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Adjustment Manual

This Adjustment Manual is valid for machines from the following serial numbers onwards:

6 001 000 →

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12 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.

12.01 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.

12.02 Tools, gauges and other accessories

- 1 set of screwdrivers with blade widths from 2 to 10 mm
- 1 set of wrenches with jaw widths from 7 to 13 mm
- 1 set of Allen keys from 1.5 to 6 mm
- 1 metal ruler, part no. 08-880 218-00
- Threads and test material

12.03 Abbreviations

t.d.c. = top dead centre

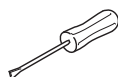
b.d.c. = bottom dead centre

12.04 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

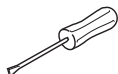
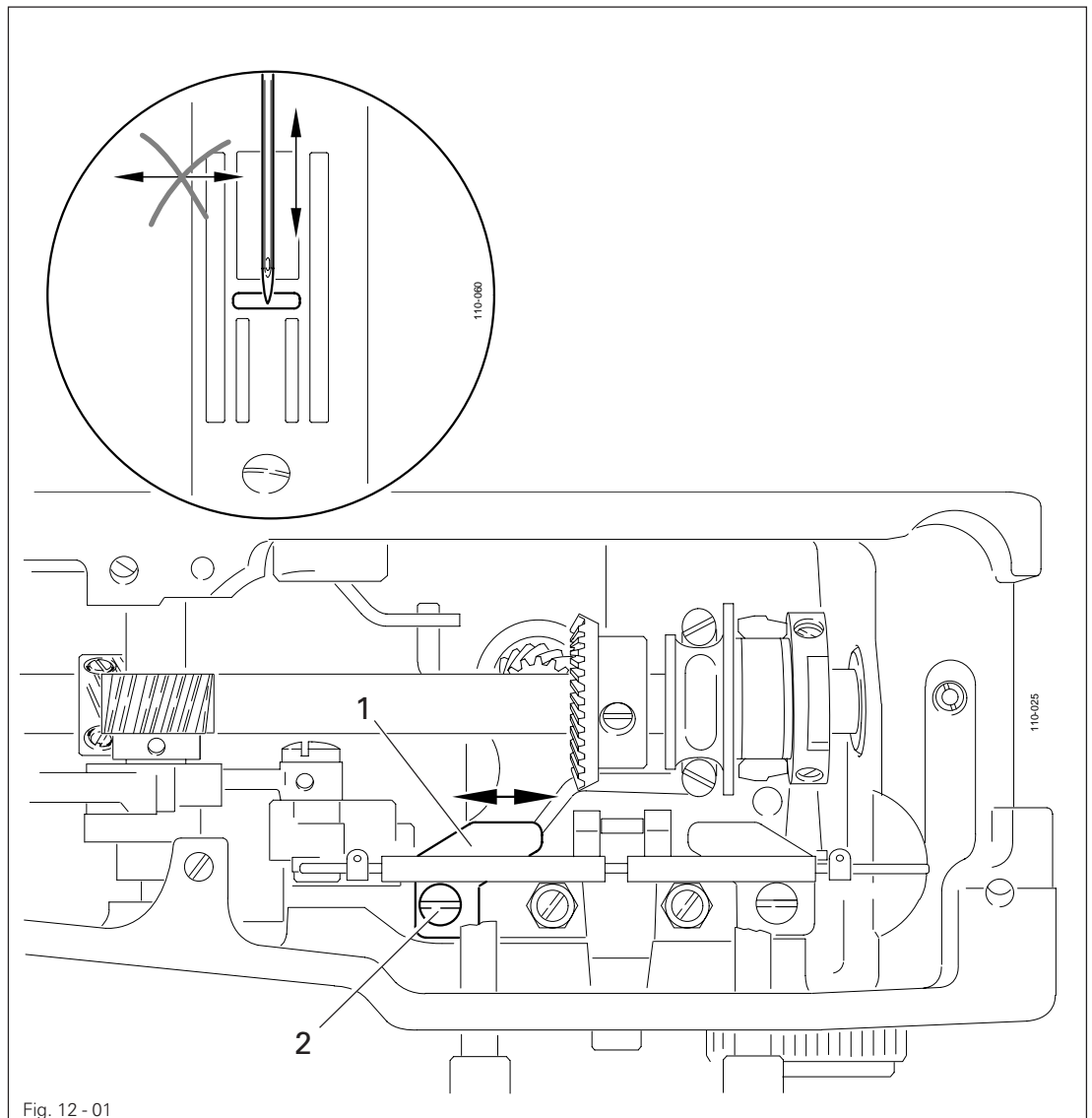


Service, repair, adjustment, maintenance
(work to be carried out by qualified staff only)

12.05 Zero stitch width

Requirement

When the zig-zag stitch is set at "0" and the stitch position at "centre", the needle bar should not move sideways when the balance wheel is turned.

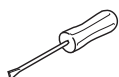
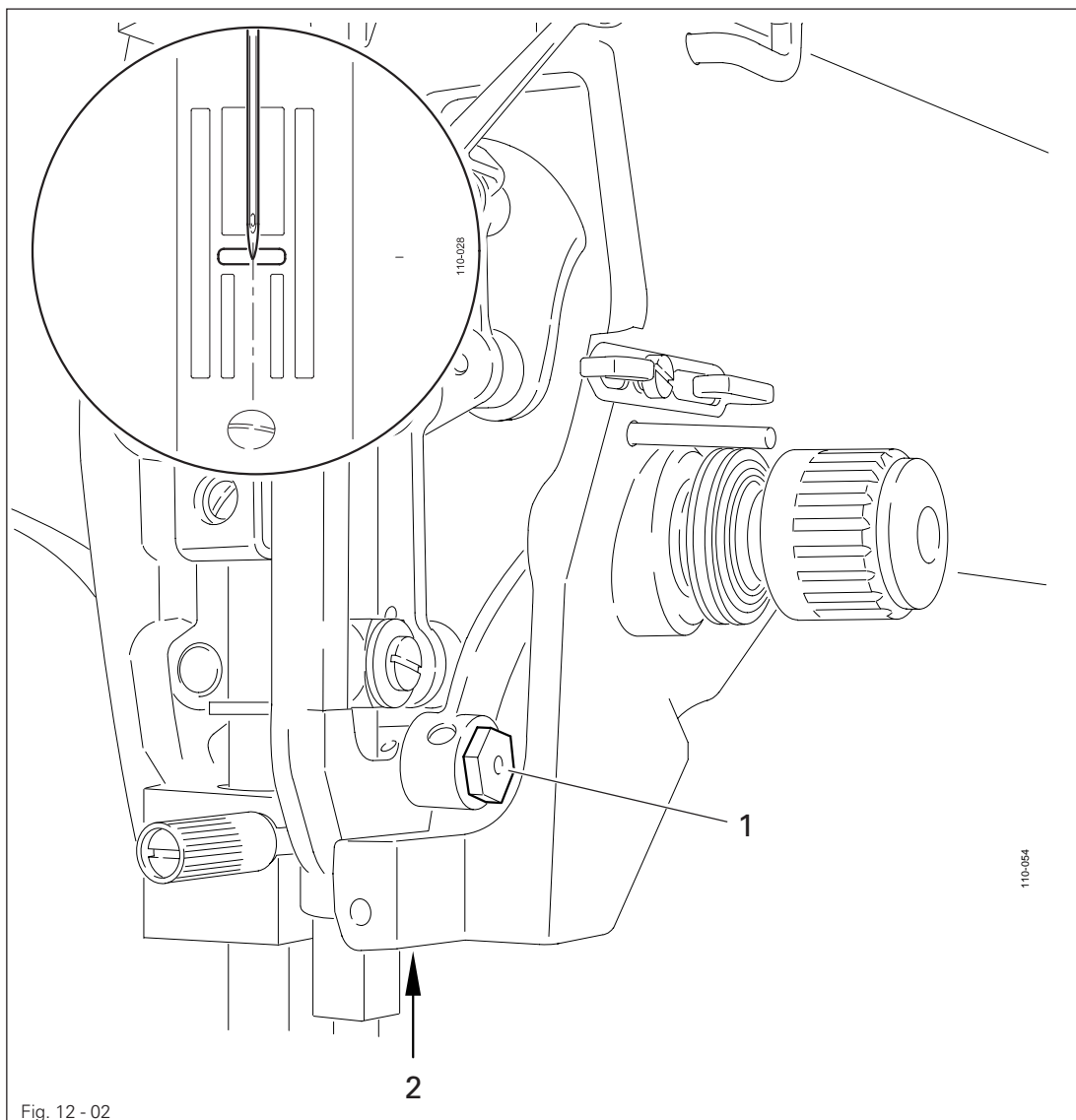


- Adjust stop 1 (screw 2) in accordance with the requirement.

12.06 Centering the needle in the needle hole (crosswise to the sewing direction)

Requirement

When the zig-zag stitch is set at "0" and the stitch position at "centre", the needle, as seen crosswise to the direction of sewing, should enter the needle hole in the centre.



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



The greatest eccentricity of eccentric 1 must be at the top (marking 3 is at the top).

12.07 Zig-zag stitch width

Requirement

When the zig-zag stitch is set at its maximum, the zig-zag stitch width should be 9 mm.

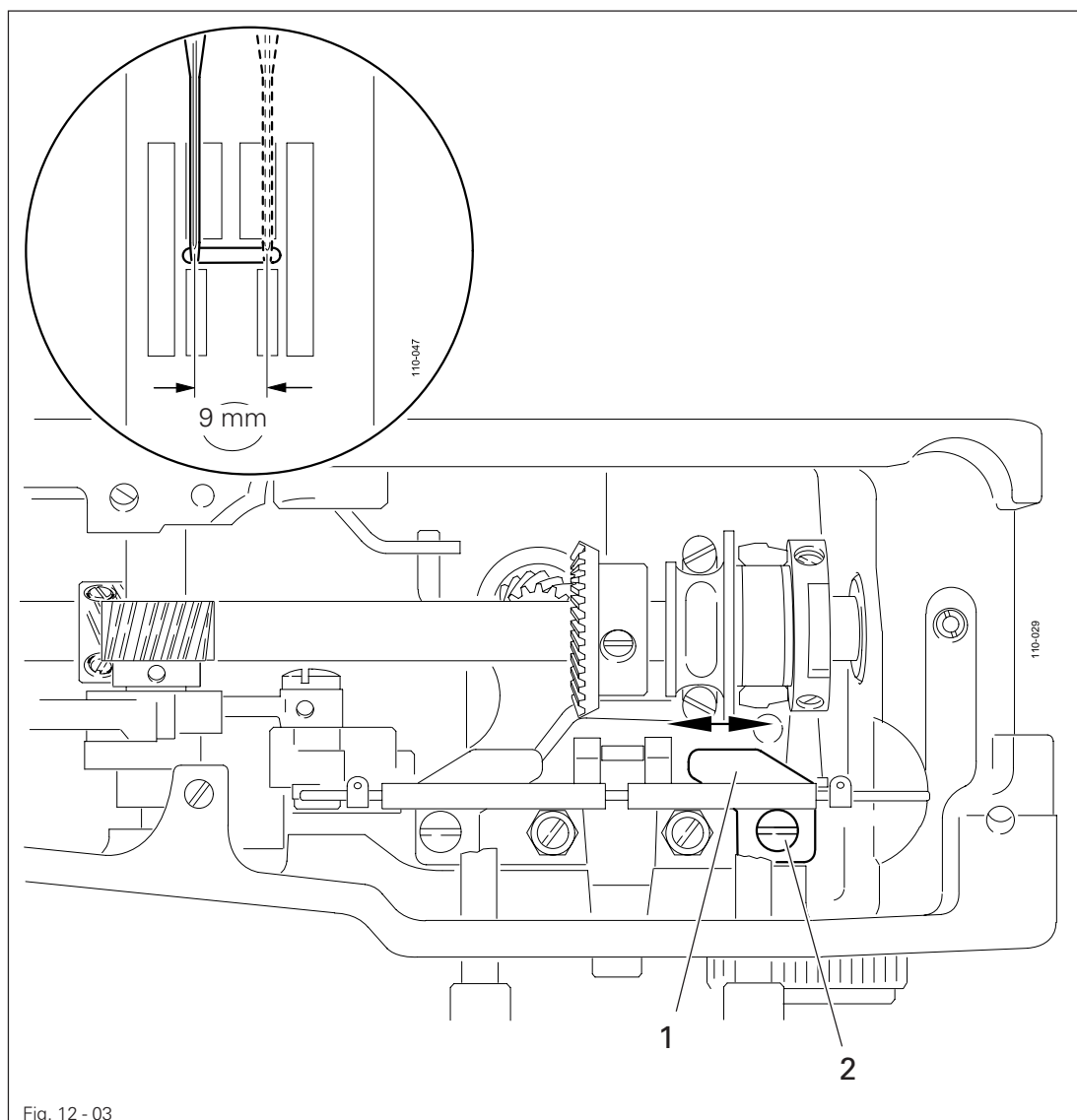
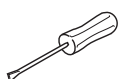


Fig. 12 - 03



The needle must not touch presser foot and needle plate! If a needle plate or presser foot with a smaller needle hole is fitted, the zig-zag stitch width must be adjusted to match this needle hole width!



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



To check the adjustment turn the balance wheel one complete revolution in the direction of sewing.

12.08 Zig-zag movement

Requirement

When the needle bar is at t.d.c., the needle bar should not move sideways when the zig-zag stitch lever is operated.

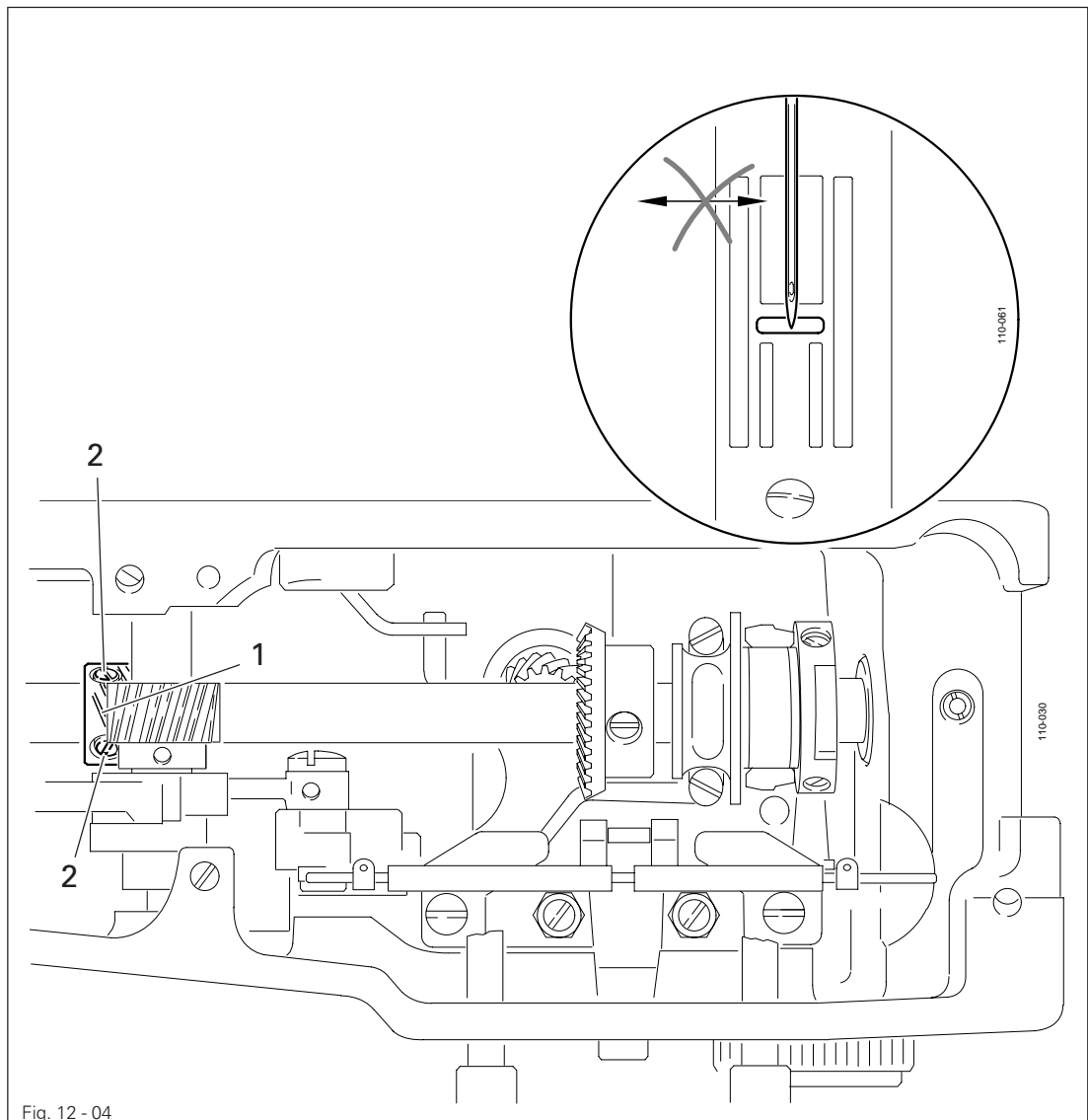
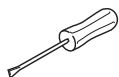


Fig. 12 - 04



- Without displacing it, adjust toothed wheel 1 (screws 2) in accordance with the requirement.

12.09 Needle penetration symmetry

Requirement

1. When the zig-zag stitch is set at "0", the needle should penetrate in the centre of the needle hole.
2. With the maximum zig-zag stitch set, the needle should penetrate on the left and right side with the same distance to the centre.

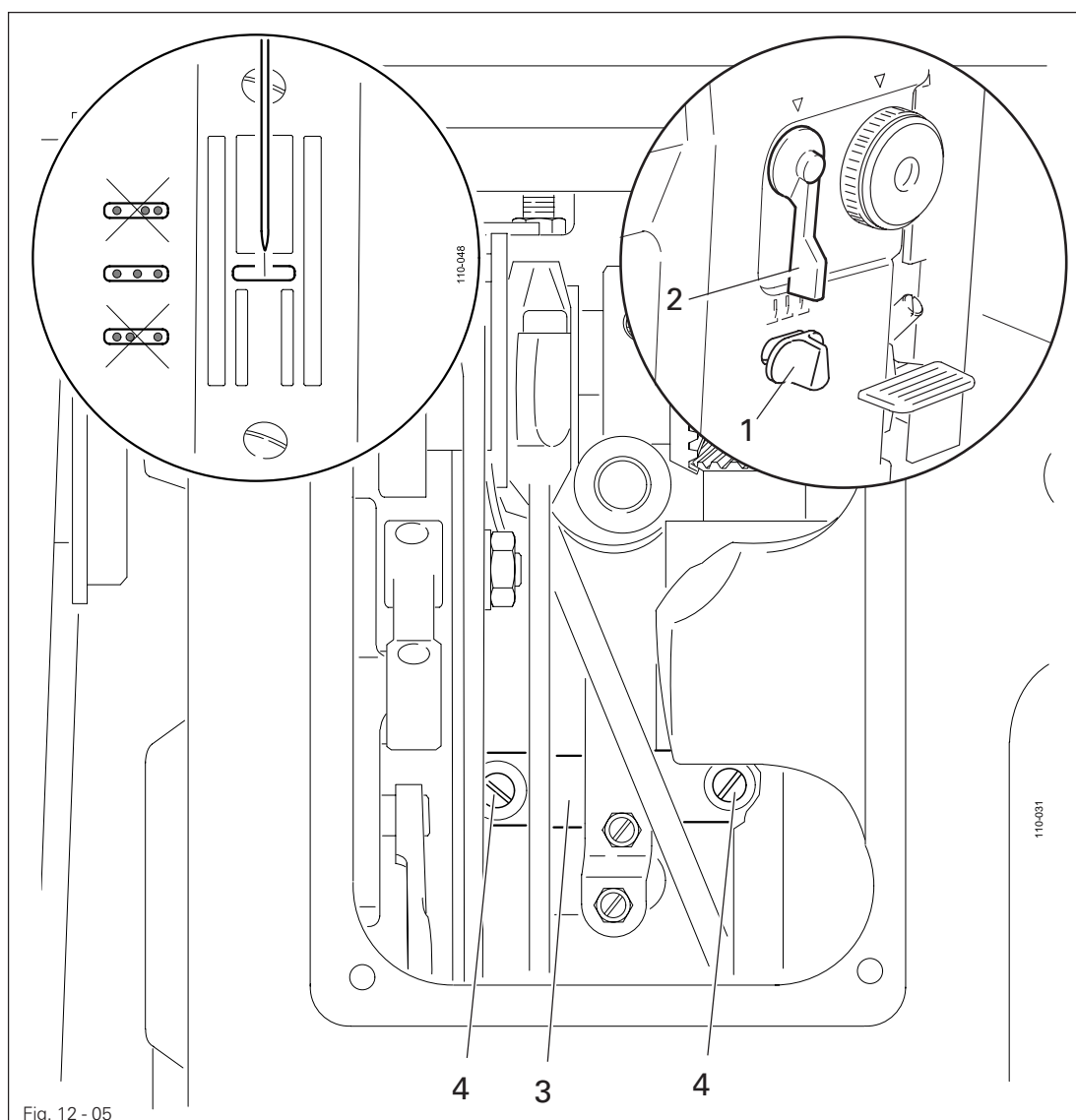


Fig. 12 - 05



- Set stitch position adjustment lever 1 at "centre" and zigzag adjustment lever 2 at "0".
- Place a piece of paper under the sewing foot and pierce it with the needle.
- Set the zigzag adjustment lever 2 to "max." and pierce the paper with the needle.
- Turn the balance wheel further in the sewing direction and pierce the paper with the needle.
- Check the symmetry of the needle holes.
- Adjust slot 3 (screws 4) in accordance with the requirement.
- Check the symmetry of the needle holes again and readjust if necessary.

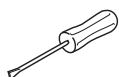
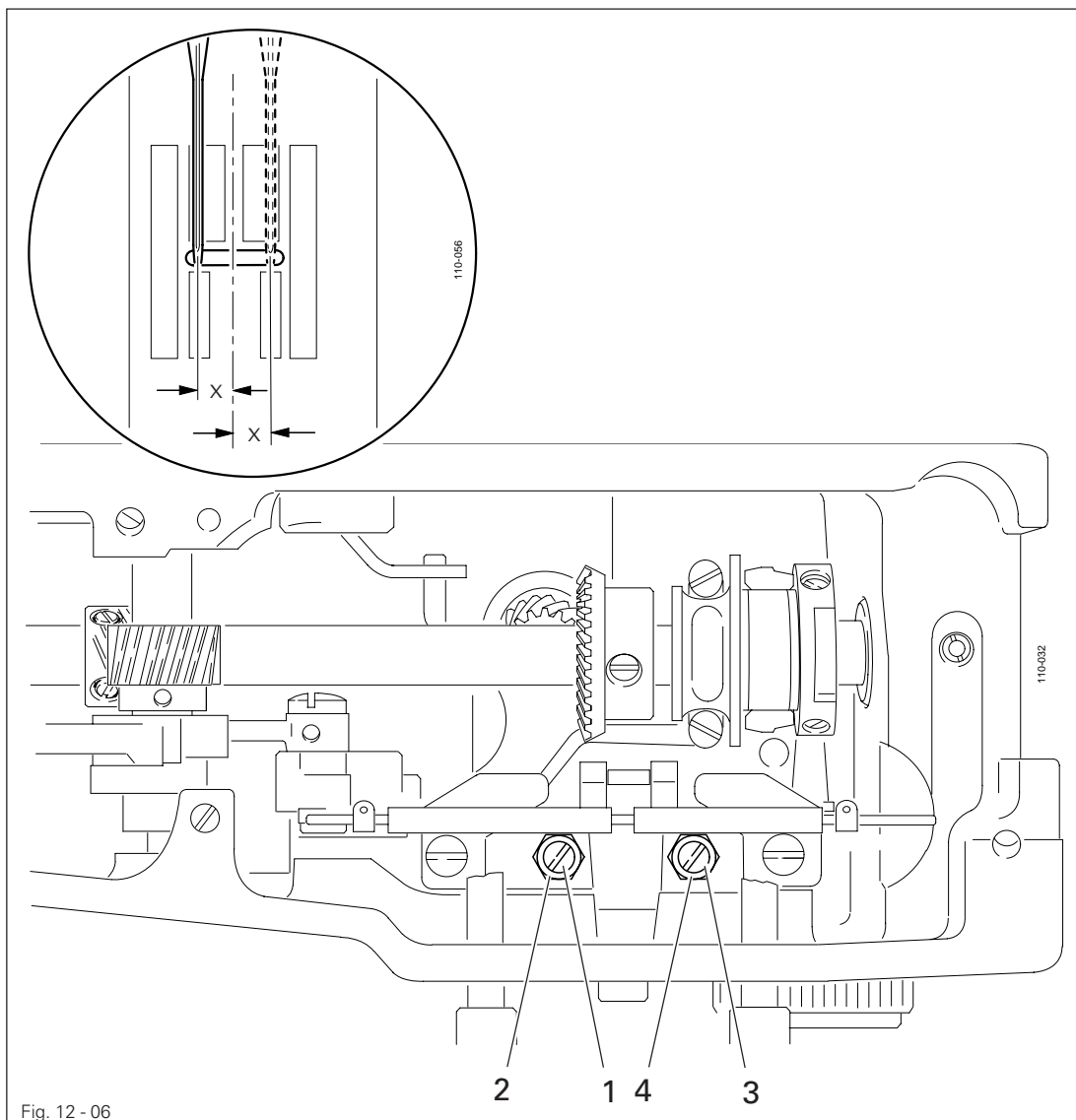


Check the setting in accordance with Chapter 12.06 Centering the needle in the needle hole (crosswise to the sewing direction) and readjust if necessary.

12.10 Stitch position adjustment lever

Requirement

When the left or right stitch position is selected, the needle should enter the needle hole at the point where the needle also enters when the largest zig-zag stitch is set.



- Adjust right stitch position with screw 1 (nut 2) in accordance with the **requirement**.
- Adjust left stitch position with screw 3 (nut 4) in accordance with the **requirement**.



To check the adjustment turn the balance wheel one complete revolution in the direction of sewing.

12.11 Driving motion of the bottom feed dog

Requirement

With the needle bar positioned at 1.0 mm after t.d.c. and the largest stitch length set, the bottom feed dog **3** should not move when the reverse feed key is operated.

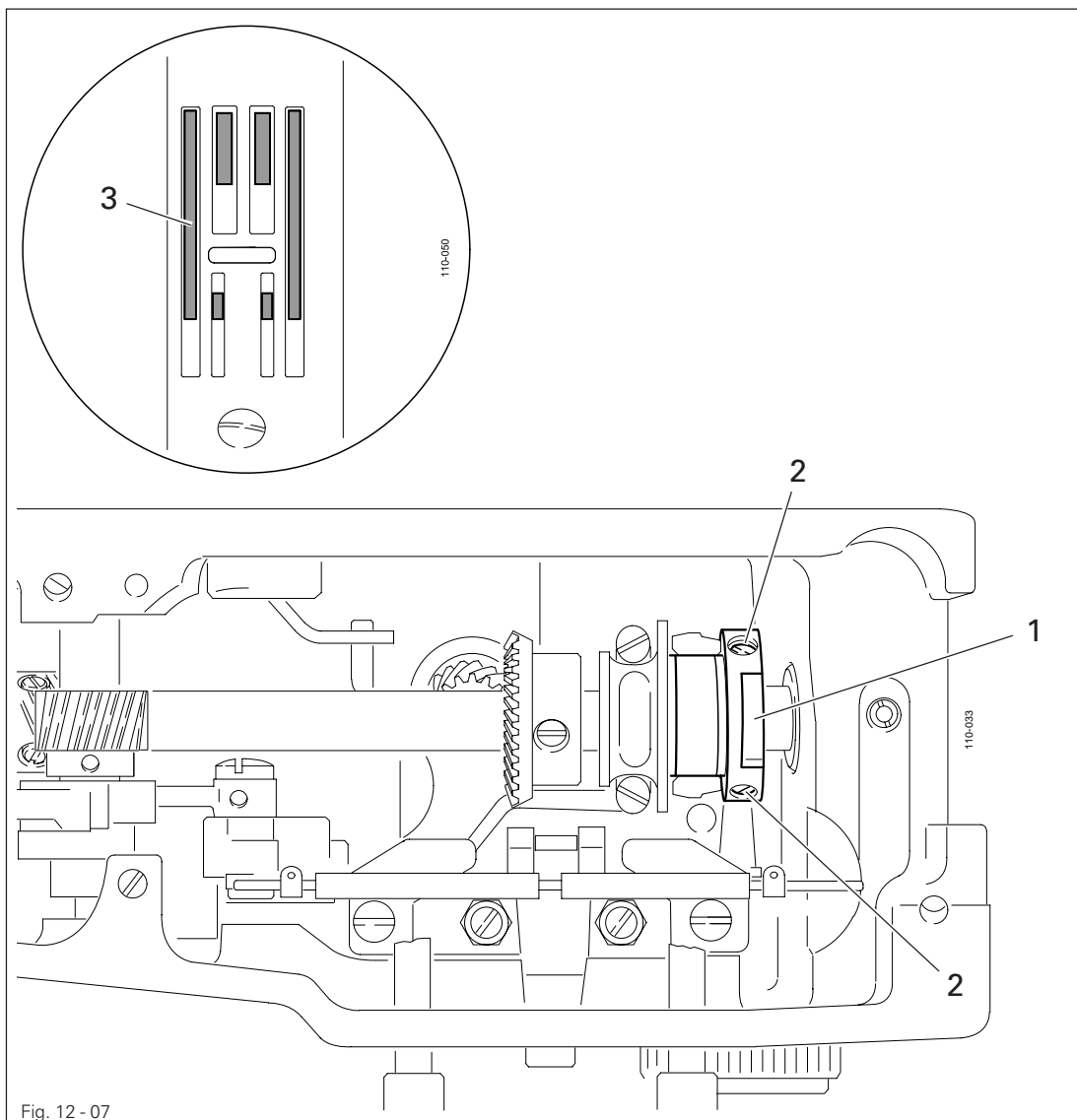
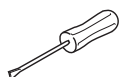


Fig. 12 - 07



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

12.12 Height of the bottom feed dog

Requirement

With the stitch length set at "0", at the top of its stroke the bottom feed dog 3 should protrude over the needle plate by ca. 1 mm.

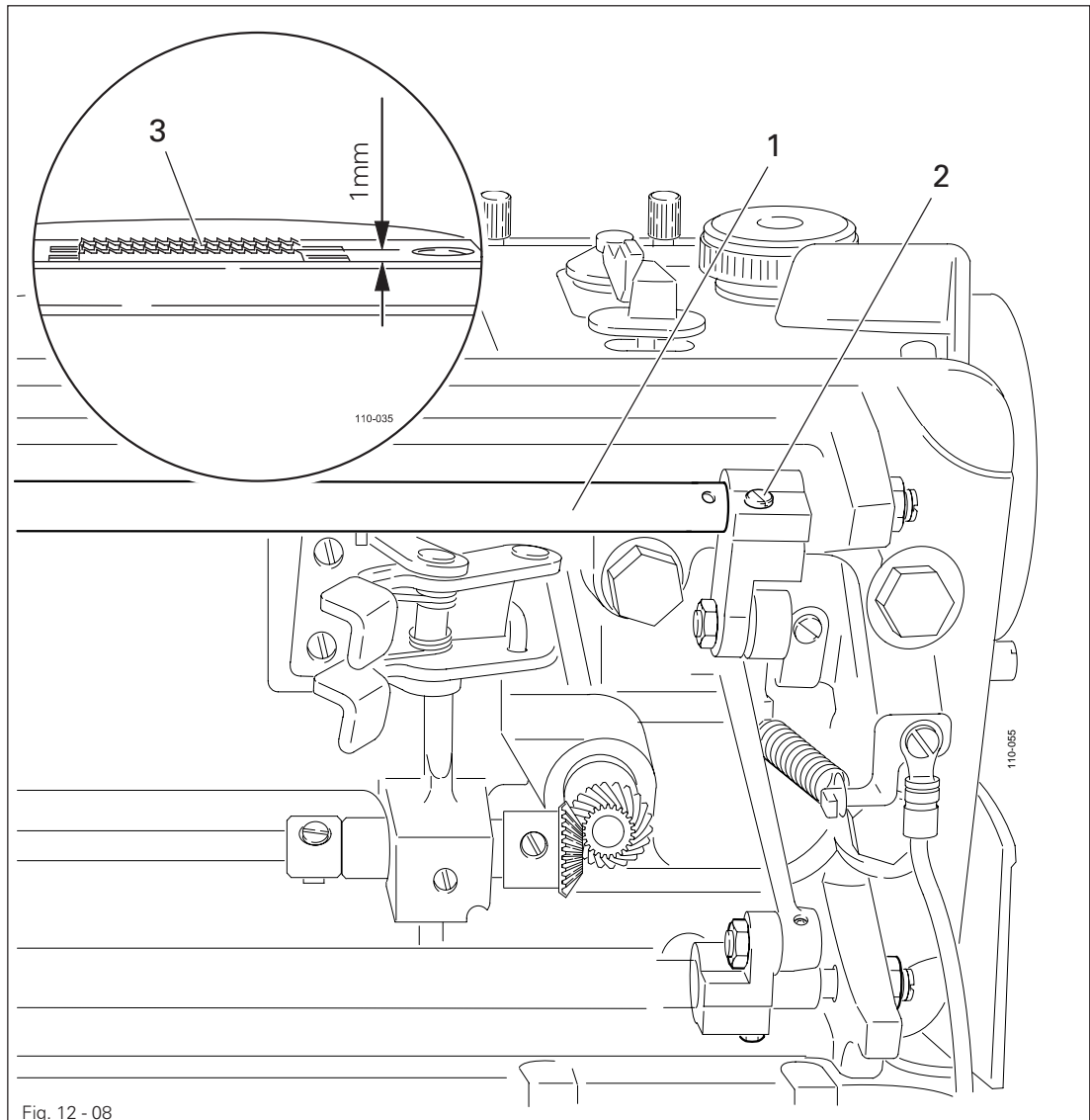
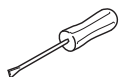


Fig. 12 - 08



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

12.13 Position of the bottom feed dog

Requirement

1. The bottom feed dog 5 should be positioned in the centre of the needle plate cutout.
2. With the largest stitch length set, in its front and back point of reversal the bottom feed dog 5 should have the same distance to the edge of the needle plate cutout.

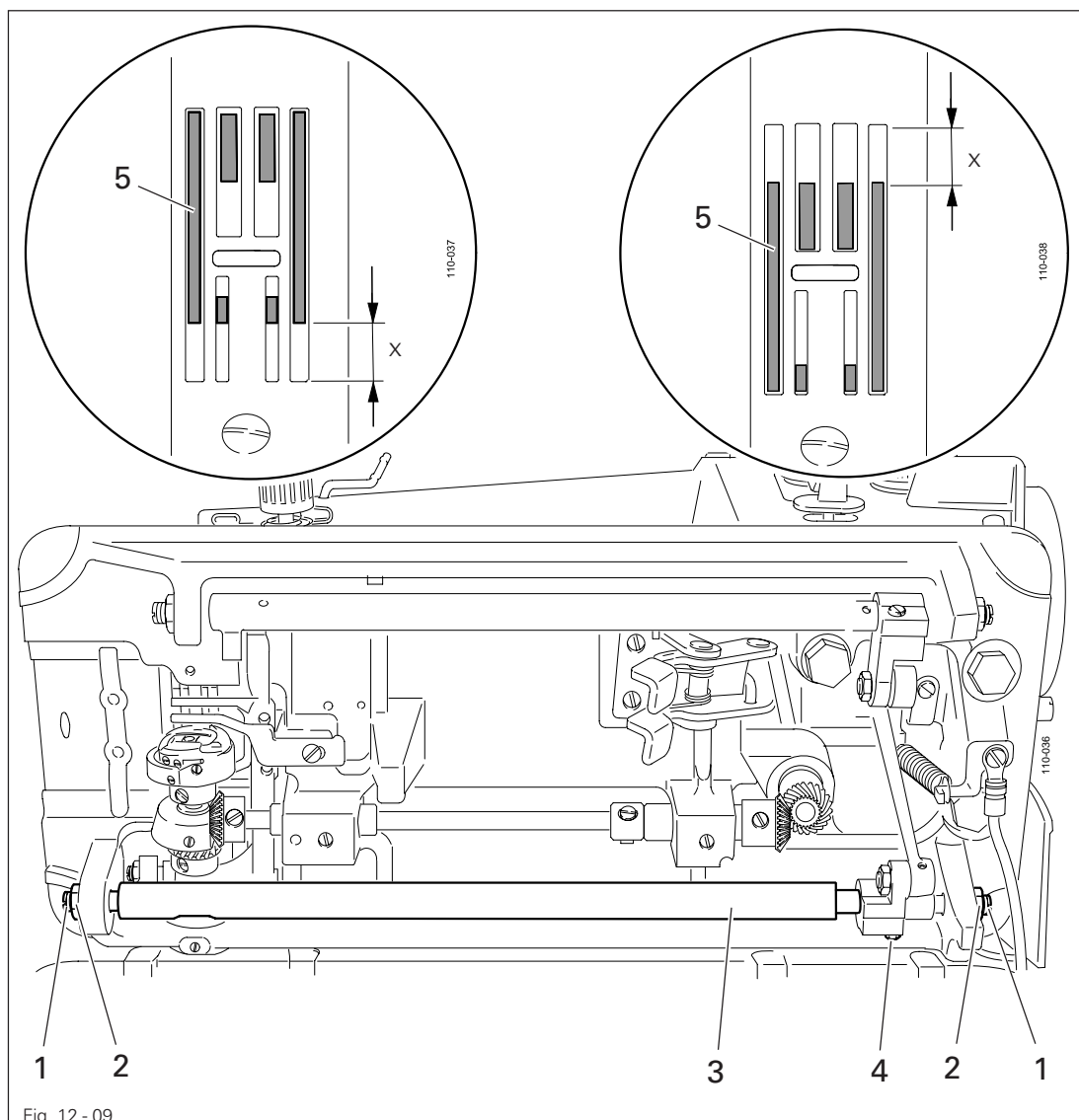
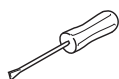


Fig. 12 - 09



- Adjust screws 1 (nuts 2) in accordance with requirement 1.
- Adjust shaft 3 (screw 4) in accordance with requirement 2.

12.14 Needle height (preliminary adjustment)

Requirement

With the needle bar at b.d.c, the **top** marking on needle bar **1** should be level with the bottom edge of adjusting aid **3**.

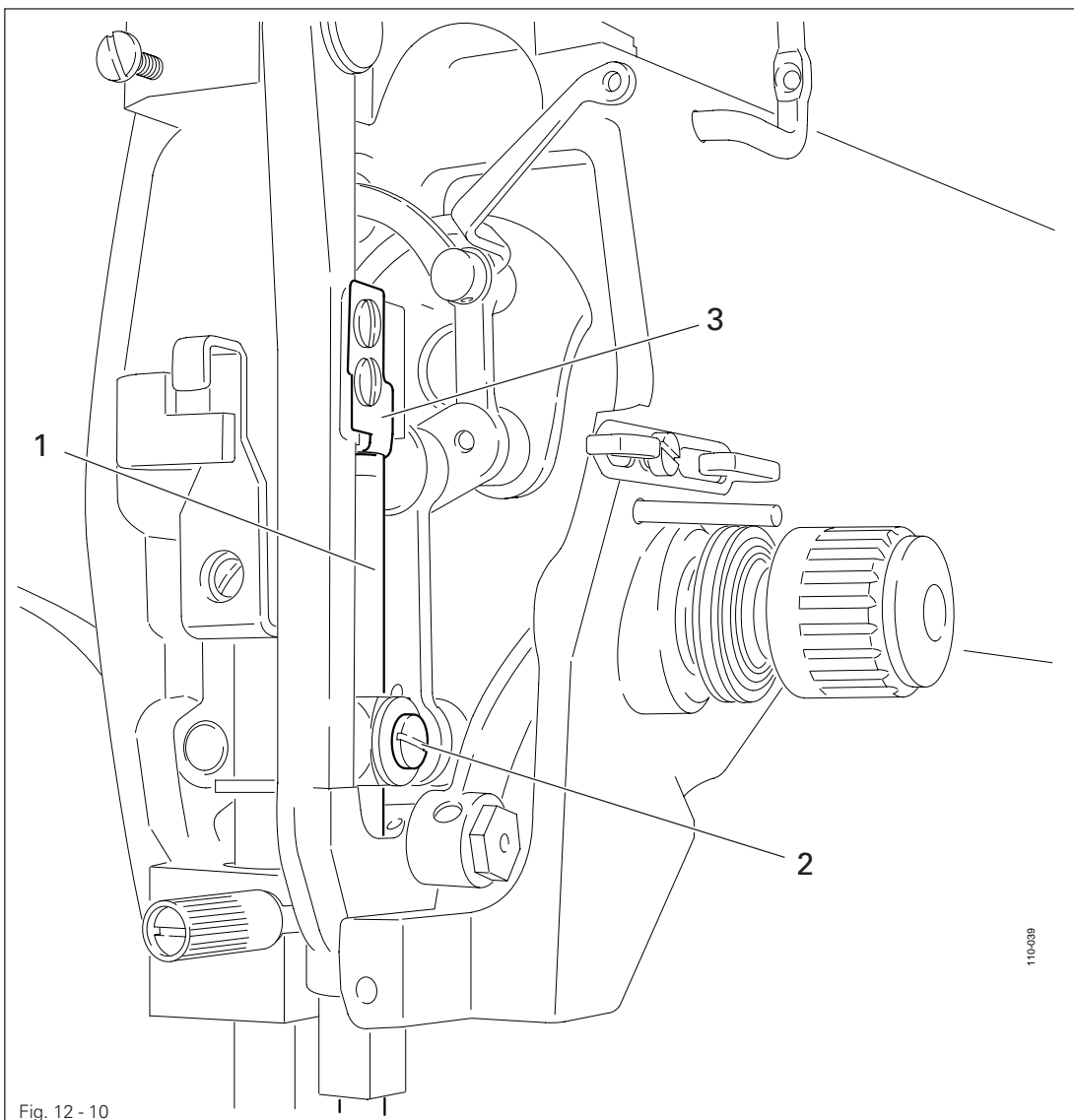
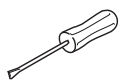


Fig. 12 - 10

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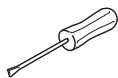
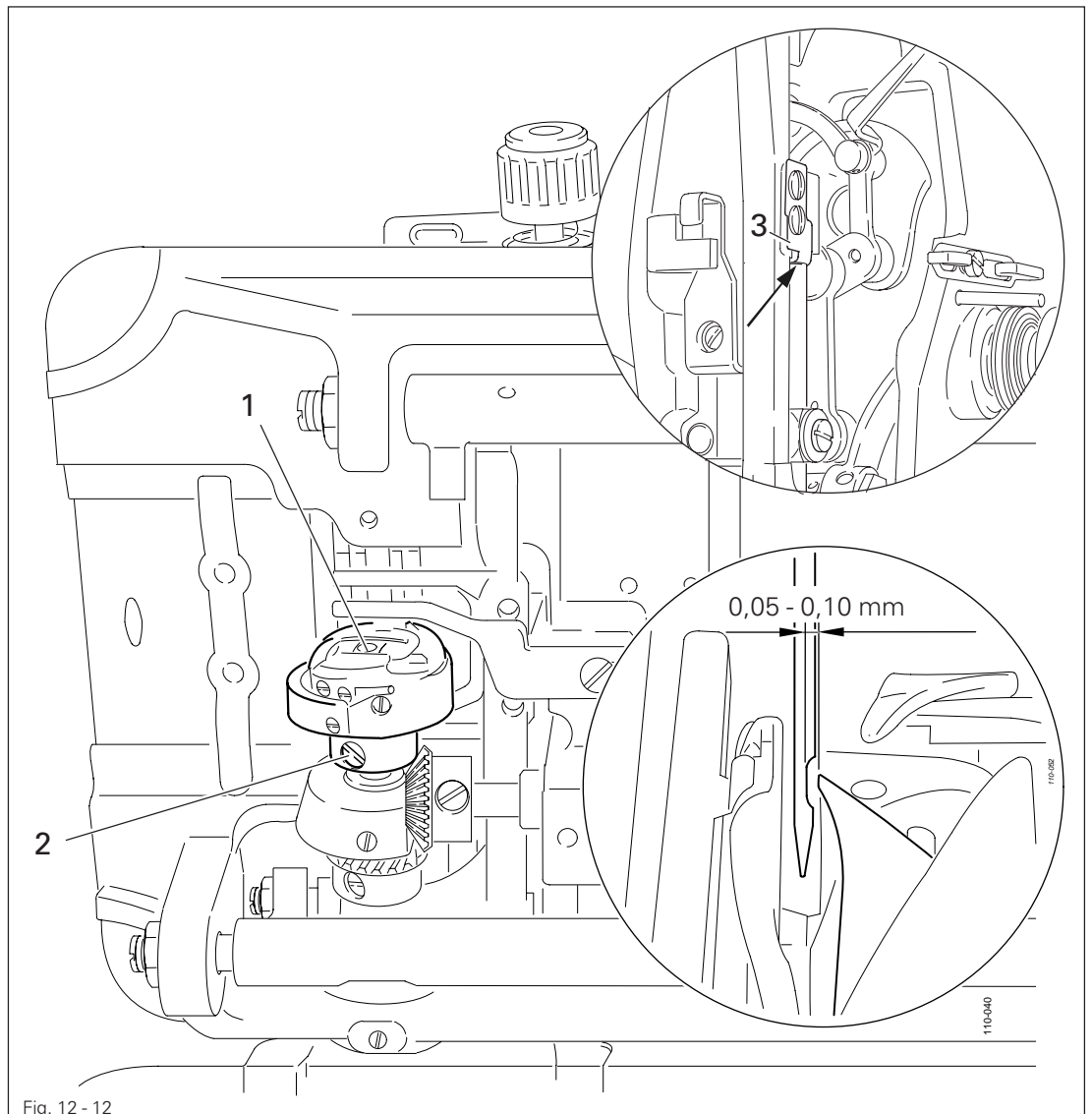


- Without twisting it, adjust needle bar 1 (screw 2) in accordance with the **requirement**.

12.15 Needle rise and hook-to-needle-clearance

Requirement

When the **bottom** marking on the needle bar is level with the bottom edge of adjusting aid **3**, with the zig-zag stitch set at "0" and the stitch position set at "centre", the tip of the hook should be centred to the needle and be at a distance of **0.05 - 0.10 mm** from the groove of the needle.

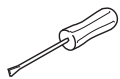
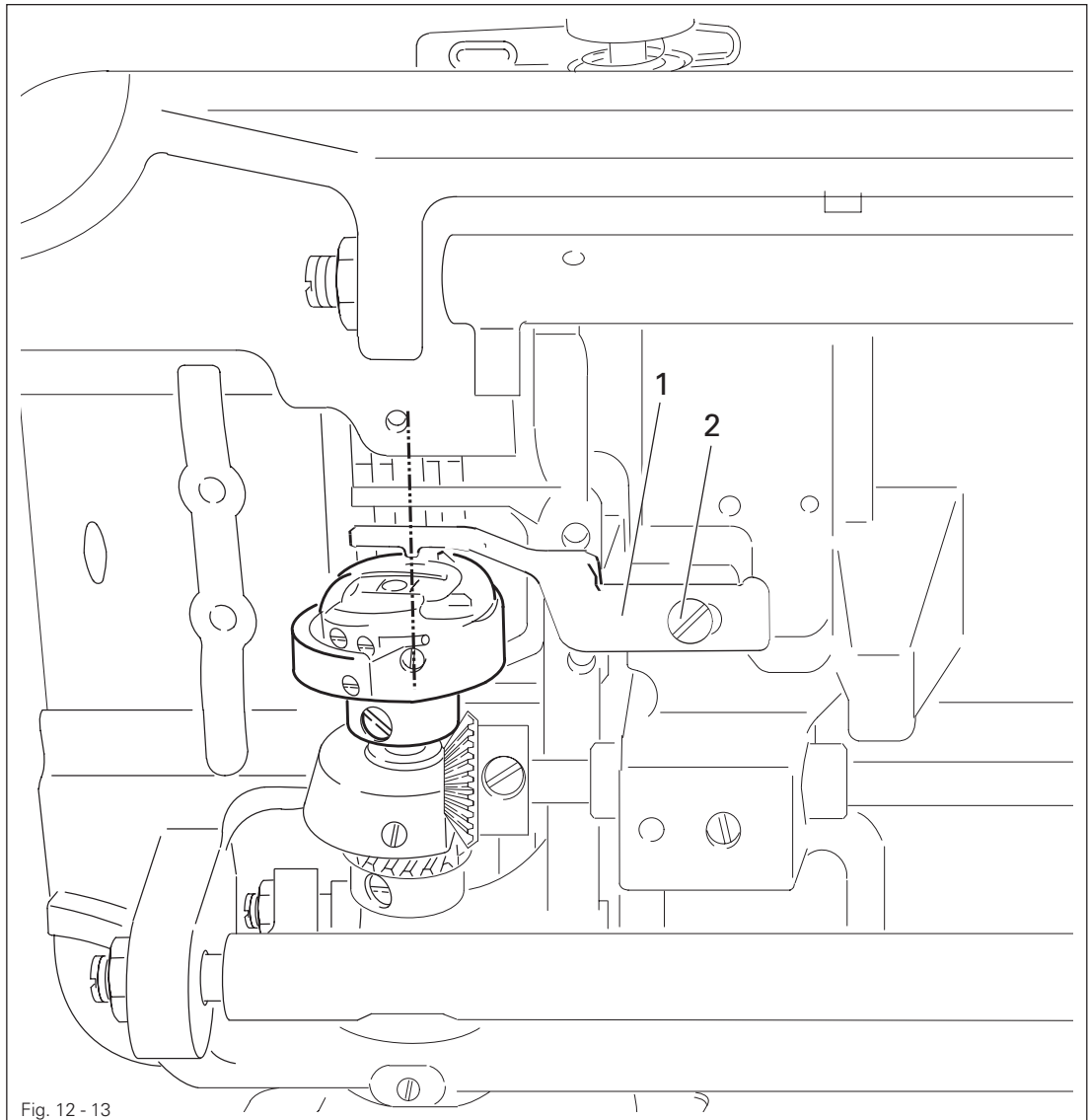


- Adjust hook **1** (screws **2**) in accordance with the **requirement**.

12.16 Bobbin position stop

Requirement

The stop of bobbin position stop 1 should be centred to the needle hole of the needle plate.

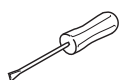
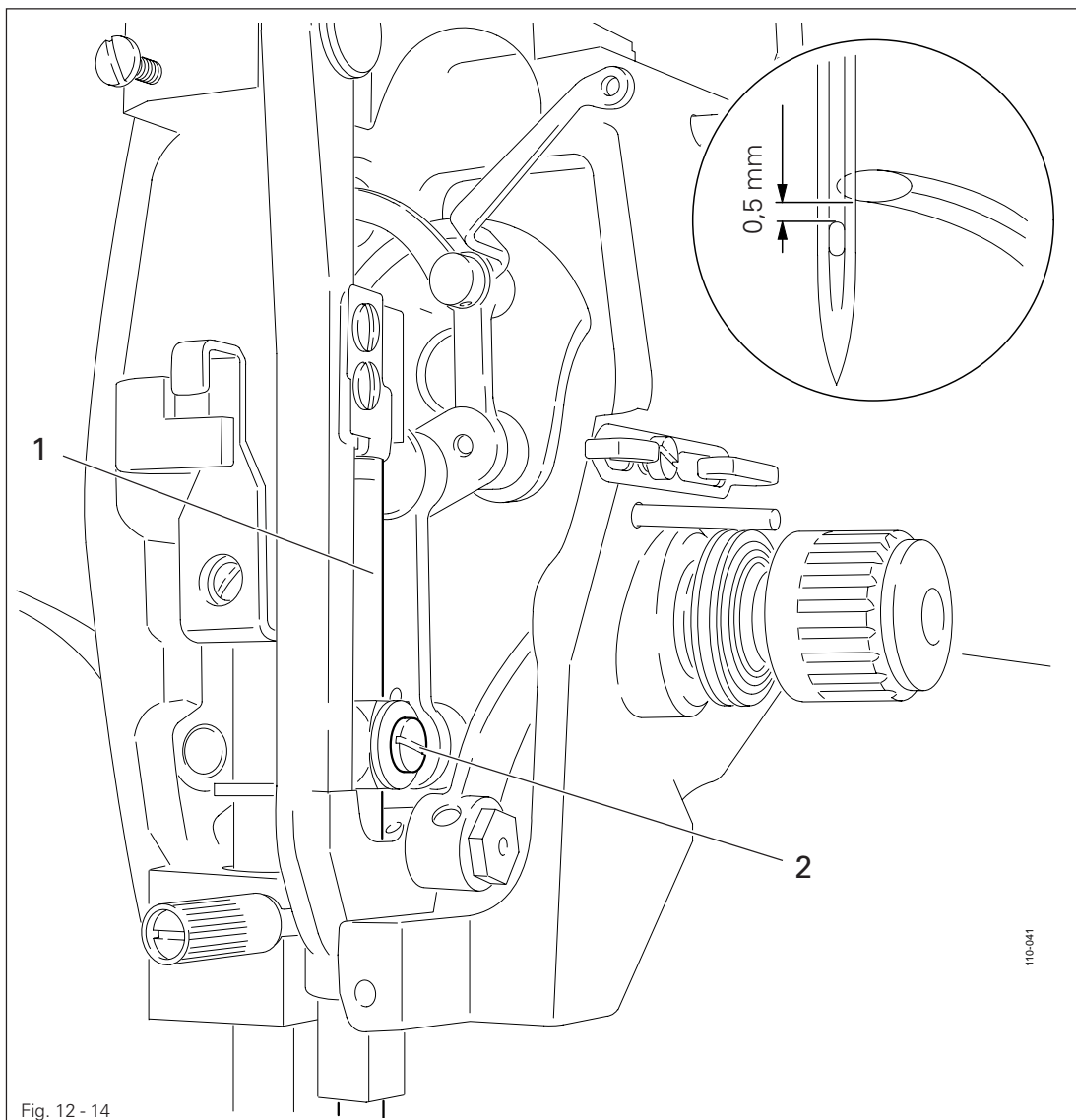


- Adjust bobbin position stop 1 (screw 2) in accordance with the **requirement**.

12.17 Needle height (readjustment)

Requirement

With the zig-zag stitch set at "0" and the stitch position set at "left", when the tip of the hook is centred to the needle, the upper edge of the eye of the needle should be 0.5 mm below the tip of the hook.



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

12.18 Presser foot to needle plate clearance / presser foot pressure

Requirement

1. When the presser foot is raised, there should be a clearance of **6 mm** to the needle plate
2. Even at maximum speed, the material should be fed perfectly.

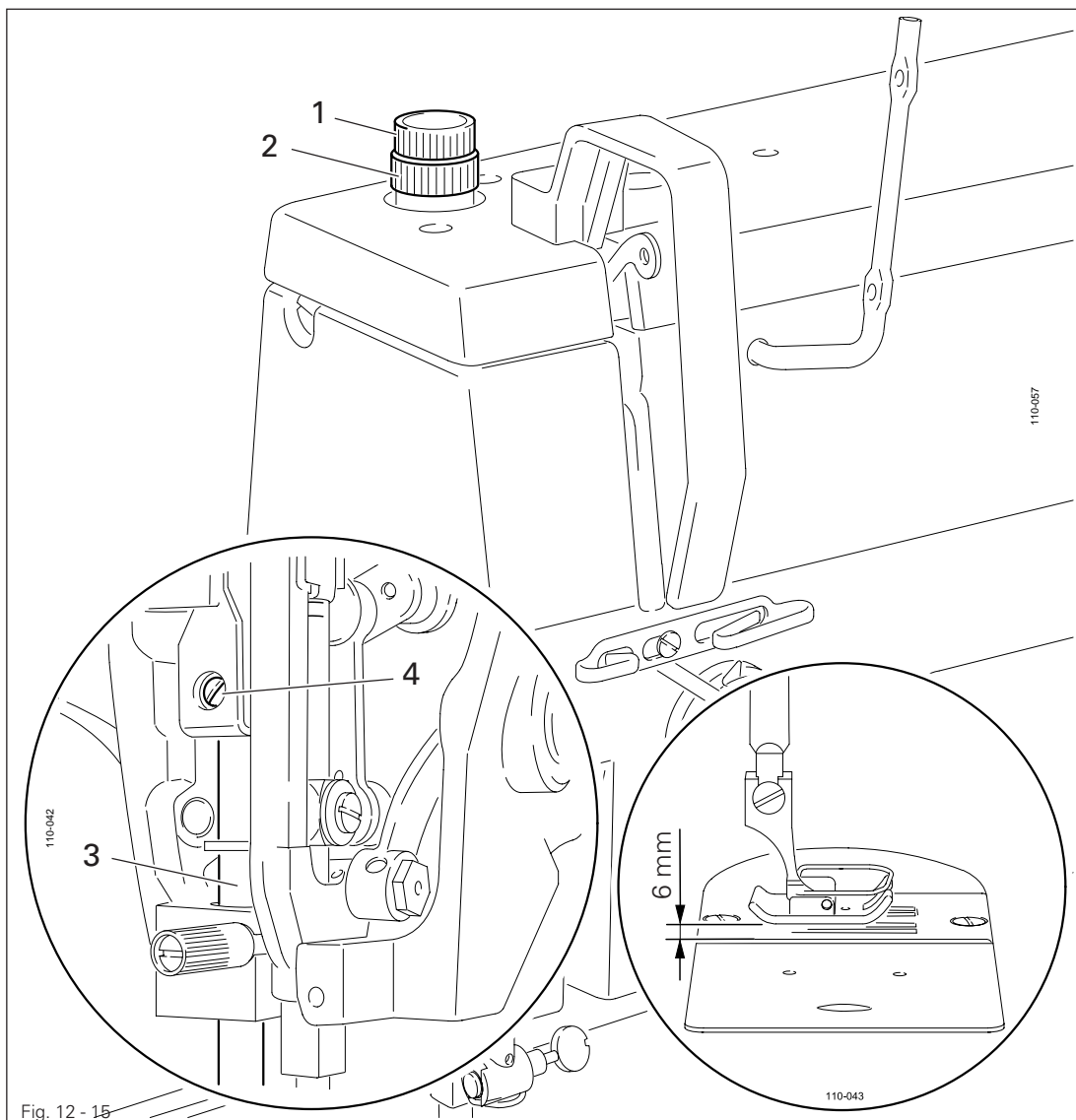
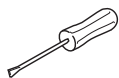


Fig. 12 - 15

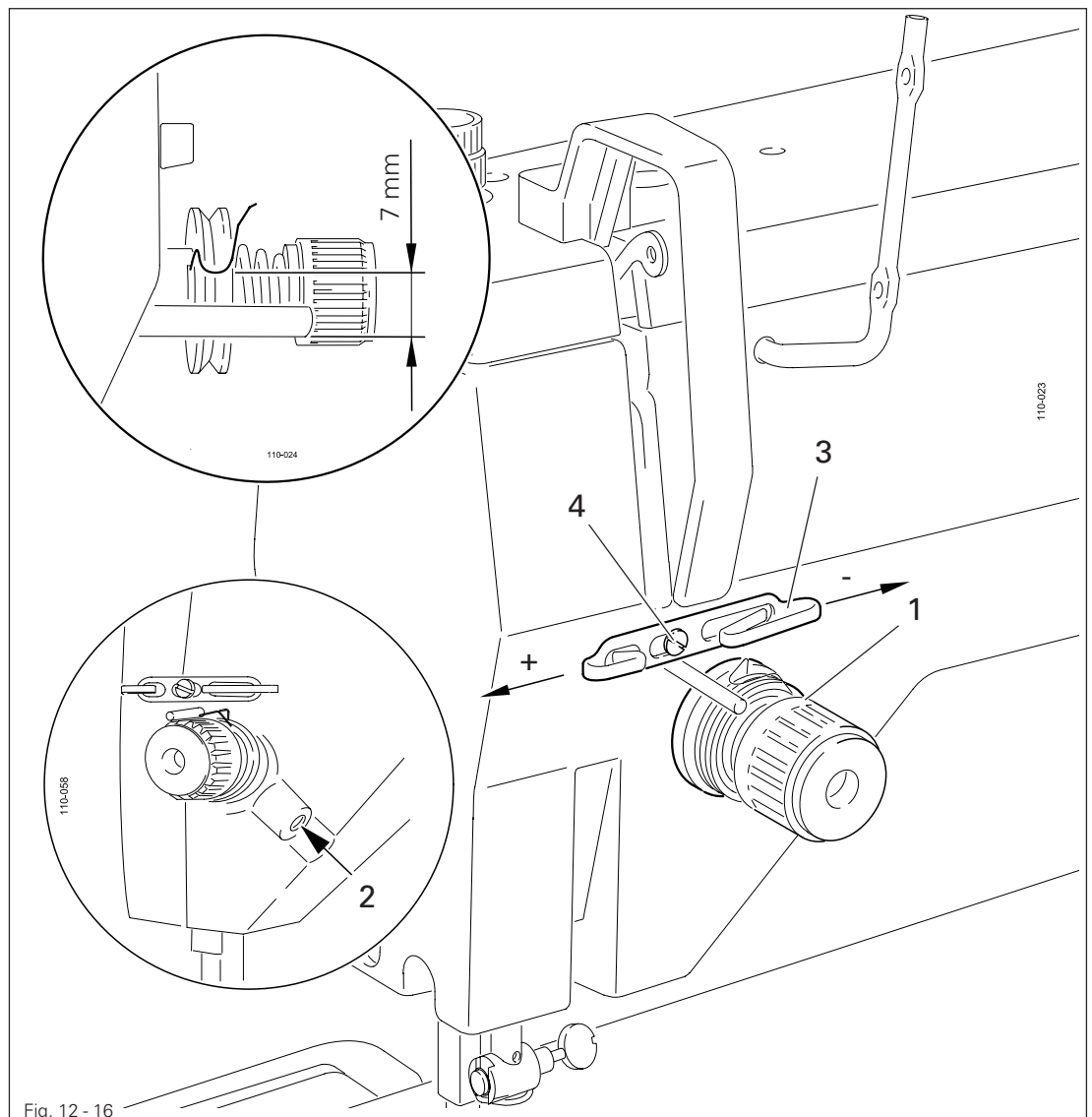


- Raise the presser foot with the hand lever.
- Reduce the pressure on the presser foot with screw **1** (nut **2**).
- Without twisting it, adjust presser rod **3** (screw **4**) in accordance with **requirement 1**.
- Adjust screw **1** (nut **2**) in accordance with **requirement 2**.

12.19 Thread check spring and thread regulator

Requirement

1. The movement of the thread check spring should be finished, when the needle point enters the material (spring stroke ca. 7 mm).
2. When the thread loop is at its largest while being passed around the sewing hook, the thread check spring should have moved ca. 1 mm.



- Adjust thread tension 1 (screw 2) in accordance with requirement 1.
- Adjust thread regulator 3 (screws 4) in accordance with requirement 2.



For technical reasons it may be necessary to deviate from the indicated spring stroke. Move thread regulator 3 (screw 4) towards "+" (= more thread) or "-" (= less thread).

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