



MANUALE

INSTRUCTION

MANUAL

N31E-N32E-N33E  
ALL-IN-ONE





This manual is valid for all models and subclasses indicated in the "Technical Specifications" chapter.

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# 1 Safety

## 1.01 Guidelines

The machine has been manufactured according to the European standards reported in the declaration of conformity and/or in the manufacturer's declaration. In addition to these instructions, also observe the applicable general and specific provisions and laws (including those of the country in which the machine is installed), as well as all the provisions in force concerning environmental protection! Always observe the national provisions in force of the accident prevention agency or of other control authorities!

## 1.02 General safety rules

- Use the machine only after having read the relevant instructions; the machine must be used only by specially trained operators!
- Before start-up, also carefully read the safety rules and the motor manufacturer's instruction manual!
- Observe all the warning labels affixed to the machine!
- Use the machine only in accordance with its intended purpose and always with its safety devices in place, taking into account all relevant safety rules and standards.
- When replacing machine parts (such as needle, foot, needle plate and bobbin), threading, leaving the workplace and maintenance operations, turn off the machine by switching off the main switch and removing the plug from the power socket!
- Daily routine maintenance work shall be carried out only by suitably trained personnel!
- Repairs and extraordinary maintenance work must only be carried out by qualified or specially trained personnel!
- Work on electrical equipment must only be carried out by qualified personnel!
- Do not work on live parts or equipment! For exceptions, please refer to EN 50110.
- For modifications or alterations to the machine, you must follow all relevant safety rules and regulations!
- For repairs, use only spare parts that have been authorised by us! Please note explicitly that spare parts and accessories not delivered by us have not been tested or authorised by us. The fitting and/or use of these products may therefore negatively change the construction characteristics of the machine. We are not liable for damage caused by the use of non-original parts .

### 1.03 Warning signals



Hazard zone!  
Warnings that must be carefully kept in mind.



Danger of injury to operators and qualified personnel!



#### Warning

You must use the safety devices supplied with the machine.

Always turn off the main switch before carrying out threading or adjustments on the machine.

### 1.04 Recommendations for the user

- **These instructions are an integral part of the machine and must be kept at hand by the operator at all times. Read the instructions before starting the machine for the first time.**
- Instruct operators and qualified personnel on the safety devices of the machine and on safe working methods.
- **It is the responsibility of the user to keep the machine in perfect condition.**
- **The user is required to check that the safety devices are not removed or deactivated.**
- **The user is required to ensure that the machine is used exclusively by authorised personnel.**

For more information, please contact your dealer.

## 1.05 Operators and qualified personnel

### 1.05.01 Operators

The operators are the persons responsible for the assembly, operation and cleaning of the machine, as well as resolving any faults deriving from sewing operations.

The operators are required to observe the following rules of conduct:

- **Observe the safety rules in this instruction manual during work!**
- **Do not carry out any operation that could compromise the safety of the machine!**
- **Wear tight-fitting clothing and avoid wearing jewellery such as necklaces or rings!**
- Make sure that only authorised persons are in the danger zone of the machine!
- **Immediately notify the user if the safety of the machine, following the introduction of changes, is no longer guaranteed!**

### 1.05.02 Qualified personnel

**Qualified personnel is represented by electricians, electrotechnical and electromechanical personnel,**

responsible for the lubrication, maintenance, repair and commissioning of the machines.

**Qualified personnel are required to observe the following rules of conduct:**

- **Observe the safety rules in this instruction manual during work!**
- **Before proceeding with tune-up and repair work, turn off the general switch and make sure that the machine does not turn on again accidentally!**
- **Before carrying out any repair or adjustment works, wait for the indicator light on the control panel to turn off (it must not even flash)!**
- **Do not work on live parts or devices! For exceptions please refer to EN 50110 standard.**
- Do not forget to refit the guards and close the electrical control compartment once the repair or maintenance works are complete.

## 1.06 Hazard warnings



During machine operation, keep a free area of 1 m in front and behind it so that free access is always guaranteed.



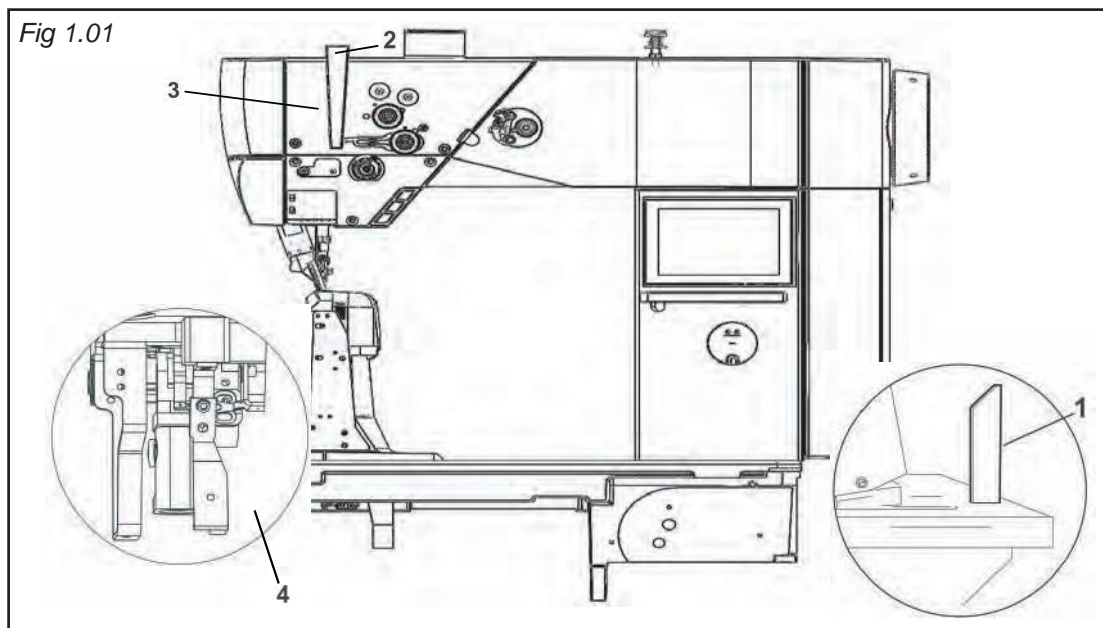
When sewing, do not put your hands in the area of the needle. Risk of personal injury associated with the needle!



Do not leave objects on the table during adjustment operations! The objects might get stuck in or thrown out by the machine! Risk of personal injury!



Do not operate the machine without support 1!  
Danger due to the upper part of the machine containing the head! The machine may tip over while being overturned.



Turn off the machine before overturning it back!  
Risk of personal injury due to accidental start-up of the machine!



Do not operate the machine without the thread tensioning lever guard 2  
Danger of injury due to the movement of the thread tensioning lever!



Do not operate the machine without anti-tip stop 4!  
Risk of contusion between the upper section of the machine and the table top!

## 2 Use in compliance with the intended use

**The CAMARB N31** is a single-needle fast post-bed sewing machine (post to the right of the needle) with a controlled feeding roller and roller foot, as well as a movable needle.

**The CAMARB N32** is a double-needle fast post-bed sewing machine, with a controlled feeding roller and roller foot, as well as a movable needle.

The machines are used in the leather and upholstery industry to produce twin needle lockstitches.



Any use not authorised by the manufacturer is considered improper use!  
The manufacturer shall not be held liable for any damages resulting from improper use! Compliance with the instructions for use, adjustment, maintenance and repair prescribed by the manufacturer also falls within the scope of use in accordance with the intended use!

### 3 Technical specifications

#### 3.01 CAMARB N31E - N32E-N33E \*

Type of stitch \_\_\_\_\_ 301 (Double knot stitch)

Passage under the roller foot: \_\_\_\_\_ 7 mm

Passage Width: \_\_\_\_\_ 265 mm

Passage height: \_\_\_\_\_ 70 mm

Post height: \_\_\_\_\_ 180 mm

Dimensions of the head section:

Length: \_\_\_\_\_ approx. 620 mm

Width : \_\_\_\_\_ approx. 155mm

Height (above table): \_\_\_\_\_ approx. 425 mm

Base plate size: \_\_\_\_\_ 520 x 177mm

Maximum speed:

CAMARB N33,N32,N31 Model A+B: \_\_\_\_\_ 3000 stitches/min \*\*

CAMARB N32,N31 Model C-RINF: \_\_\_\_\_ 2000 stitches/min \*\*

Power supply:

Operating voltage: \_\_\_\_\_ 230 V  $\pm$  10%,50/60 Hz

Maximum power consumption: \_\_\_\_\_ 0.85 kVA

Fuses: \_\_\_\_\_ N31 3.15 A

\_\_\_\_\_ N32 5.0 A

Noise emissions:

Sound pressure level of the emissions in the workplace at the indicated speed

(measurement according to DIN 45 635-48-A-1,ISO 11204,ISO 3744, ISO 4871)

CAMARB N31-N33, models A + B at  $n = 2400^{-1}\text{min}$  \_\_\_\_\_  $L_{pA} = 79 \text{ dB(A) }^{***}$

CAMARB N32, models C at  $n 1600 \text{ min}^{-1}$  \_\_\_\_\_  $L_p = 75 \text{ dB(A) }^{***}$

\_\_\_\_\_  $L_{pA} = 73 \text{ dB(A) }^{***}$

Net weight of the head: N31 \_\_\_\_\_ about 70 kg

Gross head weight: N31 \_\_\_\_\_ about 80 kg

Net head weight: N32 \_\_\_\_\_ about 69 kg

Gross head weight: N32 \_\_\_\_\_ about 79kg

\* Specifications are subject to change

\*\* Depending on the material, processing and length of the stitch.

\*\*\* KPA = 2.5 dB

### 3.02 Needle and thread

Model	Thread thickness (Nm) max Synthetic	Needle count in 1/100 mm	Needle system for CAMARB N32	Needle system for CAMARB N31-N33
A	60/3	70	134	134
B	40/3	100	134	134
A	15/3	130	134	134

\* or comparable thicknesses of other types of yarn.

### 3.03 Possible models and subclasses

CAMARB N31E, N32E, N33E

Model A

for light-weight materials

CAMARB N31E, N32E, N33E

Model B

for medium-weight materials

CAMARB N31E, N32E

Model C

for medium-heavy materials

#### **CAMARB N31-ALL-IN-ONE -E (Electronic)**

Electronic post-bed machine with servo motor integrated in the sewing head, single needle, rotating feed dog, roller foot synchronised with the movement of the needle by means of stepper motors. Thread trimmer device, electric backtack and lifting of the electric foot.

#### **CAMARB N32-ALL-IN-ONE -E (Electronic)**

Electronic post-bed machine with servo motor integrated in the sewing head, 2 needles, rotating feed dog, roller foot synchronised with the movement of the needle by means of stepper motors. Thread trimmer device, electric backtack and lifting of the electric foot.

#### **CAMARB N33-ALL-IN-ONE -E (Electronic)**

Electronic post-bed machine with servo motor integrated in the sewing head, single needle, sewing and trimming, rotating feed dog, roller foot synchronised with the movement of the needle by means of stepper motors. Thread trimmer device, electric backtack and lifting of the electric foot.

#### **CAMARB N31-ALL-IN-ONE-M (Mechanical)**

Mechanical post-bed machine with servo motor integrated in the sewing head, single needle, rotating feed dog, roller foot synchronised with the movement of the needle by means of bearings. Thread trimmer device, electric backtack and lifting of the electric foot.

#### **CAMARB N32-ALL-IN-ONE-M (Mechanical)**

Mechanical post-bed machine with servo motor integrated in the sewing head, 2 needles, rotating feed dog, roller foot synchronised with the movement of the needle by means of bearings. Thread trimmer device, electric backtack and lifting of the electric foot.



## 4 Machine disposal

- The customer is responsible for disposing of the machine in compliance with the applicable standards in force.
- The materials used to construct the machine are steel, aluminium, brass and various plastics. The materials used for the electrical system are plastic and copper.
- The machine must be disposed of in compliance with the applicable environmental protection regulations. If necessary, contact a specialist company.



**Make sure that the parts soiled with lubricant are disposed of separately in accordance with the applicable environmental protection regulations!**

## 5 Transport, packaging and storage

### 5.01 Transport to the customer's company

The machines are delivered completely packed.

### 5.02 Transport within the customer's company

The manufacturer is not responsible for transport within the customer's company and in the individual places of use. Make sure that the machines are transported only in a vertical position.

### 5.03 Packaging disposal

Their packaging consists of paper, cardboard and flixelin. The customer must dispose of the packaging correctly.

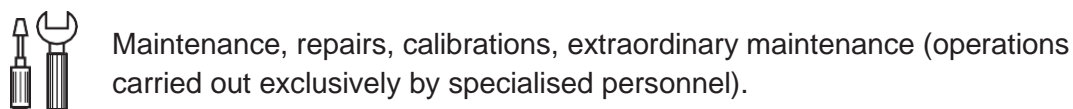
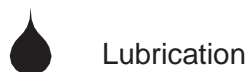
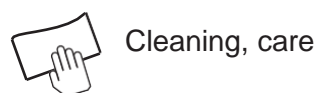
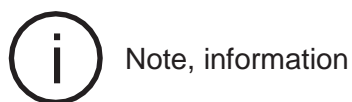
### 5.04 Storage

If the machine is not used immediately after delivery, it can be stored for up to 6 months. In this case, it must be protected from dirt and moisture.

If the machine is to be stored for long periods of time, protect the individual components and in particular their sliding surfaces from corrosion by covering them with a film of oil.

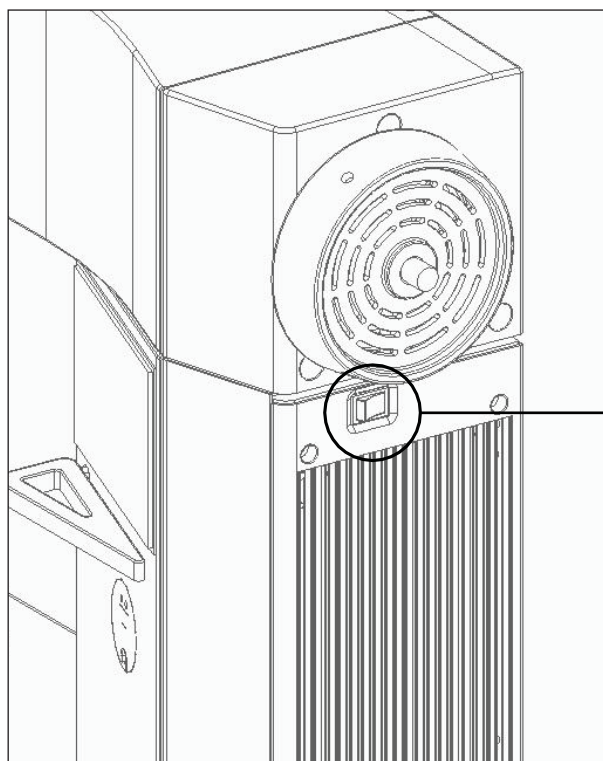
## 6 Symbols

The work to be done and the important information are highlighted throughout this manual by symbols. The symbols used have the following meaning:



## 7 Control devices

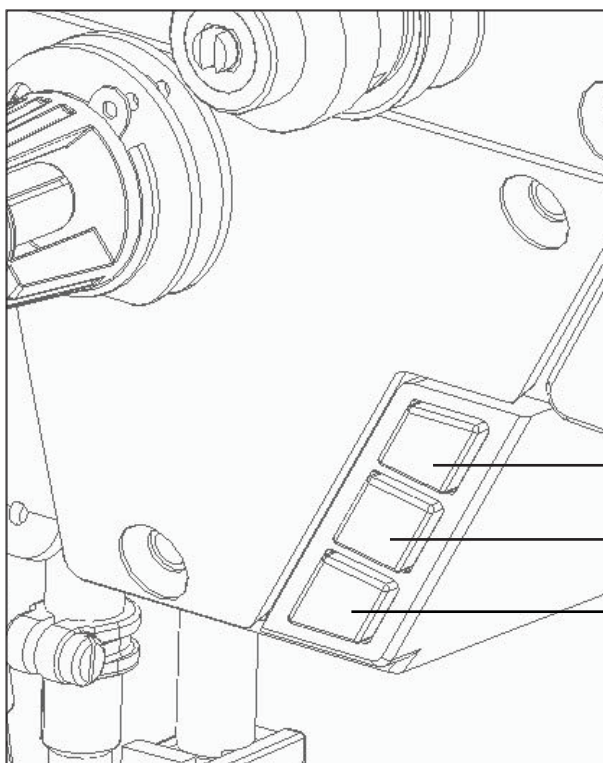
### 7.01 Main switch



- The machine is switched on and off by pressing the main switch **1**.

Fig.7.01

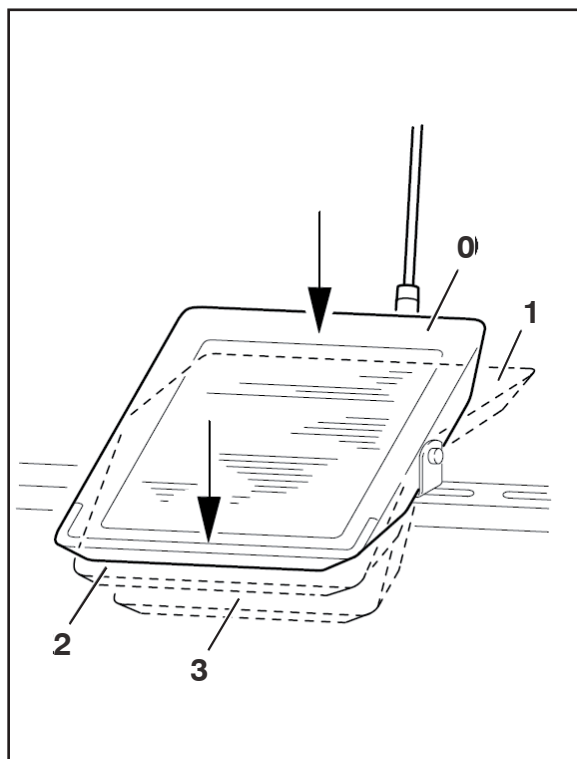
### 7.02 Keyson the machine head



- By pressing key **1** during sewing, the machine sews backward.
- Specific parameters can be assigned to keys **2**.

Fig.7.02

### 7.03 Foot pedal



Using the foot pedal it is possible to start the stitching and check some functions of the machine depending on the pressure and the positions listed below.

**0** = Resting position

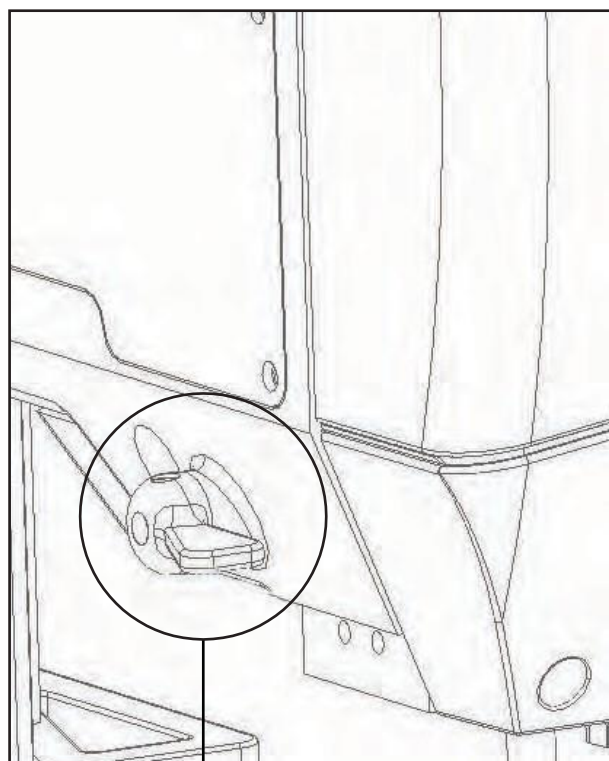
**1** = Sewing

**2** = Lifting of the roller foot

**3** = Thread cut

Fig.7.03

### 7.04 Lever for lifting the roller foot



•By rotating lever 1 the roller foot is lifted

Fig.7.0

## 7.05 Free hand system

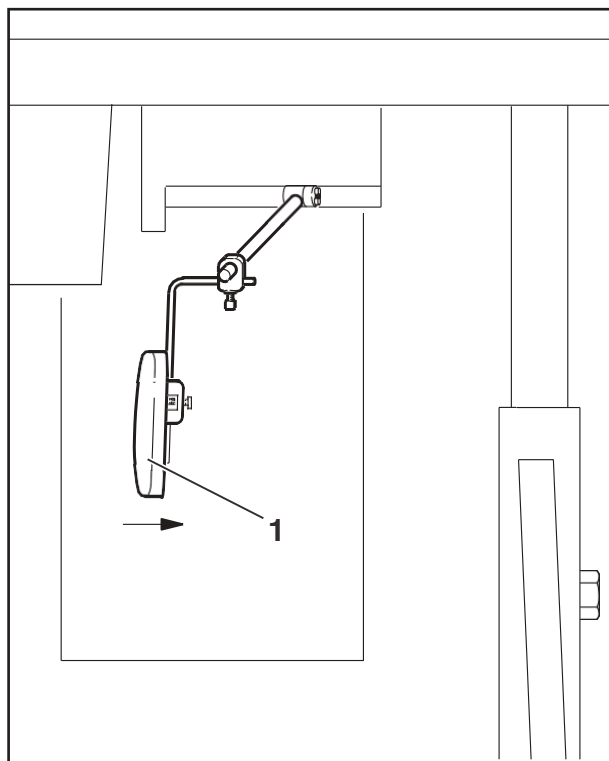


Fig.7.05

By pressing the free hand system 1 in the direction of the arrow, the roller foot is lifted.

## 7.06 Stitch adjuster key (N31-M , N32-M , N33-M)

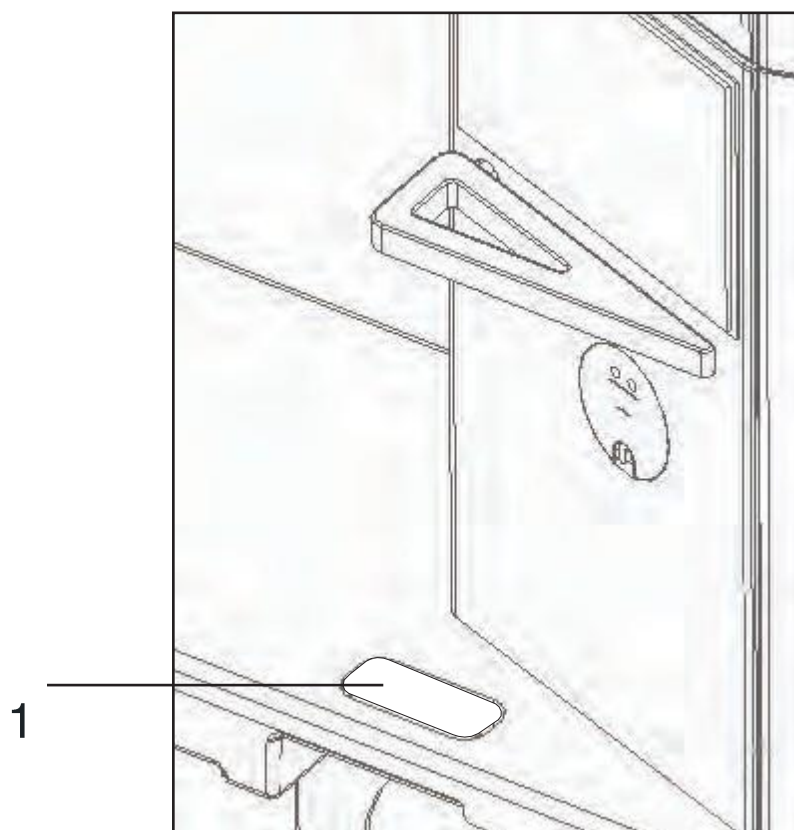
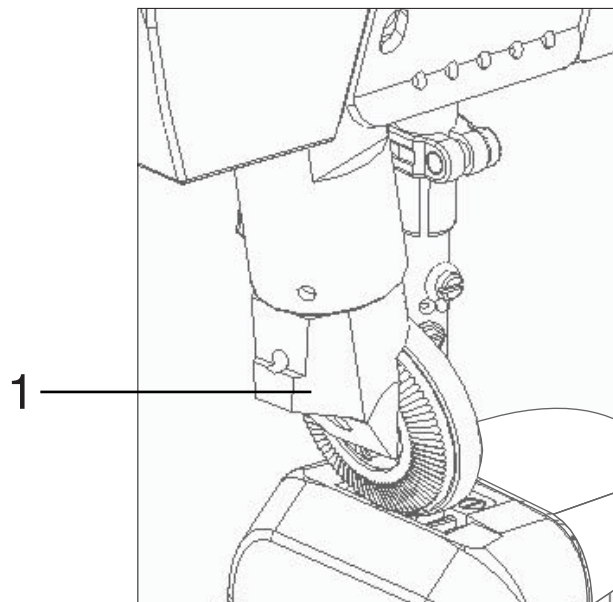


Fig.7.06

By pressing the key 1 to adjust the stitch in the mechanical version (M) and turning the handwheel, the length of the stitch is adjusted, see paragraph 9.08.  
Adjusting the length of the stitch.

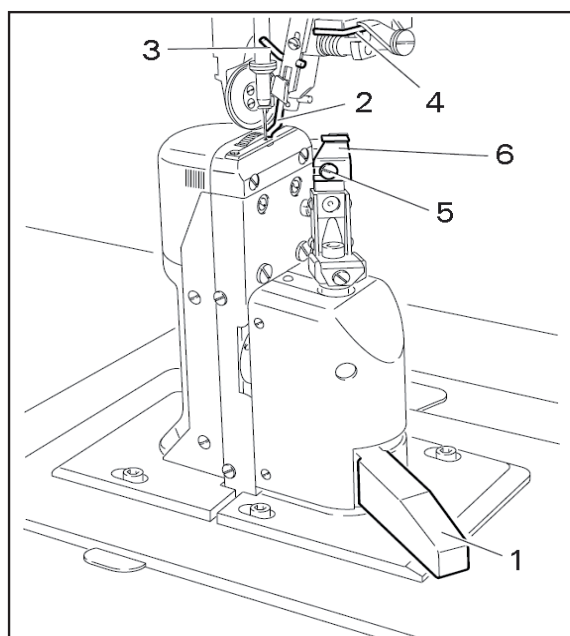
## 7.07 Extending the roller foot



When the roller foot 1 is lifted, the roller foot can be opened by pulling it slightly laterally.

Fig.7.07

## 7.08 "CUC" selvedge cutting device for Camarb N33E



Do not touch the moving blade! Risk of personal injury!

Switching on the blade:

- Turn the lever 1 back, the blade moves to the working position.

Switching off the blade:

- Press lever 1, the blade rotates towards the rear side.

Selvedge cutting device activation:

- Manually rotate the selvedge guide 2 and press the lever 3, the selvedge guide 2 moves to the working position.

Turning off the selvedge guide:

- Lift the selvedge guide 2 and engage it, the selvedge guide 2 is deactivated.
- Lift the lever 4, the selvedge guide rotates towards the rear.

Blade replacement:

The following operations can only be performed by specialised personnel.

- Switch off the machine.
- Unscrew the screw 5 and remove the blade 6. • Insert a new blade and tighten the screw 5 slightly.
- Adjust the blade according to the instructions in paragraph 12.05.03 Movement of the blade in the Camarb N33E and then tighten the screw 5.

## 8 Installation and initial start-up



The machine must be installed and commissioned only by qualified personnel. Observe all the safety regulations in force!



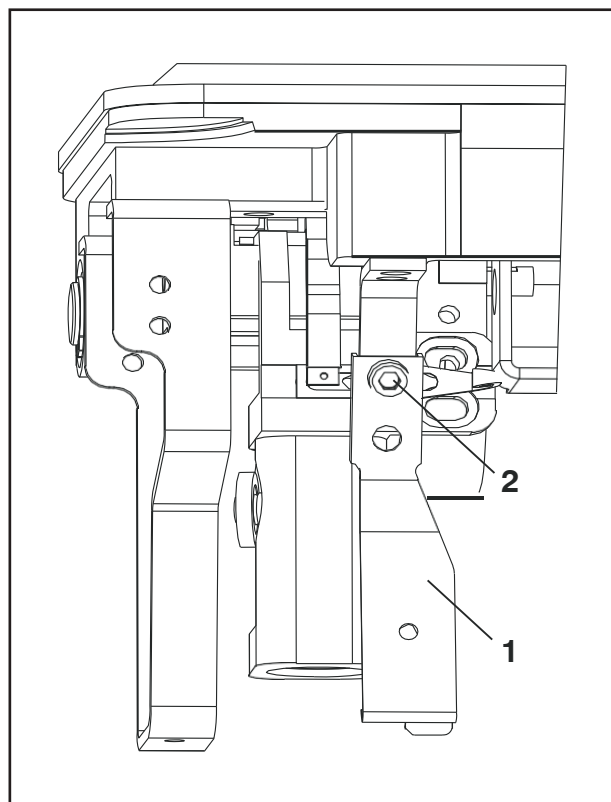
If the machine has been delivered without a table, the frame and table top provided for the installation of the machine must be able to safely support the weight of the machine with motor.

Sufficient stability of the support must be ensured, also when sewing.

### 8.01 Installation

Adequate power supply must be provided at the installation site. The installation site must ensure a level, solid base and sufficient lighting.

#### 8.01.01 Fitting the anti-tipping device



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

- Screw the anti-tipping device **1** supplied with the accessories, using the screw **2**

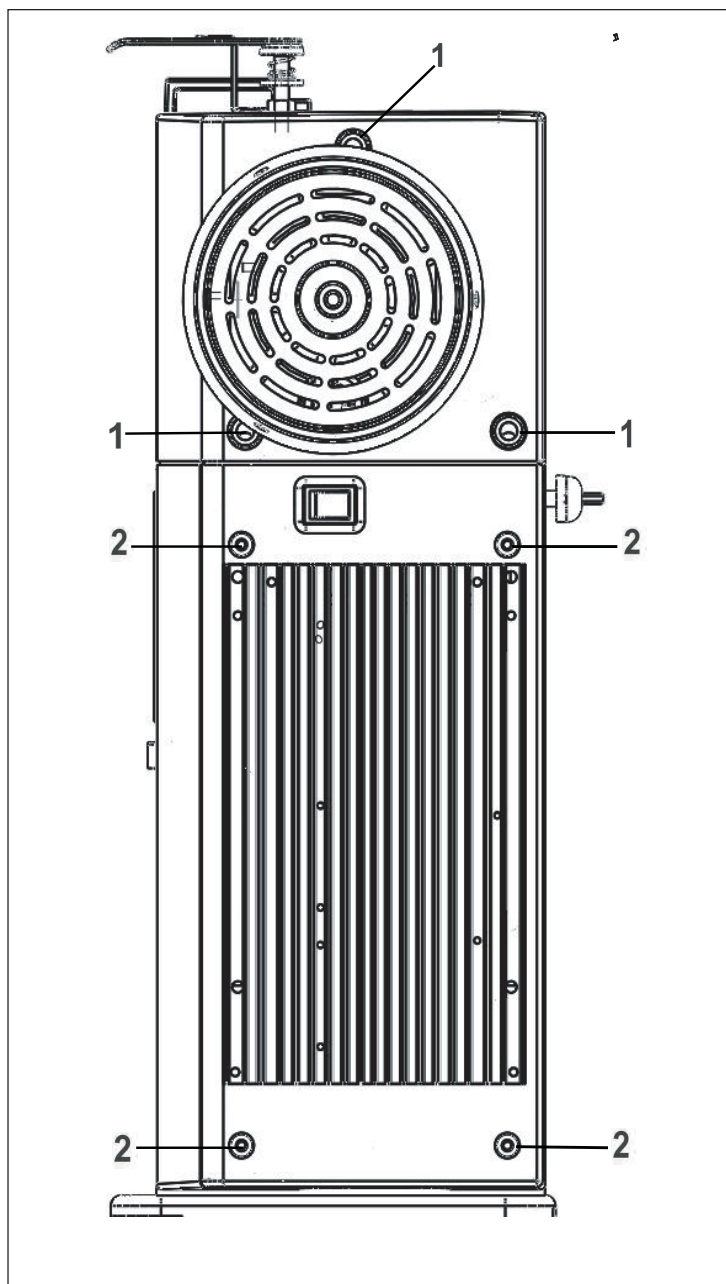


**Do not operate the machine without the anti-tipping device **1**! danger of bruising between the top of the machine and the table top!**

Fig.8.01



## 8.02 Fitting the machine casing



- Secure the upper casing by screwing the screws 1
- Secure the lower casing by screwing the screws 2

Fig.8.02

## 8.04 Fitting the spool pin

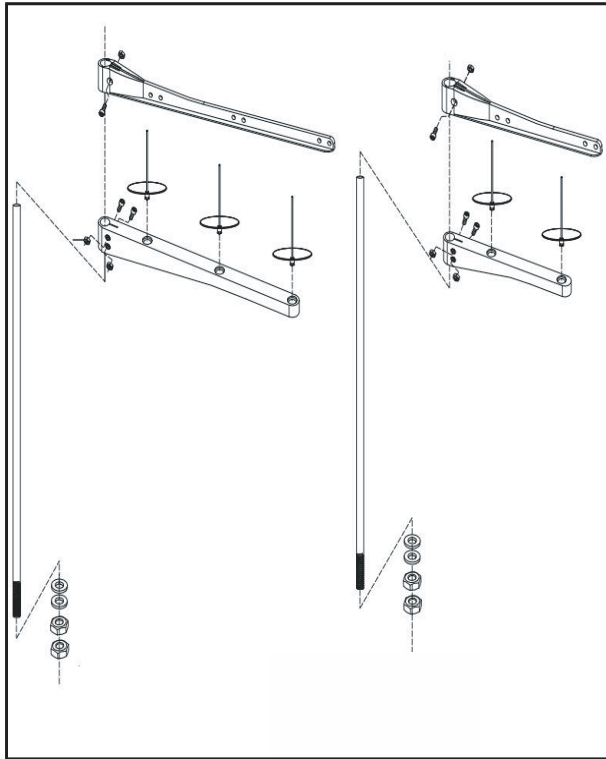


Fig.8.04

Fit the spool pin as shown in Fig.8.04.

Then insert the spool pin into the table top hole and secure it with the nuts supplied.

## 8.05 Initial start-up

- Check that the machine and in particular the electrical cables are not damaged
- Thoroughly clean the machine then oil it and top up the oil, see chapter 11 Care and maintenance.
- Specialised personnel must check that the machine motor can operate at the existing supply voltage on site and that it is connected correctly in the terminal block. In case of discrepancies, do not start the machine under any circumstances.



The machine can only be connected to a grounded power outlet

With the machine running, the handwheel must rotate towards the user, otherwise have a technician reverse the motor connections.

## 8.06 Switching the machine on/off

To turn the machine on and off, see paragraph 7.01 Main switch.

## 9 Set-up



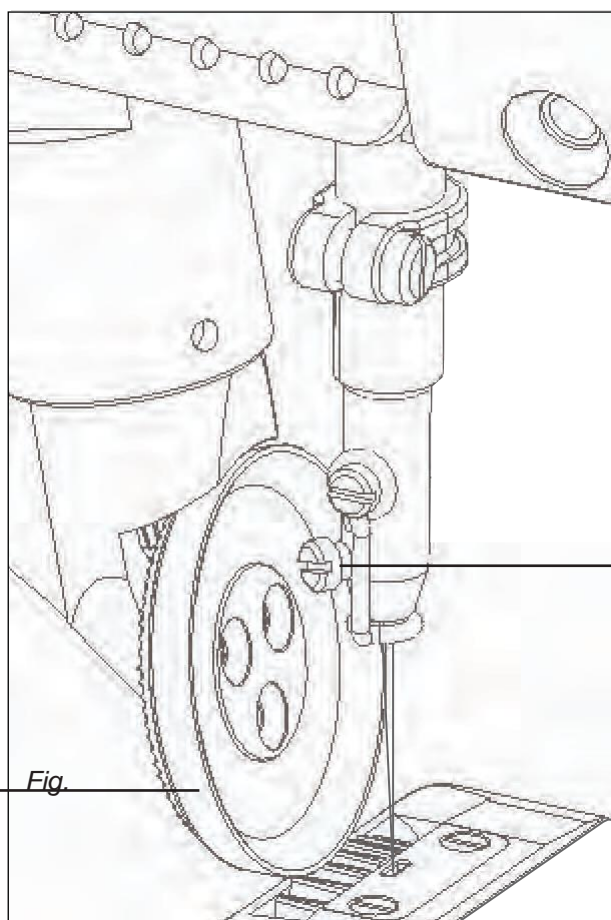
Comply with all the rules and instructions contained in this manual. Pay particular attention to the safety rules!



All set-up work must only be carried out by trained personnel. During all set-up work, disconnect the power supply of the machine by pressing the main switch and disconnecting the power cable from the socket!

### 9.01 Inserting the needle for CAMARB N31

An adequate power supply must be present at the installation site. The installation site must ensure a level, solid base and sufficient lighting.



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

Only use system 134 needles.

- Lift the roller foot **1** and move it away
- Screw in the screw **2** and insert the needle until it stops. The long groove must face left in the **N31**
- Tighten the screw **2** and move the roller foot **1** away

1

Fig.

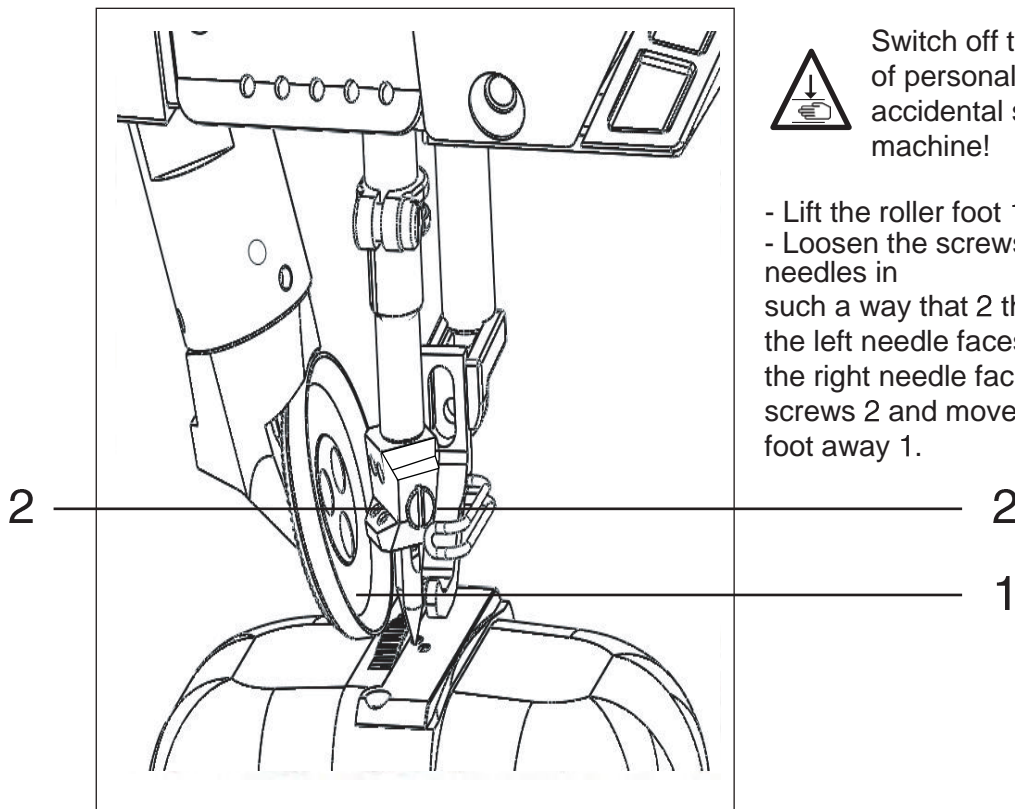
Fig.9.0

1



The choice of needle depends on the machine model, the yarn and the material to be processed, see paragraph 3.02 Needle and thread.

## 9.02 Inserting the needle into the Camarb N32



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

- Lift the roller foot 1 and move it away.
- Loosen the screws 2 and insert the needles in such a way that 2 the long groove of the left needle faces right and that of the right needle faces left. Tighten the screws 2 and move the roller foot away 1.

Fig.9.02



The choice of needle depends on the machine model, the yarn and the material to be processed, see paragraph 3.02 Needle and thread.

### 9.03 Spolatura del filo inferiore, regolazione della tensione iniziale del filo

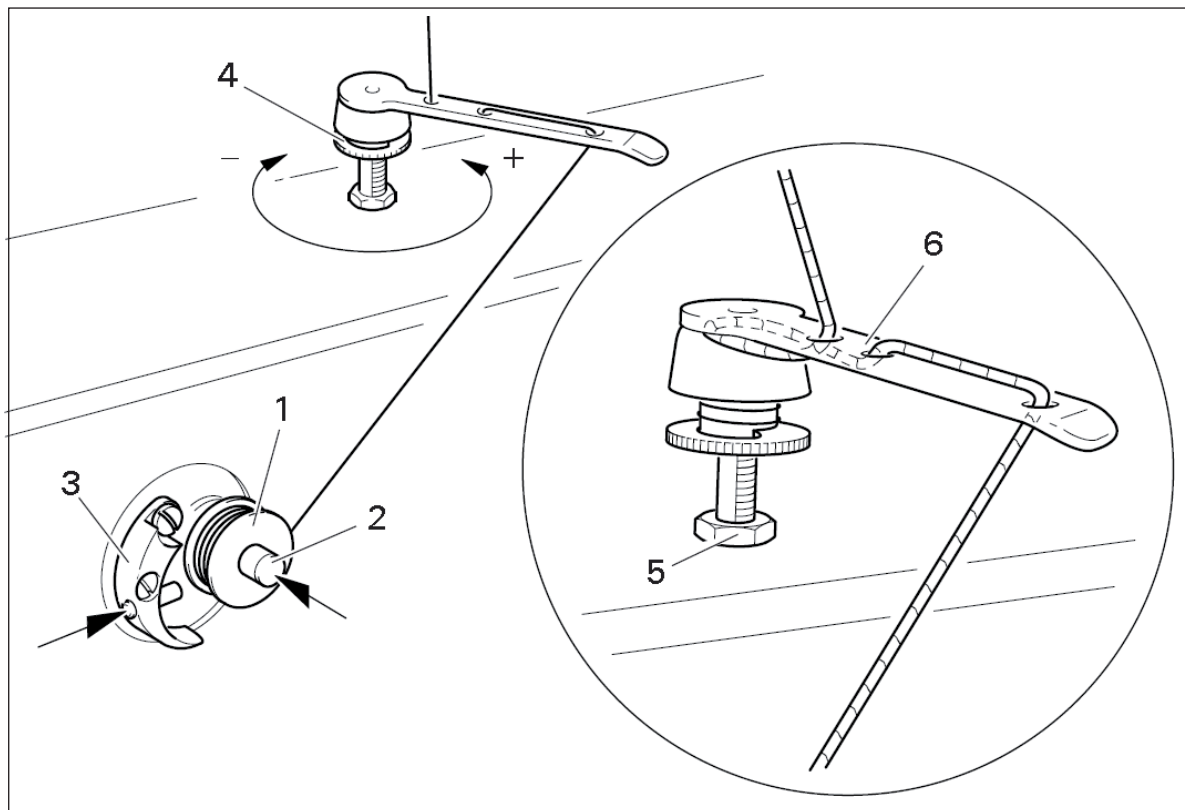


Fig.9.03

- Insert the empty bobbin 1 on the bobbin spindle 2.
- Insert the thread as shown in Fig.9.03 and wind it a few times clockwise on the bobbin 1.
- Turn on the bobbin winder, for this purpose press, at the same time, the spindle of the bobbin winder 2 and lever 3.



The bobbin is filled during sewing.

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

If the bobbin is not wound evenly:

- Loosen the nut 5.
- Properly rotate the thread guide 6.
- Tighten the nut 5.

## 9.04 Removing / Inserting the bobbin case

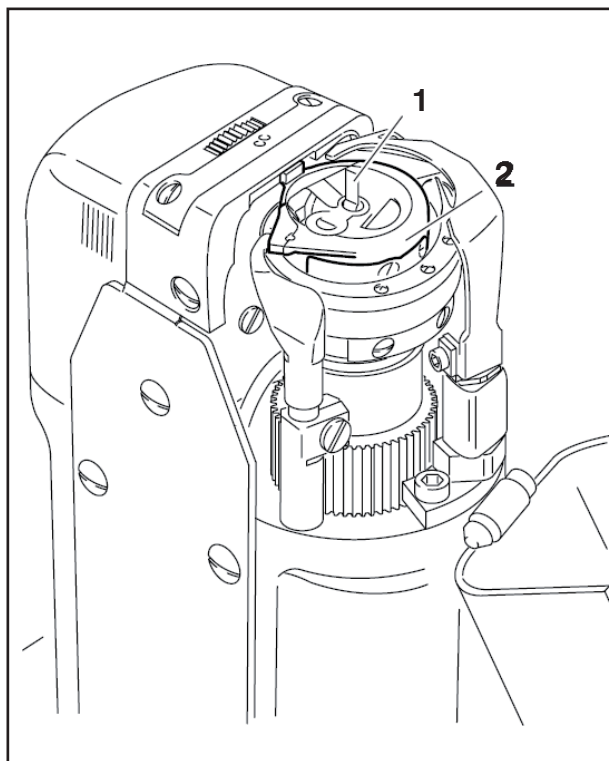


Fig.9.04



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

Removing the bobbin case:

- Open the post cover.
- Lift the bracket 1 and remove the bobbin case 2.

Inserting the bobbin case:

- Insert the bobbin case 2.
- Close the bracket and close the post cover.



Fig.9.04 refers to CAMARB N32

## 9.05 Threading the bobbin case, lower thread tension adjustment

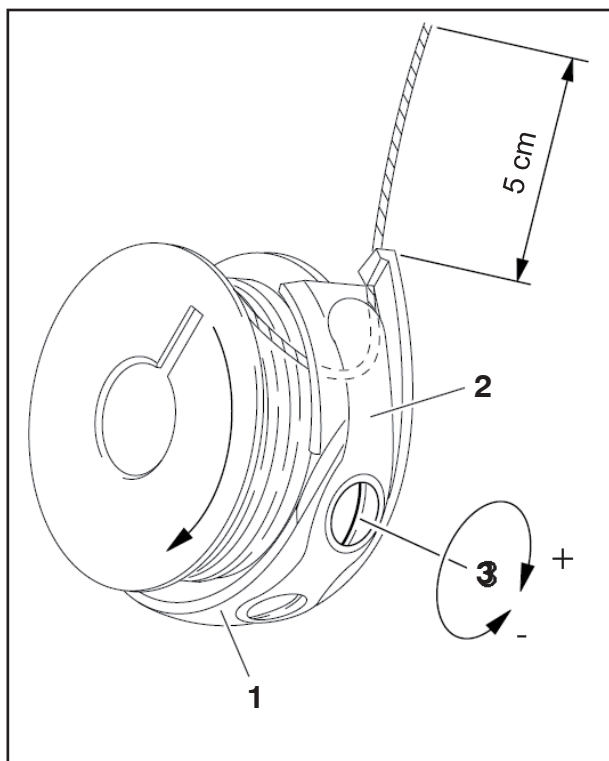


Fig.9.05

- Insert the bobbin into the case 1.
- Pass the thread into the slit under spring 2.
- Then pass the thread through the groove.
- Adjust the thread tension by screwing or unscrewing the screw 3.



Unwinding the bobbin thread, it must rotate in the direction of the arrow.

## 9.06 Infilatura del filo superiore / Regolazione della tensione del filo superiore in CAMARB N31

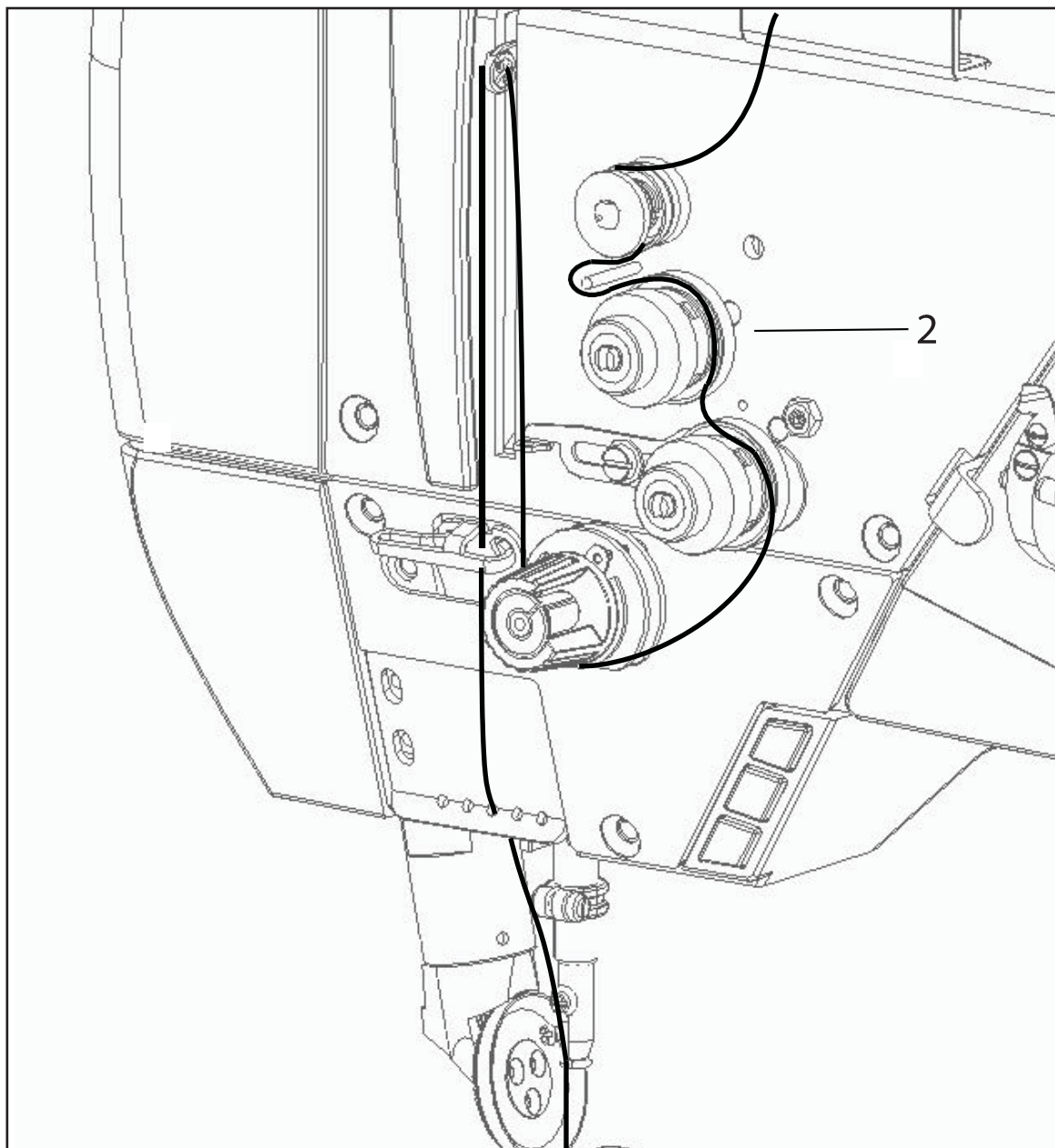


Fig.9.06

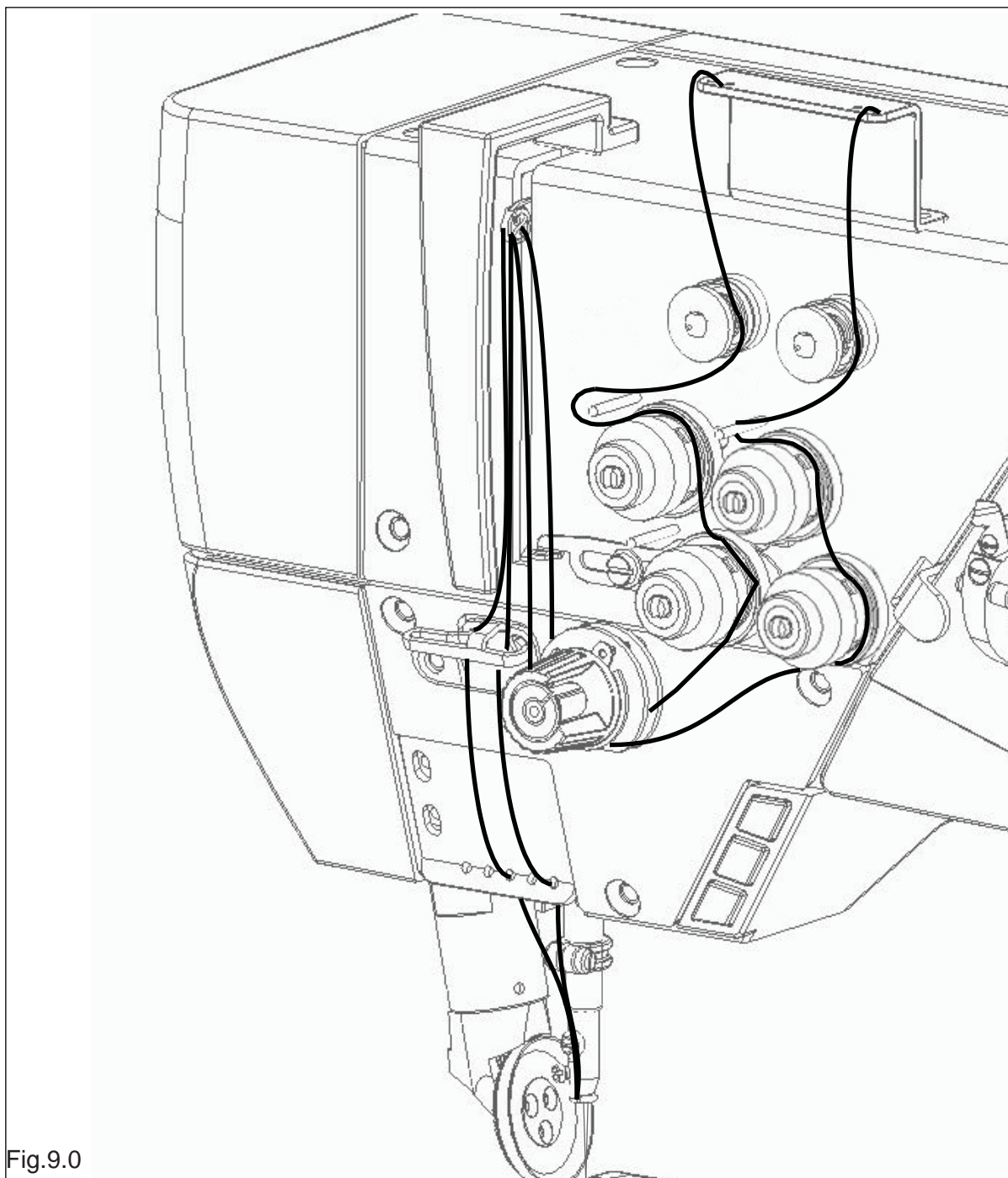


Switch off the machine!  
Risk of injury due to accidental start-up of the machine!

- Turn the eye protection 1 upwards.
- Perform the threading following the diagram in Fig.9.06.
- In the CAMARB N31 the thread must be inserted into the needle eye from left to right.
- Adjust the tension of the upper thread by turning the knurled screw 2.



## 9.07 Infilatura del filo superiore / Regolazione della tensione del filo superiore in CAMARB N22



Switch off the machine!  
Risk of personal injury due to accidental start-up of the machine!

- Turn the protection 1 upwards.
- Perform the threading of the two upper threads following the diagram in Fig. 9.07.
- Insert the thread into the left needle eye from right to left and into the right needle eye from left to right.
- Adjust the tension of the upper threads by turning the knurled screws 2.



## 9.08 Stitch length adjustment

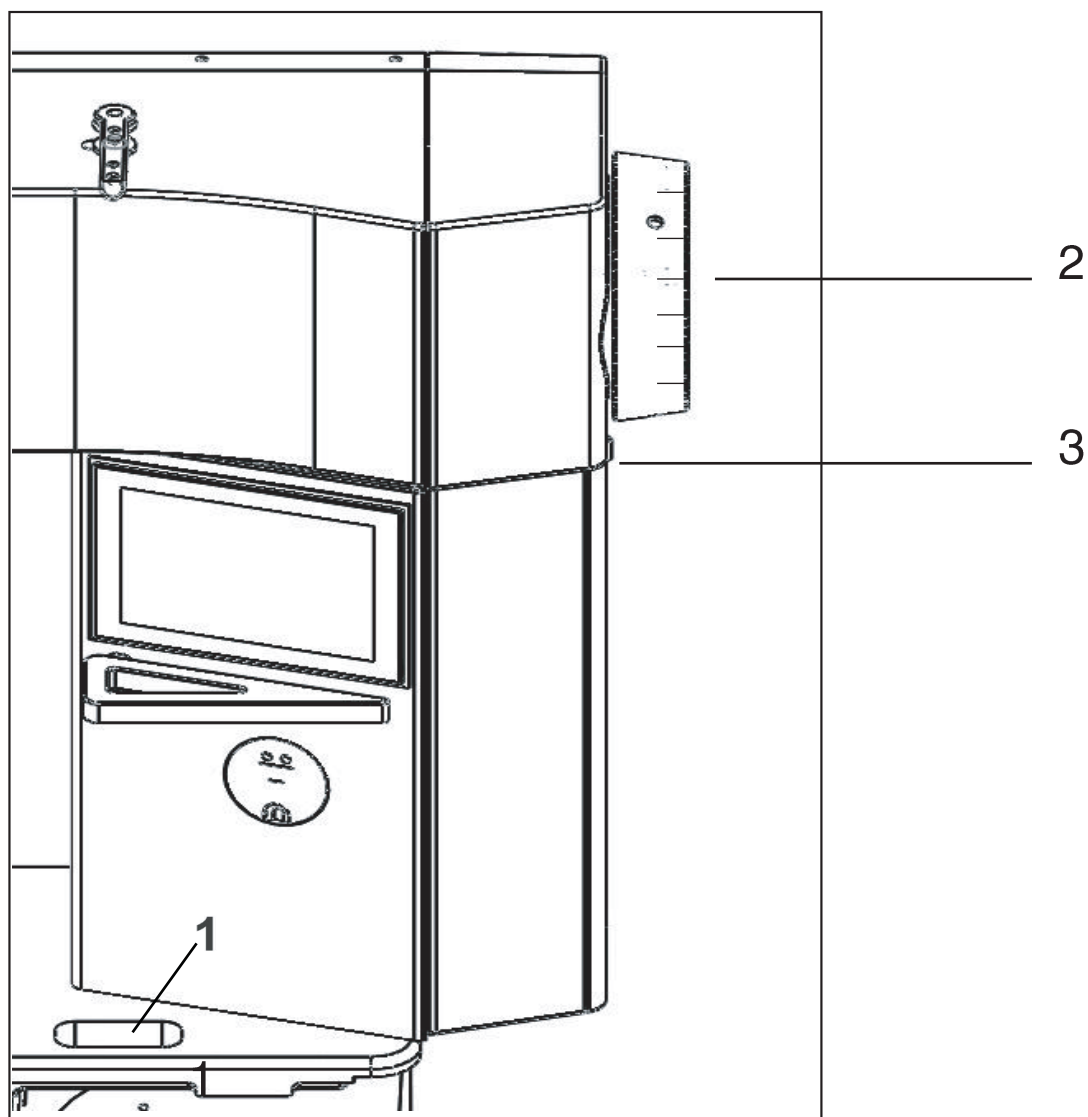


Fig.9.08

- Press key 1 and simultaneously rotate the handwheel until the stitch adjuster engages.
- Hold the key 1 and turn the handwheel forward or backward to set the desired stitch length number shown on the scale 2 at the bottom edge 3 of the belt cover recess.
- After setting the stitch length, make a 360° rotation of the handwheel without pressing any other key. Always carry out this operation: failure to rotate the handwheel may affect the stitch length adjustment mechanism.

## 10 Care and maintenance

- Cleaning:  
Daily; in case of continuous operation, even several times a day.
- Oil level (thread lubrication/crochet hook lubrication): Daily,  
before starting the machine.
- Crochet hook oiling: Daily, before starting  
the machine.
- Conical wheel greasing: Once a year.



The maintenance intervals refer to an average operating time of the machine in shift operation.  
In case of longer machine times, shorter maintenance intervals are recommended.

## 10.01 Cleaning

Clean daily the crochet hook, crochet hook area and gear 3, in case of continuous operation more often.

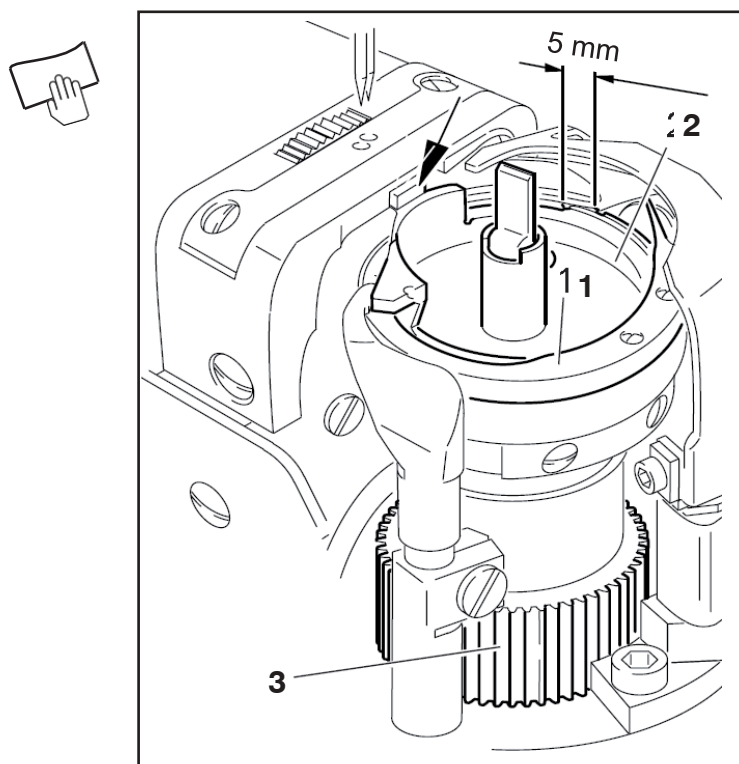


Fig.10.01



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

- Set the needle bar to the uppermost position.
- Open the post cover and pull out the top of the bobbin case together with the bobbin.
- Unscrew the crochet hook bracket 1.
- Rotate the handwheel until the tip of the lower case 2 is inserted into the crochet hook groove by about 5 mm.
- Remove the lower case 2.
- Clean the crochet hook guide with oil.
- When inserting the lower case 2 make sure that the tip of the lower case 2 is inserted into the groove of the needle plate.
- Tighten the hook bracket 1.
- Insert the bobbin case including the bobbin and close the post cover.

## 10.02 Lubrificazione ad olio del crochet

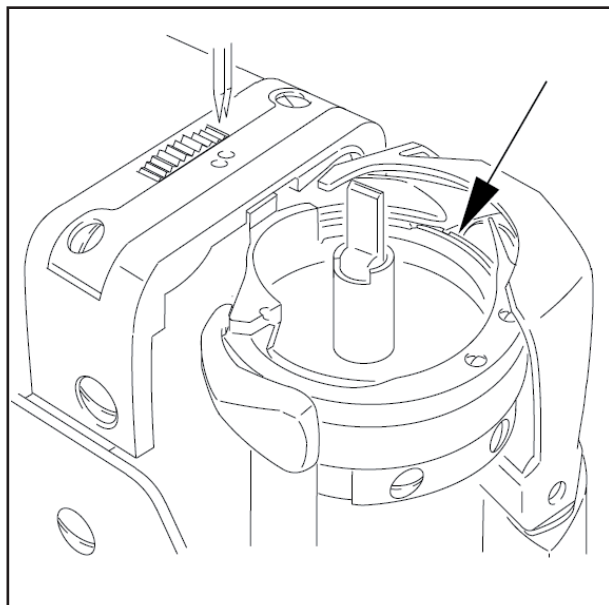


Fig.10.02



Switch off the machine! Risk of personal injury due to accidental start-up of the machine!

- Before putting the machine into operation for the first time and in case of prolonged inactivity, also pour a few drops of oil into the crochet hook guide (see arrow).

## 10.03 Recipiente olio per la lubrificazione del crochet

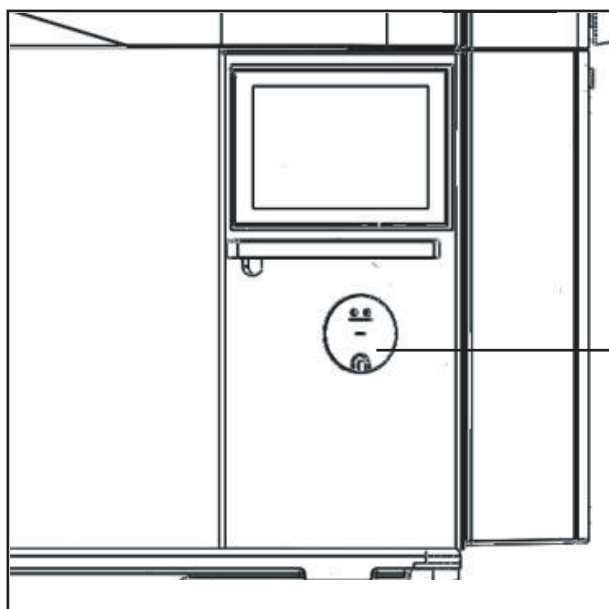


Fig.10.03



Before each use, check the oil level.

The reserve container 1 must always contain oil.

- When necessary, top up the oil through the hole.

1



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

## 10.05 Conical wheel lubrication

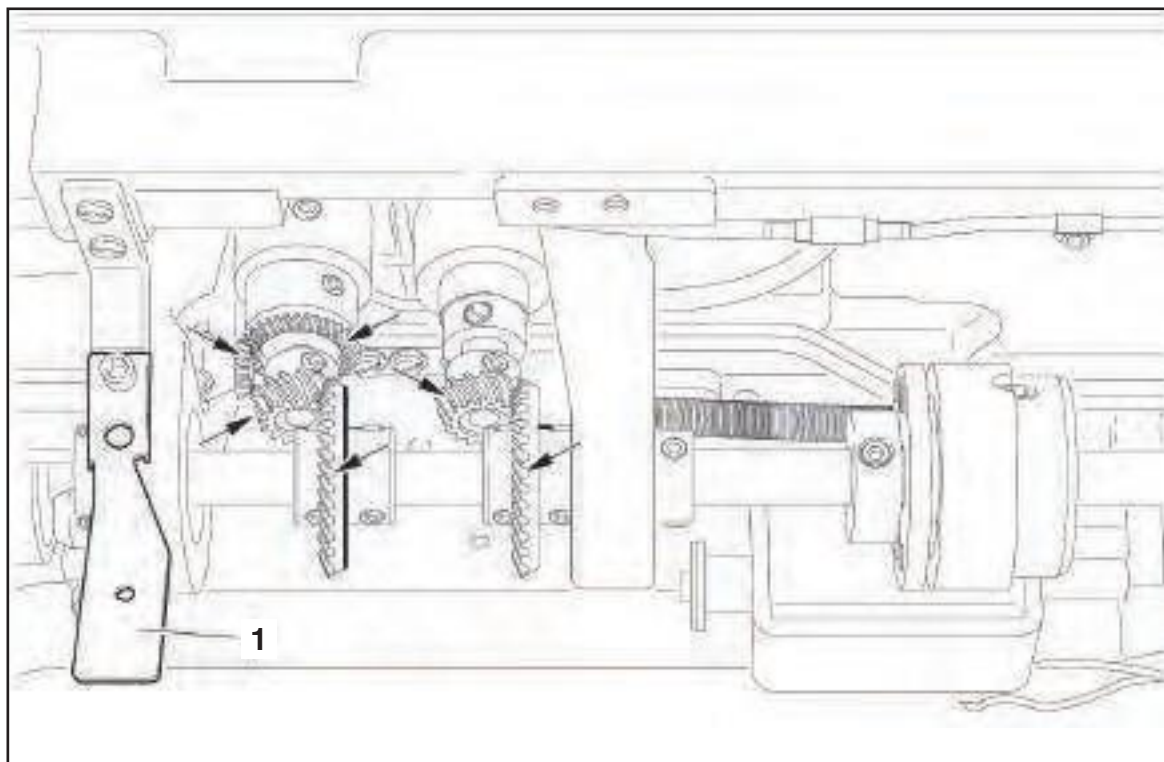


Fig.10.05



The machine can only be connected to a grounded power outlet!

- Grease all conical wheels once a year.
- Tilt the top of the machine backwards, until it touches the mount.



Fig.10.05 shows the conical wheels of the CAMARB N32

- Distribute the grease on all the sides of the teeth and the rack (see arrows).
- To straighten the top of the machine, press the anti-tipping device 1 towards the rear side and straighten the top of the machine with both hands.



Straighten the top of the machine with both hands!  
Risk of bruising between the top of the machine and the table top!

## 11 Calibrations



Unless otherwise described, the machine must be disconnected from the electrical and pneumatic supply during all adjustment work!

Risk of personal injury due to accidental start-up of the machine!

### 11.01 Adjustment information

All the adjustments contained in these instructions refer to the completely assembled machine and can only be carried out by suitably trained specialised personnel.

The machine casings that must be unscrewed and screwed back for control and adjustment operations are not mentioned in the text.

The order of the following chapters corresponds to a correct sequence of operations if a machine is to be fully calibrated. If only a few phases are performed in a targeted manner, always keep the previous and the following chapters in mind.

The screws and nuts indicated in brackets ( ) are fasteners that must be loosened before the adjustment operations and tightened again once the work is complete.

### 11.02 Equipment, gauges and other tools

- 1 set of screwdrivers with 2 to 10 mm bit
- 1 set of wrenches from 7 to 13 mm
- 1 set of Allen keys from 1.5 to 6 mm
- Sewing thread and sewing material
- 1 clamp
- 1 metal ruler
- 1 gauge

### 11.03 Abbreviations

p.m.s = upper dead point.

p.m.i = lower dead point.

## 11.04 M-Series (Mechanical) Machine Calibration

### 11.04 Needle position with respect to the stitching direction for CAMARB N31.

#### Rule

By adjusting the stitch length to the minimum, the needle should be located in the middle of the hole, seen in the stitching direction.

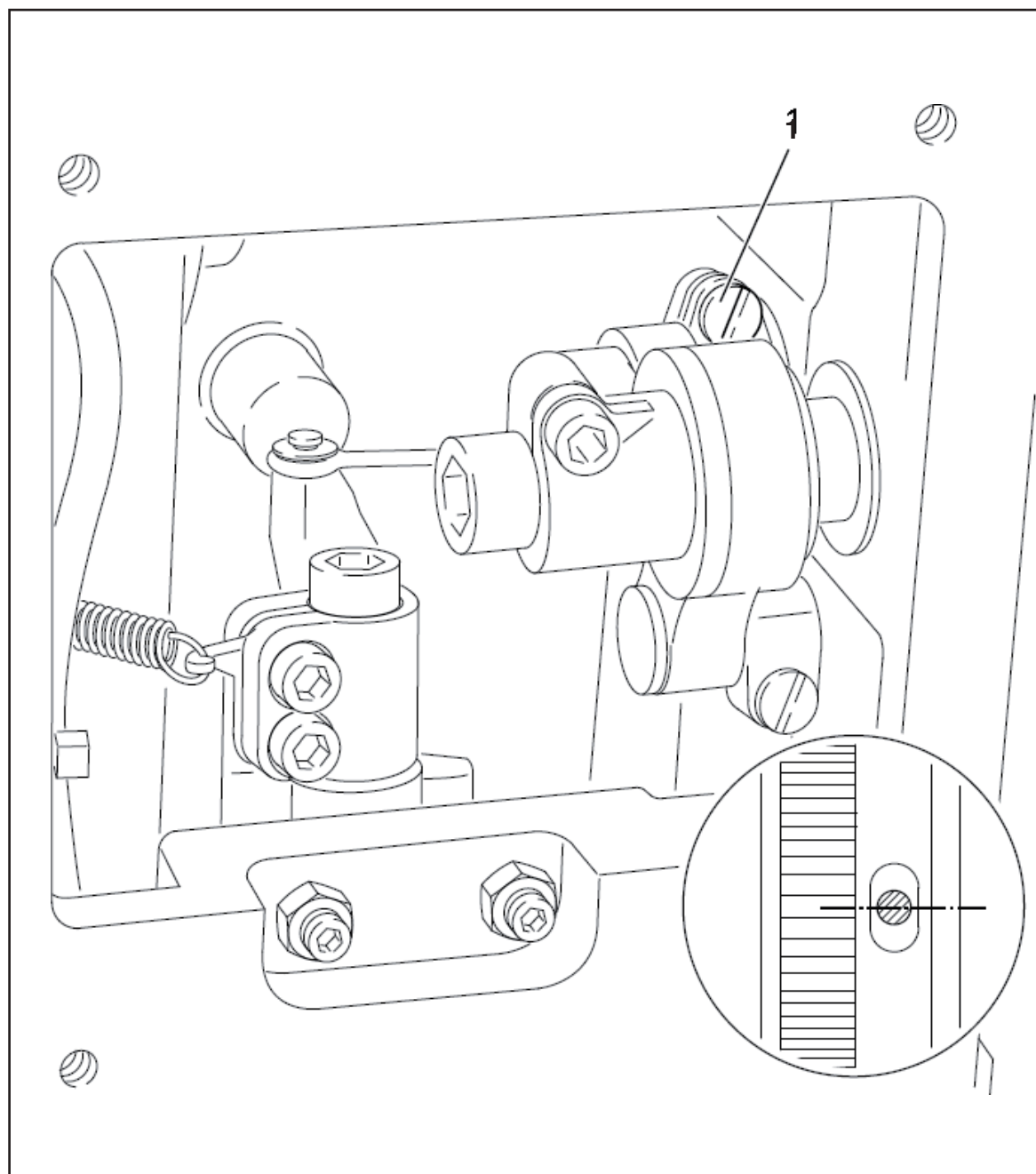
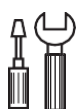


Fig.11.04



- Adjust the stitch length to the minimum.
- Move the needle bar (screw 1) according to the Rule.

## 11.06 Needle position in relation to the sewing direction for CAMARB N32

### Rule

Seen in the stitching direction, the needle must be in the centre of the hole.

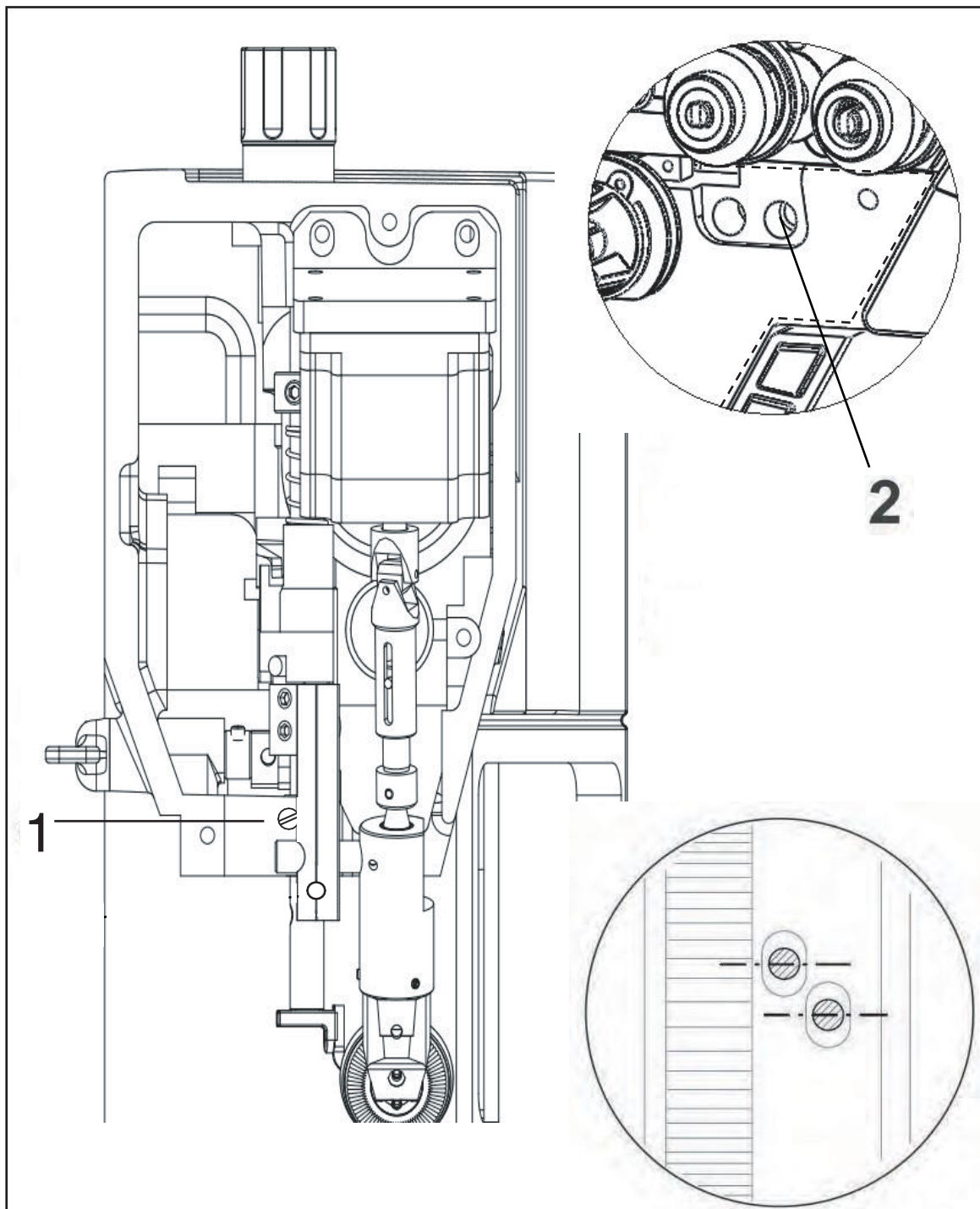
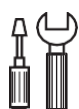


Fig.11.06



- Move the needle bar (screws 1 and 2) according to the Rule.



## 11.07 Needle height adjustment.

### Rule

At the upper dead point of the needle bar, between the needle tip and needle plate there must be a distance of about 21 mm.

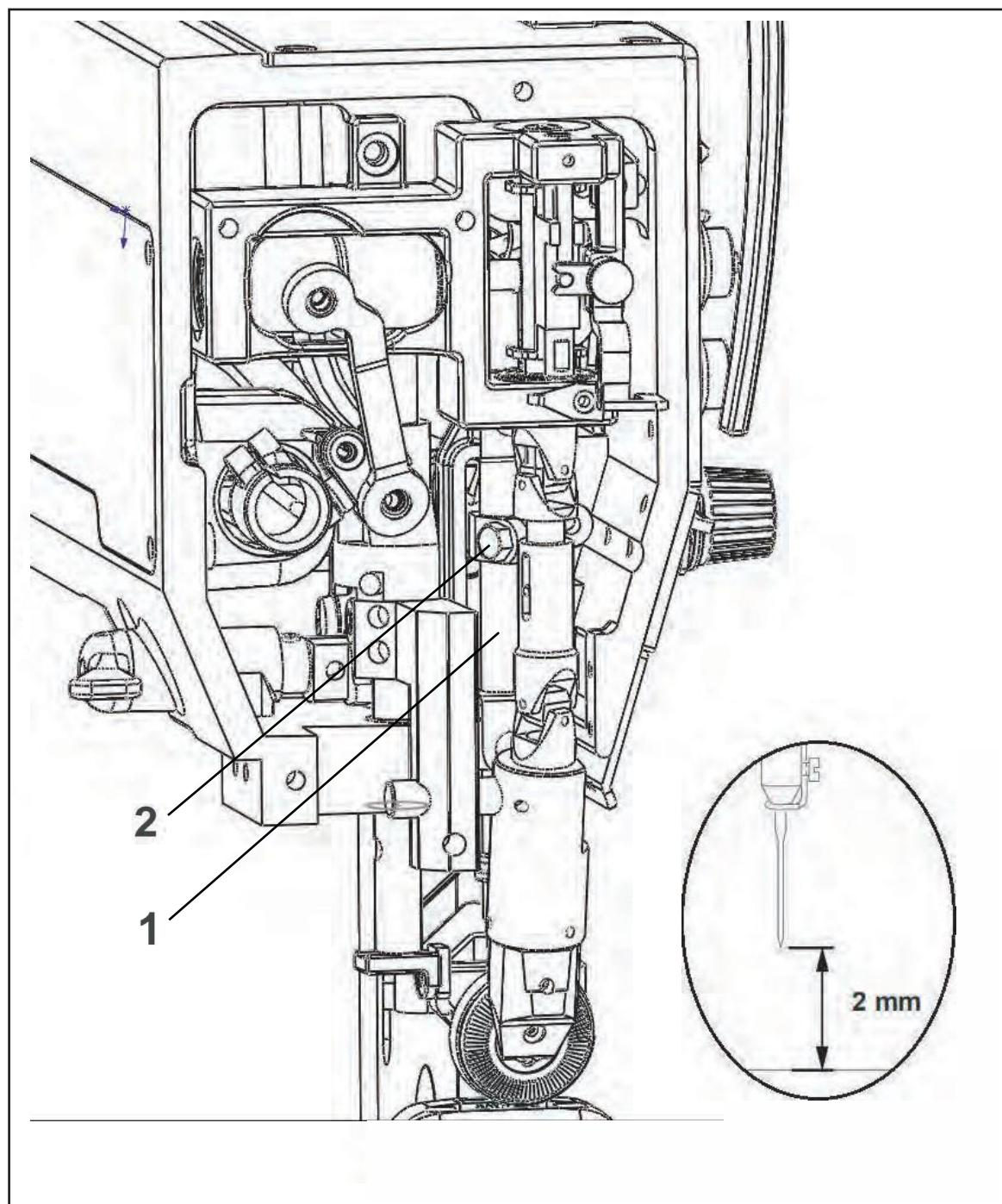
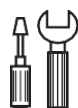


Fig.11.07



- Move the needle bar 1 (screw 2), without rotating it, according to the Rule.

## 11.08 Crochet hook loop stroke, crochet hook distance, needle height and needle protection in CAMARB N32.

### Rule

When the needle bar is 2.0 mm after the lower dead point, in the two crochet hooks:

1. The tip of the crochet hooks must be located at the tip of the needle and have a distance from 0.05 mm to 0.1 mm from the needle;
2. The top edge of the needle curve should be 0.8 to 1.0 mm below the tips of the crochet hooks;
3. The needle protection 9 must touch the needle.

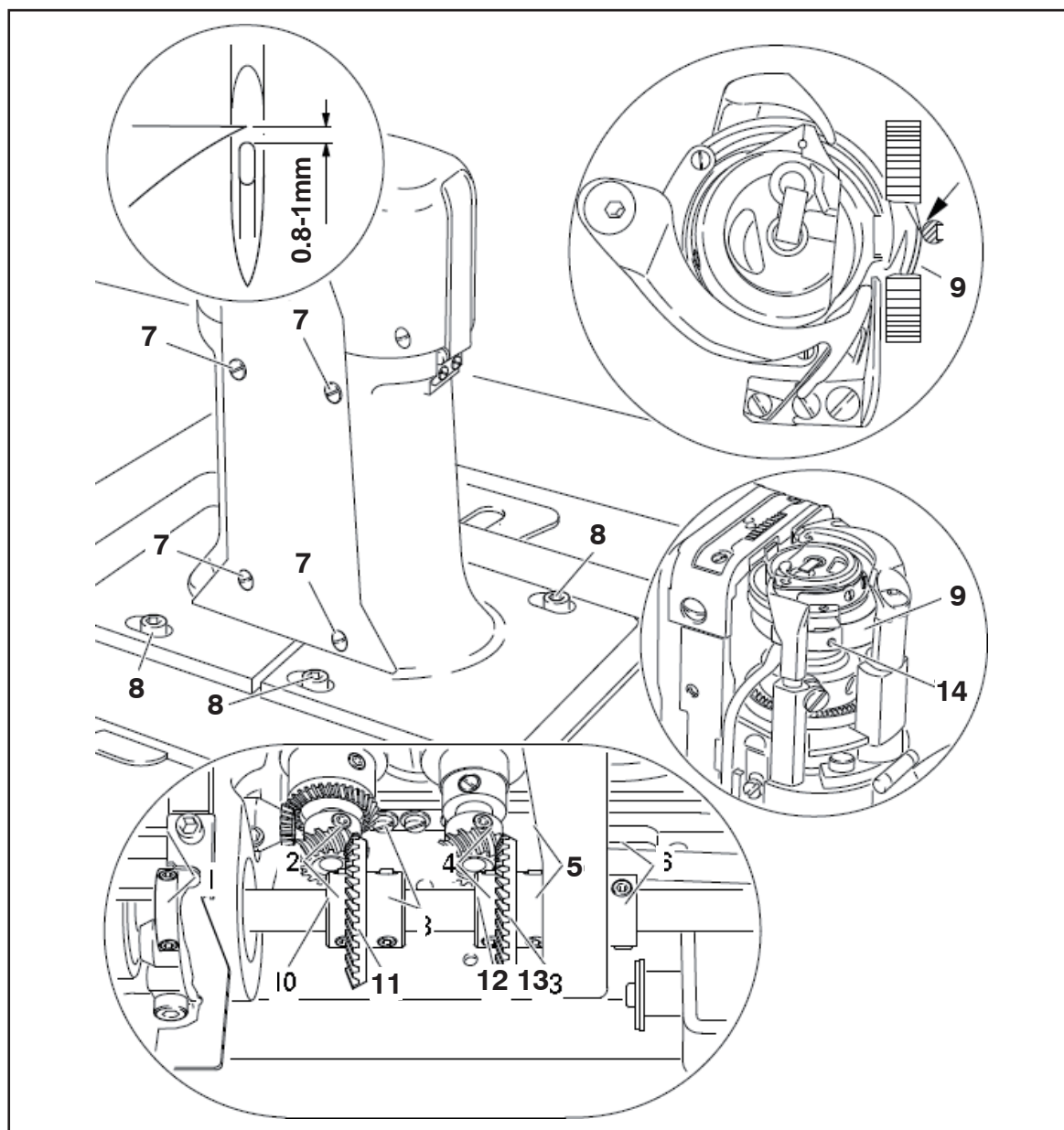
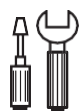
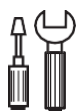


Fig.11.08



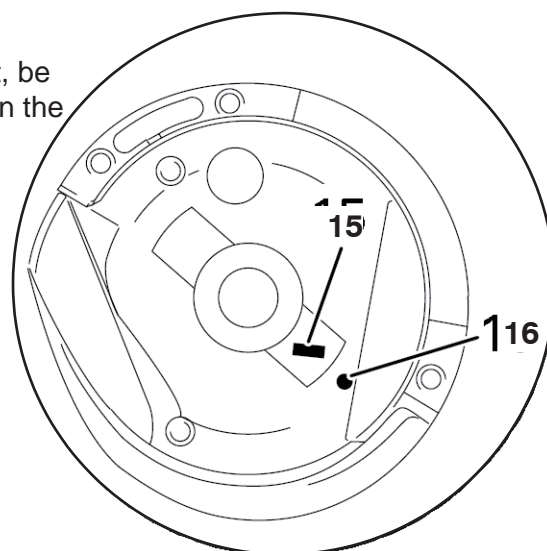
- Unscrew the screws 1,2,3,4,5,6 and 7.
- Slightly loosen the screws 8.
- Bring the needle bar to 2.0 mm after the lower dead point



- Bring the two tips of the crochet hook at the centre of the needle, taking care that the needles are not compressed by the protection 9.
- Adjust the height of the needle according to Rule 2.
- Move the two posts of the crochet hook according to Rule 1 and tighten the screws 8.
- Tighten screws 1 and 6.
- Respecting the play of the conical wheels, tighten the screws 3 and 5.
- Bring the collar 10 adjacent to the conical wheel 11 and tighten the screws 2.
- Bring the collar 12 adjacent to the conical wheel 13 and tighten the screws 4.
- Tighten the screws 7 on both sides of the post.
- Adjust the protection 9 (screw 14) on the two crochet hooks according to Rule 3.



In case of crochet hook replacement, be careful that notches 15 and 16 are on the same side.

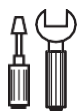
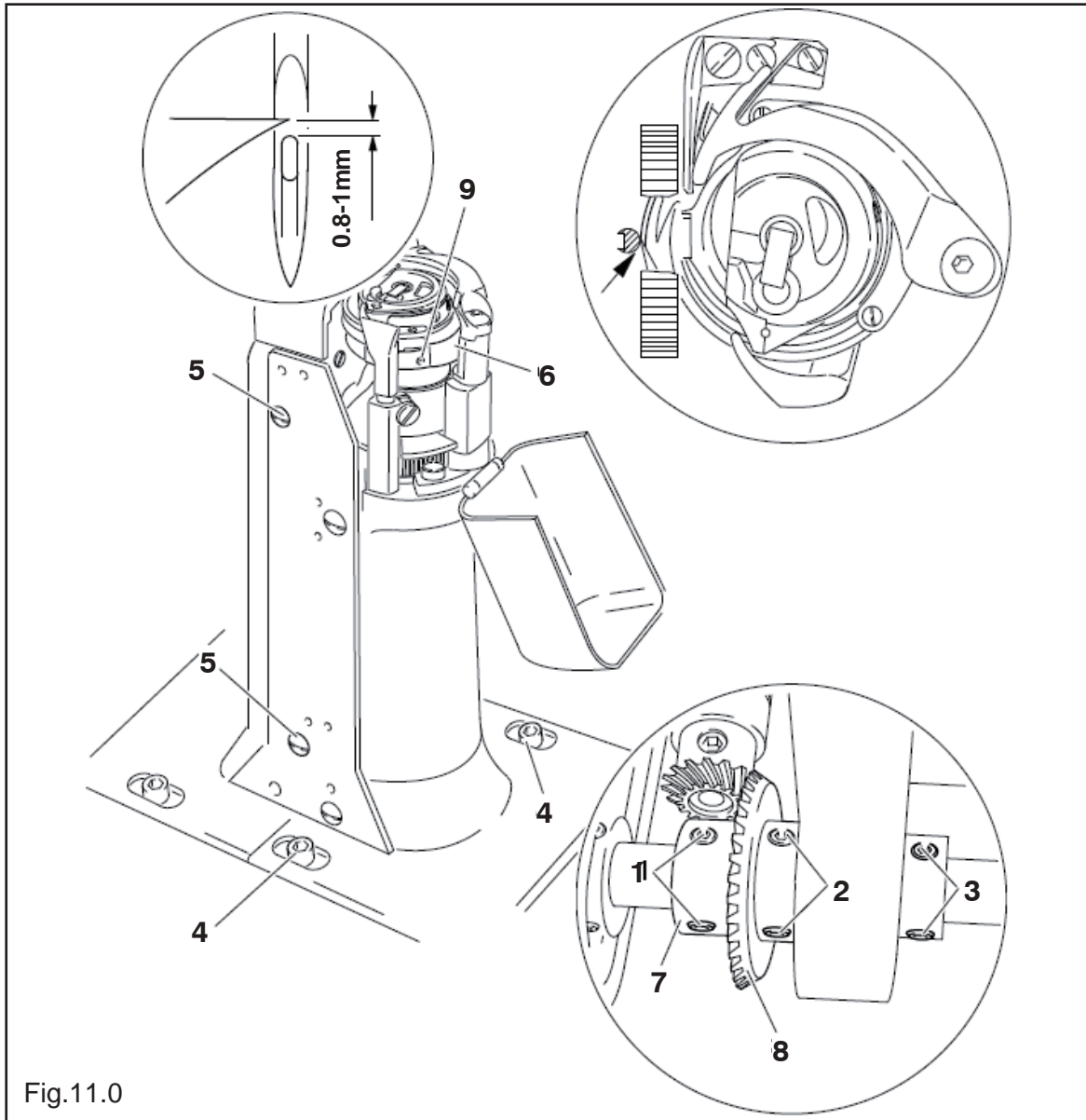


## 11.09 Crochet hook loop stroke, crochet hook distance, needle height and needle protection in CAMARB N31.

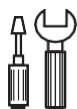
### Rule

With the needle bar at 2.0 mm after the lower dead point and with a set stitch length of 0.8:

1. The tip of the crochet hooks must be located at the tip of the needle and have a distance from 0.05 mm to 0.1 mm from the needle,
2. The top edge of the needle eye shall be 0.8 to 1.0 mm below the crochet hook tip,
3. The needle protection 6 must touch the needle.



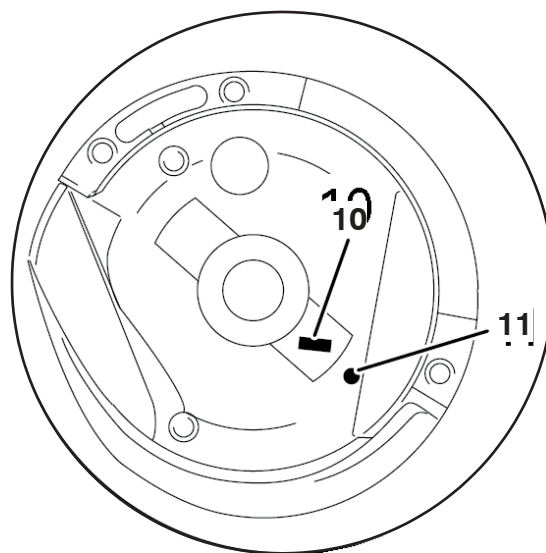
- Set the stitch length to 0.8.
- Unscrew the screws 1,2,3,4 and 5.
- Bring the needle bar to 2.0 mm after the lower dead point



- Bring the crochet hook tip to the centre of the needle, taking care that the needle is not compressed by the needle protection 6.
- Adjust the height of the needle according to Rule 2.
- Move the crochet hook post according to Rule 1 and tighten the screws 4.
- Respecting the play of the conical wheels, tighten the screws 2.
- Bring the collar 7 adjacent to the conical wheel 8 and tighten the screws 1.
- The screws 5 remain unscrewed for other settings.
- Adjust needle protection 6 (screw 9) according to Rule 3.



In case of crochet hook replacement, make sure that notches 10 and 11 are on the same side.





## 12.0 Position of the needle transversely to the stitching direction for CAMARB N32.

### Rule

The needles must pass through the centre of their holes, as seen transversely to the sewing direction.

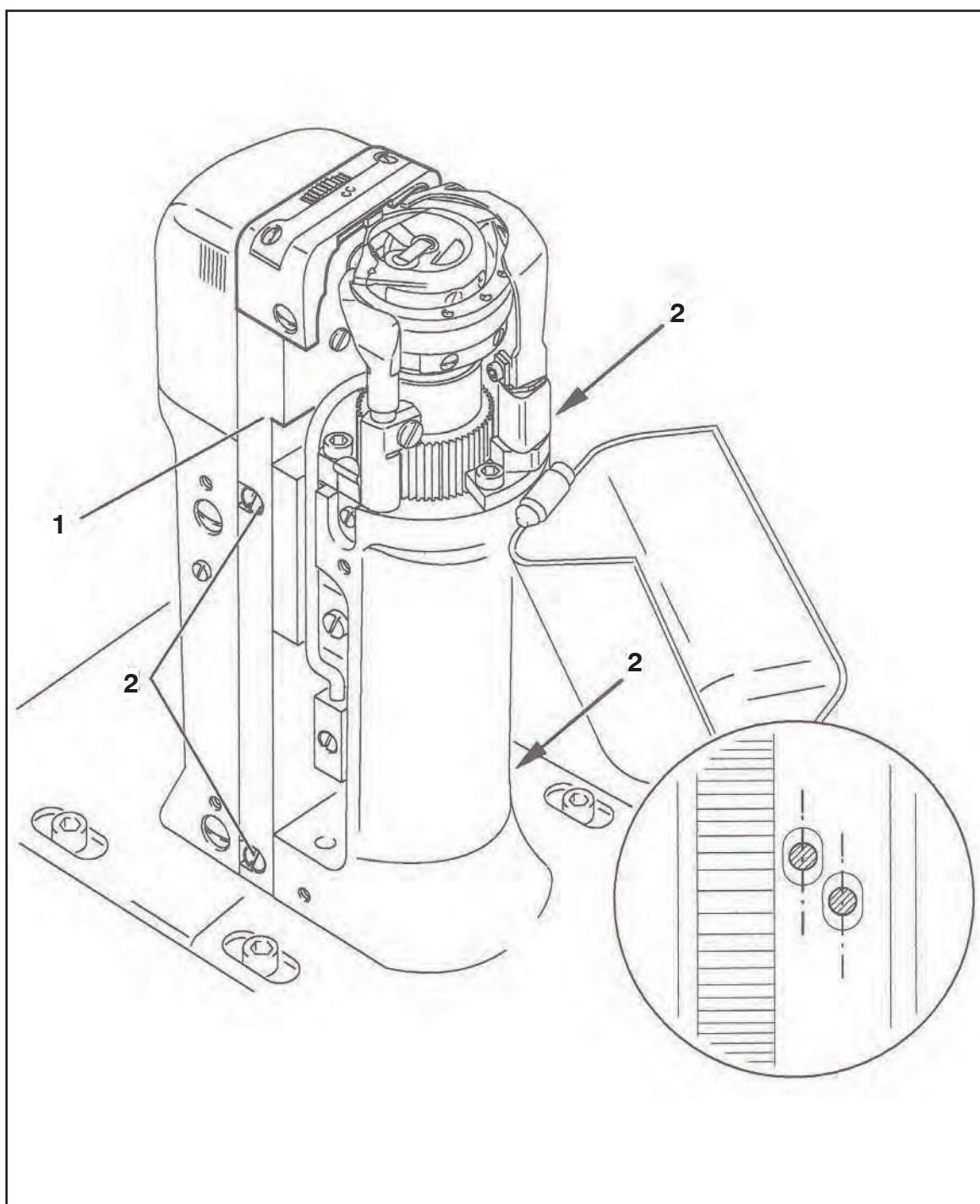
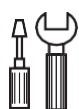


Fig.12.00



- Move the support plate 1 (screws 2, on the two sides of the post) according to the Rule.

## 12.01 Needle position transversely to the sewing direction for CAMARB N31.

### Rule

Seen transversely to the sewing direction, the needle must enter the centre of its hole.

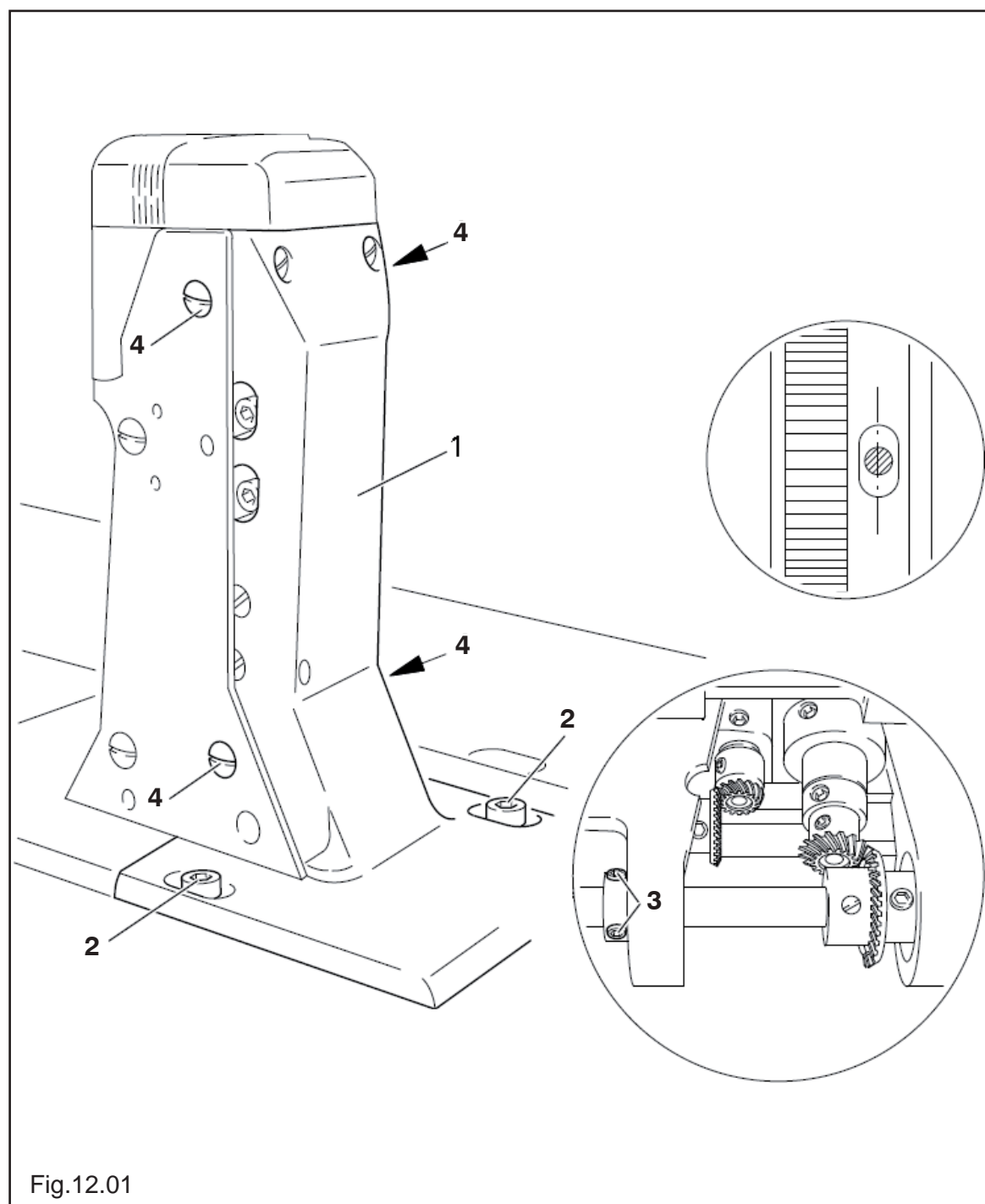
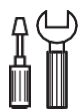


Fig.12.01



- Move the wheel post 1 ( screws 2,3 and 4) according to the Rule.

## 12.02 Height and lift stroke of the case.

### Rule

1. The upper edges of the lifted case 1 and the case holder 3 must be at the same height.
2. When the lifted case 1 has produced the maximum compression of the lower case, the lower case stud must have a distance of 0.3 - 0.5 mm from the rear edge of the indentation in the needle plate.

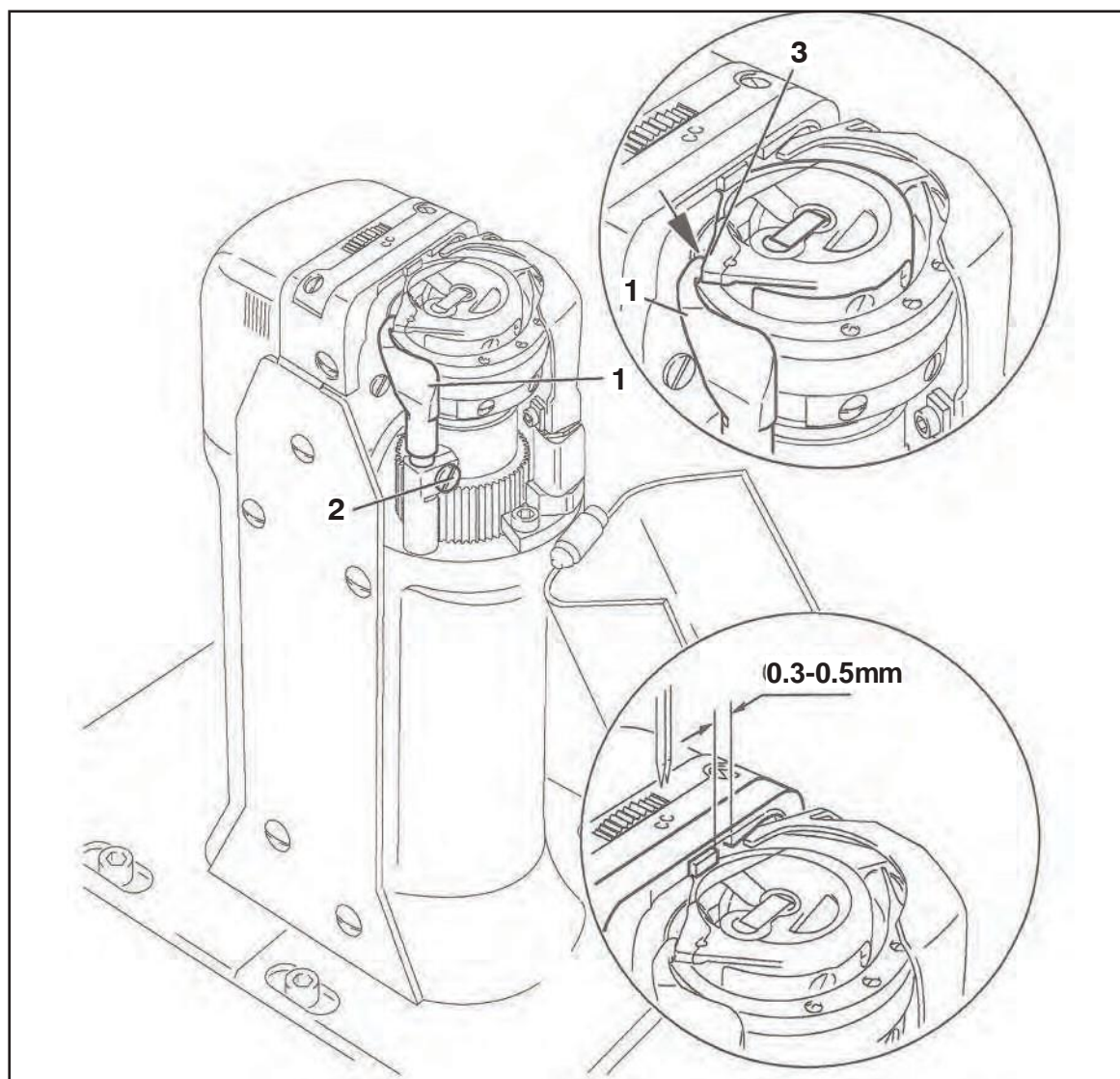
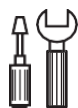


Fig.12.02



- Move the lifted case 1 (screw 2) according to Rule 1.
- Rotate the handwheel until the lifted case has produced maximum compression on the lower case.
- Turn the lifted case 1 (screw 2) according to Rule 2.



In the CAMARB N32 , repeat the settings on the right post. The settings according to Rule 2 may vary depending on the thickness of the thread.



## 12.03 Height of the feeding wheel CAMARB N32

### Rule

1. The feeding wheel 4 under load must come out of the needle plate for about the height of the teeth ( about 0.8 mm).
2. The feeding wheel 4 with no load must have a clearance in height of about 0.3 mm.

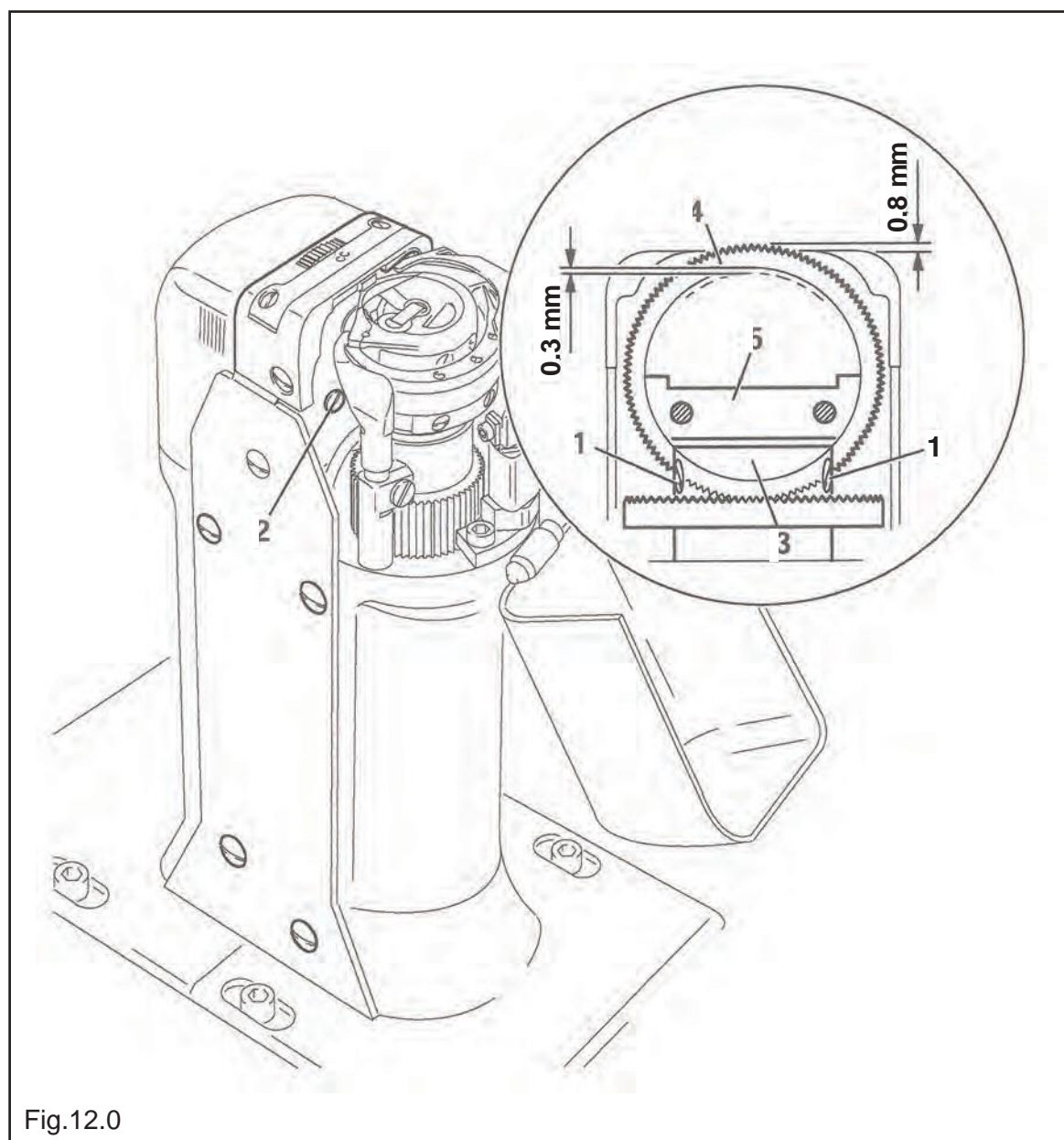
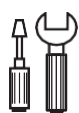


Fig.12.0

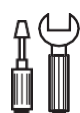
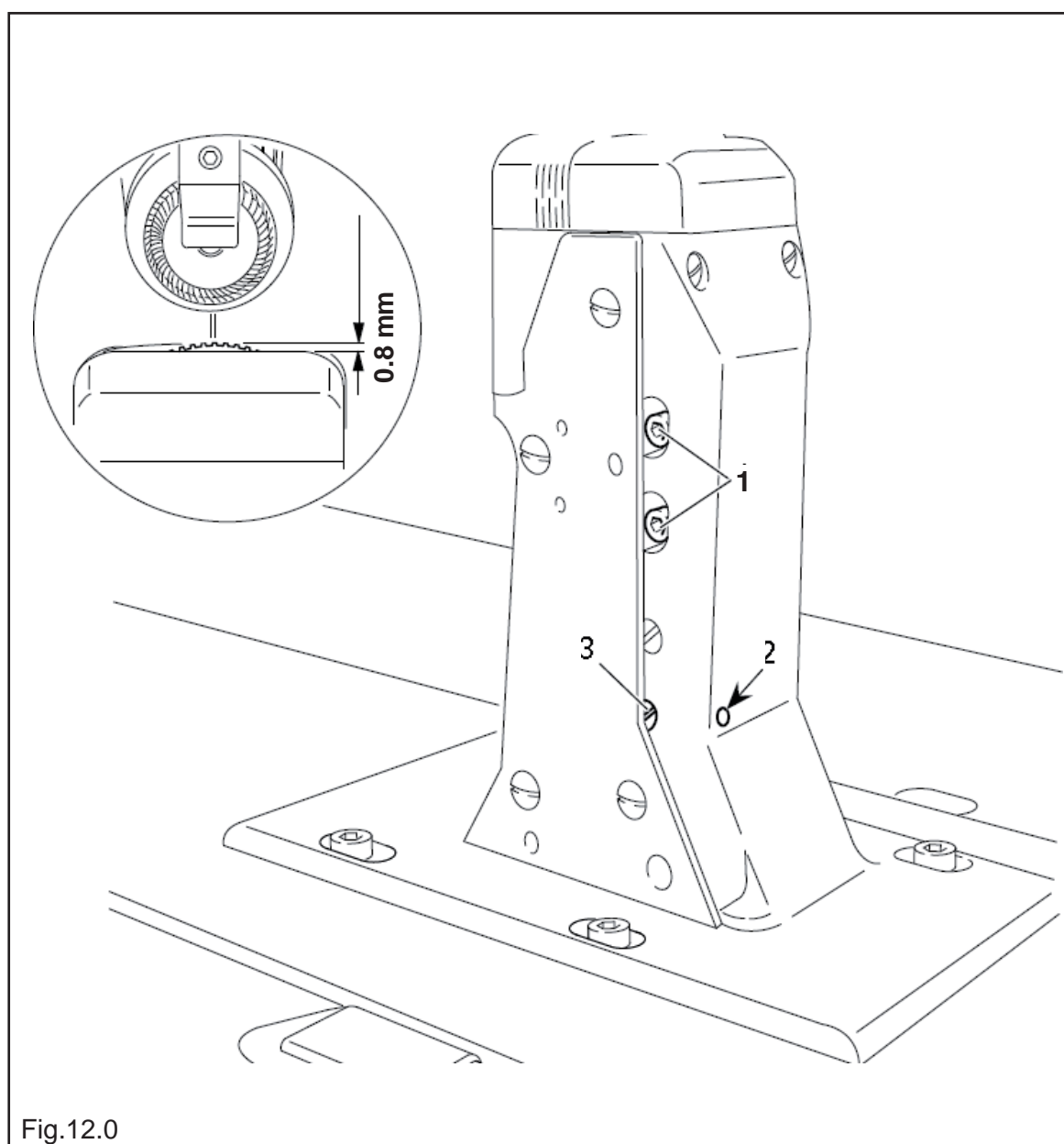


- Move the roller foot away.
- Unscrew screws 1 and 2 ( two screws each)
- Move the drive wheel 3 according to Rule 1, taking care that the drive wheel 3 and feeding wheel 4 teeth engage correctly.
- Tighten the screws 1.
- Move the guides 5 according to Rule 2 and tighten the screws 2.

## 12.4 CAMARB N31 feeding wheel height

### Rule

The feeding wheel must come out of the needle plate for about the height of the teeth (about 0.8 mm).

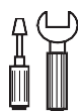
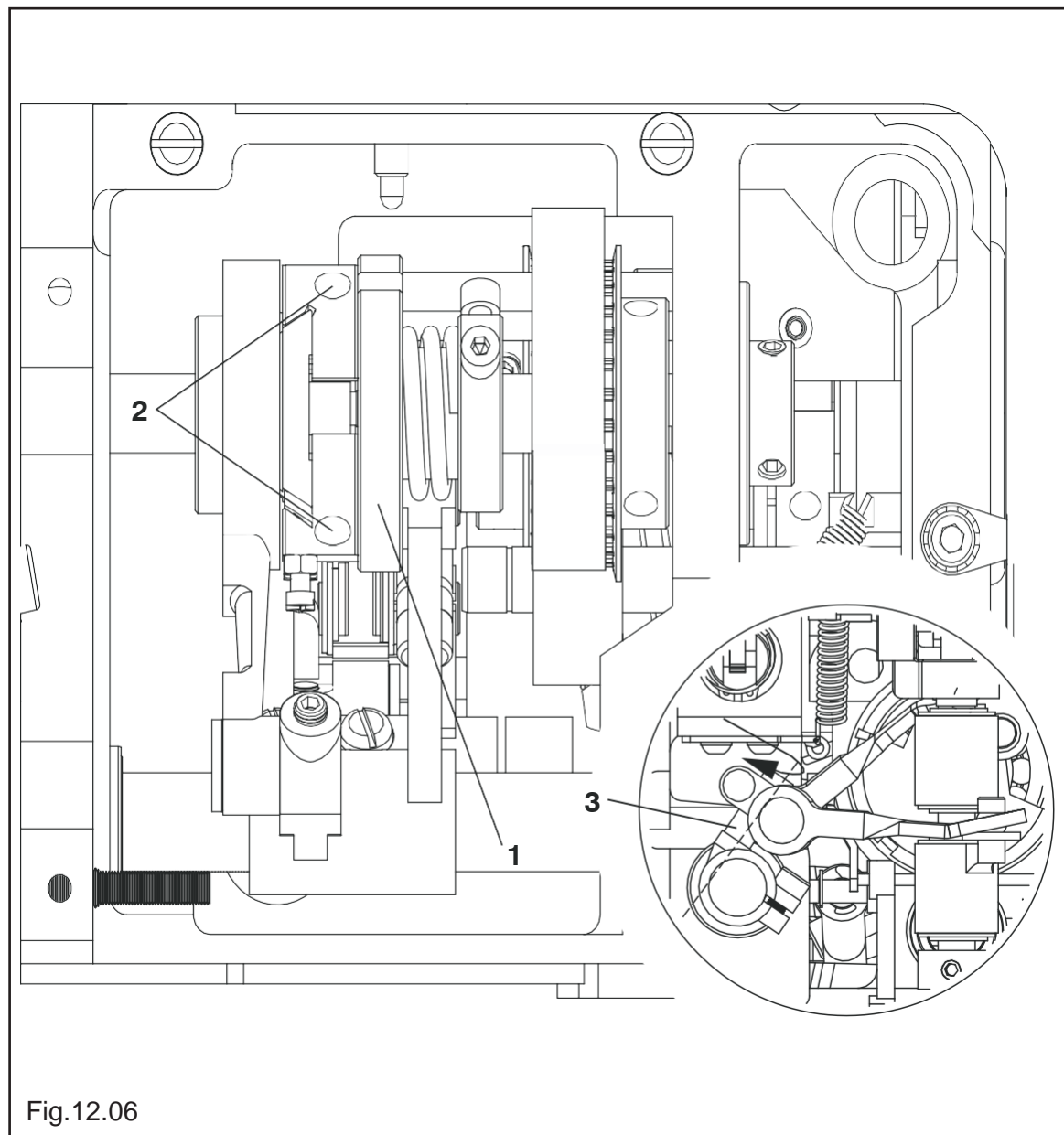


- Move the roller foot away.
- Unscrew the screws 1
- Turn the eccentric 3 (the fixing screw can be reached through the hole 2) according to the Rule.
- Tighten the screws 1.

## 12.6 Stitch adjustment eccentric

### Rule

When the needle (at the maximum stitch length) stops 3mm above the needle plate coming from the upper dead point, crank 3 must have reached its front reversal point.

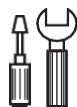
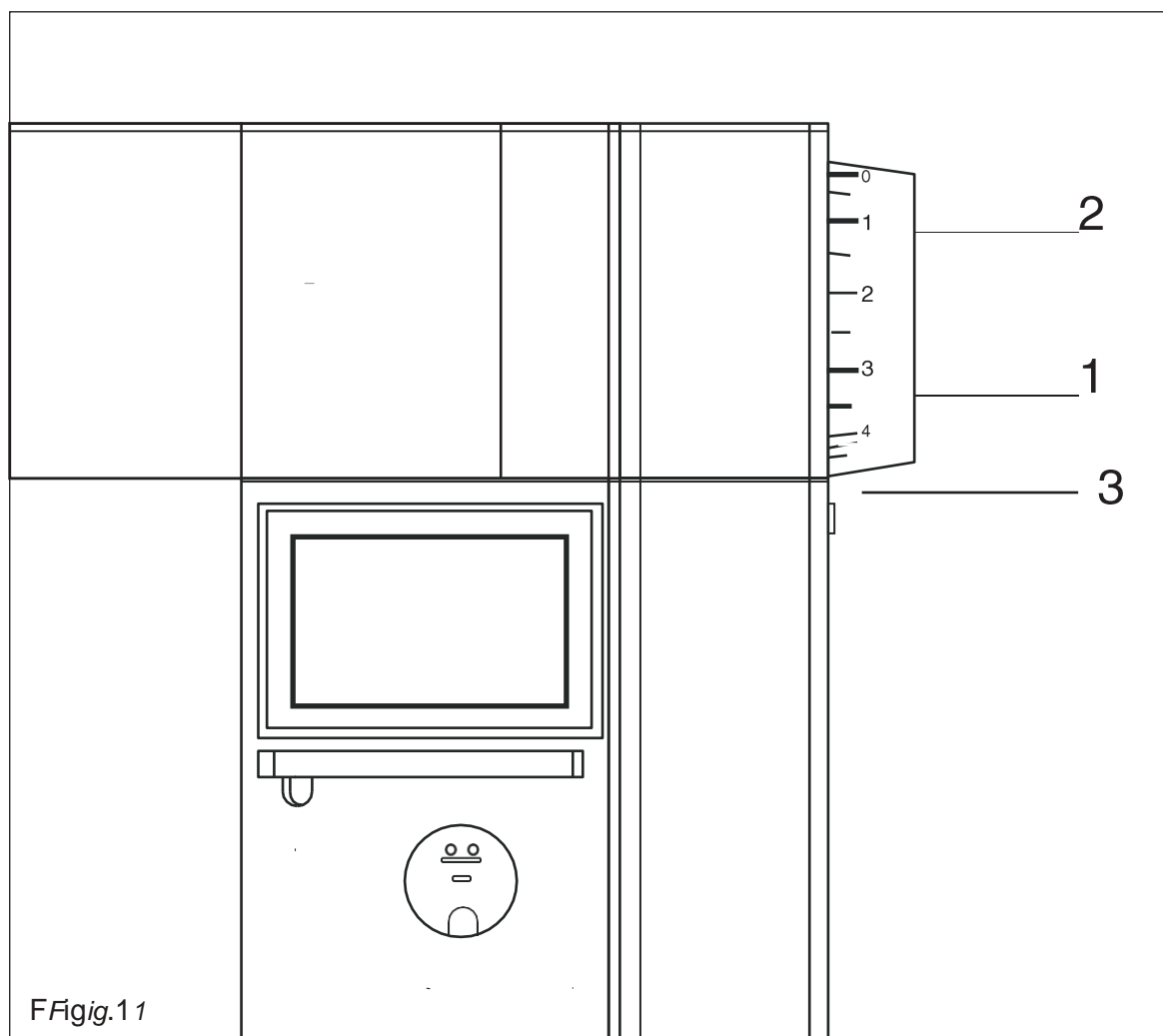


- Set the maximum length of the stitch.
- Rotate the stitch adjuster 1 (screws 2) according to the Rule.

## 12.7 Graduated ring of the stitch lengths.

### Rule

When the stitch adjuster is engaged and the maximum stitch length is set, the notch of the largest number on the graduated ring 1 must be at the lower edge 3 of the belt cover recess.



- Set the maximum length of the stitch.
- Rotate the graduated ring 1 (screws2) according to the Rule.

## 12.8 Feed wheel crank

### Rule

By setting the maximum stitch length, the draw rods 3 and 4 ( or in the CAMARB N32, the draw rod 3) must be able to move freely when the handwheel is rotated.

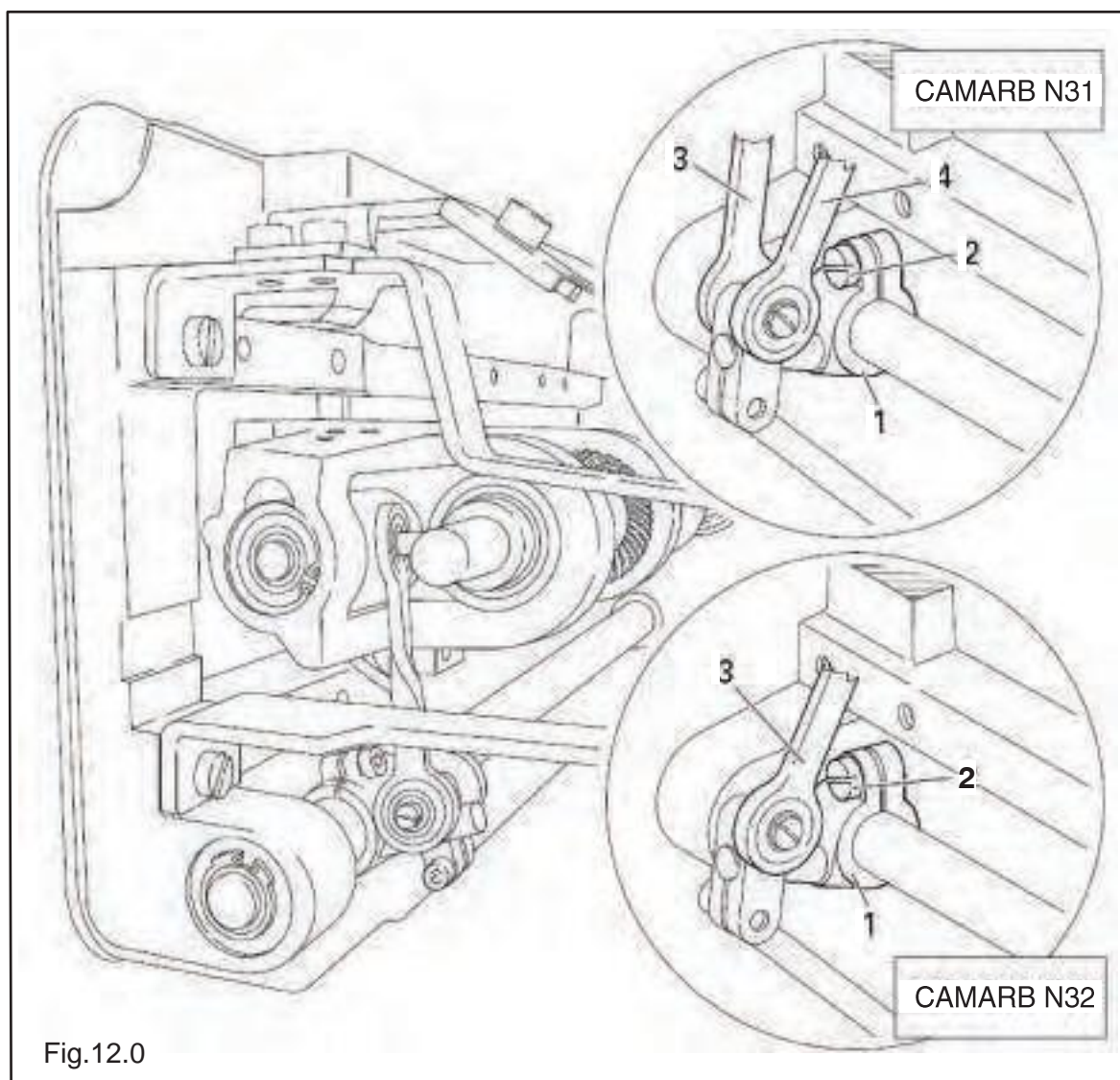
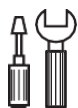


Fig.12.0



- - Set the maximum length of the stitch.
- Turn or move the handwheel 1 (screw2) according to the Rule.



## 12.9 Roller foot crank

### Rule

By setting the maximum length of the stitch, the draw rods 3 and 4 must be able to move freely in their left and right reversing stitch, when the handwheel is turned.

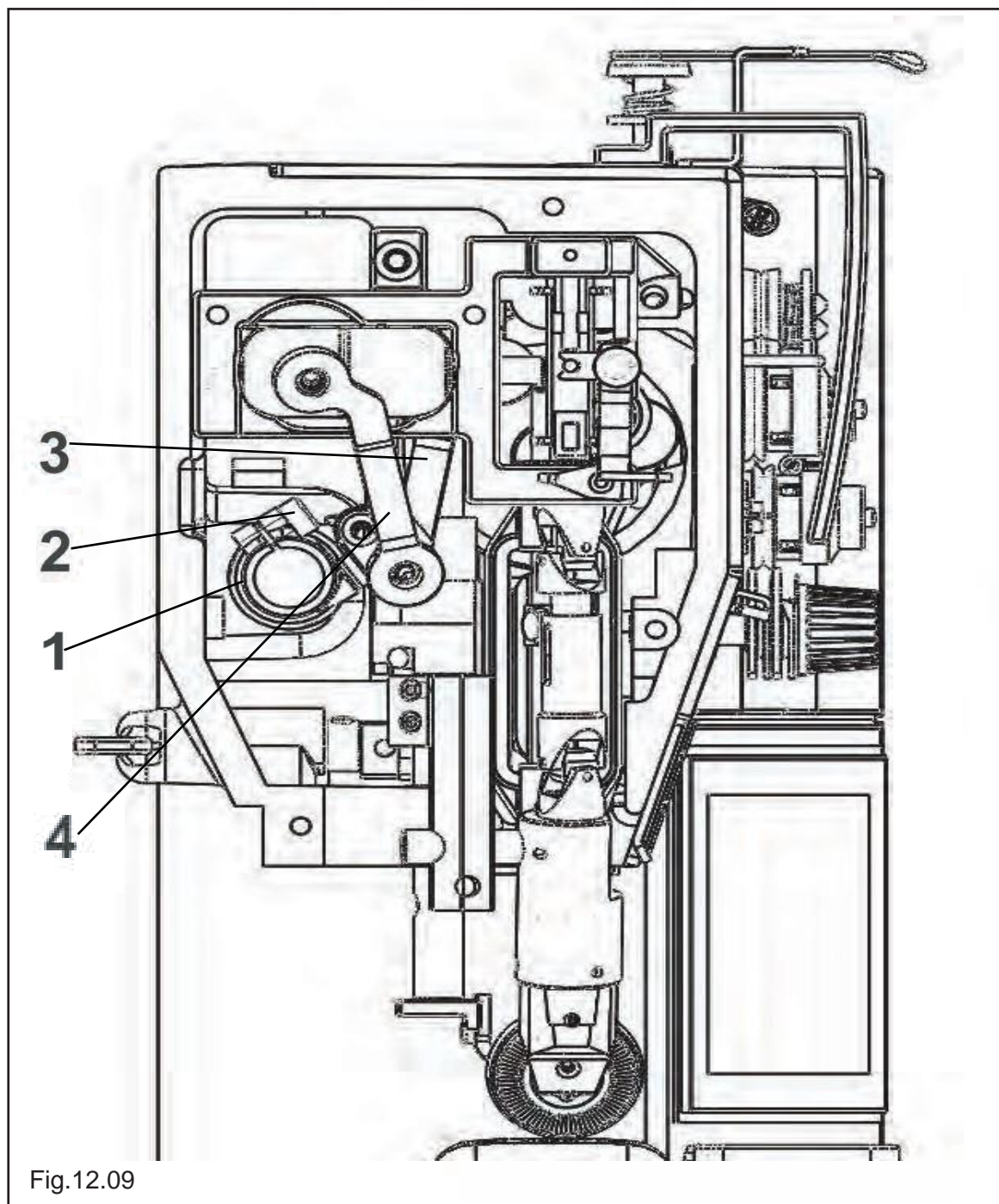
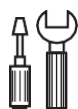


Fig.12.09

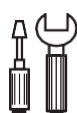
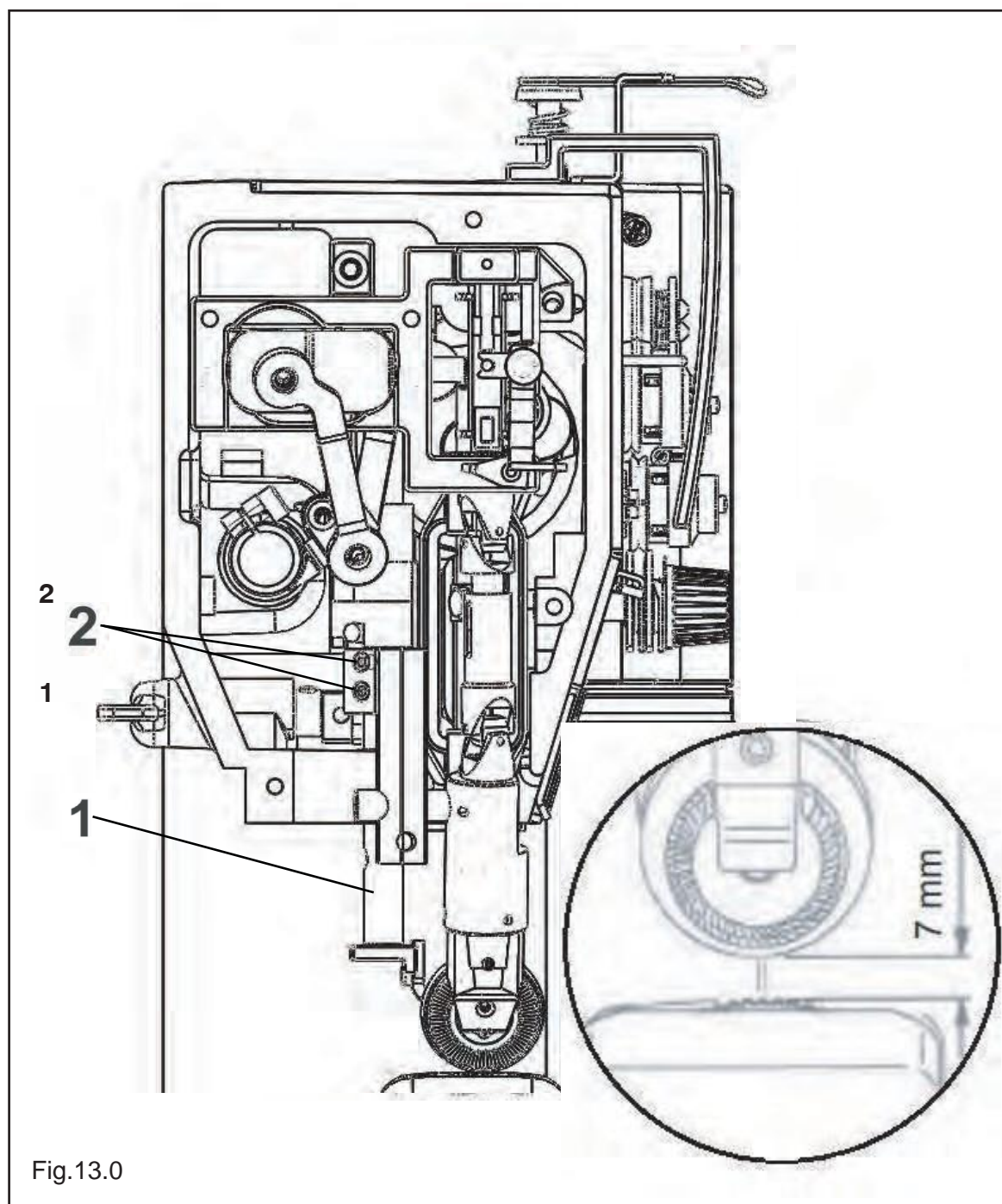


- - Set the maximum length of the stitch.
- Turn the handwheel 1 (screw 2) according to the Rule.

## 13.0 Roller foot and feed wheel

### Rule

When the roller foot is raised, the distance between the roller foot and the feeding wheel must be 7 mm.



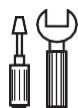
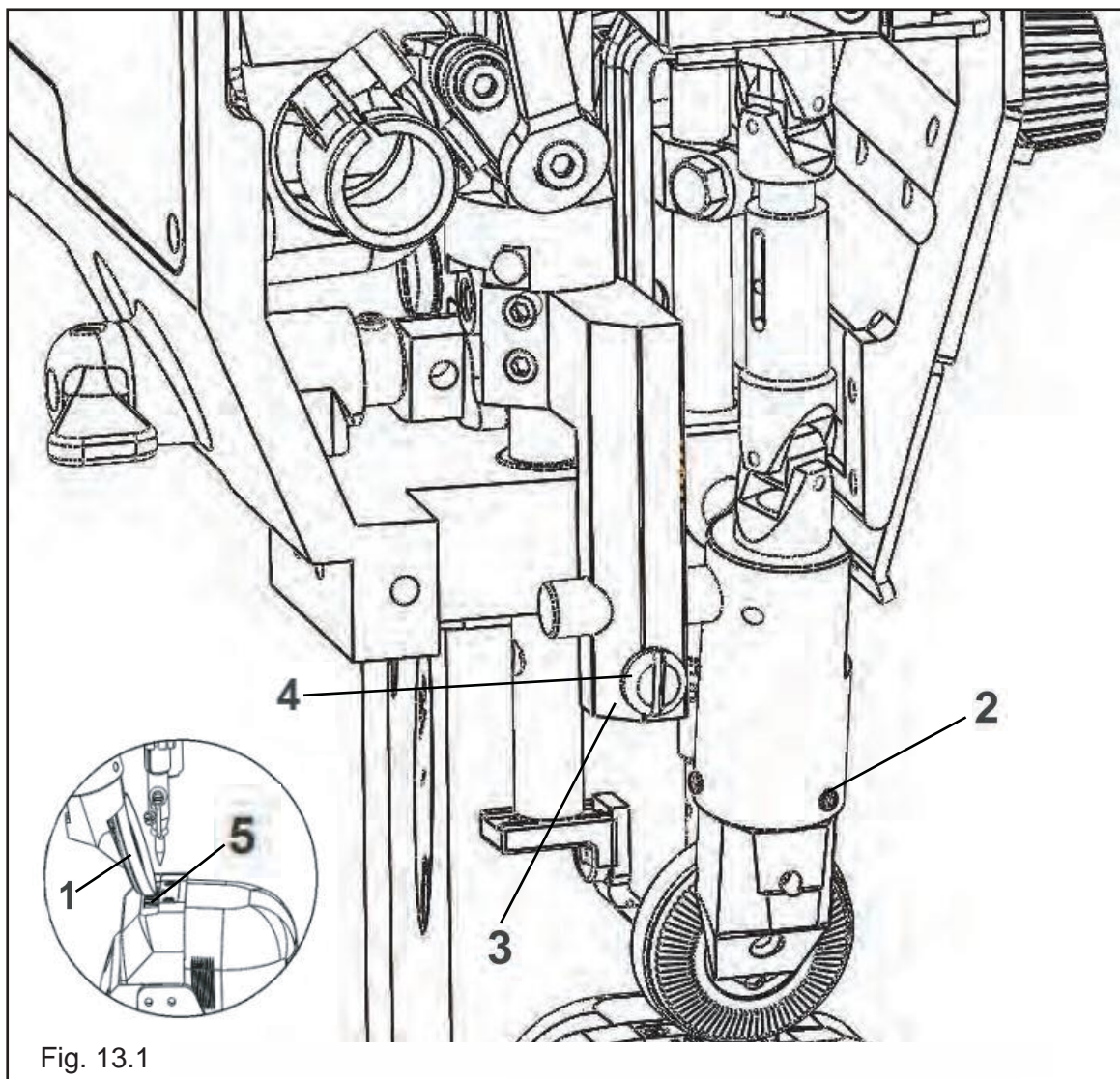
- Lift the roller foot using the manual lever.
- move the rod of the presser 1 (screws 2) according to the Rule. Make sure that the roller foot is parallel to the feed wheel.

## 13.1 Roller foot

### Rule

When the roller foot 1 rests on the feeding wheel 5; it must:

1. Be parallel to the feeding wheel 5, seen in the stitching direction;
2. Be centred in respect to the needle (in CAMARB N 32 to the left needle).
3. Be as close as possible to the needle (in CAMARB N32 to the left needle), seen transversely to the stitching direction.



- Raise the roller foot 1.
- In the following adjustments, always keep Rule 1 in mind.
- Move the roller foot 1 (screw 2) according to Rule 2.
- Place the roller foot 1 on the feeding wheel 5.
- Move the roller foot support 3 (screw 4) according to Rule 3.



In case of stitching of very tight curves, the roller foot 1 should be moved slightly towards the operator.



## 13.2 The length of the stitch in respect to its graduated scale.

### Rule

By setting the stitch length “3” and performing 11 stitches on a strip of leather, the total length from the first to the last stitch must be 30mm.

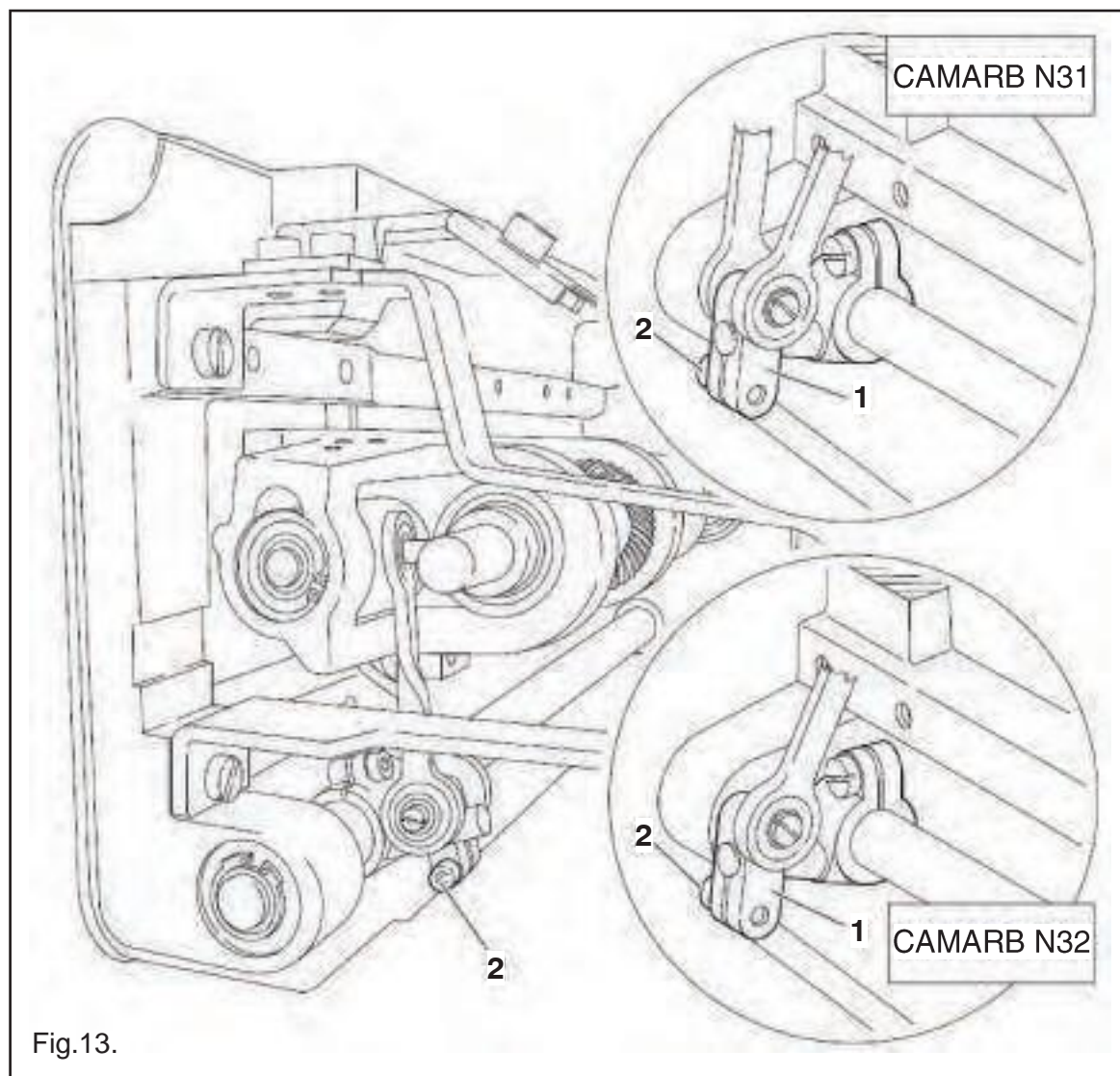
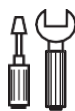


Fig.13.



- Set the stitch length “3”.
- By turning the handwheel, perform 11 stitches and measure the total length of the stitching.
- Move the stop 1 (screw 2) according to the Rule.

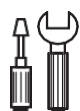
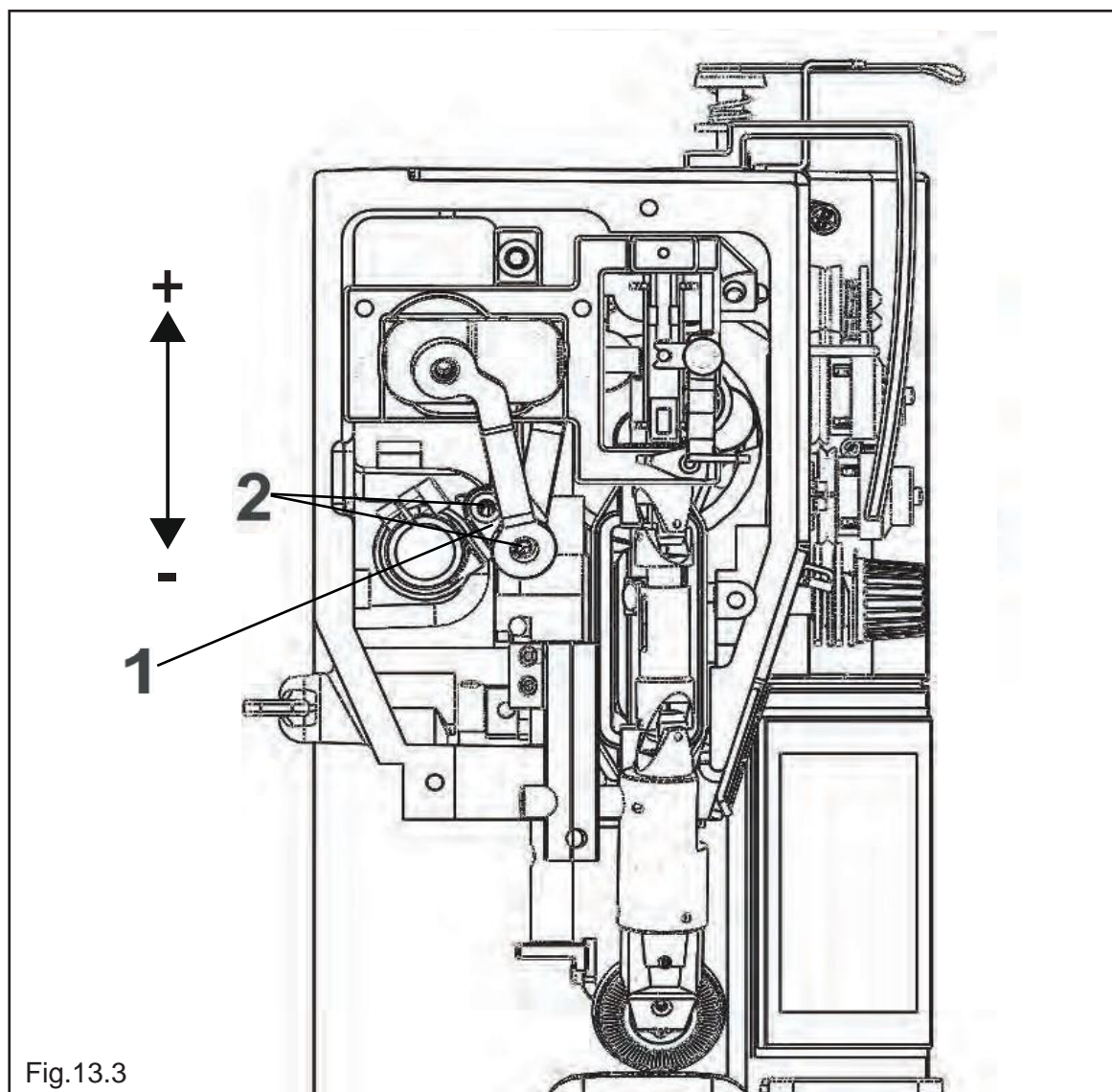


Stop 1 must not be oblique with respect to the shaft of the feeding wheel!

### 13.3 Roller foot and feed wheel synchronisation

#### Rule

After performing about 30 stitches on a strip of leather, the length of the stitching from the first to the last stitch must be equal in both the upper and lower strip of leather.



Set the stitch length to "3".

- By turning the handwheel, perform about 30 stitches.
- Check the total length of the stitching, both on the upper and on the lower strip of leather.
- Move the stop 1 (screw 2) according to the Rule.



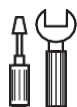
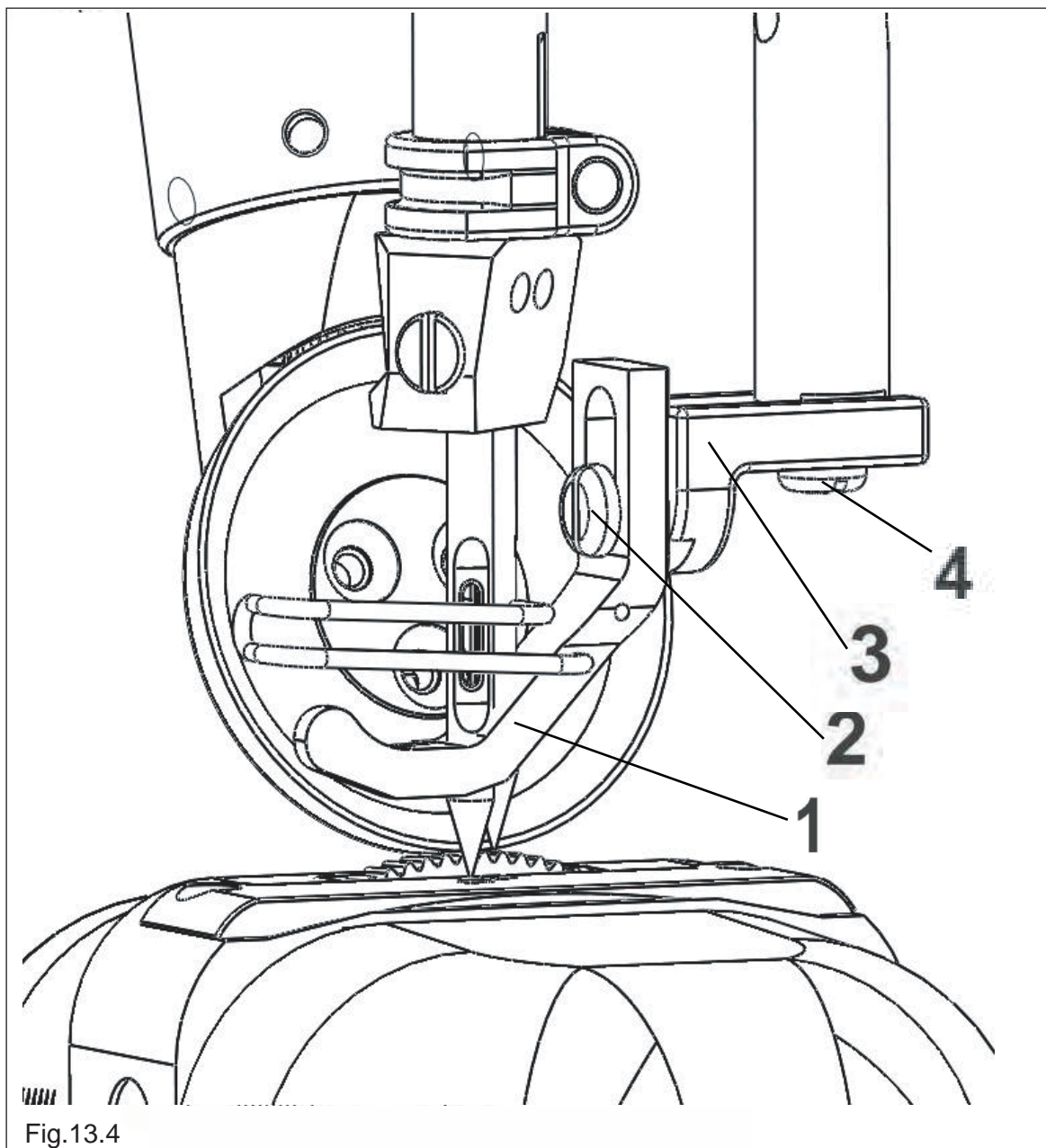
Stop 1 must not be oblique with respect to the shaft of the feeding wheel!

## 13.4 Presser foot (CAMARB N32)

### Rule

The fabric presser 1 must:

1. Be as close as possible to the needle, seen in the stitching direction.
2. Be centred with respect to the needle, seen transversely with respect to the stitching direction.
3. When the roller foot is rested, the distance between the presser 1 and the material to be stitched must be 0.2-0.3 mm.



- Move the presser 1 (screw 2) according to Rule 3.
- Move the relative support 3 (screw 4) according to Rules 1 and 2.

## 13.5 Free hand system

### Rule

1. The lever must still have a certain play before lifting the roller foot.
2. When the knee lever is actuated up to the stop, the roller foot lever should move down automatically.
3. The rod 5 of the free hand system lever must have an angle of approximately  $75^\circ$  with respect to the base plate.

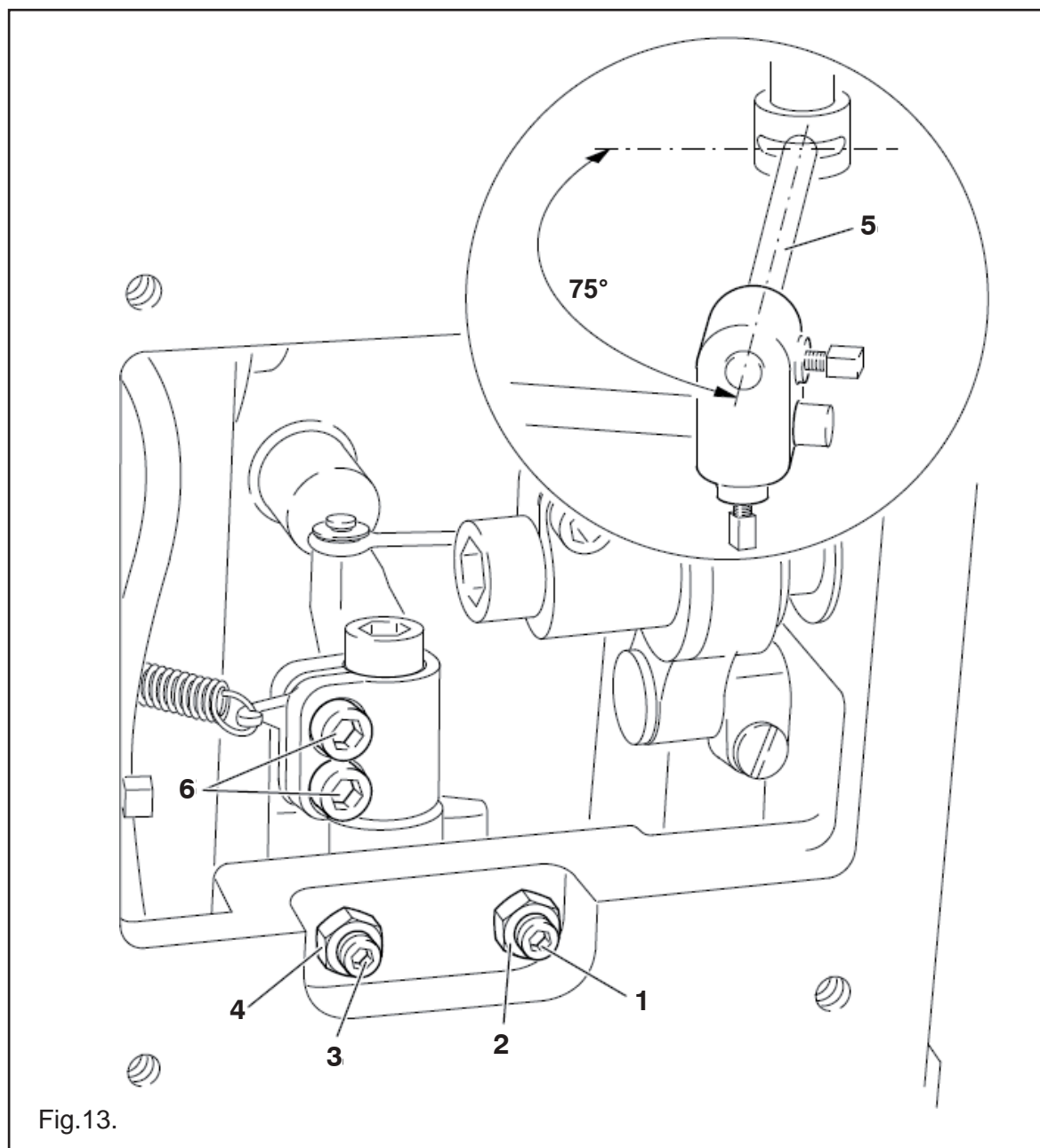
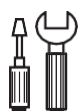


Fig.13.



- Screw or unscrew screw 1 (nut 2) according to Rule 1.
- Screw or unscrew screw 3 (nut 4) according to Rule 2.
- Adjust rod 5 (screws 6) according to Rule 3.



## 13.6 Loosening the upper thread tension

### Rule

1. With the manual lever raised, the tension discs 3 must have a mutual distance of at least 0.5 mm.
2. By lowering the roller foot, the tension must act completely.

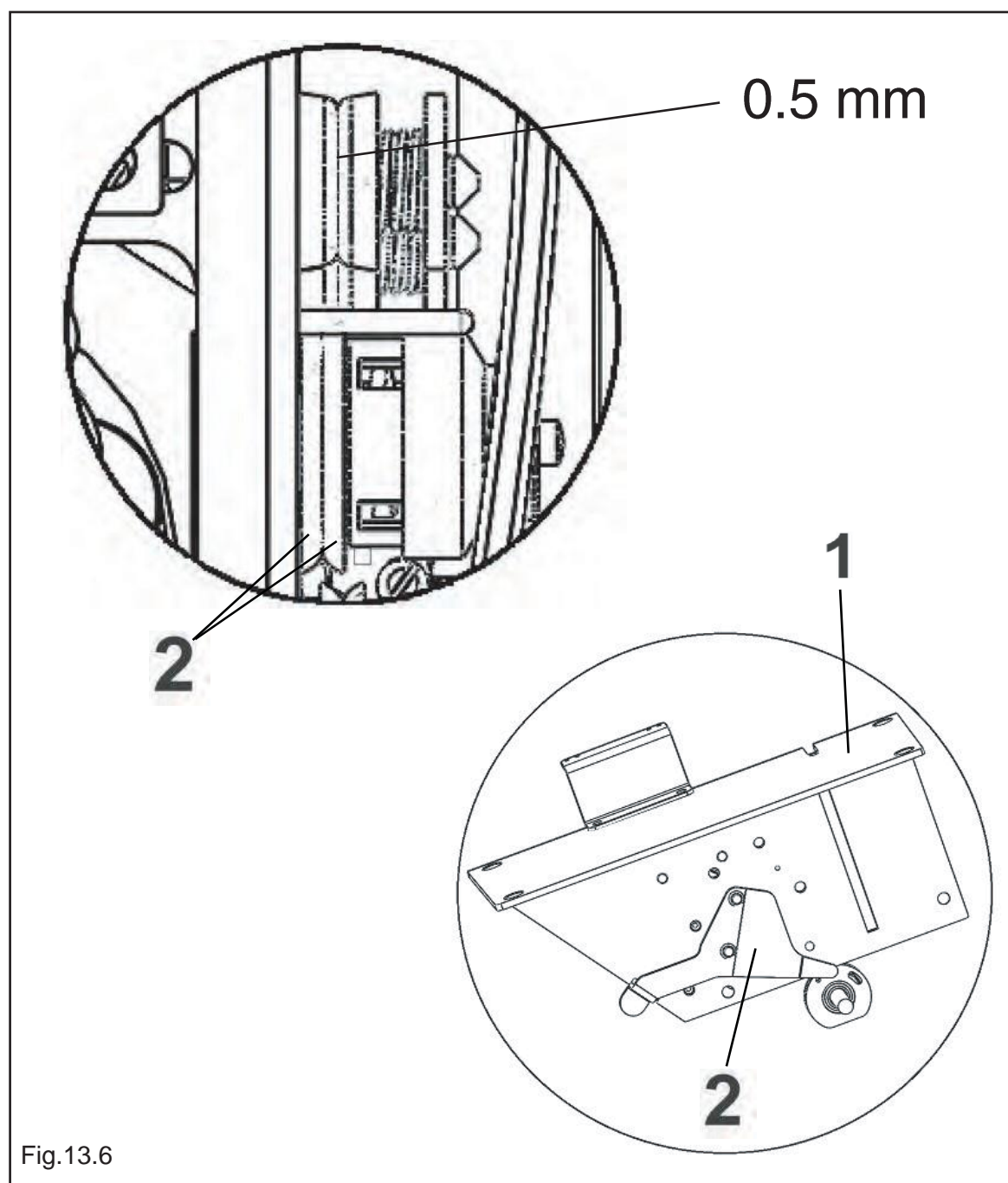
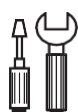


Fig.13.6



- Unscrew the tension adjuster support plate 1 and adjust the tension disc 2 according to the Rule.

## 13.7 Thread take-up spring (CAMARB N31)

### Rule

1. The movement of the thread take-up spring 7 must end when the needle tip penetrates the material (spring stroke about 7mm).
2. When the thread is pulled around the hook and the maximum loop is formed, the thread take-up spring 7 must lift slightly from the support surface 1.

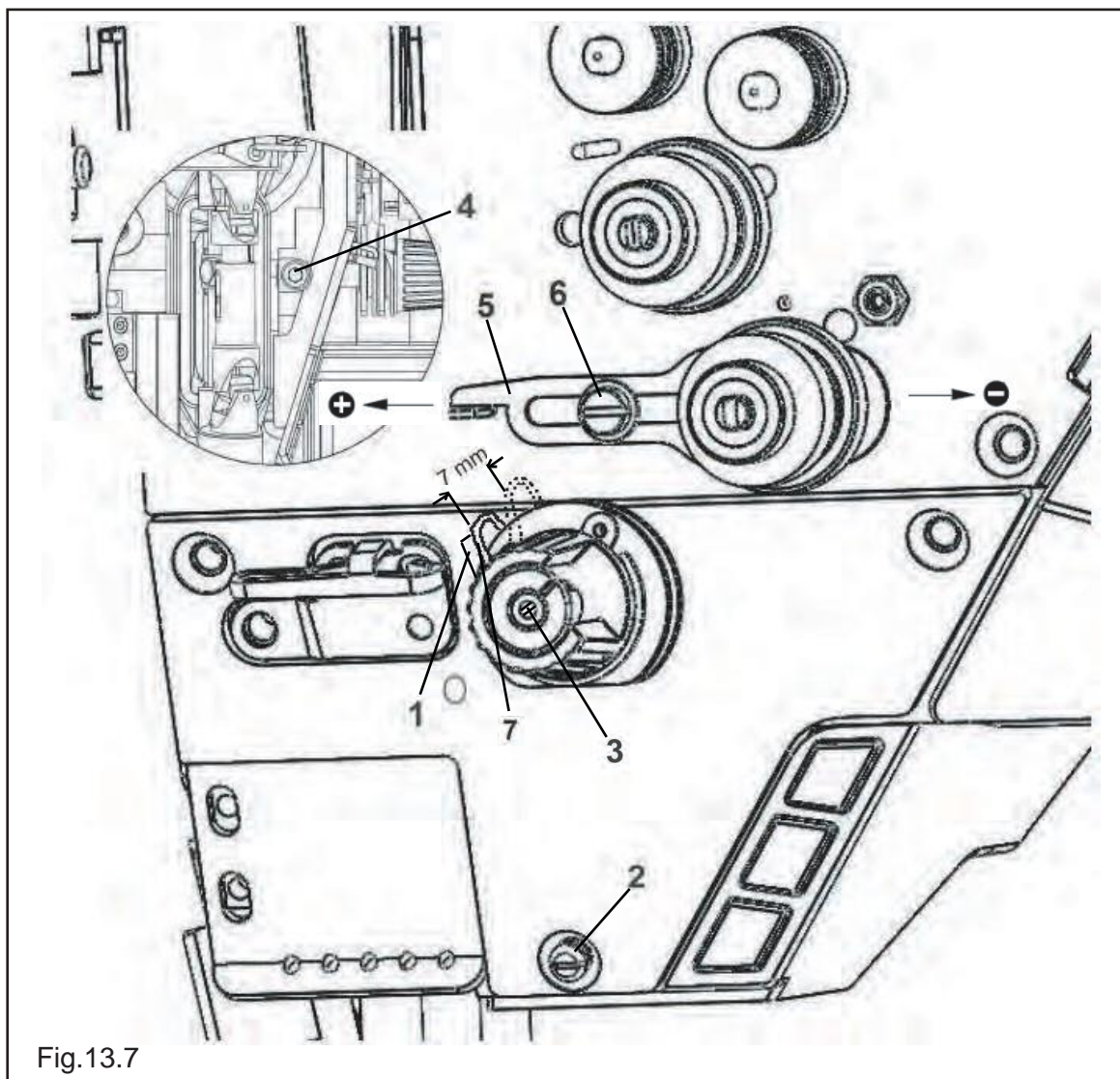
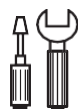


Fig.13.7



- Move the support 1 (screw 2) according to Rule 1.
- To adjust the spring force, turn screw 3 (screw 4).
- Move the thread adjuster 5 (screw 6) according to Rule 2.



For technical sewing reasons it may be necessary to set and/or a spring force different from that indicated.  
Move the thread adjuster 5 (screw 6) towards "+" (= more thread) or "-" (= less thread).

## 13.8 Thread take-up spring (CAMARB N32)

### Rule

1. The movement of the thread take-up springs 3 and 6 must end when the needle tips penetrate the material (spring stroke about 7mm).
2. At the formation of the maximum loops during the conduction of the thread around the crochet hook, the thread take-up springs 3 and 6 must lift slightly from the resting surfaces 1 and 9.

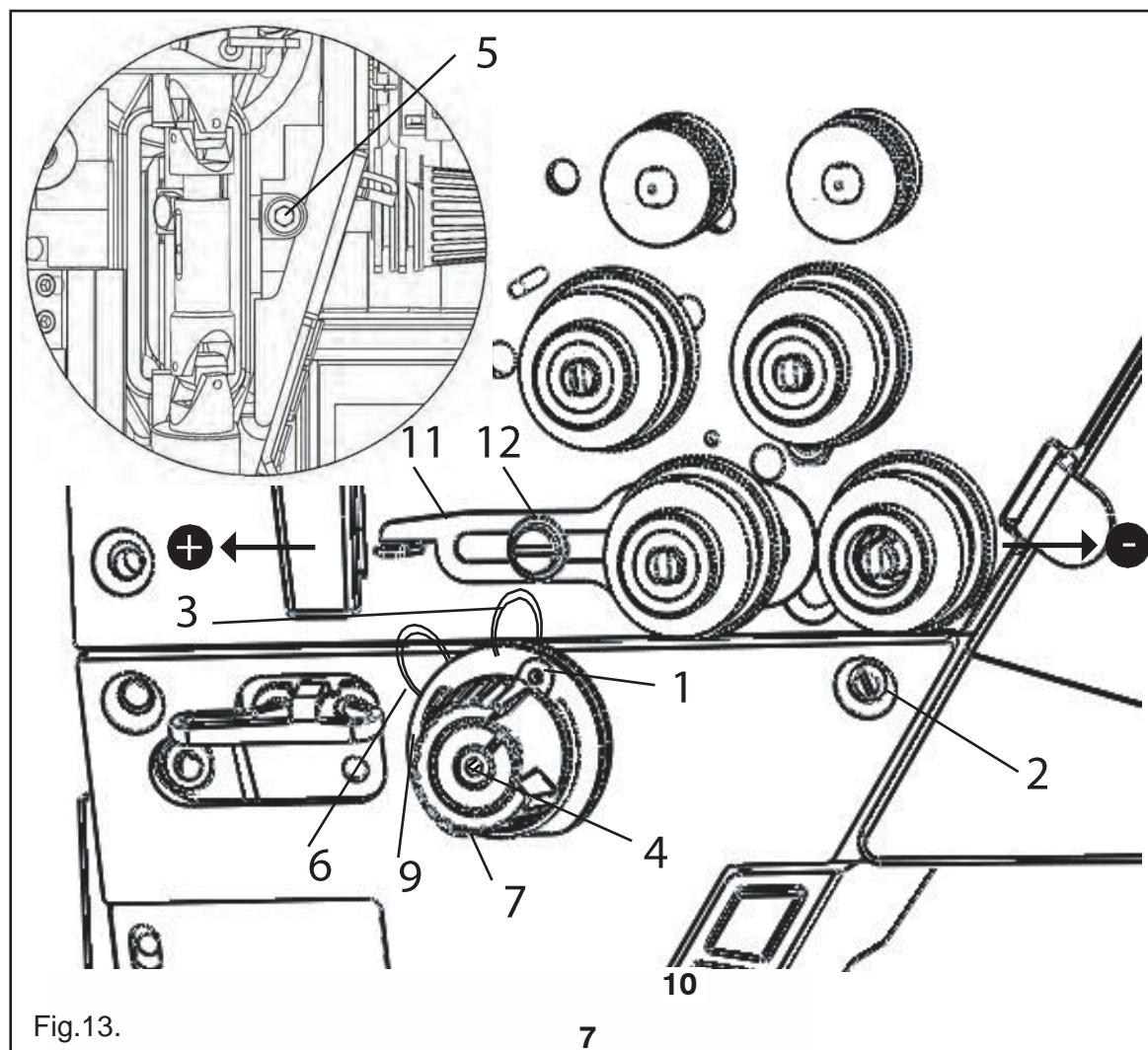
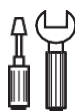


Fig.13.



- Move the support 1 (screw 2) according to Rule 1.
- To adjust the force of the thread take-up spring 3, turn the screw 4 (screw 5).
- Turn the bush 7 (screw 8) to adjust the tension of the thread take-up spring 6.
- Move the support 9 (screw 10) according to Rule 1. (if the adjustment stroke is too small, the support 9 can be screwed into another hole).
- Move the thread adjuster 11 (screw 12) according to Rule 2.

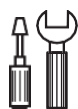
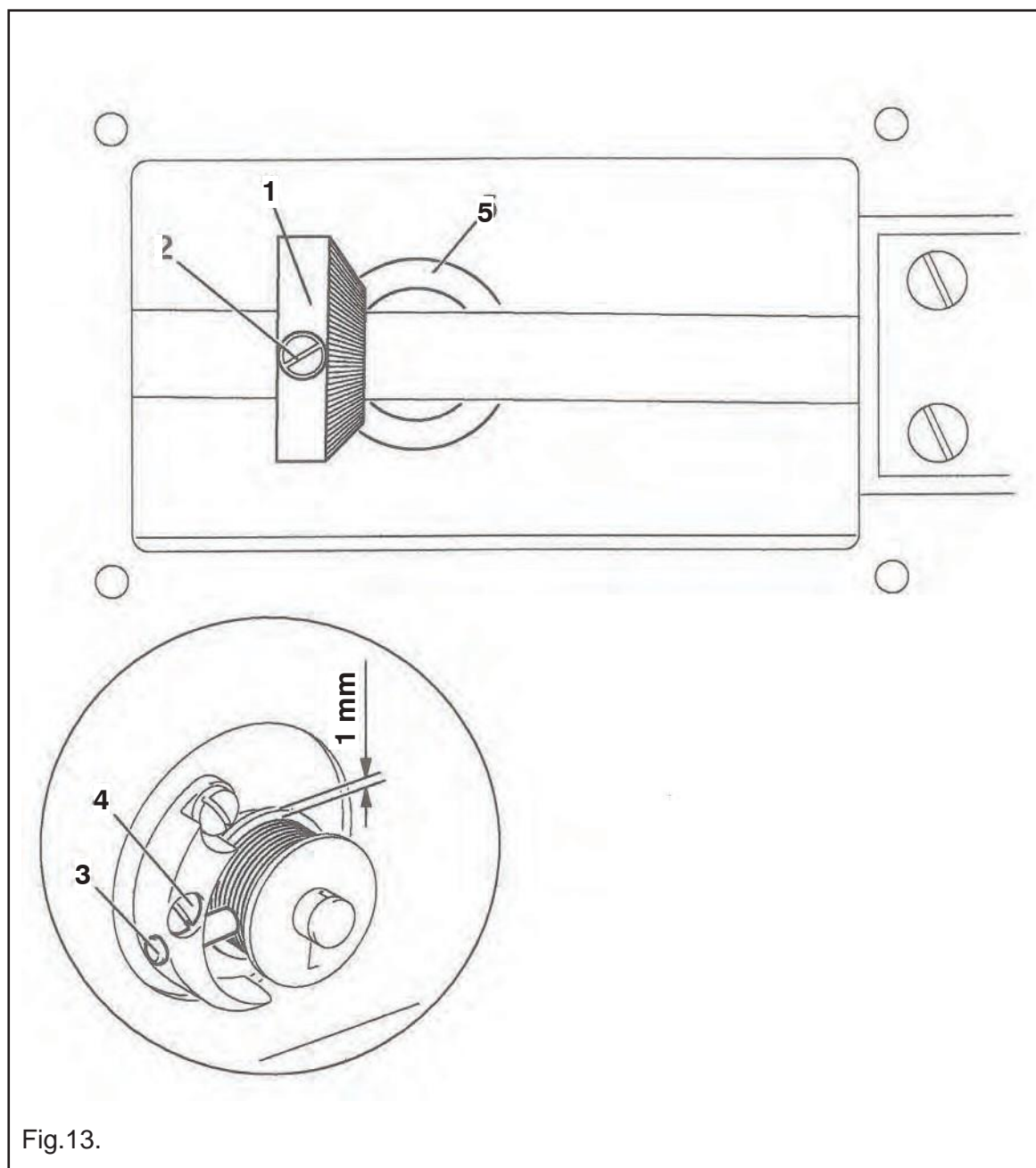


For technical sewing reasons it may be necessary to set a stroke and/or a spring force different from that indicated.  
 Move thread adjuster 11 (screw 12) to "+" (= more thread) or "-" (= less thread).

## 13.9 Bobbin winder

### Rule

1. When the bobbin winder is engaged, the bobbin spindle must be pulled.  
When the bobbin winder is disabled, the friction wheel 5 on the drive wheel 1 should not start.
2. The bobbin winder must be switched off automatically, when the bobbin is filled up to 1mm from the edge of the bobbin.



- Move the drive wheel 1 (screws 2) according to Rule 1.
- Move pin 3 (screw 4) according to Rule 2.



## 14 Roller foot pressure

### Rule

The material must be fed perfectly. There should be no pressure points on the material.

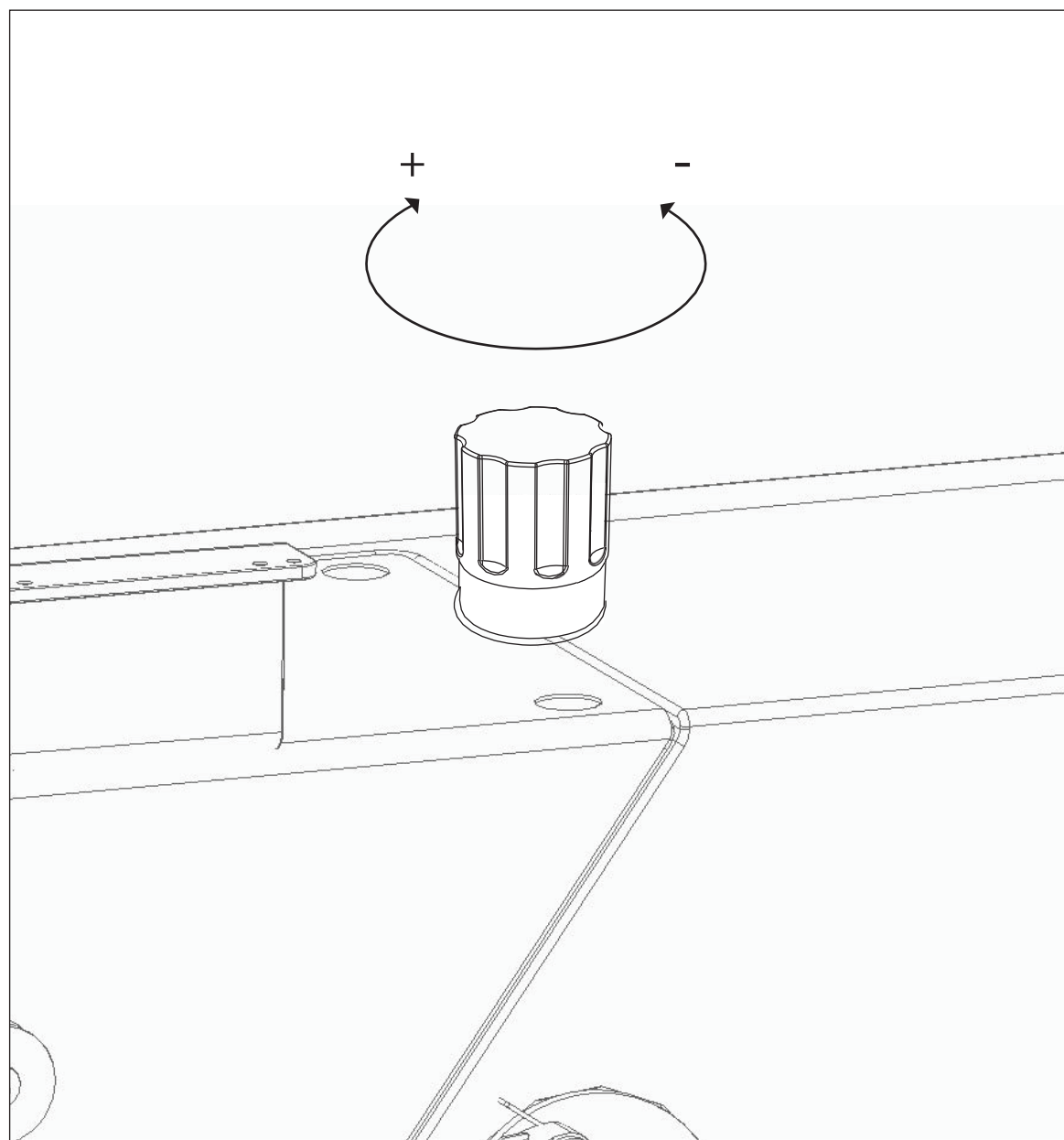


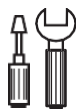
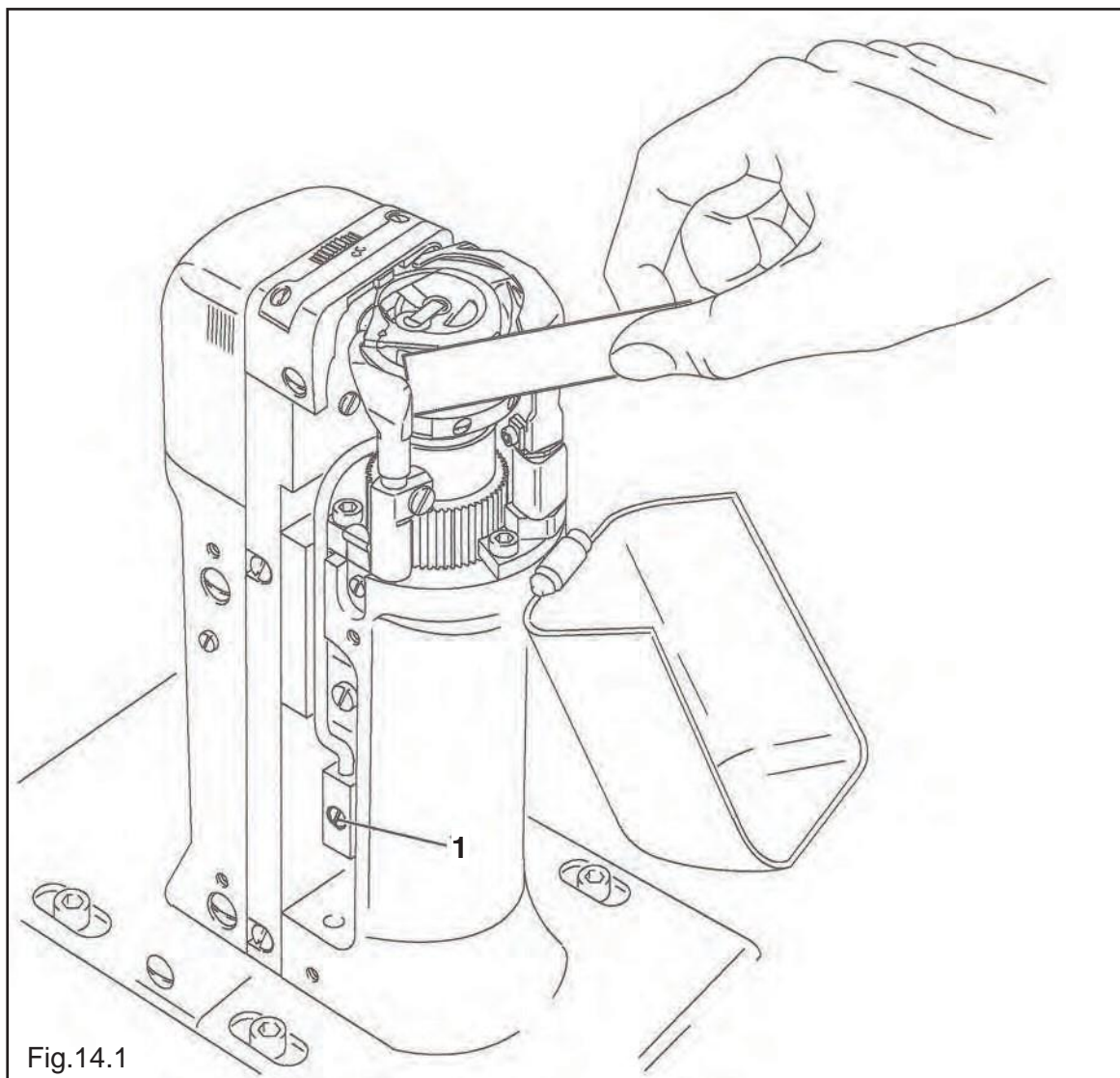
Fig.14.0

- Adjust the pressure of the roller foot on screw 1 according to the Rule.

## 14.1 Lubrication

### Rule

After 10 seconds of operation, a thin layer of oil must be deposited on a strip of paper held next to the crochet hook.



- Check that the machine is full of oil and the oil lines are free of air.
- Run the machine for 2-3 minutes.



Do not touch the needle and crochet hook area when the machine is running! Risk of injury due to moving parts!

- While the machine is running place a paper strip close to the crochet hook and check the Rule.
- If necessary, adjust the amount of oil conveyed using screw 1 .

## 14.2 Reinsertion of the friction clutch



Clutch 1 is factory adjusted. In case of thread winding, clutch 1 disengages to prevent damage to the crochet hook. The engagement of clutch 1 is described below.

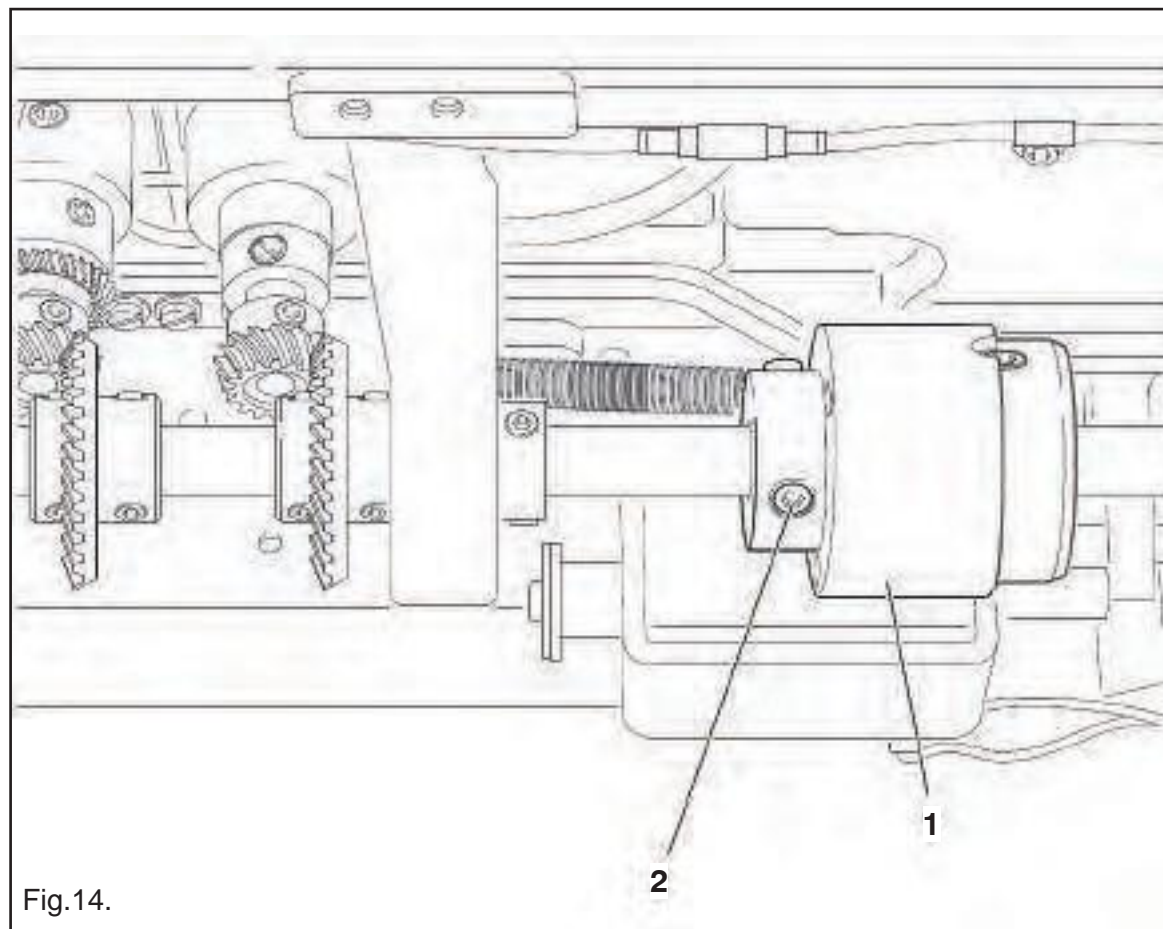
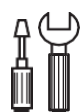


Fig.14.



- Remove the thread winding.
- Hold the clutch 1 on the screw 2 and rotate the handwheel until the clutch 1 disengages.

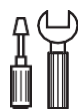
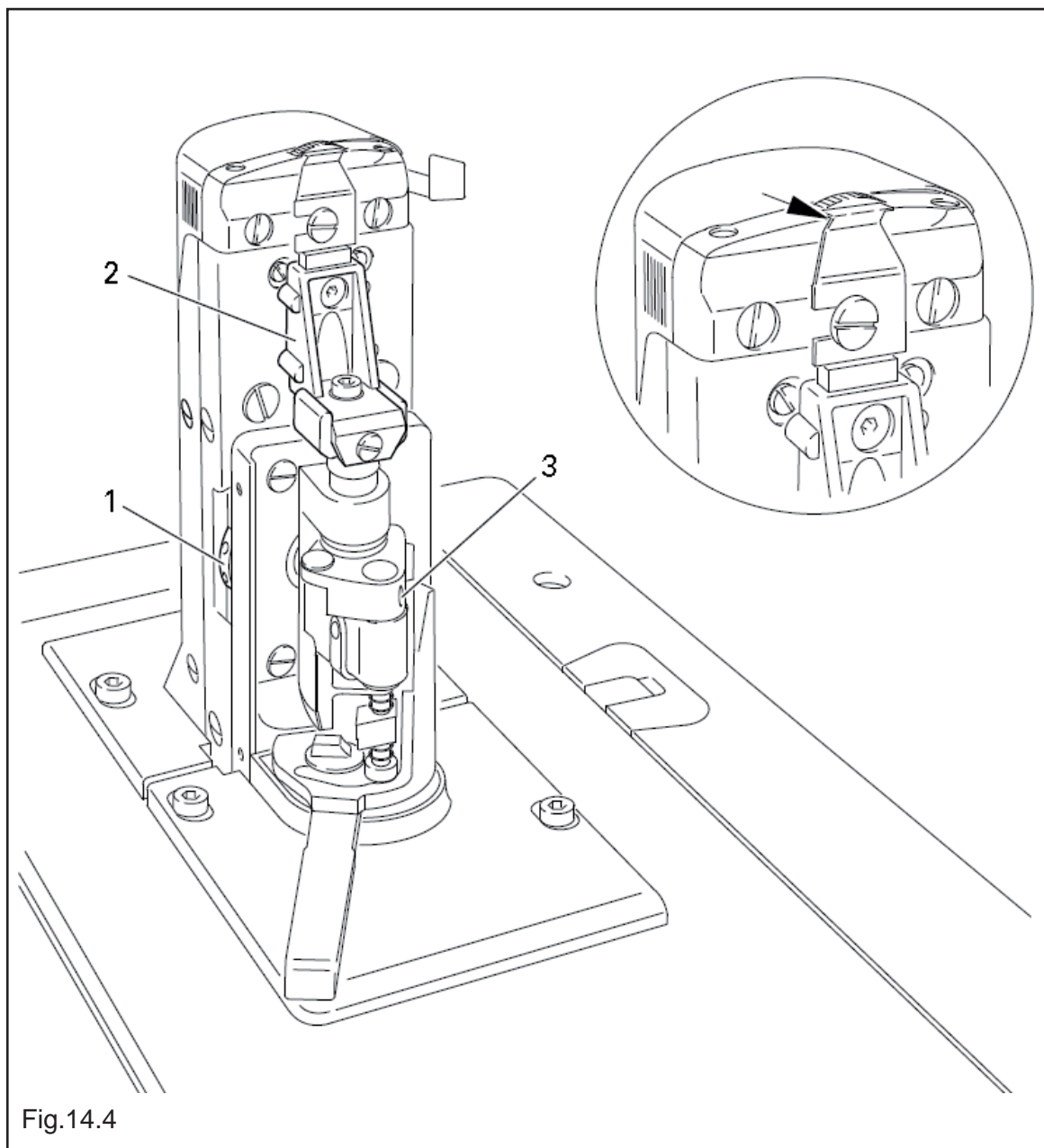
### 14.3 Adjustment of the CUC selvedge cutting system

#### 14.4 Position of the blade holder in the CAMARB N33E

##### Rule

When the selvedge cutting device is inserted and the wheel 1 is turned until the upper stop:

1. Blade holder 2 must be parallel to the post.
2. The top edge of the needle plate should be at the centre of the blade angle.



- Turn the wheel 1 to the top stop and turn on the selvedge cutting device.
- Move the blade holder 2 (screw 3) according to the **Rules**.

## 14.5 Blade stroke in CAMARB N33E

### Rule

To achieve optimum fit to all materials used, the blade stroke can be adjusted within the range of 1.0 to 3.5mm.

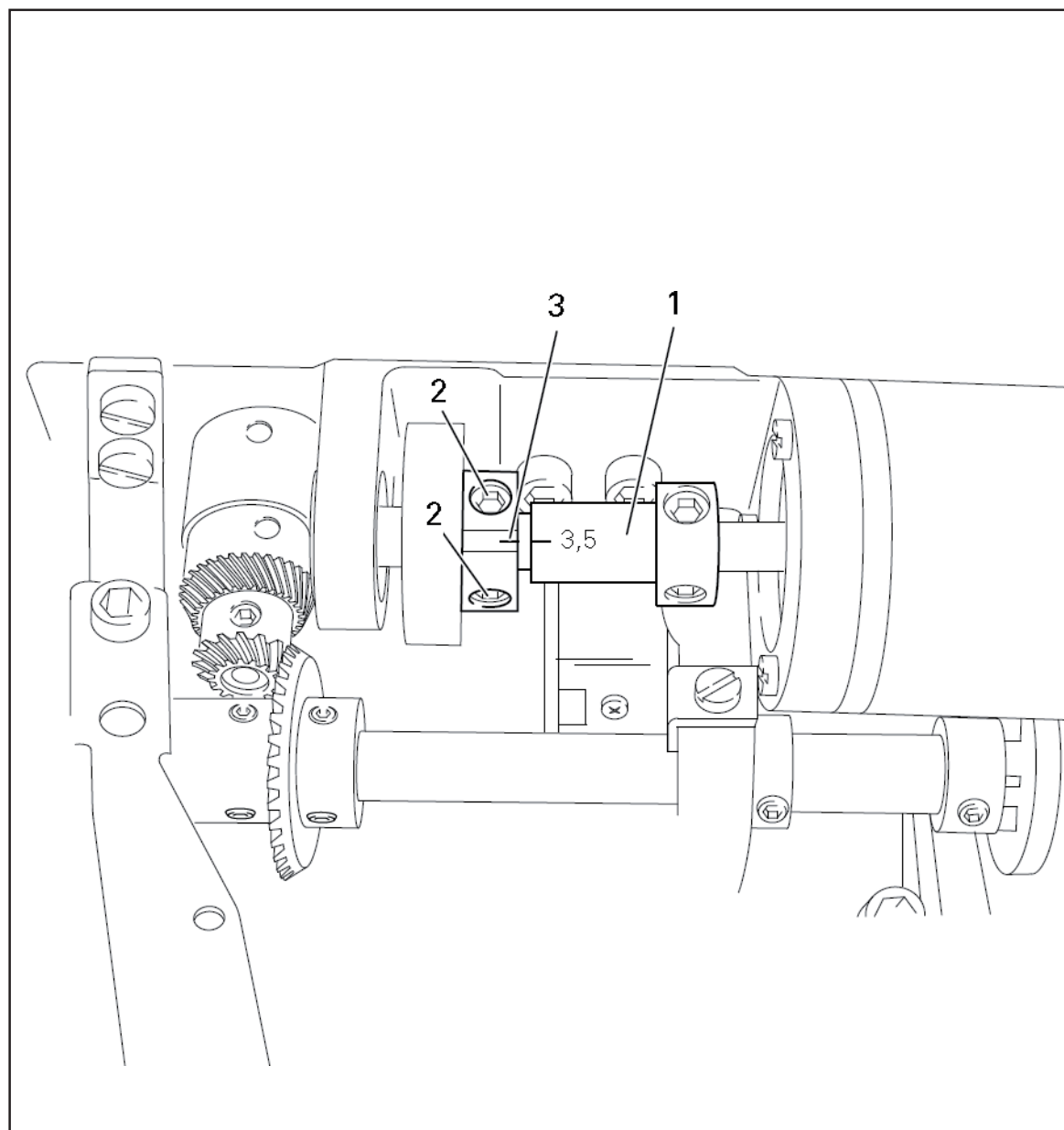
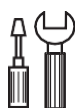


Fig.14.5



- Rotate the eccentric 1 (screws 2) in such a way that the notch of the desired cutting stroke is in correspondence with the notch on the fixing ring 3.

## 14.6 Blade movement in Camarb N33E.

### Rule

With the selvedge cutting device inserted and the needle inserted into the hole of the plate, by rotating the drive shaft manually, the movement of the blade 1 must be half in front and half behind the needle.

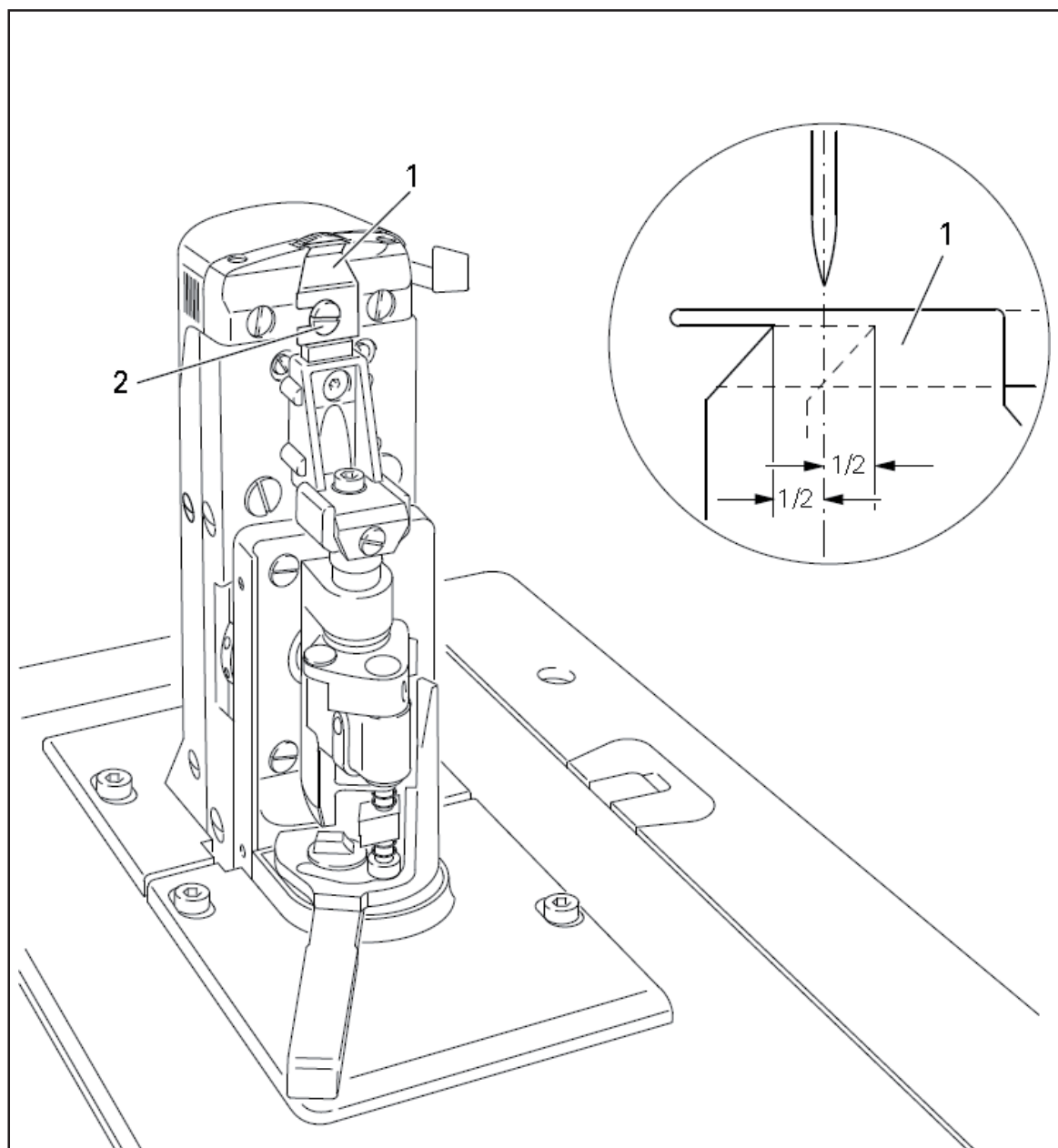
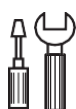


Fig.14.6

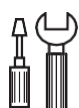
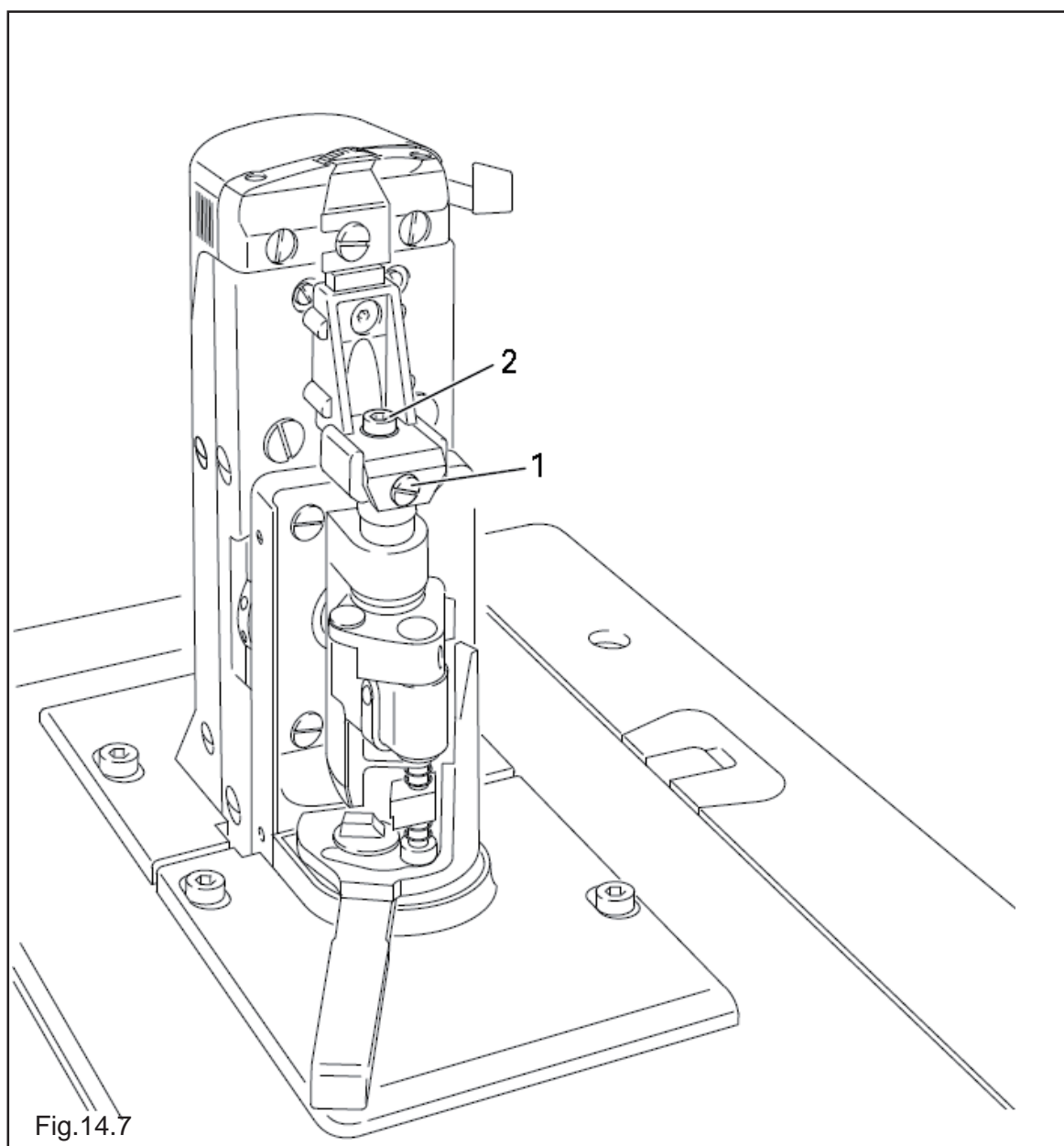


- Turn off the machine and insert the selvedge cutting device.
- Move the blade 1 (screw 2) according to the Rule.

## 14.7 Blade position.

### Rule

With the selvedge cutting device inserted, the blade should be slightly near to the needle plate and no whistling should occur during cutting.



- Turn screw 1 (screw 2) according to the Rule.
- Perform a cutting test, if necessary repeat the adjustment.

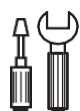
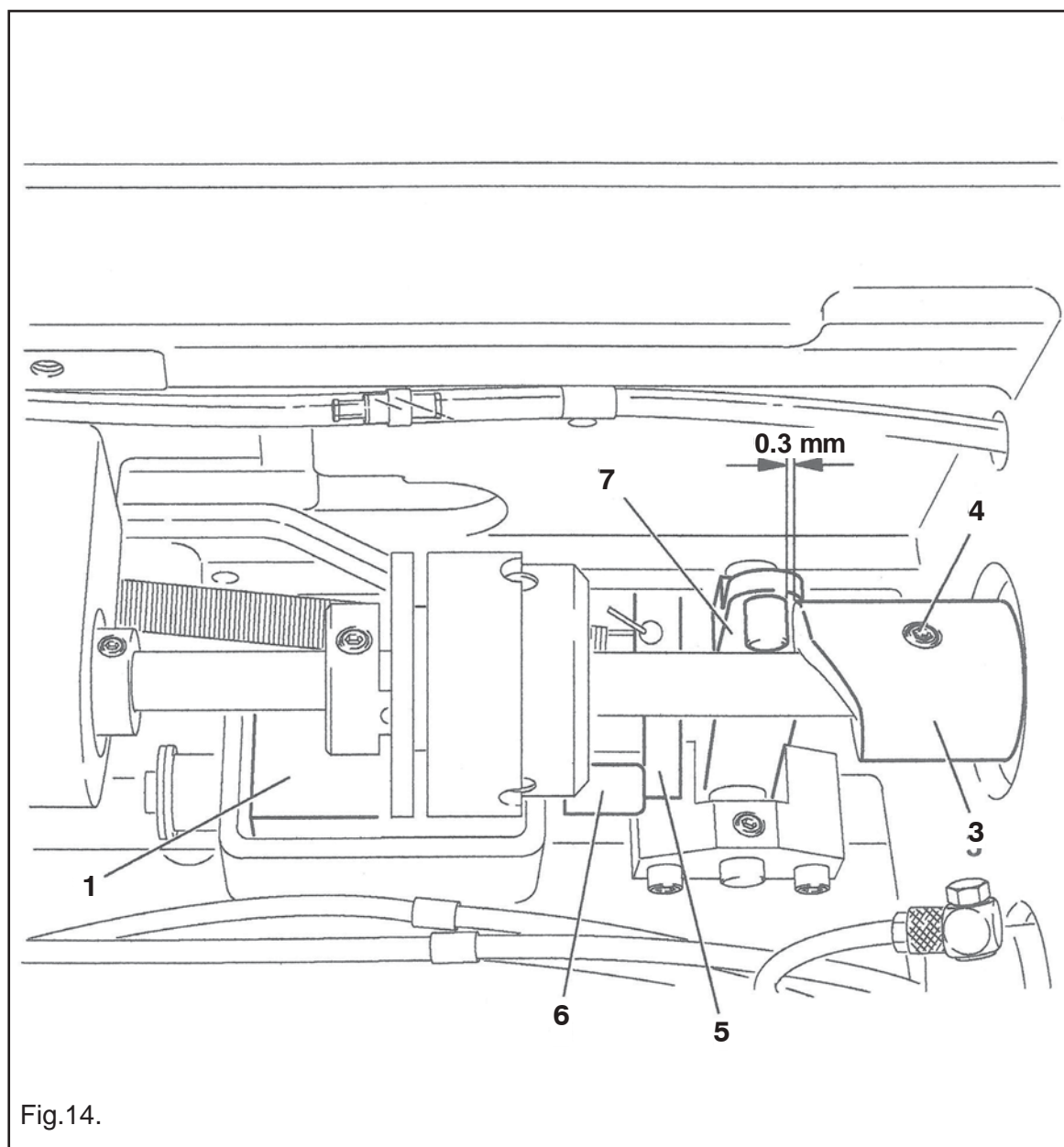


## 14.8 Adjusting the thread trimmer device

### 14.9 Roller lever rest position/cam radial position

#### Rule

1. In the rest position of the thread trimmer device, lever 5 must be adjacent to the piston 6 and the pawl of the roller lever 7 must have a distance of 0.3 mm from the cam 3.
2. At the lower dead point of the thread tensioning lever, cam 3 must have just brought the roller lever 7 to the rest position.



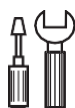
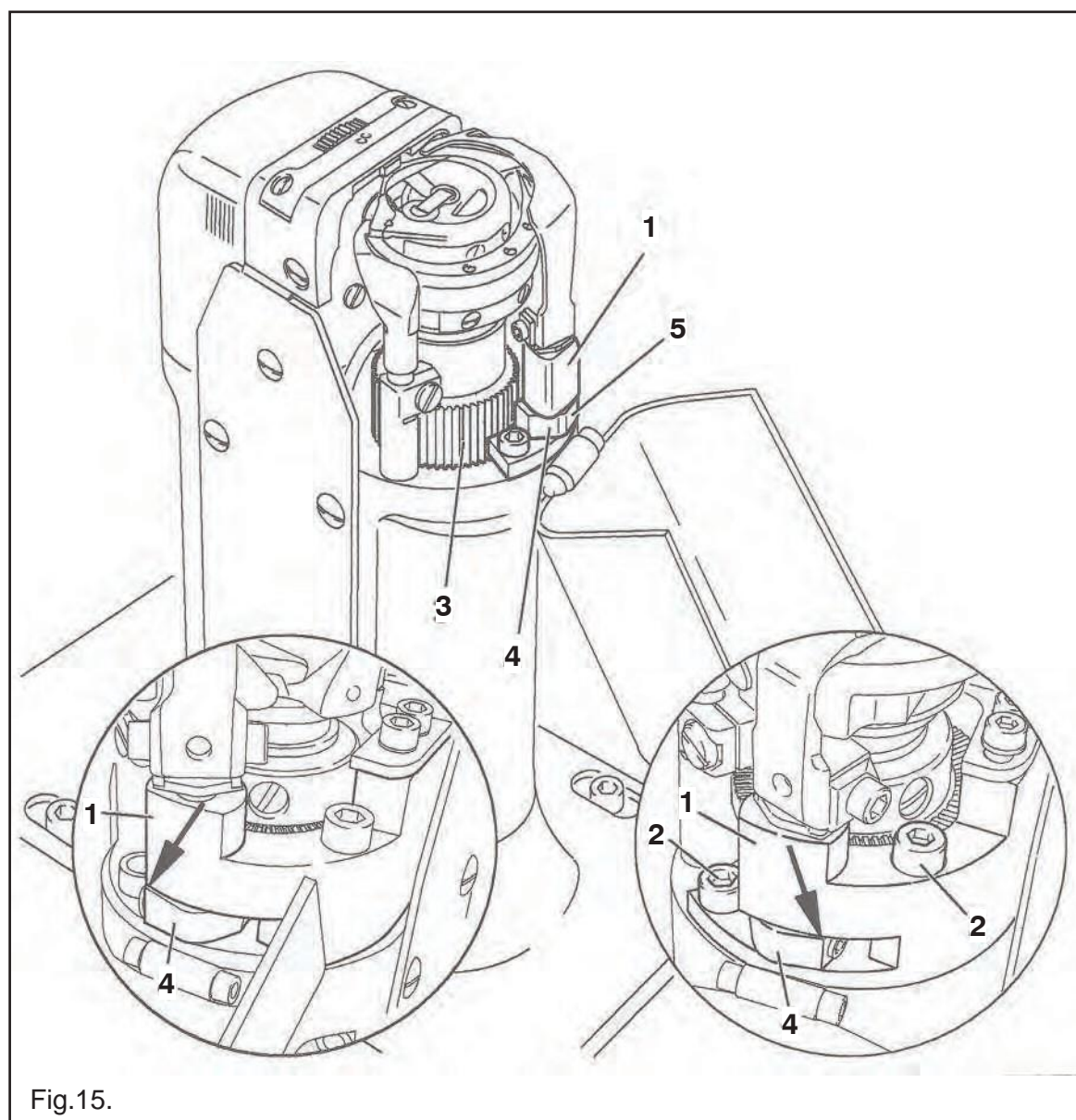
- Taking care that the piston 6 is on the left stop, move the magnet 1 (2 screws) according to Rule 1.
- Rotate cam 3 (screws 4) according to Rule 2.



## 15.0 Position of the support of the thread recovery device

### Rule

1. Between toothed wheel 3 and toothed segment 4 there must be a minimum clearance.
2. both in the rest position and in the forward point of inversion of the thread recovery device, the distance between the toothed segment 4 and the outer edge of the support of the thread recovery device 1 must be equal (see arrow).



- Adjust the support of the thread recovery device 1 (screws 2) according to the Rules.

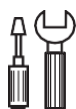
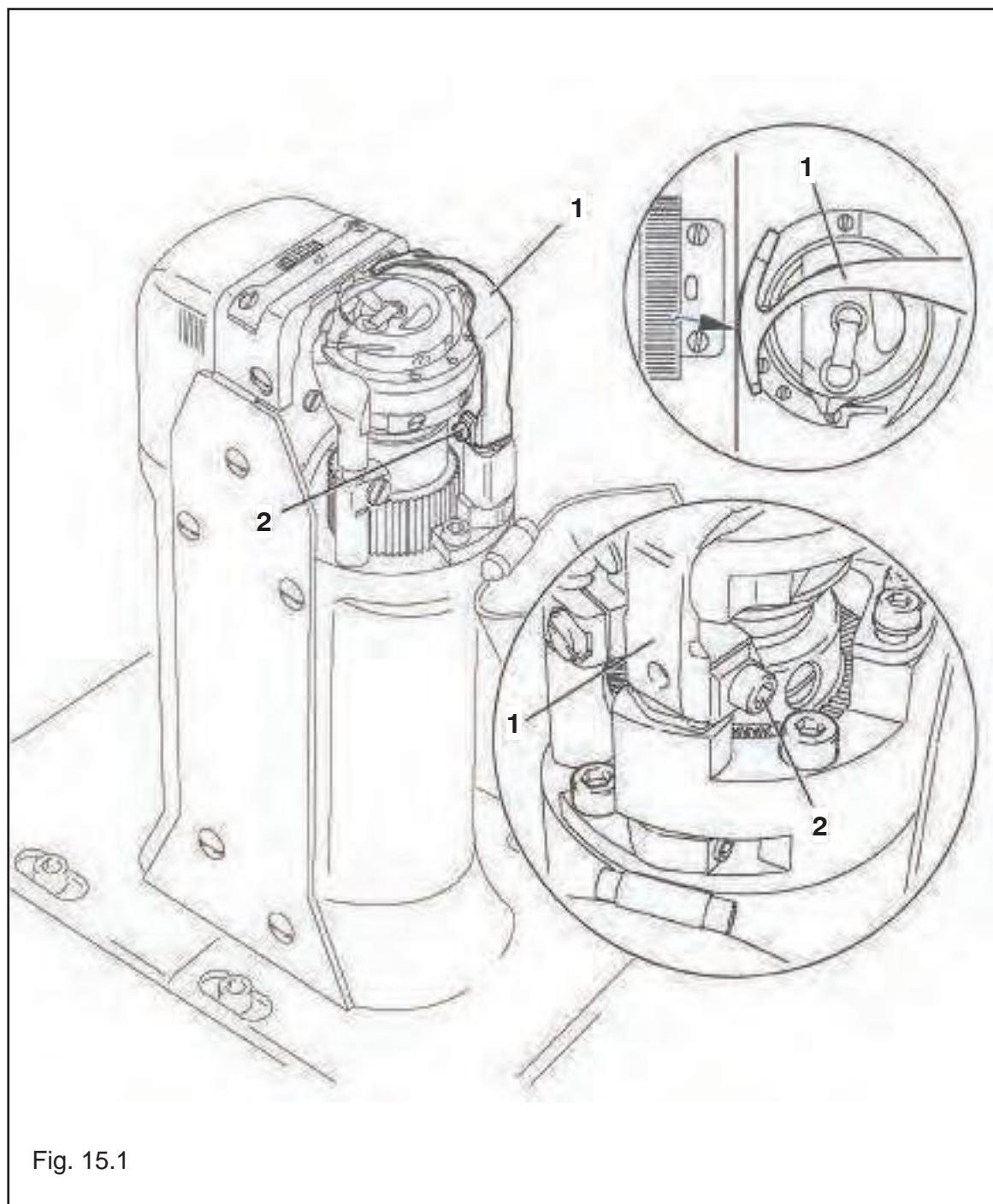


If it is not possible to reach Rule 2, loosen screw 2 and move the toothed segment 4 by a tooth.

## 15.1 Distance between thread recovery device and needle plate.

### Rule

The thread recovery device 1 must not exceed in its oscillatory movement the edge of the needle plate (see arrow).

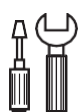
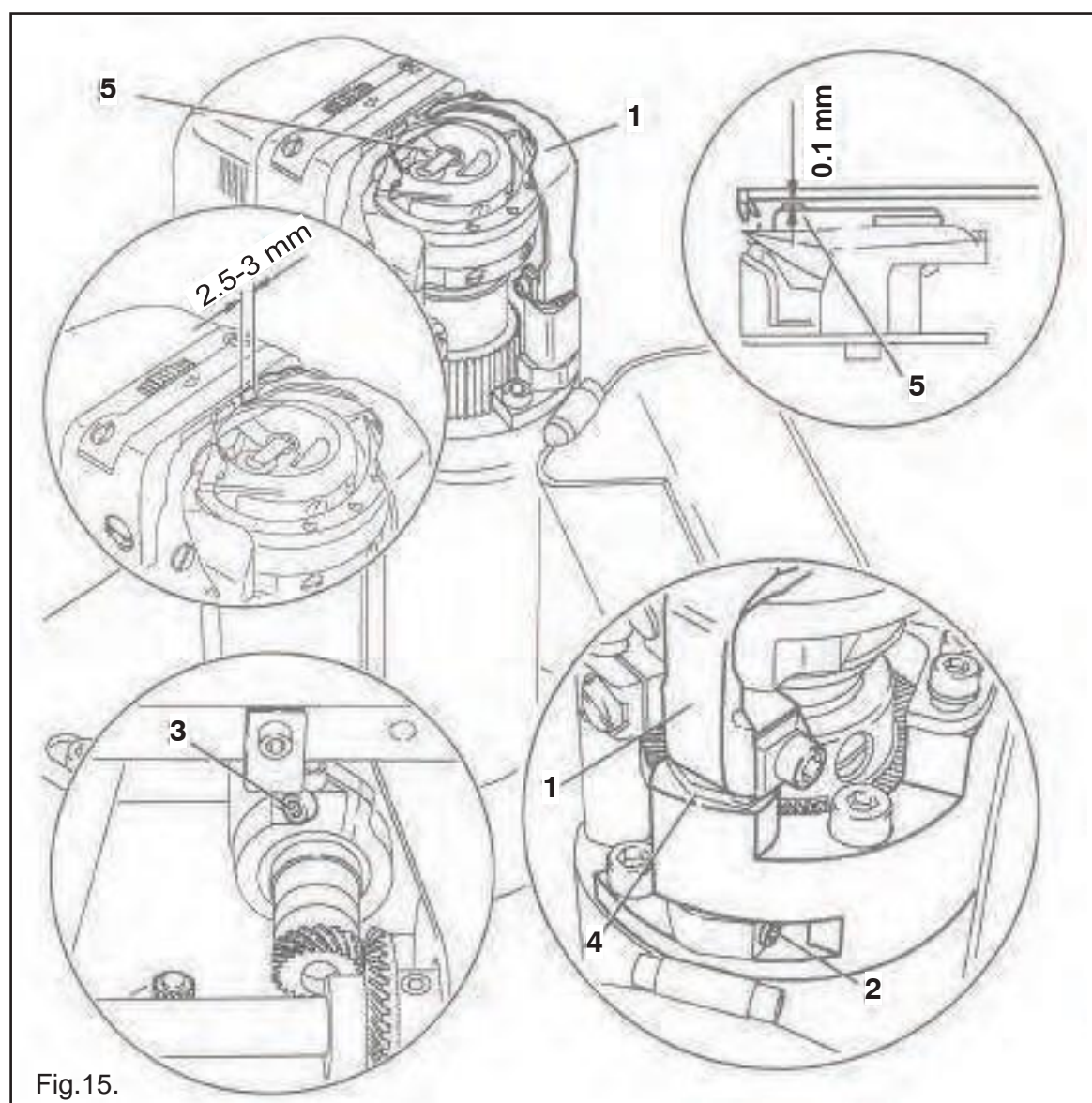


- Move the thread recovery device 1 (screws 2, two screws) according to the Rule parallel to the thread recovery device support.

## 15.2 Position of the thread recovery device.

### Rule

1. The lower edge of the thread recovery device 1 must have a distance of 0.1 mm from the tip of the bobbin case 5.
2. In the resting position of the thread trimmer device, the rear edge of the thread recovery device must be approximately 2.5 - 3 mm behind the edge of the blade.



- Move the thread recovery device 1 ( screws 2, two screws) according to Rule 1.
- Rotate the thread recovery device 1 (screw 3) according to Rule 2.



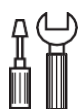
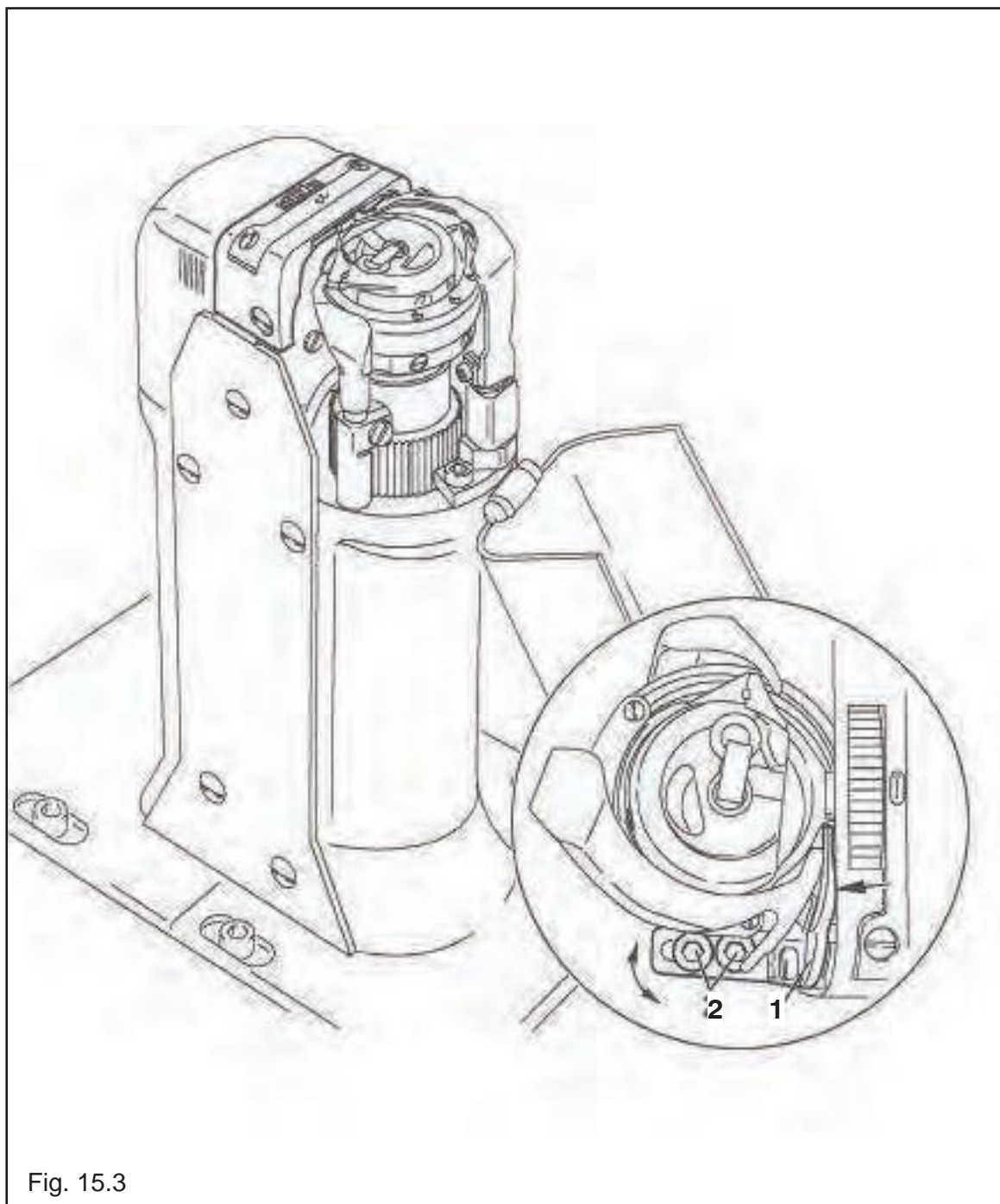
The thread recovery device 1 must be parallel to the surface of the support 4 of the thread recovery device.



### 15.3 Blade position and blade pressure.

#### Rule

1. The blade must be adjacent to the needle plate.
2. The blade pressure must be as low as possible, which allows the cutting to be carried out safely.

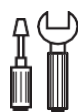
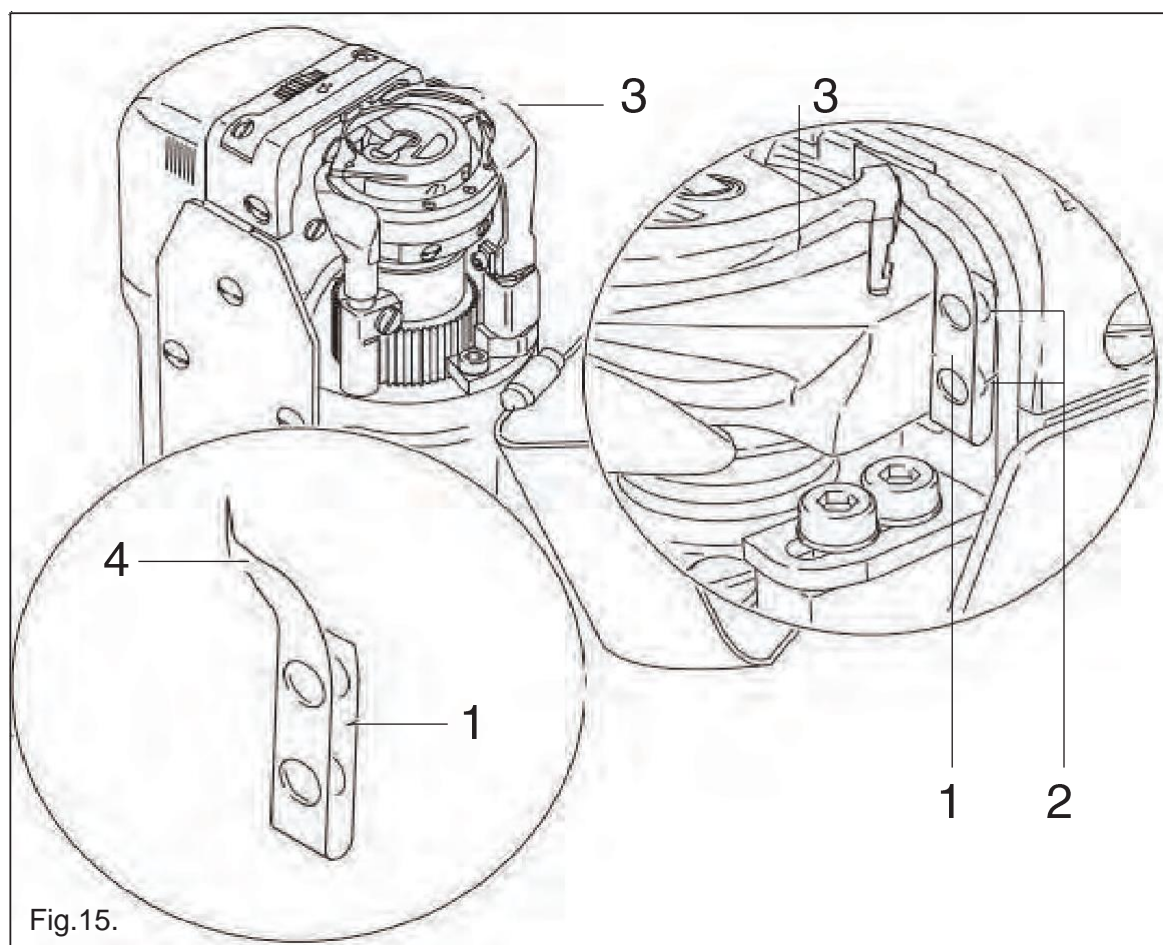


- Move the blade 1 (screws 2) according to Rule 1 or turn it according to Rule 2.

## 15.4 Lower thread take-up spring

### Rule

1. The lower thread take-up spring must be safely driven into the thread channel of the thread recovery device 3.
2. The force of the lower thread take-up spring must be as low as possible, but it must allow the lower thread to be locked after cutting.



- Adjust the lower thread take-up spring (screws 2) according to Rule 1.
- Adjust the spring force according to Rule 2 by bending the side 4 of the lower thread take-up spring 1.

### Check - Rule 1

- Turn off the machine and move the thread take-up lever to the b.d.c.
- Manually insert and disconnect the thread recovery device 3 and check Rule 1; if necessary correct the adjustment.

### Check - Rule 2

- After cutting the thread, sew a few stitches by rotating the handwheel and check that between the first and third stitches the lower thread is pulled out of the lower thread take-up spring. If necessary, correct the force of the spring.

## 15.5 Manual cutting test.

### Rule

1. During its forward movement, the thread recovery device 1 must not push the lower thread 3 in front of it.
2. At the front point of inversion of the thread recovery device 1, the lower thread 3 must be perfectly clasped by the hook 4.
3. At the end of the cutting procedure, the top and bottom threads must be cut perfectly and the bottom thread 3 must be locked.

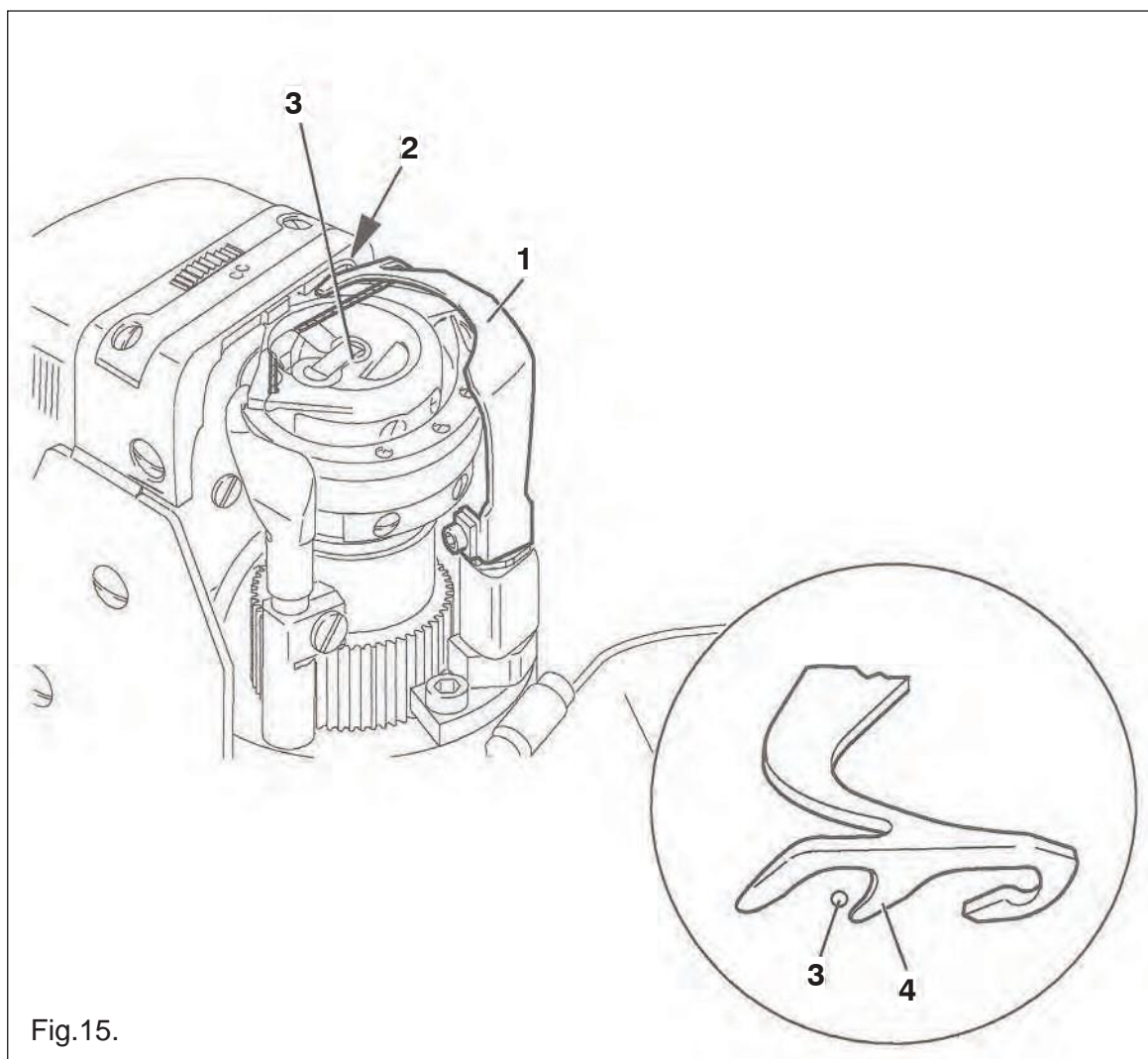
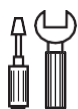


Fig.15.



- Sew some stitches.
- Turn off the main switch.
- Perform the cut manually.
- Check Rules 1 and 2, if necessary make a new adjustment of the thread recovery device according to paragraph 11.06.04 Position of the thread recovery device.
- Check Rule 3, if necessary make a new adjustment of the lower thread take-up spring 2 according to paragraph 11.06.06 Lower thread take-up spring.

## 15.6 Loosening the thread tension

### Rule

With the magnet activated, the tension discs 3 must have a distance between them of at least 0.5 mm

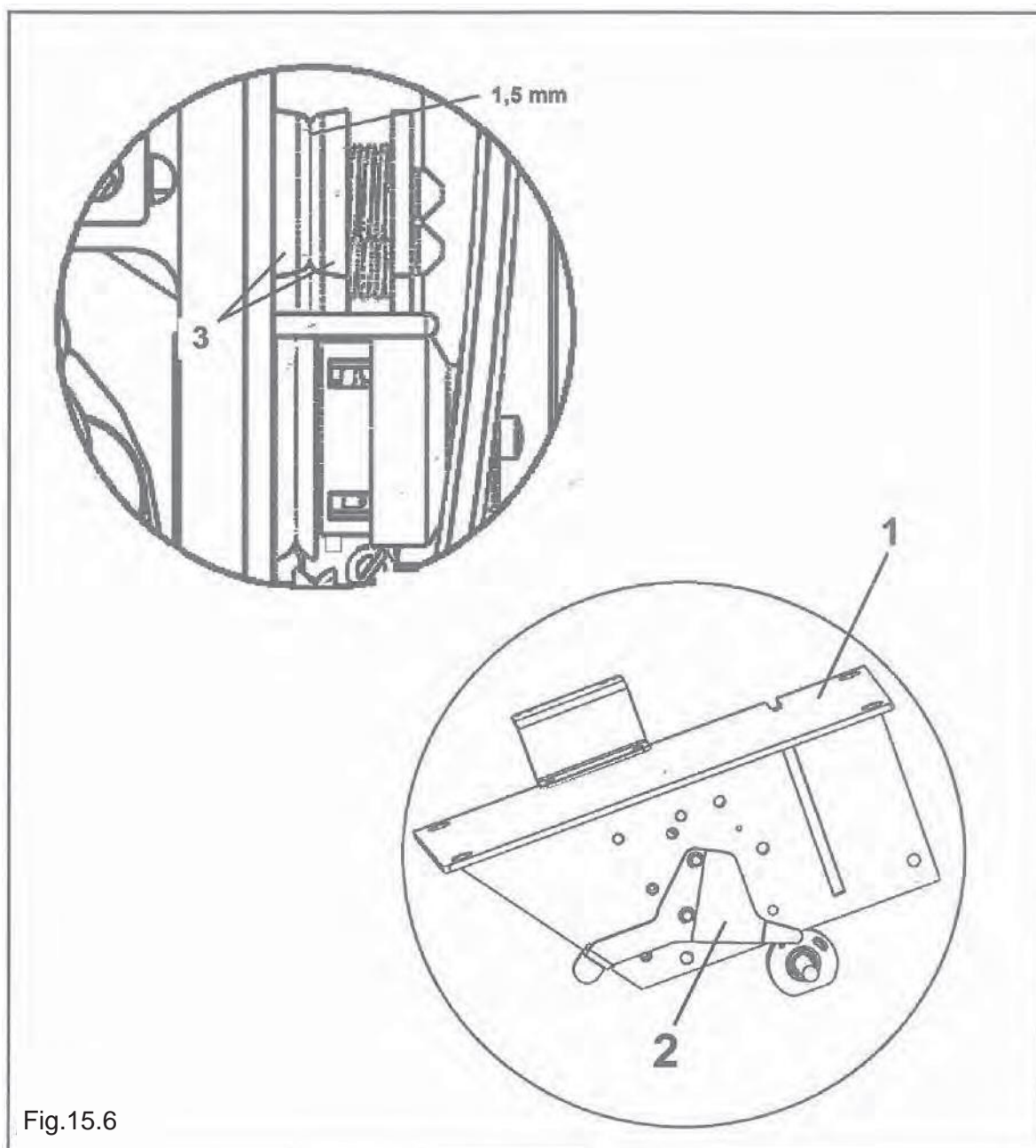
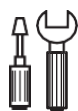


Fig.15.6

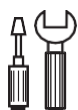
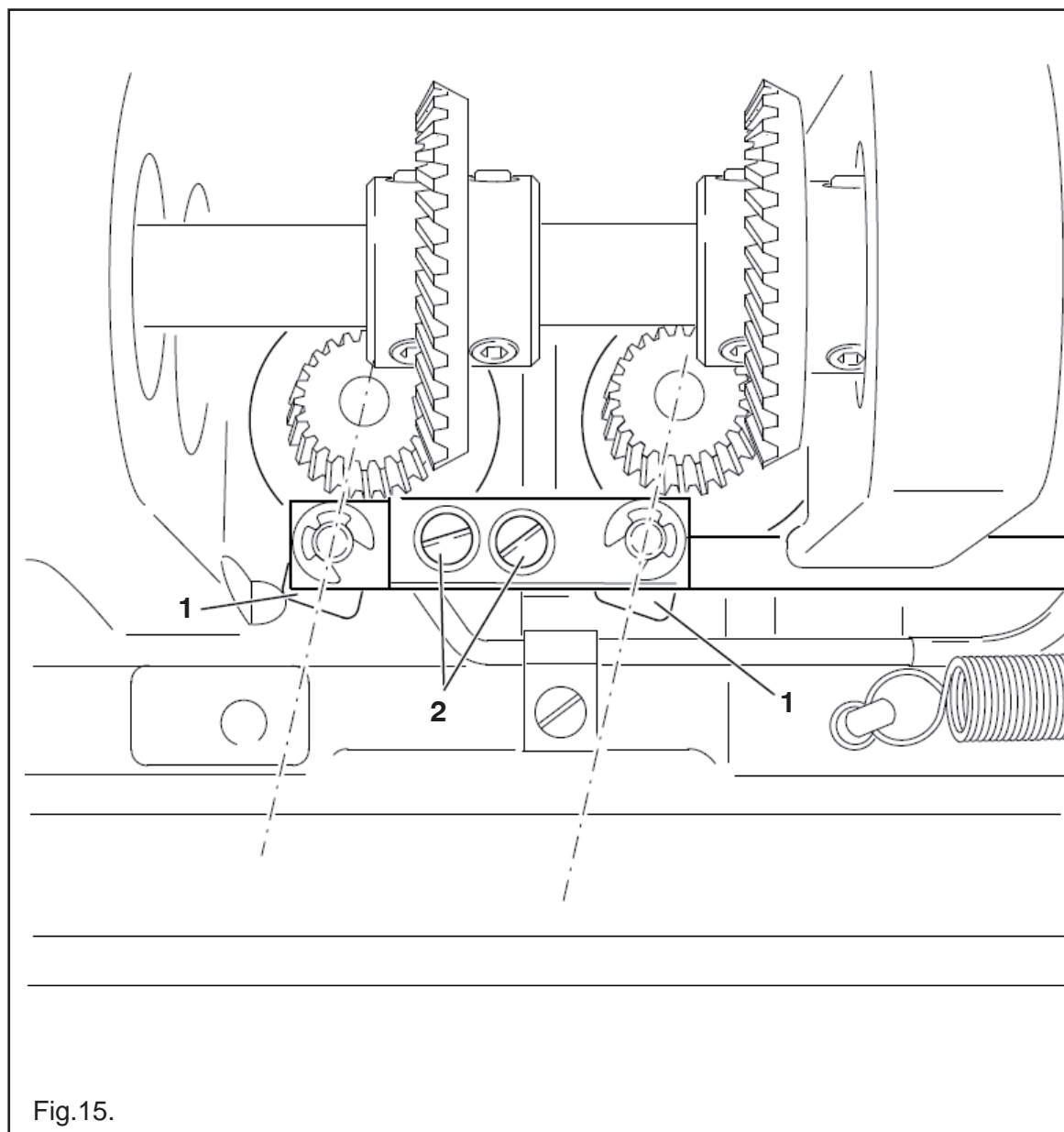


- Activate the magnet.  
Unscrew the tension adjuster support plate 1 and adjust the tension disc 2 according to the Rule.

## 15.7 Control levers (CAMARB N32)

### Rule

In the rest position of the thread trimmer device, the control levers 2 must be parallel.



- Adjust the control lever 1 ( Screws 2) according to the Rule.



## 15.8 Calibration of the backtack device

## 15.9 Needle in hole (CAMARB N31)

### Rule

By adjusting the maximum length of the stitch, the needle must be at both the forward and backward stitch the same distance from the inner edge of the hole.

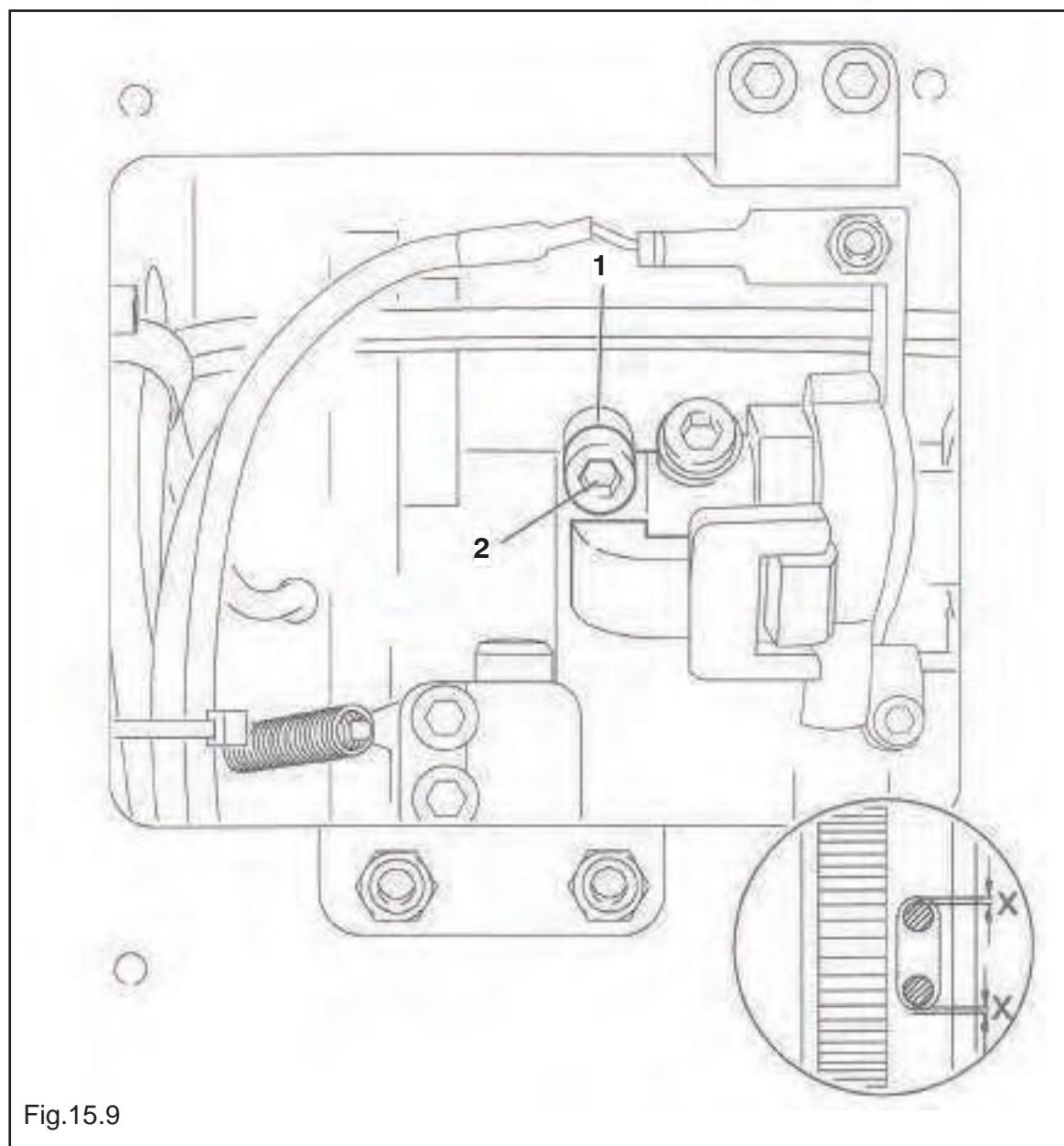
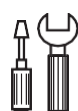


Fig.15.9



- Turn the handwheel 1 (screws 2 ) according to the Rule.

## 16.0 Roller foot activation clutch

### Rule

The distance between half clutch 1 and drive safety washer 3 must be 3mm

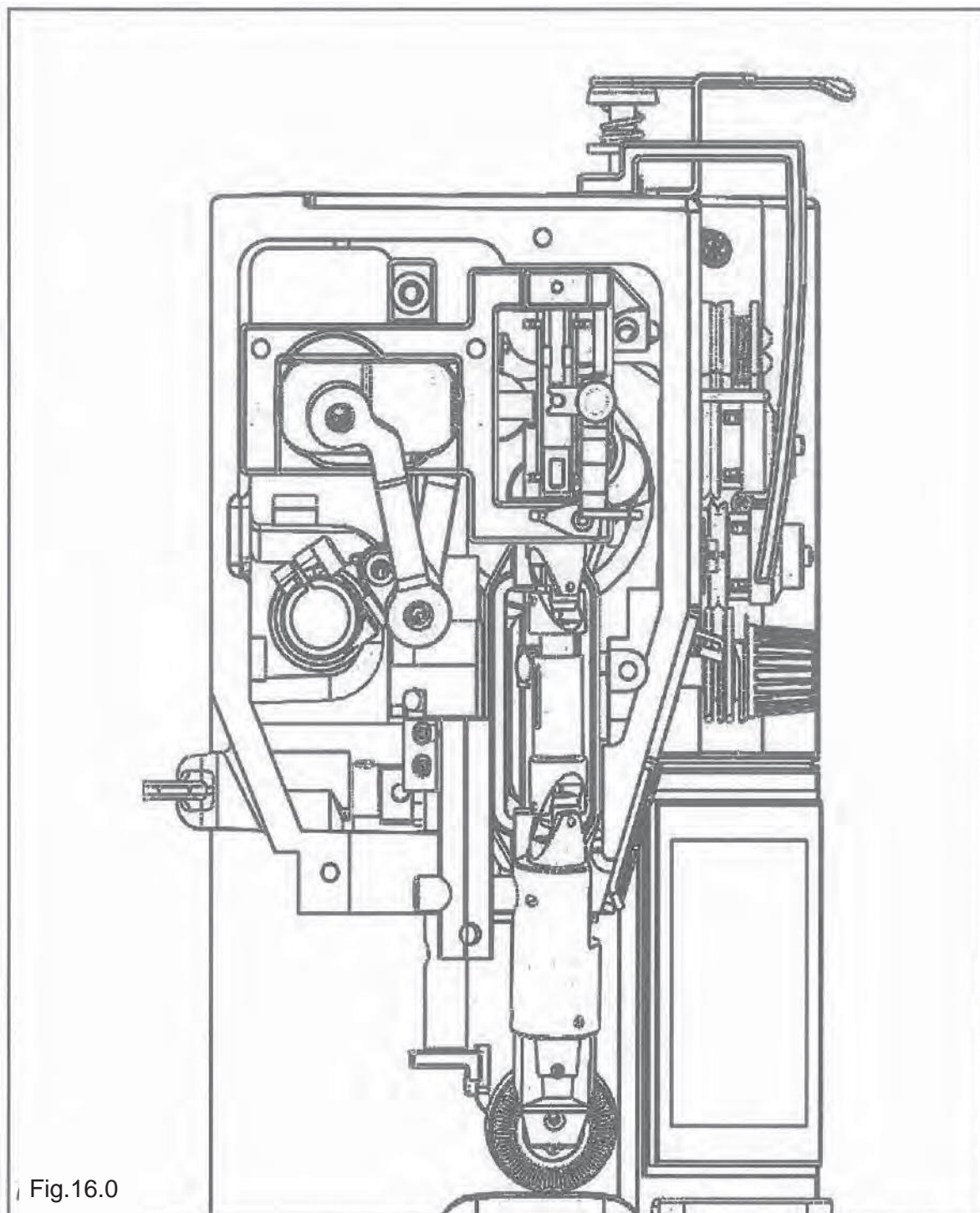
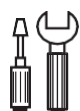


Fig.16.0



- Move the half clutch 1 (screw 2) according to the Rule.

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# ISTRUZIONI-INSTRUCTIONS udhëzime-instrucciones

Version 11 - 2020