PFAFF® Industrial

337

ADJUSTMENT MANUAL

This Adjustment Manual is valid for machines from the following serial numbers onwards:
7 207 686 →

296-12-18 644/002
Justieranleitung engl. 06.09

PFAFF Industriesysteme
und Maschinen AG

Hans-Geiger-Str. 12 - IG Nord
D-67661 Kaiserslautern

11 Adjustment

11.01 Notes on adjustment

All adjustments in this instruction manual refer to a completely assembled machine and must only be carried out by **appropriately trained technical personnel**. Machine covers that have to be removed and replaced for checks and adjustment work are not mentioned in the text.
The screws and nuts indicated in brackets () are for the fixation of machine parts that have to be unscrewed before adjustment and tightened again afterwards.

11.02 Tools, gauges and other equipment for adjusting

- Screwdrivers with blade widths from 2 to 10 mm
- Spanners (wrenches) in sizes from 7 to 14 mm
- Allen keys from 2 to 6 mm
- Metal rule (part No. 08-880218-00)
- Needle-rise gauge (part No. 61-111600-01)
- Screw clamp (part No. 61-111600-35/001)
- Gauge, 7-mm, for lifting presser stroke (part No. 61-11163 0-14)
- Needles, system 134-35
- Sewing thread and material for stitching off

11.03 Abbreviations

t.d.c. = top dead centre
b.d.c. = bottom dead centre

11.04 Adjusting the basic machine

11.04.01 Position of the bottom feed dog crosswise to sewing direction

Requirement
The bottom feed dog 1 must clear the feed slot by the same amount at the left and right.

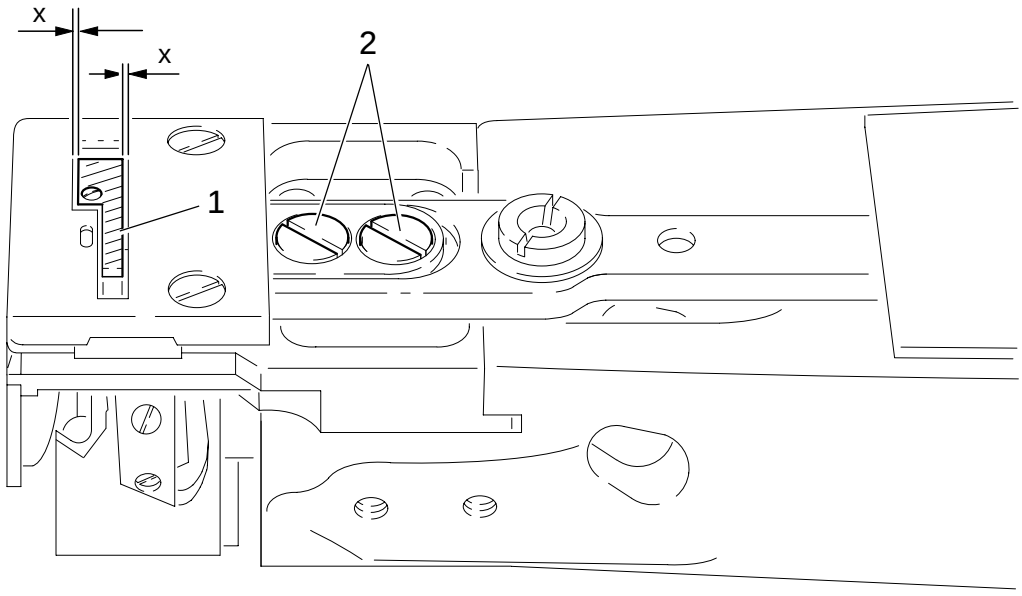
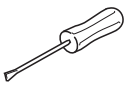


Fig. 11 - 01



- Re-position feed dog 1 (screws 2) according to Requirement.

11.04.02 Adjusting the bottom feed dog in sewing direction

Requirement
With the longest stitch length set, bottom feed dog 5 must clear the feed slot by the same amount at the front and rear end of its stroke.

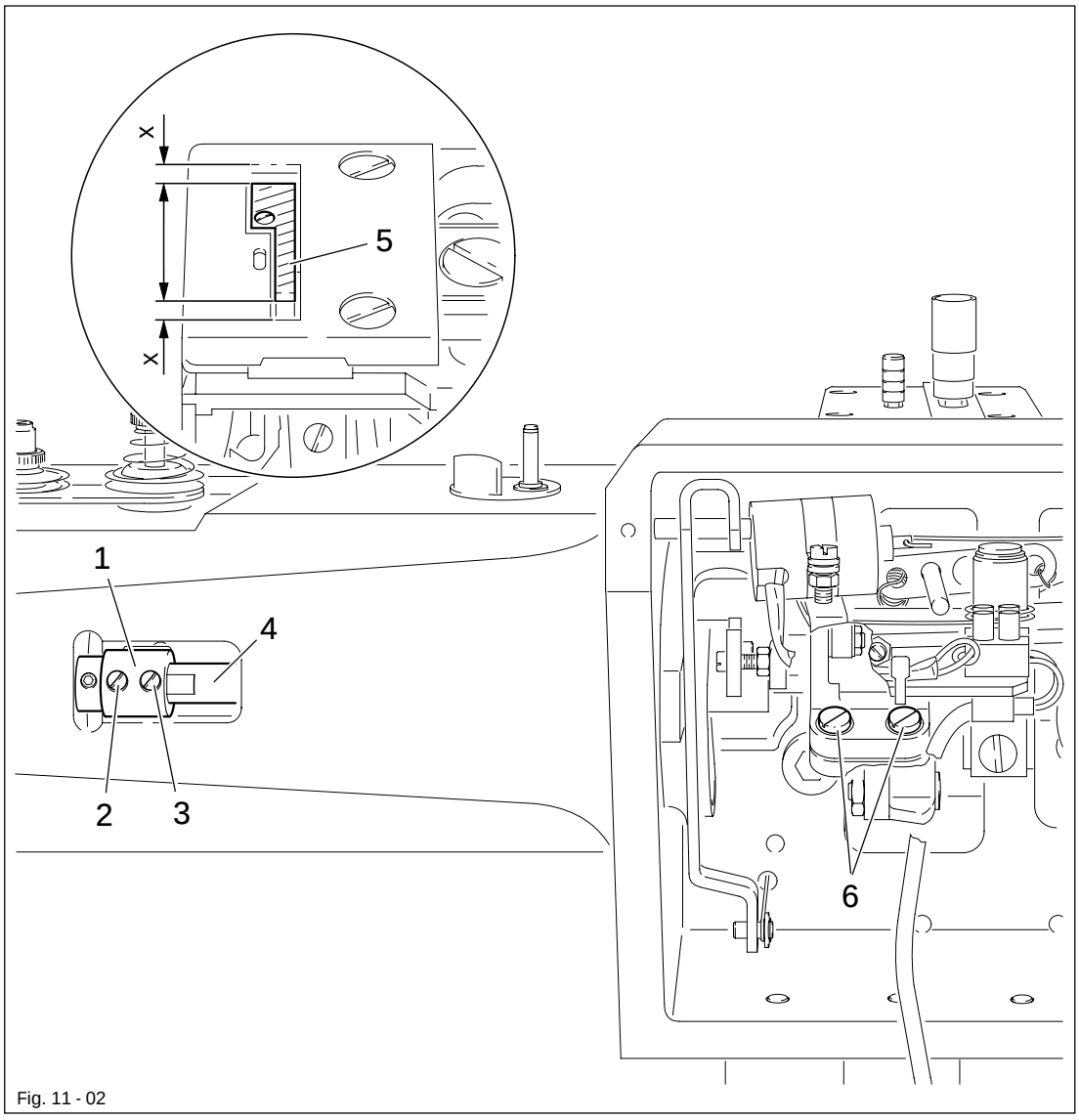


Fig. 11 - 02

- Set the longest stitch length.
- Position clamp sleeve 1 (screws 2 and 3) on the flat of shaft 4 as far to the left as possible, making sure that screw 2 is still on the flat.
- Position feed dog 5 (screws 6) according to Requirement.

11.04.03 Needle position in needle hole

Requirement

1. In sewing direction the needle centre must be at a distance of approx. 0.7 mm from the front inside edge of the needle hole.
2. Crosswise to sewing direction the needle must be centred in the needle hole.

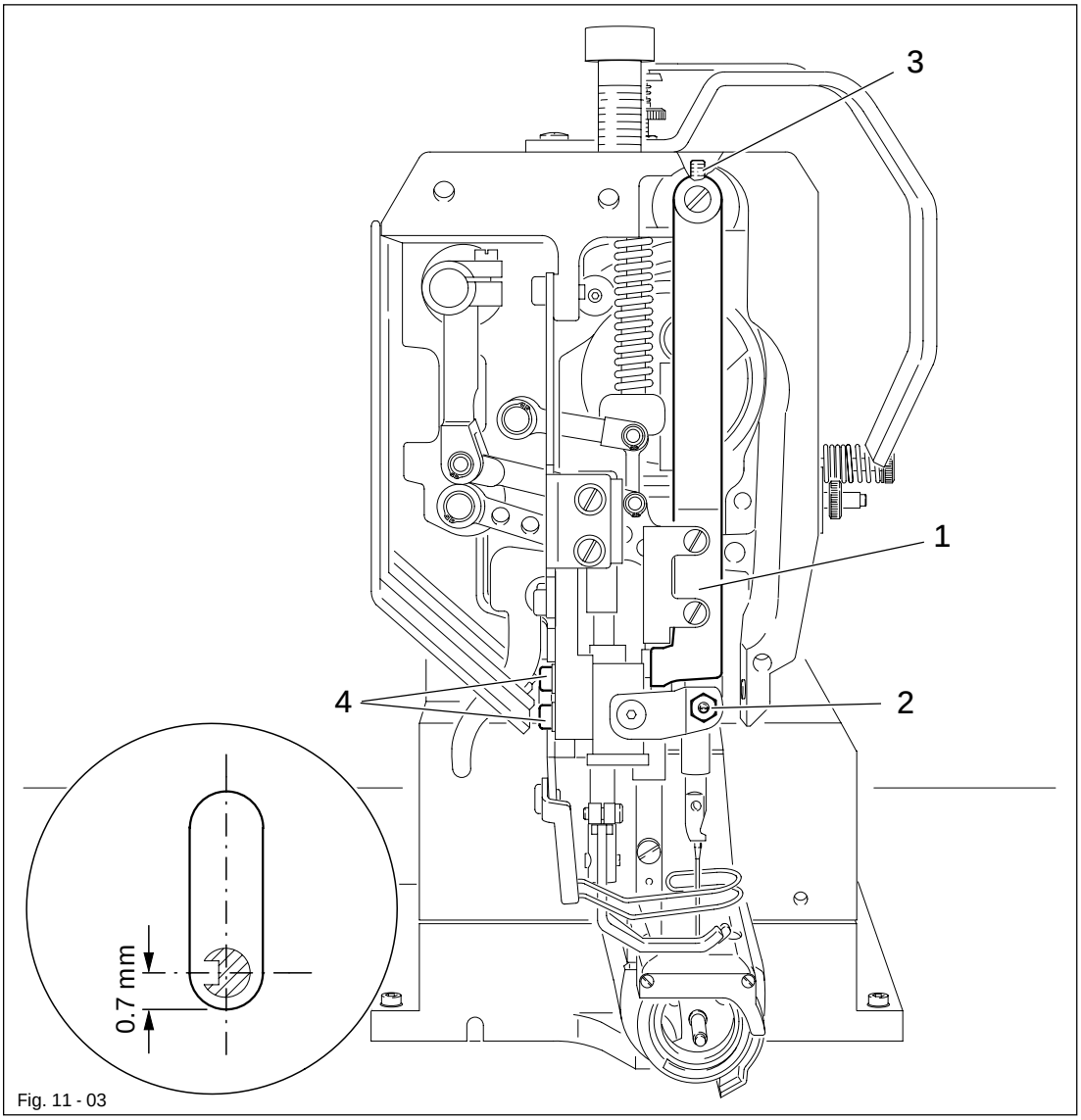
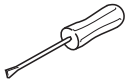


Fig. 11 - 03



- Turn the balance wheel to lower the needle into the needle plate.
- Position needle-bar frame 1 (nut 2 with locknut) according to Requirement 1.
- Position needle-bar frame 1 (screws 3 and 4) according to Requirement 2.

11.04.04 Needle height (preliminary adjustment)

Requirement
With the needle bar at b.d.c. the clearance between needle bar and needle plate must be 15 mm.

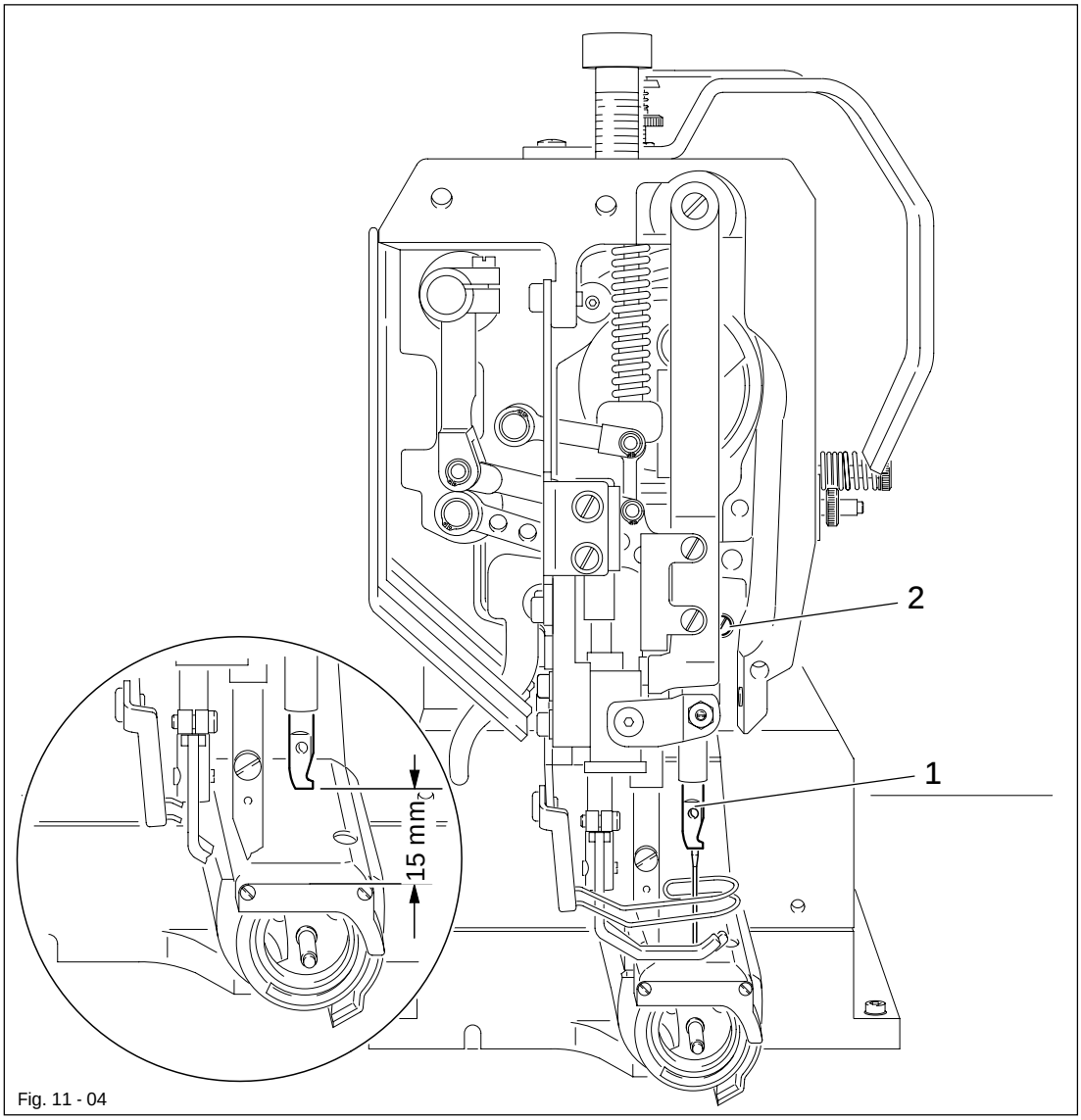


Fig. 11 - 04

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

11.04.05 Top-feed pendulum

Requirement
At stitch length ”0” and the largest gather setting, presser bar 4 must be at the centre between needle bar guide and presser bar.

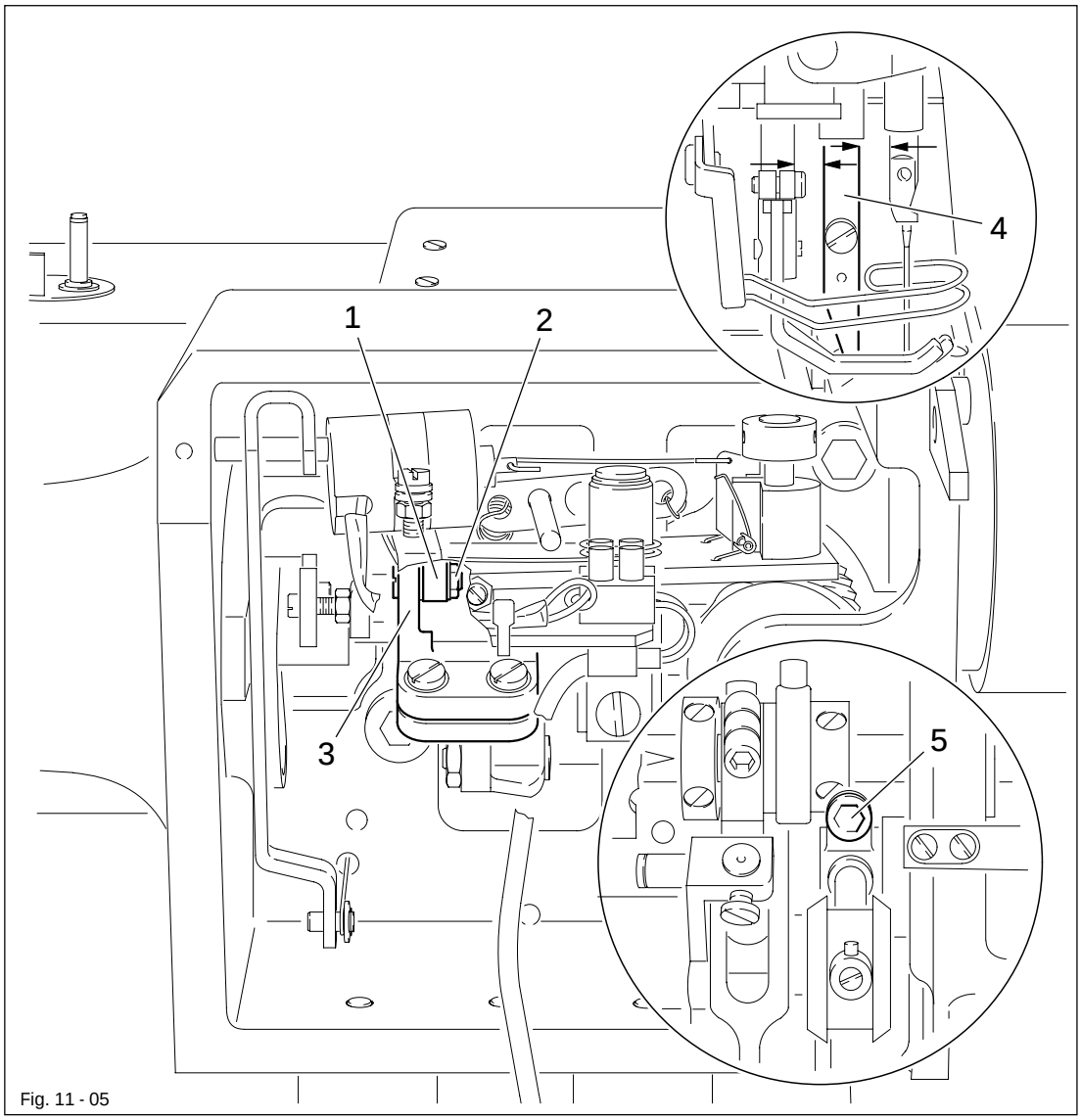
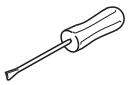


Fig. 11 - 05



- Push linkage rod 1 (screw 2) fully up in its slot 3.
- Set stitch length at ”0” and press the pedal to set the largest gather setting.
- Position presser bar 4 (screw 5) according to Requirement.

11.04.06 Feeding stroke of top and bottom feeds

Requirement
When the lower edge of the descending needle bar is 33 mm above the top edge of the needle plate, the top and bottom feeds should not move when the stitch length adjustment lever is activated.

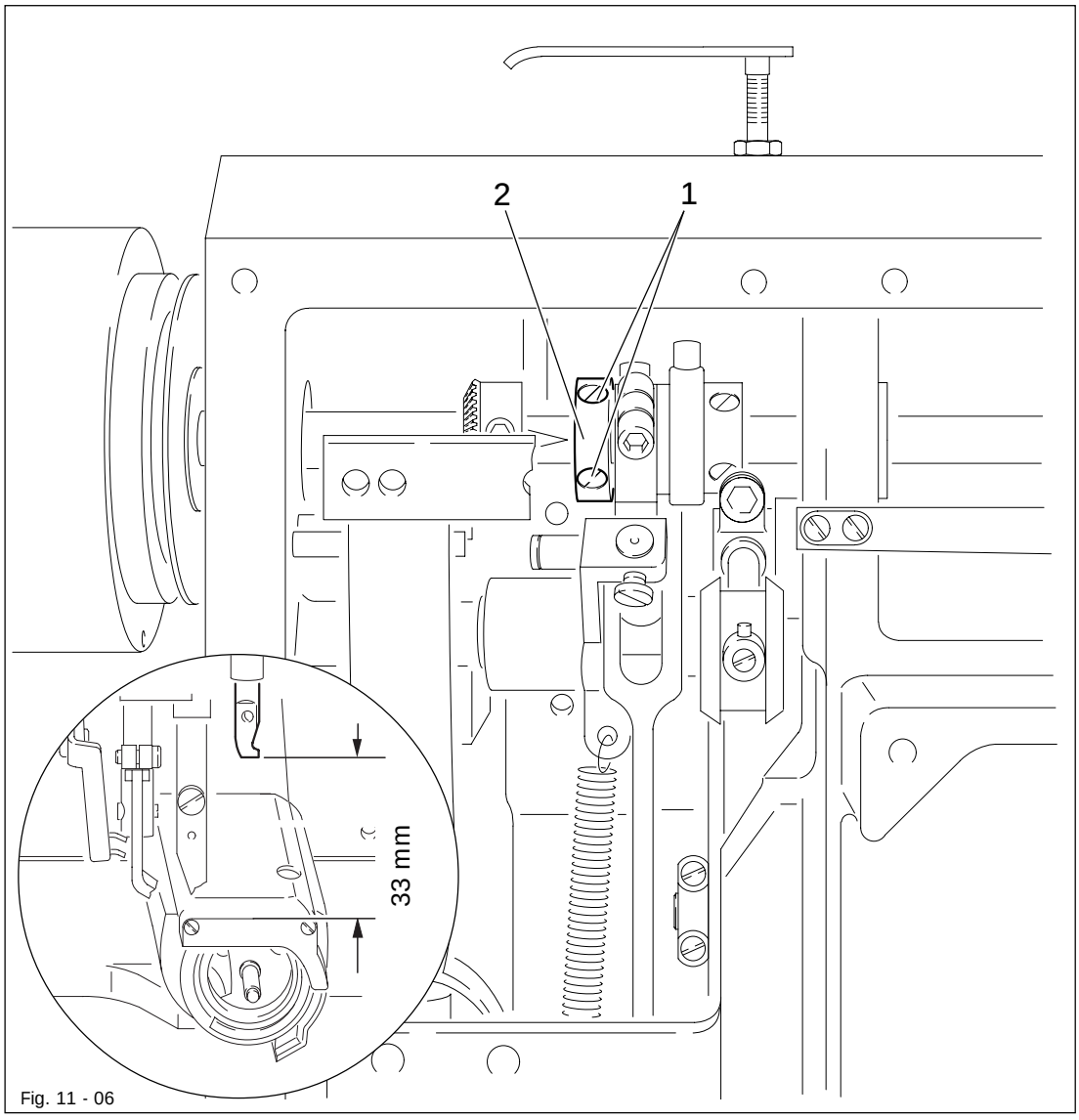


Fig. 11 - 06

- Set the longest stitch length.
- Loosen screws 1 far enough, so that the eccentric 2 can be turned on the shaft with difficulty.
- Bring the needle bar into the appropriate position.
- Turn eccentric 2 according to the requirement.
- Tighten screws 1.

11.04.07 Top feed stroke

Requirement
When lever 1 is in the middle of its slot, vibrating presser 3 and lifting presser 4 must be at the same height above the needle plate.

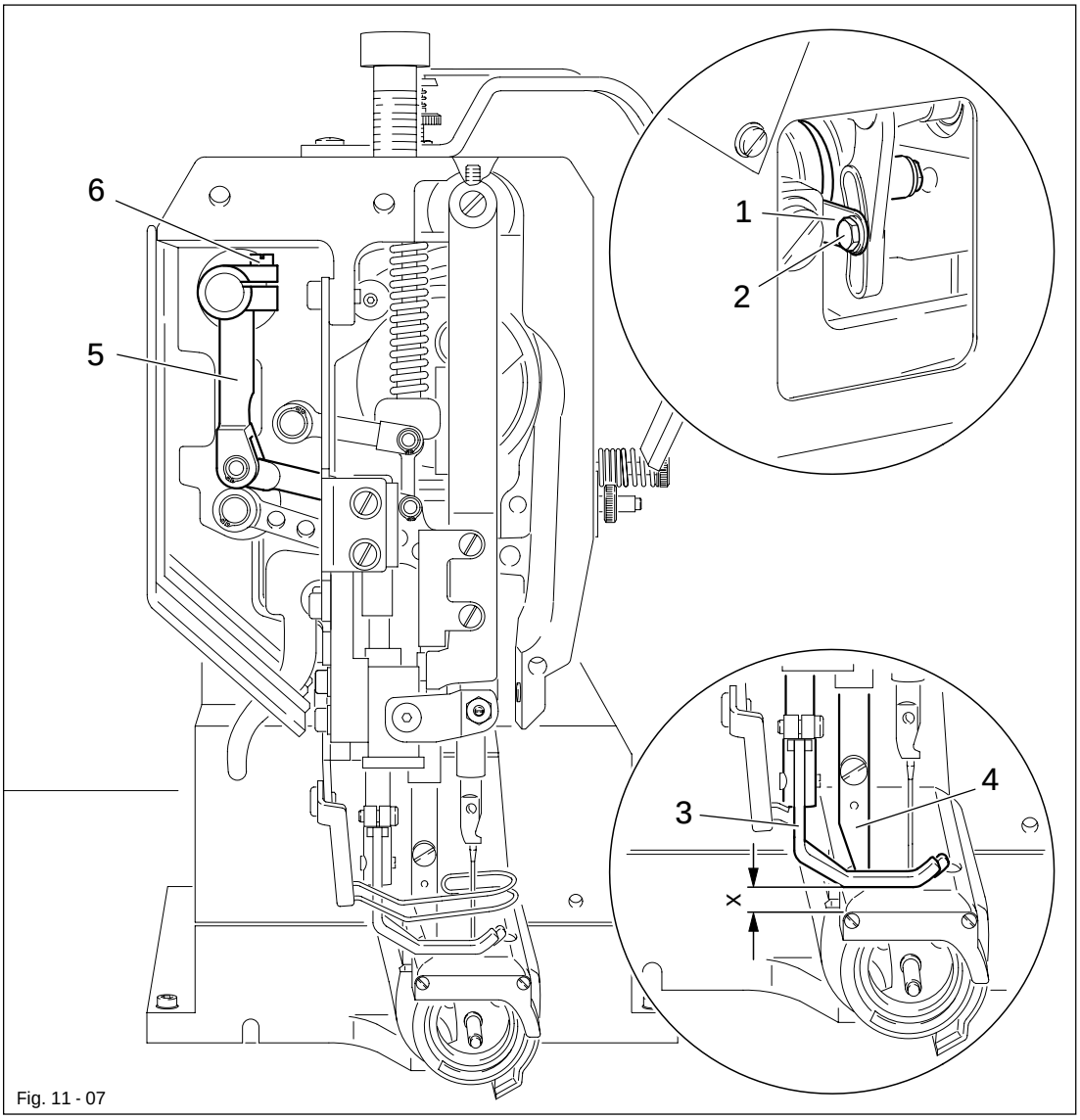
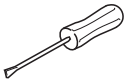


Fig. 11 - 07



- Set stitch length at ”0”
- Set lever 1 (screw 2) at the middle of its slot.
- Lower lifting presser 3.
- Turn balance wheel in sewing direction until vibrating presser 4 is at its highest point.
- Turn crank 5 (screw 6) according to Requirement

11.04.08 Top feed lifting motion

Requirement
When the lower edge of the descending needle bar is 33 mm above the top edge of the needle plate, the top feed should not move, when the slotted lever 3 is moving up and down.

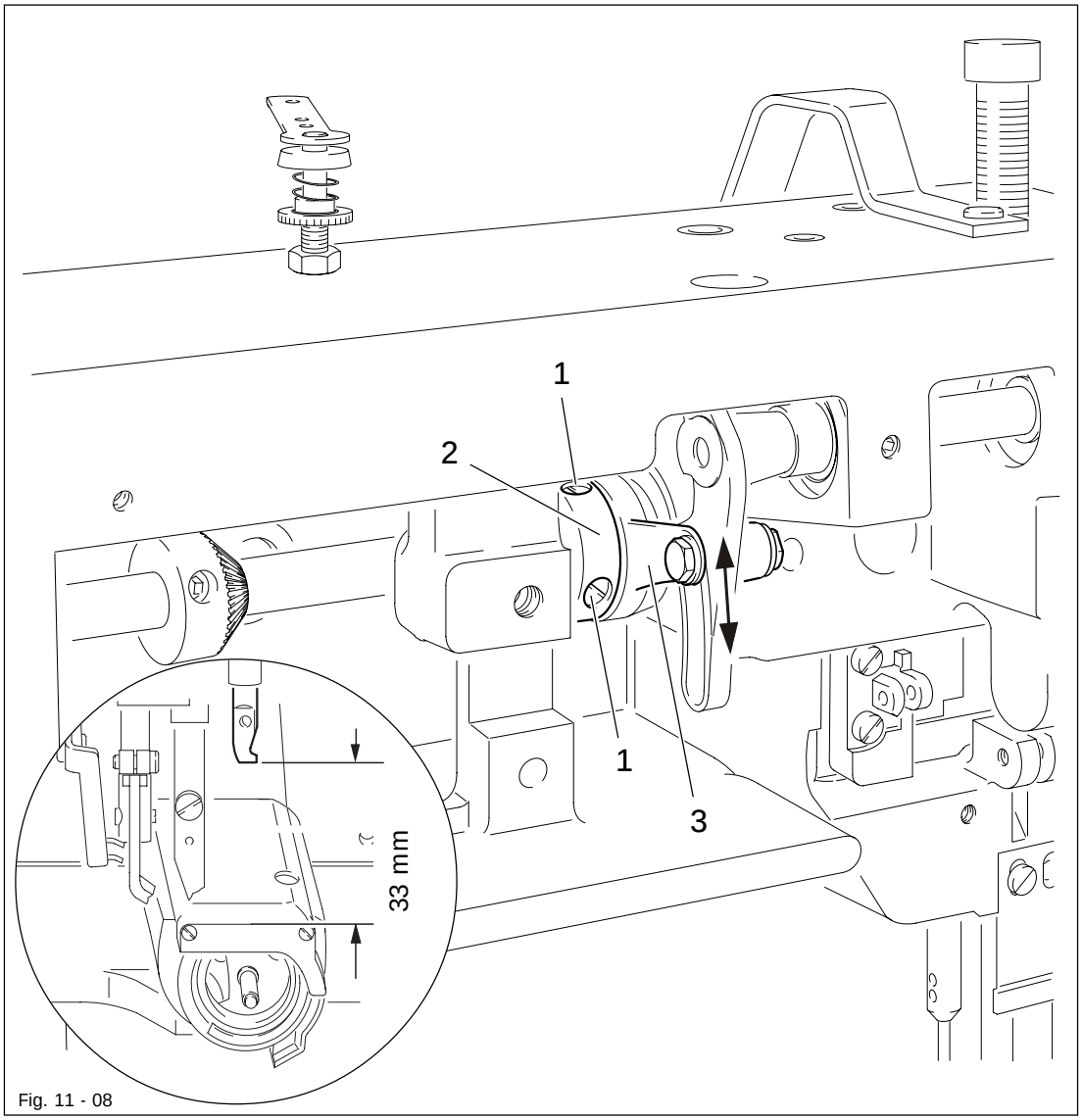


Fig. 11 - 08

- Loosen screws 1 far enough, so that the eccentric 2 can be turned on the shaft with difficulty.
- Bring the needle bar into the appropriate position.
- Turn eccentric 2 according to the requirement.
- Tighten screws 1.

11.04.09 Hook clearance, needle rise and needle height

Requirement
With the longest stitch length set and in needle-rise position (= 1.8 mm past b.d.c. of the needle bar)
1. The hook point must be at "needle centre" and the clearance between hook and needle 0.05 to 0.1 mm, and
2. the top of the needle eye must be 0.8 mm below the hook point.

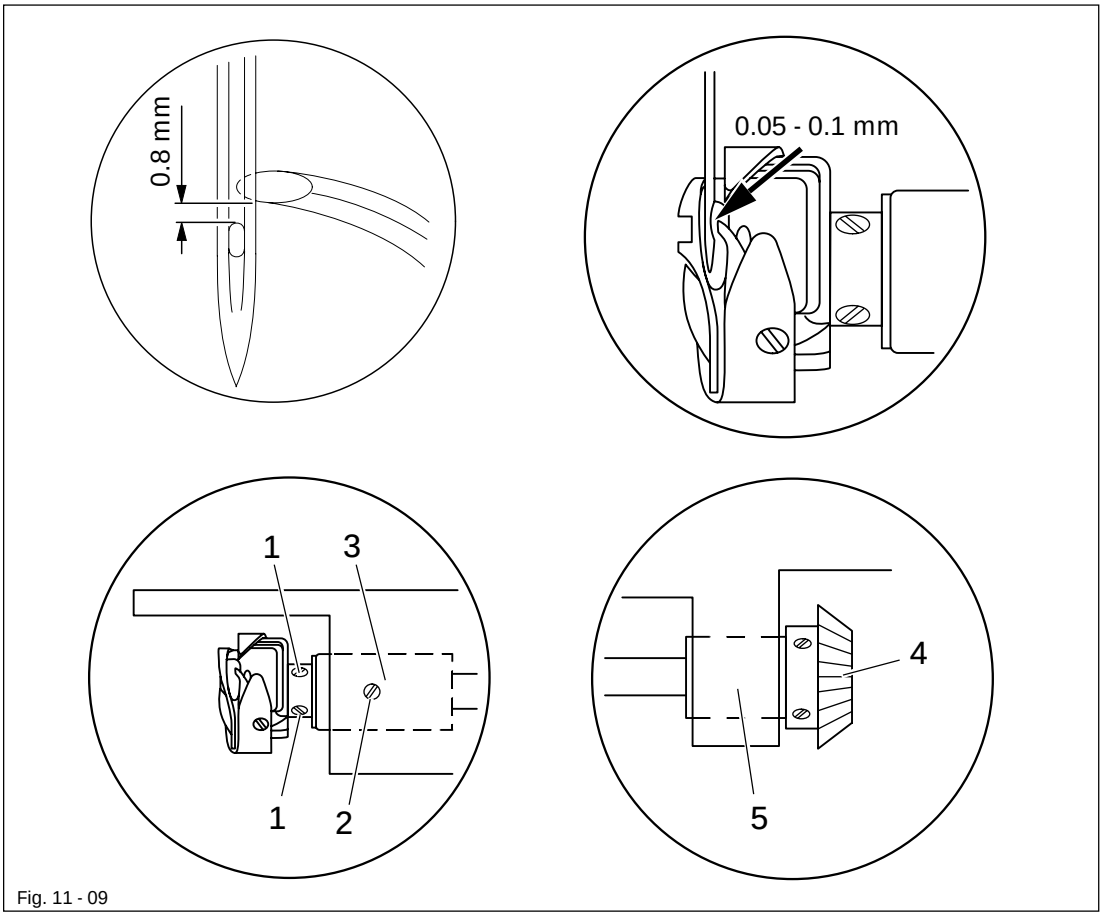


Fig. 11 - 09

- Set the longest stitch.
- Loosen screws 1 and 2 (screw 2 is on the rear side of the machine).
- Set the needle bar at b.d.c. and place the 1.8 mm thick feeler gauge with its cutout close under the lower needle bar bearing.
- Place the screw clamp up against the feeler gauge and tighten it.
- Remove the feeler gauge and turn the balance wheel until the screw clamp is resting against the needle bar bearing.
- Adjust the hook according to Requirements.
- If necessary adjust the needle height, see Chapter 11.04.04 Needle height (preliminary adjustment).
- Move hook shaft bearing 3 against the hook and tighten screw 2.
- Move bevel gear 4 against bearing 5 and tighten screws 1.

On machines with thread trimmer –900/51, adjustment of the axial play of the hook shaft and hook-shaft bearing **3** does not apply.

11.04.10 Needle-thread tension release

Requirement
With the lifting presser raised, there must be a clearance of at least 0.5 mm between tension discs 4.

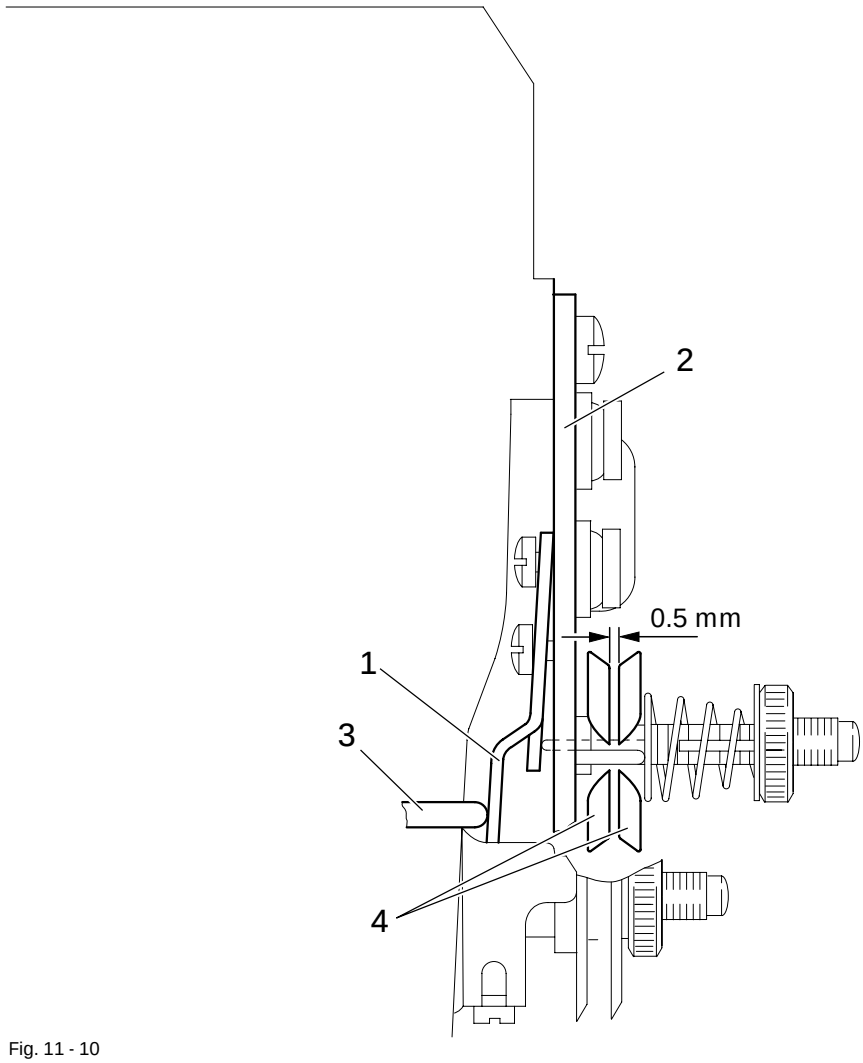


Fig. 11 - 10

- Raise the lifting presser.
- Position pressure plate 1 behind mounting bracket 2 according to Requirement.

When the tension is engaged, release pin 3 must not be under load.

11.04.11 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).

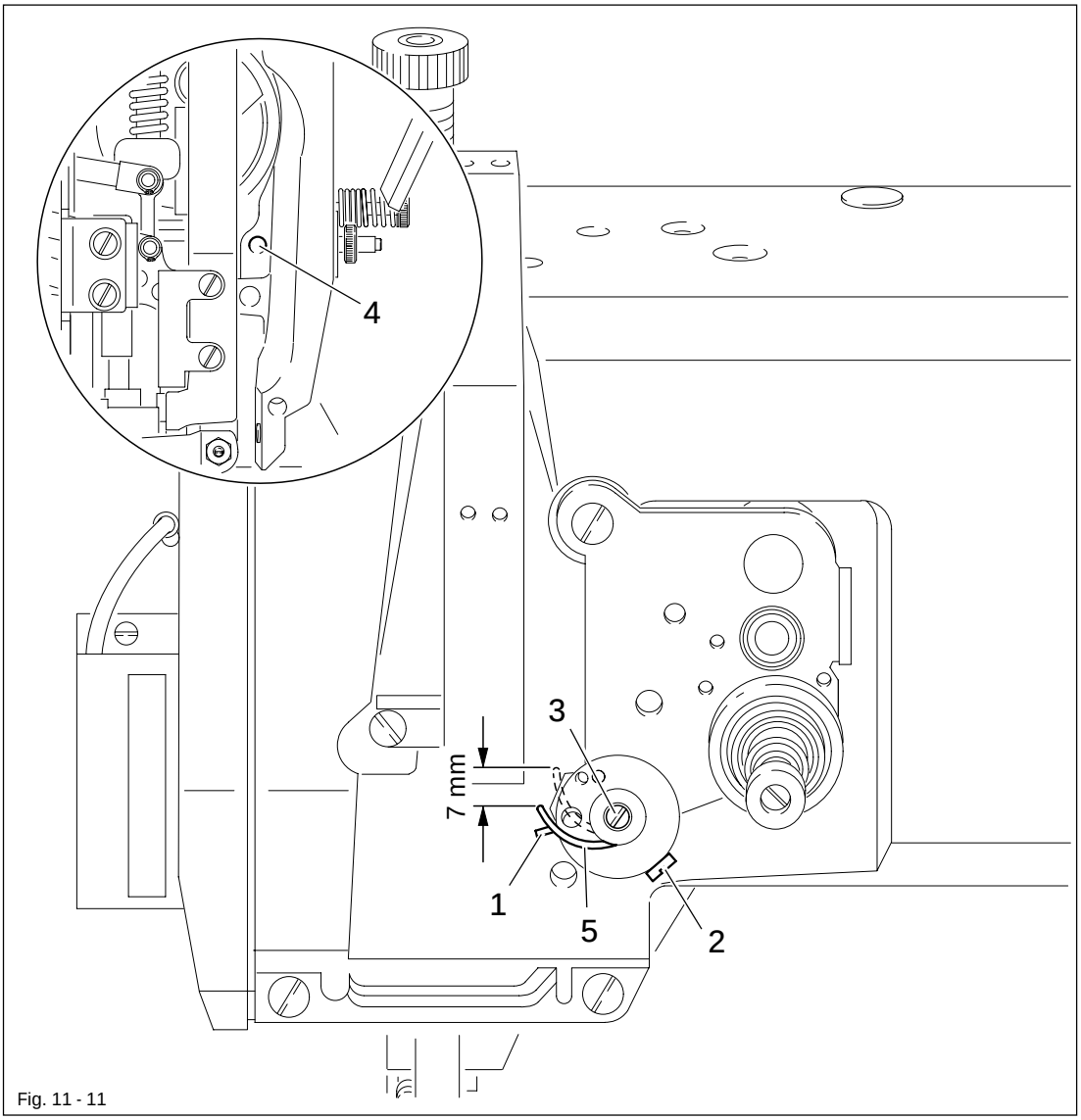


Fig. 11 - 11

- 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.

11.04.12 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.

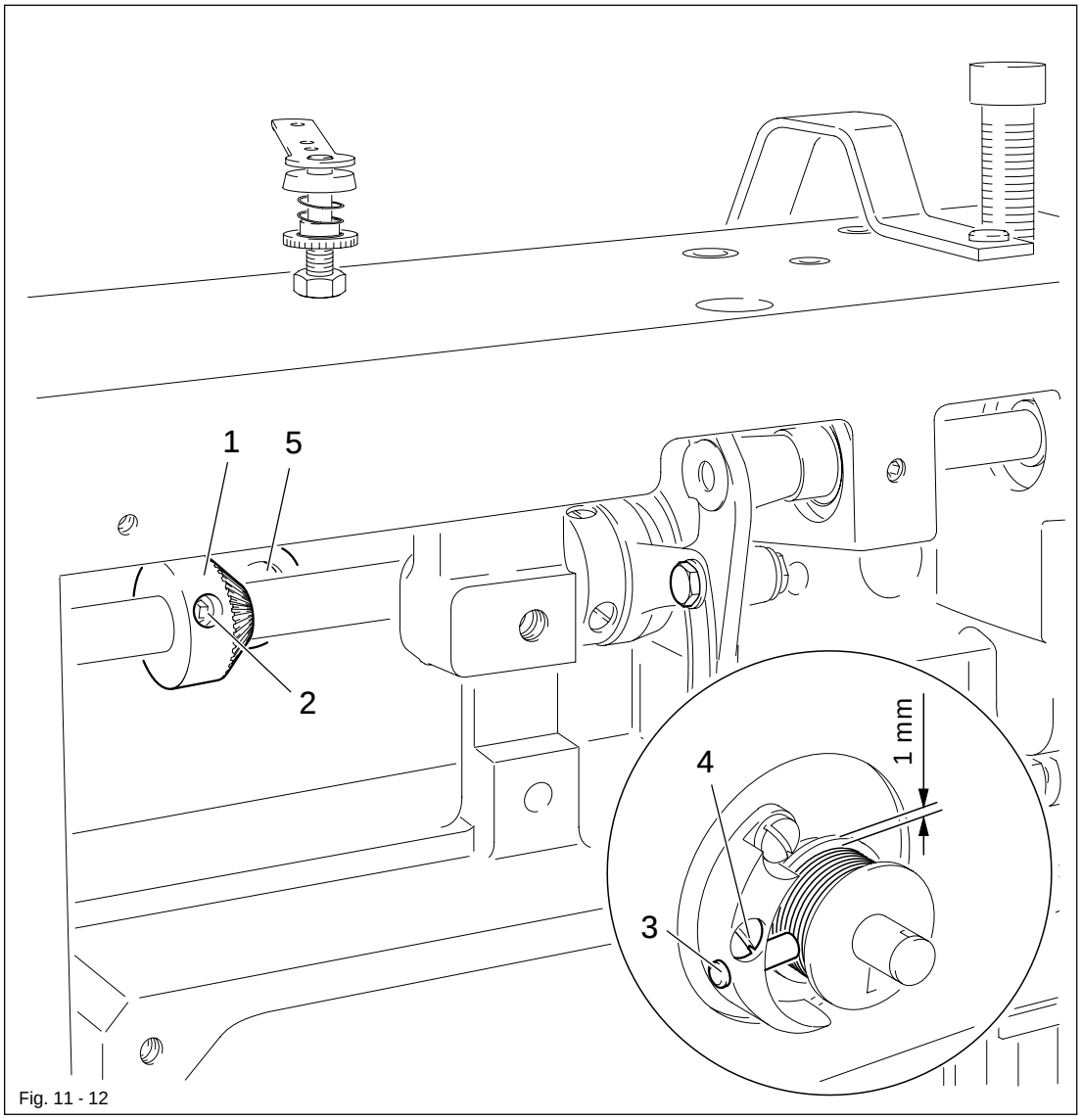
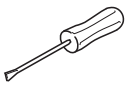


Fig. 11 - 12



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

11.04.13 Pressure of the lifting presser

Requirement
The material must be properly fed, even at the highest sewing speed.

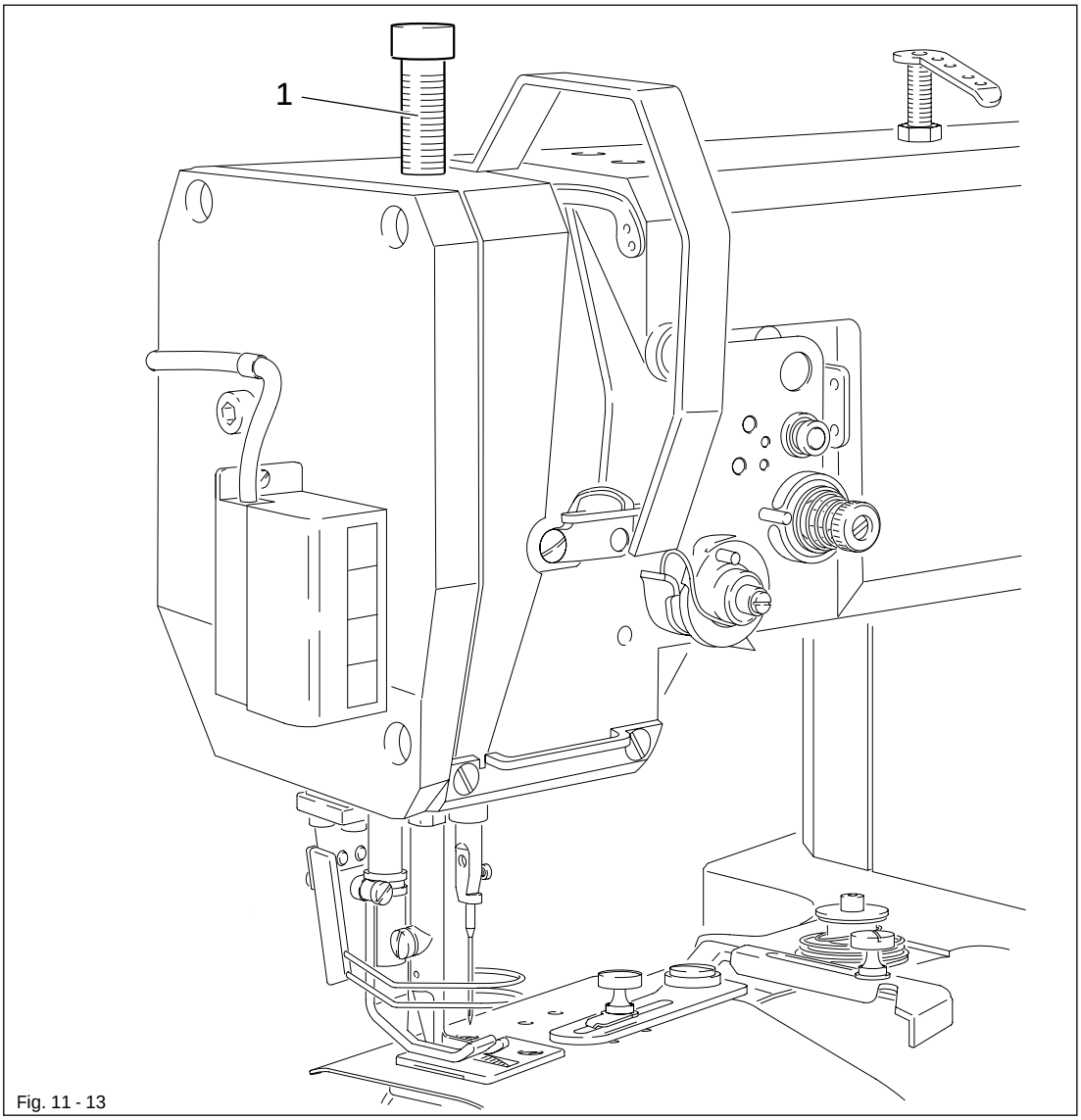
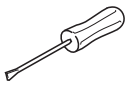


Fig. 11 - 13



- Turn screw 1 according to the Requirement.

11.05 Adjusting the thread trimmer –900/56

11.05.01 Control cam (preliminary adjustment)

Requirement
With the needle bar at b.d.c., groove 4 of control cam 2 must be vertically below control pin 5.

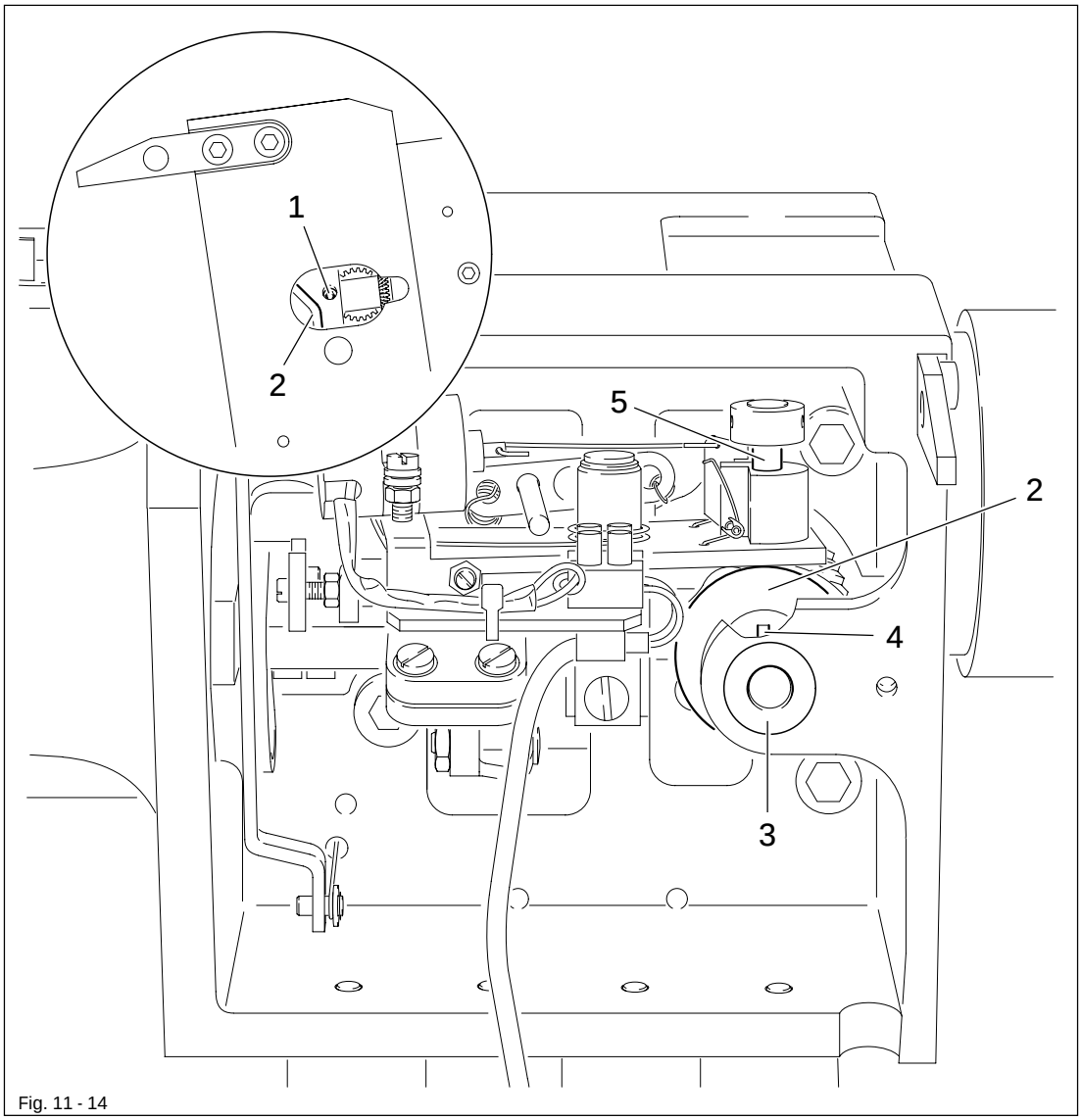
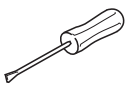


Fig. 11 - 14



- Loosen screws 1 through the hole in the machine housing.
- Set the take-up lever at b.d.c.
- Turn control cam 2 according to Requirement.
- Move control cam 2 down against bearing 3 and tighten the accessible screw 1.
- Make the second screw 1 accessible and tighten it also.

11.05.02 Control lever height

Requirement
With the needle bar at b.d.c. there must be a clearance of 1.0 mm between control lever 3 and control cam 4.

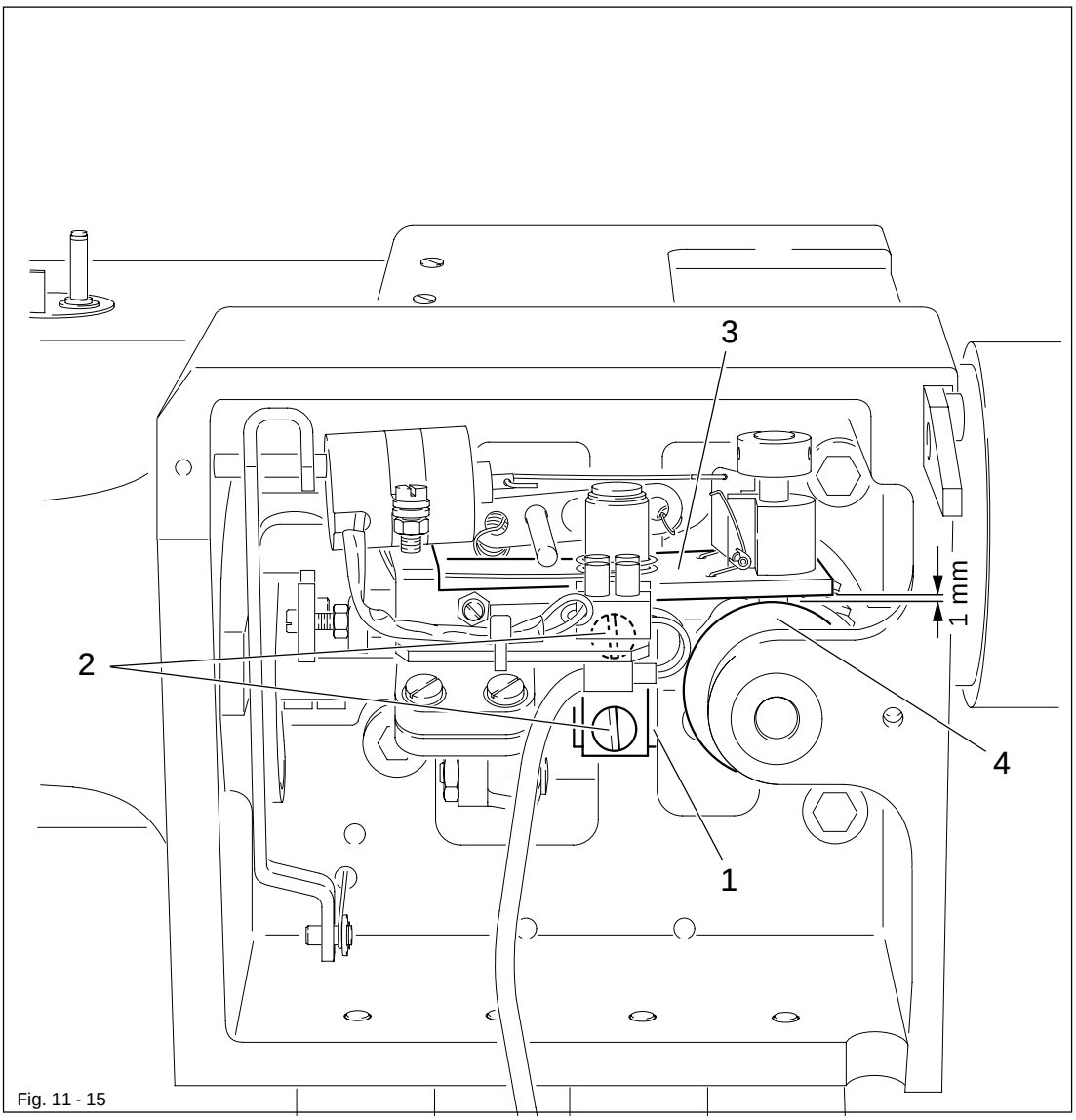


Fig. 11 - 15

- Set the needle bar at b.d.c.
- Position bracket 1 (screws 2) of control lever 3 in the elongated hole according to Requirement.

11.05.03 Control pin

Requirement
With the needle bar at b.d.c. control pin 5 must drop easily into the track of control cam 7 when engaging solenoid 6 is operated.

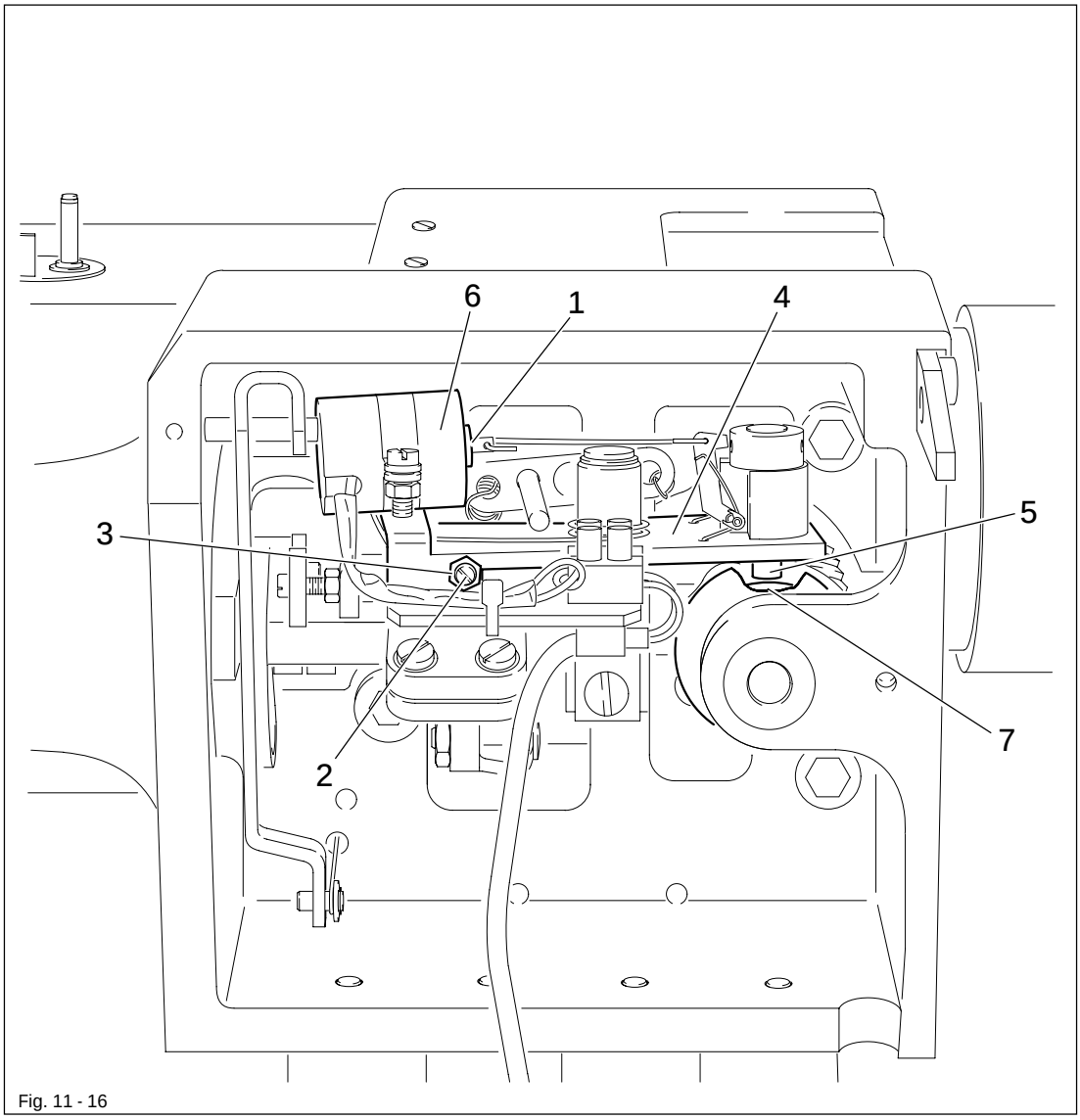
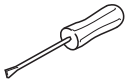


Fig. 11 - 16



- Set the needle bar at b.d.c.
- Operate the solenoid core by hand.
- Turn screw 2 (nut 3) inwards until it is resting lightly against control lever 4.
- Turn screw **2** back again by about half a turn until the movement of control pin 5 corresponds with the Requirement.

11.05.04 Engaging solenoid

Requirement
With the needle bar at b.d.c. and solenoid core 1 fully operated there must be a clearance of approx. 0.5 mm between locking pawl 7 and fixing collar 6.

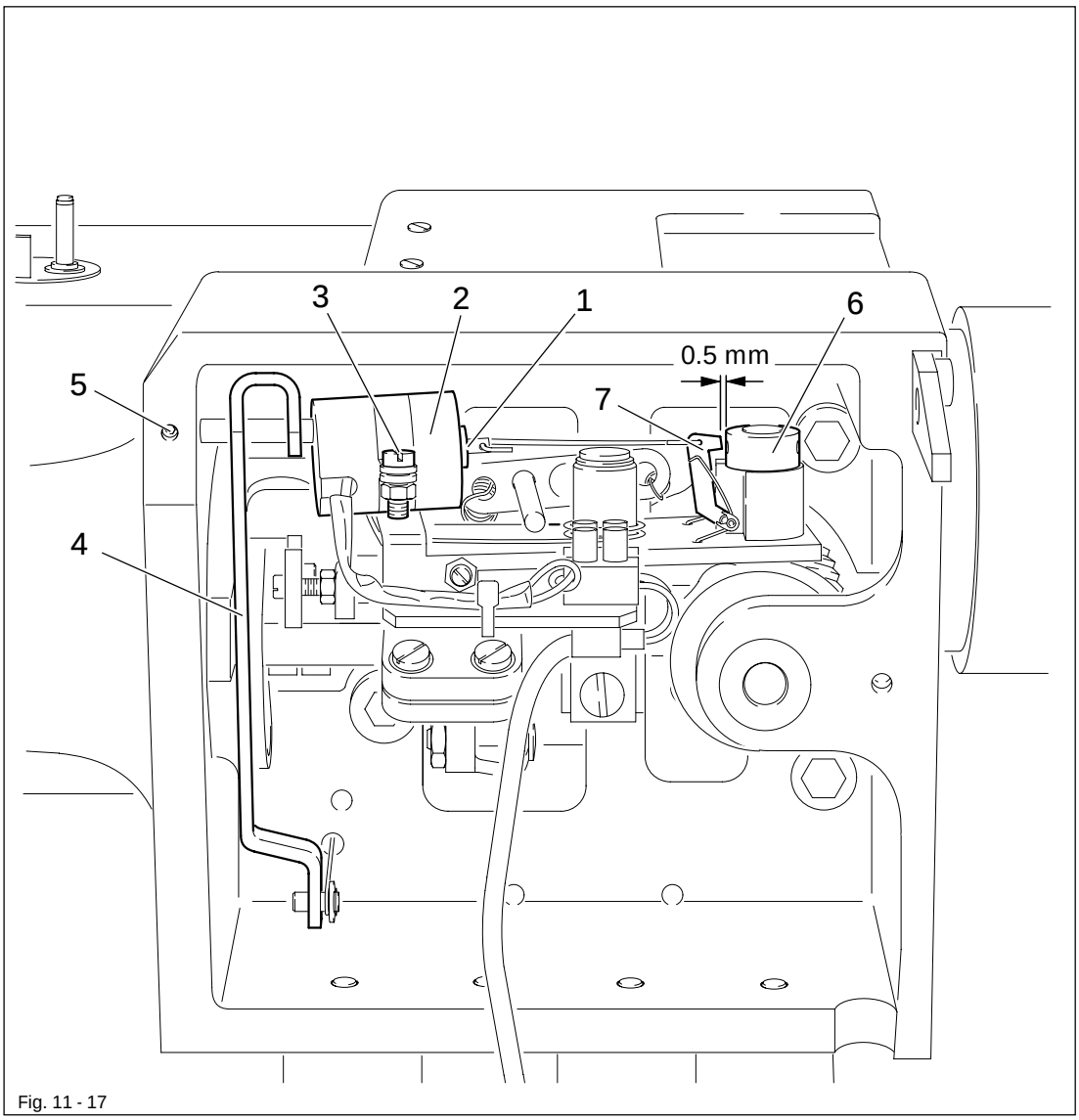


Fig. 11 - 17

- Set the needle bar at b.d.c.
- Push solenoid core 1 fully in.
- Position solenoid housing 2 (screw 3) according to Requirement

If solenoid housing 2 strikes against lever 4, position lever 4 (screw 5) a little farther to the left.

11.05.05 Control pin height

Requirement
With the thread trimmer in its resting position and locking pawl **4** engaged there must be a clearance of **0.3 mm** between the highest point of control cam **5** and control pin **6**.

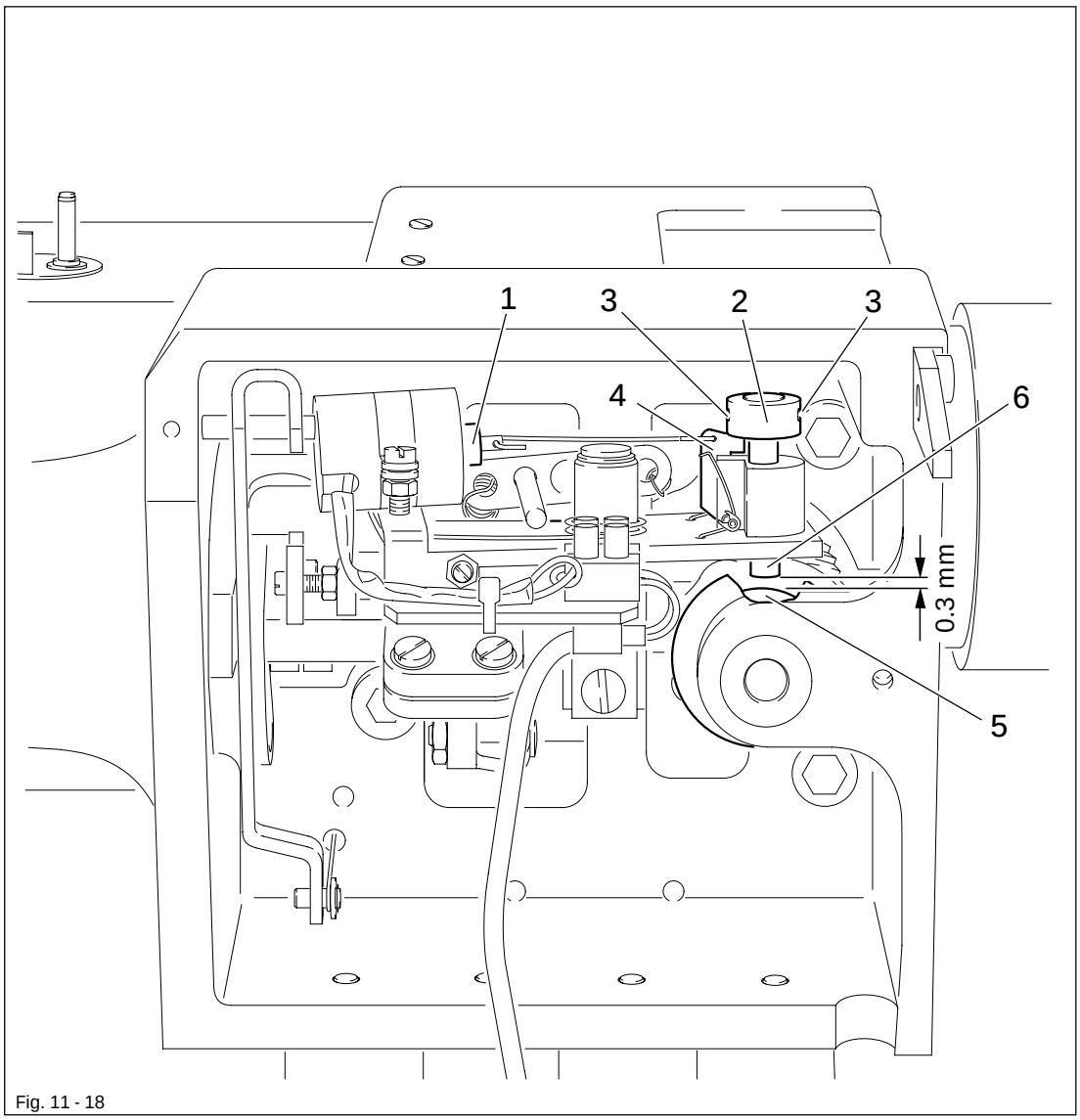
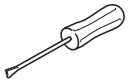


Fig. 11 - 18



- Set the needle bar at t..d.c.
- Operate the solenoid core.
- Position fixing collar 2 (screws 3) according to Requirement.

11.05.06 Front position of thread catcher

Requirement
With thread catcher 3 at its front position the back edge of the thread catcher cutout must be 1 mm beyond the front edge of bobbin case position stop 6.

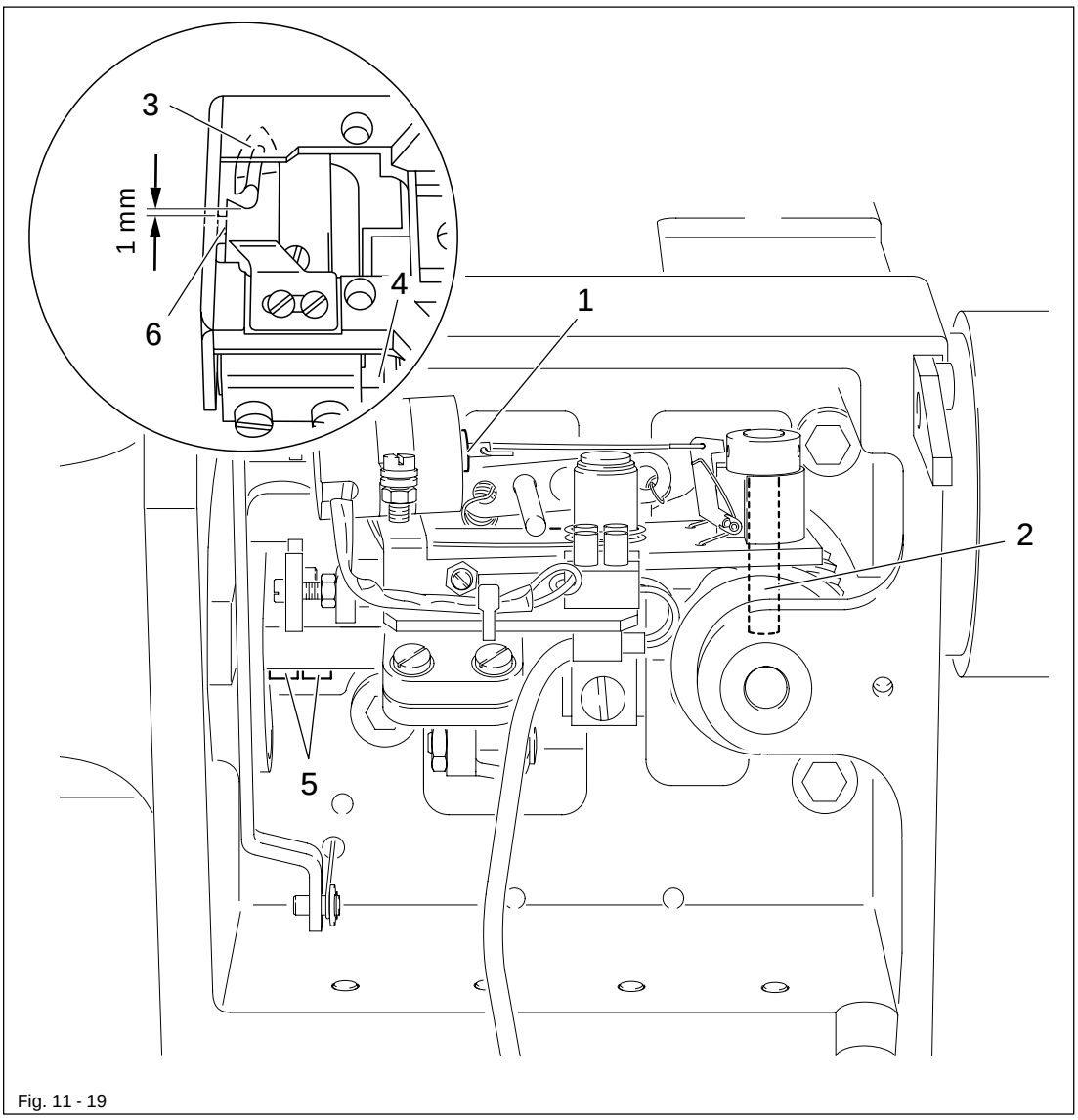


Fig. 11 - 19

- Set the needle bar at b.d.c.
- Operate solenoid core 1 so that control pin 2 drops into the cam track.
- Turn the balance wheel in sewing direction to set thread catcher **3** at its front position.
- Turn thread catcher 4 (screws 5) to set thread catcher 3 according to Requirement.

11.05.07 Lateral position of thread catcher

Requirement
With the needle bar at b.d.c. the point of thread catcher 4 must be at the centre of the needle.

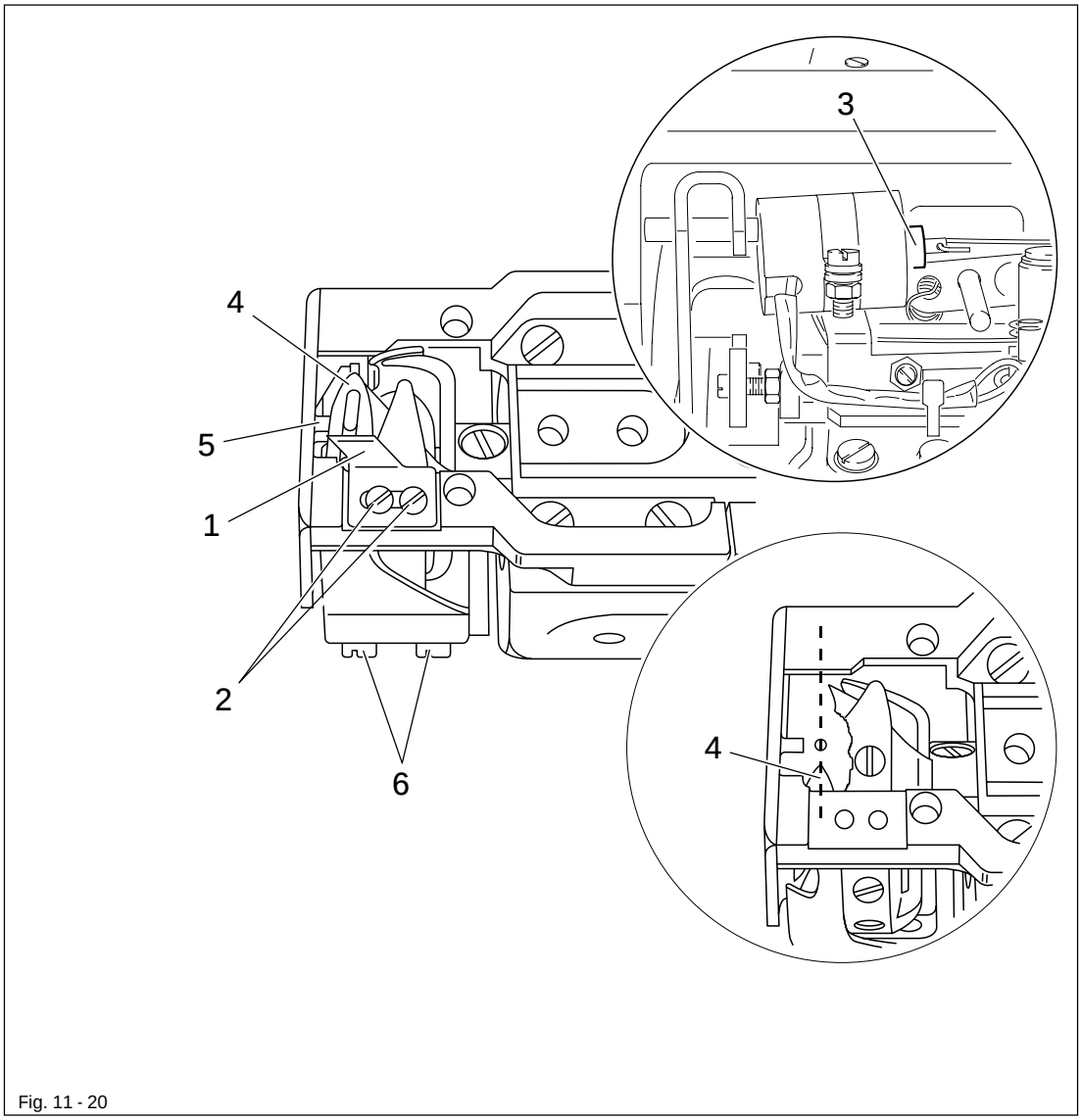
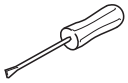


Fig. 11 - 20



- Remove knife 1 (screws 2).
- Set the needle bar at b.d.c.
- Operate solenoid core 3 by hand and turn the balance wheel until the needle bar is at t.d.c. In doing so, make sure that thread catcher 4 does not strike bobbin case position stop **5** during its motion.
- Set lateral position of thread catcher 4 (screws 6) according to **Requirement**.

For further adjustments do not yet refit knife 1.

11.05.08 Control cam (final adjustment)

Requirement
When the end of hook gib 2 is 2 mm behind the centre of bobbin-case position finger 3, as viewed in feeding direction, there must be a clearance of **approx. 4 mm** between catcher point 4 and hook gib 2.

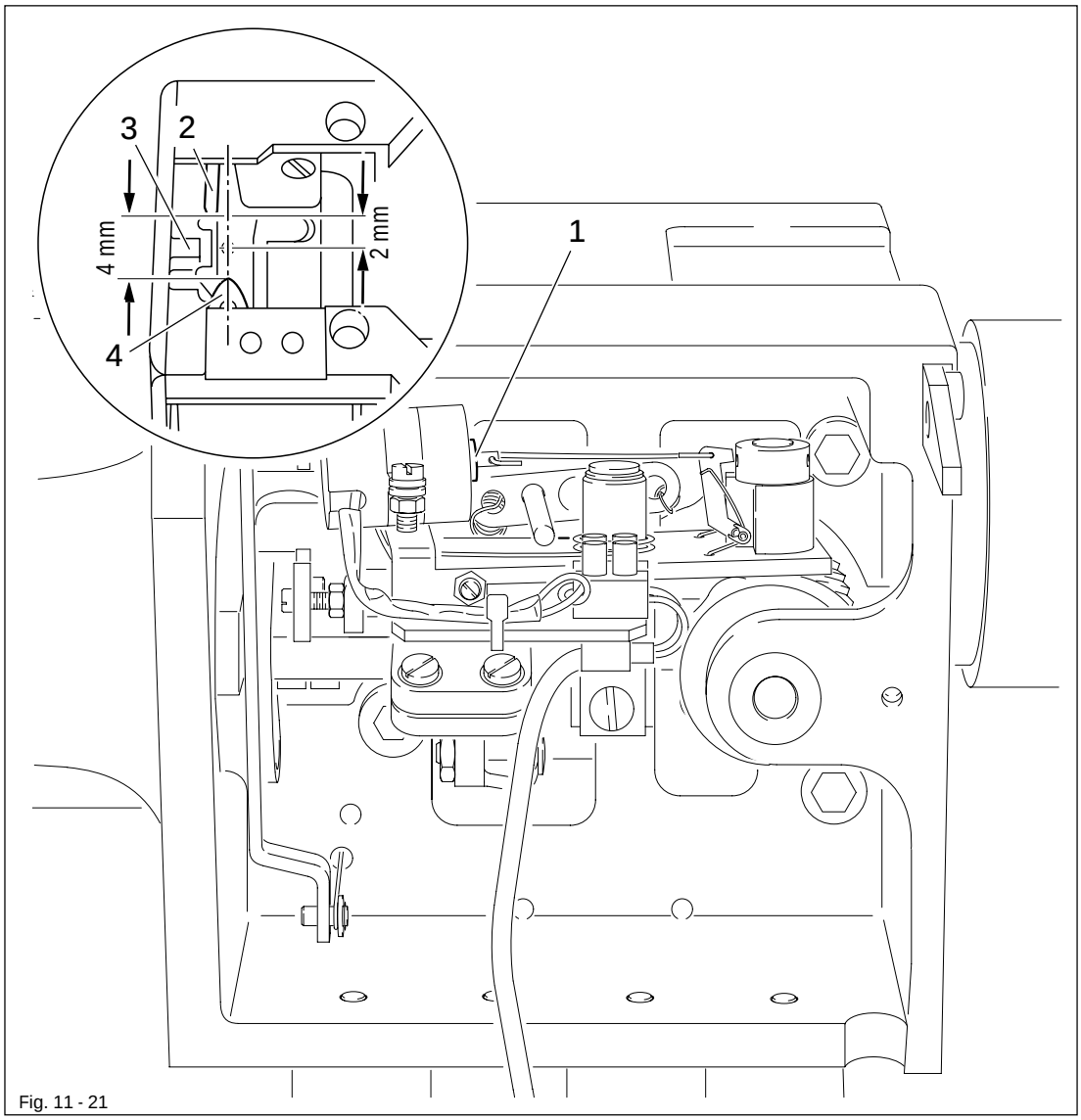
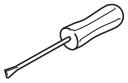


Fig. 11 - 21



- Set the needle bar at b.d.c.
- Operate solenoid core 1 by hand.
- Turn the balance wheel farther (sewing direction) until the end of hook gib 2, viewed in sewing direction, is 2 mm behind the centre of bobbin case position finger 3.
- Check according to requirement and re-adjust control cam if necessary, see Chapter 11.05.01 Control cam (preliminary adjustment).

11.05.09 Knife

Requirement
When the back edge of the thread catcher cutout is 1 mm in front of the knife edge, the left knife edge must be flush with the edge of the thread catcher.

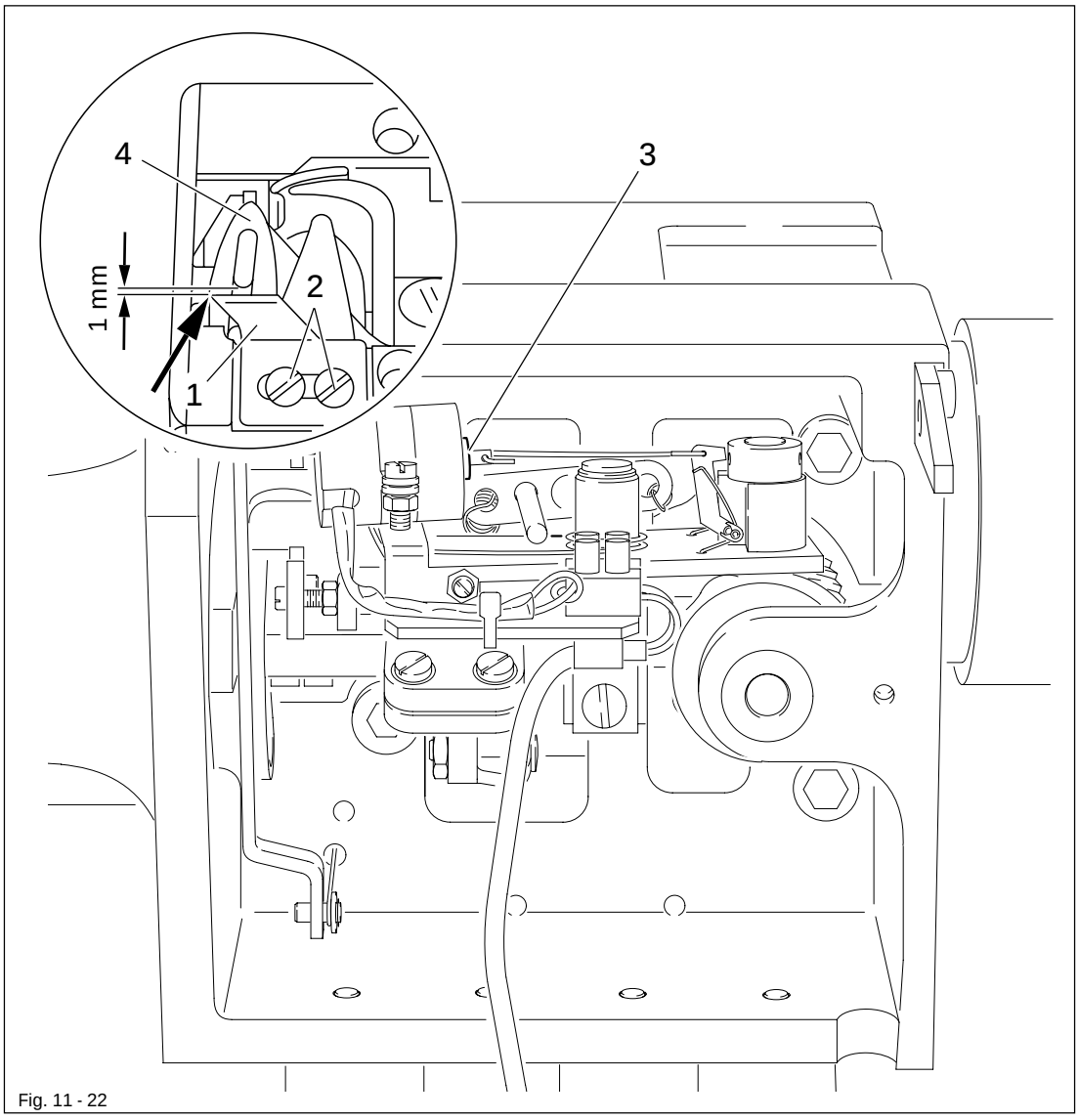
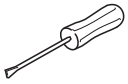


Fig. 11 - 22



- Screw on knife 1 (screws 2) finger-tight.
- Set the needle bar at b.d.c.. and operate solenoid core 3.
- Turn the balance wheel (sewing direction) until the short point of thread catcher **4** is aligned with the knife edge.
- Set the lateral position of knife 1 according to Requirement (see arrow).
- Tighten screws 2.
- Turn the balance wheel to check whether the back of the thread catcher is not twisted in relation to the knife edge.
- If necessary re-adjust thread catcher 4, see Chapter 11.05.07 Lateral position of the thread catcher.

11.05.10 Needle thread tension release

Requirement
When the tip of release lever 5 is at the highest point of release cam 4 the tension discs must be at least 0.5 mm apart.

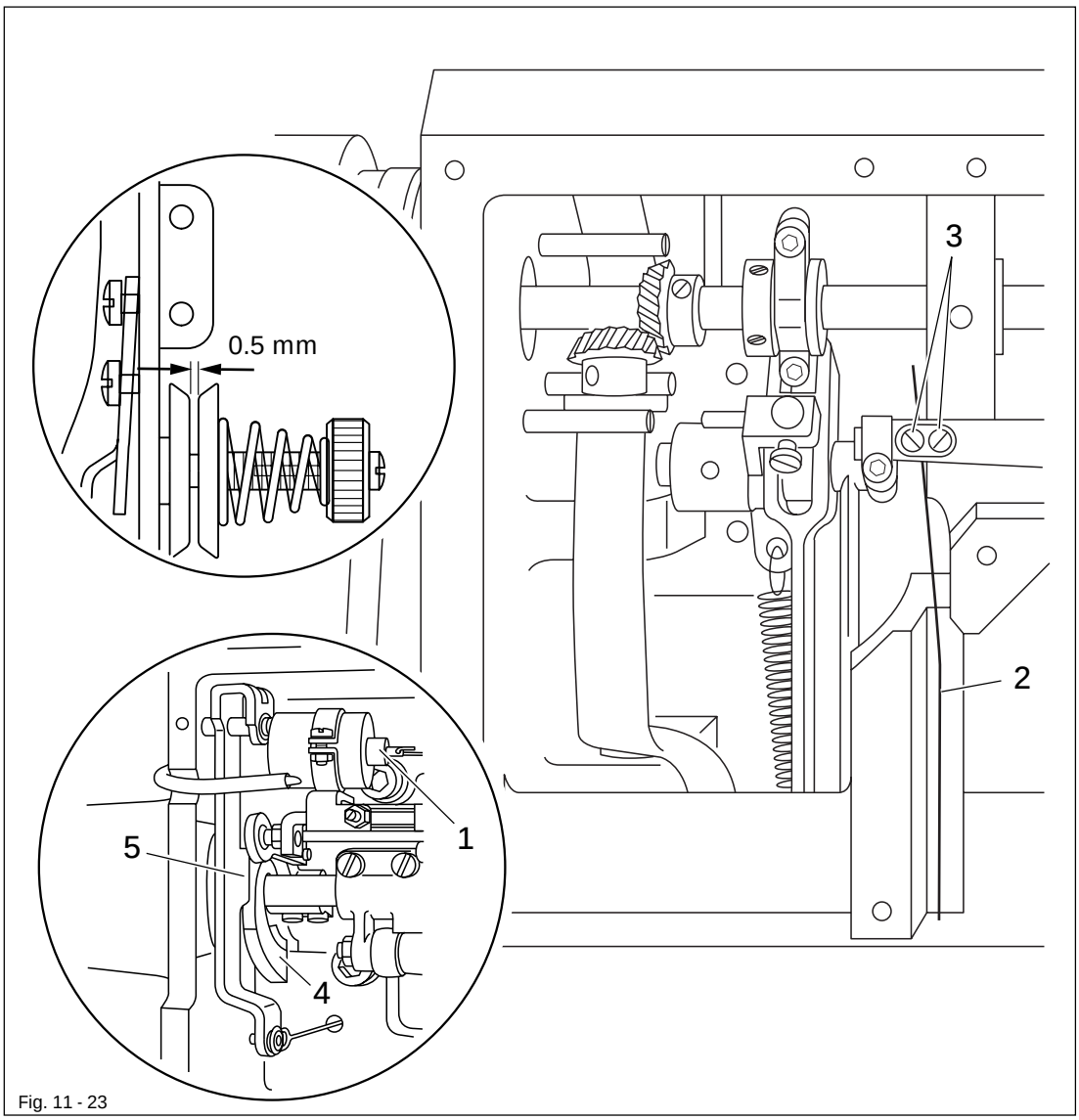


Fig. 11 - 23

- Lower the lifting presser onto the needle plate.
- Set the needle bar at b.d.c. and operate solenoid core 1.
- Turn the balance wheel (sewing direction) until the thread catcher is in its front position.
- Adjust linkage rod 2 (screws 3) according to Requirement.
- Turn the balance wheel to end the trimming action and set the take-up lever at t.d.c.
- Check that the thread tension is fully active.
- Finally, lightly grease the surfaces of release cam 4 and the tip of release lever 5.

11.05.11 Cutting test

Requirement
The knife must stand parallel to the thread catcher and both threads must be reliably cut.

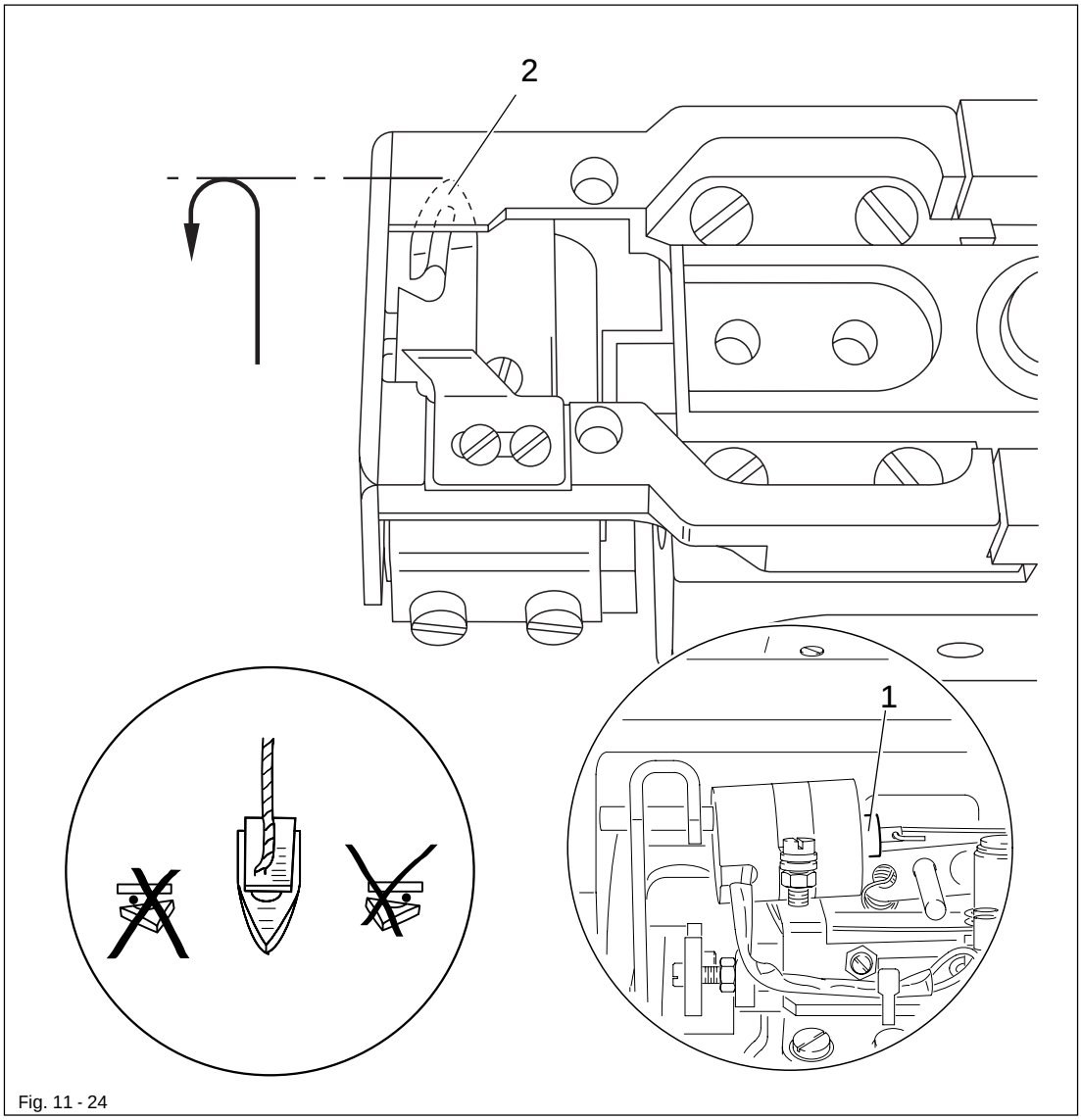


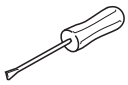
Fig. 11 - 24

- Set the needle bar at b.d.c. and operate solenoid core 1.
- Turn balance wheel (sewing direction) until thread catcher 2 is in its front position.
- Take a double piece of thread, pull it into the cutout of thread catcher 2 and turn the balance wheel farther to make a cutting test.
- Check that both threads are reliably cut.
- If necessary, re-adjust thread catcher 2, see Chapter 11.05.07 Lateral position of the thread catcher.

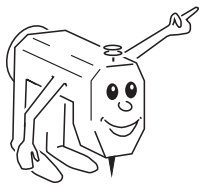
11.05.12 Adjusting the synchronizer

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.



Notes

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