PFAFF® Industrial

335

ADJUSTMENT MANUAL

This adjustment manual applies to machines from the following serial numbers onwards:
6 500 123 →

296-12-19 198/002
Justieranleitung engl. 01.12

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und Maschinen AG

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1 Adjustment



Please observe all notes from Chapter **1 Safety** of the instruction manual!
In particular care must be taken to see that all protective devices are refitted properly after adjustment, see Chapter **1.06 Danger warnings** of the instruction manual!



If not otherwise stated, the machine must be disconnected from the electrical power supply. Danger of injury due to unintentional starting of the machine!

Notes on adjustment

All following adjustments are based on a fully assembled machine and may only be carried out by expert staff trained for this purpose.
Machine covers, which have to be removed and replaced to carry out checks and adjustments, are not mentioned in the text.
The order of the following chapters corresponds to the most logical work sequence for machines which have to be completely adjusted. If only specific individual work steps are carried out, both the preceding and following chapters must be observed.
Screws, nuts indicated in brackets ( ) are fastenings for machine parts, which must be loosened before adjustment and tightened again afterwards.

1.01 Tools, gauges and other accessories for adjusting

- Screwdrivers with blade width from **2** to **10 mm**
- Spanners (wrenches) with jaw width from **7** to **14 mm**
- Allan keys from **2** to **6 mm**
- Metal rule (part No. 08-880 218-00)
- Needle-rise gauge (part No. 61-111 600-01)
- Gauge, (top feed stroke **7 mm**) (Part No. 61-111 633-61)
- Screw clamp (part No. 61-111 600-35)

1.02 Abbreviations

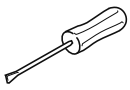
t.d.c. = top dead centre
b.d.c. = bottom dead centre

1.03 Explanation of the symbols

In this adjustment manual, symbols emphasize operations to be carried out or important information. The symbols used have the following meaning:



Note, information



Service, repair, adjustment, maintenance
(work to be carried out by qualified staff only)

1.04 Adjusting the basic machine

1.04.01 Lateral positioning of the feed dog

Requirement
The clearances from the left and right of the bottom feed dog **1** to the needle plate cutout must be the the same size.

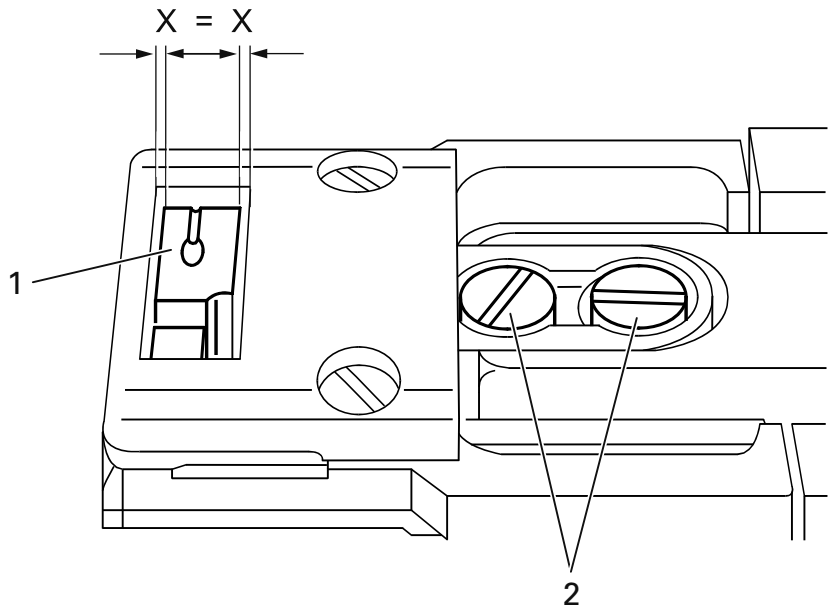
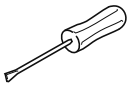


Fig. 1 - 01



- Move the bottom feed dog **1** (screws **2**) in accordance with the **requirement**.

1.04.02 Lengthwise positioning of the feed dog

Requirement
With the stitch length set at its longest the clearances behind and in front of the bottom feed dog **4** to the needle plate cutout must be the same.

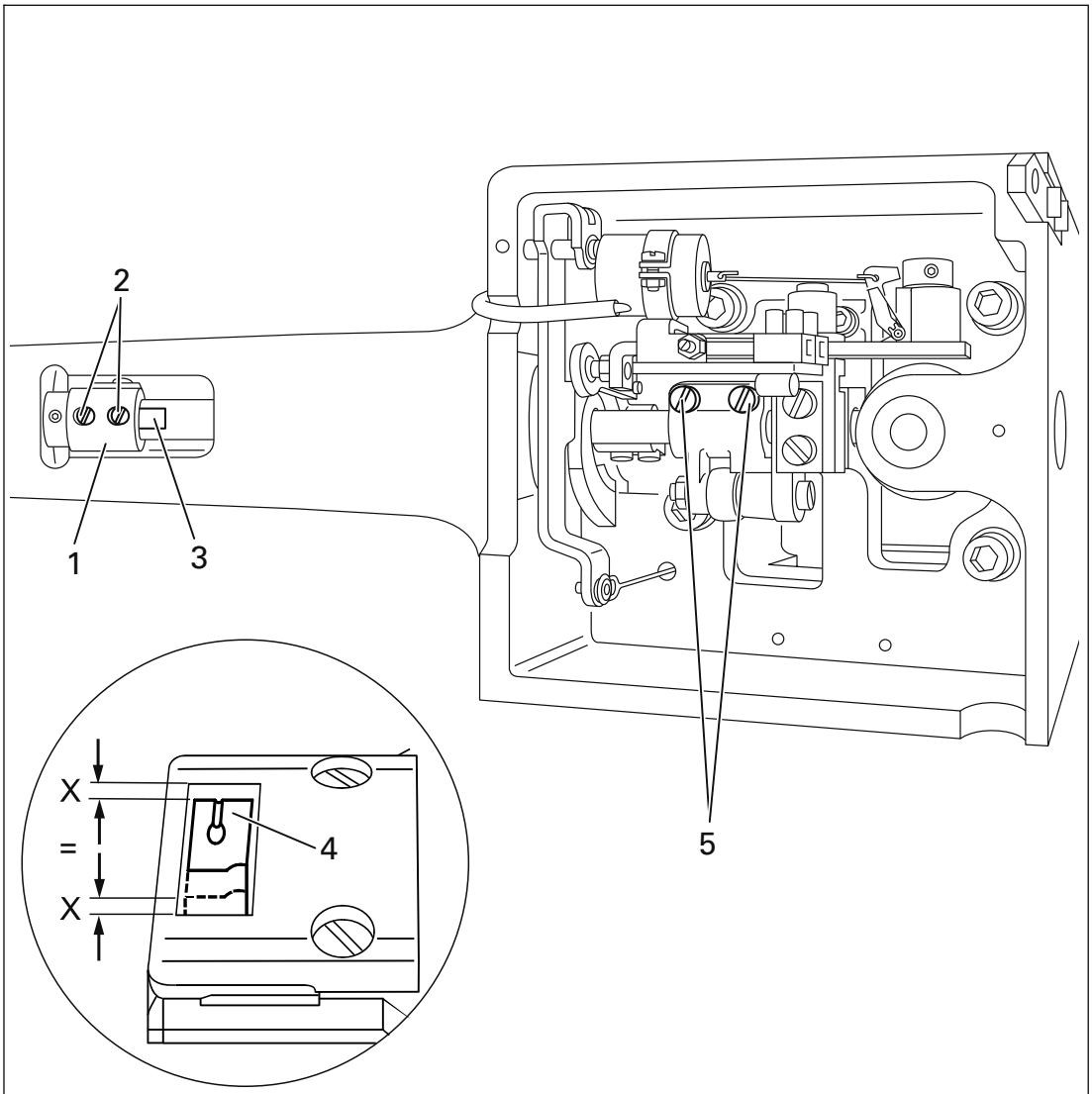


Fig. 1 - 02

- Set the longest stitch length.
- Move the clamp piece **1** (screws **2**) as far to the left as possible on the clamp surface **3** of the rock shaft. The left screw must still be on the clamp surface.
- Position feed dog **4** (screws **5**) according to **requirement**.

1.04.03 Height of the bottom feed dog (only on machines with lifting phase – P-version)

Requirement
When the stitch length is set at "**0**", in its highest position the bottom feed dog **4** should be **0.8 - 1.1 mm** above the top edge of the needle plate.

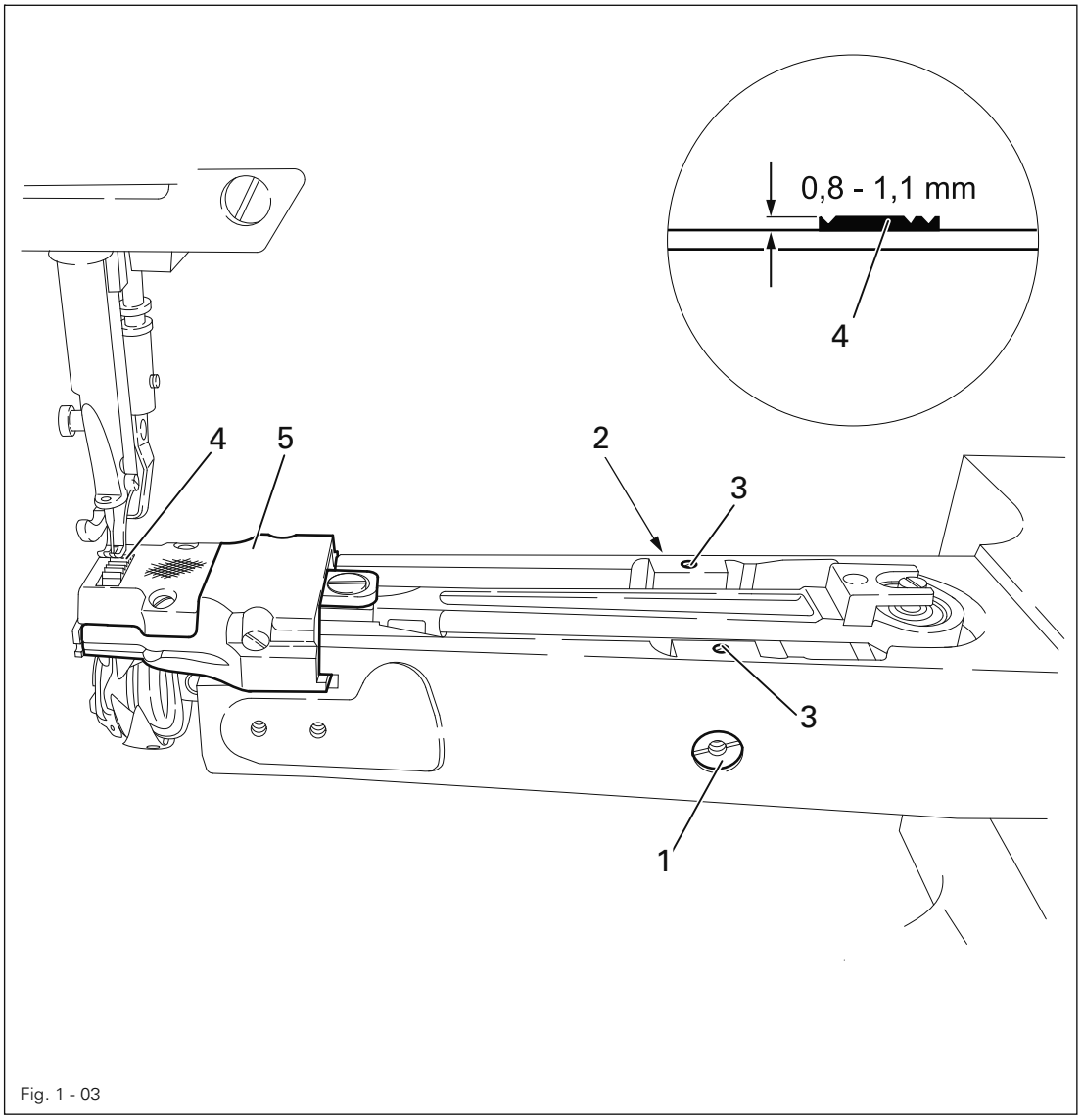


Fig. 1 - 03

- Set the stitch length at "**0**".
- Adjust eccentric **1** and **2** (screws **3)** in accordance with the **requirement**.

The bottom feed dog **4** should not touch cloth plate **5.**

1.04.04 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.

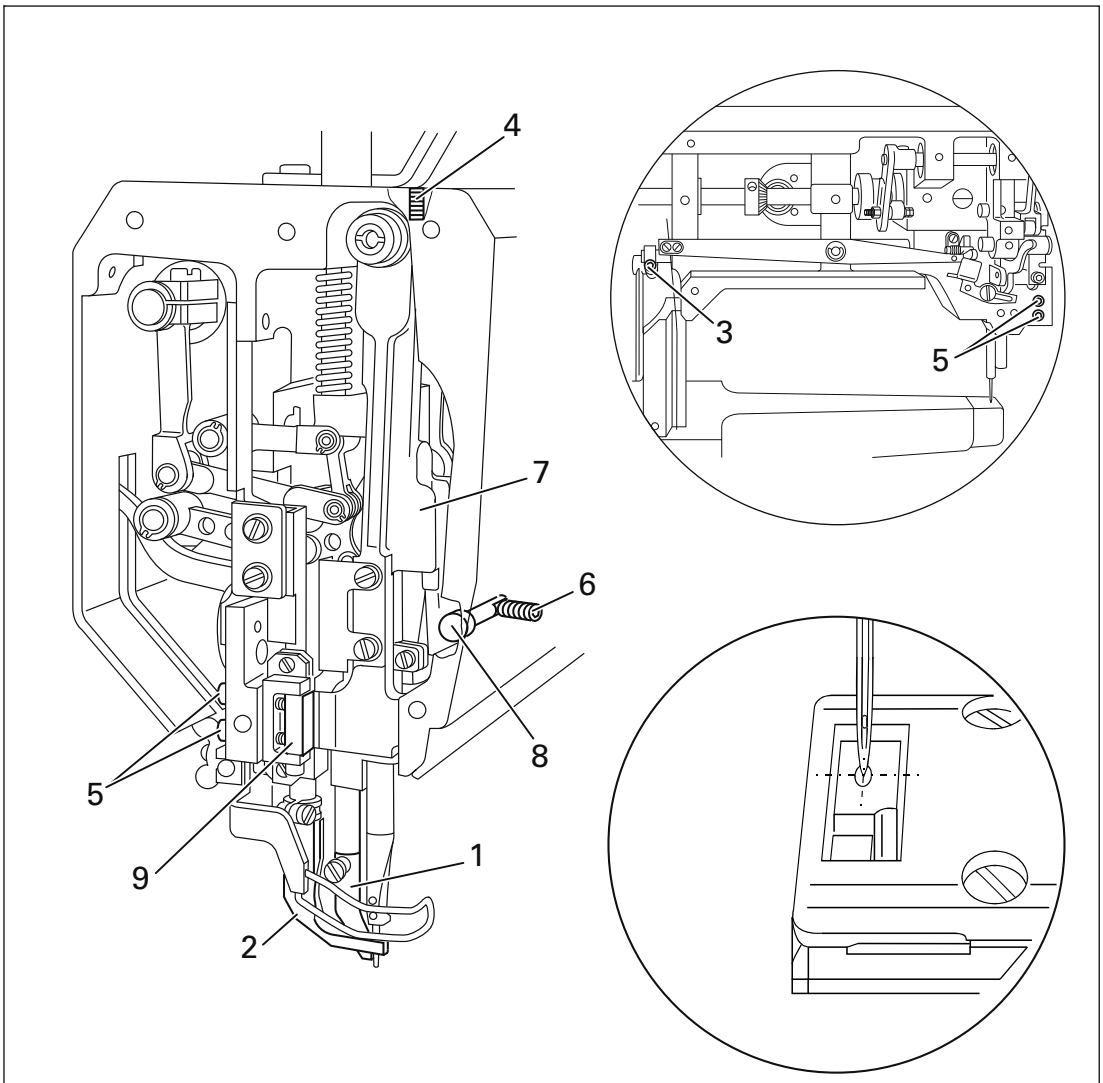
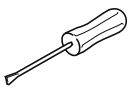


Fig. 1 - 04



- Unscrew the vibrating presser foot **1** and the presser foot **2.**
- Set the stitch length at "**0**" and bring the needle to its tdc.
- Insert a new needle. Loosen screws **3, 4, 5** and **6.**
- Bring the needle to a position directly over the bottom feed dog by turning the handwheel.
- Move the needle bar frame **7** in accordance with the **requirement**.
- Tighten screws **3, 4** and **5.**
- Position stop **8** so that it is touching the needle bar frame **7** and tighten screw **6.**

The needle bar frame **7** in guide **9** and the vibrating presser drive shaft must move freely.

1.04.05 Pre-adjusting the needle height

Requirement
With the needle bar at its bdc the distance between the needle bar and the needle plate must be **15 mm**.

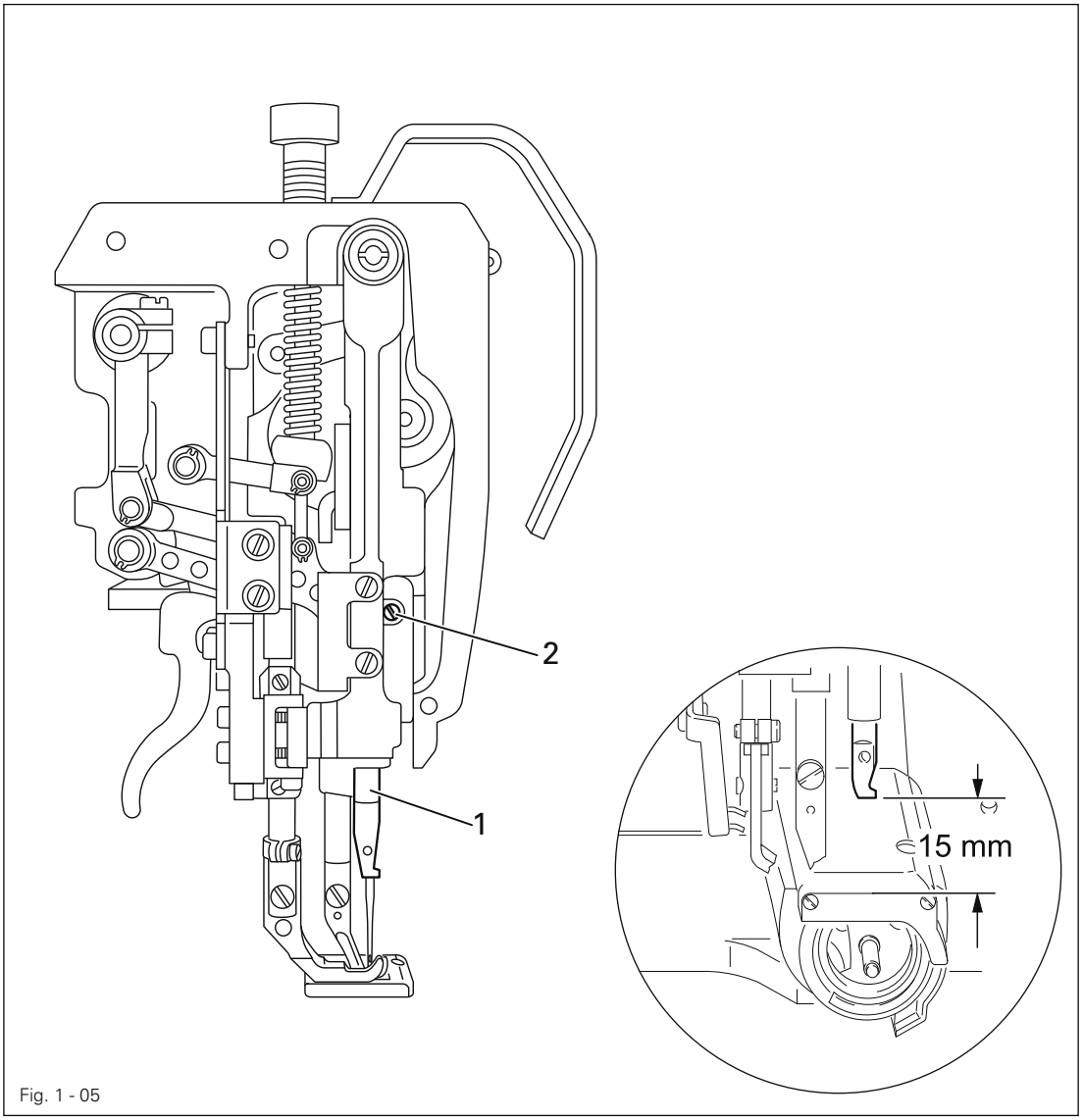


Fig. 1 - 05

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

1.04.06 Driving motion of the top and bottom feed dogs

Requirement
With the longest stitch length set and the needle bar at its bdc the top and bottom feed dogs should not move when the reverse feed lever is activated.

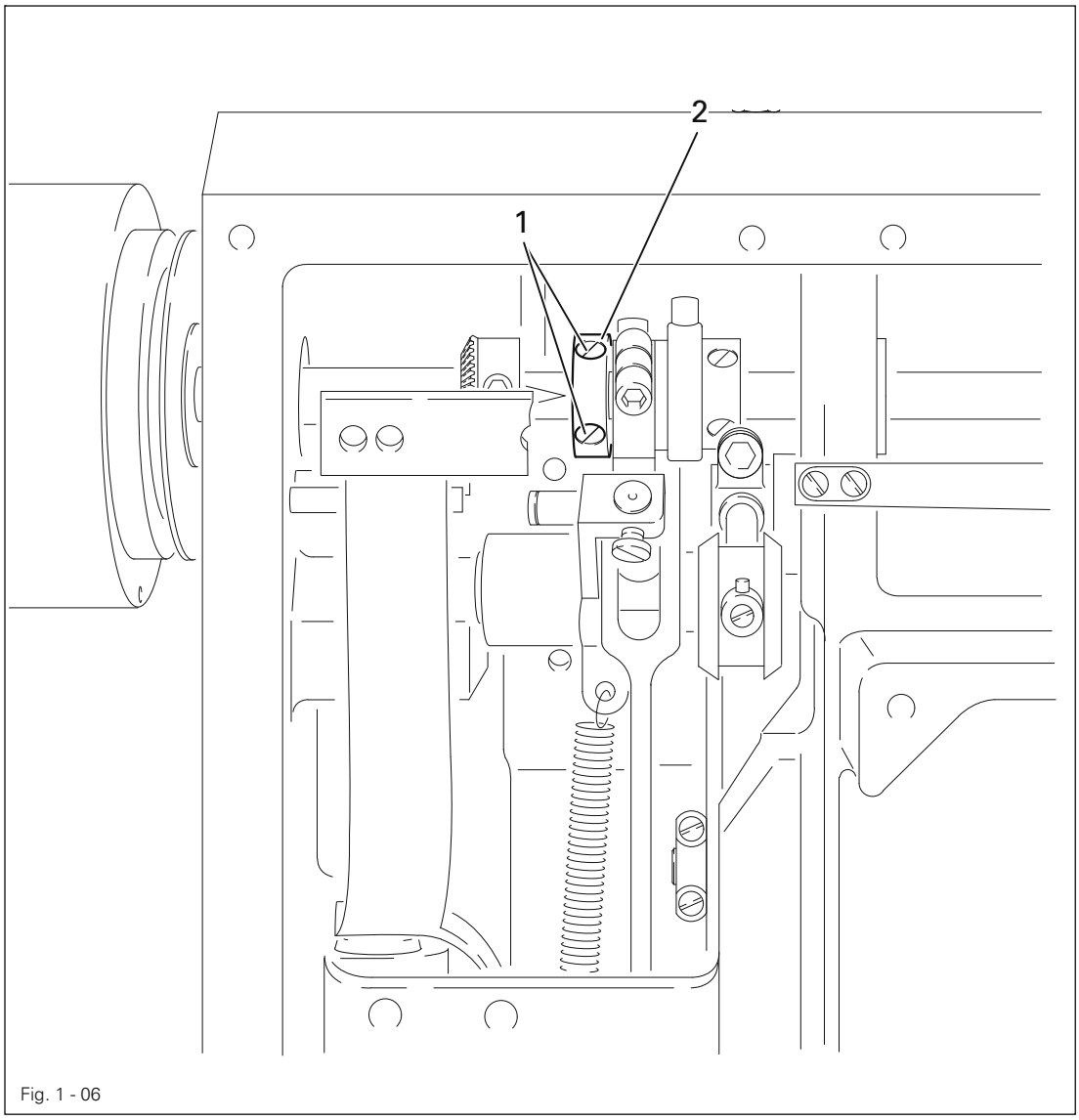
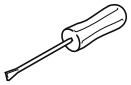


Fig. 1 - 06



- Set the longest stitch length.
- Loosen screw **1** far enough so that the feed driving eccentric **2** can be turned on the shaft with some difficulty.
- Bring the needle to its bdc.
- While keeping this position, move the feed driving eccentric **2** to the top and then move it slightly so that the **requirement** is fulfilled when the reverse feed lever is activated.
- Tighten screws **1.**

1.04.07 Lifting motion of the bottom feed dog

(only on machines with lifting phase – P-version)

Requirement

1. With the needle bar positioned at b.d.c., the bottom feed doc should be in the t.d.c. position.
2. With the maximum stitch length set, when the balance wheel is turned the bottom feed dog should reach the needle plate surface at the same time as the needle point.

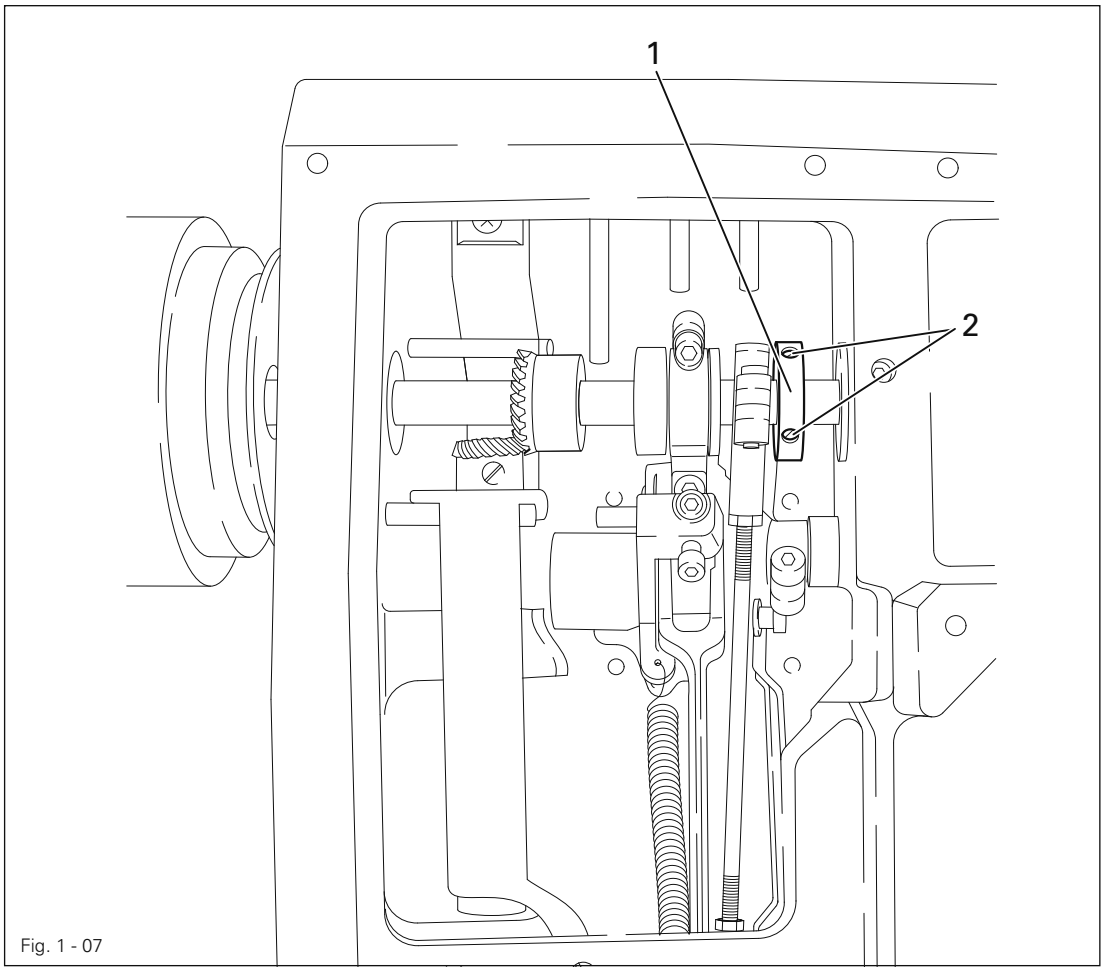
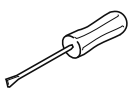


Fig. 1 - 07



- Adjust eccentric **1** (screws **2**) in accordance with the **requirements**.

1.04.08 Needle rise, hook-to-needle clearance and needle height

Requirement
With the stitch length set at "**3**" (**1.8 mm** after the bdc of the needle bar) the following must be correct:

1. The hook point must be opposite the middle of the needle and the distance to the needle must be **0.05** - **0.1 mm**.
2. The top edge of the needle eye must be **0.8 mm** from the hook point.

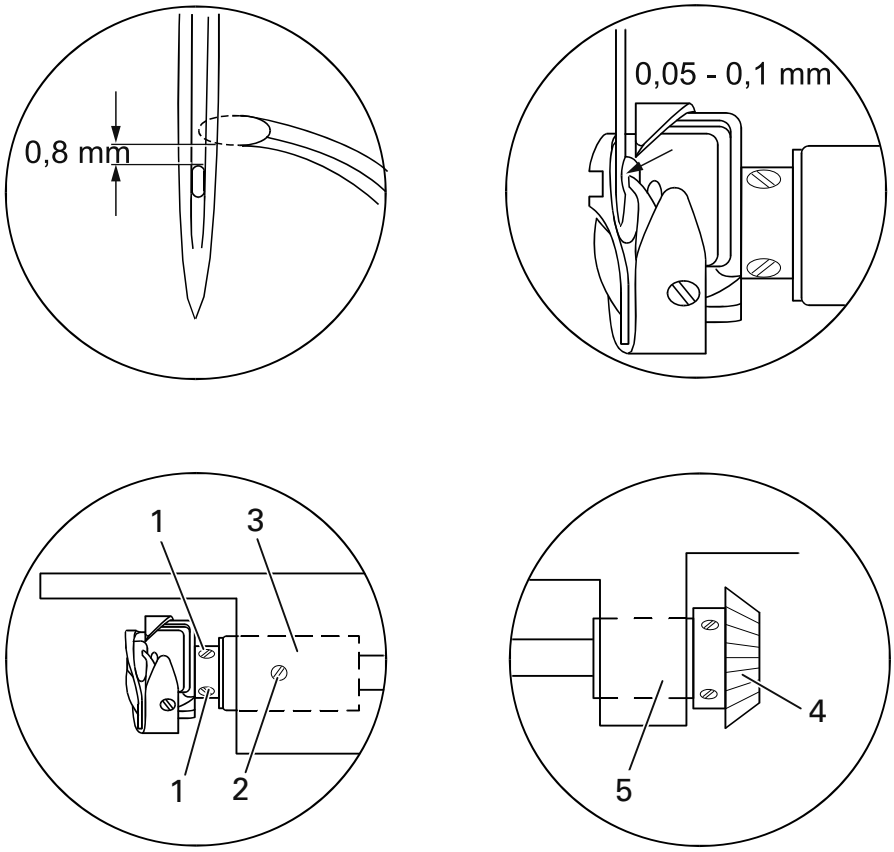
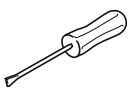


Fig. 1 - 08



- Set the stitch length at "**3**" and loosen screws **1** and **2** (screw **2** is on the back 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.
- Remove the measuring plate and turn the handwheel in its direction of rotation until the screw clamp is touching the needle bar bearing.
- Move the hook on the hook shaft in accordance with **requirement 1.**
- Rotate the hook in accordance with **requirement 2** (adjust needle height if necessary).
- Bring the hook shaft bearing **3** to rest on the hook and tighten screw **2.**
- Taking care to ensure that the bevel gear **4** is resting on the bearing **5,** tighten screws **1.**



On machines with a thread trimmer the adjustment of the axial play on the hook shaft and the adjustment of the hook shaft bearing **3** are not necessary.

1.04.09 Vibrating presser lift

Requirement
With the vibrating presser lift at maximum and the stitch length set at "**0**", presser foot **1** and vibrating presser foot **2** must lift **7.0 mm** from the needle plate when the handwheel is rotated.

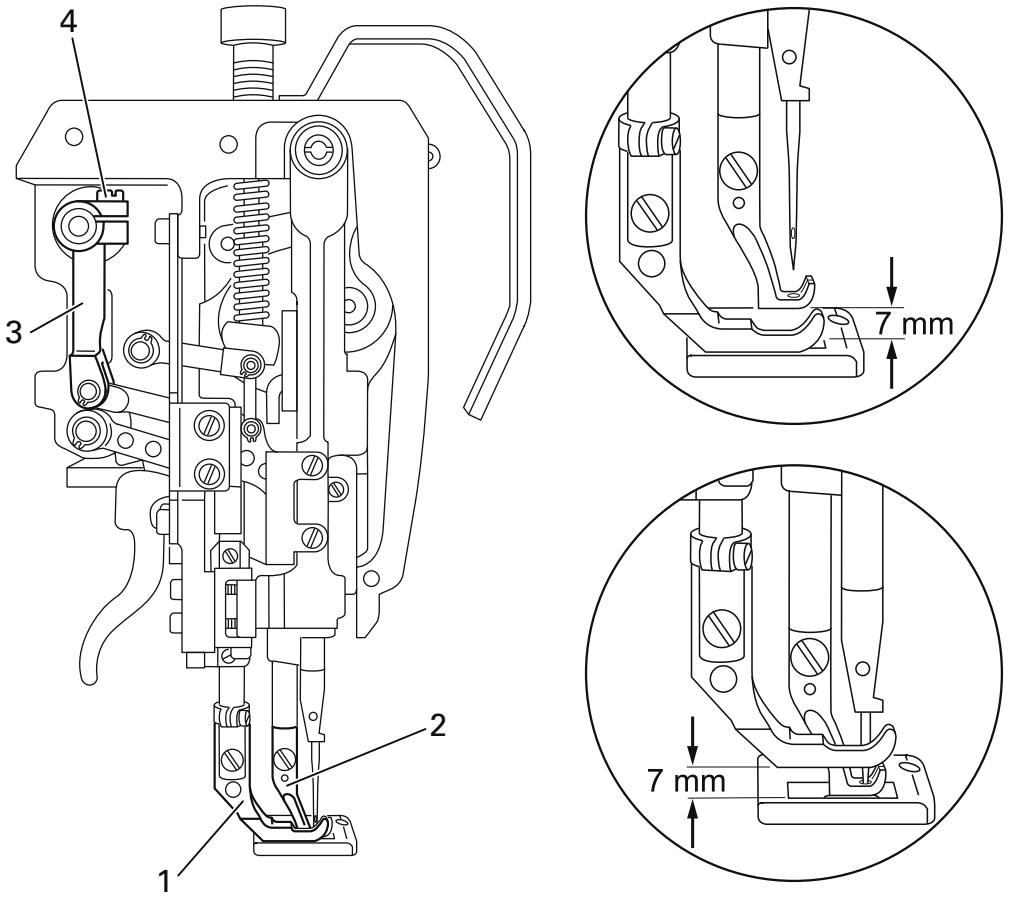


Fig. 1 - 9

- Set the vibrating presser lift at maximum and the stitch length at "**0**".
- Allow the presser foot **1** to rest on the needle plate.
- Turn the handwheel in its direction of rotation until the vibrating presser foot **2** has reached its highest point.
- Turn crank **3** (screws **4**) in accordance with the **requirement**.
- Carry out a check.

1.04.10 Vibrating presser feeding motion

Requirement
With the presser foot **3** resting on the needle plate the vibrating presser **6** and the needle point must both reach the needle plate at the same time with the vibrating presser stroke at maximum.

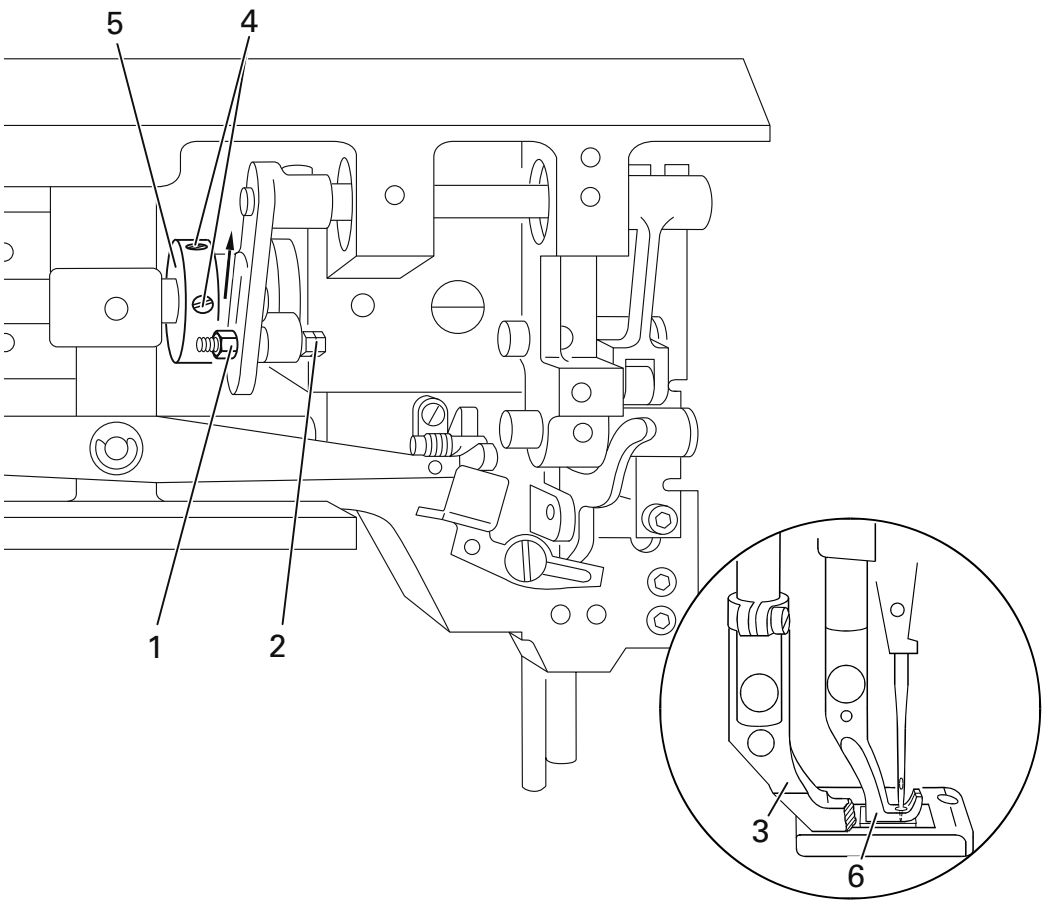
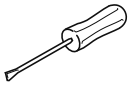


Fig. 1 - 10



- Loosen nut **1.**
- Slide bolt **2** upwards in the elongated hole and tighten nut **1.**
- Allow the presser foot **3** to rest on the needle plate.
- Loosen screws **4** enough so that the feed lifting eccentric **5** can be rotated with difficulty.
- Rotate the lifting eccentric **5** in accordance with the **requirement**.
- Tighten screws **4.**
- Carry out a check.

1.04.11 Needle thread tension release

Requirement
With the presser foot lifted, the two tension disks must be at least **0.5 mm** apart.

The distance of **0.5 mm** is the minimum clearance. The clearance can range up to more than **1 mm** with thick threads.

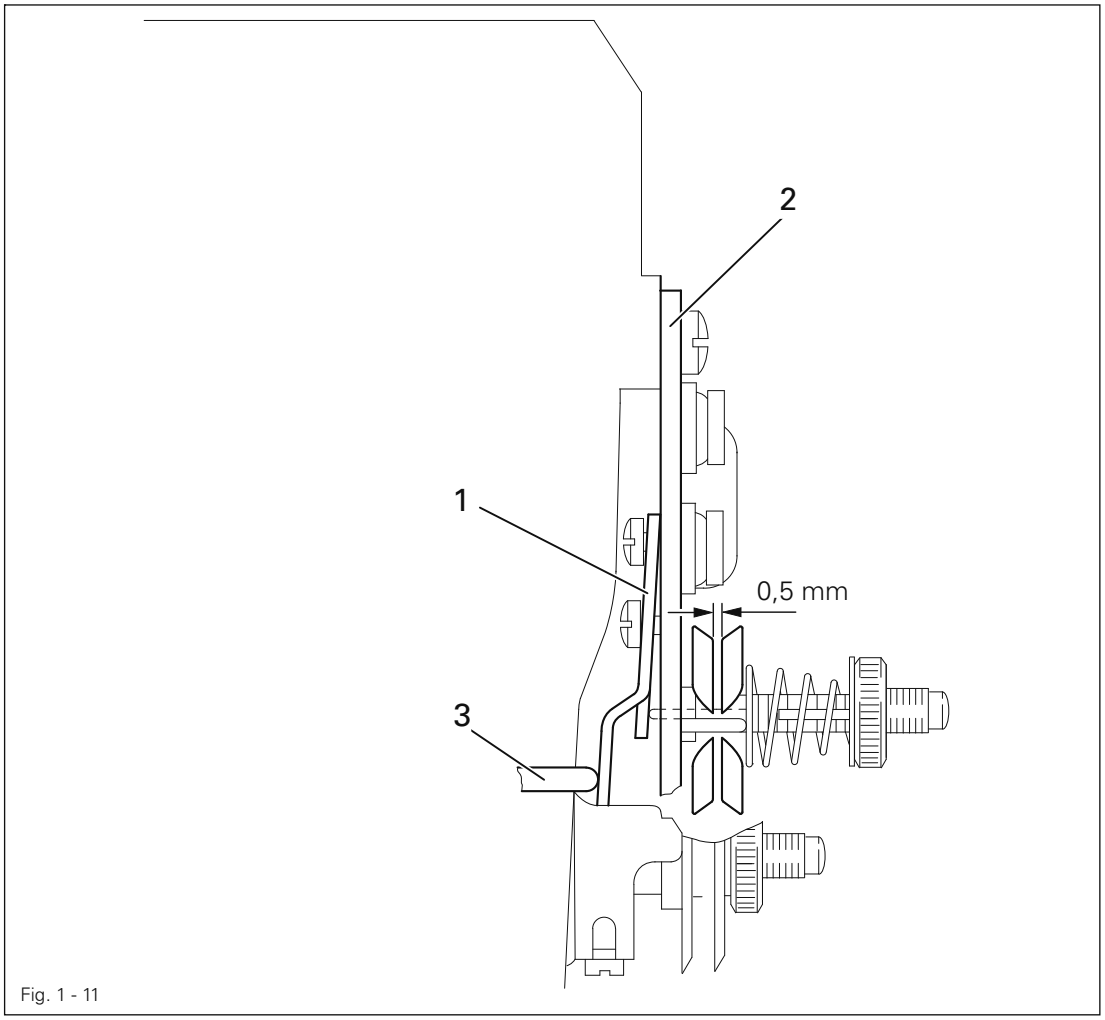


Fig. 1 - 11

- Raise the presser foot using the hand lever.
- Align the compression plate **1** behind the tension bearing board **2** in accordance with the **requirement**.

When the tension is correct the release pin must not be under pressure.

1.04.12 Thread check spring

Requirement
The movement of the thread check spring must be finished when the needle point enters the material (= approx. **7 mm** spring movement).

The length of the spring movement can vary a little upwards or downwards due to changes in the sewing parameters.

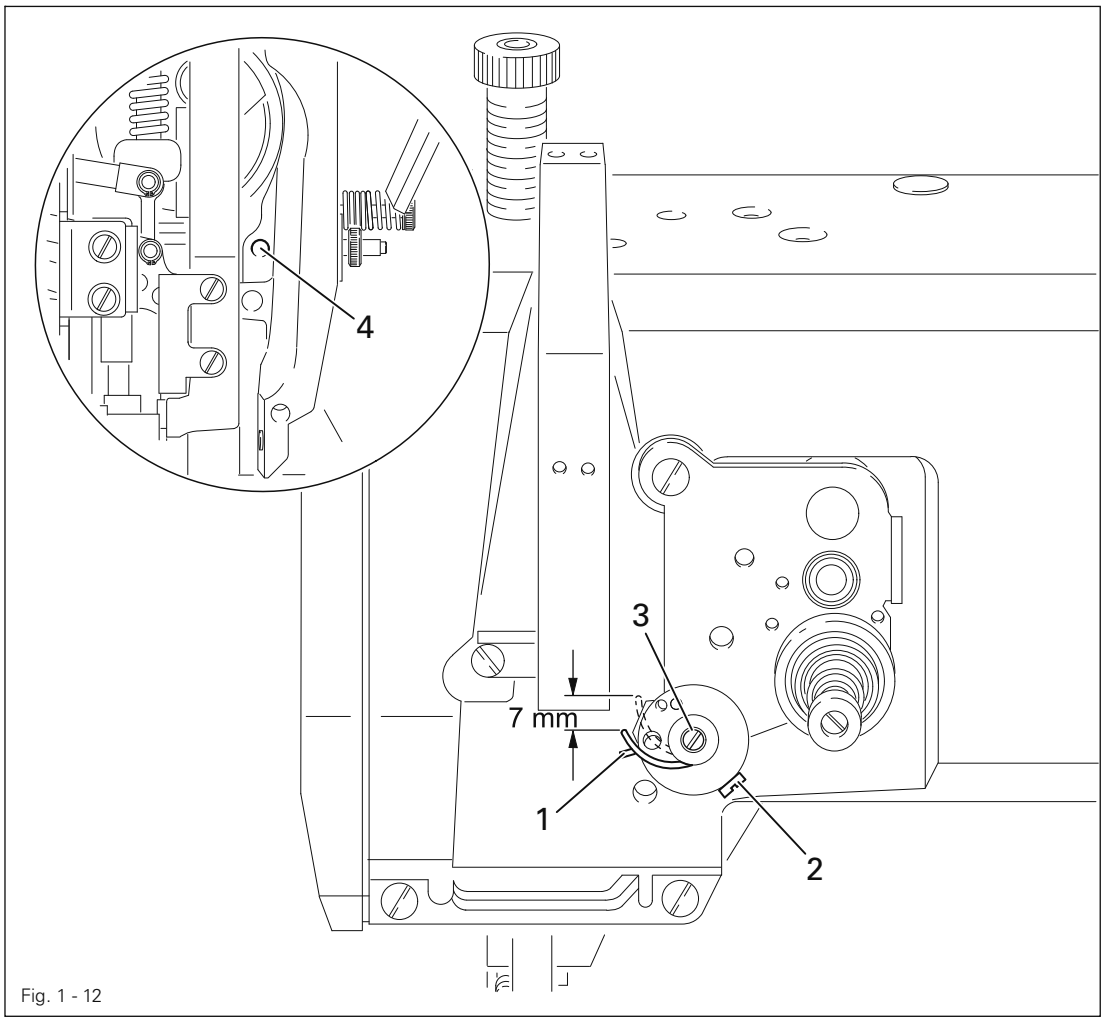


Fig. 1 - 12

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

1.04.13 Bobbin winder

Requirement

1. With the bobbin winder engaged the winder spindle must be driven reliably. With the bobbin winder disengaged, however, the friction wheel **5** must not touch the drive wheel **1.**
2. The bobbin winder must stop automatically when the thread wound on the bobbin has reached a point approx. **1 mm** below the bobbin rim.

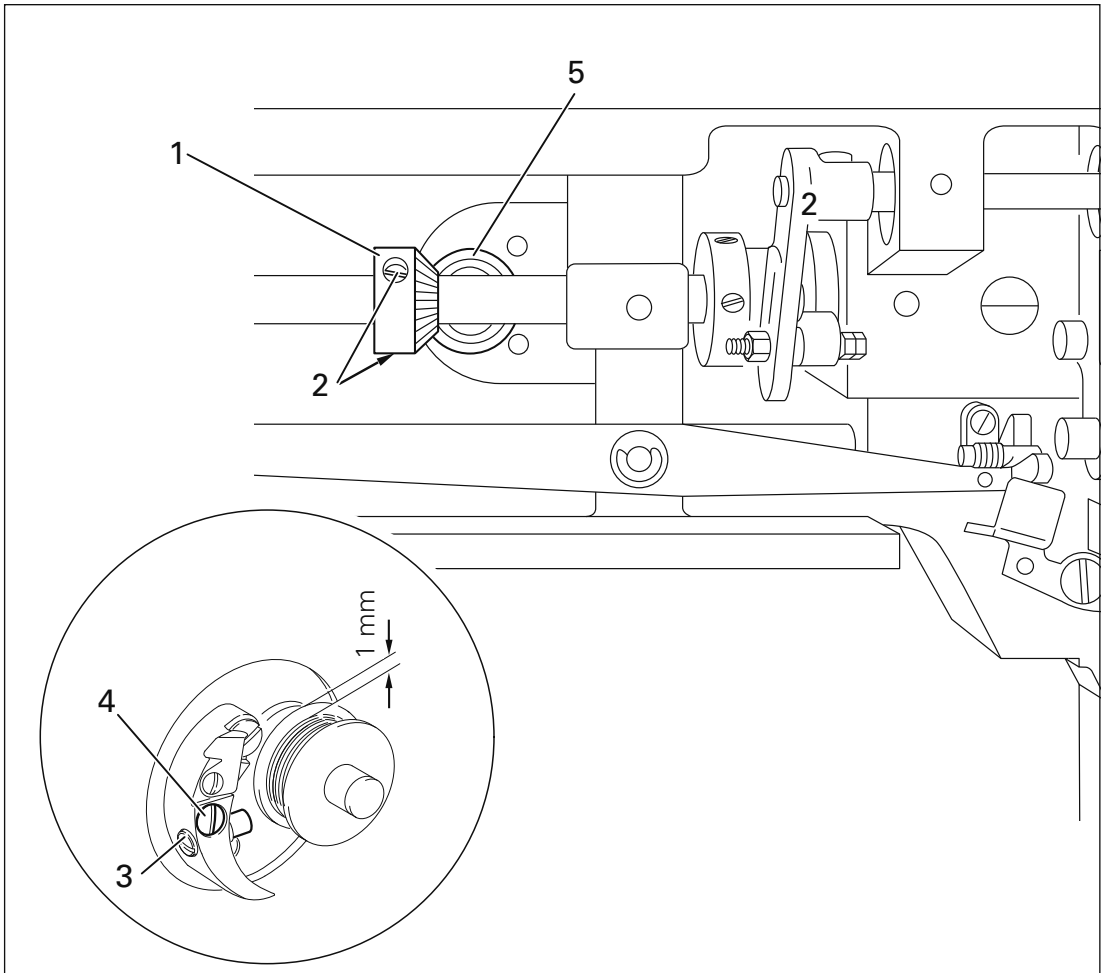


Fig. 1 - 13

- Adjust the drive wheel **1** (screws **2)** in accordance with **requirement 1.**
- Place a bobbin on the winder spindle, thread the bobbin and switch on the bobbin winder.
- Shift the regulating pin **3** (screws **4)** in accordance with **requirement 2.**

1.04.14 Regulating the pressure on the presser foot

Requirement
The material must be fed perfectly even at top sewing speed. There must not be any pressure marks on the material.

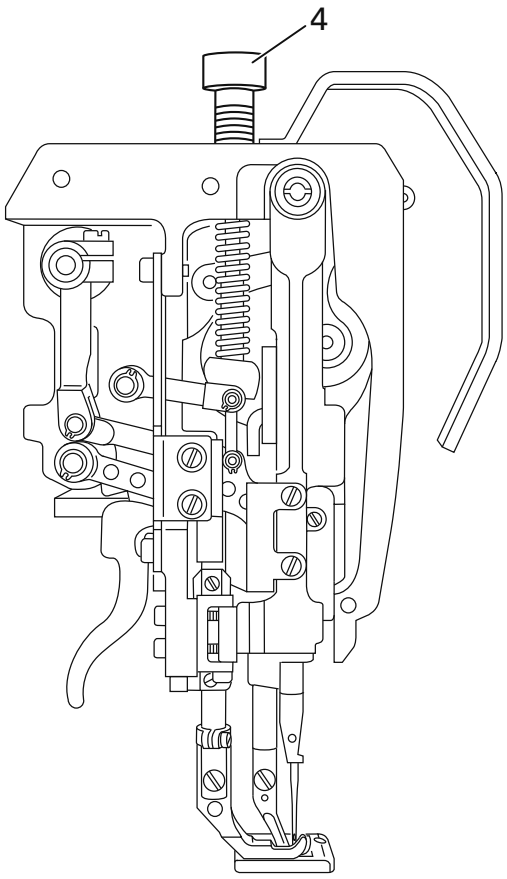
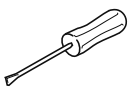


Fig. 1 - 14



- Turn screw **1** in accordance with the **requirement**.

1.05 Adjusting the thread trimmer -900/52

Please note that on all machines with thread trimmer -**900/52** the stitch length must be limited to **5.5** mm!

1.05.01 Preadjusting the control cam

Requirement
With the take-up lever at its bdc, projection **4** on the control cam **2** must be directly underneath the cam follower **5.**

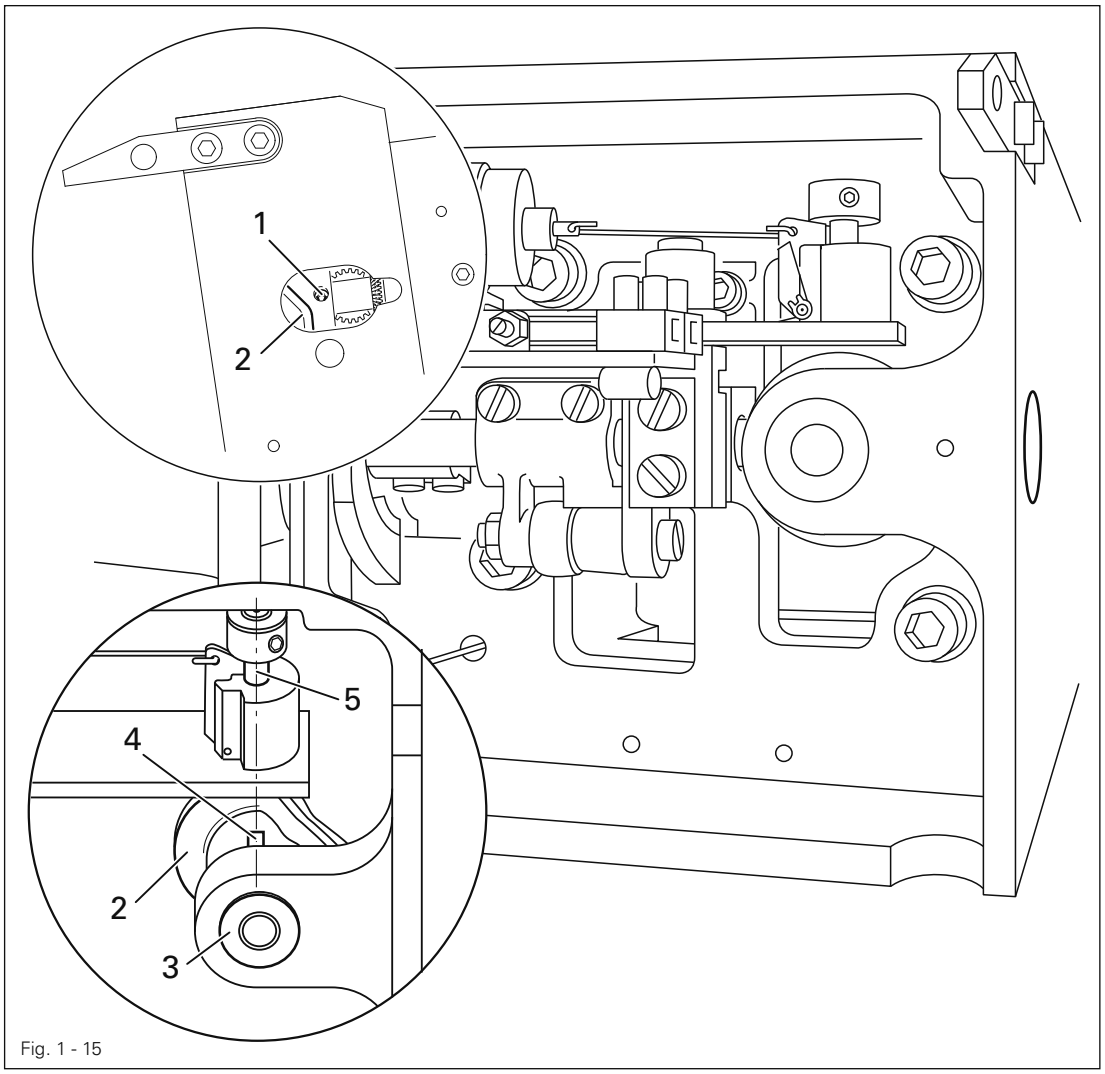


Fig. 1 - 15

- 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.

1.05.02 Tripping lever height

Requirement
With the needle bar at its bdc there must be a distance of **1.0 mm** between the tripping lever **3** and the control cam **4.**

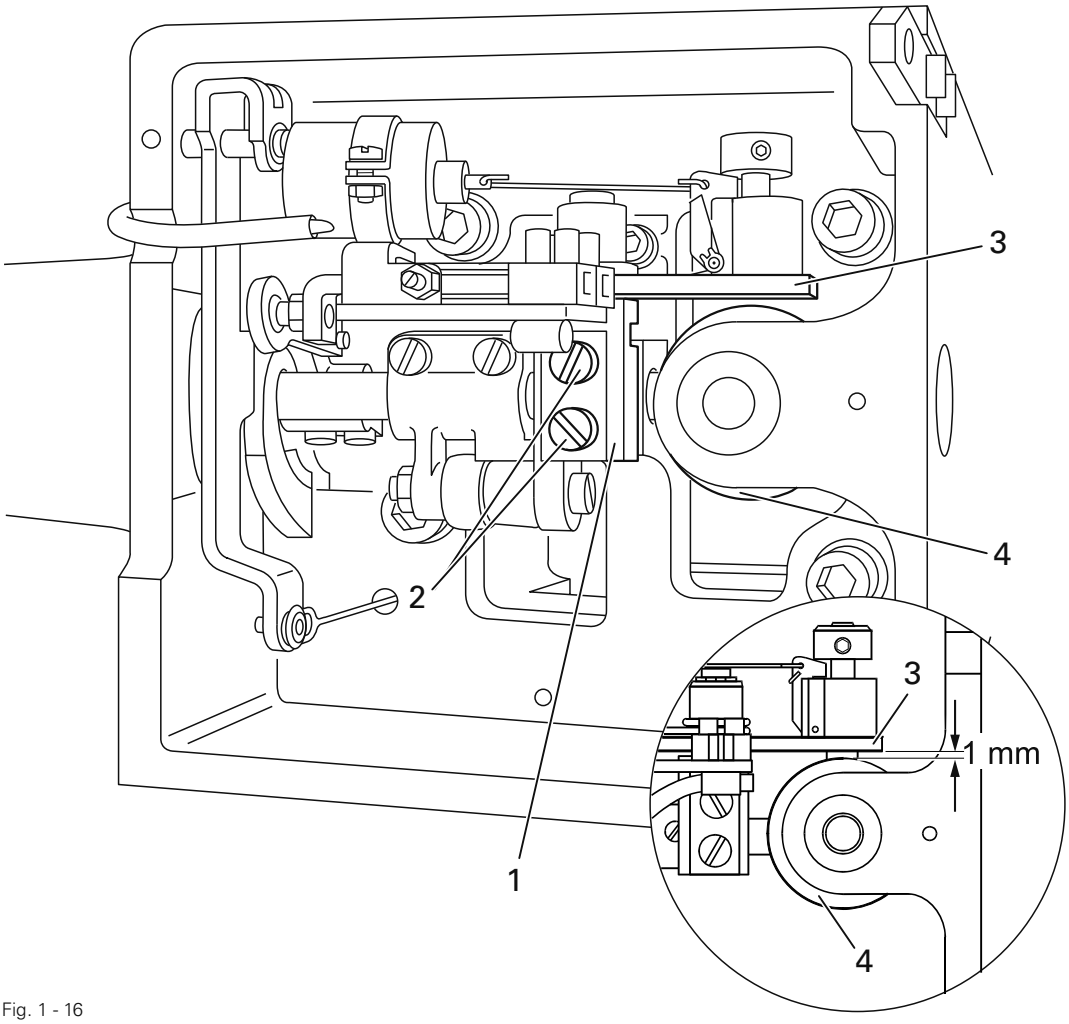
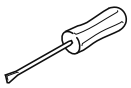


Fig. 1 - 16



- Bring the needle bar to its bdc by turning the handwheel.
- Move the carrier **1** (screws **2)** of the tripping lever **3** in the elongated hole in accordance with the **requirement**.

1.05.03 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.

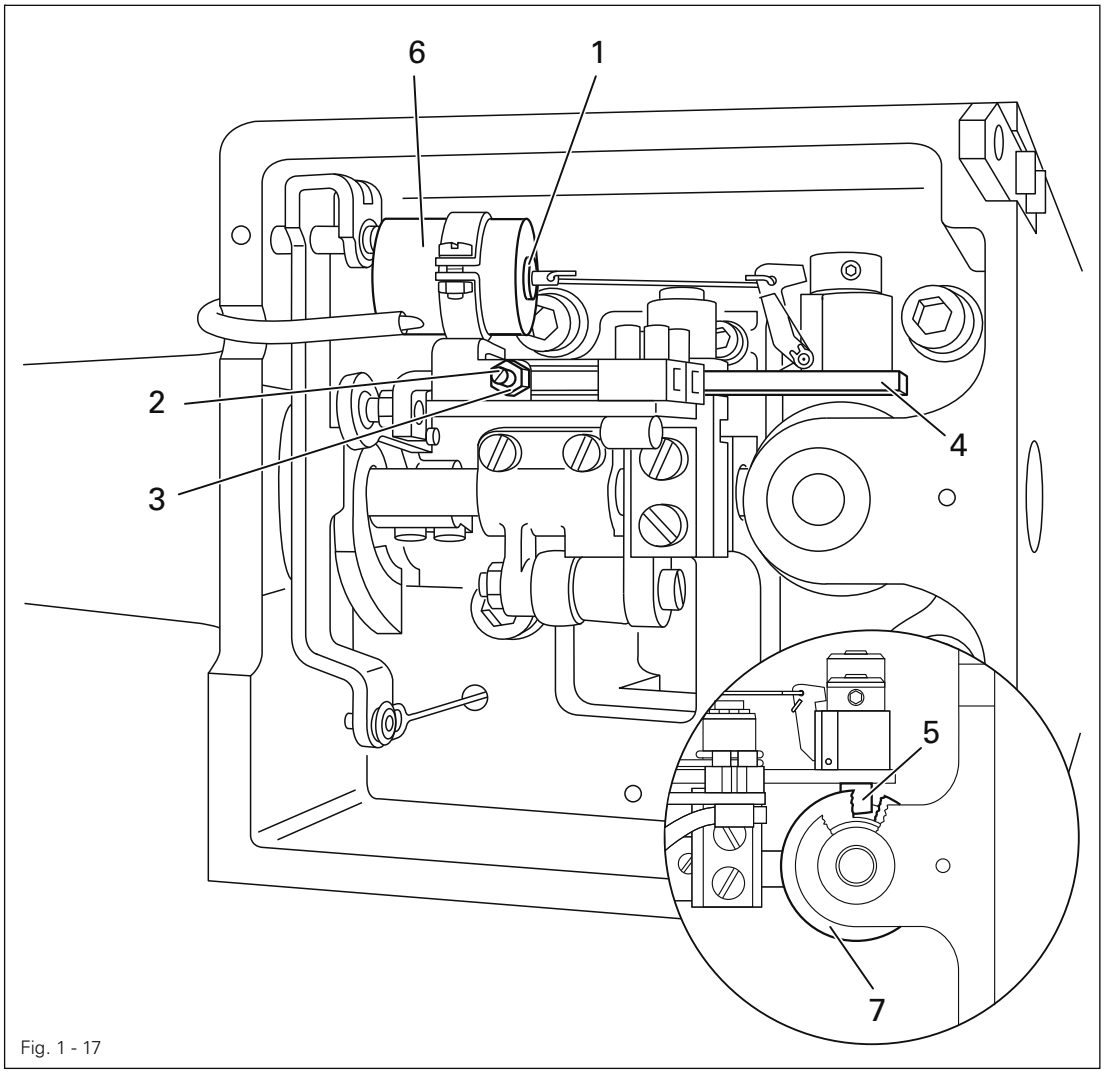
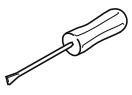


Fig. 1 - 17



- 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**.

1.05.04 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.**

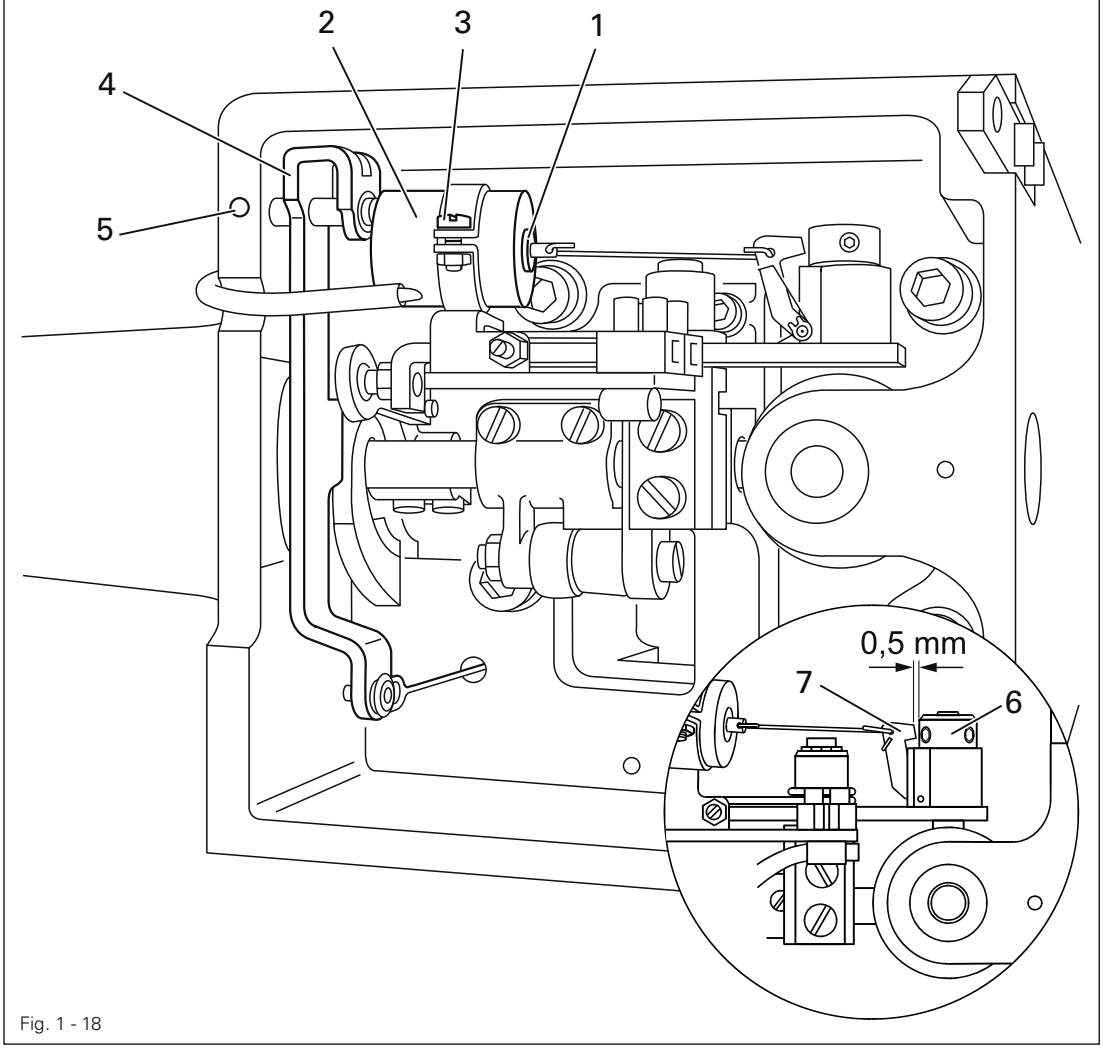
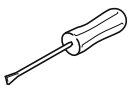


Fig. 1 - 18



- 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.

1.05.05 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.**

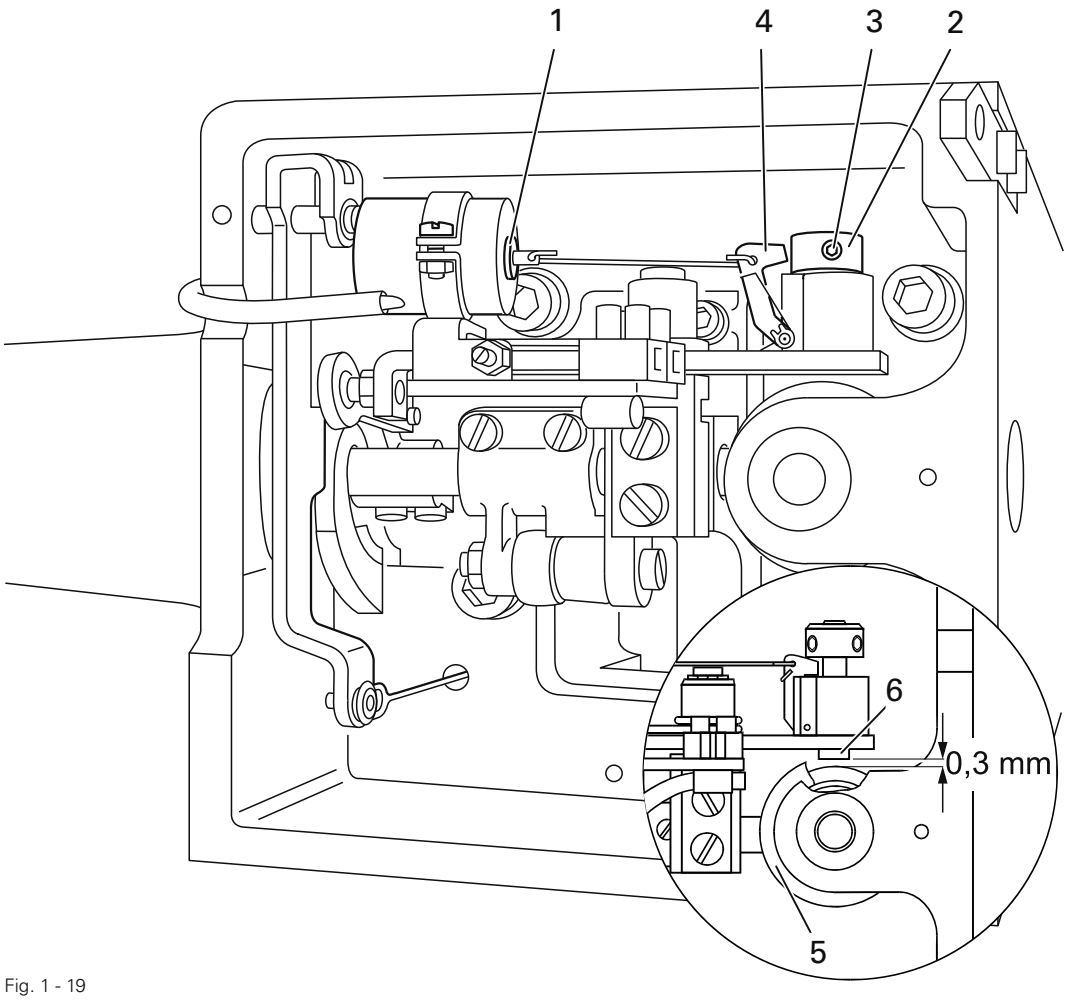
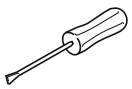


Fig. 1 - 19



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

1.05.06 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.**

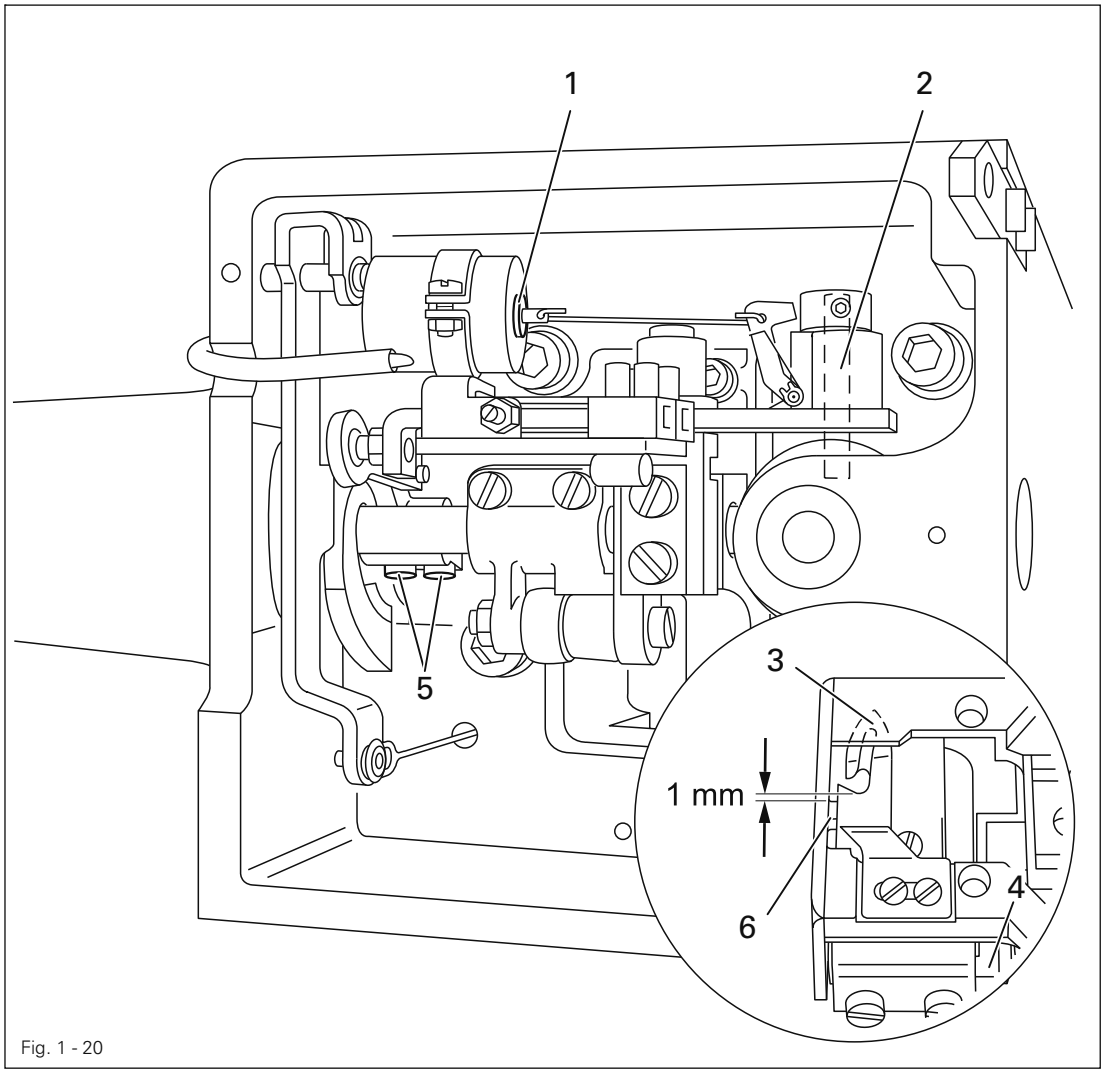
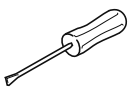


Fig. 1 - 20



- 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**.

1.05.07 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.

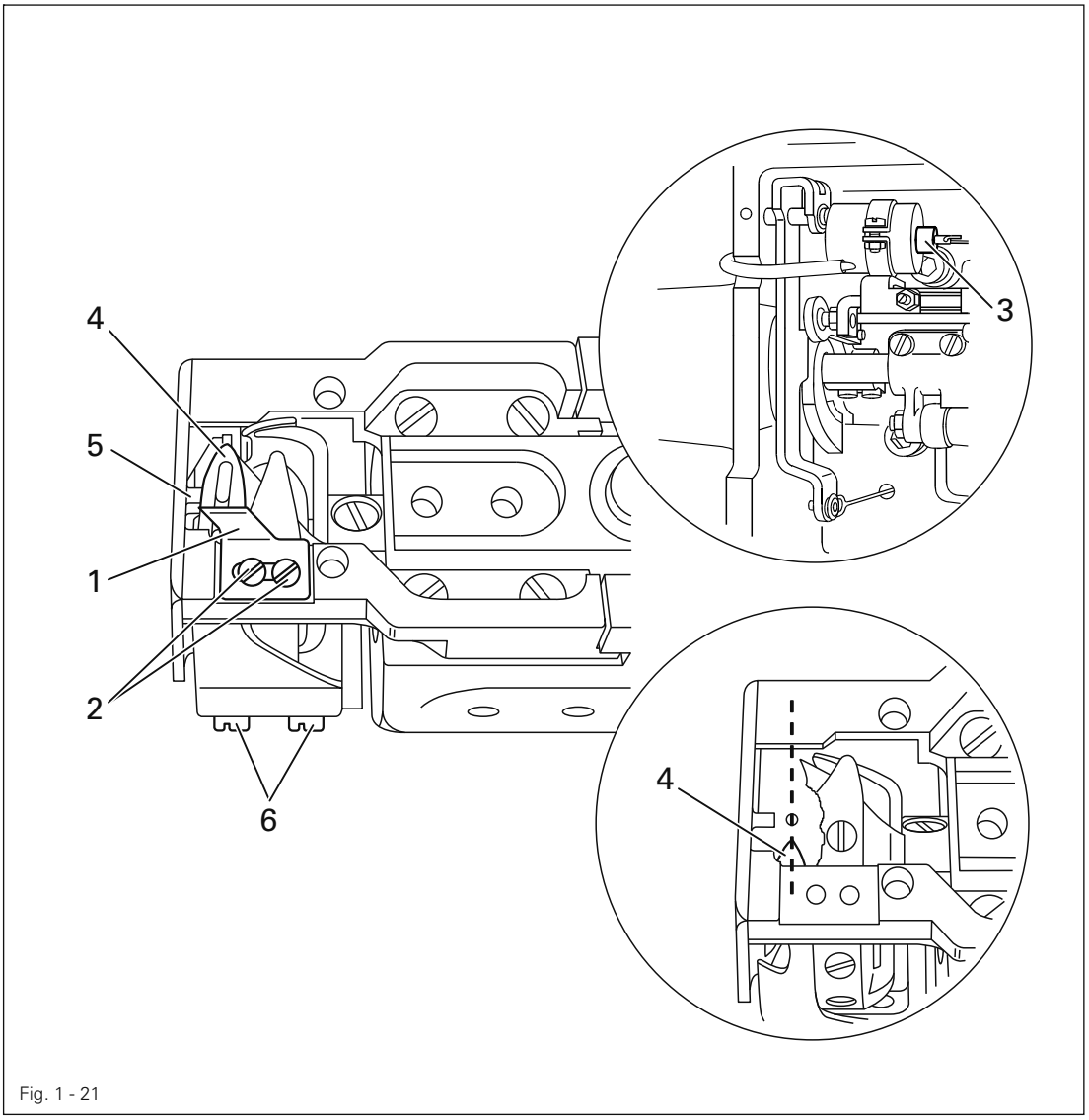
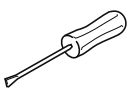


Fig. 1 - 21



- 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**.

1.05.08 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.

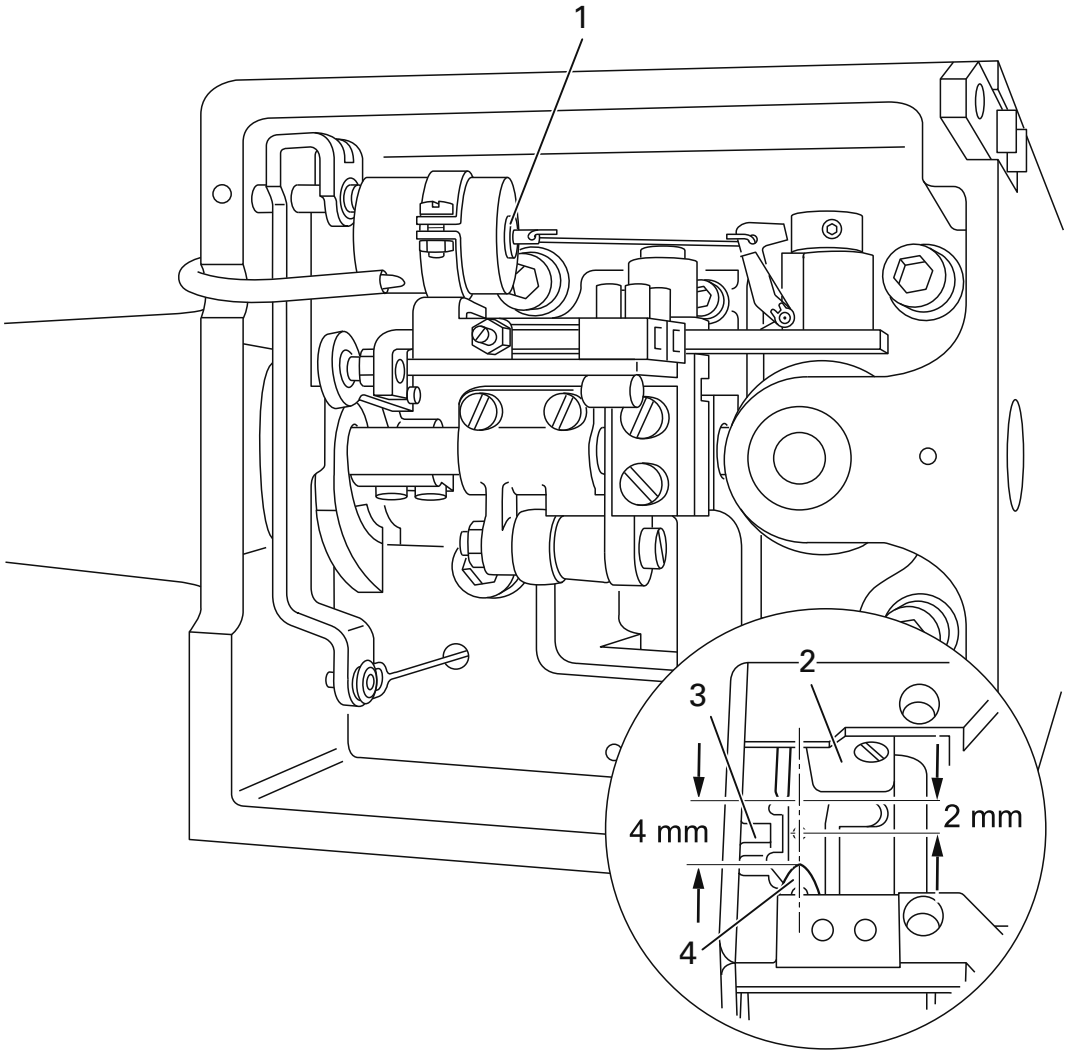


Fig. 1 - 22

- 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 **1.05.01** Control cam (preliminary adjustment).

1.05.09 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.

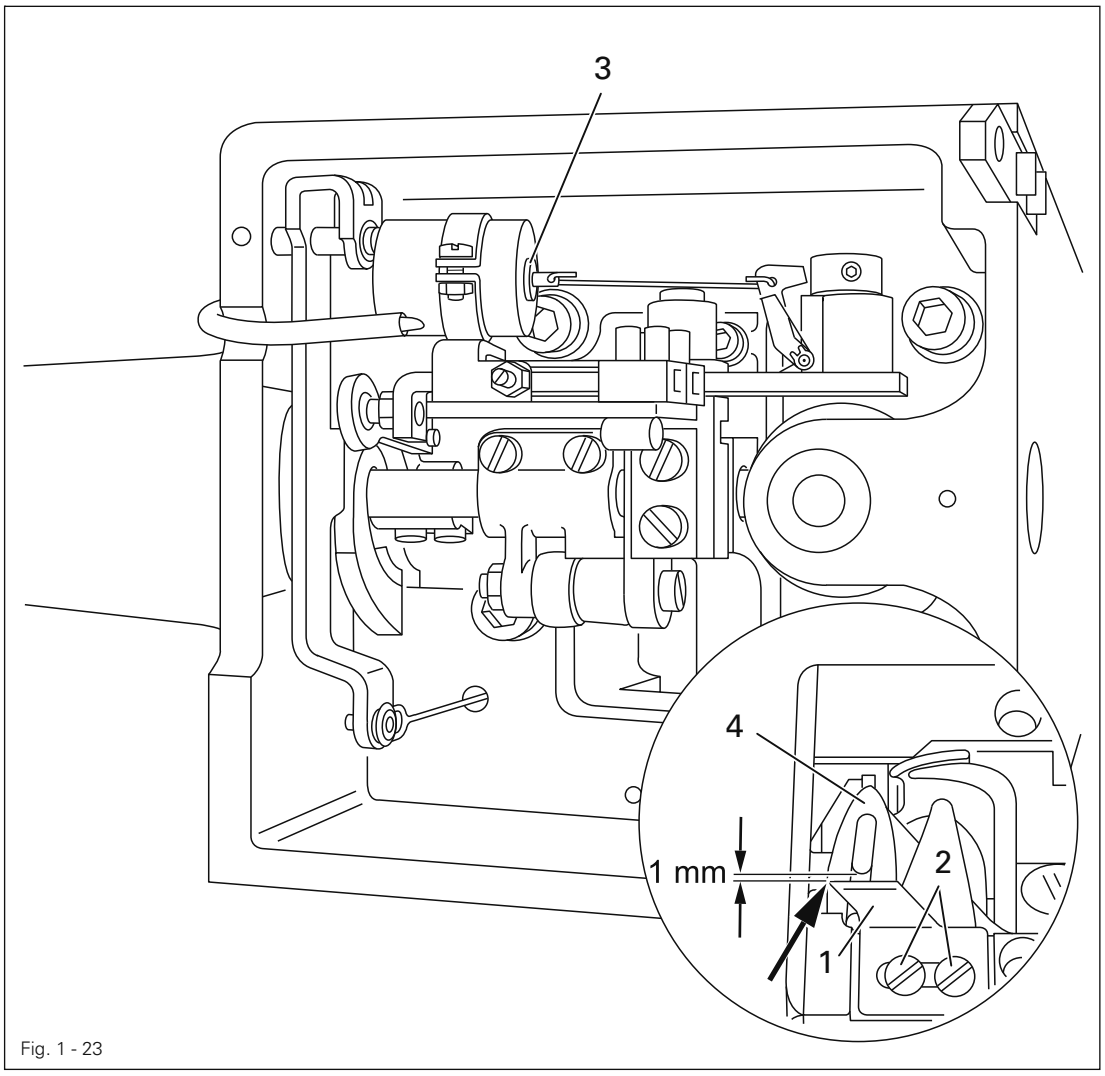
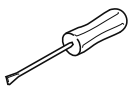


Fig. 1 - 23



- 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 **1.05.07** Lateral position of the thread catcher.

1.05.10 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.

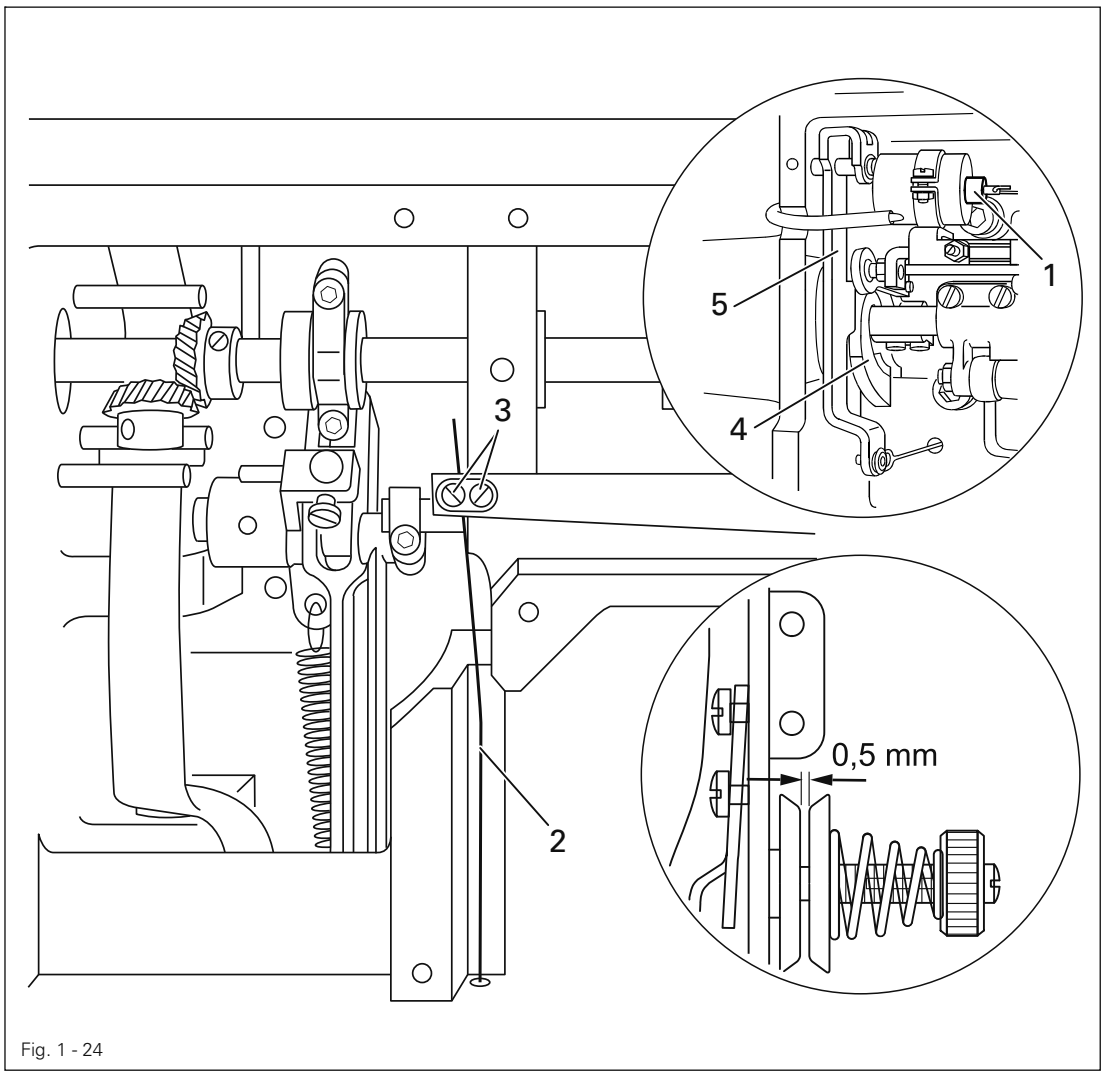
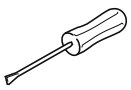


Fig. 1 - 24



- 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.**

1.05.11 Cutting test

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

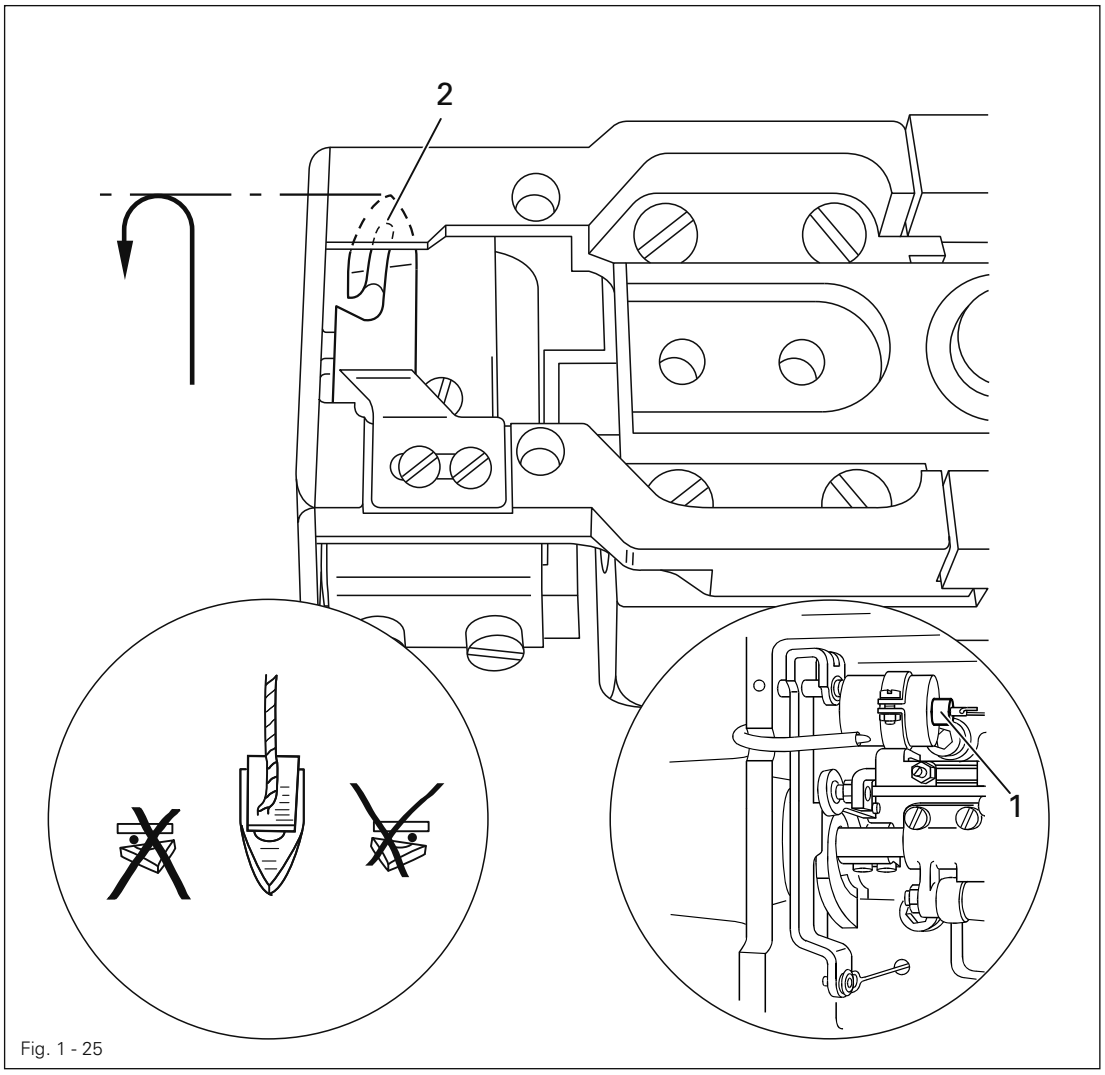


Fig. 1 - 25

- 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 **1.05.07** Lateral position of the thread catcher.

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