

PFAFF

1243 -712/02

Instruction Manual

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1 Safety

1.01 Regulations

This machine has been made according to 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 valid pollution control regulations!

The locally valid regulations of the social insurance institution responsible for occupational accidents, or other supervisory authorities, must be strictly adhered to!

1.02 General notes on safety

- The machine must only be operated when the instruction manual has been fully read and understood, and only by operators who have had the necessary training!
- All notes on safety and the instruction manual of the motor manufacturer must be read before the machine is put into operation!
- All notices on the machine referring to danger and safety must be observed!
- The machine must be used for the purpose it is intended for 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 and needle plate), during threading, when the workplace is left unattended and during maintenance work, the machine must be isolated from the power supply by pressing 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 the appropriate training! Exceptions to this are only allowed for adjustment and function checks by appropriately trained personnel!
- Repair work and special maintenance work must only be carried out by technical personnel or by persons with the appropriate training!
- 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 properties 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 is part of the equipment of the machine and must be available to the operating staff at all times.
- The 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 must be sure to observe the following items:

- always observe the notes on safety in this instruction manual in their work!
- refrain from any working methods which adversely effect the safety of the machine!
- avoid wearing loose clothing or jewelry such as necklaces or rings!
- also make sure that only authorised 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 must be sure to observe the following items:

- always observe the notes on safety in this instruction manual in their work!
- press the on/off switch before carrying out adjustment and repair work, and ensure it cannot be switched on again unintentionally, or isolate the machine from the power supply by removing the mains plug!
- 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 and, if applicable, close the electrical control box again!

1.06

Danger warnings



A working area of 1 m must be kept free both in front of and behind the machine, so that easy access is possible at all times.



Never put your hands or fingers in the sewing area during sewing!
Danger of injury by the needle!



While setting or adjusting the machine do not leave any objects on the table nor in the needle plate area! Objects may be trapped or flung out of the machine!



When a mechanically operated clutch motor without actuation lock is switched off, always wait until the motor has stopped! Danger of injury!

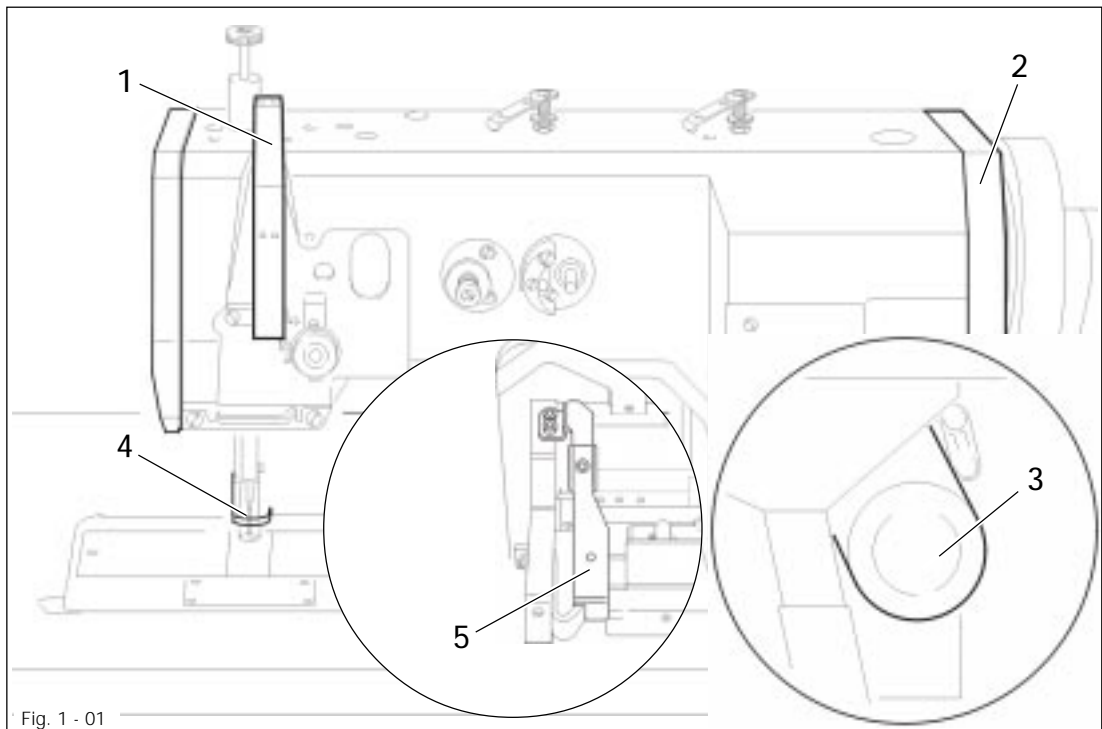


Fig. 1 - 01



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



Do not operate the machine without belt guard 2 and 3!
Danger of injury from running drive belts!



Do not operate the machine without finger guard 4!
Danger of injury from the up- and downward movement of the needle!



Do not operate the machine without tilt lock 5!
Danger of crushing between sewing head and table top!

2

Proper use

The **PFAFF** 1243-712/02 is a single-needle, lockstitch, flatbed sewing machine for industrial stitching work.



Any use of this machine which is not approved by the manufacturer shall be considered as improper use! The manufacturer shall not be held 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 1243-712/02♦

Stitch type:	301 (lockstitch)
Model:	B
Needle system:	190
Needle size in 1/100 mm:	80 – 100
Max. thread size (synthetic▲):	40/3
Max. speed:	
PFAFF 1243-712/02	1000 s.p.m.
Handwheel eff. dia.	90 mm
Machine dimensions	
Length:	approx. 530 mm
Width:	approx. 177 mm
Height (above table):	approx. 265 mm
Clearance width:	270 mm
Clearance height:	115 mm
Fabric clearance:	
PFAFF 1243-712/02	max. 20 mm
Net weight (sewing head):	42 kg
Power supply:	See motor service manual
Power consumption:	See motor service manual
Fuse protection:	See motor service manual
Working noise level:	
Emission level at workplace	
PFAFF 1243-712/02, at a speed of 800 spm.:	78 dB(A)
Noise measurement in accordance with DIN 45 635-48-A-1	

♦ Subject to alteration

▲ or comparable thicknesses of other thread types

3.02 Models and subclasses

Model B: for work on medium-weight materials

Accessories:

Subclass –900/56 Thread trimming device

4 Disposal of the machine

- The proper disposal of the machine is the responsibility of the user.
- The materials used for the machine are steel, aluminium, brass and various plastics. The electrical equipment consists of plastics and copper.
- The machine must be disposed of in accordance with applicable local pollution control regulations. If necessary, a specialist is to be consulted.



Special care is to be taken that parts soiled by lubricants are separately disposed of in accordance with the applicable local environmental 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.

6 Explanation of the symbols

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



Note, information



Cleaning, care



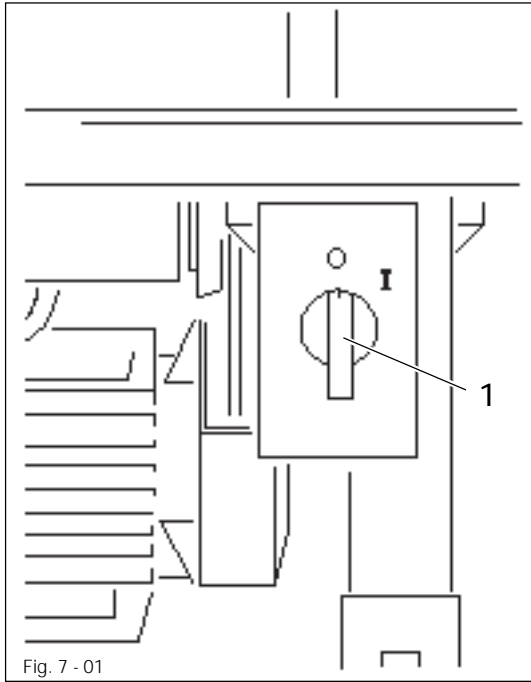
Lubrication



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

7 Controls

7.01 On/off switch

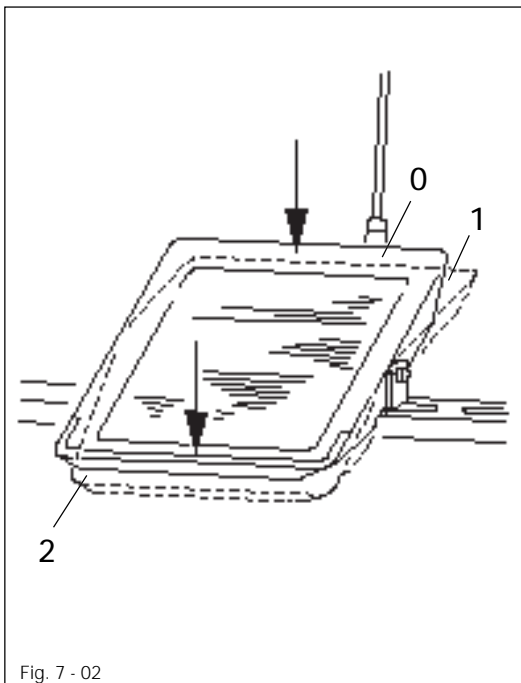


- Switch the machine on or off by turning on/off switch 1.



The illustrated on/off switch is fitted to machines with Quick motors. If other motors are used, a different switch may be fitted.

7.02 Pedal (on versions with one pedal)

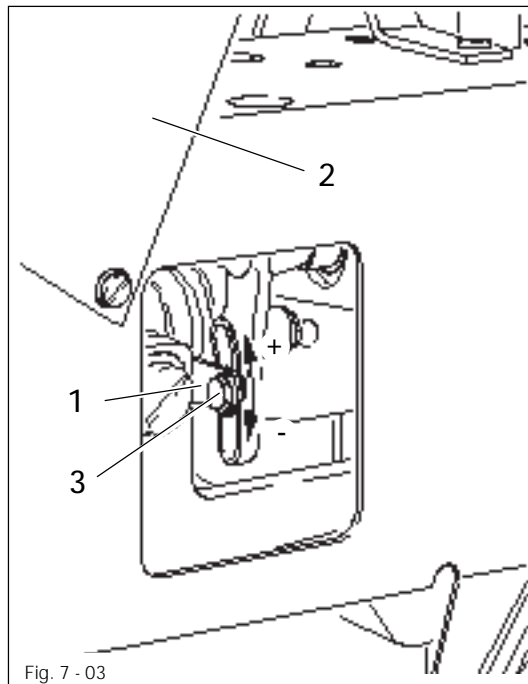


- 0 = Neutral position
- 1 = Sewing
- 2 = Thread trimming (on machines with thread trimmer -900/56) and presser foot lifting.



For further pedal functions please refer to the instruction manual of the motor manufacturer.

7.03 Top feed stroke adjustment



Switch off the machine!
 Danger of injury due to
 unintentional starting of the
 machine!

- The top feed stroke is adjusted by re-positioning lever 1. To do this, remove cover 2 at the rear side of the machine and loosen screw 3.
- After adjustment, tighten screw 3 and close cover 2.

8 Installation and commissioning



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



If the machine is delivered without a table, be sure to use a stand and table that will reliably support the weight of the machine with its motor.
It is very important to ensure that the stand of the machine is firm and steady, also during sewing.

8.01 Installation

The site where the machine is installed must be provided with suitable connections for electric current and compressed air. It must be ensured that the standing surface of the machine site is firm and horizontal and that sufficient lighting is available.



For packing and transportation reasons the table top is in the lowered position.
The table height is adjusted as described below.

8.01.01 Adjusting the table height

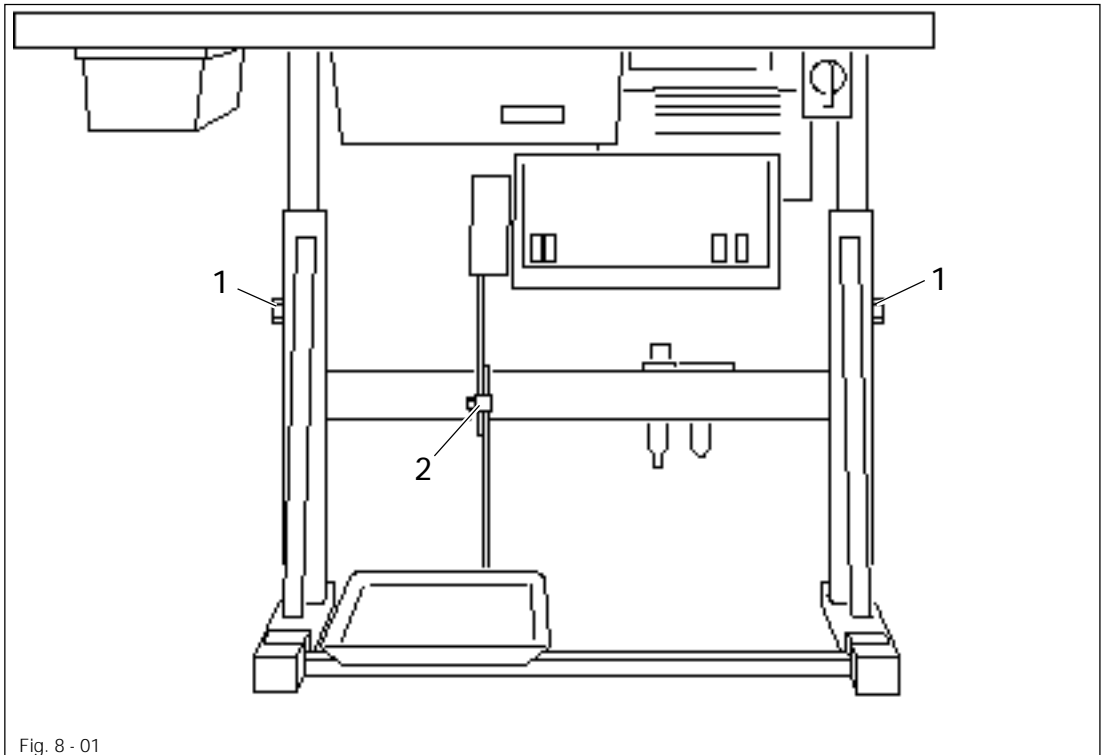
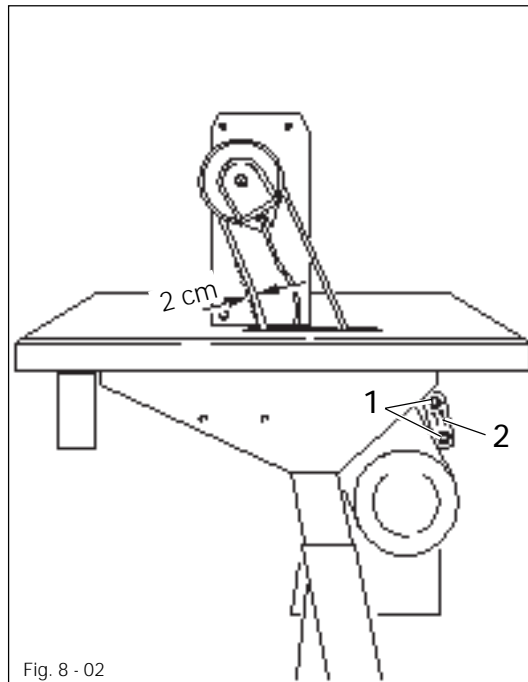


Fig. 8 - 01

- Loosen screws 1 and 2 and set the table at the required height.
- Fully tighten screw 1.
- Set the required pedal position and tighten screw 2.

8.01.02 Tensioning the v-belt

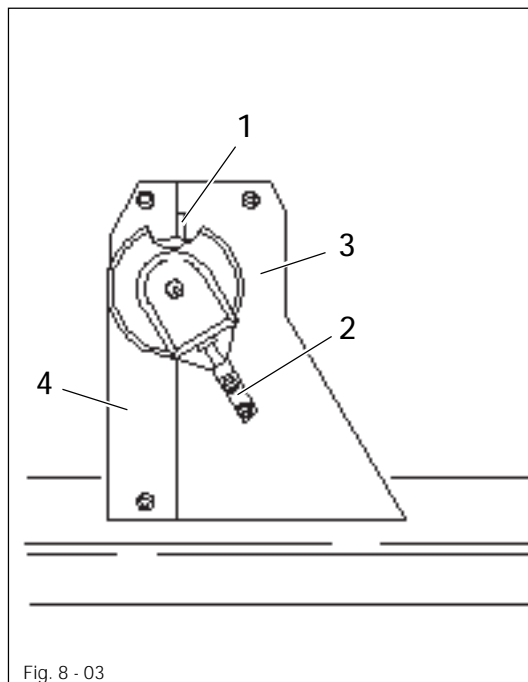


- Loosen nuts 1.
- Tension v-belt by adjusting bracket 2.
- Tighten nuts 1.



Fig. 8-02 shows a Quick motor. If a different motor is used, please refer to the instruction manual of the motor manufacturer.

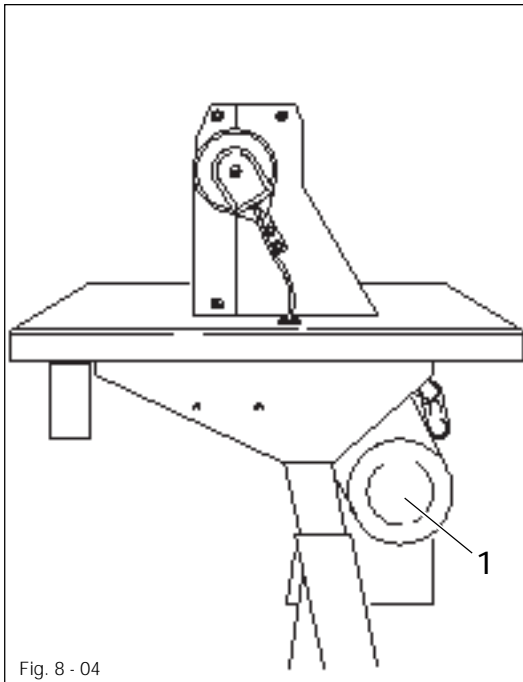
8.01.03 Fitting the upper V-belt guard



Break out corner 1 of belt guard section 3.

- Screw position stop 2 onto belt guard section 3.
- Screw on belt guard section 3.
- Screw on belt guard section 4.

8.01.04 Fitting the lower belt guard

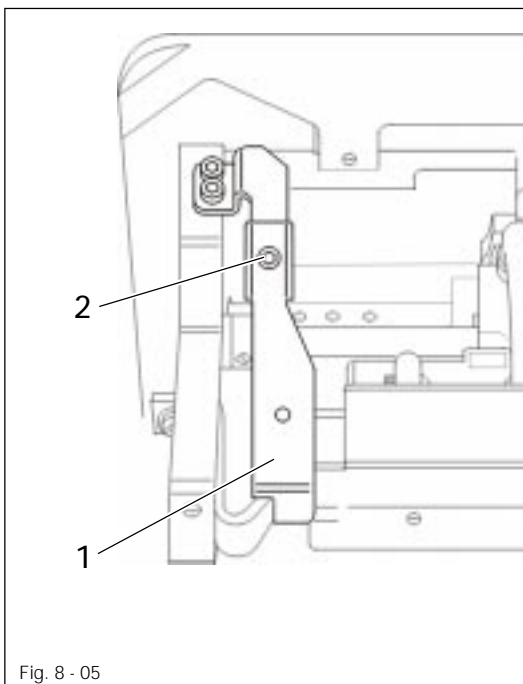


- Position belt guard 1 so that motor pulley and v-belt can run freely.



Fig. 8-04 shows a Quick motor. If a different motor is used, please refer to the instruction manual of the motor manufacturer.

8.01.05 Fitting tilt lock

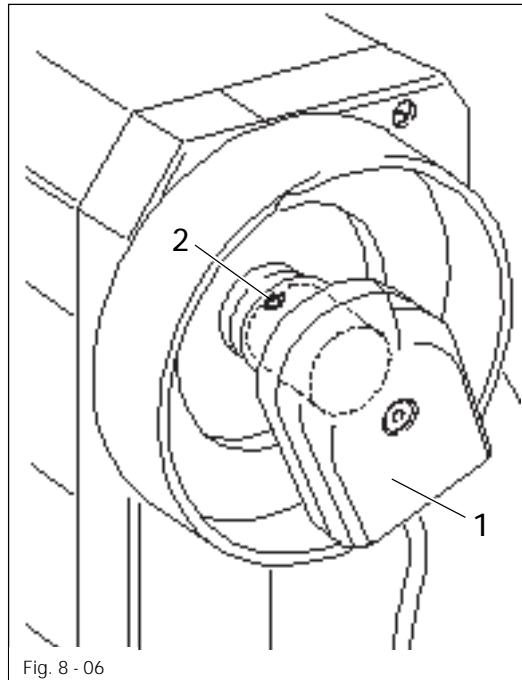


- Attach tilt lock 1 included in the accessories with screw 2.



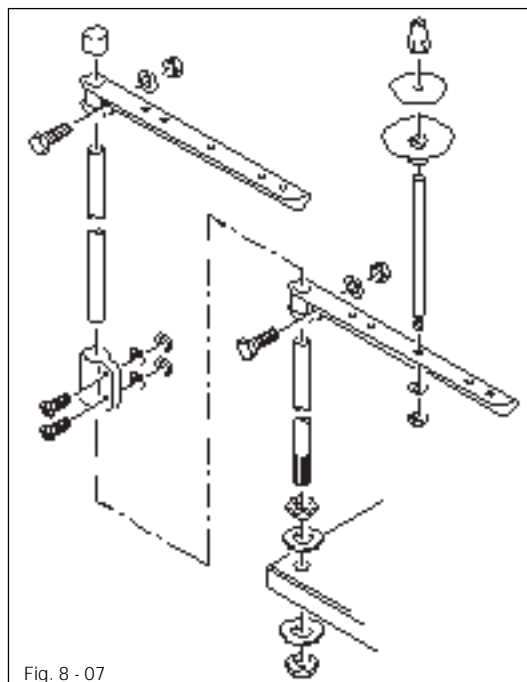
Do not operate the machine without tilt-over safeguard 1! Danger of crushing between upper part and the table top!

8.01.06 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).

8.01.07 Assembling the reel stand



- Assemble the reel stand as shown in Fig. 8-07.
- Afterwards insert the stand in the hole in the table top and secure it with the nuts provided.

8.02 Initial operation

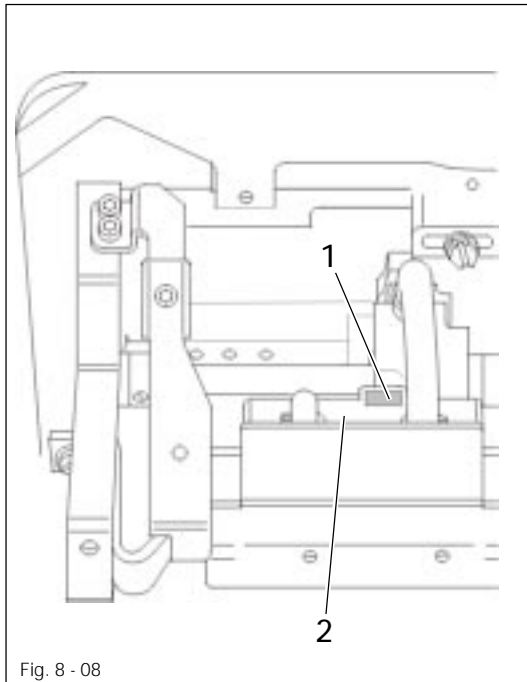


Fig. 8 - 08

- Check the machine, in particular the electrical leads and pneumatic connection tubes, for any damage.
- Remove pin 1 from the oil reservoir 2. The pin 1 serves only to protect the machine from damage during transportation and must not be used during sewing.
- Clean the machine thoroughly and oil it, or top up the oil, 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 terminal box. If not, the machine must **not** be operated.

- The balance wheel must rotate towards the operator when the machine is running. If not, have the motor connection changed by a mechanic.

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.

9

Setting up



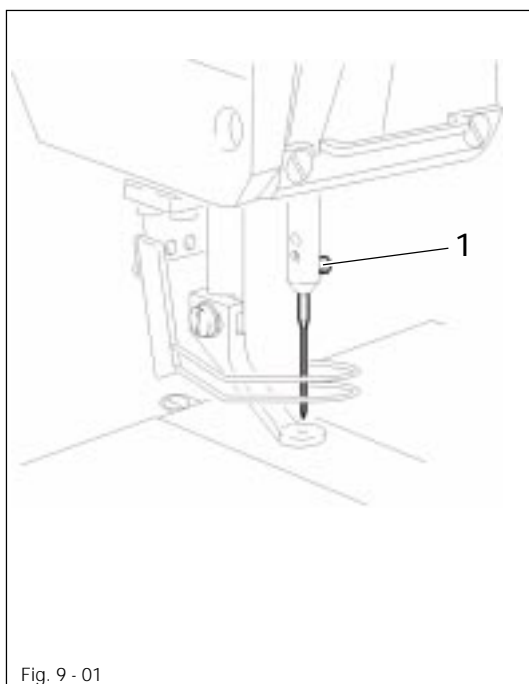
All regulations and instructions in this instruction manual are to be observed. Special attention is to be paid to all Notes on Safety!



All setting up work is only to be carried out by appropriately trained personnel. Before all preparation 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



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

Only use needles from the appropriate system, see **Chapter 3 Specifications!**

- Raise the needle bar and loosen screw 1.
- Insert the needle as far as possible (the long needle groove must be facing right).
- Tighten screw 1.



The selection of the correct needle depends on the model of the machine and the material and threads being sewn (see **Chapter 3 Specifications**).

9.02 Winding the bobbin thread, adjusting the thread tension

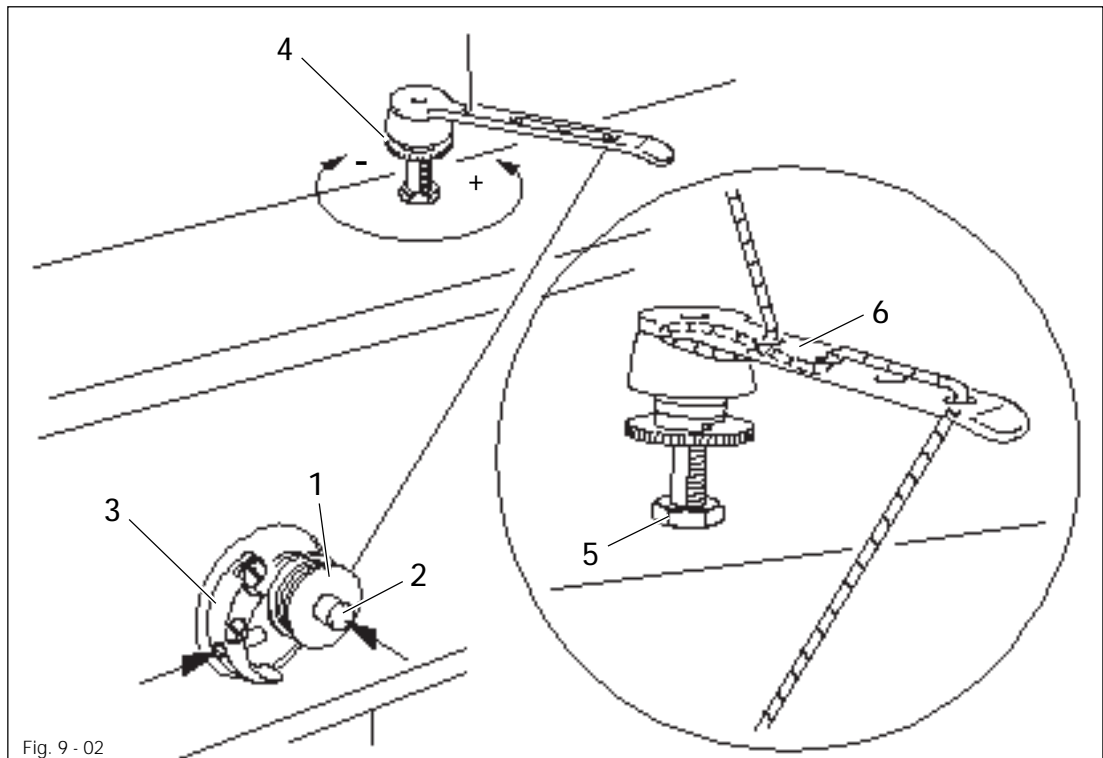


Fig. 9 - 02

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



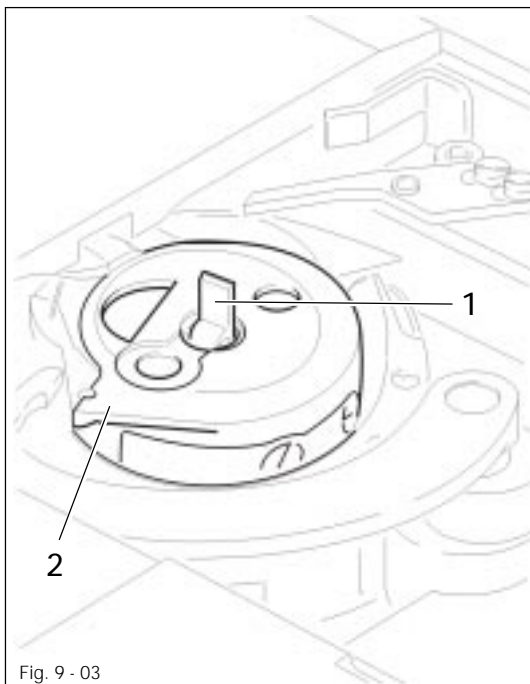
The bobbin fills up during sewing.

- 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.

9.03 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 cover of the hook compartment, raise latch 1 and remove bobbin case 2.

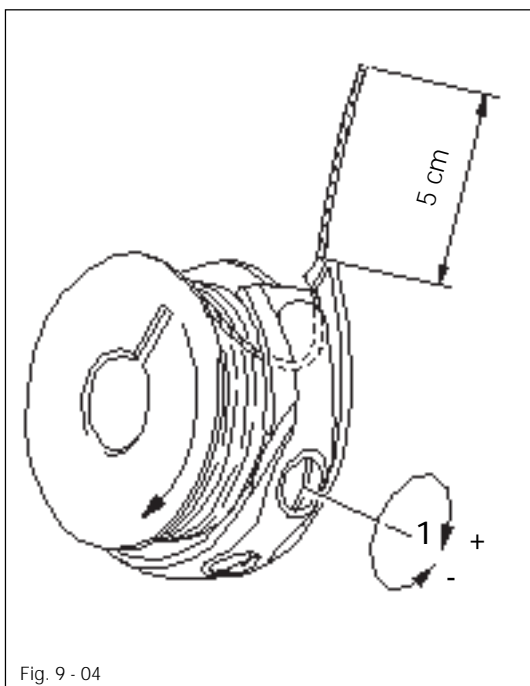
Inserting the bobbin case:

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



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

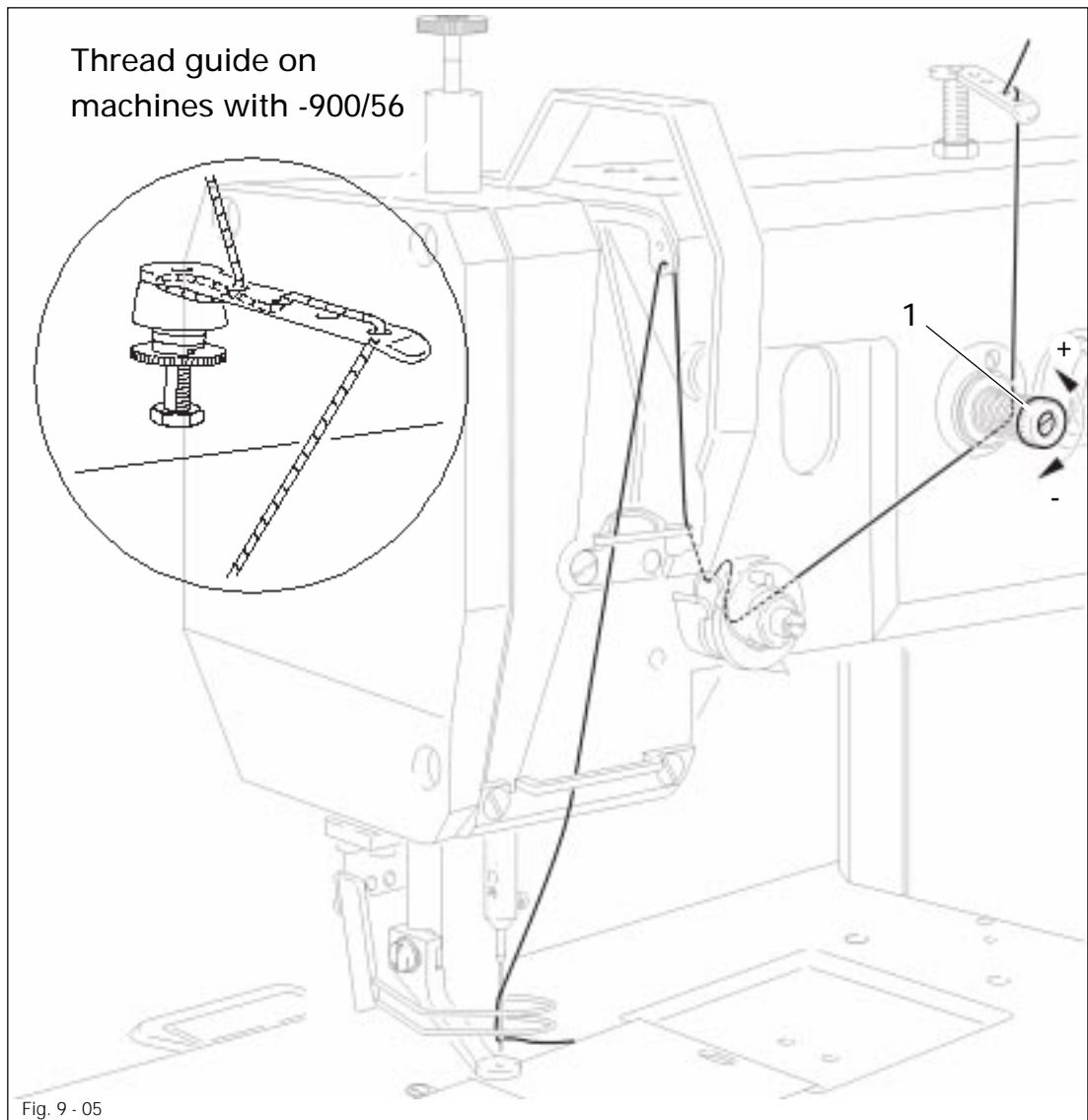
9.04 Threading the bobbin case / adjusting the thread tension



- Thread the bobbin as shown in Fig. 9-04.
- When the thread is pulled, the bobbin must rotate in the direction of the arrow.
- Adjust the bobbin thread tension with screw 1.

9.05

Threading needle thread/adjusting needle thread tension



Switch off the machine!
 Danger of injury due to unintentional starting of the machine!

- Thread needle thread as shown in Fig. 9-05. Be sure to thread the needle from the left.
- Regulate the needle thread tension by turning knurled screw 1.

10 Care and maintenance

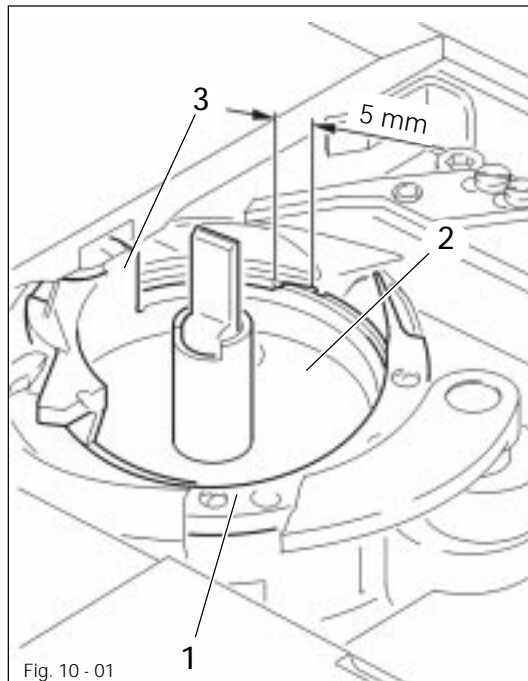
10.01 Servicing and maintenance intervals

Clean the hook compartment	daily, more often if in continuous operation
Check the hook oil-container	once a week
Clean the hook	once a week
General lubrication	twice a week
Lubricating the head parts	twice a week



Diese Wartungsintervalle beziehen sich auf eine durchschnittliche Maschinenlaufzeit eines Einschicht-Betriebes. Bei erhöhten Maschinenlaufzeiten sind verkürzte Wartungsintervalle ratsam.

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 hook compartment cover.
- Raise the needle bar as far as possible.
- Remove the bobbin case cap and the bobbin.
- Unscrew hook jib 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 jib 1 back on.
- Insert the bobbin case and close the cover of the hook compartment.

10.03 General lubrication

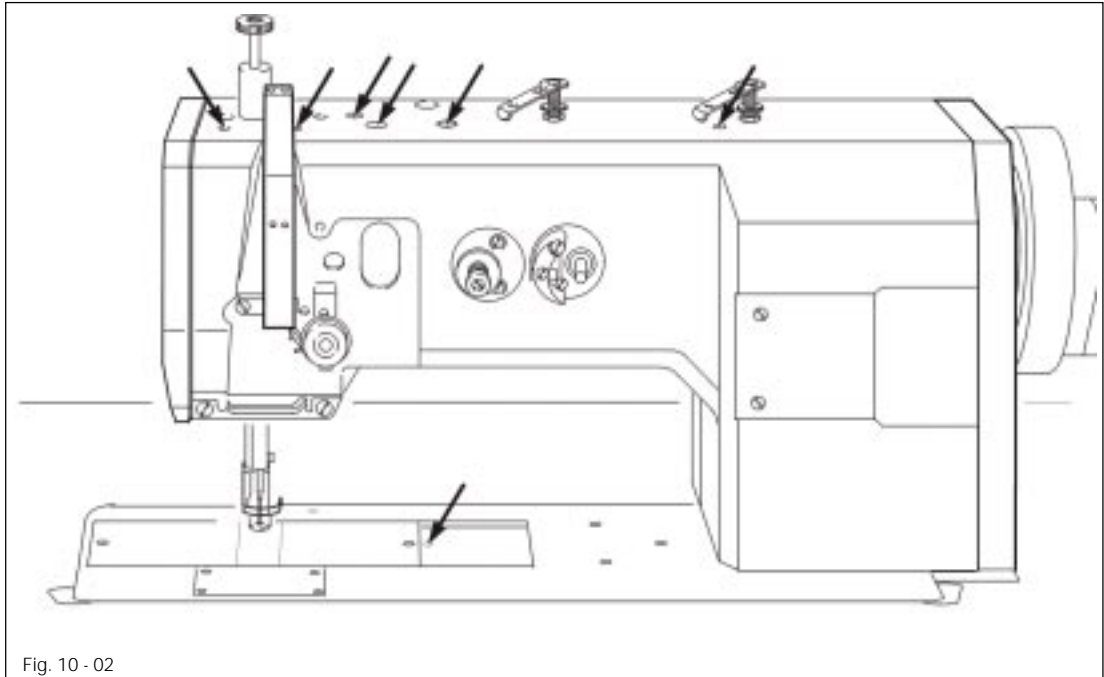


Fig. 10 - 02

- Lubricate all bearings (see arrows) twice a week.



Switch off the machine! Danger of injury!



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

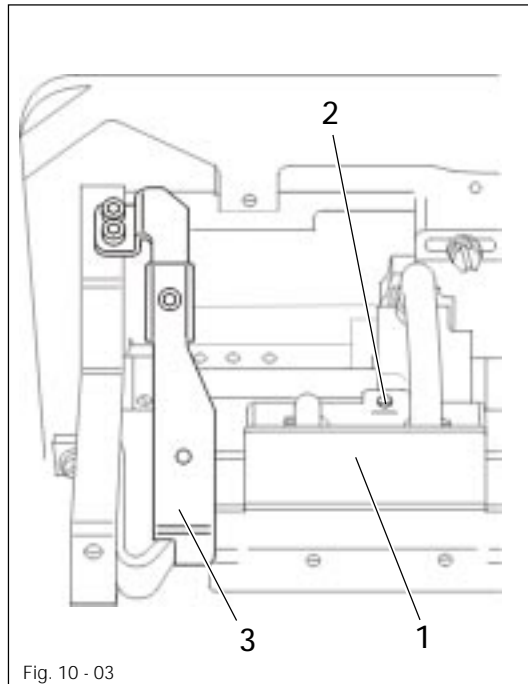


Fig. 10 - 03



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

- Pull the knee lever out to the front and tilt the machine backwards.
- Fill oil reservoir 1 through hole 2 up to the top marking.



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. Order-No. 280-1-120 144.

Setting the machine upright

- Hold the machine firmly, press tilt safety device 3 and, using both hands, set the machine into an upright position.



Danger of crushing between the machine and table top!

10.05 Lubricating the needle head parts

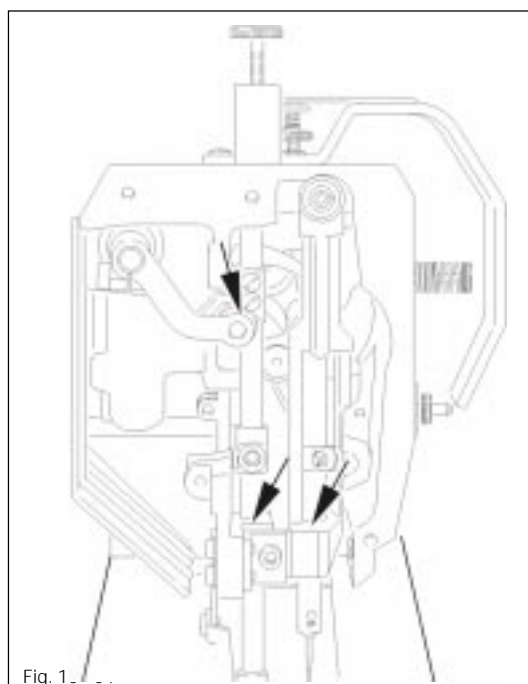


Fig. 10 - 04

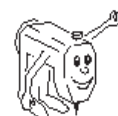


Turn the machine off!
Danger of injury if the machine is started accidentally!

- 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. Order-No. 280-1-120 144.

11 Adjustment

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 of 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

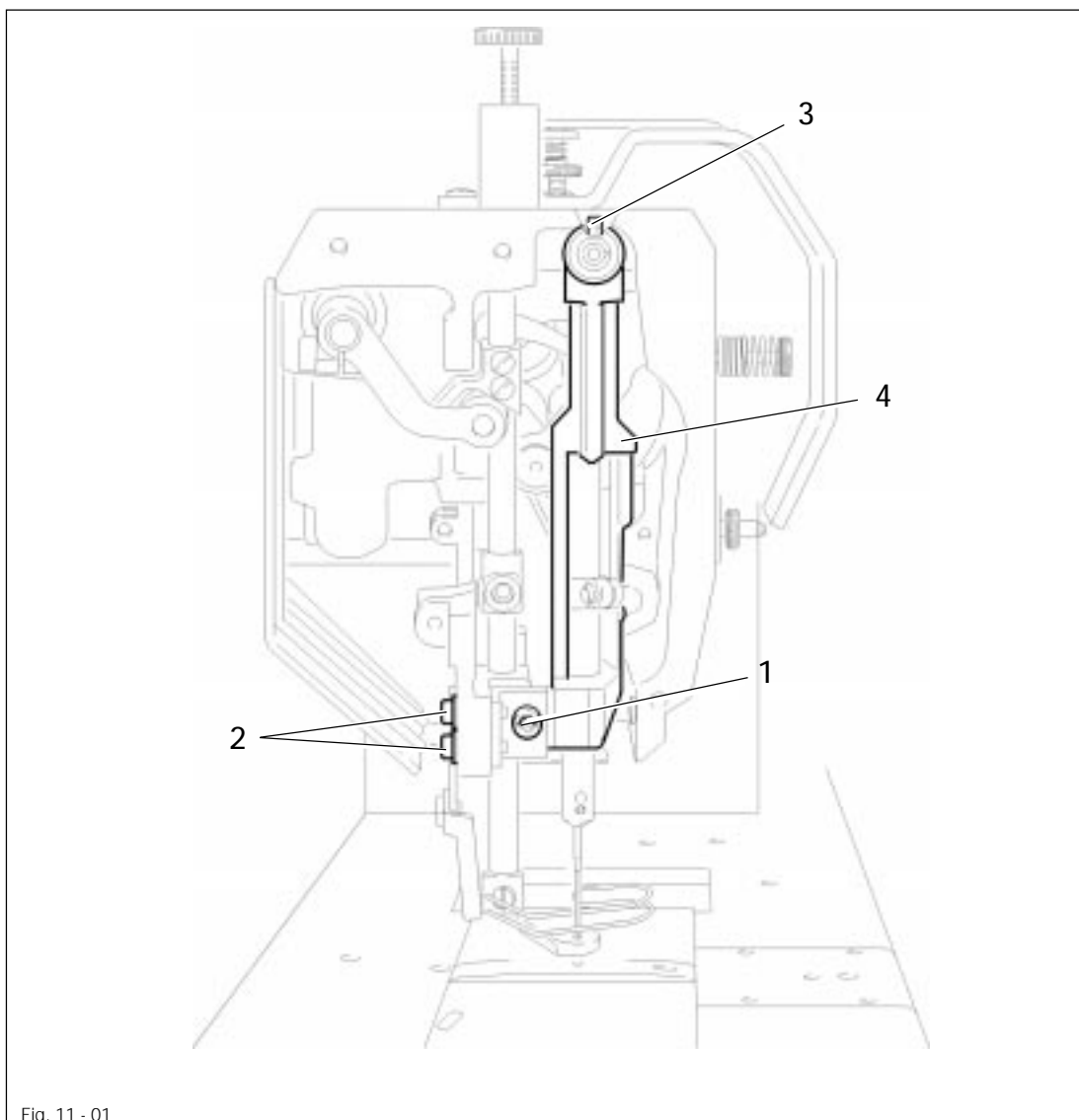
BDC = bottom dead center

11.04 Adjustment of the basic machine

11.04.01 Needle position in needle hole

Requirement

The needle must be exactly centred in the needle hole.



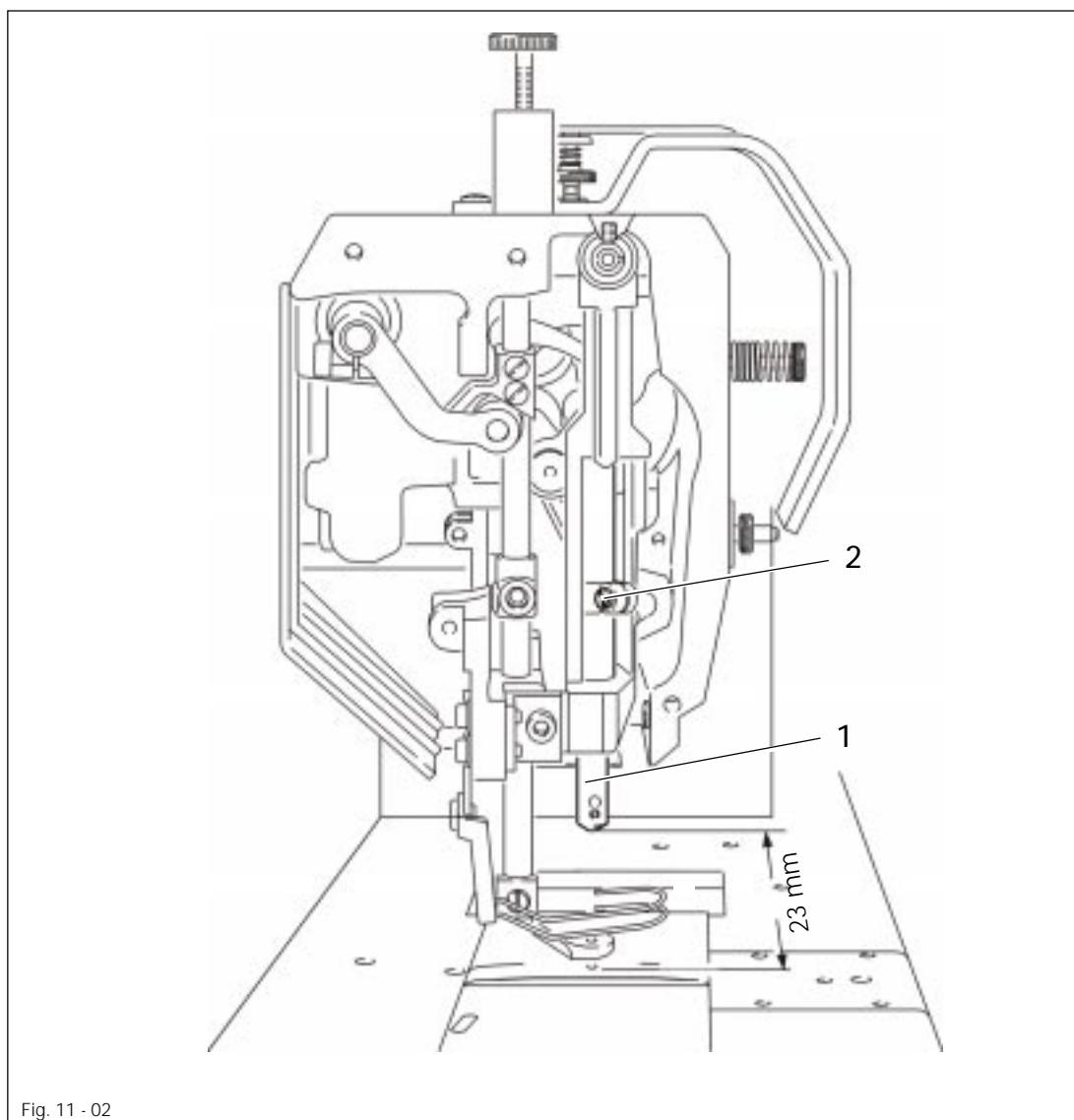
- Loosen screws 1, 2 and 3.
- Turn the balance wheel to set the needle just above the needle hole.
- Re-position needle bar frame 4 according to Requirement.
- Tighten screws 1, 2 and 3.

Adjustment

11.04.02 Needle height (preliminary adjustment)

Requirement

With the needle bar at b.d.c. the clearance between needle bar and needle plate must be 23 mm.



- Position the height of needle bar 1 (screws 2) according to Requirement, but do not turn it.

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

Requirement

When the needle bar is positioned at 1.8 mm after b.d.c.

1. The point of the hook must be pointing to the centre of the needle and have a side clearance of 0.05 – 0.1 mm to the needle.
2. The top edge of the needle eye must be 0.8 – 1.00 mm below the hook point and
3. The needle guard 5 must lightly touch the needle.

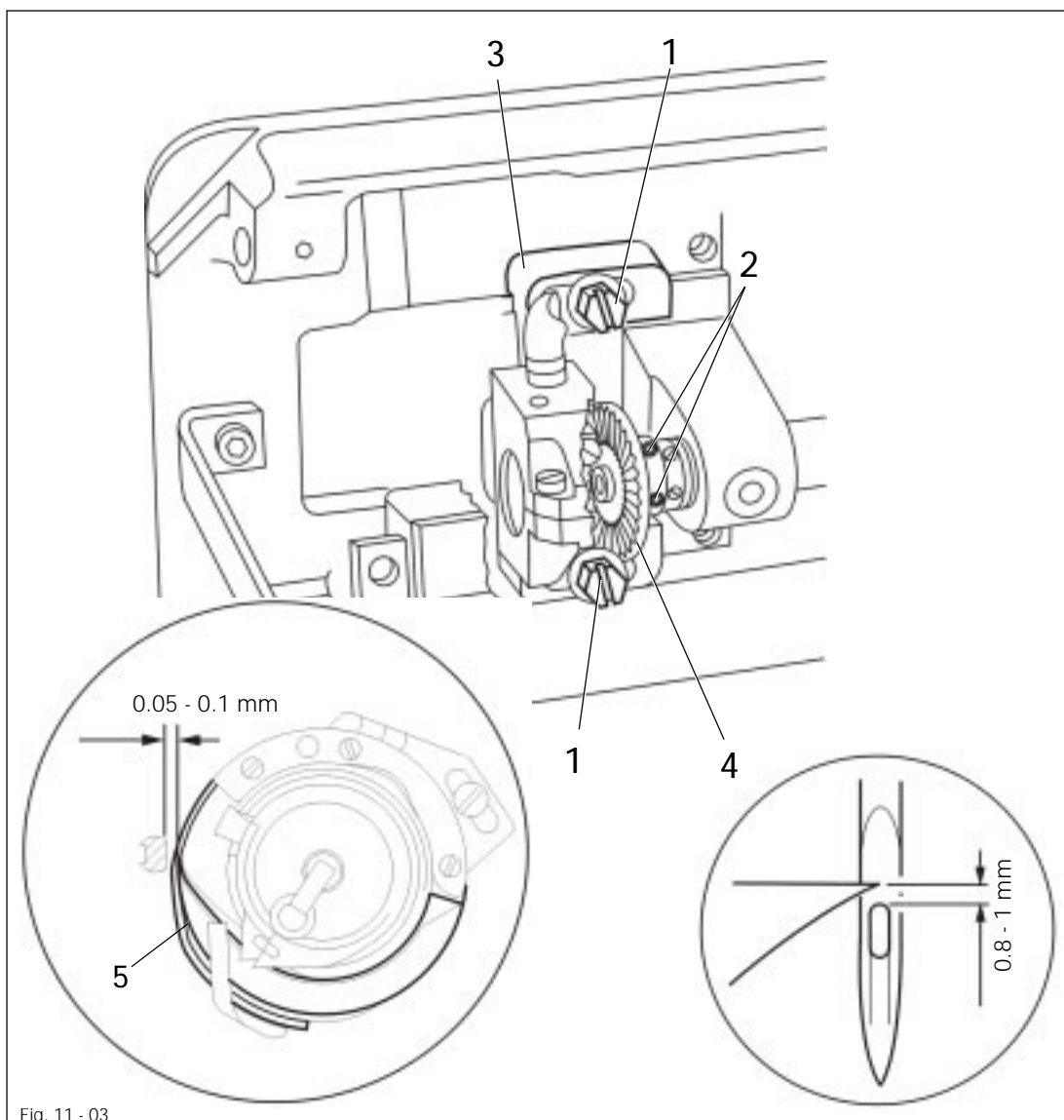
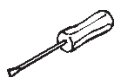


Fig. 11 - 03



- Loosen screws 1 and 2.
- Bring the needle to its b.d.c. and slide the 1.8 mm thick feeler gauge under the needle bar bearing.
- Place the screw clamp on the feeler gauge and tighten it.
- Remove feeler gauge and turn the balance wheel in the sewing direction until the screw clamp is resting on the needle bar bearing.
- Adjust the hook bearing 3 according to requirement 1.

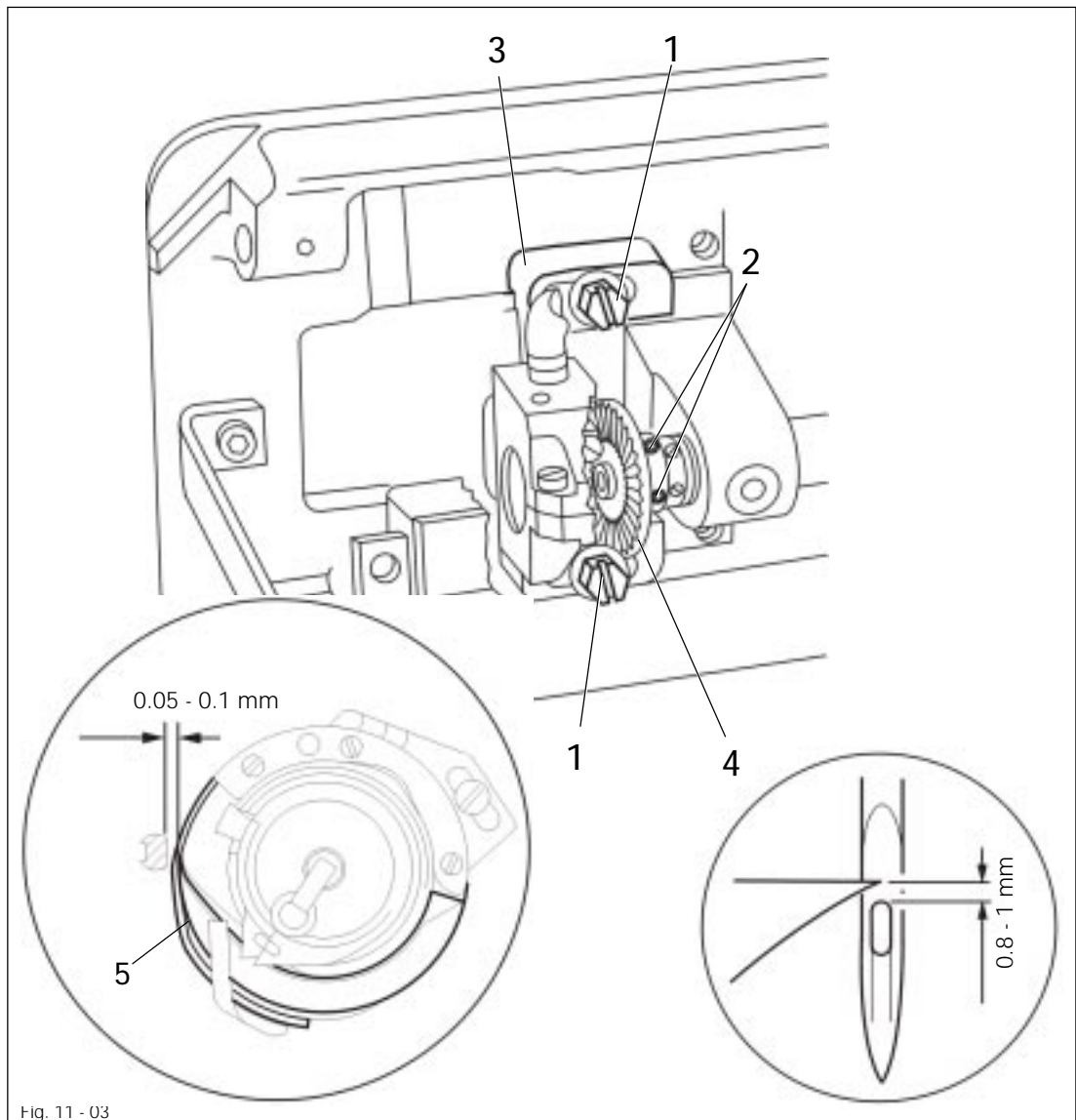


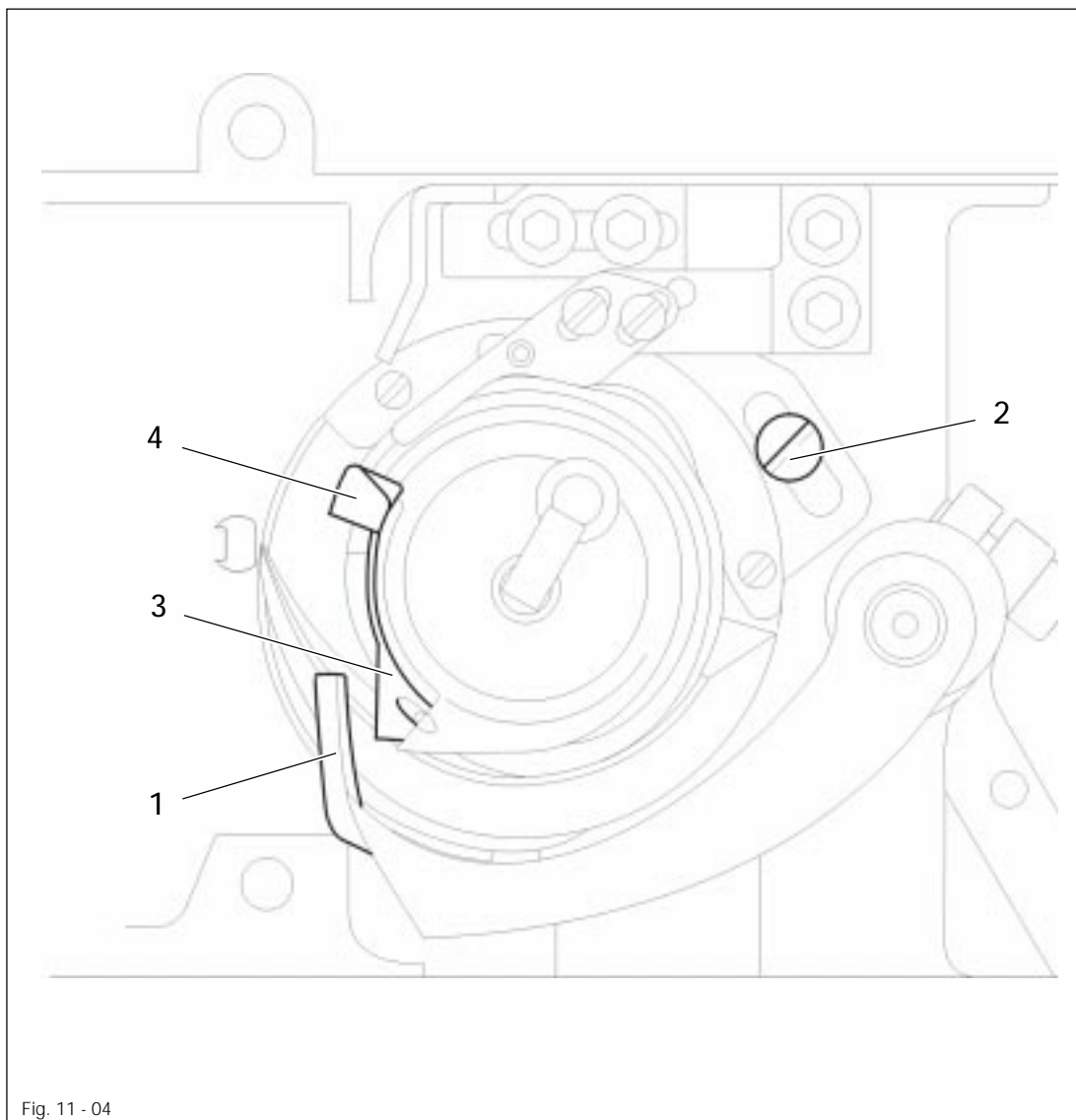
Fig. 11 - 03

- Tighten screws 1.
- Position the hook point towards the centre of the needle, taking care to ensure that the needle is not deflected by needle guard 5.
- While ensuring that the bevel pinion 4 is not too close, and that the hook does not have too much play, tighten screws 2.
- Adjust the needle height in accordance with requirement 2.
- Align needle guard 5 in accordance with requirement 3.

11.04.04 Bobbin opener

Requirement

The needle thread must neither be jammed between bobbin opener 1 and bobbin case base 3, nor between the projection 4 and the retaining trip of the needle plate.



- Thread the machine and load test material.
- Sew a few stitches by turning the balance wheel and while doing so, check the requirement.
- Adjust bobbin opener 1 (screw 2) according to the requirement.

11.04.05 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 the coupling in follows.

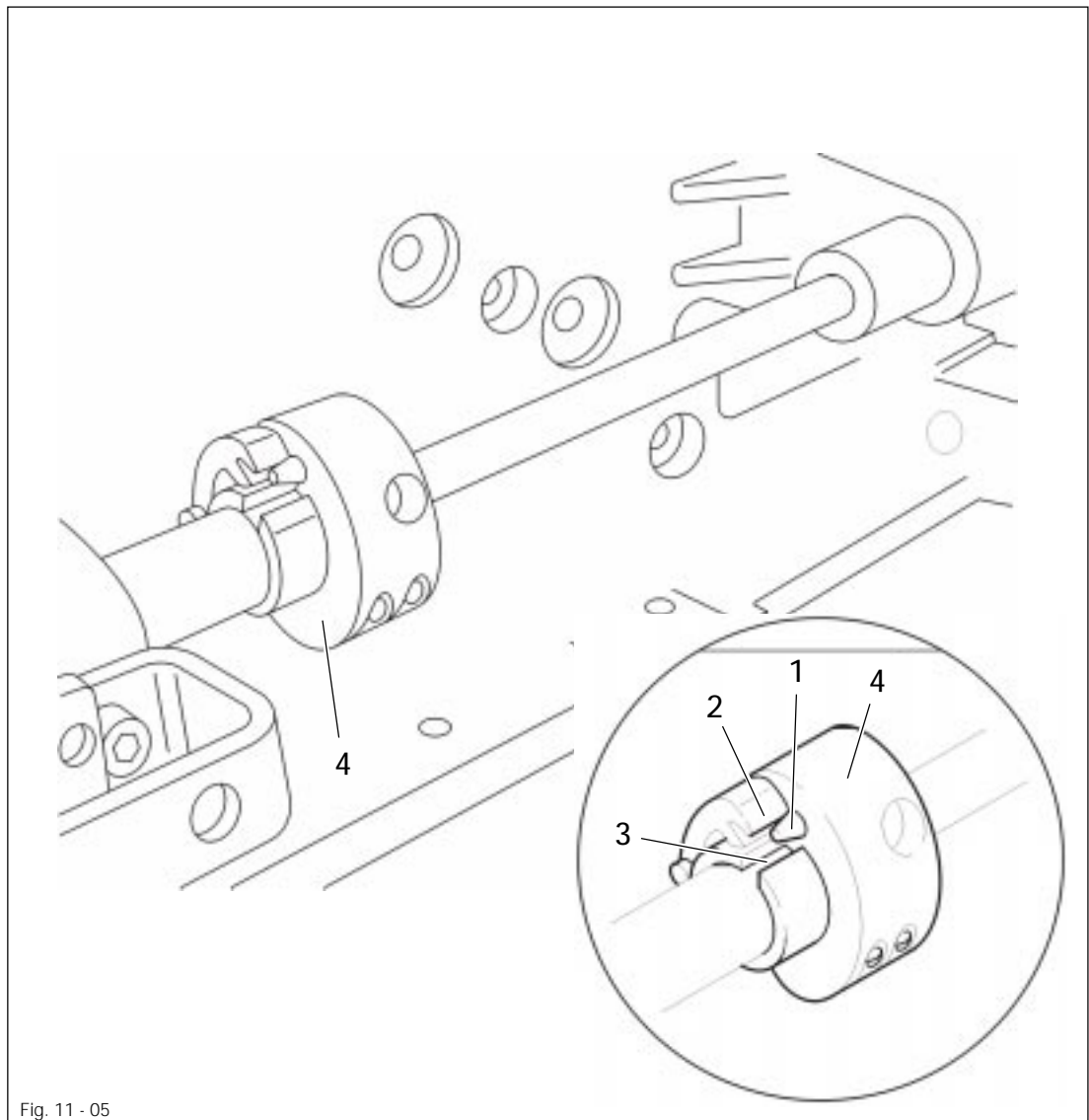


Fig. 11 - 05



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

11.04.06 Top feed lifting motion

Requirement

When the balance wheel is turned, lifting presser 3 and needle point 6 must reach the needle plate at the same time.

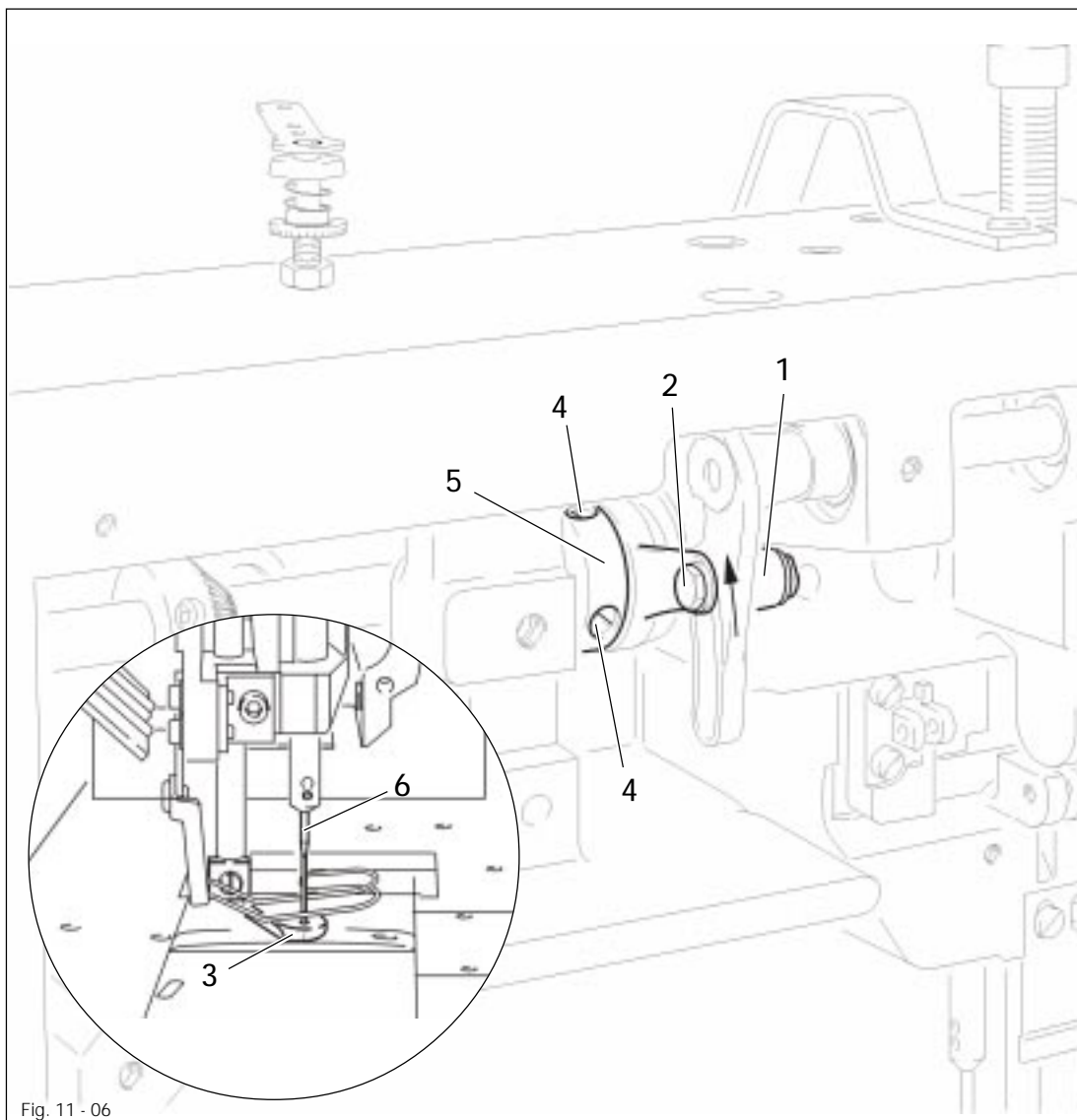


Fig. 11 - 06

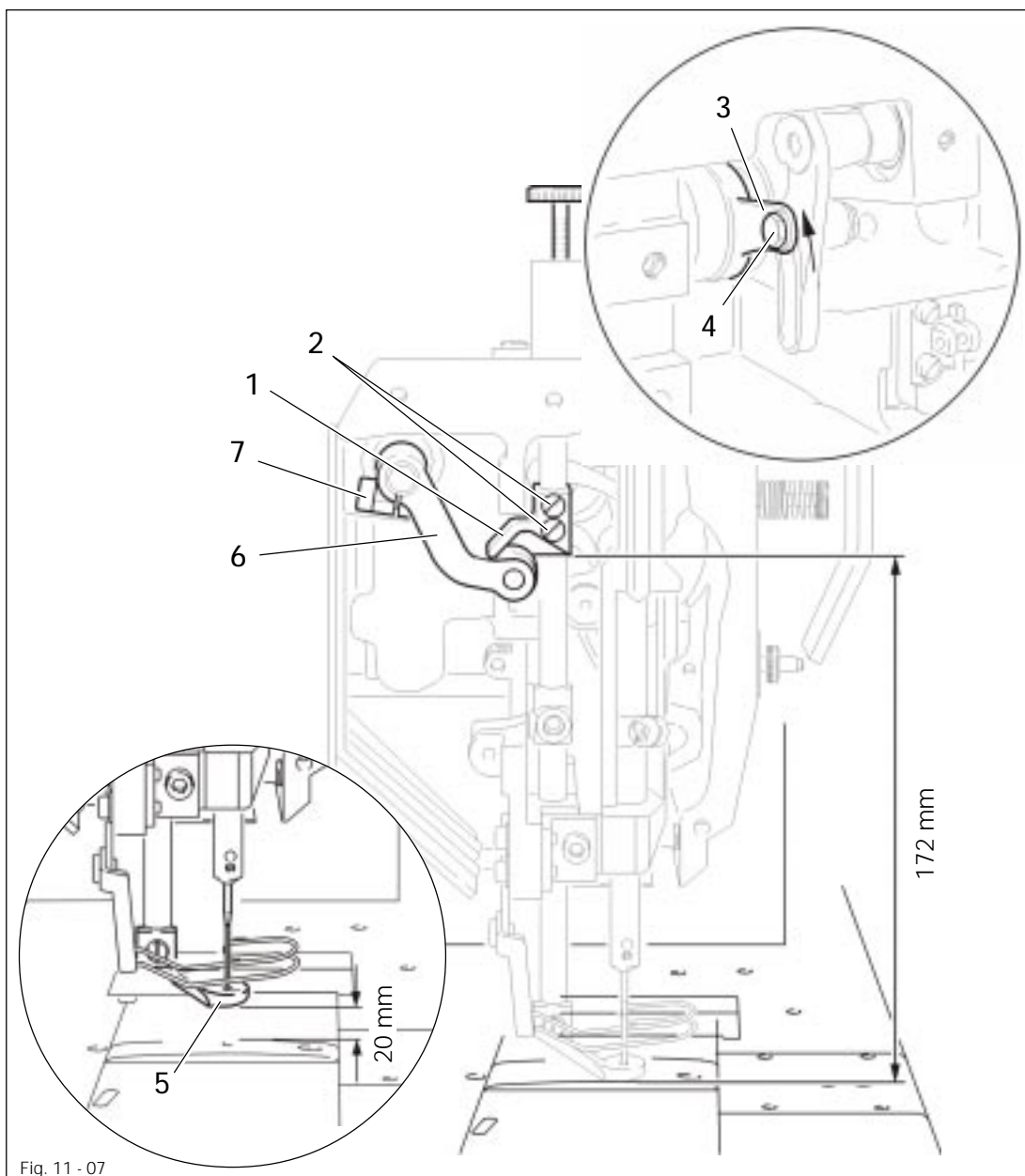


- Push lever 1 (screw 2) fully up in its slot.
- Lower lifting presser 3 onto the needle plate.
- Loosen screws 4 just enough to allow eccentric 5 to be turned on its shaft.
- Turn eccentric 5 according to **Requirement**.
- Tighten screws 4.

11.04.07 Presser foot lift

Requirement

1. With the needle bar at its b.d.c., pick up **1** must be **172 mm** from the needle plate.
2. When the lift is set at a maximum, the presser foot **5** must be **20 mm** above the needle plate, when it is at its t.d.c.



- Set needle bar at b.d.c.
- Re-position actuator **1** (screws **2**) according to **Requirement 1**.
- Push lever **3** (screw **4**) to the top end of its linkage slot.
- Turn balance wheel to set lifting presser **4** at t.d.c.
- Turn crank **6** (screw **7**) according to **Requirement 2**.

11.04.08 Needle-thread tension release

Requirement

With the take-up lever at b.d.c. the tension disks must be apart by their maximum clearance of 1.0 mm.

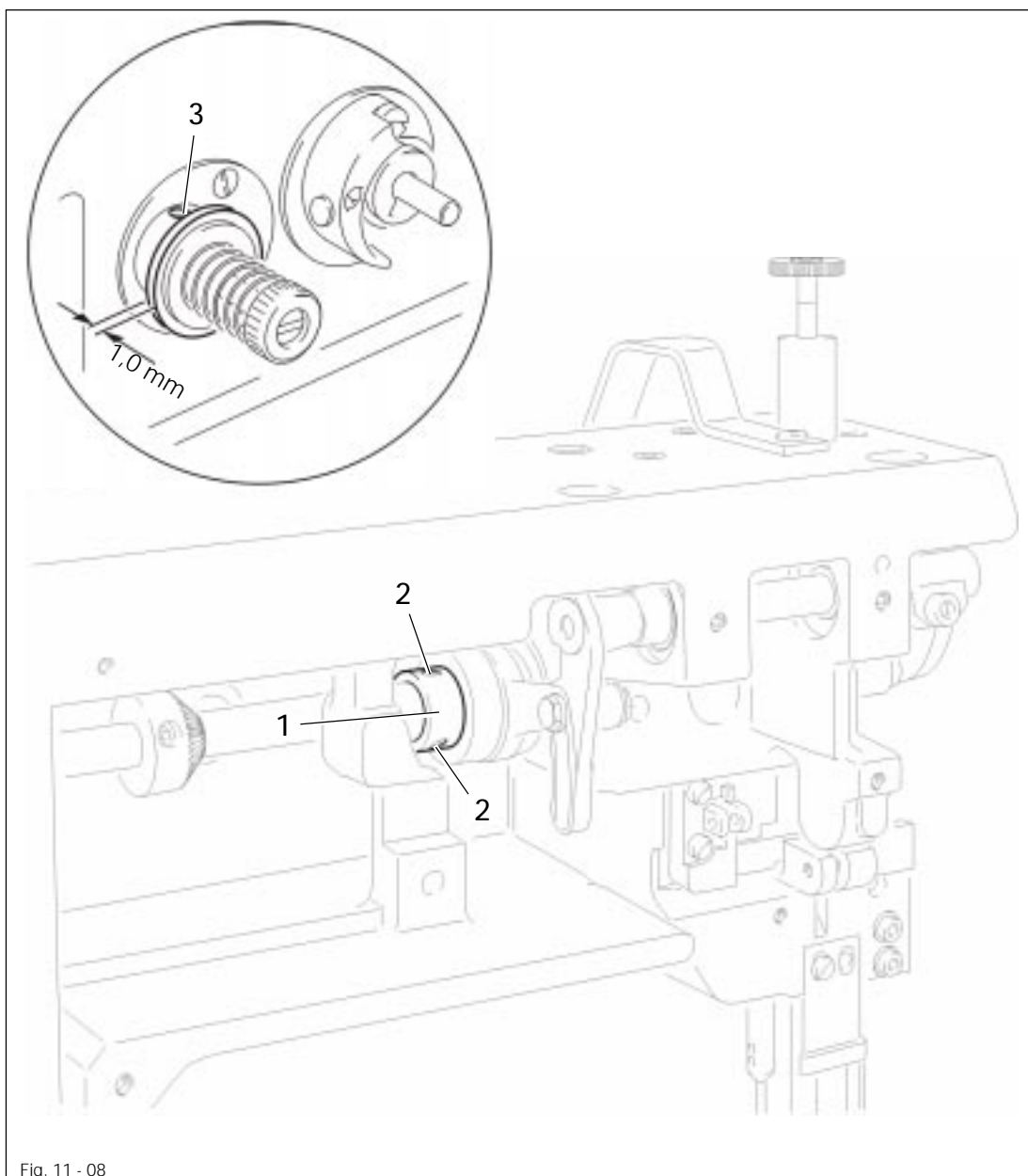


Fig. 11 - 08



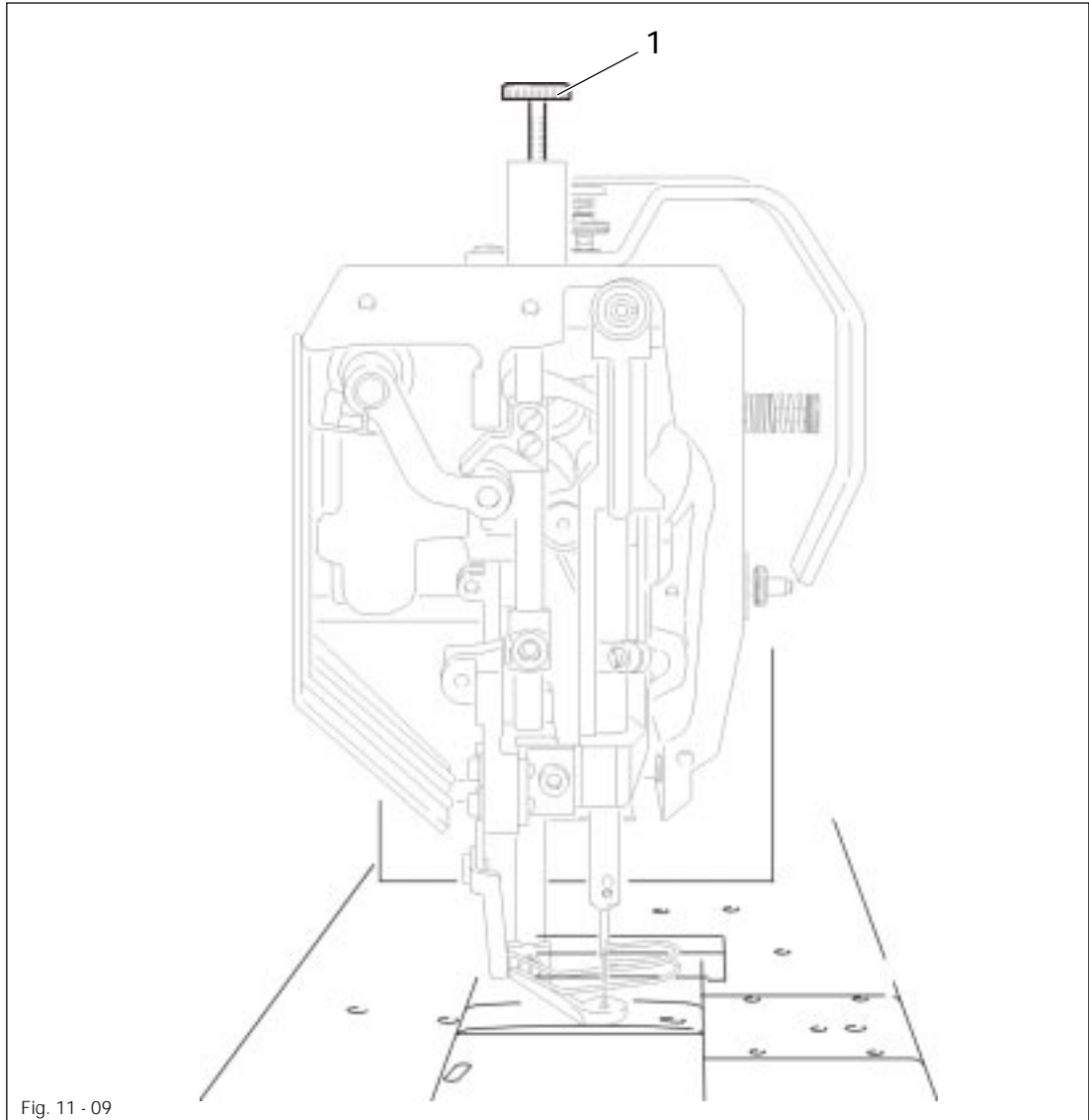
- Set take-up lever at b.d.c.
- Turn eccentric 1 (screws 2) until the tension disks are at their maximum clearance.
- Adjust tension (screw 3) according to Requirement.

Adjustment

11.04.09 Pressure of the lifting presser

Requirement

The material must be reliably held, even at the highest sewing speed.



- Turn screw 1 according to Requirement.

11.04.10 Thread check spring

Requirement

The movement of thread check spring 5 must be finished when the needle point enters the material (= spring stroke of about 7 mm).

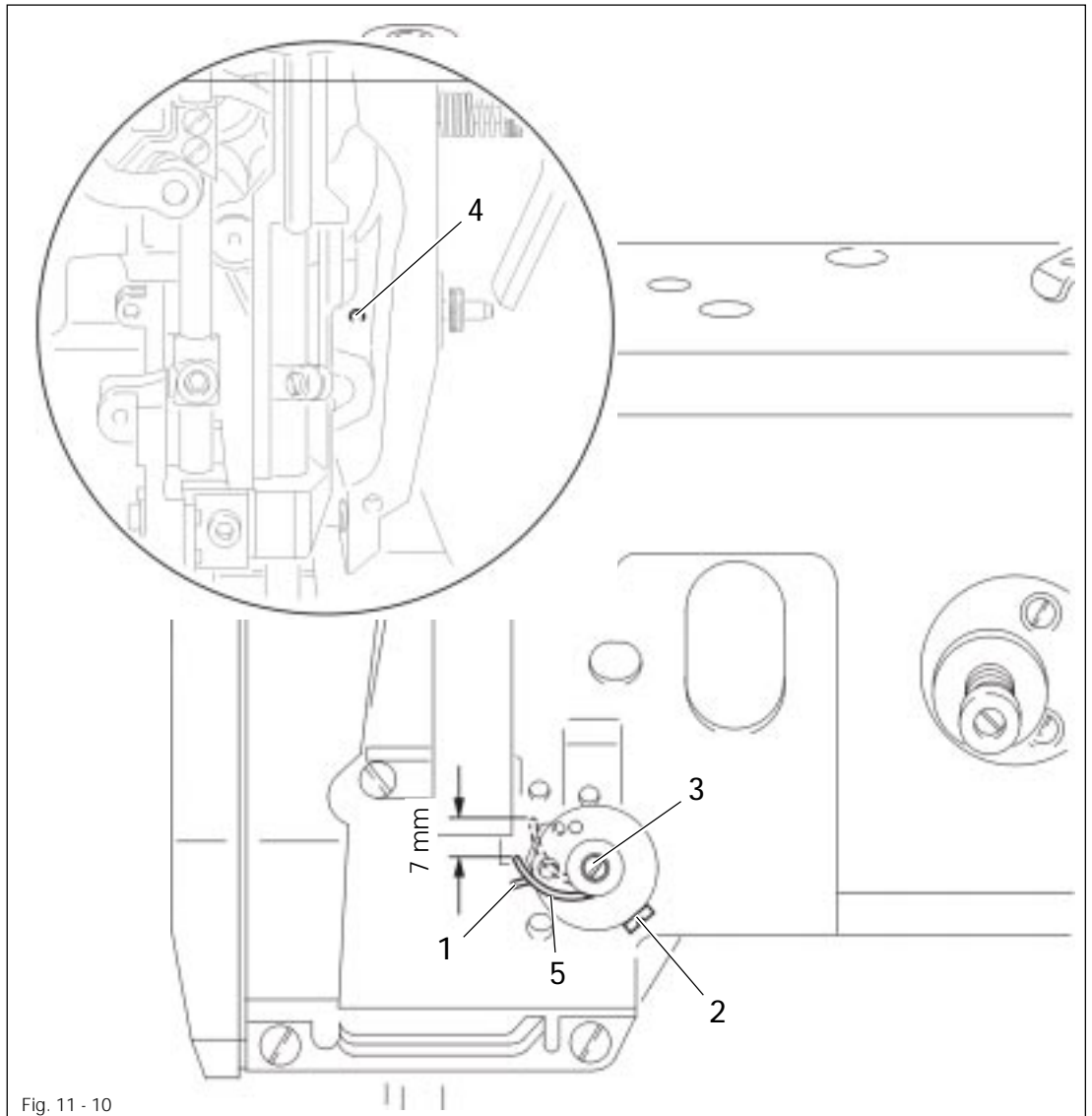


Fig. 11 - 10



- Adjust stop 1 (screw 2) according to **Requirement**.
- To adjust the pressure of the spring, turn screw 3 (screw 4).



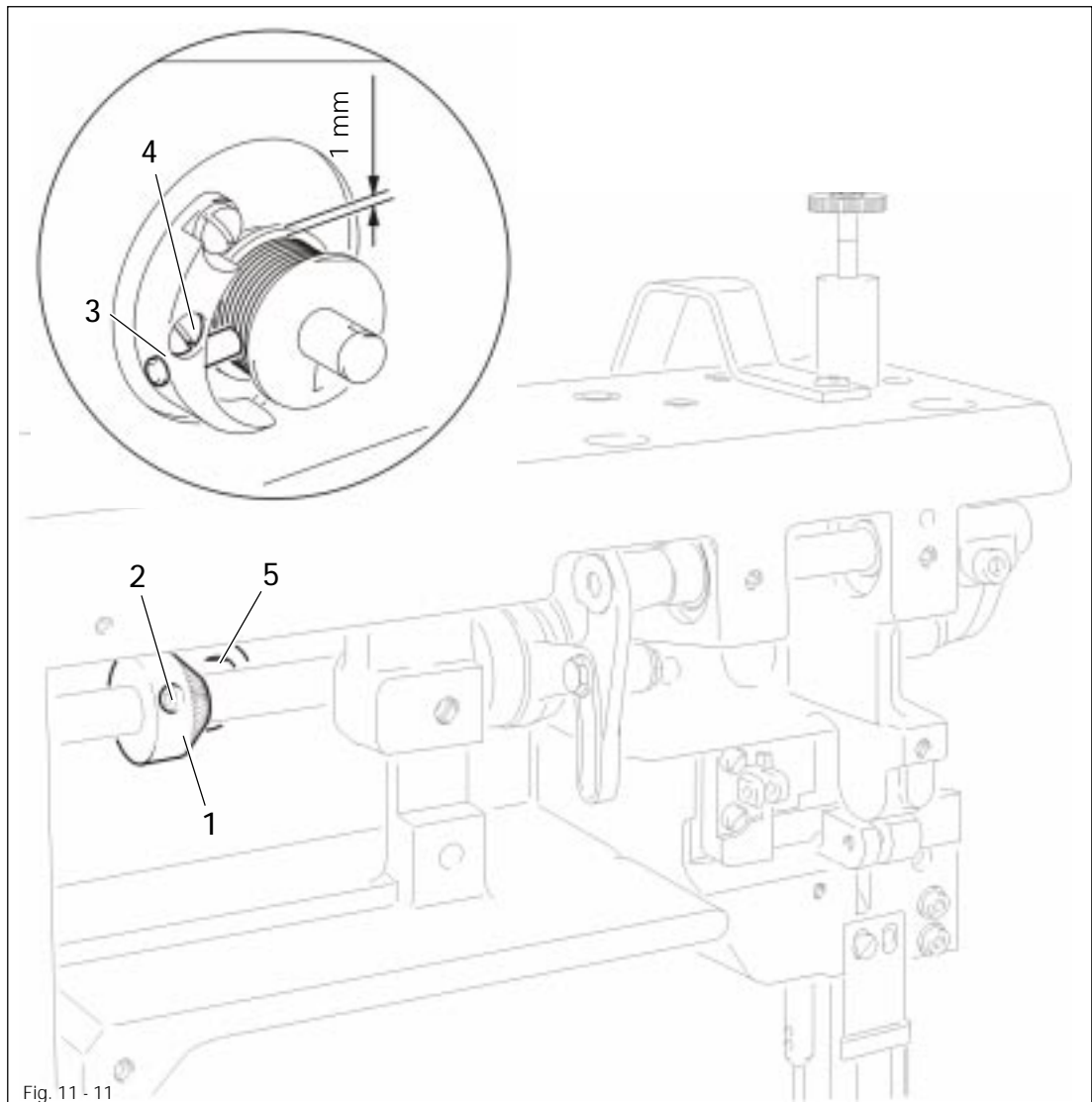
For technical reasons the length of the thread check spring stroke may vary upwards or downwards a little.

Adjustment

11.04.11 Bobbin winder

Requirement

1. With the bobbin winder engaged, friction wheel 5 must be driven reliably.
2. With the bobbin winder disengaged, friction wheel 5 must not run against drive wheel 1.
3. The bobbin winder must switch itself off when the filled thread is about 1 mm from the rim of the bobbin.



- Position drive wheel 1 (screws 2) according to Requirements 1 and 2.
- Position pin 3 (screw 4) according to Requirement 3.

11.05 Adjusting the thread trimmer -900/56

11.05.01 Pre-adjusting the control cam

Requirement

1. The bearing surface of control cam 5 must be laterally in the middle of pawl 8.
2. With the take-up lever at its TDC, the beginning of the largest eccentricity of the bearing surface (in the direction of rotation) must be underneath the point of pawl 8.

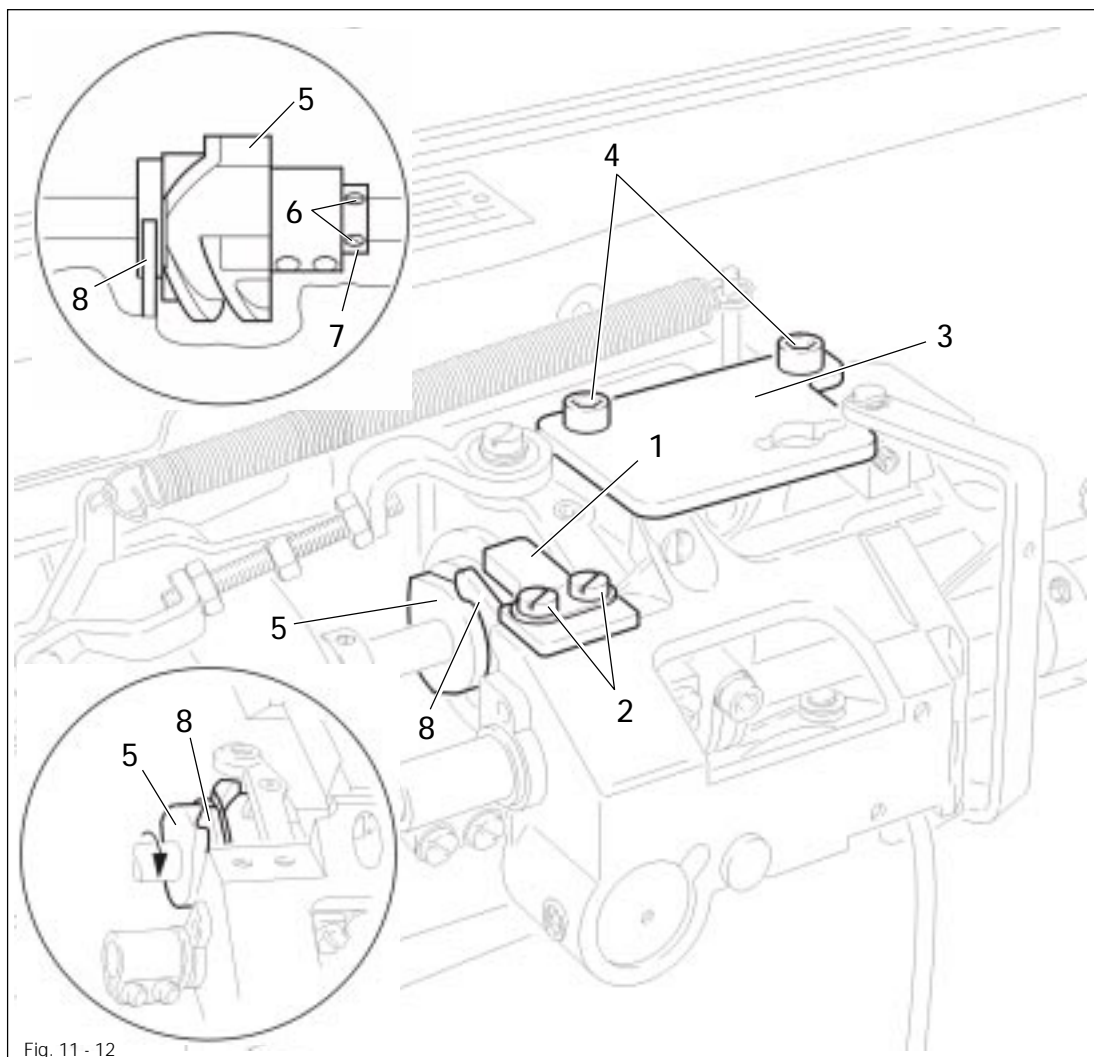


Fig. 11 - 12



- Remove catch 1 (screws 2).
- Remove plate 3 (screws 4).
- Loosen the four screws of control cam 5 and screws 6 of retaining collar 7.
- Move control cam 5 laterally in accordance with **requirement 1**.
- In this position bring retaining collar 7 to rest on control cam 5 and tighten screws 6.
- Bring the take-up lever to its TDC by turning the balance wheel.
- Turn control cam 5 in the direction of rotation in accordance with **requirement 2**, taking care to note that it is touching retaining collar 7.
- In this position, tighten the four screws on control cam 5.

Adjustment

11.05.02 Tripping lever

Requirement

In needle rise position, the flattened pin of control lever 6 (see arrow) must drop easily into the track of control cam 7 when activating lever 8 is activated.

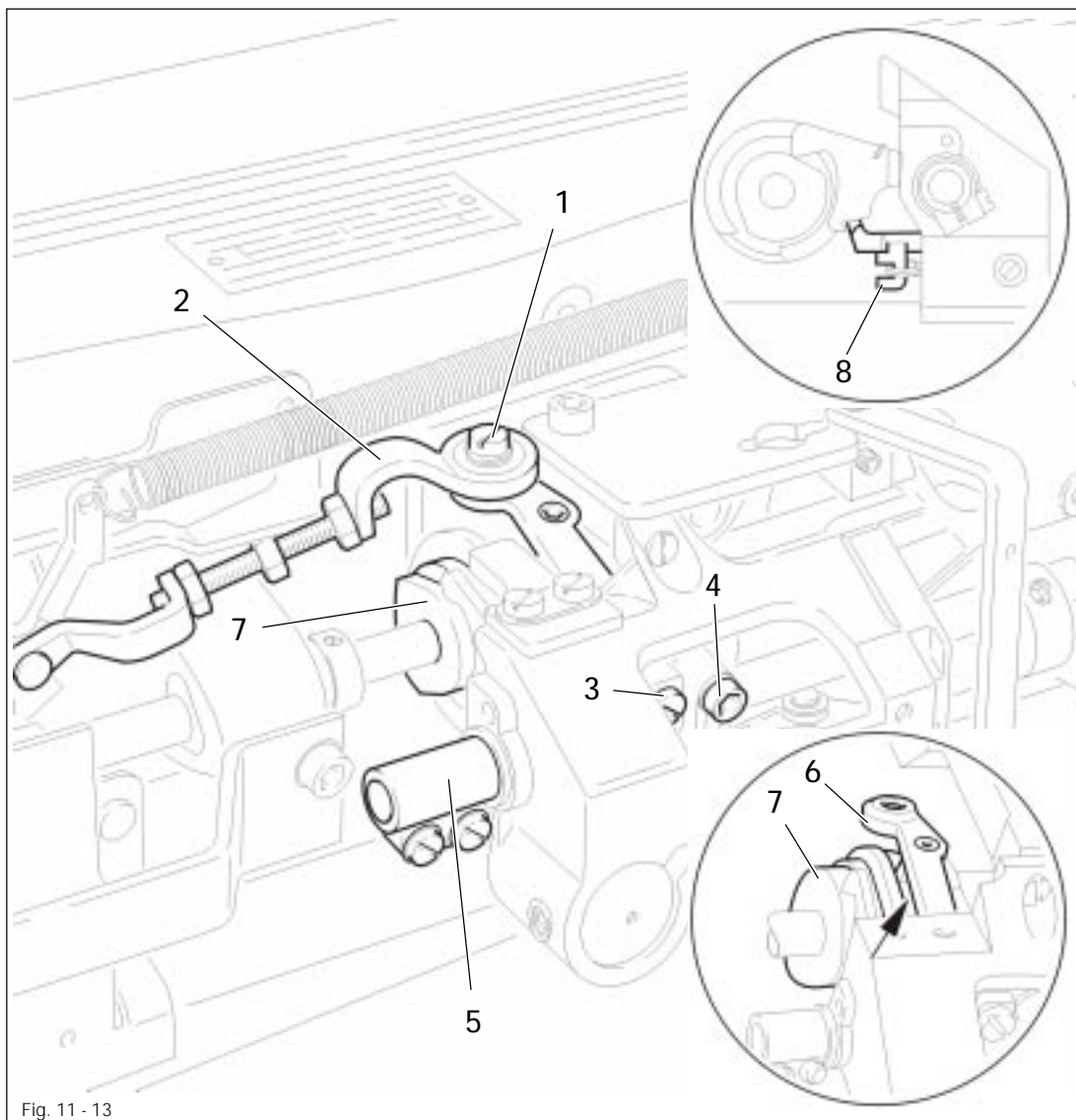


Fig. 11 - 13



- Screw out screw 1 and swing out connecting rod 2.
- Loosen screws 3 and 4.
- Bring the needle bar to needle rise position by turning the balance wheel.
- Bring clamp 5 to rest on the right side of the housing.
- Keeping this position, press control lever 6 to the bottom of the cam track and move it in accordance with the **requirement**.
- In this position, tighten screw 3.



Screw 4 remains loosened until the release trip is adjusted.

11.05.03 Pawl

Requirement
With the thread-trimming mechanism in resting position, there must be a distance of 0.3 mm between the largest eccentricity of control cam 1 and pawl 2.

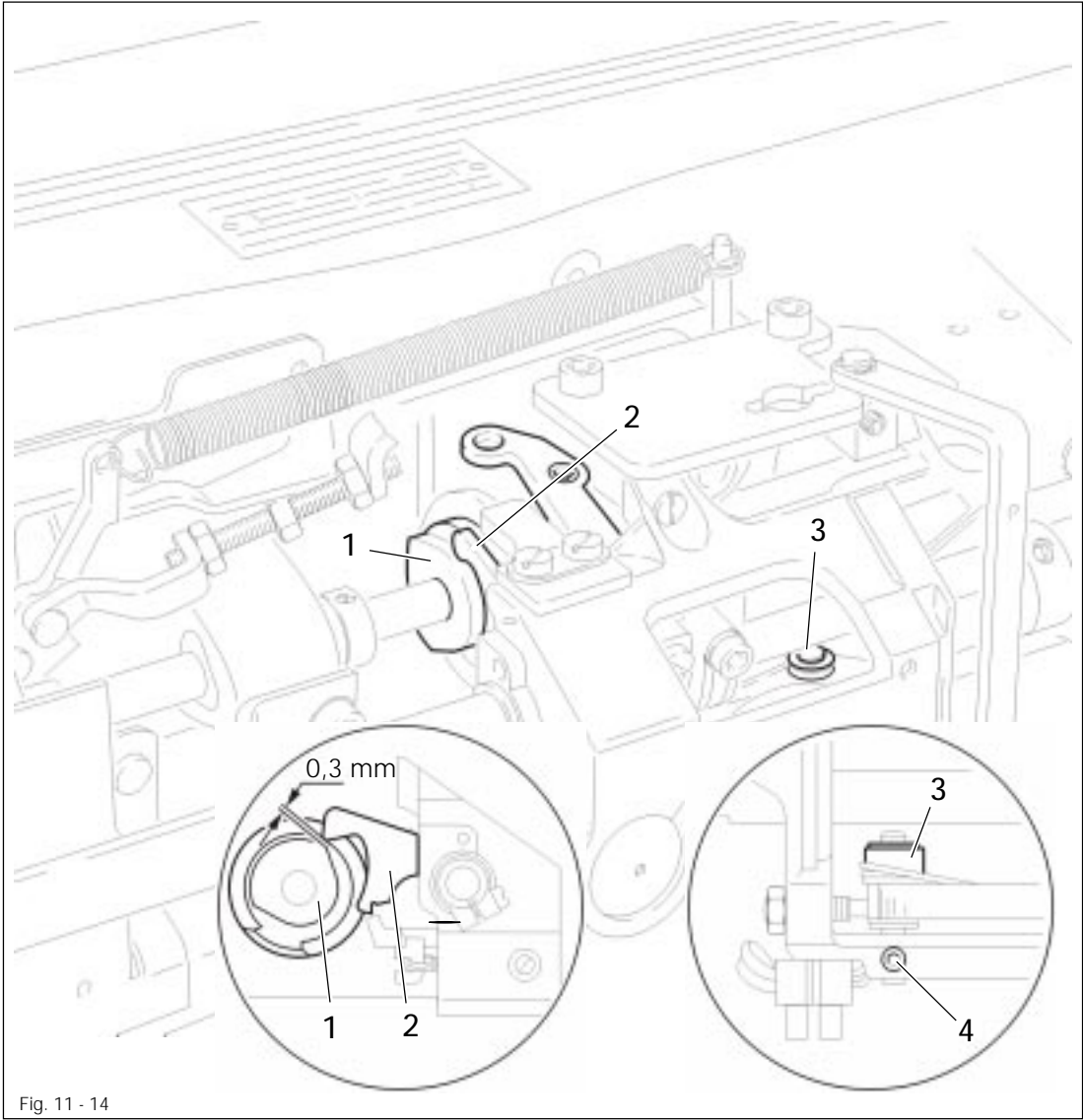


Fig. 11 - 14



- Position the largest eccentricity of control cam 1 underneath pawl 2 by turning the balance wheel.
- Move bearing bolt 3 (screw 4) in accordance with the requirement.

11.05.04 Engaging solenoid

Requirement

In needle rise position and with engaging solenoid 5 activated, there must be a distance of 0.3 mm between engaging lever 2 and pawl 3.

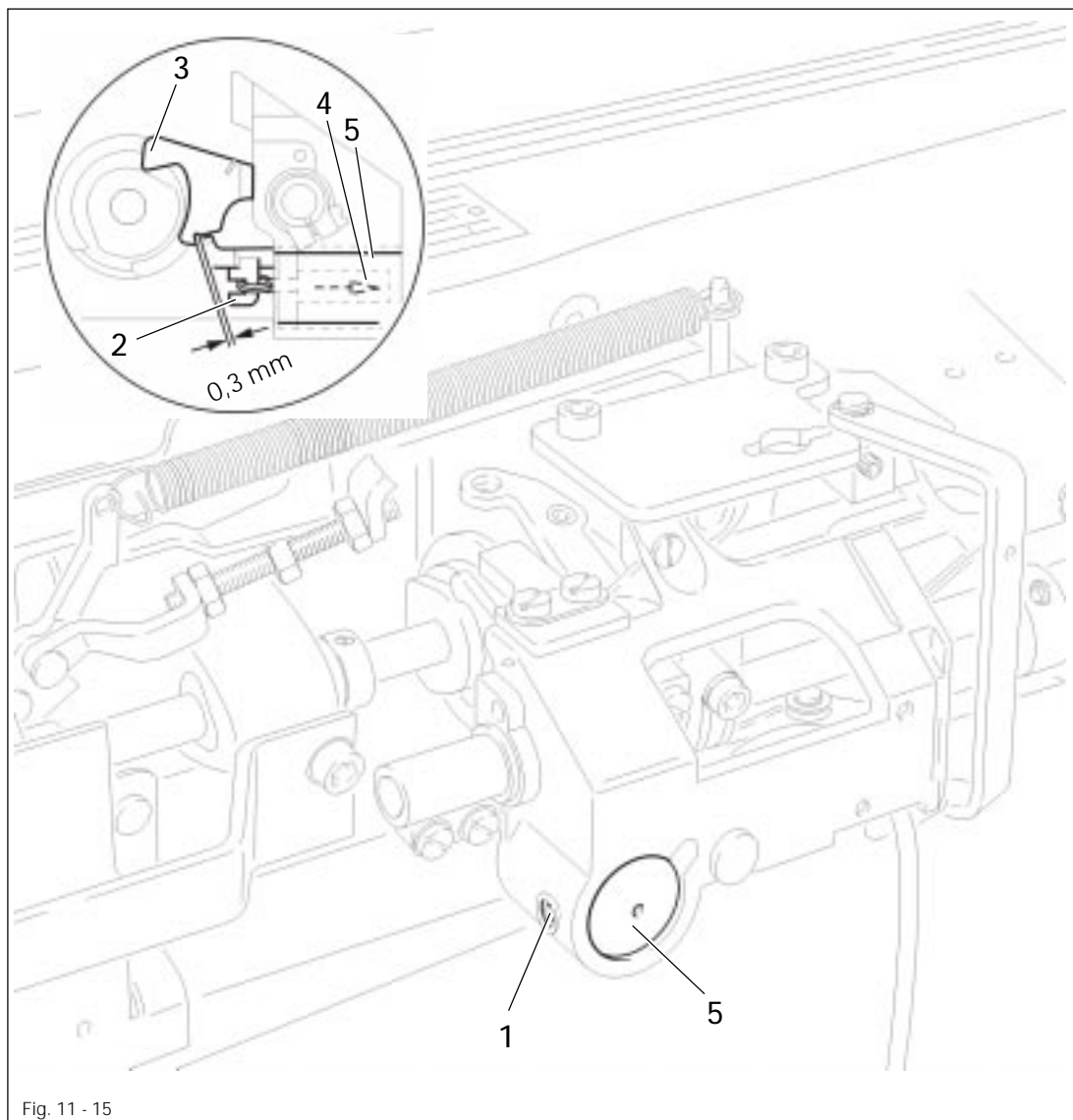


Fig. 11 - 15



- Bring the machine to needle rise position by turning the balance wheel.
- Loosen screw 1 until the engaging solenoid can be turned with difficulty.
- Manually activate engaging lever 2 so that pawl 3 engages.
- Press solenoid plunger 4 as far as possible into solenoid housing 5 and move both the solenoid housing and the solenoid plunger in accordance with the requirement.
- In this position tighten screw 1.

11.05.05 Release trip

Requirement

In needle rise position and with control lever 4 engaged, there must be a clearance of approx. 0.3 mm between the bolt of the control lever and the base of the cam track.

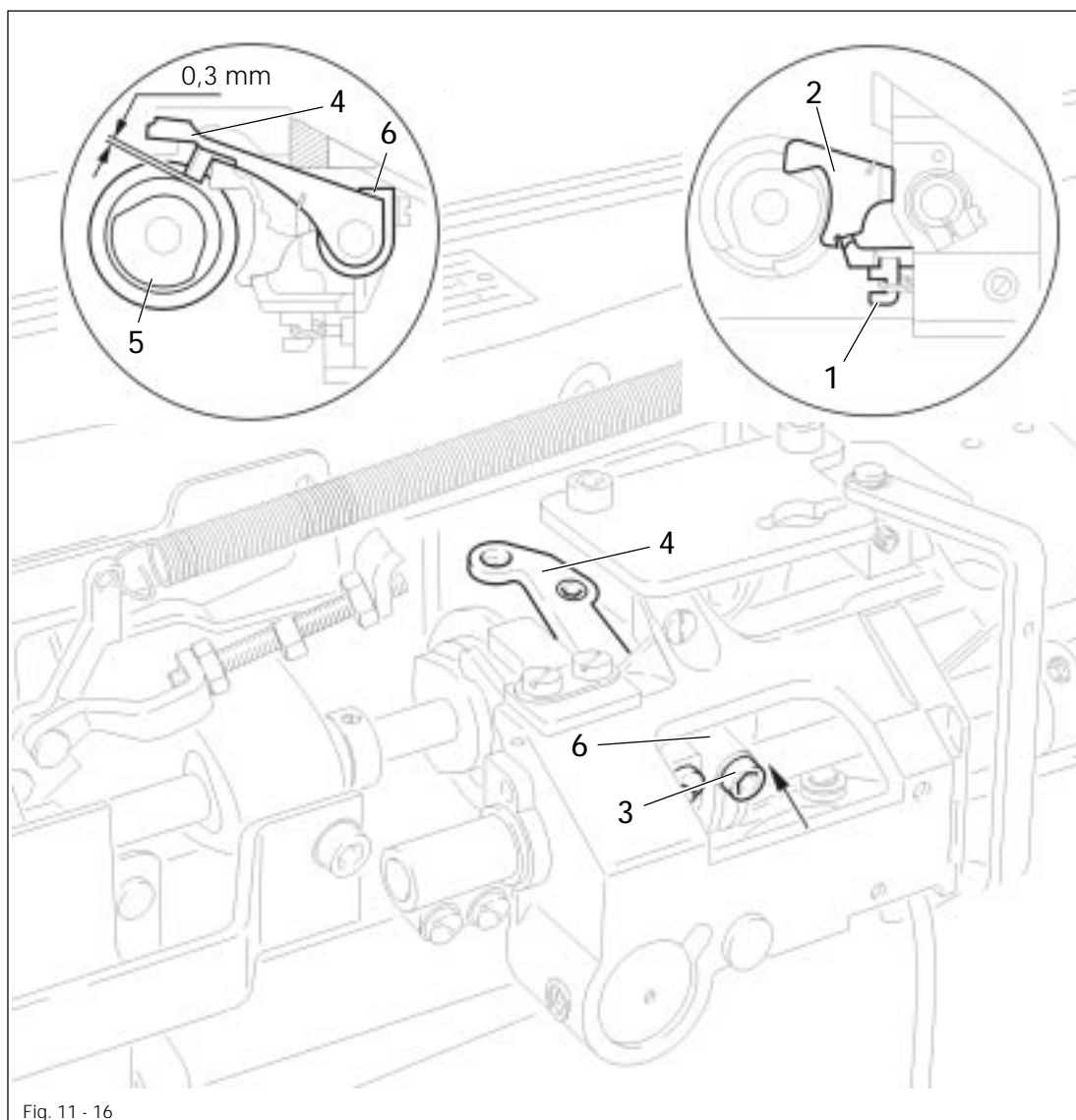


Fig. 11 - 16



- Bring the machine to needle rise position.
- Manually activate engaging lever 1 so that pawl 2 engages.
- Taking care to ensure that screw 3 is still loose, press control lever 4 down to the base of the track of control cam 5.
- Maintaining this position, lightly tighten screw 3 while bringing release trip 6 into a resting position against engaging lever 1 and laterally against control lever 2 in the direction of the arrow.
- By lightly tapping on release trip 6 in the direction of the arrow, while simultaneously tapping control lever 4, create a distance between the pin and the base of the cam track which corresponds with the requirement.
- In this position tighten screw 3.

Adjustment

11.05.06 Engaging lever

Requirement

With the needle bar at TDC and with control lever 3 at starting position, there must be a clearance of approx. 0.3 mm between bolt 4 and the outer diameter of control cam 5.

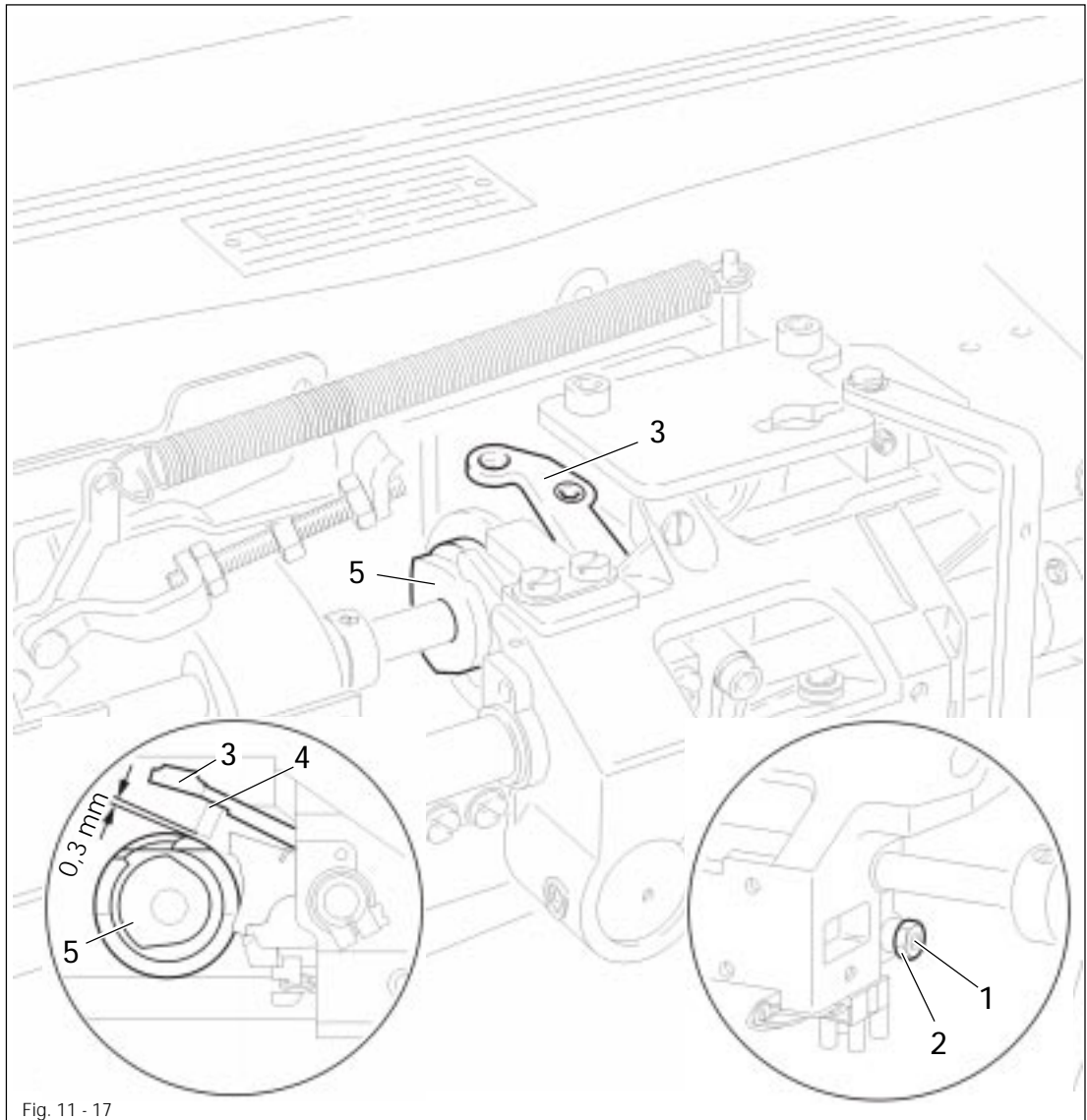


Fig. 11 - 17



- Bring the needle bar to TDC by turning the balance wheel.
- Turn screw 1 (nut 2) in accordance with the **requirement**.
- Carry out a check by tapping control lever 3.

11.05.07 Linkage rod

Requirement

When shaft 9 begins its sliding motion, lever 6 must simultaneously lift from stop 7.

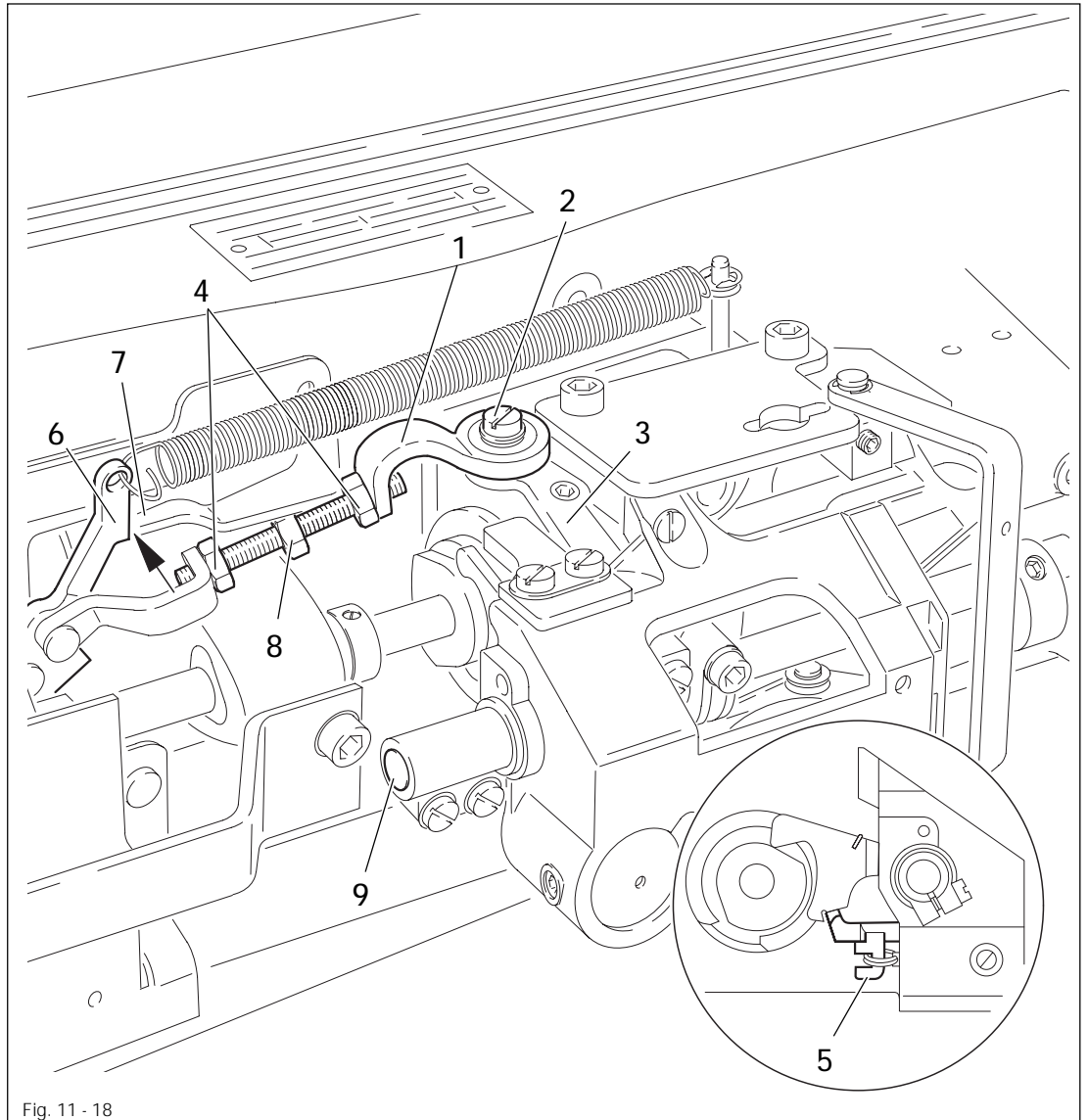
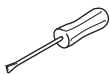


Fig. 11 - 18



- Affix spherical head 1 to control lever 3 using screw 2.
- Loosen nuts 4 (right and left handed thread).
- Bring the machine to needle rise position by turning the handwheel and activate engaging lever 5.
- Taking care to ensure that lever 6 is touching stop 7 (see arrow), turn linkage rod 8 in accordance with the **requirement**.
- In this position tighten both nuts 4.

11.05.08 Final adjustment of the control cam

Requirement

When control lever 3 is engaged and the needle point is 12 mm above the needle plate coming from its BDC, the motion of the thread catcher 5 must begin.

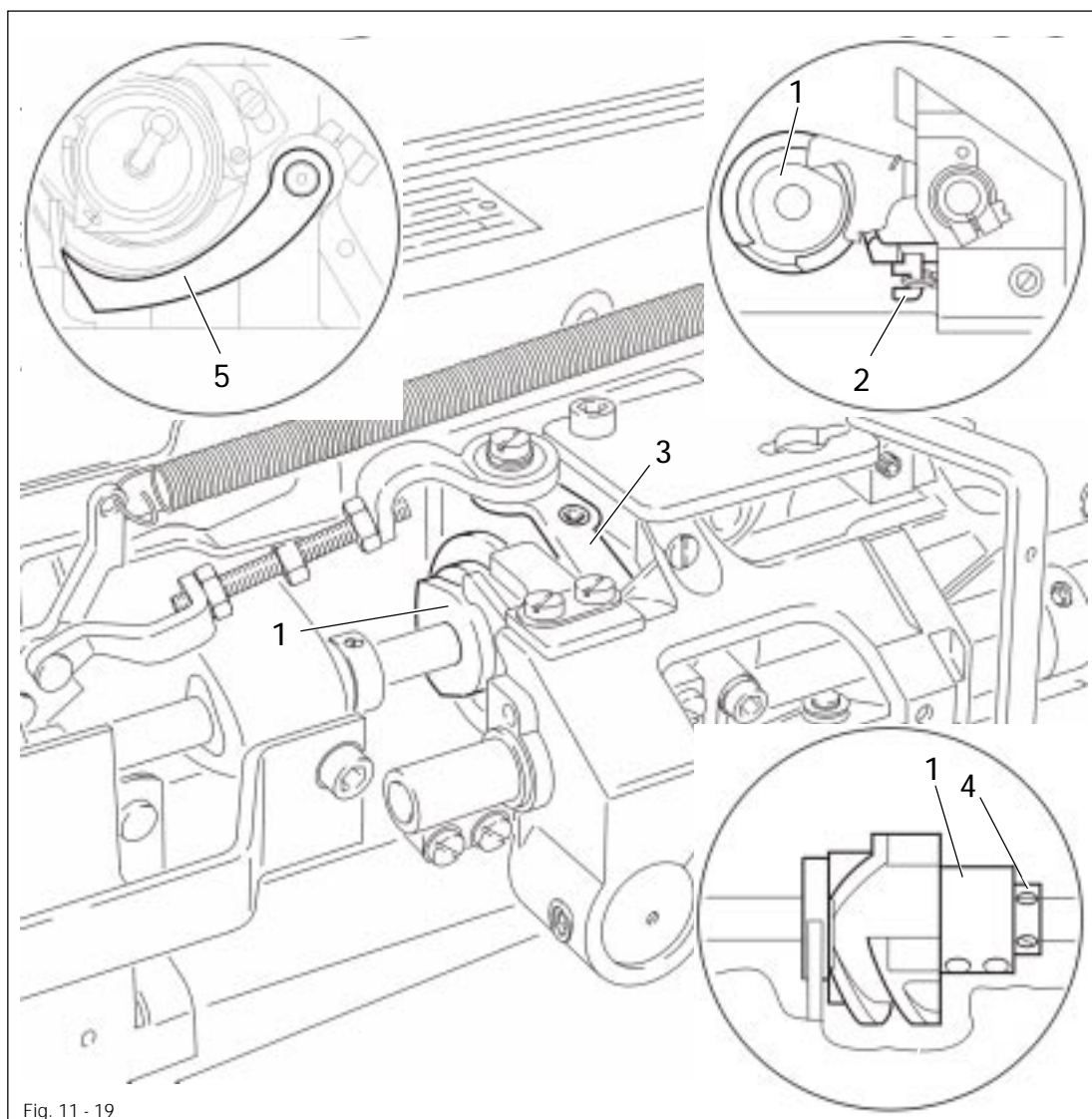


Fig. 11 - 19



- Bring the take-up lever to just past its TDC by turning the balance wheel and loosen the accessible screws on control cam 1.
- Continue turning the balance wheel in its direction of rotation until the machine is in needle rise position and then activate engaging lever 2.
- Taking care to ensure that control lever 3 is engaged, loosen the remaining screws on control cam 1.
- Continue turning the balance wheel in its direction of rotation until the point of the needle is 12 mm above the needle plate.
- In this position, and taking care to ensure that control cam 1 is touching retaining collar 4, turn in the direction of rotation until you feel some resistance.
- In this position, tighten the accessible screws on control cam 1.
- Make the remaining screws on control cam 1 accessible and tighten them.

11.05.09 Catch

Requirement

With the thread trimming mechanism in resting position, there must be a distance of approx. 5 mm between catch 1 and control lever 6.

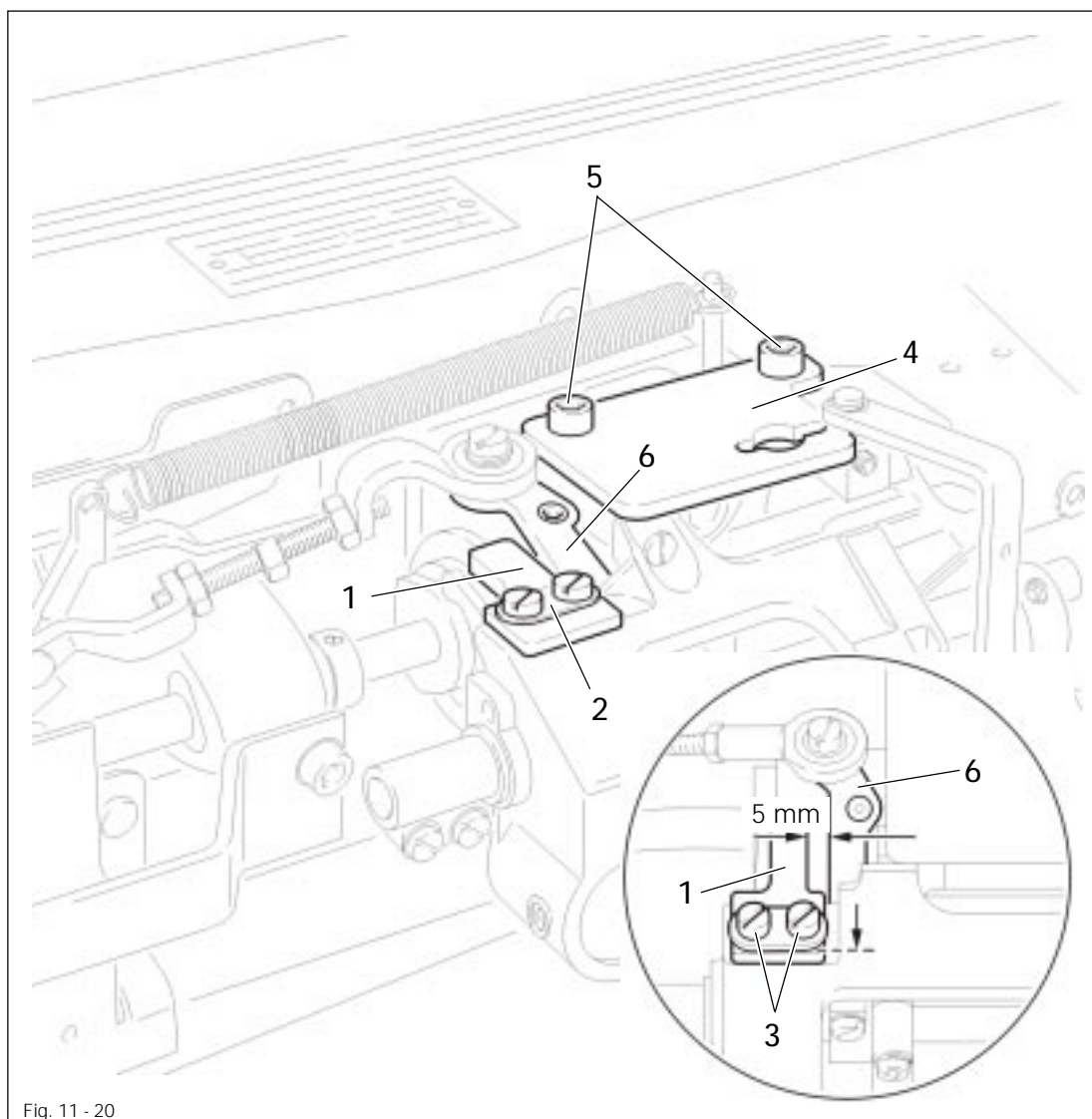


Fig. 11 - 20

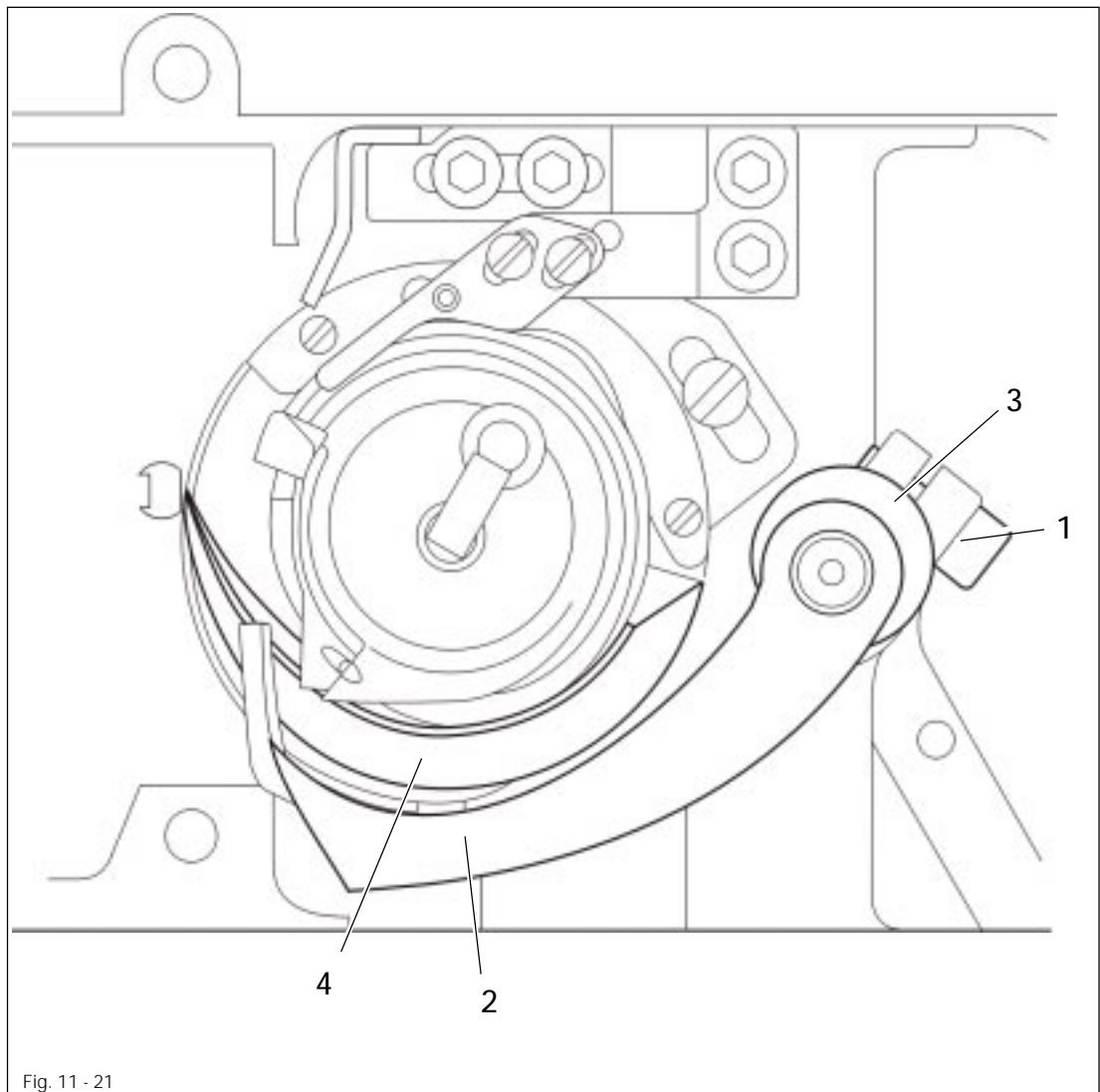


- Lightly affix catch 1 and cover plate 2 using screws 3.
- Move catch 1 as far as possible in the direction of the arrow and then move it laterally in accordance with the **requirement**.
- In this position, tighten screws 3.
- Using screws 5, screw plate 4 on.

11.05.10 Thread-catcher height

Requirement

When thread catcher **2** is pushed forwards manually with the take-up lever at its TDC, the lower point of the thread catcher must pass **1 mm** over the back of hook **4**.



- Loosen screw **1** enough so that thread catcher **2** can be turned.
- Loosen the screws in retaining collar **3**.
- Bring the take-up lever to its TDC by turning the balance wheel.
- Move thread catcher **2** in accordance with the **requirement**.
- In this position, and taking care to ensure that retaining collar **3** is touching the shaft bushing, tighten screws **3** of the retaining collar.



Screw **1** remains loosened for the following adjustment.

11.05.11 Knife

Requirement

1. The elongated hole of knife 3 must be parallel to knife carrier 5 and the knife must not be touching the casting (see arrow).
2. When the point of needle catcher 4 protrudes approx. 3 mm over the cutting edge of the knife, knife 3 must just touch thread catcher 4.

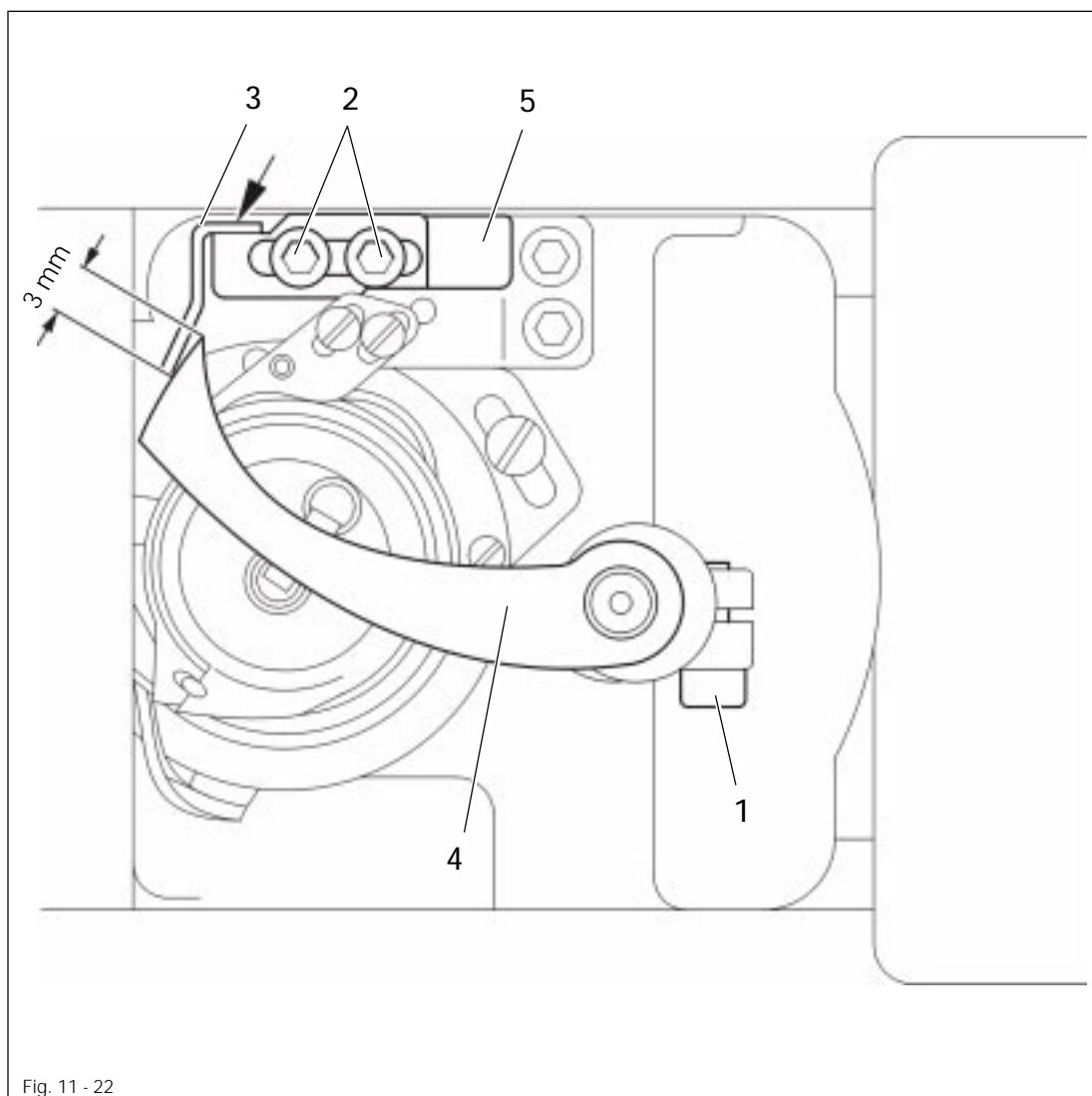


Fig. 11 - 22



- Loosen screws 2.
- Move knife 3 in such a way that it cannot collide with thread catcher 4.
- Taking care to ensure that screw 1 is loosened, manually turn thread catcher 4 in accordance with requirement 2.
- Bring knife 3 to rest against thread catcher 4 and align it in accordance with requirement 1.
- In this position tighten screws 2.



Screw 1 remains loosened for the following adjustment.

11.05.12 Thread catcher reverse position

Requirement

At the front point of reversal of thread catcher 3, its rear edge must be flush with the cutting edge of knife 4 (see arrow).

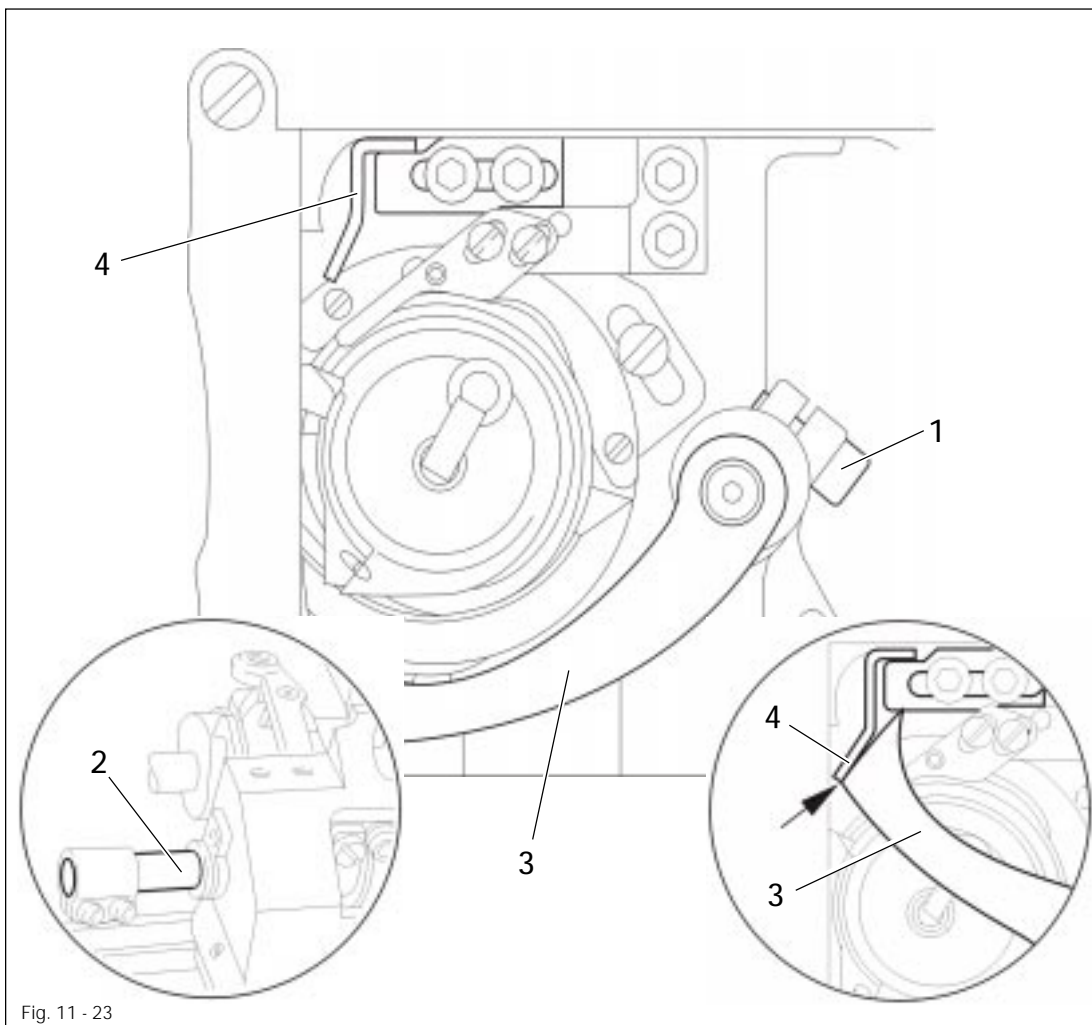


Fig. 11 - 23

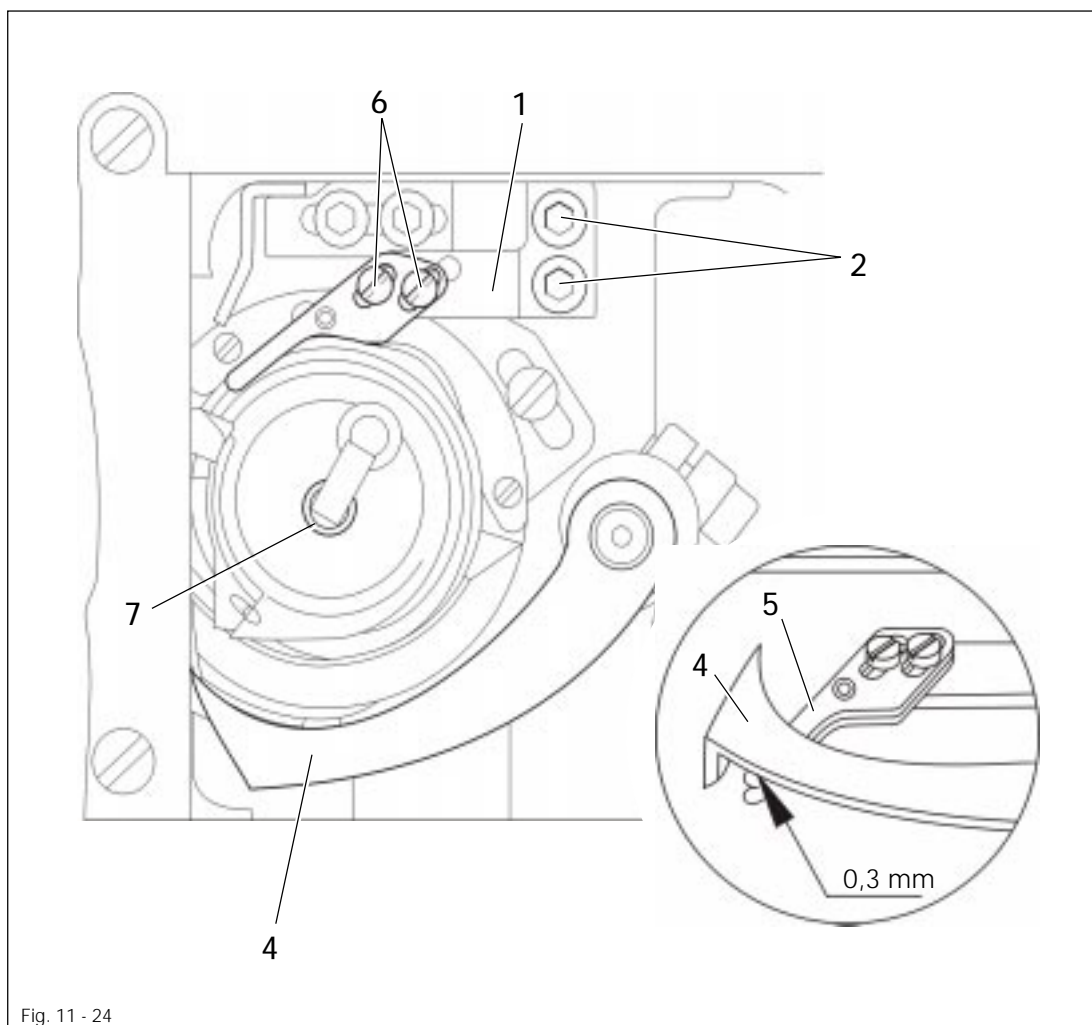


- Taking care to ensure that screw 1 is loosened, bring the machine to needle rise position and activate the engaging lever.
- By turning the balance wheel further, bring rock shaft 2 to its left point of reversal.
- Maintaining this position, turn thread catcher 3 in accordance with the requirement.
- In this position and taking care to ensure that there is no horizontal play, tighten screw 1.

11.05.13 Bobbin-thread clamp spring

Requirement

1. Between clamp spring 5 and the bottom of thread catcher 4, there must be a distance of 0.3 mm.
2. At the front point of reversal of thread catcher 4, the points of clamp spring 5 must be flush with the back edge of catcher 4 (see arrow).
3. There must be a distance of approx. **12 mm** between the inner edge of clamp spring 5 and guide sleeve 7.
4. It must be possible to insert and remove the bobbin-case from the hook without any interference.



- Align carrier 1 (screws 2) in such a way that it is in the middle of its adjustment range and parallel to the bedplate of the machine.
- Unhook spring 3 (see Page 11-38)
- Manually pivot thread catcher 4 over clamp spring 5.
- Bend clamp spring 5 in accordance with requirement 1.
- Hook spring 3 back in again.
- Bring the machine to needle rise position, activate the engaging lever and bring the thread catcher to its front point of reversal by turning the balance wheel.

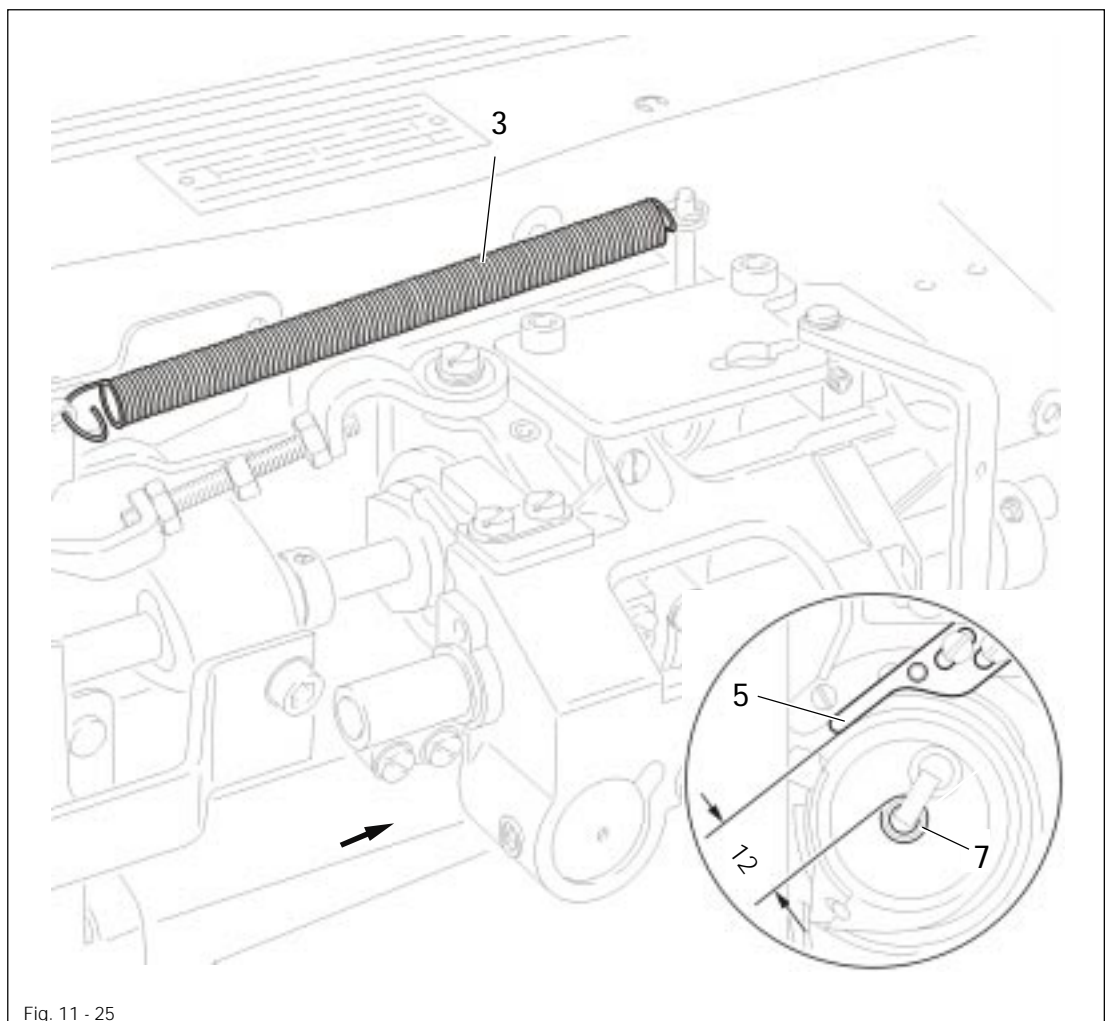


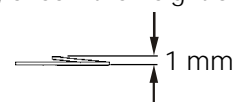
Fig. 11 - 25

- Align clamp spring 5 (screws 6) in the elongated hole in accordance with **requirement 2 and 3** - if necessary carrier 1 (screws 2) as well.
- In this position, and taking care to ensure that carrier 1 is parallel to the machine bedplate, tighten screws 2 and 6.



If sewing problems occur after the thread has been trimmed, check the height of the spring under the bobbin in the hook!

The height of the spring must be approx. **1 mm**.



11.05.11 Adjusting the synchronizer

Requirement

1. On a seam interruption the machine must position **4 mm** past b.d.c.
2. After a thread trim the machine must position at t.d.c. of the take-up lever.



- Carry out adjustment according to motor instruction manual.

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