



UTC-1060

AUTOMATIC GRINDING MACHINE



USER MANUAL

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This manual contains important information on the safe usage and maintenance of UTEST UTC-1060 Automatic Grinding Machine and of its related components. Please read through the manual carefully before operating the device for the first time and keep it for the future reference.

Safety Symbols and Markings

Symbol	Description
	WARNING: In conjunction with one of the signal words this symbol indicates a hazard which will or could result in death or serious injury.
	ELECTRIC HAZARD: In conjunction with one of the signal words this symbol indicates a hazard involving electrical voltage and identifies information about protection against electrical voltage.
	HIGH TEMPERATURE WARNING: This icon indicates a hot surface warning. Protective gear must be worn at all times while working with or close to the sections marked with this warning icon.
	NOTE: Recommendations and important information on how to handle the product.

UTEST General Terms and Conditions of Sales and Delivery apply in all cases. Warranty and liability claims arising from personal injury and damage to property cannot be upheld if they are due to one or more of the following causes:

- ✓ Unauthorized modifications to the device and its components.
- ✓ Failure to use the instrument in accordance with its designated use and purpose which is described in this manual.
- ✓ Failure to adhere to the sections of the manual dealing with the performance check, operation and maintenance of the instrument and its components.
- ✓ Incorrect performance checks for operation and maintenance of the instrument and its components.
- ✓ Damage resulting from the effects of foreign bodies, accidents, vandalism and force majeure.
- ✓ If the instructions given in troubleshooting cannot help to solve your problem, plug out the power cable and call UTEST technical service.

The instrument is only to be used for its designated purpose as describe herein. Replace faulty components only with original replacement parts from UTEST. Accessories should only be installed or connected to the instrument if they are expressly authorized by UTEST. If other accessories are installed or connected

to the instrument, then UTEST will accept no liability and the product guarantee is forfeit.

General Safety Instructions

UTEST

This part contains important safety instructions that the user must follow for operation and storage of UTC-1060.

This part contains important safety instructions that the user must follow for operation and storage of UTEST UTC-1060.

- ✓ Device should be seated on a steady base.
- ✓ Always follow basic safety precautions when using this product to reduce risk of injury from any dangerous situations.
- ✓ Read and understand all instructions in the documentation that comes with UTC-1060.
- ✓ Make sure cover is in place and not damaged before starting to the test.
- ✓ Observe all warnings and instructions marked on the product.
- ✓ Before removing any covers or performing maintenance repair and service, isolate from electrical supply by removing mains plug.
- ✓ Wear protective clothing when handling equipment at extreme temperature.
- ✓ **After the test, clean the grinding wheel, cradles and thoroughly with a water gun, brush and cloth and make sure that no parts remain.**
- ✓ Avoid contact with these materials if any organic or inorganic chemicals are used in the test to be performed with the equipment.
- ✓ Wear safety glasses, gloves and a lab coat before starting the test.

- ✓ If the instructions given in troubleshooting cannot help to solve your problem, plug out the power cable and call UTEST technical service.
- ✓ Do not lean the cabinet to the wall at zero distance.
- ✓ While the test is in operation do not remove any covers or attempt to adjust any part of the machine.



WARNING: *The equipment is not allowed to be operated by children or anyone under the influence of alcohol, drugs or pharmaceutical preparations. Anyone who is not familiar with this manual must be supervised when using the equipment. Carry out the stipulated maintenance properly and at the correct time. Following completion of the maintenance tasks, perform a functional check. As s safety features there is a emergency stop button on the device.*

Device Handling

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The electronic parts and mechanic parts of UTC-1060 are sensitive components. Please handle them carefully.

- ✓ Do not place any heavy objects on the device.
- ✓ Avoid any impact or rough handling that might damage the device.
- ✓ Do not disassemble UTC-1060.
- ✓ Install the product in a protected location where no one can step on or trip over the power cord and in a location where the power cord cannot be damage.

The UTC-1060 Automatic Grinding Machine provides fast grinding of concrete, rock, natural stone. etc. specimens to obtain plane and parallel surfaces according to EN and ASTM standards.

Five units of $\varnothing 38$ to 50 mm cylinders, three units of $\varnothing 70$ mm to $\varnothing 110$ mm cylinders, two units of $\varnothing 110$ mm to $\varnothing 160$ mm cylinders, three units of 100 mm cubes faces, and one unit of 150 mm cube faces can be ground simultaneously with the suitable cradle. The length of the any specimen must be longer than 110 mm.

According to ASTM and EN standards, the planeness accuracy of grinded surfaces of concrete compression test specimens should be 0.05 mm and also the deviation of perpendicularity of the side with reference to the end faces should be 0.5° .

The equipment has selectable advance grinding time functionality by user from 50 to 400 seconds. Optimum grinding time per end of all type specimens is 90 to 120 seconds. The specimens fixed to the any cradle are abraded by the grinding wheel which has bidirectional radial displacement ability. The safe and ergonomic design provides easy access to the water inlet and outlet. Specimen cradles can easily be installed without the need for any assembly.

Mobility of the machine is achieved with the help of the integral wheels, and all components of the system can be safely accessed for easy maintenance. The parts exposed to water are made of stainless steel to resist corrosion. In Table 1 dimensions and weight of the device can be seen.

Table 1: Dimensions and Weight of UTC-1060

Dimensions and Weight of UTC-1060			
Width (cm)	Length (cm)	Height (cm)	Weight (approx.) (kg)
800	1265	1652	350

The device can also work with a system that allows the used water to be reused. This system can be seen in Figure 1. The system must be ordered separately.



Figure 1: Water Tank with Filtration and Circulation System

UTEST UTC-1060 Automatic Grinding Machine consists of fixing clamp, grinding wheel, cradle, water gun. Locations of these units can be found in the following section.

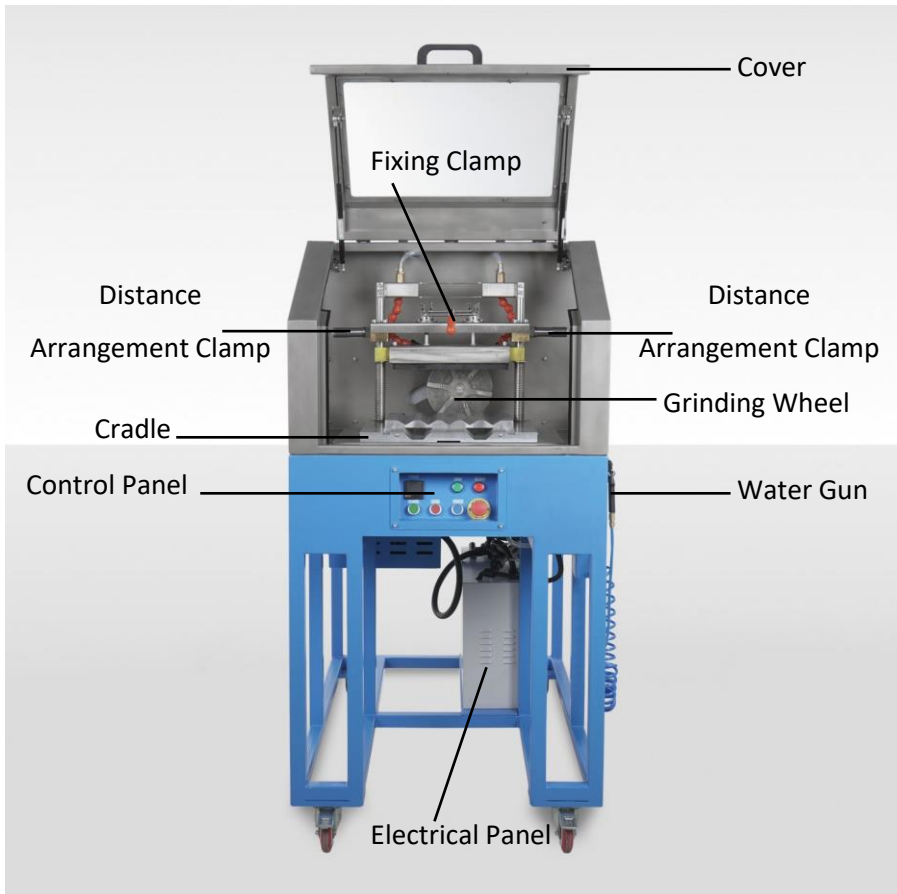


Figure 2: Parts of the UTC-1060

There are 3 optical sensors in the cabin adjusts the initial position of the cradle and grinding wheel (Figure 3).

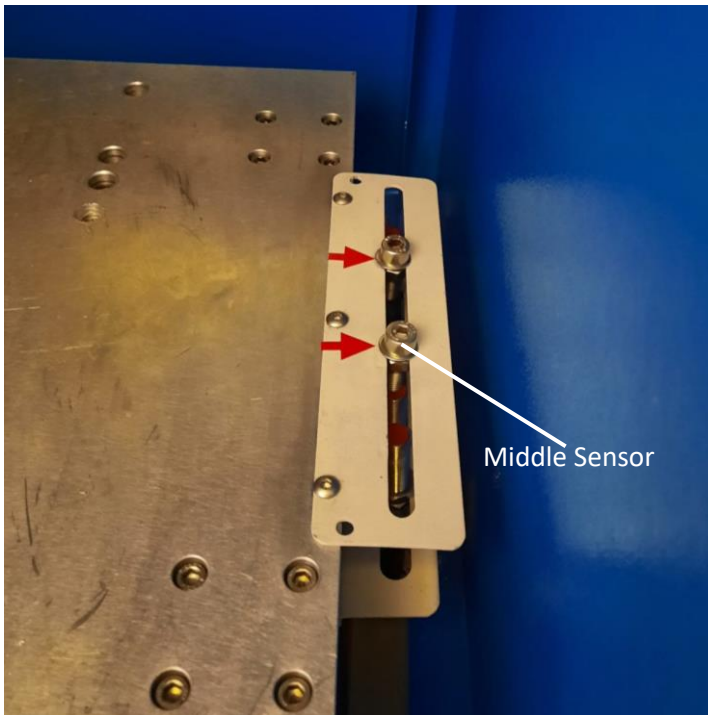


Figure 3: Optical Sensors

There are small lights on them for stating that they are in operation. The one not indicated with red arrow get rarely activated as the grinding head normally run between sensors indicated with red arrows. This sensor is located for safety purpose that if rotating head does not stop at the middle sensor, this sensor catches the rotating head. The light of the middle sensor

should be lit when the device is ready for the test after sample placement (Figure 4). The bolt and the related middle sensor tips should be aligned before starting a test.



Figure 4: Middle Sensor Tip

There is another sensor in the cabin. The sensor seen at Figure 5 is for safety purpose that if the cover is not closed machine does not start to operate.



Figure 5: Door Safety Sensor

Also, there is another sensor to adjust the vertical position of the grinding wheel (see Figure 6) which is reset position. If the grinding wheel is not in vertical position this sensor activates the grinding wheel motor and motor align the grinding wheel in vertical position when Reset option on the control panel is used.

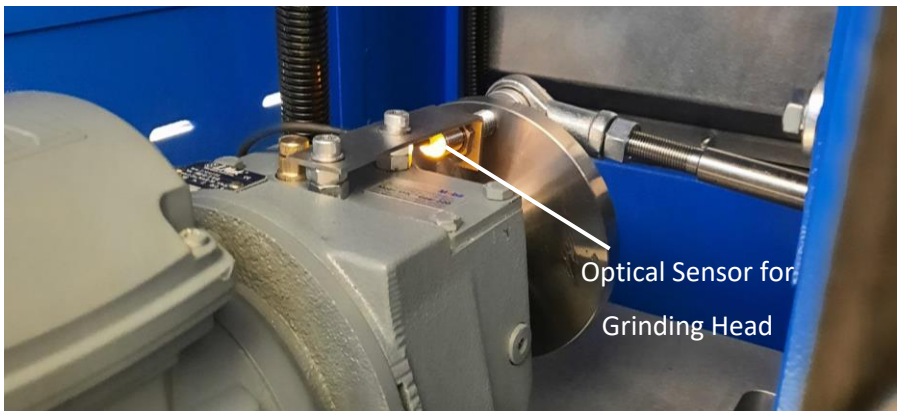


Figure 6: Optical Sensor for Grinding Head Position

The control panel of the device consists of timer unit, run and alarm lights and start-stop-reset-emergency stop buttons.



Figure 7: Control Panel

Timer: The timer controls the duration of the full cycle. The grinding time is determined for each sample according to material hardness and cylinder diameter. The timer is set in seconds only.

For example, 120 seconds= 2 minutes. The device is set to 100 secs from factory. The $\pm$ buttons located above and below the numbers determine the units, tens, hundreds and thousands of seconds, up to a maximum of 9,999.

Green Run Light: It is connected with start button. It blinks during reset process.

Red Alarm Light: It comes on when panel cover sensor is faulty or panel cover is not placed, inverter failure, motor failure and when emergency stop button is pressed.

Start – Stop Buttons: They are used to start and stop the test.

Reset Button: It is used to reset the counter number. The reset button is used after one of the alarm situations occur on device and device is stopped before test is completed automatically. It does not need to be pressed during regular test intervals, as the device automatically moves back its current test start initial position after the last test ends.

Emergency Stop Button: It is used to stop the whole device in case of emergency.

2. INSTALLATION

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2.1 Environment

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Make sure that the room in which the device is going to be placed have a proper mains supply which is in compliance with the machine's specifications. Check the voltage (V), ampere (A), frequency (Hz), and the phase of the mains supply in Table 2.

Table 2: UTC-1060 Electrical Connection Properties

UTC-1060 Electrical Connection Properties				
Voltage	Ampere	Frequency	Phase	Power
220 - 240 V	20 A	50 - 60 Hz	1Ph	3000 W

Main electricity line must be free from instabilities and repetitive power cuts for both the extended life of the device and the continuity of testing. Therefore, make sure that the mains supply is well grounded. If the power cuts are frequent or the grounding is not well enough, the use of an uninterruptible power supply (UPS) is recommended.

Make sure that the device is placed in a clean and dry surrounding. Direct contact of the device with the sunlight should be avoided. A conditioned room for example, will comply the above conditions and will result in best operational performance and measurement results. Device should be well accessible from the front and the sides for connections, testing and maintenance.

In order to prevent inaccurate test results, the ground should be rigid enough to minimize vibrations or shocks. If there are any other testing equipment or a source that creates vibrations on the floor, UTC-1060 should be placed maximum possible distance to that source. Surface of the ground should be horizontal and smooth enough so that the horizontal and vertical alignment of the device are not shifted.



NOTE: *If remote assistance will be required from the UTEST Technical Service Department, the room should have an internet access.*

2.2 Unpacking

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Open the wooden crate without damaging the contents and remove all packaging materials. Check for completeness and damages if exist. Report any irregularities directly to the supplier. Take necessary precautions and carefully transport and place the device to its place. Since mobility of the machine is achieved with the help of the integral wheels to transport to device to the desired location only pushing the device will be enough. Do not forget to lock the wheels pushing the locks (see Figure 8).



Figure 8: Lock of the Integral Wheel

Place the device somewhere near the electricity and main water supplies. After placing the device, connect the mains water to the water inlet on the

right side of the device with the help of a hose because the grinding wheel is done with water to prevent excessive wear of grinding wheel and excessive dust formation.

The device should be installed close to a drain in order for the wastewater to flow without accumulation. If there is no such possibility, wastewater can be deposited.

1. Read the requirements of the standard to be applied before starting the test and prepare all the materials needed to perform the test.
2. Select the appropriate cradle to grind the samples and place it (see Figure 9).

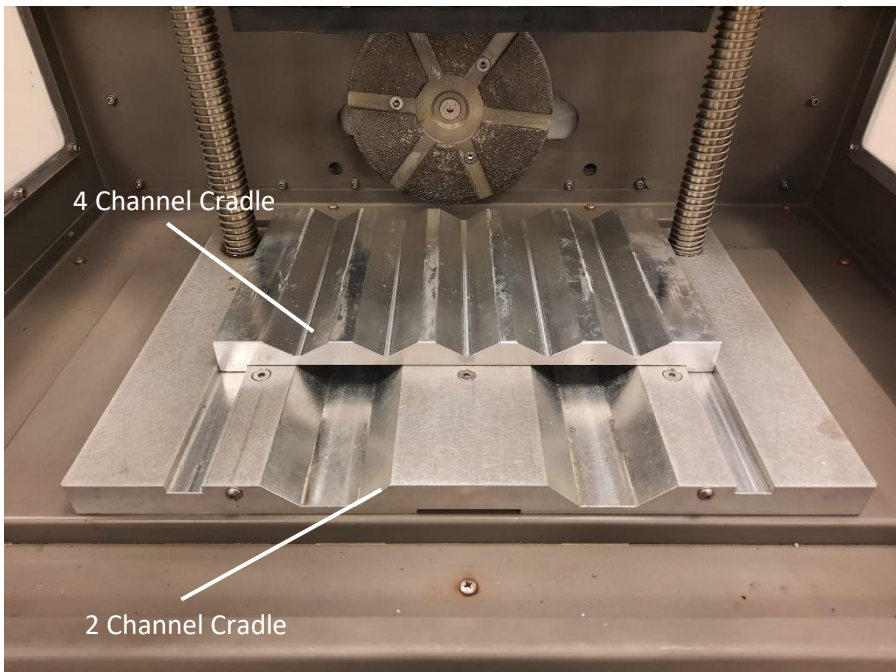


Figure 9: Cradles

3. Place the samples on the cradle. When doing this, make sure that there is no a distance between the samples and the grinding wheel, the samples should contact with the grinding wheel. Then pull the

distance arrangement clamps adjust the fixing mechanism to correct height and secure it.



NOTE: *If the diameter of the sample is between 38 mm and 100 mm, a 4-channel cradle should be used to grind these samples. If the diameter of the samples to be grinded is more than 100 mm, a 2-channel cradle should be used.*

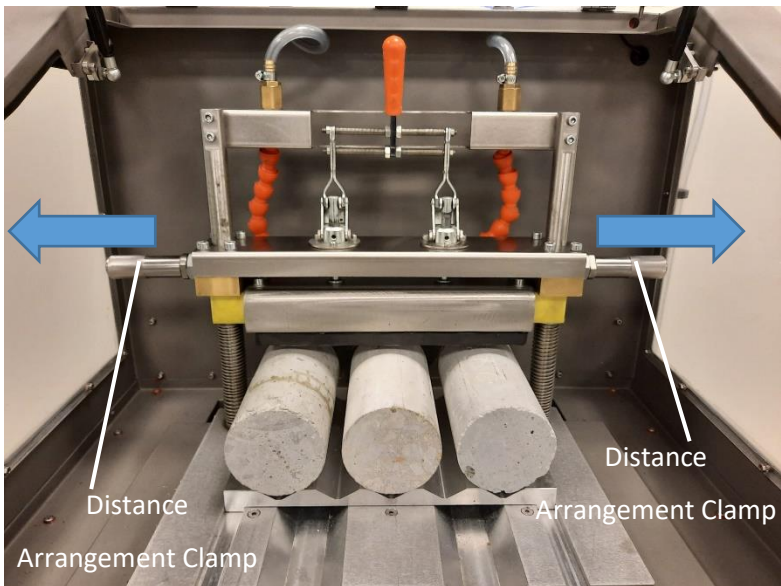


Figure 10: Samples on Cradle

4. By turning fixing clamp secure the specimens. Be sure that specimens firmly fixed to its positions.

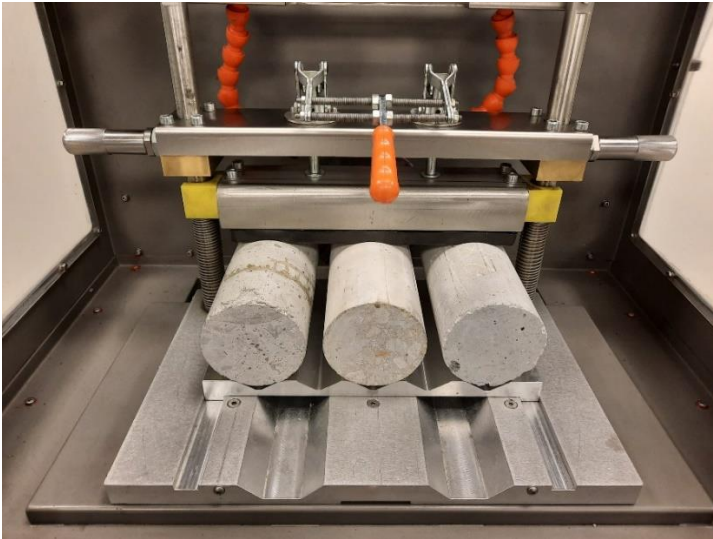


Figure 11: Fixing the Specimens

5. Plug the power cord. Then turn on the power switch by pressing the on / off switch located at the back side of the device.



Figure 12: Power Switch

6. Set the run time of the grinding operation from the timer. To do this press the Left arrow key to switch the digits. Set each digit by using Up key. Then press MODE key.



Figure 13: Timer

7. Close the cover and press RESET button on the control panel in order to bring the device at start position.
8. Open the water inlet valve and press “START” button (see Figure 13). When the “START” button is pressed, the green light will light on the RUN button. This indicates that the device is working.



WARNING: *Never attempt to run the device without supplying water. Otherwise, the warranty procedure will not applicable for some related damage.*



NOTE: *The device should be installed close to a drain in order for the wastewater to flow without accumulation. If there is no such possibility, wastewater can be deposited into a trough.*

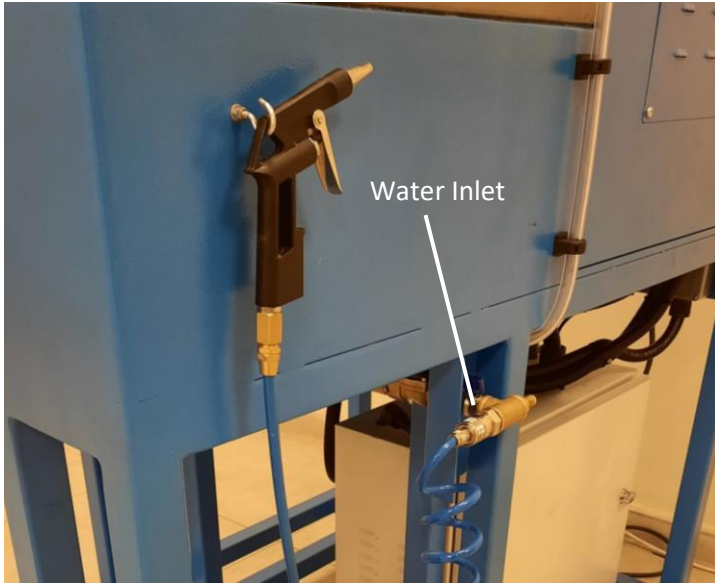


Figure 14: Water Inlet

9. As soon as the grinding process is completed, the sample stays at its forward position and the grinding wheel cleans the edge surface of the sample for 35-40 sec. Then the grinding head moves back to its initial position, i.e. until the before mentioned middle sensor.
10. Rinse the front side of the device with pressurized water using water gun located at the right side of the device and if possible should be dried by using a compressor.

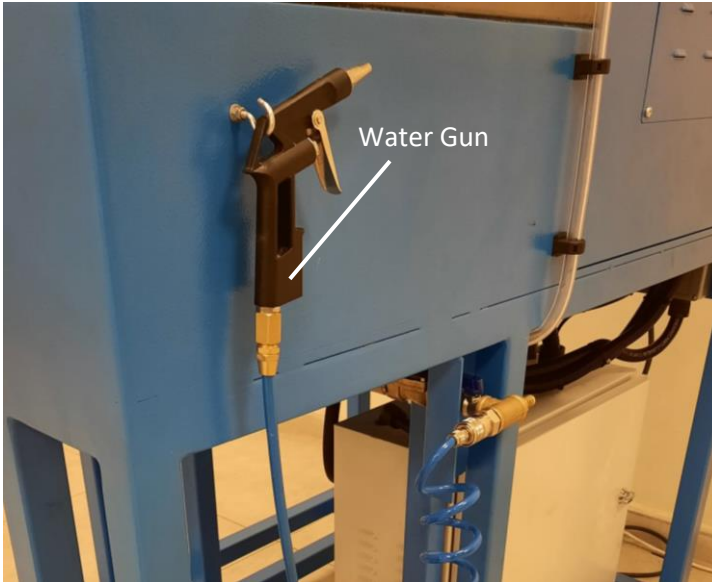


Figure 15: Water Gun

4. MAINTANENCE

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WARNING: *It is important to care that the unit must be switched off and the main cable must be removed before starting any maintenance for user's safety.*

All safety devices must be functional at all times. Damaged protective covers must be replaced as soon as possible. When safety components are replaced, the protective devices are to be properly attached and tested.

We recommend that the device is cleaned of any particles and dust from the scattered specimen after the test with a damp cloth and brush to avoid incrustations which could damage the paint work.

As with all electrical equipment, machine must be used correctly and maintenance and examination must be performed at regular periods. Such precautions will guarantee the safe and sufficient functioning of the equipment.

Maintenance to the equipment is responsibility of the purchaser and must be performed as stated by this chapter. Failing to perform the recommended maintenance actions or maintenance performed by unauthorized people can void the warranty.

The section between the cradles should be lubricated every month. Please apply little amount of oil or light grease by using a small brush.

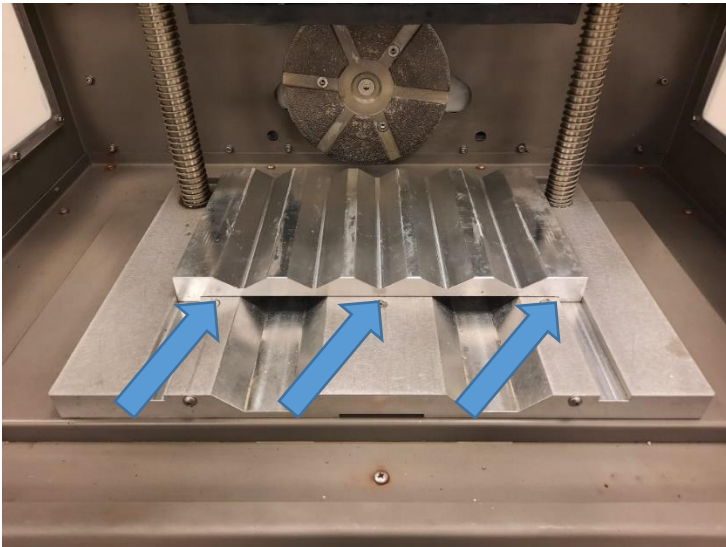


Figure 16: Section should be lubricated

After the end of every test day, the fore section of the machine should be rinsed with pressurized water thoroughly and if possible, should be dried by using a compressor.

Every 3 months, the motor bearings and swing mechanism arm should be greased via grease nipples (see Figure 17 and Figure 18).

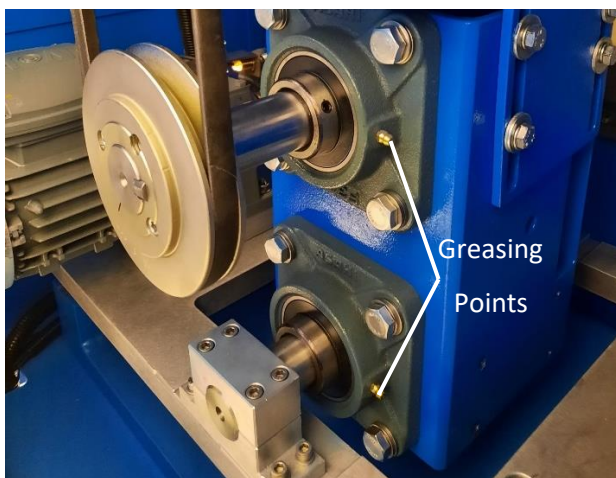


Figure 17: Motor Bearings Greasing Points



Figure 18: Swing Mechanism



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Manufacturer: Utest Material Testing Equipment Co.
Üretici UTEST Malzeme Test Cihazları ve Makineleri İmalat ve Dış Tic. A. Ş.

Address: Ankara 1.OSB Ural Cad. No:18 Sincan/ANKARA/TURKIYE
Adres

Here with declares that the product
İş bu belge ile beyan ederiz ki aşağıdaki ürün

Model: UTC-1060, UTC-1060-N
Model

Serial Number: See Details on Product Identification Plate
Seri No Ürün Tanımlama Etiketine Bakınız

Description: Otomatik Yatay Hareketli Yüzey Aşındırma Cihazı
Ürün Adı: Automatic Horizontal Grinding Machine

is in conformity with the provisions of the following EC directives;
belirtilen AT Yönetmelikleri hükümleri ile uyumludur.

- 2006/42/ EU Machinery Safety Directive Annex-1
2006/42/EU Makine Emniyeti Yönetmeliği Ek-1
- 2014/35/ EU Low Voltage Directive
2014/35/ EU Alçak Gerilim Yönetmeliği
- 2014/30/ EU Electromagnetic Compability Directive
2014/30/ EU Elektromanyetik Uyumluluk Yönetmeliği

is in conformity with the following standards;
belirtilen standartlar ile uyumludur;

- EN 12390-1, 12390-3, 12504-1
- ASTM C31, C39, C42, D4543 C192, C617

Issue Date:
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16.12.2016

Onay: Tarık Ö. USANMAZ
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