SCISSORS SHARPENING MACHINE

ADEMS & ZM

OPERATION MANUAL

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1. **. PURPOSE AND SCOPE**

The ADEMS & ZM household machine is designed for reducing the width of the blade support surface on scissors by performing radius grinding on the back surface of the blade.

2. **DELIVERY SET**

The delivery set includes:

1. Household machine ZM with frequency converter - 1 pc.;
2. Manipulator - 1 pc.;
3. Abrasive wheel F90 150x40x32, mounted on ProFix 40 and calibrated with a diamond pencil - 1 pc.;
4. Abrasive wheel F180 150x10x32, mounted on ProFix 20-10 and calibrated with a diamond pencil, complete with an intermediate bushing - 1 pc.;
5. Wrench set for changing abrasive wheels - 1 set;
6. Abrasive wheel dressing device, complete with a diamond pencil and adjustment wrench - 1 pc.;
7. Mains cable - 1 pc.;
8. Friction support foot - 4 pcs.;

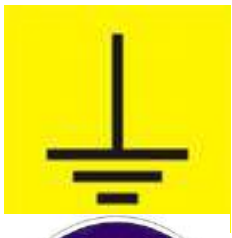
3. **TECHNICAL SPECIFICATIONS**

Types of Sharpenable Tools	- Household scissors - Classic hairdressing scissors - Convex hairdressing scissors
Sharpening Methods	- Roughing - Finishing
Motor Supply Voltage, V	220
Lighting Supply Voltage, V	12
Rated Motor Power Consumption, W, max	550
Wheel Rotation Speed, adjustable, rpm	0...1500
Abrasive Wheel Diameter, mm	150
Abrasive Wheel Width, mm	10 and 40
Wheel Bore Diameter, mm	32
Possible Abrasive Wheel Installation: - Diameter, mm - Width, mm	 125-200 10, 16, 20, 40
Overall Dimensions, mm	595x310x300
Net Weight, kg	22.5
Gross Weight (packaged), kg	25

4. **SAFETY INSTRUCTIONS**

WARNING

Before starting work, inspect the machine for any obvious damage to the power cord or moving parts. Do not turn on the machine if such damage is found until it has been repaired.



It is recommended to connect the machine only to a power outlet with a grounding branch.

When operating the machine, use protective goggles and a respirator mask. Goggles only provide protection against suspended dust and abrasive particles and do not protect against flying fragments.

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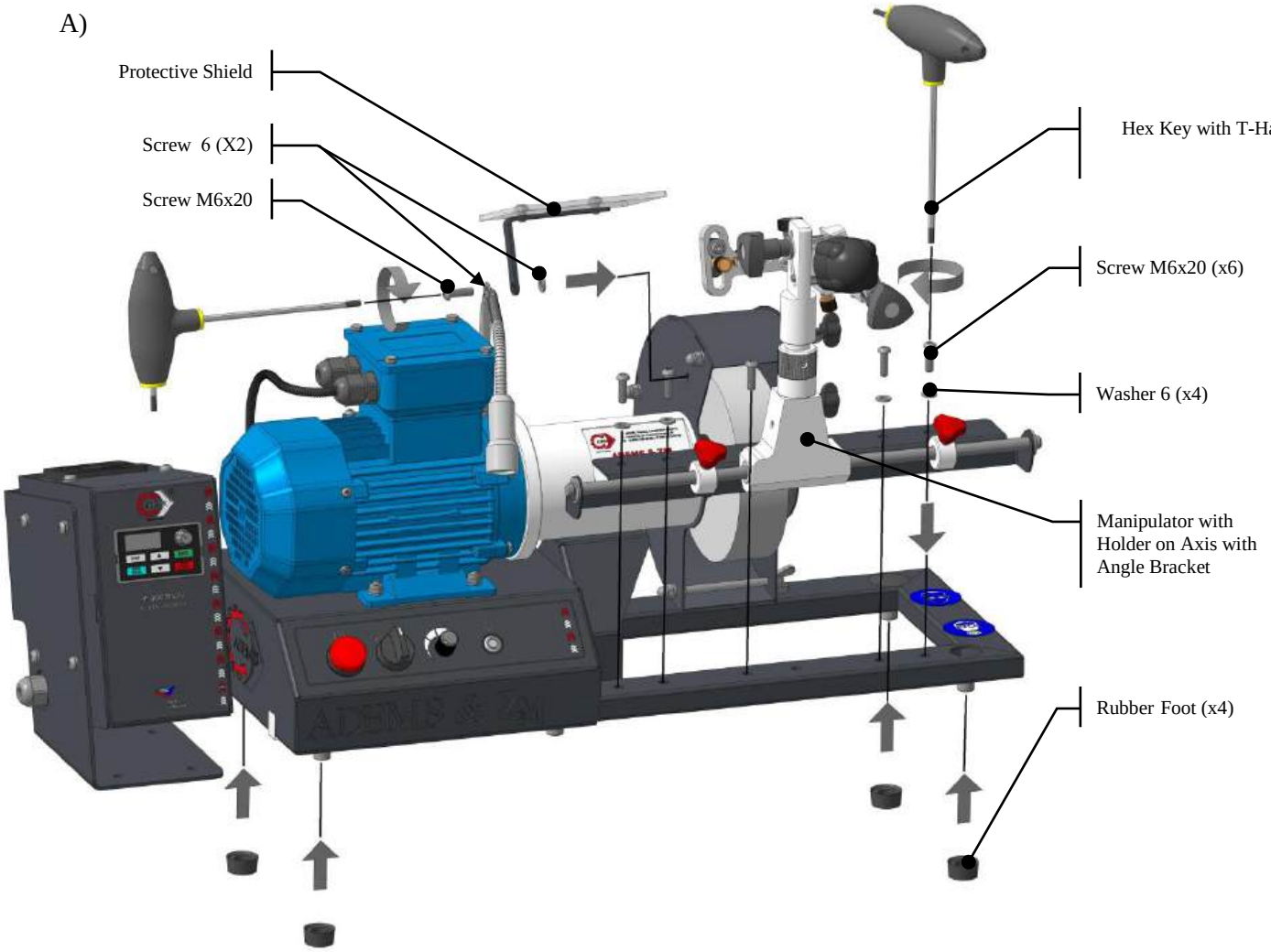
5. MACHINE PREPARATION FOR OPERATION

A)



b)

Fig.1 Assembly of the ADEMS & ZM Machine

a) Front side of the machine; b) Rear part of the machine
Remove the machine from its packaging and place it on a standard workstation close to a power source.

WARNING
If the machine is brought into a heated room from outside or from a cold environment during winter, do not unpack or turn it on for 8 hours. The machine must warm up to the ambient air temperature. Otherwise, the machine may fail upon startup due to condensed moisture on the electric motor components.
Insert the rubber feet onto the screw heads under the frame - the machine rests on the rubber feet. Install the manipulator with the holder on the axis with the angle bracket onto the frame, aligning the holes on the frame and the angle bracket. Secure the position of the angle bracket by tightening the screws using the hex key No.4 with T-handle from the delivery set. Check the operation of all moving elements of the manipulator and holder. All unsecured mechanisms should move and rotate smoothly by hand without jamming or sticking. Mechanisms secured by clamping screws must be firmly fixed; any play is unacceptable. Install the protective shield onto the housing guard, securing it with a screw with sufficient force to keep the shield in the selected position. Insert the cable plug from the frequency converter box into the corresponding socket on the rear of the machine housing.
Insert the power cord into the corresponding socket on the rear of the machine housing. The cable plug from the frequency converter box must be inserted into the socket on the rear of the housing.

WARNING
The machine's abrasive wheel must rotate freely by hand. Ensure that nothing obstructs its rotation.
The power cord should not be taut; 20% of its length should lie loosely on the workbench.
WARNING
Before connecting the mains cable to the general power supply, ensure that the power cord and plug are not damaged.

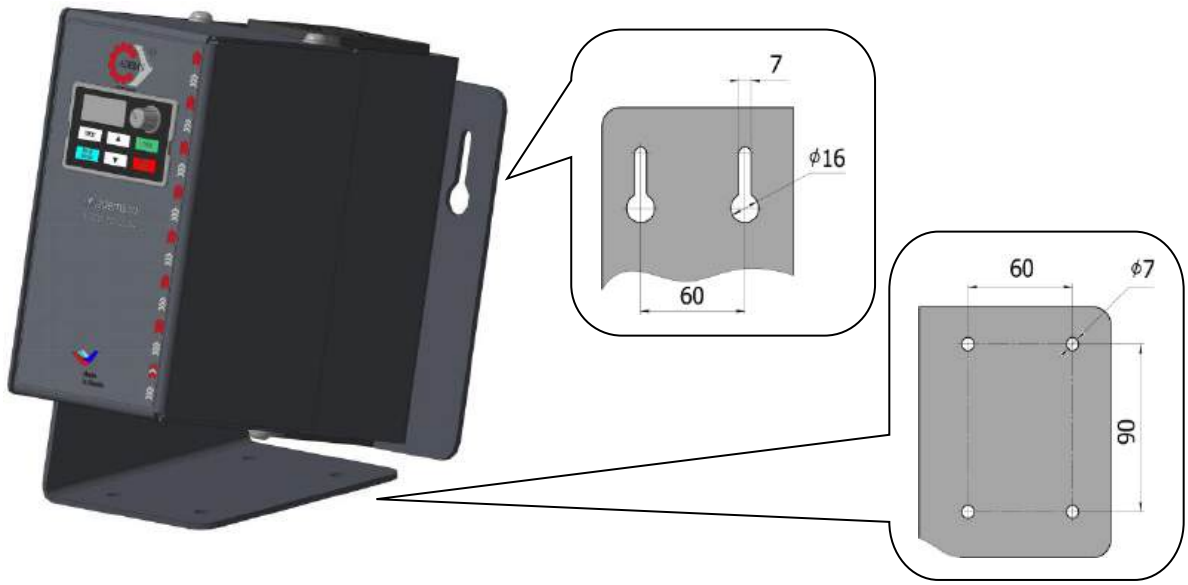


Fig.2 Mounting Diagram for Frequency Converter Installation

WARNING

Before plugging into the 220 V outlet, double-check that all plugs are connected to the corresponding sockets on the rear of the machine housing.
Check the operation of the electrical equipment: switches, light.
Check the operation of the machine: the abrasive wheel must rotate without vibration, extraneous noise, or knocking.
Place the stand with the box in any convenient location for you.

WARNING

For convenient operation, the frequency converter box can be mounted either on the tabletop or on the wall.

6. DESIGN

The design and operating principle are described based on Fig. 3.

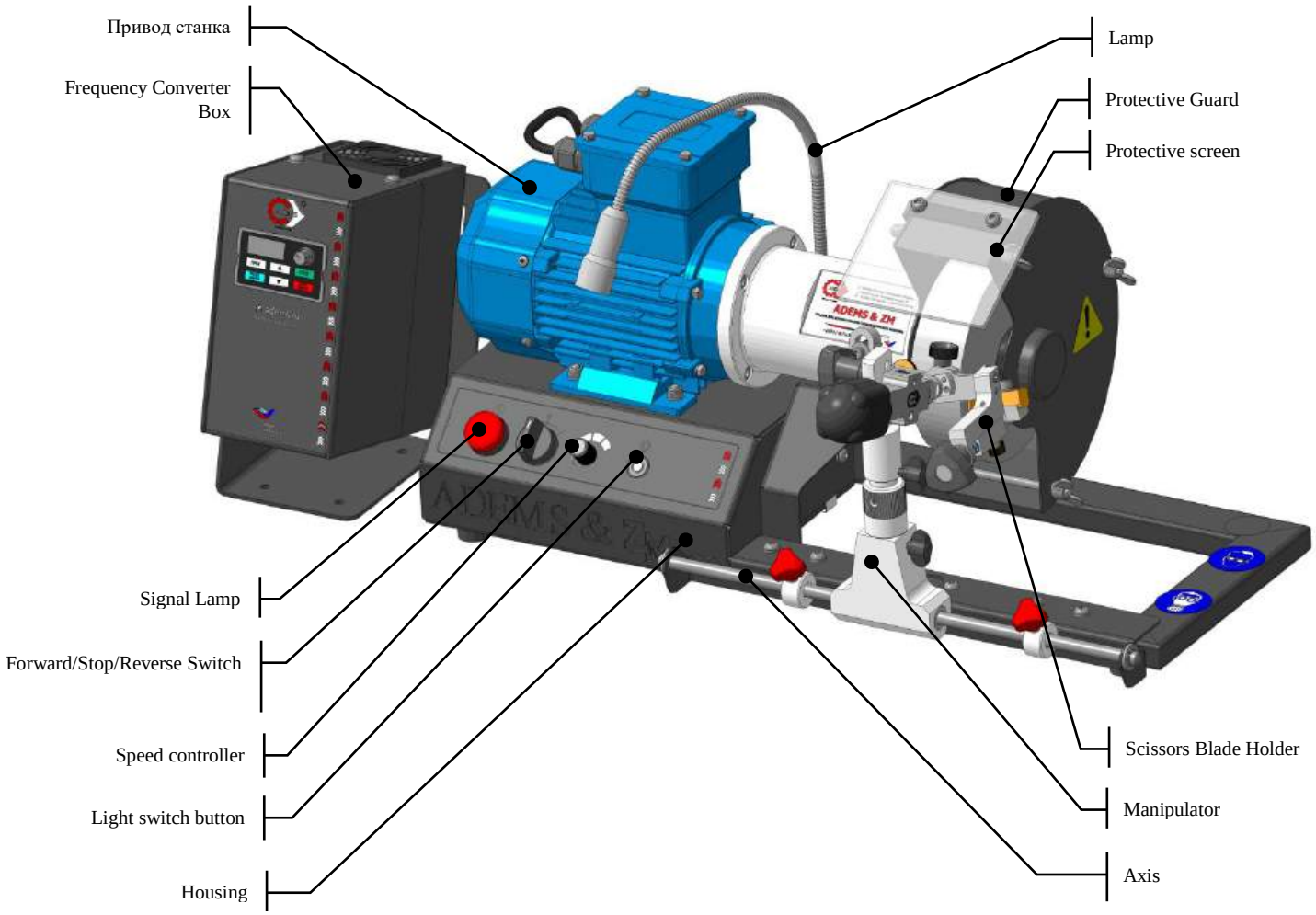


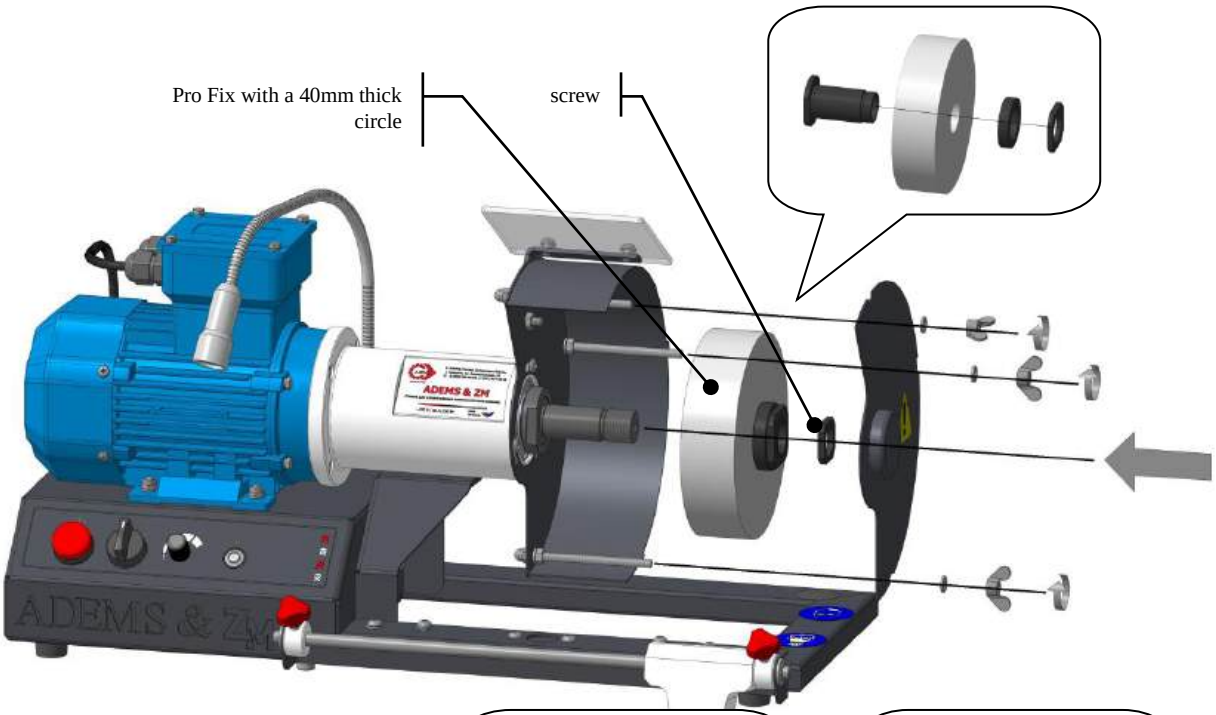
Fig.3 ADEMS & ZM Machine

7. **OPERATING PRINCIPLE**

STEP 1. Preparation for work.

Before starting work, ensure that the protective guard does not block the view of the processing area for visual control of the grinding location. If the top edge of the guard is in the way, rotate the guard clockwise after loosening the guard mounting screws using a hex key No.4. Secure the position of the protective guard by tightening the screws.

a)



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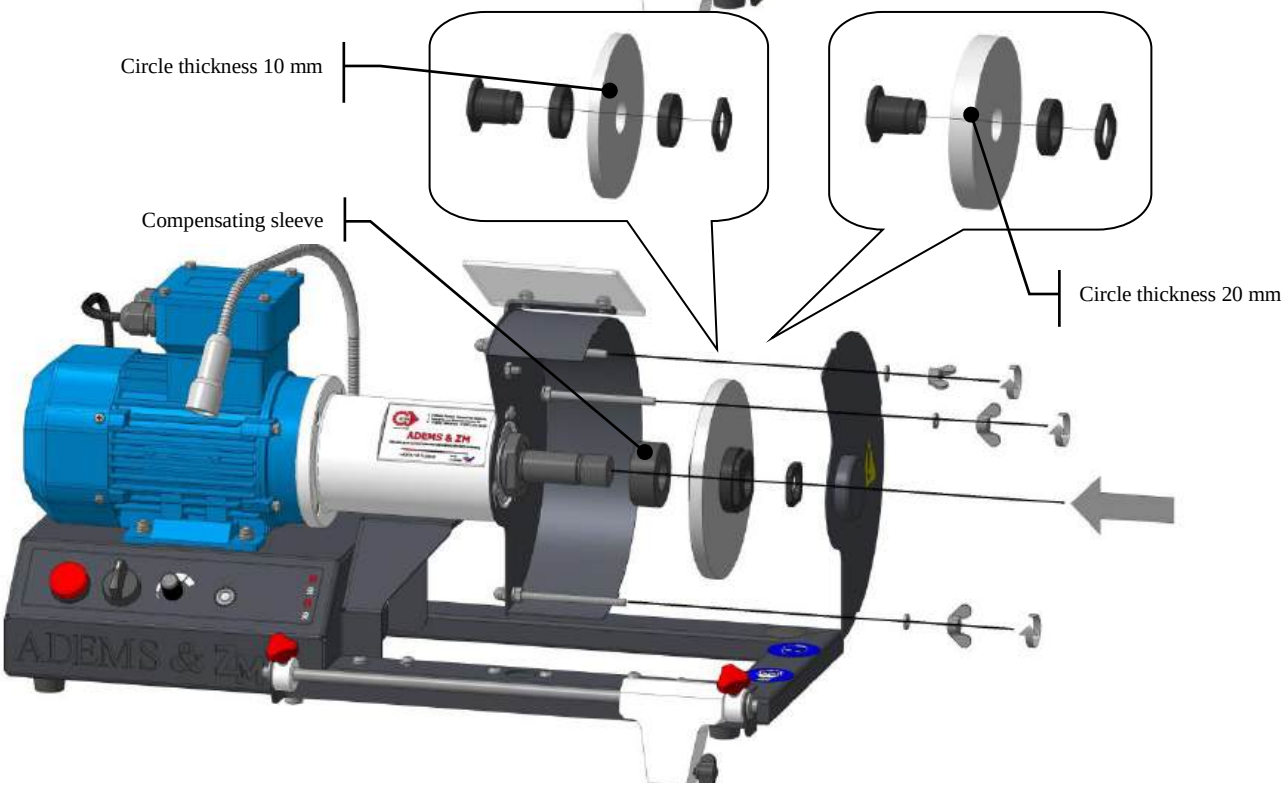


Fig.4 Installation of Pro Fix with Wheel

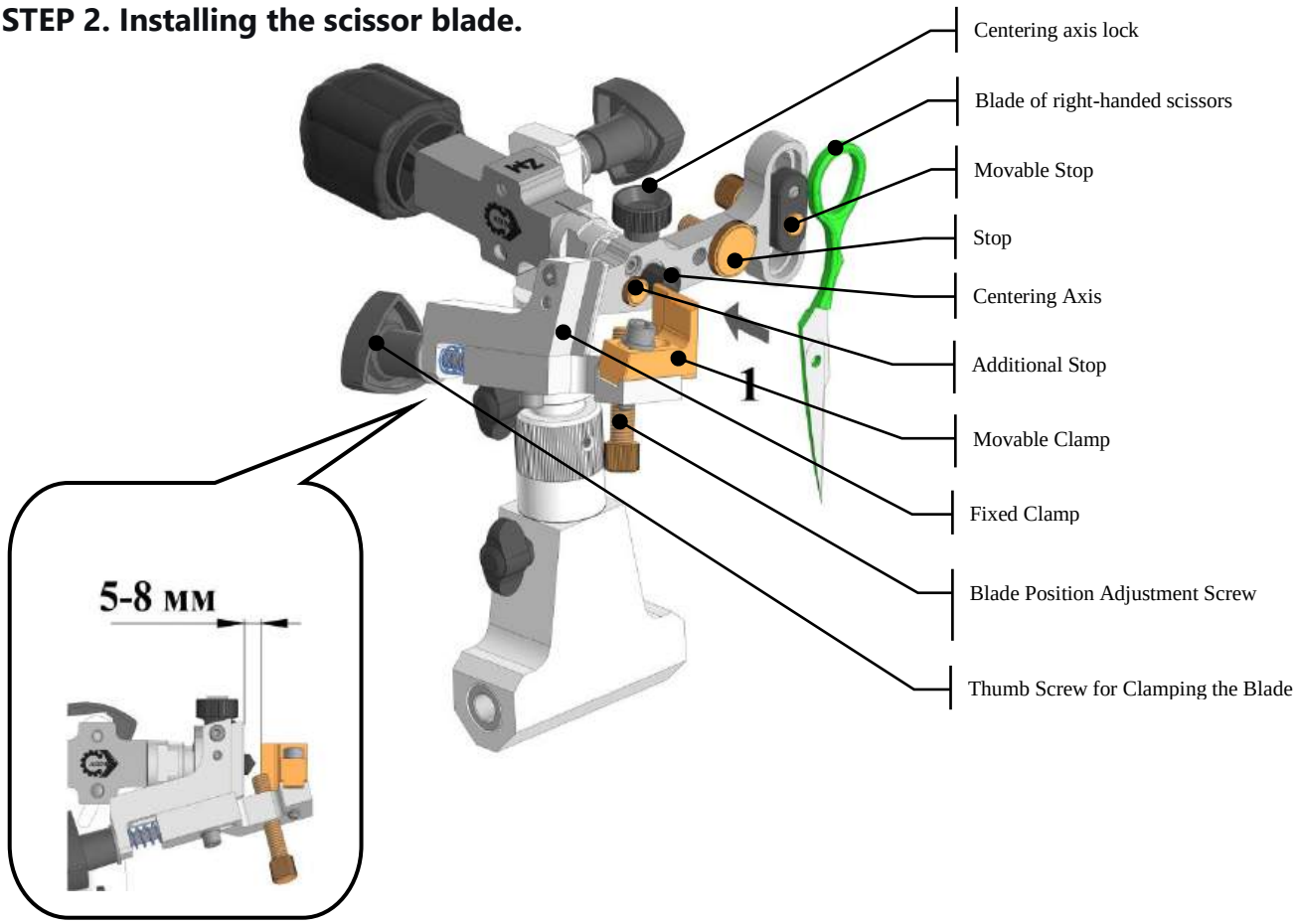
a) 40 mm thick; b) 10 mm thick

The machine comes with two abrasive wheels, 150 mm in diameter and 40 mm and 10 mm thick. The first wheel is designed for forming the width of the support surface along the entire length of convex hairdressing scissor blades and thinning scissor blades, without touching the heel. The 10 mm wide wheel is designed for grinding in the heel area of thinning scissors.

Install the Pro Fix with the selected abrasive wheel onto the machine shaft, tighten the nut using the wrenches from the Pro Fix set.

WARNING
It is not recommended to remove the abrasive wheel from the Pro Fix, as the manufacturer performed its calibration together with this specific Pro Fix to reduce vibration and runout of the working surface. Removing and subsequently reinstalling the abrasive wheel will cause runout, which can only be eliminated by subsequent dressing with a diamond pencil.
WARNING
The machine technically allows the installation of abrasive wheels with a diameter of 125...250 mm and a width of 10, 20, 40 mm.
If you need to install a Pro Fix with a 10 mm thick wheel, first place the compensating bushing on the shaft before it.
To install a 20 mm thick wheel on the machine, use a short Pro Fix without one washer, using the compensating bushing.

STEP 2. Installing the scissor blade.



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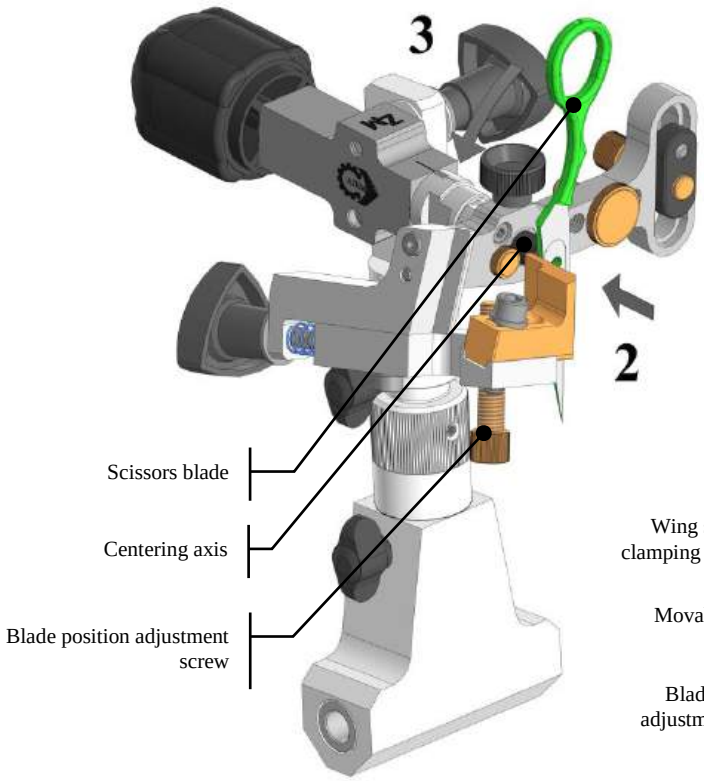

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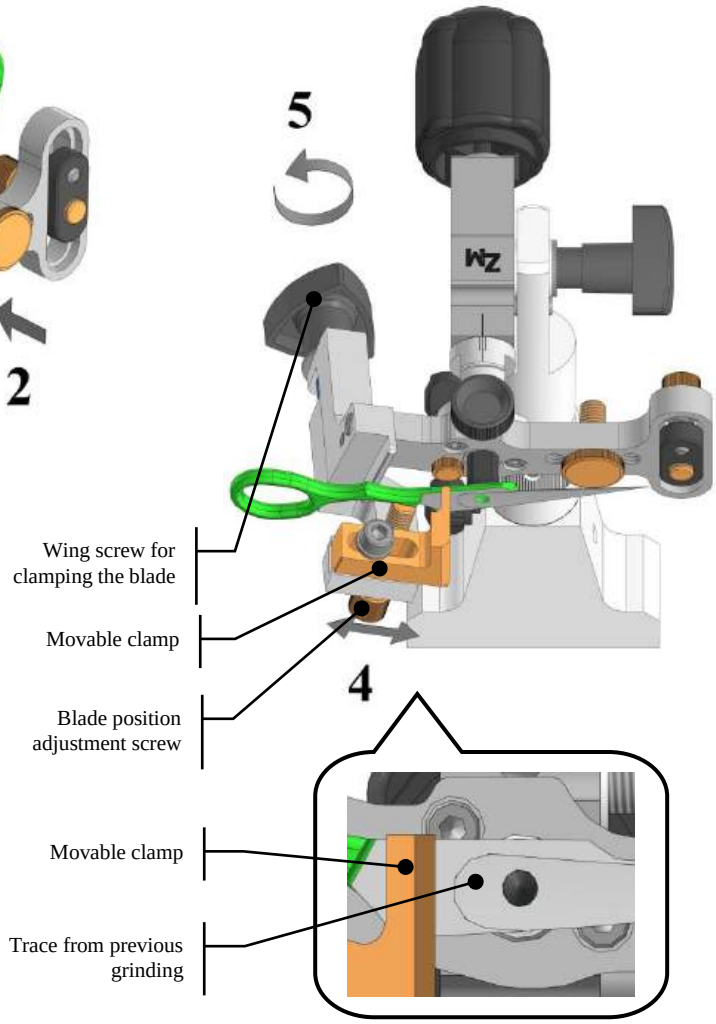

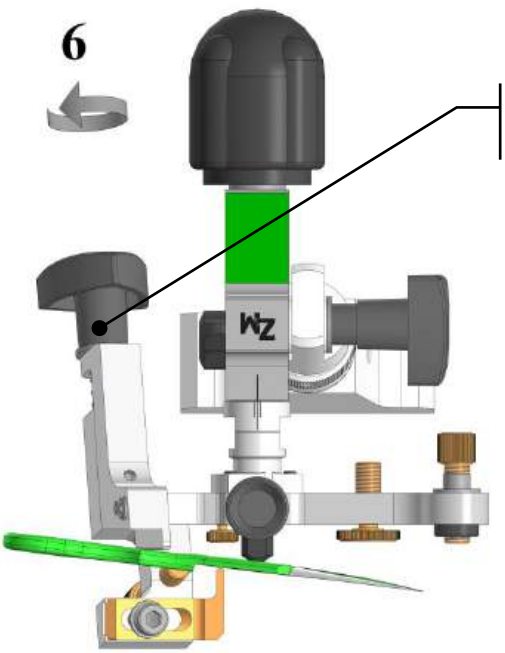

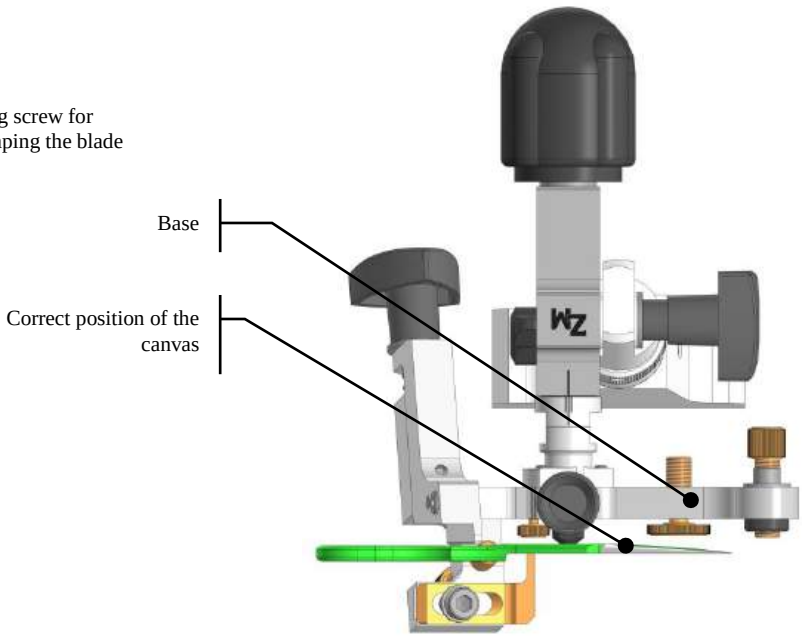

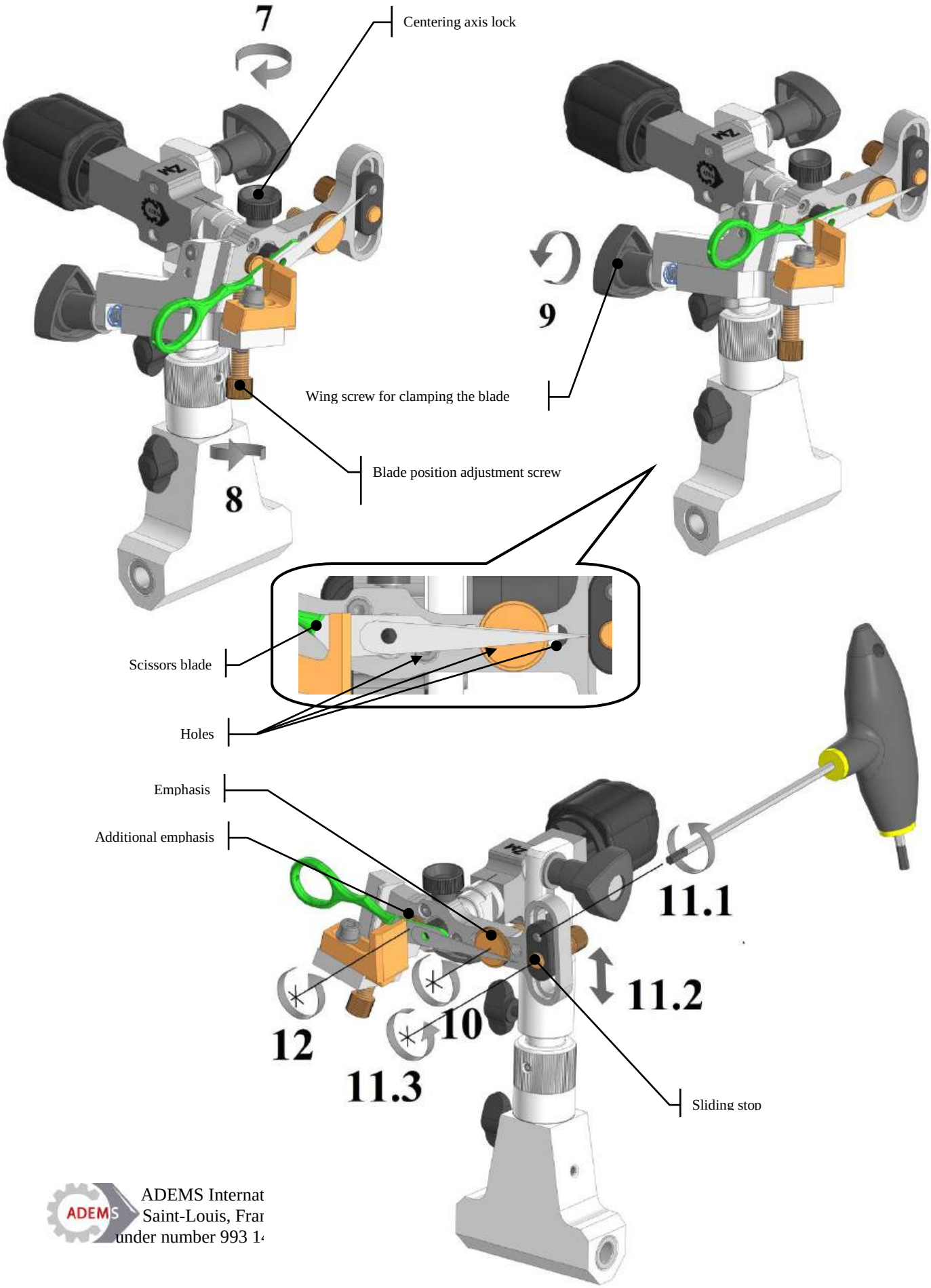
7
Centering axis lock
9
Wing screw for clamping the blade
8
Blade position adjustment screw
Scissors blade
Holes
Emphasis
Additional emphasis
11.1
11.2
12
10
11.3
Sliding stop

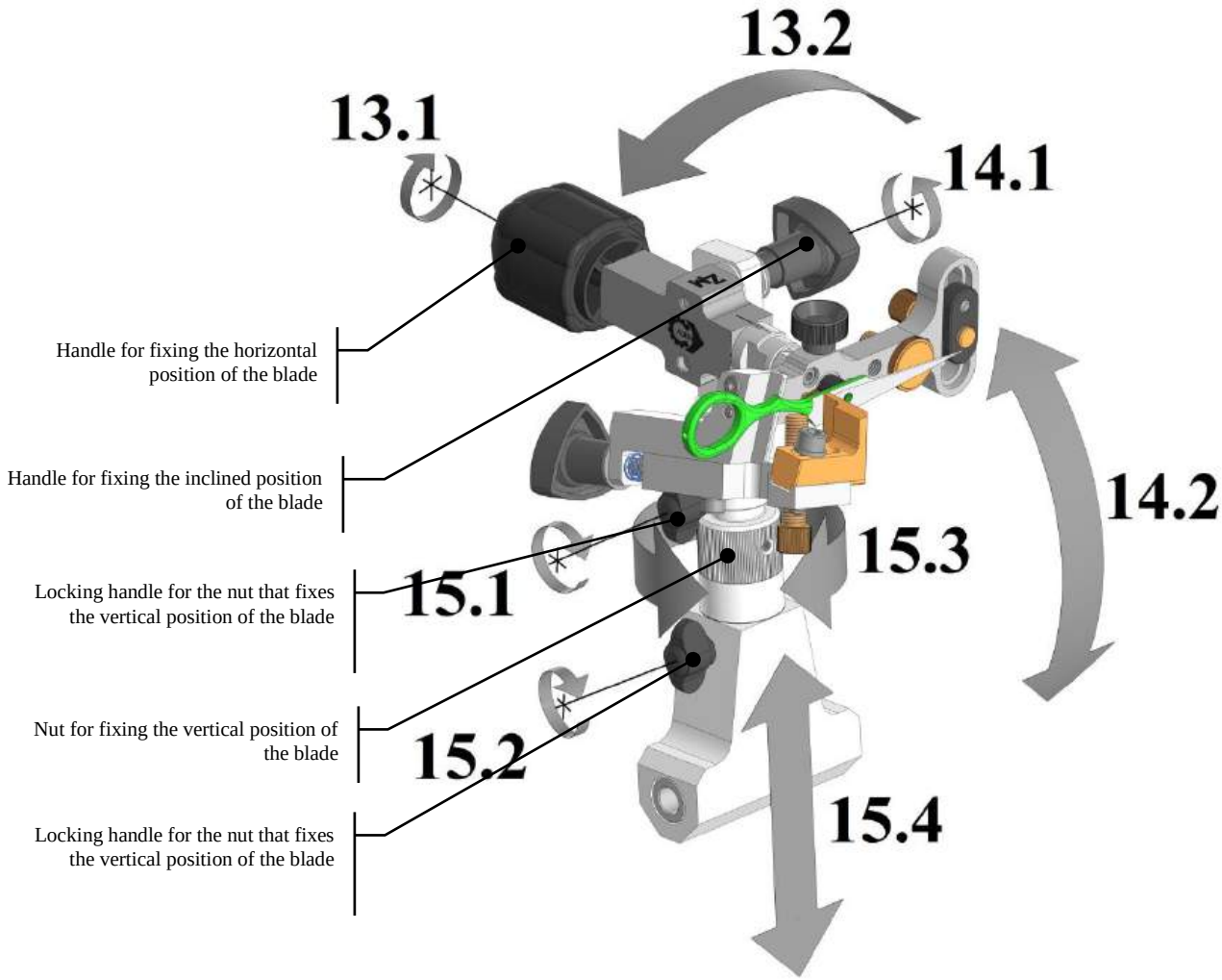

Fig.5 Installing the Scissor Blade and Adjusting Position Relative to the Wheel

Before installing the scissor blade into the clamp, ensure that the movable clamp is extended by 5-8 mm, the stop, additional stop, and movable stop are screwed into the base, and the working parts of the blade position adjustment screw protrude slightly from the body so as not to hinder the scissor blade from assuming the optimal position during clamping. Check the smooth movement of the centering axis. The centering axis lock must be loosened. The clamp jaw must be open for free passage of the scissor blade.

Position the scissor blade vertically with the ring up. In this position, bring the blade, connecting the pivot hole with the centering axis. While holding the scissor blade near the pivot hole with your index finger, lightly press on the blade while simultaneously rotating the blade until the blade handle rests against the blade position adjustment screw. Pay attention to the position of the movable clamp relative to the support surface of the scissor blade. When clamping, the movable stop should contact the support surface as close as possible to the pivot hole, but without covering the mark from the previous grinding. If the movable clamp is displaced from the intended clamping point, move it with the fingers of your right hand, see figure. Rotate the thumb screw for clamping the blade until the blade is parallel to the base, partially securing the blade. Secure the position of the centering axis with the scissor blade clamped by tightening the centering axis lock.

Using the blade position adjustment screw, adjust the blade position so that the threaded holes in the base pass under the blade. Finally, secure the scissor blade by tightening the thumb screw for clamping the blade. Extend the stop until it touches the outer side of the blade. If the scissors have larger dimensions, use the movable stop. Bring and extend the stop until it touches the blade tip using the hex key No.4. If the clamped scissor blade does not have sufficient rigidity, use the additional stop by screwing it out until it contacts the scissor blade.

WARNING
With some scissor blade configurations, the blade may slip during clamping. For such scissors, an additional stop is provided, which is screwed out to contact the blade after the centering axis is locked.

STEP 3. Adjusting the scissor blade position.
Before adjusting the scissor blade position, color the future grinding area on it with a permanent marker.
WARNING
A permanent marker is not included in the machine's delivery set and must be purchased by the customer separately.
The correctness of the manipulator and holder adjustment will be determined by the mark on the colored part of the scissor blade from the abrasive wheel, produced by rotating it by hand.
First, loosen but do not unscrew the handle for locking the horizontal blade position. Set the blade in a horizontal position according to the residual mark from the abrasive wheel, then tighten the loosened handle. Remember the blade position according to the marks. Repeat the adjustment process for the blade inclination. Next, loosen but do not unscrew the handles for locking the vertical position locking nut. While holding the clamp with the scissor blade by hand, rotate the nut to raise/lower the scissor blade. Achieve the correct adjustment, then tighten the handles for locking the nut.
WARNING
Now, when removing the scissor blade from the clamp, all its settings will be saved.
Using the stops, you can set a limited travel for the scissor blade, which does not distract attention during blade grinding (control over the grinding process is not lost).

STEP 4. Grinding the scissor blade.
Turn on the machine power button on the socket on the rear of the machine housing. The signal lamp on the control panel will light up, indicating that the machine is powered on. Turn on the light, positioning it conveniently near the processing area. Use the switch to select the direction of rotation of the abrasive wheel.

WARNING
Set the rotation of the abrasive wheel towards the scissor blade edge.
When grinding the scissor blade (with the blade edge facing up), the abrasive wheel should rotate clockwise (viewed from the end of the wheel).
By rotating the speed control knob on the machine's control panel, select the rotation speed of the abrasive wheel within the range of 0 to 1500 rpm.

WARNING
All buttons on the remote frequency converter panel are disabled to prevent settings failure.
Bring the manipulator with the clamped blade towards the abrasive wheel so that the right side of the wheel is near the heel of the scissor blade. Perform a linear movement from the heel to the tip of the scissor blade, constantly monitoring the grinding process.
During grinding, the manipulator has a small degree of freedom. This is done to adjust the processing depth on one side or the other by slightly rotating the clamp. Using one of the nut locking handles, you can set the deviation to one side.
The thickness of the support surface after grinding should be around 0.6...0.8 mm.

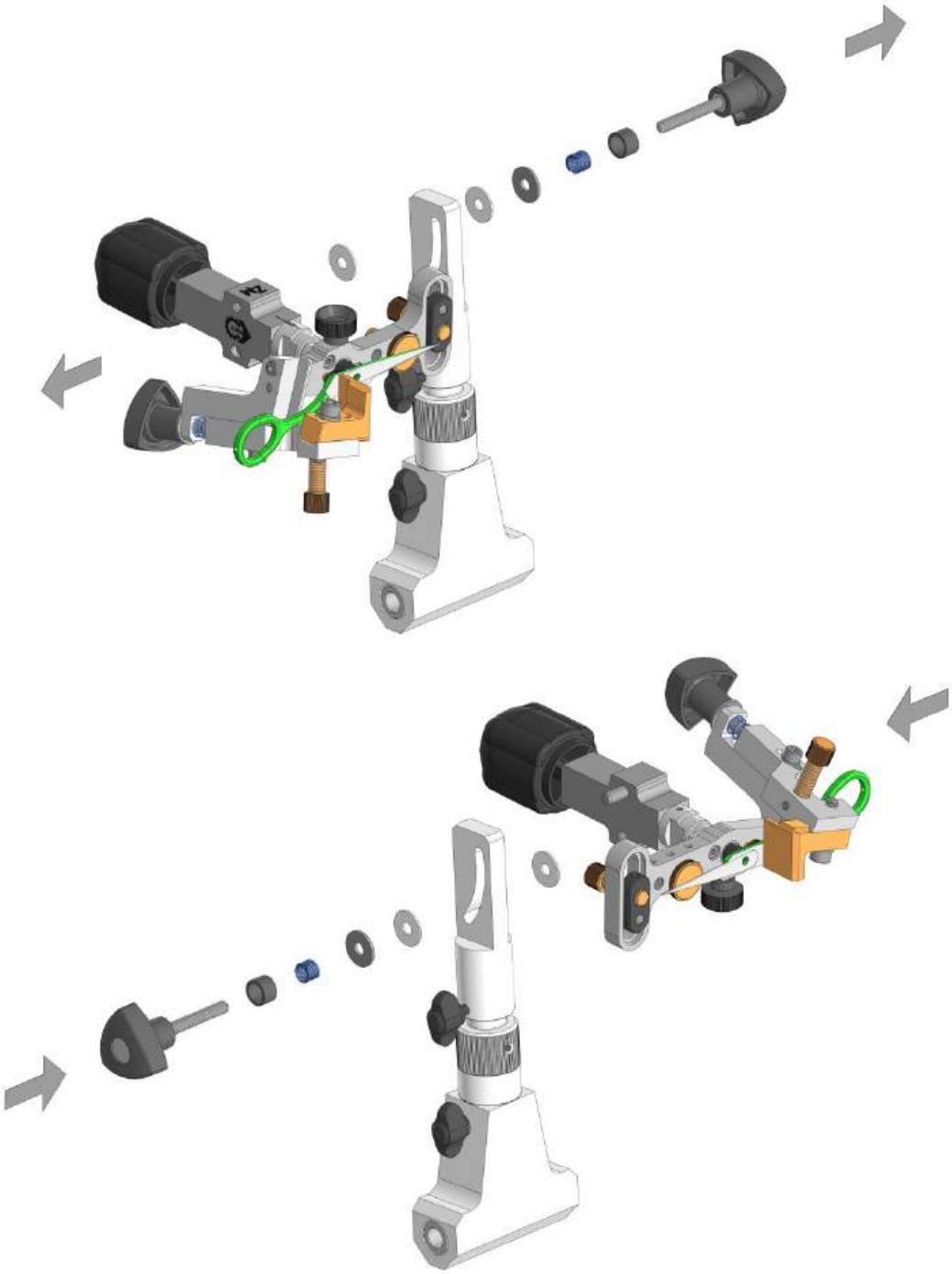

Fig.6 Manipulator for Working with Left-Handed Scissors

The machine is capable of grinding left-handed scissor blades. To do this, simply remove the clamp from the manipulator, flip it over, and place it on the opposite side of the manipulator, then reassemble in the same order.

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8. ADJUSTMENT, SETUP, LUBRICATION

After each use, thoroughly wipe the machine with a cloth to remove abrasive dust, preventing it from entering the rubbing elements. This will prevent premature play.

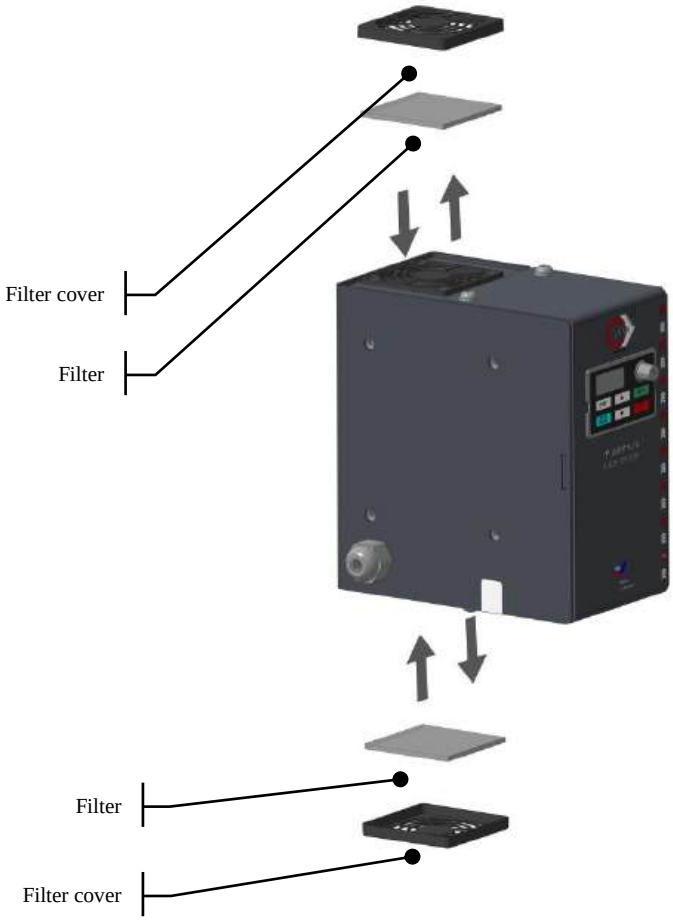


Fig.7 Filter Disassembly and Cleaning

Periodically, once or twice a month depending on the intensity of machine use, it is necessary to clean the filters from accumulated dust and dirt for the normal operation of the frequency converter. To do this, disconnect the frequency converter box from the bracket, remove the filter covers as shown in Fig.7, take out the filters, and blow out or wash the filters to remove dust and dirt. When washing the filter, you can add a little detergent to the water, after which the filter must be thoroughly rinsed in water and air-dried at room temperature. After drying, reassemble the filter in reverse order and you can proceed to work on the machine.

The lower filter contains a magnet to capture metal dust to prevent short circuits in the frequency converter's electrical circuit. When cleaning the filters, periodically clean the magnet as well.

WARNING

It is prohibited to install a damp, undried filter into the frequency converter housing, as this may lead to a short circuit and its failure, which automatically voids the machine's warranty. It is prohibited to disassemble the frequency converter box; if the sticker is damaged, the machine is also removed from warranty.

Removing abrasive wheels from the Pro FIX bushing and subsequently installing new ones necessitates mandatory wheel dressing, as both axial and radial runout will occur. Claims regarding runout in such cases are not considered by the manufacturer. Use the dressing unit to eliminate runout or simply to refresh the abrasive grain.

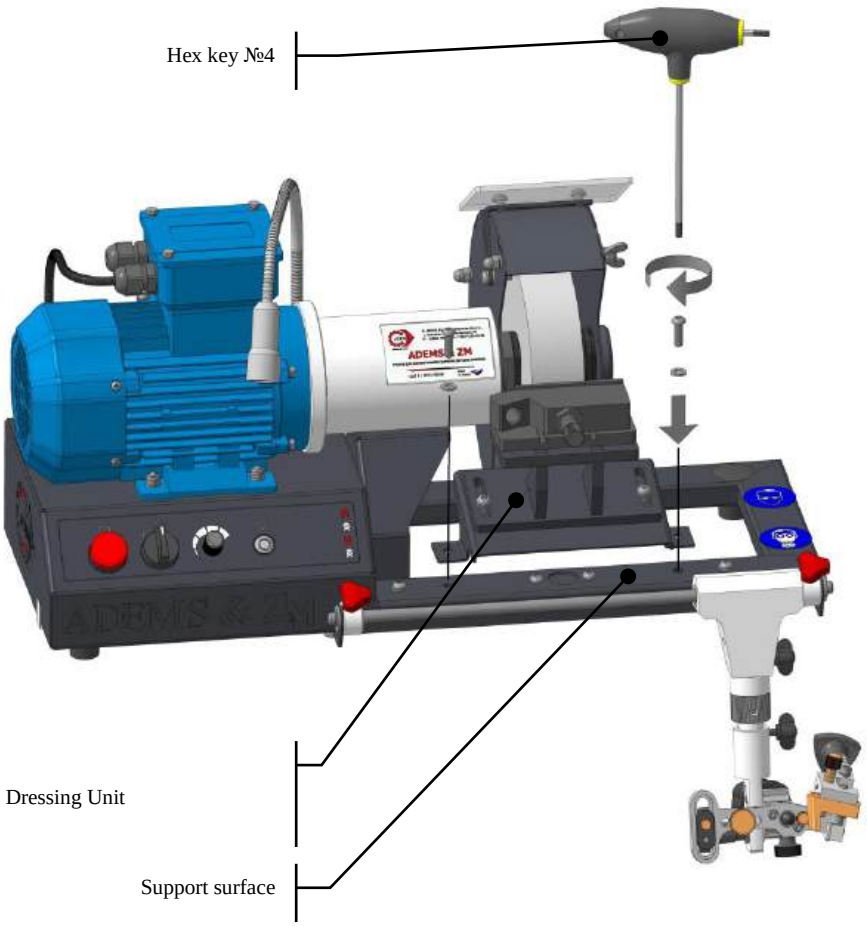
Move the manipulator away from the abrasive wheel to the extreme left or right position. Wipe the parts of the device dry with a cloth and ensure there are no damages of any kind on the working and auxiliary surfaces. If necessary and possible, rectify any defects. Operation of a damaged mechanism is prohibited.

WARNING

The decision regarding the degree of wheel wear and the timing of its dressing is made by the customer independently.

Using the hex key No.4, unscrew the two middle screws, the distance between which corresponds to the grooves of the dressing unit. Install the dressing unit on the machine's support surface as shown in Fig.8, adjust the position of the dressing unit relative to the wheel, and securely fasten it by tightening the screws using the hex key No.4 from the delivery set. Check the smooth movement of the movable elements, as well as the overhang and secure fastening of the diamond pencil.

a)



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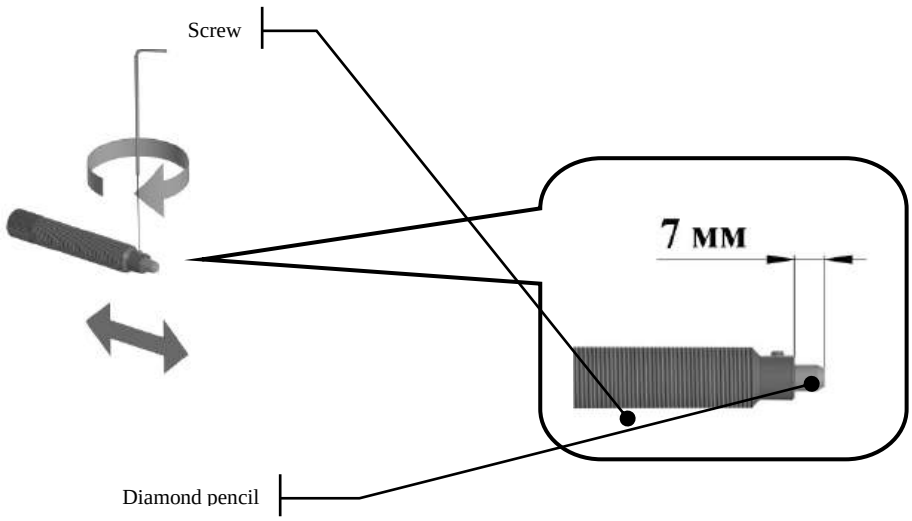

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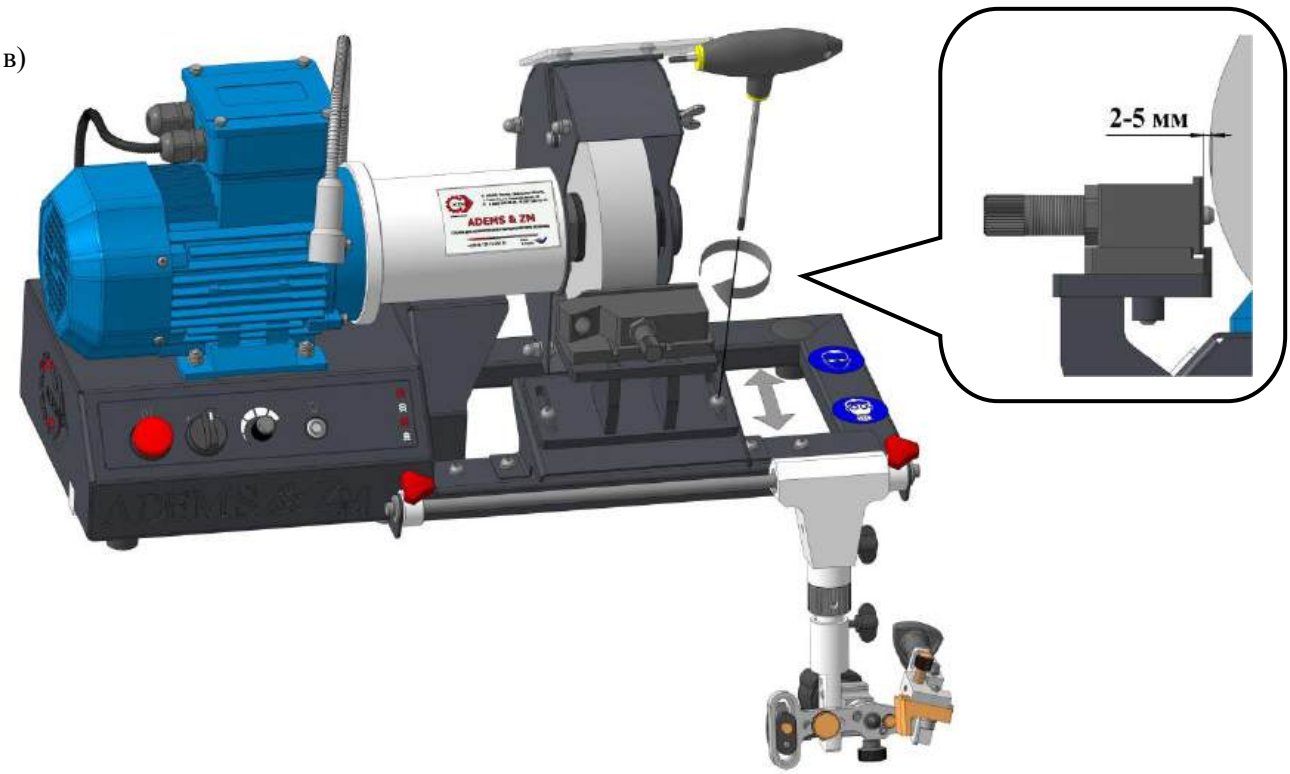


Fig.8 Installation of the Dressing Unit
a) Removing fasteners; b) Adjusting the diamond pencil;
c) Adjusting the dressing unit

After assembling the device, and by rotating the screw with the diamond pencil, bring the cutting surface of the pencil to the side surface of the rotating abrasive wheel until contact. Then, by moving the body along the guide, remove the allowance. Then, by rotating the screw, set a new allowance and repeat the abrasive removal. Continue processing the wheel's face surface until the runout is completely eliminated.

WARNING

During dressing, vibration occurs, which can cause the screw with the diamond pencil to loosen. To prevent the screw from unscrewing, use an open-end wrench to lock the screw with the nut.

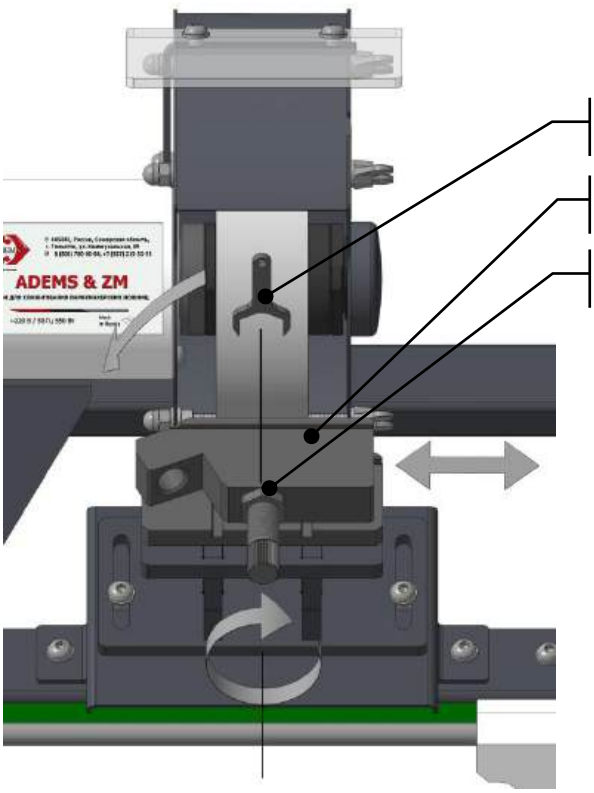
When dressing the faces of a 40 mm wide wheel, it is necessary to shift the guide of the dressing unit. To do this, loosen but do not unscrew the screws holding the guide, shift it to one side, and secure the screws with the hex key No.4.

WARNING

As the abrasive wheels are dressed, the diamond pencil wears out. Using the hex key No.1.5 from the delivery set, unscrew the locking screw in the screw, extend the diamond pencil 7 mm out of the screw, and lock it in place.

After performing dressing operations, remove the device from the machine and wipe all parts with a cloth until completely clean (remove abrasive dust, dirt, etc.). Then lubricate with machine oil, wrap in polyethylene, and place in the box until next use.

a)



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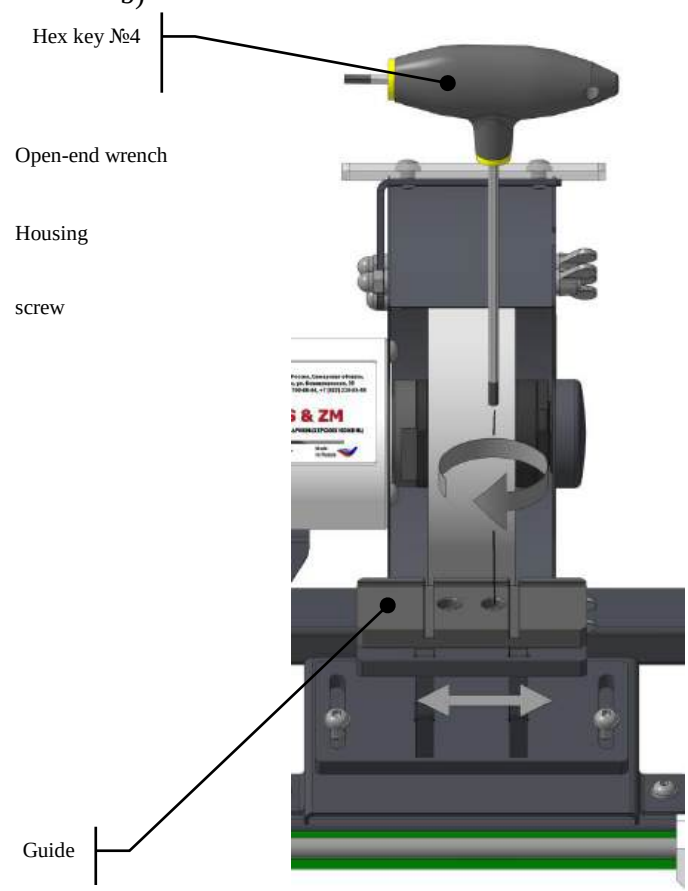


c) d)

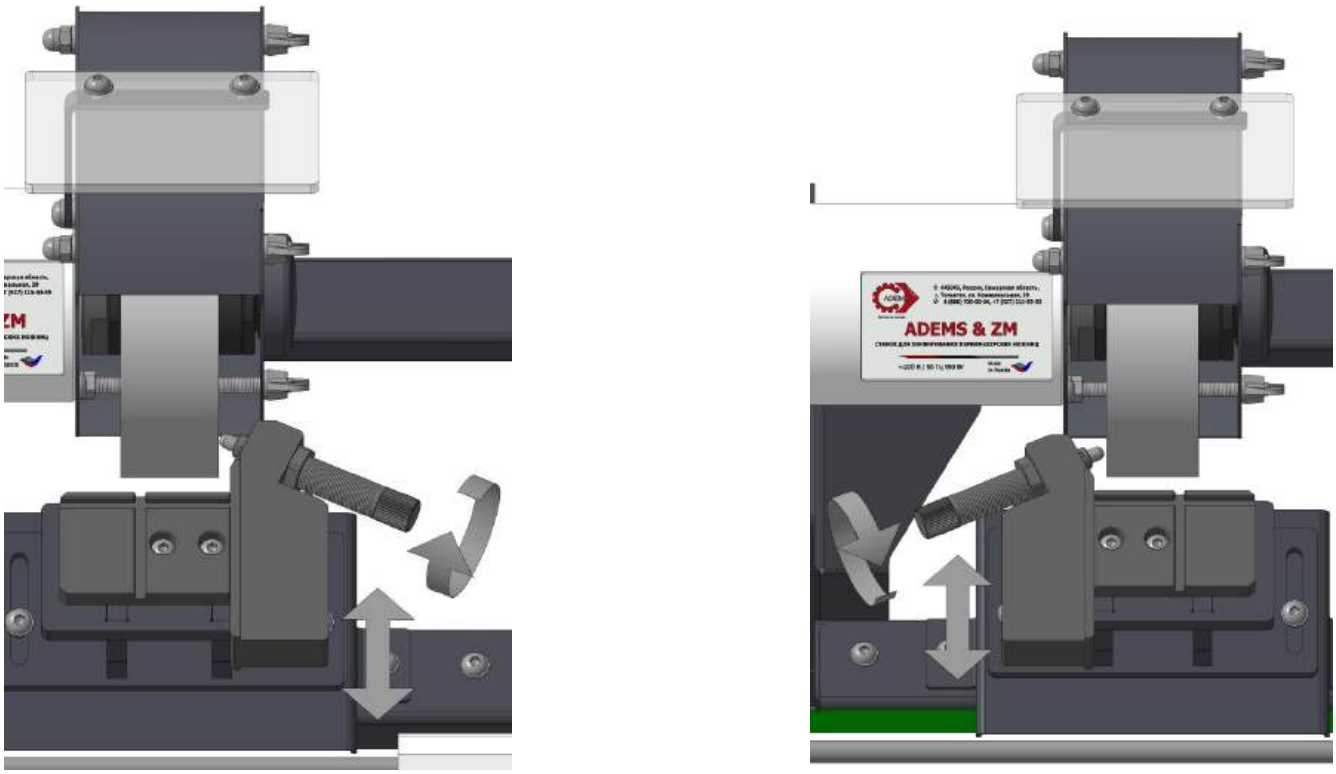
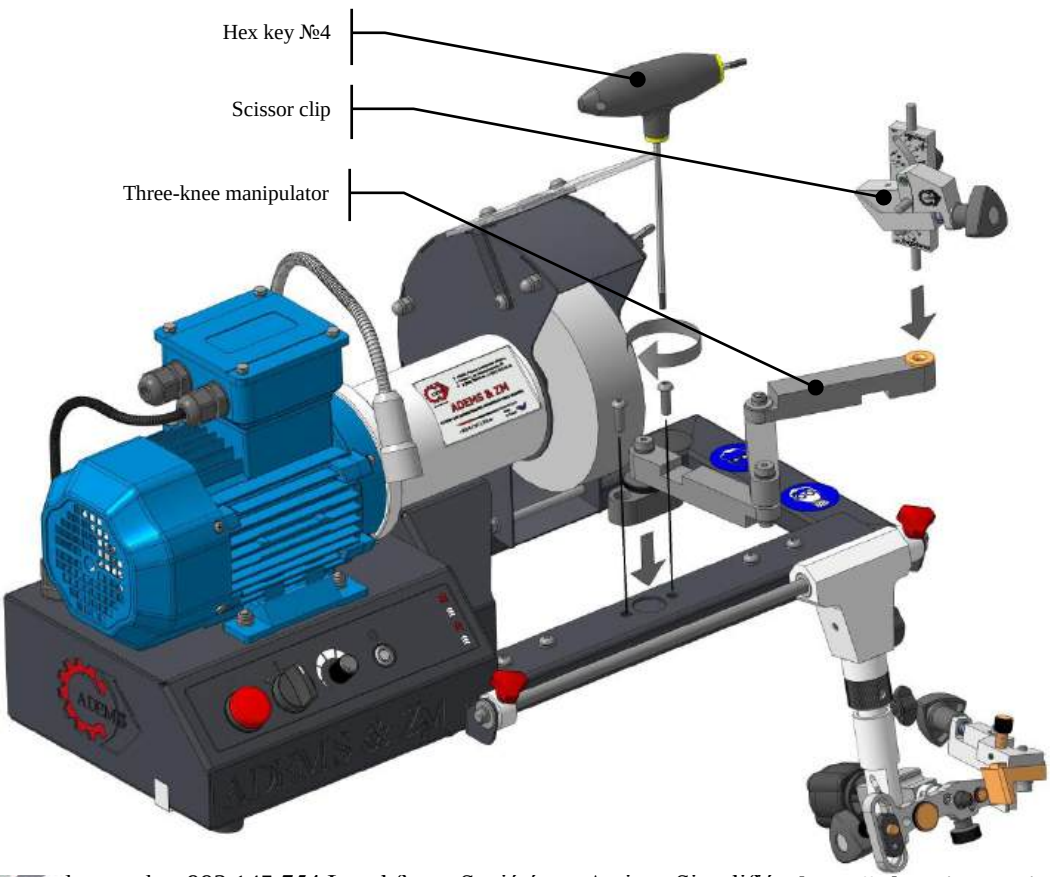


Fig.9 Dressing Unit
a) Radial dressing; b) Setup; c) Left face dressing;
d) Right face dressing

The machine allows for the installation of a three-link manipulator with a clamp for sharpening scissors.



WARNING
After dismantling the three-link manipulator or the dressing unit, it is recommended to screw the mounting screws back into their standard place to prevent dust from entering the machine housing.
WARNING
The machine is capable of operating at speeds up to 3000 rpm. The machine speed is technically limited to 1500 rpm. If you need to increase the machine speed, you can obtain detailed instructions via video call by contacting the warranty department. In this case, all warranty obligations for the machine are voided.
WARNING
If a fuse blows, replace it. A spare fuse is stored in the socket on the rear of the housing.
WARNING
To preserve the factory settings of the manipulator, the locking screws are marked with paint. Violation of the paint integrity will void the machine's warranty.
Our company constantly works on improving the machine, so there may be minor design changes not reflected in this manual.

9. WARRANTY SERVICE CONDITIONS

9.1. The warranty period is one year from the date of sale.
9.2. Warranty, as well as post-warranty repairs, are performed only by specialists of the "ADEMS" company.
9.3. The warranty covers only manufacturing defects identified during the operation of the equipment within the warranty period.
9.4. Equipment is accepted for warranty repair only if the following correctly completed documents are provided: a free-form application addressed to the General Director with the following fields filled in:

- Equipment name;
- Date of purchase;
- Cost of equipment;
- Reason for warranty claim;
- Whether it was used or not;
- Customer's signature;
- Factory number of the equipment, copied from this equipment's passport.

9.5. The warranty does not cover:

- Consumables (accessories and supplies), e.g., discs, abrasive belts, abrasive paper, oils, filters, etc.;
- Power cords; in case of insulation damage, they must be replaced without the owner's consent.

9.6. Warranty repair is not performed in the following cases:

- Absence, damage, or alteration of the serial number on the equipment or in its passport, as well as their mismatch;
- Use of the equipment for purposes other than those specified in the operating instructions.
- Failure due to overload;
- Mechanical damage to the equipment;
- Defects arising from the actions of third parties, force majeure, natural disasters, adverse atmospheric effects and/or external influences of aggressive environments and high temperatures;
- Natural wear and tear of the equipment (full or partial resource depletion, severe internal or external contamination, rust);
- Damage due to non-compliance with the prescribed operating instructions;
- Equipment damage due to power grid voltage spikes;
- Entry of foreign objects into the equipment that are not waste products of normal use;
- Equipment damage due to non-compliance with storage and transportation rules.
- After attempts of self-opening, repair, structural modifications, or lubrication of the equipment during the warranty period, as evidenced by damaged stickers/seals;
- Breakdowns related to lack of equipment maintenance;
- Partially or fully disassembled equipment;

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9.7. Preventive maintenance of the equipment (cleaning, flushing, and lubricant replacement) during the warranty period is a paid service.
9.8. The equipment service life is 3 years from the date of manufacture.
9.9. The owner will be informed of any possible violations of the above warranty conditions after the equipment is diagnosed by specialists of the "ADEMS" company.
9.10 The owner authorizes the diagnostics of the equipment by specialists of the "ADEMS" company in their absence.
9.11. Under no circumstances shall the "ADEMS" company be liable for:

- Losses or damages that, at the time of purchase of the equipment, cannot be attributed to the consequences of "ADEMS" violating the terms of this warranty;
- Losses incurred due to the fault of the owner, loss of commercial appearance, lost profits, or lost benefits.

9.12. Available service options, spare parts, and response times may vary by country. If service is required in a country where "ADEMS" does not have an Authorized Supplier, the number of service options may be limited. If international service is available, "ADEMS" may repair or replace the equipment and parts with comparable equipment or parts that meet local standards.

WARNING

The warranty period is extended for the duration the equipment is under warranty repair.