

PFAFF

294

1293

Instruction Manual

1294



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

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1 Safety

1.01 Regulations

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

In addition to this instruction manual, please also observe all generally accepted, statutory and other legal requirements, including those of the user's country, and the applicable pollution control regulations!

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

1.02 General notes on safety

- The machine must only be operated by adequately trained operators and only when the instruction manual has been fully read and understood!
- All notices on safety and the instruction manual of the motor manufacturer are to be read before the machine is put into operation!
- All notes on the machine concerning danger and safety must be observed!
- The machine must be used for the purpose for which it is intended and must not be operated without its safety devices; all regulations relevant to safety must be adhered to.
- When part sets are changed (e.g. needle, presser foot, needle plate, feed dog or bobbin), during threading, when the workplace is left unattended and during maintenance work, the machine must be isolated from the power supply by turning off the on/off switch or removing the plug from the mains!
- Daily maintenance work must only be carried out by appropriately trained persons!
- Repairs and special maintenance work must only be carried out by qualified technical staff or persons with appropriate training!
- During maintenance or repairs on the pneumatic system the machine must be isolated from the compressed air supply! The only exception to this is when adjustments or function checks are carried out by appropriately trained technical staff!
- Work on the electrical equipment must only be carried out by technical staff who are qualified to do so!
- Work on parts or equipment connected to the power supply is not permitted! The only exceptions to this are specified in regulations EN 50110.
- Conversion or modification of the machine must only be carried out under observation of all relevant safety regulations!

- Only spare parts which have been approved by us are to be used for repairs! We draw special attention to the fact that spare parts and accessories not supplied by us have not been subjected to testing nor approval by us. Fitting and/or use of any such parts may cause negative changes to the design characteristics of the machine. We shall not accept any liability for damage caused by the use of non-original parts.

1.03 Safety symbols



Danger!
Special points to observe.



Danger of injury to operating or technical staff!

1.04 Important notes for the user

- This instruction manual belongs to the equipment of the machine and must be available to the operating staff at all times.
- This instruction manual must be read before the machine is operated for the first time.
- Both operating and technical staff must be instructed on the safety devices of the machine and on safe working methods.
- It is the duty of the user to operate the machine in perfect running order only.
- The user must ensure that none of the safety devices are removed nor put out of working order.
- The user must ensure that only authorized persons operate and work on the machine.

For further information please refer to your PFAFF agency.

1.05 Notes for operating and technical staff

1.05.01 Operating staff

Operating staff are the persons responsible for setting up, operating and cleaning the machine and for removing any disturbances in the sewing area.

The operating staff are obliged to observe the following points, and must:

- always observe the notes on safety in this instruction manual!
- avoid using any working methods which adversely effect the safety of the machine!
- avoid wearing loose-fitting clothing or jewelry such as necklaces or rings!
- also ensure that only authorized persons are allowed near the danger area of the machine!
- immediately report to the user any changes to the machine that may affect its safety!

1.05.02 Technical staff

Technical staff are persons who have been trained in electrical engineering, electronics, pneumatics and mechanical engineering. They are responsible for lubricating, servicing, repairing and adjusting the machine.

The technical staff are obliged to observe the following points, and must:

- always observe the notes on safety in this instruction manual!
- switch off the on/off switch before carrying out adjustment and repair work and ensure it cannot be switched on again unintentionally!
- never work on parts or equipment still connected to the power supply! Exceptions to this are only permissible according to regulations EN 50110;
- replace all safety covers after carrying out maintenance or repair work!

1.06 Danger warnings



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



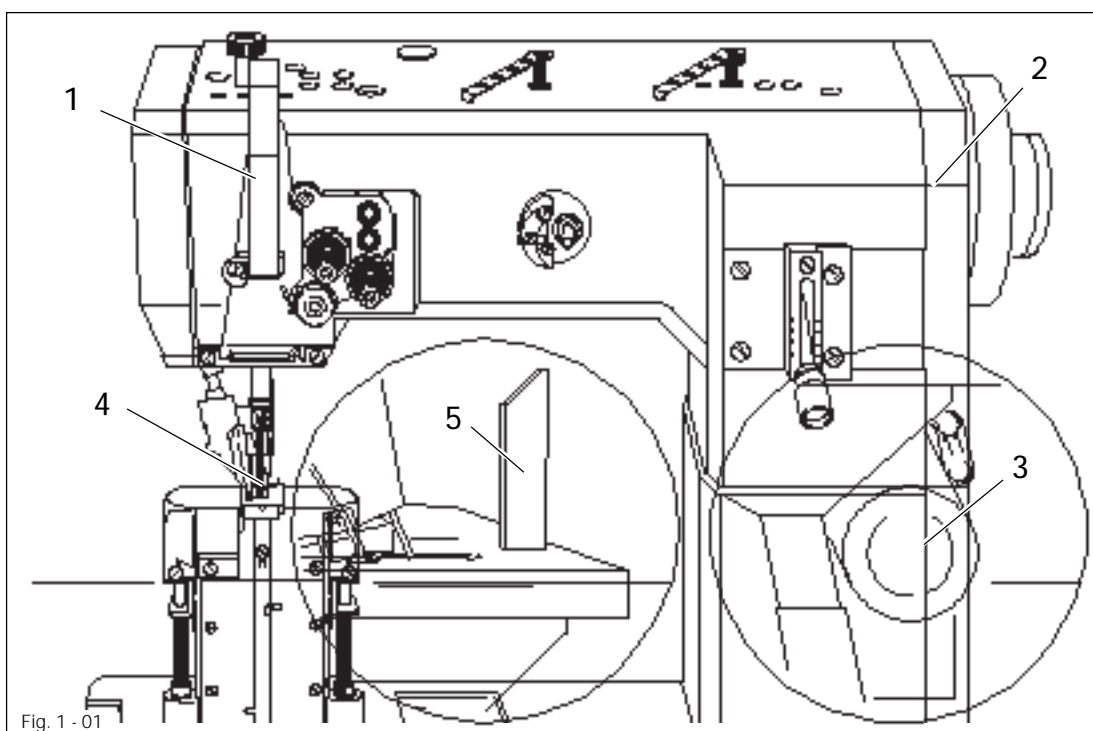
Never reach into the sewing area while sewing!
Danger of injury by the needle!



Never leave objects on the table while adjusting the machine settings!
Objects can become trapped or be hurled out! Danger of injury!



On mechanically activated clutch motors without an actuating lock, wait until the motor has come to a standstill! Danger of injury!



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



Do not operate the machine without belt guards 2 and 3!
Danger of injury by the turning drive belt!



Do not operate two-needle machines without the finger guard 4!
Danger of injury by the moving needle!



Do not operate the machine without support 5! Danger due to the top heavy sewing head! Machine can fall over backwards when being tilted!

2 Proper use

The **PFAFF 294** is a two-needle lockstitch post-bed sewing machine with roller presser, bottom feed dog and vertical sewing hook.

The **PFAFF 1293** is a single-needle lockstitch post-bed sewing machine with roller presser, bottom feed dog and large vertical sewing hook.

The **PFAFF 1294** is a two-needle lockstitch post-bed sewing machine with roller presser, bottom feed dog and large vertical sewing hook.

The machines are used for producing lockstitch seams in the textile and leather industries.



Any use of these machines which is not approved by the manufacturer shall be considered as improper use! The manufacturer shall not be liable for any damage arising out of improper use! Proper use shall also be considered to include compliance with the operation, adjustment, service and repair measures specified by the manufacturer!

3 Specifications

3.01 PFAFF 1293♦

Stitch type:	301 (lockstitch)
Needle system:	134
Needle thickness in 1/100 mm:	
Model C:	110 - 140
Model C/D and D:	160 - 190
Max. thread size (synthetic▲):	
Model C:	11/3
Model C/D:	11/4
Model D:	5/3 (15/8)
Max. stitch length:	6.0 mm
Max. speed*:	
Model C:	2300 spm
Model C/D and D:	2000 spm
Balance wheel eff. dia.:	90 mm
Dimensions of machine:	
Length:	approx. 530 mm
Width:	approx. 177 mm
Height (above table):	approx. 440 mm
Clear workspace width:	270 mm
Clear workspace height:	115 mm
Fabric clearance under roller presser	5 mm
Height of post-bed	162 mm
Net weight (machine head):	approx. 55 kg
Power supply:	see motor instruction manual
Max. power consumption:	see motor instruction manual
Fuse protection:	see motor instruction manual
Working air pressure:	6 bar
Air consumption:	~0.8 l / work cycle
Working noise level:	
Emission at workplace	
At a speed of 1600 spm:	77 dB(A)
Noise measurement in accordance with DIN 45 635-48-A-1	

- ♦ Subject to technical alterations
- ▲ Or comparable sizes of other thread types
- * Or comparable sizes of other thread types

Specifications

3.02

PFAFF 294 / PFAFF 1294♦

Stitch type: 301 (lockstitch)

Needle system: 134

Needle thickness in 1/100 mm:

Model B: 80 - 100

Model C: 110 - 140

Model C/D and D: 160 - 190

Max. thread size (synthetic▲):

Model B: 40/3

Model C: 15/3

Model C/D and D: 11/3 (8/3)

Max. stitch length:

Model B: 4.5 mm

Model CN, C/DN and DN: 6.0 mm

Max. speed*:

Model B: 2700 spm

Model C: 2200 spm

Model C/D and D: 1900 spm

Balance wheel eff. dia.:

Model B: 80 mm

Model C: 90 mm

Dimensions of machine:

Length: approx. 530 mm

Width: approx. 177 mm

Height (above table): approx. 440 mm

Clear workspace width: 270 mm

Clear workspace height: 115 mm

Fabric clearance under roller presser (roller presser raised) 5 mm

Net weight (machine head): approx. 57 kg

Power supply: see motor instruction manual

Max. power consumption: see motor instruction manual

Fuse protection: see motor instruction manual

Working air pressure: 6 bar

Air consumption: ~0.8 l / work cycle

Working noise level:

Emission at workplace

At a speed of 1500 spm: 76 dB(A)

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

♦ Subject to technical alterations

▲ Or comparable sizes of other thread types

* Dependent on the material and operating cycle

3.03 Models and subclasses

Model B (PFAFF 294): For medium-weight materials

Model C: For medium-heavy materials

Model C/D For medium-heavy materials

Model D: For heavy materials

Additional equipment:

Subclass -750/04 Roller presser drive

Subclass -900/56 Thread trimmer

Subclass -910/01 Automatic presser foot lift

Subclass -911/97 Automatic backtacking mechanism and presser-foot lift

4 Disposal of Machine

- Proper disposal of the machine is the responsibility of the customer.
- The materials used for the machine are steel, aluminium, brass and various plastic materials.
The electrical equipment comprises plastic materials and copper.
- The machine is to be disposed of according to the locally valid pollution control regulations; if necessary, a specialist is to be commissioned.



Care must be taken that parts soiled with lubricants are disposed of separately according to the locally valid pollution control regulations!

5 Transportation, packing and storage

5.01 Transportation to customer's premises

Within the Federal Republic of Germany, complete machines (with table and motor) are delivered without packing.

Machines without table (only sewing heads) and machines intended for exports are packed.

5.02 Transportation inside the customer's premises

The manufacturer cannot be made liable for transportation inside the customer's premises nor to other operating locations.

5.03 Disposal of packing materials

The packing materials of this machine comprise paper, cardboard and VCE fibre. Proper disposal of the packing material is the responsibility of the customer.

5.04 Storage

If the machine is not in use, it can be stored as it is for a period of up to six months, but It should be protected against dust and moisture.

If the machine is stored for longer periods, the individual parts, especially the surfaces of moving parts, must be protected against corrosion, e.g. by a film of oil.

Explanation of symbols

6 Explanation of symbols

In this instruction manual, work to be carried out or important information is accentuated by symbols. These symbols have the following meanings:



Note, information



Cleaning, care



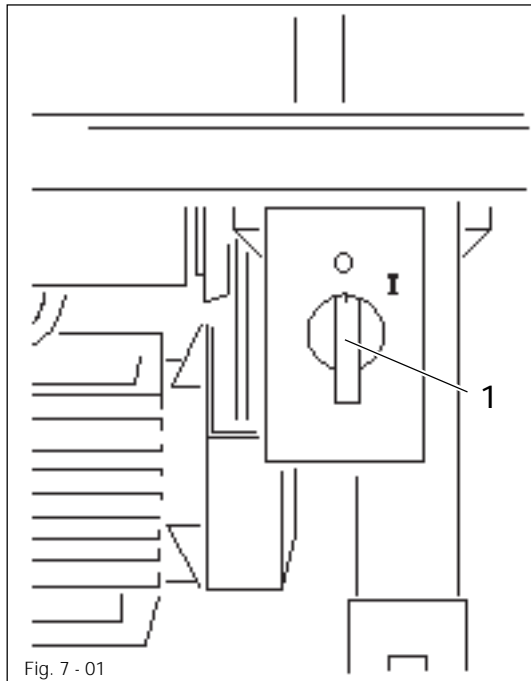
Lubrication



Maintenance, repairs, adjustment, service work
(only to be carried out by technical staff)

7 Controls

7.01 On/off switch



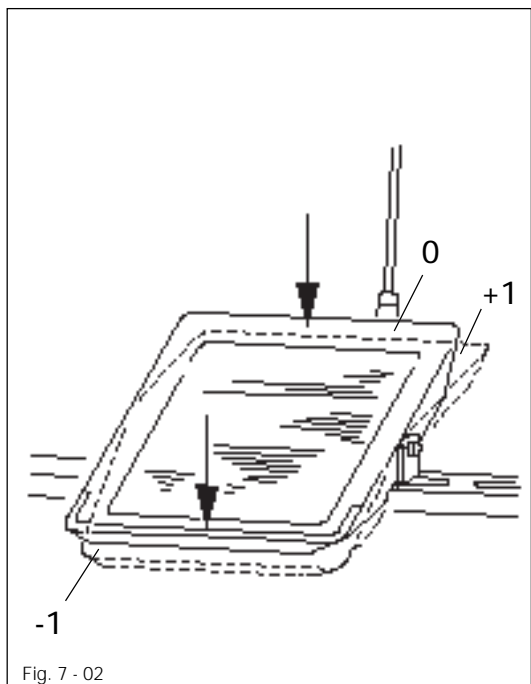
- Turn the machine on and off by turning the on/off switch 1.



The switch in the illustration is fitted to machines with Quick motors. When other motors are used, other switches may be fitted.

7.02 Pedal

(on machines without automatic backtacking mechanism and presser foot lift -911/97)

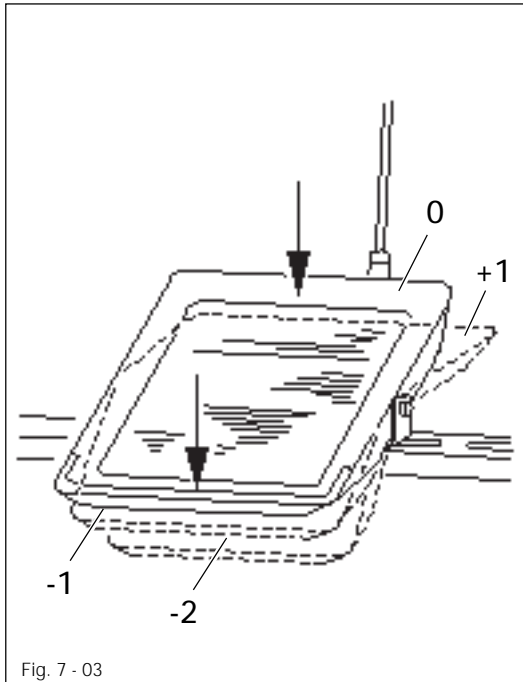


- 0 = Neutral position
- +1 = Sew
- 1 = Trim thread (on machines with thread trimmer -900/56)



For other pedal functions see the motor instruction manual.

7.03 Pedal (on machines with automatic backtacking mechanism and presser foot lift -911/97)



0 = Neutral position

+1 = Sew

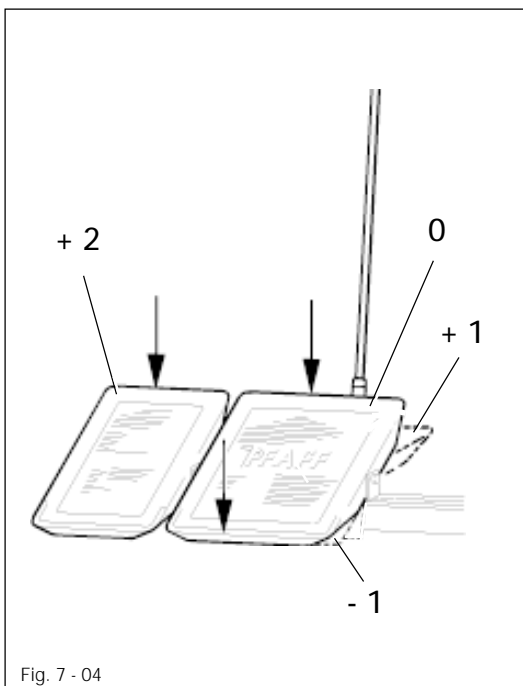
-1 = Lift roller presser

-2 = Trim thread (on machines with thread trimmer -900/56)



For other pedal functions see the motor instruction manual.

7.04 Pedals (on machines with presser foot lift -910/01)



0 = Neutral position

+1 = Sew

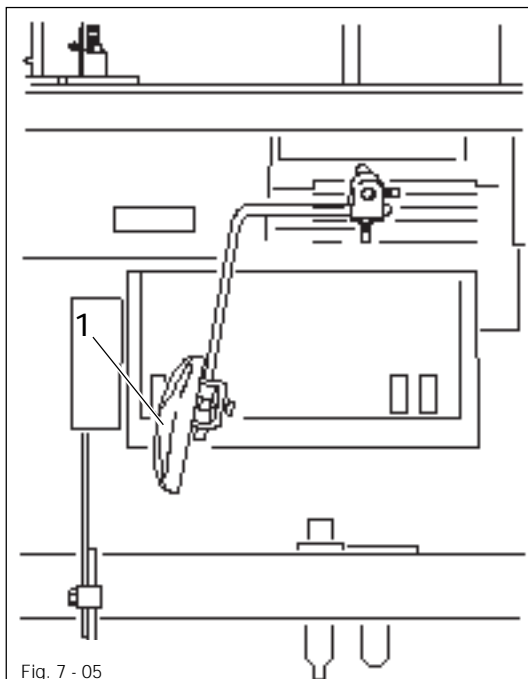
-1 = Trim thread (on machines with thread trimmer -900/56)

+2 = Lift roller presser



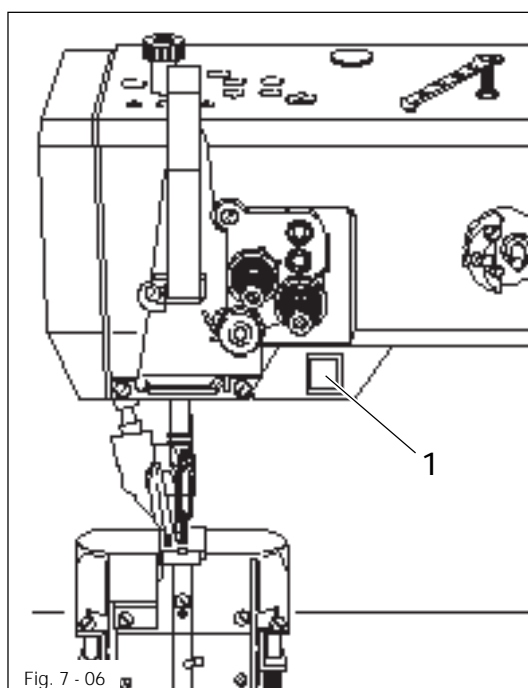
For other pedal functions see the motor instruction manual.

7.05 Knee lever (on machines without automatic backtacking mechanism and presser foot lift -911/97)



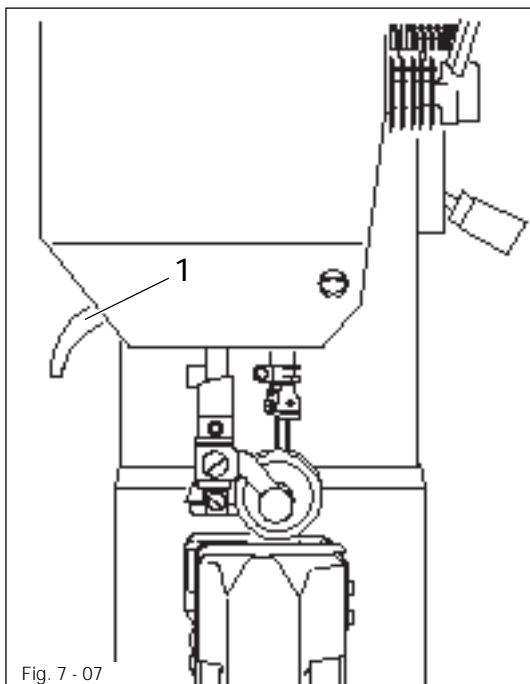
- The roller presser is raised by operating the knee lever 1.

7.06 Key on the machine head (for machines with automatic backtacking mechanism and presser foot lift -911/97)



- Switch to reverse sewing by pressing key 1 while sewing.

7.07 Lever for lifting the roller presser

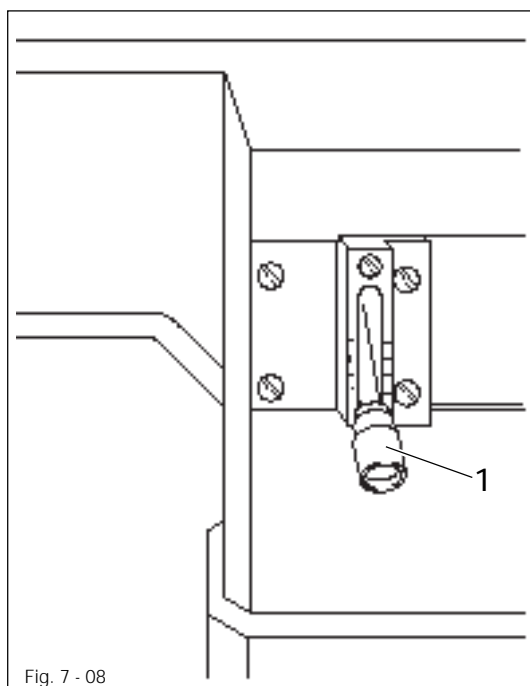


- The roller presser is lifted by raising lever 1.



Fig. 7-07 shows a PFAFF 1294.

7.08 Feed regulator and reverse sewing lever



- Adjust the stitch length by turning the knurled nut on lever 1.
- For reverse sewing push lever 1 up as far as possible.



When switching over to reverse sewing, do not sew at maximum speed.

7.09 Feed regulator (on machines with automatic backtacking mechanism and presser foot lift -911/97)

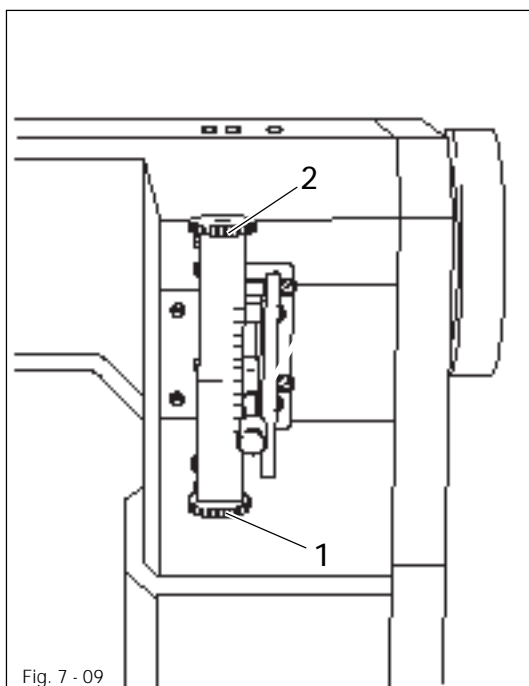


Fig. 7 - 09

- The forward stitch length is set by turning the knurled screw 1.
- The reverse stitch length is set by turning the knurled screw 2.



You can set the length of the reverse stitch as long as required, independent of the forward stitch.



The options for setting the automatic start and finish backtacks are to be found in the instruction manual of the motor.

8 Installation and commissioning



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



If the machine is delivered without a table, it must be ensured that the stand and the table top which you intend to use can hold the weight of the machine.
Adequate stability of the base must be guaranteed - during sewing too.

8.01 Installation

The necessary connections for electricity and compressed air, a level and stable surface and sufficient lighting must be available at the machine's location.



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

8.01.01 Adjusting the table-top height

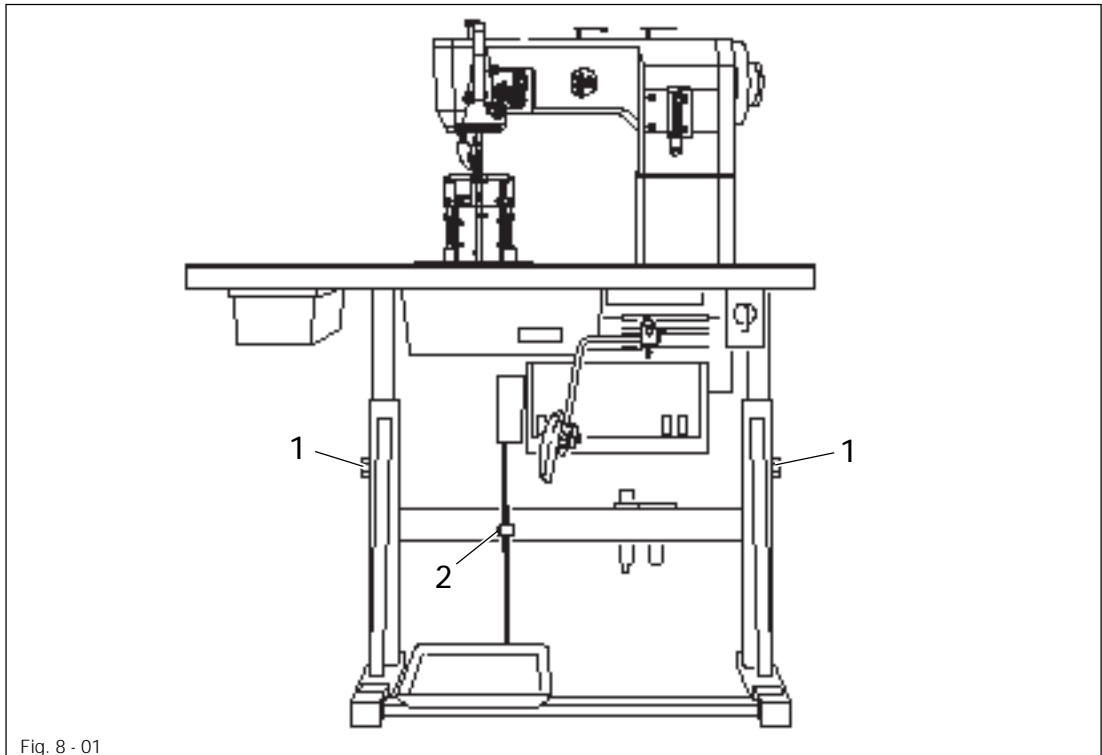


Fig. 8 - 01

- Loosen screws 1 and 2 and adjust the table top to the required height.
- Tighten screws 1.
- Adjust the pedals to the required setting and tighten screw 2.

8.01.02 Adjusting the V-belt tension

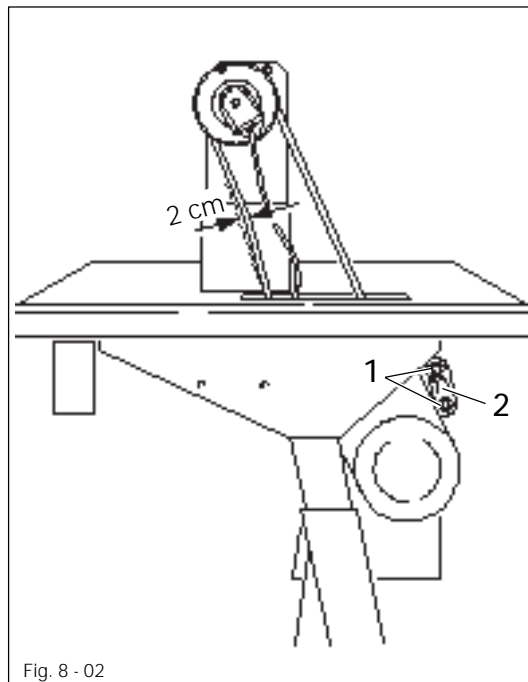


Fig. 8 - 02

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



Fig. 8-02 shows a Quick motor. If another motor is used, proceed as described in the motor's instruction manual.

8.01.03 Fitting the upper V-belt guard

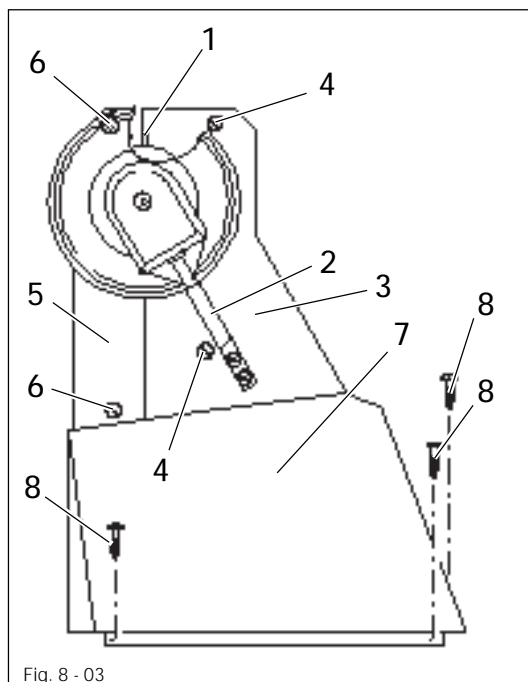


Fig. 8 - 03

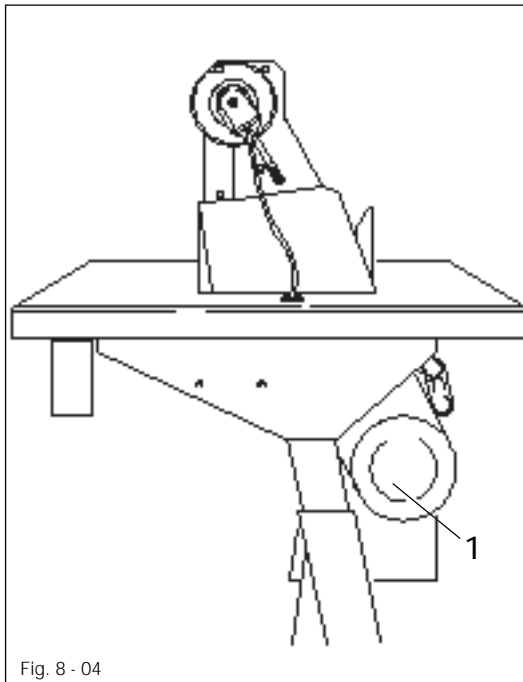


If a large balance wheel is used, the corner 1 of the belt guard 3 must be broken out.

- Screw position stop 2 to the belt guard section 3.
- Attach belt guard section 3 with the screws 4.
- Attach belt guard section 5 with the screws 6.
- Attach belt guard section 7 to the table top with wood screws 8.

Installation and commissioning

8.01.04 Fitting the lower V-belt guard

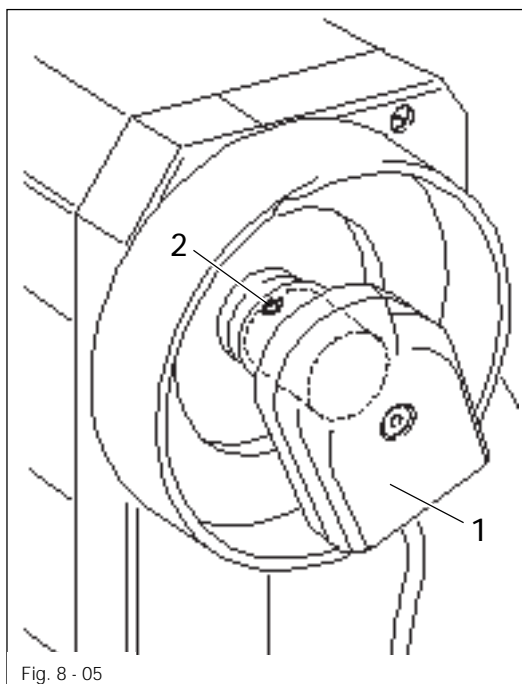


- Align belt guard 1 in such a way that both the motor pulley and the V-belt run freely.



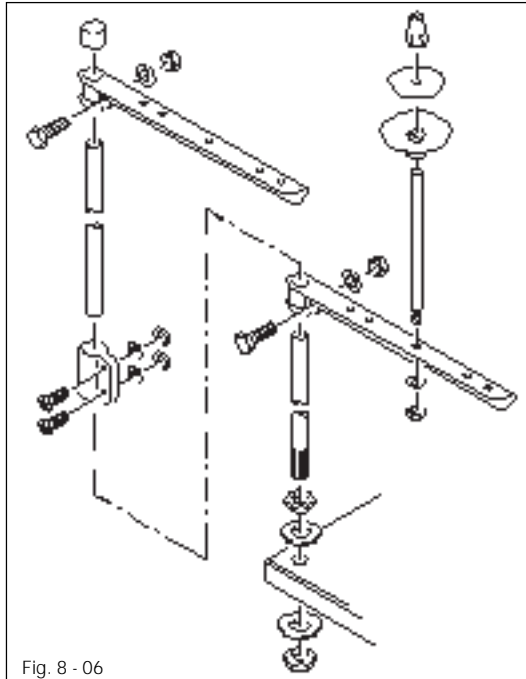
Fig. 8-04 shows a Quick motor. If another motor is used, proceed as described in the motor's instruction manual.

8.01.05 Fitting the synchronizer



- Slide synchronizer 1 onto the shaft.
- Slightly tighten screws 2.
- Insert plug of the synchronizer into the control box.
- Adjust synchronizer (see **Chapter 11.05.14 Adjusting the synchronizer**).

8.01.06 Fitting the reel stand



- Fit the reel stand as shown in Fig. 8-06.
- Insert reel stand in the table-top hole and fasten it with the included nuts.

8.02 Commissioning

- Check the machine, in particular the electrical leads and pneumatic connection tubes, for any damage.
- Clean the machine thoroughly and oil it (see **Chapter 10 Care and Maintenance**).
- Have mechanics ensure that the machine's motor can be operated with the available electricity supply and that it is connected correctly to the junction box. If not, the machine must **not** be operated **under any circumstances**.
- The balance wheel must rotate towards the operator when the machine is running. If not, have the motor connection changed by a mechanic.
- Connect the machine to the compressed air system. The pressure gauge must display a pressure of **approx. 6 bar**. If not, adjust the pressure to this value (see **Chapter 10.06 Checking / adjusting the air pressure**).

8.03 Switching the machine on / off

- Switch the machine on or off (see **Chapter 7.01 On/off switch**).
- Carry out a test run.

Setting up



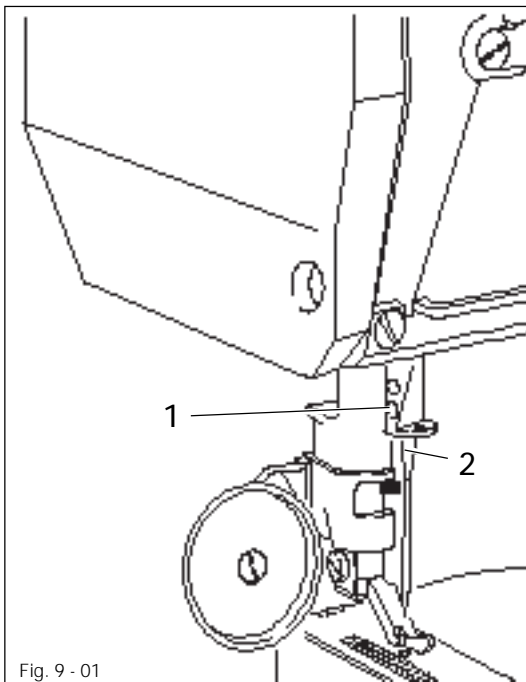
All regulations and instructions in this instruction manual are to be observed. Special attention is to be paid to all Notes on Safety!



All setting up work is only to be carried out by appropriately trained personnel. Before all setting up work, the machine is to be switched off at the on/off switch or disconnected from the electricity supply by removing the plug from the mains!

9.01

Inserting the needle in the PFAFF 1293



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

Use only system 134 needles.

- Raise the roller presser and swing it out.
- Raise the needle bar as far as possible and loosen screw 1.
- Insert the needle 2 as far as possible (the long needle groove must be facing left).
- Tighten screw 1.



The choice of needle depends on the machine model and the material and thread being used (see Chapter 3 Specifications).

9.02 Inserting the needle in the PFAFF 294 and PFAFF 1294

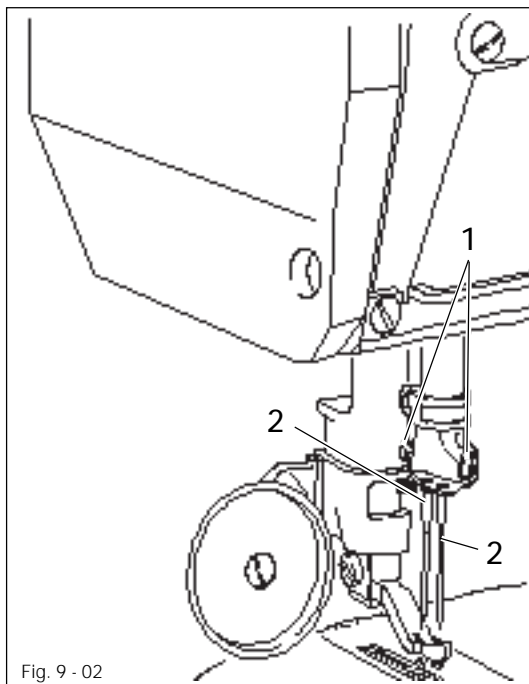


Fig. 9 - 02



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

Use only system 134 needles.

- Raise the roller presser and swing it out.
- Raise the needle bar as far as possible and loosen screws 1.
- Insert the needles 2 as far as possible (the long needle groove of the left needle must be facing right and that of the right needle must be facing left).
- Tighten screws 1.



The choice of needle depends on the machine model and the material and thread being used (see **Chapter 3 Specifications**).

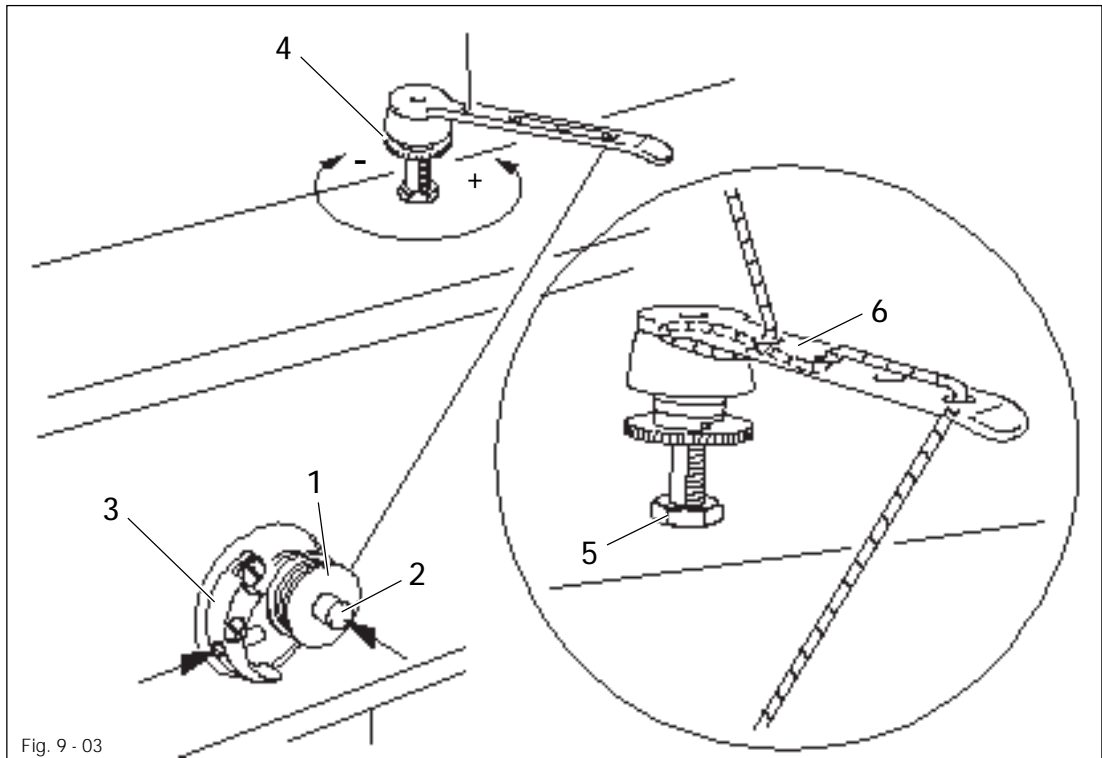


Fig. 9 - 03

- Place an empty bobbin 1 onto bobbin spindle 2.
- Thread the bobbin in accordance with Fig. 9-03 and wind it clockwise around the bobbin 1 a few times.
- Engage the bobbin winder by pressing bobbin spindle 2 and lever 3 at the same time.



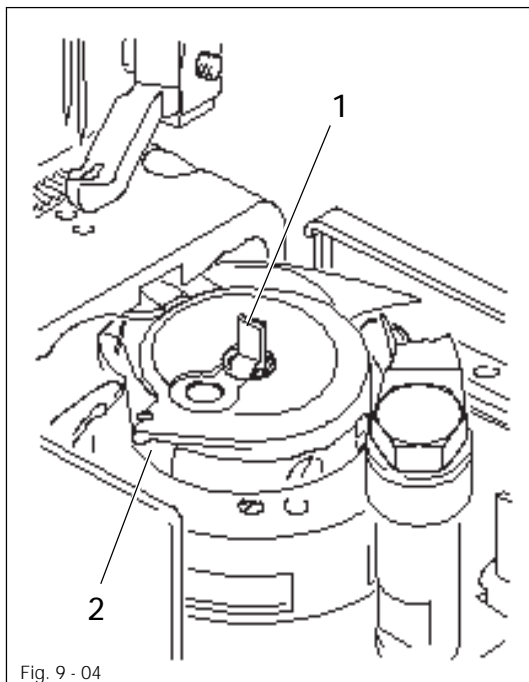
The bobbin fills up during sewing.

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

If the thread is wound unevenly:

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

9.04 Removing /inserting the bobbin case



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

Removing the bobbin case:

- Raise take-up lever as far as possible.
- Open the post cover, raise latch 1 and remove bobbin case 2.

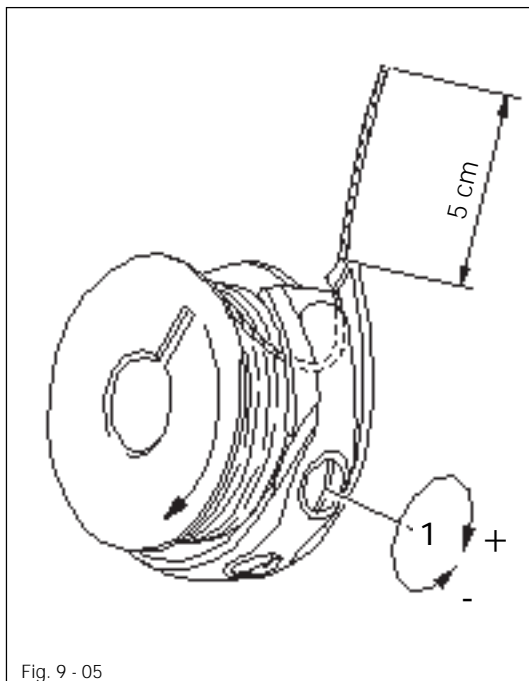
Inserting the bobbin case:

- Insert bobbin case 2 so that it clicks into place.
- Close the latch 1 and close the post cover.



Do not operate the machine when the post cover is open!
 Danger of injury by moving parts!

9.05 Threading the bobbin case / adjusting the thread tension



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

- Thread the bobbin as shown in Fig. 9-05.
- When the thread is pulled, the bobbin must rotate in the direction of the arrow.
- Adjust the bobbin thread tension with screw 1.

9.06 Threading the needle thread / adjusting the needle thread tension (PFAFF 1293)

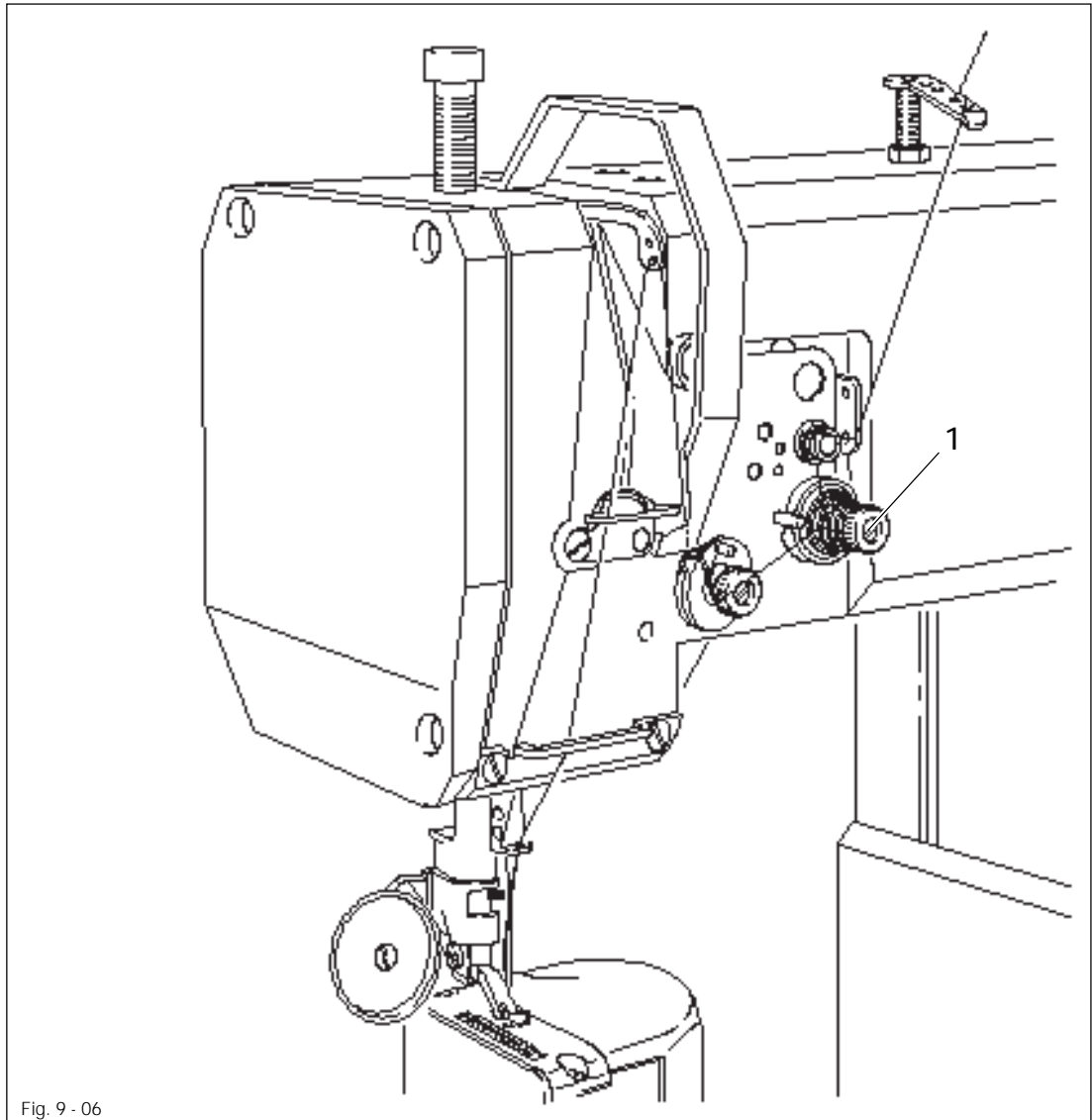


Fig. 9 - 06



Turn the machine off!

Danger of injury if the machine is started accidentally!

- Thread the needle thread as shown in Fig. 9-06. Take care that the needle is threaded from the left.
- Adjust the needle thread tension by turning the knurled screw 1.

9.07 Threading the needle thread / adjusting the needle thread tension
(PFAFF 294 and PFAFF 1294)

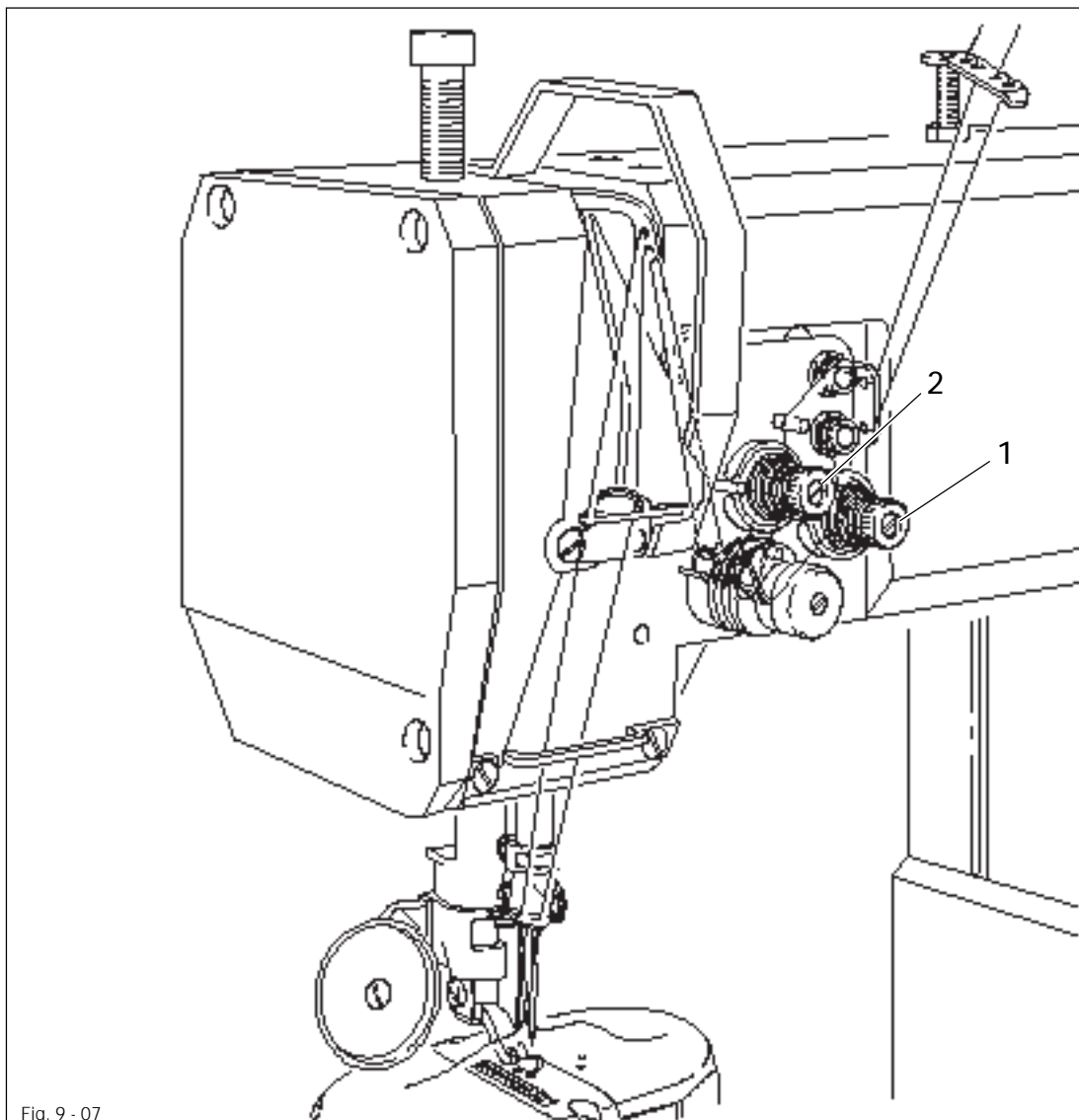


Fig. 9 - 07



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

- Thread the needle thread as shown in Fig. 9-07. Take care that the right needle is threaded from the left and the left needle from the right.
- Adjust the needle thread tension by turning the knurled screw 1 (right needle) or 2 (left needle).



The illustration shows the PFAFF 1294 with thread trimmer -900/56.

10 Care and maintenance

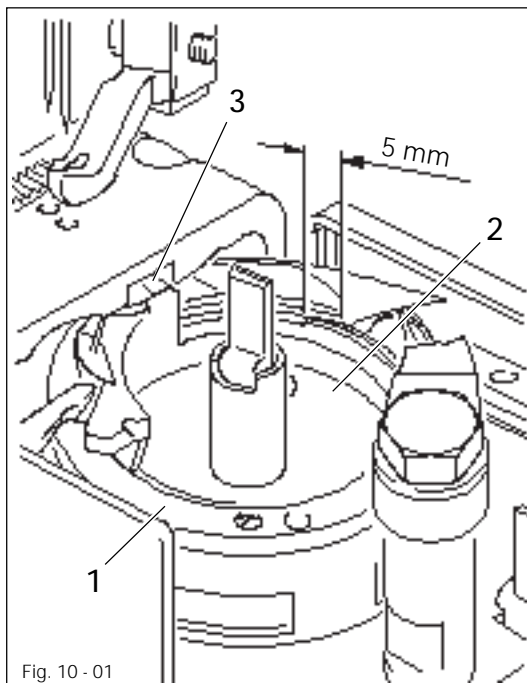
10.01 Servicing and maintenance intervals

Clean the hook compartment	daily, several times if in continuous operation
Check the air pressure	daily, before use
Clean the water container of the air filter/regulator	daily, before use
Lubricate the hook	daily, before use
Clean the hook	once a week
General lubrication	twice a week
Lubricate the needle-head parts	twice a week



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

10.02 Cleaning the hook compartment and the hook



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

- Clean the hook compartment daily with a brush, several times if in continuous operation.
 - Clean the hook thoroughly once a week.
 - Open the post cover.
 - Raise the needle bar as far as possible.
 - Remove the bobbin case cap and the bobbin.
 - Unscrew hook gib 1.
 - Turn the balance wheel, until the tip of the bobbin case 2 penetrates approx. 5 mm into the groove of the hook race.
 - In this position remove the bobbin case 2.
-
- Clean the hook race with paraffin.
 - When inserting the bobbin case, ensure that horn 3 fits into the groove of the needle plate.
 - Screw hook gib 1 back on.
 - Insert the bobbin case and close the post cover.

10.03 General lubrication

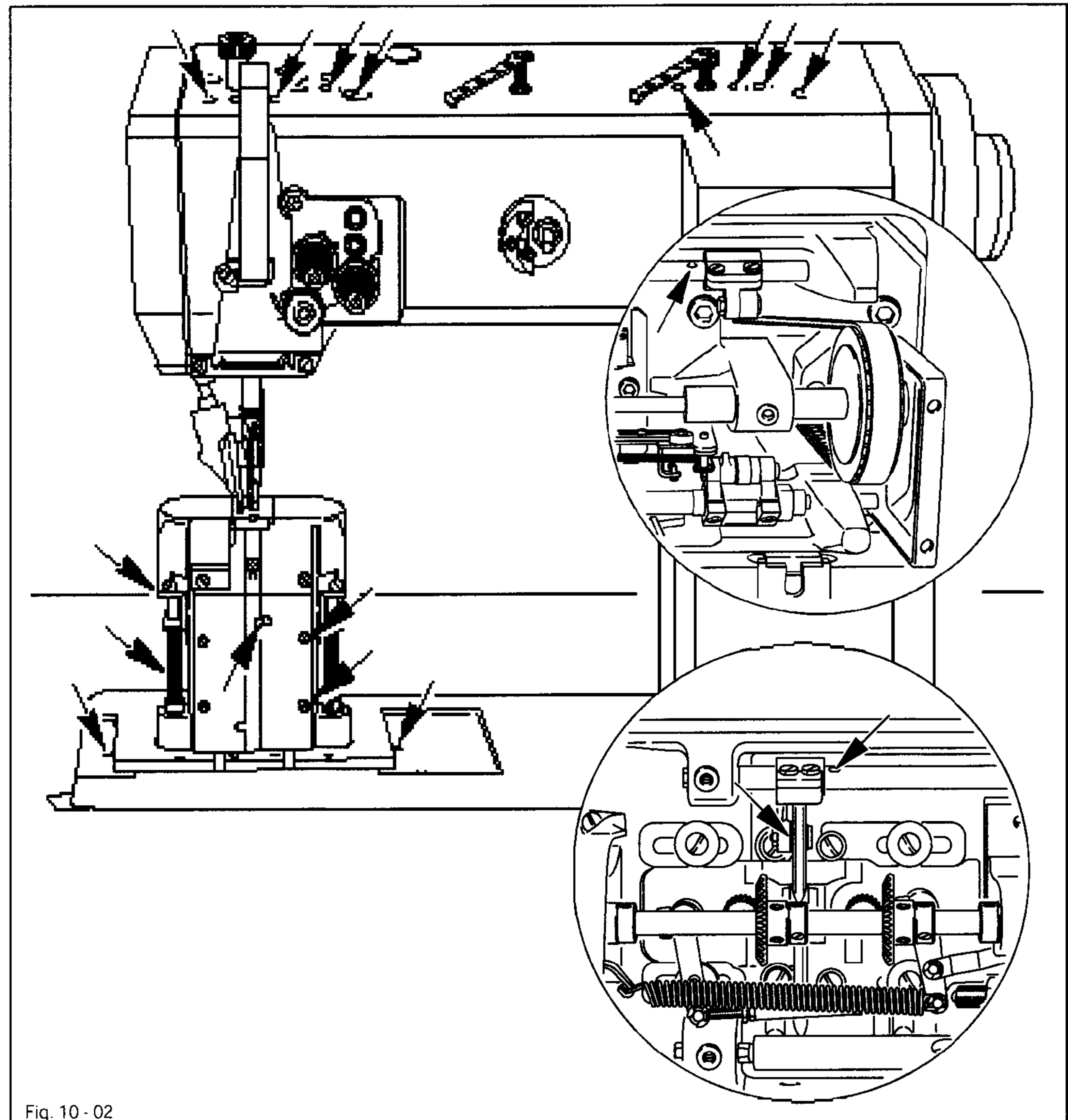


Fig. 10 - 02

- Lubricate all bearings above the table top (see arrows) twice a week.



Turn the machine off! Danger of injury!

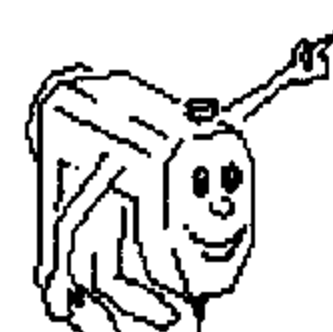
- Pull the knee lever out to the front and tilt the machine backwards.
- Lubricate all bearings below the table top (see arrows) twice a week.



Using both hands, set the machine into an upright position!
Danger of crushing between the machine and table top!

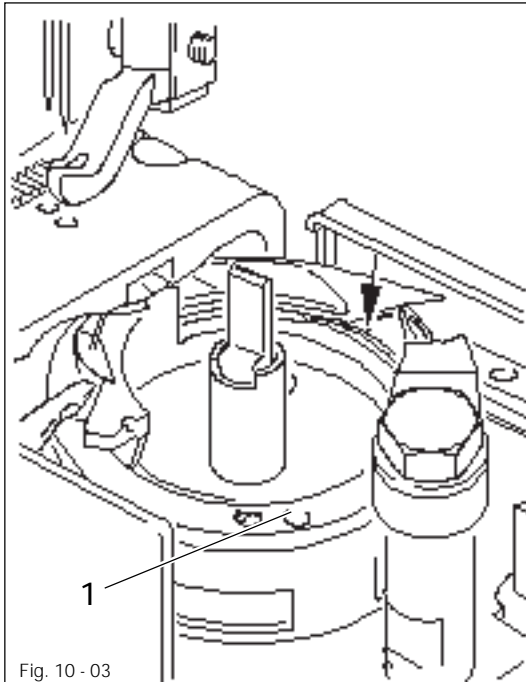


Only use oil with a mean viscosity of 22.0 mm²/s at 40° C and a density of 0.865 g/cm³ at 15° C!



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

10.04 Lubricating the hook



Turn the machine off!
Danger of injury if the machine is switched on accidentally!

- Open the hook compartment cover.
- Raise the needle bar as far as possible.
- Insert 1 - 2 **drops** of oil into the hole 1 in the hook gib.
- Insert a few drops of oil into the hook race (see arrow).

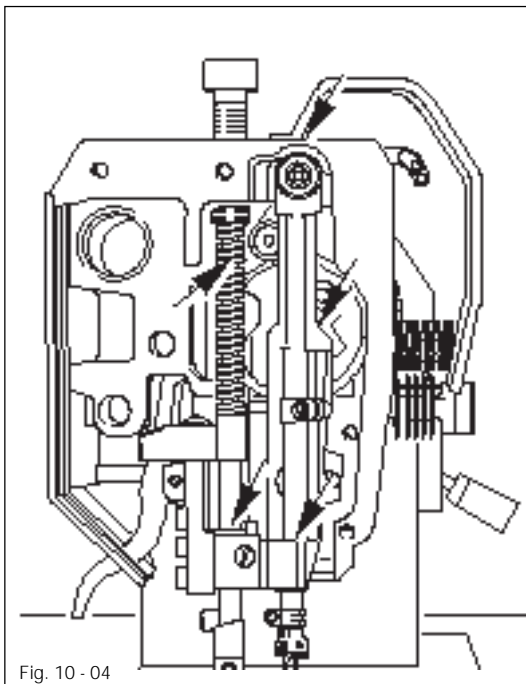


Only use oil with a mean viscosity of 22.0 mm²/s at 40° C and a density of 0.865 g/cm³ at 15° C!



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

10.05 Lubricating the needle-head parts



Turn the machine off!
Danger of injury if the machine is switched on accidentally!

- Unscrew the face plate.
- Lubricate all bearings and moving parts (see arrows) twice a week.
- Re-fit the face plate.

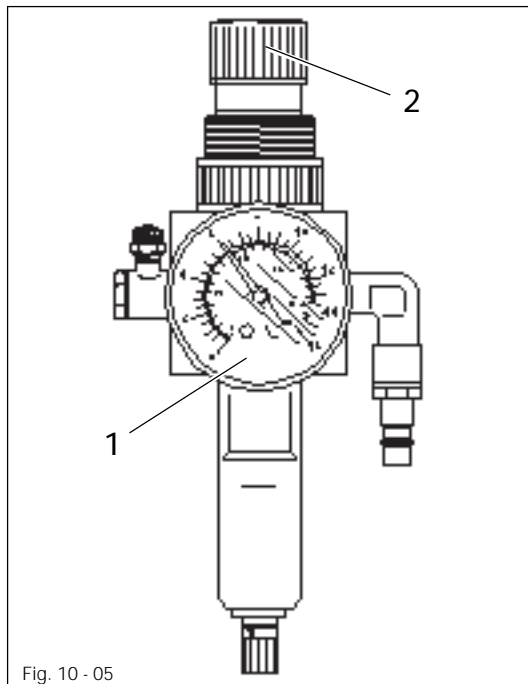


Only use oil with a mean viscosity of 22.0 mm²/s at 40° C and a density of 0.865 g/cm³ at 15° C!



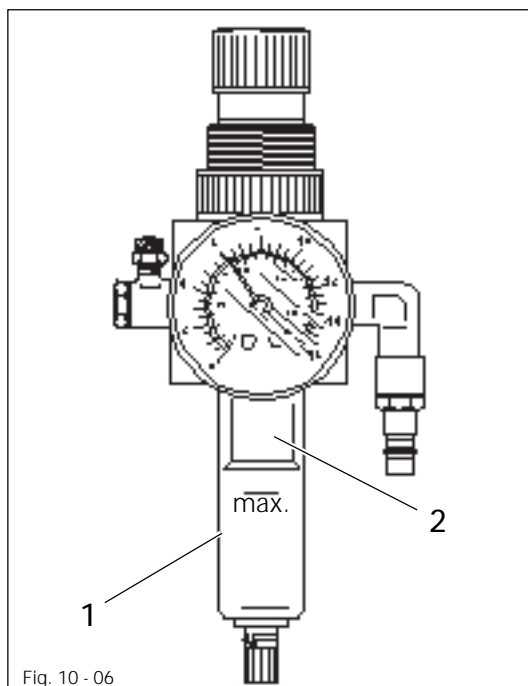
We recommend PFAFF sewing machine oil, part No. 280-1-120 144.

10.06 Checking and adjusting the air pressure



- Before each use of the machine, check the air pressure on gauge 1.
- The gauge 1 must display a pressure of 6 bar.
- If necessary, alter the pressure to this level. To do so, lift knob 2 and turn it until the required pressure is reached.

10.07 Emptying/cleaning the water container of the air filter/regulator



Turn the machine off.
Remove the compressed air hose from the air filter.

Emptying the water container

- The water container 1 empties itself automatically when the compressed-air hose is removed from the air filter/regulator.

Cleaning the filter

- Unscrew water container 1 and remove filter 2.
- Clean the filter with compressed air or with isopropyl alcohol, part number 95-665 735-91.
- Screw filter 2 back into place and screw water container 1 back on.

11 Justierung



The illustrations in this section show the two-needle machines.

For the **PFAFF 1293** single-needle machine, various adjustments only have to be made on one side, i.e. in the right hook compartment.

11.01 Notes on adjusting

All adjustments in these adjustment instructions are based on a completely installed machine and must only be carried out by appropriately **trained mechanics**. Covers on the machine, which have to be removed and replaced for checks and adjustment work, are not mentioned here.

The screws and nuts in brackets () are for securing machine parts which are to be loosened before making the adjustment and tightened again after the adjustment has been carried out.

11.02 Tools, gauges and other accessories

- Screwdrivers with blade widths from 2 to 10 mm
- Screwdrivers with blade widths from 7 to 14 mm
- Allen keys from 2 to 6 mm
- Metal rule (part No. 08-880 218-00)
- Needle rise gauge (part No. 61-111 600-02)
- Adjustable clamp (part No. 61-111 600-35/001)
- Needles, system 134
- Sewing thread and test material

11.03 Abbreviations

TDC = top dead center

BDC = bottom dead center

11.04 Adjusting the basic machine

11.04.01 Positioning the feed dog

Requirement

1. The feed dog must be the same distance from the left and the right side of the needle-plate cutout.
2. When the longest stitch length is set, the feed dog must be the same distance from the needle plate cutout at its front and rear point of reversal.

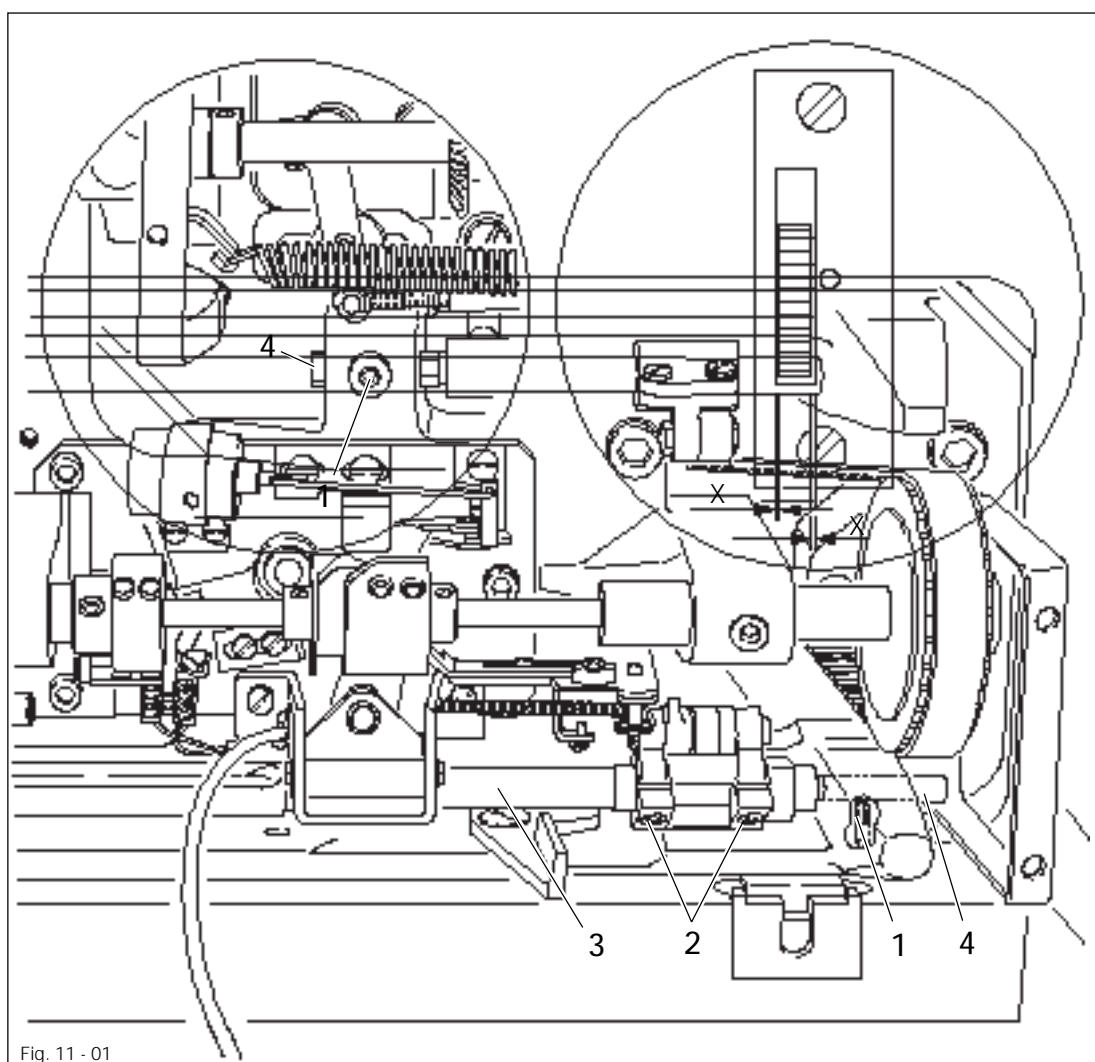


Fig. 11 - 01



- Loosen screws 1 and 2.
- Adjust rock shaft 3 in accordance with requirement 1.
- Tighten screw 1.
- Set the longest stitch length.
- Adjust rock shaft 3 in accordance with requirement 2 and tighten screws 2.



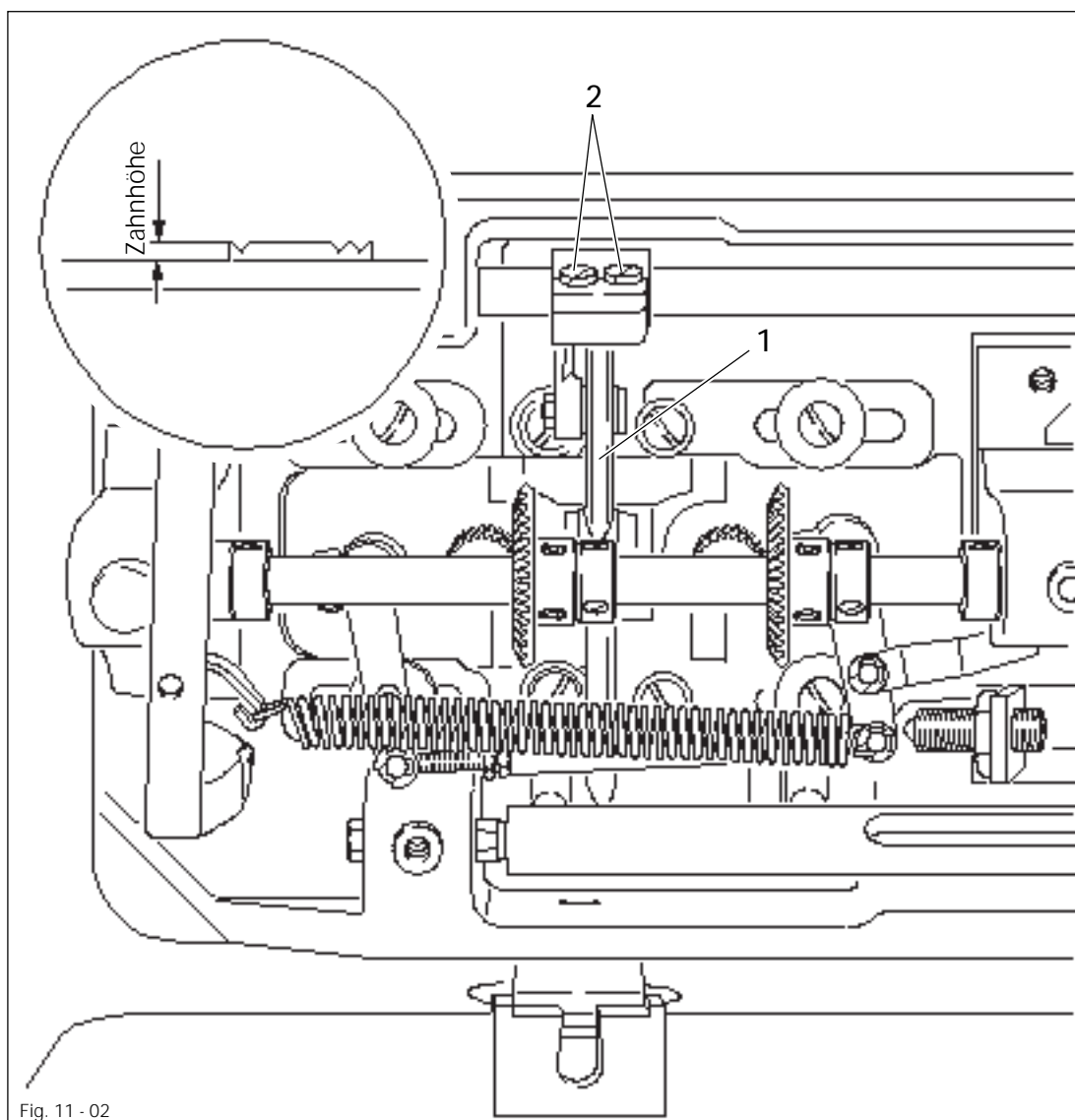
The flat sides of the pins 4 must face the screws 1, and the rock shaft 3 must neither have any play nor bind.

Adjustment

11.04.02 Height of the feed dog

Requirement

With the stitch length set at „0“, the bottom feed dog must protrude over the needle plate by the height of its teeth when at its top point of reversal.



- Set stitch length „0“.
- Bring the feed dog to its top point of reversal by turning the balance wheel.
- Adjust the link 1 (screws 2) in accordance with the requirement.

11.04.03 Pre-adjusting the needle height

Requirement

With the needle bar at BDC, the distance between the needle bar and the needle plate must be 14 mm.

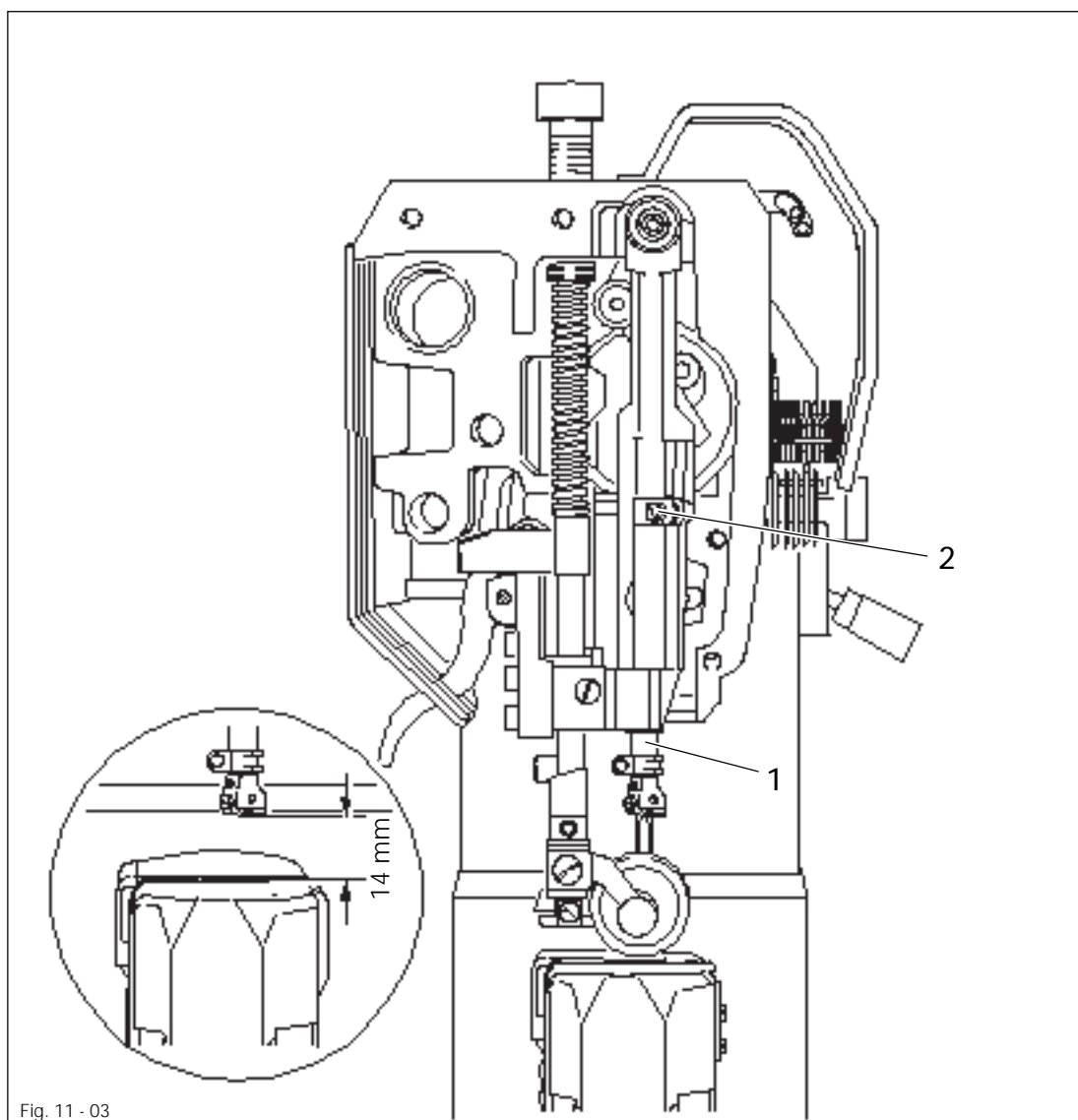


Fig. 11 - 03



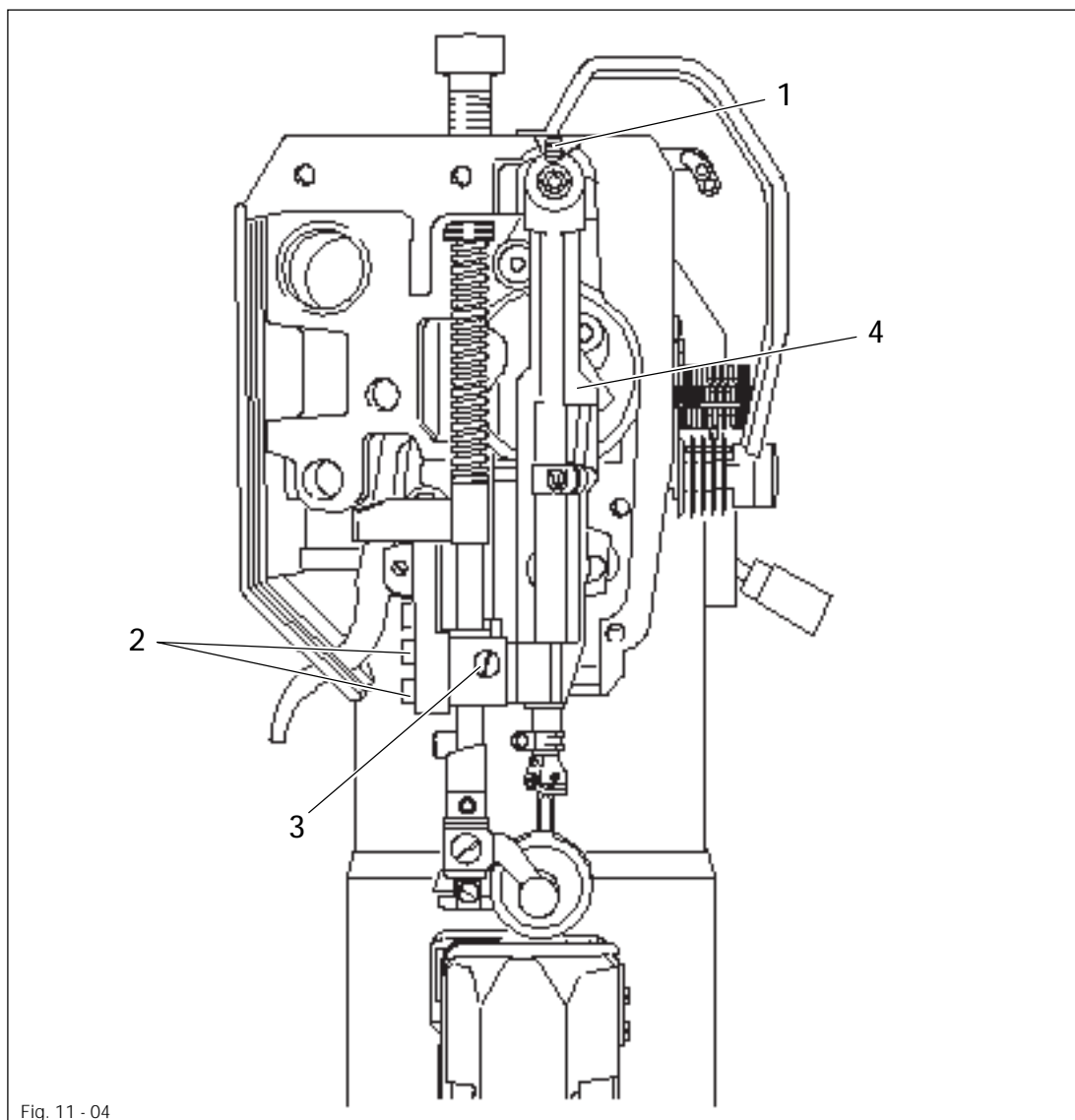
- Position needle bar 1 (screw 2) in accordance with the requirement, without twisting it.

Adjustment

11.04.04 Centering the needle in the needle hole

Requirement

With the stitch length set at „0“ , the needle must enter the needle hole exactly in the middle.



- Loosen screws 1, 2 and 3.
- Position the needle directly above the feed dog by turning the balance wheel.
- Position needle bar frame 4 in accordance with the requirement.
- Tighten screws 1, 2 and 3.

11.04.05 Driving motion of the feed dog

Requirement

With the longest stitch set and the needle positioned 3 mm after BDC, the feed dog should not move when the reverse-feed lever is operated.

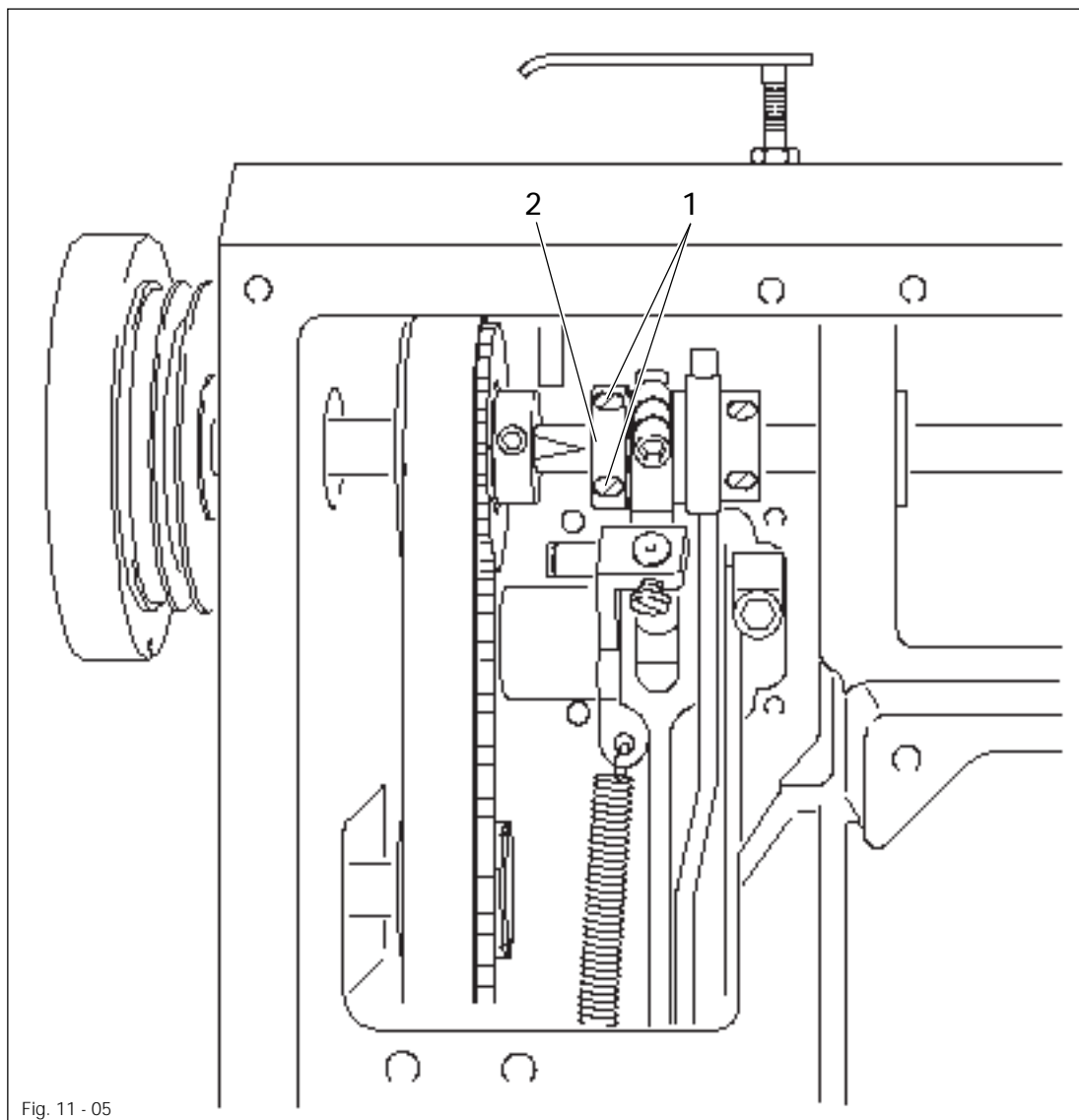


Fig. 11 - 05



- Set the longest stitch.
- Loosen screws 1 far enough so that the eccentric 2 can only be turned on the shaft with difficulty.
- Bring the needle bar to the position 3 mm after BDC.
- Turn eccentric 2 so that its largest eccentricity is facing „downwards“ , then turn it a little in the direction of rotation in accordance with the **requirement**.
- Tighten screws 1.

Adjustment

11.04.06 Lifting motion of the feed dog

Requirement

1. With the needle set at its TDC, the feed dog must be at its top point of reversal.
2. With the longest stitch set, the teeth of the feed dog must be at the same height as the surface of the needle plate, when the needle point enters the needle hole.

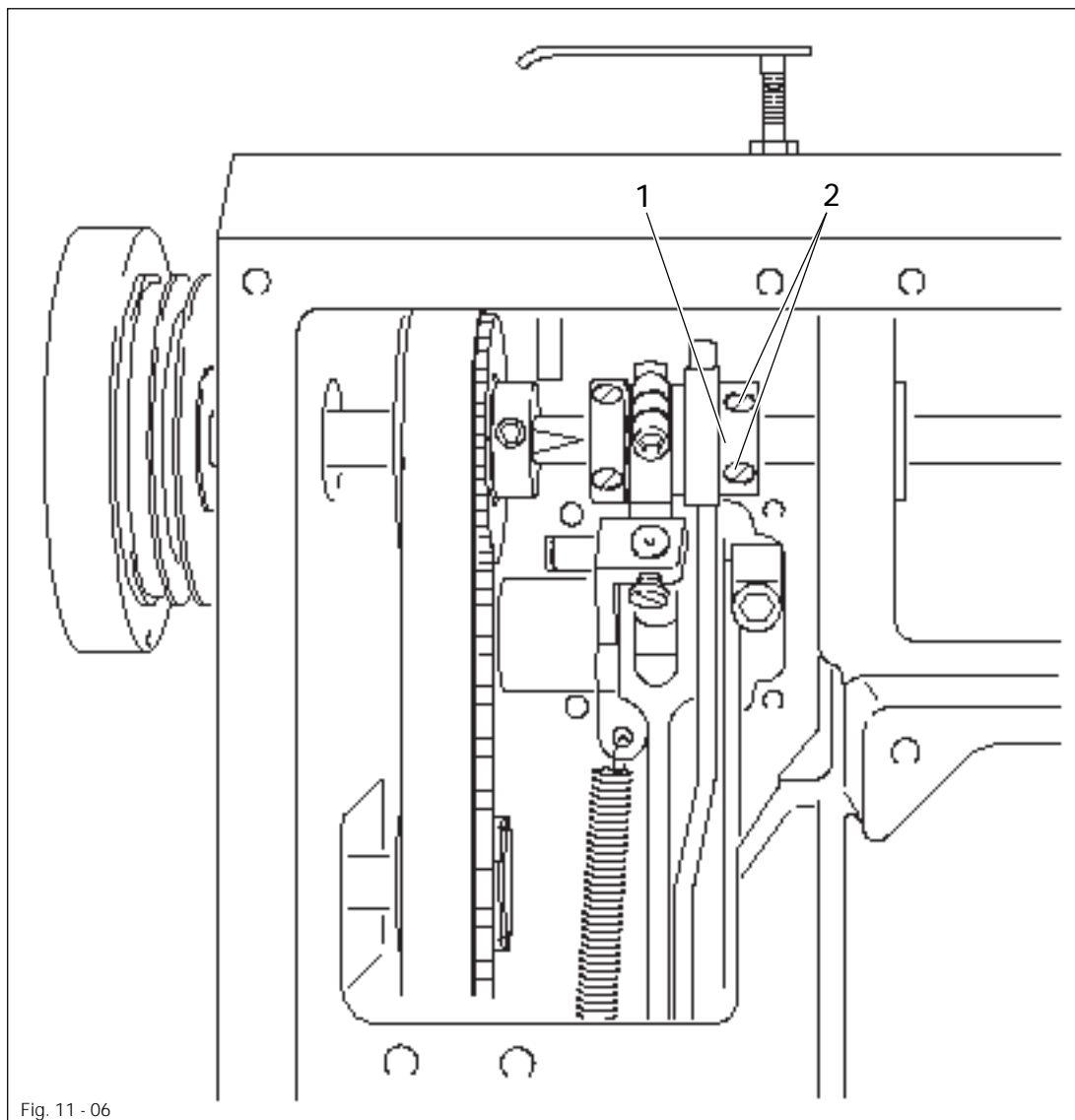


Fig. 11 - 06



- Bring the needle bar to its TDC.
- Turn eccentric 1 (screws 2) in accordance with **requirement 1**.
- In this position, slightly tighten the accessible screw 2 until eccentric 1 can be turned with difficulty.
- Turn eccentric 1 a little further in accordance with **requirement 2**.
- Tighten both screws 2.

11.04.07 Basic position of the roller presser drive (only on machines with subcl. -4/01)

Requirement

1. With the longest stitch setting the clamping surfaces of lever 1 must be horizontal, when these are at their front point of reversal.
2. Lever 3 must be in the middle of the hole in lever 1.
3. At its rear point of reversal lever 5 must be at a distance of 18 mm from the side cover.

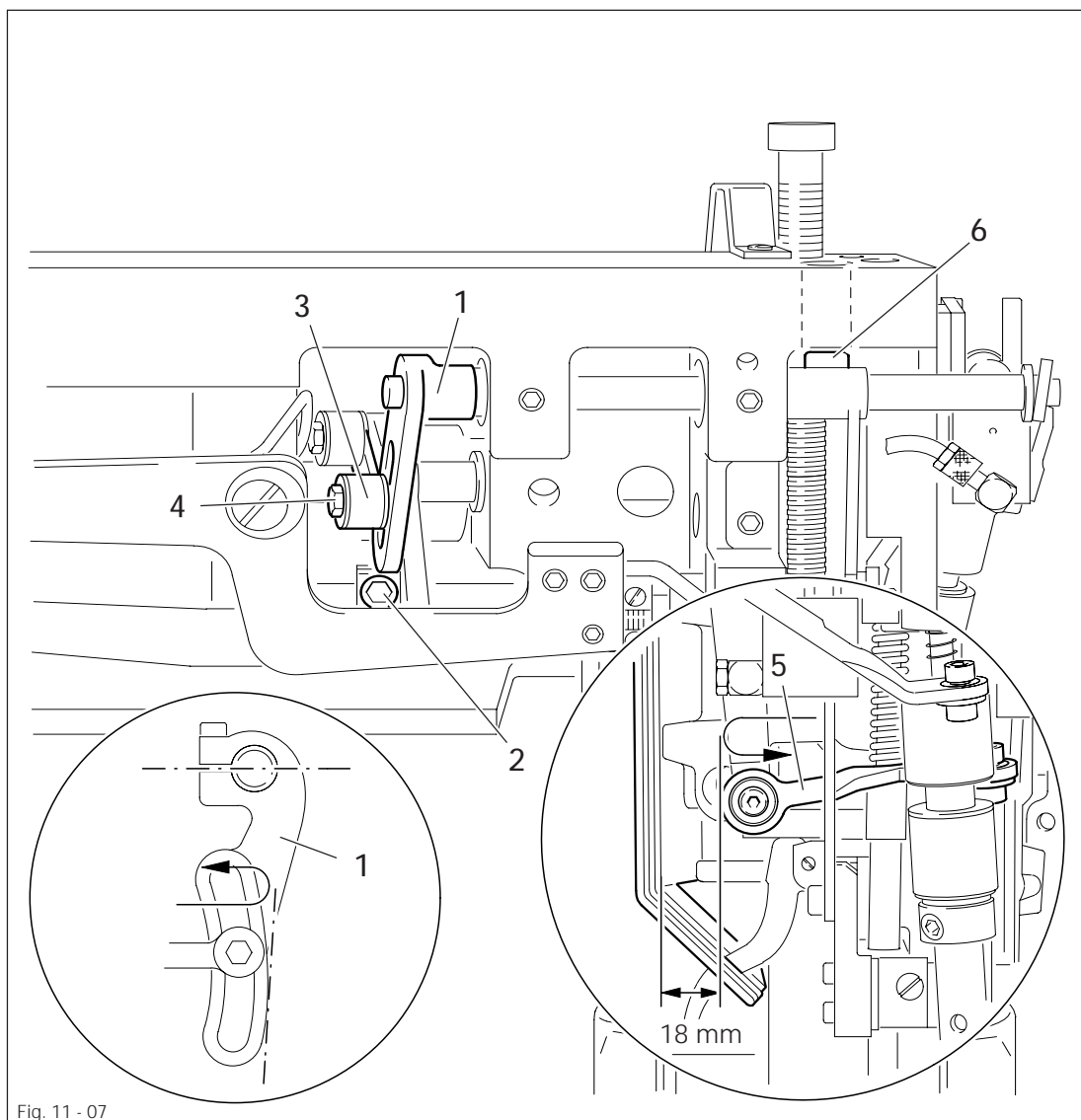
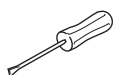


Fig. 11 - 07



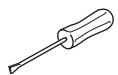
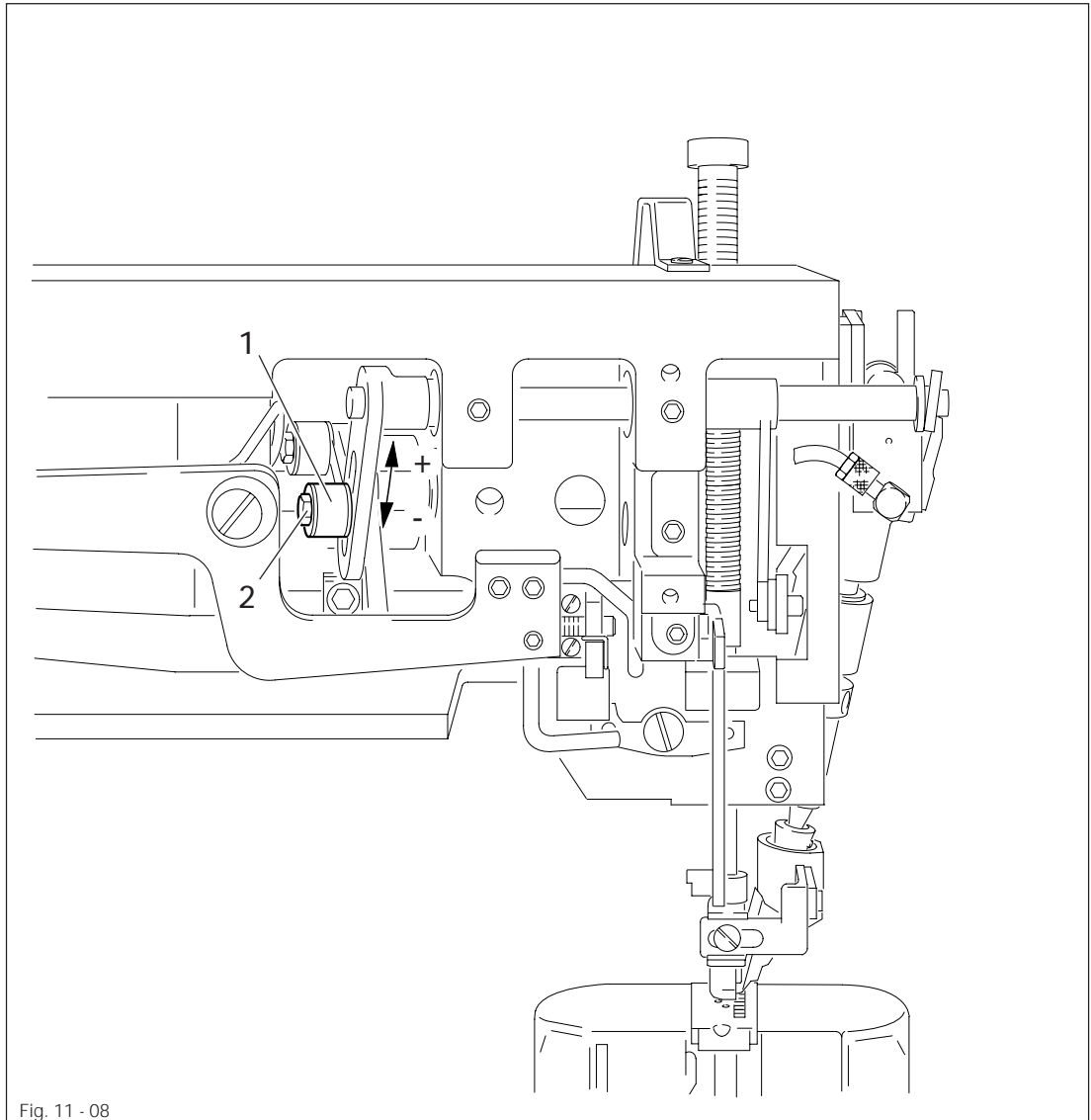
- Set the longest stitch length.
- Turn lever 1 (screw 2) in accordance with the **requirement 1**.
- Adjust lever 3 (screw 4) in accordance with the **requirement 2**.
- Adjust lever 5 (screw 6) accessible from above through hole in the case) in accordance with the **requirement 3**.

Adjustment

11.04.08 Synchronizing the roller presser and feed dog (only on machines with subcl. -4/01)

Requirement

The feed strokes of the roller presser and the feed dog must be equal.

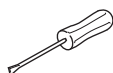
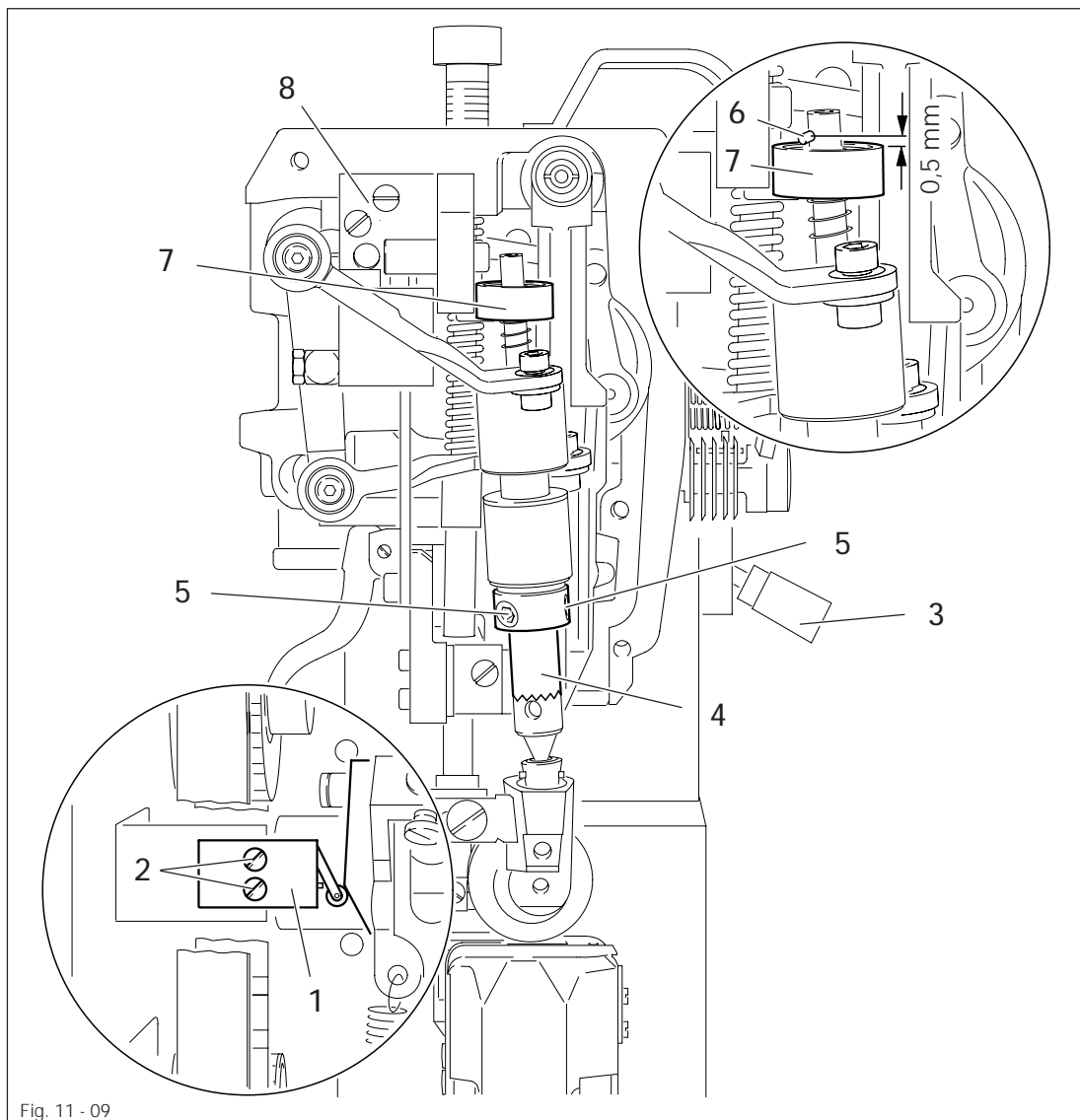


- Adjust lever 1 (screw 2) in accordance with the requirement.

11.04.09 Releasing the roller presser for reverse sewing (only on machines with subcl. -4/01)

Requirement

1. For reverse sewing, the roller presser must be released (cylinder 8 extended).
2. When the roller presser and feed dog are lowered, the clearance between tension pin 6 and bearing 7 should be 0.5 mm, if cylinder 8 has not been extended.



- Adjust valve 1 (screws 2) so that it is positioned between the settings 0 and 1 on the gauge if lever 3 is operated.
- Adjust coupling part 4 (screws 5) in accordance with requirements 1 and 2.

11.04.10 Hook-to-needle clearance, needle rise, needle height and needle guard

Requirement

In the needle rise position (see table), the following applies:

1. The hook point must be at the "needle centre" position and clear the needle by **0.05 - 0.1 mm**.
2. The top edge of the eye of the needle must be **0.8 - 1.0 mm** below the hook point.
3. The needle guard **8** must lightly touch the needle.



Needle rise position

Model B:	1.8 mm after BDC of the needle bar
Model C:	2.0 mm after BDC of the needle bar
Model C/D and D:	2.2 - 2.5 mm after BDC of the needle bar

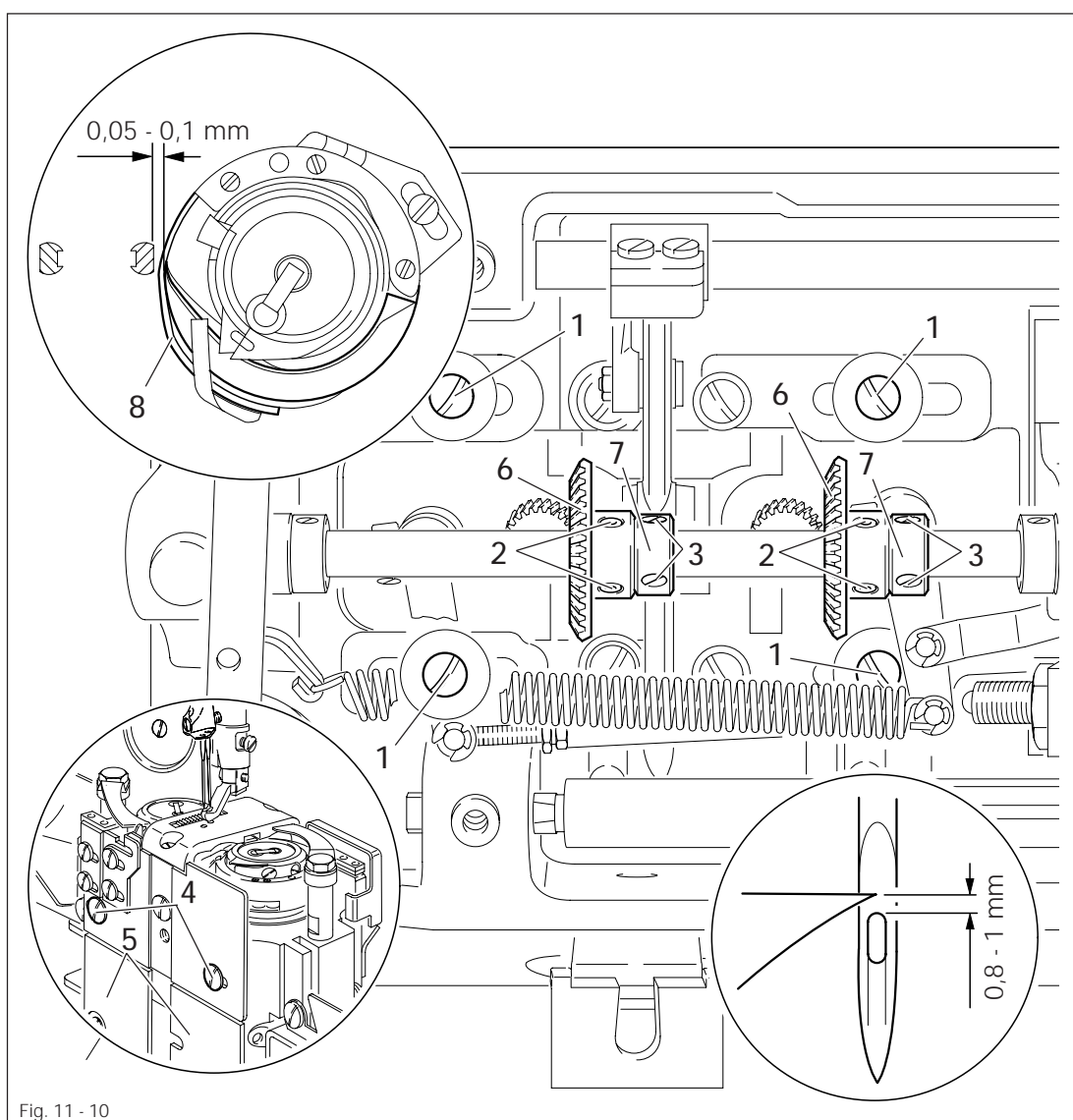
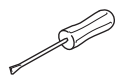


Fig. 11 - 10



- Loosen screws 1, 2 and 3.
- Loosen screws 4 on both sides of the posts.
- Bring the needle to its BDC and slide the feeler gauge for the appropriate model under the needle bar bearing.
- Position the adjustable clamp against the feeler gauge and screw it tight.



- Remove the feeler gauge and turn the balance wheel in its direction of rotation until the adjustable clamp is touching the needle bar bearing.
- Position posts 5 in accordance with **requirement 1**.
- Tighten screws 1 and 4.
- Position the hook point at the needle centre, taking care to ensure that the needle is not deflected by needle guard 8.
- While ensuring that bevel gear 6 is not too close, and that the hook does not have too much play, tighten screws 2.
- Position retaining collar 7 so that it rests on bevel gear 6 and tighten screws 3.
- Adjust the needle height in accordance with **requirement 2**.
- Align needle guard 8 in accordance with **requirement 3**.

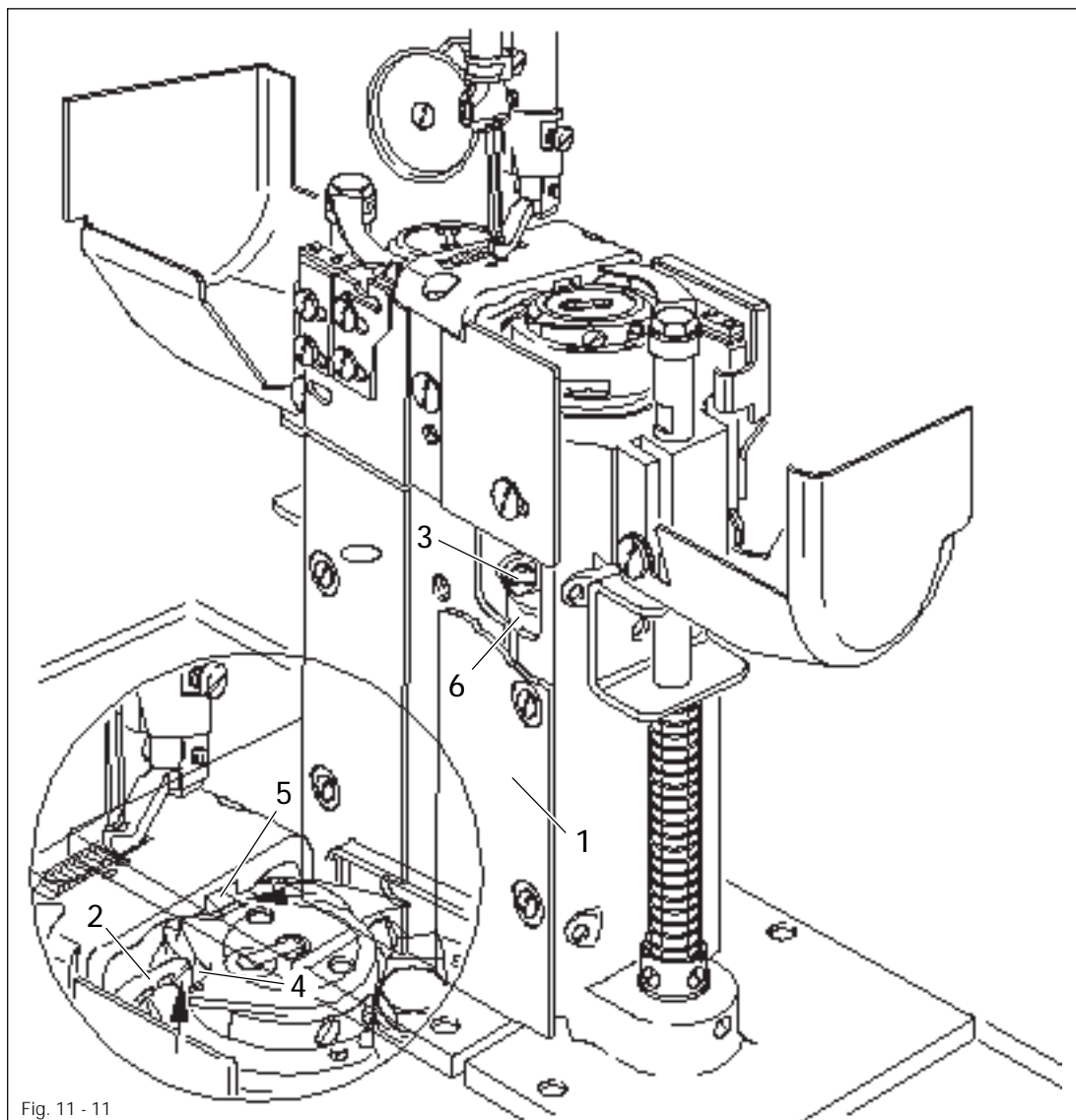


If the needle distance is altered, it is absolutely necessary to re-adjust the linkage to the thread trimmer (see **Chapter 11.05.06 Thread trimmer linkage**).

11.04.11 Bobbin-case opener

Requirement

The needle thread must not be clamped between the bobbin-case opener 2 and the bobbin-case base 4, nor must it be clamped between projection 5 and the retaining trip of the needle plate (see arrows).



- Unscrew covers 1 (on the left post from the rear side).
- Adjust the bobbin-case opener 2 (Screws 3) in accordance with the requirement.
- With the bobbin-case opener in this position, apply pressure on it from above, slide the clamp collar 6 up as far as possible and tighten screw 2.

11.04.12 Safety coupling



The safety coupling 4 is set by the manufacturer. If the thread jams, the safety coupling 4 disengages to prevent damage to the hook. A description of how to re-engage it follows.

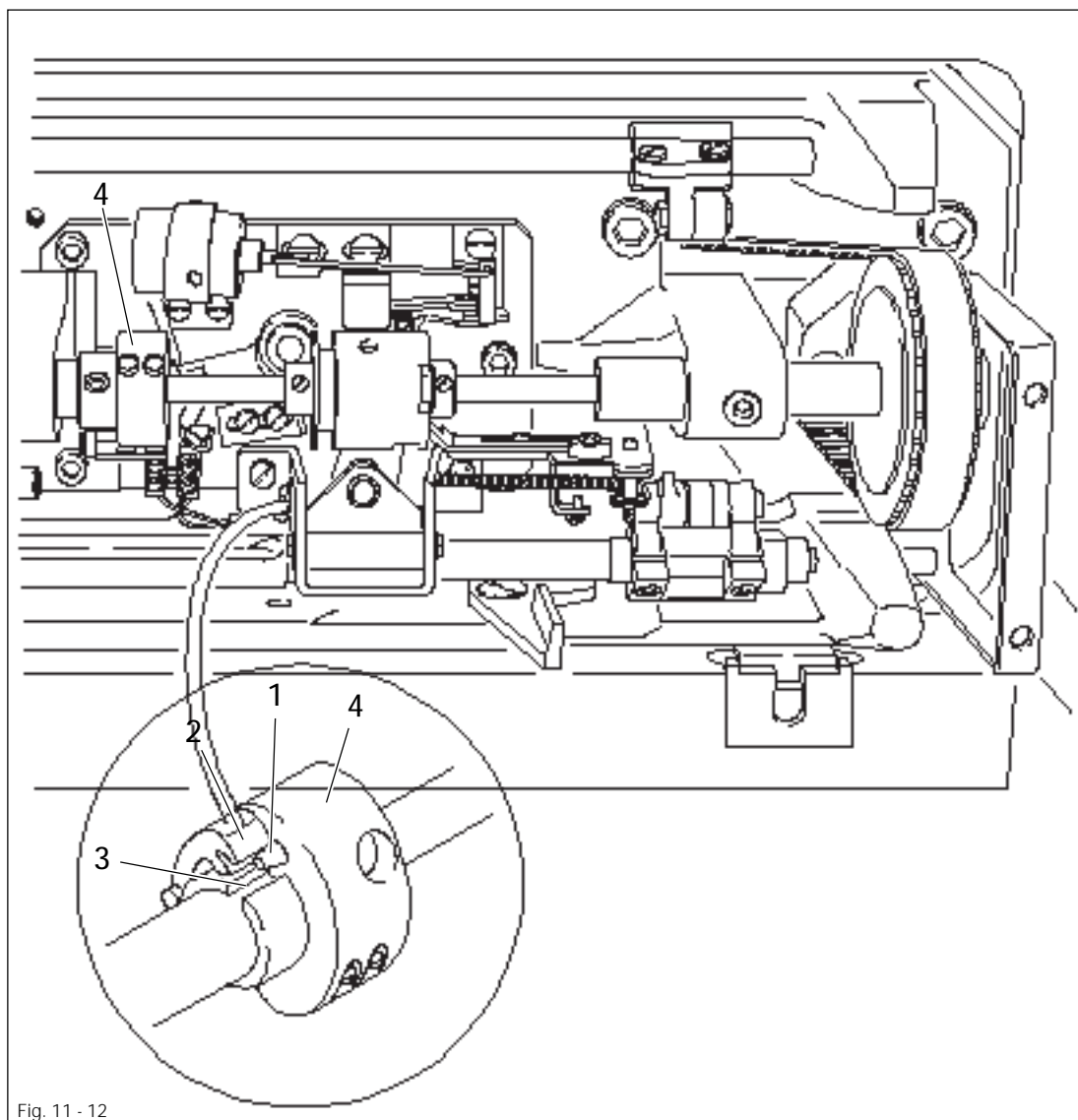


Fig. 11 - 12



- Remove the jammed thread.
- Press plunger 1 and turn the balance wheel until pawl 2 engages in the groove 3.

11.04.13 Clearance between roller presser and needle plate

Requirement

The clearance between the raised roller presser and the needle plate must be 5 mm.

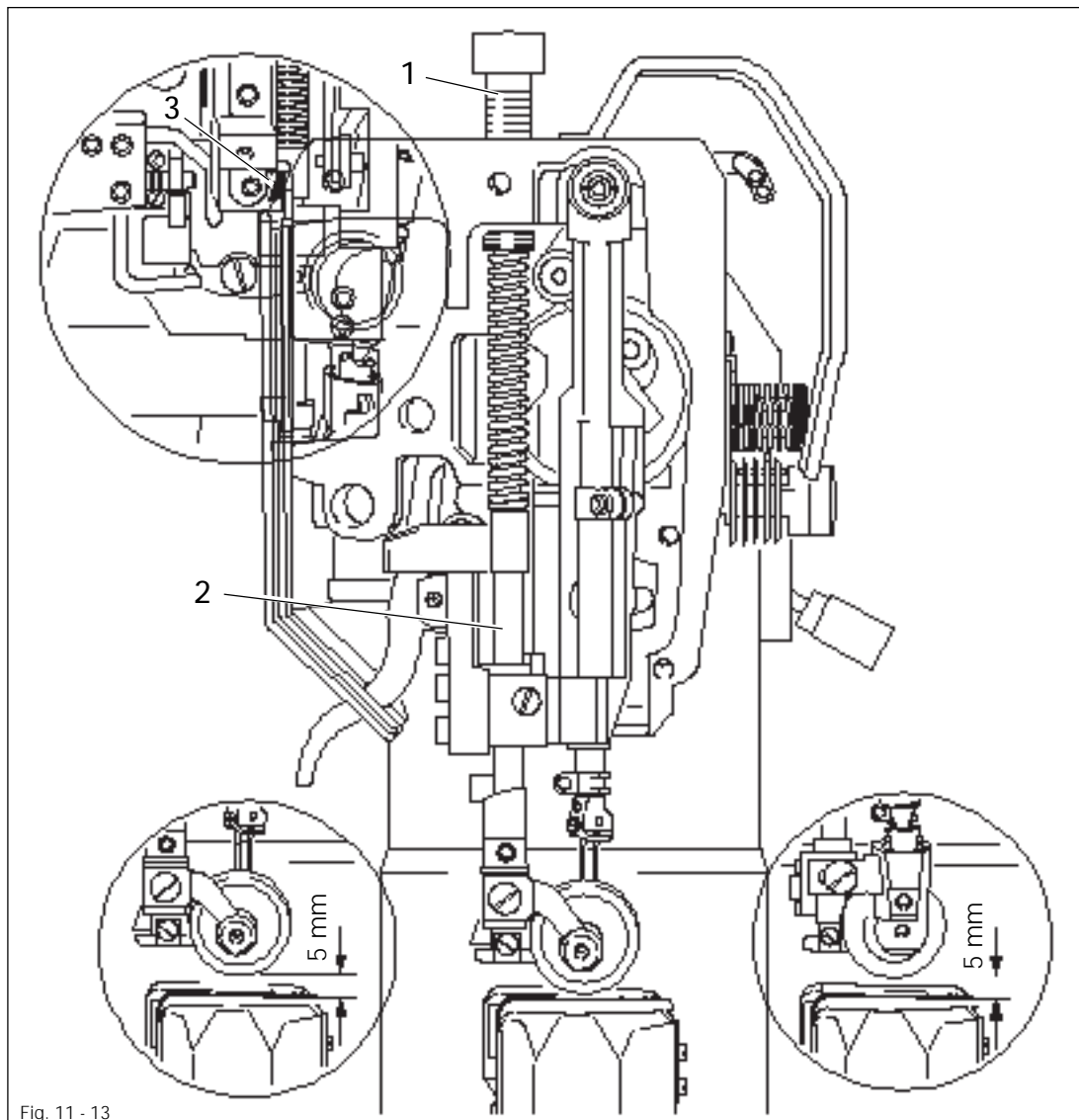


Fig. 11 - 13



- Raise roller presser with the presser bar lifter.
- Reduce the pressure on the roller pressure (screw 1).
- Move presser rod 2 (screw 3) in accordance with the **requirement**.
- Carry out the adjustment in accordance with Chapter 11.04.14 Pressure of roller presser.

11.04.14 Pressure of roller presser

Requirement

The material must be fed reliably even at top sewing speed.

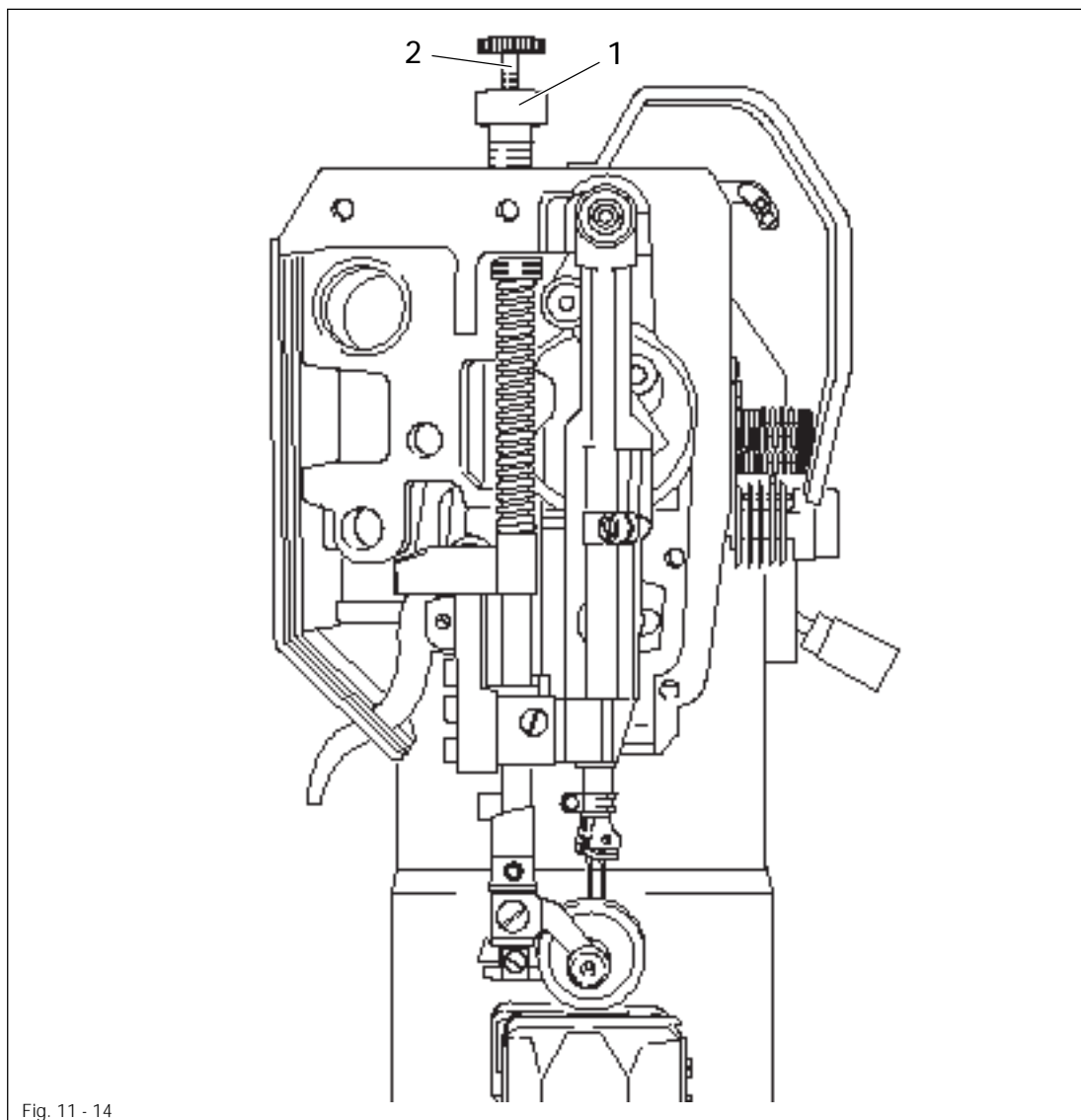


Fig. 11 - 14



- Turn screw 1 in accordance with the requirement.

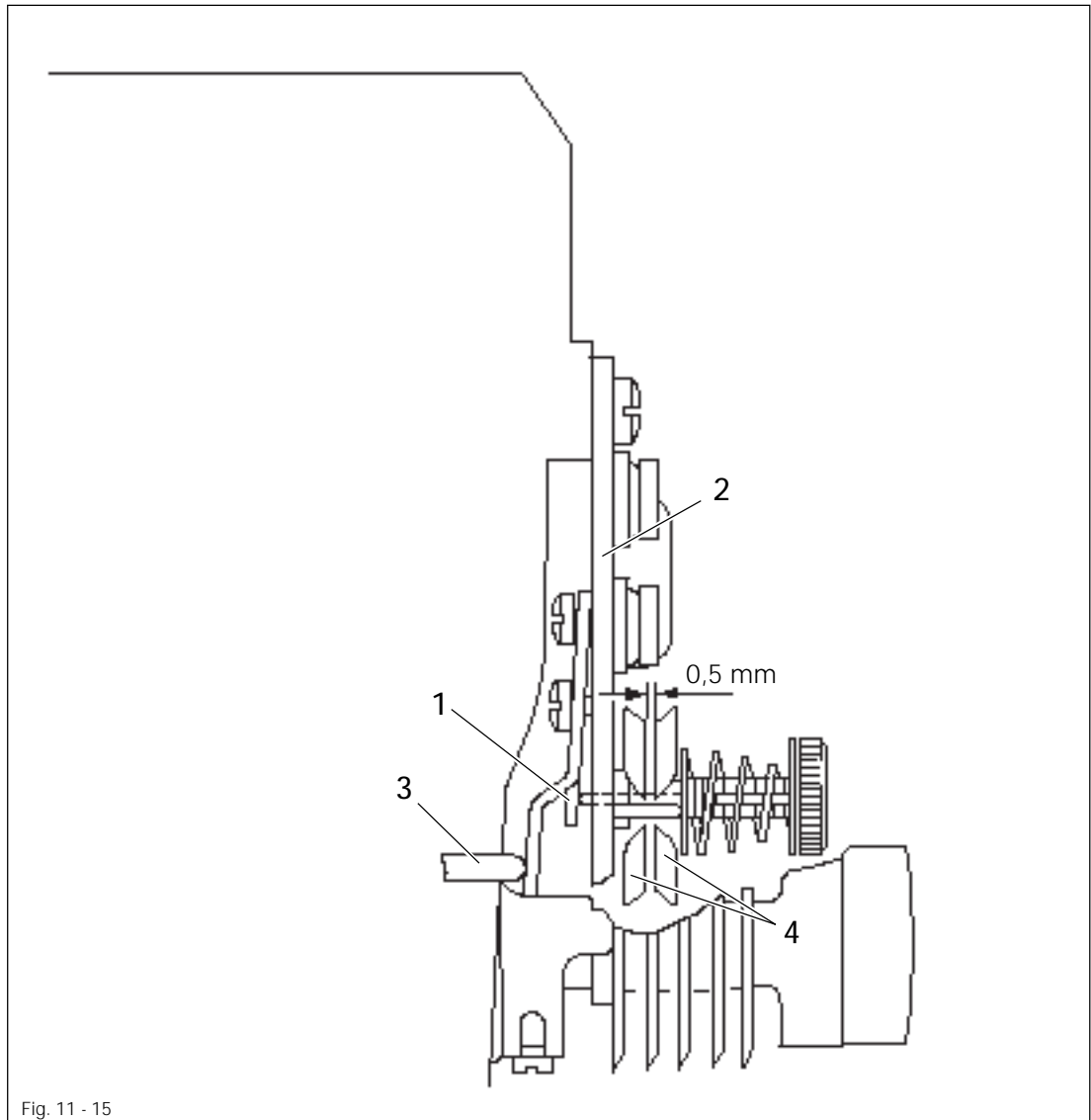


On Model D machines the pressure can be increased additionally via screw 2.

11.04.15 Needle thread tension release

Requirement

With the roller presser raised, the two tension discs 4 must be at least 0.5 mm apart.



- Align pressure plate 1 behind tension carrier plate 2 in accordance with the requirement.



The clearance of 0.5 mm is a minimum and can increase to more than 1 mm when thick threads are used.

If the tension is correct, release pin 3 should not be under pressure.

11.04.16 Thread check spring (PFAFF 1293 and on machines without -900/56)

Requirement

The motion of the thread check spring 5 should have ceased when the needle point enters the material (= approx. 7 mm spring stroke).

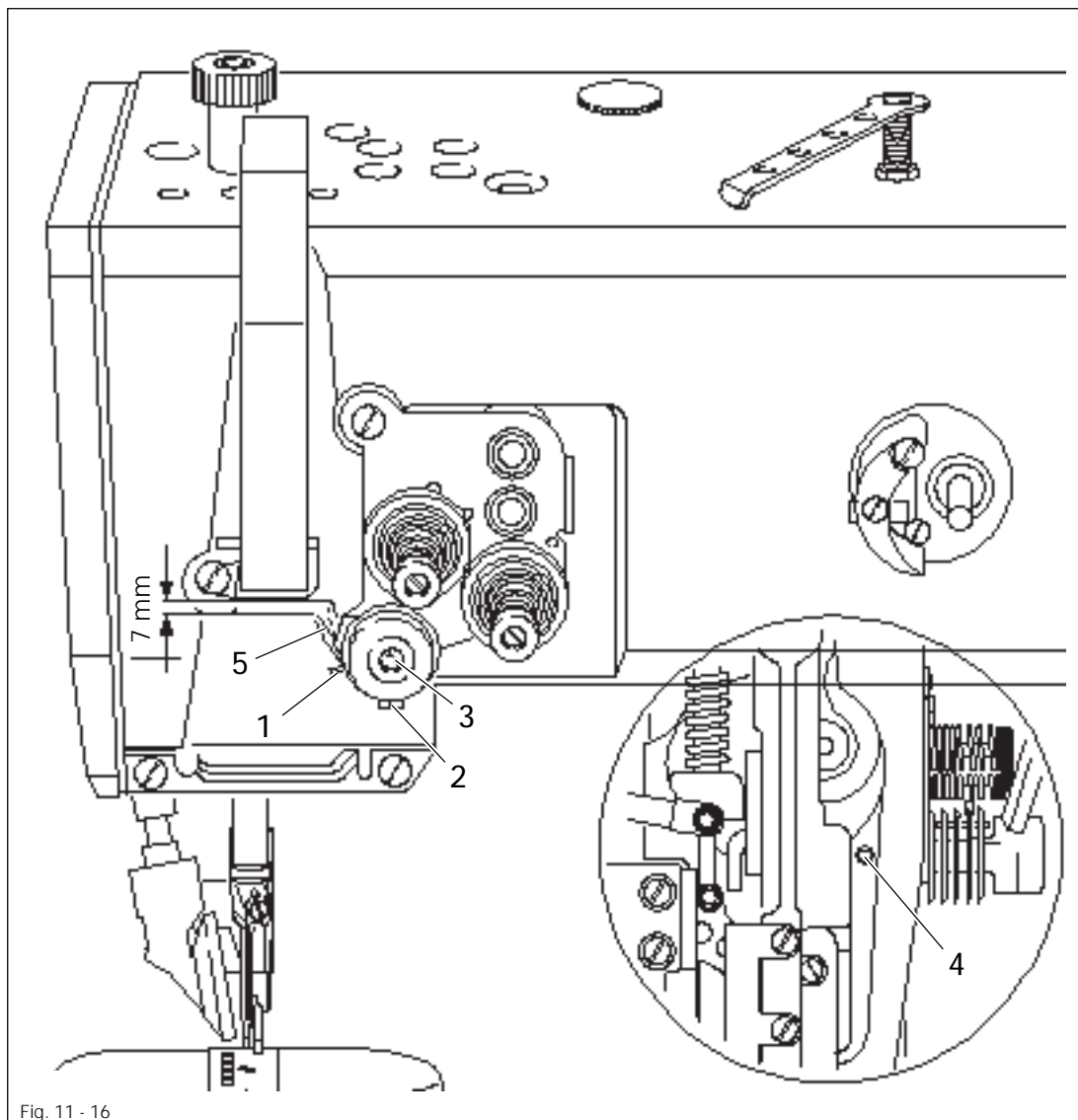


Fig. 11 - 16



- Turn retainer 1 (screw 2) in accordance with the requirement.
- Turn screw 3 (screw 4) to adjust the spring resistance.



Due to technical reasons, the length of the thread-check spring stroke can vary a little in either direction.

11.04.17 Thread check spring (on PFAFF 294 and PFAFF 1294 with -900/56)

Requirement

The motion of the thread check springs 1 and 6 should have ceased when the needle points enter the material (= approx. 7 mm spring stroke).

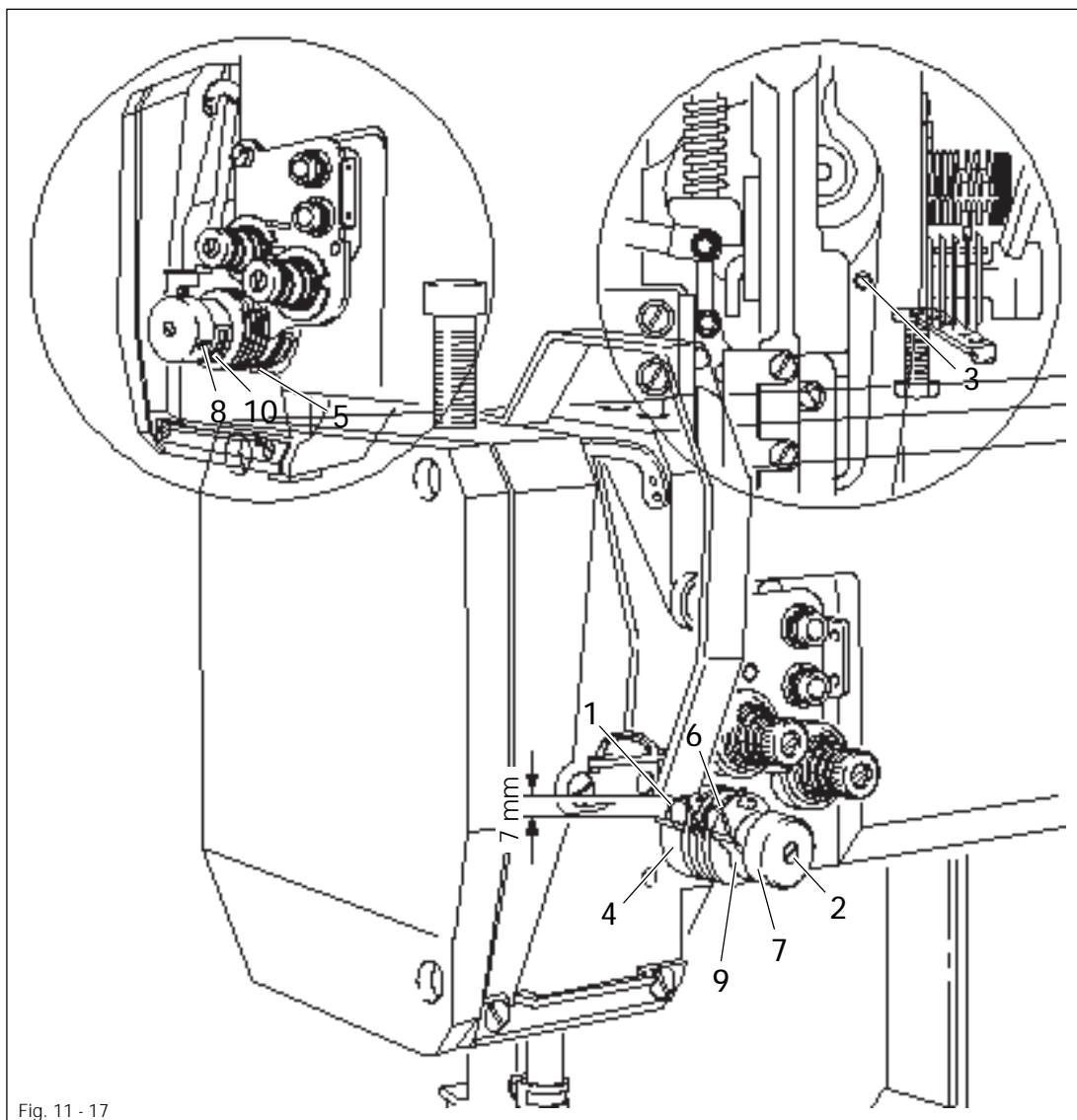


Fig. 11 - 17



- Turn screw 2 (screw 3) to adjust the tension of thread check spring 1.
- Turn retainer 4 (screw 5) in accordance with the **requirement**.
- Turn screw 7 (screw 8) to adjust the tension of thread check spring 6.
- Turn retainer 9 (screw 10) in accordance with the **requirement**.



Due to technical reasons, the length of the thread-check spring stroke can vary a little in either direction.

11.04.18 Bobbin winder

Requirement

1. When the bobbin winder is switched on, the friction wheel 5 must engage reliably.
2. When the bobbin winder is switched off, the friction wheel 5 must not touch the drive wheel 1.
3. The bobbin winder must switch off automatically when the thread level is approx. 1 mm from the edge of the bobbin.

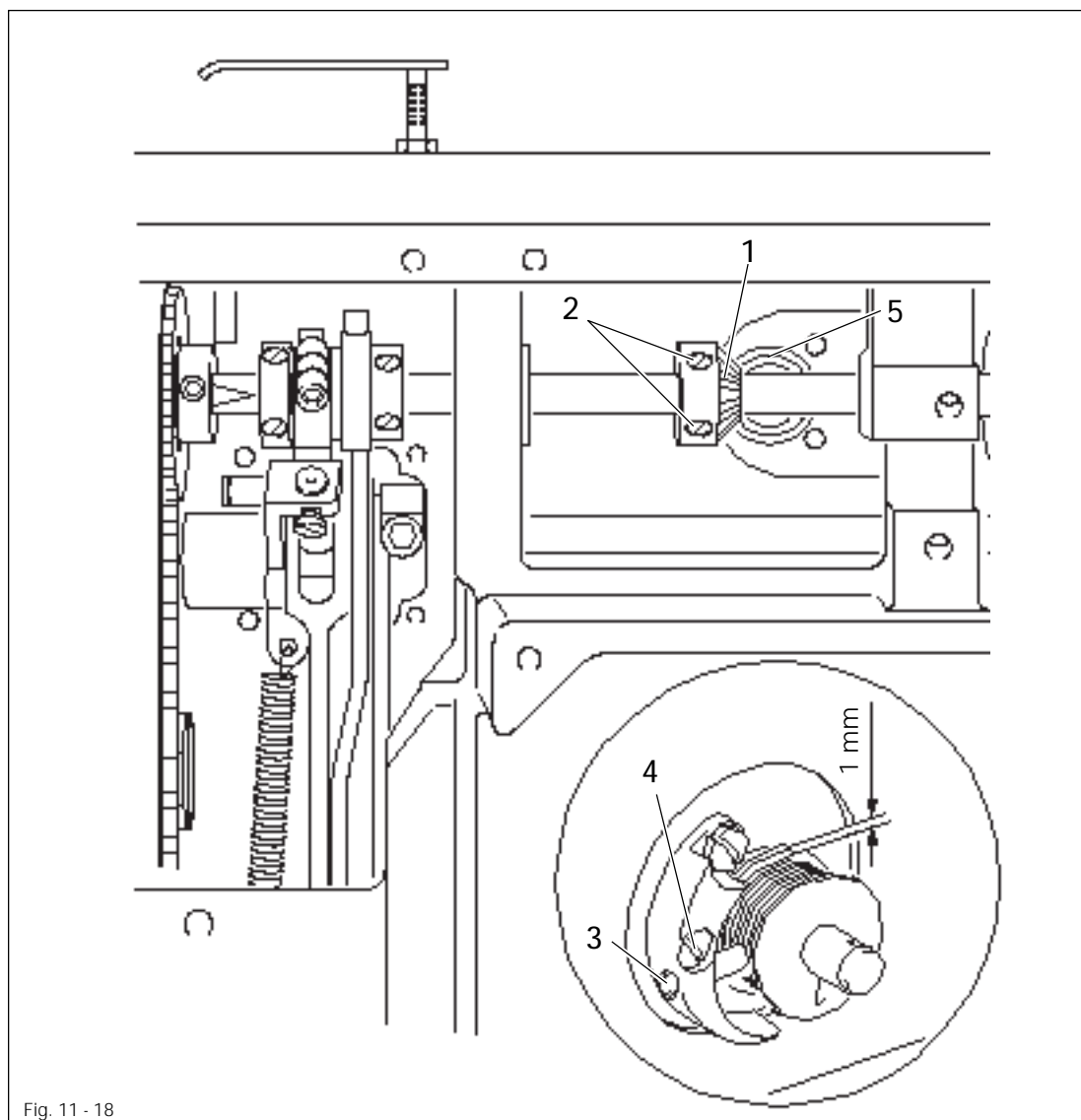


Fig. 11 - 18



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

11.04.19 Adjusting the presser bar lifting lever with subclass -911/97

Requirement

When the automatic presser foot lift is operated

1. the roller presser must rise **5 mm** above the needle plate and
2. the tension discs of the thread tension device must be **0.5 mm** apart.

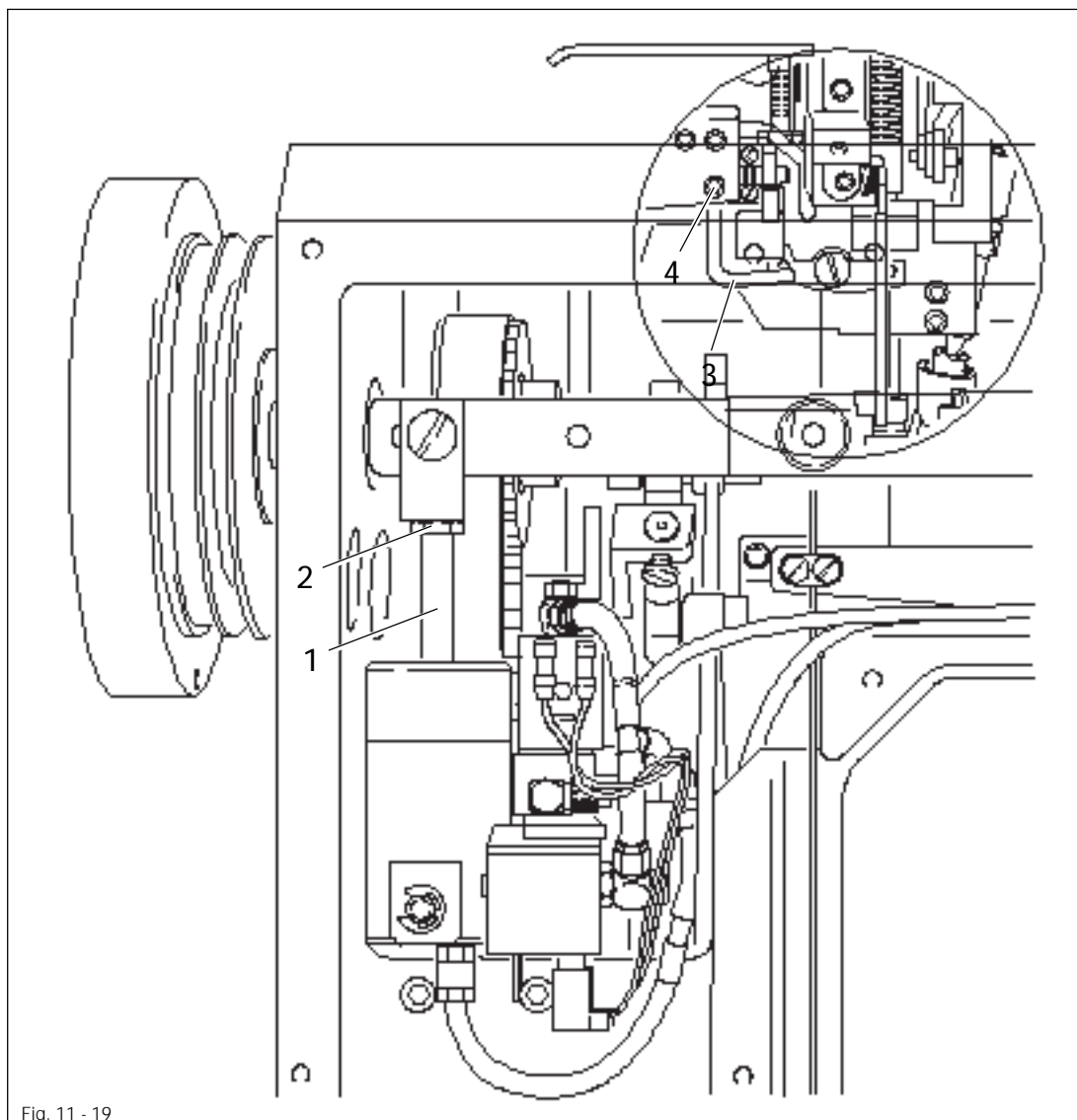


Fig. 11 - 19



- Check, if necessary adjust the setting in accordance with Chapter 11.04.13 Clearance between roller presser and needle plate.
- Adjust rod 1 (nut 2) in accordance with requirement 1.
- Adjust bar 3 (screw 4) in accordance with requirement 2.
- Check whether the raised presser bar lifter drops back down under its own weight when the automatic presser foot lift is operated, and adjust rod 1 if necessary.

11.04.20 Adjusting the presser bar lifting lever without subclass -911/97

Requirement

When the knee lever is operated

1. the roller presser must rise 5 mm above the needle plate and
2. the tension discs of the thread tension device must be 0.5 mm apart.

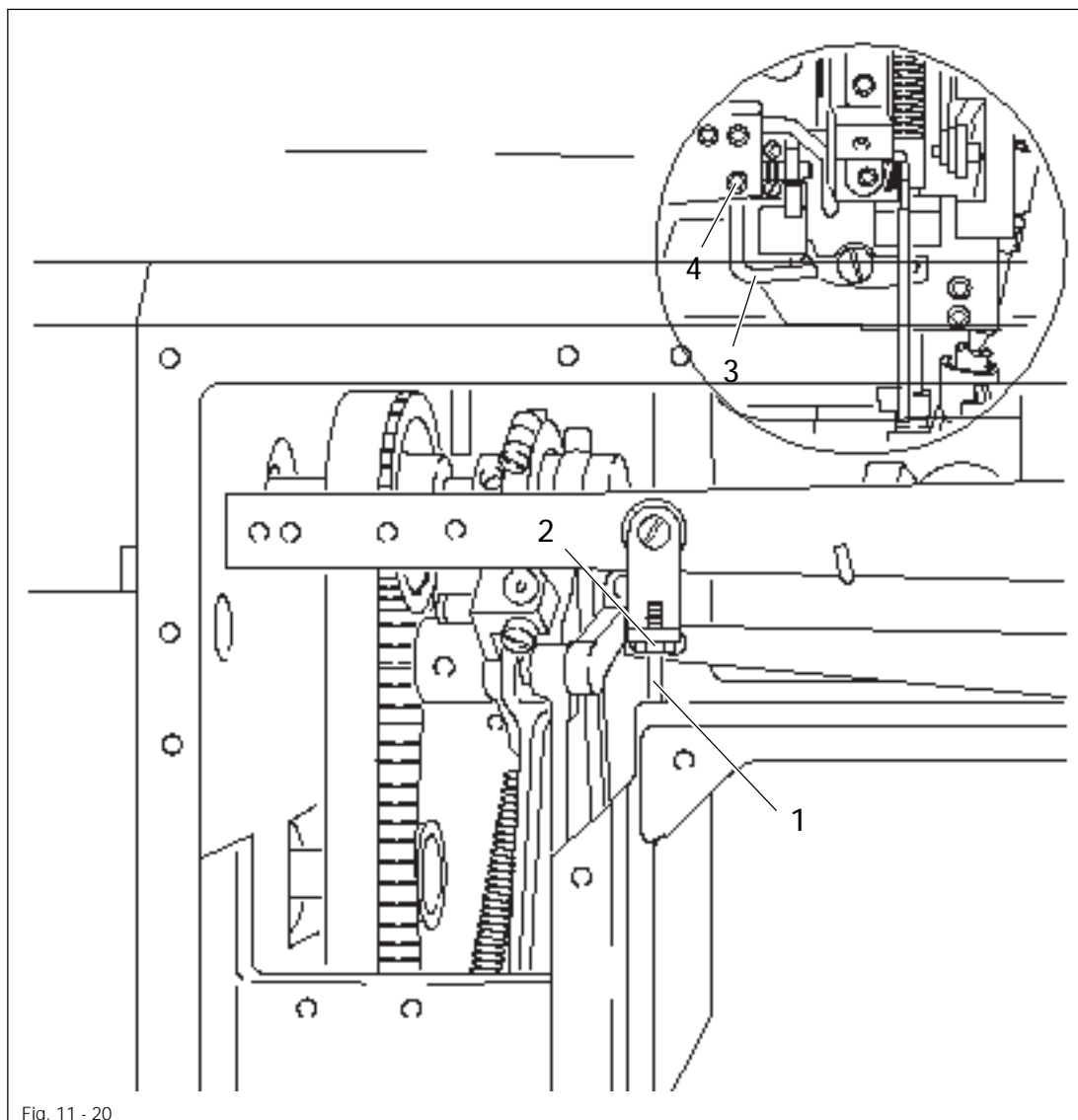


Fig. 11 - 20



- Check, if necessary adjust the setting in accordance with **Chapter 11.04.13 Clearance between roller presser and needle plate.**
- Adjust rod 1 (nut 2) in accordance with **requirement 1.**
- Adjust bar 3 (screw 4) in accordance with **requirement 2.**
- Check whether the raised presser bar lifter drops back down under its own weight when the automatic presser foot lift is operated, and adjust rod 1 if necessary.

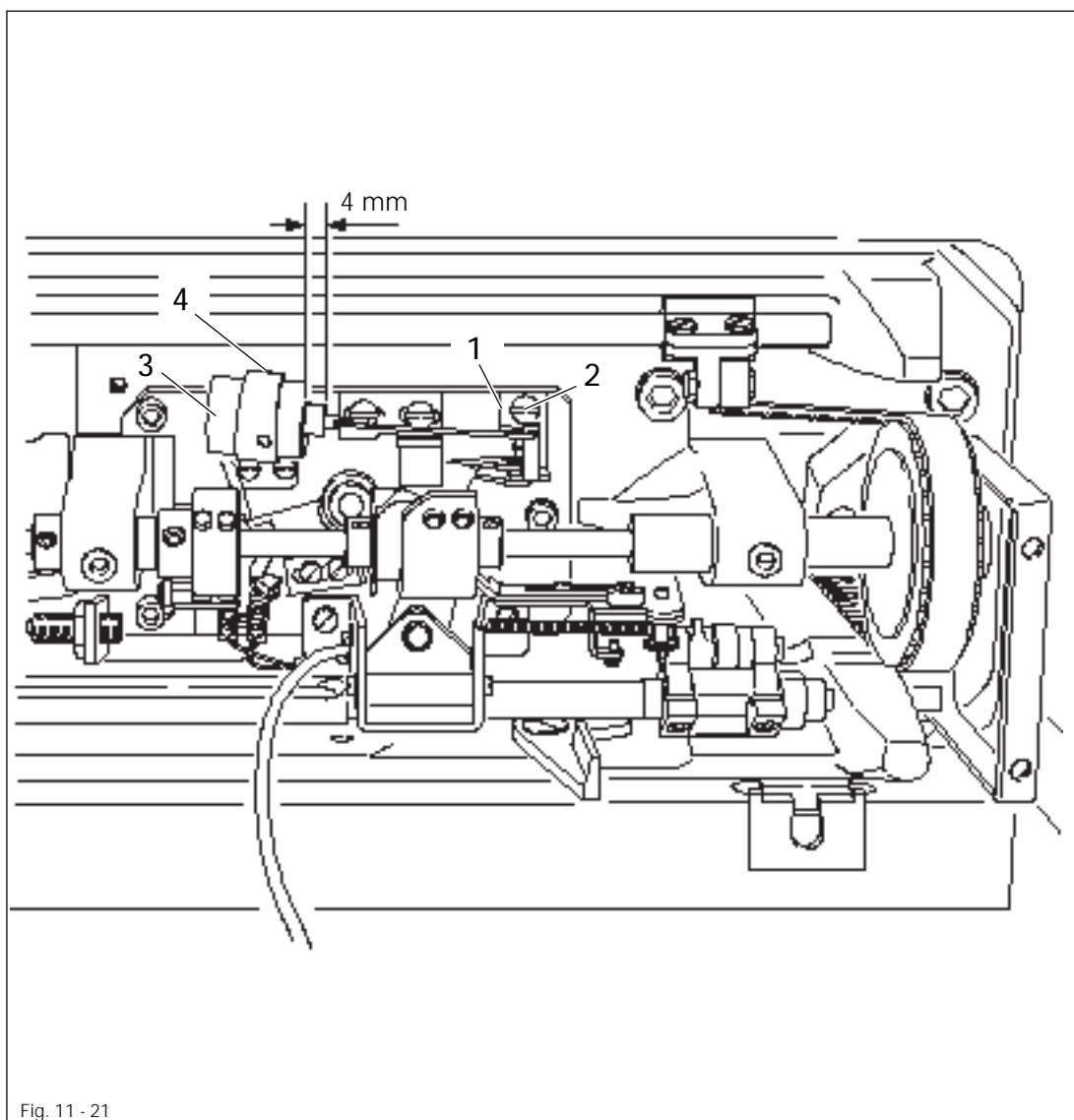
Adjustment

11.05 Adjusting the thread trimmer -900/56

11.05.01 Engaging solenoid

Requirement

1. Mounting bracket 1 must be in the middle of its adjusting range and parallel with the right-hand edge of the mounting bracket.
2. When the thread trimmer is in its resting position the core of solenoid 3 must protrude from the solenoid housing by about 4 mm.

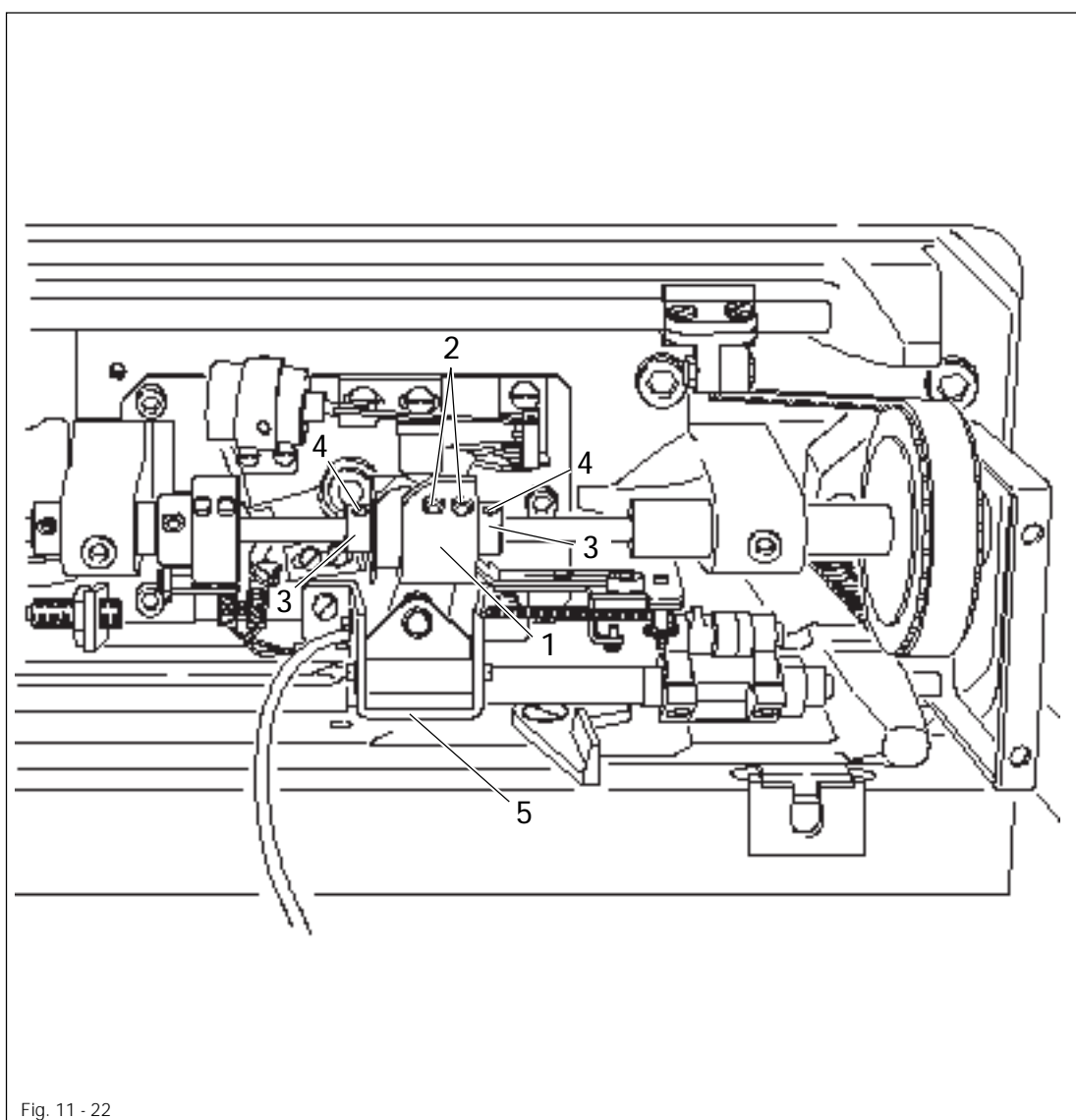


- Re-position bracket 1 (screw 2) according to Requirement 1.
- Re-position solenoid 3 (screw 4) according to Requirement 2.

11.05.02 Control cam (preliminary adjustment)

Requirement

1. Control cam 1, must be centred with the cutout of bearing mounting 5.
2. With the needle bar at t.d.c., screws 2 must be visible from the front and aligned parallel with the bedplate.



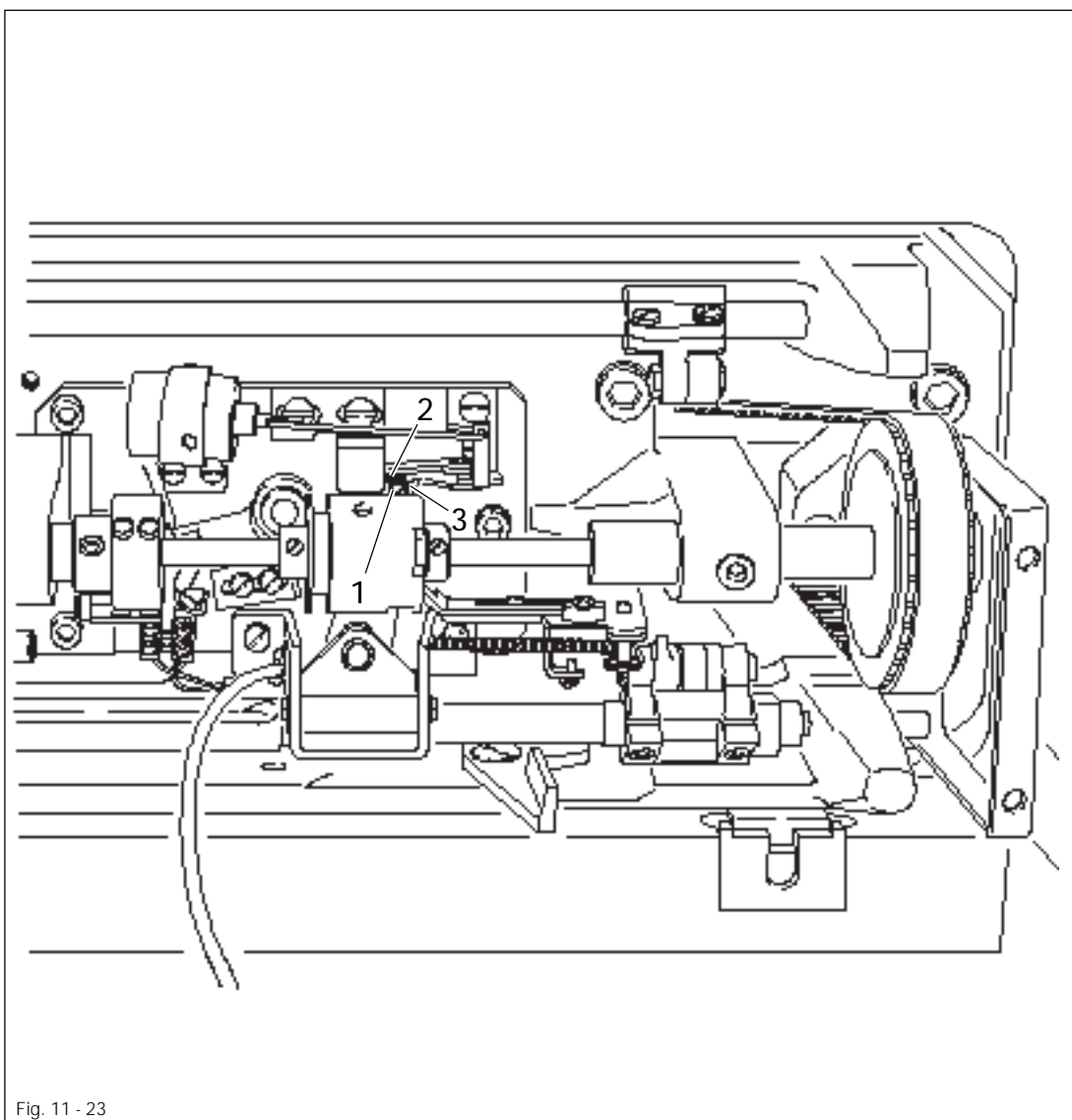
- Re-position control cam 1 (screws 2) and fixing collars 3 (screws 4) according to Requirement.

Adjustment

11.05.03 Tripping lever spring action

Requirement

When the thread trimmer is in its resting position, it must be possible to press control lever 3 about 1 mm towards the bedplate (spring action).

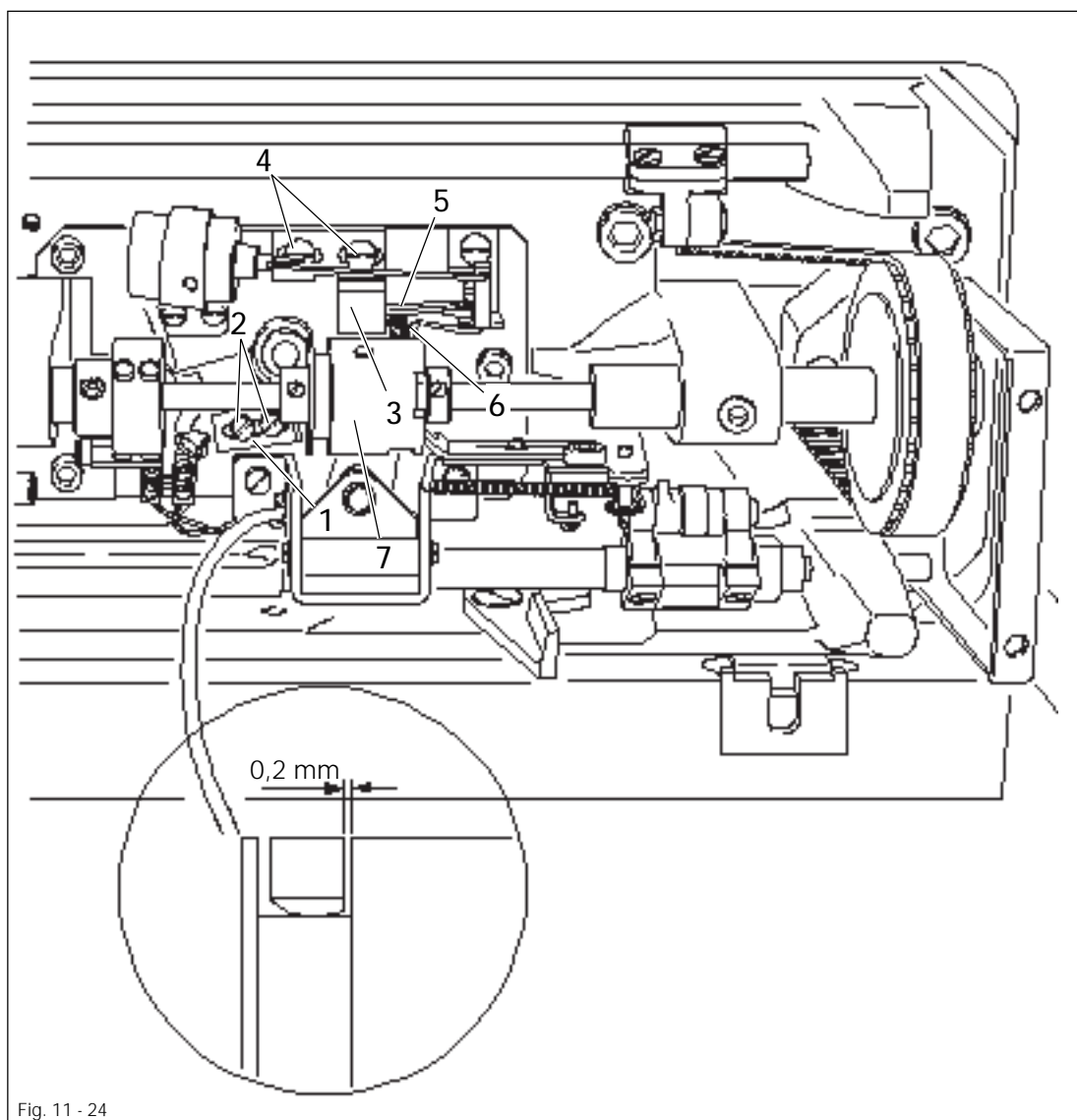


- Turn screw 1 (nut 2) according to Requirement.

11.05.04 Tripping lever stroke

Requirement

1. When engaging lever 5 is operated the pin of control lever 6 must drop freely into the track of control cam 7.
2. After thread trimming, control lever 6 must pass freely on the right side of stop plate 3 and engage control lever 5 behind stop plate 3.
3. There must be a clearance of 0.2 mm between the pin of control cam 6 and the right-hand inside of the control cam track.

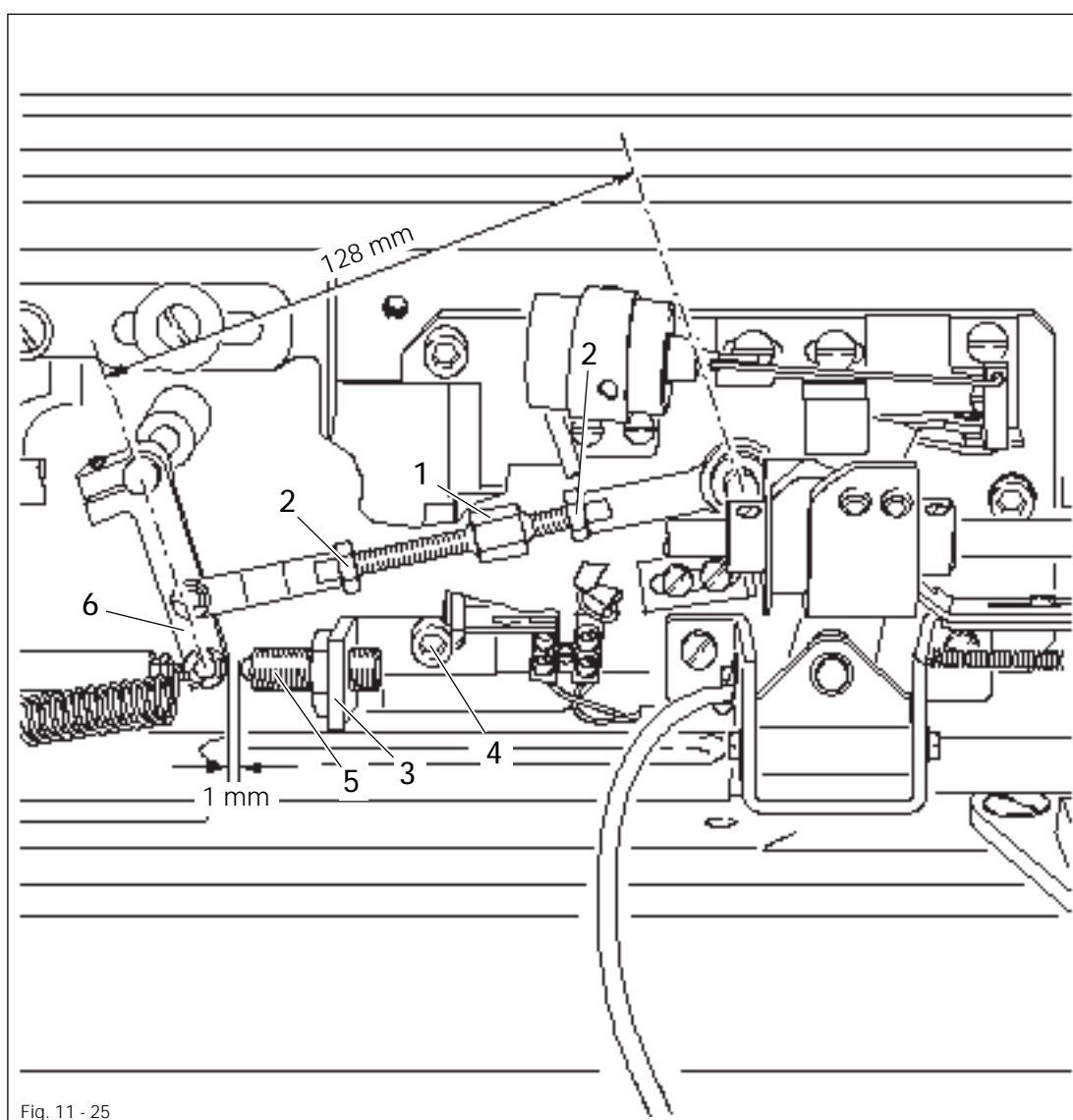


- Re-position stop plate 1 (screws 2) and stop plate 3 (screws 4) according to Requirement.

11.05.05 Thread-catcher drive linkage

Requirement

1. On the PFAFF 294 and PFAFF 1294 thread-catcher drive linkage 1 must have a length of 128 mm, less half of the needle gauge.
On the PFAFF 1293 thread catcher drive linkage 1 must have a length of 128 mm.
2. When the threa trimmer is in its resting position there must be a clearance of about 1 mm between plunger 5 and lever 6.



- Turn thread-catcher drive linkage 1 (nuts 2) to adjust it according to Requirement 1.
- Re-position bracket 3 (screw 4) according to Requirement 2.

11.05.06 Linkage bar (only on the PFAFF 294 and PFAFF 1294)

Requirement

The length of linkage bar 1 must be the same as the distance between the two thread-catcher drive shafts 3.

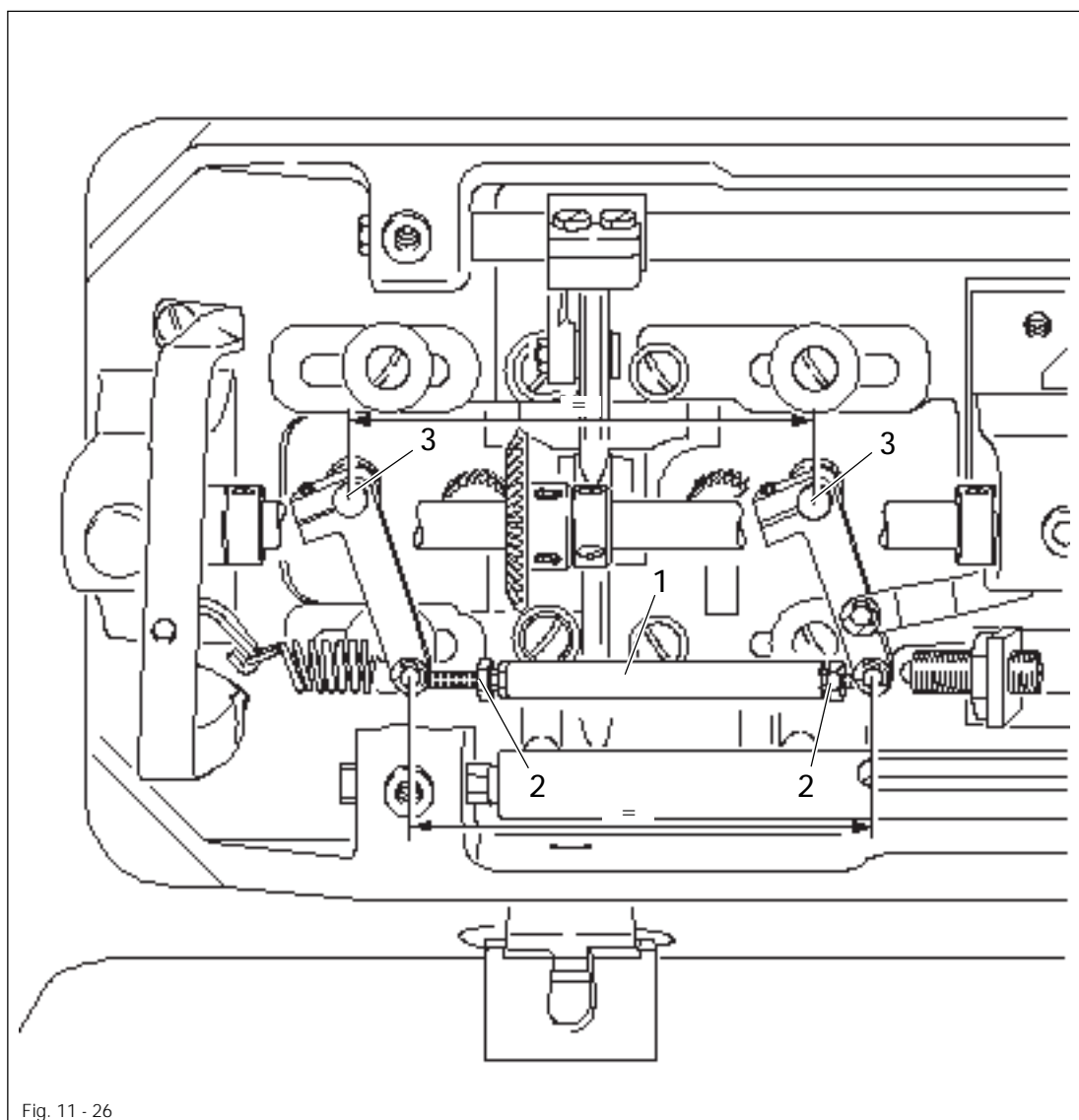


Fig. 11 - 26



- Adjust middle section 1 (nuts 2) of the linkage bar according to Requirement.

11.05.07 Thread catcher height

Requirement

There must be a clearance of 0.7 mm between the underside of thread catcher 4 and bobbin case cap 5.

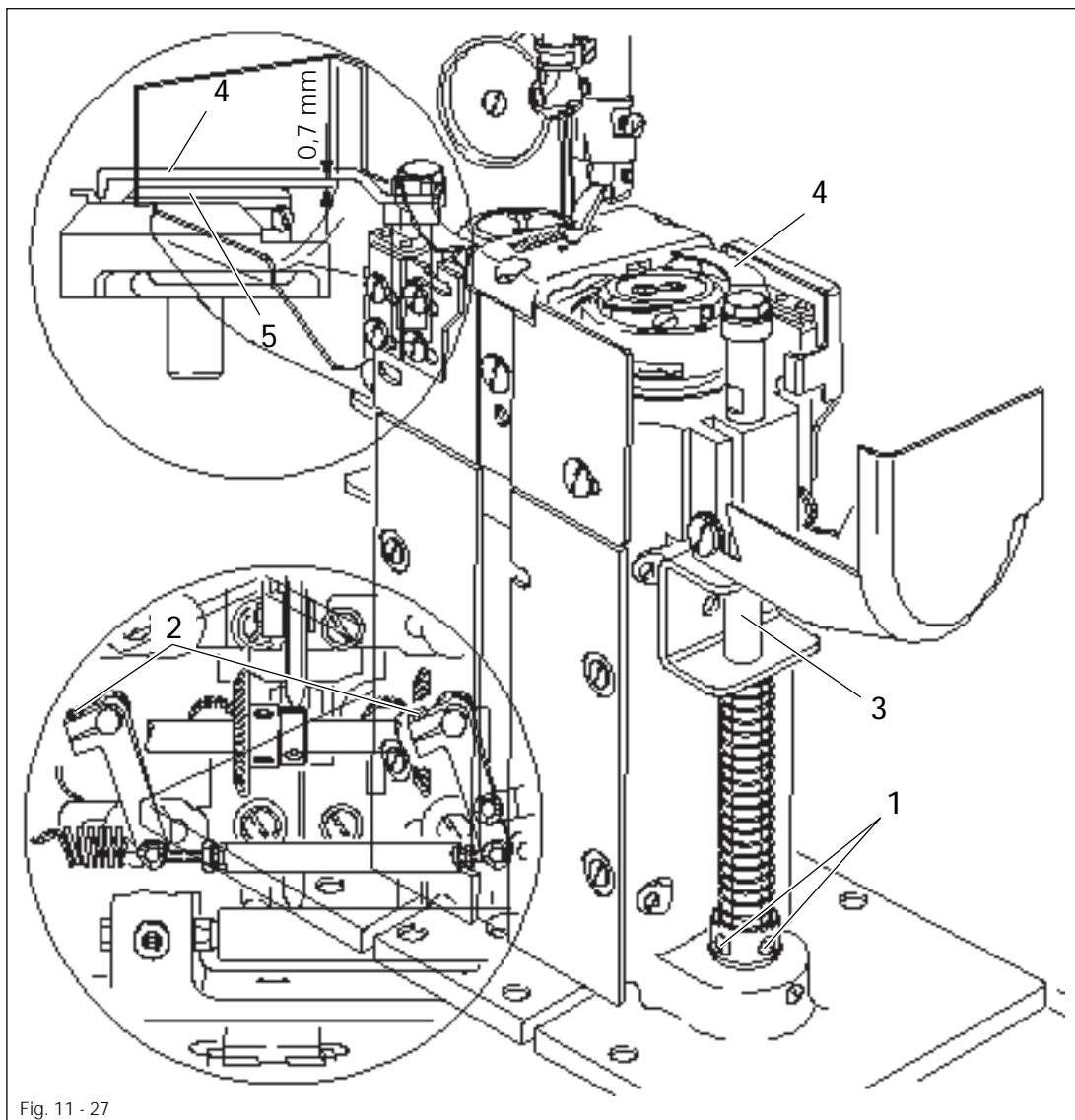


Fig. 11 - 27



- Loosen screws 1 and 2.
- Adjust the height of shaft 3 according to Requirement.
- Tighten screws 1.



Leave screws 2 loose for the following adjustment.

11.05.08 Thread catcher resting position

Requirement

When the thread trimmer is in its resting position there must be a clearance of about 4 mm between the point of catcher 3 and the cutting edge of knife 4.

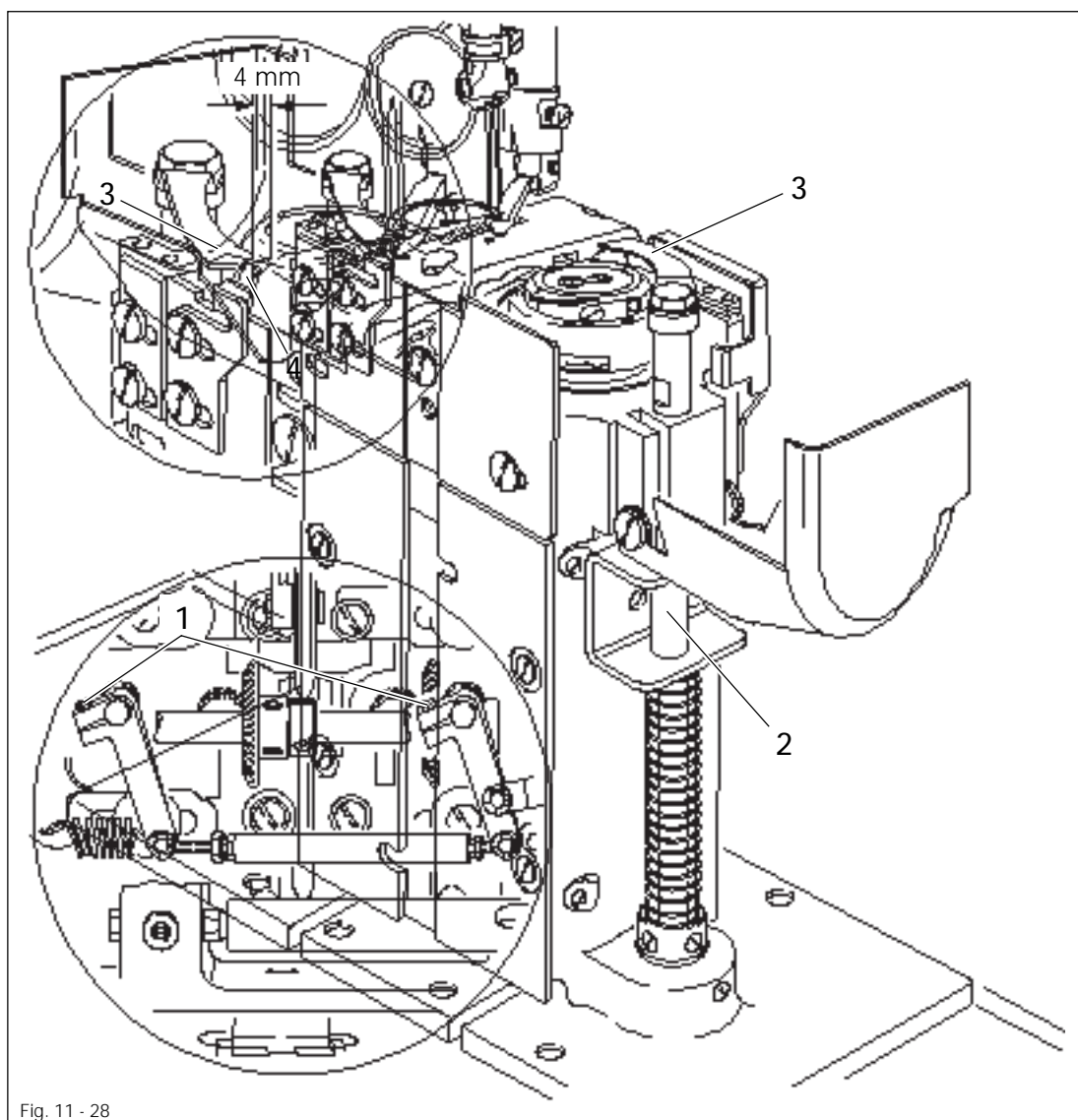


Fig. 11 - 28



- Turn shaft 2 according to Requirement.
- Tighten screws 1.



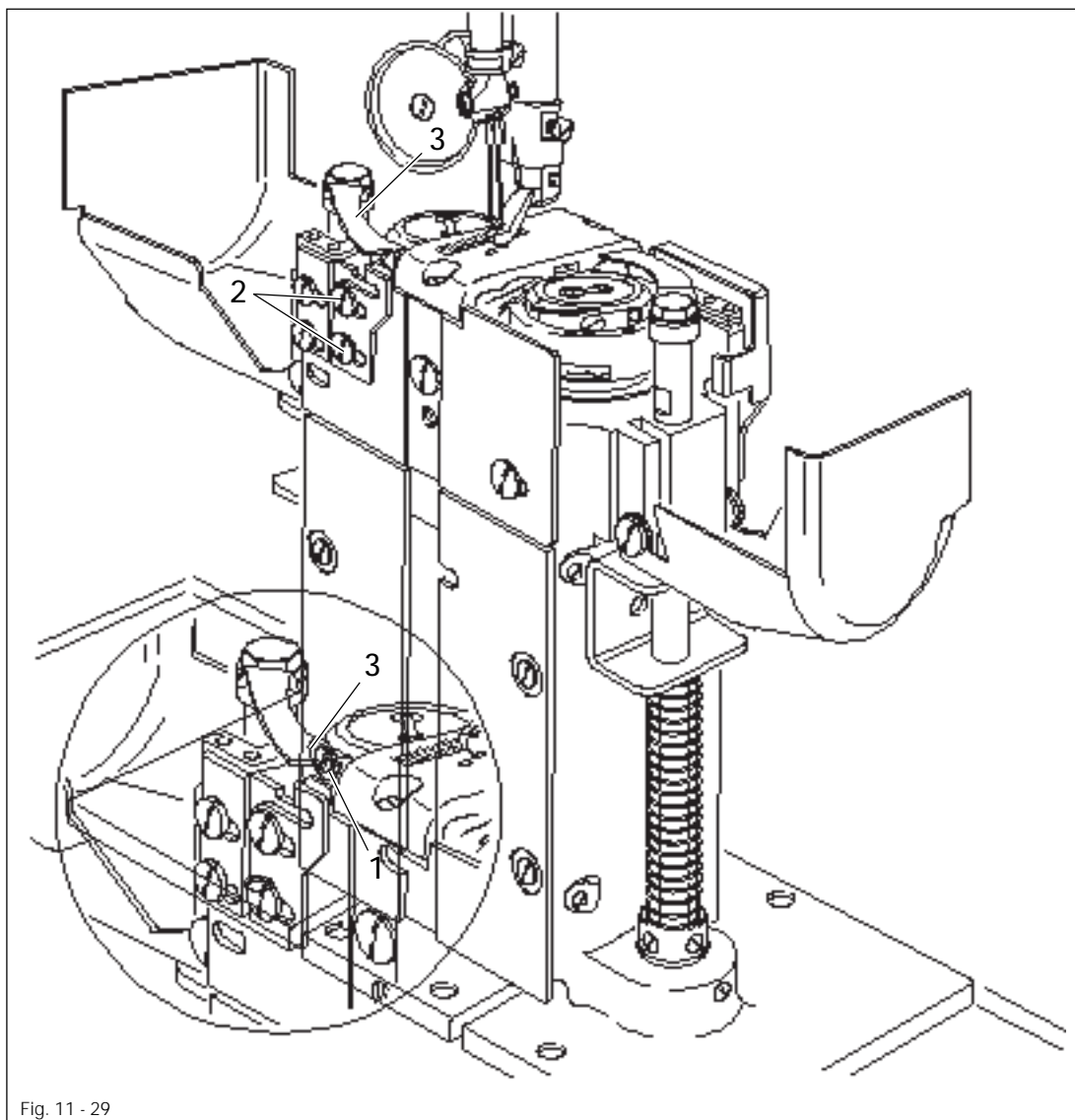
When tightening screws 1 make sure that all transmission parts of the thread catcher drive can move freely.

Adjustment

11.05.09 Knife pressure

Requirement

When the front edge of thread catcher 3 has passed the knife cutting edge by half, knife 1 must rest with light pressure on the edge of the catcher.

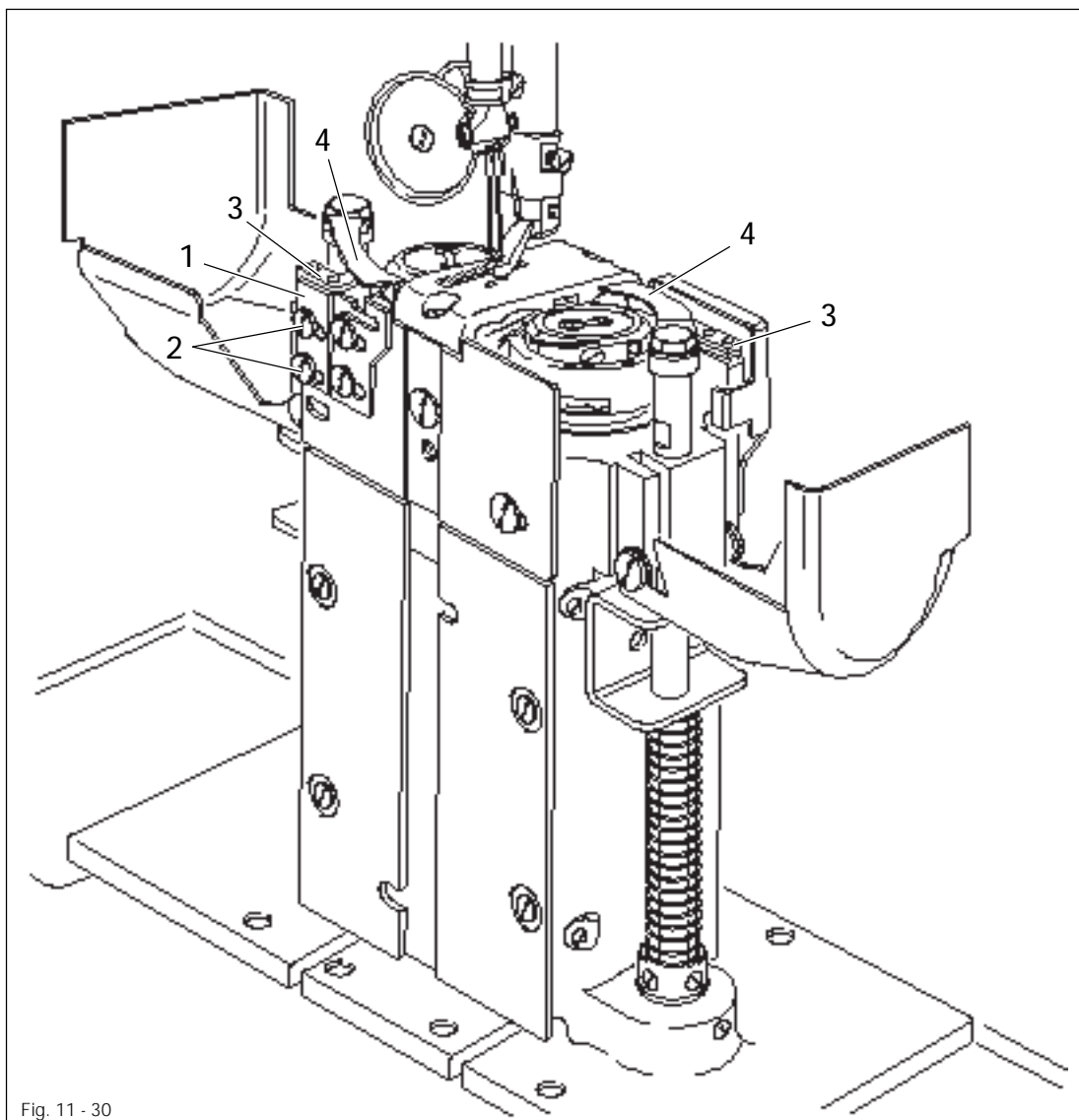


- Adjust knife 1 (screws 2) according to Requirement

11.05.10 Bobbin thread trapping spring

Requirement

1. Bobbin thread trapping spring 3 must not be deflected by thread catcher 4 in any phase.
2. After the trimming action the bobbin thread must be securely trapped.
3. It must be possible to insert and remove the bobbin from the hook without any hindrance.



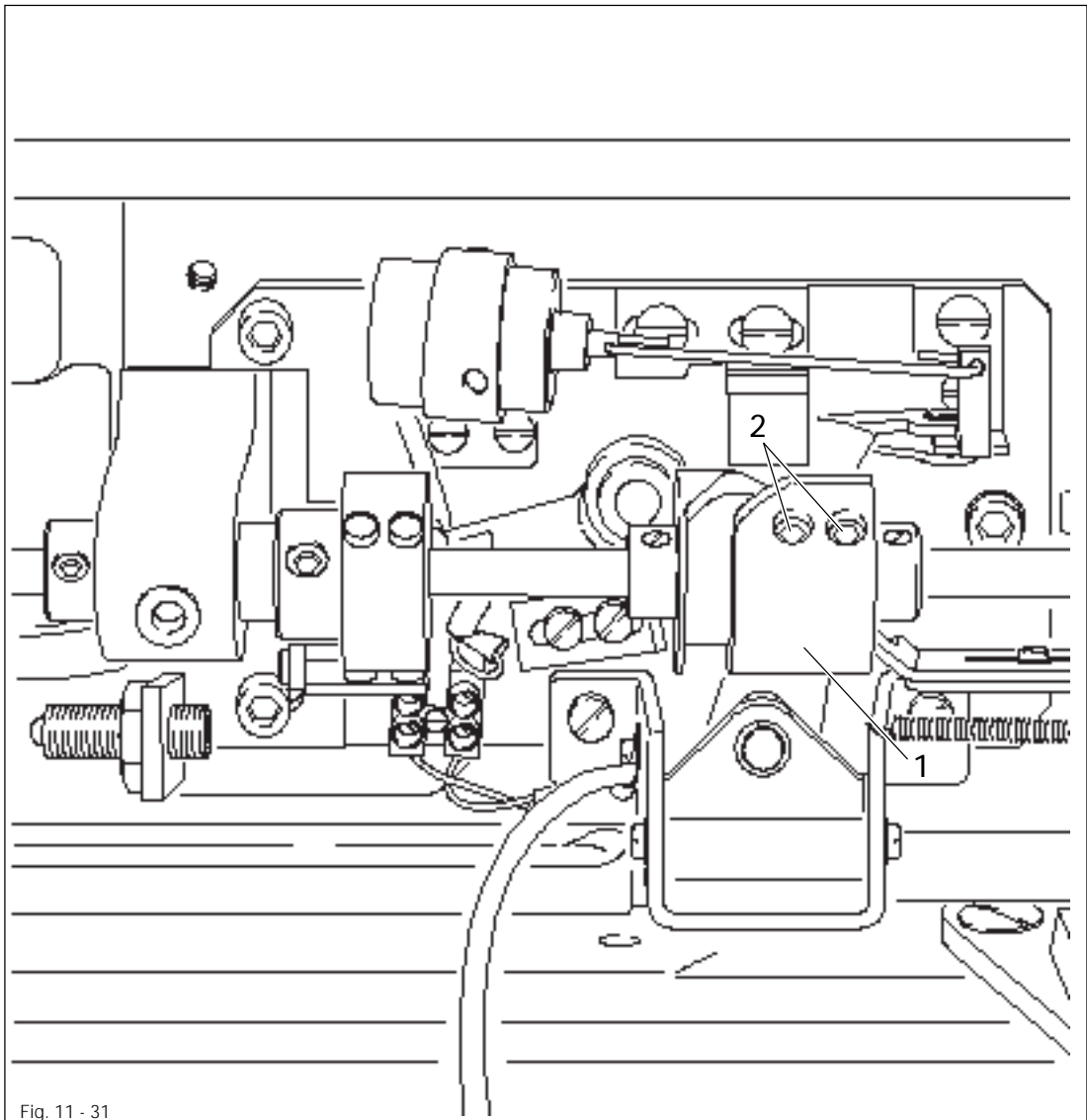
- Re-position bracket 1 (screws 2) according to Requirements 1 and 3.
- Bend trapping spring 3 according to Requirement 2.

Adjustment

11.05.11 Control cam (final adjustment)

Requirement

The trimming action must be just completed when the take-up lever is at t.d.c.

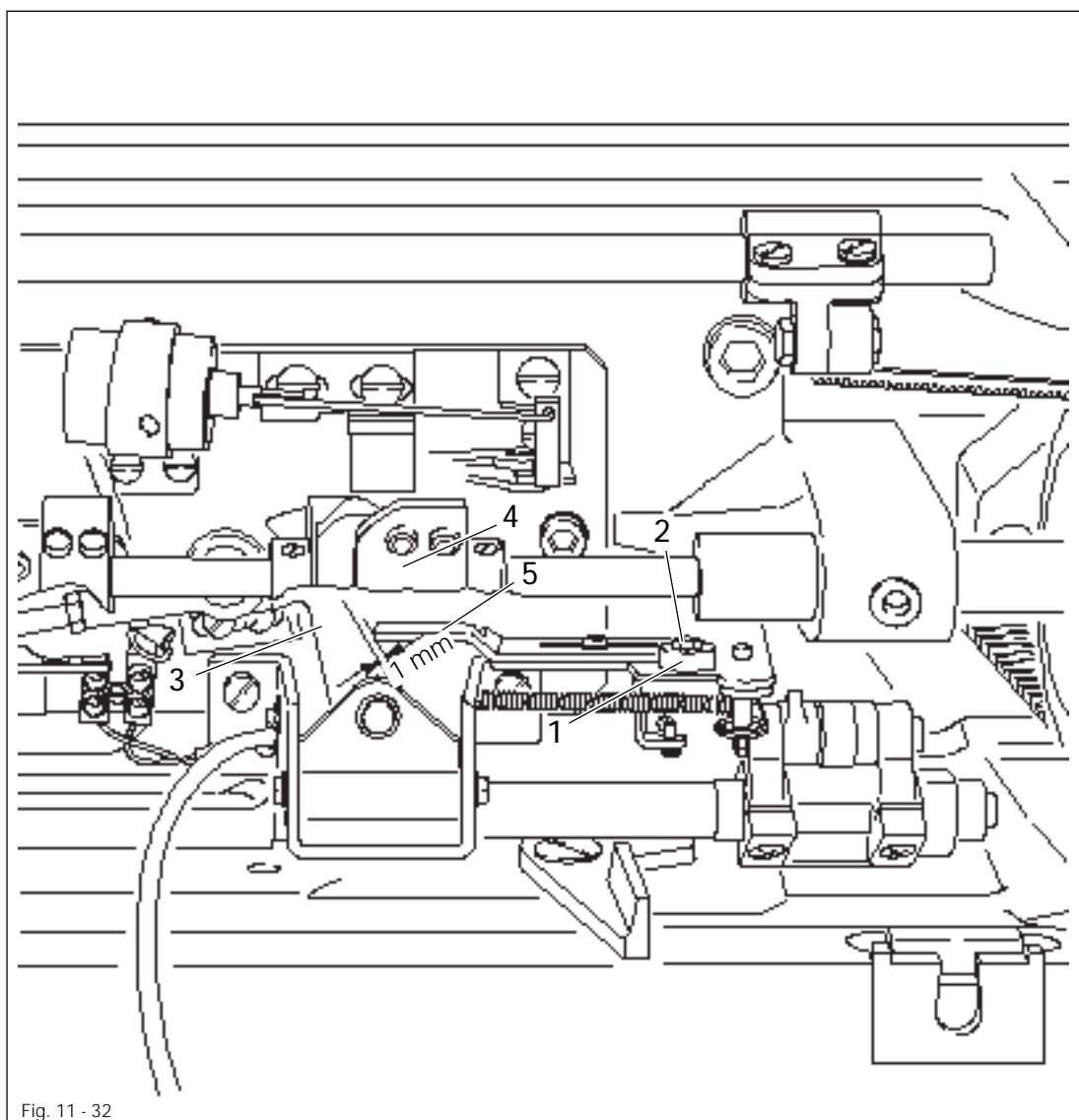


- Turn control cam 1 (screws 2) according to Requirement.

11.05.12 Release lever

Requirement

When the pin of control lever 3 has dropped into the track of control cam 4 and the needle bar is at b.d.c. there must be a clearance of about 1 mm between control lever 3 and release lever 5. In this position the needle thread tension must still be engaged.

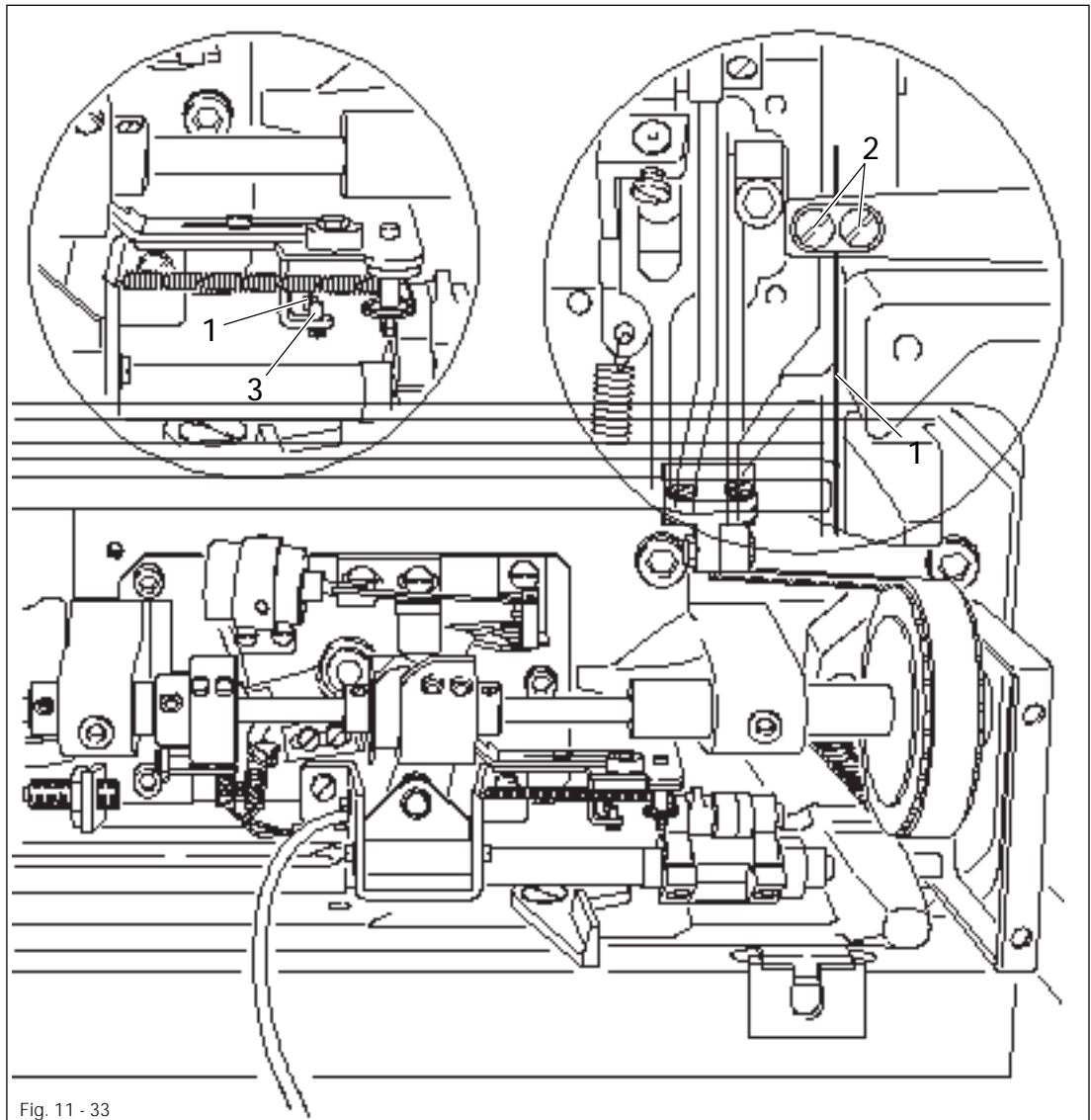


- Turn eccentric 1 (screw 2) according to Requirement.

11.05.13 Release rod

Requirement

1. When the roller presser is resting on the needle plate, pin 3 must rest at the lower end of the elongated hole in pull-rod 1.
2. The tension discs of the needle thread tension device must not be moved apart in this position.



- Re-position pull-rod 1 (screws 2) according to Requirement.

11.05.14 Adjusting the synchroniser

Requirement

1. When sewing is interrupted, the machine must position at about **4 mm** past b.d.c. of the needle bar.
2. After thread trimming the machine must position with the take-up lever at t.d.c.



The maximum speed for the start backtack, finish backtack and intermediate backtack is 800 min⁻¹.



- Carry out adjustment as stipulated in the instruction manual of motor.

PFAFF

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