

# PFAFF

## 3339

### Instruction Manual

the needle system 287 has the same □  
shank size thru out the size range of □  
needles. The shank is the same size as □  
the 34 system needle.

needle system 16X95 or □  
71X1 is the same as the □  
system 287 needle.

At the time of printing, all information and illustrations contained in this document were up to date.

Subject to alteration!

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## 1 Safety

### 1.01 Directives

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

In addition to this Instruction Manual, observe also all generally accepted, statutory and other regulations and legal requirements and all valid environmental protection regulations! The regionally valid regulations of the social insurance society for occupational accidents or other supervisory organisations are to be strictly adhered to!

### 1.02 General notes on safety

- This machine may only be operated by adequately trained operators and only after having completely read and understood the Instruction Manual.
- All Notes on Safety and Instruction Manuals of the motor manufacturer are to be read before operating the machine.
- 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, needle plate, feed dog or bobbin), when threading the machine, when leaving the machine unattended and during maintenance work, the machine is to be separated from the power supply by switching off the On/Off switch or by removing the plug from the mains.
- Everyday maintenance work is only to be carried out by appropriately trained personnel.
- Repairs and special maintenance work may only be carried out by qualified service staff or appropriately trained personnel.
- When servicing or carrying out repairs on pneumatic devices, the machine is to be removed from the compressed air supply. The only exceptions to this are adjustments and function checks carried out by 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 in accordance with the regulations EN 50110.
- Modifications and alterations to the machine may only be carried out under observance of all the relevant safety regulations.
- It is forbidden to operate the machine head until such time as is determined that the entire sewing unit complies with the regulations of the EC Directives.

- 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 construction characteristics of the machine. We shall not be liable for any damage which may be caused by non-original parts!

## 1.03 Safety symbols

In this instruction manual safety symbols are used. Their meanings are as follows.



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 operator to only operate the machine in perfect running order.
- It is the obligation of the operator to ensure that none of the safety mechanisms are removed or deactivated.
- It is the obligation of the operator to ensure that only authorised 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 loosely fitting clothing or jewellery such as chains or rings.
- also ensure that only authorised persons have access to the potentially dangerous area around the machine.
- always immediately report to the person responsible any changes in the machine which may limit its safety.

### 1.05.02 Specialist personnel

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

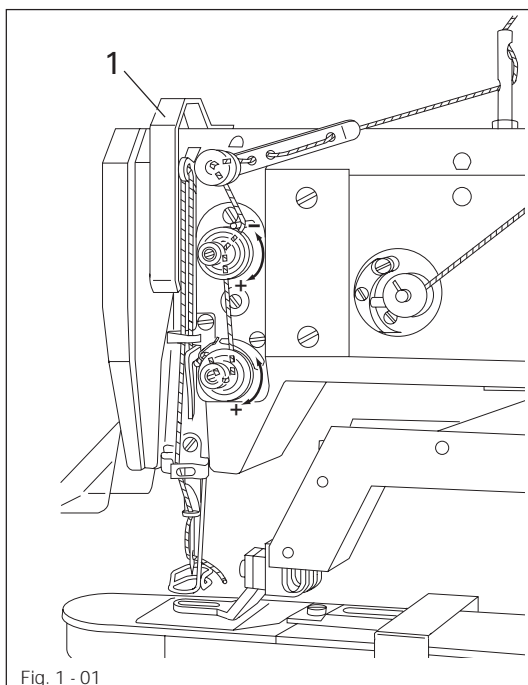
The specialist personnel is obliged to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual.
- switch off the On/Off switch before carrying out adjustments or repairs and ensure that it cannot be switched on again unintentionally.
- never work on parts which are still connected to the power supply. Exceptions are contained in the regulations EN 50110.
- when servicing or carrying out repairs on pneumatic devices, remove the machine from the compressed air supply. The only exceptions to this are function checks.
- replace the protective coverings and close the electrical control box after all repairs or maintenance work.



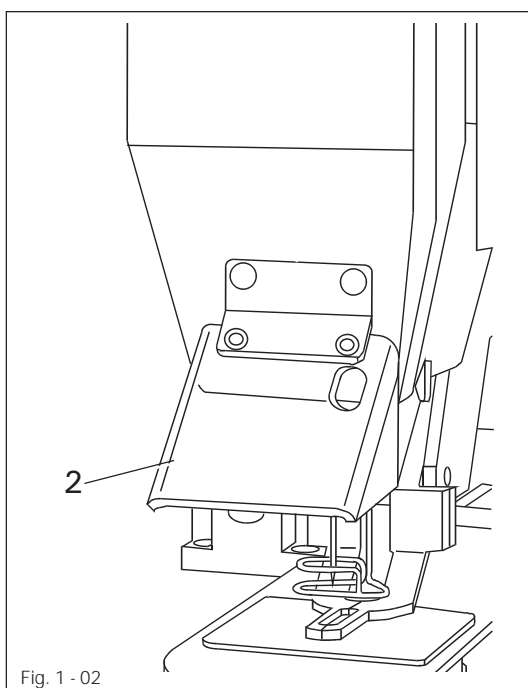
1.06 Danger

1.06.01 Take up lever guard



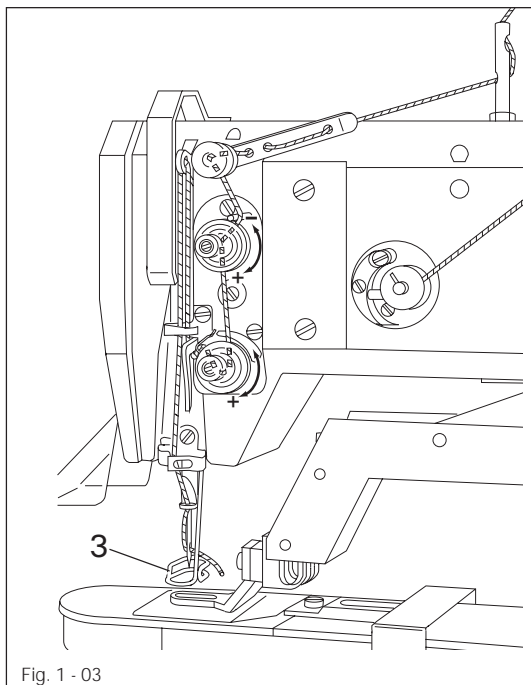
Do not operate the machine without the take up lever guard 1! Danger of injury due to movement of the take up lever!

1.06.02 Eye guard



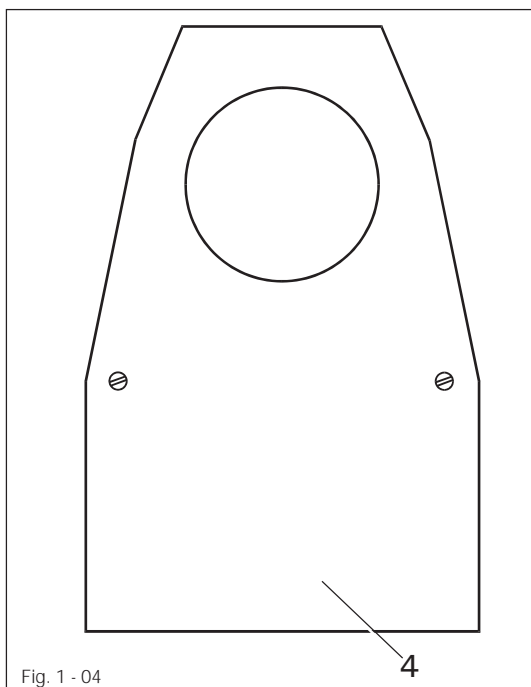
Do not operate the machine without the eye guard 2! Danger of injury by pieces of needle which can be slung away!

## 1.06.03 Finger guard



Do not operate the machine without the finger guard **3**!  
Danger of injury due to the up and down movement of the needle!

## 1.06.04 Belt guard



Do not operate the machine without the belt guard **4**!  
Danger of injury due to the movement of the belt!

2      **Proper use**

The PFAFF 3339 is a high speed sewing machine for sewing lockstitch bartacks and short seams.



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

Stitch type: ..... 301 (lockstitch)

Model: ..... A; B; C

Needle system:

on models A and B ..... 34

on model C and sub class -381/.. ..... DPx17

Needle thickness (Nm) in 1/100 mm:

on model A ..... 60 - 70

on model B ..... 80 - 100

on model C ..... 110 - 140

Max. speed.: ..... 2000 min<sup>-1</sup>

Max. seam construction size.: ..... 60 x 60 mm

Motor: ..... Quick QE 5542-P139SE

Maximum motor rpm: ..... 1400 min<sup>-1</sup>

Dimensions of machine

Length: ..... approx. 650 mm

Width: ..... approx. 360 mm

Height: ..... approx. 400 mm

Gross weight (machine head): ..... approx. 72 kg

Power supply: ..... 190 - 240 V 50 / 60 Hz, single phase

Power input max.: ..... 600 VA

Fuse protection: ..... 1 x 16 A, delayed action

Working air pressure: ..... 6 bar

Air consumption: ..... ~0,8 l / work cycle

Working noise level:

Emission at workplace at sewing cycle of 2s on 2s off: ..... L<sub>pA</sub> ≤79 dB (A)

noise measurement in accordance with DIN 45 635-48-B-1

### 4 Disposal of machine waste

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



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

### 5 Transport, packaging and storage

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

Within Germany, the machine is delivered without packaging.  
Machines for export are packaged as follows:

Stand: In crate or cover, dependent on method of transport.

Machine head: In carton with polyurethane high-resistance foam filling.

#### 5.02 Transport within the customer's premises

The manufacturer carries no liability for transport within the customer's premises.  
Care is to be taken to transport the machine in an upright position.

#### 5.03 Disposal of the packaging

The packaging of the machine consists of wood, paper, cardboard, VCE fibre and polyurethane high-resistance foam.

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

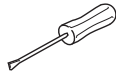
The symbols used have the following meanings:



Note, information



Cleaning, care



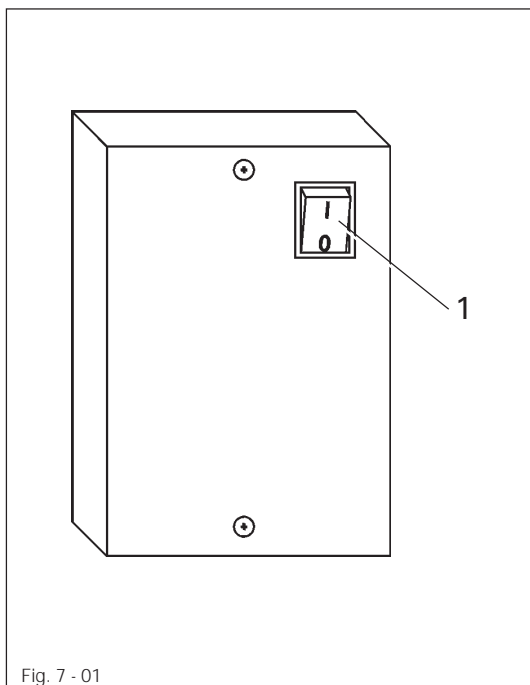
Servicing, repairing, adjustment, maintenance  
(only to be carried out by specialist personnel)



Lubrication, greasing

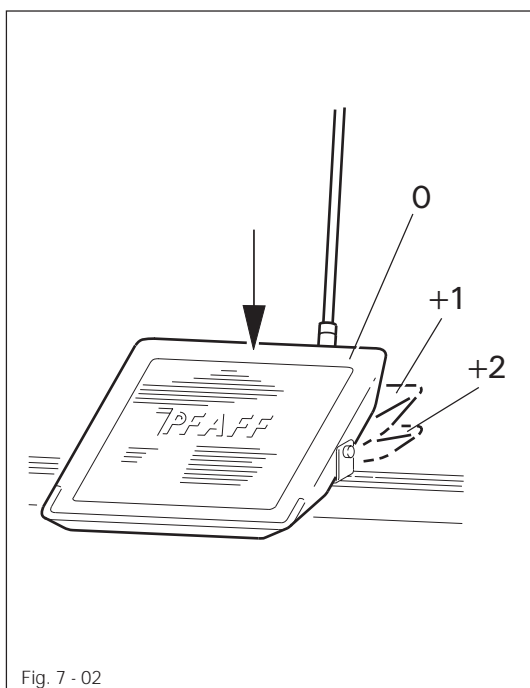
### 7 Operational controls

#### 7.01 On/off switch



- Switch the machine on/off by switching switch 1 up or down. When the machine is on, the light in the switch is lit.

#### 7.02 Pedal

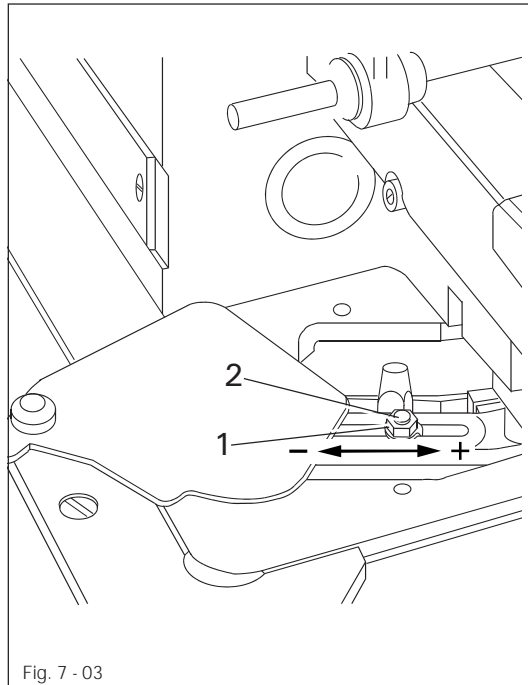


When the motor is on

- 0** = motor is running, work clamp is lifted.
- +1** = Work clamp is lowered.
- +2** = The sewing procedure is triggered off and completed automatically.

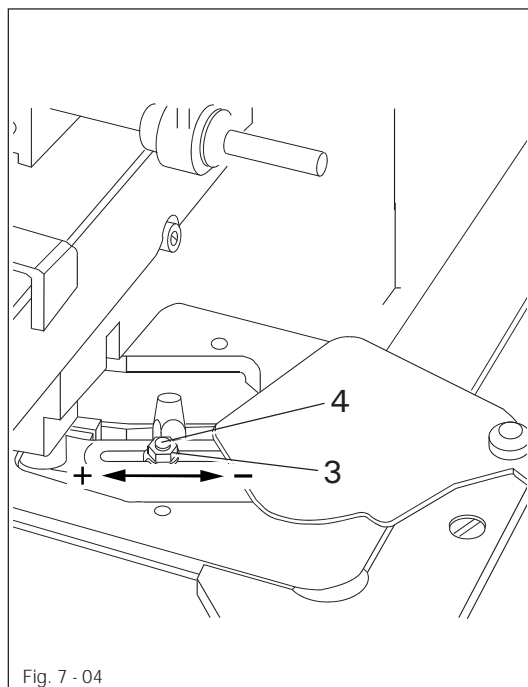


7.03 Adjustment pin for the seam construction size



Switch off the machine!

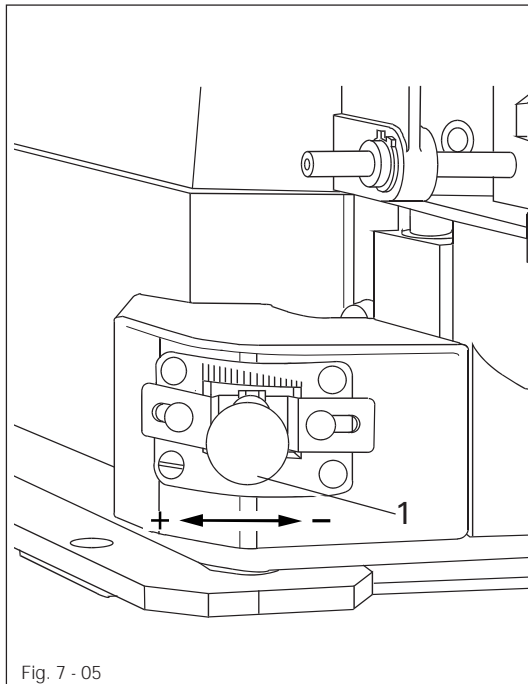
- **Lateral movement**  
Loosen nut 1 and move pivot pin 2 as required.



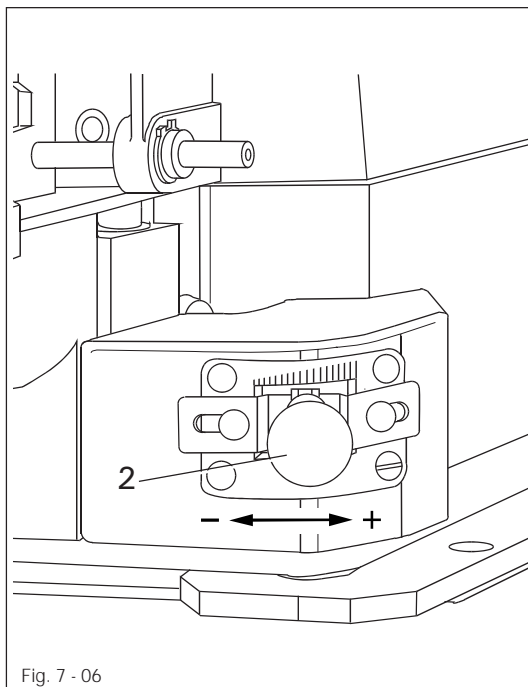
Switch off the machine!

- **Lengthwise movement**  
Loosen nut 3 and move pivot pin 4 as required.

### 7.04 Adjustment lever for the seam construction size on machines with quick adjustment (subclasses -964/03)



- **Lateral movement**  
Press lever 1 down and move it as required.



- **Lengthwise movement**  
Press lever 2 down and move it as required.

## 8 Mounting and initial operation



This machine must only be mounted and operated by qualified specialist personnel! All relevant safety regulations are to be observed!

The machine must be mounted where suitable electricity and compressed air supplies are available (see specifications).

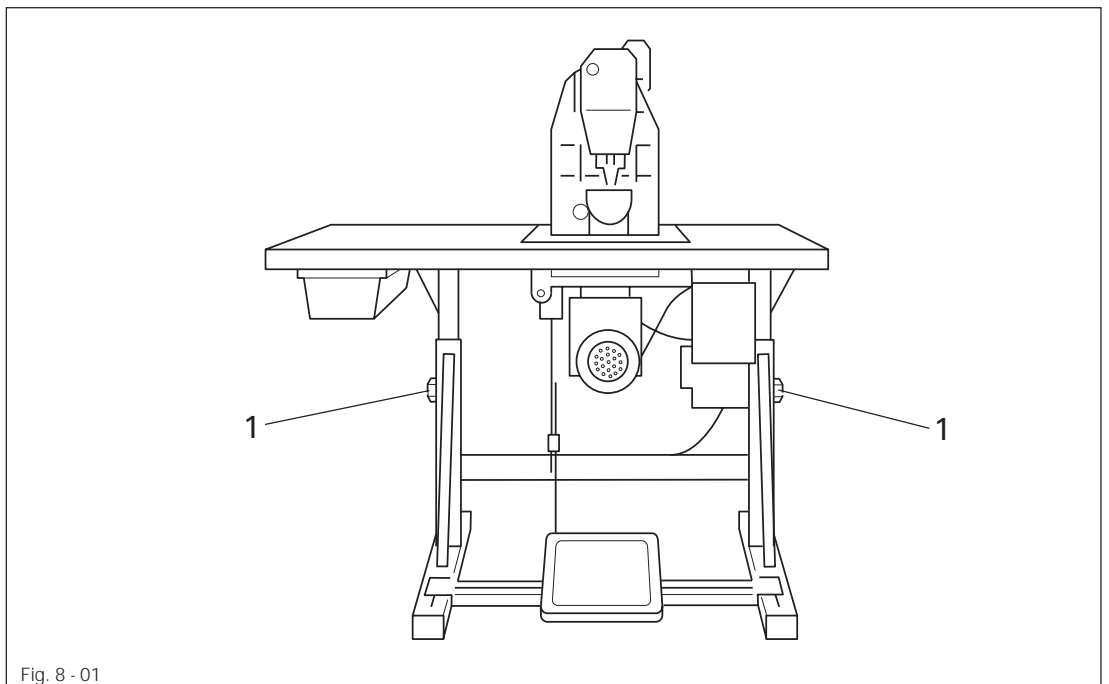
A horizontal and stable floor and adequate lighting must be present at the place where the machine is mounted.

### 8.01 Mounting



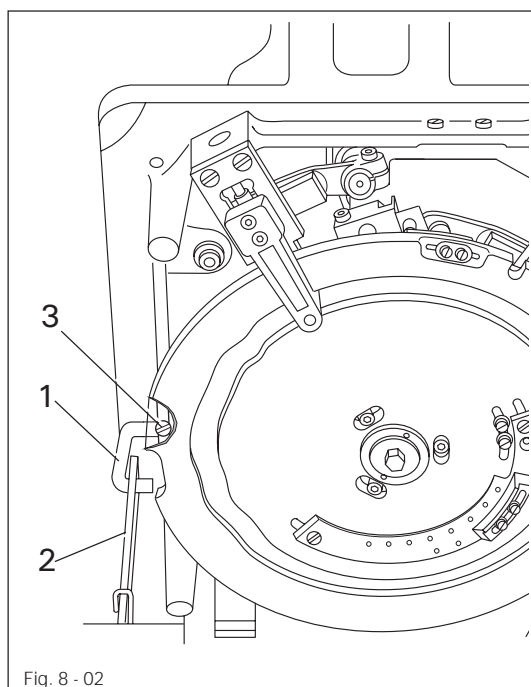
Due to reasons of packaging, the machine head and the stand are packaged separately when destined for export. The mounting is described in the following.

#### 8.01.01 Adjusting the table-top height



- Loosen screws 1 and adjust the table-top height as desired.
- Tighten screws 1 firmly.

### 8.01.02 Positioning the machine head and mounting the anti tilt device



- Insert and attach the machine head into the table top with its hinged hook.
- Tilt the machine head backwards a little and have a second person hold it in this position.
- Insert lever 1 into the hole in the casing and into the connecting link of the anti tilt device 2.
- Secure lever 1 with screw 3.

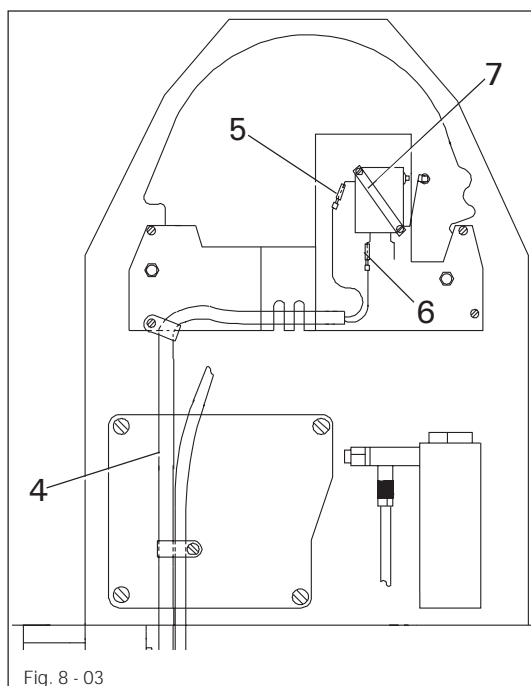
Return the machine to its upright position



Hold the machine firmly, lift the anti tilt device 2 and return the machine to its upright position with both hands.

Danger of crushing between machine and table top !

### 8.01.03 Connecting the pneumatic lines and cables



The plug to the main power supply must be unplugged!

- Connect the pneumatic hoses from the valve plate on the stand, with the cylinder on the back of the machine (taking care to observe the numbers on the hoses).
- Screw cable 4 (coming from the table top) to the housing with two hose clamps.
- Connect plugs 5 and 6 to switch 7 (plugs can be connected in either position).

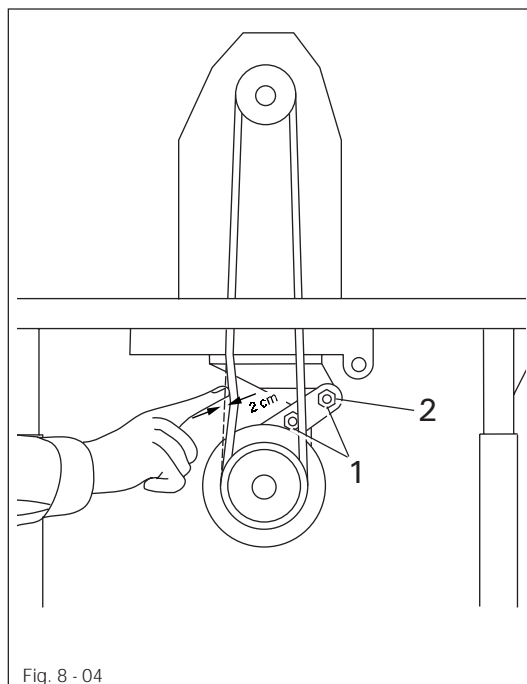
### 8.01.04 Mounting the V-belt

- Tilt the machine backwards.
- Lay the V-belt onto the drive wheel of the machine and the V-belt pulley of the motor.



Hold the machine firmly, raise the anti tilt device 2 (Fig 8.02) and return the machine to its upright position with both hands.  
Danger of crushing between machine and table top!

### 8.01.05 Tightening the V-belt



- Loosen nuts 1.
- Using the motor-driven rocker 2, tighten the V-belt.
- Tighten nuts 1.

## Mounting and initial operation

### 8.01.06 Mounting the synchronizer

- Screw the synchronizer onto the arm shaft.
- Insert the synchronizer plug into the motor control-box.
- Adjust in accordance with chapter 11.22.

### 8.01.07 Mounting the upper V-belt guard

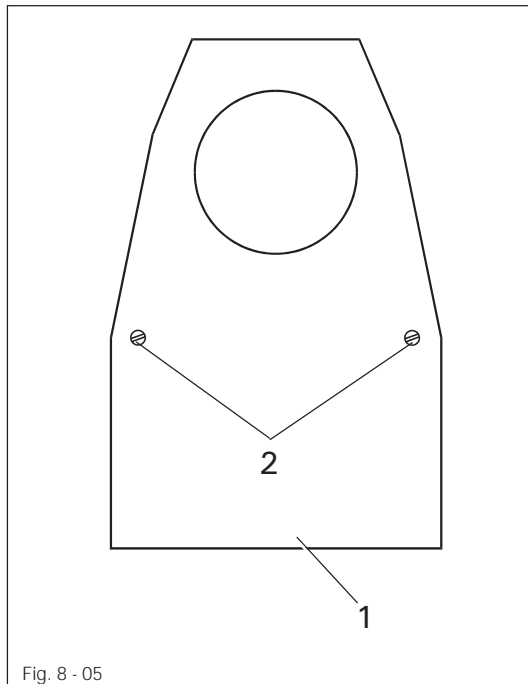


Fig. 8 - 05

- Attach the V-belt guard 1 with screws 2.

### 8.01.08 Mounting the lower V-belt guard

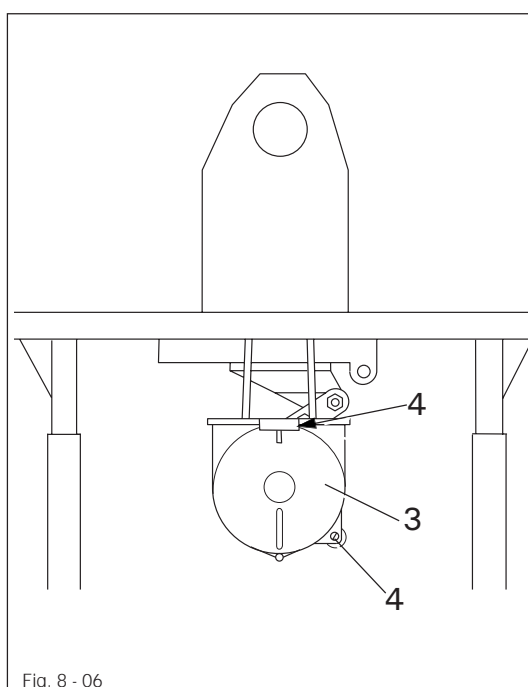


Fig. 8 - 06

- Position the V-belt guard 3 so that both the motor pulley and the V-belt run freely.
- Tighten screws 4.

### 8.01.09 Mounting the sewing lamp<sup>▲</sup>

- Screw the sewing lamp onto the table top (wood screws 5x35) and have the lamp connected by an appropriately trained person.

### 8.01.10 Mounting the spool holder

- Mount the spool holder
- Insert the spool holder into the hole in the table top and fasten it with the enclosed nuts.

## 8.02 Initial operation

- Before operating the machine for the first time, check the electrical leads and the pneumatic connecting hoses for any damage.
- Clean the machine thoroughly and lubricate it (see chapter 10 Care and maintenance).
- Connect the machine to the power supply.
- Connect the machine to the compressed air supply. The manometer must display a pressure of approx. 6 bar. If necessary adjust the air pressure to this value.

## 8.03 Switching the machine on / off

- Switch the machine on (see chapter 7.01).
- Carry out a test run.

<sup>▲</sup> = The sewing lamp is not included as a standard accessory in the scope of the normal delivery.

## 9 Preparation



All regulations and notes in this instruction manual are to be strictly observed. Take special care to observe all safety regulations!



All preparation work must be carried out by appropriately trained personnel. The machine is to be separated from the power supply by switching the machine off at the on/off switch or by pulling the mains plug out of the socket!

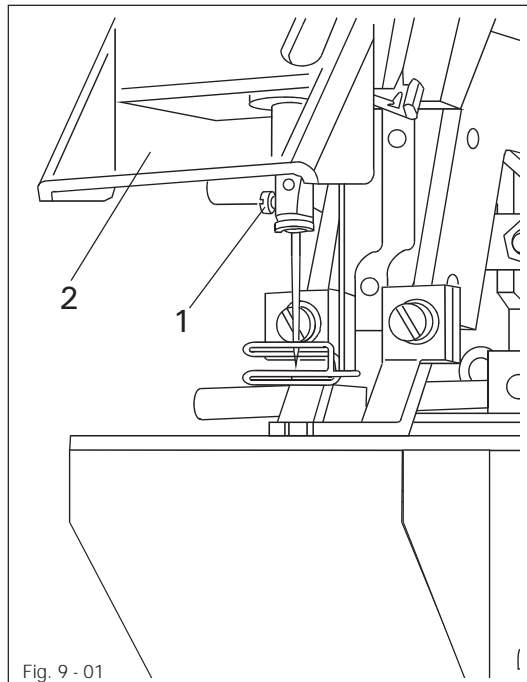
### 9.01 Needle and thread

The choice of the correct needle depends on the model of the machine and the yarn and material to be used.

Model	Use	Needle thickness (Nm) in 1/100 mm
<b>A</b>	For sewing finer materials	60 - 70
<b>B</b>	For sewing medium materials	80 - 100
<b>C</b>	For sewing medium/heavy materials	110 - 140



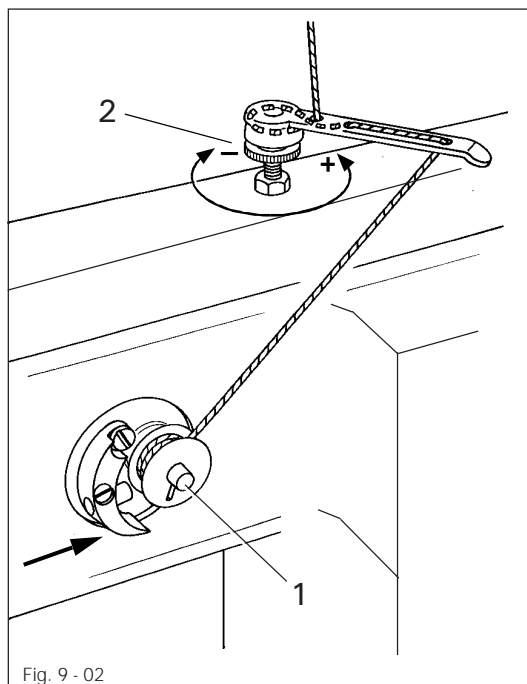
9.02 Inserting the needle



Switch off the machine!

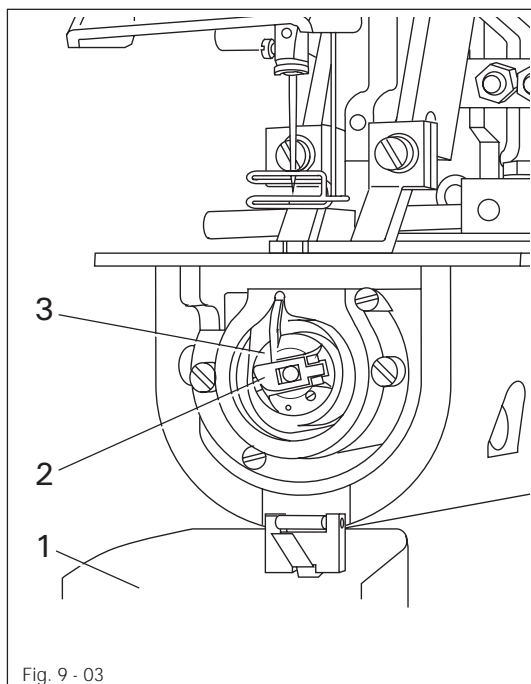
- Needle system: 34 on models A + B; DPx17 on model C and subclass -381/..
- Loosen needle retaining screw 1.
- Insert the needle as far as it will go (the groove in the needle must be pointing forwards).
- Tighten needle retaining screw 1.

9.03 Winding the bobbin thread, adjusting the primary thread tension



- Place an empty bobbin onto the bobbin winder spindle 1.
- Thread the thread in accordance with Fig. 9.02.
- Press the bobbin winder ratchet in the direction of the arrow.
- The bobbin is wound while the machine is sewing.
- The bobbin winder stops automatically when the bobbin is full.
- The tension of the thread on the bobbin can be adjusted with milled screw 2.

## 9.04 Inserting/removing the bobbin case



Switch off the machine!

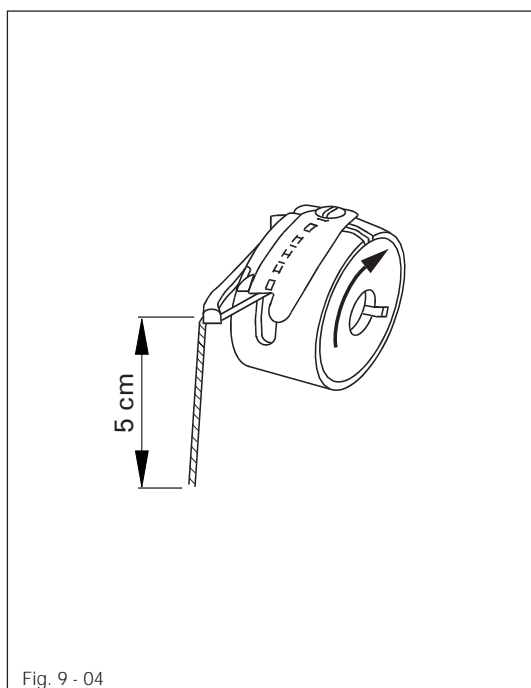
### Removing the bobbin case

- Open the lid of the free arm 1.
- Raise catch 2 and remove the bobbin case 3.

### Inserting the bobbin case

- Insert the bobbin case 2 so that it clicks into place.
- Close the lid of the free arm!

## 9.05 Threading the bobbin case



Switch off the machine!

- Thread the bobbin in accordance with Fig. 9.04.
- When pulling the thread the bobbin must rotate in the direction of the arrow.

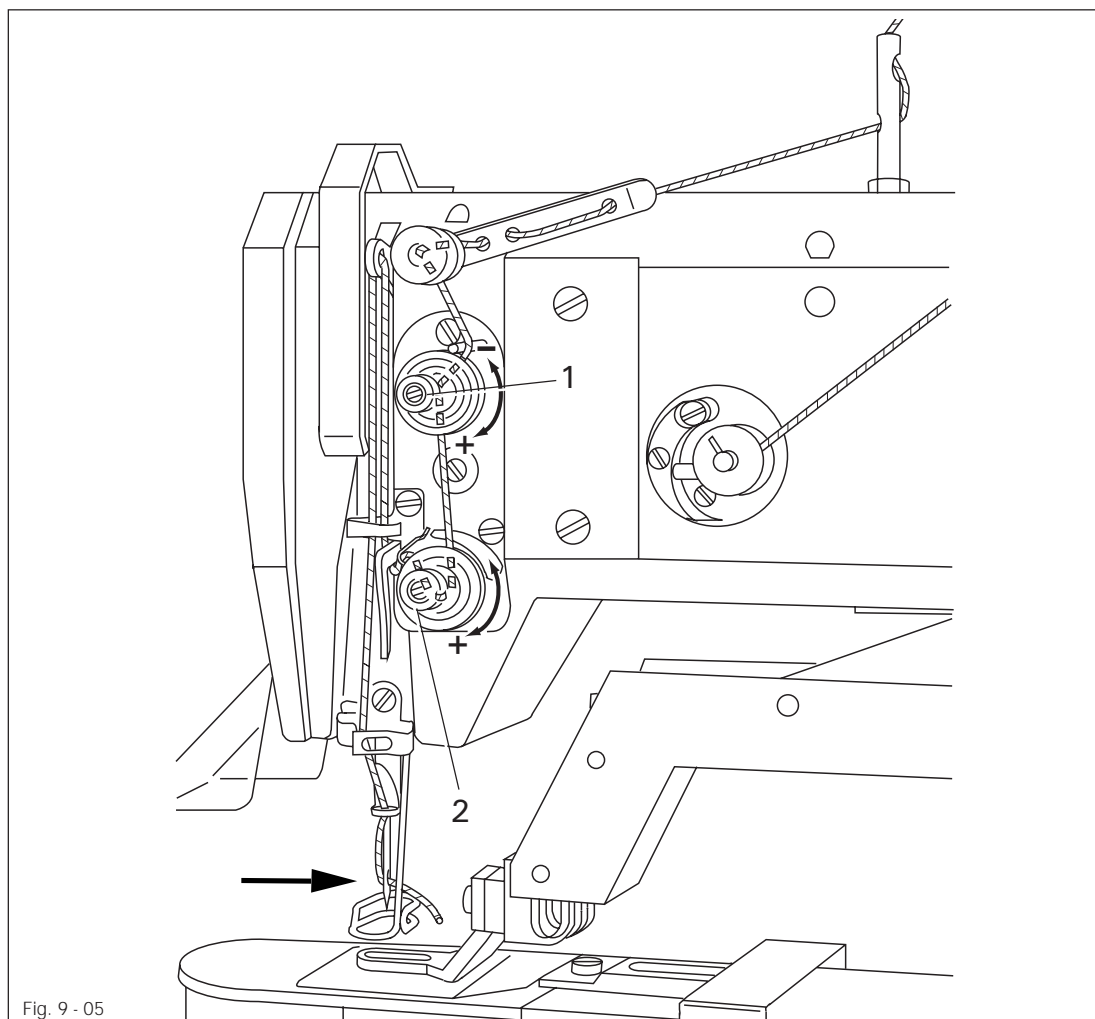


Fig. 9 - 05

### 9.06 Threading the needle thread



Switch off the machine!

- Thread the machine in accordance with Fig. 9.05, taking care to ensure that the needle is threaded from the front (see arrow).

### 9.07 Adjusting the needle thread tension

- Adjust tension 1 so that the knots of the stitches are on the underside of the workpiece.
- Adjust tension 2 so that the knots of the stitches are in the workpiece.

## 9.08 Adjusting the bobbin thread tension

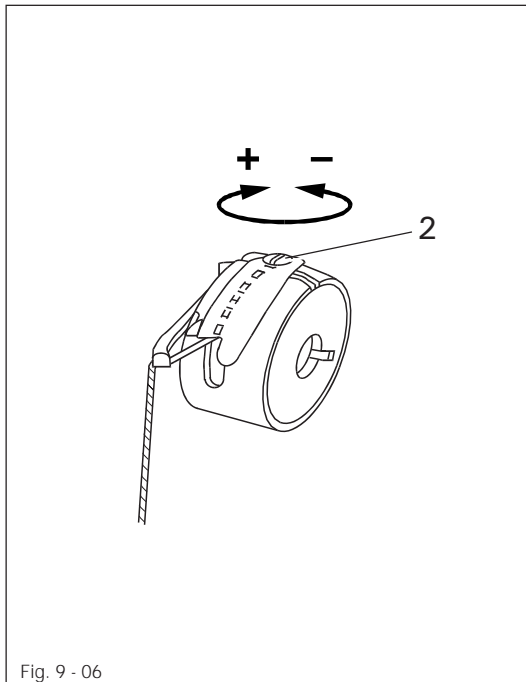


Fig. 9 - 06

- Adjust the bobbin thread tension with screw 2.

## 9.09 Adjusting the thread brake

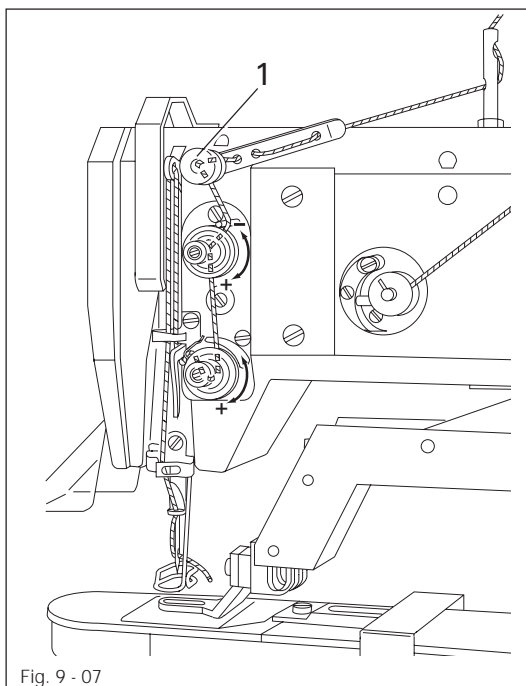


Fig. 9 - 07

- Adjust the thread brake 1 so that the needle thread does not move when removing the workpiece.

10 Care and maintenance

10.01 Care and maintenance intervals

Cleaning .....	weekly. Daily when in continuous operation
General lubrication .....	weekly
Lubrication of machine head parts (container on machine head) .....	as required
Lubrication of the hook (container on machine arm) .....	as required
Check air pressure .....	daily before beginning sewing
Empty the water trap of the maintenance unit .....	as required

10.02 Cleaning

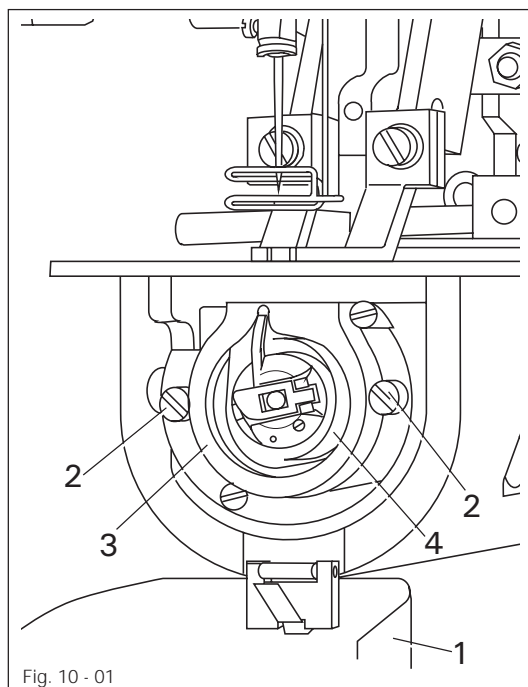


Fig. 10 - 01



Switch off the machine!

Carry out the following cleaning steps at least **once a week** or daily when the machine is in continuous operation.

- Open the lid 1.
- Remove screws 2, retaining ring 3 and hook 4.
- Clean the hook compartment.
- Clean the hook and the hook raceway with petroleum.
- Carry out these steps in reverse order to reassemble.

## 10.03 General lubrication

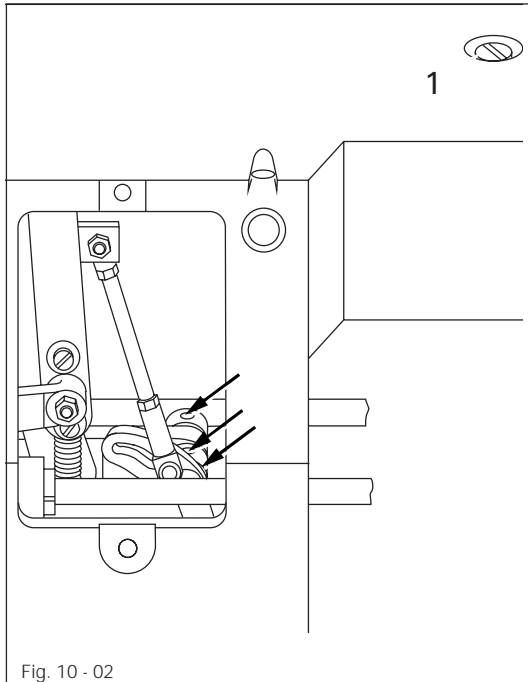


Fig. 10 - 02

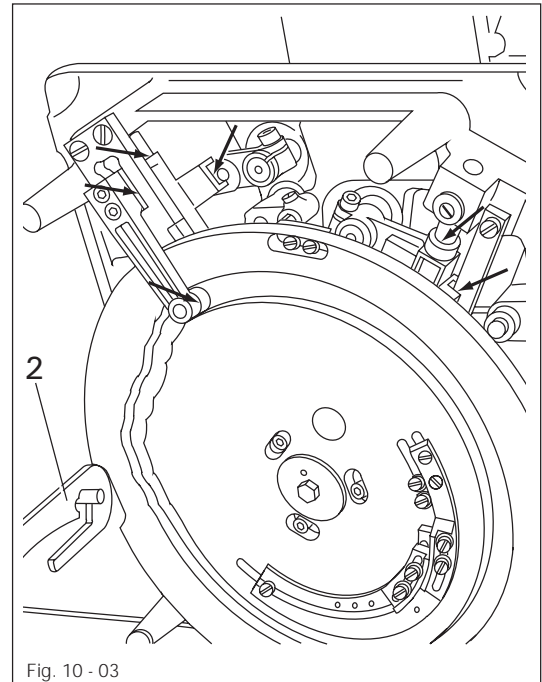


Fig. 10 - 03

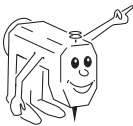


Switch off the machine!

- Screw off the left arm-cover.
- Oil the spots marked with an arrow **once a week**.  
On oil spot 1, loosen the screw first.
- Screw the left arm cover back on!
- Tilt the machine back until the anti tilt device 2 clicks into place.
- Oil the spots marked with an arrow **once a week**.



Only use 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: Part no. 280-1-120 144.

- Return the machine to its upright position.



Hold the machine firmly, raise the anti tilt device 2 and return the machine to its upright position with both hands.

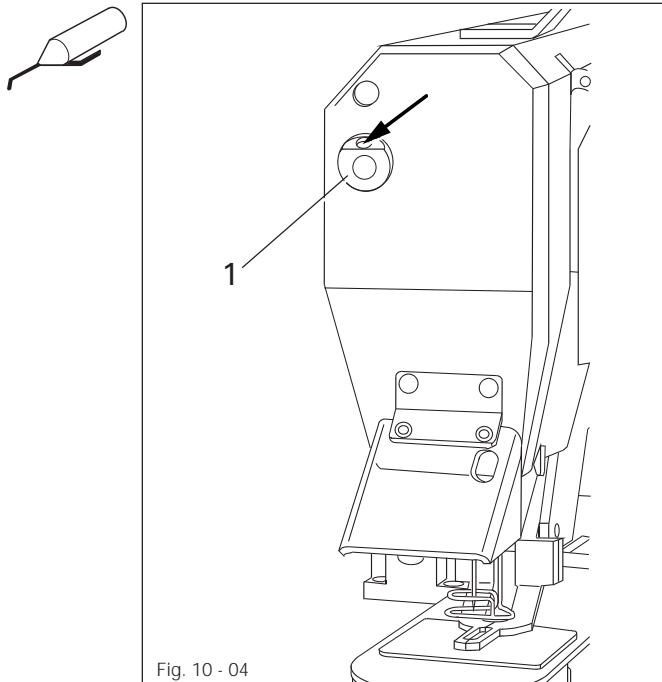
Danger of crushing between machine and table top !



When returning the machine head to its upright position make sure that the v-belt runs freely.

If this rule is not observed, parts of the machine could become damaged by the rotating v-belt.

10.04 Lubricating the machine head

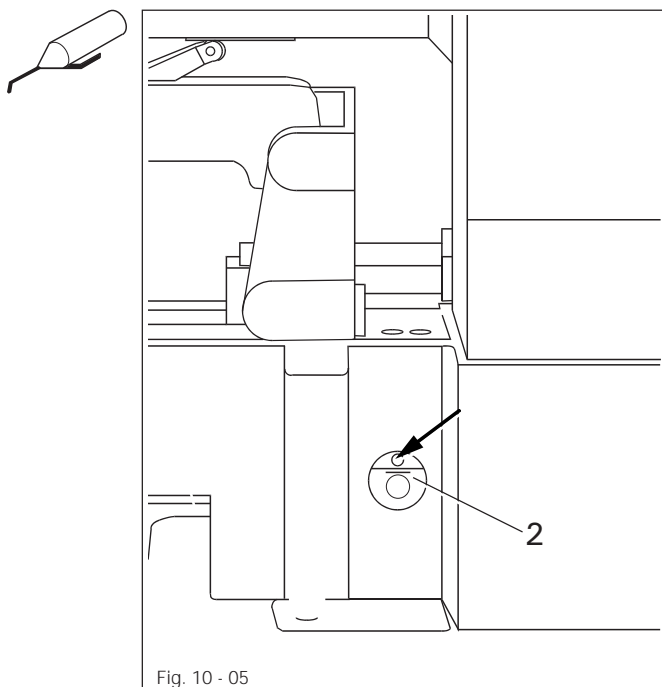


- Always check the oil level before operating the machine and if required fill with oil through the hole in the viewing glass 1.



Only use 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:  
Part no. 280-1-120 144.

10.05 Lubricating the hook



- Always check the oil level before operating the machine and if required fill with oil through the hole in the viewing glass 2.



Only use oil with a mean viscosity of 4.4 mm<sup>2</sup>/s at 20°C and a density of 0.842 g/cm<sup>3</sup> at 15°C!  
We recommend PFAFF sewing machine oil:  
Part no. 280-1-120 143.

### 10.06 Air pressure

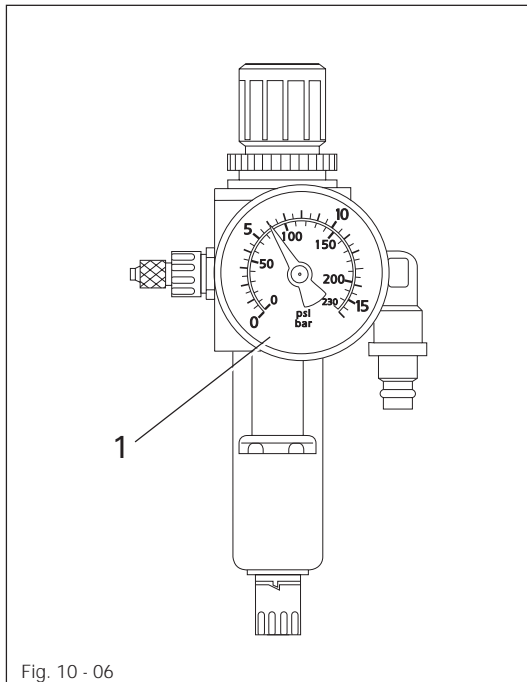


Fig. 10 - 06

- Always check the air pressure on the manometer 1 before operating the machine.
- The manometer must display an air pressure of 6 bar.
- Adjust to this value if necessary.

### 10.07 Emptying/cleaning the water trap of the maintenance unit

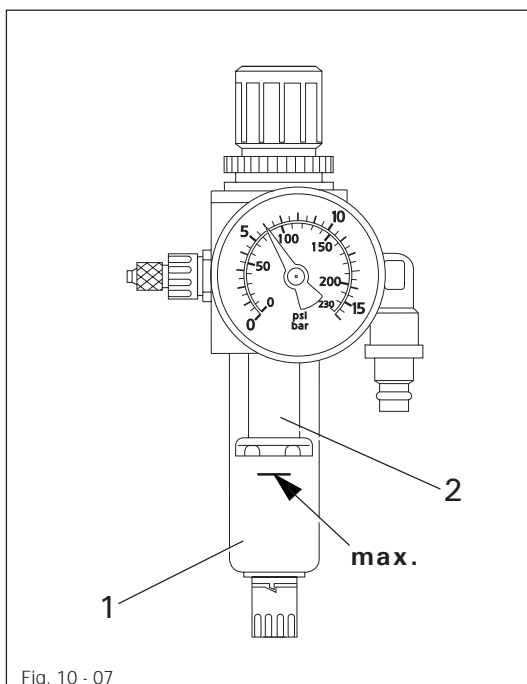


Fig. 10 - 07



Switch the machine off. Remove the compressed air pipe from the maintenance unit.

#### Emptying the water trap

- The water trap 1 empties automatically when the air pressure pipe is removed from the maintenance unit.

#### Cleaning the filter

- Screw off the water trap 1 and screw out the water filter 2.
- Clean the filter with compressed air or with Isopropyl alcohol:  
Part no. 95-665 735-91.
- Screw the filter 2 back in and screw the water trap 1 back on.



## 11 Adjustment



All relevant safety regulations are to be strictly adhered to!  
The machine is to be separated from the power supply before all adjustment work and secured against accidentally being switched back on!

All adjustments in these adjustment instructions are based on a completely mounted machine. Machine covers which are to be screwed off and back on for tests and adjustments are not mentioned here.



For some adjustments it is necessary to tilt the machine backwards.  
When returning the machine head to its upright position make sure that the v-belt runs freely. If this rule is not observed, parts of the machine could become damaged by the rotating v-belt.

### 11.01 Tools, gauges and other accessories

- Screwdrivers with blade width from 2 to 10 mm
- Wrenches with jaw width from 7 to 24 mm
- Allan keys from 1.5 to 10 mm
- 90% offset socket wrench, Part No. 99-115 326-35 (in accessories)
- Pin spanner, Part No. 08-800 401-20 or 08-800 202-64
- Seeger circlip ring plier
- Hammer
- Brass arbour (mandrel)
- Metal rule of 0.3 mm thickness (Part No. 08-880 218-00)
- Needle rise gauge (2.4 mm), Part No. 08-880 136-05
- Terminal screw, Part No. 08-880 137-00
- A strip of white paper
- Sewing thread and test material

### 11.02 Notes on adjusting

All adjustments in these adjustment instructions are based on a completely mounted machine. Machine covers which are to be screwed off and back on for tests and adjustments are not mentioned here.

The screws and nuts in brackets ( ) are retainers for machine parts which are to be loosened before the adjustment and retightened afterwards.

### 11.03 Abbreviations

t.d.c. = top dead center

b.d.c. = bottom dead center

Program end position = Thread catcher is in position and take up lever is in its t.d.c.

## 11.04 Clamp release lever

### Requirement

With the clamp release lever 5 in resting position there must be a clearance of 122 mm between the pressure plate 6 (in the arm of the machine) and the cover plate 7.

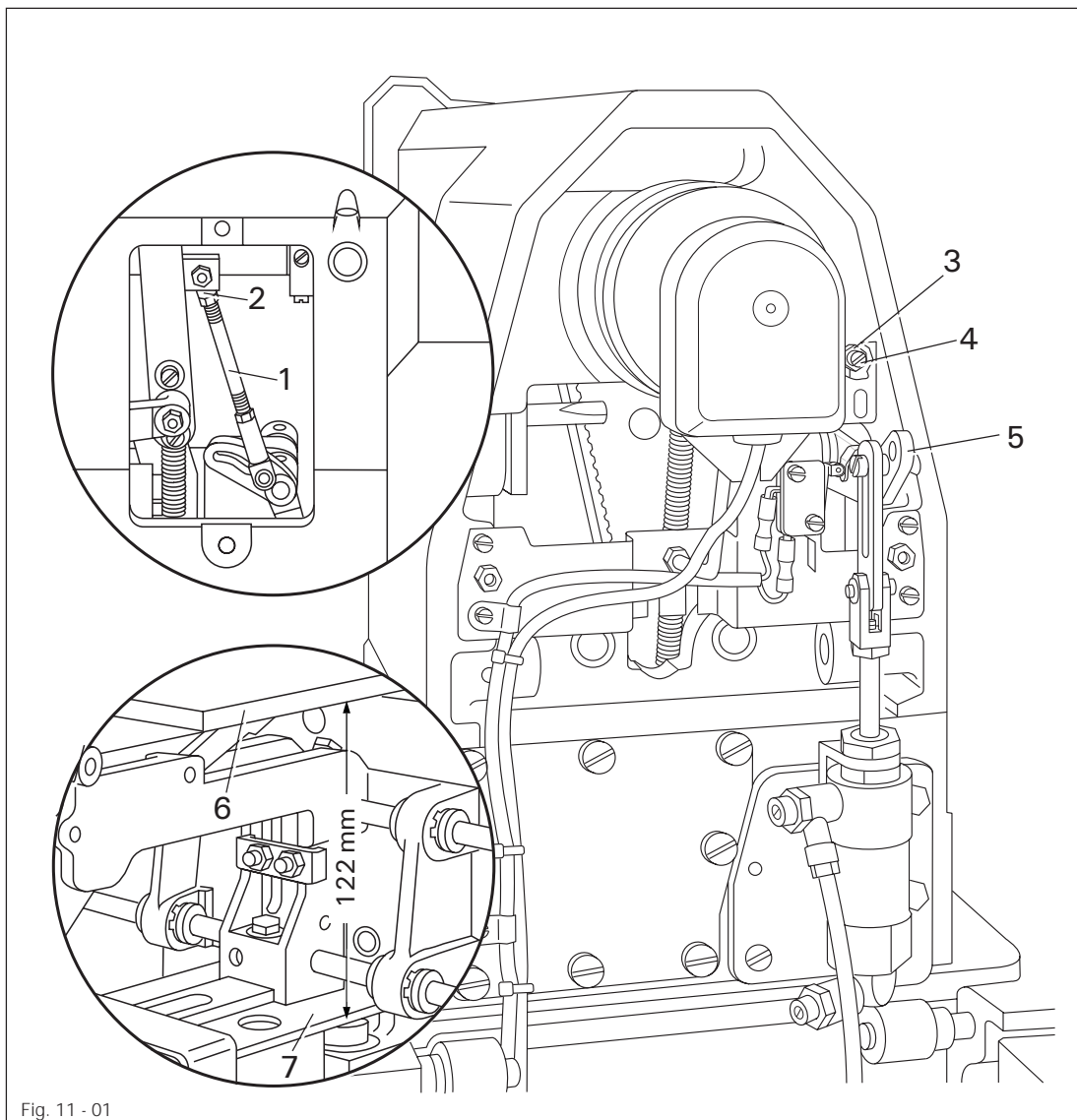
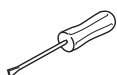


Fig. 11 - 01



- Disengage the connecting rod 1 to the knife control segment at the upper spherical head 2.
- Loosen nut 3.
- Tighten regulating screw 4 in accordance with the requirement.
- Counter regulating screw 4 with nut 3.
- Re-engage connecting rod 1.
- Check the clearance in accordance with the requirement.

11.05 Connecting rod of the knife control segment

**Requirement**

With the clamp release lever 3 in resting position the guide pin must be just touching the lowest point of the connecting link (see arrow).

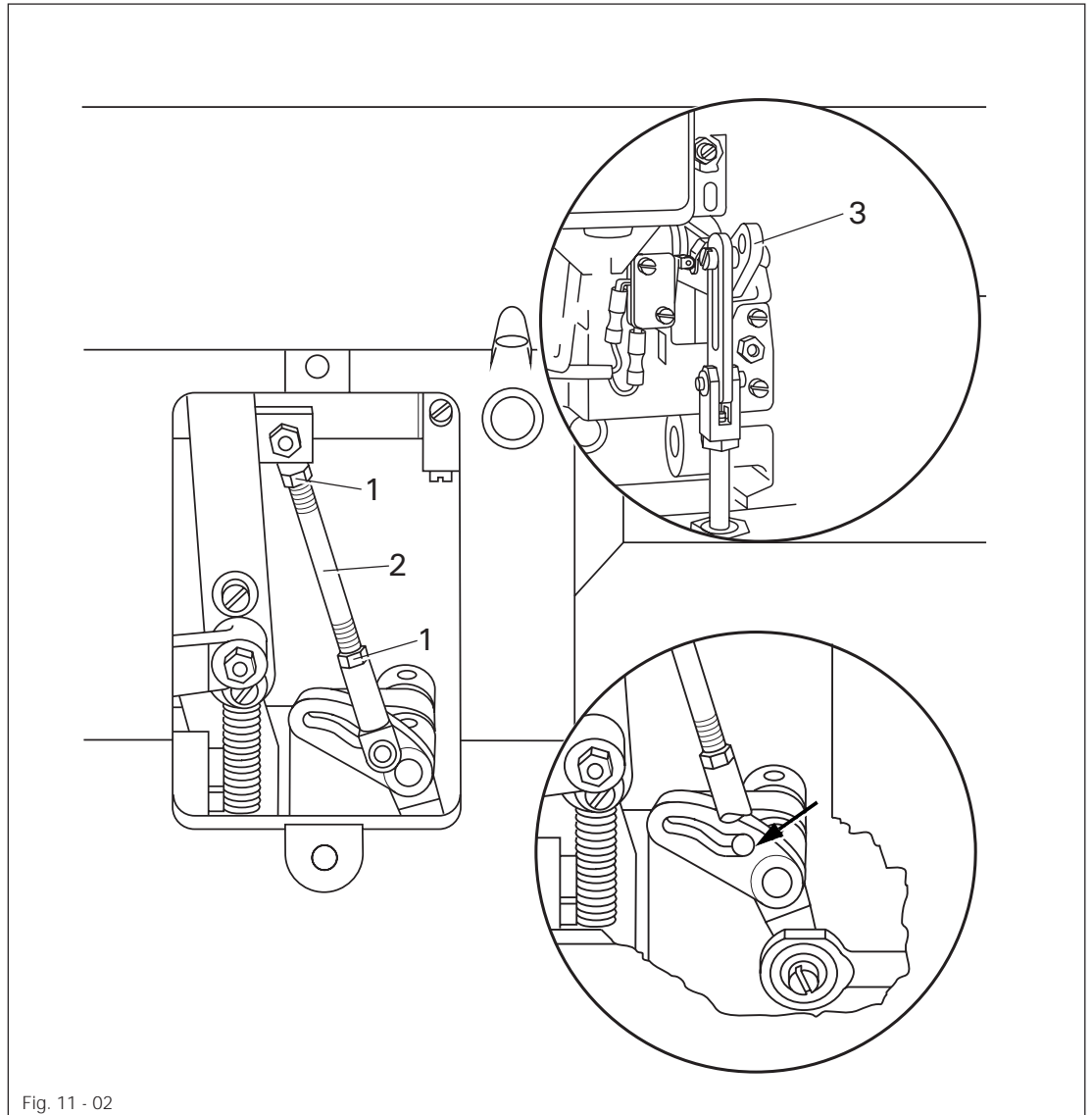
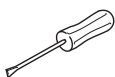


Fig. 11 - 02

- Loosen nut 1.



Upper nut has a left handed thread!

- Rotate the rod 2 in accordance with the requirement.
- Counter rod 2 with nuts 1.

## 11.06 Locking switch

### Requirement

When the pressure plate 3 is touching the roller of lever 4 the locking switch 1 must switch over.

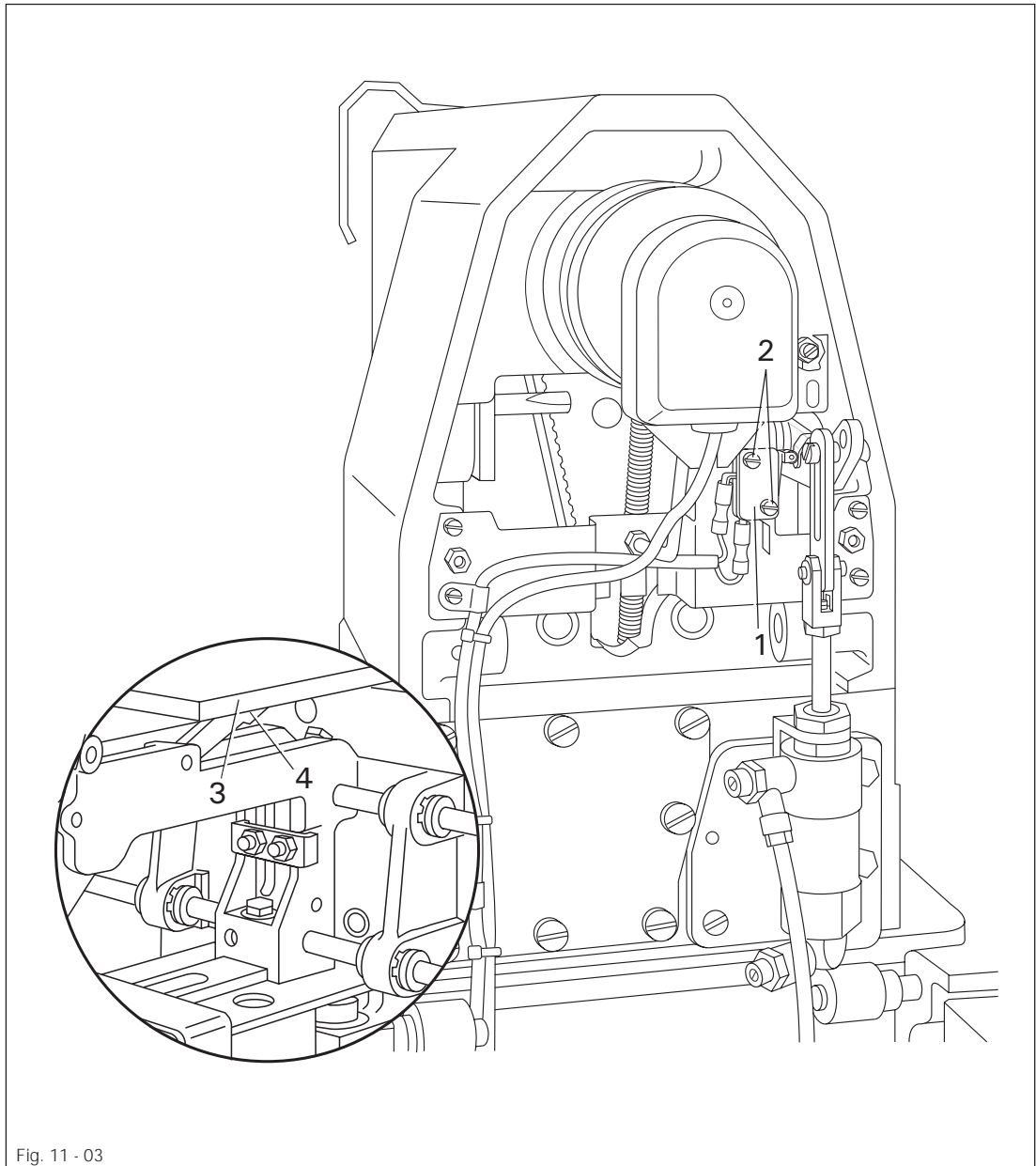
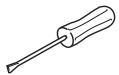


Fig. 11 - 03



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

11.07 Centering the needle in the needle hole

**Requirement**

The needle must enter exactly into the middle of the needle hole.

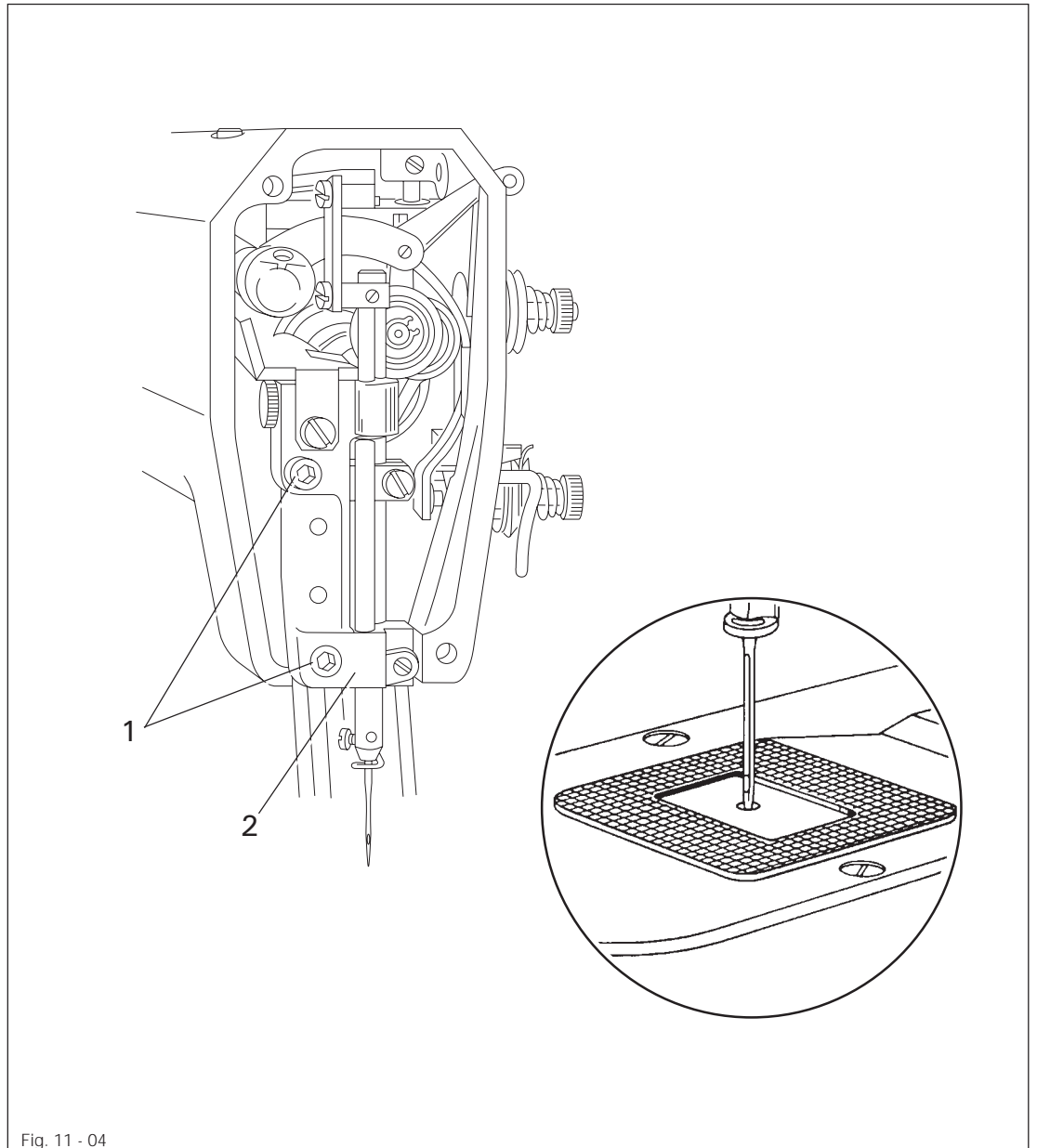
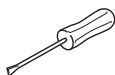


Fig. 11 - 04



- Insert a new needle with the long groove facing forwards.
- Loosen screws 1.
- Rotate the V-belt wheel while at the same time moving the needle bar frame 2 in accordance with the requirement.
- Gently tighten screws 1 so that the needle bar is not hindered in its stroke.

## 11.08 Dismantling work for the following adjustments



The machine must be in program end position.

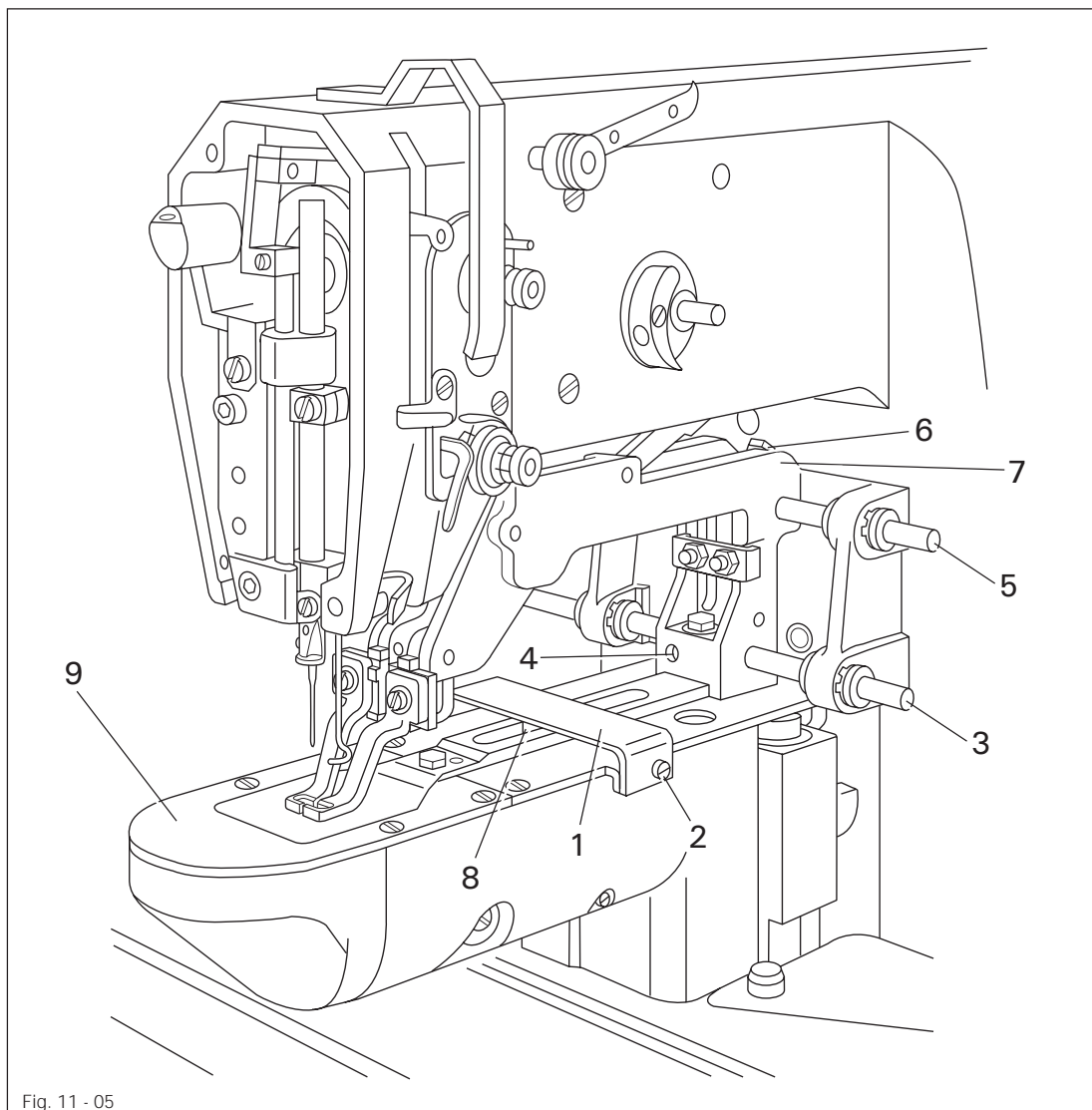
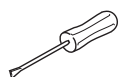


Fig. 11 - 05



- Remove covering bar 1 (screws 2).
- Pull out the lower shaft 3 (screw 4)
- Pull out the upper shaft 5 (screw 6).
- Dismount the arch clamp frame 7.
- Dismount the slide 8 from the front control pin. Take care of the distancing disks which may be underneath it!
- Dismount the needle plate 9.

## 11.08 Dismantling work (continued)

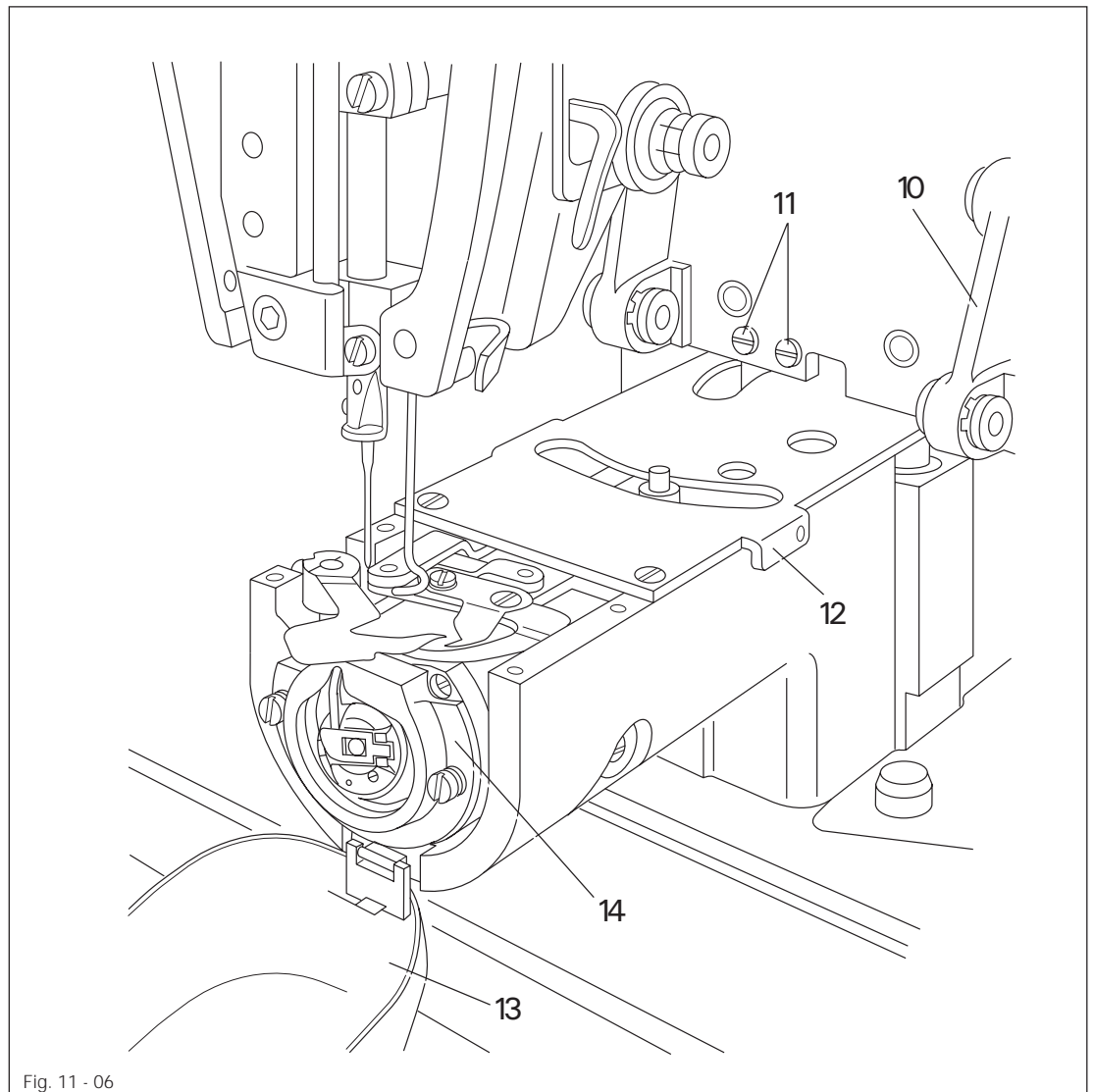
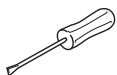
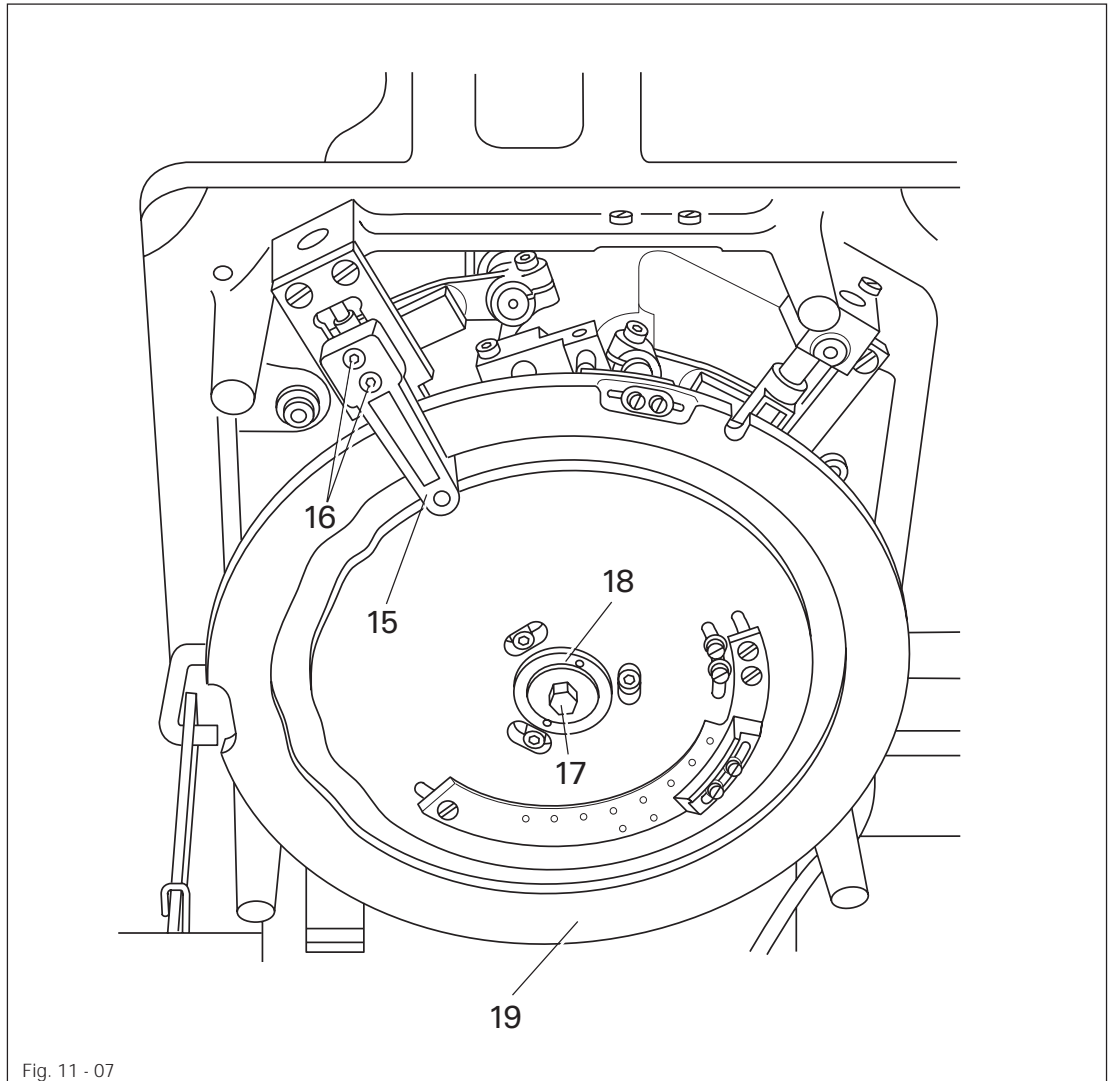


Fig. 11 - 06



- Pull slide 10 (screws 11) forward as far as possible and dismantle according to the side.
- Remove the crank drive guide and the slide underneath it. Take care of the distance disks which may be underneath it!
- Remove the lower-arm cover 12.
- Open cover lid 13.
- Screw out the hook race ring 14.
- Remove the hook with the bobbin case from the hook race.

## 11.08 Dismantling work (continued)



- Remove roller lever 15 (screws 16).
- Screw out screw 17.
- Rotate the eccentric bearing bush 18 a little to the left (anti clockwise) and pull it out.
- Remove the control cam disk 19.



## 11.09 Hook-to-needle clearance

**Requirement**

With the hook point in the middle of the needle scarf, the distance between the hook point and the needle scarf must be 0,1 mm.

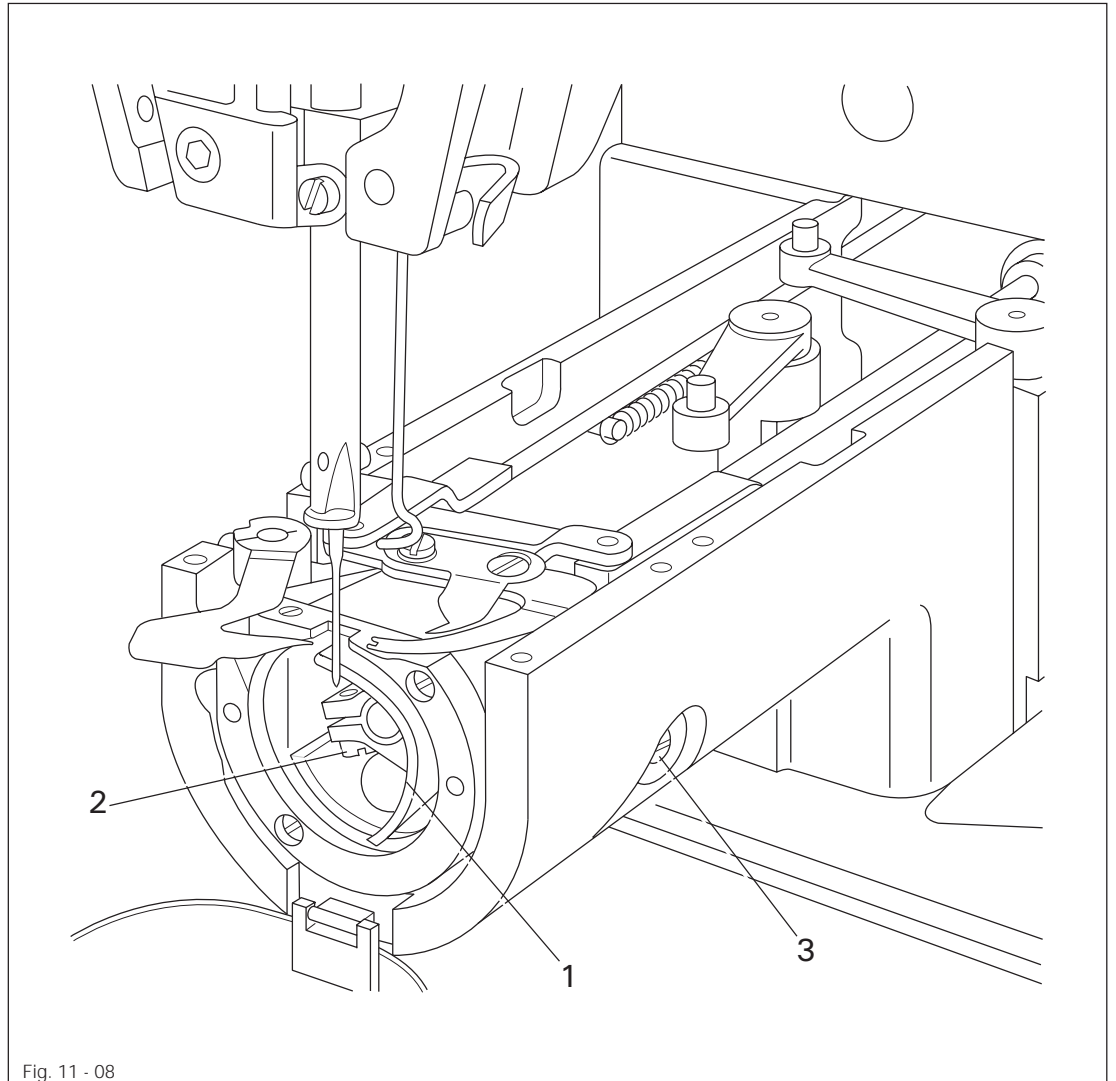
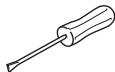


Fig. 11 - 08



- Remove drift 1 (screw 2) from its shaft.
- Loosen screw 3 a few rotations and loosen the draw key beneath it by hitting the head of the screw.
- Insert the hook into the hook race and hold it there.
- Turn the V-belt wheel and the hook simultaneously until the hook point is exactly in the middle of the needle scarf.
- Move the drift shaft bearing (with the hook race) along the length of the arm in accordance with the requirement.
- Remove the hook from the hook race.
- Tighten screw 3.
- Carry out a check in accordance with the requirement.

## 11.10 Driver

### 11.10.01 Driver shaft in sewing arm direction

#### Requirement

A distance of **1.3 mm** should exist between the cast housing of the machine arm and the gear on the driver shaft.

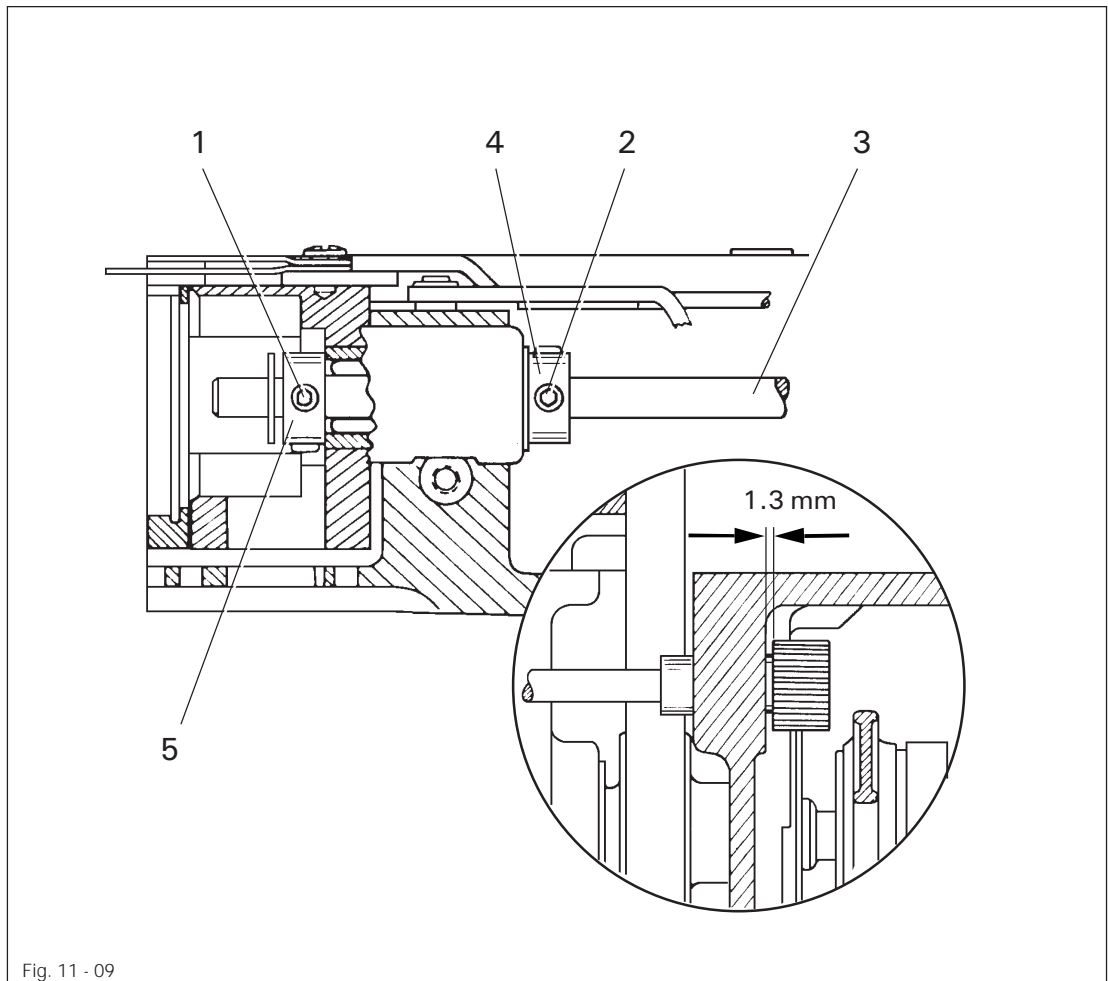
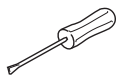


Fig. 11 - 09



- Loosen screws **1** and **2** (2x each).
- Bring the needle bar to its t.d.c.
- Pull the driver shaft **3** forwards as far as it will go.
- Slide the set collar **4** until it rests against the driver shaft bearing and tighten screws **2**.
- Push the driver shaft back until there is a clearance of **1.3 mm** between set collar **4** and the driver shaft bearing.
- Bring set collar **5** to resting position on the driver shaft bearing and tighten screws **1**.
- Loosen screw **2** a little and press set collar **4** (with light pressure against the front end of the driver shaft) against the driver shaft bearing in accordance with the requirement.
- Tighten screws **2**.



The driver shaft must move freely but without any lengthwise play!

## 11.10.02 Driver - needle guard

### Requirement

With the needle bar at b.d.c. the driver 2 must be lightly touching the needle in the area of the needle guard bias, without pressing the needle.

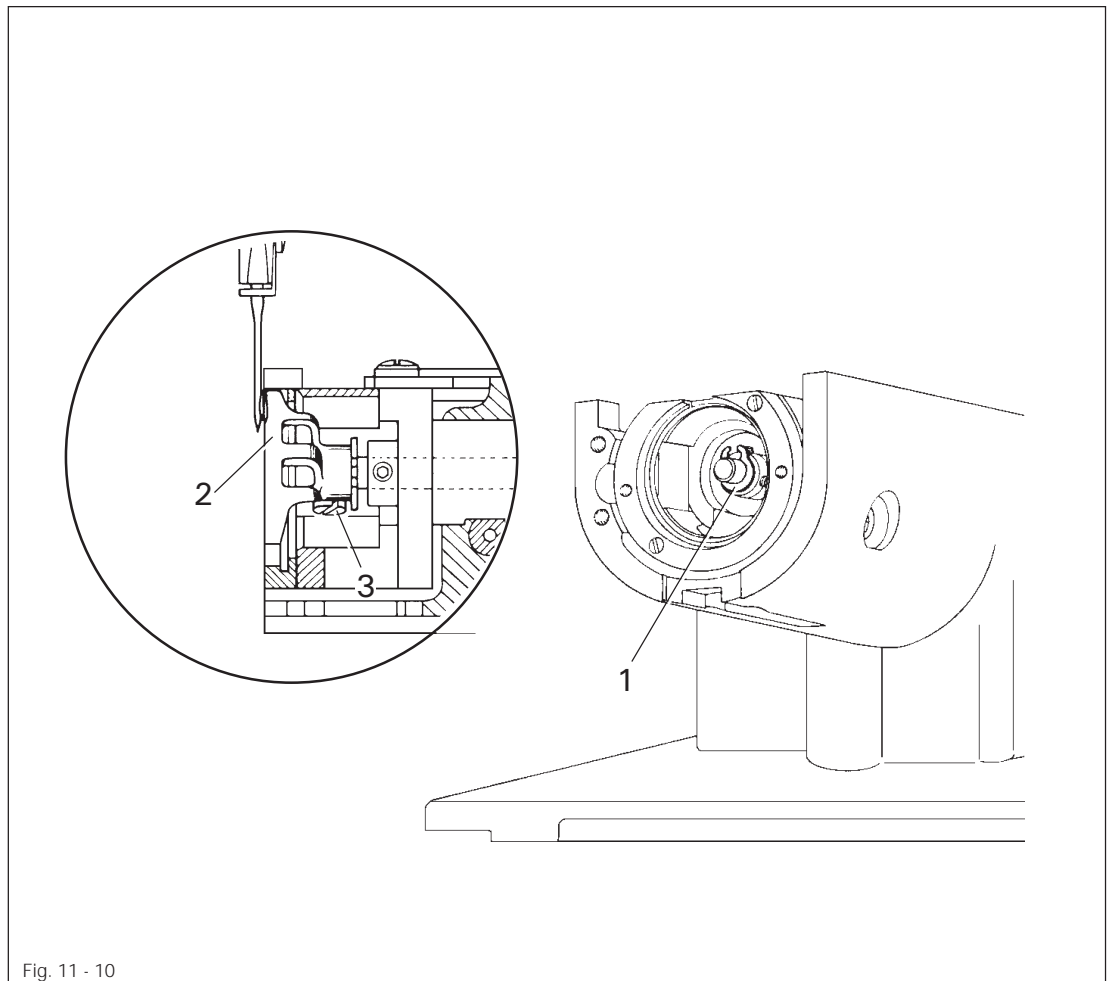
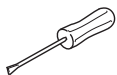


Fig. 11 - 10



- Push the locking ring 1 a little to the front.
- Bring the needle bar to its b.d.c.
- Place driver 2 on its shaft and position it so that it touches the locking ring 1.
- Knock driver 2 back in accordance with the requirement.
- Tighten screw 3 on the driver a little.

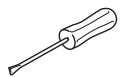
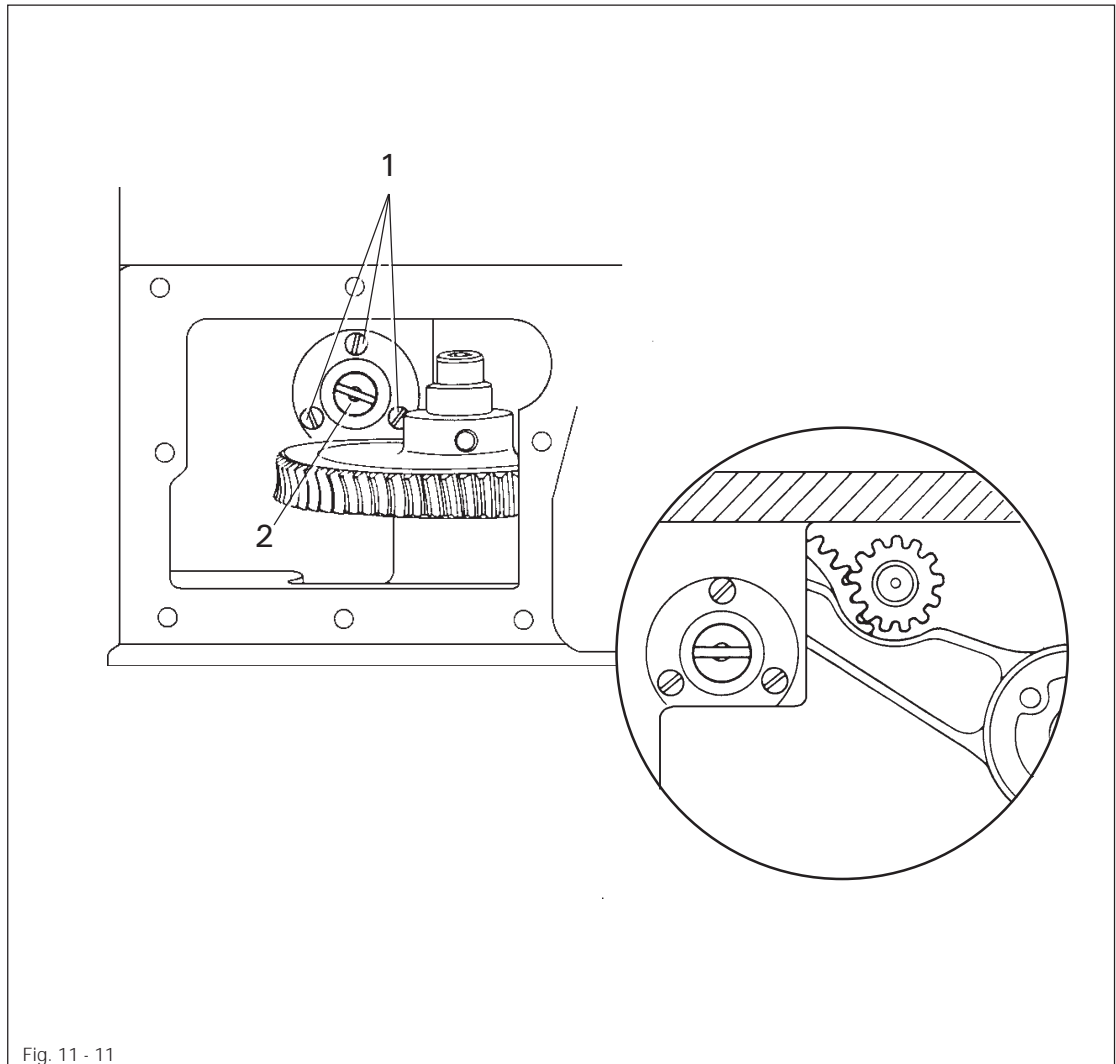


After setting the needle bar height (chapter 11.12) check this adjustment once again in accordance with the requirement.

## 11.10.03 Driver play

### Requirement

The driver should have no radial play and both cogs should be flush, however, the hindrance free running of the machine must be guaranteed.



- Remove the right housing lid.
- Loosen screws 1.
- Turn eccentric axle 2 in accordance with the requirement.
- Tighten screws 1 evenly.

## 11.10.04 Driver reversal point and needle bar rise

### Requirement

With the needle bar at its b.d.c. the hook point must be at its left point of reversal.

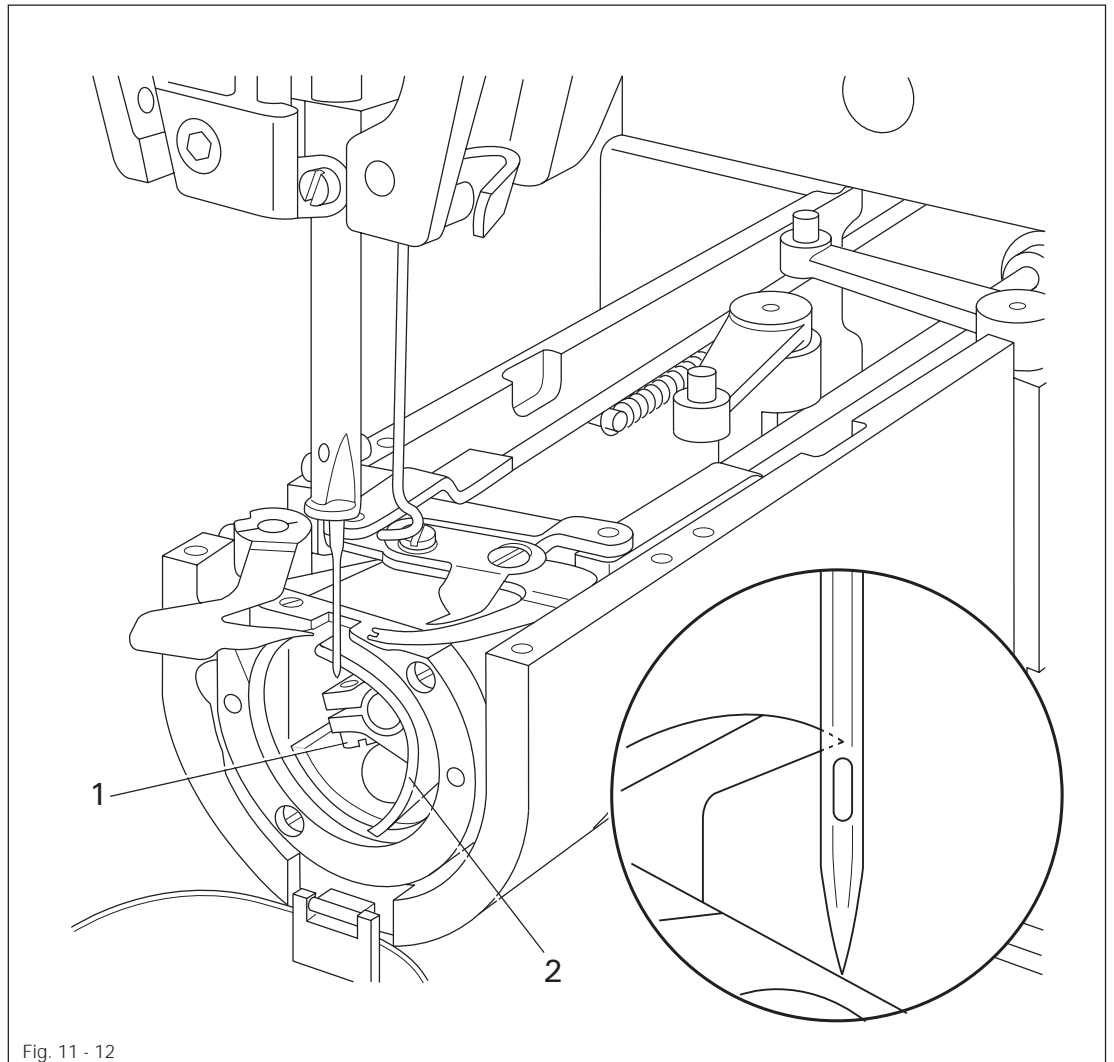
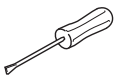


Fig. 11 - 12



Check that on the parts on the drive shaft (e.g. spur toothed wheel, eccentric and worm) the first screw in the direction of rotation is on the surface/in the groove and all the screws are tightened.

- Loosen screw 1 on driver 2 just enough so that the driver can be rotated with difficulty on its shaft.
- Insert the hook into the hook race and bring the needle bar to its b.d.c.
- Set the needle bar rise at **2.4 mm** (use the clamp screw).
- Turn the hook simultaneously with the driver so that the hook point is directly behind the needle.
- Rotate the V-belt wheel backwards until the clamp screw is touching the needle bar frame. The hook point must once again be directly behind the needle.
- Continued on next page.

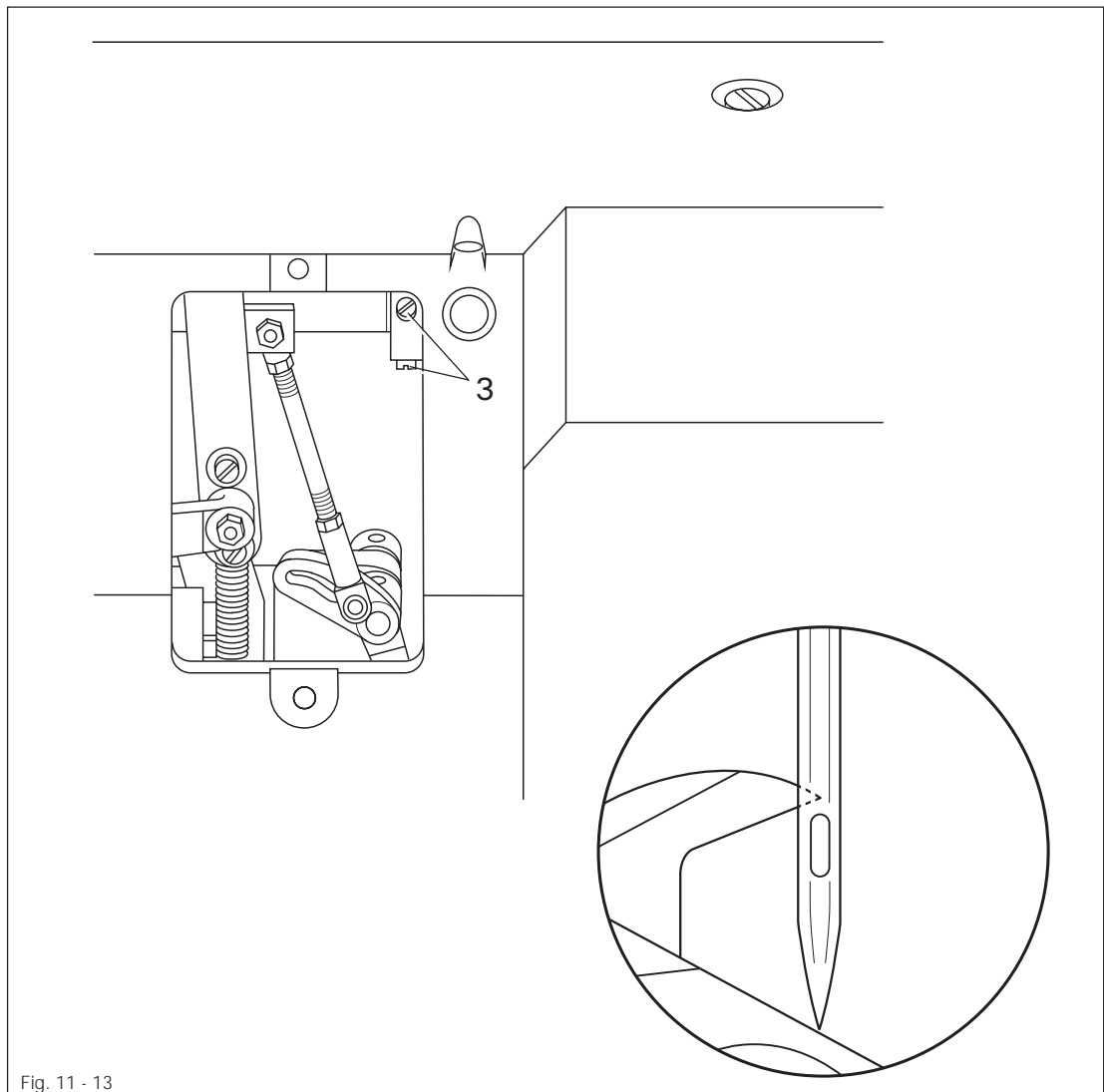
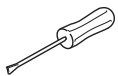


Fig. 11 - 13



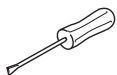
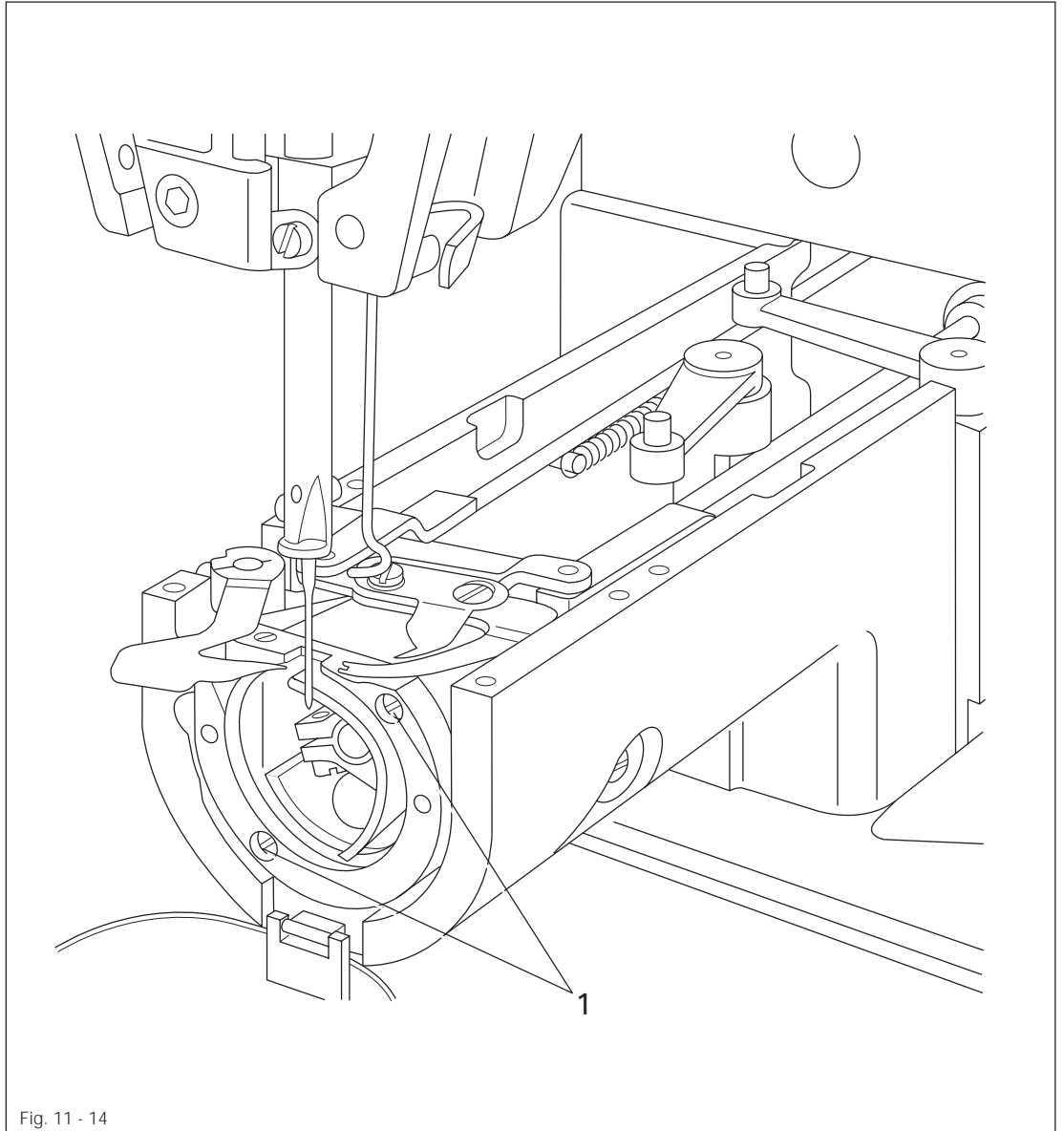
If the hook point is not directly behind the needle, proceed as follows:

- Remove the clamp screw.
- Loosen the three screws **3** just enough so that the V-belt wheel can be rotated with difficulty.
- Hold the V-belt wheel and turn the toothed belt wheel a little.
- Set the needle bar rise and repeat the following points until the hook point is directly behind the needle:
  - Rotate the hook simultaneously with the driver until the hook point is directly behind the needle.
  - Rotate the V-belt wheel backwards until the clamp screw is touching the needle bar frame. The hook point must be directly behind the needle bar.
- Taking care to ensure that the toothed belt wheel is touching on the right hand side, tighten the screw **3** that is accessible.
- Remove the clamp screw from the needle bar.
- Tighten the other screws **3**.
- Remove the hook from the hook race and tighten screw **1** on the driver.

## 11.11 Hook race

### Requirement

In every position there must be a large amount of play (for the thread) between the driver and the hook.

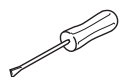
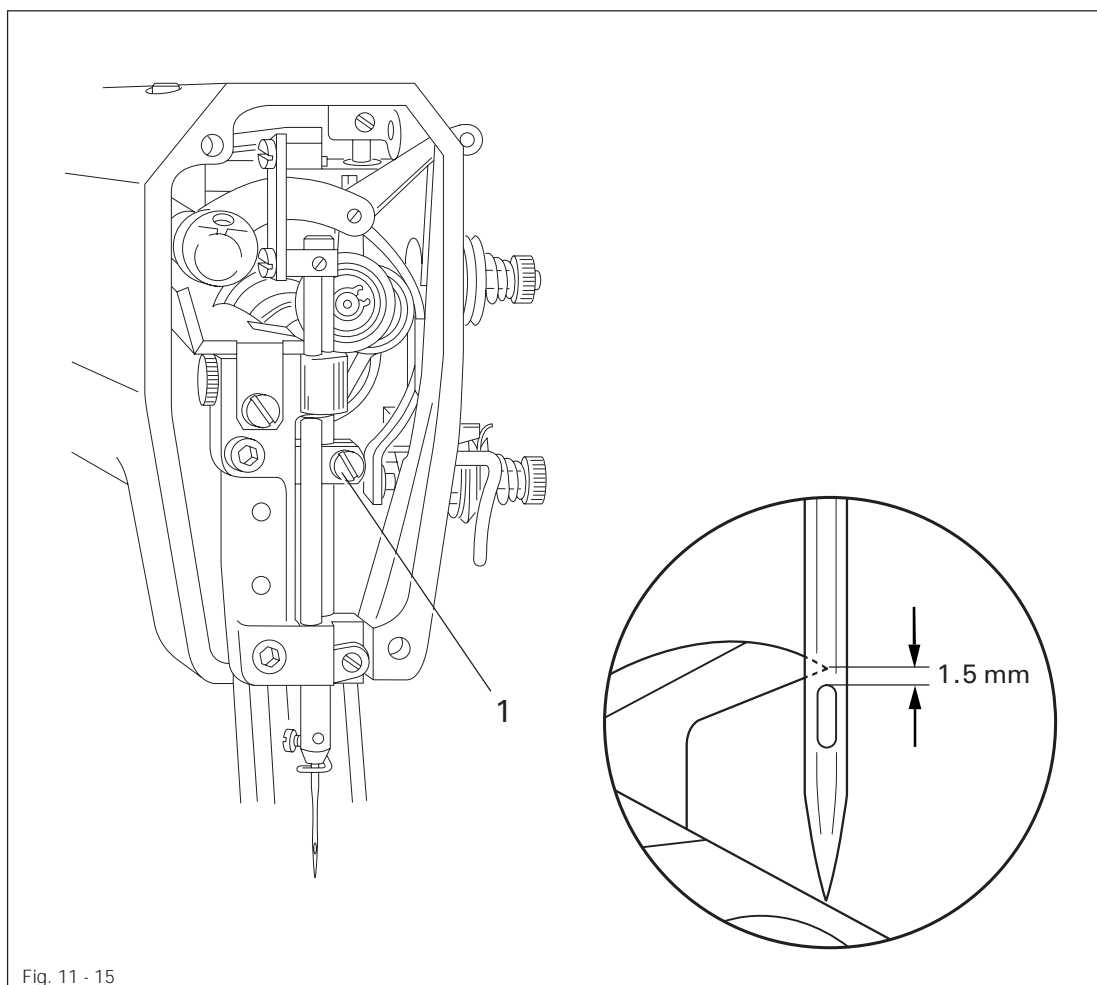


- Loosen screws 1 on the hook race.
- Insert the hook into the hook race.
- Align the hook race in accordance with the requirement.
- Tighten screws 1.
- Check in accordance with the requirement.

## 11.12 Needle bar height

### Requirement

With the hook point exactly in the middle of the needle, there must be a clearance of 1.5 mm between the top edge of the eye of the needle and the hook point.



- Rotate the V-belt wheel in its direction of rotation until the hook point is directly in the middle of the needle.
- Move the needle bar (screw 1) in accordance with the requirement.



The screw of the thread guide eyelet on the needle bar must be facing towards the back.

- Screw the hook race locking ring so that it still bounces.



11.13 Bobbin thread puller and knife

**Requirement**

1. With the clamp lifting lever pressed there must be a clearance of **53 mm** between the inside of the threaded hole **6** and the point of the bobbin thread puller.
2. The clearance from the cutting edge of the knife to the inside of the threaded hole **6** must be **38 mm**.



The machine must be in program end position.

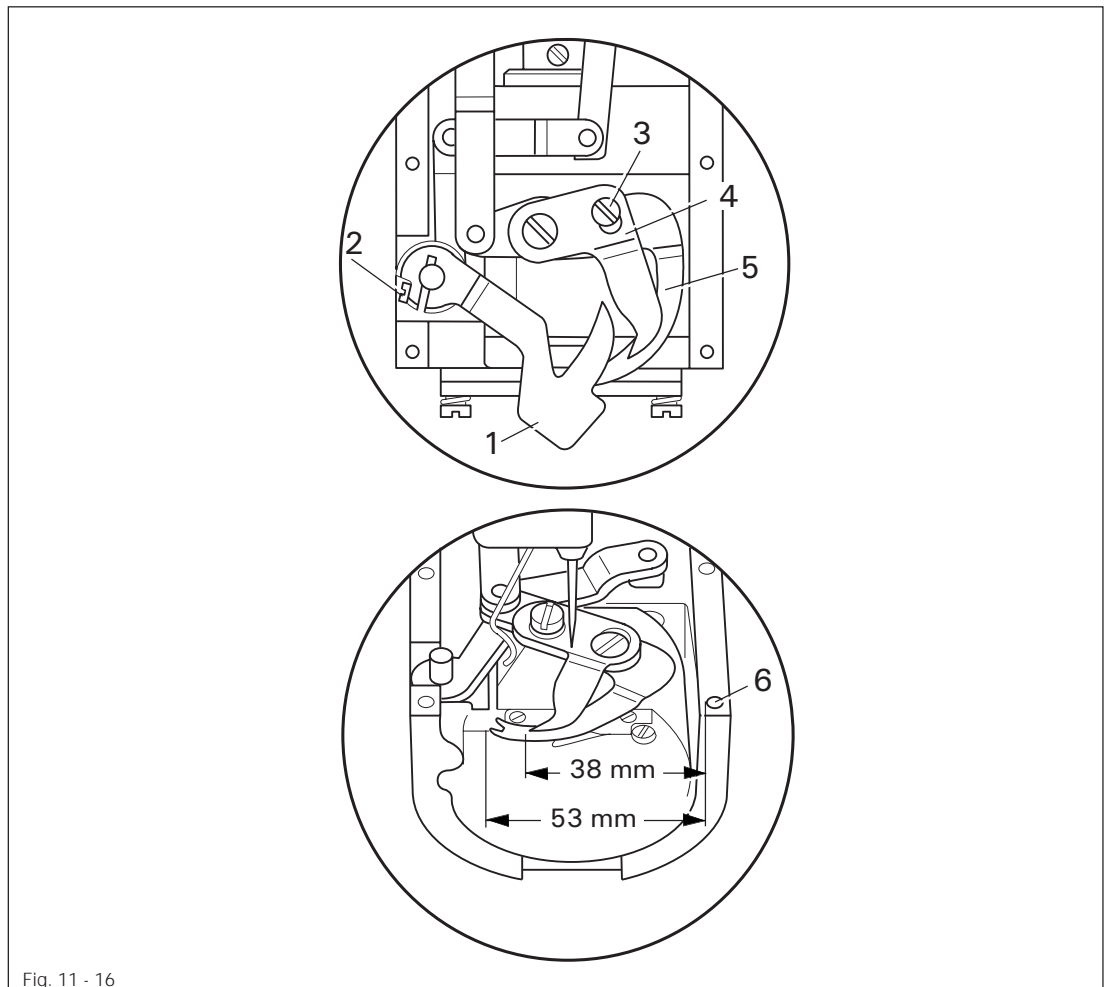
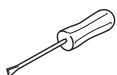


Fig. 11 - 16



- Swing the needle thread catcher **1** to the left and loosen screw **2** a little.
- Loosen screw **3** far enough so that knife **4** and bobbin thread puller **5** can be moved with difficulty.
- Bring the knife and the bobbin thread puller into the front point of reversal using the clamp lifting lever. Block the lifting lever.
- Adjust the bobbin thread puller and the knife in accordance with the requirement.
- Tighten screw **3**, taking care that the bobbin thread puller is as close as possible over the hook race without touching it.
- Tighten screw **2**.

## 11.14 Inserting the control cam

### Requirement

The control cam must be inserted in such a way that the play between the two spur gears is as minimal as possible without hindering the smooth running of the machine.



The machine must be in program end position.

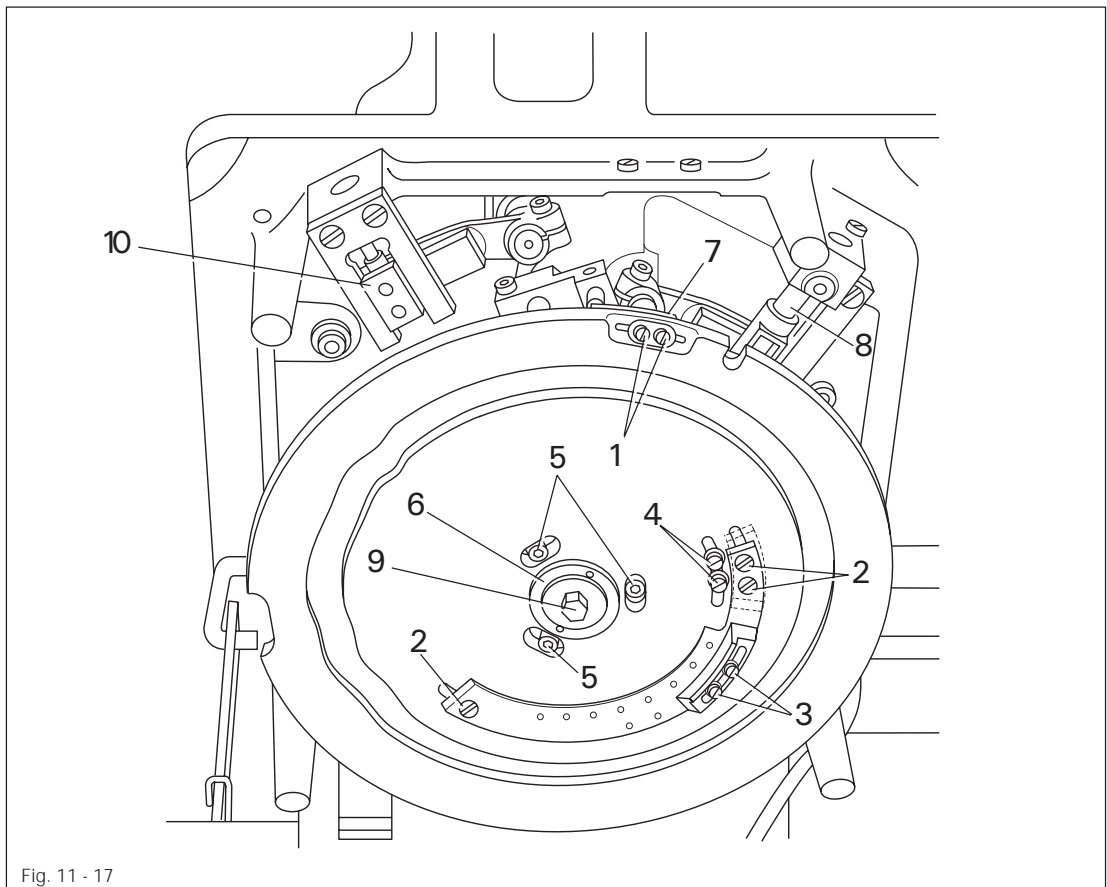
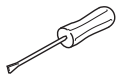


Fig. 11 - 17

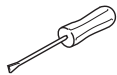
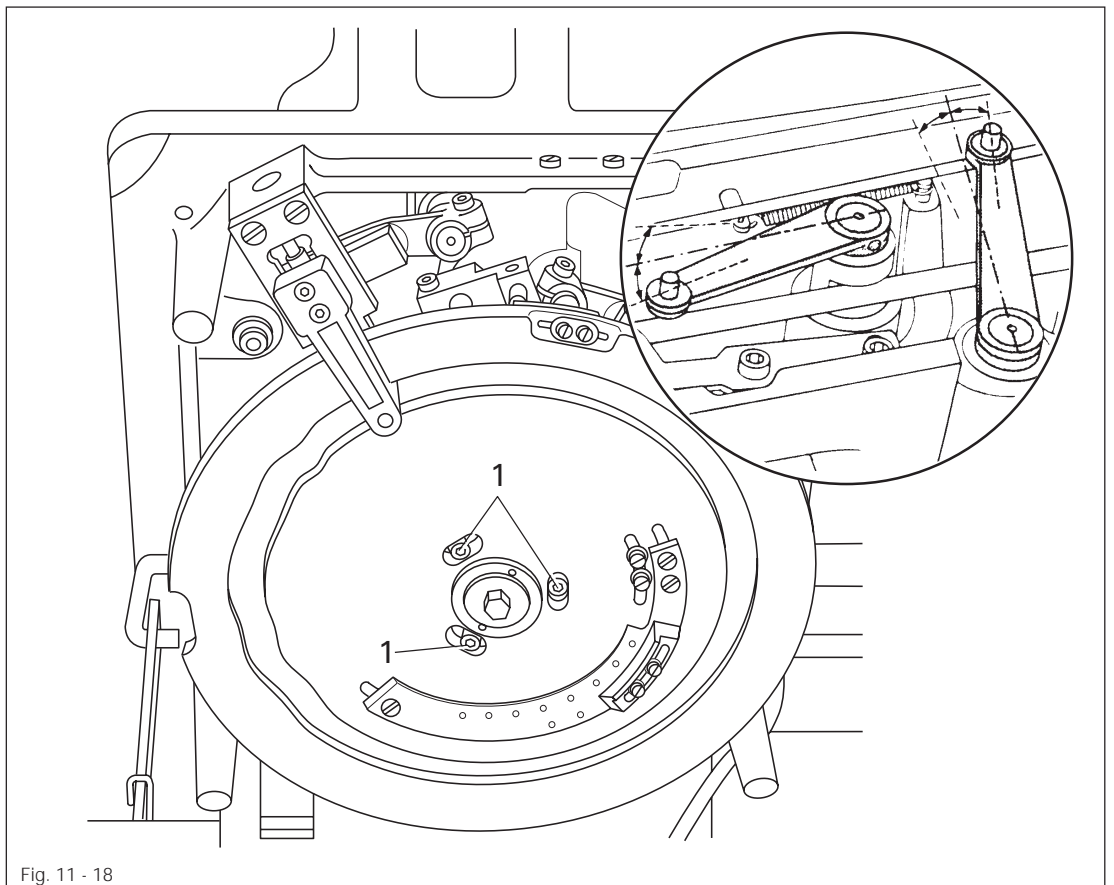


- Loosen screws 1, 2, 3 and 4 and position them in the middle of their elongated holes.
- Tighten screws 1, 2, 3 and 4.
- Insert the eccentric bearing bush 6 into the control cam and rotate it so that the largest eccentricity is pointing upwards, i.e. is pointing to the radial cam 7 of the catcher.
- Mount the control cam, taking care that the notch on the edge of the control cam is pointing to the left and the roller of the right hand control segment 8 is in the curve path.
- Insert the locking disk into the bearing bush 6 (ensuring that the pin is in the hole).
- Tighten screw 9 as far as possible by hand.
- Rotate bearing bush 6 clockwise in accordance with the requirement.
- Tighten screw 9.
- Set the roller lever on the left control segment 10 and move the segment so that the roller is in the curve path.
- Screw on the roller lever.

## 11.15 Feed stroke

### Requirement

The feed stroke of the functioning control lever must occur 50% before the t.d.c. of the needle bar and 50% after it.



- Activate the engaging lever.
- Rotate the V-belt wheel to check the stroke of the needle and the control lever.
- Turn the control cam disk to carry out the correction (screws 1).

## 11.16 Thread catcher

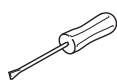
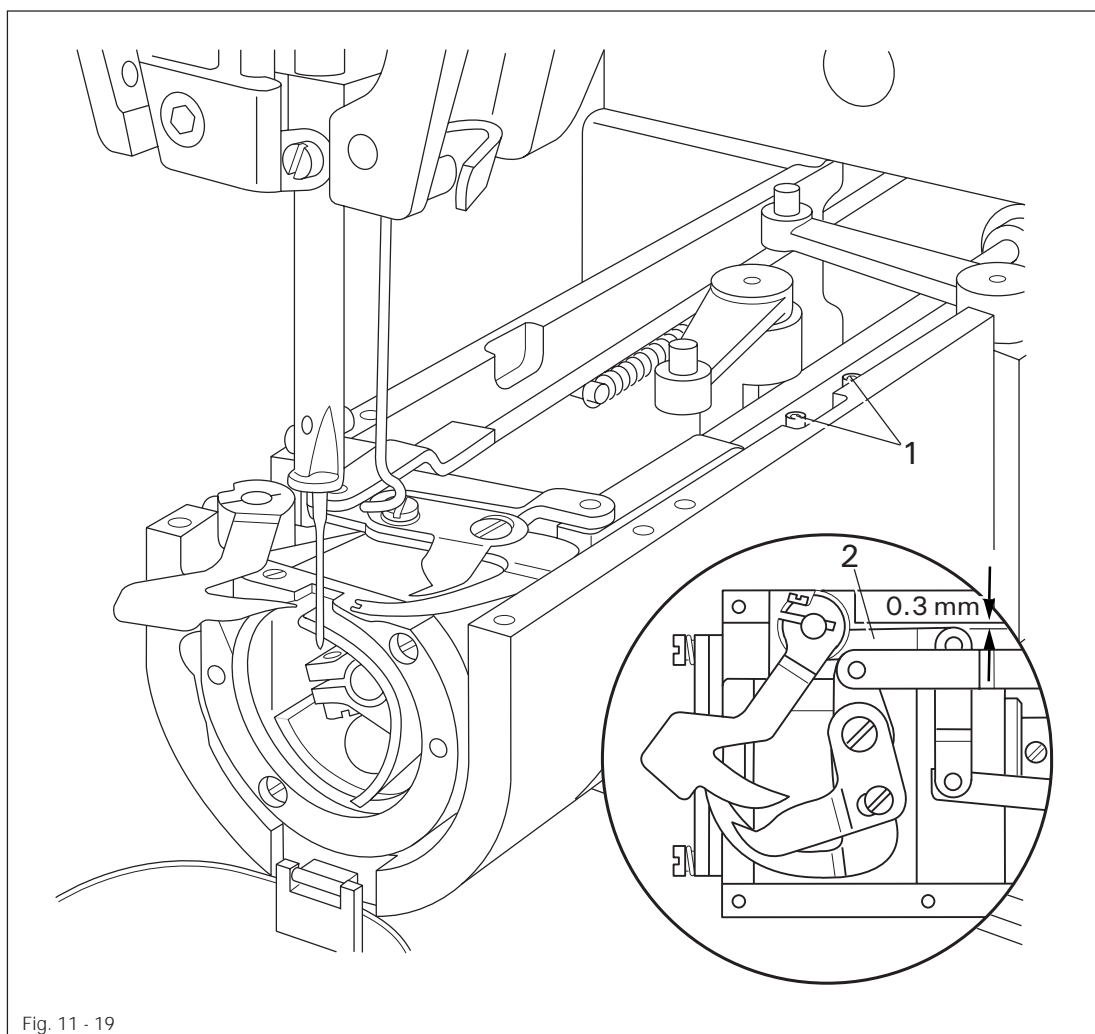
### 11.16.01 Thread catcher - connecting crank

#### Requirement

With the thread catcher fully activated by the cam there must be a clearance of **0,3 mm** between crank **2** and the moulded wall.



The machine must be in program end position.



- Machine in start position, activating pin for catcher control at the highest point of the control cam.
- Loosen screws 1.
- Adjust in accordance with the requirement.
- Tighten the front screw 1 first and then the rear screw 1.

## 11.16.02 Thread catcher - position

### Requirement

1. With crank **6** touching the lower arm moulded wall, the thread catcher **4** must just be touching the needle.
2. With the thread catcher **4** in start position, there must be a clearance between the catcher point and the needle of **4 mm**.
3. The thread catcher **4** must be able to pass between knife **9** and bobbin thread puller **10** without touching anything.



The machine must be in program end position.

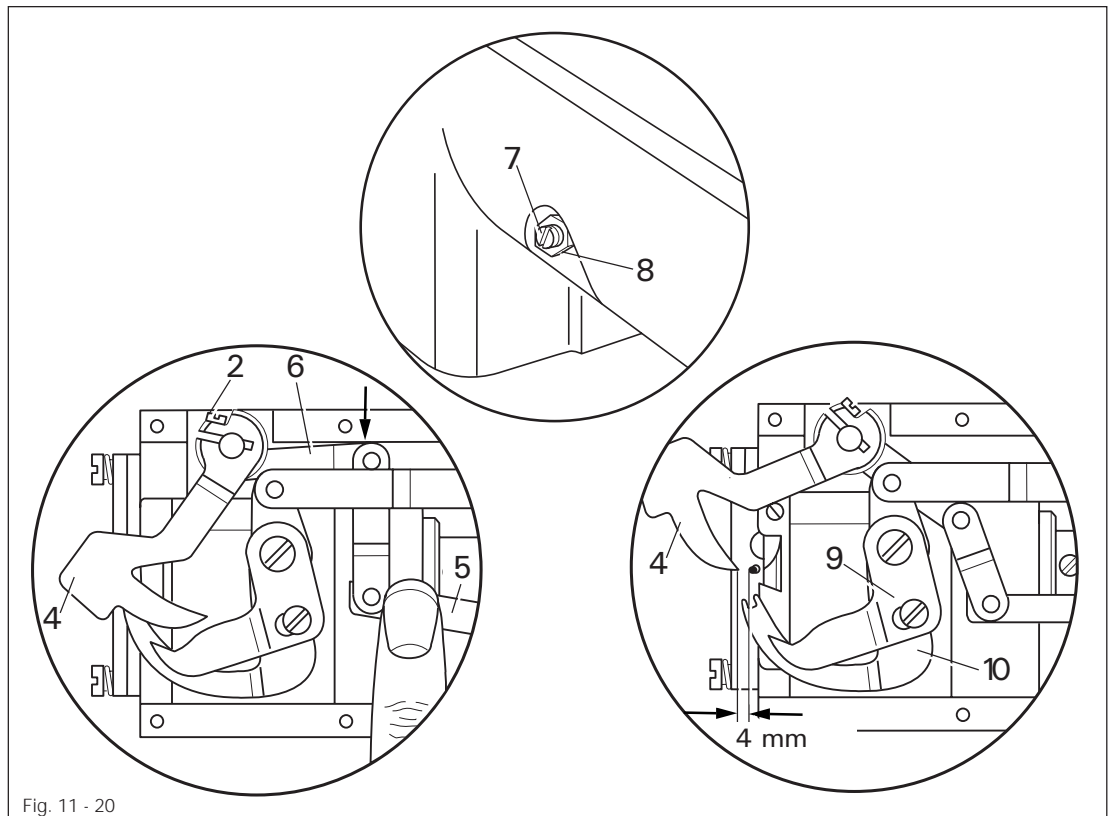
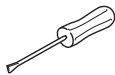


Fig. 11 - 20



- Bring the needle bar to its b.d.c. by turning the V-belt wheel. Ensure that pin **3** of the control cam **1** (see Fig. in chapter 11.16.03) is dropped.
- Loosen screw **2** just enough so that the thread catcher **4** can be turned on its shaft with difficulty.
- Press connecting rod **5** to the left until crank **6** is touching the lower arm moulded wall and hold it there.
- Pivot thread catcher **4** back in in accordance with requirement 1.
- While observing requirement 3, tighten screw **2**. Upon letting go of the connecting rod the thread catcher must fall back to start position.
- Turn set screw **7** (nut **8**) in accordance with requirement 2.
- Raise pin **3** with its activating lever (see Fig. in Chapter 11.16.03 and bring the machine into program end position by turning the V-belt wheel backwards.

## 11.16.03 Thread catcher - movement

### Requirement

The thread catcher must begin with its triggering movement when the hook point is directly behind the needle with the hook coming from the left on the last stitch of the sewing program.



The machine must be in program end position.

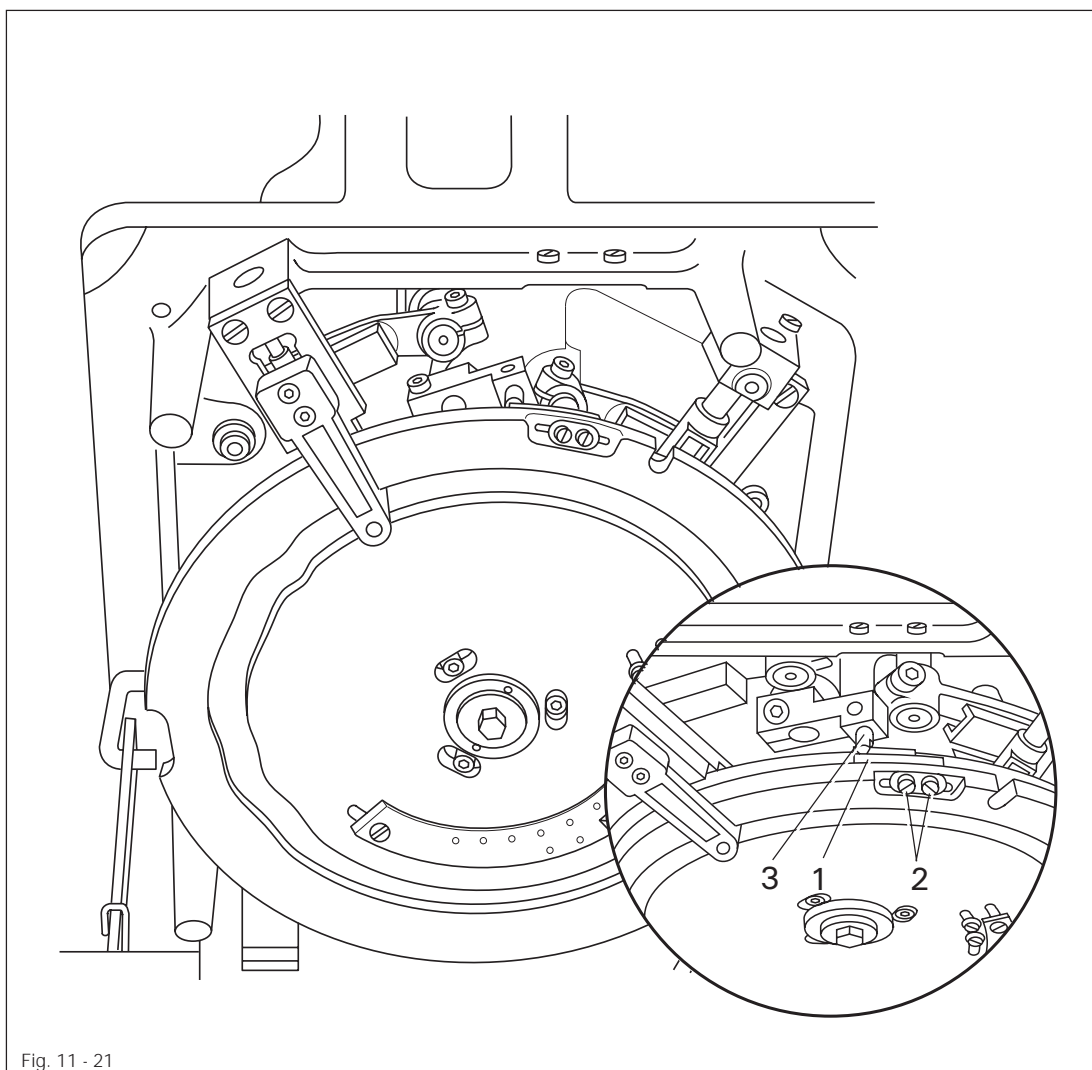
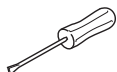


Fig. 11 - 21

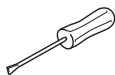
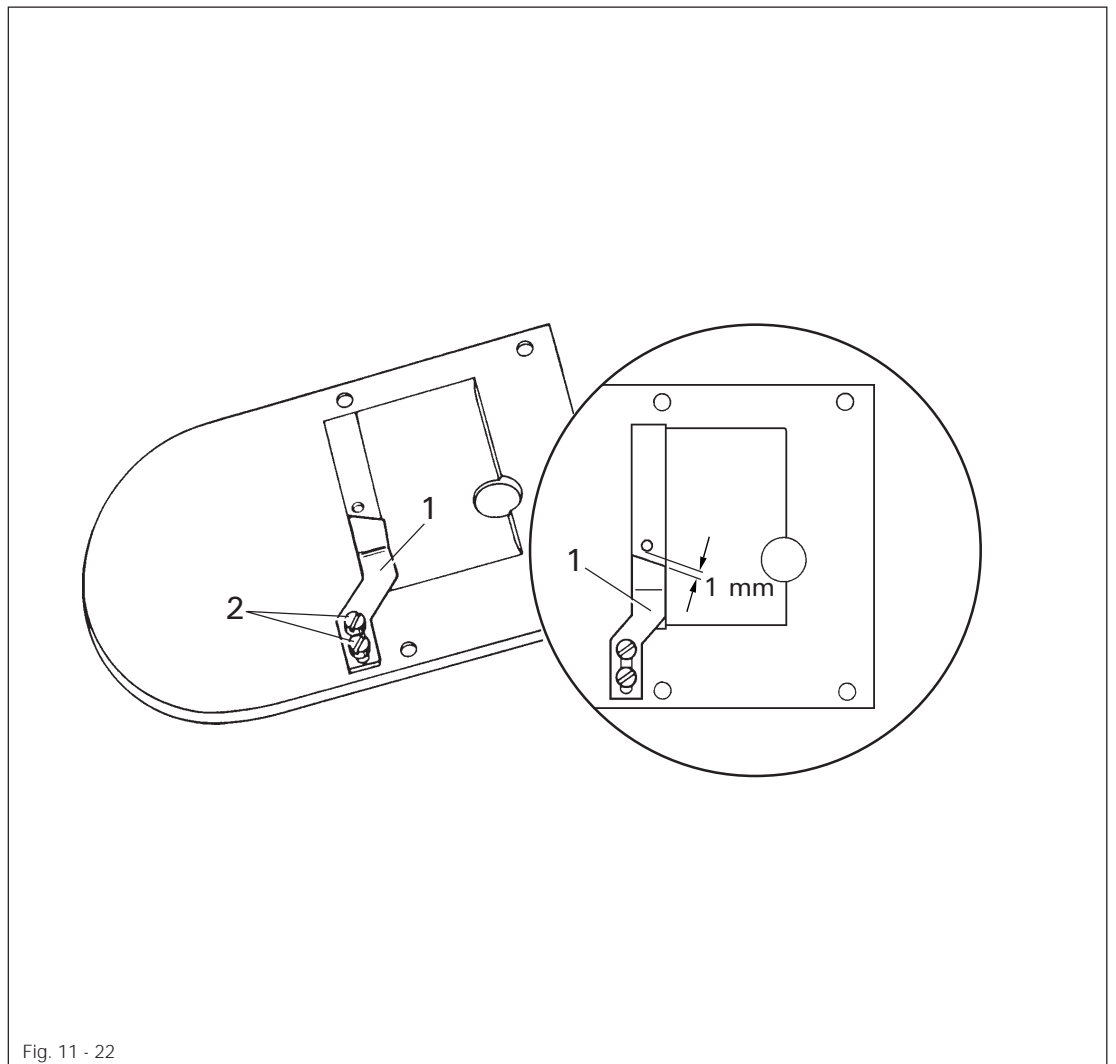


- Turn the V-belt wheel one rotation backwards.
- Turn the V-belt wheel in the direction of rotation until the hook point is exactly behind the needle with the needle bar moving upwards.
- Move control cam 1 (screws 2) to the right until nut 3 is touching the bias of the control cam.
- Turn the V-belt wheel 1/2 a rotation backwards and then turn it slowly in the direction of rotation while carrying out a check in accordance with the requirement.
- Turn the V-belt disk in its direction of rotation until the take up lever is in its t.d.c. The machine is in program end position.

## 11.17 Counter blade on the needle blade and cutting test

**Requirement**

The clearance between the knife blade and the edge of the needle hole must be 1 mm.



- Adjust knife 1 (screws 2) in accordance with the requirement.
- Tighten screws 2 and screw on the needle plate.
- To check the cut, insert a double thread through the needle hole and activate the lifting lever by hand. Both threads must be cut perfectly.



If this is not the case, remove the needle plate and align the knife so that the left edge of the knife blade (seen from the front) is a little higher than the right blade so that a scissor effect is guaranteed between the fixed and the moving knife when the needle plate is screwed on.

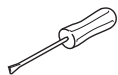
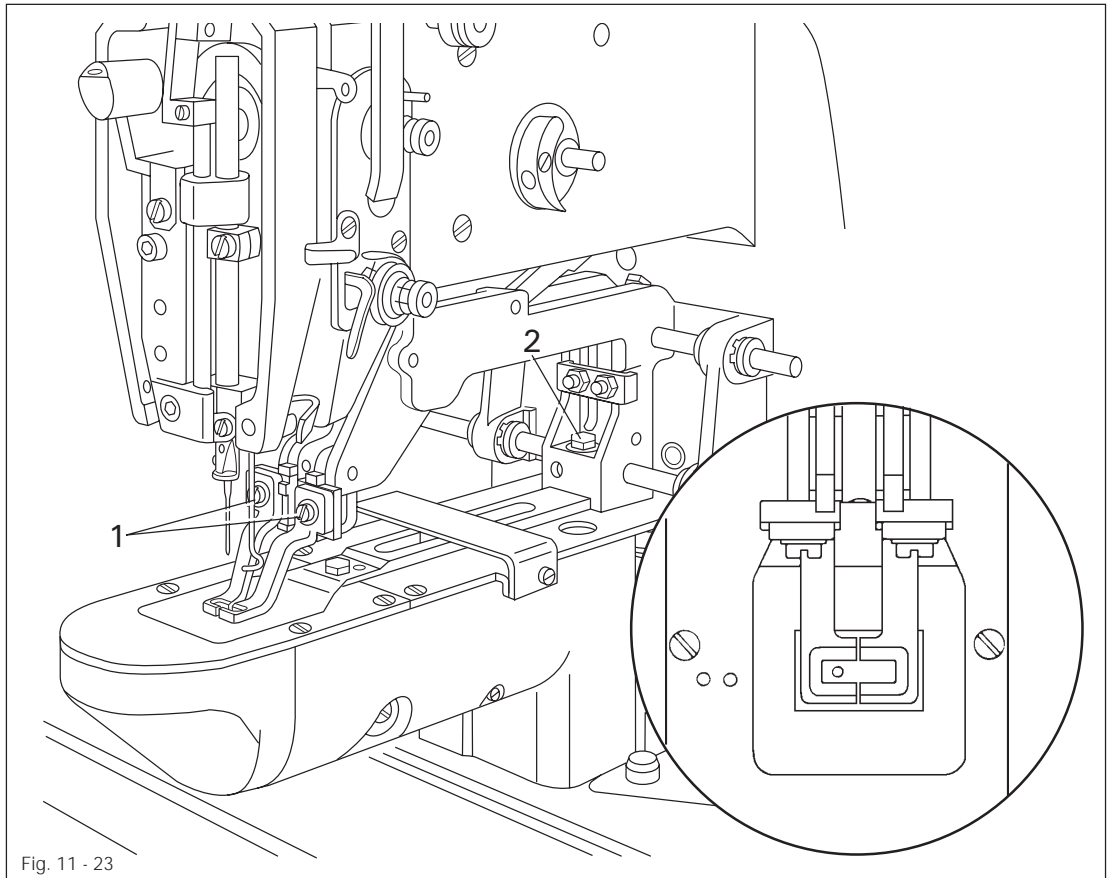
## 11.18 Presser feet

### Requirement

1. The presser feet must rise independently of each other without touching.
2. The presser feet must lie exactly in the middle of the plate cutout.



The machine must be in program end position.



- Align the presser feet in accordance with requirement 1 (screws 1).
- Move the slide rail lengthwise in accordance with requirement 2 (screw 2).



## 11.19 Sewing construction in the presser foot cutouts

**Requirement**

The needle must enter the material at the same distance from both inner edges of the presser foot at the lengthwise and crosswise movements of the clamp carrier.



The machine must be in program end position.

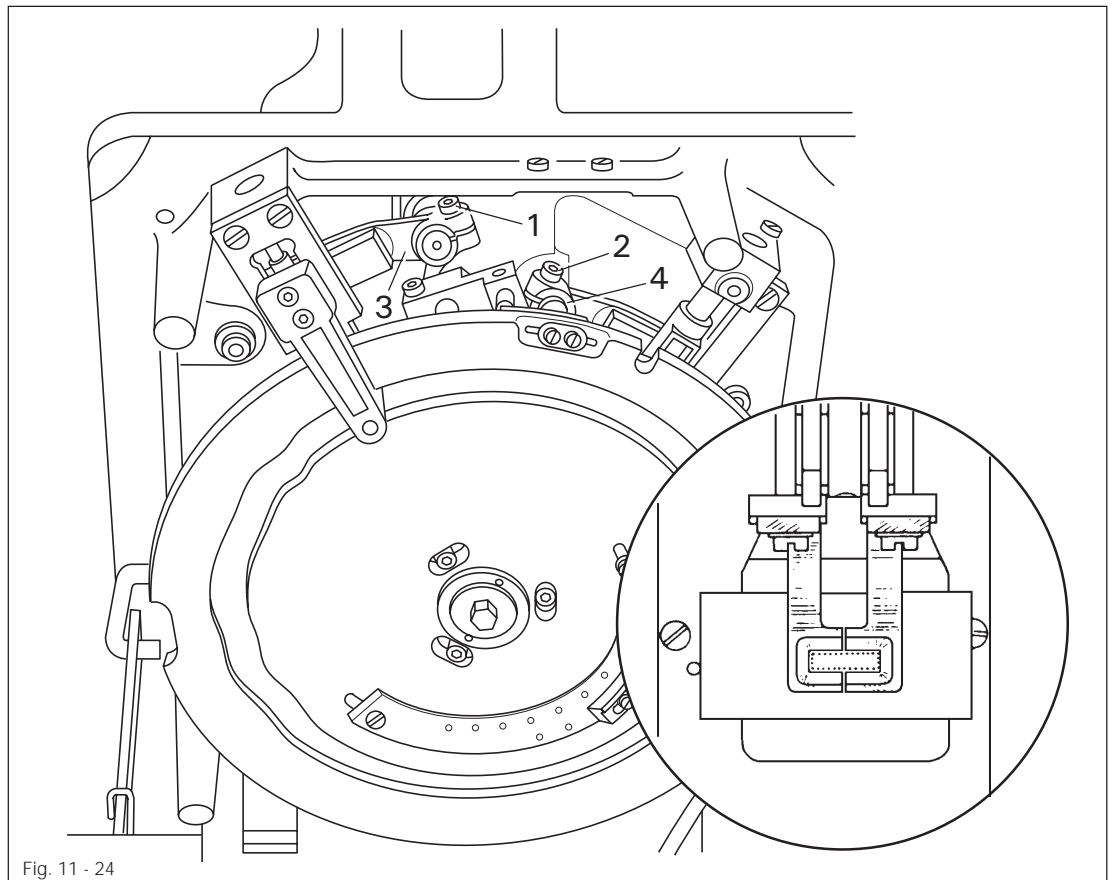
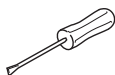


Fig. 11 - 24

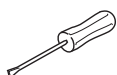
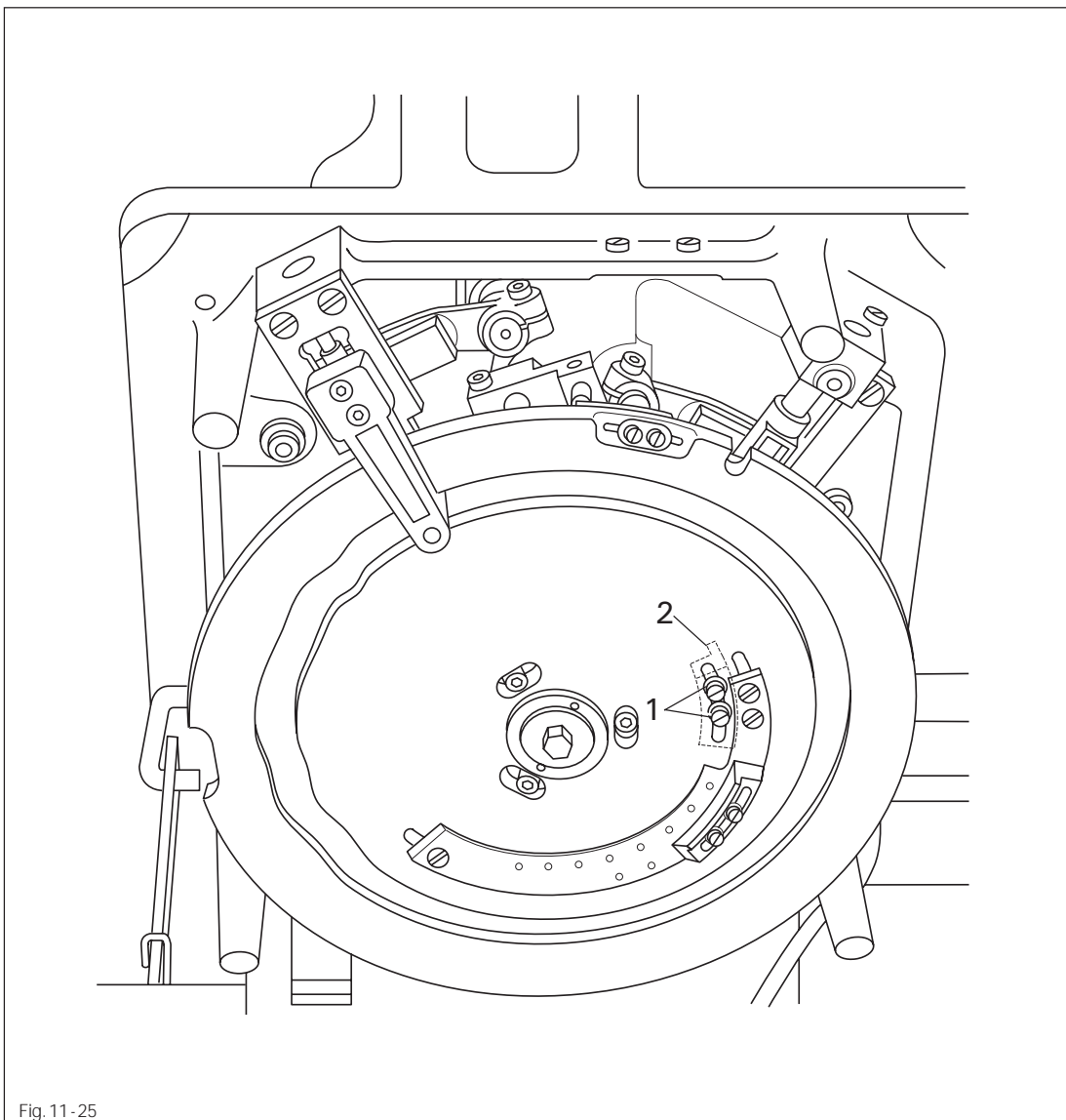


- Set the sewing construction size to its maximum (see Chapter 8.03 + 8.04).
- Loosen screws 1 and 2 enough so that cranks 3 and 4 can be moved with difficulty.
- Activate the engaging lever by hand.
- Turn the V-belt wheel in the direction of rotation and move the clamp carrier so that the distance from the needle to the left and right inside edges of the presser feet is the same (see Fig.).
- Tighten screw 1.
- Continue to turn the V-belt wheel in its direction of rotation until the machine runs lengthwise along the arm.
- Move the clamp carrier so that the distance from the needle to the front and back inside edges of the presser feet is the same.
- Tighten screw 2.
- Continue turning the V-belt wheel until the machine is in program end position and the take up lever is at its t.d.c.

## 11.20 Tension release cam

### Requirement

At the first stitch and with the take up lever at its b.d.c. the lower thread tension must be closed.



- Turn the V-belt wheel in its direction of rotation until the take up lever is at its b.d.c.
- Loosen screws 1 and move the tension release cam 2 down as far as possible.
- Push the tension release cam 2 back as far as possible so that it is touching the feeling lever and tighten screws 1.
- Continue turning the V-belt wheel until the machine is in program end position and the take up lever is at its t.d.c.

## 11.21 Tension release lever

**Requirement**

With the bobbin thread released the thread check spring must be at the same height as the slack thread control wire 4.

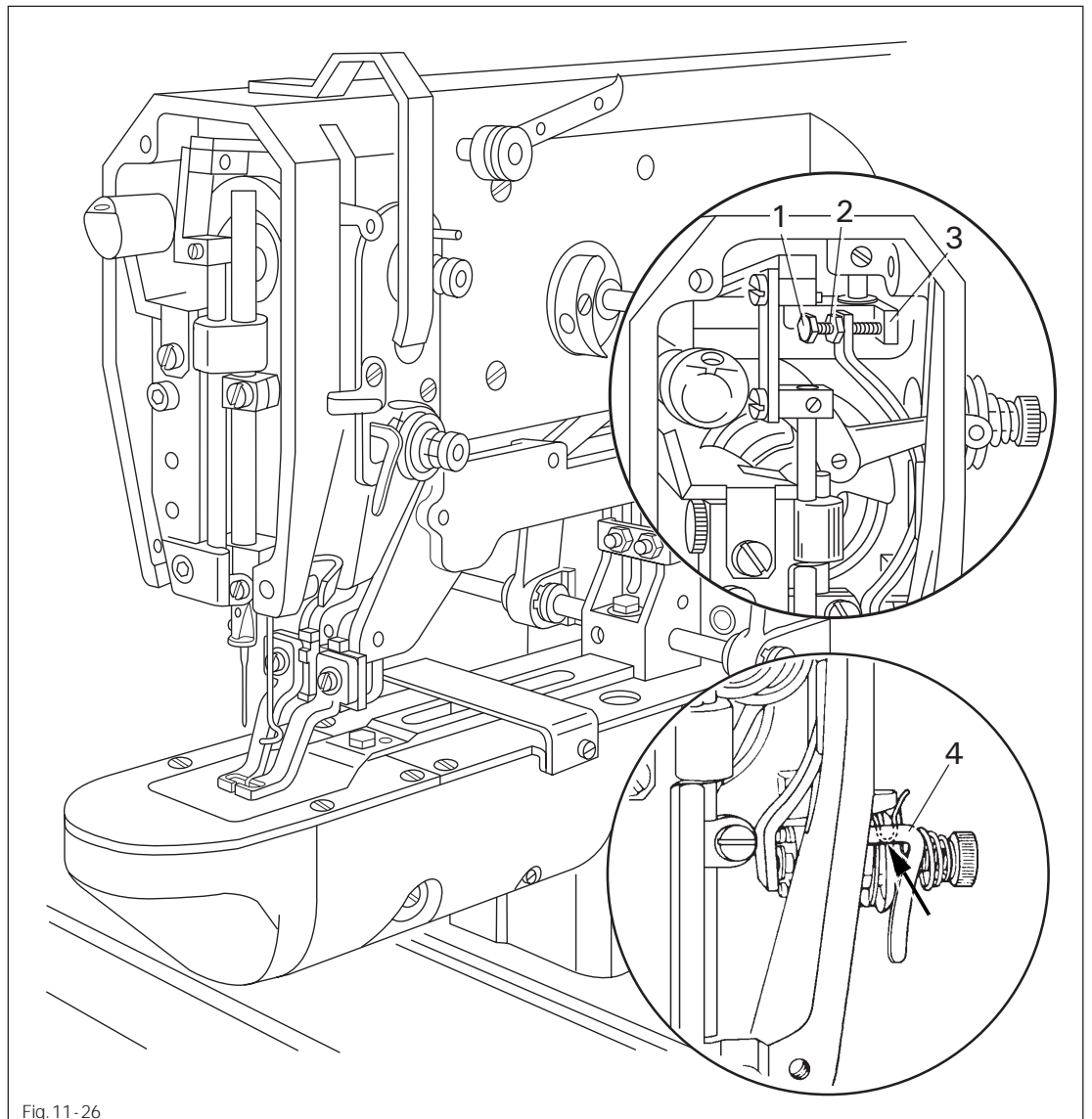
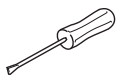


Fig. 11-26

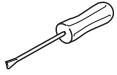


- Turn the V-belt wheel in the direction of rotation until screw 1 is accessible.
- Loosen nut 2 and turn screw 1 in accordance with the requirement.
- The thread tension should now have a small amount of play, i.e. when pressure is applied to the tension release lever 3 the thread check spring must go down a little.
- Tighten nut 2.
- Turn the V-belt wheel a few more rotations in the direction of rotation. The thread tension must now be fully effective and there must be some play between screw 1 and lever 3.
- Continue turning the V-belt wheel until the machine is in program end position and the take up lever is at its t.d.c.

### 11.22 Synchronizer

#### Requirement

The machine must position itself at the t.d.c. of the take up lever at every stop.



- Remove the needle.
- Screw the synchronizer on.
- Switch the machine on and allow it to position itself.
- Loosen the synchronizer screw and hold the synchronizer in position.
- Turn the V-belt wheel until the take up lever is at its t.d.c.
- Tighten the synchronizer.
- Allow the machine to position itself once again and carry out a check in accordance with the requirement.

## 11.23 Stop trip for starting the counting stitches for program end position

## Requirement

Switch 6 must switch 3 stitches before program end.

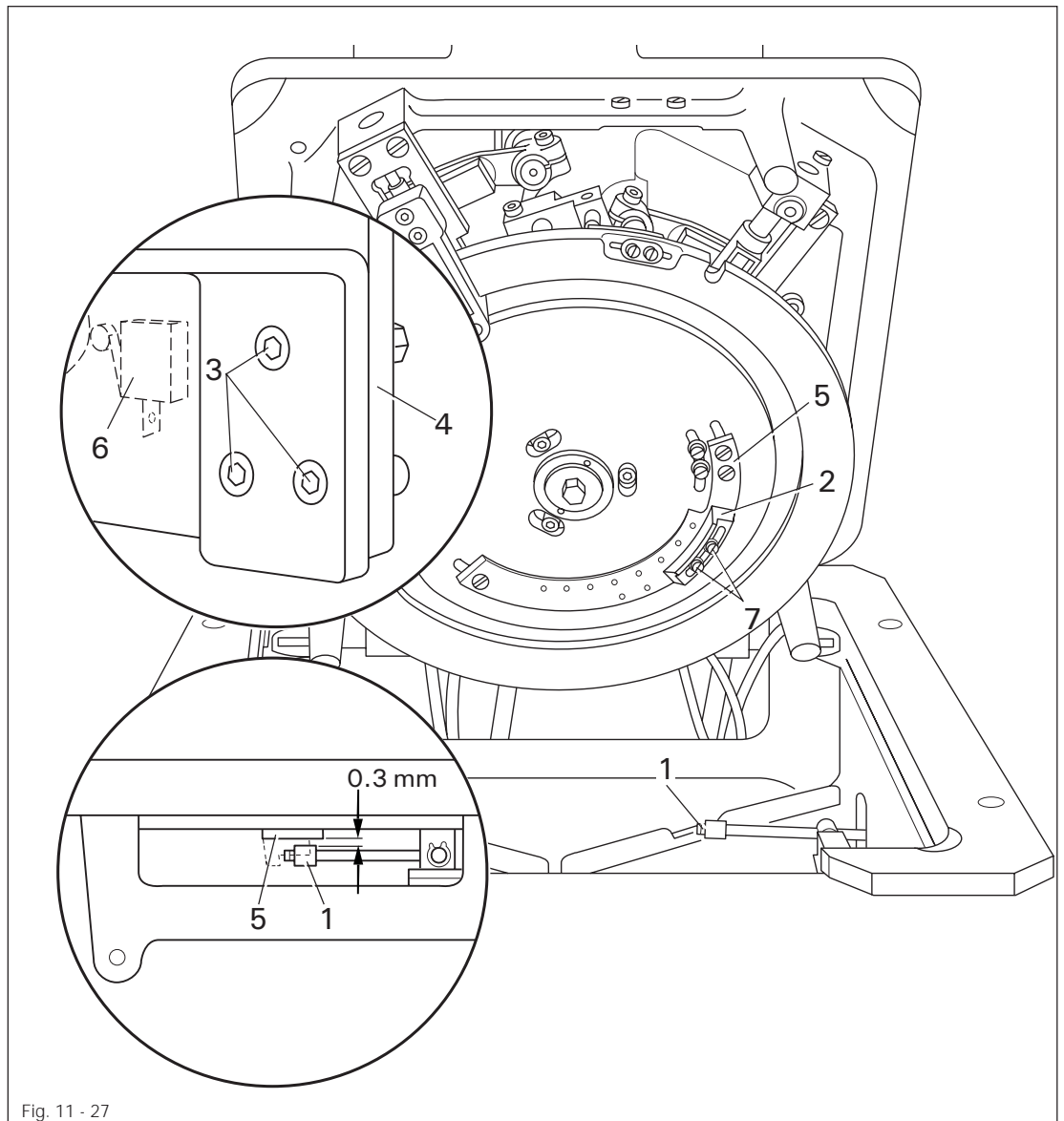
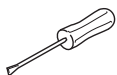


Fig. 11 - 27



- Bring the machine to program end position manually.
- Turn the V-belt five stitches backwards. Roller 1 must not be pressed by cam 2.
- Loosen screws 3 and move carrier 4 so that there is a distance between cam carrier 5 and roller 1 of 0.3 mm.
- Turn the V-belt wheel 1 1/2 stitches forwards.
- Continue turning the V-belt wheel until the take up lever is approx. 60 mm after b.d.c. Switch 6 must now audibly switch.
- Loosen screws 7 and move cam 2 in accordance with the requirement.
- Check in accordance with the requirement.

## 11.24 Lifting lever cylinder

### Requirement

With the cylinder bar 3 retracted the lifting lever 4 must have approx. 1.5 mm play and be able to be moved downwards by hand.

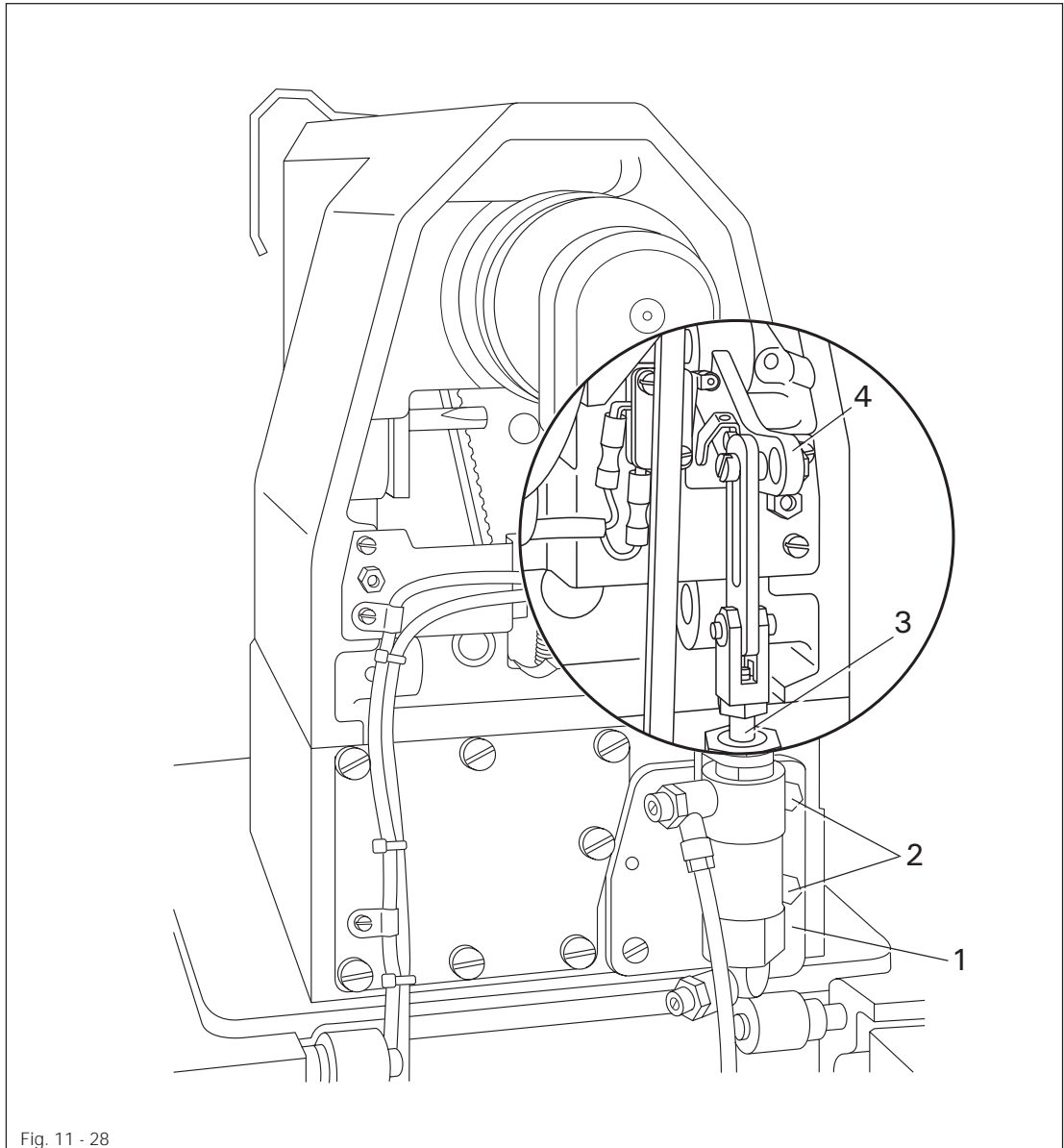
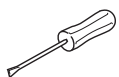


Fig. 11 - 28



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

11.25 Throttles

Requirement

1. The clamps must rise quickly enough so that the thread leader in the bobbin is not too high.
2. The clamps must rise as fast as possible.

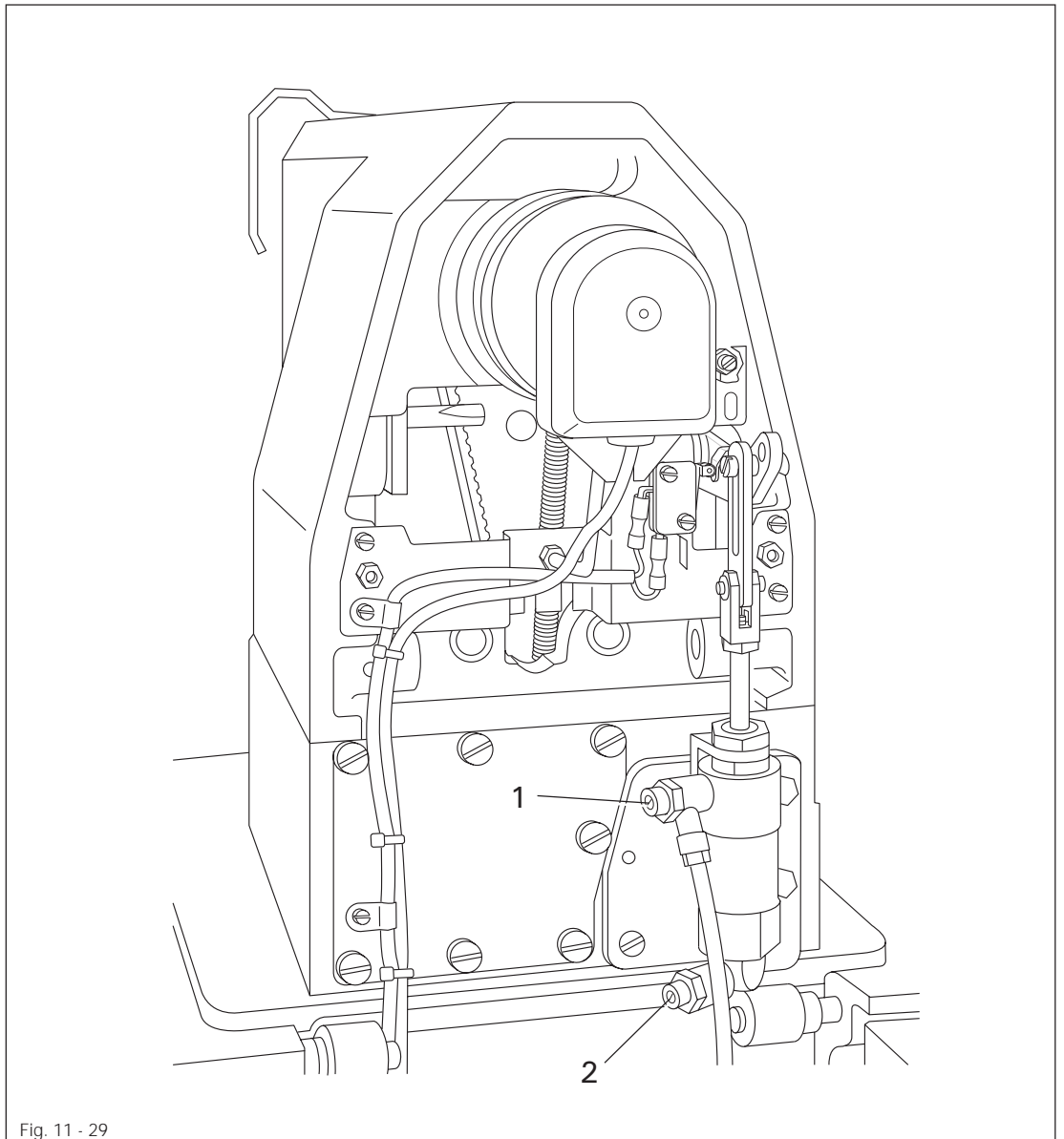
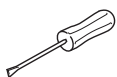


Fig. 11 - 29



- Adjust throttle 1 (raise) in accordance with the requirement.
- Adjust throttle 2 (lower) so that there is no noise is made when lowering.

## 11.26 Bobbin winder

### Requirement

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

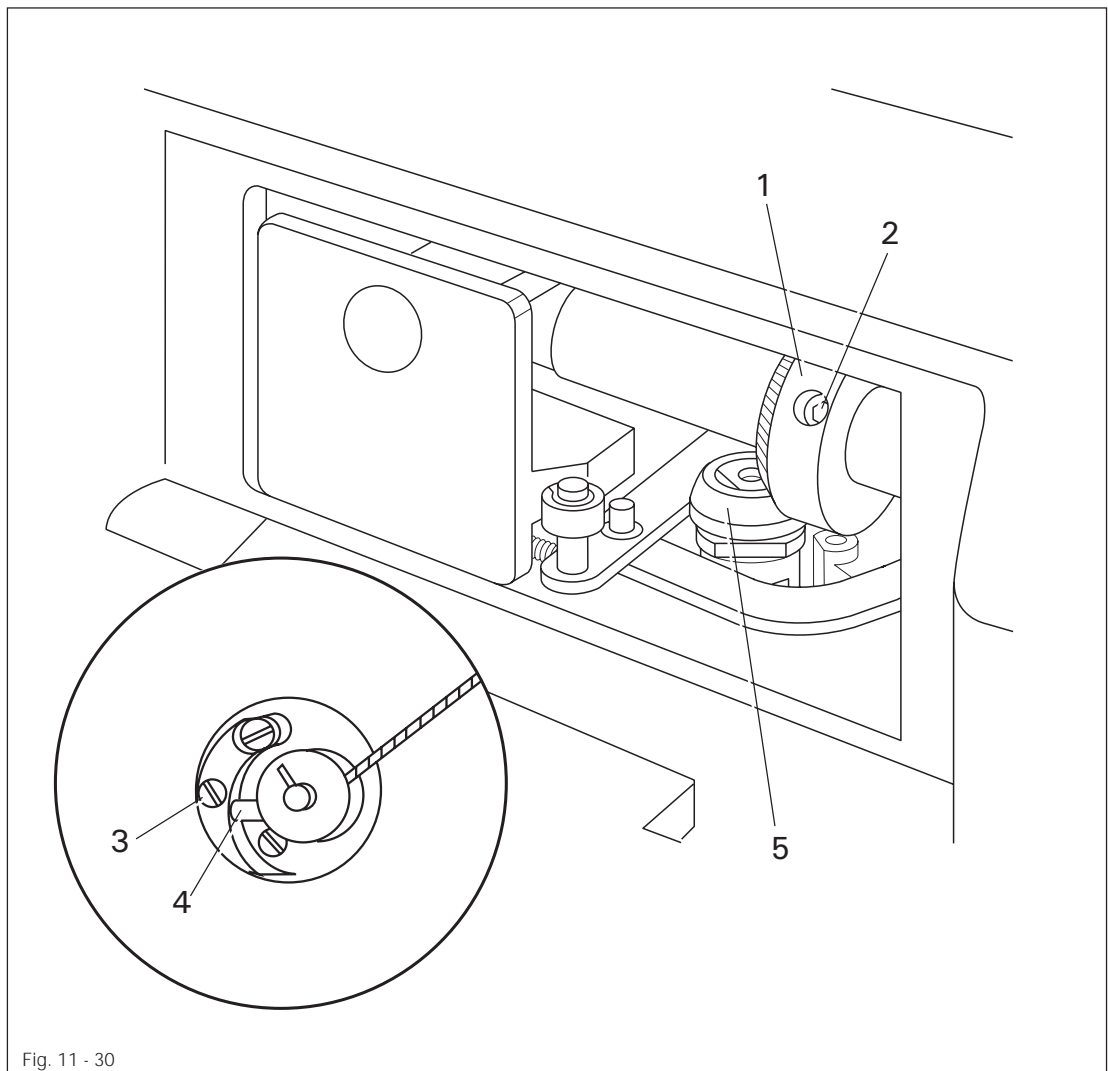
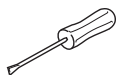


Fig. 11 - 30



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



## 11.27 Thread wiper

**Requirement**

1. There must be a lateral clearance of **15 mm** between the thread wiper wire **3** and the needle.
2. The thread wiper wire **3** must pass approx. **1 mm** underneath the needle when the lifting lever is activated.



The machine must be in program end position.

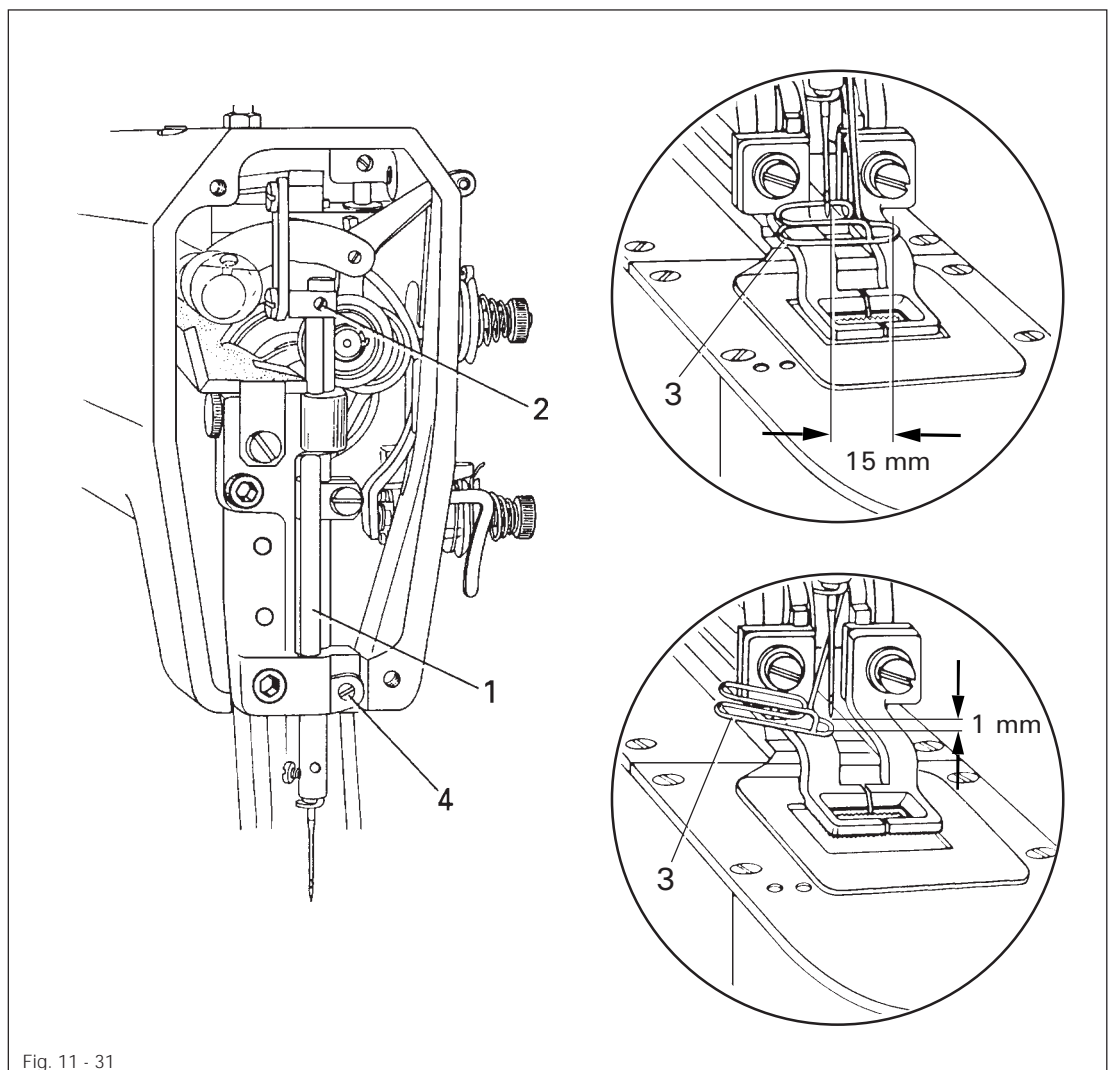
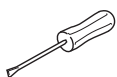


Fig. 11 - 31



- Move the guide bar **1** (screws **2**) in accordance with requirement 1.
- Adjust the thread wiper wire **3** (screw **4**) in accordance with requirement 2.

## 11.28 Parameter adjustments

The following parameter adjustments are possible via the display with the quick control panel.

### 11.28.01 List of parameters

Group	Parameter	Explanation	Adjustment range	Standard value
1	116	No. of stitches for reduced speed n <sup>1</sup>	3 - 10	3
	117	Reduced speed n <sup>1</sup>	100 - 1000	700
	143	Reduced speed n <sup>3</sup>	500 - 1300	700
4	410	Alteration of speed n <sup>2</sup> in steps of: I = 10 RPM II = 100 RPM		II
	417	I = Display mode: display machine unit counter II = Display mode: display daily unit counter or n <sup>2</sup>		II
	431	Counter for multiple revolutions	1,1,4	1
6	605	I = Actual RPM in the display II = No actual RPM in the display		II
	620	I = Bobbin thread monitor via stitch count II = No bobbin thread monitor via stitch count		II
7	718	Cycle brake	0 - 30	3
	722	Acceleration ramp	1 - 50	44
	723	Brake ramp	1 - 50	46
	730	Lift delay for work clamp	0 - 250	0
	733	Language	1 - 6	1
	784	Delay for position monitoring	0 - 2500	2000
8	800	I = left running for sewing (Viewpoint Drive-BLM) II = right running for sewing		I
	884	P. share speed regulation	0 - 50	10



In groups 2, 3 and 5 there are no parameters.

11.28.02

Hidden parameters



These parameters can only be adjusted via the service control panel!

Group	Parameter	Explanation	Adjustment range	Standard value
9	200	Stitch counter for stop	1 - 15	3
	607	Maximum speed	1000 - 2500	2000
	719	Presser foot cycle	0 - 90	50
	721	On/off cylinder cycle	0 - 90	50
	884	P - share speed regulation	1 - 50	10
	885	I - share speed regulation	1 - 30	6
	886	P - share superordinate lay regulator	1 - 30	11
	887	P - share speed for lay regulator	1 - 10	4
	888	I - share speed for lay regulator	1 - 30	5
	889	Time for lay regulation	0 - 500	100
	890	P - share superordinate lay regulator for brake	0 - 50	15
	891	P - share subordinate speed regulator for brake	0 - 50	2
	892	Free	0 - 255	0
	893	Pointer on period duration	0 - 3	3
	894	I = Right running from positioner when sewing II = Left running from positioner when sewing (point of view:positioner-sewing machine)		II
	895	Value of pre-ignition	0 - 30	30
	896	I <sup>2</sup> t limit	25 - 255	150
897	Free	0 - 255	0	
898	Free	0 - 255	0	
899	Free	0 - 255	0	



See the instruction manual of the motor for further information.

### 11.29 Speed adjustment

- Maximum speed:           models A + B  2000 spm  
                                  model C         1700 spm
- Open the control box of the motor. There is a switch key on the on the bottom left hand side of the control plate.
- Each time this switch key is pressed the speed is reduced 100 spm.
- In this way the speed can be reduced to 1000 spm. The next time the switch key is pressed the speed adjustment returns to the beginning again (2000 spm or 1700 spm).
- If the motor is running at maximum speed, this is indicated by the yellow LED next to the switch key.



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