

# PFAFF

3801-1/07

3801-1/071

Instruction Manual



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

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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, also observe 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 organizations 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, presser foot and needle plate), 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!

## 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 jewelery 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 explained in the regulations EN 50110.
- replace the protective coverings 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 while adjusting the machine settings!  
Objects can become trapped or be slung away!  
Danger of injury!

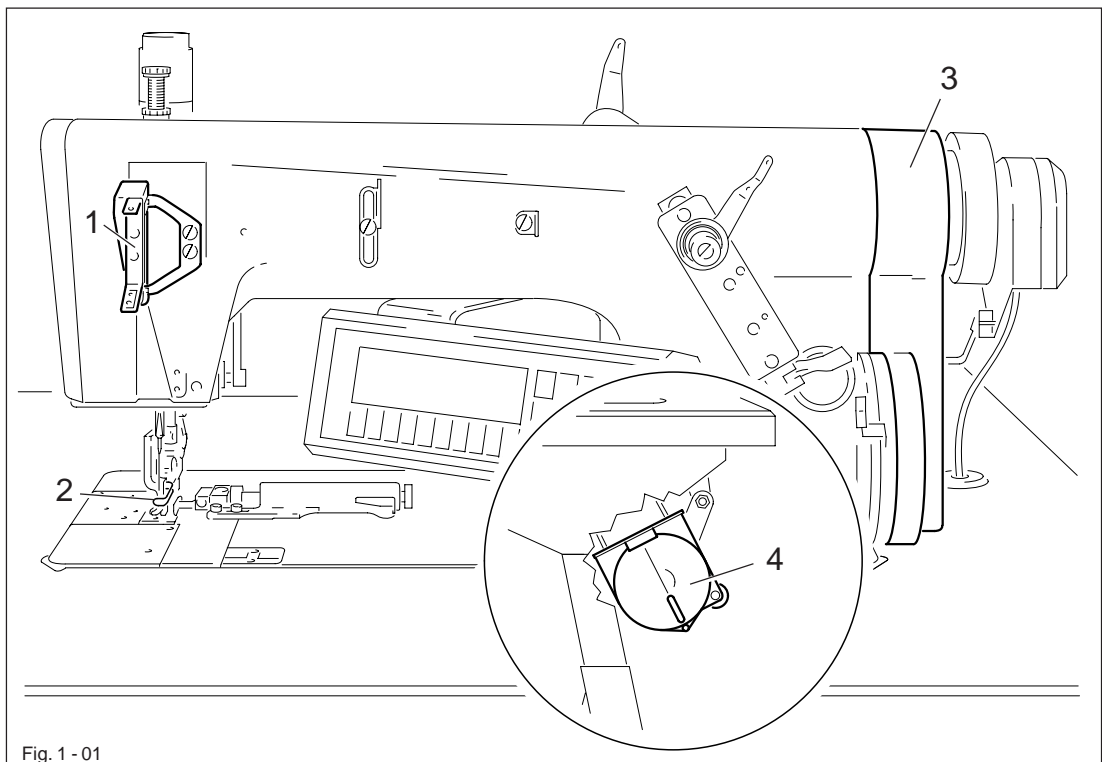


Fig. 1 - 01



Do not operate the machine without the take-up-lever guard 1!  
Danger of injury due to the motion of the take-up lever!



Do not operate the machine without the needle guard 2!  
Danger of injury by the needle!



Do not operate the machine without the belt guards 3 and 4!  
Danger of injury due to the rotating V-belt!

2

## Proper use

The PFAFF 3801-1/07 and  
the PFAFF 3801-1/071

are integrated workstations for use in the apparel industry for applying fullness to a material ply.



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 ▲

### Sewing head:

3801-1/07: ..... 5487/5489-814/01

3801-1/071: ..... 5487/5489-814/01-900/71

Stitch type: ..... 401

Max. speed: ..... 3200 spm/min♦

Max. stitch length: ..... 2.5 mm

Differential stitch length: ..... 6 mm

Needle system: ..... 4463-35

Needle size ( Nm ) in  $\frac{1}{100}$  mm: ..... 80 - 110 depending on type of material

Handwheel eff. dia.: ..... 65 mm

Clearance under the presser foot: ..... 7 mm

Sewing motor: ..... QE 6040-Q 31 Plus

Input rating: ..... 0.8 kW

Connection voltage: ..... E 230 V, 50/60 Hz

Working air pressure: ..... 6 bar

Air consumption: ..... 0.3 - 0.5 l / work cycle

### Working noise level:

Emission at workplace at speed  $n = 2600 \text{ min}^{-1}$ : ..... 79 dB(A)

( Noise measurement in accordance with DIN 45 635-48-A-1 )

### Dimensions of the machines:

Length: ..... ~ 1250 mm

Width: ..... ~ 600 mm

Height (with reel stand): ..... ~ 1700 mm

Net weight: ..... 140 kg

▲ Subject to alteration

♦ Varies according to material, work process and stitch length

### 4 Disposal of machines

- The proper disposal of the 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!

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## *Transport, packaging and storage*

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### 5 Transport, packaging and storage

#### 5.01 Transport to the customer's premises

Within Germany, complete machines (with table and motor) are delivered without packaging. Machines without a table (sewing head only) and machines for export are packaged.

#### 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 fiber. 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.

6 Explanation of the symbols

In this Instruction Manual, tasks to be carried out and important information are drawn to your attention by symbols. The symbols have the following meanings:



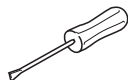
Note, information



Cleaning, care



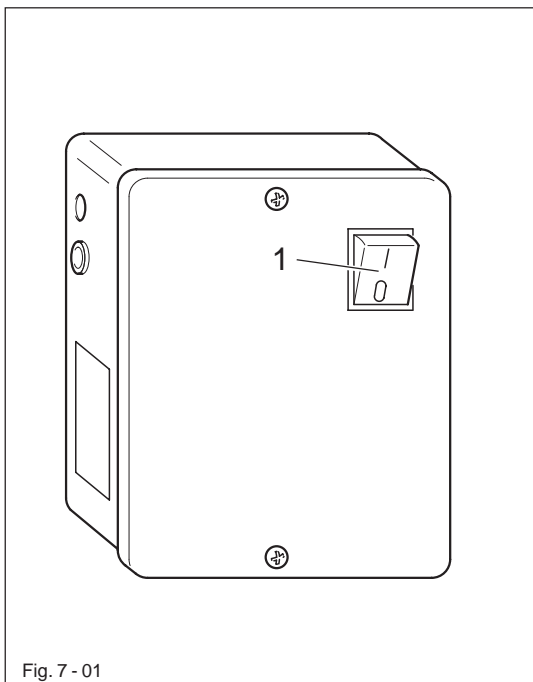
Lubrication



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

## 7 Controls

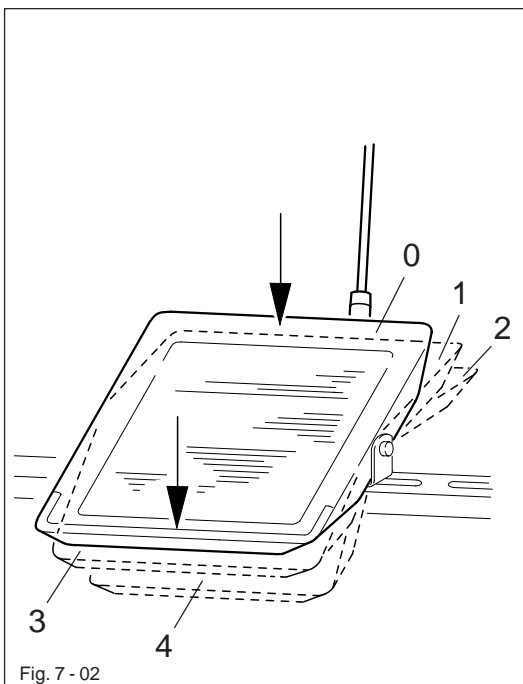
### 7.01 On/off switch



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

Fig. 7 - 01

### 7.02 Pedal



- 0 = Machine stop
- 1 = Presser foot down
- 2 = Sew
- 3 = Presser foot up
- 4 = Cut thread

Fig. 7 - 02



7.03 Lever for lifting the presser foot

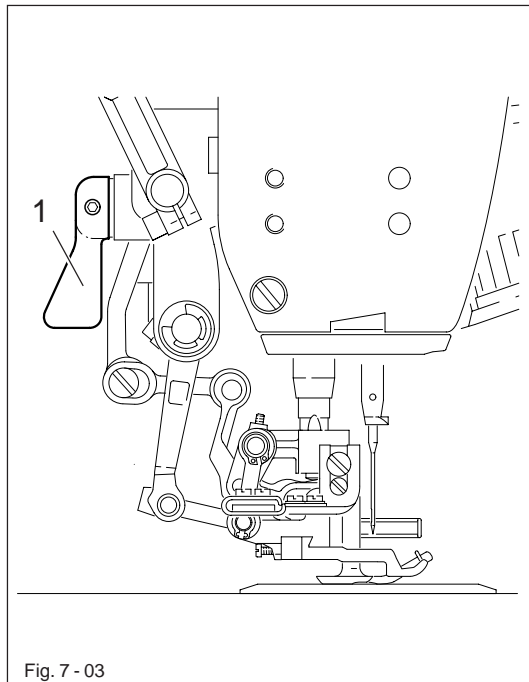


Fig. 7 - 03

- The presser foot is raised by turning lever 1.

7.04 Edge guide

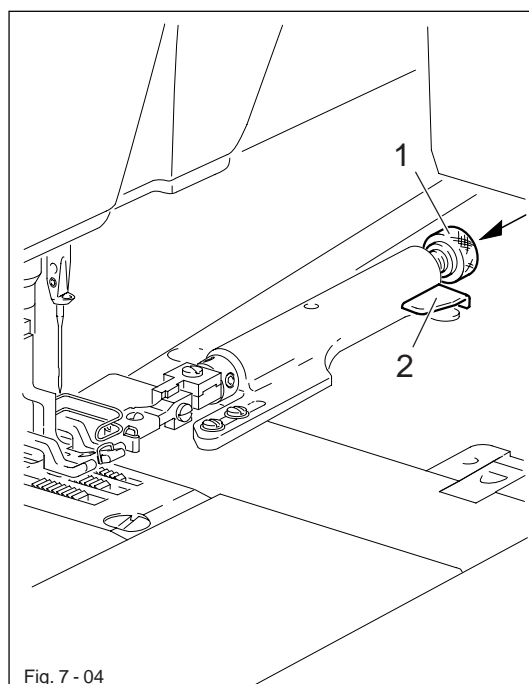


Fig. 7 - 04

- The edge guide is brought into operating position by pushing up lever 1.
- By pressing switch-key 2, the edge guide can be raised.

## 7.05 Control panel

The control panel consists of the display and two key panels.

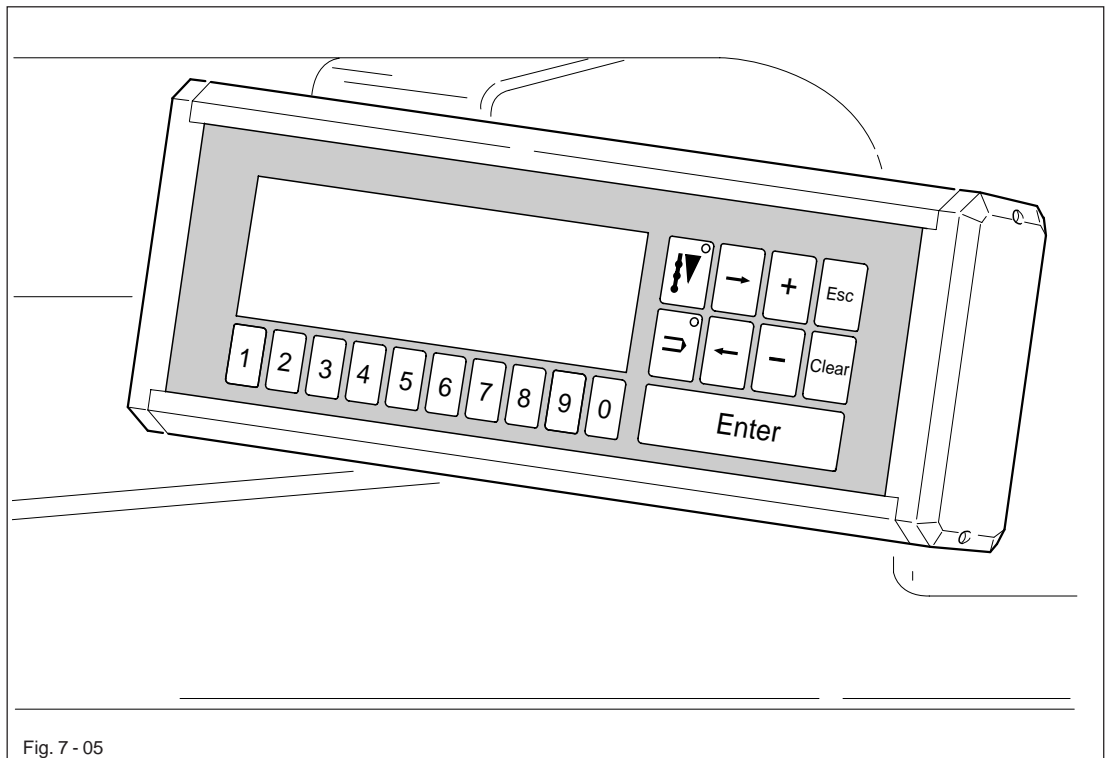


Fig. 7 - 05

### 7.05.01 Display

In the basic screen the messages in the display are divided into three sections:

#### Status bar

The status bar is in the upper section of the display. Here, up to 5 pictograms with the corresponding values can be displayed (e.g. program number, number of seam sections, etc.).

#### Text field

The text field is in the middle section of the screen, in which messages are displayed in 2 lines. Stylized seam segments can also be shown here with information about start and end bartacks, sewing direction and seam section end.

#### Pictogram bar

The pictogram bar is found at the bottom of the display. Here, symbols are displayed whose corresponding function can be called up via the number keys. Active functions are shown by a symbol displayed on a dark background.



Normal symbol (function not active)



Symbol on dark background (function active)

7.05.02 Operation-mode keys

There are two operation modes. The selected mode can be seen by the light emitting diode in the respective key.



SEWING mode



INPUT mode

7.05.03 Function keys



Arrow keys (right/left)

- For positioning the cursor when entering several values in one line
- Selecting function



Plus/Minus keys

- For raising and lowering input values



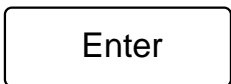
Esc key

- For interrupting functions without taking on the value entered
- For returning to superordinate menu functions
- For error acknowledgement after an error message



Clear key

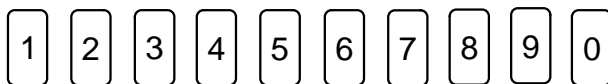
- For returning the input value to 0
- For error acknowledgement after an error message



Enter key

- For confirming an input value
- For error acknowledgement after an error message

7.05.04 Number keys



Below the display there is a row of number keys.

Depending on the current operating mode, these keys have the following functions:

- carrying out the function shown by the symbol displayed above the number key
- entering a numerical value
- selecting functions or the next level of the menu

7.06 Tape feeder (option)

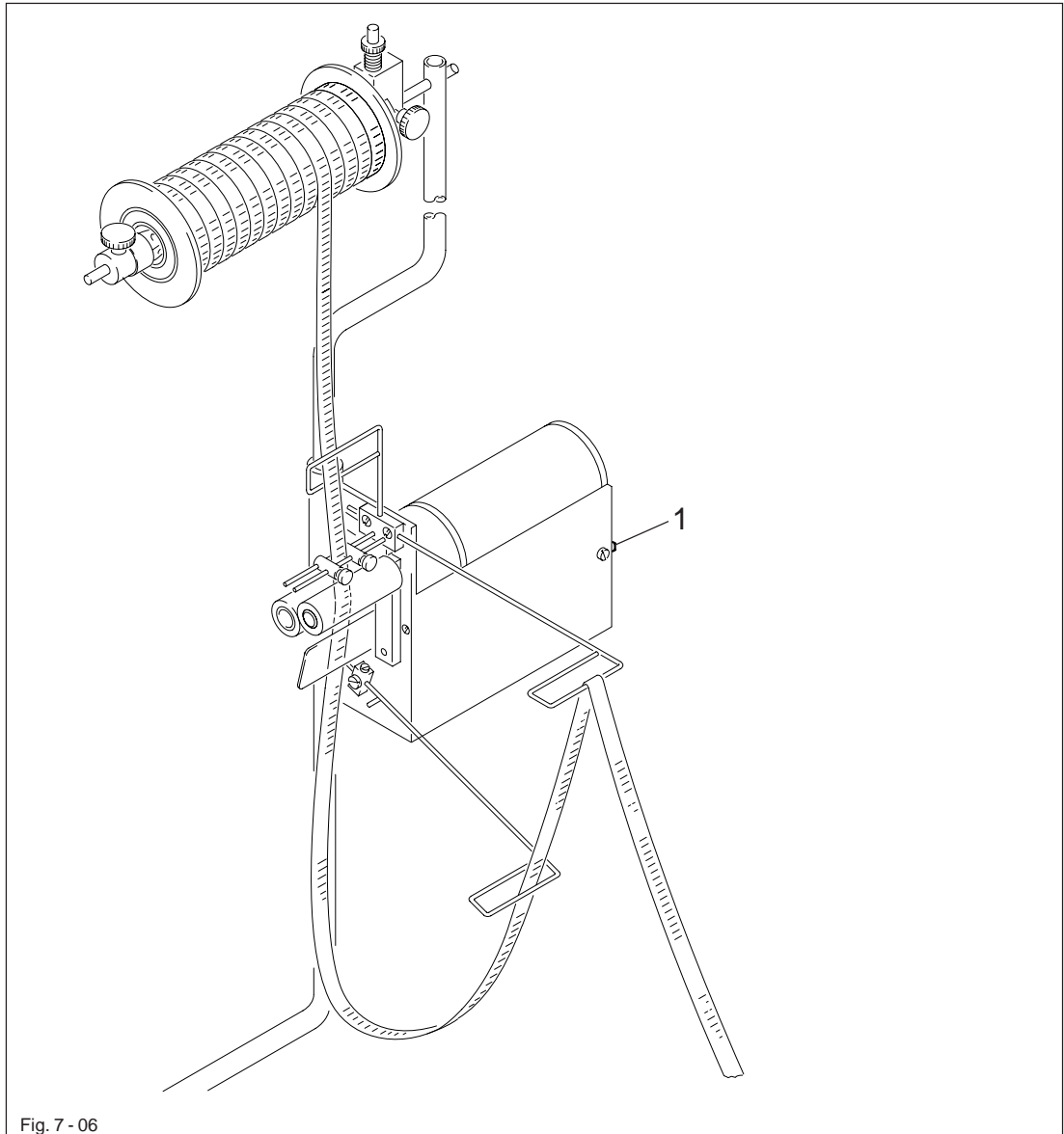


Fig. 7 - 06

- When stabilizing tape is to be applied, the device is turned on using switch 1.

## 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, you must make sure that the frame and the table top which you intend to use can hold the weight of the machine and the motor. It must be ensured that the supporting structure is sufficiently sturdy, including during all sewing operations.

### 8.01 Mounting

The necessary electricity supply must be available at the machine's location (see chapter 3 Specifications).

There must be a stable and horizontal surface and adequate lighting at the machine's location.



The method of packaging used requires that the table top be 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

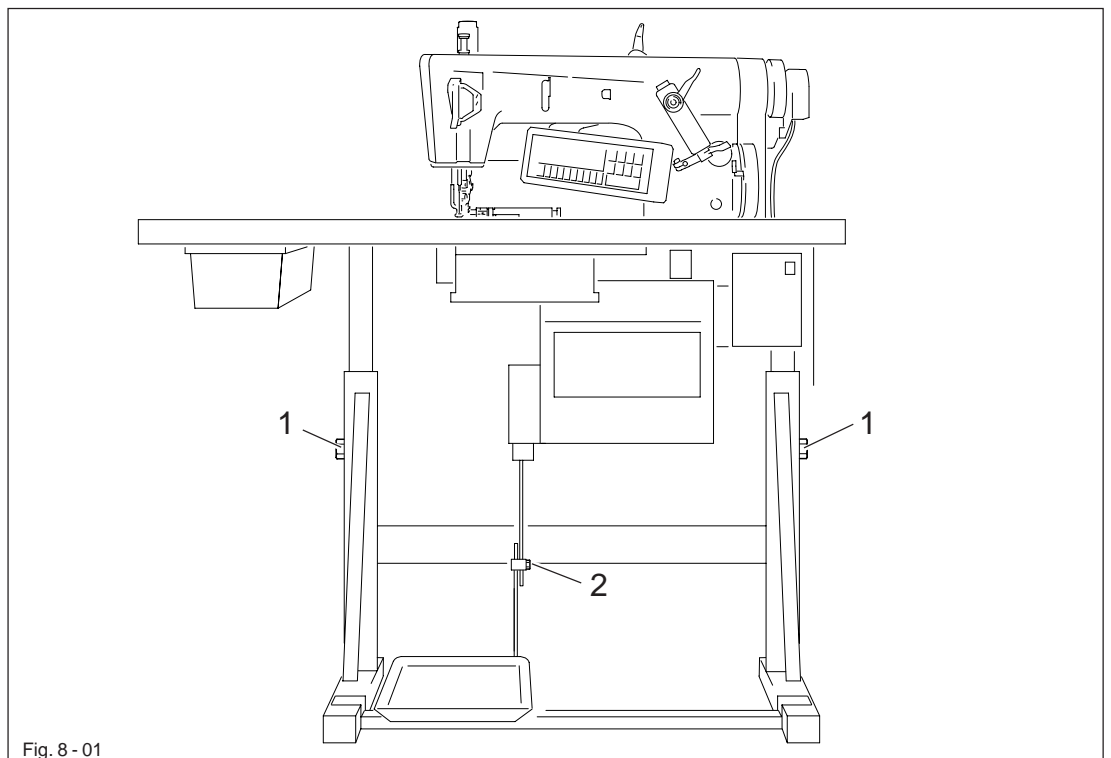
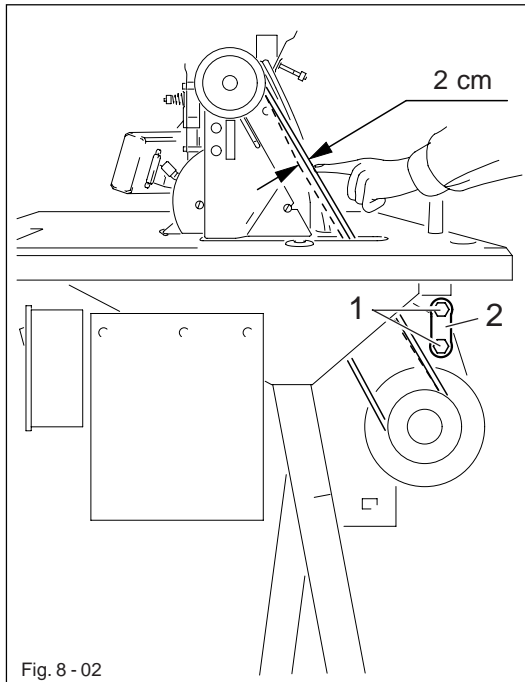


Fig. 8 - 01

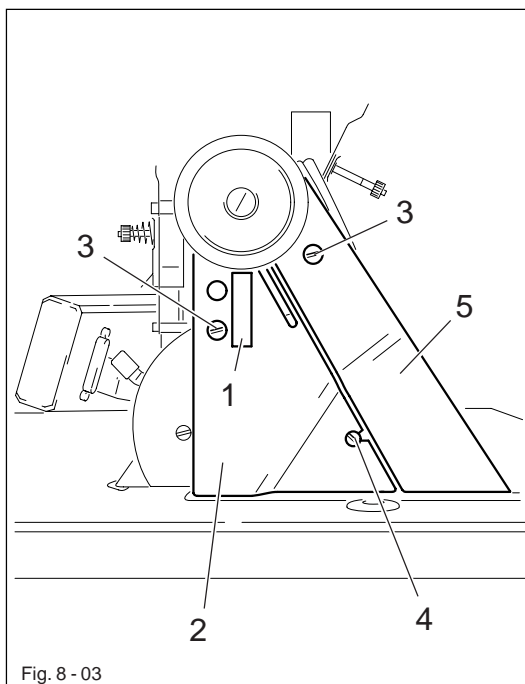
- Loosen screws 1 and 2 and set the desired table-top height.
- Tighten screws 1 well.
- Adjust the position of the pedal so that you can operate it comfortably and tighten screw 2.

## 8.01.02 Adjusting the V-belt tension



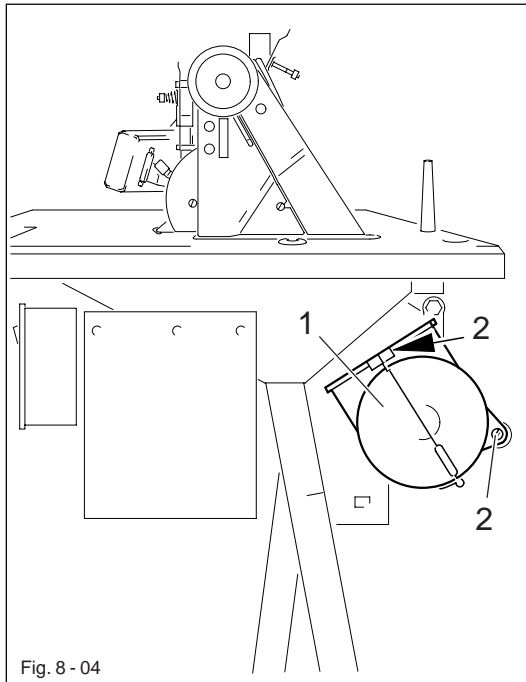
- Loosen nuts 1.
- Tighten the V-belt with belt take-up hanger 2.
- Tighten nuts 1.

## 8.01.03 Mounting the upper V-belt guard



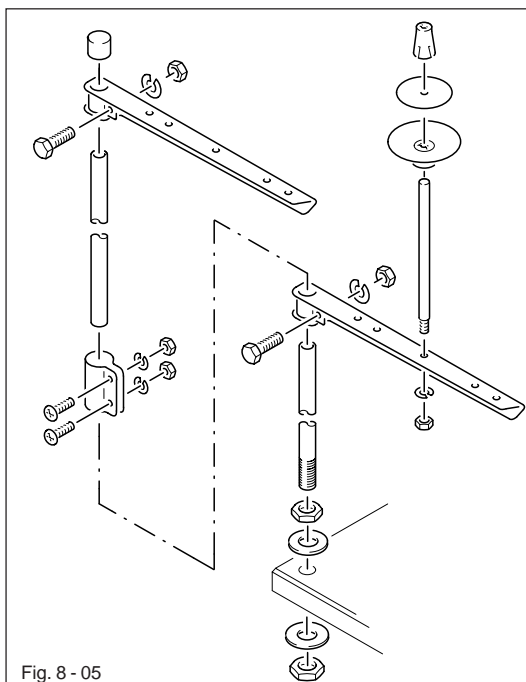
- Screw position stop 1 onto the left half of V-belt guard 2.
- Screw on screws 3.
- Screw on screw 4 together with the spacing sleeve.
- Slide the left half of V-belt guard 2 behind screws 3 and 4.
- Slide the right half of V-belt guard 5 behind screw 3 and half of V-belt guard 2.
- Tighten screws 3 and 4.

## 8.01.04 Mounting the lower V-belt guard



- Align belt-guard 1 in such a way that both the motor pulley and the V-belt run freely.
- Tighten screws 2.

## 8.01.05 Mounting the spool holder



- Mount the spool holder as shown in Fig. 8 - 05.
- Insert the spool holder into the hole in the table top and fasten it with the nuts enclosed.

# Mounting and commissioning the machine

## 8.02 Commissioning the machine

- Before commissioning the machine, check the electrical leads for any damage.
- Clean the machine thoroughly and oil it / fill with oil (see chapter 12 Care and maintenance).
- Have specialists ensure that the machine's motor can be operated with the available electricity supply and that it is connected correctly to the terminal box.



If the mains voltage and the operating voltage differ, the machine must not be operated under any circumstances!



Only connect the machine to a grounded socket.

- Connect compressed air tube (inside diameter 6 mm) to the coupling of the air filter.

## 8.03 Turning the machine on/off

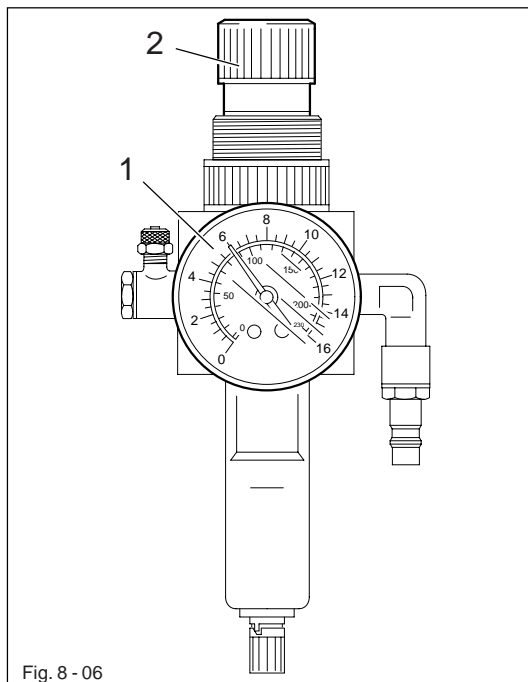


Fig. 8 - 06

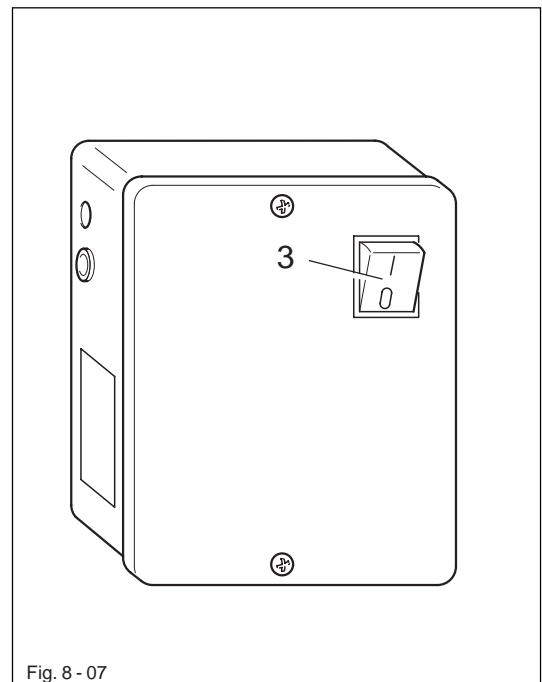


Fig. 8 - 07

Switching on the machine:

- Check working air pressure (6 bar) on the manometer 1.
- If necessary, adjust the working air pressure on adjusting knob 2.
- Switch on machine with the On/Off switch 3.

Switching off the machine:

- Switch off the machine with the On/Off switch 4.



9

Preparation



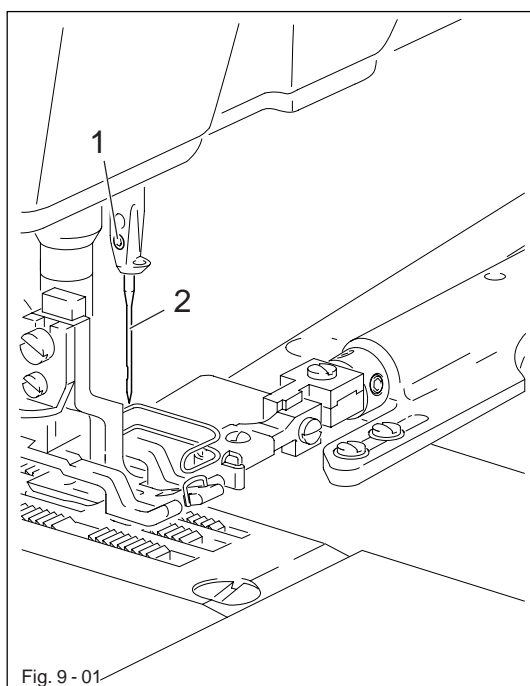
All regulations and instructions in this Instruction Manual are to be observed!  
Special attention is to be paid to the safety regulations!



All preparation work is only to be carried out by appropriately trained personnel.  
Before all preparation work, the machine is to be separated from the electricity supply by removing the plug from the mains or switching off the On/Off switch!

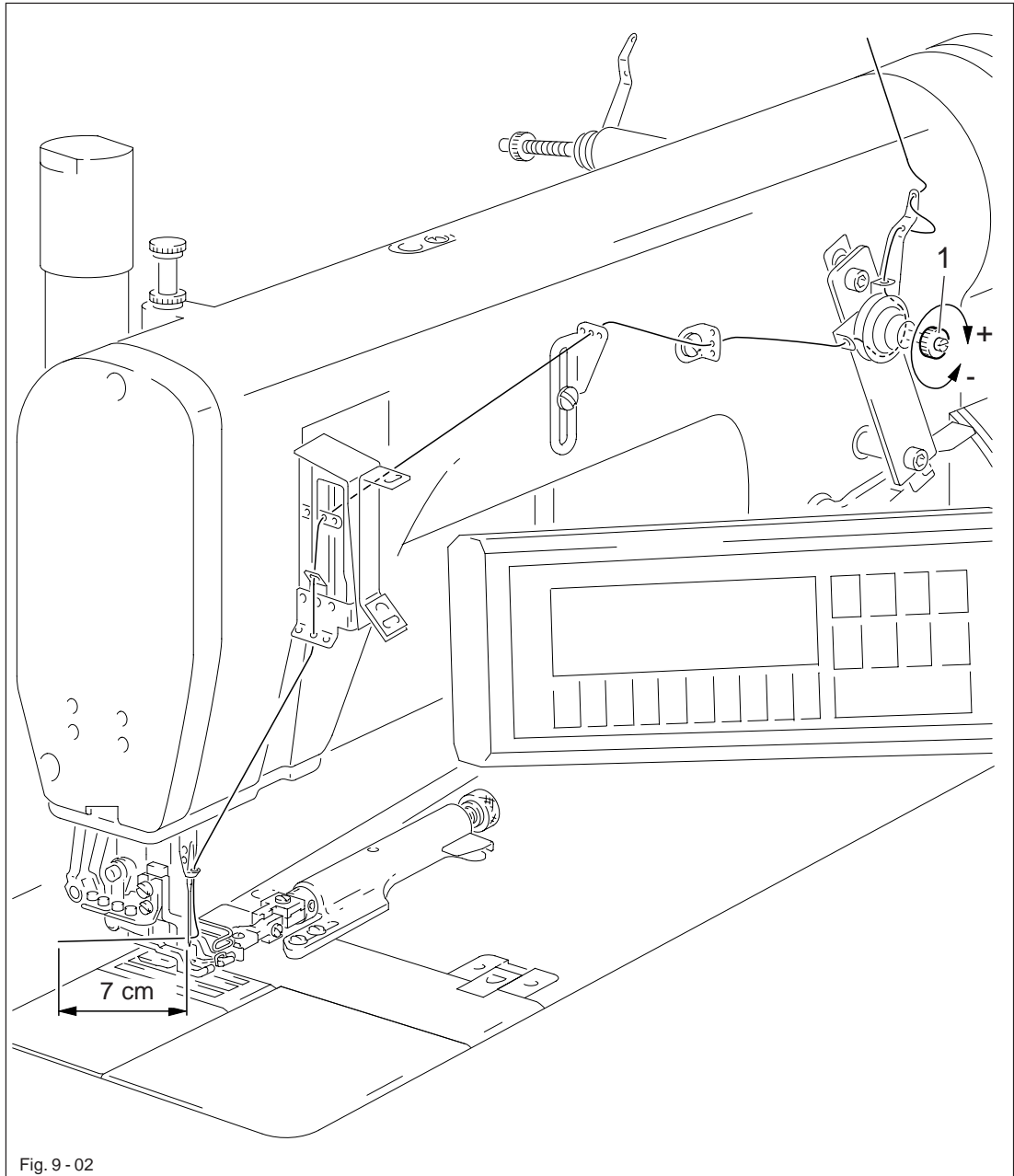
9.01

Inserting the needle



Turn the machine off!

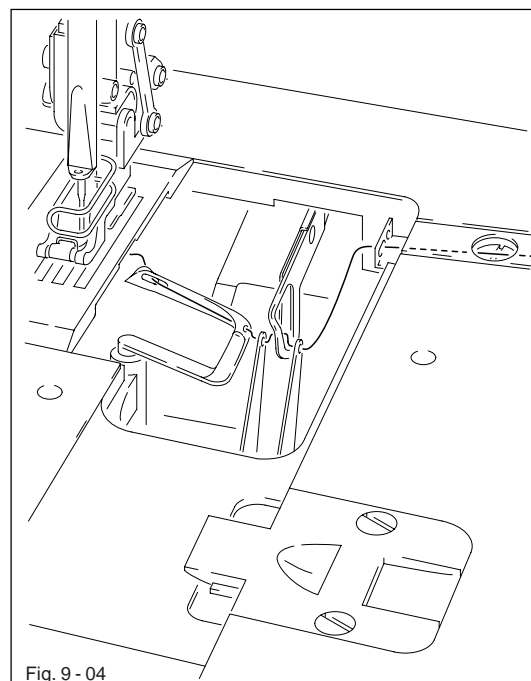
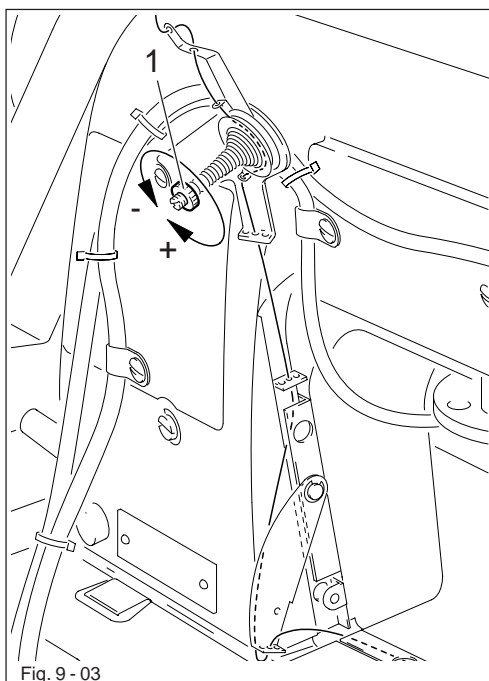
- Raise the needle bar.
- Loosen screw 1.
- Insert needle 2 into the needle bar until it stops.
- The long needle groove must be facing the operator.
- Tighten screw 1.



Turn the machine off!

- Thread the machine as shown in Fig. 9-02.
- Adjust the needle thread tension by turning knurled screw 1.

9.03 Threading the bobbin thread / Adjusting the bobbin thread tension



Switch off the machine!

- Remove hook cover plate.
- Thread the bobbin thread as shown in Fig. 9-03 and Fig. 9-04.
- Adjust the bobbin thread tension by turning knurled screw 1.

## 9.04 Inputting fullness

- Turn the machine on.



- Select SEWING mode.



- Select the function select program (number key 1).



- Enter program number 0.



- Confirm with the enter key.

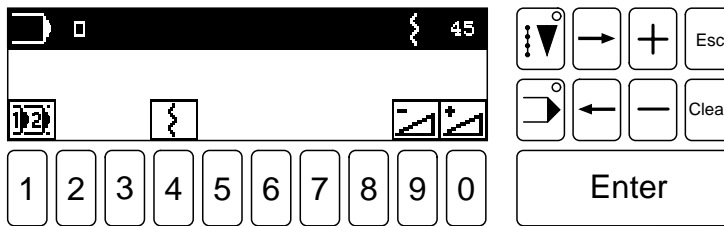


Fig. 9 - 05



- Select the function fullness (number key 4).

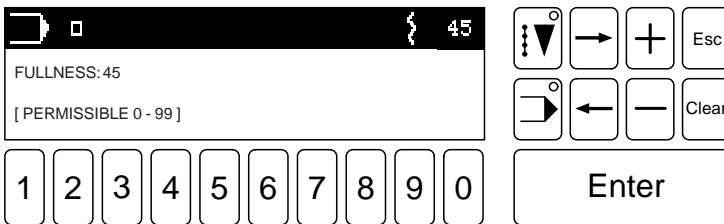


Fig. 9 - 06

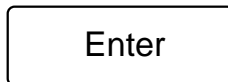
- Input the desired value using the number keys.



The current value can also be increased or decreased by using the plus/minus keys.



You can exit the input menu any time using the Esc key. The values entered will not be taken over; the previous values remain stored.



- The values you have entered or changed are taken over by pressing the Enter key.

9.05 Selecting a language

- Turn the machine on.
- Select INPUT mode

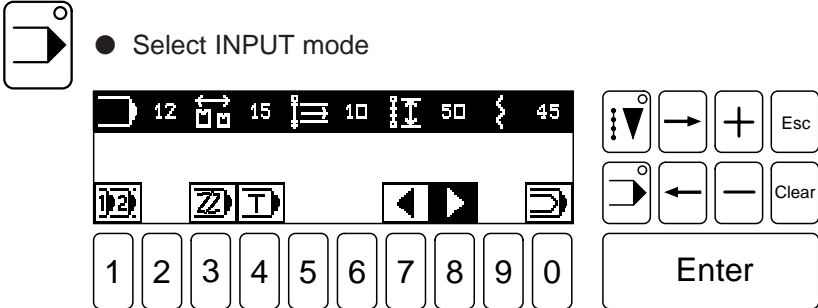


Fig. 9 - 07

- Select the function input menu with number key 0.

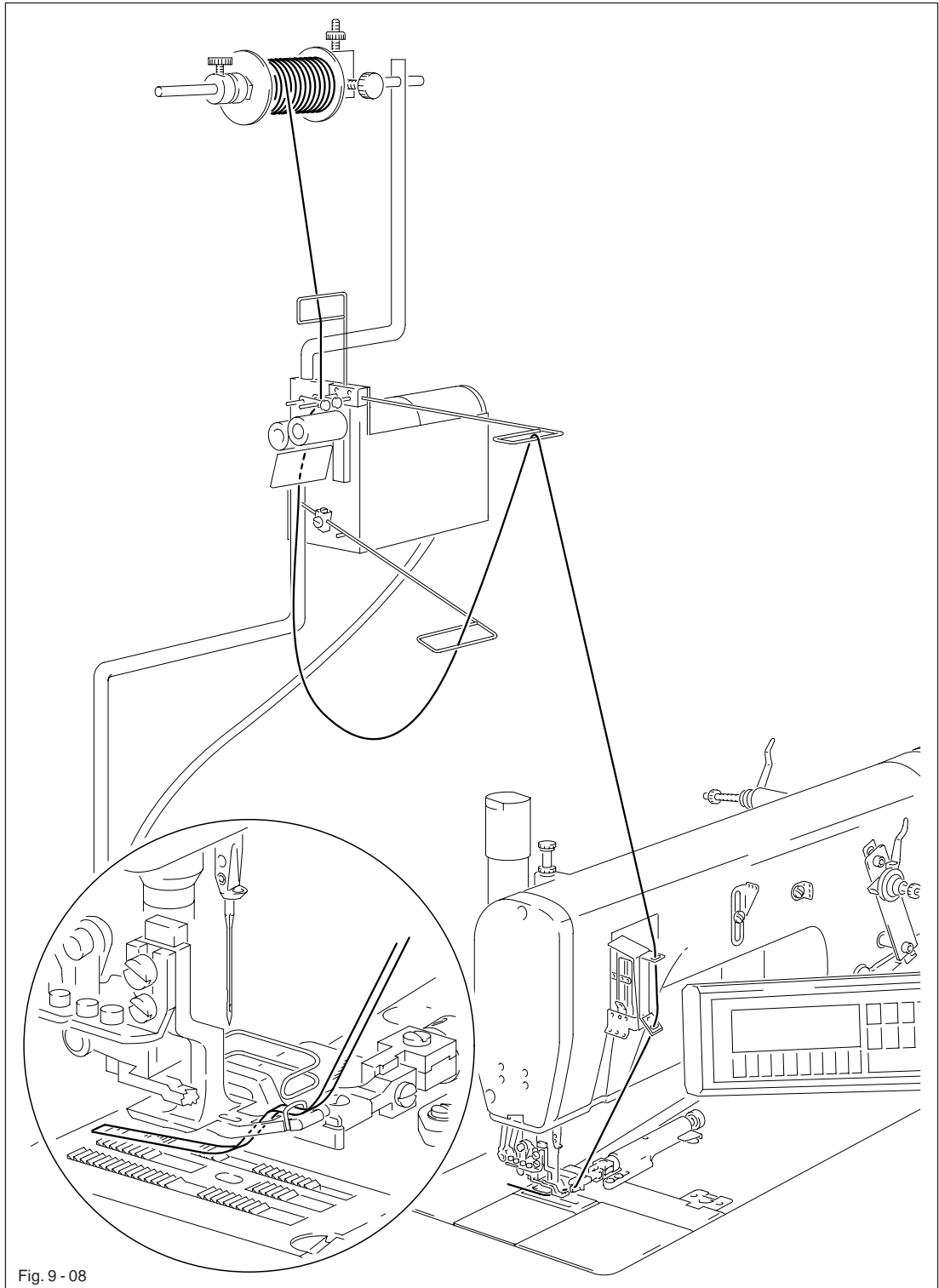
- Select the function LANGUAGES with number key 1.

- Select the desired language with the number keys:

- 1 = (D)
- 2 = (GB)
- 3 = (F)
- 4 = (I)
- 5 = (E)
- 6 = (P)

- The language selected is assumed immediately once the corresponding number has been entered.

9.06 Threading reinforcing tape (option)



Switch off machine!

- Thread the reinforcing tape according to Fig. 9-08.

## 10 Sewing

## 10.01 Manual sewing (Program number 0)

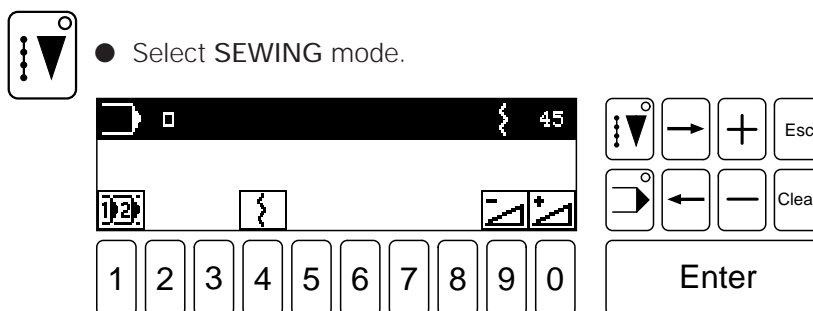









Fig. 10 - 01

If the display shown in Fig. 10-01 does not appear:

-  ● Select the function select program (number key 1).
-  ● Enter program number 0.
-  ● Confirm the input with the Enter key.
- After these inputs you can begin sewing.

Explanation of the symbols in the display:

-  **Program selection**  
This function opens a direct menu for selecting the desired seam program.
-  **Fullness**  
This function opens a direct menu for selecting the desired fullness (see chapter 9.04 Inputting fullness).
-  **Correction value minus**  
When this function is active, the correction value is subtracted from the current fullness.
-  **Correction value plus**  
When this function is active, the correction value is added to the current fullness.



The purpose of the functions **correction value plus / minus** is to compensate for variations in the feeding properties when parameters are changed. The amount of the correction value can be changed in the input menu (see chapter 13.08.01 Entering correction values).

## 10.02 Programmed sewing

Via the program numbers 1-35 you can call up pre-programmed seams.



- Select SEWING mode.

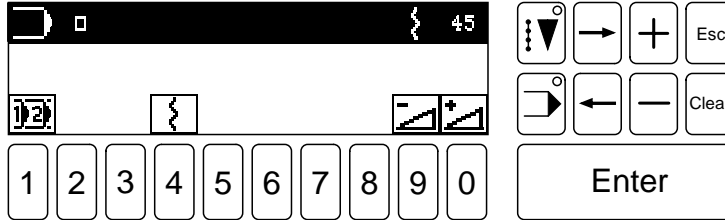


Fig. 10 - 02



- Select the function select program.



- Enter the desired program number from 1-35.



- Confirm with the enter key.

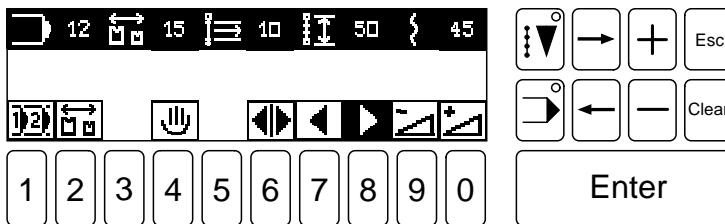


Fig. 10 - 03

Explanation of the symbols:



**Program selection**

Opens a direct menu for the selection of the desired seam program.



**Size selection**

Opens a direct menu for the selection of the desired size (see chapter 11.09 Selecting the size).



**Program interruption**

Interrupts the seam program cycle (see chapter 10.03 Program interruption).



**Automatic seam change**

When this function is activated, at the end of the seam the machine switches to the right or left seam, respectively.



**Left seam**

When this function is active, a left seam is sewn.



**Right seam**

When this function is active, a right seam is sewn.



**Correction value minus**

When this function is active, a certain value is subtracted from the current fullness.





### Correction value plus

When this function is active, a certain value is added to the current fullness.

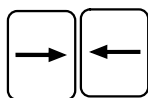


The purpose of the functions **correction value plus / minus** is to compensate for variations in the feeding properties when parameters are changed. The amount of the correction value can be changed in the input menu (see **chapter 13.08.01 Entering correction values**).

## 10.03 Programm interruption



If you want a sewing program to be interrupted (e.g. in the case of thread breakage), the function **program interruption** must be selected.



- After initial selection, the machine switches to **manual SEWING**.
- Sewing can now be continued manually.
- Using the **arrow keys**, you can select the seam section in which the sewing program is to be continued.
- After the key is pressed for a second time, you can start sewing the selected seam section; **programmed SEWING** is continued.



After the thread has been cut via the pedal (pedal position 4 in **chapter 7.02 Pedal**), the interrupted sewing program is restarted.

## 10.04 Error messages

When there is an error message, the text and pictogram bars in the display are overwritten. An error message is caused by the wrong settings, erroneous elements or seam programs, or by overload.

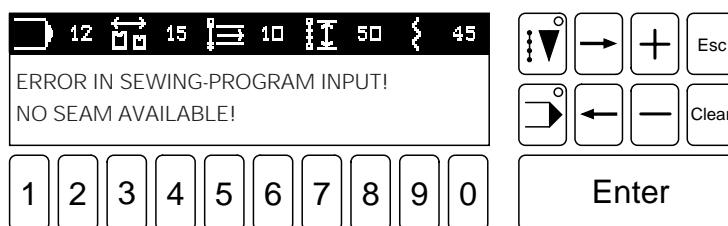
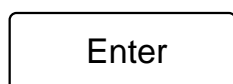


Fig. 10 - 04

- Before the machine can be further operated, the error must be corrected.



Trouble-shooting:

- Pressing the **Enter** key returns you to the wrong input.
- Now you can enter the correct input.



For trouble-shooting, which is only to be carried out by authorized specialists, a separate trouble-shooting list can be requested.

## 11 Programming

### 11.01 Symbols in the status bar

Information on the current seam section is displayed in the upper area of the display. For this purpose symbols are displayed together with the corresponding values.



Fig. 11 - 01



#### Program number

The number of the selected seam program appears to the right of this symbol.



#### Garment size

The current size is displayed to the right of this symbol.



#### Number of seam sections

The total number of seam sections contained in the current seam program is displayed to the right of this symbol.



#### Number of stitches

The number of stitches of the current seam section is displayed to the right of this symbol.



#### Fullness

The fullness value for the current seam section is displayed to the right of this symbol.

11.02 Symbols in the text and graphic fields

Corresponding to the operation mode, a stylized seam program or seam section is shown in the middle of the display.

11.02.01 Text and graphic fields in the SEWING mode

During programmed sewing, a stylized seam program is displayed.

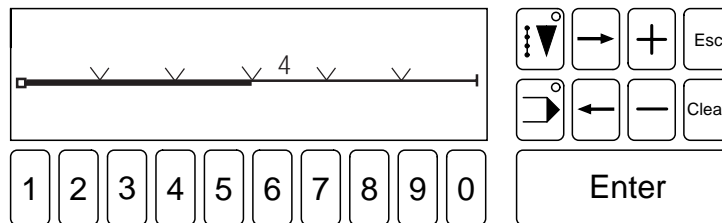


Fig. 11 - 02

In the example illustrated above, a seam program with 6 seam sections is displayed. The first three seam sections have already been sewn. The fourth seam section is currently being sewn (current seam section).

—— Seam

∨ Notch

■—— Beginning of seam

∨——∨ Seam section already sewn

∨ 4 ∨ Current seam section (incl. seam section number)

——→ Seam section end



The illustration in the display is not true to scale.

## 11.02.02 Text and graphics fields in the INPUT mode

In the **INPUT** mode a stylized seam section is displayed.

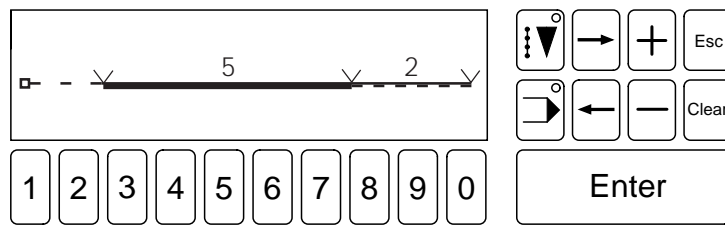


Fig. 11 - 03

▣ - - Beginning of seam

∨ 5 ∨ Current seam section (incl. seam section number)

∨ 2 ∨ Graduation section (incl. graduation value)



The illustration in the display is not true to scale.

### 11.03 Symbols in the pictogram bar

In this control concept, the functions are selected exclusively using the **number keys**. The available functions are displayed as symbols in the pictogram bar of the display. You select the function by pressing the **number key** which is below it.

Initial state INPUT mode:

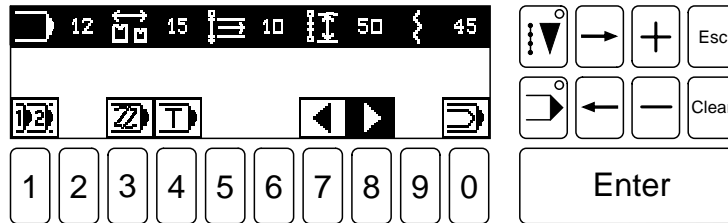








Fig. 11 - 04

Explanation of the symbols in the display:

-  **Program selection**  
Opens a direct menu for the selection of the desired seam program.
-  **Programming**  
Opens a direct menu for inputting or changing seam programs. The seam program is entered via the control panel.
-  **Teach In**  
Opens a direct menu for programming seams. Here, the system "learns" the desired seam.
-  **Left seam**  
When this function is switched on, the left seam is sewn.
-  **Right seam**  
When this function is switched on, the right seam is sewn.
-  **Input menu**  
Opens a menu with special functions, selection of language, parameter settings and service functions.

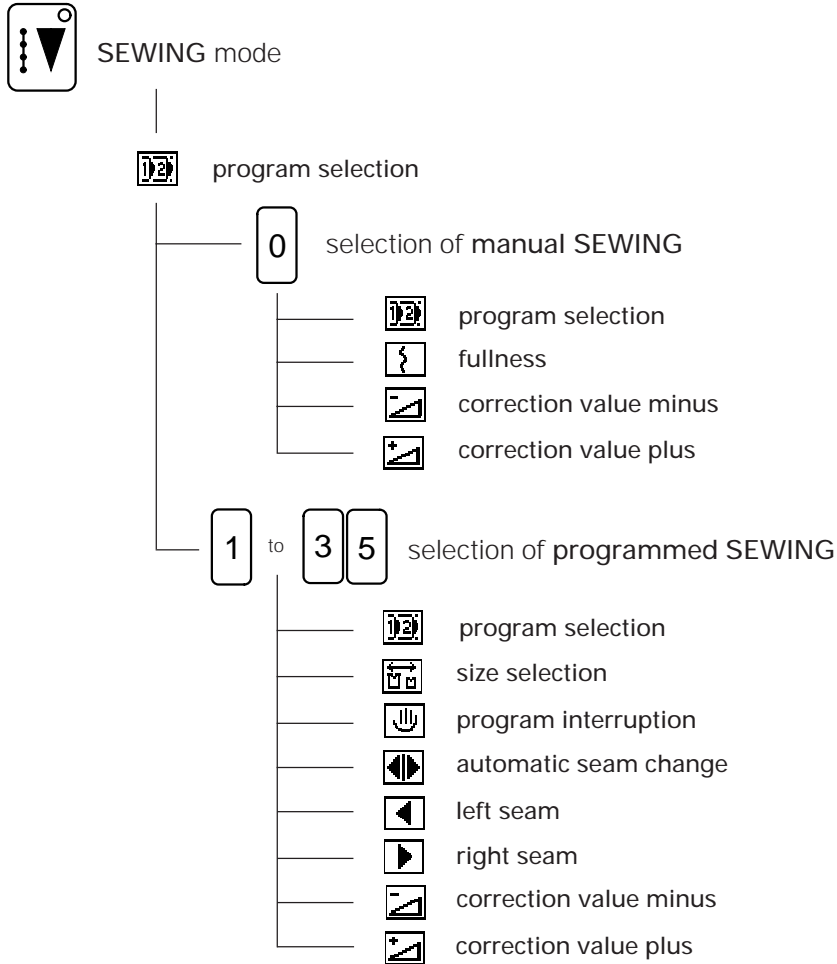
## 11.04 Summary of the functions in the SEWING mode



The functions shown in the display after the machine is switched on depend on the program number displayed in the status bar:

- Programm No. 0 : manual SEWING
- Programm No. 1 - 35 : programmed SEWING

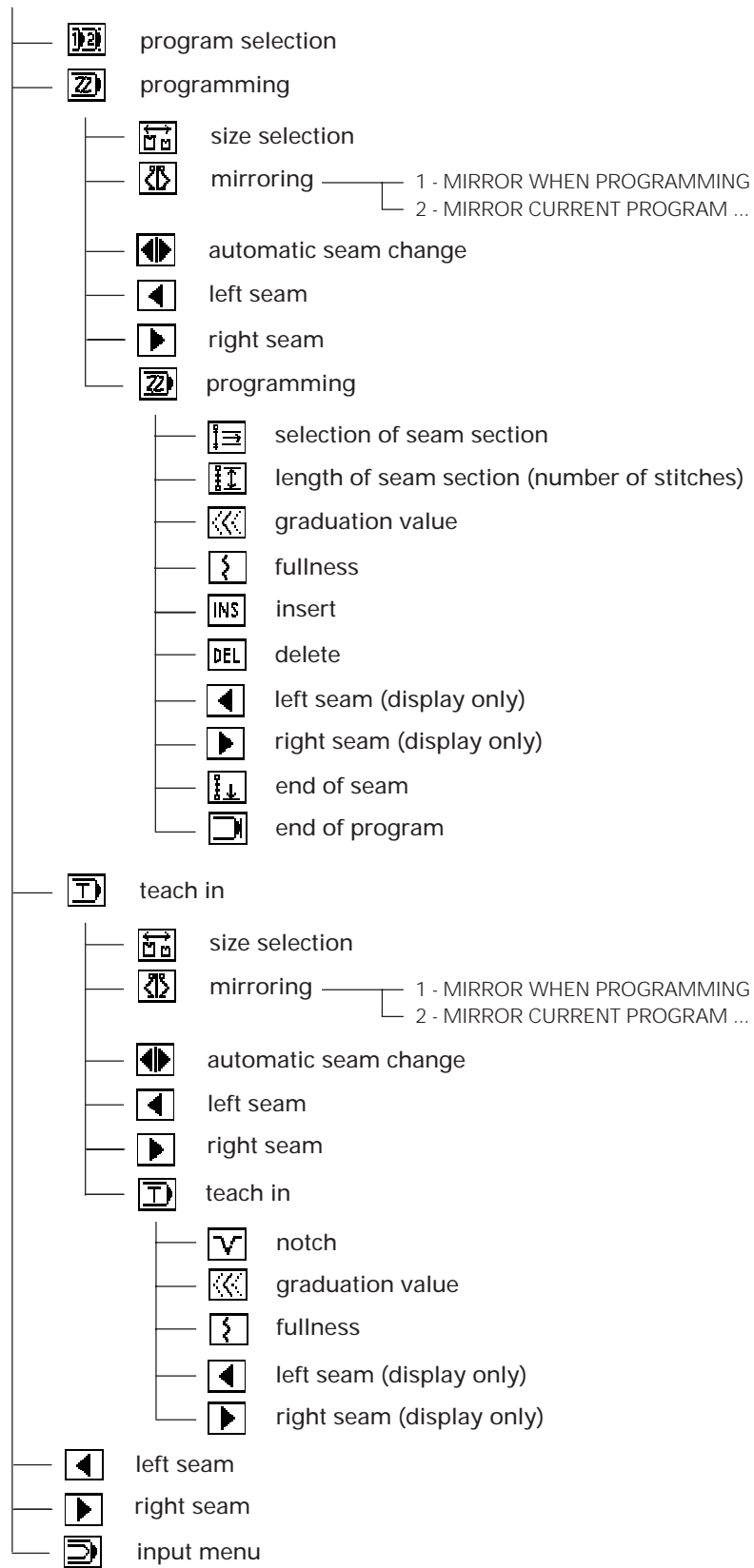
By choosing the program selection function, you can switch between **manual** and **programmed** sewing.



11.05 Summary of the functions in the INPUT mode

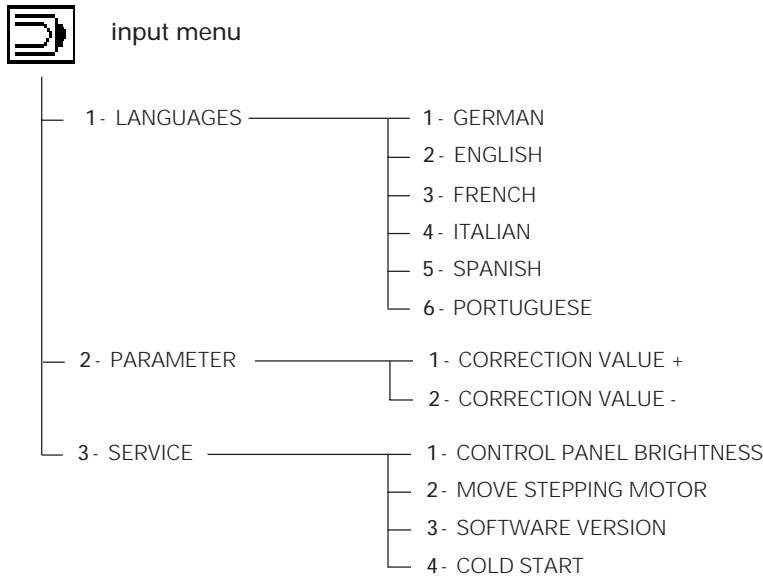


INPUT mode



see chapter 11.06 Summary of the functions in the input menu

## 11.06 Summary of the functions in the input menu



## 11.07 Selecting functions from the input menu

The brightness of the display, for example, may be adjusted as follows:



- Select INPUT mode (number key 0).



Fig. 11 - 05



- Select the input menu function (number key 0).

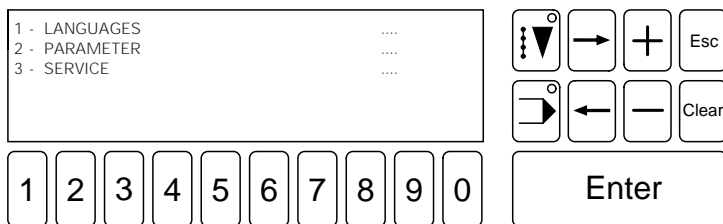


Fig. 11 - 06






- Choose SERVICE function. The following display appears:

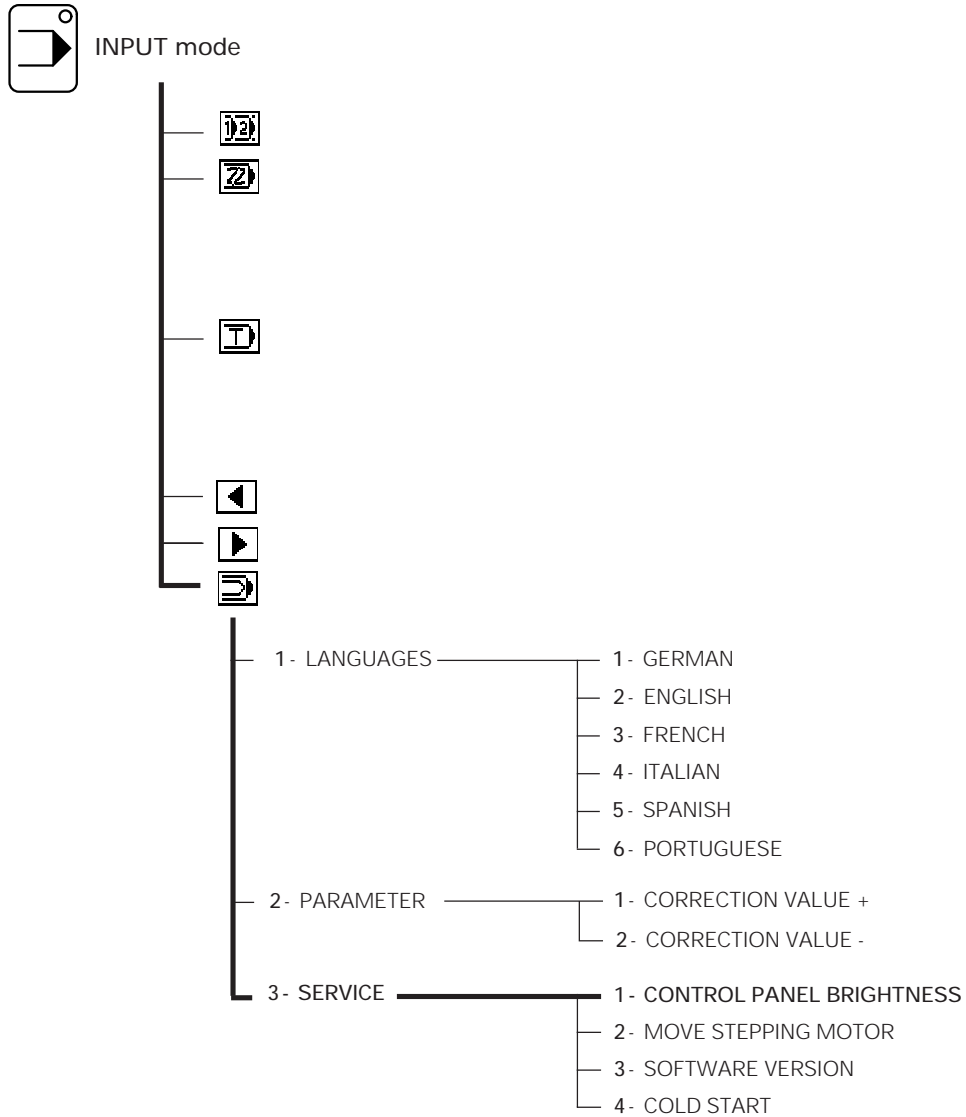


Fig. 11 - 07



- 
  - Select CONTROL PANEL BRIGHTNESS.
- 
  - The desired brightness can now be set using the plus/minus keys.
- 
  - Confirm by pressing Enter.

Summary of the procedure:



## 11.08 Creating seam programs

### 11.08.01 Programming



- Select INPUT mode.

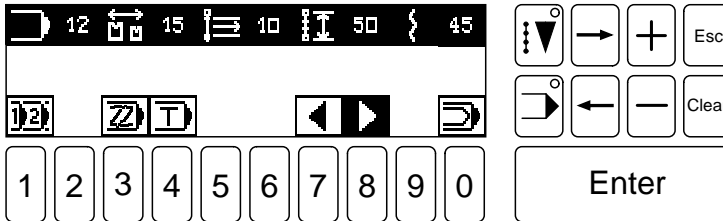


Fig. 11 - 08



- Choose program selection.

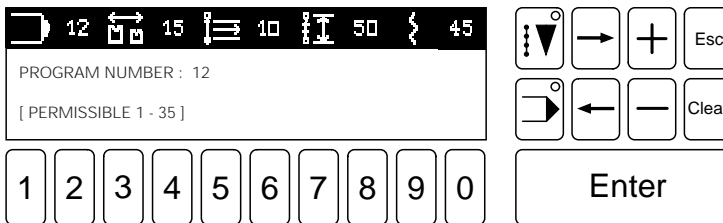


Fig. 11 - 09



- Enter a program number between 1 and 35.

Enter

- Confirm by pressing Enter.



- Call up the programming function.

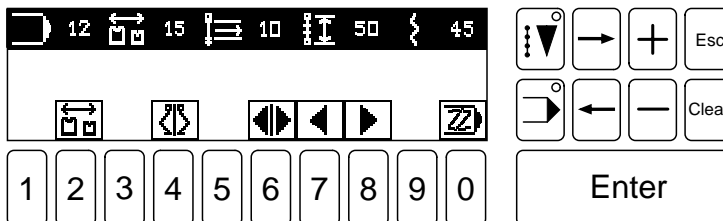


Fig. 11 - 10

Explanation of the symbols in the display:



#### Size selection

Opens a direct menu for the selection of the basic size.  
(See chapter 11.09 Selecting the size.)



#### Mirroring

Opens a menu for mirroring seams.  
(See chapter 11.10 Mirroring seams.)



#### Automatic seam change

When this function is activated, the machine automatically switches to the left seam after having programmed the right seam, and vice versa.



## Left seam

When this function is activated, the left seam is sewn.



## Right seam

When this function is activated, the right seam is sewn.



## Programming

This function opens a direct menu for programming seams. The program is entered via the control panel.

To enter or change seam programs:



- Call up the **programming** function.

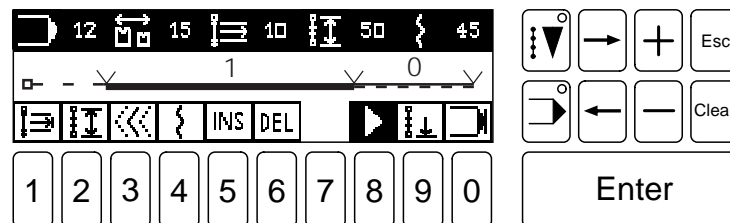


Fig. 11 - 11

Explanation of the symbols in the display:



## Selection of the seam section

Opens a direct menu for selecting a desired seam section within the seam program.



The desired seam section may also be selected using the **arrow keys**.



## Length of seam section (number of stitches)

Opens a direct menu for entering the number of stitches in the current seam section.



## Graduation value

Opens a direct menu for entering the graduation value in the current seam section (grading value = extension of the seam line in stitches).



## Fullness

Opens a direct menu for entering the fullness in the current seam section.



## Insert

Inserts a seam section into the seam program in front of or behind the current seam section. The subsequent seam sections are moved behind by one place.



## Delete

Deletes the current seam section.



## End of seam

Completes the current seam and switches over to entering the data for the second seam.



The **end of seam** function is only displayed if you have chosen the **automatic change of seam** function when entering the basic data and while you are entering the data for the first seam.



## End of program

Completes the seam program. The program data entered are checked.

- Individual seam programs may now be created or changed using the above functions.
- The system does not accept wrong combinations.



For a step-by-step example for programming refer to **chapter 11.11.01 Example for programming a seam.**

## 11.08.02 Teach In

When this function is activated, the machine is able to "learn" a program during sewing.



- Select INPUT mode.

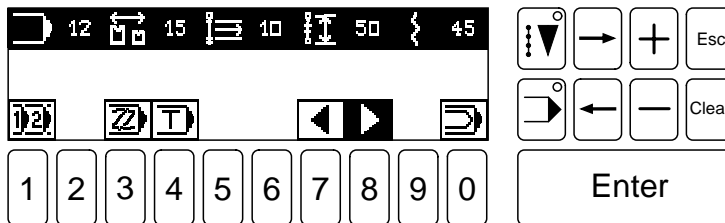


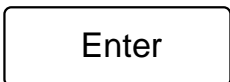
Fig. 11 - 12



- Choose the program selection function.



- Enter a program number between 1 and 35.



- Confirm by pressing Enter.



- Choose the Teach In function.

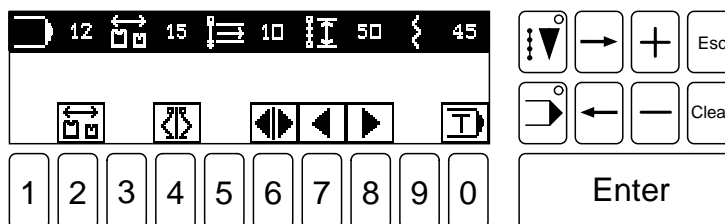


Fig. 11 - 13

Explanation of the symbols in the display:



### Basic size

Opens a direct menu for selecting the basic size of the garment. (See **chapter 11.09 Selecting the size.**)



### Mirroring

Opens a menu for mirroring seams. (See **chapter 11.10 Mirroring seams.**)



## Automatic seam change

When this function is activated, the machine automatically switches to the left seam after having programmed the right seam, and vice versa.



## Left seam

When this function is activated, the left seam is sewn.



## Right seam

When this function is activated, the right seam is sewn.



## Teach In

Opens a direct menu for programming seams. Here the system "learns" the desired seam.

How to enter seam programs by using the Teach In function:



- Choose Teach In.

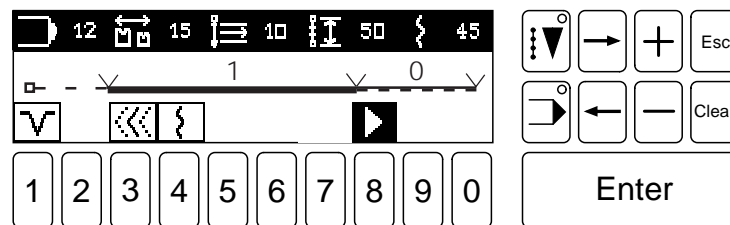


Fig. 11 - 14

Explanation of the symbols in the display:



## Notch

Completes the current seam section and switches to the next.



## Graduation value

Opens a direct menu for entering the graduation value in the current seam section (grading value = extension of the seam line in stitches).



## Fullness

Opens a direct menu for entering the fullness in the current seam section.



## Left seam

When this function is activated, the left seam is sewn.



## Right seam

When this function is on, the right seam is sewn.



Only the symbol for the active seam (i.e. right or left seam) is displayed.

- Enter the desired values.
- Step on the foot pedal.  
The seam is sewn according to the entered values.

## 11.09 Selecting the size



Depending on the operation mode, the basic size or the size, respectively, may be selected using the size selection function.

- Men's sizes (German)

Basic size: 50

Sizes: 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 88, 90, 92, 94, 96, 98, 100, 102, 104, 106, 108, 110, 112, 116, 120, 124, 128, 132, 136, 140, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 23, 24, 25, 26, 27, 28, 29, 30

- Men's sizes (American)

Basic size: 40

Sizes: 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60

- Ladies' sizes (German)

Basic size: 38

Sizes: 34, 36, 38, 40, 42, 44, 46, 48, 50, 52

- Ladies' sizes (Large American)

Basic size: 20

Sizes: 18, 19, 20, 21, 22, 23, 24, 25, 26

- Ladies' sizes (American)

Basic size: 6

Sizes: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20

### 11.09.01 Selecting the basic size in the INPUT mode



In the **INPUT** mode only basic sizes can be altered. The basic size determines the size system which is to be used. The size system is specifically assigned to the program to be programmed.



- Choose the **programming** or **Teach In** function in the INPUT mode.



- Select the size selection function.

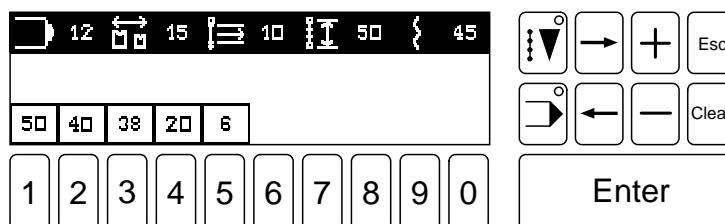


Fig. 11 - 15



to



- Choose the desired basic size.

11.09.02 Selecting the size in the SEWING mode



In **programmed sewing** the sizes of the respective size system may be selected. The size system is determined by the selected program which it has been assigned to.



- Choose the **program selection** function in the **SEWING** mode.
- Call up an already programmed seam program (**number keys**).



- Select the **size selection** function.

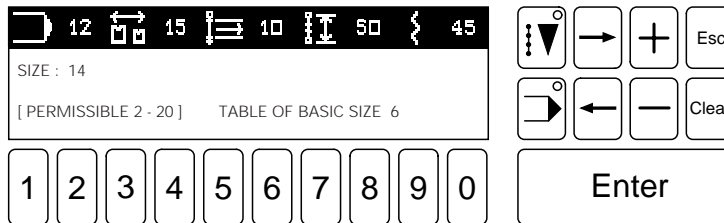


Fig. 11 - 16

- Enter the desired size using the **number keys**.
- Confirm by pressing **Enter**.



11.10 Mirroring seams



- Call up the **INPUT** function.



- Select **Programming** or **Teach In**.



- Choose the **mirroring** function.

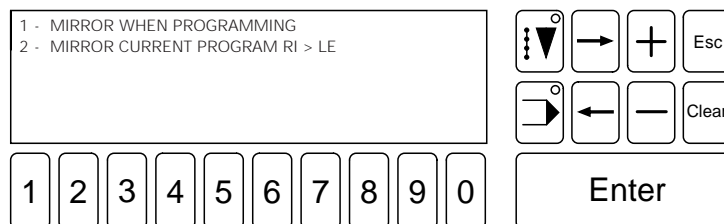


Fig. 11 - 17

- The desired mirroring type can be selected using the **number keys**.



The function **MIRROR WHEN PROGRAMMING** automatically mirrors the first (e. g. the right) seam after it has been entered. By using **MIRROR CURRENT PROGRAM...** an existing right seam can be mirrored to the left or a left seam can be mirrored to the right, respectively.

## 11.11 Programming examples

### 11.11.01 Example for programming a seam

The seam to be programmed is to consist of 2 seam sections, be assigned the basic size 50 (German men's size) and be saved under program number 4. Initially it is only to be sewn as a right seam.



- Select INPUT mode.



Fig. 11 - 18



- Call up the program selection function (number key 1).

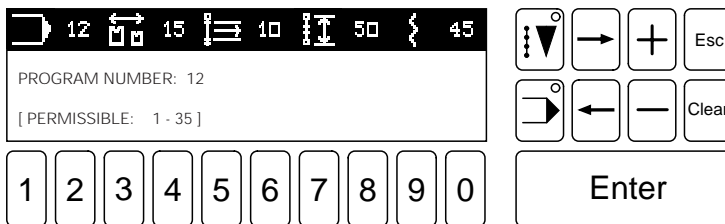


Fig. 11 - 19



- Enter the program number.



- Confirm by pressing Enter.



Fig. 11 - 20



- Call up the programming function (number key 3).

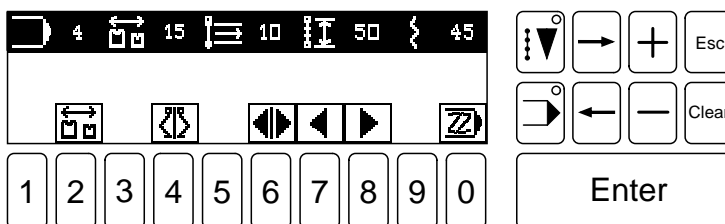


Fig. 11 - 21



- Select the size selection function (number key 2).



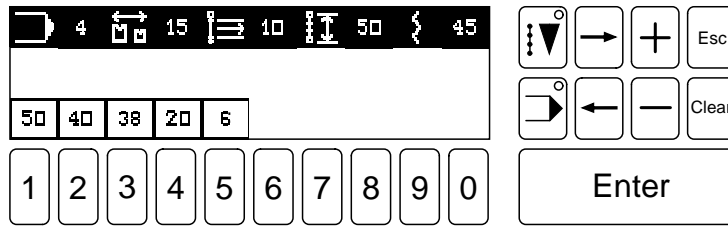


Fig. 11 - 22

- Choose basic size 50 (number key 1).

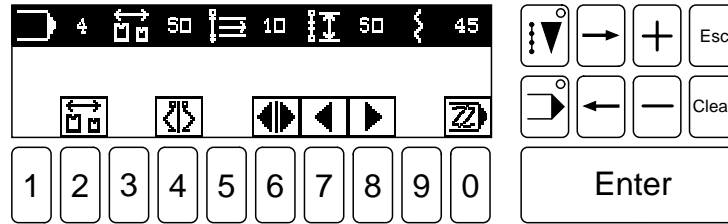


Fig. 11 - 23

- Select the programming function (number key 0).

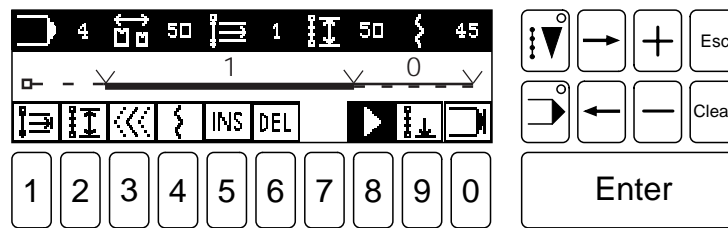


Fig. 11 - 24

Entering the first seam section:

The seam section length is to be 20 stitches in the seam section, the graduation value is to be 2 and fullness is not to be applied.

- Select the seam section length function (number key 2).

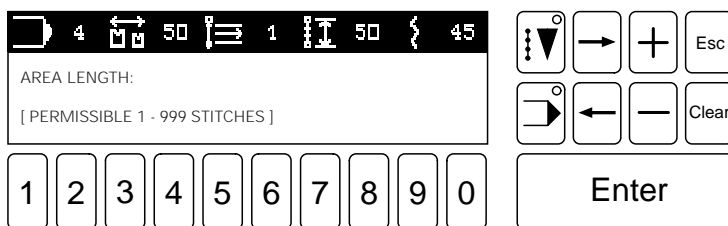


Fig. 11 - 25

- Enter the number of stitches.



- Confirm by pressing Enter.



Fig. 11 - 26



- Select the graduation value function (number key 3).

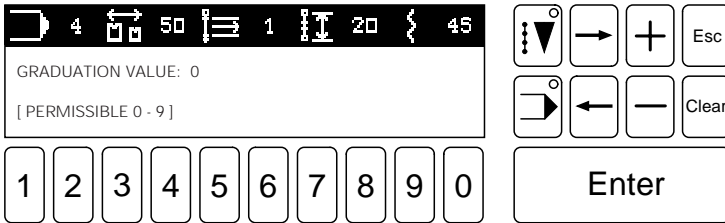


Fig. 11 - 27



- Enter the graduation value.



- Confirm by pressing Enter.

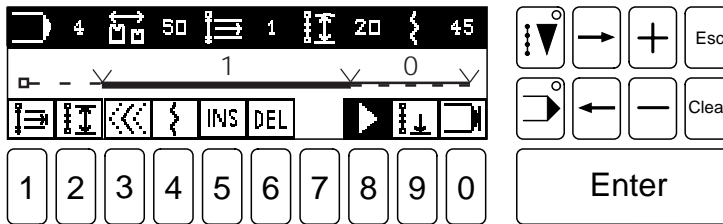


Fig. 11 - 28



- Select the fullness function (number key 4).



- Enter the value for the fullness.



- Confirm by pressing Enter.



- Press the arrow key to go to the second seam section.

In the second seam section 10 stitches are to be sewn, the other values remain unchanged.



- Select the seam length function (number key 2).



- Enter the number of stitches.



- Confirm by pressing Enter.



- Save the seam using the **end of program** function and exit the programming mode.



- After calling up the **SEWING** mode, the seam program may be sewn.

## 11.11.02 Example for Teach In programming

The seam to be programmed is to consist of **2 seam sections**, be assigned the basic size **6** (American ladies' size) and to be saved under **program number 4**. The seam is to be mirrored immediately after having been entered.



- Select **INPUT** mode.

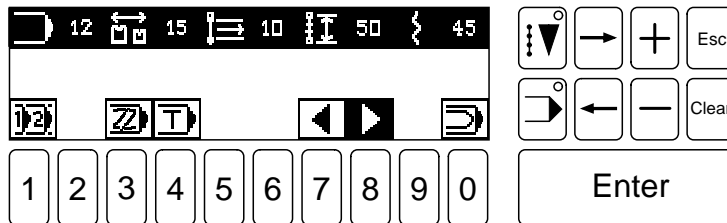


Fig. 11 - 29



- Call up the program selection function (number key 1).

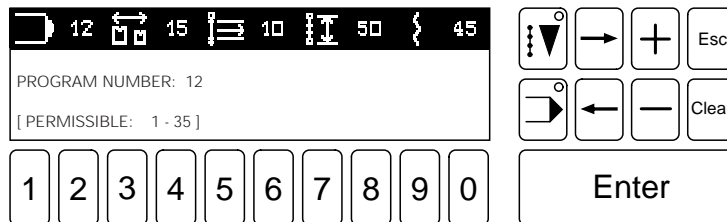


Fig. 11 - 30

4

- Enter the program number.

Enter

- Confirm by pressing **Enter**.

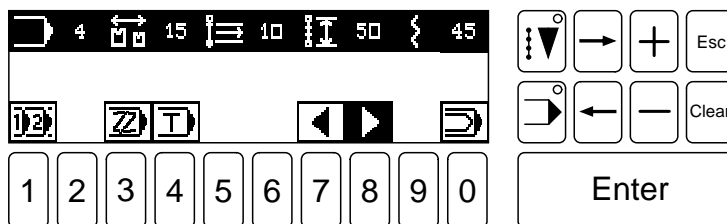


Fig. 11 - 31



- Select the **Teach In** function (number key 4).

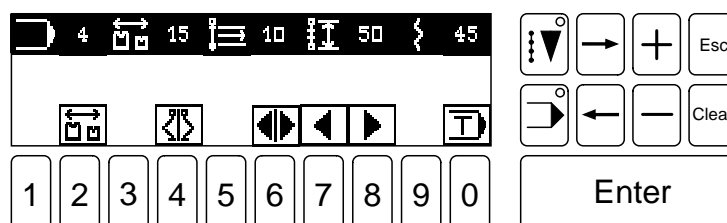


Fig. 11 - 32



- Call up the size selection function (number key 2).

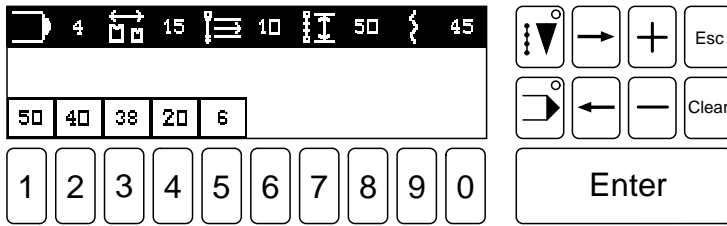


Fig. 11 - 33



- Select basic size 6 (number key 5).

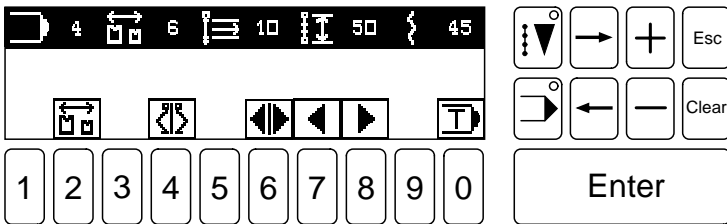


Fig. 11 - 34



- Call up the mirroring function (number key 4).

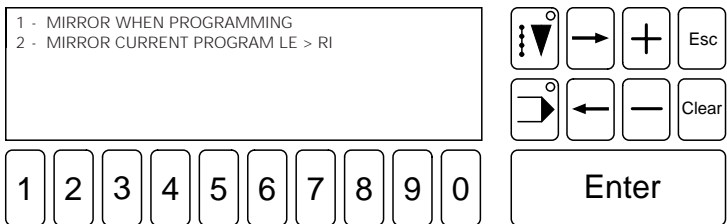


Fig. 11 - 35



- Choose the MIRROR WHEN PROGRAMMING function.



- Call up the Teach In function (number key 0).

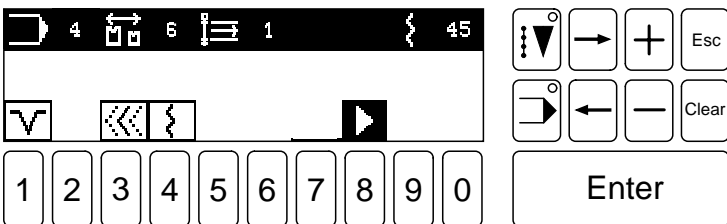


Fig. 11 - 36

To enter the first seam section:

In this example no fullness is to be applied and the graduation value is to be 3.



- Call up the fullness function (number key 4).



- Enter the fullness value.

Enter

- Confirm by pressing Enter.

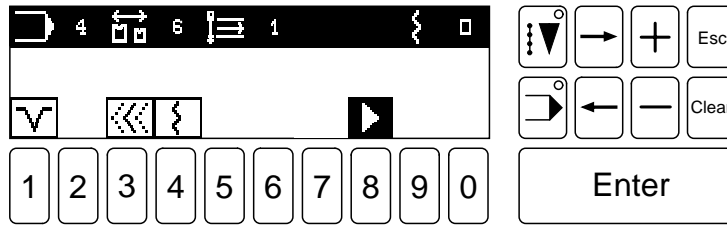


Fig. 11 - 37



- Select the graduation value function (number key 3).

3

- Enter the graduation value.

Enter

- Confirm by pressing Enter.

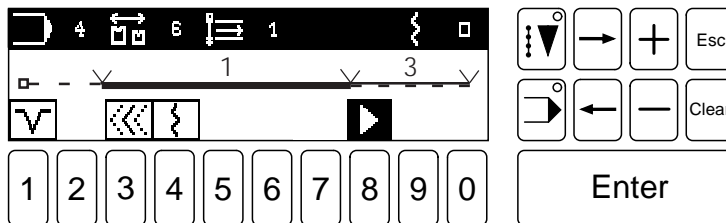


Fig. 11 - 38

- Sew the first seam section by stepping on the foot pedal.



- Use the notch function to complete the first seam section and to get to the second seam section.

In the second seam section a **fullness** of 3 mm is to be applied and the **graduation value** is to **remain the same** as in the first seam section.



- Call up the **fullness** function (number key 4).

3

- Enter the fullness value.

Enter

- Confirm by pressing Enter.

- Sew the second seam section manually.



- Complete the seam section by using the **notch** function.

- The seam program is completed and saved by trimming the thread with the pedal (position 4 in chapter 7.02 Pedal).



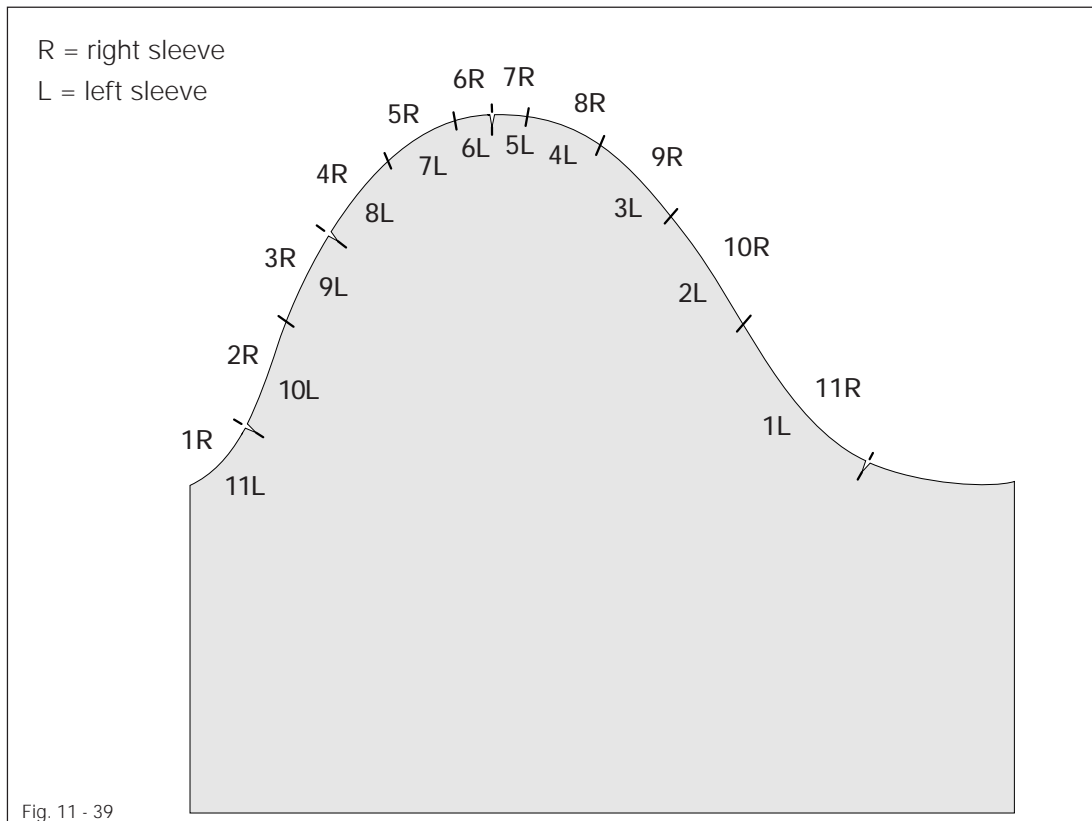
- After calling up the **SEWING** mode, the seam program may be sewn.

## 11.11.03 Programming example for a sleeve seam



Fig. 11 - 39 shows a sleeve seam in size 50.

The table lists the values for the individual seam sections, the left sleeve having been mirrored.



Right sleeve				Left sleeve			
Seam section	Stitches	Fullness	Graduation value	Seam section	Stitches	Fullness	Graduation value
1	7	0		1	8	0	
2	14	10		2	42	10	
3	24	25		3	27	20	3
4	25	40		4	22	10	
5	20	50	2	5	39	45	2
6	14	10		6	14	10	
7	39	45	2	7	20	50	2
8	22	10		8	25	40	
9	27	20	3	9	24	25	
10	42	10		10	14	10	
11	8	0		11	7	0	

11.12 Templates

Right sleeve				Left sleeve			
Seam section	Stitches	Fullness	Graduation value	Seam section	Stitches	Fullness	Graduation value

Right sleeve				Left sleeve			
Seam section	Stitches	Fullness	Graduation value	Seam section	Stitches	Fullness	Graduation value

Right sleeve				Left sleeve			
Seam section	Stitches	Fullness	Graduation value	Seam section	Stitches	Fullness	Graduation value

Right sleeve				Left sleeve			
Seam section	Stitches	Fullness	Graduation value	Seam section	Stitches	Fullness	Graduation value



12 Care and maintenance

Clean the hook compartment .....	daily, more often if in continuous operation
Clean the entire machine .....	once a week
Oil level of the machine .....	daily before use
Check air pressure .....	daily before use
Clean air filter/lubricator .....	when necessary



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.

12.01 Cleaning



Turn the machine off!

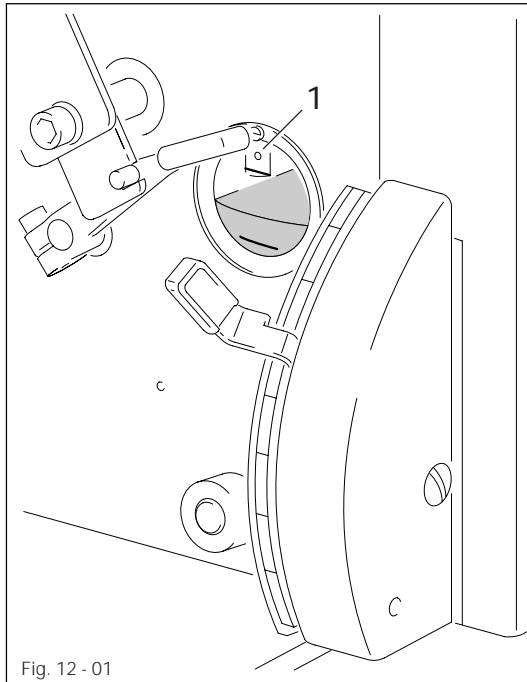


- Lay the sewing head on its back.
- Clean the hook and hook compartment daily, more often if in continuous operation.
- Move the sewing head back to its upright position using both hands.



Danger of being crushed between sewing head and table top!

### 12.02 Oil level of the machine



Check the oil level before every use!

- The oil level must be between the marks on the glass.
- Fill oil through hole 1 as required.

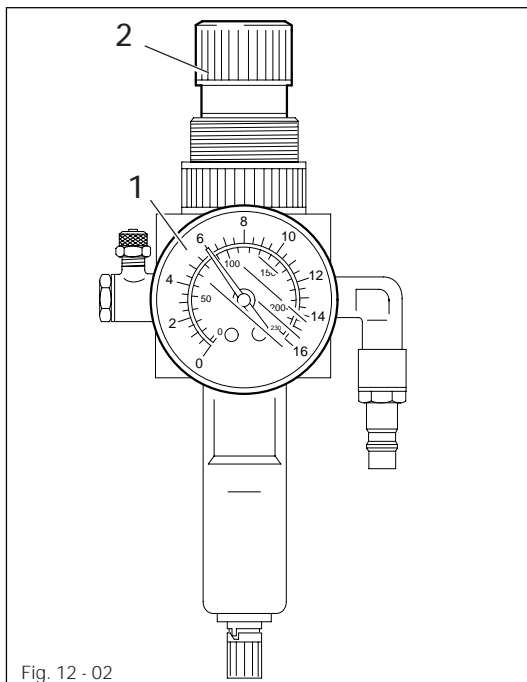


Use only oil with a mean viscosity of 22.0 mm<sup>2</sup>/s at 40°C and a density of 0.865 g/cm<sup>3</sup> at 15°C.



We recommend  
PFAFF sewing machine oil  
Order No. 280-1-120 144.

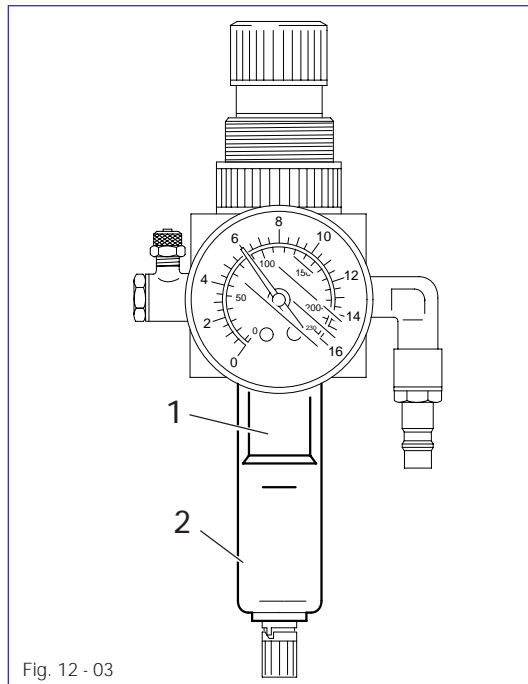
### 12.03 Checking and adjusting the air pressure



The manometer 1 should show a pressure of **6 bar**!

- Check the operating air pressure on manometer 1 before each use.
- If required, adjust the air pressure to the required value by turning knob 2.

### 12.04 Cleaning the air filter/lubricator



If the operating air pressure falls below **6 bar**, the filter element **1** must be cleaned.



Switch the machine off!  
Turn the air pressure off!



After the air pressure has been turned off, the oil reservoir **2** empties itself automatically. Place a suitable container underneath.

- Screw off oil reservoir **2**.
- Take out filter element **1**.
- Clean filter element **1** and oil reservoir **2** with petroleum benzene.
- Blow out filter element **1** from the inside to the outside with compressed air.
- Make sure the seals are in place when screwing the reservoir **2** back on.

## 13 Adjustment

### 13.01 Notes on adjusting

All adjustments in this instruction manual refer to a completely installed machine and must only be carried out by appropriately trained specialists.

Covers on the machine which have to be removed and replaced for checks and adjustment work are not mentioned here.

The screws and nuts in brackets () are attachments of machine parts which are to be loosened before making the adjustment and tightened again when the adjustment is complete.

### 13.02 Tools, gauges and other accessories for adjusting

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of fork wrenches with jaw widths from 6 to 22 mm
- 1 set of Allan keys from 1.5 to 6 mm
- 1 hammer, 250 g
- 1 brass drift,  $\varnothing$  6 - 8 mm
- 1 original Seeger pliers
- 1 pair of pincers, 90° offset
- 1 adjustable clamp, (Part No. 08-880 137-00)
- 1 metal rule, (Part No. 08-880 218-00)
- 1 adjustment pin,  $\varnothing$  5 mm (Part No. 13-030 341-05)
- 1 adjustment gauge (Part No. 61-111 642-19)
- 1 adjustment gauge (Part No. 91-186 311-15)
- 1 adjustment gauge (Part No. 91-084 387-11)
- 1 hook adjustment gauge (Part No. 61-111 643-06)
- Needles, system 4463/35 Nm 80
- Sewing thread and test material
- Spacing rings: 0.3/0.5/0.8 and 1.2 mm

### 13.03 Abbreviations

TDC = top dead center

BDC = bottom dead center

## 13.04 Checking and adjusting aids



By inserting the adjustment pin ( $\varnothing$  5 mm) into holes 1, 3 and 4 the needle bar can be fixed precisely in the desired position.

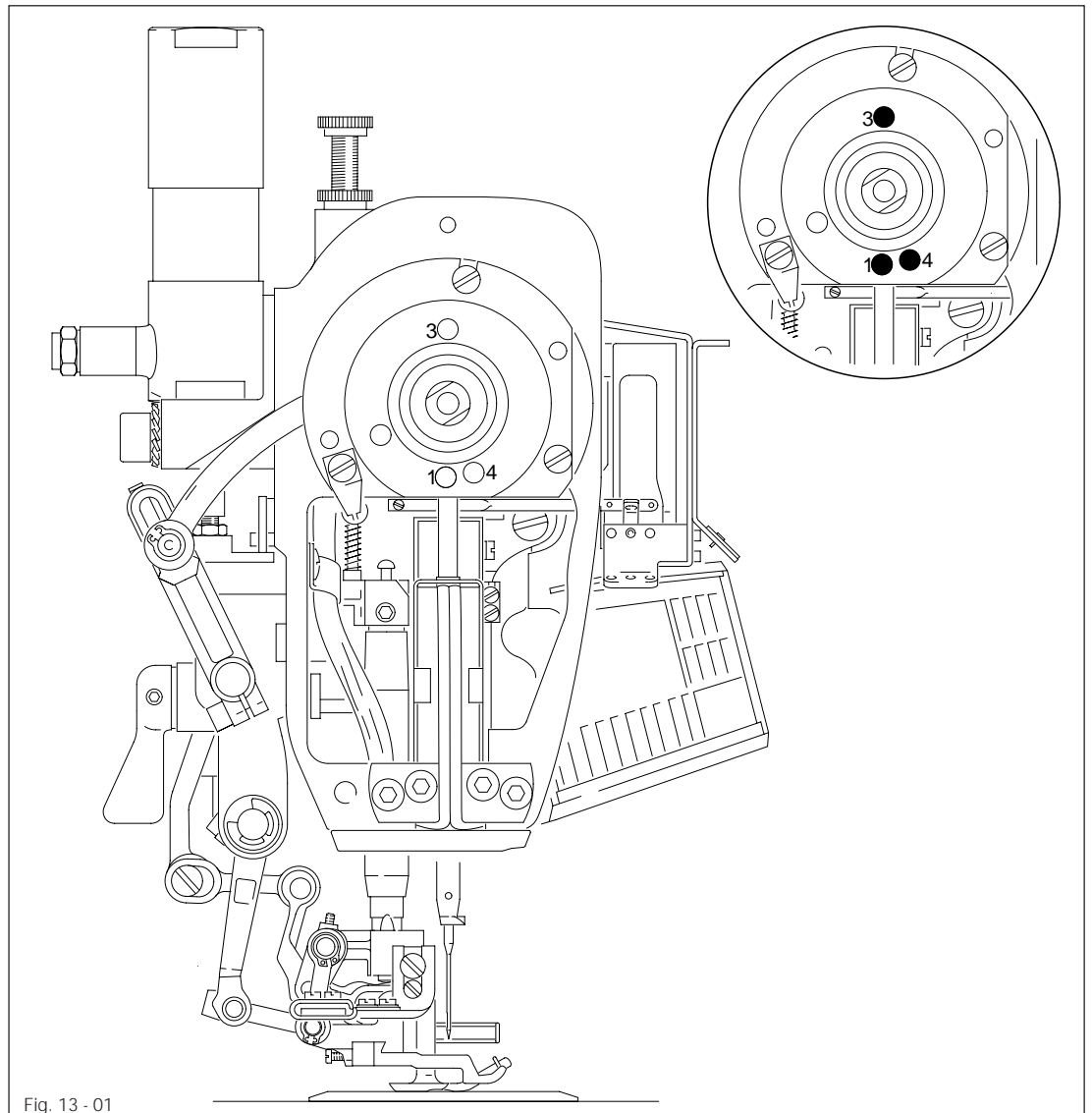
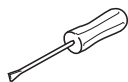


Fig. 13 - 01



- Turn the handwheel until the needle bar is approximately in the desired position.
- Insert the adjustment pin into the respective hole and apply pressure.
- Turn the handwheel slightly forwards and backwards until the adjustment pin engages in the rear crank recess and thus blocks the machine.

Hole 1 = top dead center of the needle bar (TDC)

Hole 3 = bottom dead center of the needle bar (BDC)

Hole 4 = 0.8 mm below the top dead center of the needle bar (0.8 below TDC)

# Adjustment

## 13.05 Adjusting the basic machine

### 13.05.01 Adjusting the synchronizer

#### Requirement

After thread trimming, the machine must position at t.d.c.

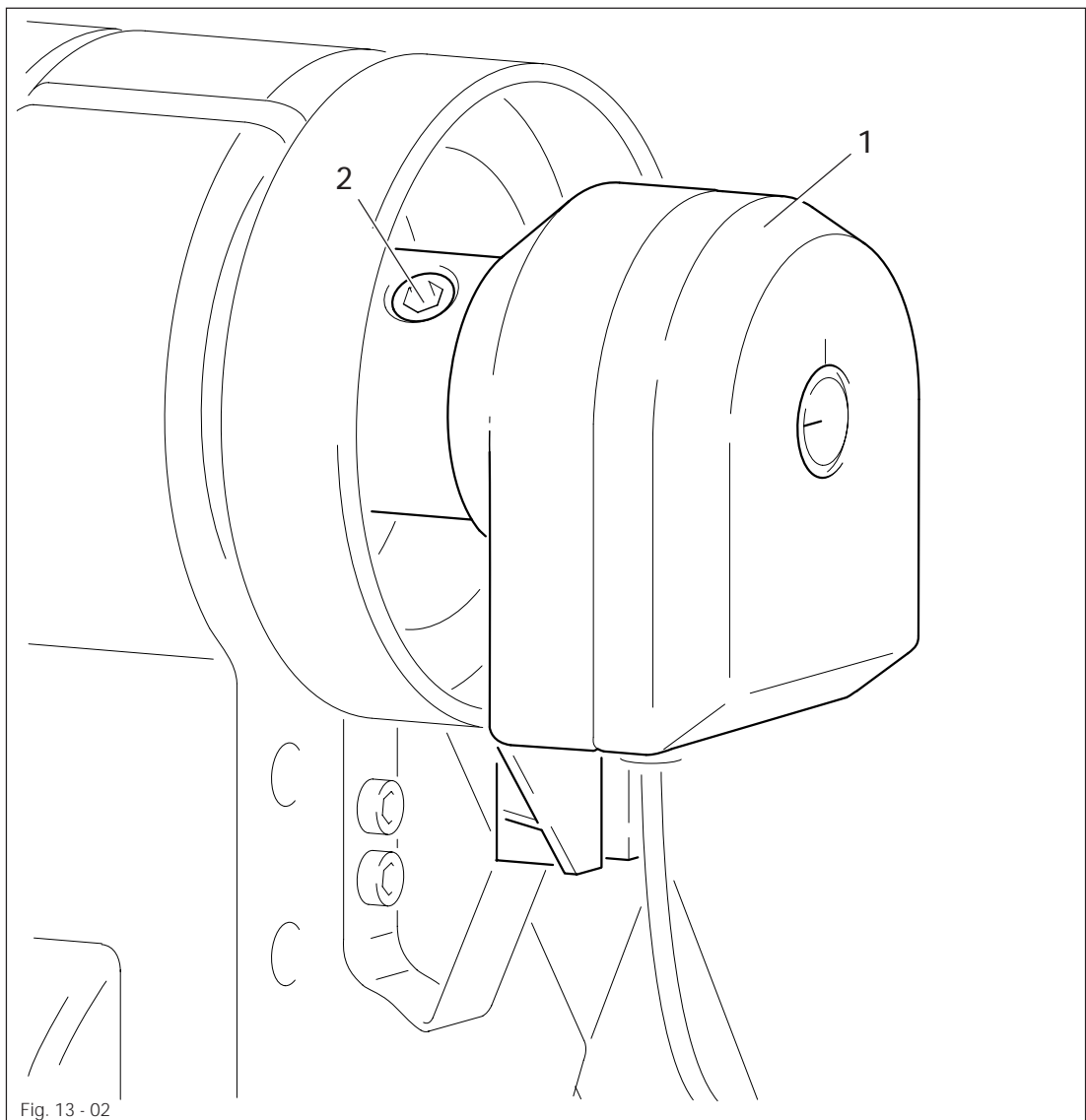
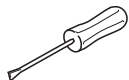


Fig. 13 - 02



- Switch on machine.
- Sew a few stitches and actuate thread trimming.
- Turn synchroniser 1 (screws 2) according to requirement.

## 13.05.02 Needle position in transverse direction to sewing

**Requirement**

The needle 4 must enter the middle of the needle hole as viewed in transverse direction of sewing.

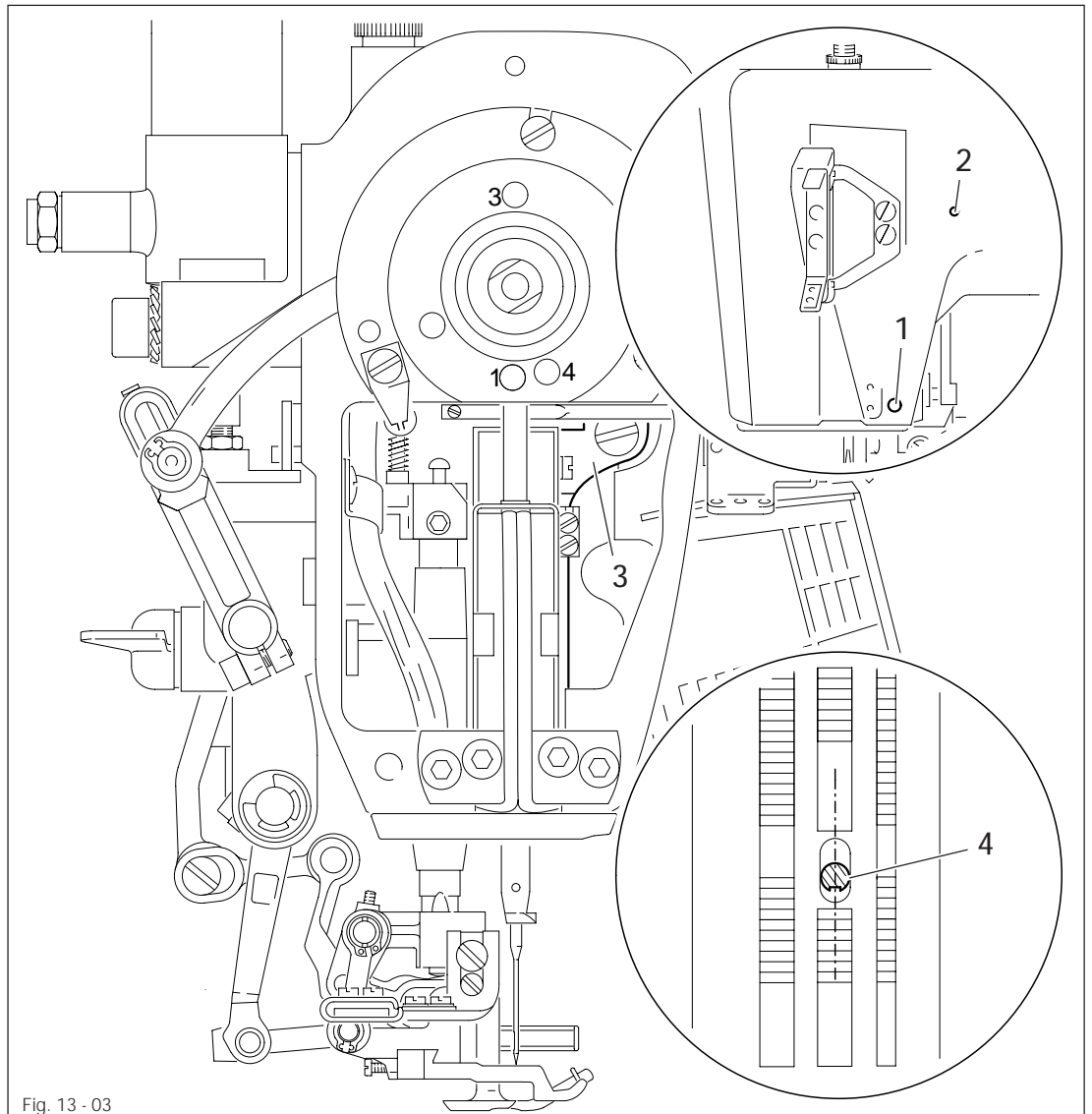
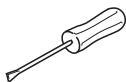


Fig. 13 - 03



- Loosen screws 1 and 2.
- Move the needle bar frame 3 in accordance with the requirement.
- Tighten screw 1.



Screw 2 remains loosened for further adjustments.

# Adjustment

## 13.05.03 Needle position in direction of sewing

### Requirement

The clearance between the needle 4 and the front edge of the needle hole must be approx. 0.8 mm.

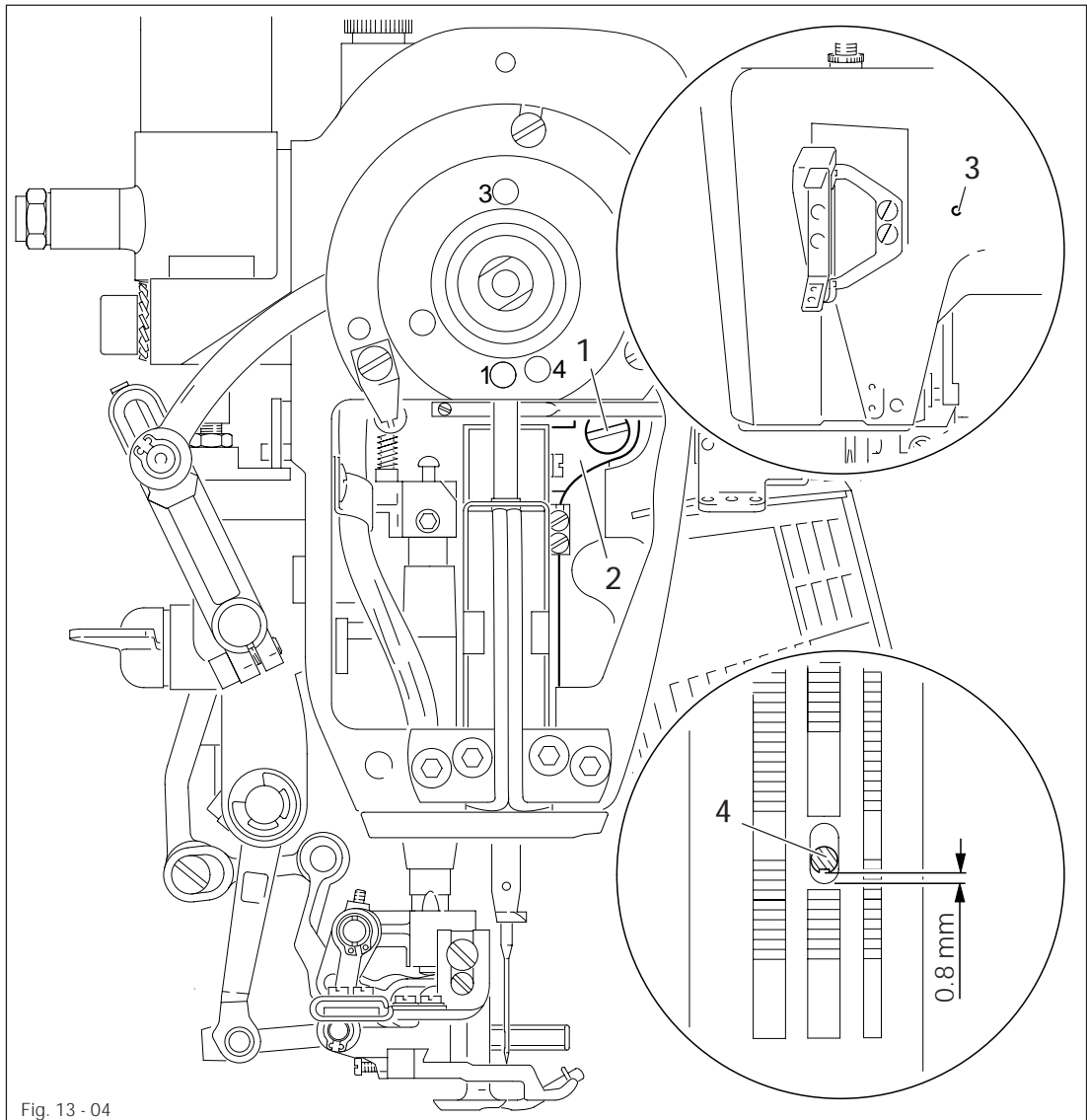
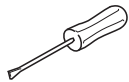


Fig. 13 - 04



- Loosen screw 1.
- Swivel the needle bar frame 2 in accordance with the requirement.
- Tighten screws 1 and 3.



## 13.05.04 Pre-adjusting the needle height

**Requirement**

At the top dead center of the needle bar (hole 1), the clearance between the needle plate and the point of the needle must be **11 mm**.

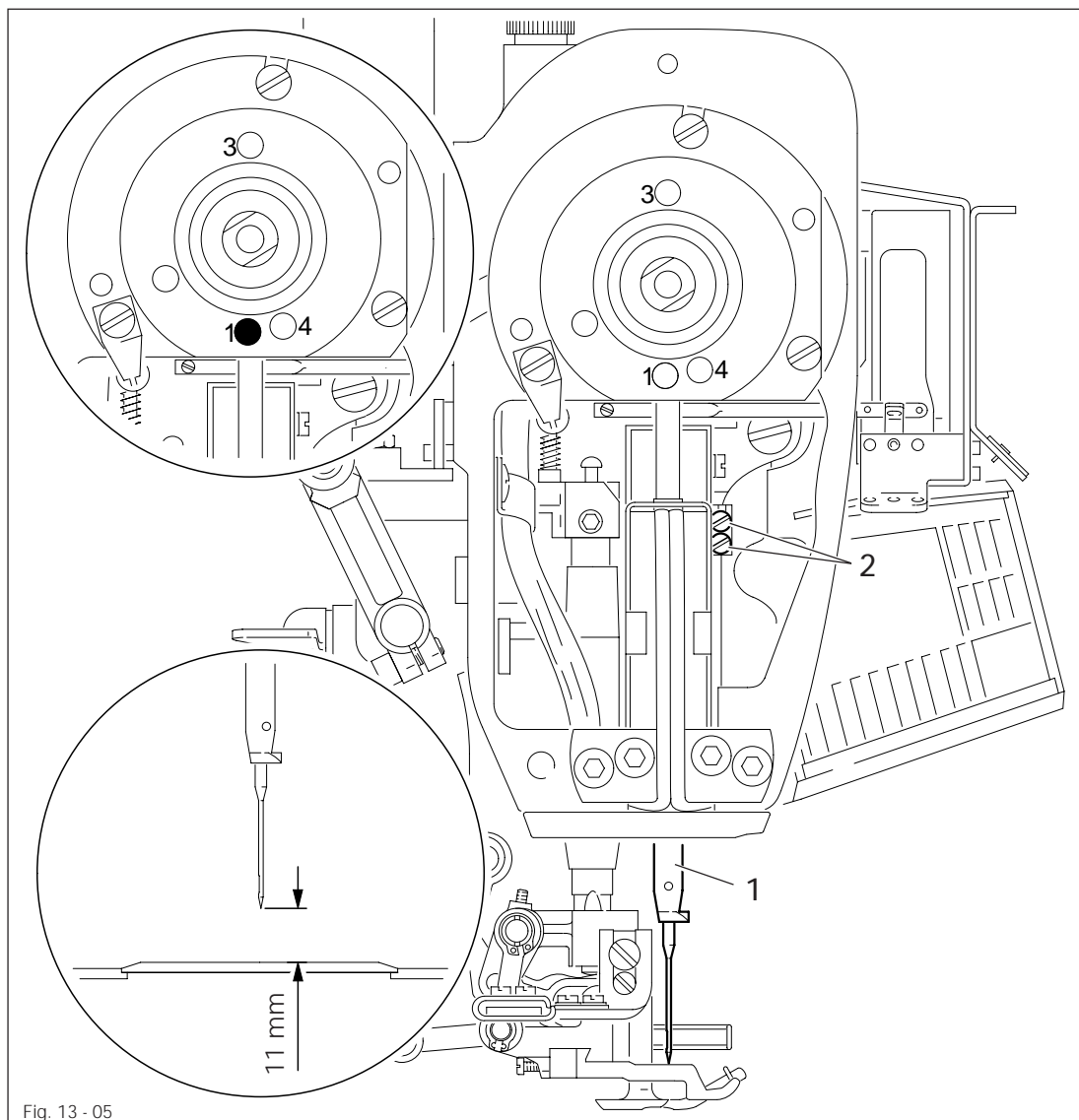
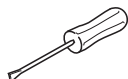


Fig. 13 - 05



- Bring the needle bar 1 to its TDC.
- Move the needle bar 1 in accordance with the requirement.

## 13.05.05 Neutralizing the main feed dog

### Requirement

With the stitch length set at "0", the bottom main feed dog 4 must not carry out a feeding motion.

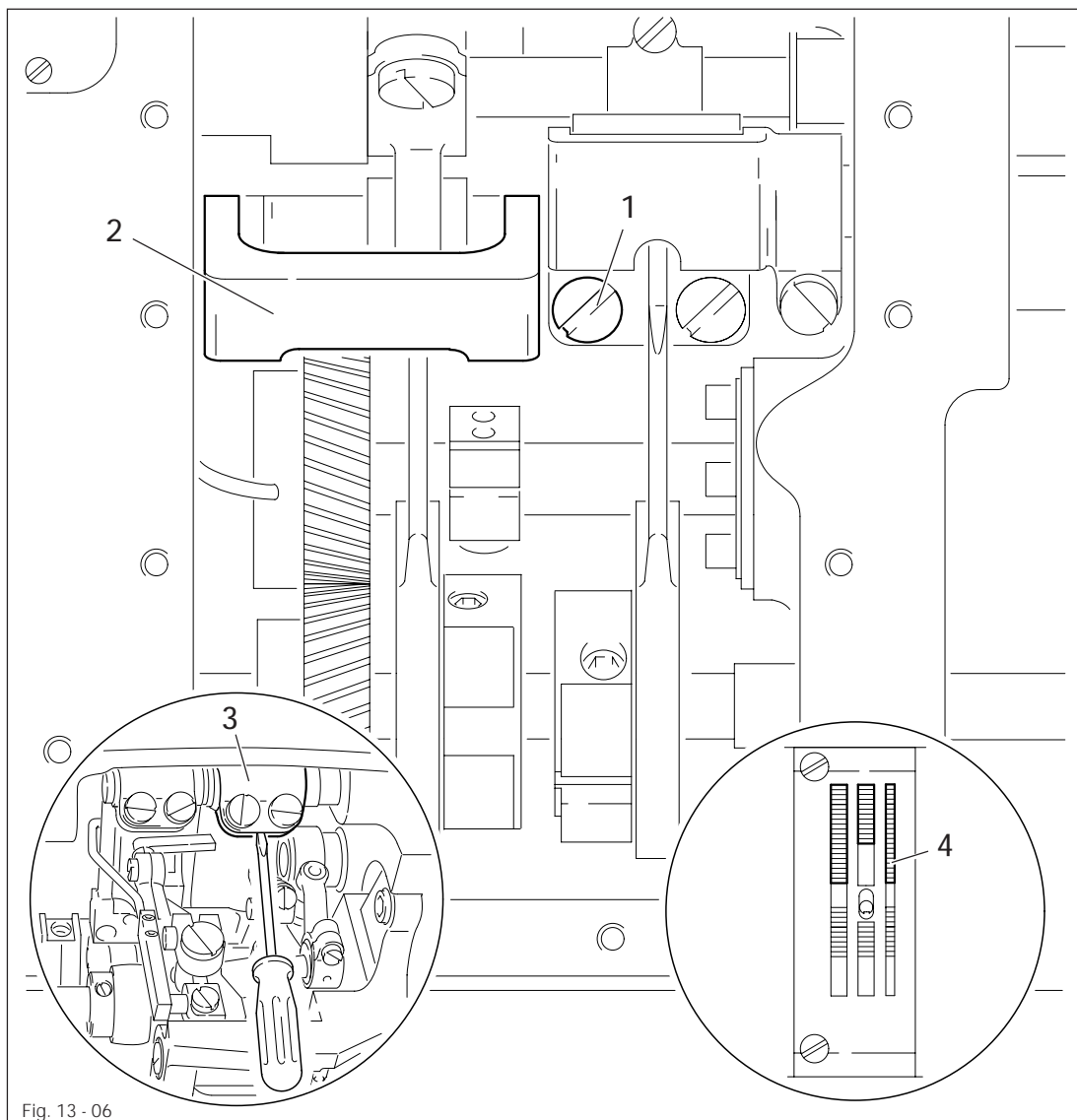
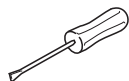


Fig. 13 - 06



- Set the stitch length to "0".
- Loosen screw 1 just far enough that crank 2 cannot be turned on the shaft easily.
- In order to see the movement better, insert a screwdriver in the clamp slot of crank 3.
- While constantly turning the handwheel, move crank 2 so that crank 3 does not move.
- Tighten screw 1.

## 13.05.06 Zero position of the differential feed dog

**Requirement**

At stitch length setting " 0 " and with adjustment gauge 1 fitted, differential feed dog 5 must not make any movement.

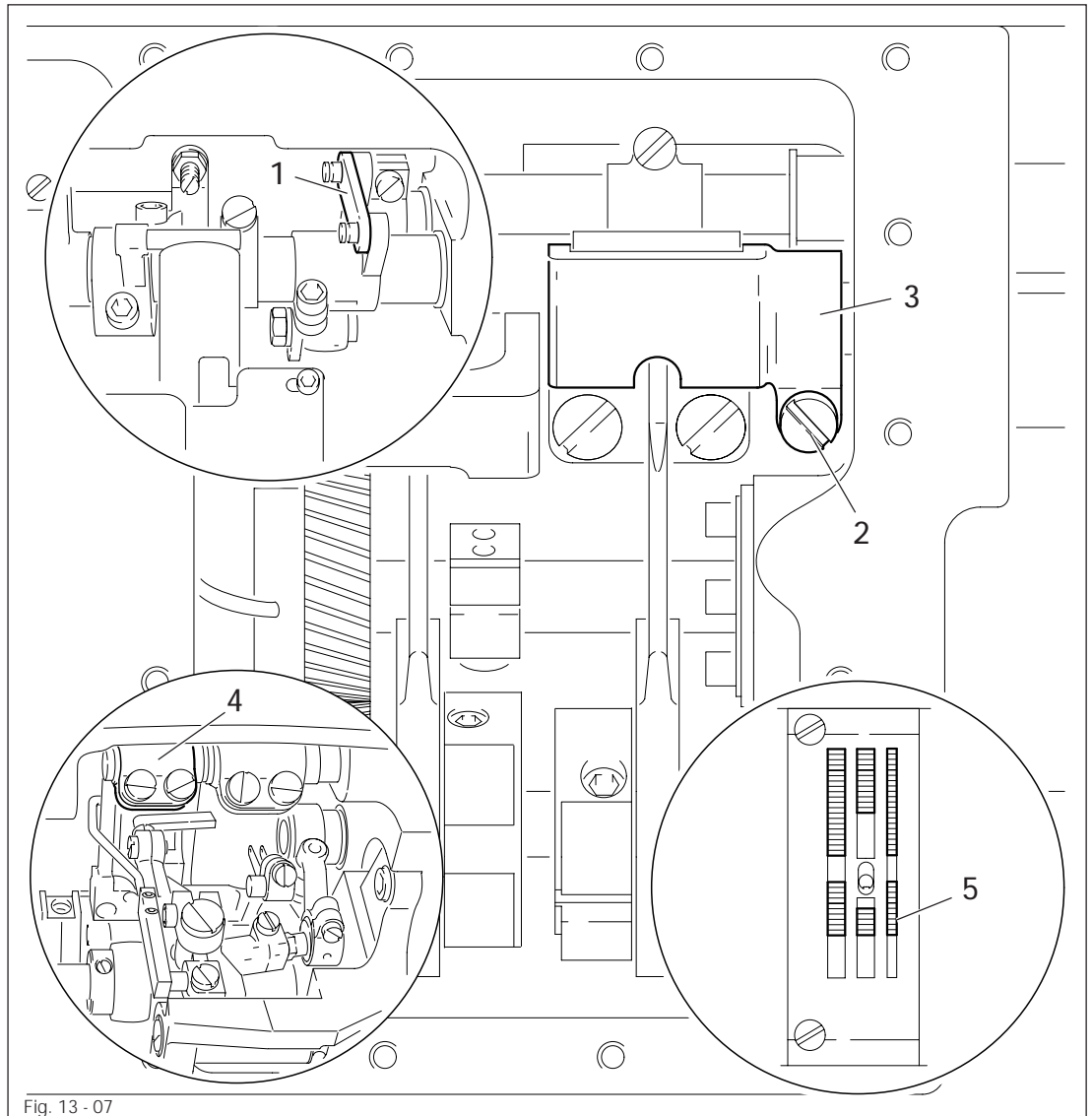
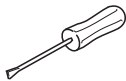


Fig. 13 - 07



- Set stitch length at " 0 " .
- Fit adjustment gauge 1.
- Undo screw 2 just enough to allow crank 3 to be turned on the shaft.
- Turn the balance wheel continuously and turn crank 3 to the position in which crank 4 no longer moves.
- Tighten screw 2.

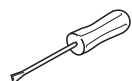
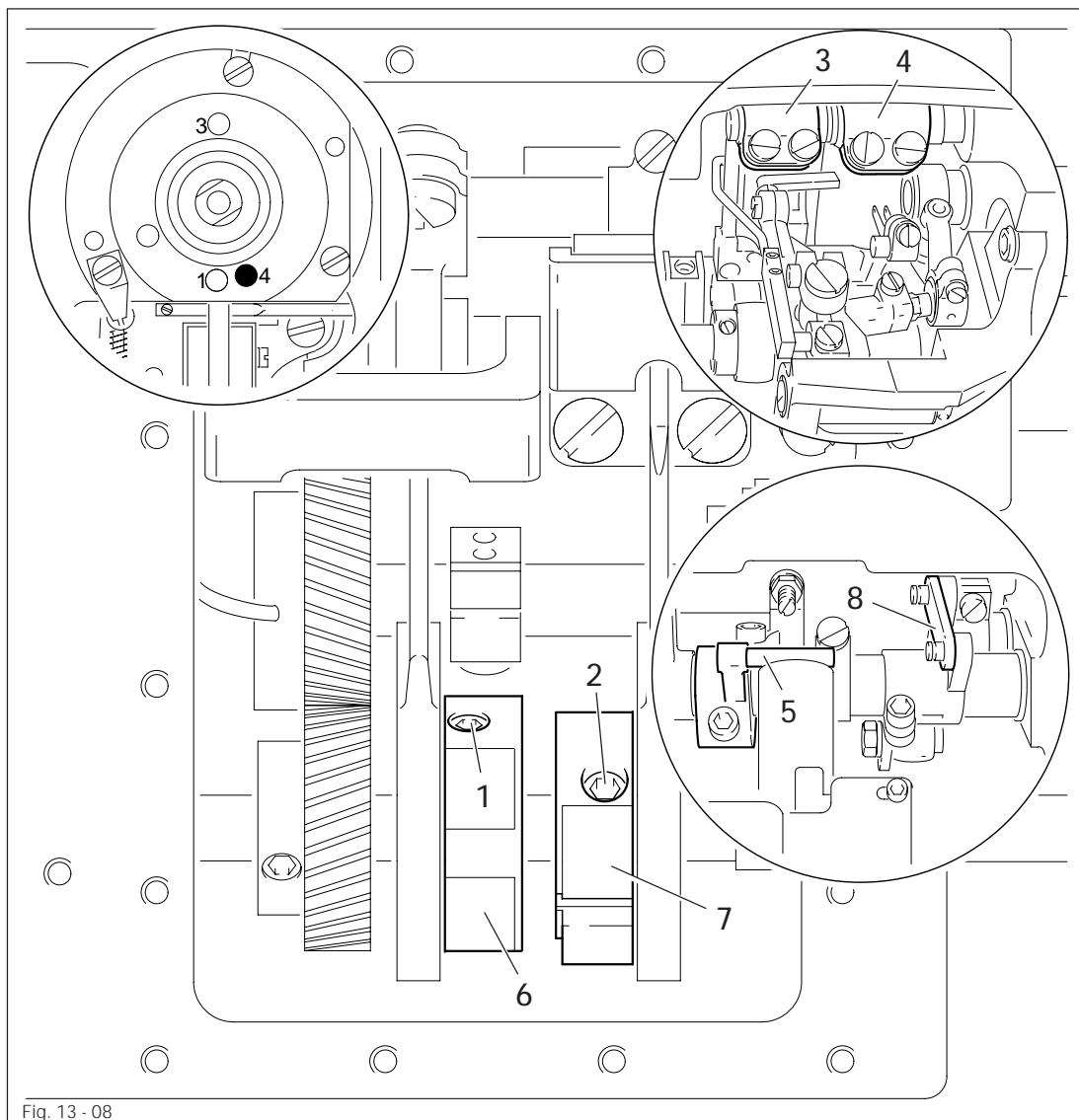


Leave adjustment gauge 1 in place for further adjustments.

## 13.05.07 Feeding motion of main- and differential feed dogs

### Requirement

With the longest stitch length set, the needle bar in position 0.8 before t.d.c. (hole 4) and adjustment gauge 8 fitted, the main- and differential feed dogs must not move when lever 5 is operated.



- Loosen screws 1 and 2 (four screws) just a little.
- Set needle bar at 0.8 before t.d.c. and set the longest stitch.
- Continuously move lever 5 up and down and turn eccentrics 6 and 7 so that the cutout is visible and cranks 3 and 4 do not move.
- Fully tighten screws 1 and 2.

## 13.05.08 Lifting motion of main- and differential feed dogs

**Requirement**

With the needle bar at t.d.c. (hole 1) the cutouts of eccentrics 3 and 4 must face vertically downwards.

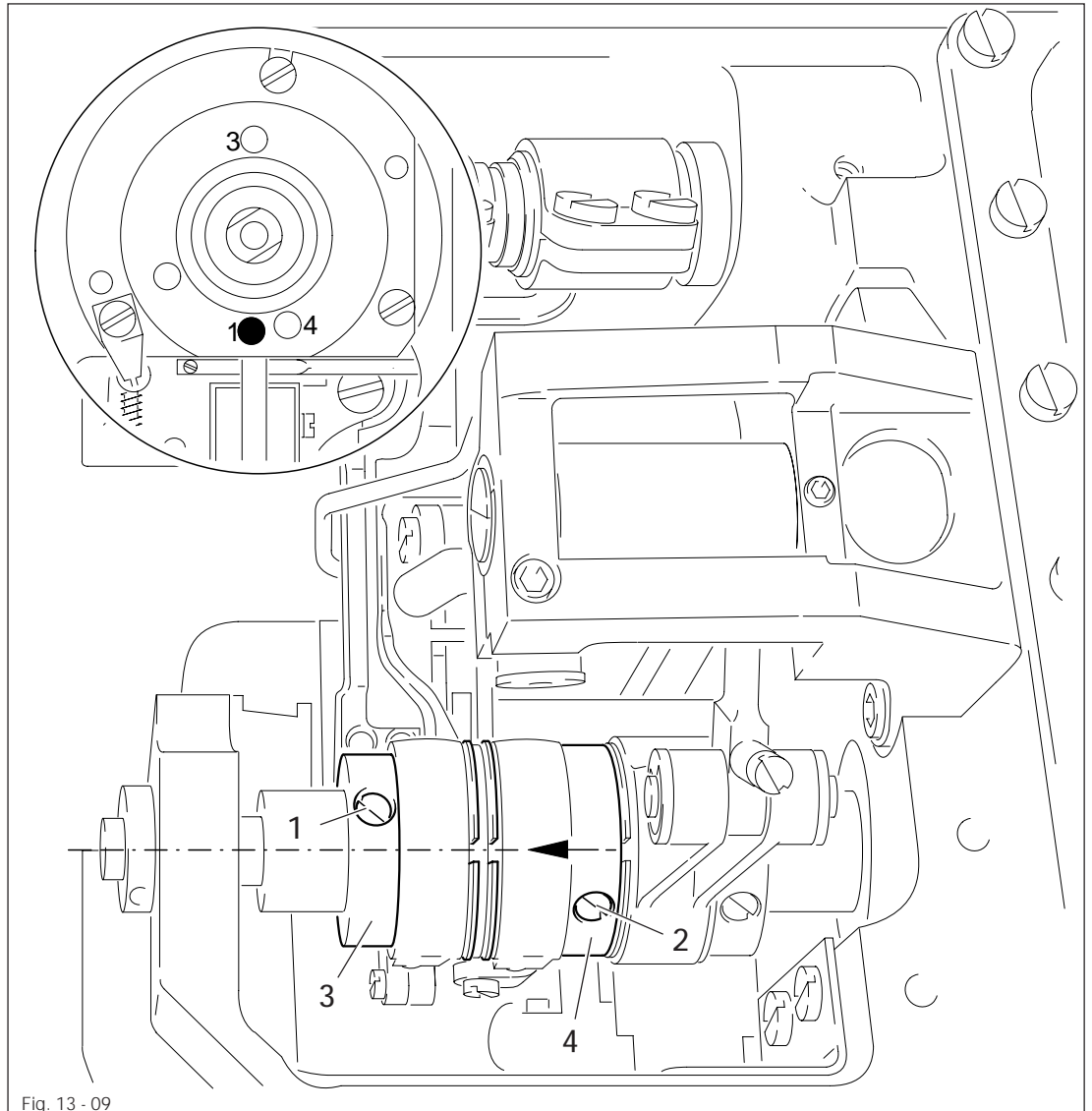
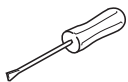


Fig. 13 - 09



- Loosen screws 1 and 2 (four screws).
- Set needle bar at t.d.c.
- Turn eccentrics 3 and 4 according to **Requirement** and fully tighten the accessible screws 1 and 2.
- Turn balance wheel to make the remaining screws 1 and 2 accessible and fully tighten them.

## 13.05.09 Position of main- and differential feed dogs

### Requirement

When the needle bar is at t.d.c (hole 1) and the longest stitch length is set the main- and differential feed dogs must:

1. rest their full length on adjustment gauge 5,
2. be centred in the feed slots of the needle plate, and
3. clear each other by 4 mm.

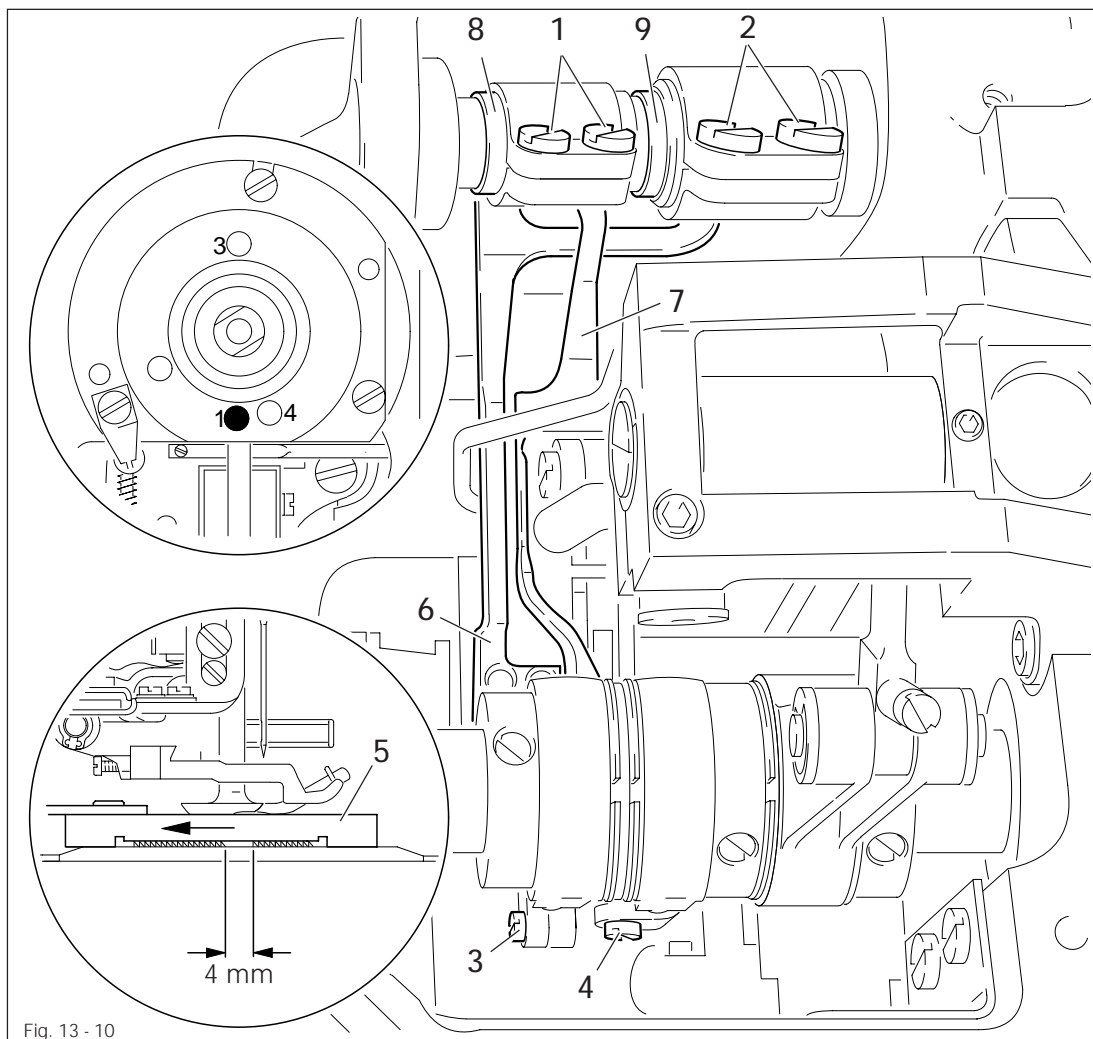
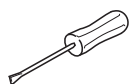


Fig. 13 - 10



- Set needle bar at t.d.c. and set longest stitch length.
- Loosen screws 1, 2, 3 and 4.
- Raise lifting presser and place adjustment gauge 5 (part No. 61-111 642-19) under the lifting presser with its cutout facing downwards so that the arrow on gauge 5 faces in feed direction.
- Push two feed bars 6 and 7 upwards to press the two feed dogs against the gauge.
- Tighten screws 1 and 2 just a little.
- Turn eccentric bushes 8 and 9 according to **Requirements 2 and 3**.
- In this position fully tighten screws 3 and 4.
- Making sure that **Requirement 1** is fulfilled, fully tighten screws 1 and 2.

## 13.05.10 Zero position of feeding presser

### Requirement

With the stitch length set at " 0 " and adjustment gauge 4 in place the feeding presser must not make any movement.

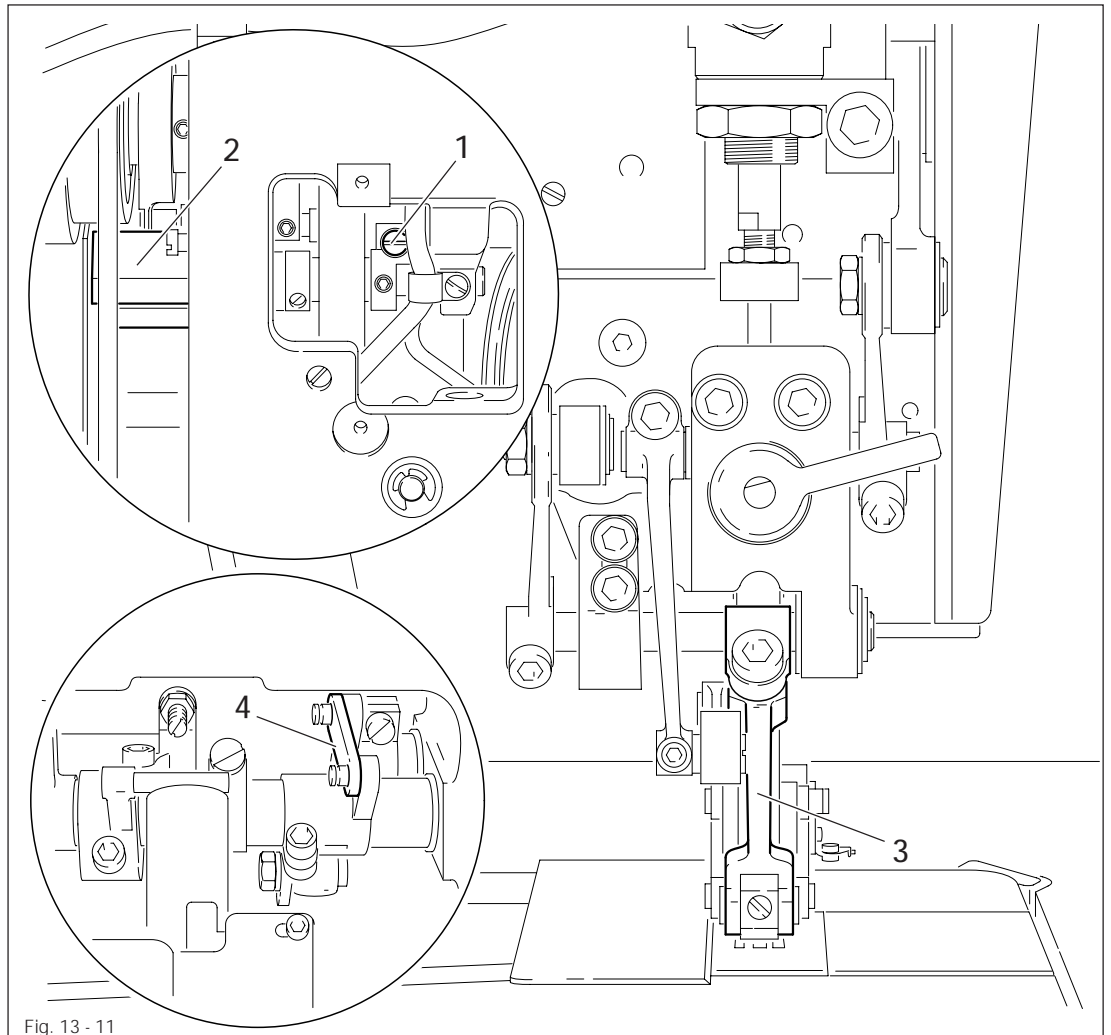
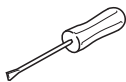


Fig. 13 - 11



- Set feed regulator at " 0 ".
- Undo screw 1 just enough to allow crank 2 to be turned.
- Turn the balance wheel continuously and turn crank 2 to the position in which lever 3 no longer moves.
- Fully tighten screw 1.

## 13.05.11 Front driving link of feeding-presser drive

### Requirement

With the needle bar at 0.8 mm before t.d.c. (hole 4) there must be a distance of **16.5 mm** between the eye of link 2 and machine housing 3.

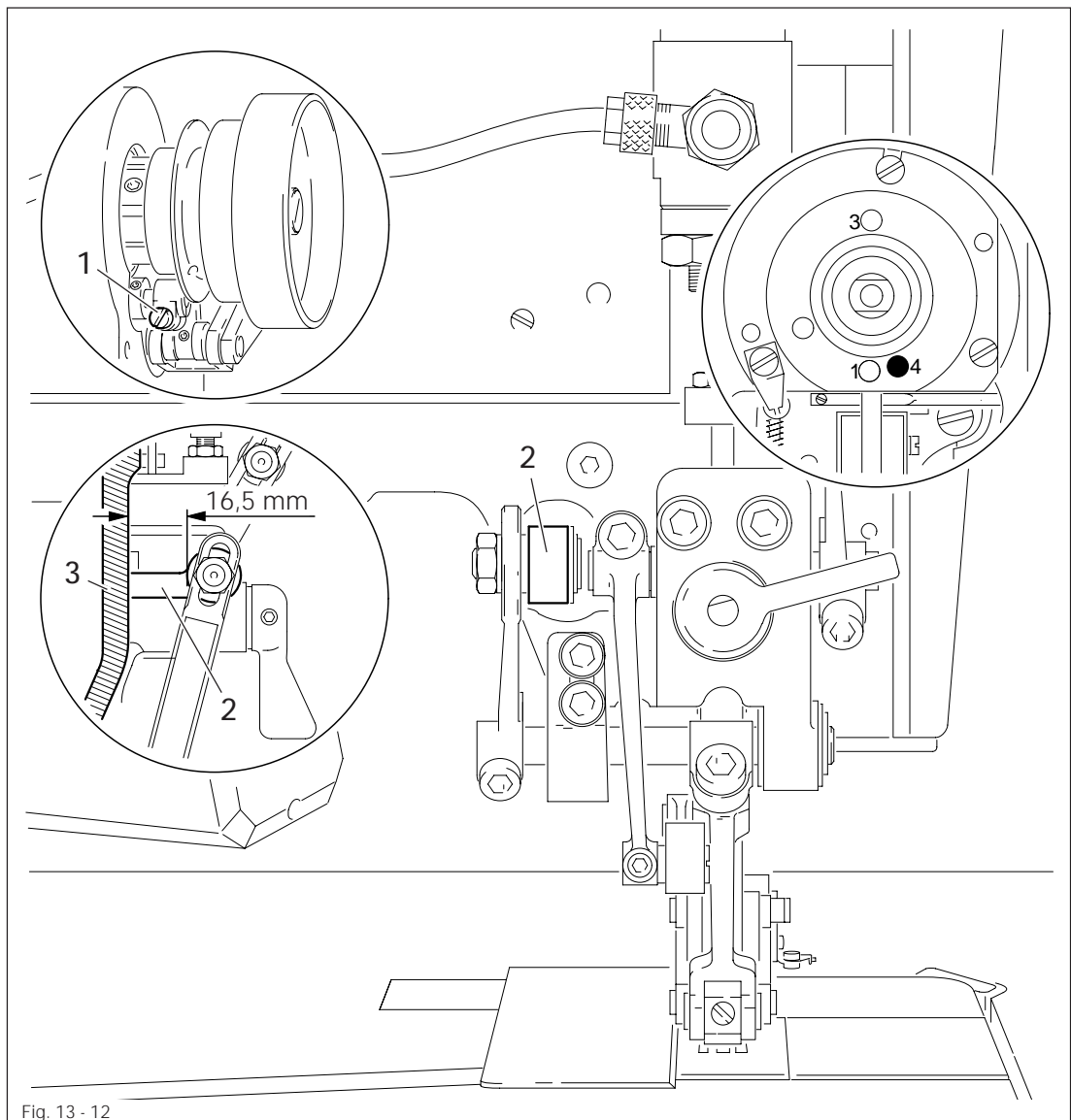
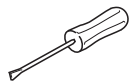


Fig. 13 - 12



- Set needle bar at 0.8 mm before t.d.c.
- Loosen screw 1.
- Adjust link 2 according to Requirement.
- Tighten screw 1.
- Check adjustment.



## 13.05.12 Positioning the lifting presser

**Requirement**

1. With presser bar lifter 1 raised there must be a clearance of 5 mm between lifting presser 13 and the needle plate.
2. The needle must enter the centre of the needle hole in lifting presser 13.
3. The edge of the lifting presser must be parallel with the bottom feed dog.

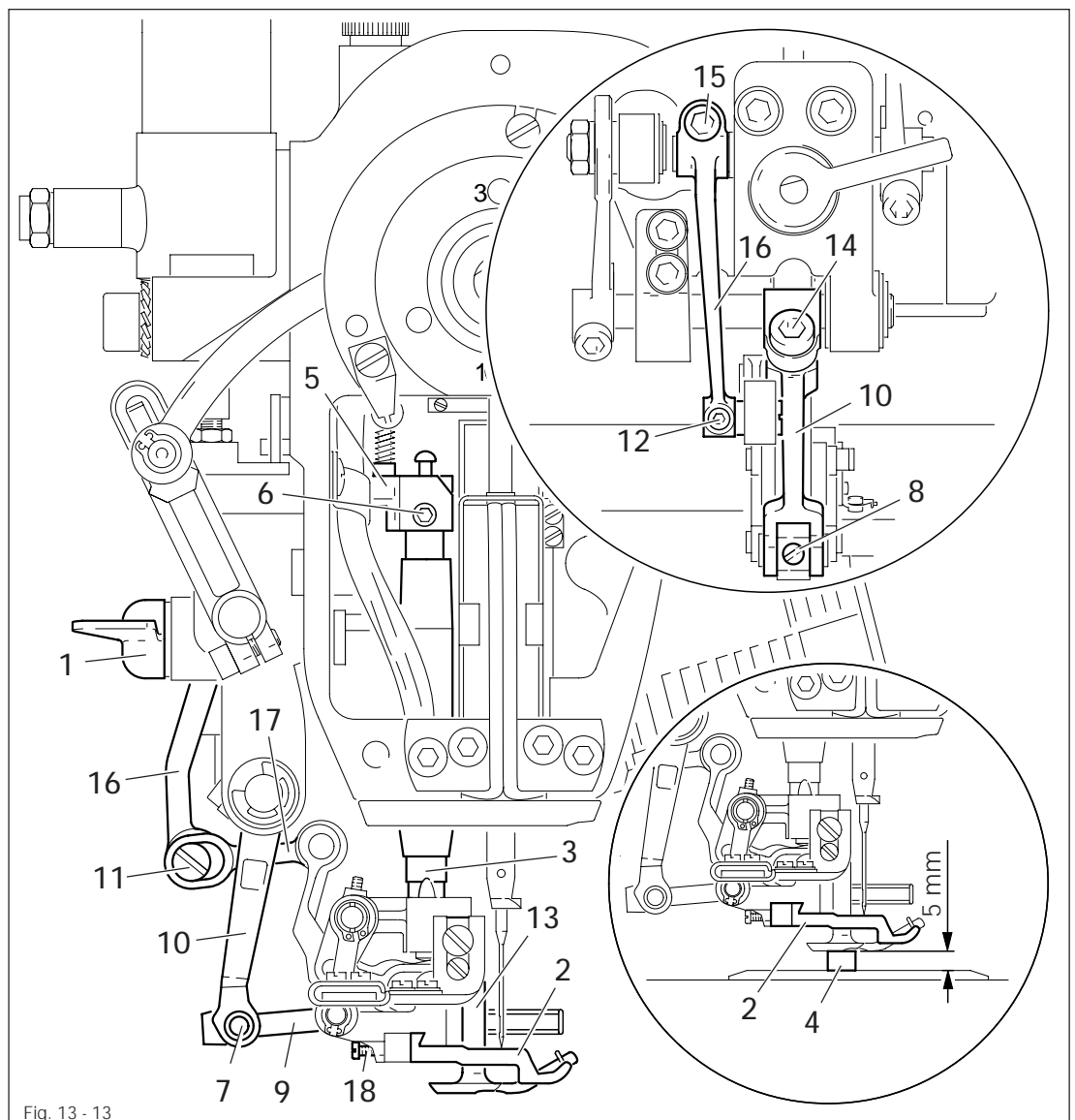


Fig. 13 - 13

- Raise presser bar lifter 1.
- Turn the balance wheel to set feeding presser 2 at its highest point.
- Raise presser bar 3 and push the 5 mm thick part of adjustment gauge 4 (part No. 61-111642-19) under the lifting presser from behind.
- Move lifting piece 5 (screw 6) down as far as it will go.
- Take out pin 7 (screw 8).
- Swing lever 9 out of the fork of lever 10.
- Take out eccentric pin 11 (screw 12).
- Position lifting presser 13 according to the Requirements.

---

## Adjustment

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- Tighten screw 6.
- Remove gauge 4 and lower lifting presser 13 onto the needle plate.
- Loosen screw 14.
- Swing lever 9 into the fork of lever 10.
- Insert pin 7 (screw 8), making sure it can move freely.
- If necessary, bend lever 10 accordingly.
- Set needle bar at 0.8 mm before t.d.c.
- Set feeding presser 2 at middle of lifting presser cutout and tighten screw 14.
- Loosen screw 15.
- Connect lever 16 with link 17 using eccentric pin 11 (screw 12) and turn eccentric pin 11 with highest eccentric part facing downwards.
- Move lever 16 up against eccentric pin 11 and tighten screw 15.
- Position feeding presser 2 (screw 18) so that it does not touch lifting presser 13 to the side.



All moving parts of top feed drive must move freely and without any play.  
Oil regularly!

## 13.05.13 Lifting presser stroke on automatic foot lift

**Requirement**

With cylinder plunger 1 retracted there must be a clearance of 7 mm between lifting presser 3 and the needle plate.

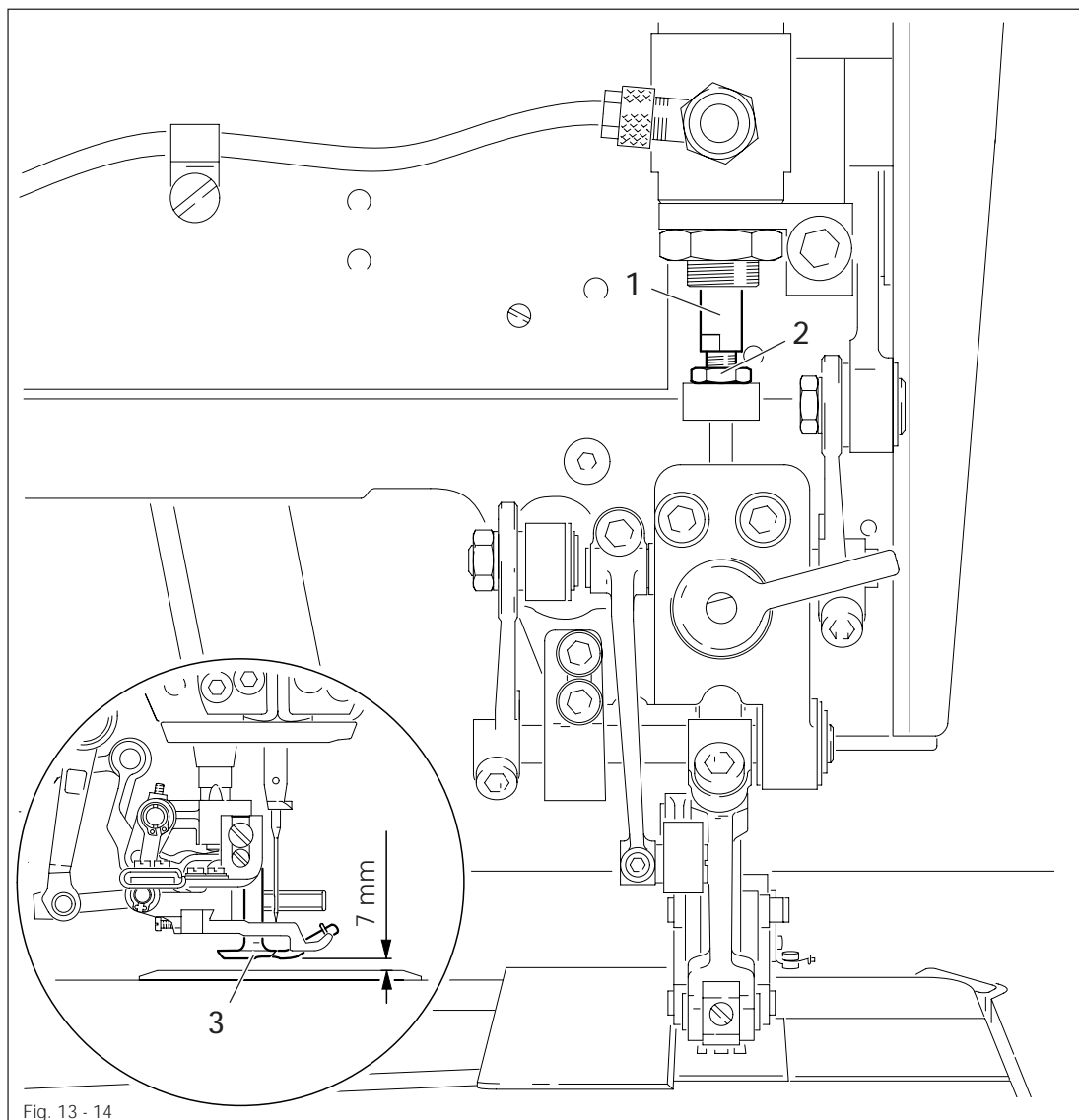
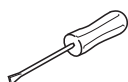


Fig. 13 - 14

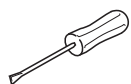
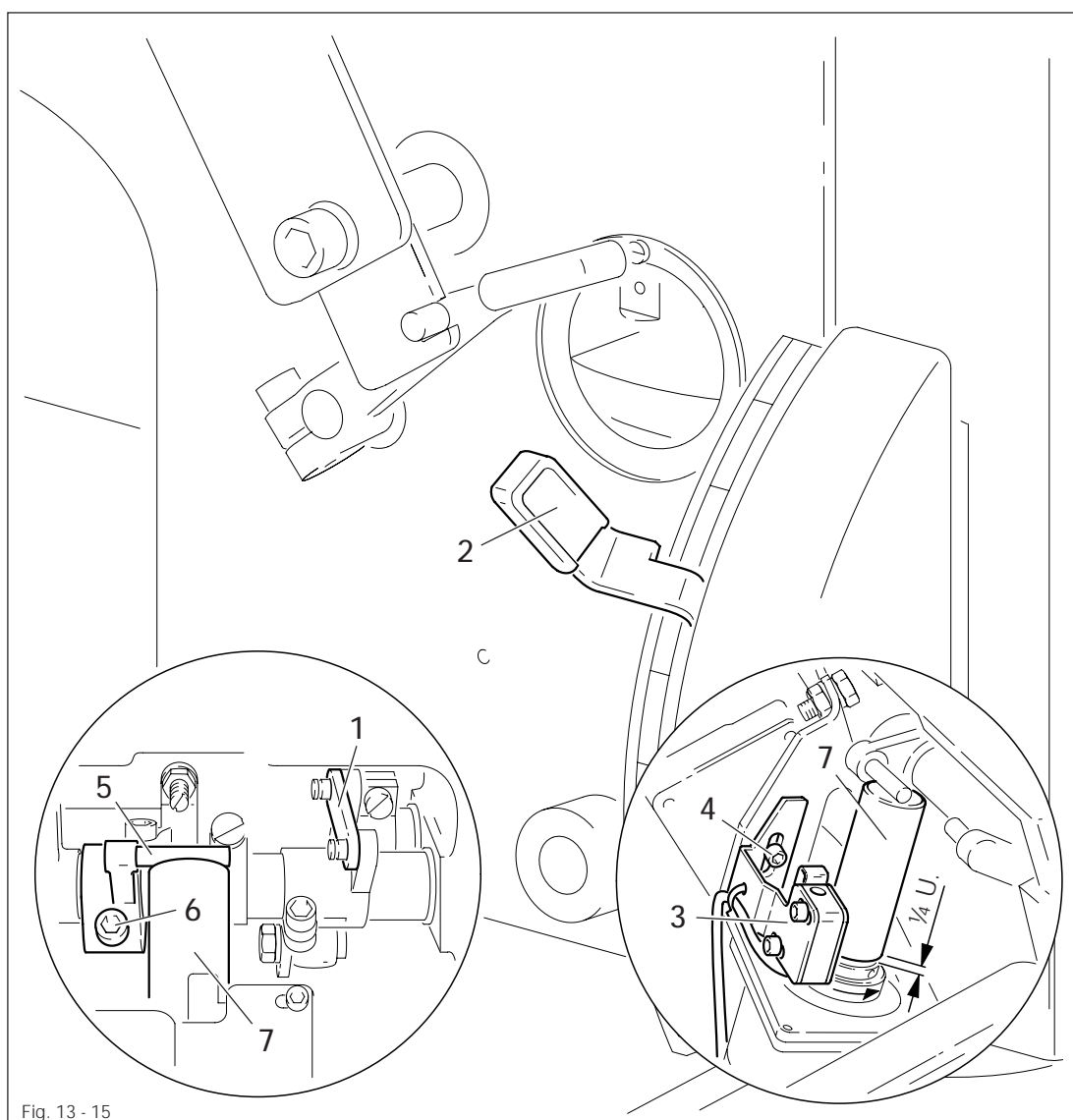


- Adjust cylinder plunger 1 (nut 2) according to Requirement.

## 13.05.14 Quick-change movement of feeding presser

### Requirement

1. At the maximum fullness setting and with adjustment gauge 1 in place, pressure sleeve 7 must be about  $\frac{1}{4}$  of a turn from the stop of the servo motor.
2. At fullness setting " 0 ", stitch length setting " 2.5 " and with adjustment gauge 1 in place, lever 5 must just rest on pressure sleeve 7.



- Switch on machine, select program " 0 " and set fullness reading " 99 ".
- Set stitch length at " 2.5 " (lever 2).
- Switch off machine and check **Requirement 1** if necessary by turning pressure sleeve 7 as shown by arrow.
- Re-position sensor 3 (screw 4) according to **Requirement 1**.
- Switch on machine.
- Change fullness setting to " 0 ".
- Turn lever 5 (screw 6) according to **Requirement 2**.

## 13.05.15 Feeding motion of feeding presser

**Requirement**

With the longest stitch length set, the needle bar in position 0.8 before t.d.c. (hole 4), lever 4 must not move when lever 2 is operated.

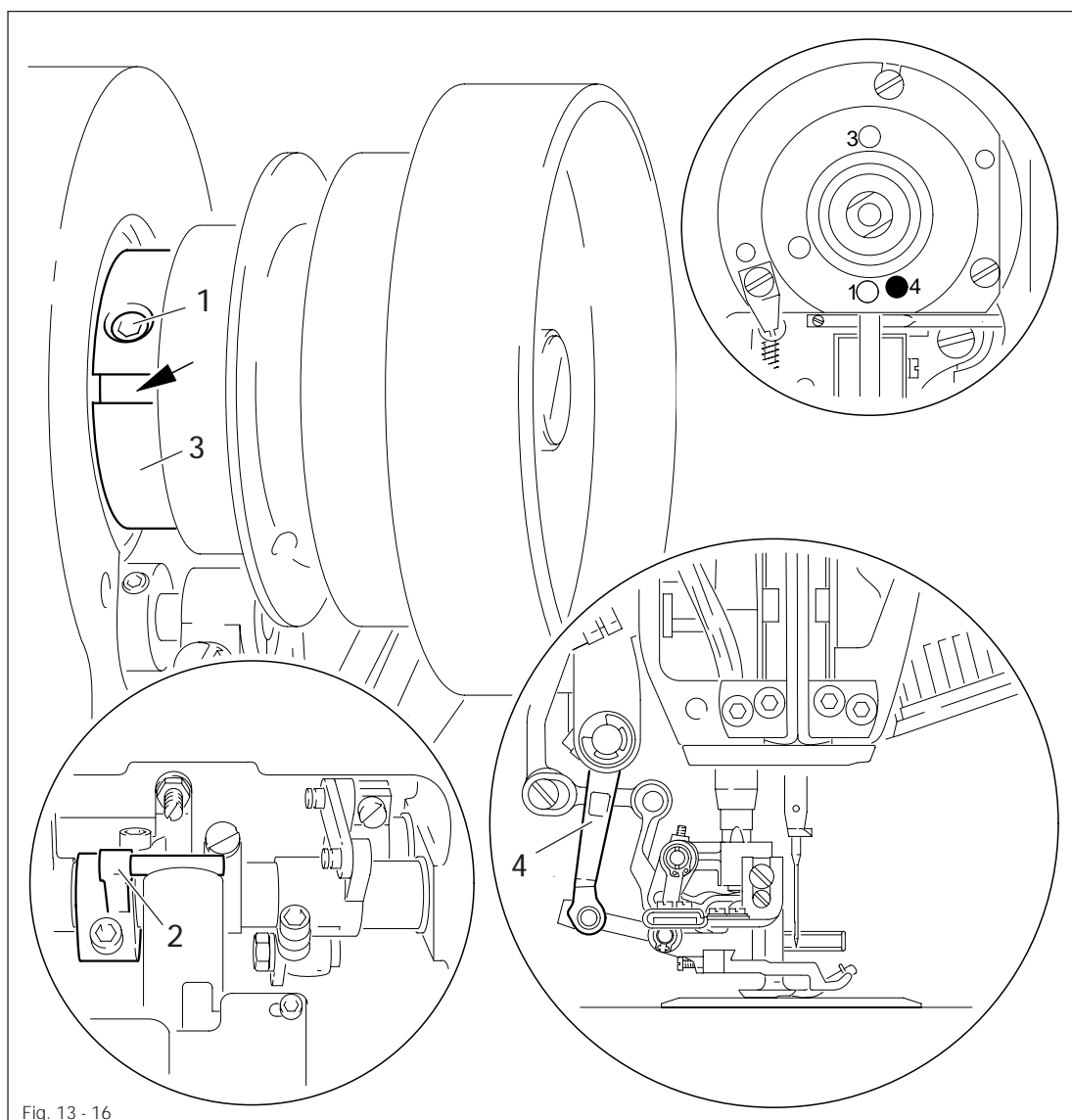
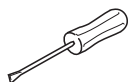


Fig. 13 - 16

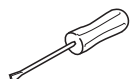
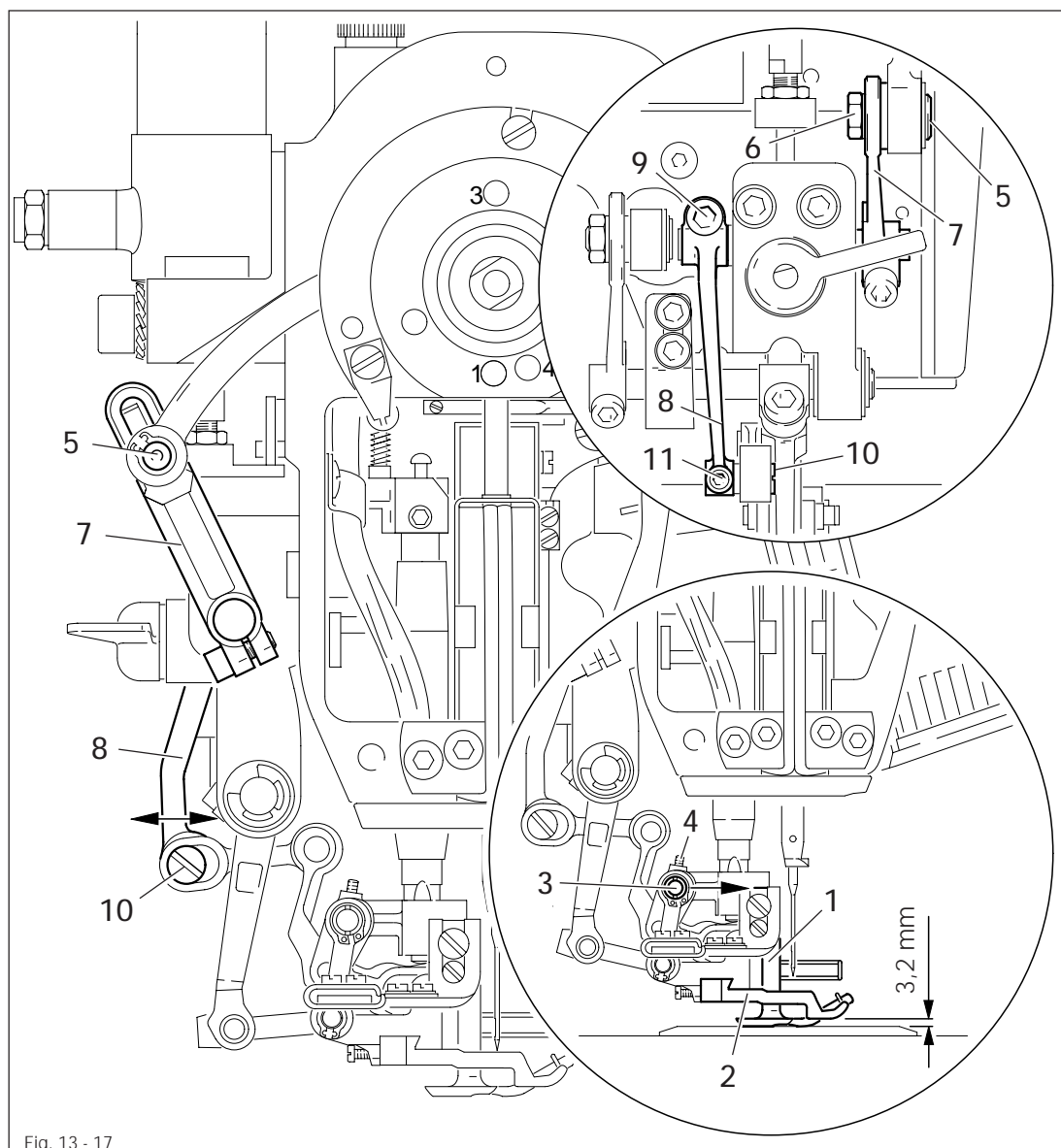


- Loosen screws 1.
- While continuously moving lever 2 up and down, adjust eccentric 3 so that the groove faces the operator and lever 4 does not move.
- Tighten screws 1.

## 13.05.16 Lift of feeding presser

### Requirement

With the stitch length set at " 2.5 " and the adjustment gauge in place, the feeding presser 2 must clear the needle plate by 3.2 mm when at the top of its stroke.



- Lower lifting presser 1 onto needle plate.
- Set stitch length at " 2.5 " and turn balance wheel to set lifting presser 2 at the top of its stroke.
- Turn eccentric pin 3 (screw 4) so that its eccentric side faces the needle (see arrow).
- Move pin 5 (nut 6) fully down in elongated hole of lever 7.
- For preliminary adjustment of clearance between feeding presser 2 and needle plate position lever 8 (screw 9).
- Turn eccentric pin 10 (screw 11) according to Requirement.

## 13.05.17 Lifting stroke of feeding presser

**Requirement**

With the stitch length set at " 2.5 " and adjustment gauge 4 in place, the feeding presser must contact the bottom feed dog when the latter has risen to the top surface of the needle plate.

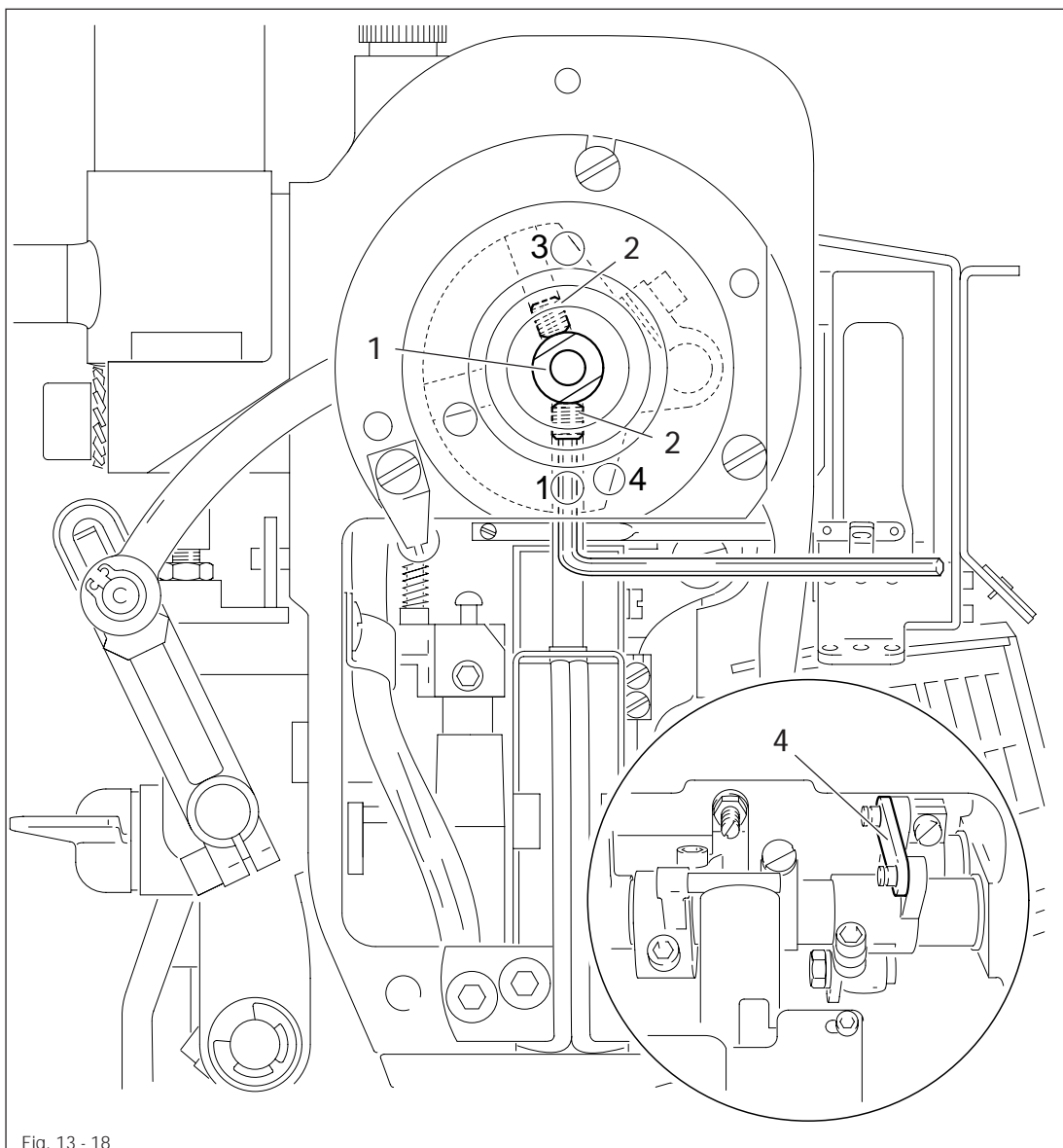
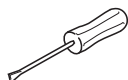


Fig. 13 - 18



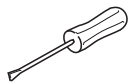
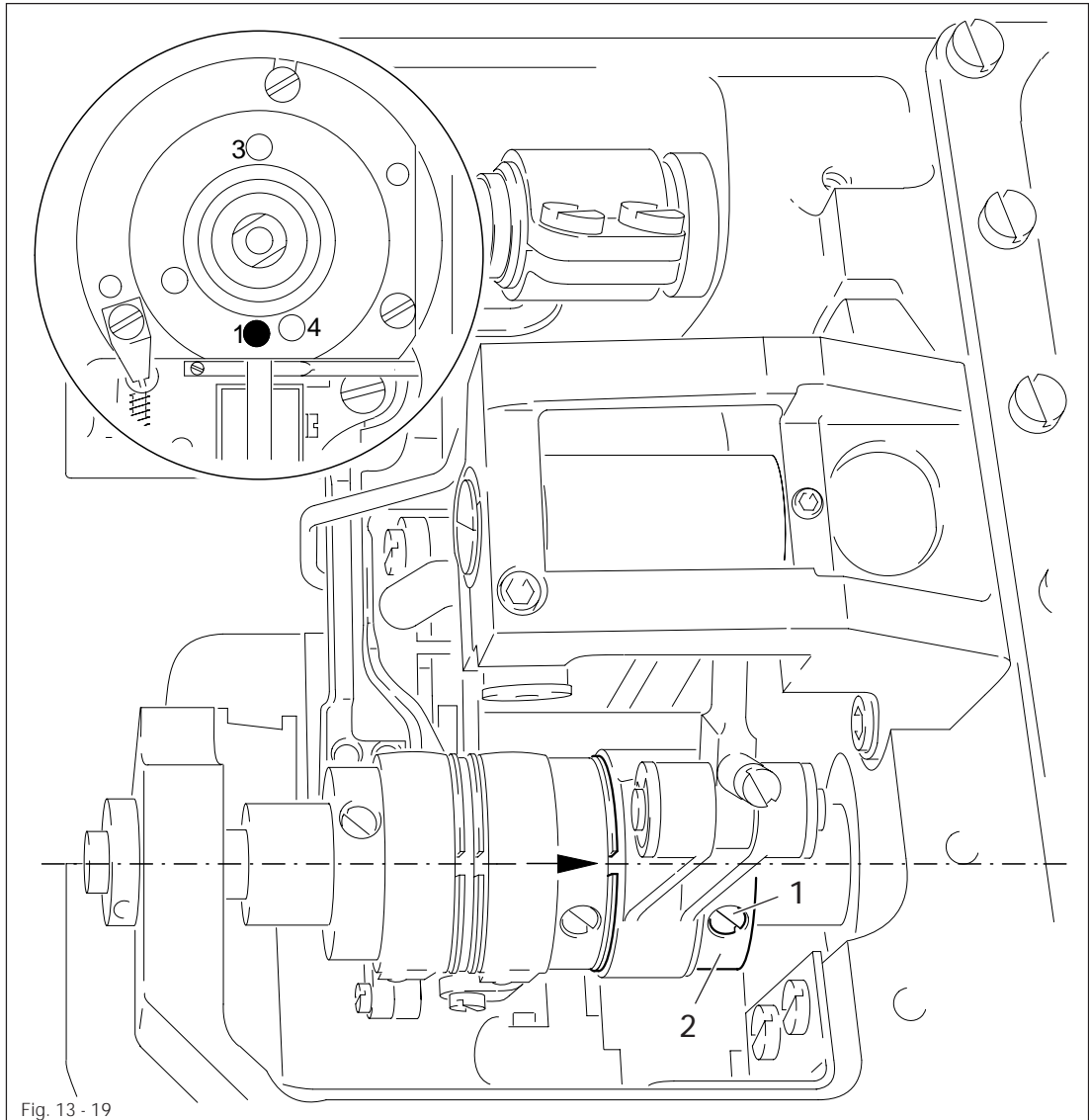
- Set the stitch length at " 2.5 ".
- Turn eccentric 1 (screw 2) according to **Requirement**.
- Tighten screw 3 (this blocks the set stitch length).
- Remove adjustment gauge 4.

# Adjustment

## 13.05.18 Looper avoiding motion

### Requirement

With the needle bar at t.d.c. (hole 1) the cutout in eccentric 2 must be positioned vertically below the shaft centre line.



- Loosen screw 1.
- Set needle bar at t.d.c.
- Turn eccentric 2 according to Requirement.
- Tighten screws 1.



## 13.05.19 Hook height and hook angle (for the 3801-1/07)

**Requirements**

When the hook carrier 2 is vertical

1. there must be a clearance of 0.7 mm between the highest point of the back of the hook and the needle plate support surface, and
2. hook 7 must touch adjustment gauge 9.

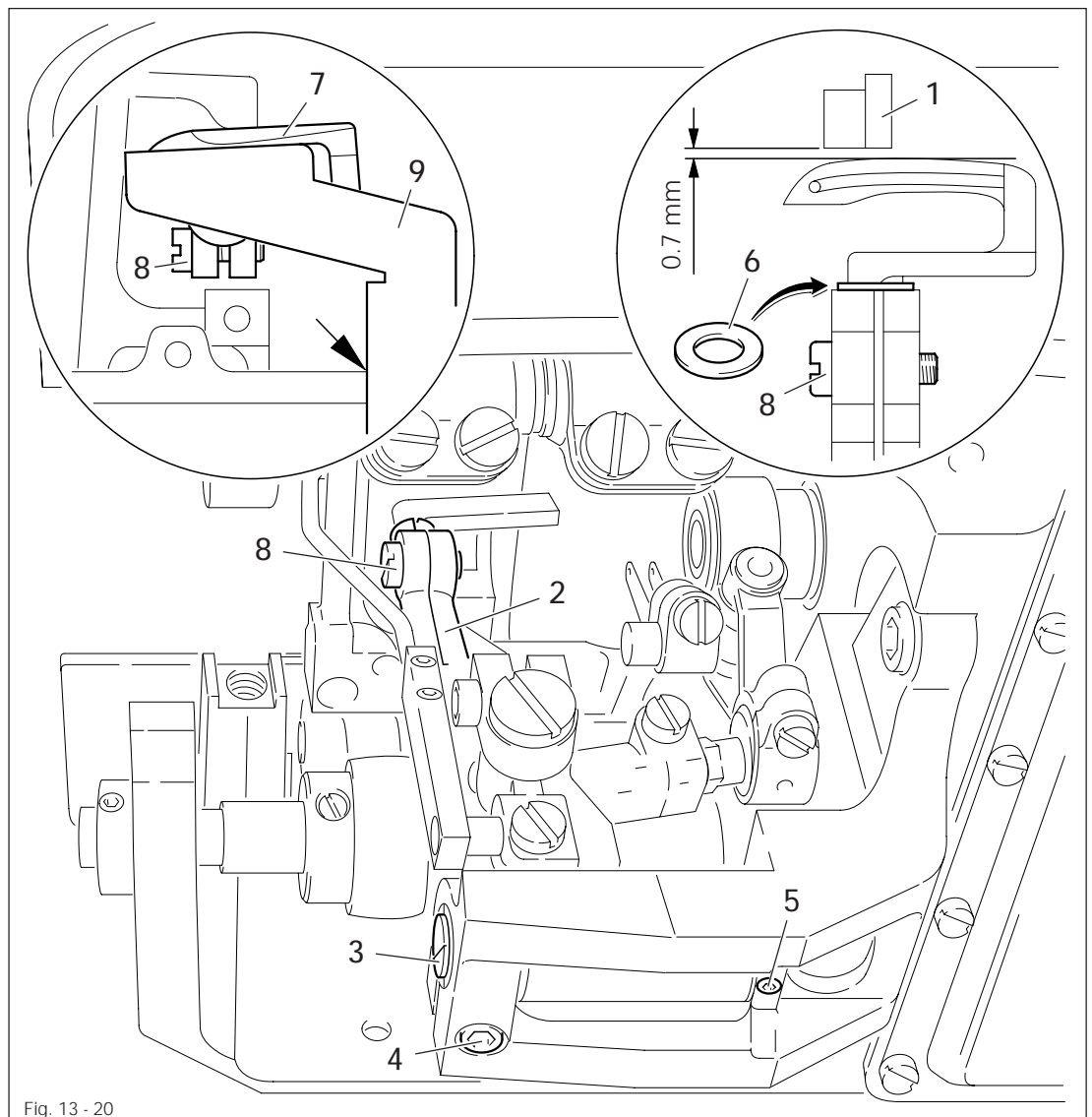
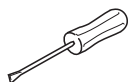


Fig. 13 - 20



- Remove needle plate and bottom feed dog.
- Lay the adjustment gauge (Part No. 61-111 642-19) onto the needle plate support.
- Position the hook carrier 2 vertically.
- Turn eccentric bearing pin 3 (screws 4 and 5) according to requirement 1.
- Check adjustment.
- If the required clearance is not achieved, replace the spacer 6. To do this, hook 7 (screw 8) must be dismantled.
- Lay hook adjustment gauge 9 (Part No. 61-111 643-06) on the left edge of the cover plate groove (see arrow) and slide against hook 7.
- Position hook 7 (screw 8) so that it touches hook adjustment gauge 9 (requirement 2).

## 13.05.20 Hook height and hook angle (for the 3801-1/071)

### Requirements

When the hook carrier 1 is vertical

1. there must be a clearance of 0.3 mm between the highest point of the back of the hook and the bottom of the thread trapper 8, and
2. hook 6 must touch hook adjustment gauge 4.

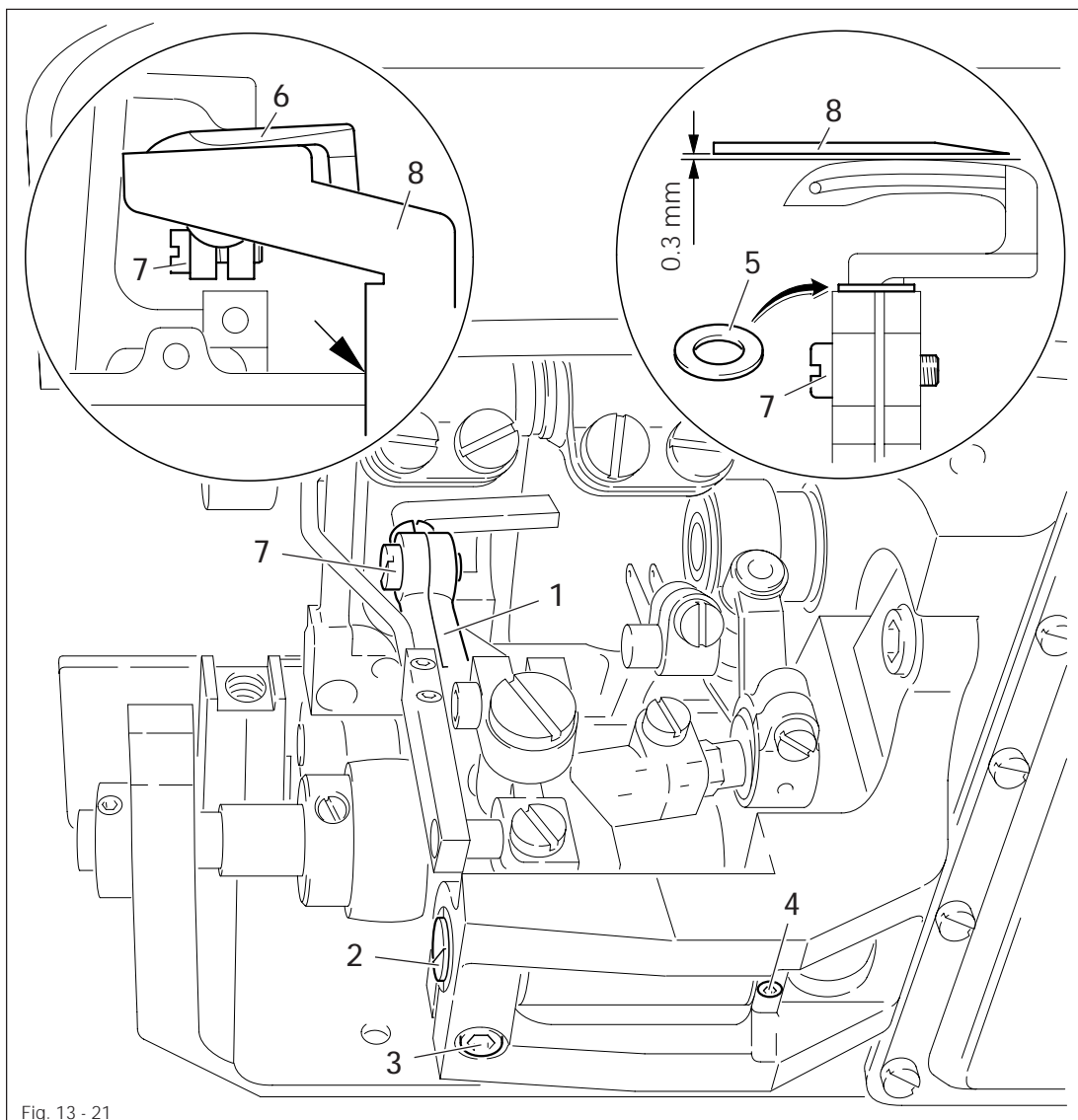
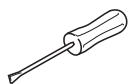


Fig. 13 - 21

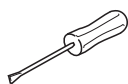
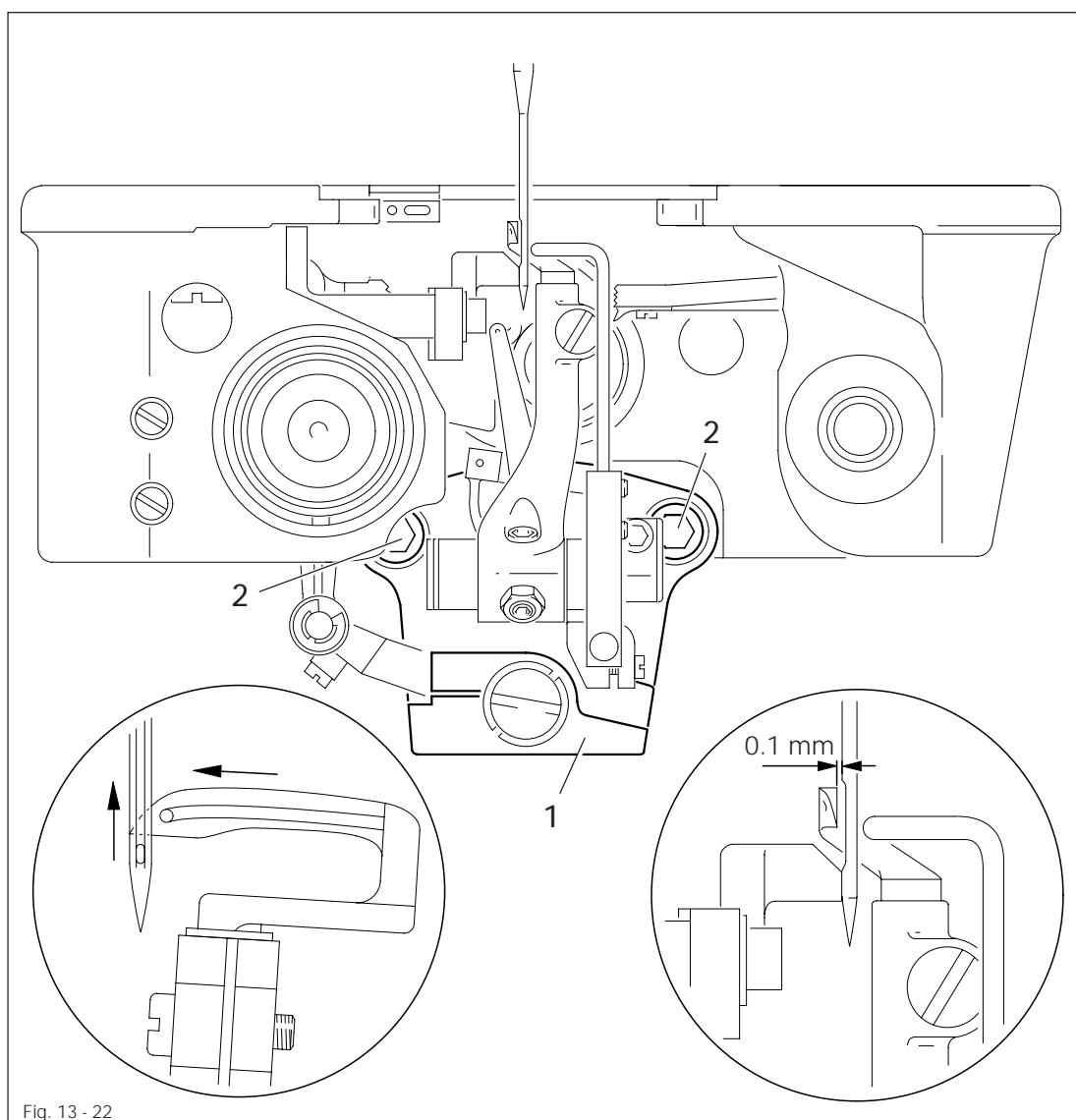


- Position hook carrier 1 so that it is vertical.
- Disassemble needle plate and bottom feed dog.
- Turn eccentric bearing pin 2 (screws 3 and 4) according to requirement 1.
- Check adjustment.
- If the required clearance is not achieved, replace the spacer 5. To do this, hook 6 (screw 7) must be dismantled.
- Lay hook adjustment gauge 8 (Part No. 61-111 643-06) on the left edge of the cover plate groove (see arrow) and slide against hook 6.
- Position hook 6 (screw 7) so that it touches hook adjustment gauge 8 (requirement 2).

## 13.05.21 Hook clearance in sewing direction

**Requirement**

Viewed in the direction of sewing, the clearance between the hook point and the needle must be approx. 0.1 mm.

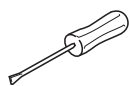
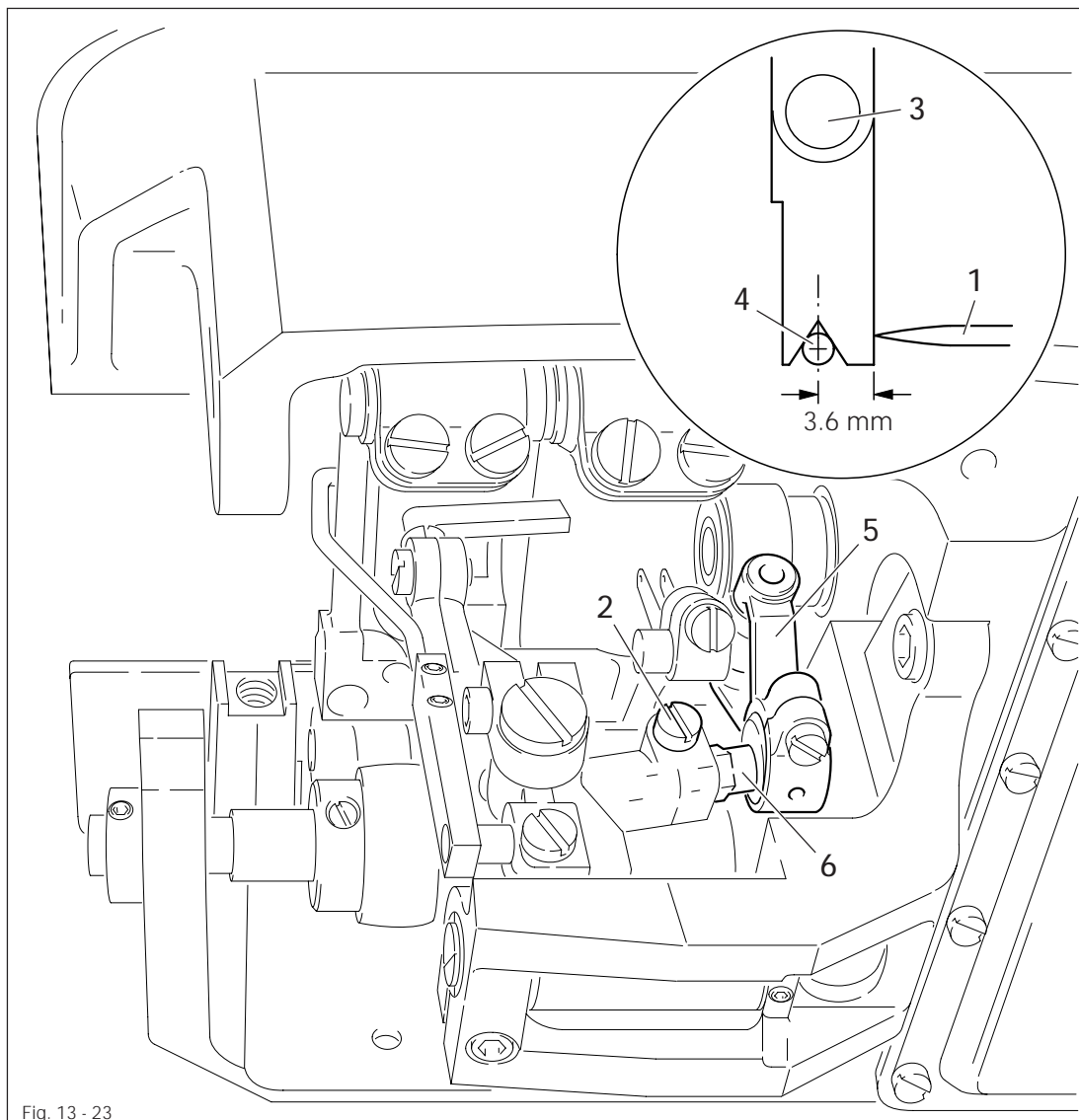


- Turn the handwheel until the hook point, coming from the right hand side, reaches the left side of the needle.
- Align the hook unit 1 (screws 2) according to the requirement.

## 13.05.22 Hook clearance in traverse direction of sewing

### Requirement

At the right point of reversal of hook 1, the hook point in the traverse direction of sewing must have a clearance of 3.6 mm to the middle of the needle.



- Move hook 1 to its right point of reversal by turning the handwheel.
- Loosen screw 2.
- Lay the 3.6 mm feeler gauge (Part No. 61-111 643-06) against the needle with its notch facing in the direction of feed.
- Taking care that the drive connecting rod 5 is vertical, turn the ball pin 6 using a fork wrench (jaw width 6) until the point of hook 1 touches the feeler gauge.
- Tighten screw 2.

## 13.05.23 Hook motion

**Requirement**

The needle bar position must be the same:

- a) when the point of the hook, coming from the right hand side, is positioned to the left hand side of the needle and,
- b) when, after the handwheel has been turned back, the hook point is positioned a) to the right hand side of the needle.

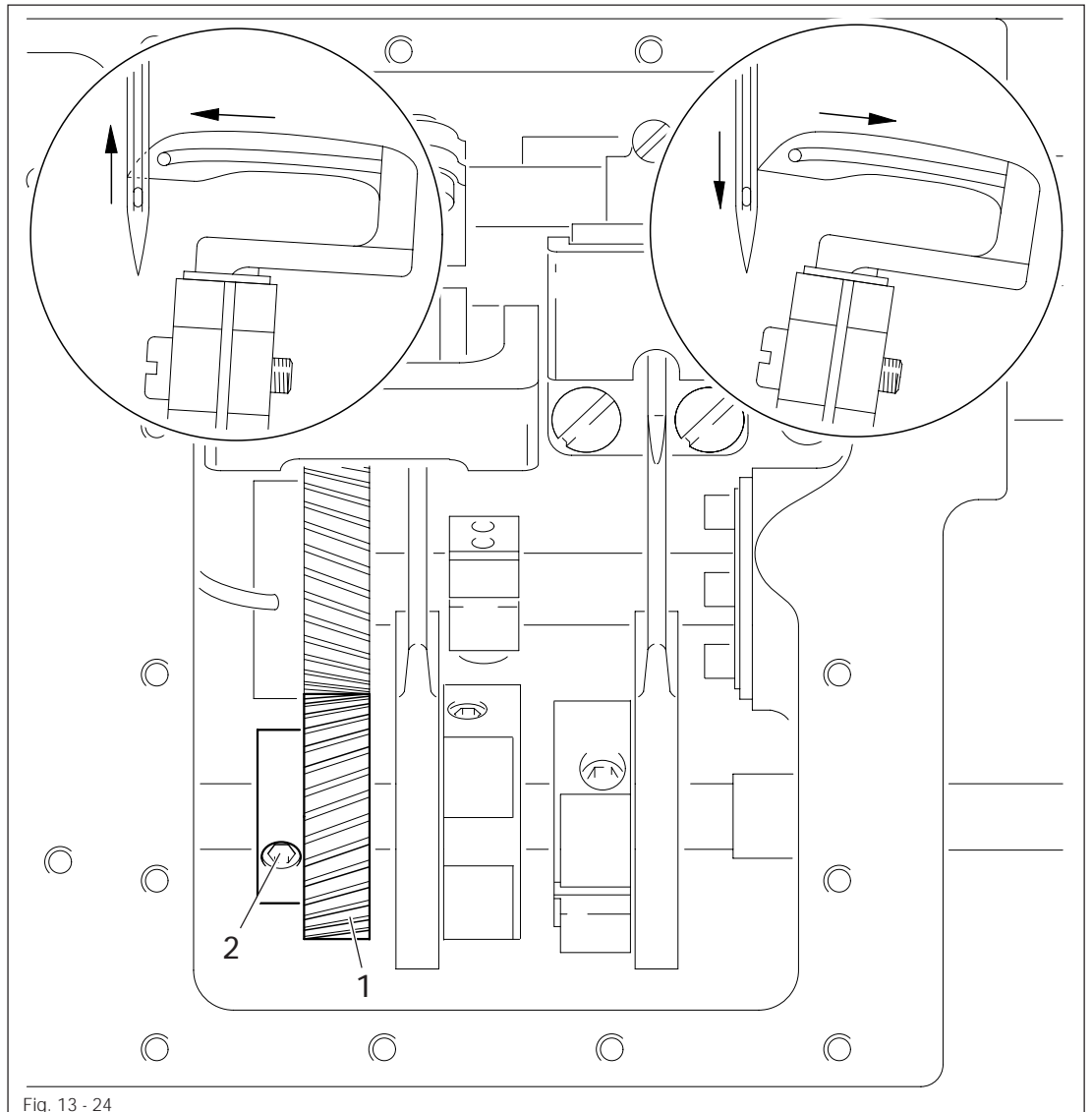
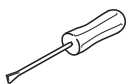


Fig. 13 - 24



- Insert a new 80 Nm needle.
- Turn the handwheel until the point of the hook, coming from the right hand side, is on the left hand side of the needle.
- In this position, fasten the screw clamp (Part No. 08-880 137-00) onto the needle bar so that the upwards movement of the needle bar is blocked.
- Turn the needle bar back until the screw clamp is once again touching it.
- Check requirement.
- If necessary, remove the screw clamp and turn the cog 1 (screws 2) according to the requirement.

## 13.05.24 Adjusting the needle height

### Requirement

When the hook point, coming from the right hand side, reaches the left side of the needle, the top edge of the eye of the needle should be 1.0-1.2 mm below the bottom edge of the hook.

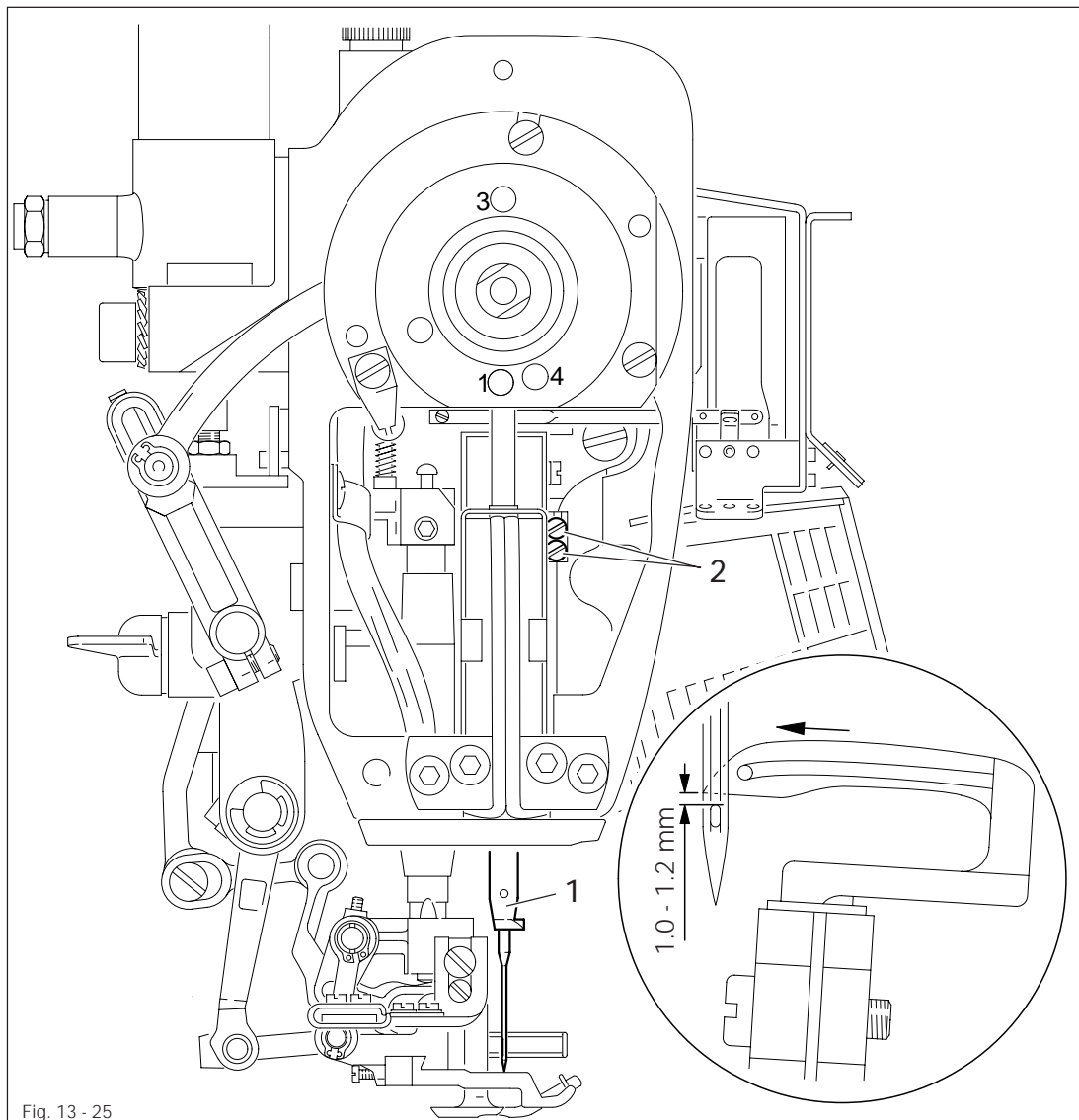
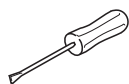


Fig. 13 - 25



- Turn the handwheel until the point of the hook, coming from the right hand side, reaches the left hand side of the needle.
- Move the needle bar 1 (screws 2) without turning it according to the requirement.

## 13.05.25 Height of the rear needle guard

### Requirement

With the needle bar at its BDC (hole 3), the edge of the rear needle guard 1 must be at the same height as the upper edge of the eye of the needle.

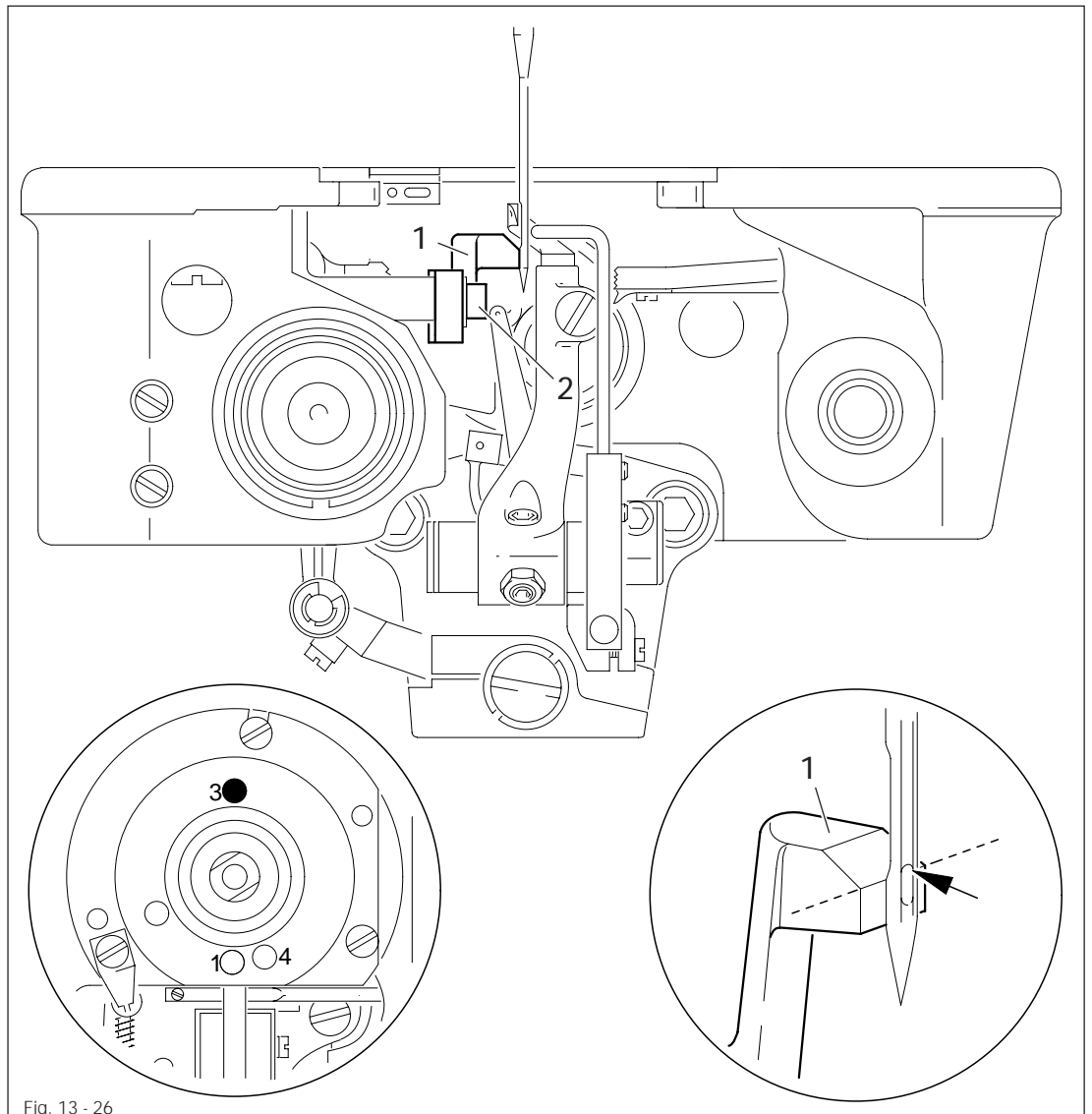
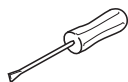


Fig. 13 - 26



- Move the needle bar to its BDC.
- Move the needle guard 1 (screw 2) according to the requirement.

## 13.05.26 Clearance between the rear needle guard and the needle

### Requirement

When the point of the hook, coming from the right hand side, has reached the right hand side of the needle, the needle guard 3 must still be slightly touching the needle.

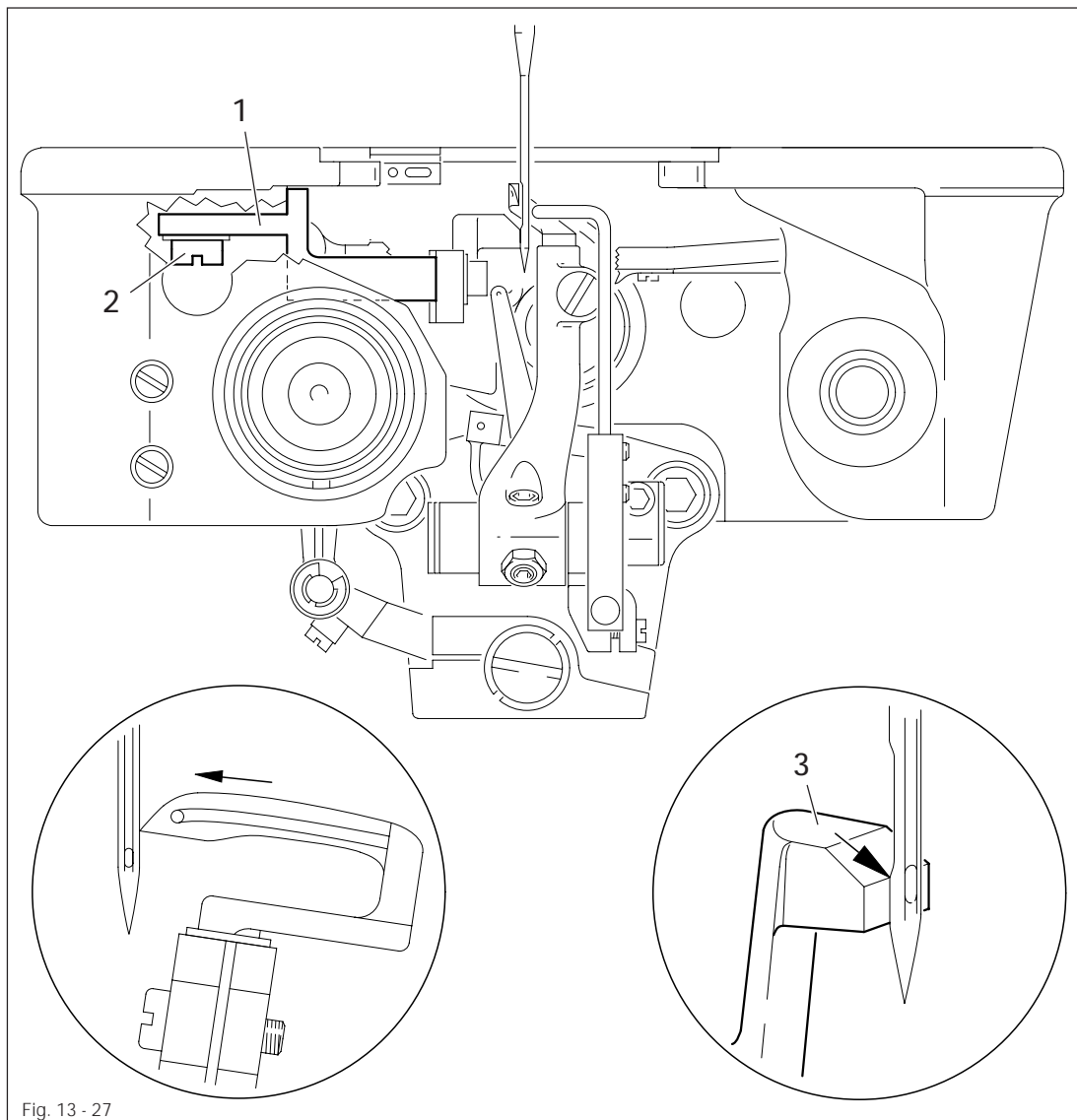
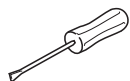


Fig. 13 - 27



- Turn the handwheel until the point of the hook has reached the right hand side of the needle.
- Move the carrier 1 (screw 2) according to the requirement.



The needle guard 3 must not press against the needle!



## 13.05.27 The hook-eccentric guard

### Requirement

The eccentric must not at any stage of its motion touch the guard 1.

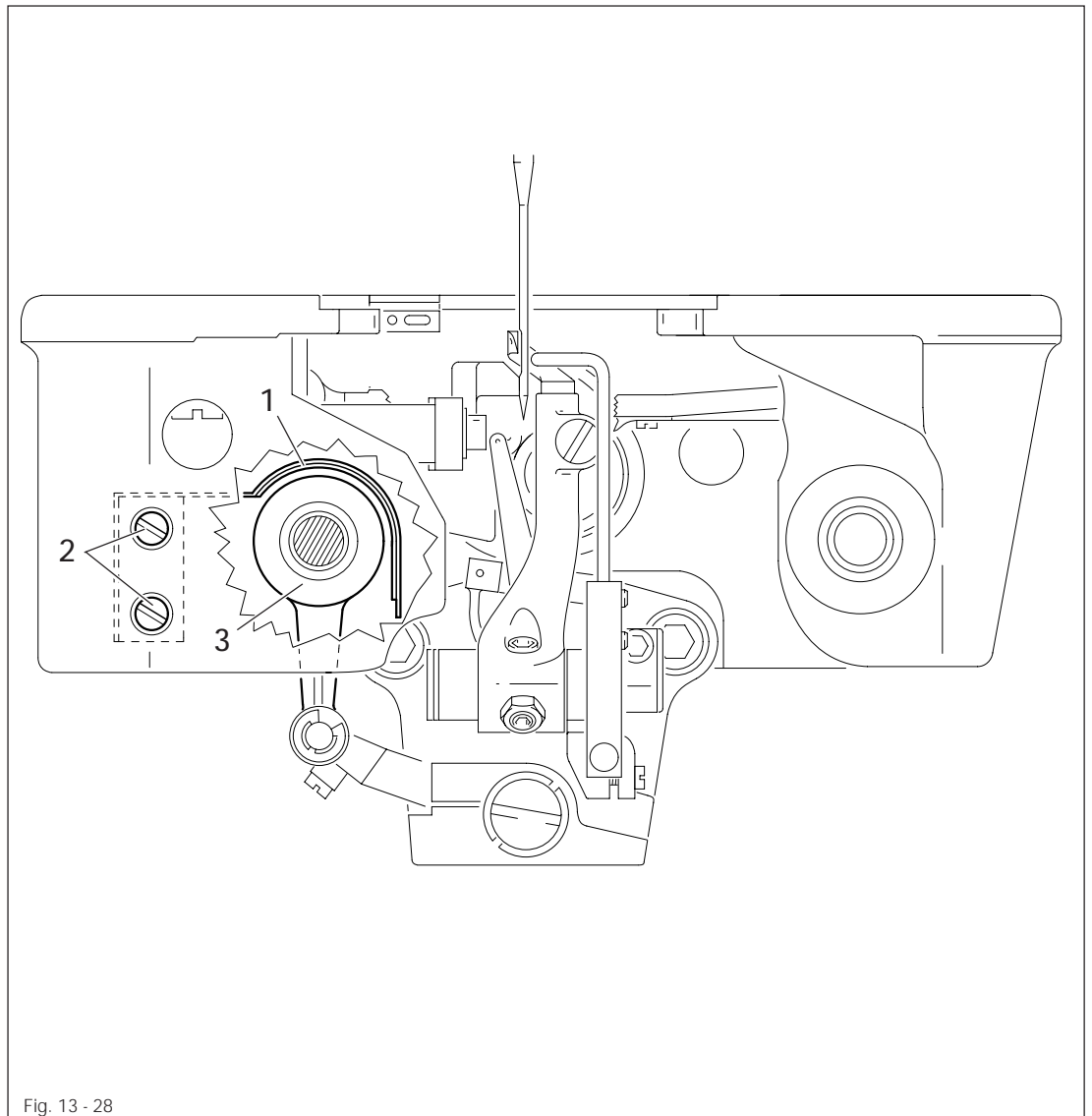
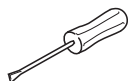


Fig. 13 - 28



- Align the guard 1 (screws 2 which can be reached through the holes) in accordance with the requirement.

## 13.05.28 Position of the front needle guard

### Requirement

When the point of the hook 1, coming from the right hand side, is positioned at the middle of the needle, the needle guard finger 4

1. must have a lateral clearance of 0.3 - 0.5 mm to the needle,
2. must be parallel to the hook blade and
3. must have its upper edge positioned at the same height as the point of the hook 1.

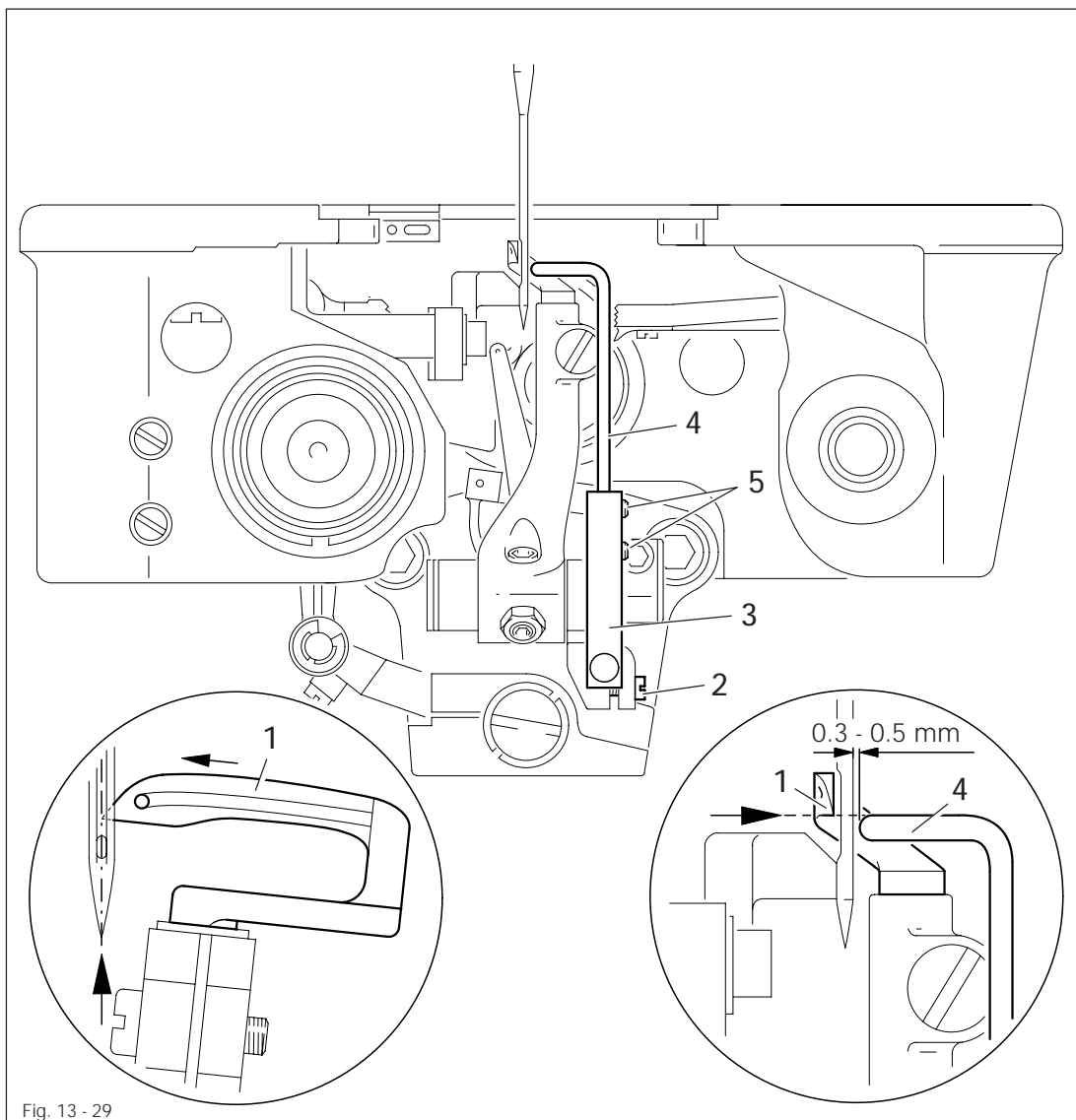
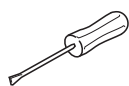


Fig. 13 - 29

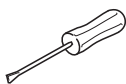
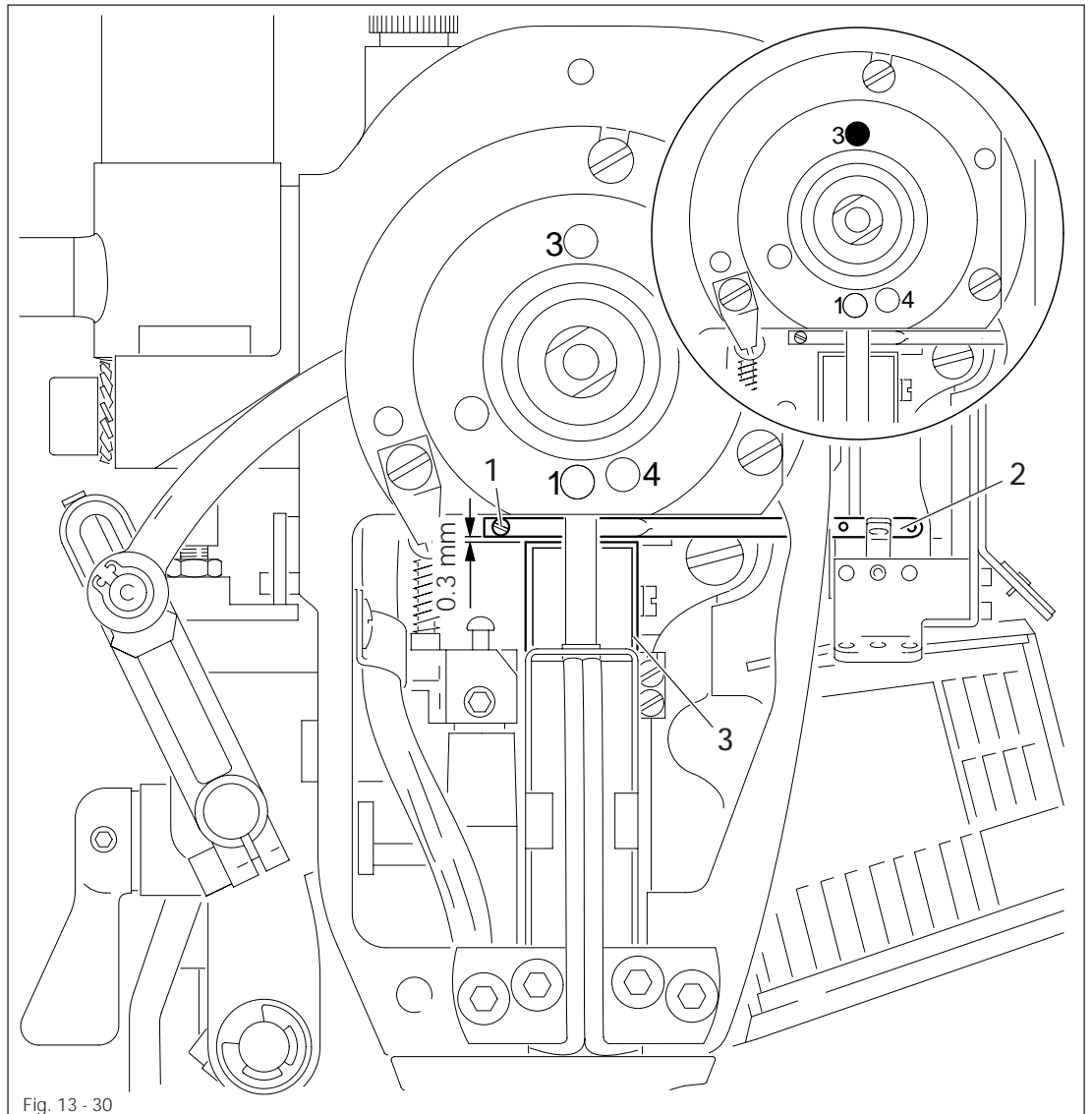


- Turn the handwheel until hook 1 is at its left reversal point.
- Loosen screws 2.
- Move needle guard carrier 3 so that in this position the needle guard finger 4 does not press against hook 1.
- Turn screws 2 slightly.
- Turn the handwheel until the point of the hook 1, coming from the right hand side, has reached the middle of the needle.
- Turn needle guard carrier 3 according to requirement 1.
- Align needle guard finger 4 (screws 5) according to requirements 2 and 3.

## 13.05.29 Needle thread puller

**Requirement**

1. When the needle bar is at its BDC, the clearance between the needle thread puller 2 and needle bar frame 3 must be approx. **0.3 mm**.
2. The needle thread puller 2 must be able to move freely in the middle of the face slot and not strike against anything at its top and bottom reversal points.

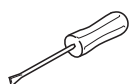
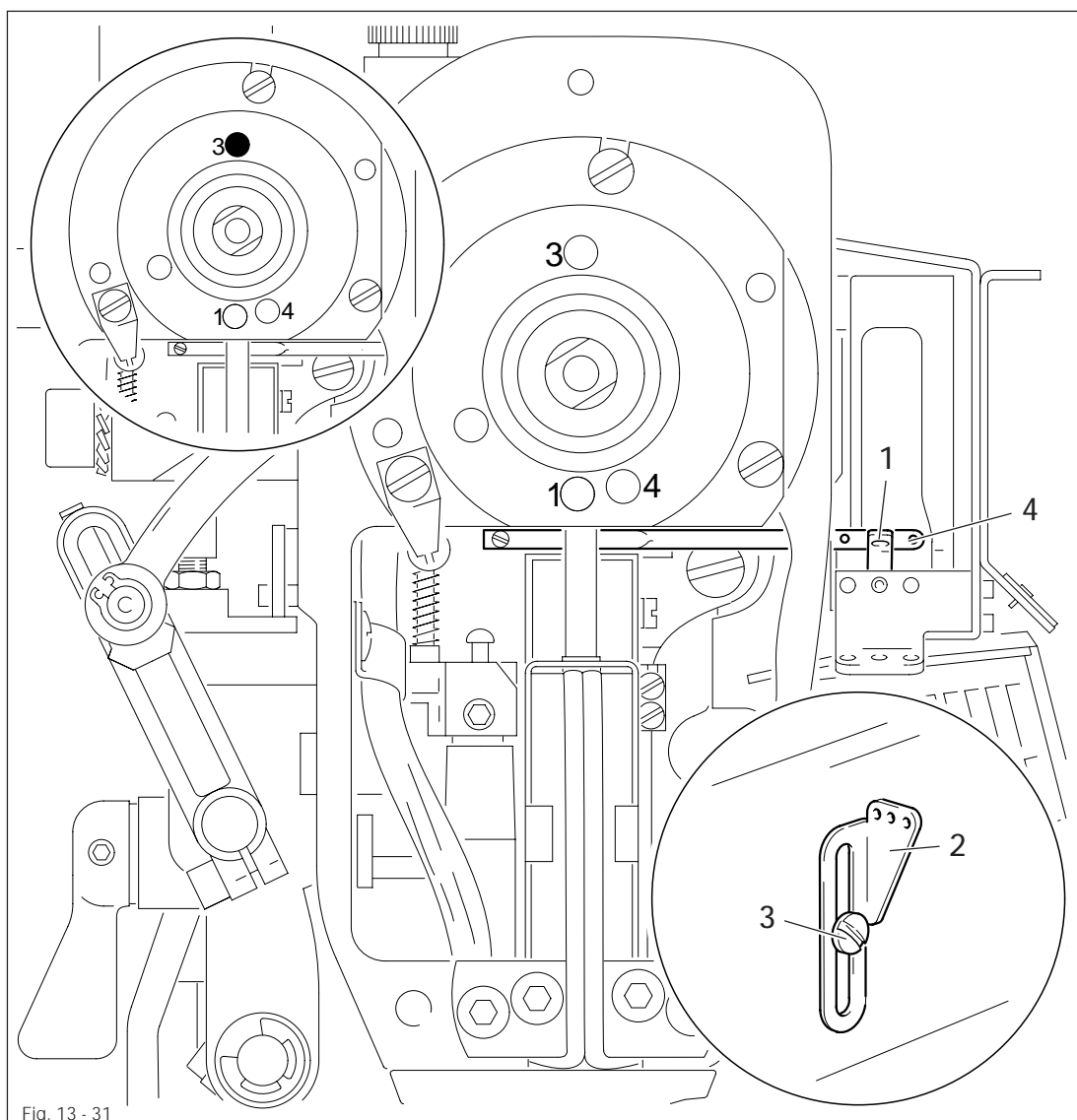


- Turn handwheel until screw 1 is easily accessible and loosen screw slightly.
- Move the needle bar to its BDC.
- Move needle thread puller 2 according to requirement 1.
- Tighten screw 1 according to requirement 2.

## 13.05.30 Basic setting of the needle thread regulator and the thread guide

### Requirement

1. With the needle bar at its BDC, the eye of the needle thread regulator 1 must be at the same height as the hole in the needle thread puller 4.
2. The thread guide 2 must be vertical and fastened in the middle of the elongated hole.



- Bring the needle bar to its BDC.
- After you have loosened the screw, move the needle thread regulator 1 according to requirement 1.
- Tighten the screw of the needle thread regulator.
- Align the thread guide 2 (screw 3) according to requirement 2.

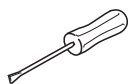
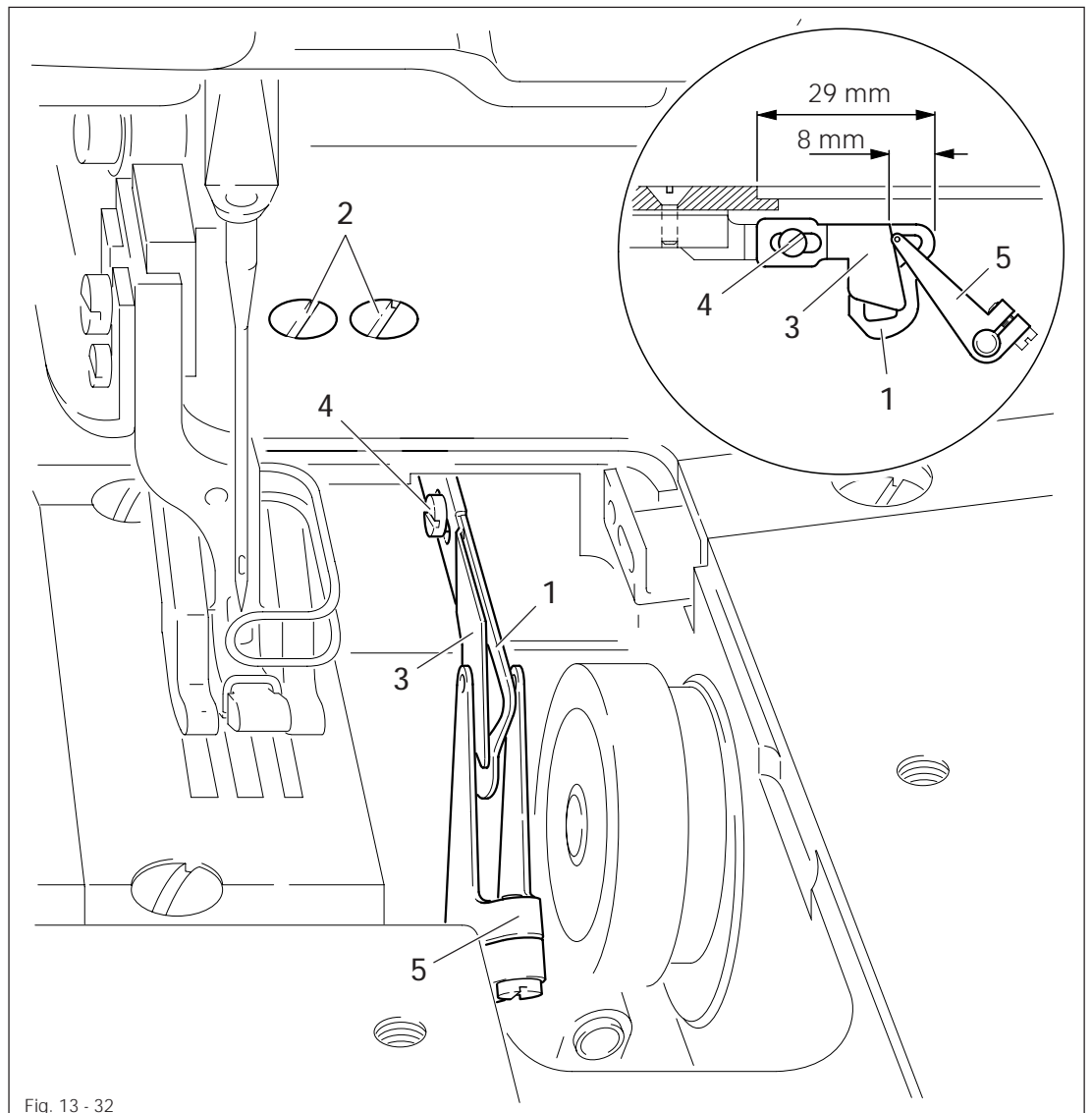


Depending on the workpiece and the type of thread, it may be necessary to deviate from the basic setting.

## 13.05.31 Hook thread regulators

**Requirement**

1. The front edge of the thread regulator **1** must be at a distance of **29 mm** to the needle plate cutout, and be centered with respect to the fork of the hook thread puller **5**.
2. The front edges of thread regulators **3** and **1** must be at a distance of **8 mm** to each other.



- Move thread regulator **1** (screws **2**) according to **requirement 1**.
- Move thread regulator **3** (screw **4**) according to **requirement 2**.



Depending on the workpiece and the type of thread, it may be necessary to deviate from the basic setting.

## 13.05.32 Hook thread puller

### Requirement

With the needle bar at its TDC (hole 1), both eyes of the hook thread puller 1 must be positioned at the front edge of the thread regulator 4.

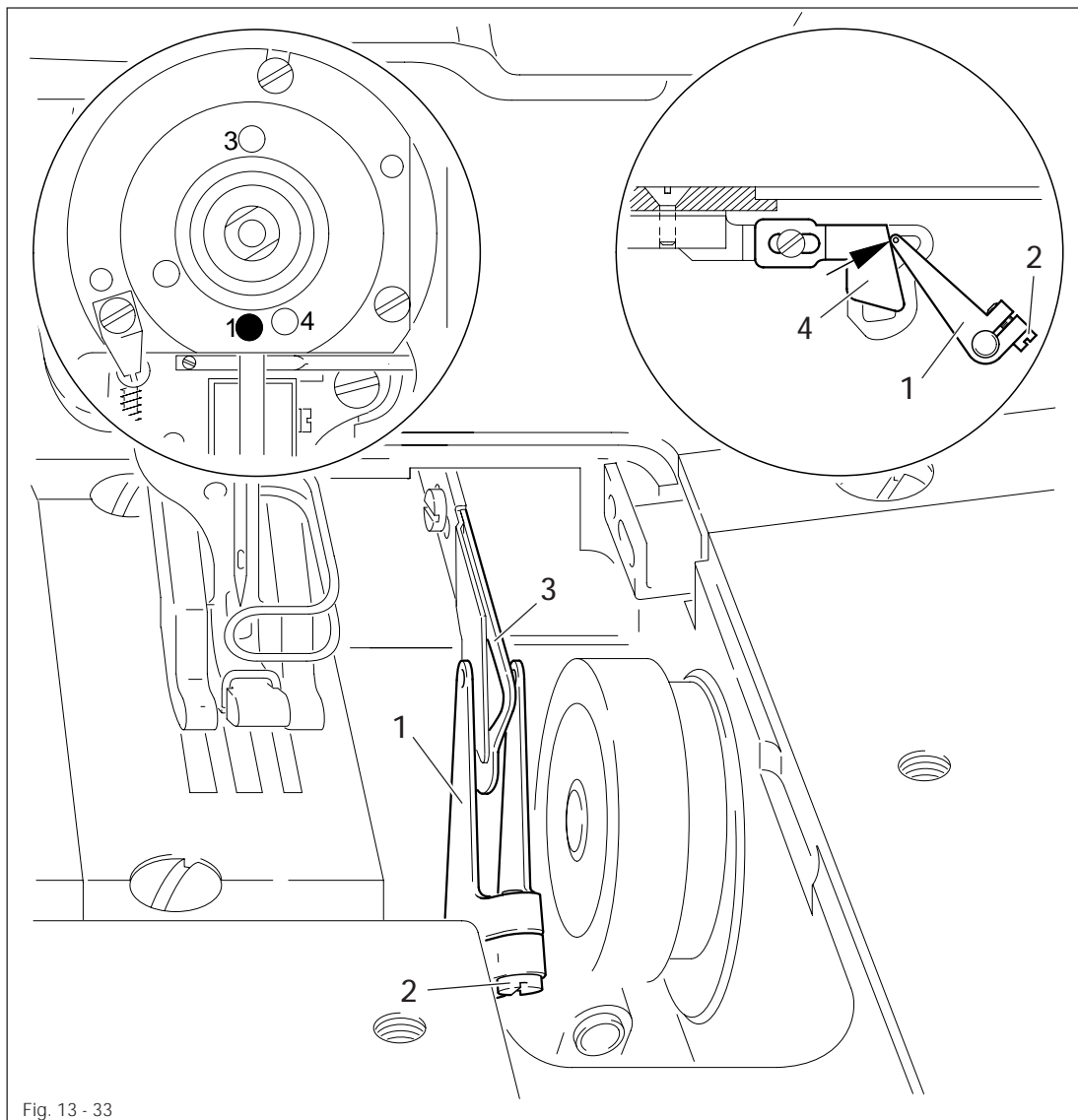
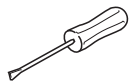


Fig. 13 - 33



- Bring the needle bar to its TDC.
- Turn hook thread puller 1 (screw 2) according to the **requirement**. In doing so, make sure that the fork of the hook thread puller 1 is centered with respect to the thread regulator 3.



Depending on the workpiece and the type of thread, it may be necessary to deviate from the basic setting.

## 13.05.33 Top feed and presser foot pressure

### Requirement

The pressure exerted by the top feed and the presser foot must be adjusted so that the workpiece is transported optimally at any sewing speed.

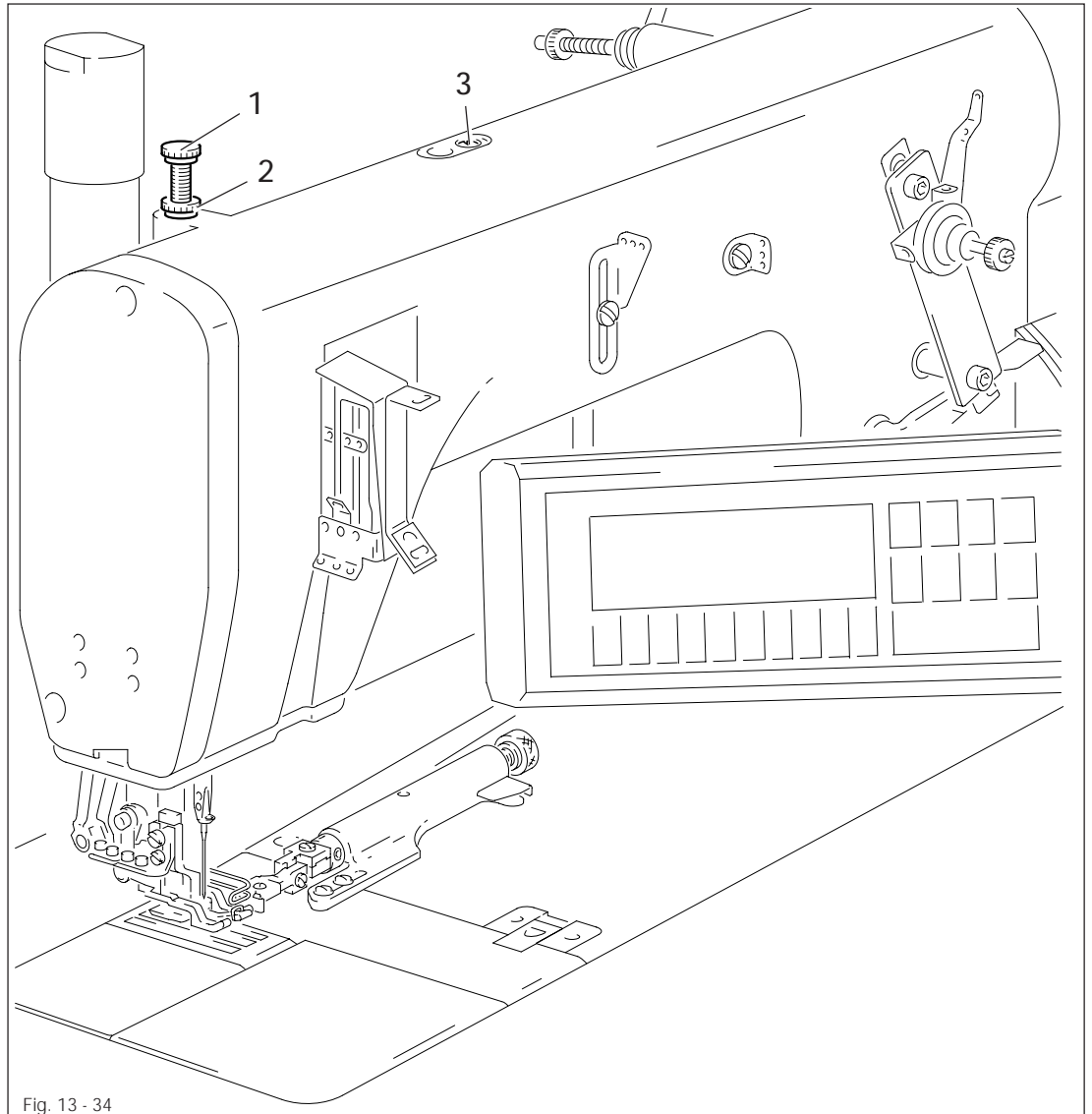
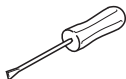


Fig. 13 - 34



- Adjust presser foot pressure according to the requirement with screw 1 (nut 2).
- Adjust top feed pressure according to requirement with screw 3.

## 13.06 Adjusting the thread trimmer ( only applies 3801-1/071 )

### 13.06.01 Preadjusting the thread catcher

#### Requirement

1. The point of the thread catcher 4 must be at a distance of 32.5 - 33 mm to the front edge of the mounting plate 1.
2. The guides 5 must be parallel to the mounting plate 1.
3. The thread catcher 4 must move freely and with minimal play.

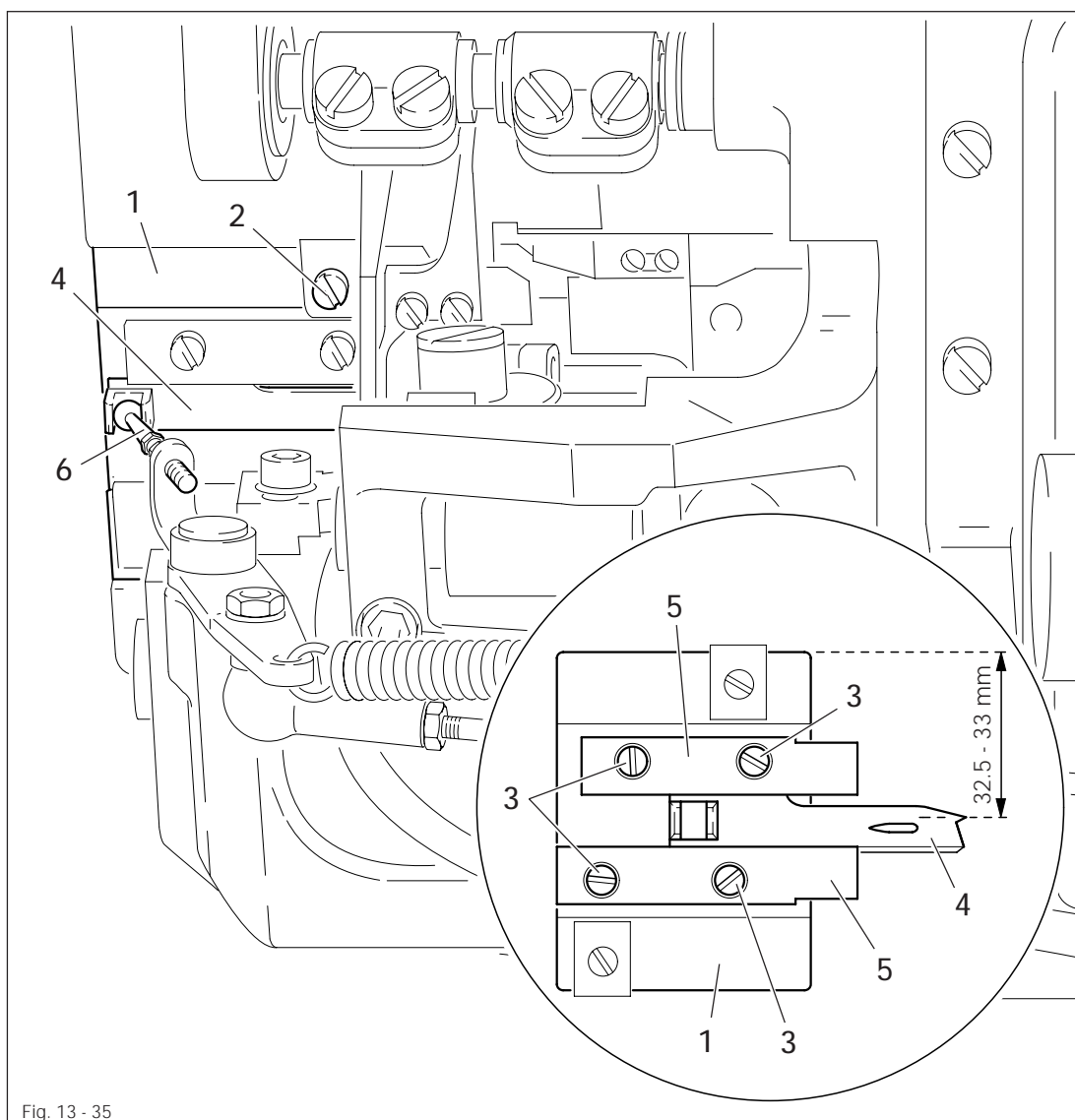
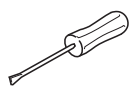


Fig. 13 - 35



- Remove mounting plate 1 (screws 2).
- Loosen screws 3.
- Move thread catcher 4 according to requirement 1.
- Align guides 5 according to requirements 2 and 3, and tighten screws 3.
- Screw on mounting plate 1, ensuring that the ball pin 6 engages in the drive dog of the thread catcher 4.

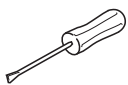
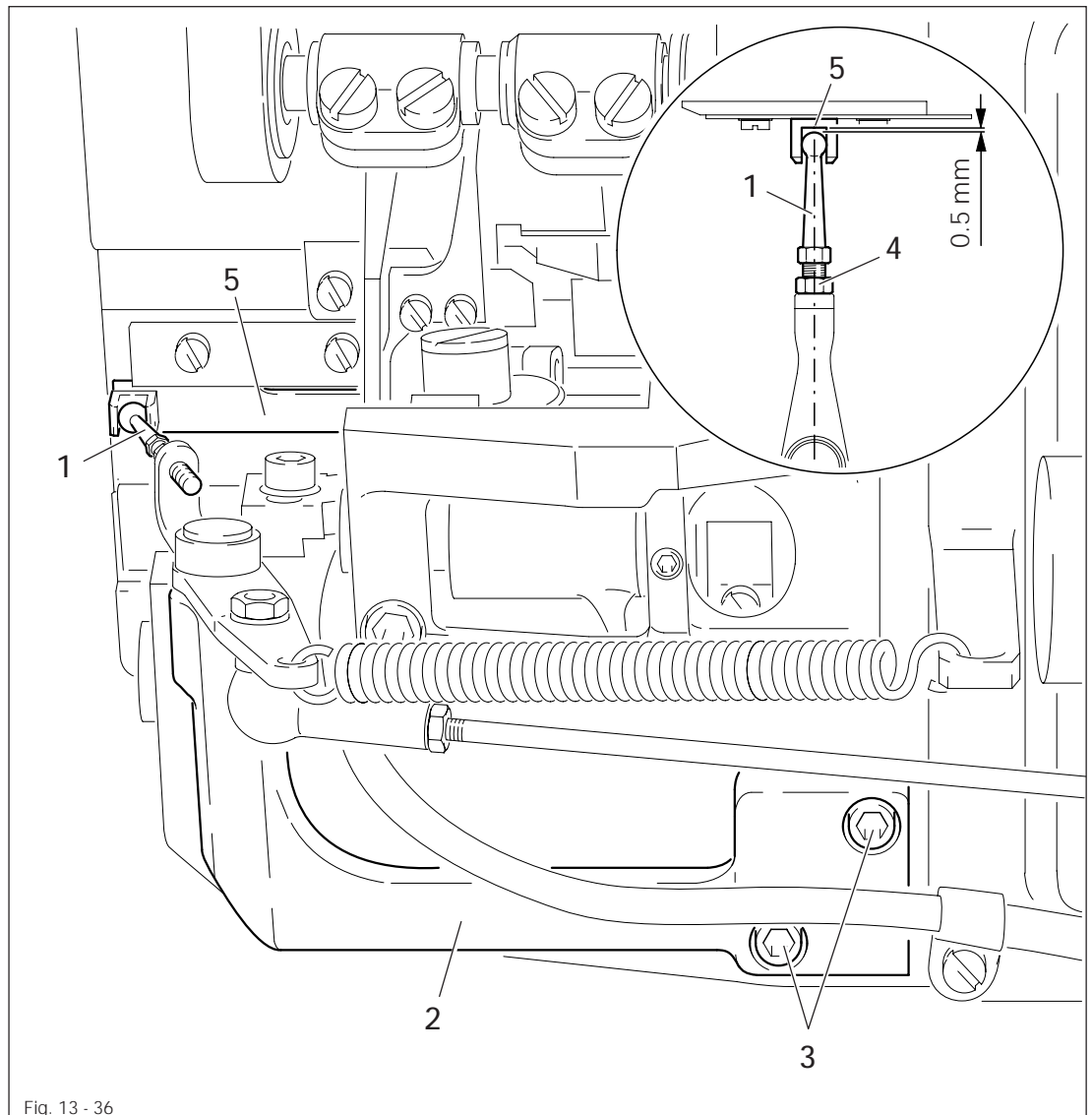


## 13.06.02 Ball pin position

**Requirement**

When it is positioned vertically, the ball pin 1 must

1. be centered with respect to the drive dog 5, and
2. have a distance of **0.5 mm** to the bottom of the drive dog 5.

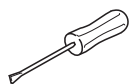
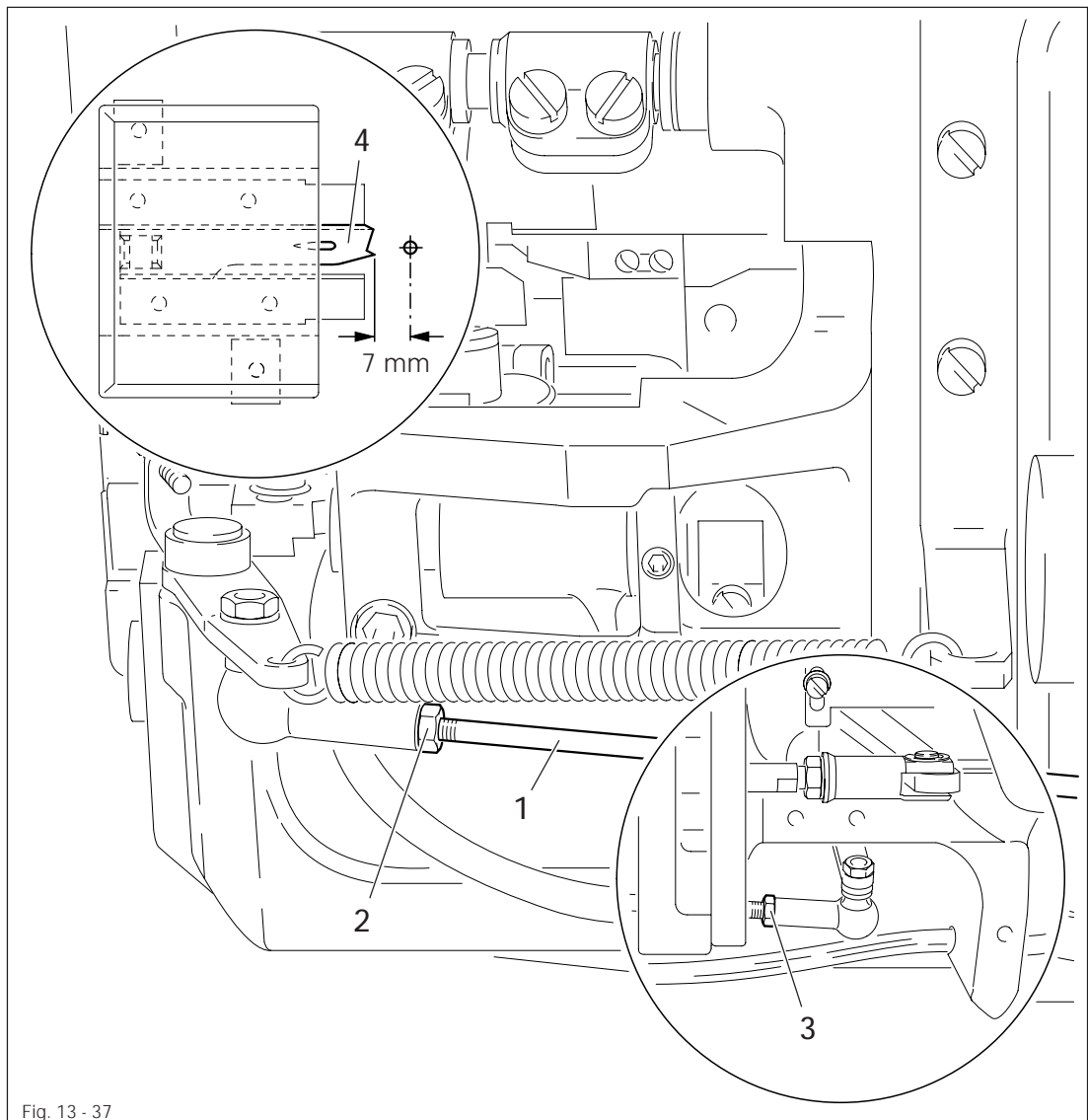


- Position the ball pin 1 vertically.
- Move carrier 2 (screws 3) according to requirement 1.
- Turn ball pin 1 (nut 4) according to requirement 2.

## 13.06.03 Thread catcher position with respect to needle

### Requirement

With the thread trimmer in its resting position, the point of the thread catcher 4 must be at a distance of 7 mm to the center of the needle.



- Bring the thread trimmer into its resting position.
- Turn connecting rod 1 (nut 2, nut 3 with left-hand thread) according to the requirement.

## 13.06.04 Thread catcher guard

**Requirement**

1. When the thread trimmer is in the cutting position, the guide roller 3 must be centered in the recess of the guard cam 2.
2. When the thread trimmer is in the basic position, there must be a distance of 0.5 - 1 mm between the guard cam 2 and the guide roller 3.

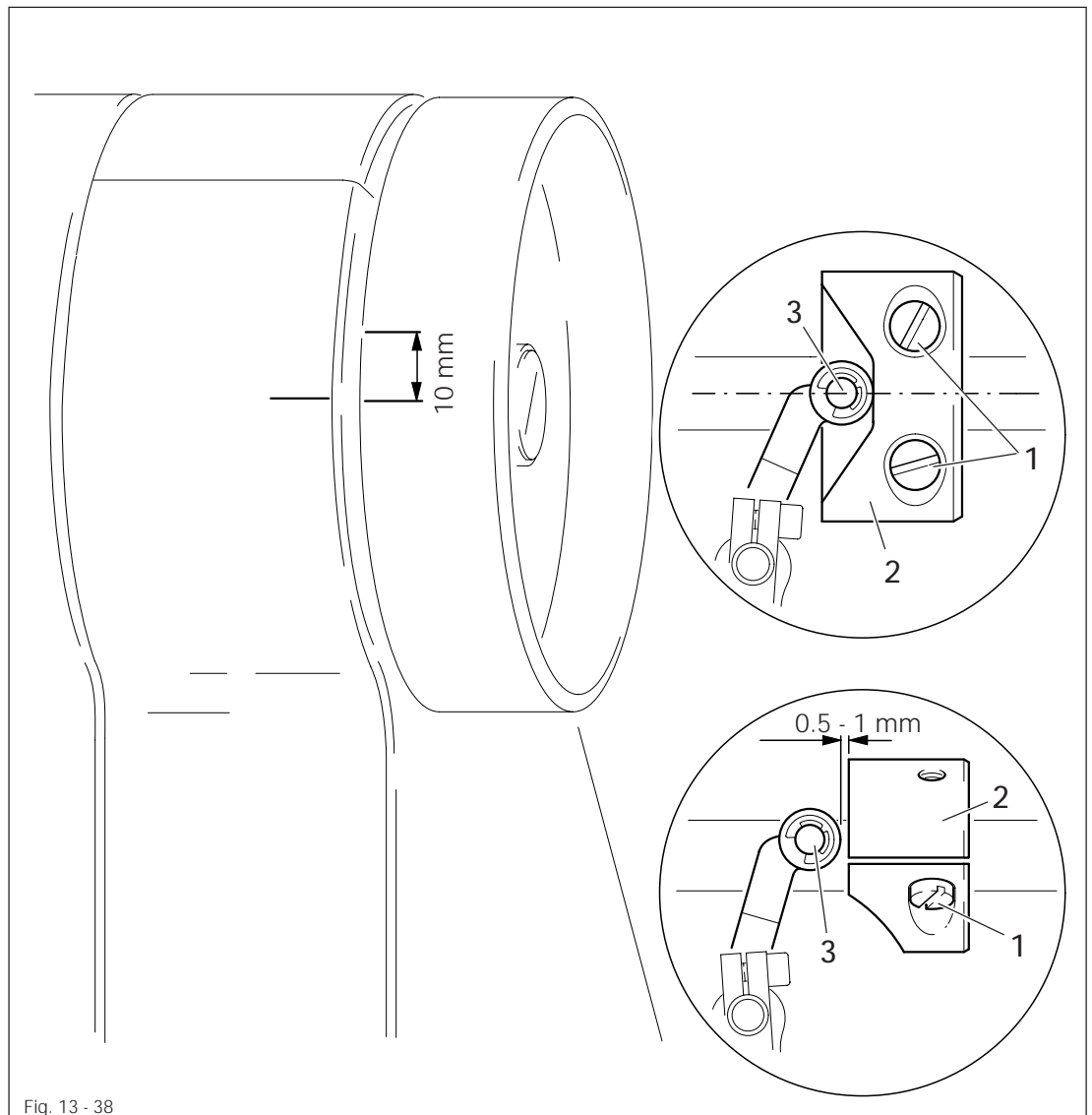
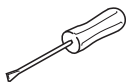


Fig. 13 - 38



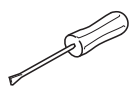
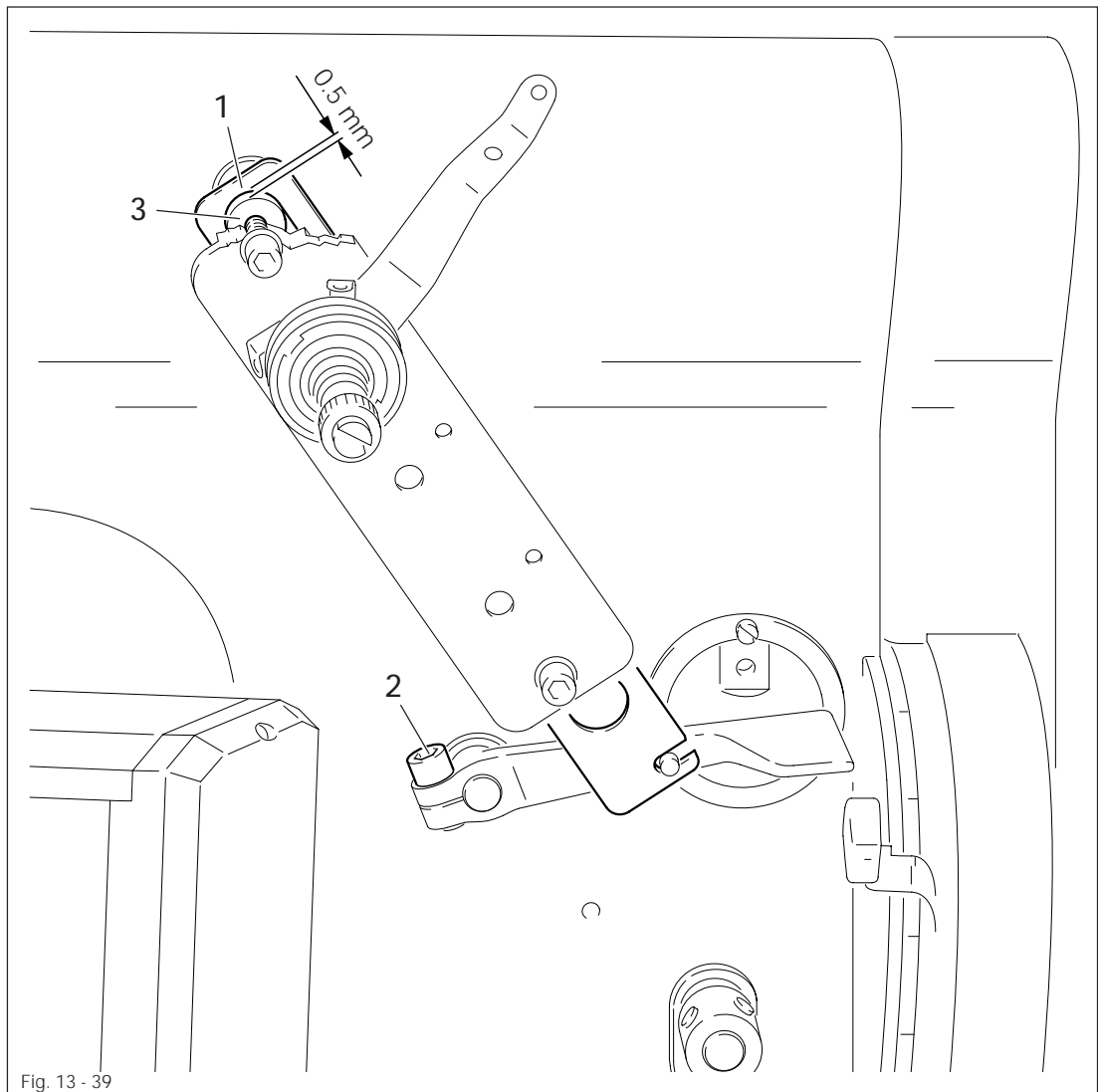
- Loosen screws 1 so that the guard cam 2 cannot be easily moved on the shaft.
- Move the needle bar to its TDC. Mark this position on the handwheel and the belt guard.
- Starting at this mark, make a further mark at a distance of 10 mm in the direction opposite to the rotating direction of the handwheel.
- Turn the handwheel until the second mark of the handwheel is across from the mark on the belt guard.
- In this position, turn the guard cam 2 according to requirement 1.
- Bring the thread trimmer back to its basic position.
- Move the guard cam 2 according to requirement 2 and tighten screws 1.

# Adjustment

13.06.05 Tension release

## Requirement

When the cylinder is fully actuated, there must be a distance of approx. **0.5 mm** between the upper edge of the elongated hole in plate 1 and the guide studs 3.

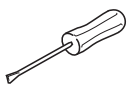
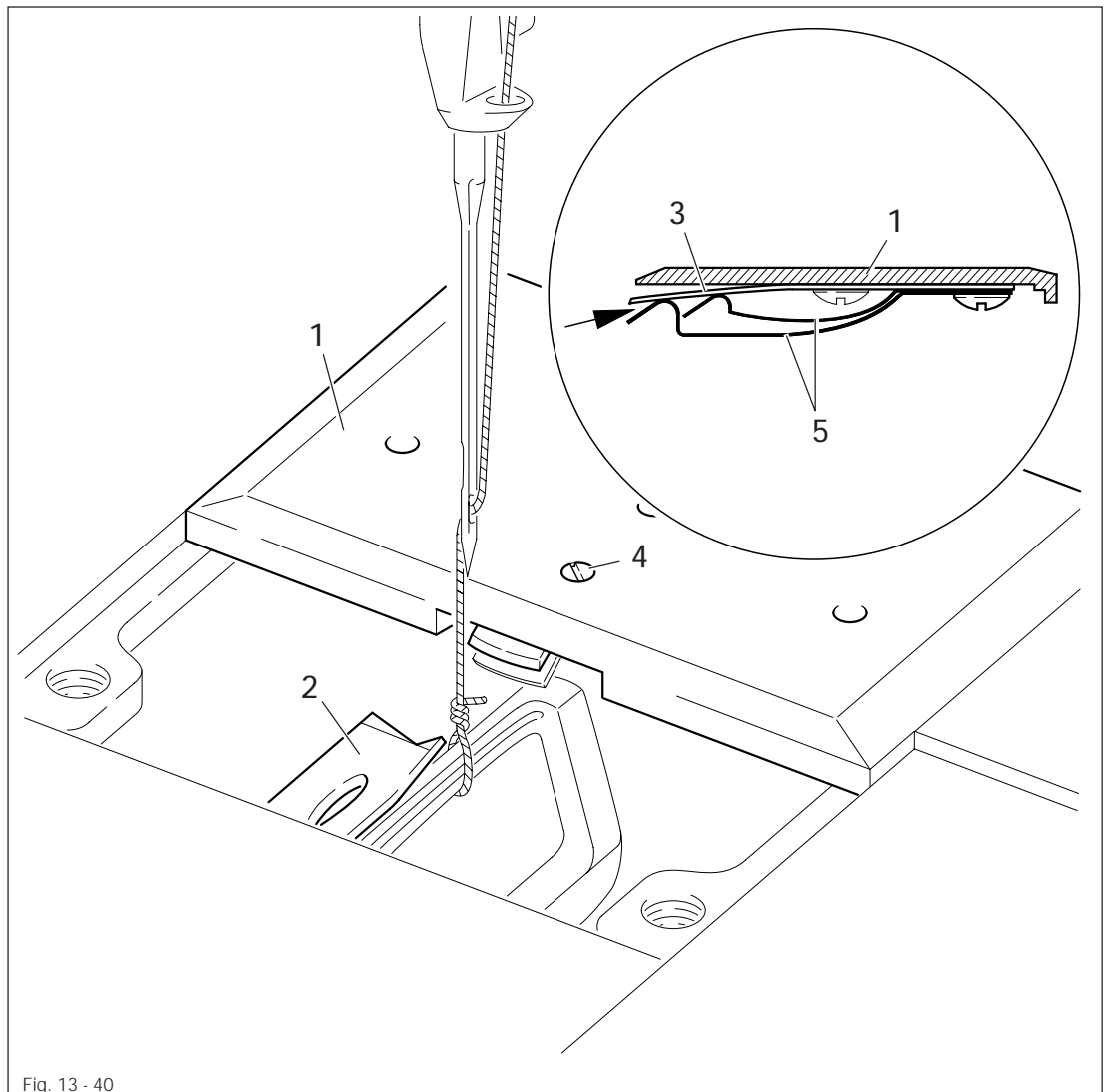


- Fully extend thread trimmer cylinder.
- Move plate 1 (screw 2) according to the requirement.

## 13.06.06 Trimmer test

**Requirement**

1. The point of the thread catcher 2 must securely take hold of the hook thread and the back part of the needle thread loop.
2. The threads must not be damaged when the cover plate 1 is removed.
3. When the cover plate 1 is mounted, the thread catcher 2 must enter between the knife 3 and the thread clamp spring 5; in the process, the threads must be perfectly cut and trapped.



- Lay material under presser foot and sew a few stitches.
- Remove cover plate 1.
- Set needle position according to **chapter 13.06.04 Thread catcher guard**.
- Operate cutting cylinder manually to check **requirements 1 and 2**.
- If necessary, adjust thread catcher 2 accordingly.
- Screw on cover plate 1.
- Operate cutting cylinder again and check **requirement 3**.
- If necessary, turn screw 4 carefully according to **requirement 3**.

## 13.07 Adjusting the tape feeder (option)

### Requirement

When the switch wire 6 is raised by approx. 3 cm, the motor must start to operate.

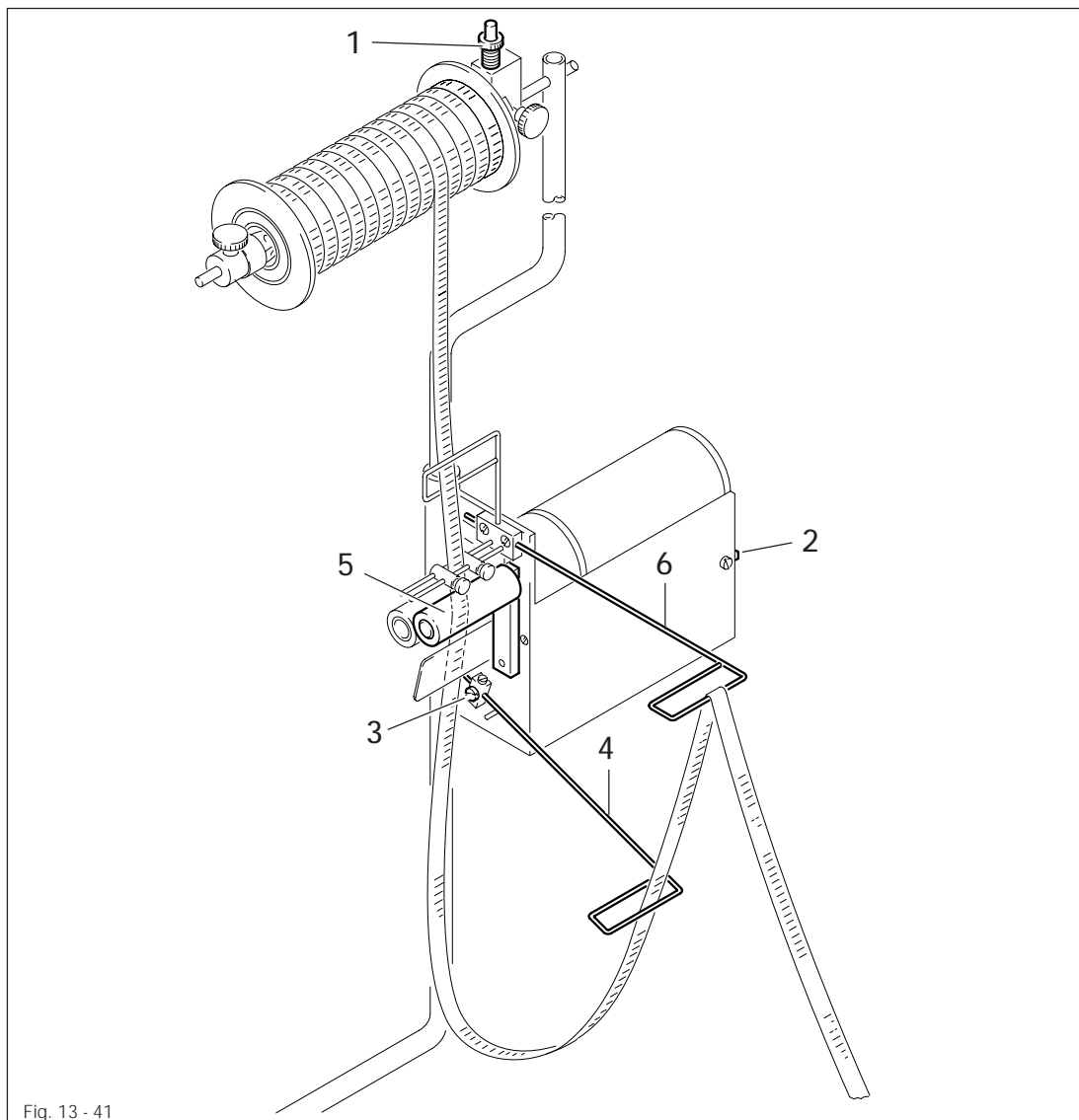
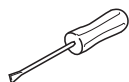


Fig. 13 - 41



- Mount reel with stabilizing tape and thread tape through loop.
- Adjust brake 1 so that the stabilizing tape can be quickly fed.
- Switch on tape feeder (switch 2).
- Loosen screw 3.
- Press down guide wire 4 until it stops.
- Turn selector shaft 5 to the right until it stops and tighten screw 3.

## 13.08 Parameter adjustments



The following parameters can only be set with a Quick control panel (optional).

Group	Parameter	Meaning	Setting
2	208	Pedal as encoder (variable)	II
		Pedal as switch (constant speed)	I
	222	Automatic speed	1500
5	585	speed delimitation	2000
	586	speed delimitation	1000
	587	speed delimitation	300
	591	speed delimitation via switch-key I = yes II = no	I
6	607	Max speed	3200
	608	speed increment curve	I
	609	trimming speed	160
	665	start inhibitor / stop I = contact to "plus" II = contact to "null"	I
7	799	Machine configuration	5



For further information please refer to the Instruction Manual for the motor.

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