

OPERATING MANUAL

08.26

TTP-500 Mould Finisher

ORIGINAL INSTRUCTIONS



Multifunction Ultrasonic Polisher

Congratulations on your new ultrasonic multifunction polisher. We hope the machine will be of use and enjoyment. Enjoyment requires and demands proper operation and maintenance of the equipment. We therefore recommend that you read this manual thoroughly before using the equipment.

Tracytec

Smart solutions for welding and polishing of moulds



EU DECLARATION OF CONFORMITY

According to:

The Low Voltage Directive 2014/35/EU

The EMC Directive 2014/30/EU

Type of equipment: Ultrasonic power source

Model: TTP-500

Brand: TracyTec

Identification number:

Manufacturer's authorized representative established within the EEA:

Name, address, and telephone No:

Indsatsen ApS
Djeldvej 62
7830 Vinderup
Denmark
Phone: +45 97 44 33 99

The following harmonized standard in force within the EEA has been used in the design:

EN 60204-1:2018, EN 61000-6-1:2007
EN 61000-6-3:2007 + A1:2011 + AC:2012

Additional Information:

Restrictive use, Class A equipment, intended for use in locations other than residential.

By signing this document, the manufacturer's authorized representative established within the EEA agrees that the equipment in question complies with the safety requirements stated above.

Date:

Denmark
2021-04-23

Signature:

Jes Valdemar Willumsen

Position:

CEO



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Safety warnings

The use of this multifunction polisher can be dangerous for the user and the environment if used incorrectly. The equipment should only be used in accordance with relevant safety regulations. Particular attention should be paid to the following:

Electric shock

- The appliance must be installed correctly (power regulations).
- Avoid contact with live parts in the welding circuit or electrodes with bare hands. Never use defective or wet welding gloves.
- Isolate yourself from the ground and the workpiece by using the spark features (e.g. wear rubber-soled shoes) as when using welding equipment.
- Ensure proper maintenance of equipment. In case of damaged cables, insulation or enclosure, stop work immediately and repair the defect.
- Repair and maintenance of the equipment must be carried out by a person with proper technical knowledge.

Spray from process

- Protect your eyes with glasses when using some of the features. See in the instruction where.

Fire

- Molten steel splashes may occur during use of the EDM reversing function and can ignite a fire.
- Work clothes must also be protected against sparks and splashes, and safety goggles must be worn.

Noise

- The polishing function generates noise. The noise level is dependent on the task. In some cases it will be necessary to use hearing protection. Use of the machine for purposes other than those for which it is intended is not recommended and is at your own risk.



Electromagnetic noise

The TTP-500 multifunction ultrasonic polisher is designed for professional use and complies with the European standard EN50199. The standard aims to ensure that equipment does not disturb or interfere with other electrical equipment due to electromagnetic noise. The electric spark welding operation emits noise and must be used without interference while taking precautions for installation and use. The user must ensure that other electrical equipment in the area is not disturbed.

The following must be taken into account in the surrounding area:

1. Supply and signal cables in use in the area of the TTP-500 that are connected to other electrical devices.
2. Radio and TV transmitters and receivers.
3. Computers and electronic equipment.
4. Critical safety equipment. Monitoring and process control.
5. Pacemaker and hearing aid users.
6. Equipment used for calibration and measurement.
7. Time of day when welding and other activities are taking place.
8. Building structure and use.

This machine is intended for use solely by professionals!

Read this instruction manual carefully
before the equipment is installed and in use!

General description

The TTP-500 is a multifunctional ultrasonic polisher that with its four functions can make tool polishing easier, reduce polishing time and improve results.

The four functions are: Ultrasonic polishing, EDM spark, EDM surface finish and reverse EDM.

The machine is equipped with an intelligent frequency tracking system which ensures a very stable output from the machine.

NC controlled EDM function ensures precision and surfaces down to Ra0.3.

Unique ultrasonic control circuit that optimizes the use of the fiber stick and diamond file. Rotating poles handle.

1. Use on ribs, holes and other parts of molds where it is difficult to polish by hand.
2. The machine can be used on steel, carbide, glass and precious stones.
3. EDM liquid petroleum or water.

Tekniske specifikationer	
Power voltage	230V, ground
Ultrasound output	60W, 26-35 KHz, 9 NC levels
EDM output	160W, 5 NC levels
Dimensions	340×185×140 mm
Weight	6 kg

Ultrasonic polish

The machine produces a high-frequency force of 26-35 KHz, which causes the clamped tool to vibrate. The vibrations are within a few μm . The operator will not feel the vibrations in the hand. The handle remains steady, which is a big advantage over pneumatic and mechanical tools. It has 9 NC controlled ultrasonic levels.

EDM spark

The spark function is for removing steel. It removes steel quickly and efficiently, and since it does not use fiber sticks, files or anything else in this function, it is cheap to operate. It leaves a fine sparkle surface that is easy to polish on. This feature is great when there is a lot to remove. It has 5 NC controlled spark levels.

EDM surface finish

The machine can create finishes that match sparked and etched surfaces. The function is mainly for repairing damaged surfaces, where it can save a lot of time and facilitate repairs, but can also be used to surface simple and prototype tools where you want a spark-like surface but do not want to make electrodes or send the mold to photo etching. It has 99 NC controlled levels.

Reverse EDM

With this function, the EDM function of the machine is reversed and the material in the ultrasonic handle is absorbed onto the surface of the steel.

Ultrasonic polishing handles

The handle is an important part of the ultrasonic polisher. Inside the handle is a transducer that transforms the electrical signal into ultrasonic vibrations. If the transducer is damaged, the ultrasonic function disappears. The handle and transducer are not particularly fragile, but do not drop the handle or put it in water.

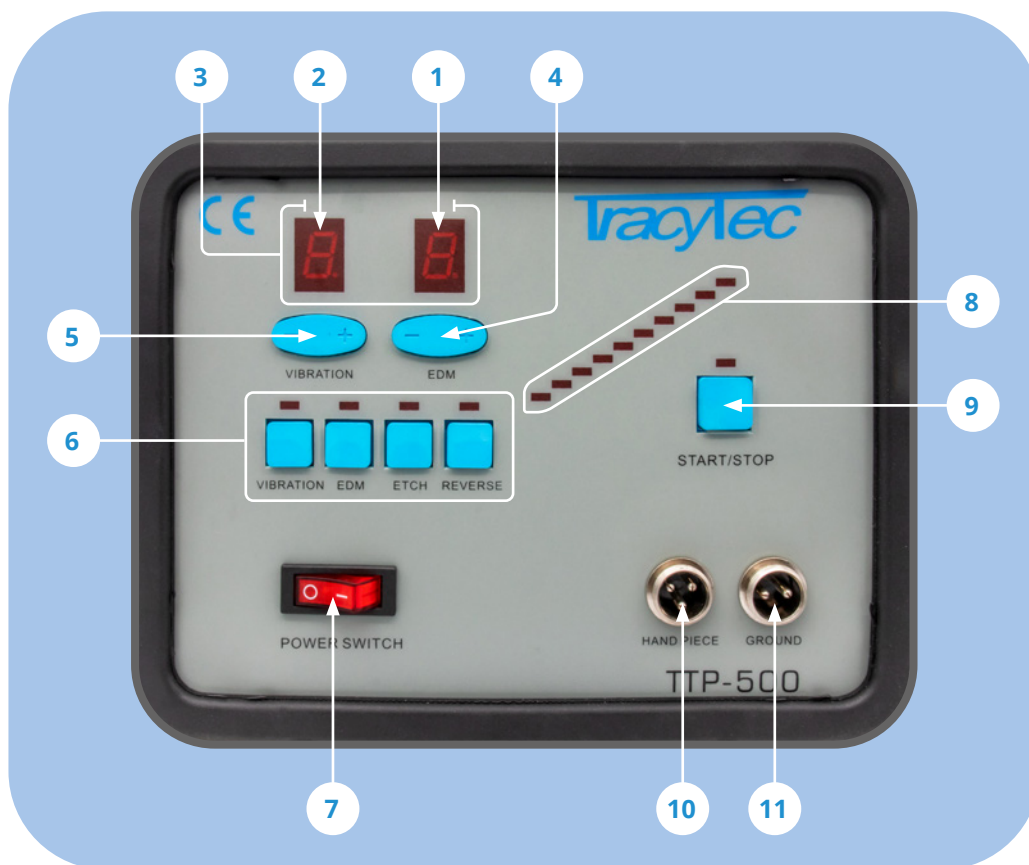
The holder amplifies the ultrasound and transmits it to the clamped tool. The transmission of

the power is of great importance for the function. Poor or loose connection leads to low performance. After a long period of use, the holder will eventually crack and the power will drop. The holder should then be replaced with a new one.

The tool itself is clamped to the holder and both the holder and the tool must be tightened.

Control panel

1. EDM strength display. (Levels: 1-5)
2. Ultrasonic strength display. (Levels: 1-9)
3. Etch and reverse display.
(Both displays together; levels: 1-99)
4. Button for adjustment of EDM-strength.
5. Adjusting vibration levels.
6. Function buttons.
7. On/off button.
8. Efficiency indicator.
9. Work/pause button.
10. Connecting the ultrasonic handle
11. Ground connection.



Installation diagram



Check cables for any damages before use!
Use protective clothing e.g. gloves etc.

Instruction in use

In general

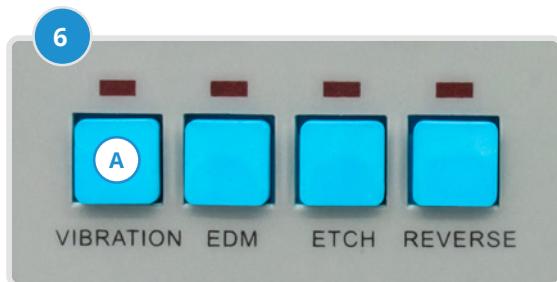
The Start/Stop button (9) is used to select between work or pause.

ATTENTION When stopping and pausing, it is extremely important to press the START/STOP button (9) otherwise the fuse will blow and the machine will no longer function.

Ultrasonic function

ATTENTION Make sure to tension the tool sufficiently otherwise the ultrasound will not propagate to the tool. Avoid touching the tool when it is in use, otherwise the ultrasound will suffocate.

The ultrasonic function is the basic function of this machine.

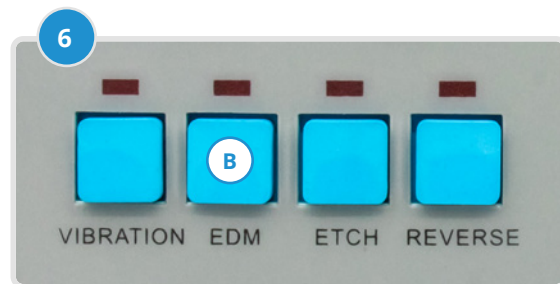


The ultrasound is selected with the VIBRATION button (6A). The sound can be set from 1 to 9 with the adjustment knob (5), which is shown in the display (2). The indicator (8) shows the effectiveness of the ultrasound. If there is only a small difference, it is often because the holder or tool is not sufficiently tightened.

Files, diamond files, fiber sticks, hard wood, soft wood, emery cloth and brass rod are some of the most used tools in ultrasonic polishing.

EDM spark

⚠ WARNING When using the spark function, it is strictly necessary to wear rubber gloves to avoid electric shock!



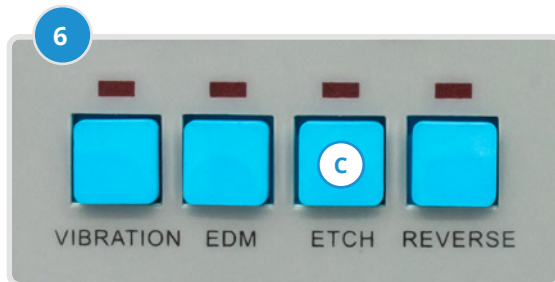
The EDM function is selected with the EDM button (6B). The function is set from 1 to 5 with the adjustment knob (4) and the strength is shown in the display (1). The indicator (8) shows the efficiency of the ultrasound. The workpiece being worked on should generally be covered with water or other suitable liquid during the work. If the workpiece is so large that it is not possible to immerse it completely in water or other suitable liquid, it is sufficient to be able to constantly add water or other suitable liquid, possibly with a spray bottle, while working.

The EDM function is primarily for removing a lot in a short time. Power 5 is the fastest, but leaves the roughest surface. Power 1 is the slowest, but leaves a Ra 0.3 surface finish.

Brass rods are primarily used as electrodes. These brass rods can be shaped according to the task or desire.

EDM surface finish

ATTENTION When using the spark surface function it is necessary to wear rubber gloves for insulation!

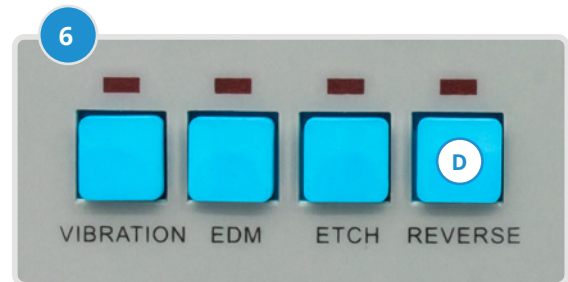


The EDM surface function is selected with the ETCH button (6C). Can be set from 1 to 99 with the adjustment knob (4), and as the value is from 1 to 99 it is shown in both displays (3).

The workpiece being worked on must be covered with water or other suitable liquid while working. If the workpiece is so large that it is not possible to immerse it completely in water or other suitable liquid, it is sufficient to be able to constantly add water or other suitable liquid, possibly with a spray bottle, during work. Spring steel is mostly used as an electrode.

Reverse EDM

ATTENTION When using the Reverse EDM surface function it is necessary to wear rubber gloves for insulation!



The Reverse EDM function is selected with the REVERSE button (6D). The pulse length can be set from 1 to 99 with the adjustment knob (4) and the strength is shown in both displays (3).

Connect the ground connection to the part to be coated. The item being worked on should NOT be covered by liquid during the work.

Tungsten and brass are often used as electrodes. Remember, do not touch them during or immediately after use as the electrode becomes very hot.

Splashes of molten material can occur during work, so safety glasses are recommended.

Fire can occur due to molten splashes, so it is advisable to have a fire extinguisher within reach.

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