

OPERATING INSTRUCTIONS FOR THE GRINDER OF SLITTING TOOLS

1. Introduction

These Operating Instructions serve as a supplement to the operating instructions of the electric bench grinding machine and define the area of use for sharpening the slitting tools of the industrial sewing machines.

2. Purpose of use of the product

The grinder has only been designed for the sharpening of the slitting tools for slitting of industrial sewing machines.

3. Safety instructions



Caution!

Before you start to use the grinder, read carefully the attached operating instructions of the electric bench grinding machine, model B-150.



Caution!

During any handling of the slitting tools, you have to be very careful in order to prevent from any injury of the operator by the cutting edge of the tool.

It is forbidden:

- To use the grinder for sharpening or grinding other objects than the slitting tools.
- To develop lateral pressure by the tool being ground onto the disk, when sharpening the tool on the thin grinding disk.
- To clamp the tool into the clamp A, C, Y or Z in some other way than it is shown in the operating instructions, or to sharpen the tool in hands.

4. Grinding the tool for the lower oscillatory slitting machine 4181i-1, 4181i-3

Working method for tool grinding is shown in the Figures of these Operating Instructions, and consists of three phases:

- a) dressing of the grinding disk
- b) tool grinding in the jig Y or Z
- c) repolishing of the burr on the felt polishing wheel

Description to the Figures:

Fig. 1 - view of the tool grinder

- On the left part of the shaft, a grinding disk is clamped, a felt polishing wheel on the right part.
- On the front side of the grinding machine ELKO, a switch for starting the machine is mounted.
- On the front side of the auxiliary device of the grinder, a control wheel of the feed screw is placed.
- Next to the left disk, a feed slide rest is mounted for clamping the jigs Y or Z, for the cranked or straight tools.

Fig. 2 - view of the clamps of the slitting tools

Y – for the cranked tools

Z – for the straight tools

H – the diamond dresser of the disk

Fig. 3 - dressing of the grinding disk

- Take with one hand the holder of the wheel dresser, and overrun with swinging movements from the left to the right within the width of the disk.
- Turn slowly with the other hand the small control wheel of the feed screw, by which you are feeding the slide rest with the wheel dresser into the engagement. The turning of the wheel is minimum and corresponds maximally to one groove in the grooving of the wheel.
- The dressing is finished after cleaning the whole active surface of the disk.

Fig. 4 - detail of the dressing device

- After certain time /about 10 dressings/ it is recommended to loose the bolt M4 and to turn the dressing diamond approximately 90°; by this you will increase its service life.



Caution!

For the next dressing, always go away the slide rest in direction from the disk, and then move carefully the diamond dresser into the engagement; so you will avoid damaging or destroying of the diamond and the disk, or prevent from possible injury.

Fig. 5 - preparation for grinding

- Loosen the bolt M6 by about 4 mm, lift a little and turn the holder of the dresser 90°, by this you will swing it off from the functional position and obtain a space for the clamps with tools.
- After snapping into the groove, tighten the bolt again.
- Prepare the dresser for the dressing in the same way.

Fig. 6 - clamping of the cranked tool into the grinder

- On the fork of the slide rest, fit the clamp for cranked tool Y.
- Loosen the grooved bolt M5 and put the cranked tool into the loosened shank.
- You can do final adjustment of the height of the clamp by means of the bolt M4, and so adjust the position of the tool with respect to the wheel.

Fig. 7 - grinding of the cutting edge of the cranked tool

- In the movement from the right to the left, arrive with the sinking of the tool against the disk.
- Gently put the tool on the rotating disk, in case of longer grinding, proceed in a few steps, in order to avoid heating of the cutting edge of the tool.

Fig. 8 - clamping of the straight tool

- On the fork of the slide rest, fit the clamp for the straight tool Z.
- Loosen the plastic nut and put the straight tool into the loosened shank.
- You can do final adjustment of the height of the tool by means of the bolt M4.

Fig. 9 - grinding of the cutting edge of the straight tool

- In the movement from the right to the left, arrive with the sinking of the tool against the disk.
- Gently put the tool on the rotating disk, in case of longer grinding, proceed in a few steps, in order to avoid heating of the cutting edge of the tool.

Fig. 10 - preparation of the polishing wheel

- Put and press the polishing paste on the rotating felt polishing wheel, and apply it uniformly along the whole circumference.

Fig. 11, 12 - polishing of the burr of the tool

- On the rotating wheel, hold the tool in such a way that the wheel rotates along the cutting edge of the tool, and polish the burr that occurs after grinding.

**Caution!**

After holding the tool against the cutting edge, it might cut into the felt wheel and subsequently it may fling up and cause injury to the operator.

5. Grinding the tools for oblique slitting machine 4182i-1

Working method when tool grinding is shown in the Figures of these Operating Instructions, and consists of three phases:

- d) dressing of the grinding disk
- e) tool grinding in the jig A or C
- f) repolishing of the burr on the felt polishing wheel

Description to the Figures:**Fig. 13 - view of the tool grinder**

- On the left part of the shaft, a grinding disk is clamped, a felt polishing wheel on the right part.
- On the front side of the grinding machine ELKO, a switch for starting the machine is placed.
- On the front side of the auxiliary device of the grinder, a control wheel of the feed screw is placed.
- Next to the left disk, a feed slide rest is mounted for clamping the jigs A or C, for the tool with straight cutting edge or for the tool with cranked cutting edge.

Fig. 14 - view of the clamps of the slitting tools

- A – for tools with straight cutting edge – the diamond dresser of the disk A, C
- C – for tools with cranked cutting edge – the diamond dresser of the disk C

Fig. 15 and 16 - dressing of the grinding disk

- In the first dressing phase it is necessary to dress the front of the disk with help of the dresser A, C according to Fig. 15.
- Take with one hand the holder of the wheel dresser A, C and overrun with swinging movements from the left to the right within the width of the disk.
- Turn slowly with the other hand the control wheel of the feed screw, by which you are feeding the slide rest with the wheel dresser into the engagement. The turning of the wheel is minimum and corresponds maximally to one groove in the grooving of the wheel.
- In the second dressing phase it is necessary to dress the facet of the disk with help of the dresser C according to Fig. 16.
- Take with one hand the holder of the wheel dresser C and overrun with swinging movements from the left to the right within the width of the disk.

- Turn slowly with the other hand the control wheel of the feed screw, by which you are feeding the slide rest with the wheel dresser into the engagement. The turning of the wheel is minimum and corresponds maximally to one groove in the grooving of the wheel.
- The dressing is finished after cleaning the whole active surface of the disk.
- After certain time /about 10 dressings/ it is recommended to loosen the bolt M4 and to turn the dressing diamond approximately 90°, by which you will encrease its service life.



Caution!

For the next dressing, always go away the slide rest in direction from the disk, and then bring carefully the diamond dresser into the engagement, by this you will avoid damaging or destroying of the diamond and the disk, or prevent from possible injury.

Preparation for grinding

- Loosen the bolt M6 by about 4 mm, lift a little and turn the holder of the dresser 90°, by this you will swing it off from the functional position and obtain a space for the clamps with tools.
- After snapping into the groove, tighten the screw again.
- Prepare the dresser for the dressing in the same way.

Fig. 17 - clamping of the tool with straight cutting edge into the grinder

- Onto the axis of the movable slide rest, fit the arresting ring and the clamp for the cranked tool A.
- Loosen the bolt M5 and fit the cranked tool into the loosened shank. Adjust the arresting ring axial to the right position.
- Insert the tool to be aligned with the gib, what position is possible to be set through the screw M4. After that the tool to be fixed by tightening the shank.

Fig. 18 - grinding of the cutting edge of the tool

- In the movement from the right to the left, arrive with the tool against the disk.
- Gently put the knife on the rotating disk, in case of longer grinding, proceed in a few steps, in order to avoid heating of the cutting edge of the tool.

Fig. 19 - clamping of the tool with the cranked cutting edge into the grinder

- Onto the axis of the movable slide rest, fit the arresting ring and the clamp for the cranked tool C.
- Loosen the bolt M5 and fit the cranked tool into the loosened shank. Adjust the arresting ring axial to the right position.
- Insert the tool to be aligned with the gib, what position is possible to be set through the screw M4. After that the tool to be fixed by tightening the shank.

Fig. 20 - grinding of the cutting edge of the tool

- In the movement from the right to the left, arrive with the sinking against the disk.
- Gently put the tool on the rotating disk, in case of longer grinding distance, proceed in a few steps, in order to avoid heating of the cutting edge of the tool.

Fig. 21 - grinding of the tool taper

- Grind a gentle taper on the side of the cutting edge of the tool, according to the attached drawing.

Fig. 22 - preparation of the polishing wheel

- Put and press the polishing paste on the felt polishing wheel, and apply it uniformly along the whole circumference.

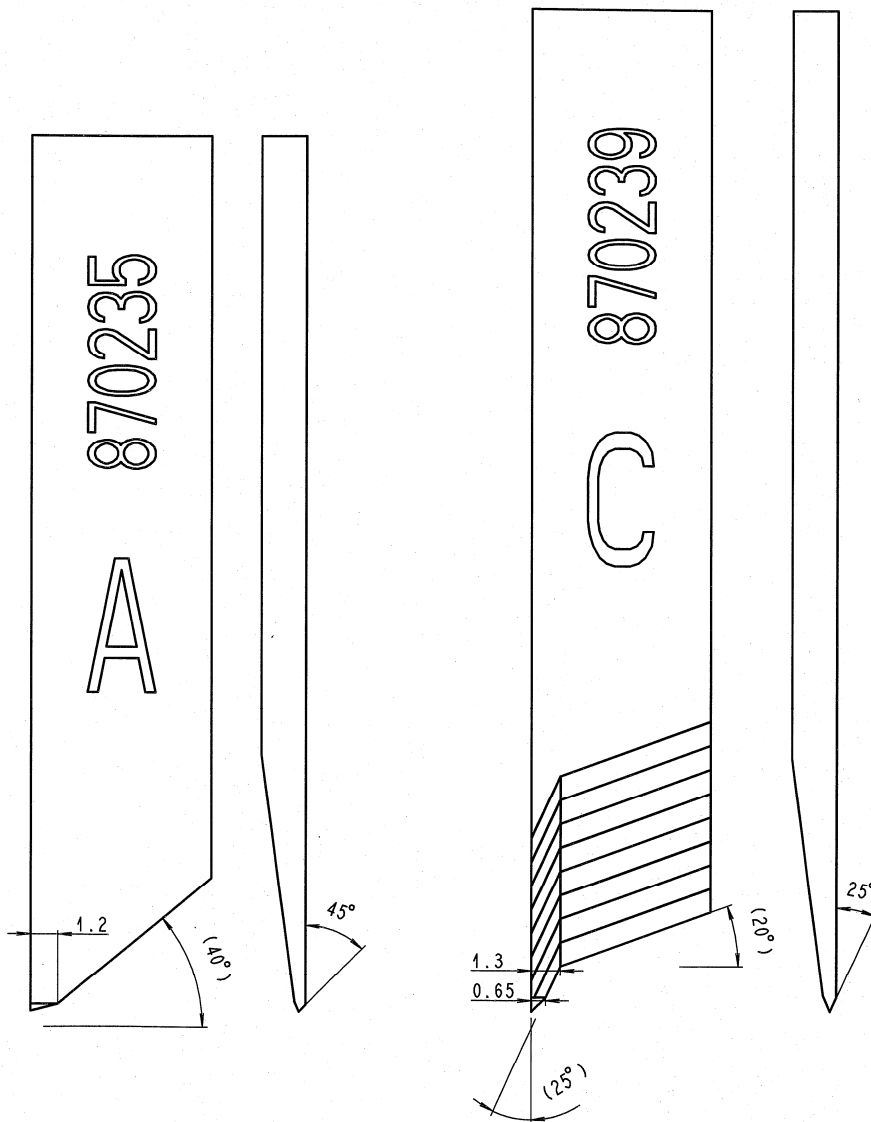
Fig. 23 - polishing of the burr of the tool

- On the rotating wheel, hold the tool in such a way that the wheel rotates along the cutting edge of the tool, and polish the burr that occurs after grinding.



Caution!

After holding the tool against the cutting edge, it might cut into the felt wheel and subsequently it may fling up and cause injury to the operator.

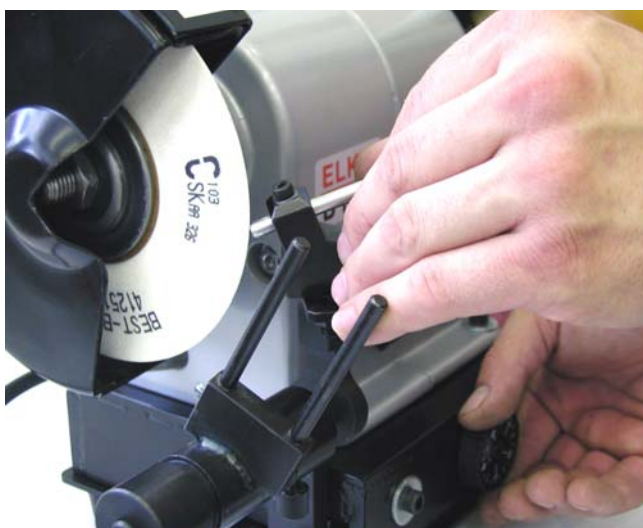




Obr. 1



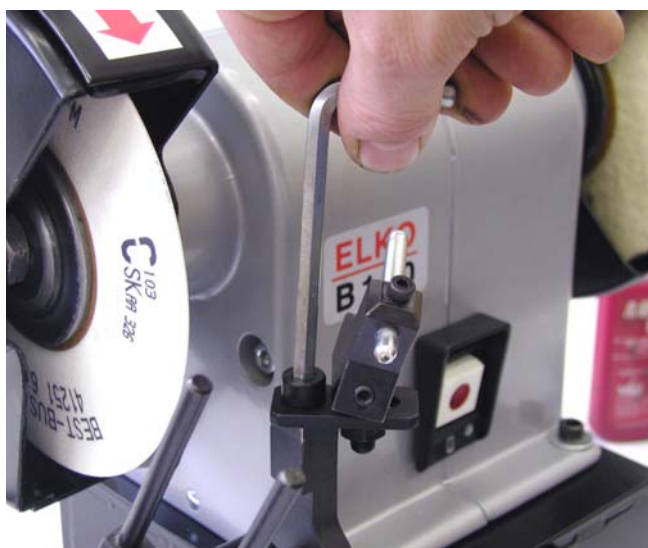
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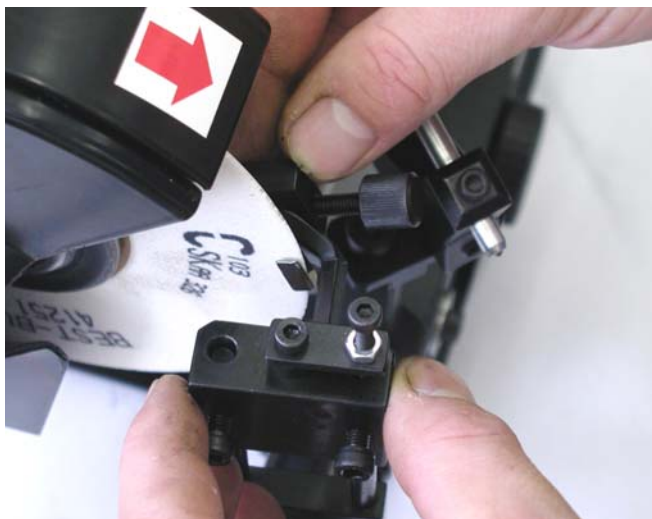
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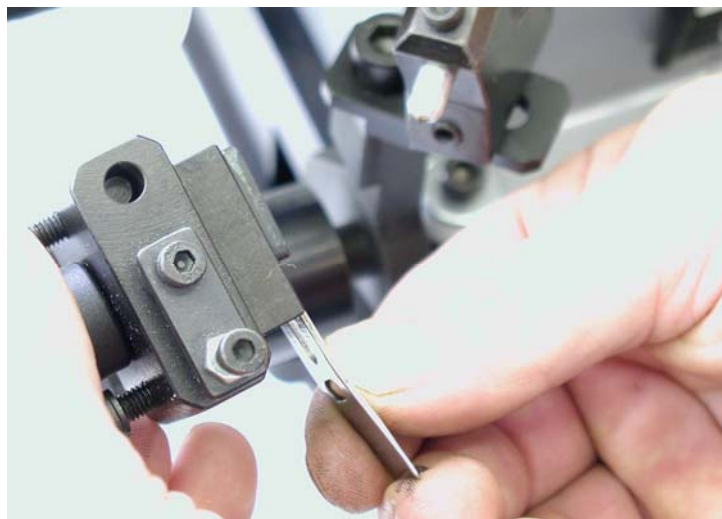
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Obr. 8



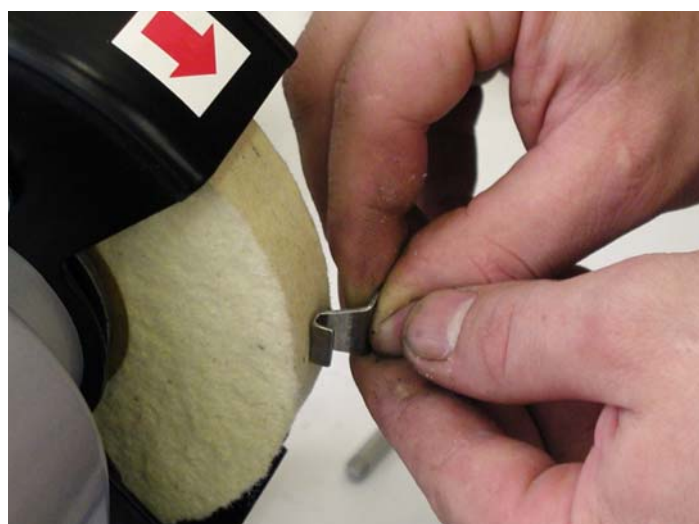
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Obr. 10



Obr. 11



Obr. 12



Obr. 13



Obr. 14



Obr. 15



Obr. 16



Obr. 17



Obr. 18



Obr. 19



Obr. 20



Obr. 21



Obr. 22



Obr. 23