3 Specifications**3.01 PFAFF 3734-12/31[▲]**

Stitch type: 301 (lockstitch)

Roller presser clearance: 9 mm

Clearance width: 245 mm

Clearance height: 115 mm

Post height: 180 mm

Sewing head dimensions:

Length: approx. 615 mm

Width: approx. 240 mm

Height (above table): approx. 500 mm

Bed-plate dimensions: 518 x 177 mm

Max. speed: 3500 s.p.m. ♦

Connection data:

Operating voltage: 230 V ± 10%, 50/60 Hz, alternating voltage

Max. power consumption: 1,2 kVA

Fuse protection: 1 x 16 A, inert

Noise data:

Noise emission level at workplace with a sewing speed of 2700 spm: $L_{pA} < 80$ dB(A) ■
(Noise measurement in accordance with DIN 45 635-48-A-1, ISO 11204, ISO 3744, ISO 4871)

Net weight of sewing head: approx. 61 kg

Gross weight of sewing head: approx. 71 kg

▲ Subject to alternation

♦ Varies according to material, work process and stitch length

■ $K_{pA} = 2,5$ dB**3.02 Model, needles and threads**

Model: A

Needle system: 134-35

Needle size in 1/100 mm: 80

Max. thread size: 120

4 Disposal of machines

- The proper disposal of machines is the responsibility of the customer.
- The materials used in the machines are steel, aluminium, brass and various plastics. The electrical equipment consists of plastics and copper.
- The machine is to be disposed of in accordance with the locally valid environmental protection regulations. If necessary, a specialist is to be commissioned.



Special care is to be taken that parts soiled with lubricants are separately disposed of in accordance with the locally valid pollution control regulations!

5 Transport packaging and storage

5.01 Transport to the customer's premises

All machines are delivered completely packed.

5.02 Transport within the customer's premises

The manufacturer bears no liability for transport within the customer's premises or to the individual locations of use.

Always ensure that the machine is only transported upright.

5.03 Disposal of the packaging

The packaging of these machines consists of paper, cardboard and VCE fibre.

The proper disposal of the packaging is the responsibility of the customer.

5.04 Storage

The machine can be stored for up to 6 months if not in use. During this time it should be protected from dust and moisture.

For longer storage the individual parts of the machine, especially the moving parts, should be protected against corrosion, e.g. by a film of oil.

Explanation of the symbols

6 Explanation of the symbols

In the following section of this Instruction Manual, certain tasks or important pieces of information are accentuated by symbols.

The symbols used have the following meanings:



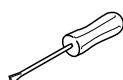
Note, information



Cleaning, care



Lubrication, greasing



Servicing, repairing, adjustment, maintenance
(only to be carried out by specialist personnel)

7 Controls

7.01 On/off switch

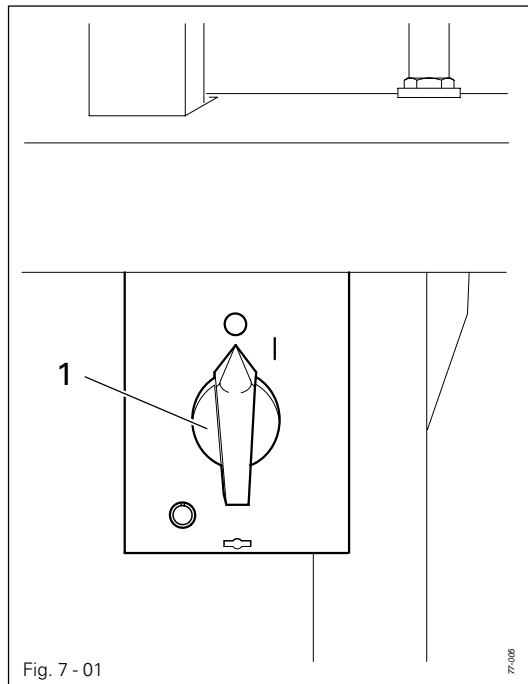


Fig. 7 - 01

77/006

- Turn the machine on/off by turning On/Off switch 1.

7.02 Pedal

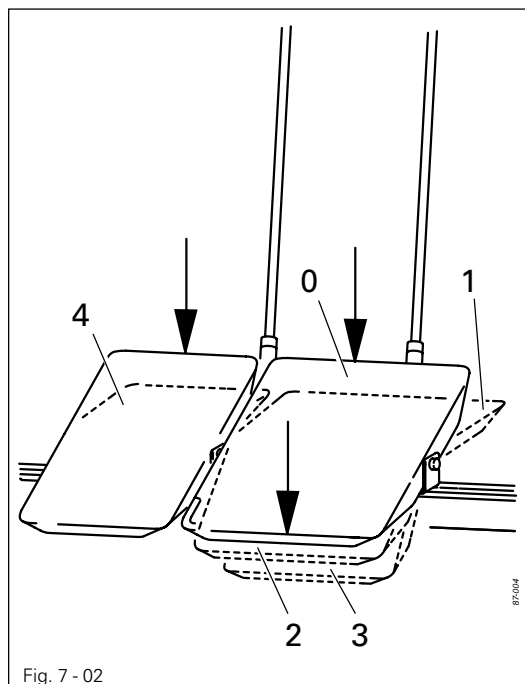


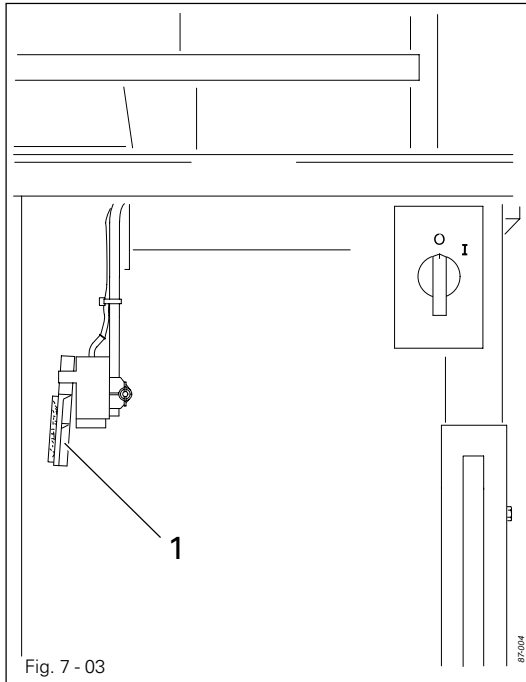
Fig. 7 - 02

87/004

- 0 = Neutral position
- 1 = Sewing
- 2 = Raise roller presser
- 3 = Trim thread and raise roller presser
- 1 + 4 = Variable application of fullness

7.03

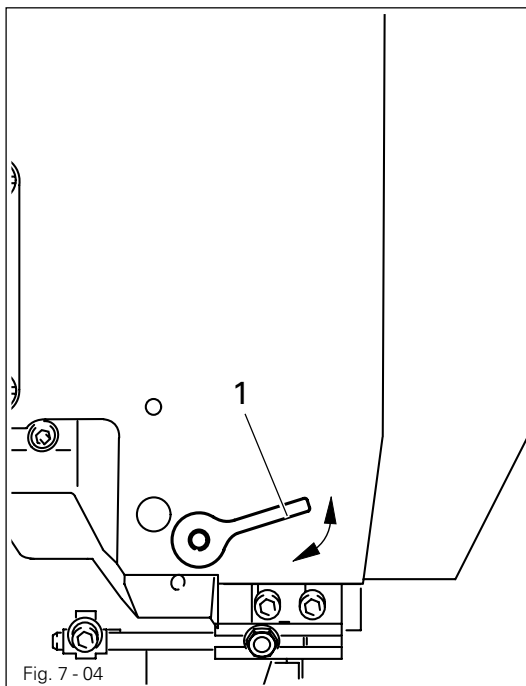
Knee switch



- By operating knee switch 1 it is possible to select 2 pre-set values for fullness.

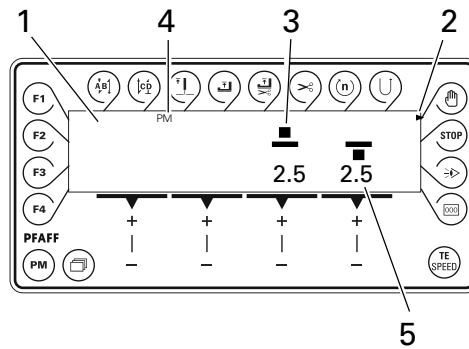
7.04

Lever for raising the roller presser



- Raise the roller presser by turning lever 1.

7.05 Control panel



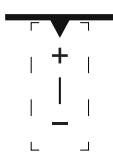
The control panel consists of display 1 and the function keys described below. Display 1 consists of a two-row, alpha-numerical display with 16 symbols per row. The special symbols 3 and texts 4 show the respective status of the function keys and the operating modes of the machine.

During the power-on phase the control panel automatically switches on all LCD segments and a beep tone for a short time. Afterwards the lettering PFAFF appears on the display, until the higher-ranking control unit sends commands to the control panel.

7.05.01 Displays on the screen

- Activated functions are shown with a triangular symbol 2 below or next to the respective function key.
- In sewing mode all relevant sewing data is displayed and can be changed directly depending on the machine status, also see **Chapter 10 Sewing**.
- When entering the parameters, the selected parameter number with the corresponding parameter value is displayed, see **Chapter 12.06 Parameter settings**.

7.05.02 Function keys



The function keys described below are used basically to switch the machine functions on and off.

If a value must be given for the activated function, this is entered with the relevant +/- key. By pressing down the relevant +/- key the corresponding value 5 is changed slowly. If the +/- key is held down longer, the values change more quickly.



Start backtacks

- By pressing this key, the backtacking function at the beginning of the seam (start backtacks) is switched on or off. The number of forward stitches (A) or reverse stitches (B) for the start backtacks can be changed in each case by pressing the +/- key underneath. To convert from double backtacks to single backtacks the relevant number of stitches for the seam segment is set at zero.
- When entering the code number, the key corresponds to the number 1.



End backtacks

- By pressing this key, the backtacking function at the end of the seam (end backtacks) is switched on or off. The number of reverse stitches (C) or forward stitches (D) can be changed in each case by pressing the +/- key underneath. To convert from double backtacks to single backtacks the relevant number of stitches for the seam segment is set at zero.
- When entering the code number, the key corresponds to the number 2.



Needle position

- By pressing this key the function "Needle raised after sewing stop" is switched on or off. When the function is switched on, the needle positions at t.d.c. after sewing stops.
- When entering the code number, the key corresponds to the number 3.



Foot position after stop

- By pressing this key the function "Foot raised after sewing stop" is switched on or off. When the function is switched on, the sewing foot is raised after sewing stops.
- When entering the code number, the key corresponds to the number 4.



Foot position after trimming

- By pressing this key the function "Foot raised after thread trimming" is switched on or off. When the function is switched on, the sewing foot is raised after sewing thread trimming.
- When entering the code number, the key corresponds to the number 5.



Thread trimmer

- By pressing this key the thread trimming function is switched on or off.
- When entering the code number, the key corresponds to the number 6.



- When entering the code number, the key corresponds to the number 7.



- When entering the code number, the key corresponds to the number 8.



- When entering the code number, the key corresponds to the number 9.



Stop

- By pressing this key the corresponding function is switched on or off. If the function is activated, the roller presser and feed wheel drive are switched off, in order to e.g. fill the bobbin thread spool outside the sewing operation.
- When entering the code number, this key corresponds to the number 0.



This key has no function.



This key has no function.



TE/Speed

- By pressing this key once the speed limitation for sewing mode is activated.
By pressing the key twice (within 5 seconds) the machine switches to parameter input mode. In the parameter input mode the lettering "TE" is displayed on the control panel. In the alpha-numerical section of the display the parameters are listed with their corresponding values, see **Chapter 12.06 Parameter settings**.



Scrolling

- When this key is pressed, it is possible to scroll through the input menus on the display.



PM

- By pressing this key the Programmed Sewing function is switched on or off. When the function is switched on, the lettering "PM" appears in the display of the control panel.
The parameters of the programs are shown in the alpha-numerical section of the display.



F1

This key has no function.



F2

This key has no function.



F3

This key has no function.



F4

- After this key has been pressed, the next bartack will not be sewn.

Mounting and commissioning the machine

8 Mounting and commissioning the machine



The machine must only be mounted and commissioned by qualified personnel!
All relevant safety regulations are to be observed!



If the machine is delivered without a table, it must be ensured that the frame and the table top which you intend to use can hold the weight of the machine and the motor, even while sewing.

8.01 Mounting

The necessary electricity supply must be available at the machine's location.
There must be a stable and horizontal surface and adequate lighting at the machine's location.



Due to reasons of packaging, the table top is lowered for transport.
The following is a description of how to adjust the height of the table top.

8.01.01 Adjusting the table-top height

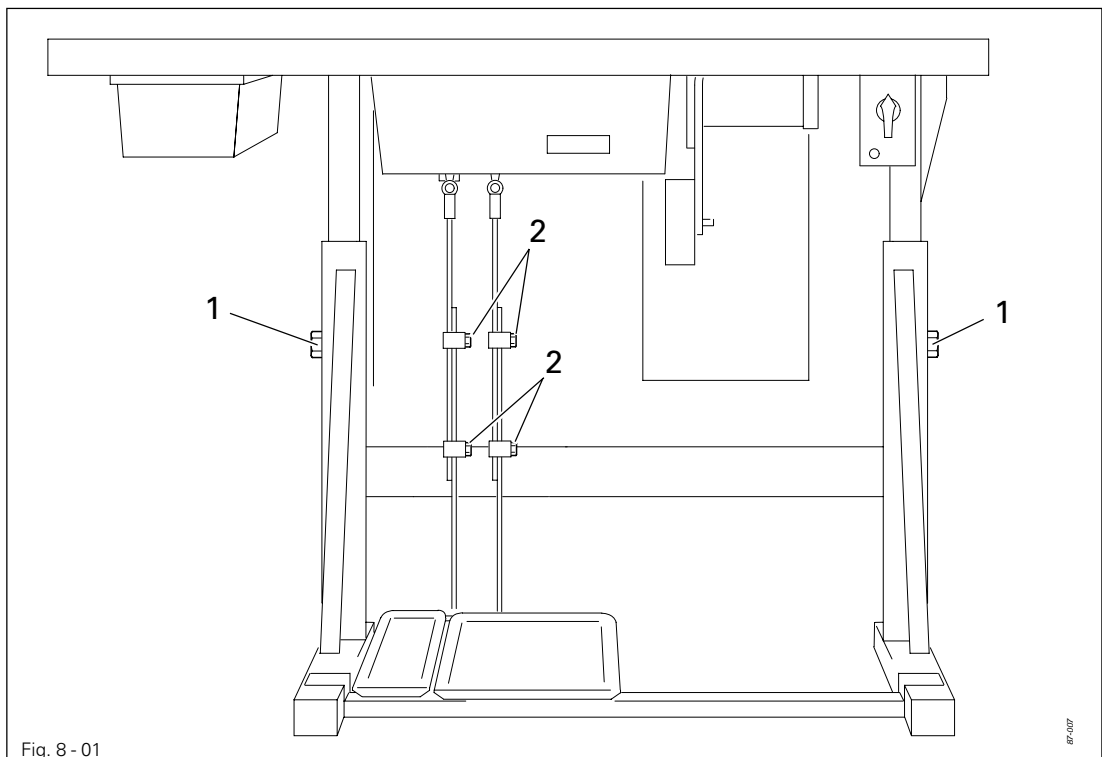
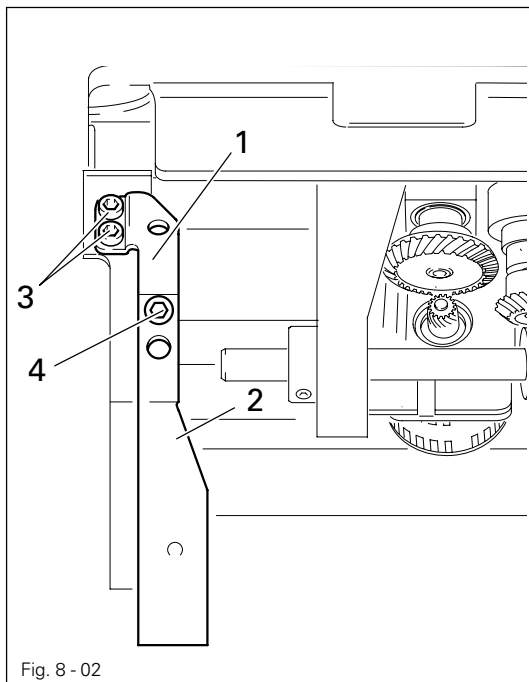


Fig. 8 - 01

- Loosen screws 1 and 2 and set the desired table-top height
- Tighten screws 1 well.
- Adjust the position of the pedal so that you can operate it comfortably and tighten screw 2.

8.01.02 Fitting the tilt lock



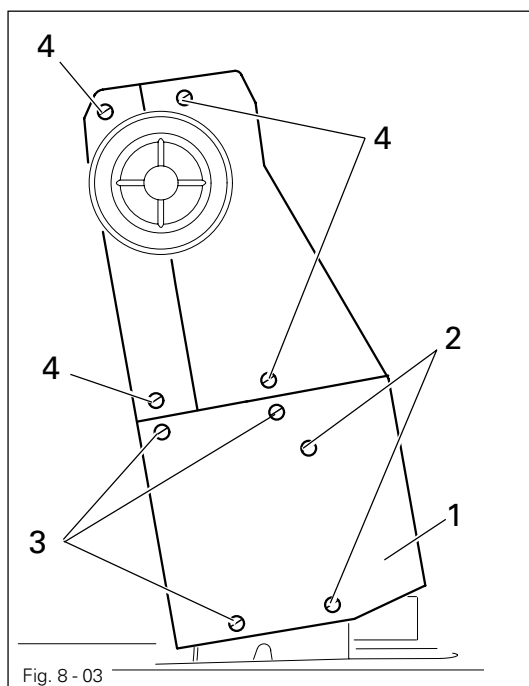
Switch off the machine!
Danger of injury if the machine is started accidentally!

- Screw on the tilt lock parts 1 and 2, provided in the accessories, using screws 3 and 4.



Do not operate the machine without tilt lock 1. Danger of crushing between sewing head and table top!

8.01.03 Fitting the machine cover

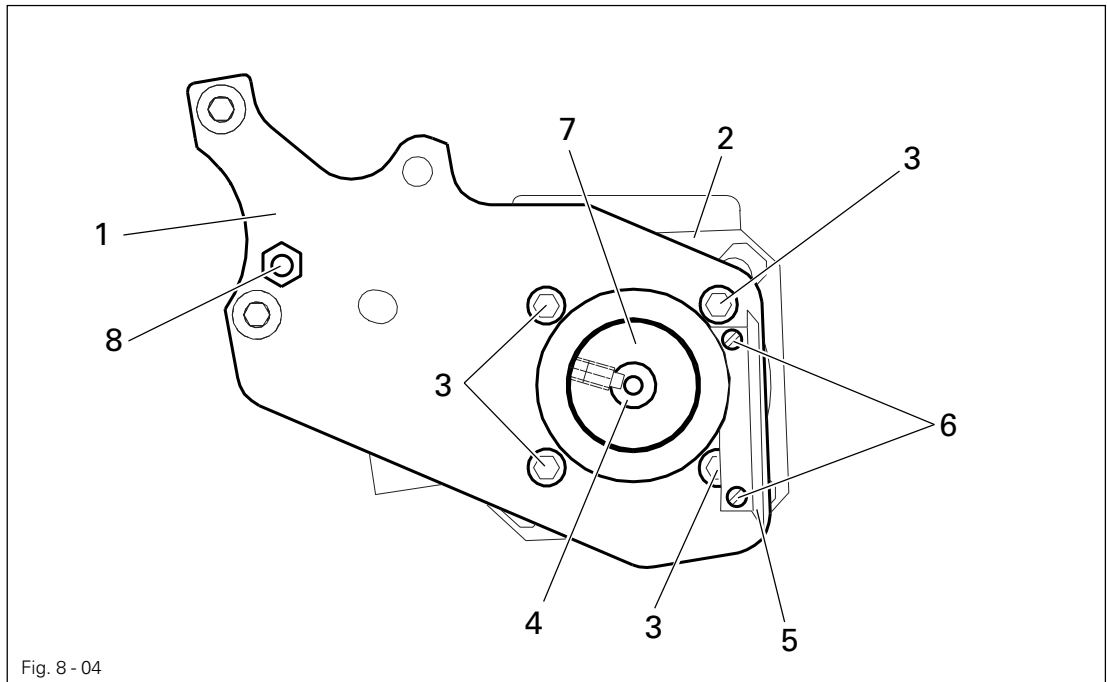


- Slide the slots of the lower section of the cover 1 behind the heads of screws 2 and attach with screws 3, then tighten screws 2 through the holes.
- Attach right and left cover sections with screws 4.

Mounting and commissioning the machine

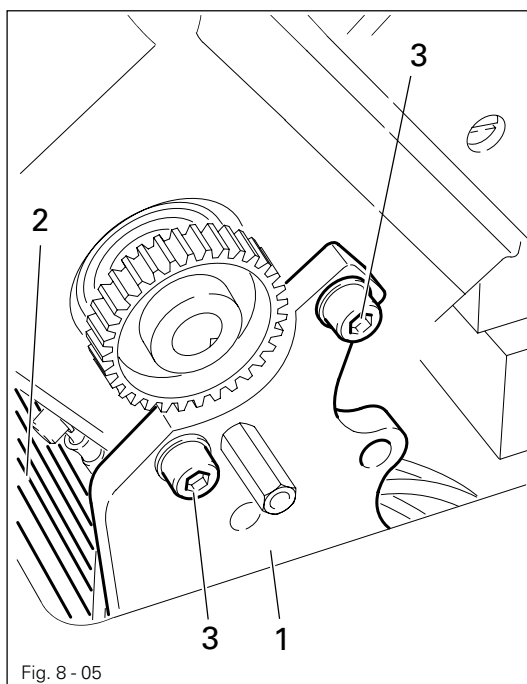
8.02 Mounting the flange motor

8.02.01 Mounting the flange motor to the bearing plate



- Attach bearing plate 1 to motor 2 with screws 3 as shown in Fig. 8 - 04.
- Remove the wedge from motor shaft 4.
- Attach angle bracket 5 with screws 6.
- Fit toothed belt wheel 7 to the motor shaft 4, so that the point of the screw is located in the groove of the motor shaft.
- Screw threaded stud 8 into the bearing plate 1.

8.02.02 Mounting the flange motor to the machine



- Attach bearing plate 1 of motor 2 to the machine case with screws 3 (only tighten screws 3 slightly).

8.02.03 Connecting the plug-in connections and earth cables

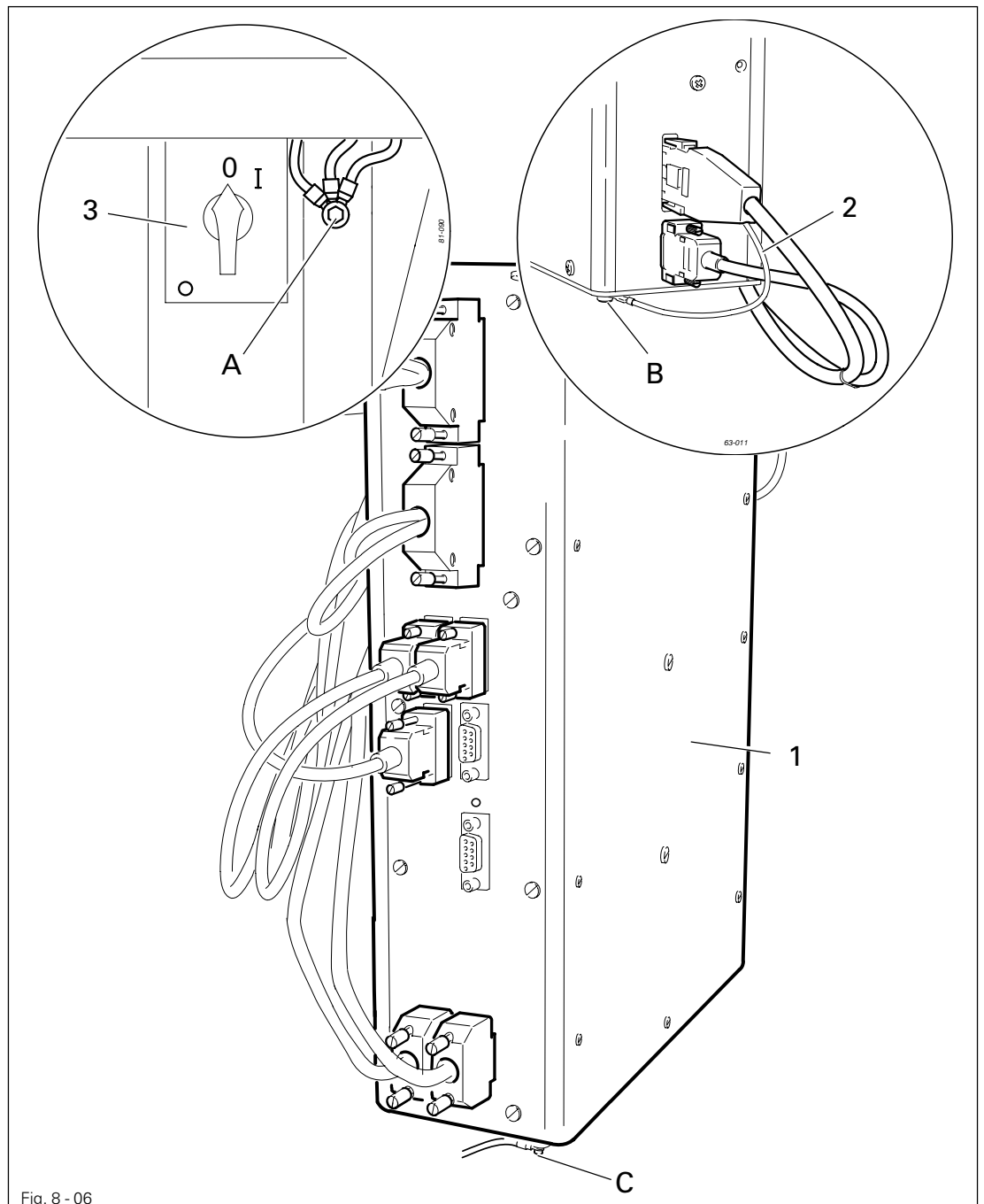


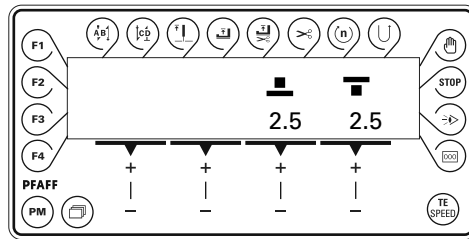
Fig. 8 - 06


- Connect all plugs as labelled to the control box 1.
- Screw the earth cable from the sewing head to earth point A.
- Screw the earth cable 2 from the motor to earth point B.
- Connect earth point C and earth point A with an earth cable.
- Fasten the earth cable of the main switch to earth point A.

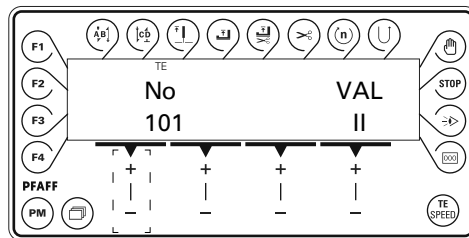
Mounting and commissioning the machine

8.02.04 Mounting the toothed belt / Basic position of the machine drive unit

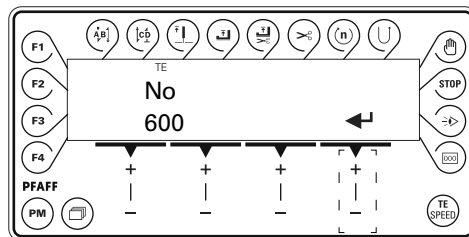
- Switch on the machine.




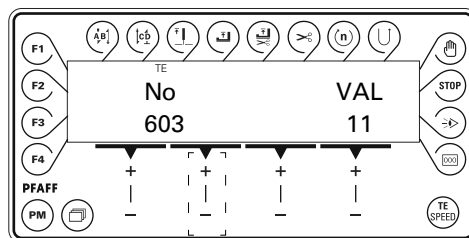
- 2 x  ● Press TE/Speed key twice to select the input mode.




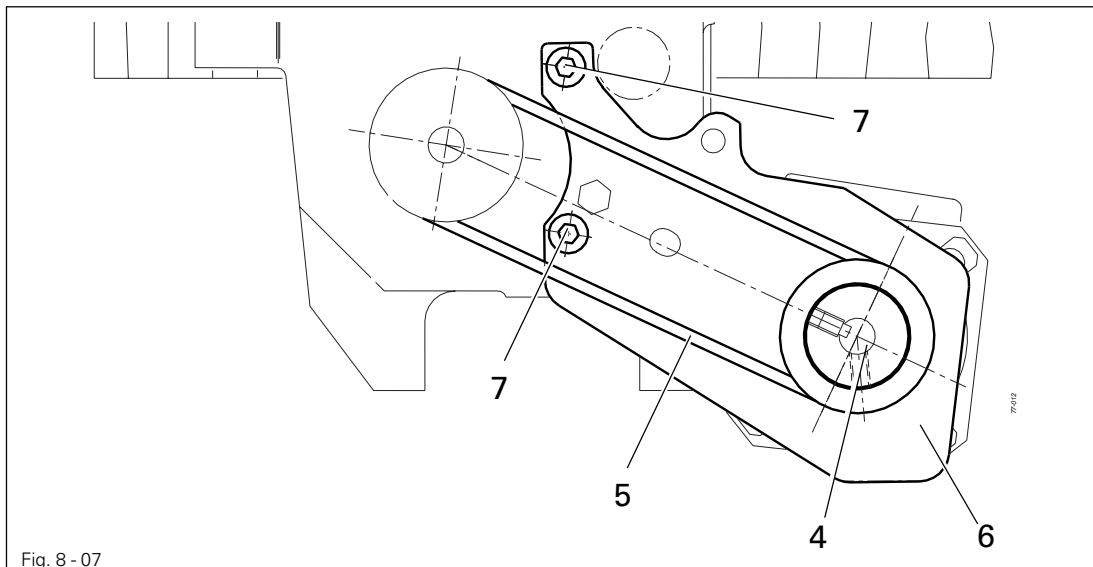
- No ● Select the parameter group "600" by pressing the corresponding +/- key.



-  ● Confirm the selection by pressing the corresponding +/- key.
- Enter the code number, see Chapter 9.08 Entering/changing the code number.



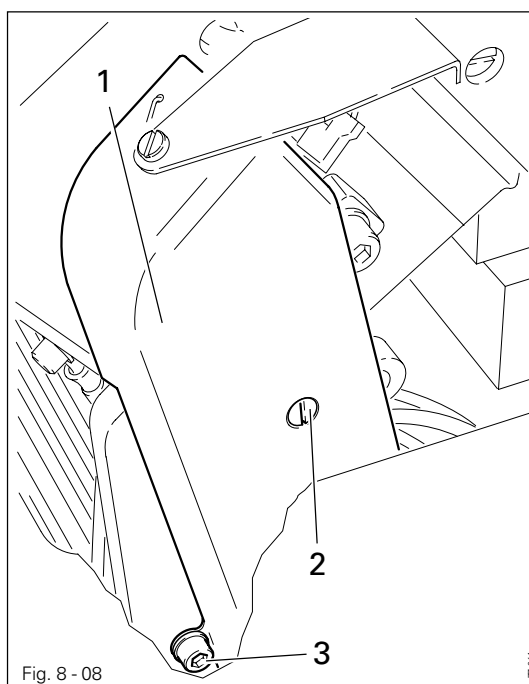
-  ● Select the parameter group "603" by pressing the corresponding +/- key.
- Turn the motor shaft by hand until value "11" appears in the display.
 - Turn the balance wheel in sewing direction until the needle point descending from above, is level with the top edge of the needle plate.
 - Taking care not to turn the motor shaft 4 (Fig. 8 - 07) or the machine, fit synchronous belt 5.



- Swing the bearing plate 6 of the motor, so that the belt 5 is tightened.
- In this position tighten screws 7.
- Turn the balance wheel in sewing direction until the needle point descending from above, is level with the top edge of the needle plate and re-check the value. A tolerance of ± 2 increments is allowed.
- Conclude the adjustment of the sewing motor by pressing the TE/Speed key.



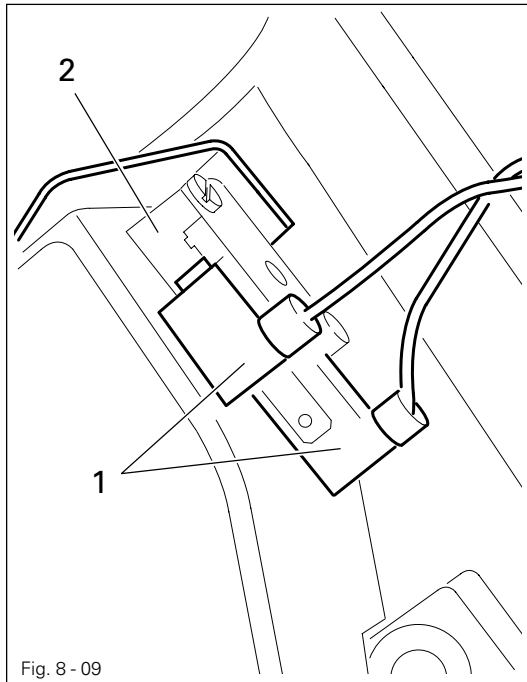
8.02.05 Mounting the belt guard of the flange motor



- Attach belt guard 1 with screws 2 and 3.

Mounting and commissioning the machine

8.02.06 Connecting the safety switch

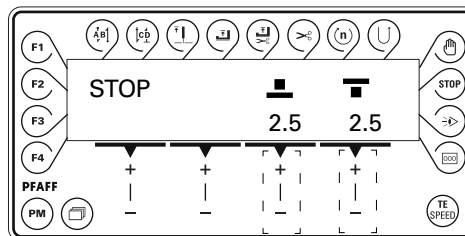


- Connect plug 1 of safety switch 2 as shown in Fig. 8-09.



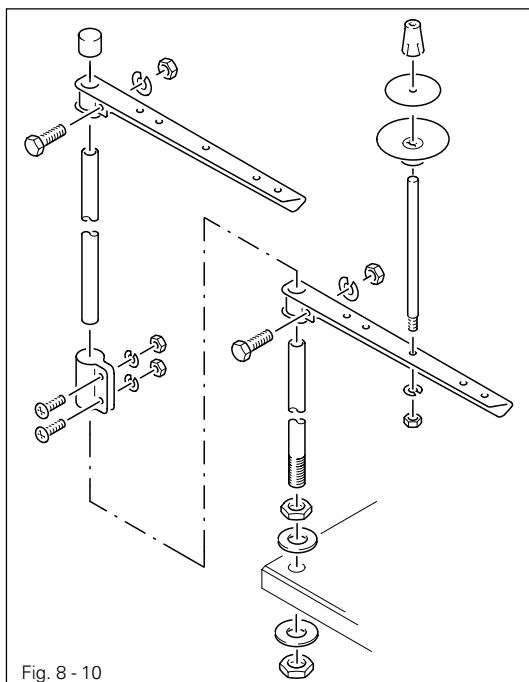
When the sewing head is tilted back, the safety switch prevents the machine starting when the main switch is on.

8.02.07 Checking the function of the start inhibitor



- Switch the machine on at the main switch and tilt back the sewing head. The error message „STOP“ must appear on the control panel.
- If the message does not appear, check the setting of switch 3.
- After the sewing head has been set upright, the machine is ready for operation again.

8.03 Fitting the reel stand



- Fit the reel stand as shown in **Fig. 8-10**.
- Afterwards insert the stand in the hole in the table top and secure it with the nuts provided.

8.04 Commissioning

- Clean the machine thoroughly and then oil it, or fill in oil, see **Chapter 11 Care and Maintenance**.
- Examine the machine, in particular the electric cables, for any damage.
- Have a qualified person check whether the motor can be driven with the existing power voltage.



If there are any differences, the machine must definitely not be operated!



The machine must only be connected to a suitably earthed socket!

- When the machine is running, the balance wheel must turn towards the operator. If this is not the case, have the motor adjusted by specialist staff, see **Chapter 12.06 Parameter settings**.

8.05 Switching the machine on/off

- Switch on the machine, see **Chapter 7.01 Main switch**.

9

Setting up



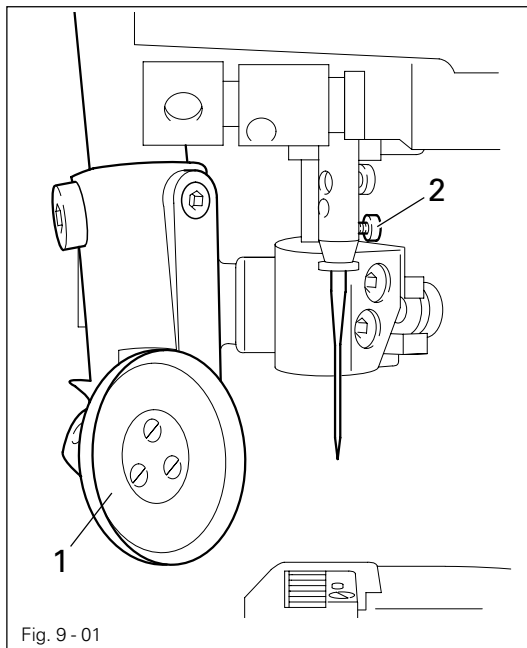
All instructions and regulations in this instruction manual must be observed. Special attention must be paid to all safety regulations!



All setting-up work must only be carried out by personnel with the appropriate training. For all setting-up work the machine must be disconnected from its power supply by turning off the on/off switch, or removing the plug from the electric power socket.

9.01

Inserting the needle



Switch the machine off!
Danger of injury if the machine is started accidentally!



Only use needles from the system intended for the machine, see **Chapter 3 Specifications**.

- Raise the roller presser 1.
- Pull down roller presser 1 a little and swing it towards the left.
- Loosen screw 2 and insert the needle as far as possible. The long needle groove must be facing towards the left.
- Tighten screw 2 and swing the roller presser back into position.



The choice of needle depends on the model of the machine and the thread and material used (see **Chapter 3.02 Needles and threads**).

9.02

Winding the bobbin thread, adjusting the thread tension

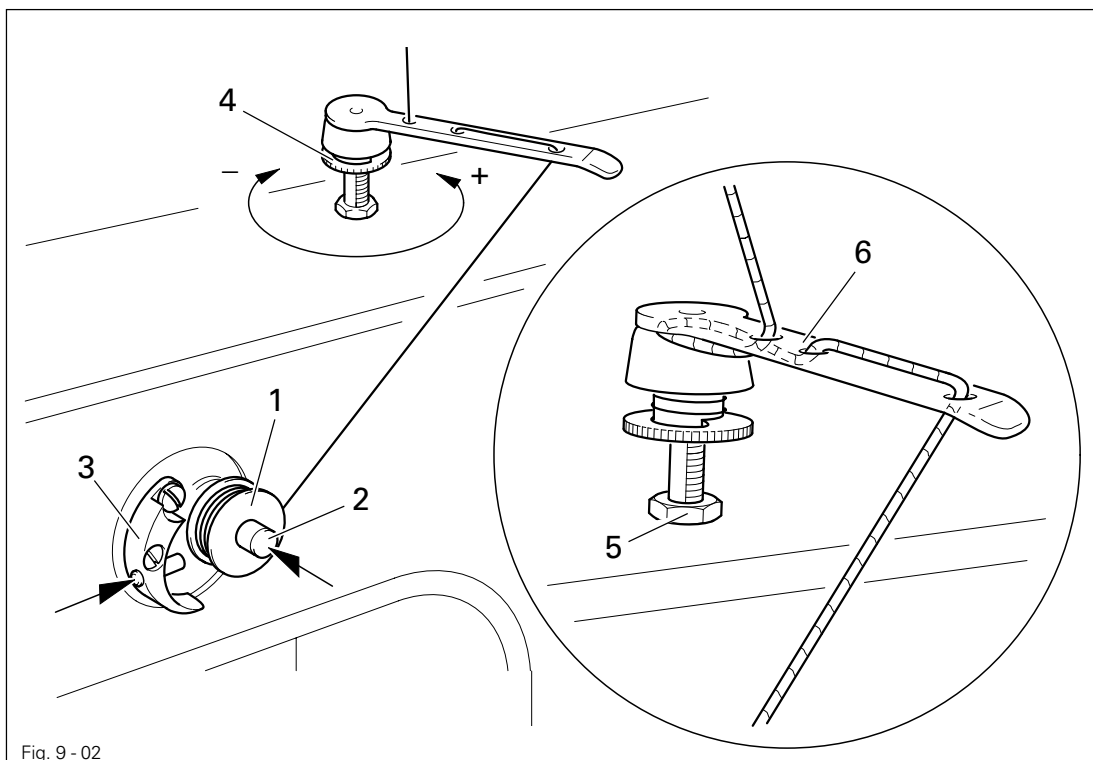


Fig. 9 - 02

- Place an empty bobbin 1 onto bobbin winder spindle 2.
- Thread the bobbin in accordance with Fig. 9 - 02 and wind it clockwise around bobbin 1 a few times.
- Switch on the bobbin winder by pressing the bobbin winder spindle 2 and lever 3 at the same time.



The bobbin is filled during sewing.



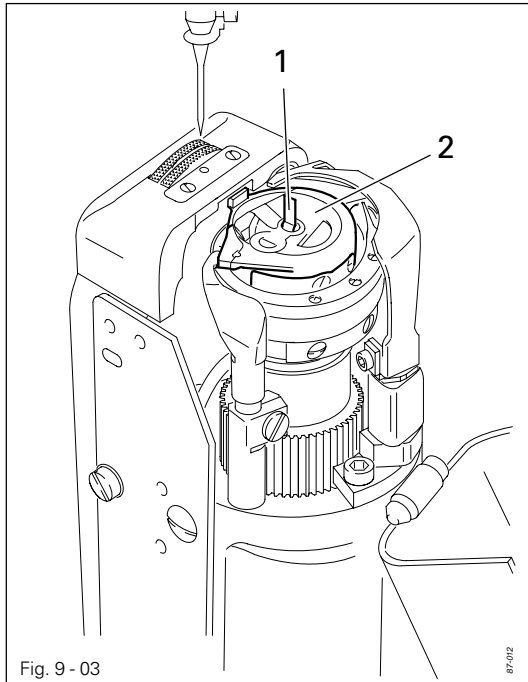
If the bobbin is filled outside the sewing operation, the drive for the roller presser and the feed wheel should be switched off by pressing the **Stop** key. This function of the **Stop** key is only available in the manual sewing mode.

- The tension of the thread on bobbin 1 can be adjusted with knurled screw 4.
- The bobbin winder stops automatically when bobbin 1 is full.

If the thread is wound unevenly:

- Loosen nut 5.
- Turn thread guide 6 accordingly.
- Tighten nut 5.

9.03 Removing / Inserting the bobbin case



Maschine ausschalten!
Switch the machine off!
Danger of injury if the machine
is started accidentally!

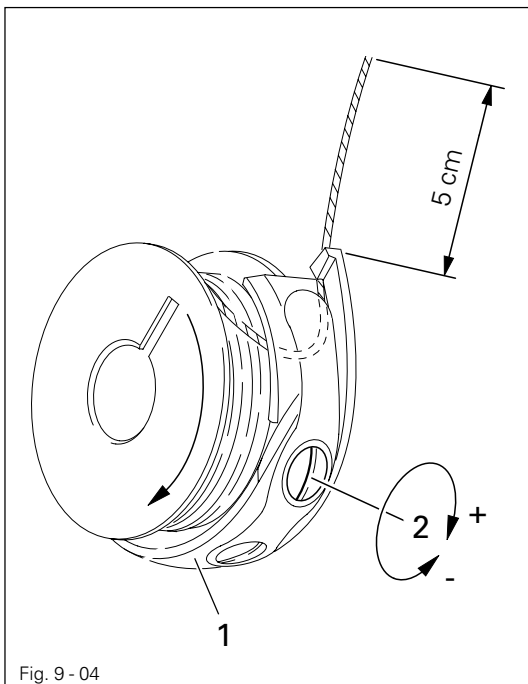
Removing the bobbin case:

- Open the post cap.
- Raise latch 1 and remove bobbin case 2.

Inserting the bobbin case:

- Insert bobbin case 2.
- Close the latch and close the post cap.

9.04 Threading the bobbin case / Adjusting the bobbin thread tension

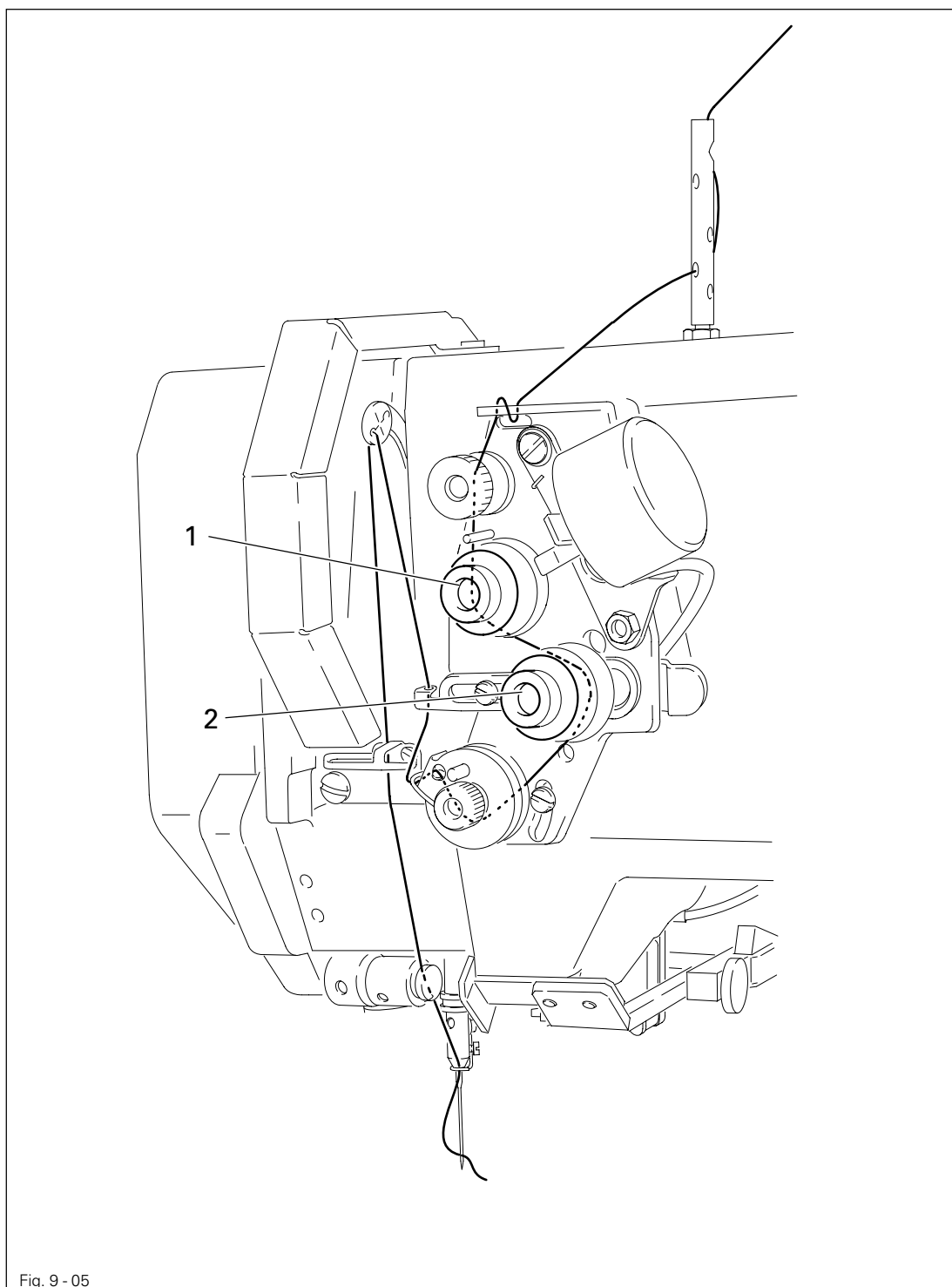


- Insert the bobbin into the bobbin case 1.
- Pass the thread through the slot under spring 2.
- Pass the thread through the notch.
- Adjust the thread tension by turning screw 3.



When the thread is pulled, the
bobbin must rotate in the
direction of the arrow.

9.05 Threading the needle thread / Adjusting the needle thread tension



Switch the machine off!

Danger of injury if the machine is started accidentally!

- Thread needle thread as shown in Fig. 9-05.
- Adjust the needle thread tension by turning knurled screws 1 and 2.

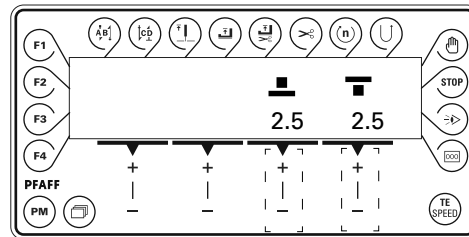
9.06 Entering the stitch length



The stitch length is determined by adjusting the feed strokes of the feed band and the feed wheel. When applying fullness, the feed stroke of the feed band must be larger or smaller than the feed stroke of the feed wheel.

9.06.01 Entering the standard stitch length

- Switch on the machine.

After the machine has been switched on, the current values of the stitch lengths for the roller presser and the feed wheel are shown on the display.

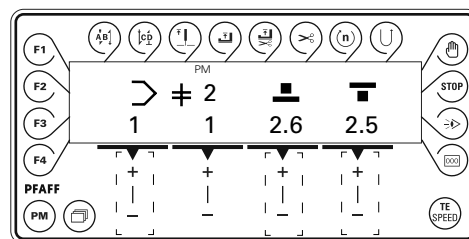






-  ● Set the stitch length (feed stroke) for the roller presser by pressing the corresponding +/- key.
-  ● Set the stitch length (feed stroke) for the feed wheel by pressing the corresponding +/- key.

9.06.02 Entering a second stitch length or amount of fullness



With the **PM** key, in addition to the standard stitch length a second stitch length or fullness setting can be determined. In the programmed sewing mode (text "PM" on the display) it is possible to switch from one setting to the other by operating the knee switch.

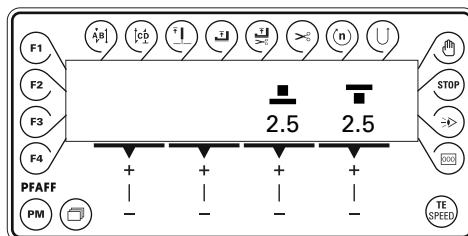



-  ● Switch on the machine and press the **PM** key to move into the programmed sewing mode.
-  ● Select the program number (1 or 2) by pressing the corresponding +/- key.
-  ● Set the stitch length (feed stroke) for the roller presser by pressing the corresponding +/- key.
-  ● Set the stitch length (feed stroke) for the feed wheel by pressing the corresponding +/- key.

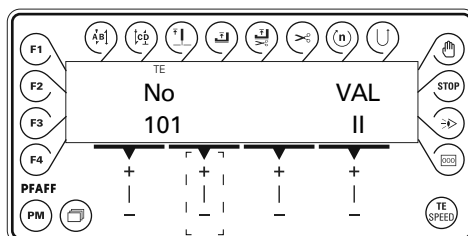
9.06.03 Entering the fullness area for the pedal adjustment

With parameter "107" it is possible to stipulate the maximum stitch length, which can be called up in infinite variations with the fullness pedal (left pedal).

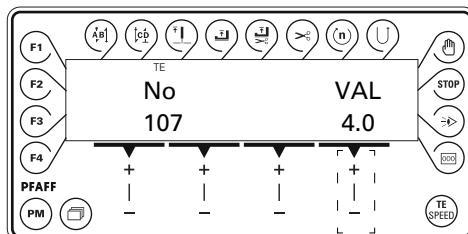
- Switch on the machine.




- 2 x  ● Press the **TE/Speed** key twice to call up the parameter input function.

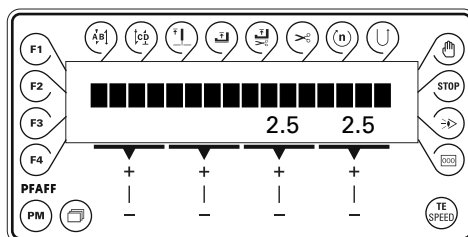


- No ● Select parameter "107" by pressing the corresponding +/- key.



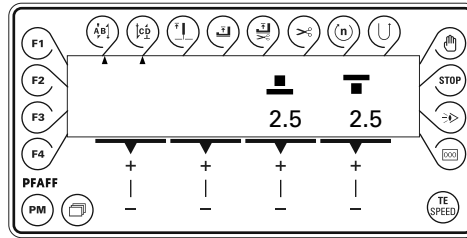
- VAL ● By pressing the corresponding +/- key, set the maximum stitch length for the fullness pedal (left pedal).

-  ● Conclude the parameter input by pressing the **TE/Speed** key. The value enter is stored. When the fullness pedal is activated, a bar display appears on the screen which shows the actual amount of fullness in the fullness area entered, dependent on the pedal setting.



9.07 Entering the start and end backtacks

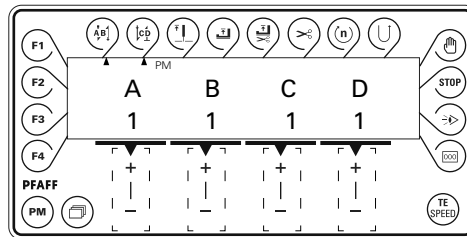
- Switch on the machine.



- Switch on the relevant function by pressing the **Start backtick** and/or **End backtick** keys. (Arrow appears under the corresponding function key)



- By pressing the **Scroll key** switch to the input menu for the start and end backtacks.



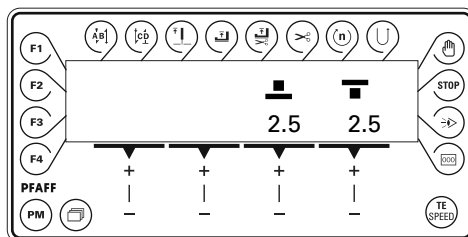
- A** ● By pressing the corresponding +/- key select the desired value for the number of forward stitches (A) of the start backtick.
- B** ● By pressing the corresponding +/- key select the desired value for the number of reverse stitches (B) of the start backtick.
- C** ● By pressing the corresponding +/- key select the desired value for the number of reverse stitches (C) of the end backtick.
- D** ● By pressing the corresponding +/- key select the desired value for the number of forward stitches (D) of the end backtick.




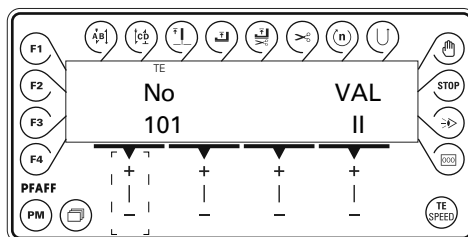
- Switch back to the stitch length input menu by pressing the **Scroll key**.

9.08 Entering/changing the code number

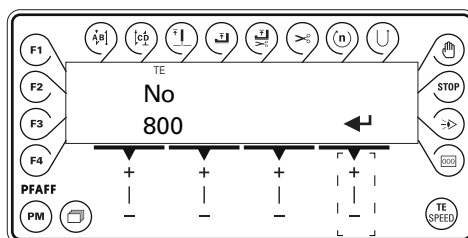
- Switch on the machine.



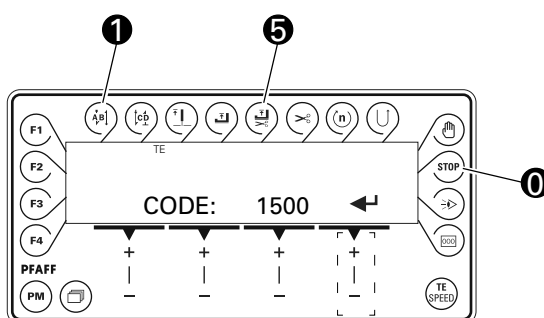
- 2 x  ● Press the TE/Speed key twice to call up the parameter input function.



- No ● By pressing the corresponding +/- key select the parameter group "800".



-  ● Confirm the selection by pressing the corresponding +/- key.



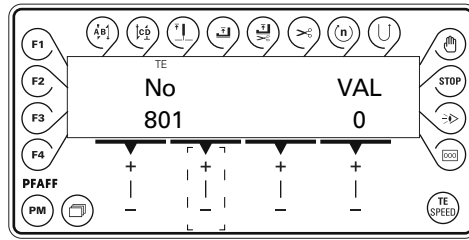
- Enter the code number by pressing the corresponding keys (factory code setting is "1500"), also see **Chapter 7.05.02 Key functions**.

-  ● Conclude code input by pressing the corresponding +/- key.

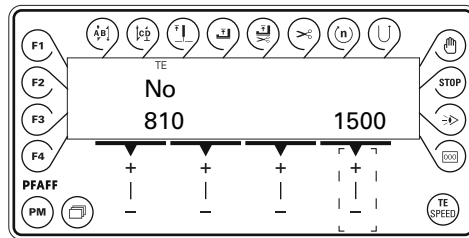


The code input is stored until the machine is switched off at the main switch. As long as the machine is not switched off, there is free access to all parameters without having to enter the code number again.

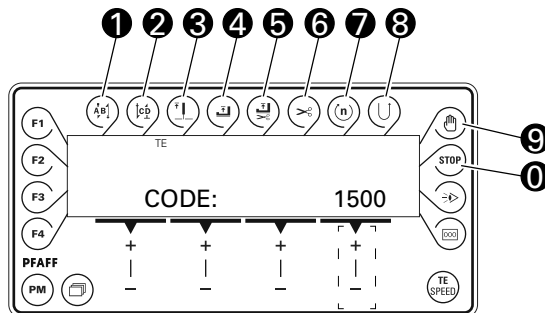
Setting up



- By pressing the corresponding +/- key select the parameter "810".



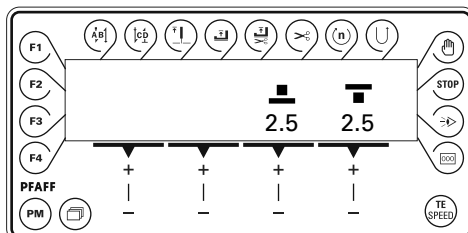
- Confirm the selection by pressing the corresponding +/- key.




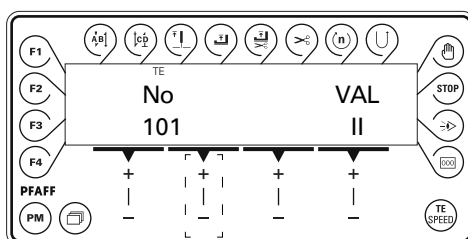
- Enter the desired code by pressing the corresponding keys, also see **Chapter 7.05.02 Key functions**.
- Conclude the input by pressing the corresponding +/- key. The new code number is stored and the parameter input concluded.

9.09 Switching on/adjusting the bobbin thread control with reverse stitch count

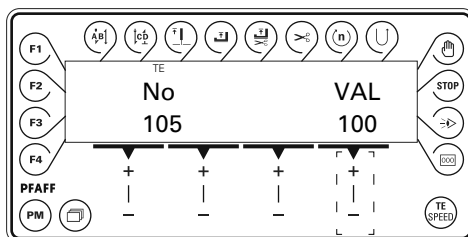
- Switch on the machine.




- 2 x  ● Press the **TE/Speed** key twice to call up the parameter input function.



- No** ● Select parameter „105“ by pressing the corresponding +/- key.



- VAL** ● By pressing the corresponding +/- key set the number of stitches to be sewn with one bobbin.

-  ● Conclude the parameter input by pressing the **TE/Speed** key. The value enter is stored.



To activate the stitch counting function, the value of parameter "104" must be set at "1".



Shortly before the number of stitches entered have been sewn, the signal "WARNING 2" appears on the display after the thread has been trimmed, also see **Chapter 12.08 Warning signals**.

To be able to continue sewing after the bobbin has been changed, the error elimination must be acknowledged by pressing any key on the control panel.

10 Sewing

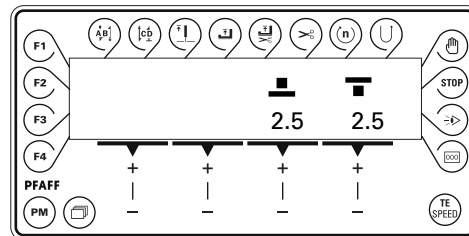
In the sewing mode all relevant settings for the sewing operation are displayed. Functions can be switched on or off by pressing a key. Values for start and end backtacks or stitch placement can be changed directly.

In this mode a difference is made between **manual sewing** and **programmed sewing**. To change from manual to programmed sewing, press the PM key. In programmed sewing the text „PM“ appears on the display. Under the program numbers 1 – 2 seam programs are stored, which can each altered, see **Chapter 10.03 Altering seam programs**.



10.01 Manual sewing

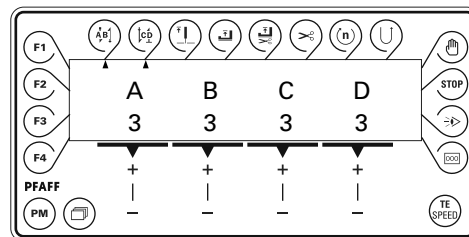
After the machine has been switched on (**Chapter 7.01 Main switch**) and the manual sewing mode has been selected with the PM key, the display appears for entering the stitch length, also see **Chapter 9.06 Entering the stitch length**.



If the backtack function is switched on, the display appears for entering the backtack values, also see **Chapter 9.07 Entering the start and end backtacks**.



It is possible to switch from one display to the other by pressing the scroll key.



Further functions in manual sewing, also see **Chapter 7.05.02 Function keys**:



Start backtacks on/off



Roller presser raised on/off



End backtacks on/off



Roller presser raised at end of seam on/off



Needle position raised on/off



Thread trimming on/off

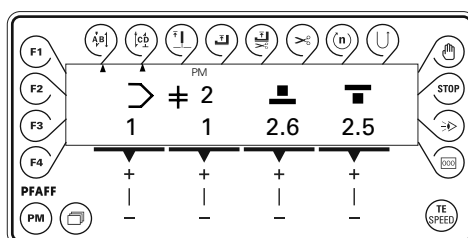
Sewing is carried out with the pedal functions, see **Chapter 7.02 Pedal**.

10.02 Programmed sewing

In programmed sewing seam programs (program numbers 1 and 2) can be called up and altered if necessary. These seam programs are used for the quick and easy production of seams with different stitch lengths or amounts of fullness. With the knee switch function it is possible to move to each of the 2 or 3 seams sections, also see **Chapter 7.03 Knee switch**. The seam programs are designed as cyclic running programs and are terminated with the pedal function, also see **Chapter 7.02 Pedal**.

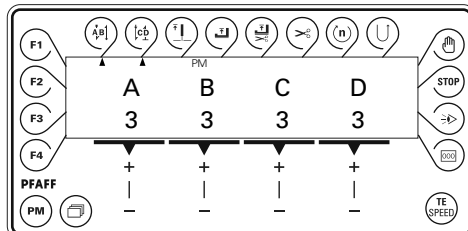
PM

After the machine has been switched on (**Chapter 7.01 Main switch**) and programmed sewing has been selected with the **PM** key, the display appears for selecting the program number, seam section and stitch length.



When the backtack function is activated, the display for entering the backtack values appears, also see **Chapter 9.07 Entering the start and end backtacks**.

It is possible to switch to other displays by pressing the **scroll** key.



Further functions in programmed sewing, also see **Chapter 7.05.02 Function keys**:

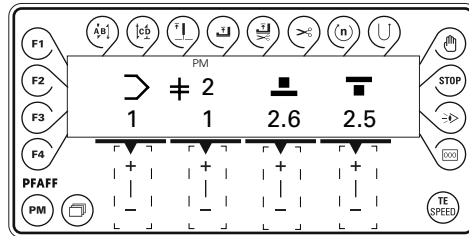
- | | | | |
|--|-------------------------------|--|--|
| | Backtack suppression on/off | | Roller presser raised on/off |
| | Start backtacks on/off | | Roller presser raised after thread trimming on/off |
| | End backtacks on/off | | Thread trimming on/off |
| | Needle position raised on/off | | |

Sewing is carried out with the pedal functions, see **Chapter 7.02 Pedal**.

10.03 Altering seam programs

- Switch on the machine.

- **PM** Select the programmed sewing mode with the **PM** key.

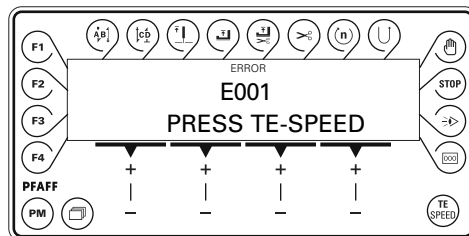


- With the corresponding +/- key select the seam program to be altered.
- With the corresponding +/- key select the seam section of the seam program which is to be altered.
- By pressing the corresponding +/- key select desired value for the stitch length of the roller presser.
- By pressing the corresponding +/- key select desired value for the stitch length of the feed wheel.

10.04 Error messages

If an error occurs, the text „ERROR“ appears on the display, together with an error code and short instructions. An error message is caused by incorrect settings, defective elements or seam programs and by overload conditions.

For an explanation of the error codes see **Chapter 12.07 Explanation of the error messages**.



- Eliminate the error.

- **TE SPEED** Confirm error elimination by pressing the **TE/Speed** key.

11 Care and maintenance

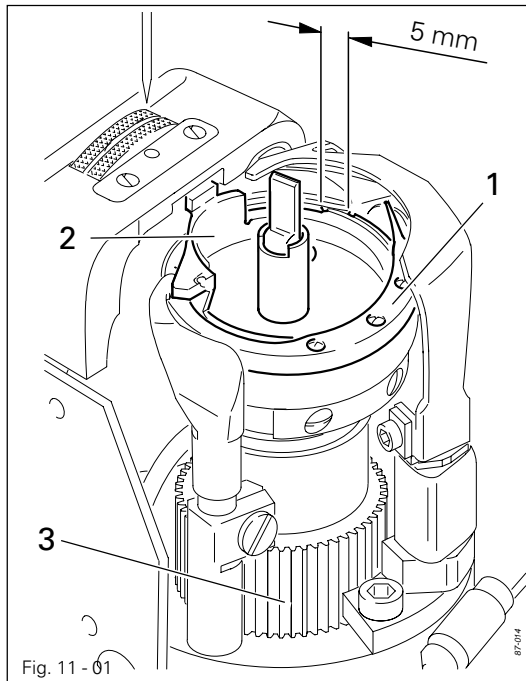
Cleaning	daily, several times if in continuous operation
Oiling the hook	daily, before operation
Checking the oil levels	daily, before operation
Lubricating the bevel gears	once a year



These maintenance intervals are calculated for the average running time of a single shift operation. If the machine is operated more than this, shorter intervals are recommended.

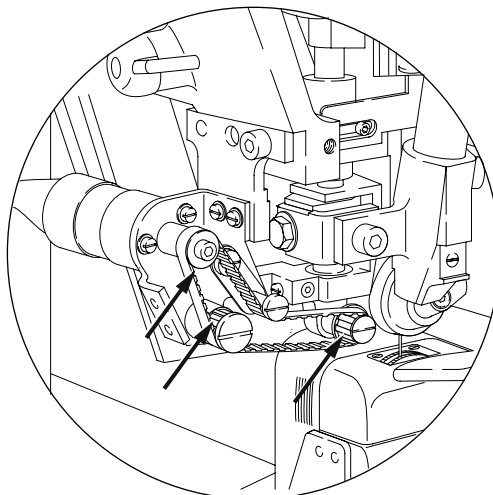
11.01 Cleaning

Clean the hook, hook compartment and toothed wheel **3** daily, several times if in continuous use.

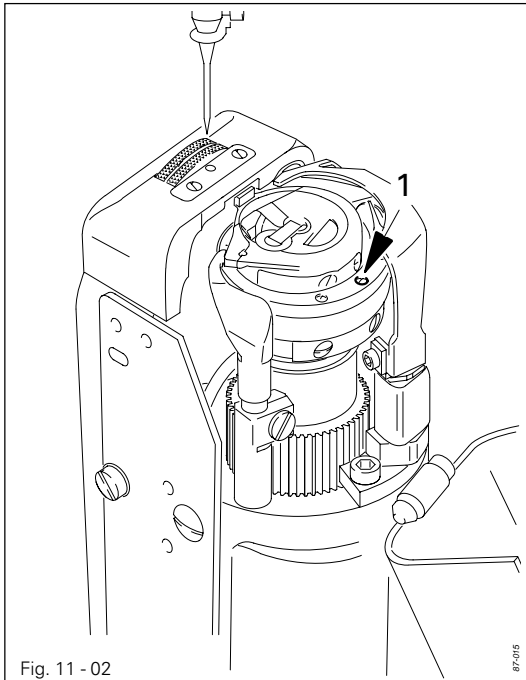


Switch the machine off!
Danger of injury if the machine is started accidentally!

- Bring the needle bar to its highest position.
 - Open the post cap and remove the bobbin case cap and the bobbin.
 - Unscrew hook gib **1**.
 - Turn the handwheel until the point of bobbin case **2** penetrates into the groove of the hook race approx. **5 mm**.
 - Remove bobbin case **2**.
 - Clean the hook race with paraffin.
 - When inserting the bobbin case **2**, ensure that the horn of the bobbin case **2** engages in the groove of the needle plate.
 - Screw hook gib **1** back on and close the post cap.
-
- Remove the puller cover and clean the puller gears daily, several times if in continuous operation.



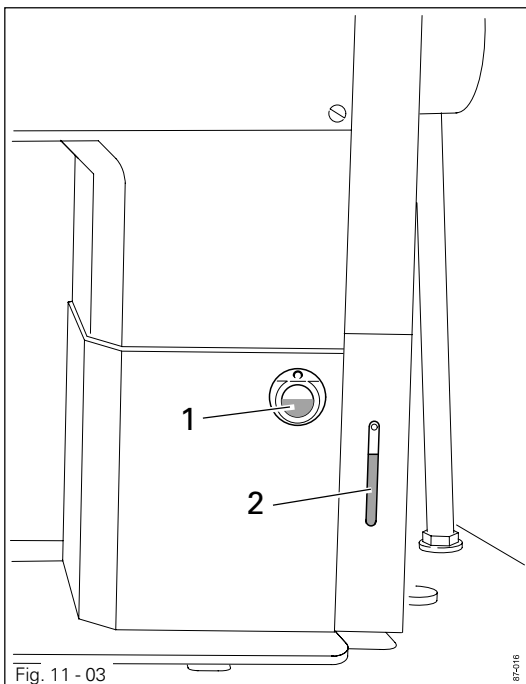
11.02 Oiling the hook



Switch the machine off!
Danger of injury if the machine is started accidentally!

- Pour **1-2 drops** of oil into hole 1 of the hook gib daily.
- Before commissioning the machine, and after long periods out of operation, pour a few drops of oil into the hook race (see arrow).

11.03 Checking the oil levels



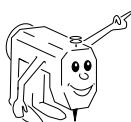
Before each operation check the oil levels..

Oil must always be visible in the reserve tanks 1 and 2.

- If necessary, fill in oil through the respective hole of the reserve tank.

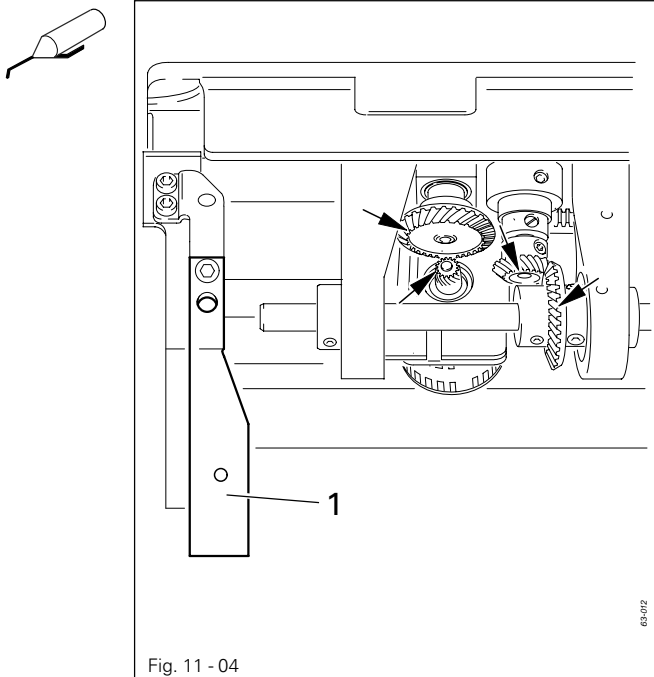


Use only oil with a mean viscosity of 22.0 mm²/s at 40°C and a density of 0.865 g/cm³ at 15°C.



We recommend PFAFF sewing machine oil Best.-Nr. 280-1-120 144.

11.04 Lubricating the bevel gears

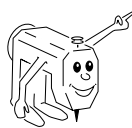


Switch the machine off!
Danger of injury if the machine is started accidentally!

- All bevel gears must be supplied with new grease once a year.
- Tilt the sewing head back onto the support.
- To set the sewing head upright, press tilt lock 1 backwards and set the sewing head upright using both hands.



Use both hands to set the sewing head upright!
Danger of crushing between the sewing head and the table top!



We recommend PFAFF sodium grease with a dripping point of approx. 150C,
Order No. 280-1-120243.

12 Adjustment



Unless stated otherwise, during all adjustment work the machine must be disconnected from the electric and pneumatic power supply!
Danger of injury if the machine is started accidentally!

12.01 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.

12.02 Werkzeuge, Lehren und sonstige Hilfsmittel

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of wrenches with jaw widths from 7 to 13 mm
- 1 set of Allen keys from 1.5 to 6 mm
- 1 adjustable clamp (part no. 08-880 137 00)
- 1 metal ruler (part no. 08-880 218-00)
- 1 locking pin for needle bar rise (part no. 61-111 641-39)
- Needles, system 134-35 R
- Threads and test material.

12.03 Abbreviations

TDC = top dead center

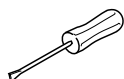
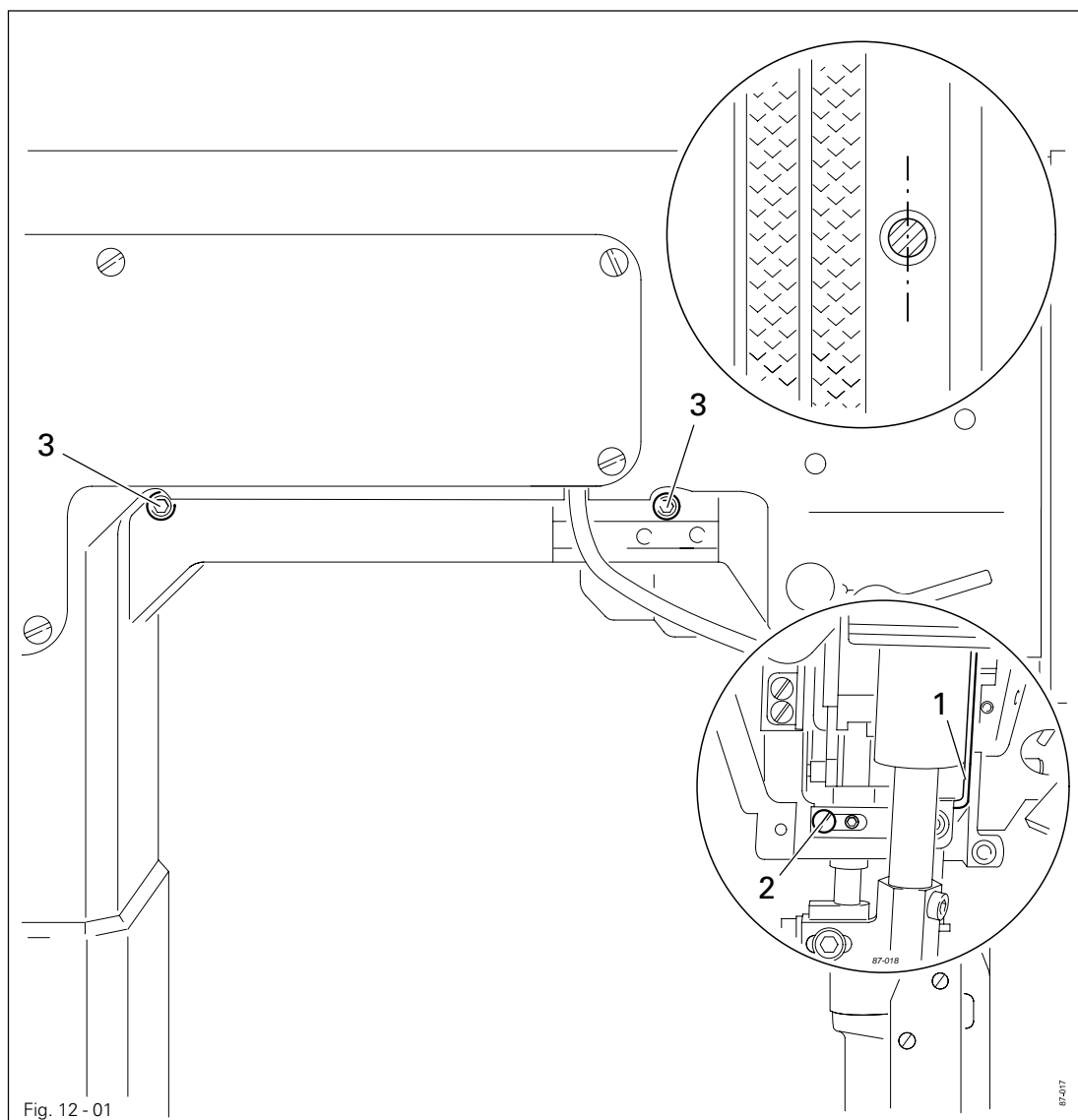
BDC = bottom dead center

12.04 Adjusting the basic machine

12.04.01 Positioning the needle in the direction of sewing

Requirement

The needle must penetrate the middle of the needle hole as viewed in the direction of sewing.



- Move the needle bar frame 1 (screws 2 and 3) in accordance with the **requirement**.



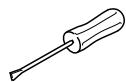
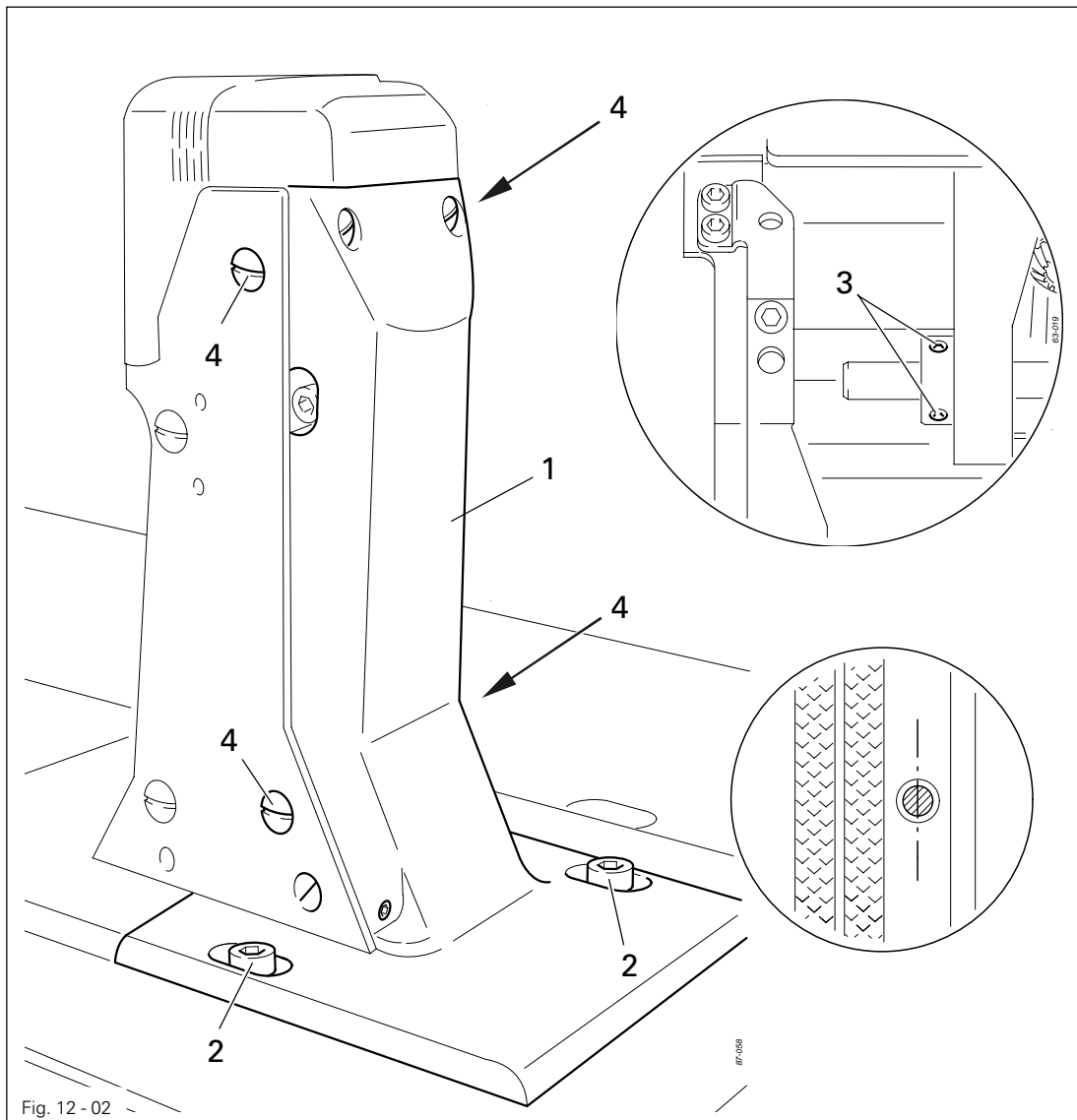
Screws 3 are accessible through the holes on the back of the housing.

Adjustment

12.04.02 Positioning the needle across the direction of sewing

Requirement

The needle must penetrate the middle of the needle hole as viewed across the direction of sewing.



- Move the feed wheel post 1 (screws 2, 3 and 4) in accordance with the **requirement**.



Screws 4 remain loosened for the following adjustments.

12.04.03 Preadjusting the needle height

Requirement

With the needle bar at TDC there must be approx. **21 mm** between the point of the needle and the needle plate.

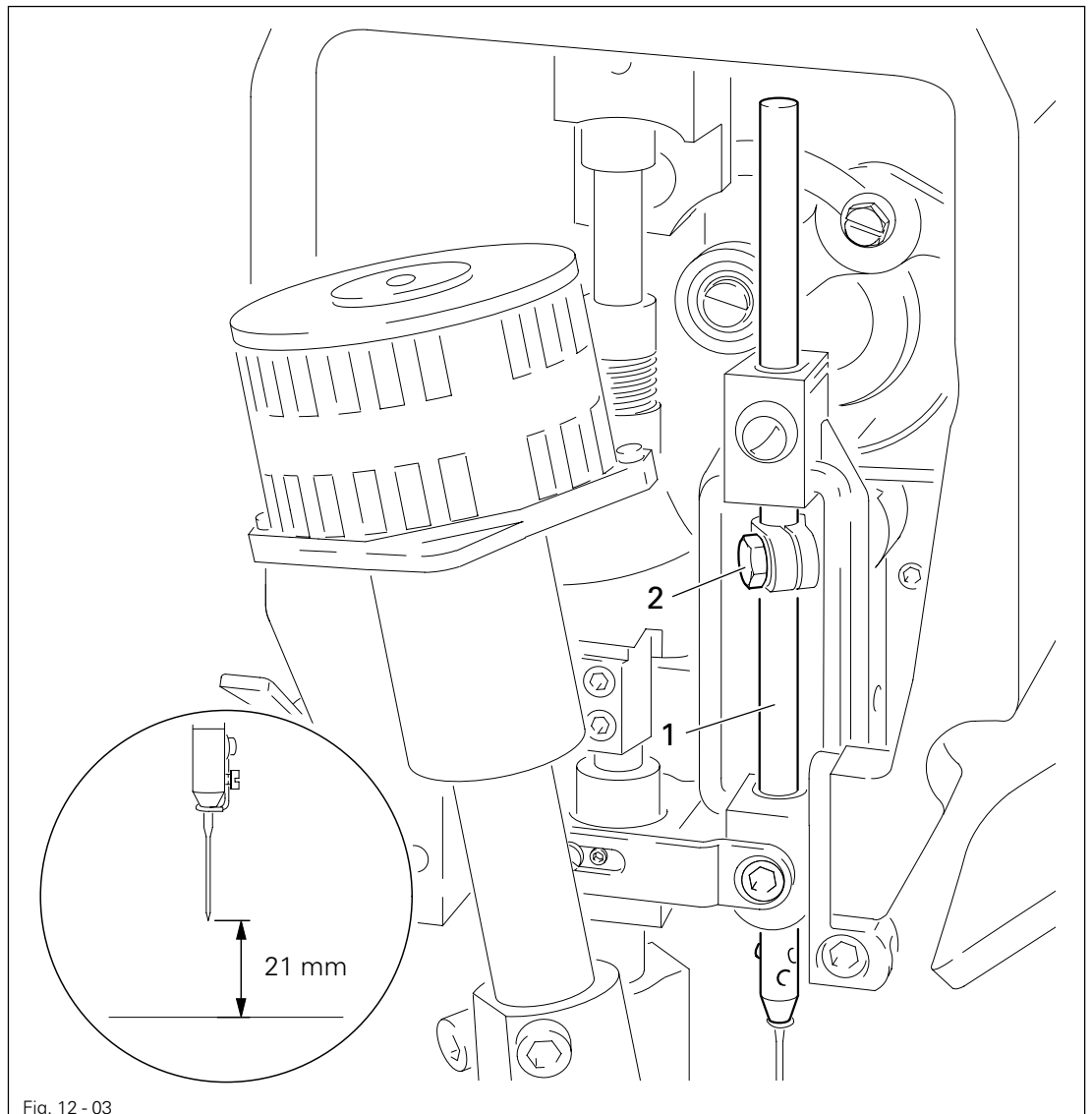
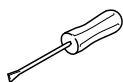


Fig. 12 - 03



- Move the needle bar 1 (screw 2) in accordance with the **requirement** without turning it.

12.04.04 Needle rise, hook-to-needle clearance, needle height and needle guard

Requirement

When the needle bar is positioned at 2.0 mm after b.d.c.

1. The point of the hook must be pointing to the centre of the needle and have a clearance of **0.05 – 0.1 mm** to the needle.
2. The top edge of the needle eye must be **0.8 – 1.00 mm** below the hook point and
3. The needle guard **7** must lightly touch the needle.

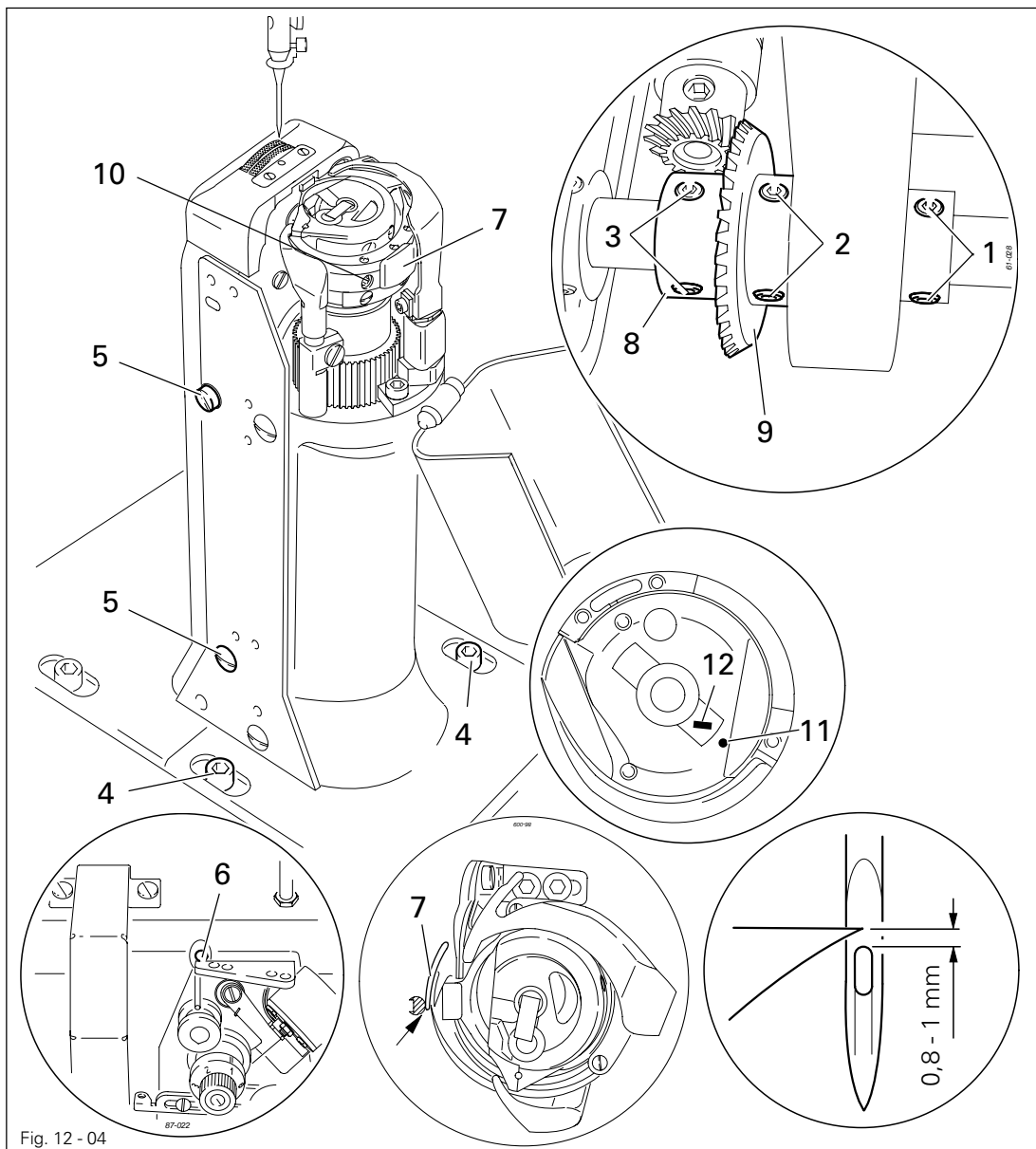
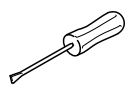


Fig. 12 - 04



- Loosen screws **1, 2, 3, 4** and **5**.
- Bring the needle bar to 2.0 after b.d.c.
- Place the adjustment pin in hole **6** and apply pressure.
- Position the hook point towards the centre of the needle, taking care to ensure that the needle is not deflected by needle guard **7**.
- Adjust the needle height according to **requirement 2**.

- Adjust the hook post according to **requirement 1** and tighten screws **4**.
- Taking the play of the bevel gear into account, tighten screws **2**.
- Remove the adjustment pin from hole **6**.
- Install the retaining collar **8** on bevel gear **9** and tighten screws **1** and **3**.
- Tighten screws **5** on both sides of the post.
- Align needle guard **7** in accordance with **requirement 3**.

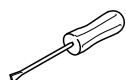
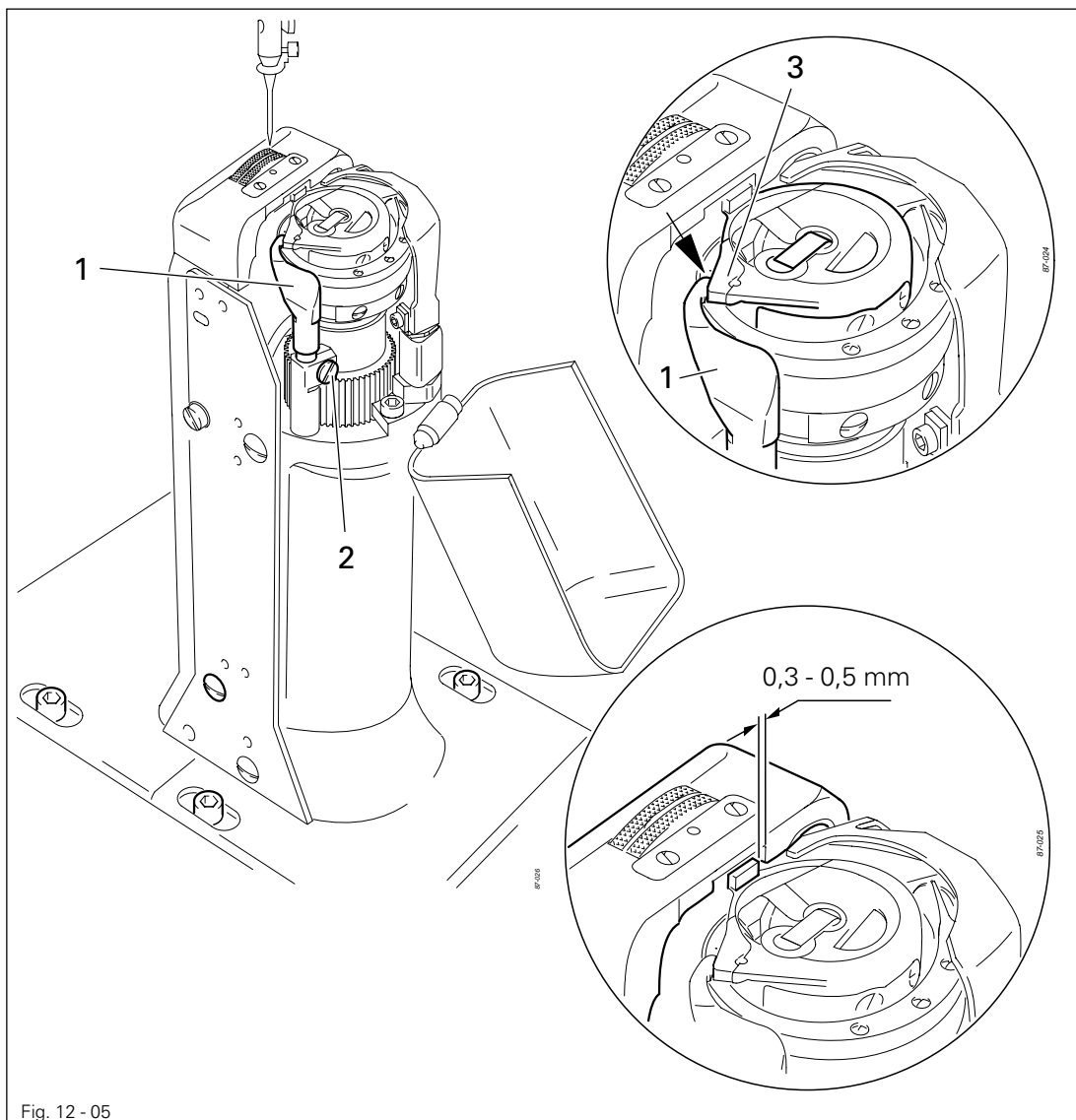


When changing the hook, care must be taken to ensure that the markings **11** and **12** are on one side.

12.04.05 Height and stroke of the bobbin case opener

Requirement

1. The top edges of the bobbin case opener **1** and bobbin case base **3** should be on one level.
2. When the bobbin case opener **1** has deflected the bobbin case to its furthest point, the catch of the bobbin case should be **0.3 – 0.5 mm** from the back edge of the needle plate recess.



- Adjust bobbin case opener **1** (screw **2**) in accordance with **requirement 1**.
- Turn the balance wheel until the bobbin case opener has deflected the bobbin case to its furthest point.
- Adjust bobbin case opener **1** (screw **2**) in accordance with **requirement 2**.

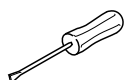
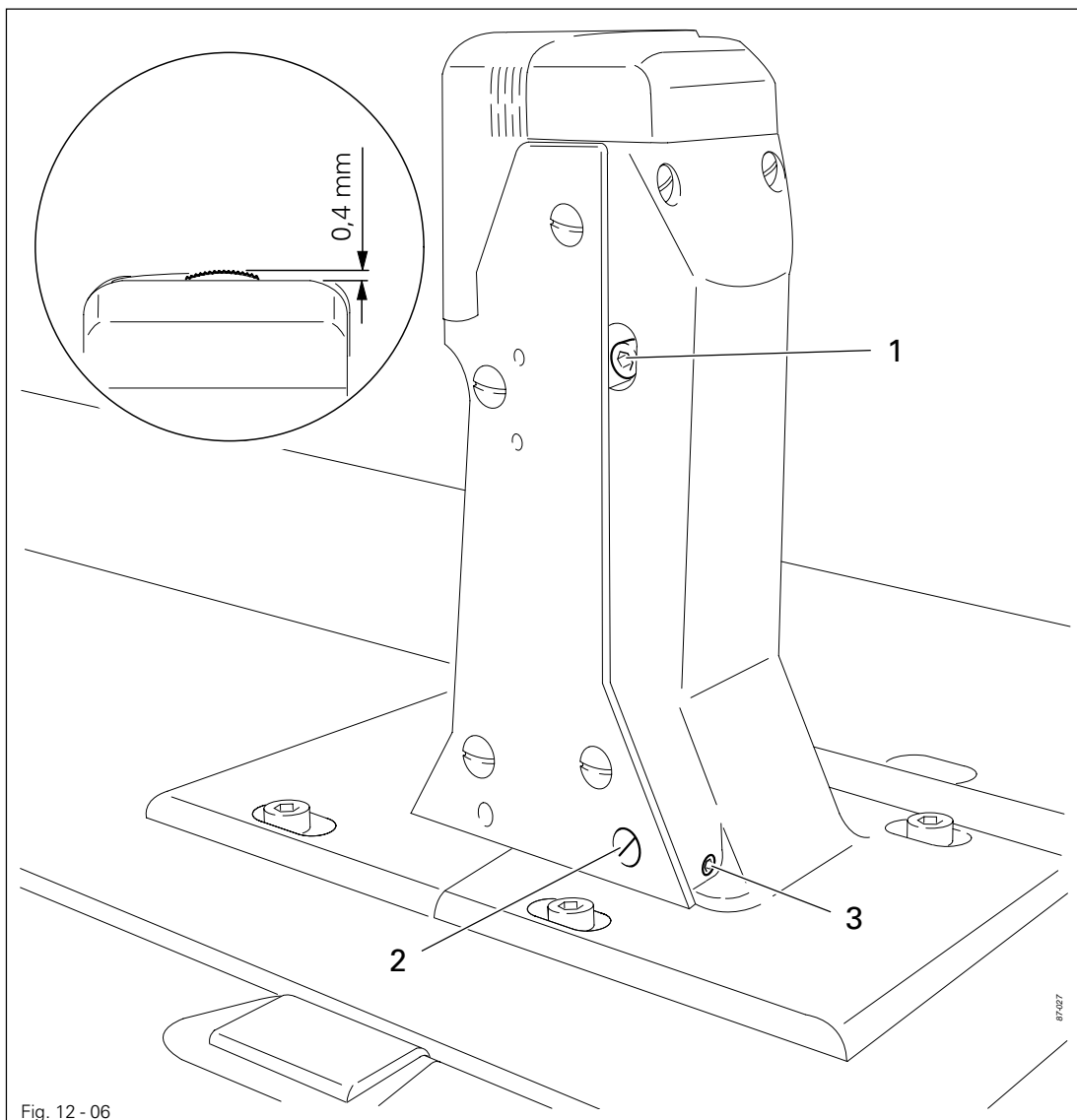


Depending on the thread size, a variation of the setting in **Requirement 2** is permitted.

12.04.06 Height of the feed wheel

Requirement

The feed wheel should jut **0.4 mm** out of the needle plate.



- Swing out the roller presser.
- Loosen screw 1.
- Adjust the eccentric (screw 3), which is accessible through hole 2, in accordance with the requirement.
- Tighten screw 1.

Adjustment

12.04.07 Clearance between roller presser and feed wheel

Requirement

When lever 1 is raised, the clearance between feed band and feed wheel should be **7 mm**.

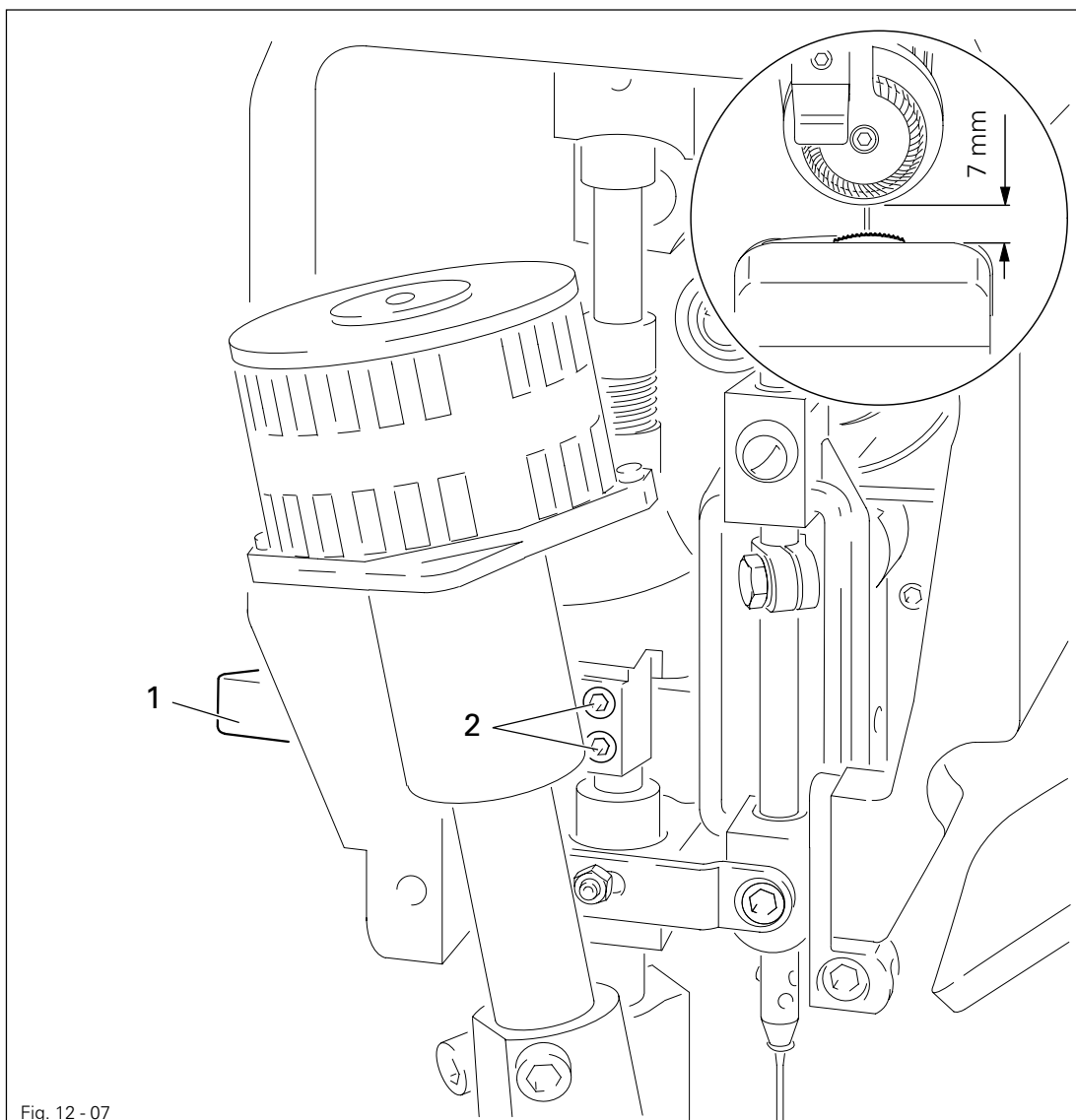
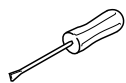


Fig. 12 - 07



- Raise lever 1.
- Adjust the presser bar (screws 2) in accordance with the **requirement**, making sure that the roller presser is parallel to the feed wheel.

12.04.08 Roller presser

Requirement

When the roller presser 1 touches the feed wheel 6,

1. Seen in the direction of sewing, the roller presser should be parallel to the feed wheel 6,
2. Seen in the direction of sewing, the centre of the roller presser should be approx. 2 mm in front of the needle,
3. Seen crosswise to the direction of sewing, the roller presser should be as close as possible to the needle.

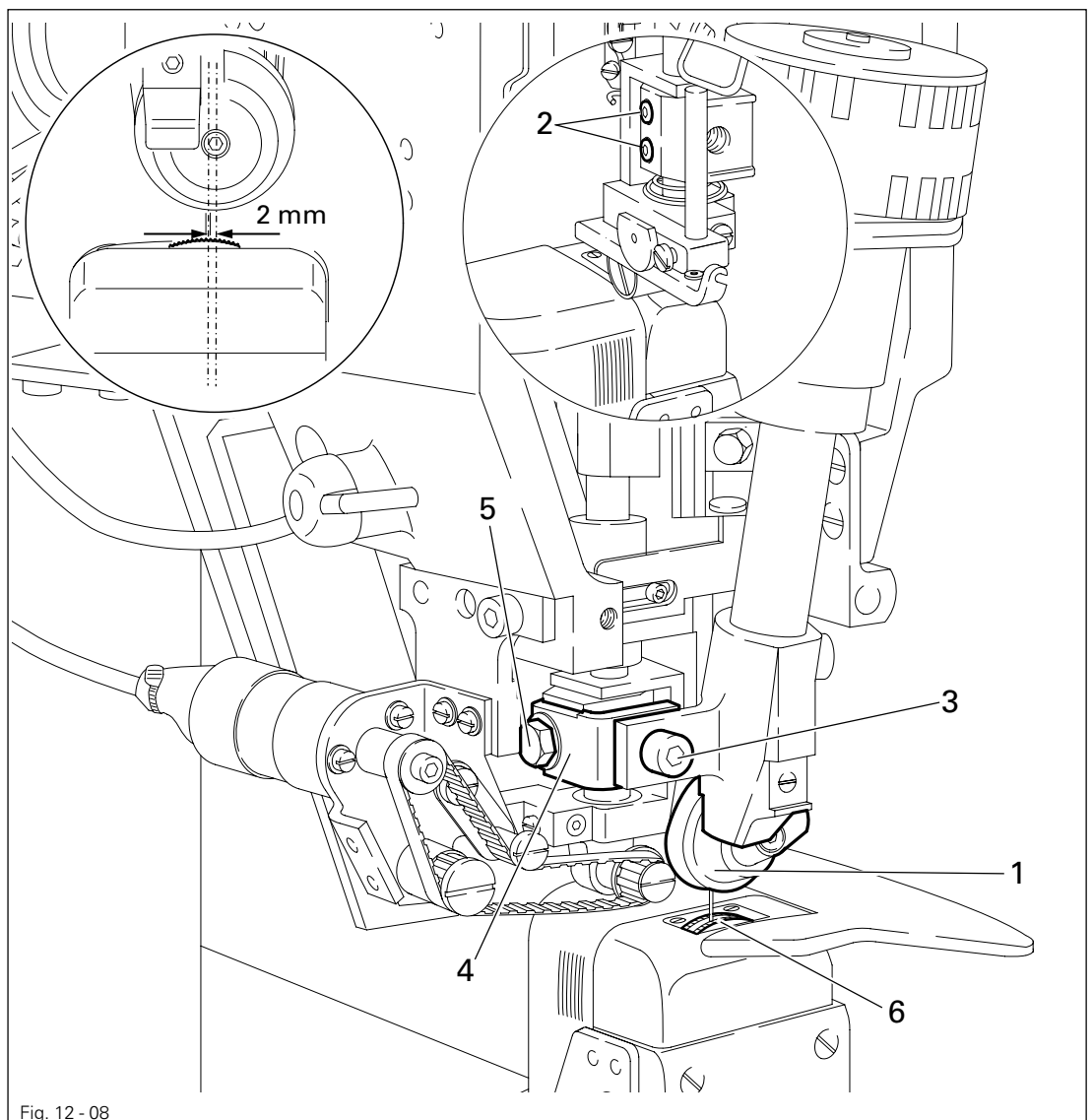
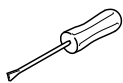


Fig. 12 - 08



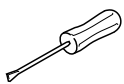
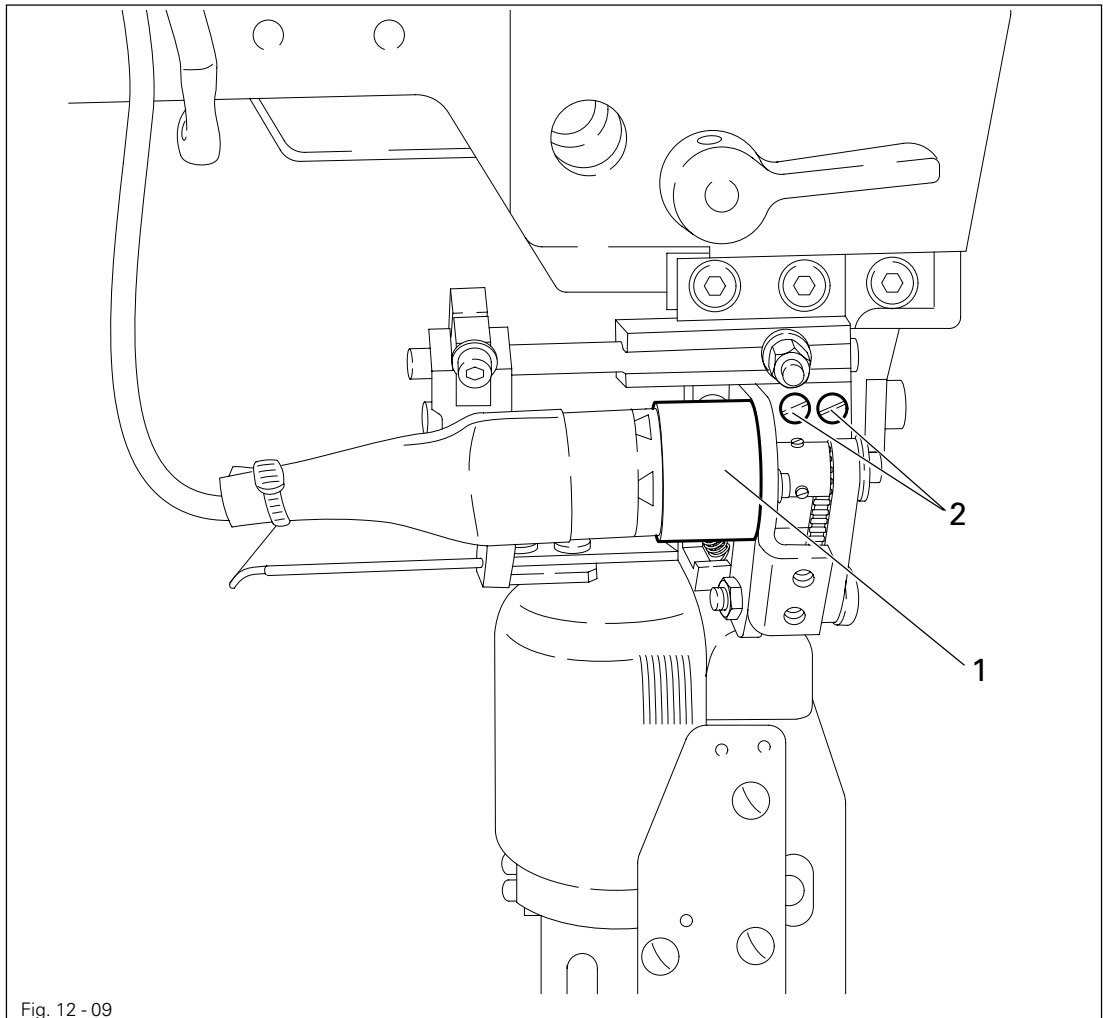
- Raise the roller presser 1.
- Adjust roller presser 1 (screw 2 and 3) in accordance with requirement 1 and 2.
- Adjust bracket 4 (screw 5) in accordance with requirement 3.

Adjustment

12.04.09 Puller

Requirement

The puller 1 should be positioned horizontally to the needle plate and the toothed belt of the puller should move freely.



- Adjust puller 1 (screws 2) in accordance with the **requirement**.

12.04.10 Tension release and tension control

Requirement

1. When lever 1 is raised, or when the automatic presser foot lift is activated and for materials less than 3 mm thick, the two tension disks 9 should be at least 0.5 mm apart.
2. When the roller presser is touching the material, for materials over 3 mm thick, the second thread tension unit 10 should be switched on (solenoid 6 is released).

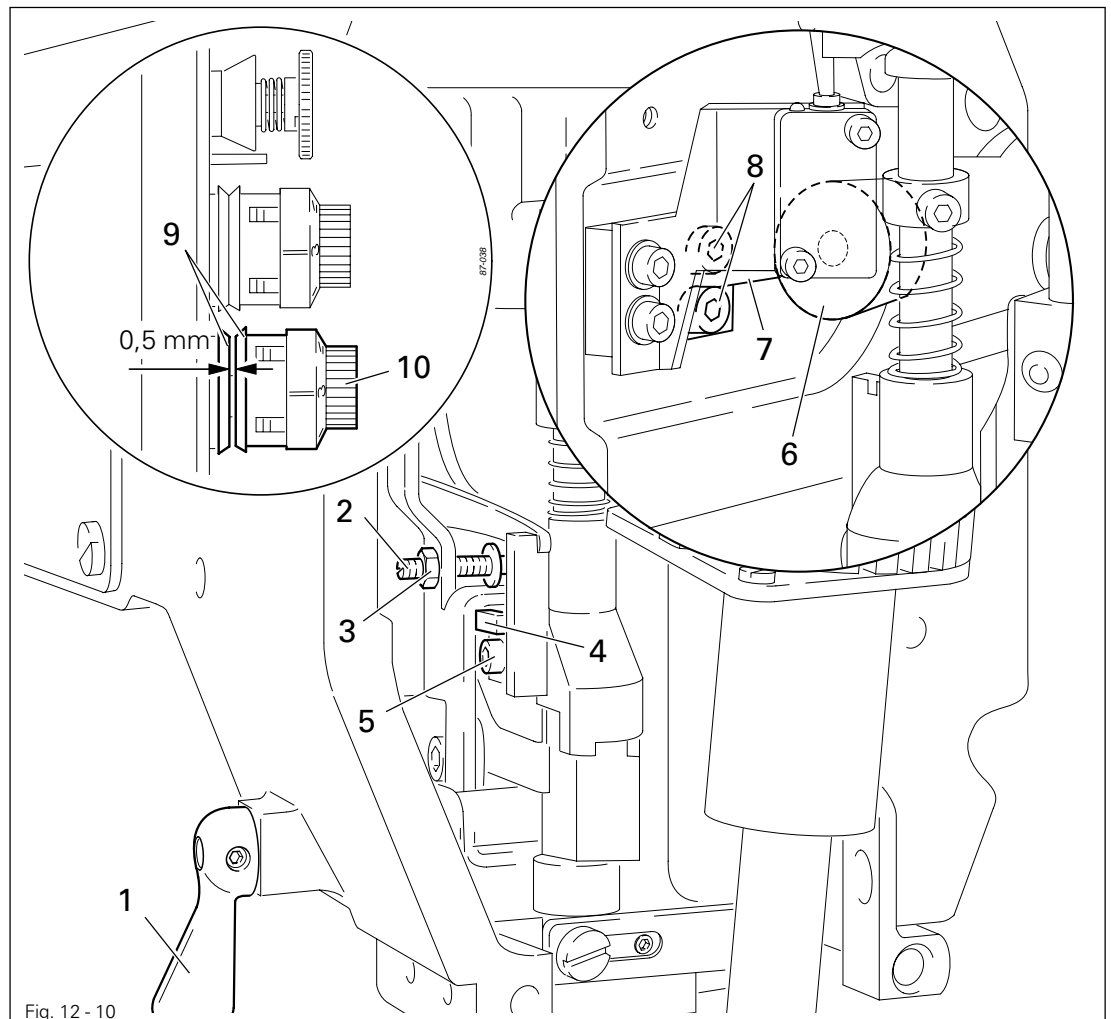
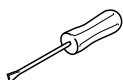


Fig. 12 - 10



- Raise lever 1 and adjust screw 2 (nut 3) in accordance with **requirement 1**.
- Raise the roller presser with the automatic presser foot lift or with the knee lever and adjust catch 4 (screw 5) in accordance with **requirement 1**.
- Press solenoid 6 as far as possible.
- Adjust bracket 7 (screws 8) in accordance with **requirement 1**.



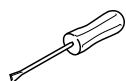
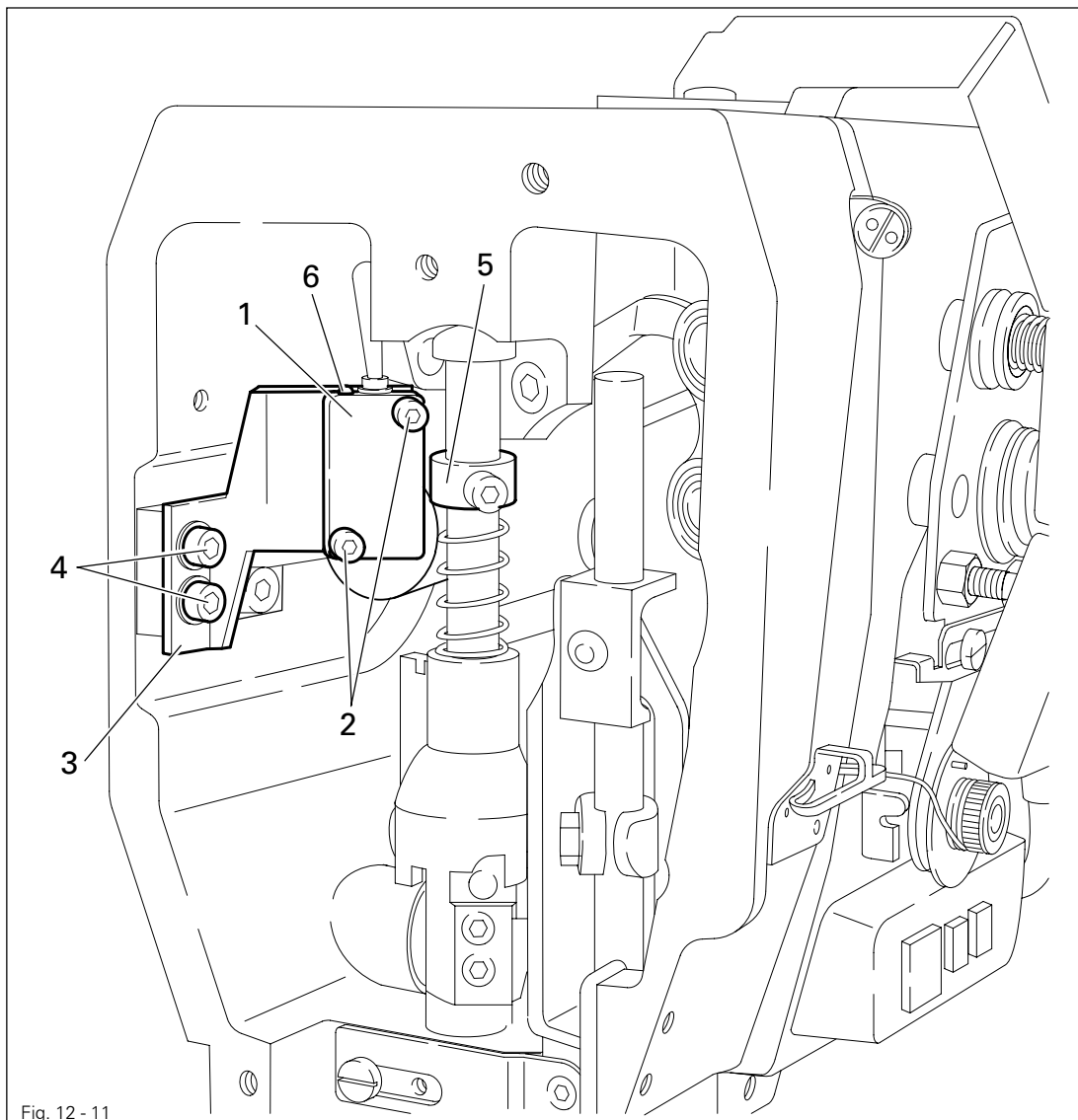
The position of the tension release unit can be changed with parameter "308", see **Chapter 12.06 Parameter settings**.

The setting in **requirement 2** is a basic setting, which can be changed depending on the material thickness.

12.04.11 Roller presser height level switch

Requirement

1. There should be a space of **approx. 1 mm** between switch **1** and retaining collar **5**.
2. When the roller presser is raised **approx. 3mm** with the hand lever, the diode **6** of switch **1** should light up.



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



The height adjustment of switch **1** defines from which material thickness the increased thread tension becomes effective. This adjustment may therefore differ depending on the material.

12.04.12 Automatic presser foot lift

Requirement

When solenoid 1 is activated, lever 3 should drop automatically to raise the roller presser.

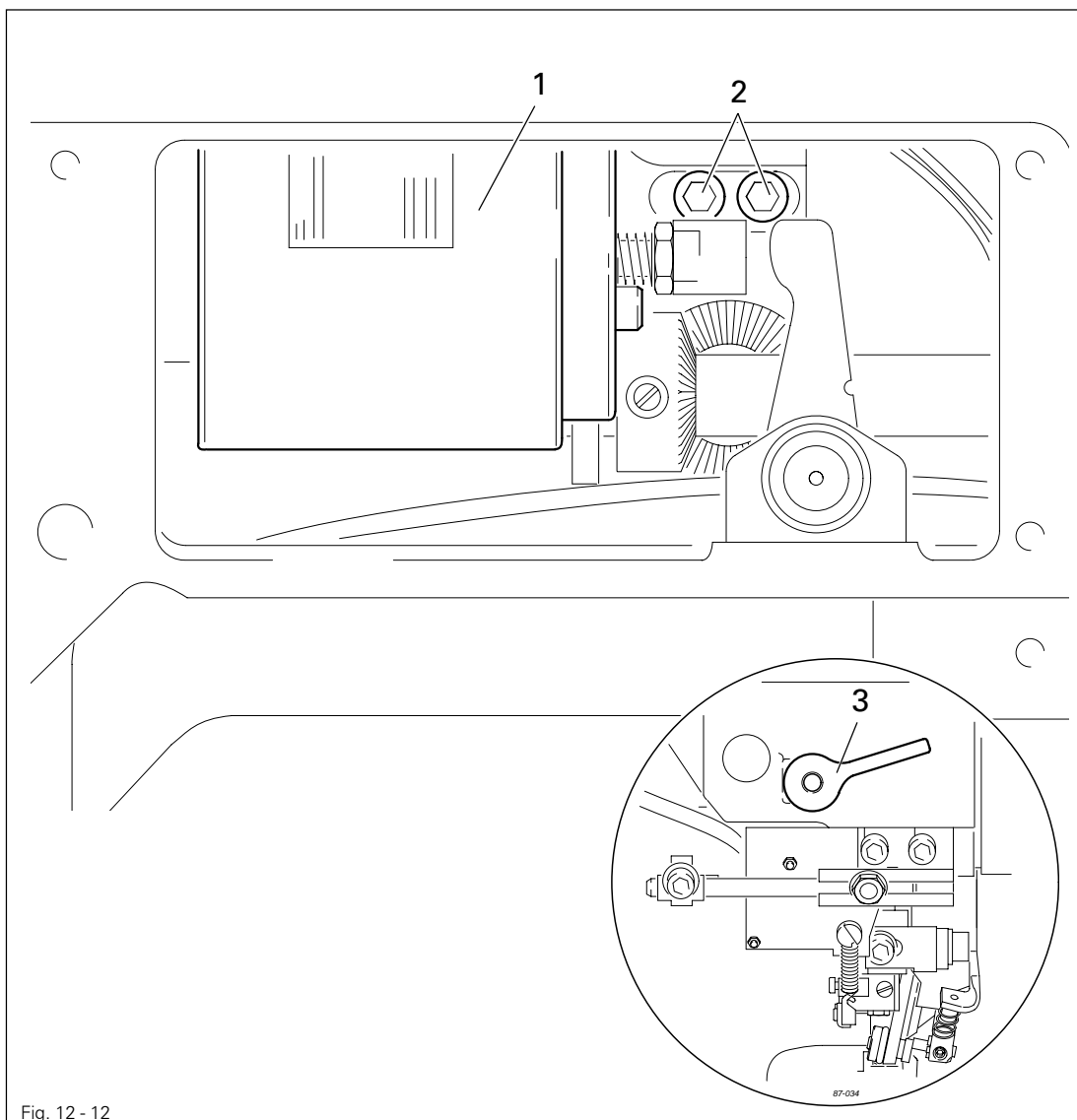
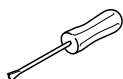


Fig. 12 - 12



- Adjust solenoid 1 (screws 2) in accordance with the **requirement**.
- Switch on the machine and check the **requirement**.
- Switch off the machine.



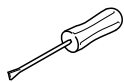
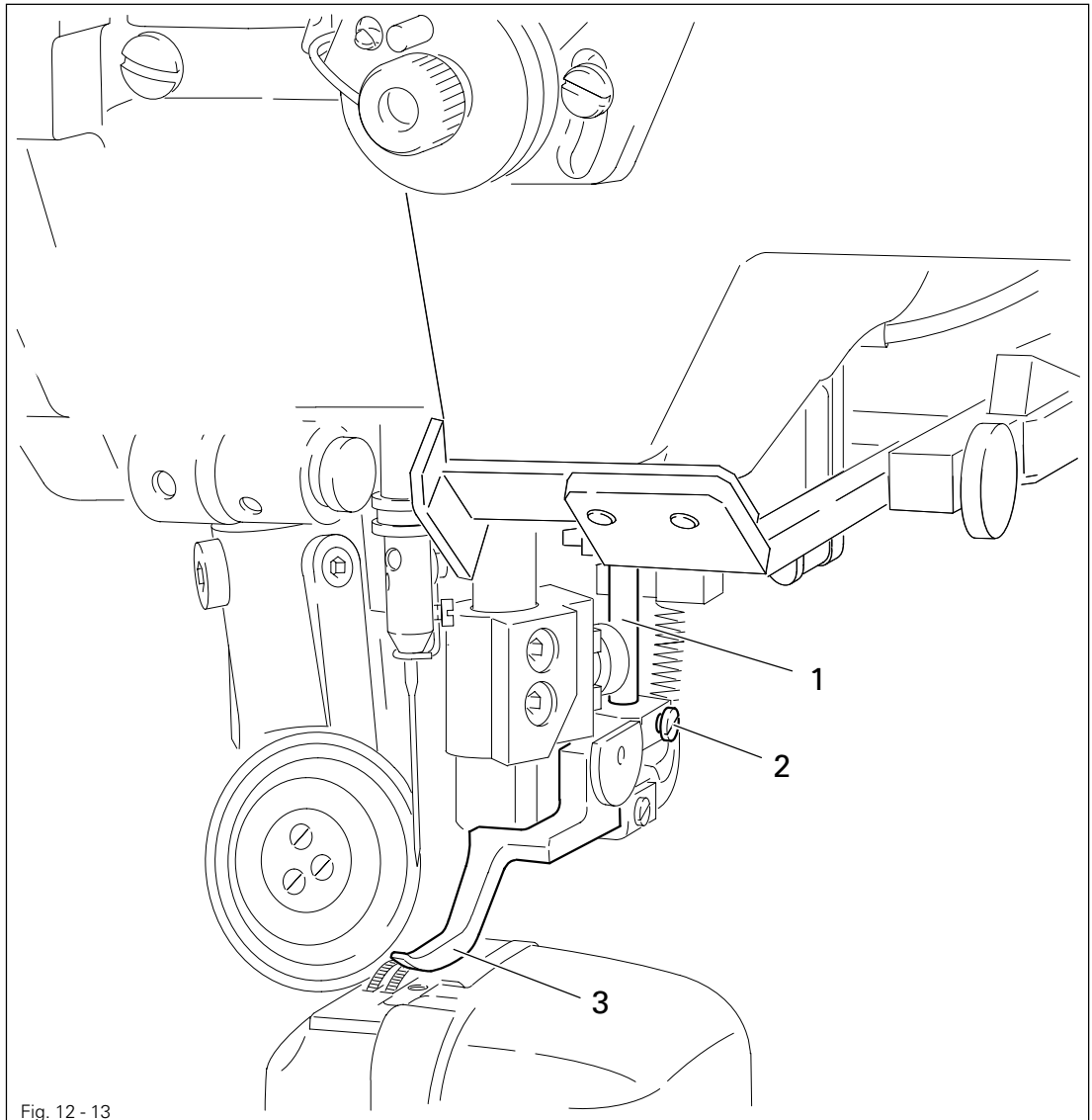
Depending on the material thickness, the clearance between roller presser and feed wheel can be increased up to **10 mm** by moving the solenoid 1 to the right.

Adjustment

12.04.13 Retainer

Requirement

The retainer 3 should just rest on the material, so that the material does not start fluttering during sewing.



- Adjust pin 1 (screw 2) according to the requirement.

12.04.14 Thread check spring

Requirements

1. The motion of the thread check spring **7** must be finished when needle point enters the material (spring stroke approx. **7 mm**).
2. When the thread loop is at its largest when going around the hook, the thread check spring must raise slightly from the workpiece rack **1**.

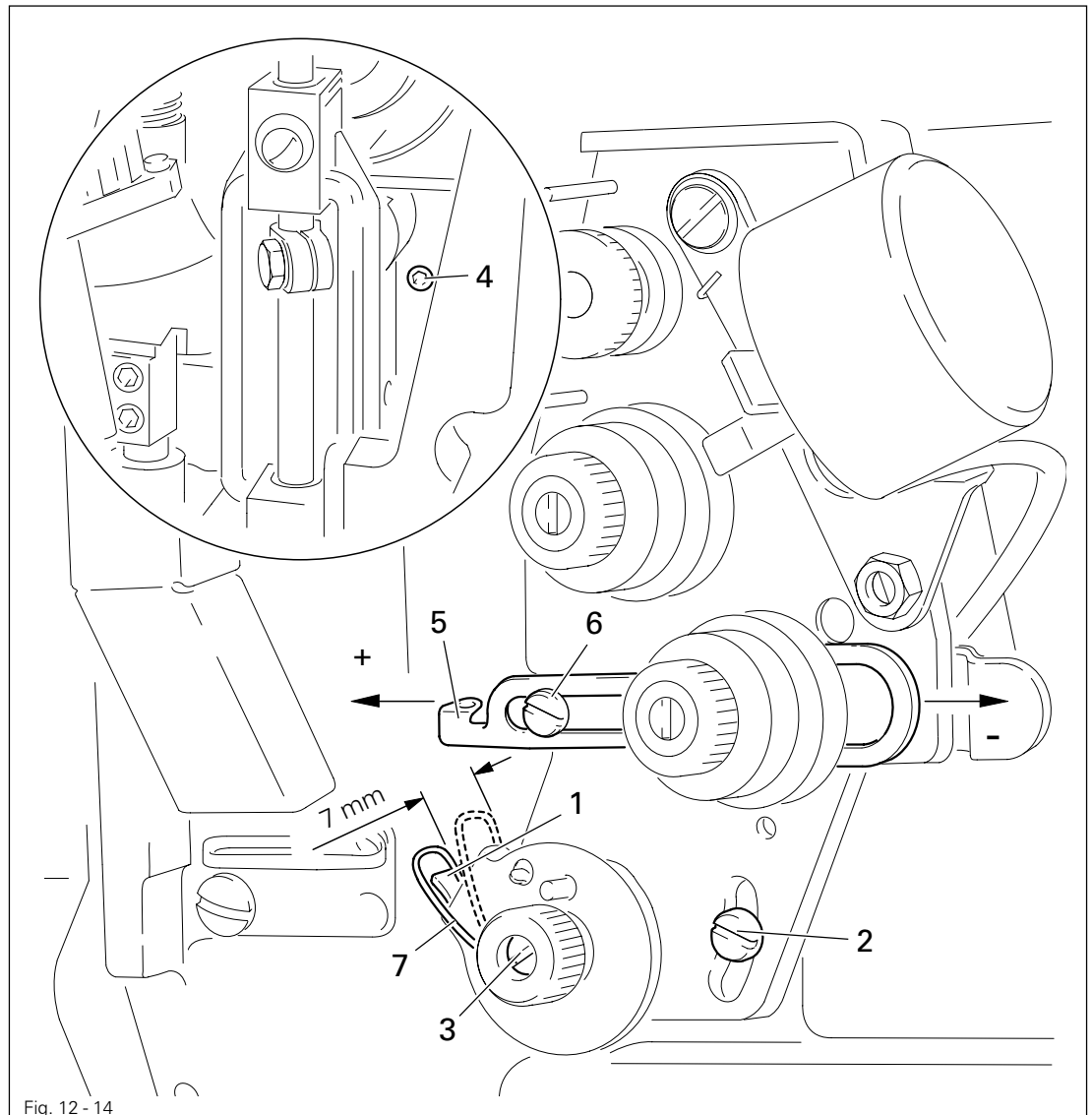
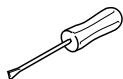


Fig. 12 - 14



- Move workpiece rack **1** (screw **2**) in accordance with **requirement 1**.
- Turn screw **3** (screw **4**) to adjust the strength of the spring.
- Move the slack thread regulator **5** (screw **6**) in accordance with **requirement 2**.

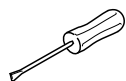
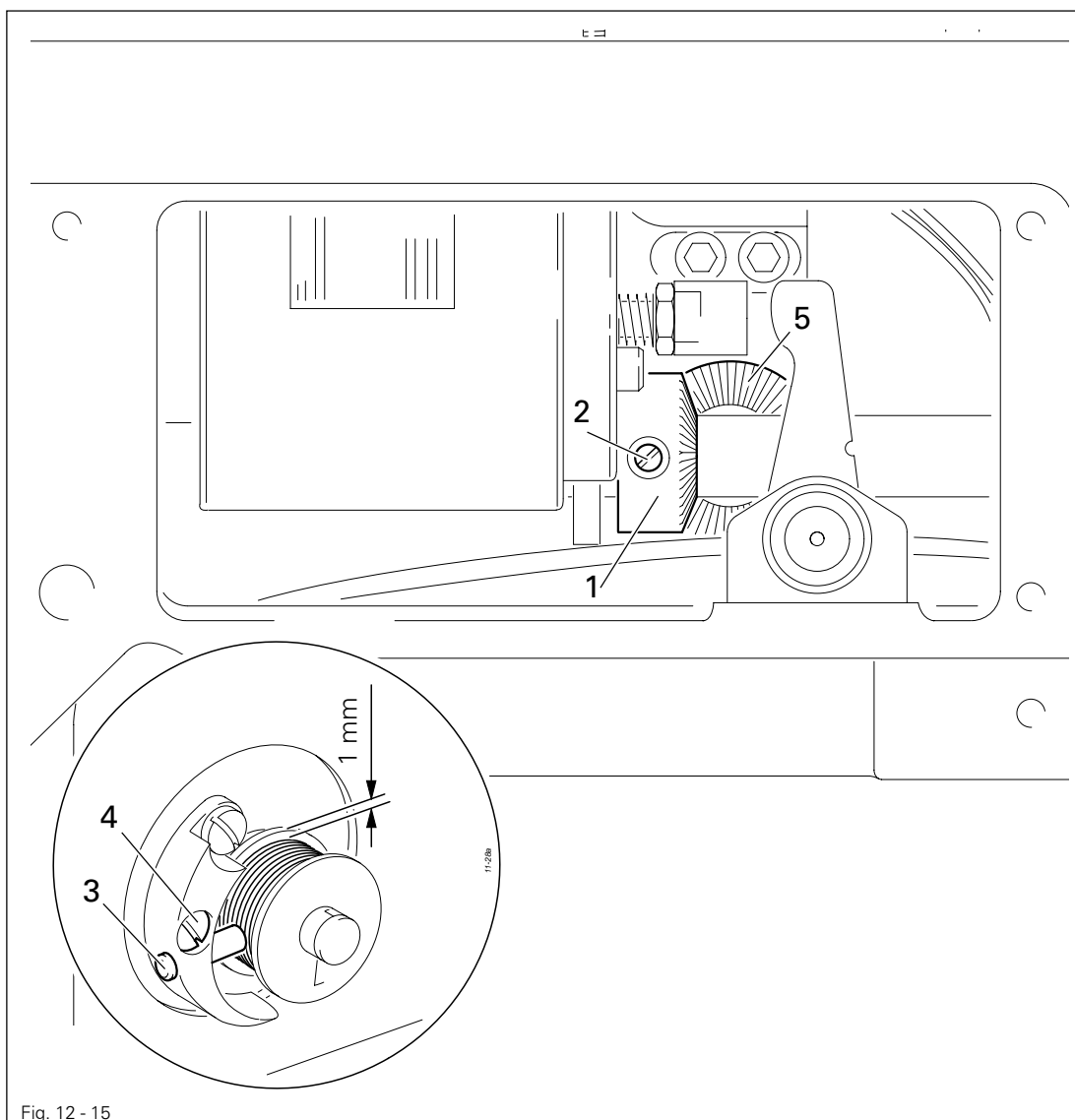


Due to technical sewing reasons it may be necessary to deviate from the spring stroke / spring strength mentioned here. Move the slack thread regulator **5** (screw **6**) toward the "+" (= more thread) or toward the "-" (= less thread).

12.04.15 Bobbin winder

Requirements

1. With the bobbin winder on, the bobbin winder spindle must engage reliably. With the bobbin winder off, the friction wheel **5** must not engage the drive wheel **1**.
2. The bobbin winder must turn off automatically when the thread level is approx. **1 mm** from the edge of the bobbin.

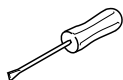
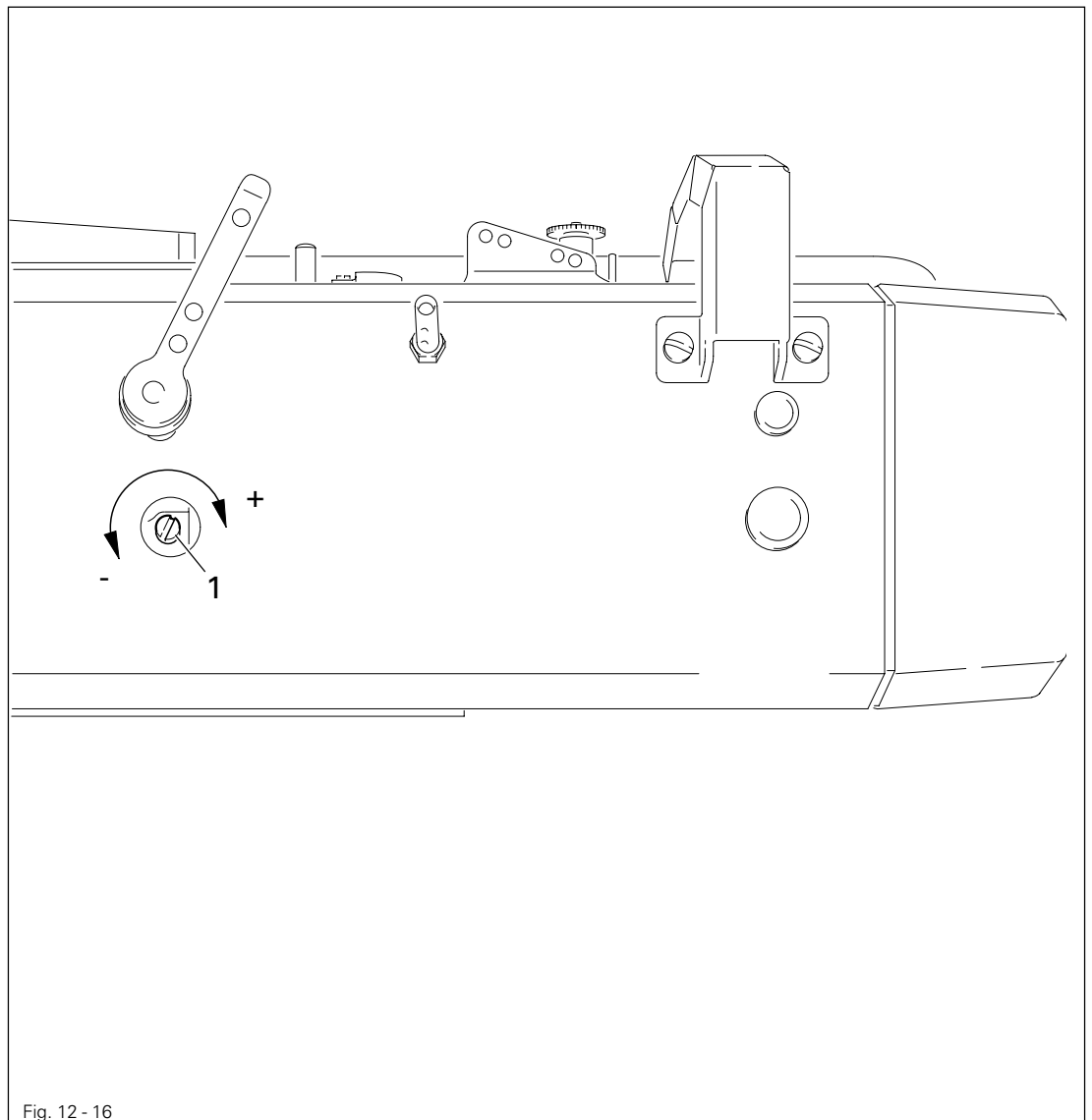


- Move drive wheel **1** (screws **2**) in accordance with **requirement 1**.
- Move pin **3** (screw **4**) in accordance with **requirement 2**.

12.04.16 Roller presser pressure

Requirement

The material should be fed without difficulty. No pressure marks should be visible on the material.



- Adjust screw 1 (under a cover) in accordance with the **requirement**.



If the roller presser pressure is low enough, the lowering speed of the roller presser can be increased with parameter "202".



The maximum pressure is 25 N.

Adjustment

12.04.17 Locking the set value transmitter

Requirement

The pedal for selecting the fullness (left pedal) should be held securely in every position without being too stiff.

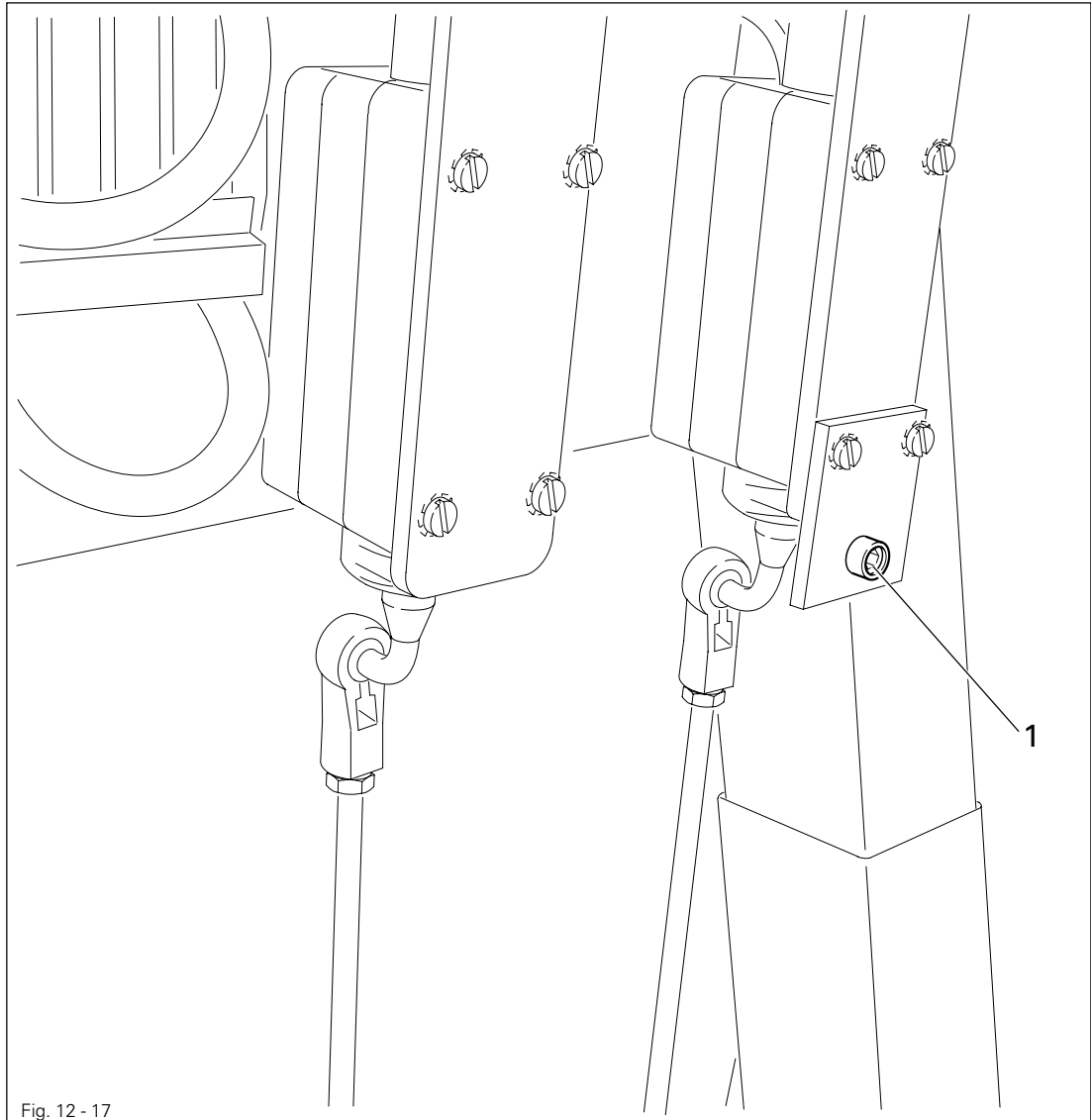
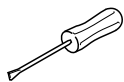


Fig. 12 - 17



- Adjust screw 1 in accordance with the **requirement**.

12.04.18 Lubrication

Requirement

After a running time of 10 seconds a fine line of oil should form on a strip of paper held next to the hook.

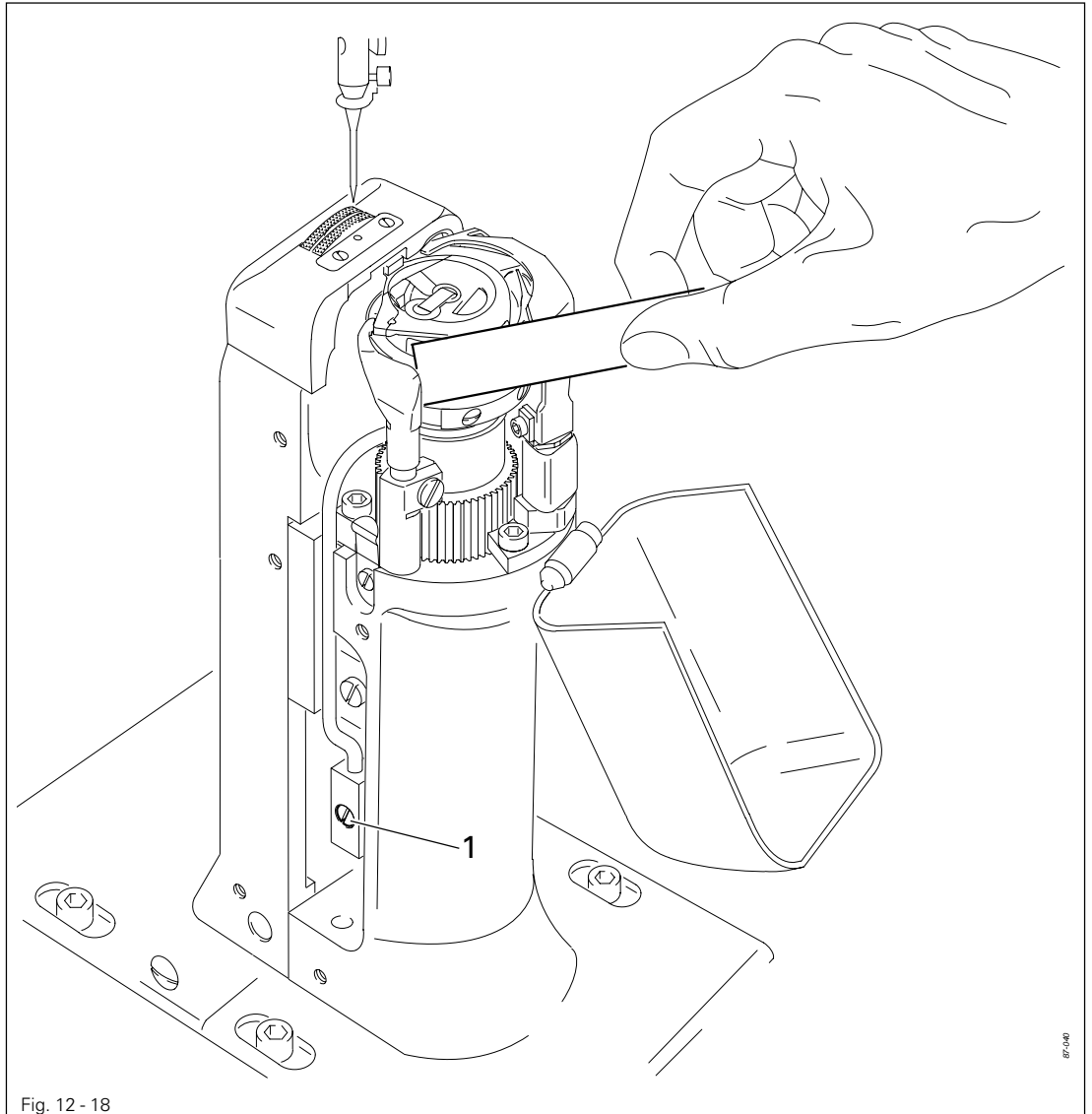
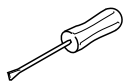


Fig. 12 - 18



- Check whether oil has been filled in and that there is no air in the oil lines.
- Let the machine run for **2-3 min.**



While the machine is running do not place hands in the needle or hook area!
Danger of injury from moving parts!

- With the machine running hold a strip of paper on the hook and check the **requirement**.
- If necessary, adjust the oil flow on screw **1**.

Adjustment

12.04.19 Re-engage safety coupling



The coupling **1** is set by the manufacturer. When the thread jams, the coupling **1** disengages in order to avoid damage to the hooks.
A description of how to engage the coupling follows.

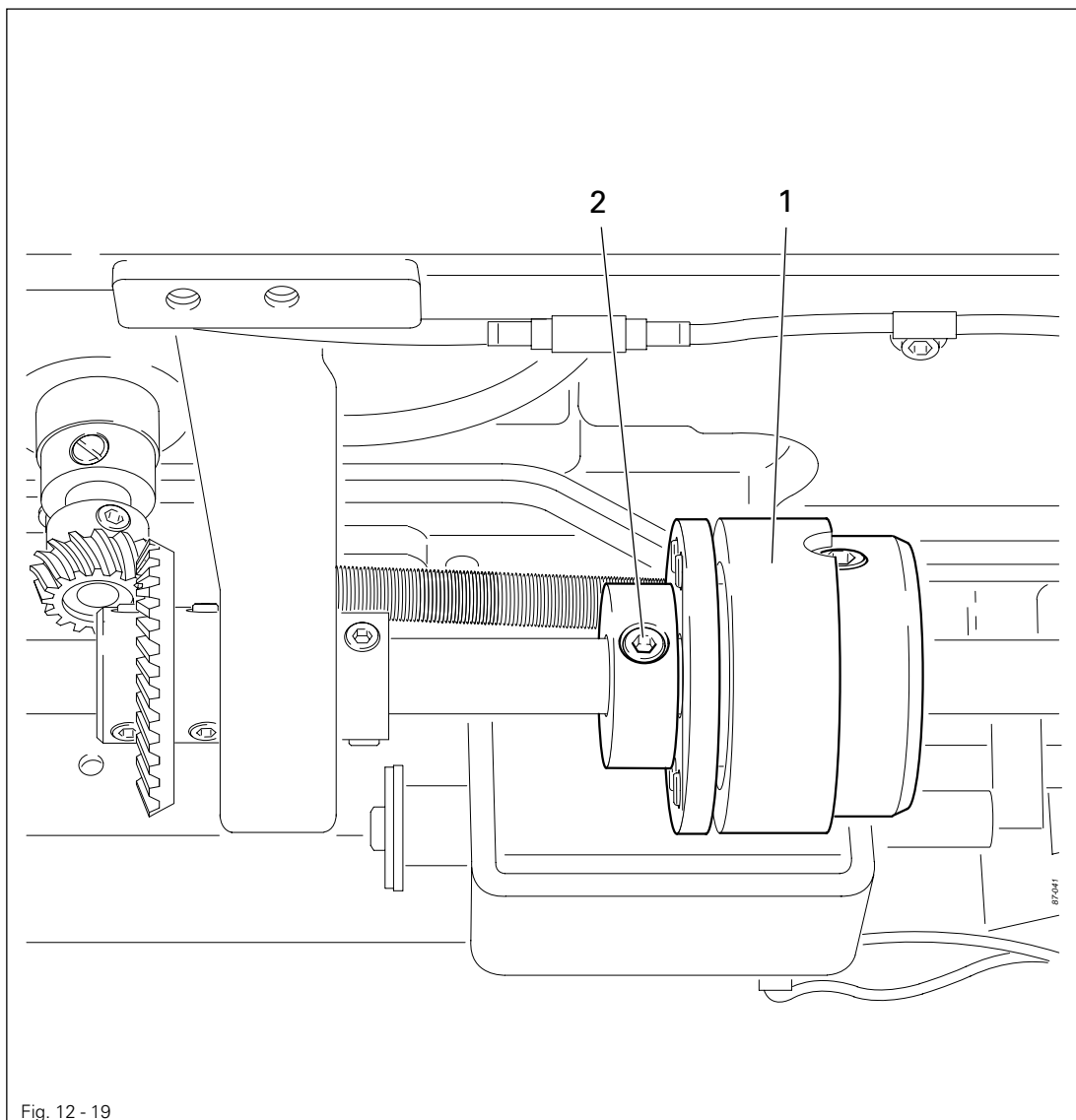
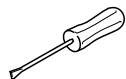


Fig. 12 - 19



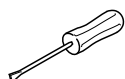
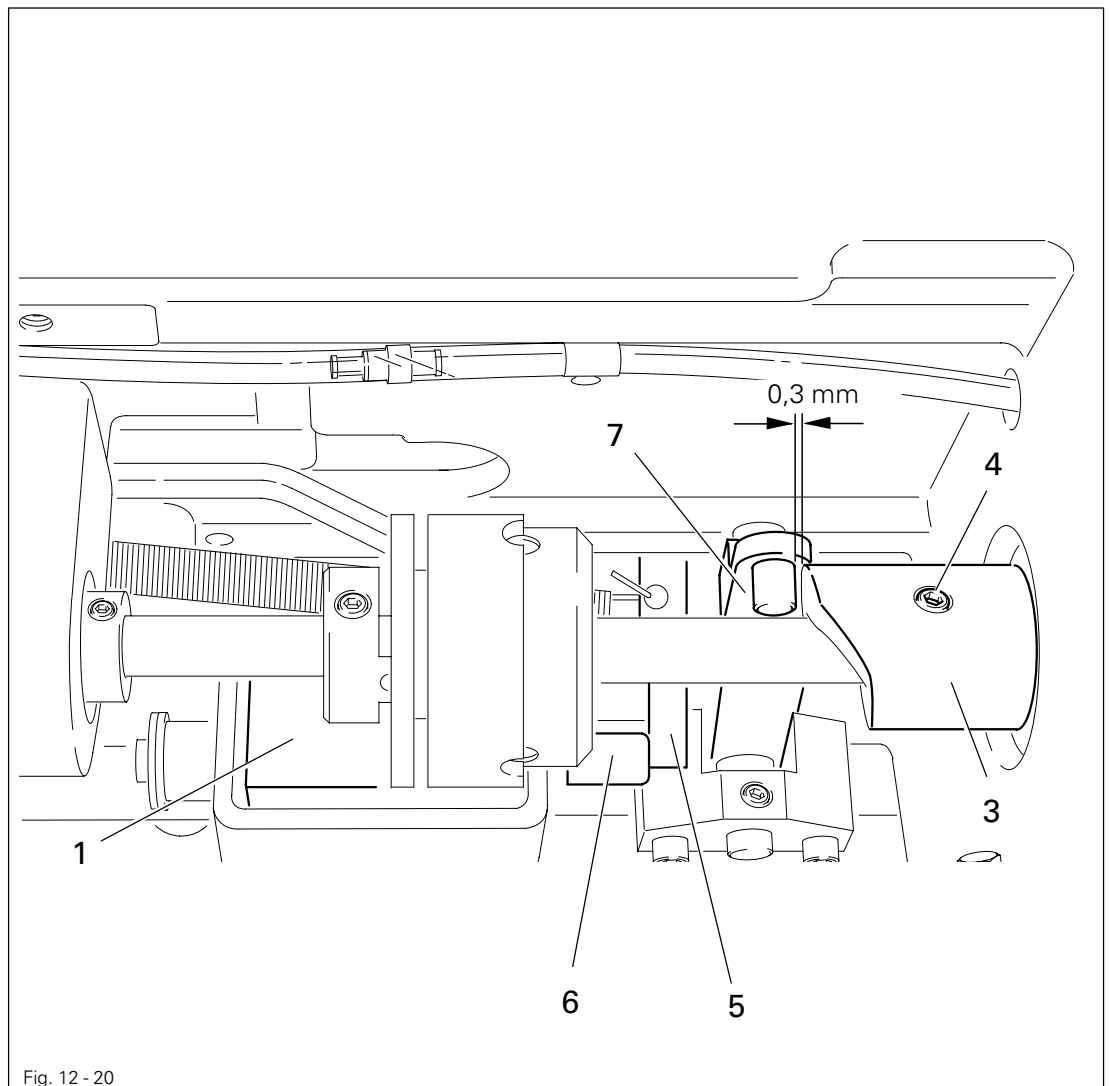
- Remove jammed thread.
- Hold coupling **1** with screw **2** and turn the balance wheel, until you feel coupling **1** snap back into place again.

12.05 Adjusting the thread trimmer –900/81

12.05.01 Resting position of the roller lever / radial position of the control cam

Requirement

1. When the thread trimmer is in its resting position, lever **5** should be touching piston **6** and the roller of roller lever **7** should be **0.3 mm** away from control cam **3**.
2. When the take-up lever is at t.d.c., control cam **3** should just have placed roller lever **7** in its resting position.

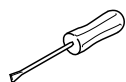
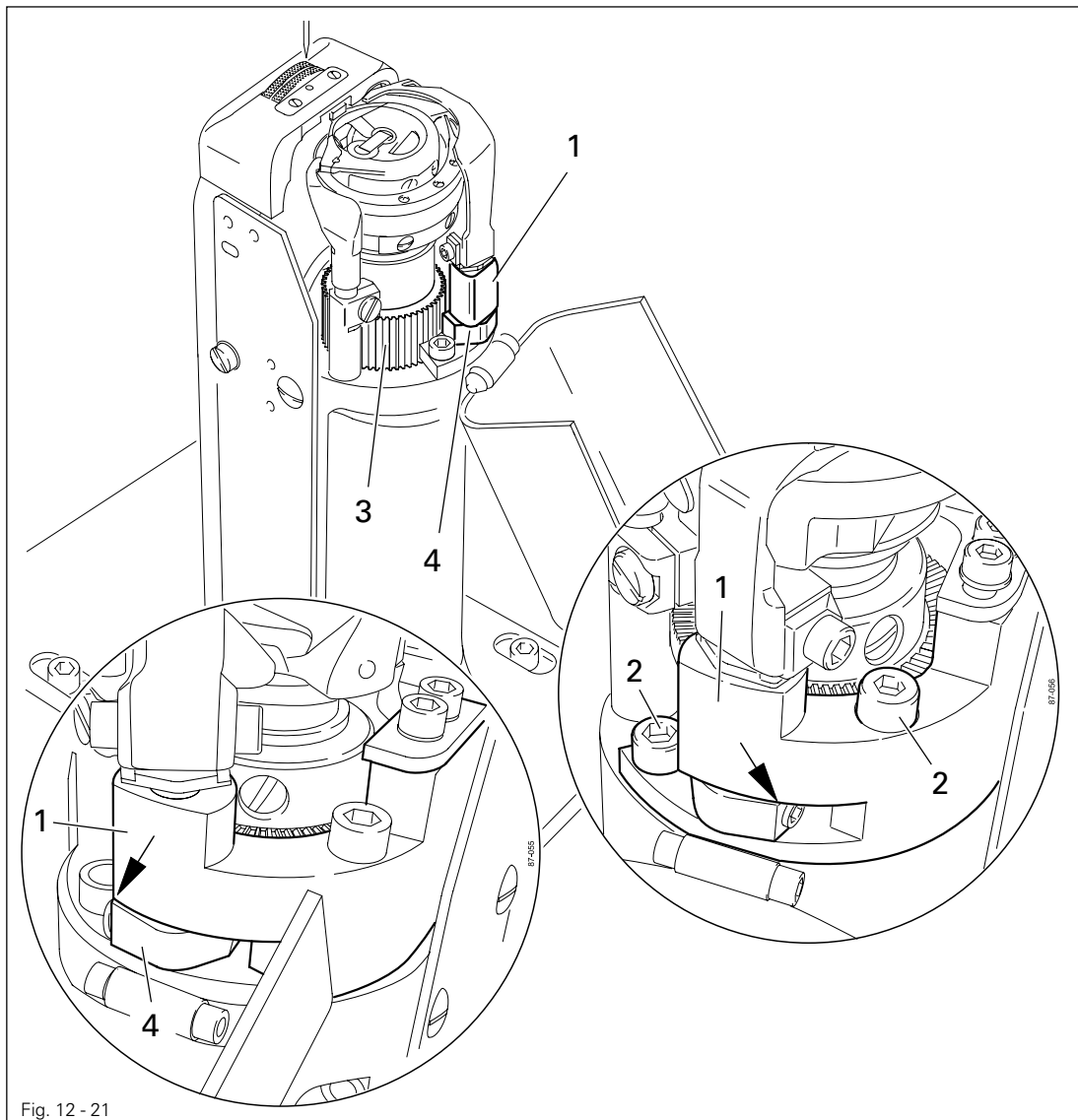


- Having made sure that piston **6** is positioned against the left stop, adjust magnet **1** (2 screws) in accordance with **requirement 1**.
- Adjust control cam **3** (screws **4**) in accordance with **requirement 2**.

12.05.02 Position of the thread catcher holder

Requirement

1. There should be a minimum amount of play between toothed wheel **3** and toothed segment **4**.
2. Both in the neutral position and the foremost position of the catcher, the distance between the toothed segment **4** and the outer edge of the thread catcher holder **1** should be the same (see arrow).



- Adjust the thread catcher holder **1** (screws **2**) according to the requirements.

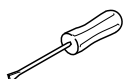
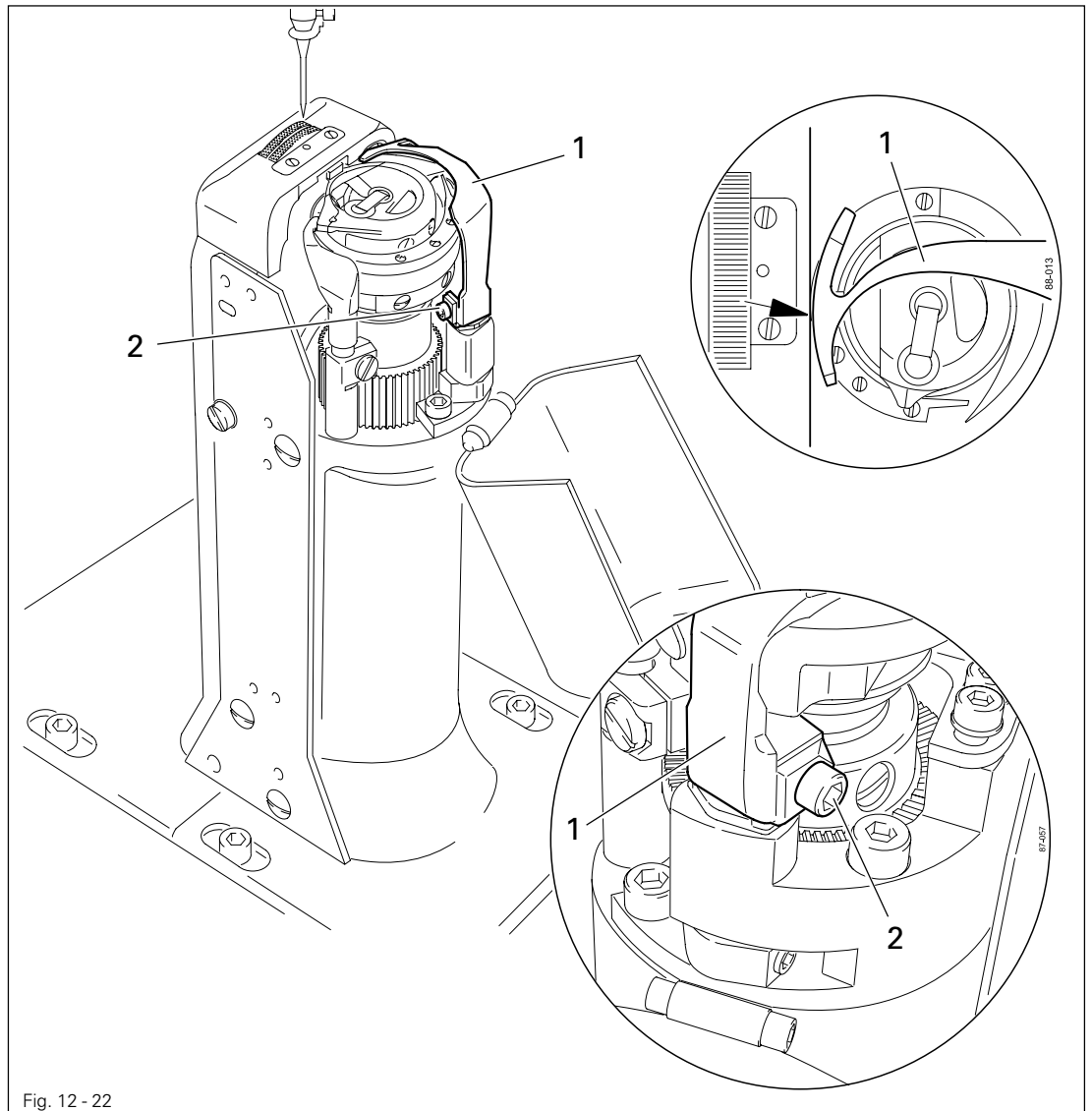


If requirement 2 cannot be fulfilled, loosen screw **2** and move the toothed segment **4** by one tooth.

12.05.03 Distance between thread catcher and needle plate

Requirement

During its swivel movement thread catcher 1 should not pass the edge of the needle plate (see arrow).



- Move thread catcher 1 (screws 2, **two screws**) parallel to the thread catcher holder in accordance with the **requirement**.

12.05.04 Position of the thread catcher

Requirement

1. The bottom edge of the thread catcher 1 should be at a distance of **0.1 mm** from the positioning finger of the bobbin case 5.
2. When the thread trimmer is in its neutral position, the rear edge of thread catcher 1 should be positioned **approx. 2.5 – 3 mm** behind the edge of the knife.

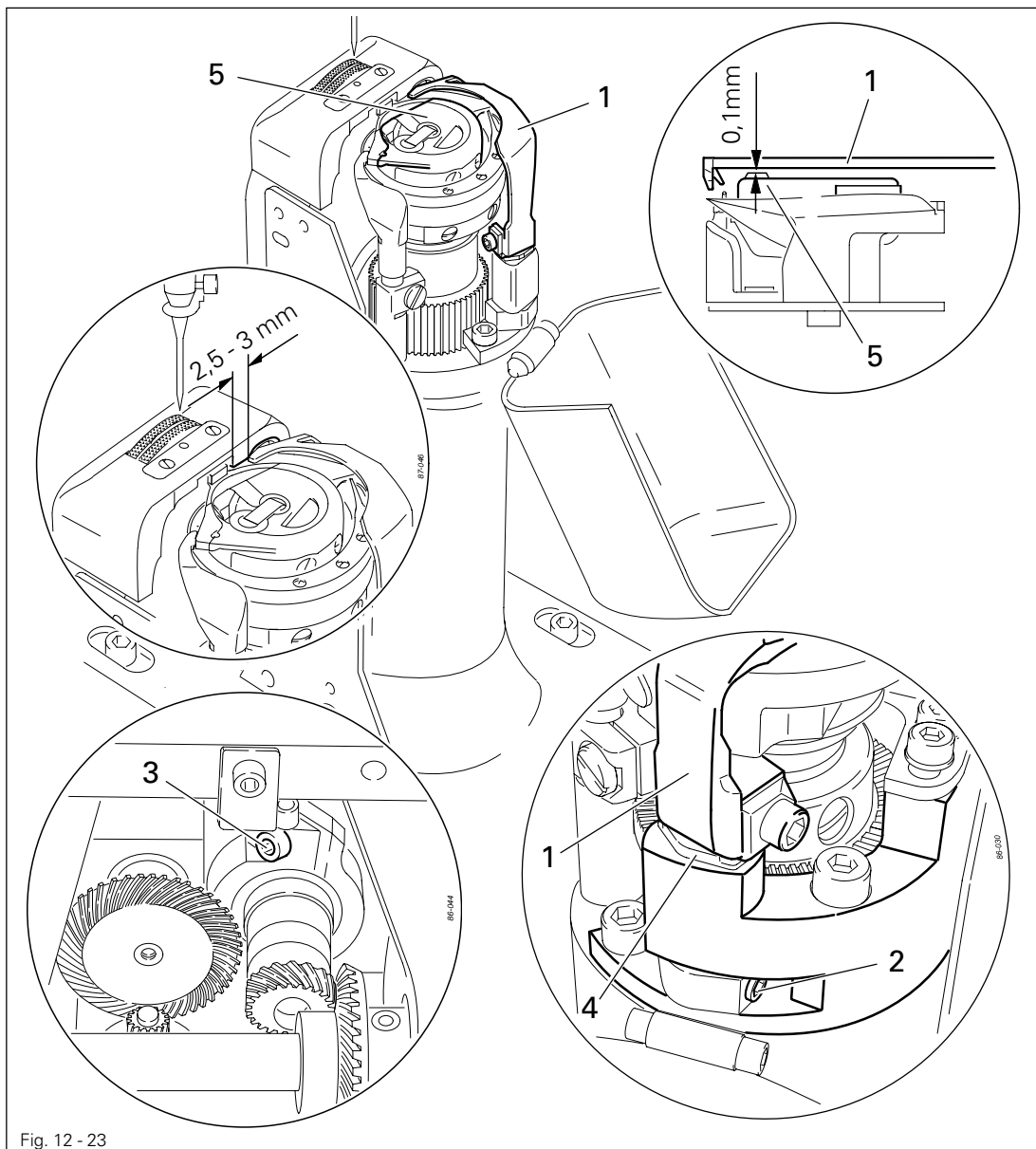
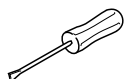


Fig. 12 - 23



- Move thread catcher 1 (screws 2, two screws) in accordance with requirement 1.
- Turn thread catcher 1 (screw 3) in accordance with requirement 2.



Thread catcher 1 must be parallel to the surface of the thread catcher holder 4.

12.05.05 Knife position and knife pressure

Requirement

1. The knife 1 should be touching the needle plate.
2. The knife pressure should be set as low as possible but the cutting operation should still be carried out reliably.

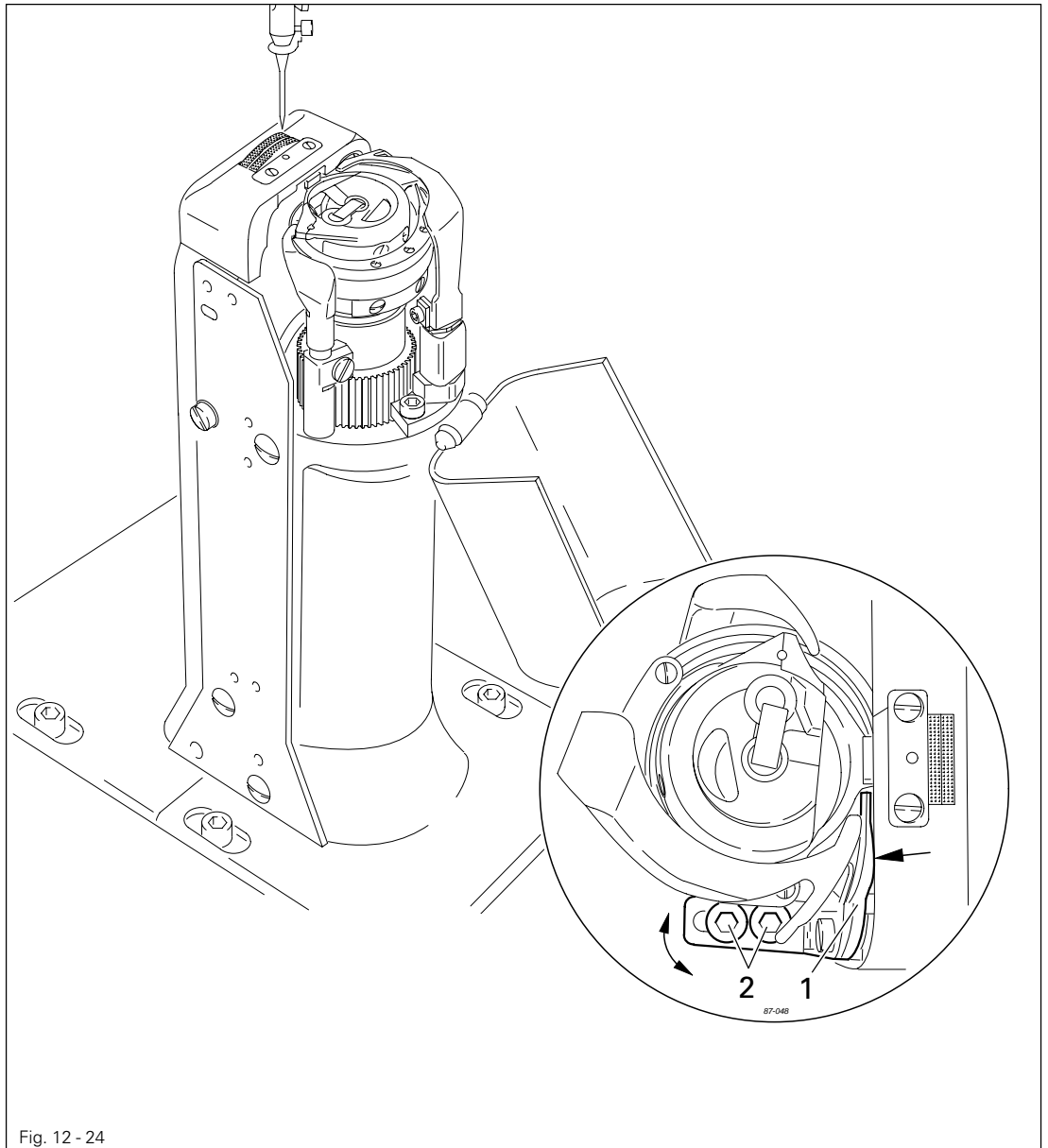
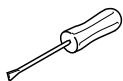


Fig. 12 - 24



- Move knife 1 (screws 2) in accordance with **requirement 1** or swivel it in accordance with **requirement 2**.

12.05.06 Bobbin thread retaining spring

Requirement

1. The bobbin thread clamp spring should be guided reliably in the thread groove of the thread catcher **3**.
2. The tension of the bobbin thread spring clamp should be as low as possible, but the bobbin thread should be held reliably after the cutting operation.

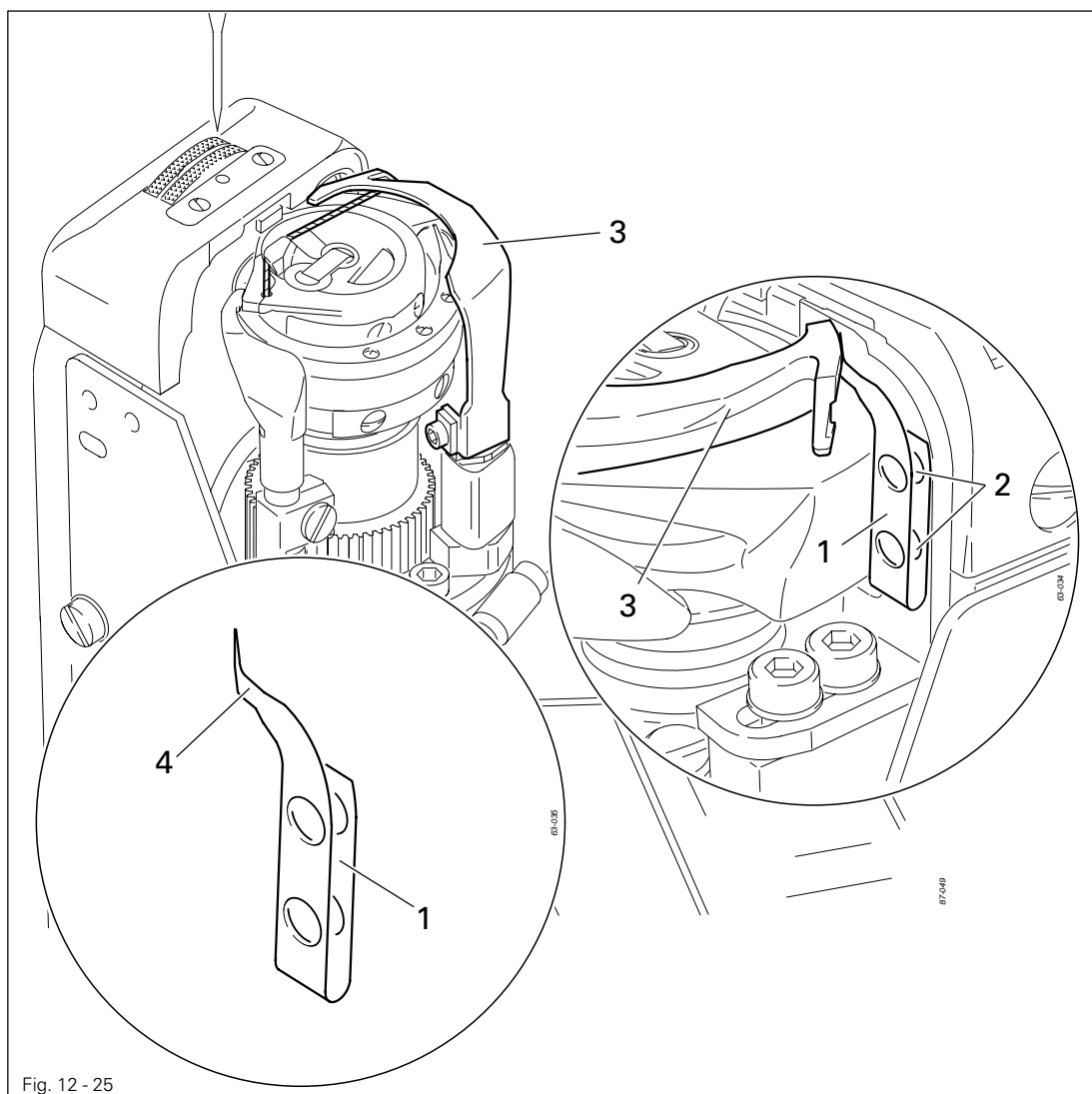
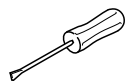


Fig. 12 - 25



- Adjust bobbin thread clamp spring **1** (screws **2**) in accordance with **requirement 1**.
- Adjust the tension in accordance with **requirement 2** by bending side **4** of the bobbin thread clamp spring **1**.

Control – requirement 1

- Switch off the machine and bring the take-up lever to its b.d.c.
- Engage and disengage the thread catcher **3** by hand and check **requirement 1**. Adjust if necessary.

Control – requirement 2

- After the thread has been cut, sew a few stitches by turning the balance wheel, checking whether the bobbin thread is drawn out of the bobbin thread clamp spring between the 1st and 3rd stitches. If necessary, correct the tension.

12.05.07 Manual cutting test

Requirement

1. When thread catcher 1 is on its forward stroke, it must not carry bobbin thread 3 forward too.
2. When thread catcher 1 is in its front position, bobbin thread 3 must be held reliably by hook 4.
3. After the trimming action, both the needle thread and the bobbin thread must be perfectly cut and bobbin thread 3 retained.

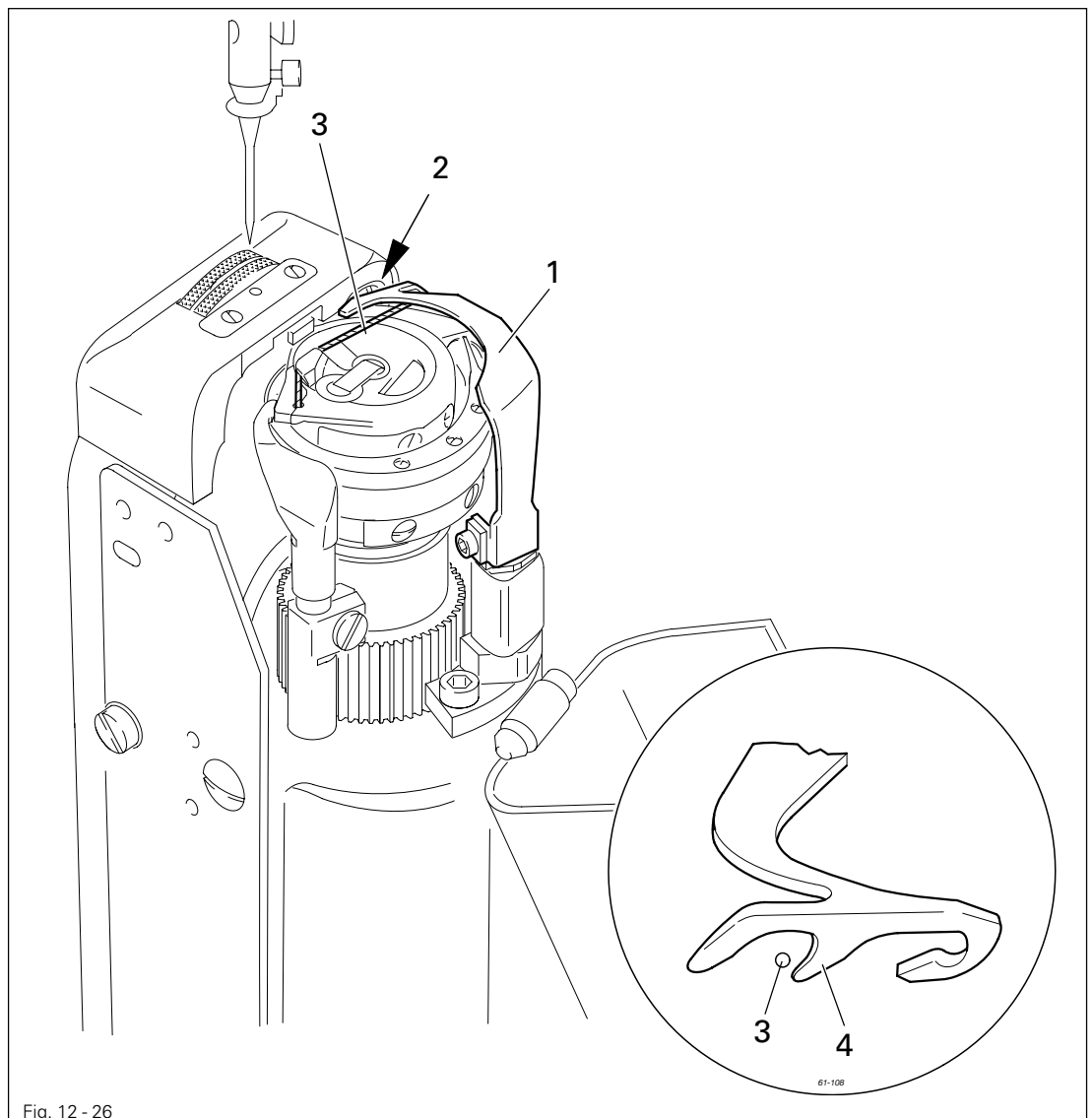
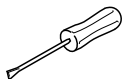


Fig. 12 - 26




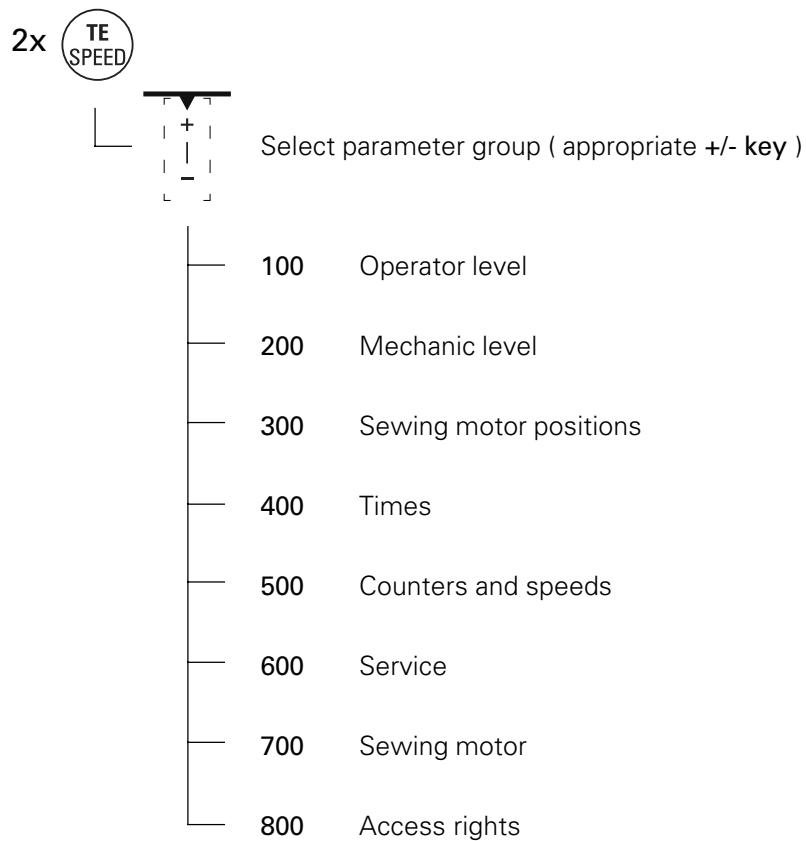
- Sew a few stitches.
- Turn off the on/off switch.
- Carry out the cutting operation manually.
- Check **requirement 1** and **2**, and if necessary readjust thread catcher 1 in accordance with **Chapter 12.05.04 Position of the thread catcher**.
- Check **requirement 3**, and if necessary readjust the bobbin thread retaining spring 2 in accordance with **Chapter 12.05.06 Bobbin thread retaining spring**.

Adjustment


12.06 Parameter settings

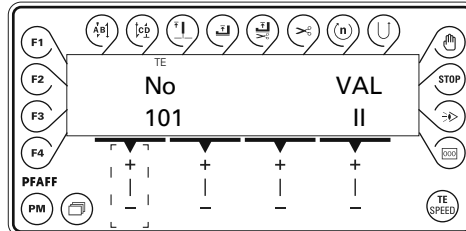
12.06.01 Overview of the parameter functions

2x  By pressing the **TE/Speed key** twice the input mode is called up. From the following parameter groups parameters can be called up and altered. With a code the parameter groups can be protected against unauthorised access.

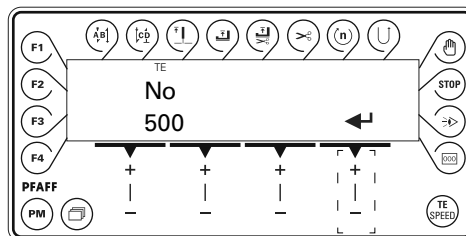



12.06.02 Parameter input example

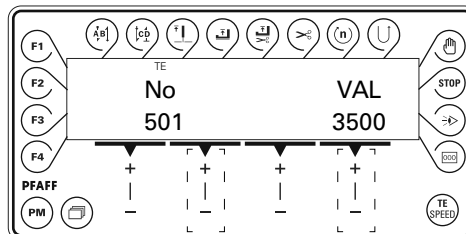
- Switch on the machine
- 2x  ● Select input mode by pressing TE/Speed key twice.



- No ● Select parameter group "500" by pressing the corresponding +/- key.



-  ● Confirm selection by pressing the corresponding +/- key.
- Enter the code number, see **Chapter 9.08 Entering/changing the code number**.



- No ● Select the desired parameter, e.g. "501" by pressing the corresponding +/- key.

- VAL ● Set the desired parameter value by pressing the corresponding +/- key.



- By pressing the TE/speed key, the value is taken over and the machine changes to the sewing mode.

Adjustment

12.06.03 List of parameters



The operator has free access to the "100" parameters. Parameters "200" – "800" can only be changed after entering a code number and many only be changed by authorised personnel.

Group	Parameter	Description	Setting range	Set value
1	101	Start backtack, pedal-controlled (I = OFF, II = ON)		I
	102	Reversing (I = OFF, II = ON)		I
	103	Stitch placement I = OFF, II = ON)		I
	104	Bobbin thread monitoring (0 = OFF, I = reverse counter, 2 = thread monitor)	0 - 2	0
	105	Bobbin thread reverse counter	0 -99999	12000
	106	Remaining bobbin thread counter	0 -999	100
	107	Maximum stitch length of fullness pedal (mm)	0.8 - 6.5	4.0
	108	Display software version of main processor	0329/....	
	110	Display software version of the control panel	V004H202	
	111	Display software version of the sewing drive	V35	
	112	Key tone of the control panel I = off, II = on		II
	113	Horn for section change I = off, II = on		II
2	202	Lowering speed roller presser I = slow, II = quick		II
	203	Puller I = OFF, II = ON		I
3	301	Position take-up lever t.d.c	0 – 127	2
	302	Position needle lowered	0 - 127	20
	303	Position cutting solenoid "on"	0 - 127	20
	304	Position cutting solenoid "tacting"	0 - 127	103
	305	Position cutting solenoid "off"	0 – 127	123

Group	Parameter	Description	Setting range	Set value
3	306	Reverse position	0 – 127	103
	307	Placement stitch position	0 – 127	7
	308	Position thread tension release	0 – 127	101
4	401	Delay time lifting roller presser [s]	0.01 – 1.50	0.02
	402	Start delay after lowering roller presser [s]	0.01 – 1.50	0.15
	403	Set lift roller presser [s]	0.01 – 0.20	0.03
	404	Tact thread cutting solenoid (%)	10 - 50	35
	405	Time for cleaning thread monitor [s]	0.01 - 1.50	0,25
5	501	Maximum speed	100 – 3500	3500
	502	Speed start backtack	100 – 1500	700
	503	Speed end backtack	100 – 1500	700
	504	Speed soft start	100 – 3500	1500
	505	Soft start stitches	0 – 15	0
6	601	Move stepping motor roller presser and feed wheel		
	602	Display inputs 0123456789ABCDEF 0: not assigned (E16) 1: not assigned (E15) 2: Coding intermittent (E14) 3: not assigned (E13) 4: not assigned (E12) 5: not assigned (E11) 6: not assigned (E10) 7: not assigned (E9) 8: not assigned (E8) 9: Bobbin thread error (E7) A: Knee switch (E6) B: not assigned (E5) C: not assigned (E4) D: not assigned (E3) E: not assigned (E2) F: not assigned (E1)		
	603	Basic position of the machine drive unit (see Chap. 8.02.04)		11 ± 2
	604	Carry out cold start (see Chap. 12.09)		
	605	Stitch formation check by turning the balance wheel		

Adjustment

Group	Parameter	Description	Setting range	Set value
7	701	P-quota speed controller	1 – 50	30
	702	I-quota speed controller	0 – 100	50
	703	P-quota position controller	1 – 50	20
	704	D-quota position controller	1 – 100	30
	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	0
	709	Minimum machine speed	3 – 64	6
	710	Maximum machine speed	1 – 35	35
	711	Maximum motor speed	1 – 35	35
	712	Positioning speed	3 – 25	18
	713	Acceleration ramp	1 – 50	35
	714	Brake ramp	1 – 50	30
	715	Reference position	0 – 127	20
	716	Time-out	0 – 255	40
	717	Starting current motor	3 – 10	8
	718	Anti-vibration filter	1 – 10	6
	719	Rotation direction allocation	0 – 1	0
	720	Reference position correction	0 – 127	64
8	801	Right of access function group 100	0 – 1	0
	802	Right of access function group 200	0 – 1	1
	803	Right of access function group 300	0 – 1	1
	804	Right of access function group 400	0 – 1	1
	805	Right of access function group 500	0 – 1	1
	806	Right of access function group 600	0 – 1	1
	807	Right of access function group 700	0 – 1	1
	808	Right of access function group 800	0 – 1	1

Group	Parameter	Description	Setting range	Set value
8	809	Right of access program creation	0 – 1	1
	810	Enter access code	0 - 9999	1500

12.07 Explanation of the error messages

Message	Description
Error 1:	System error
Error 2:	Sewing motor
Error 3:	Section
Error 4:	End of section
Error 5:	Pedal activated when machine switched on
Error 6:	Communication error with stepping motor processor
Error 7:	End of ramp
Error 8:	End position of needle drive not found
Error 9:	Centre position of needle drive not found
Error 10:	Error of stepping motor processor
Error 11:	Stepping motor stepping frequency too high
Error 12:	Error in sewing start deflection
Error 13:	Error in docu-seam system
Error 14:	Incorrect program number (larger than 99)
Error 15:	Incorrect section number
Error 16:	Memory full
Error 17:	Incorrect stitch length
Error 19:	Interface to external controller
Error 21:	Power supply unit overloaded
Error 22:	Mains voltage
Error 23:	Power supply 24V too high/too low

12.08 Warning messages

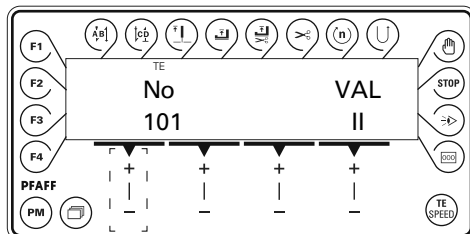
Message	Description
Warning 2	Bobbin thread error

12.09 Carrying out a cold start

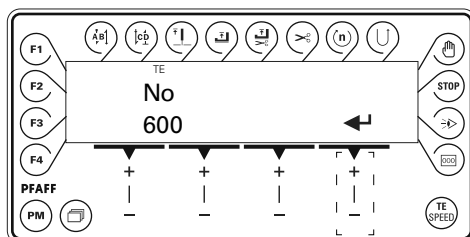
- Switch on the machine.

2x 

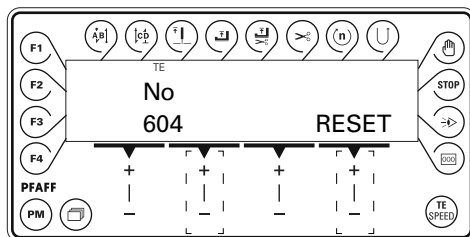
- Press the **TE/Speed** key twice to select the input mode.



- No** ● Select parameter group "600" by pressing the corresponding +/- key.



- Confirm selection by pressing the corresponding +/- key.
- Enter the code number, see [Chapter 9.08 Entering/changing the code number](#).



- No** ● Select parameter "604" by pressing the corresponding +/- key.

- RESET** ● Carry out cold start by pressing the corresponding +/- key.

- Switch off the machine.



After a cold start all programmed values are reset to their status at the time of delivery.

12.10 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.de/pfaff/de/service/downloads

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!

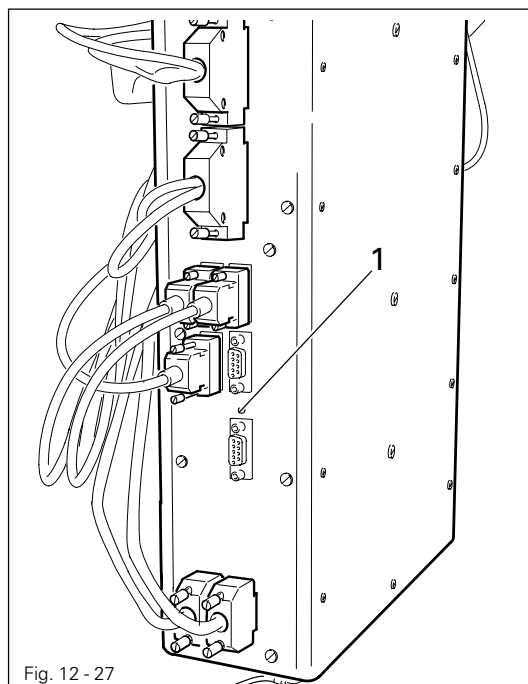


Fig. 12 - 27

- 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.
- Hold down boot key **1** and switch on the machine.
- Press the "OK" button.

The software update is carried out, the update progress 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.



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.

This is a list of the most important wearing parts.

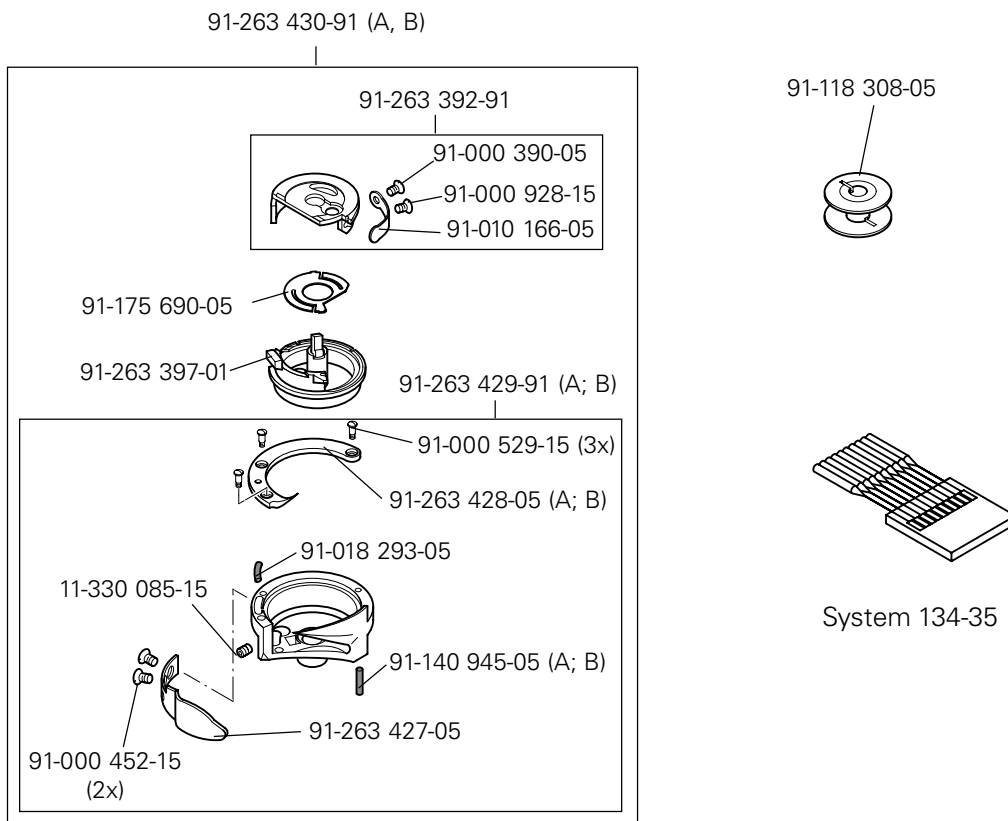
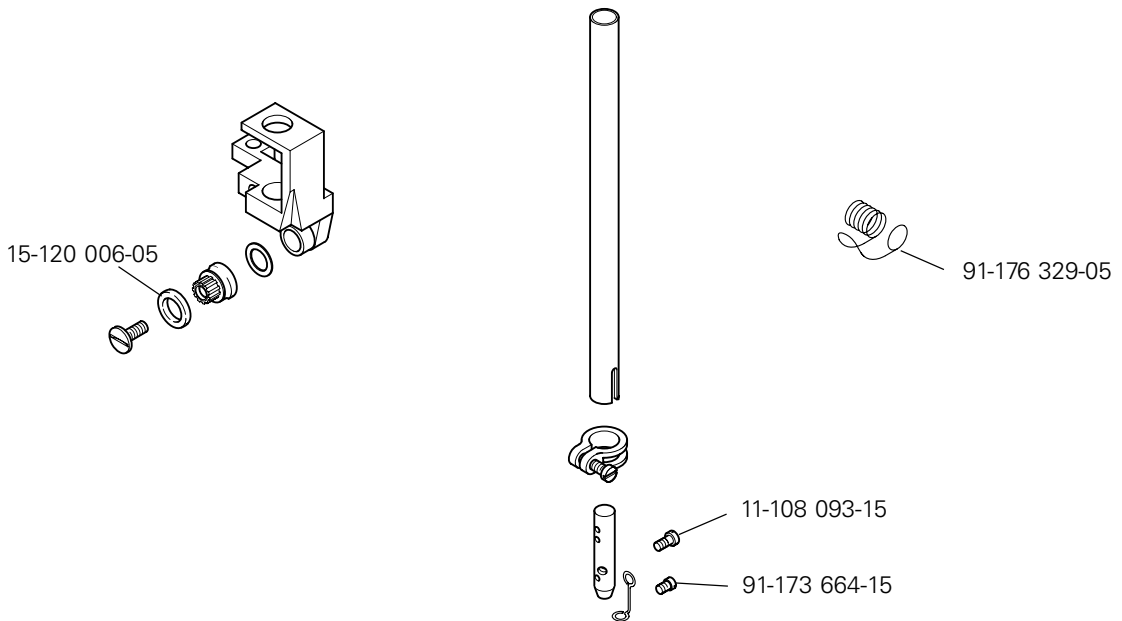
A detailed parts list for the complete machine is included with the accessories.

In case of loss, the parts list can be downloaded from the internet address

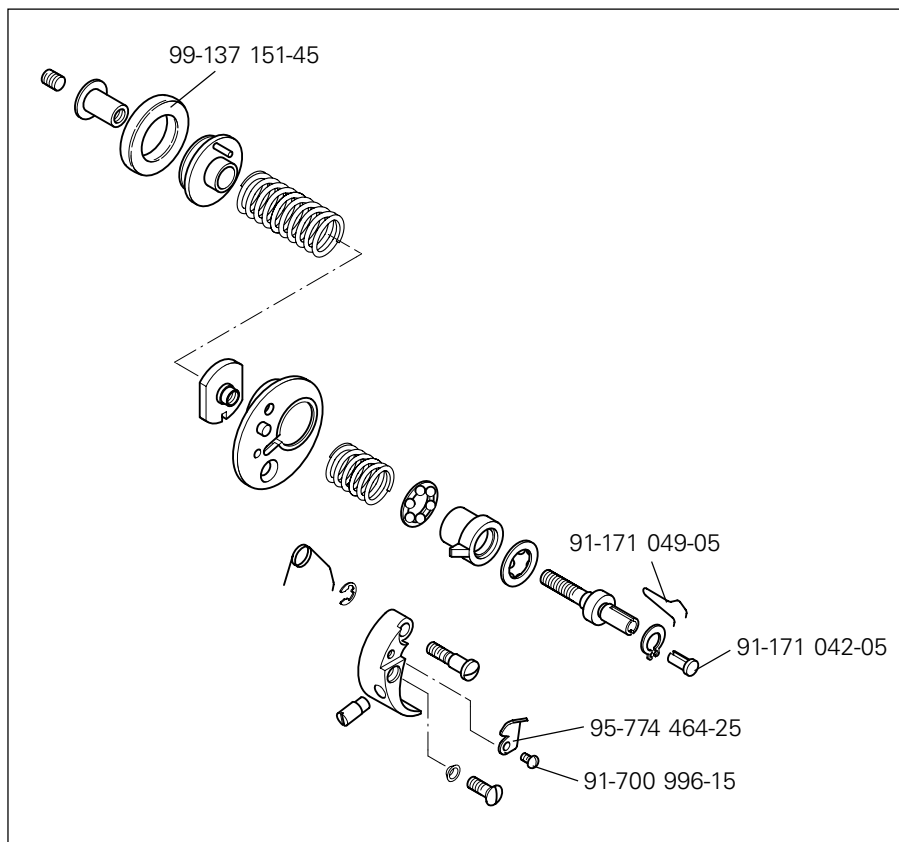
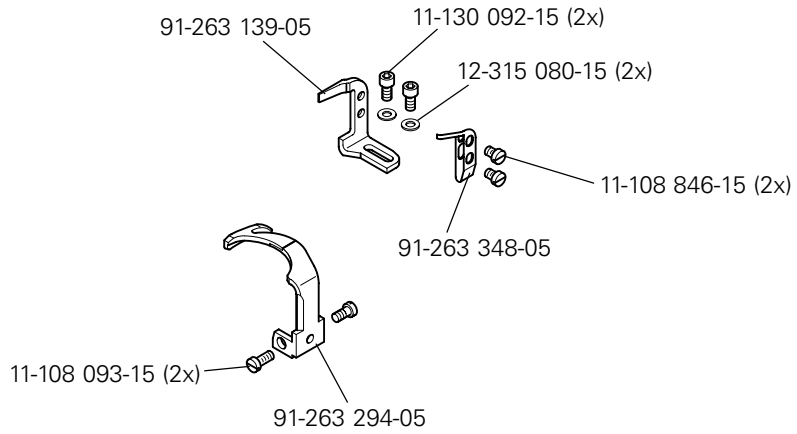
www.pfaff-industrial.com/pfaff/en/service/downloads As an alternative to

the internet download the parts lists can also be ordered in book form

under part no. 296-12-18 935.



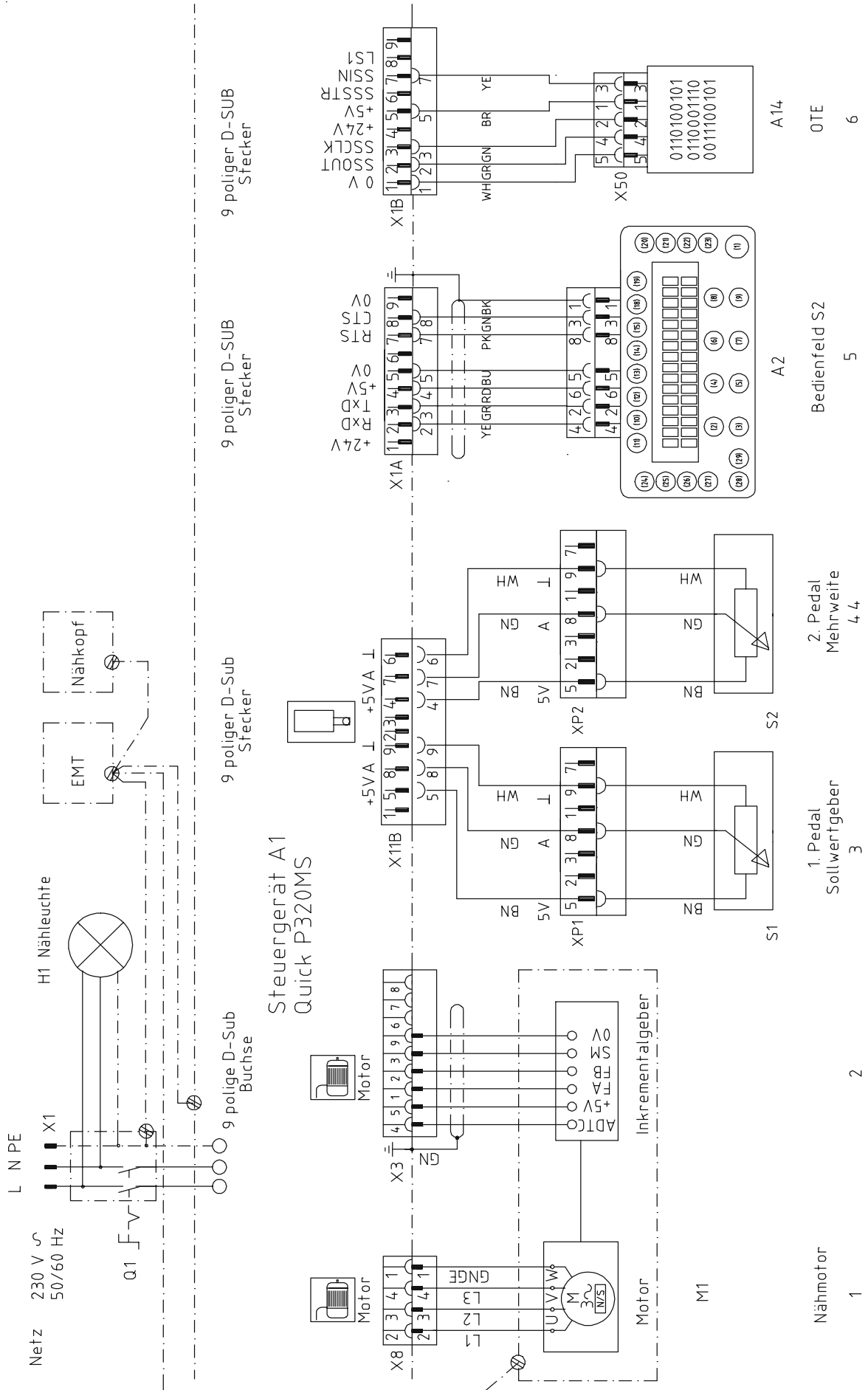
For Subclass -900/81



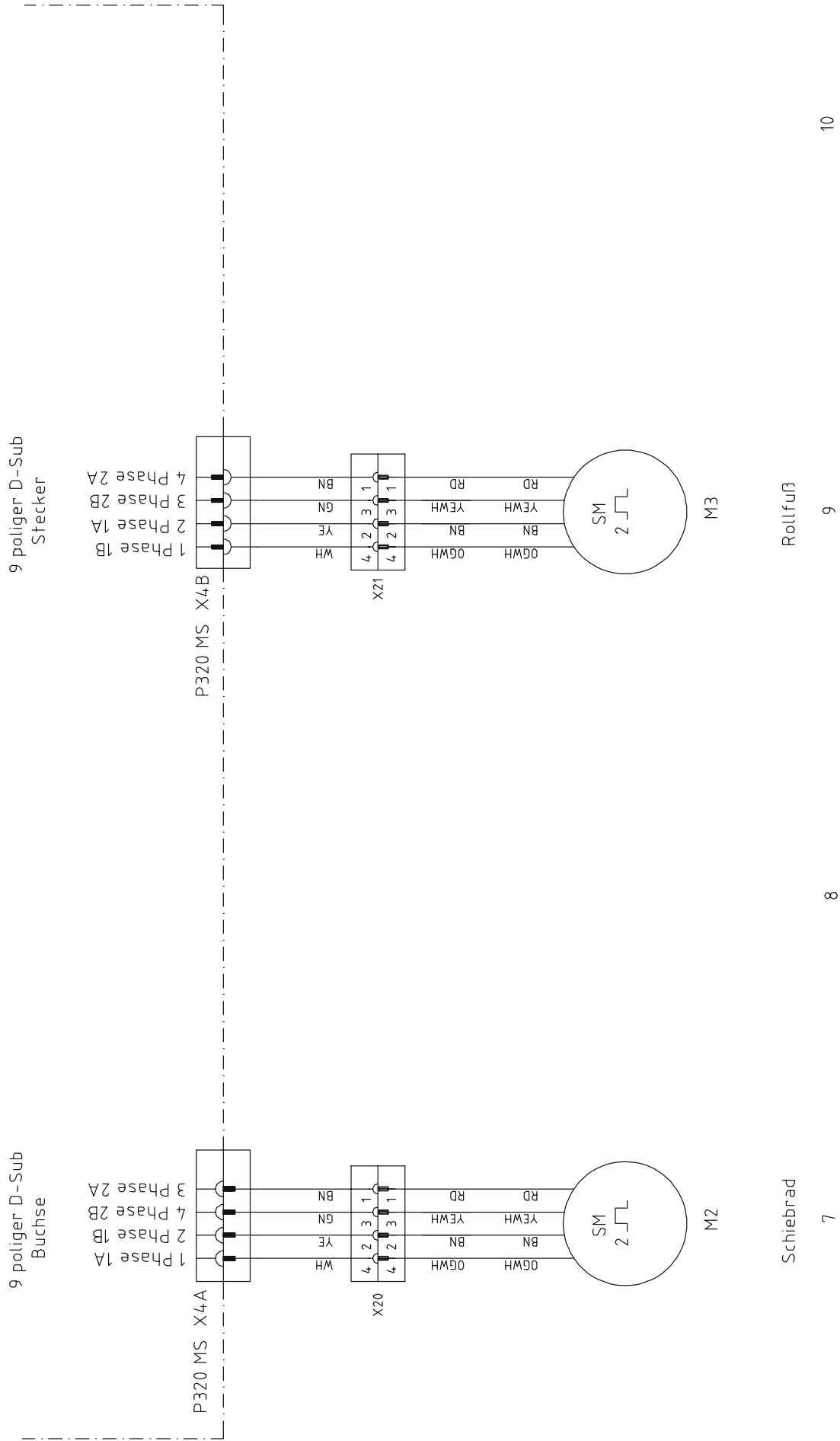
14 Circuit diagrams

Reference list for circuit diagrams

A1	Controller Quick P 320MS	X30	Initiator material height
A2	Control panel S2	X31	Key row
A14	Sewing head identification (OTE)	X34	Start inhibitor
B10	Initiator material height	X36	Knee switch (program)
H1	Sewing lamp	X41	-910/..Automatic presser foot lift
H20	LED Stitch counter (option)	X42	-900/..Thread trimmer
M1	Sewing motor	X43	Thread tension 2
M2	Stepping motor feed wheel	X44	Thread tension 1
M3	Stepping motor roller presser	X45	R45 Resistor + Pullermotor
M45	Pullermotor	Y1	-910/..Automatic presser foot lift
Q1	Main switch	Y2	-900/..Thread trimmer
R45	Resistance 330 ohm	Y3	Thread tension 2
S1	Pedal set value transmitter	Y4	Thread tension 1
S2	Pedal 2 Fullness		
S21	Manual backtacking key (option)		
S22	Single stitch switch (option)		
S23	Needle position change switch (option)		
S24	Start inhibitor switch		
S26	Knee switch (program)		
XP1	Pedal set value transmitter		
XP2	Pedal 2 Fullness		
X1	Mains plug		
X1A	RS232 – interface 1 (Control panel BDF S2)		
X1B	VSS Sewing head identification		
X3	Incremental transmitter (sewing motor)		
X4A	Stepping motor feed wheel		
X4B	Stepping motor roller presser		
X5	Inputs		
X8	Sewing motor		
X11B	Pedal set value transmitter and fullness		
X13	Outputs		
X20	Stepping motor feed wheel		
X21	Stepping motor roller presser		



Steuergerät A1 Quick P320MS



Schrittmotore

9 poliger D-Sub
Buchse

P320 MS X4A

X20

M2

Schiebbrad

7

9 poliger D-Sub
Stecker

P320 MS X4B

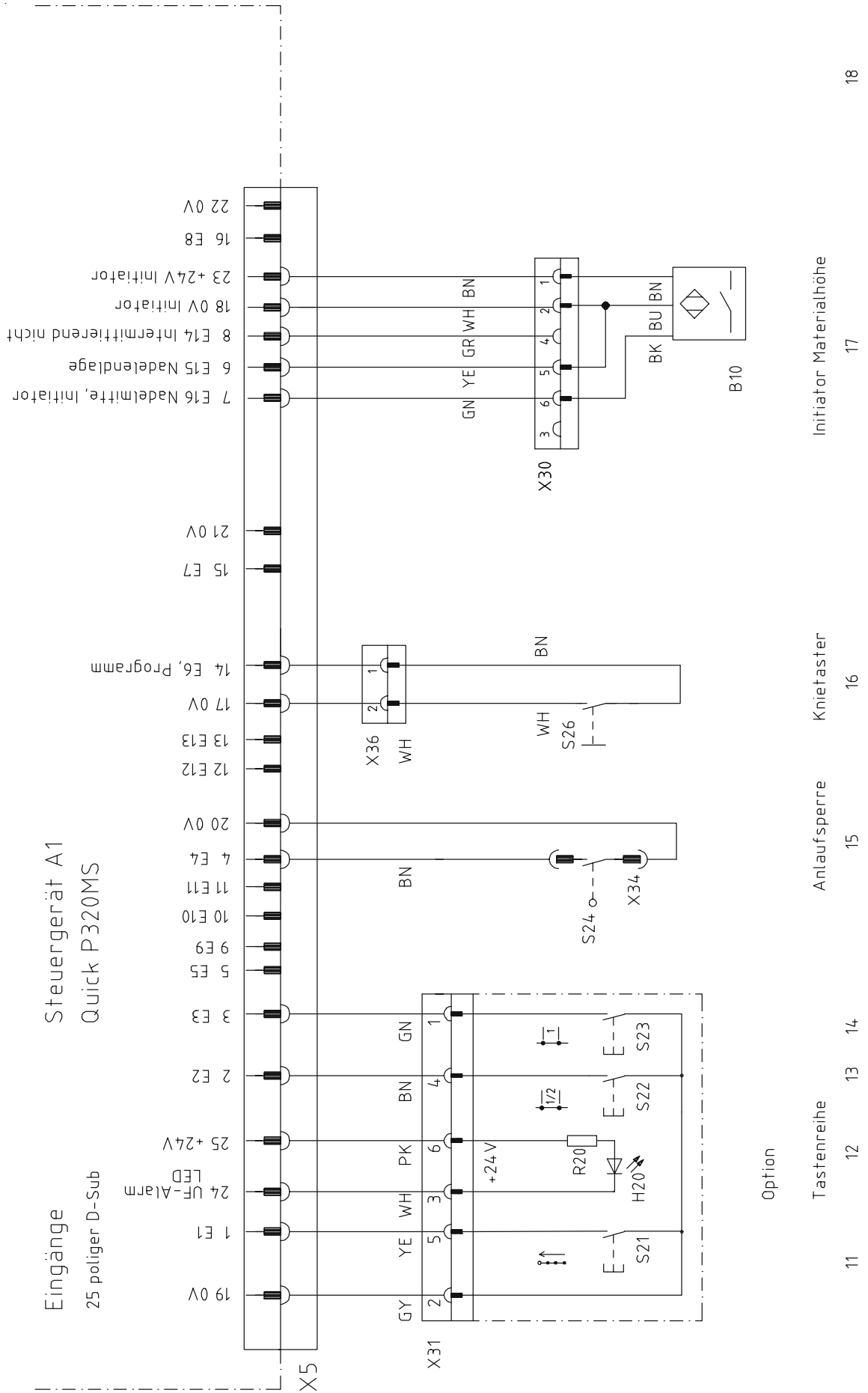
X21

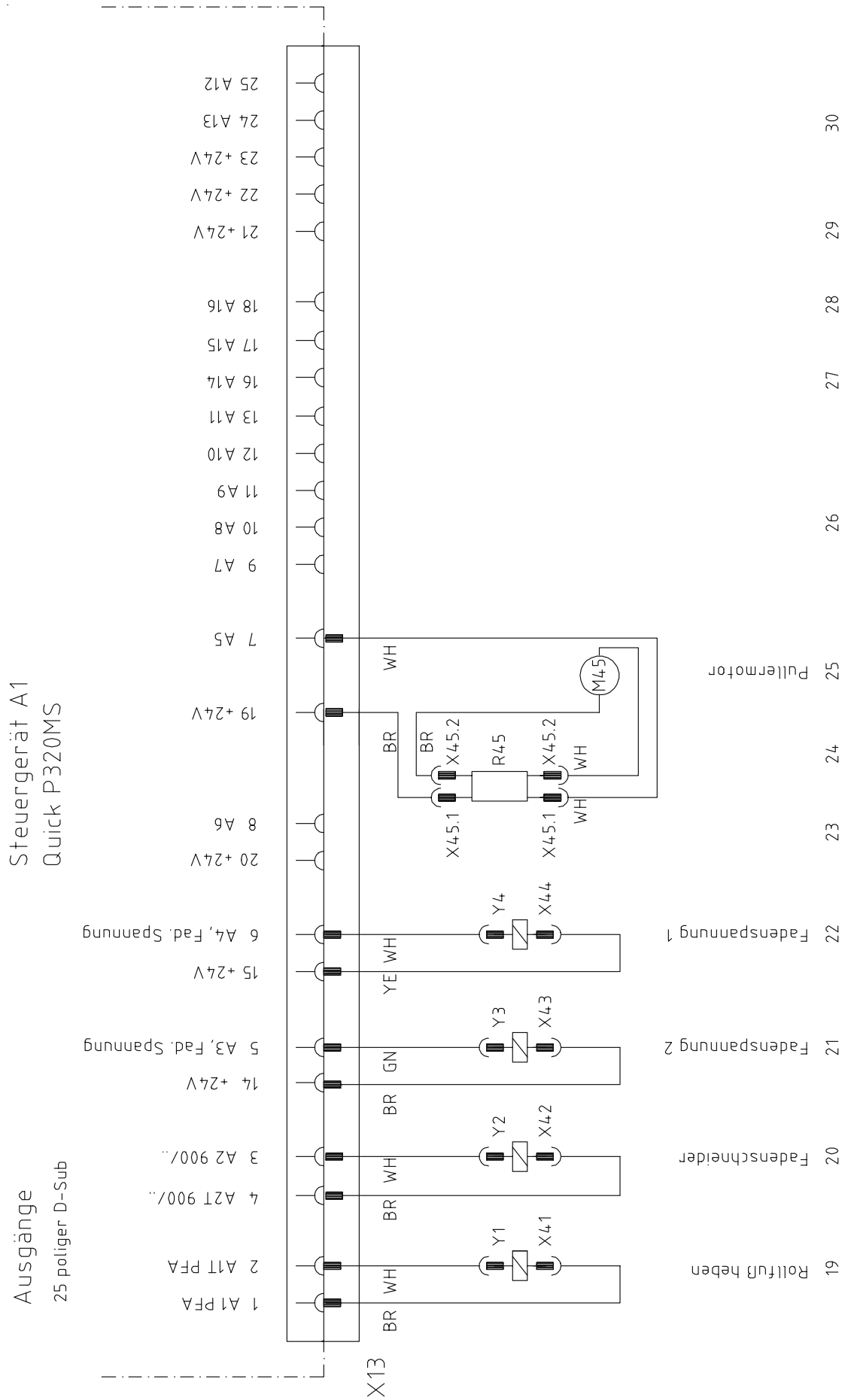
M3

Rollfuß

9

10







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