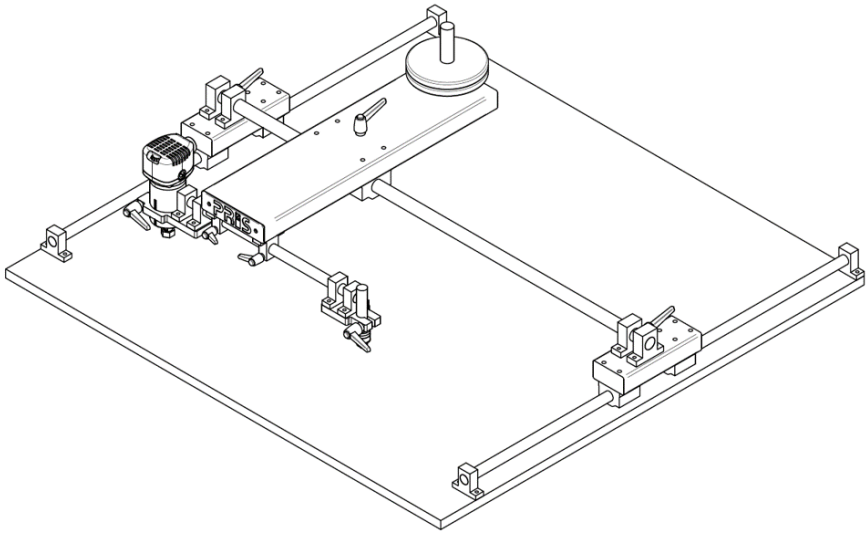
User manual

Duplicator
MCT-01



PRIS TOOLS

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Foreword

Dear Customer, thank you for the trust you have placed in our product. We believe you will be satisfied with the purchased copying device, known as the Duplicator. Before putting it into operation, please read the user manual carefully and check that the device is in an undamaged condition.

Technical Data

Type: MCT-01

Minimum machining space in the transverse direction*	312 + 312 mm (template + workpiece)
Maximum machining space in the transverse direction*	670 + 670 mm (template + workpiece)
Minimum machining space in the longitudinal direction*	755 mm
Maximum machining space in the longitudinal direction*	1755 mm
Height of the machining space**	93 mm
Minimum weight*	30 kg

* Dependent on the ordered dimension - maximum parameters can be increased by agreement
** It is possible to increase by adding shims under the mounts of the linear guides

Utilisation

The duplicator can only be used in combination with a suitable milling spindle - not included in the package! It must be secured using all available mounting holes to a solid workbench - for example, wooden board with a minimum thickness of 19mm - not included in the package! The workbench must be placed on a stable table or supporting frame. The duplicator is designed for working with wood. It is suitable for small-scale production in professional or hobby woodworking shops. The duplicator is intended for adults only.

The device may only be used for the described tasks and areas of application. The manufacturer, Carpathian West, s.r.o., does not assume any responsibility for any misuse. In such cases, the warranty becomes void.

Safety

Please read carefully and adhere to the following safety instructions and operating guidelines. Keep the user manual accessible to operators and, when necessary, pass it on to successors to ensure it is always available.

Safe working space

Keep the workspace clean and tidy!

Equipment malfunction can lead to accidents. Do not leave any other tools or objects in the immediate work area. After completing your work tasks, store the equipment in a way that prevents injury to the operator or damage to the equipment.

When working with the equipment, be mindful of other people and keep it out of reach of children!

Make sure that no one is in the danger zone. Children and adolescents (except adolescents over 16 years old under supervision) are not permitted to use this equipment. The same applies to individuals who are not familiar with how to use the equipment.

Safe work practices

Pay attention to your hands and fingers when working with the equipment!

Keep your fingers and hands as far away as possible from the rotating tool. There is a risk of injury. Try to keep your hands close to the copying tip.

Wear personal protective equipment and appropriate work clothes.

Use protective gloves to prevent injuries from flying debris. Avoid wearing loose clothing or jewelry that could get caught during work and cause an accident. Most milling spindles generate excessive noise during operation, so it's advisable to protect your hearing with suitable ear protection, as recommended by the spindle manufacturer.

WARNING! The fast-rotating tool of attached milling spindle can cause sharp chips to fly at high speed. Always wear appropriate safety goggles or a face shield!

Ensure the equipment is assembled correctly!

All parts must be properly assembled to ensure correct operation.

Pay attention to operational safety!

Before each use, check if the equipment is undamaged and if the functionality of moving parts is ensured. All parts must be correctly installed. If the equipment is damaged, do not use it!

Monitor the equipment and the workpiece!

Pay attention to the equipment and the workpiece you are working on. Never use the equipment if you are distracted, under the influence of alcohol, drugs, or other intoxicating substances.

Be careful when using the equipment!

Do not overload the equipment and work only with approved types of materials. Overloading the equipment can lead to damage.

Other safety measures!

For work to be safe, the equipment must be securely fastened to a solid and stable workbench. Do not use the equipment if it is not securely attached. This could lead to loss of control and subsequent injury.

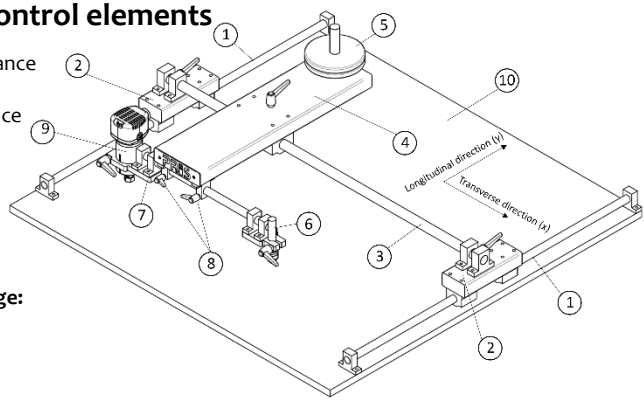
Read the user manual to understand how to safely use the equipment.

Assembly, operation, and maintenance

Functional and control elements

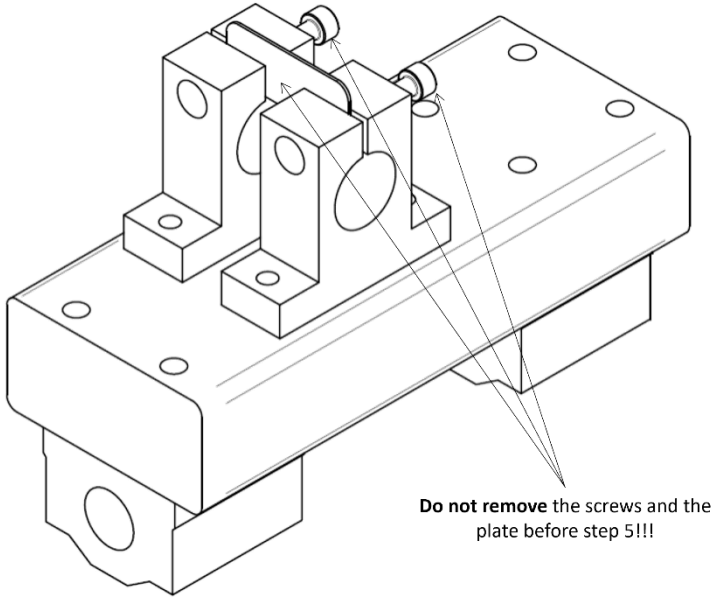
1. Longitudinal linear guidance
2. Side carriage
3. Transverse linear guidance
4. Main pendulum console
5. Balancing weight
6. Copying stylus
7. Spindle holder
8. Inclination adjustment

Not included in the package:
9. Milling spindle
10. Workbench

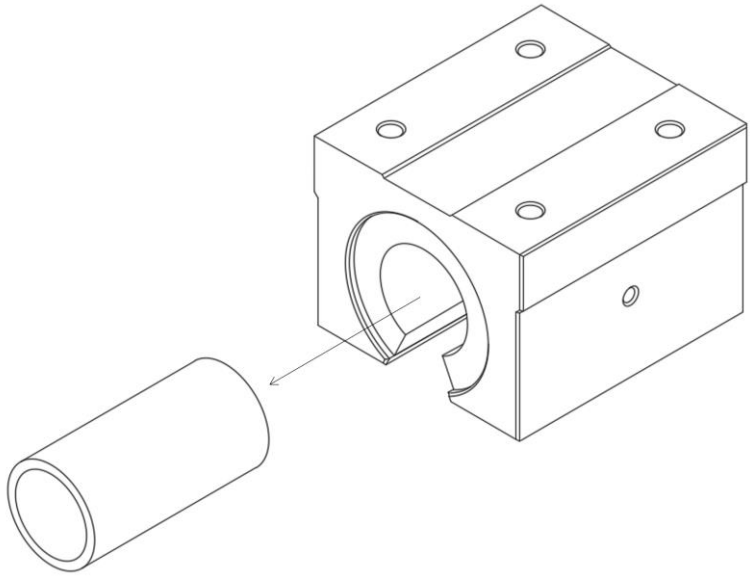


Assembly

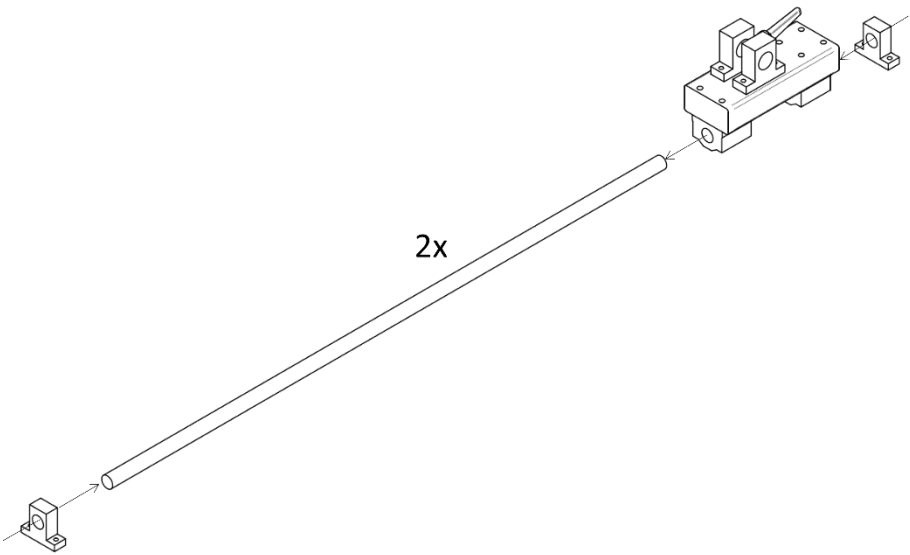
The equipment must be secured to a sufficiently stable and robust workbench. The work table or supporting structure with the workbench must be stabilized in such a way that they cannot move during work.



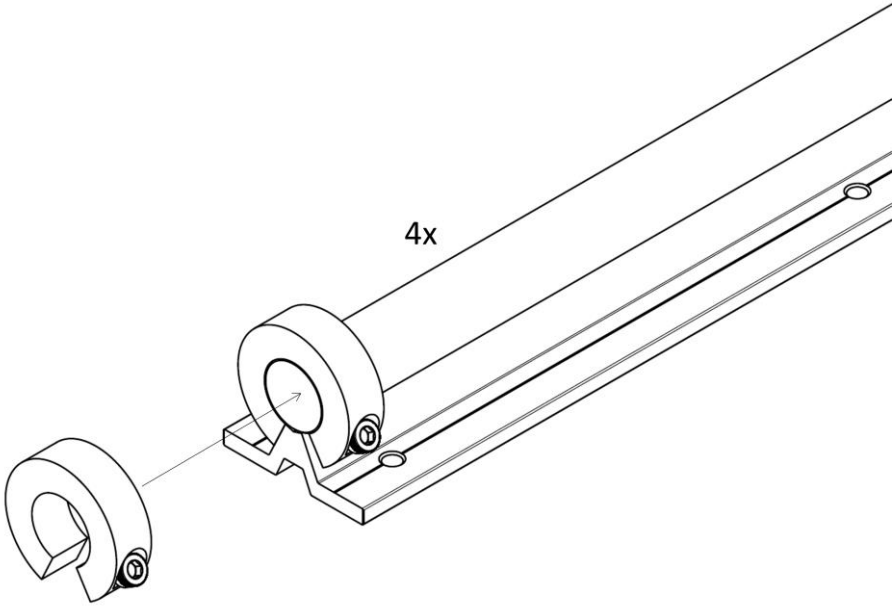
1. Carefully remove plastic protective rollers from all linear bearings - avoid damaging the sealing / wiping rings:



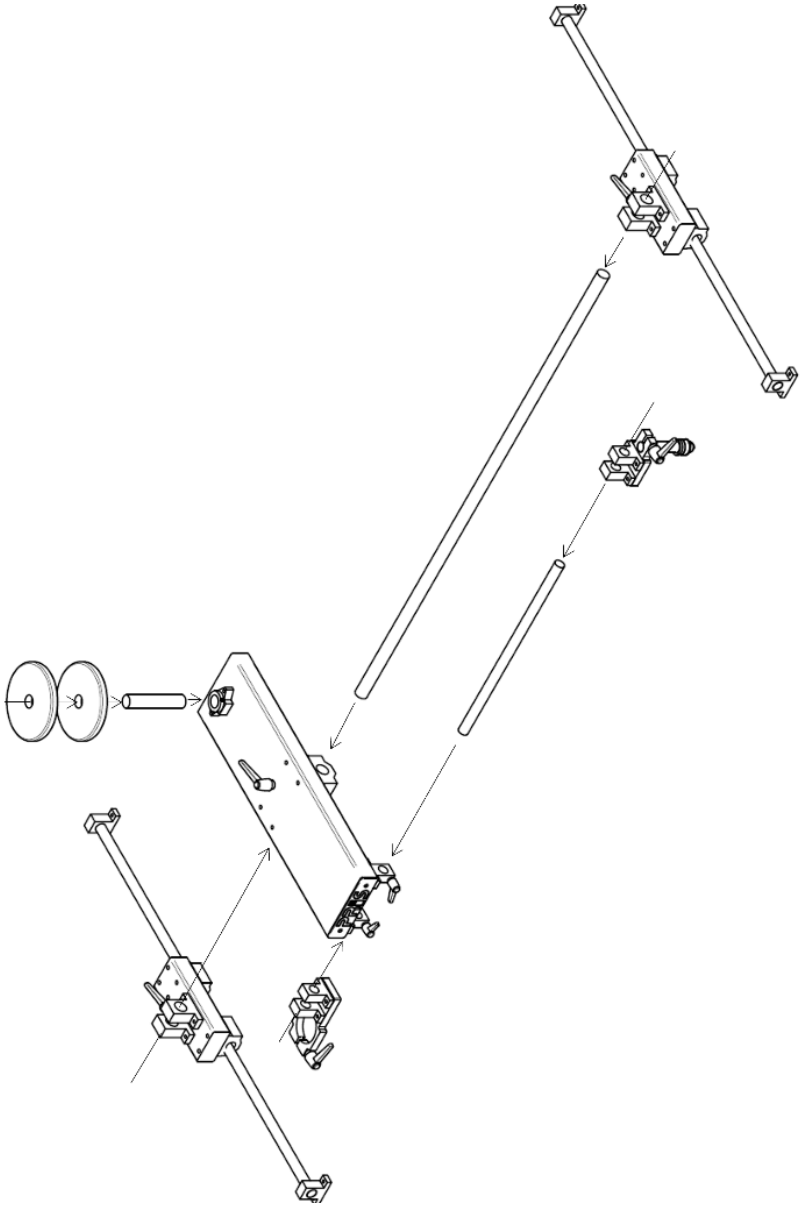
2. First assemble the two longitudinal axes by sliding the side carriages onto the linear guides and installing the stops, according to the illustrations below - **be careful not to break the sealing and wiping rings of the linear bearings.** These are located at both ends of each linear bearing, with each carriage and the main pendulum console containing 2 linear bearings. This means that when sliding the carriage or the pendulum console onto the linear guide, you pass through 4 wiping rings. Be especially careful when passing through the third wiping ring. Try to perform a gentle rotational or oval motion when passing through the ring to avoid damaging it:



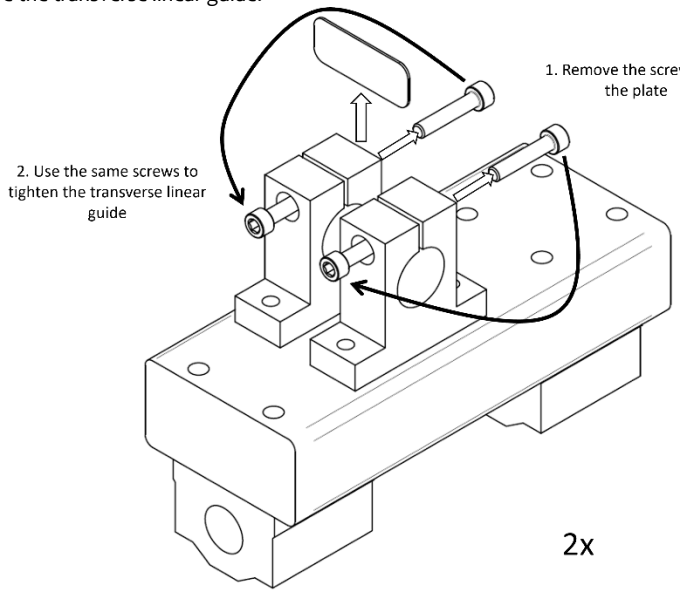
3. In the version with supported rails (SBR), mount an end stop at each end of the guide:



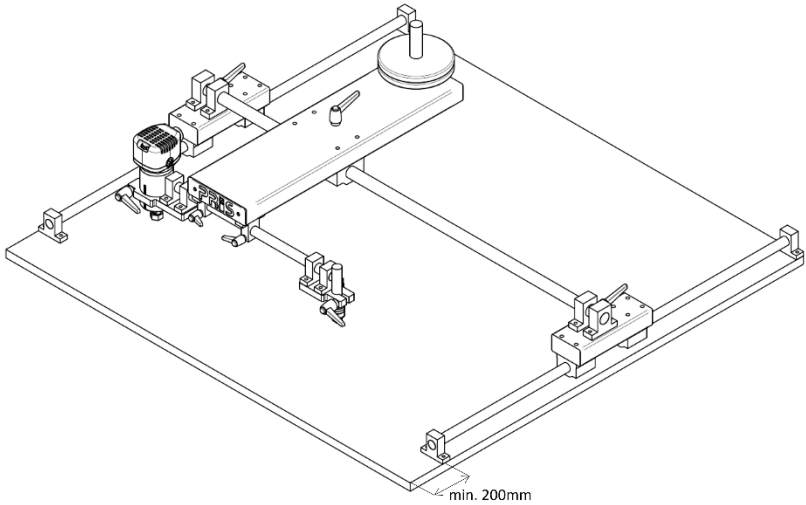
4. Assemble the entire device according to the diagram below. Similar to step 2, be careful **not to break** the sealing and wiping rings of the linear bearings:



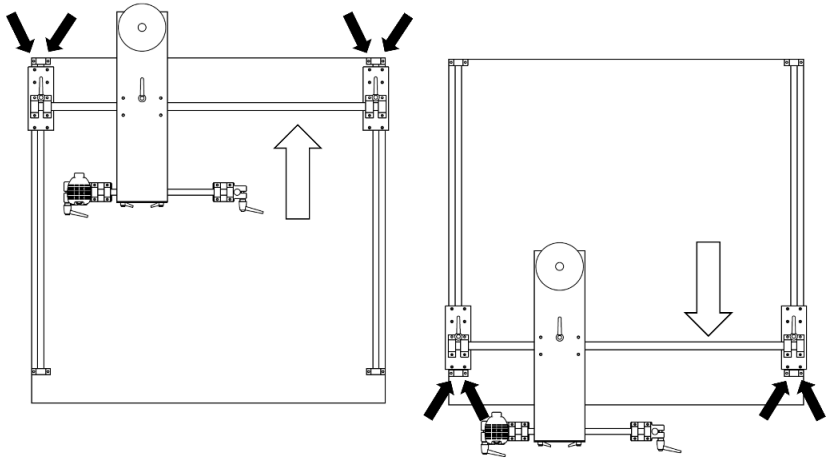
5. After positioning the side carriages finally, remove the screws and washer from the holders of the linear guide, as shown in the image below. Use the same screws, inserted from the opposite side, to secure the transverse linear guide:



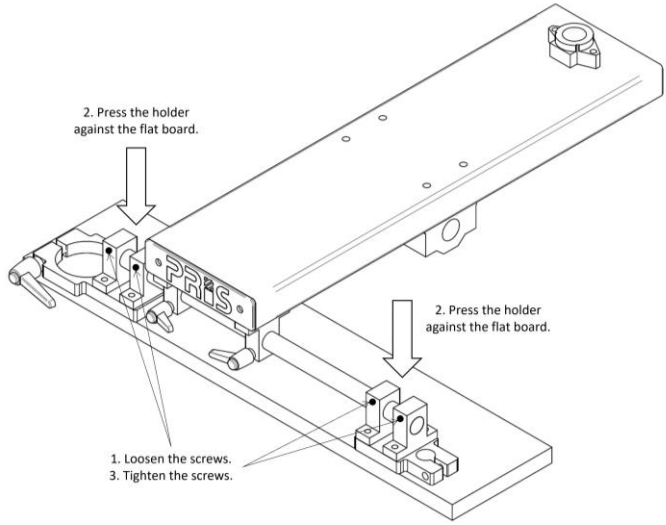
6. For full utilization of the movement range of the duplicator, we recommend choosing dimensions for the workbench so that it extends at least 200mm from the front edge of the duplicator, as shown in the image below:



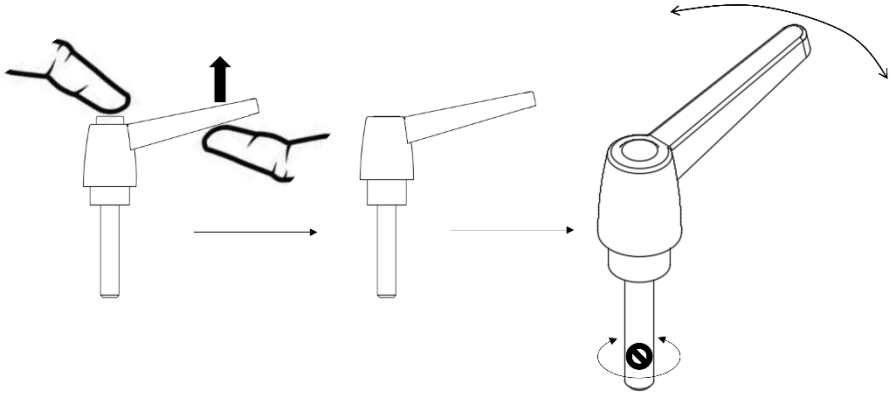
7. When assembling the longitudinal axes to the workbench, it is necessary to first secure one guide at both ends. In the SBR version, subsequently secure all points between the ends. Similarly proceed with the second guide, ensuring that the pendulum console is shifted towards the point being assembled - this ensures parallel alignment of both longitudinal guides, essential for smooth duplicator operation with minimal resistance. The perpendicularity of the longitudinal and transverse axes is set from the factory:



8. After completing the duplicator assembly, it is necessary to correctly adjust the parallelism between the spindle holder and the copying stylus. For this, you will need a straight flat board made of solid material (e.g., wood) with dimensions approximately 60cm x 10cm. Follow the steps outlined in the image below - numbering defines the sequence of steps:



9. All levers on the duplicator are adjustable. The lever can be rotated to any position relative to the thread so that, at the desired tightening force during operation, there is no collision with the workpiece or other parts of the equipment. To adjust the lever, pull it along the axis of the thread as shown in the following illustration. If the tightening force is too small and the thread offers too little resistance or turns with the lever, press with an immovable finger against the blue button so that the thread cannot rotate freely.



The duplicator was developed as an auxiliary device for woodworking milling spindles. It is important to follow the instructions of the spindle manufacturer and secure the power cable to prevent it from being damaged during operation!

Working with duplicator

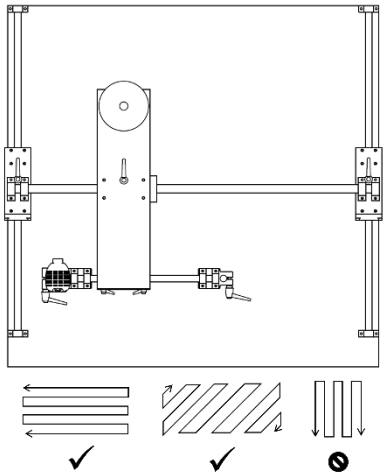
WARNING! Sharp chips may fly off during operation, which can cause eye injuries. Therefore, wear safety goggles or a face shield! To prevent hearing damage from the excessive noise produced by the spindle, use appropriate hearing protection! There is a risk of hand injuries, to reduce this risk, wear protective work gloves while working.

This equipment can only be used and stored indoors, protected from monstere and weather conditions!

- Before starting milling, it is advisable to verify the range of motion of the duplicator relative to the size and placement of the template and the workpiece.
- The template and the workpiece must be firmly secured to the workbench to ensure the required accuracy and prevent the workpiece from being ejected.
- It is advisable to proceed with machining in multiple cutting depths to avoid overloading the spindle. Listen to the sound of the spindle - a significant drop in RPM indicates high load on the spindle, and it is necessary to reduce the depth of cut or the force with which you move the duplicator.
- When working with duplicator, it is important to avoid sudden movements or abrupt changes in movement. For example, when following a corner contour, you should slow down the speed at the corner. If the copying tip hits a

perpendicular wall, it can cause a dynamic overshoot of the cutter beyond desired path due to flexibility of the device. This results in so called "over-milling" outside desired contour.

- If possible, avoid "striping" in the longitudinal direction (X). On 3D surfaces, such movement causes pure rotation of the linear bearings of the pendulum console, which can negatively affect their lifespan.



- Do not release the device from your hands while the spindle is running.

During operation, regularly remove accumulated chips and dust to prevent the risk of fire.

Creating copies of objects without consent of the template author is contrary to both national and international legal regulations!

- In case of any uncertainties, you can refer to the instructional video on the website https://pristools.com/en/duplikator/.

Maintenance

- All linear guides and steel rods must be cleaned after each job. Fine wood dust, in particular, is highly corrosive and can cause corrosion even in highly alloyed steel parts.

- All linear guides must be adequately lubricated with lubricant designed for linear guides or bearing grease. The lubrication interval depends on the intensity of use of duplicator. Avoid dry operation of linear guides - this can be indicated by absence of so called "grease rings" on the linear guides, left by the rubber seals of the linear bearings. If grease rings stop forming, the carriages and guides need to be lubricated.

- Side carriages and pendulum console need to be disassembled from the lienear guides for lubrication. **Never disassemble the linear bearings from the side carriages or the main pendulum console, as it will result in the loss of perpendicularity between the transverse and longitudinal axes!**

Spare parts

Spare parts can be ordered from the manufacturer by phone: +421 945 461 917 or by email: info@pristools.com.

Disposal and the environment

The device does not belong in household waste. Dispose of your device in an environmentally friendly manner and deliver it to a collection point.

Warranty

The seller provides the buyer with a warranty for twenty-four months. Within this warranty period, the buyer has the right to free, timely, and proper defect rectification. If defects cannot be rectified, the buyer will receive either a replacement device or a refund. Damage resulting from natural wear and tear, overload, or improper handling is not covered by the warranty. The warranty applies only if the device has been maintained and used as specified in this manual. Damage caused by mishandling during transportation is also excluded from the warranty. The warranty does not cover damages caused by moisture or weather conditions. When returning the device, all parts must be packaged to prevent damage; original packaging is not required for this purpose.

Declaration of Conformity

Company Carpathian West, s.r.o., with registered address at Slnečnicová 887/40, 90042 Milosalvov, hereby declares that the PRIS device bearing the designation MCT-01 complies with all relevant provisions of Directive 2006/42/EC.

in Miloslavove, 31.07.2022

Martin Ďurkovic
(CEO Carpathian West, s.r.o.)