



DIGITAL OVERHEAD STIRRER, TURBO OS30 AND TURBO OS50

Please read the User Manual carefully before use, and follow all operating and safety instructions

User Manual
English

User Manual

EN

Digital Overhead Stirrer, Turbo OS

Preface

Thank you for purchasing our product. Users should read this manual carefully, follow the instructions and procedures, and be aware of all preventive measures when using this instrument.

Service

If help is needed, you can always contact your dealer or Labbox via www.labbox.com. Please provide the customer service representative with the following information:

- Serial number
- Description of the problem
- Your contact information

Warranty

This instrument is guaranteed to be free from defects in materials and workmanship under normal use and service for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser and shall not apply to any product or parts that have been damaged due to improper installation, improper connections, misuse, accidents, or abnormal conditions of operation.

For claims under the warranty, please contact your supplier.

Content

1. Safety Matters.....	4
2. Scope Of Use	4
3. Unbox Inspection	5
4. System Assembly.....	5
5. Control And Display.....	6
5.1 CONTROL.....	6
5.2 DISPLAY.....	8
6. Operations And Settings	8
6.1 SETTING THE BUZZER AND OPERATING MODE	8
6.2 SETTING THE TIME, SPEED, AND DIRECTION OF ROTATION	9
6.3 SAFETY LOCK SETTINGS	10
6.4 CALIBRATE SETTINGS.....	10
7. Motor Protection and Overload Protection.....	10
8. Interface and Output	11
9. Maintenance and Clean	11
10. Relevant Standards	12
11. Technical Parameters	13

1. Safety Matters

	Warnings! • Read this instruction manual carefully before operating the instrument and follow safe operating practices. • Only professionally trained personnel can operate the instrument.
	Safe grounding protection! • In order to ensure safety, please make sure that the power socket is well grounded before using this instrument.

- When working, please wear personal protective work clothing to avoid hazards that may be caused by:
 - Stir liquid spatter
 - Glass container breaks
- Operate instruments according to safety instructions and occupational safety guidelines to avoid accidental injury.
- Do not touch the moving parts of the instrument and be careful not to crush your fingers when moving the instrument.
- Keep the instrument in a spacious and ventilated area for use, and ensure that the workbench is smooth, clean, dry, flame retardant and has a certain amount of friction. Do not run the instrument outdoors, in hazardous material environment, or in water.
- When setting the speed of the instrument, please pay attention to the container under the stirring paddle to avoid sample spatter. Turn down the motor speed if the instrument is not running smoothly.
- The stirring paddle must be connected reliably and the container must be securely placed to avoid danger.
- Preparing flammable samples may result in hazards. Only prepare samples that will not produce a dangerous reaction during oscillation.
- Disconnect the power supply before assembling the accessories and make sure the instrument and its accessories are not damaged before turning it on each time.
- Do not cover the instrument while it is in use. Prevent hitting and squeezing the instrument and accessories.
- Do not use this instrument in areas with strong magnetic fields.

2. Scope Of Use

This instrument is designed for applications such as schools, laboratories and factories to stir viscous substances. The instrument can be installed with a variety of stirring paddles, suitable for different viscosity of the medium. This instrument is not suitable for use in residential areas and under some of the restrictive conditions specified in Chapter 1.

Failure to use the manufacturer's recommended accessories, or failure to follow the instructions for operation, may result in unsafe conditions.

3. Unbox Inspection

If the user finds any packing damage, please indicate it on the receipt. If any internal damage is found after opening the package, please also contact the local supplier or manufacturer.



Attention:

Do not connect the instrument to the power supply if any visible damage is found on the instrument.

4. System Assembly

a. Installing the stirrer on the retort stand

Assemble the retort stand, then attach the stirrer to it as shown in Figure 1. Use the locking handle to adjust the height of the stirrer and its distance from the stand.

Then position the anti-drop device so that the stirring paddle cannot come into contact with the work surface.



Figure 1

b. Installing the Stirring Paddle

Remove the plastic protective cover from the stirrer chuck, then insert the stirring paddle shaft into the chuck. Next, adjust the paddle's immersion depth in the vessel.

Hold the chuck and the paddle shaft so that the paddle remains naturally vertical and can rotate freely. Then gradually tighten the chuck by turning its collar, as shown in Figure 2.



Figure 2

**Attention:**

1. The overhead agitator is a high-speed operation device. Each step of the system assembly needs to lock corresponding components to avoid damaging injuries to personnel or system surrounding caused by the movement of the main engine itself or the stirring paddle position.
2. The standard bracket is the support device of the overhead agitator, and its connecting parts should be locked tightly during assembly to avoid damaging injuries caused by loose connection.
3. When adjusting the height of the main machine and the falling protection device, please be careful not to crush your fingers.

5. Control And Display

5.1 Control

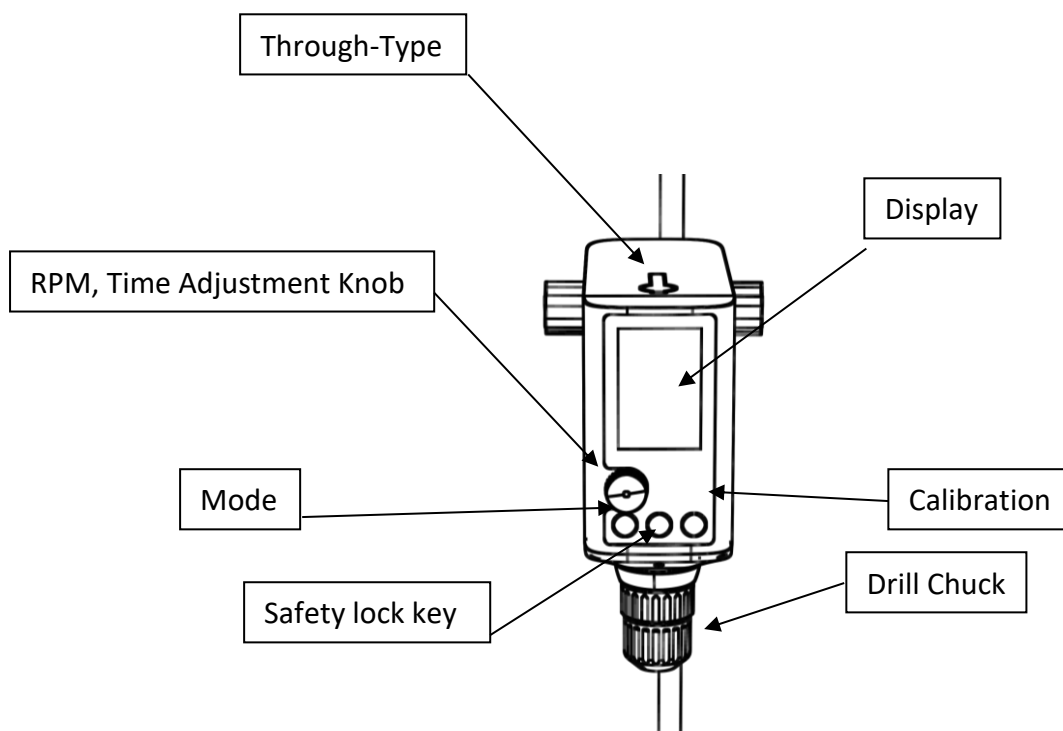


Figure 3

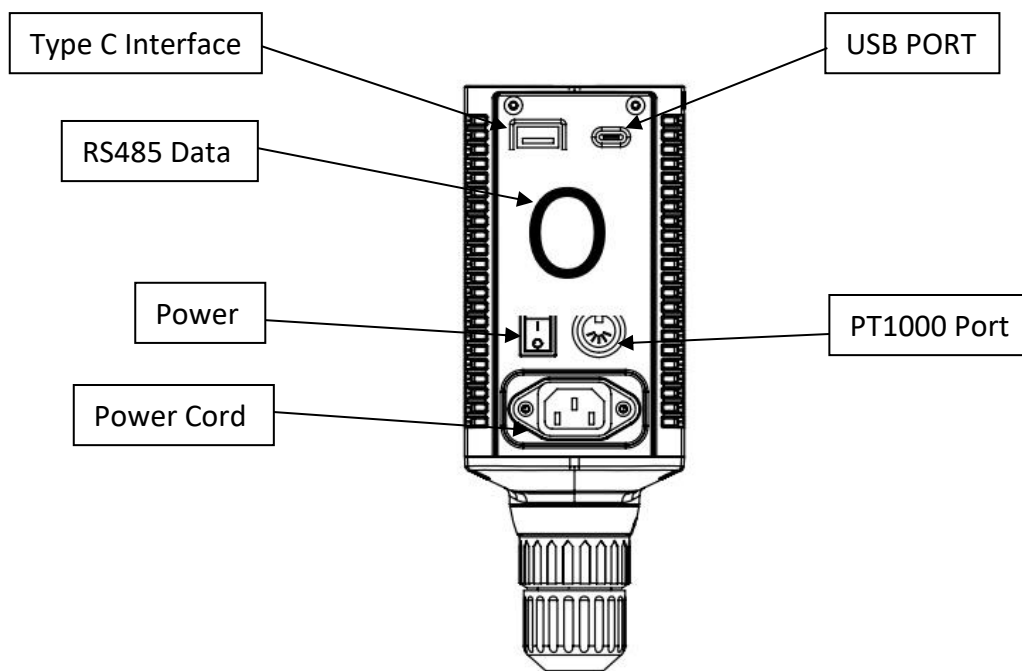


Figure 4

LCD digital display type	
LCD screen	LCD display displays the current working status of the instrument and various Settings.
Mode switch button Mode	Press "Mode" to switch between "Set time", "Set speed", "set rotation direction" (for the top mount with maximum torque of 40 and 60N.cm) and "Set gear" (for the top mount with maximum torque of 600N.cm).
Safety lock button "Lock"	Prevent changing instrument Settings by false touch.
Calibrating keys "Cal"	Calibrate the instrument temperature.

5.2 Display

Max. Torque 40/60N.cm

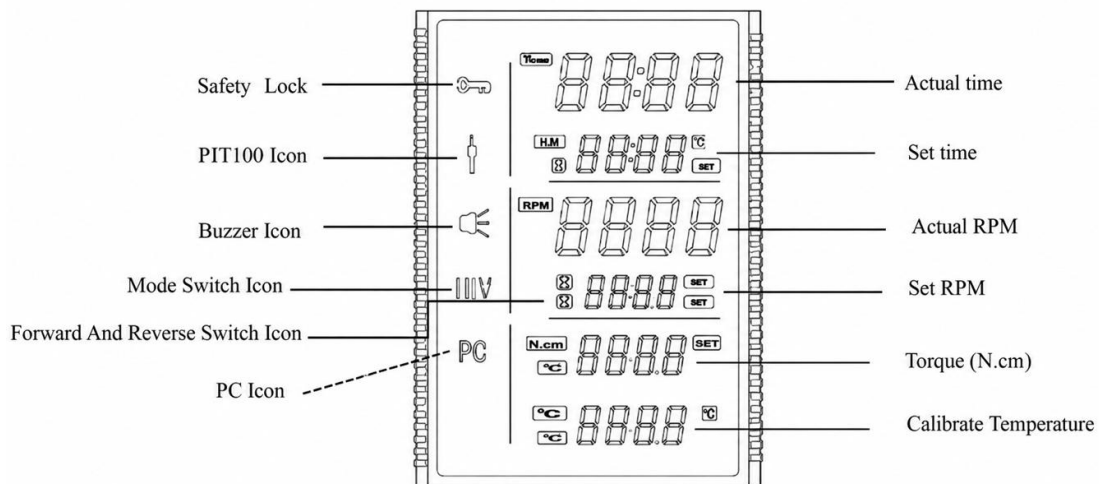


Figure 5

6. Operations And Settings

Important reminder

Check that the operating voltage specified on the nameplate matches the grid supply voltage.

Check that the power outlet is well grounded.

If it does not work properly, the instrument may have a security setting or be damaged. Contact the manufacturer/supplier.



Be aware of:

Do not touch the external high-speed parts during the operation of the instrument to avoid damaging injuries.

6.1 Setting the Buzzer and Operating Mode

Turn the power switch on. When the display lights up and starts flashing, immediately press and hold the **“Mode”** button for 5 seconds to access the configuration settings.

- **Buzzer Icon:** use the adjustment knob to select **“ON”** or **“OFF”** to enable or disable the buzzer.

Press the **“Mode”** button again to access the operating mode selection. Turn the adjustment knob to select one of the following modes:

- **Operating Mode I:** after the instrument is switched off, the current speed and time settings are saved.
- **Operating Mode II:** after the instrument is switched off, the speed and time settings are not saved. The speed and time values are reset to **0**.
- **Operating Mode III:** when the instrument is switched on, stirring starts automatically using the speed and time values saved before shutdown. The speed and time values can be modified at any time.
- **Operating Mode IV:** after the instrument is switched off, the current speed and time settings are saved, but they can no longer be modified.

Once the operating mode has been selected, wait for the main screen to appear. Then set the operating time, speed, and temperature.

6.2 Setting the Time, Speed, and Direction of Rotation

Setting Time and Speed

Press the “**Mode**” button. The time value shown on the display starts flashing. Set the required time by turning the control knob. Press the “**Mode**” button again to access the speed setting, then set the required speed by turning the control knob.

Setting the direction of rotation

Press the “Mode” button again to access the direction-of-rotation setting. Use the control knob to select clockwise or counterclockwise rotation, then press the knob to start the instrument. Stirring takes place in the selected direction and stops automatically at the end of the programmed time.

Important note: an alternating rotation mode can also be selected, in which the instrument operates successively in the clockwise and counterclockwise directions.

In this mode, the instrument first rotates clockwise for the programmed time, pauses for 5 seconds, then rotates counterclockwise for the same duration. After another 5-second pause, the cycle restarts automatically.

In this mode, the timer does not provide automatic stopping. The instrument must be stopped manually. Automatic stopping is only available when the instrument is controlled using the PC software.

6.3 Safety lock settings

Press the safety LOCK button "Lock", the instrument will enter the locked state, and the safety lock icon on the screen will light up. At this time, no parameter changes can be made to the instrument. Press the "LOCK" button again to release the safety lock.

6.4 Calibrate settings

Connect the external temperature probe, then press the “Cal” (calibration) button to enter calibration mode.

The temperature measured by the instrument is displayed in the actual temperature area, while the calibration value is temporarily displayed in the area normally used for the torque reading.

Compare the temperature measured by the instrument with the value indicated by a reference thermometer. Turn the control knob to adjust the calibration value until it matches the temperature indicated by the reference thermometer.

Press the “Cal” button again to confirm the value and exit calibration mode.

Please Attention:

1. When the external temperature sensor is not connected, the calibration button function is to clear the torque operation.
2. When the external temperature sensor is connected, the calibration function is calibrated only for temperature.
3. Temperature calibration only supports single point temperature calibration, and the calibration temperature cannot exceed the detection temperature of the instrument.

7. Motor Protection and Overload Protection

When the overhead agitator works continuously, the motor realizes the overload protection function through the electronic current limiting safety circuit. When the system torque reaches the limit value, the overload protection starts and the instrument stops automatically.

8. Interface and Output

This instrument can be connected to the computer through RS485, USB and Type-C interface.

RS485 interface:

LCD digital display type overhead electronic stirrer uses special accessories and cables to connect other external devices. The standard 9-pin interface is used to connect to the PC.

- The connection line between the overhead mixer and the PC uses the specified EIA standard RS485 communication line corresponding to the DIN 66020 interface.
- Transmission mode: bidirectional communication
- 1 Start bit; 8-bit character; 1 stop bit
- Transfer rate: 9600 bit/s
- Data communication of laboratory instruments to the PC can only be requested by the PC.



Attention: Do not unplug the serial cable when it is turned on.

USB and Type-C interfaces:

Universal serial port (USB and Type-C) systems are used to connect instruments to computers. Devices that support (USB and Type-C) can be connected to each other during operation (hot swappable) and automatically recognize the connected instrument and its properties.

9. Maintenance and Clean

- The correct use and maintenance of the instrument, so that it is in good working condition, is conducive to extending the service life. Keep the instrument clean and tidy, do not let the solution into the machine.
- Power must be cut off before maintenance and cleaning, and only clean the instrument using our recommended methods.

Removal method:

Dye	Isopropyl alcohol
Building materials	Aqueous solution with active agent/isopropyl alcohol
Cosmetics	Aqueous solution with active agent/isopropyl alcohol
Food	Aqueous solution with active agent
Fuel oil	Water solution with active agent

For materials not listed in the table above, consult the manufacturer. The user must consult with the manufacturer before adopting other cleaning methods

The manufacturer confirms that the method will not damage the instrument. Wear appropriate protective gloves when cleaning the instrument.

	Attention: • Electronic devices cannot be cleaned with cleaner. • Delivery instruments must be cleaned to avoid contamination with hazardous materials and sent back in their original packing boxes. • When the product is not used for a long time, please store the instrument without power and place it in a dry, clean, normal temperature and stable place.
---	--

10. Relevant Standards

Instrument construction meets the following safety standards
EN 61010-1 UL 3101-1 CAN/CSA C22.2(1010-1) EN 61010-2-10
Instrument construction meets the following electromagnetic compatibility standards
EN 61326-1

11. Technical Parameters

Technical Parameters	Max. Torque 40N.cm	Max. Torque 60N.cm
Maximum agitation [H ₂ O]	30L	50L
Speed Range	50~2200rpm	50~2200rpm
Timing range	0min-99h59min	0min-99h59min
Maximum torque	40N·cm	60N·cm
Maximum Viscosity	10000mPa·s	50000mPa·s
Motor Type	Dc brushless motor	Dc brushless motor
Speed Display	LCD	LCD
Torque Display	LCD	LCD
Positive And Negative Rotation	Stir forward, reverse, and intermittently	Stir forward, reverse, intermittently
Temperature Display Accuracy	0.1 °C	0.1 °C
External Temperature Sensor	0-100 °C	0-100 °C
Overload Protection Display	LCD	LCD
Drill Chuck Grip Diameter Range	0.5 to 10 mm	0.5 to 10 mm
Data Interface	RS485, Type-C, USB	RS485, Type-C, USB
Voltage	100~240V, 50/60 Hz	100~240V, 50/60 Hz
Motor input and output power	60W/50W	110W/100W
Power	70W	120W
Dimensions [length x width x height]	90x240x227mm	90x240x227mm
Weight	3.5 Kg	3.5 Kg
Allow Ambient Temperature Humidity	5~40°C,80%RH	5~40°C,80%RH

Nota importante para los aparatos electrónicos vendidos en España

Instrucciones sobre la protección del medio ambiente y la eliminación de aparatos electrónicos:



Los aparatos eléctricos y electrónicos marcados con este símbolo no pueden ser eliminados en forma de residuos urbanos.

De conformidad con la Directiva 2012/19/UE, los usuarios de la Unión Europea de aparatos eléctricos y electrónicos, tienen la posibilidad de devolver sus RAEE para su eliminación al distribuidor o fabricante del equipo después de la compra de uno nuevo. La eliminación ilegal de aparatos eléctricos y electrónicos es castigada con multa administrativa.

Remarque importante pour les appareils électroniques vendus en France

Informations sur la protection du milieu environnemental et élimination des déchets électroniques :



Les appareils électriques et électroniques portant ce symbole ne peuvent pas être jetés dans les décharges.

En réponse à la réglementation, Labbox remplit ses obligations relatives à la fin de vie des équipements électriques de laboratoire qu'il met sur le marché en finançant la filière de recyclage de ecosystem dédiée aux DEEE Pro qui les reprend gratuitement (plus d'informations sur www.ecosystem.eco). L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

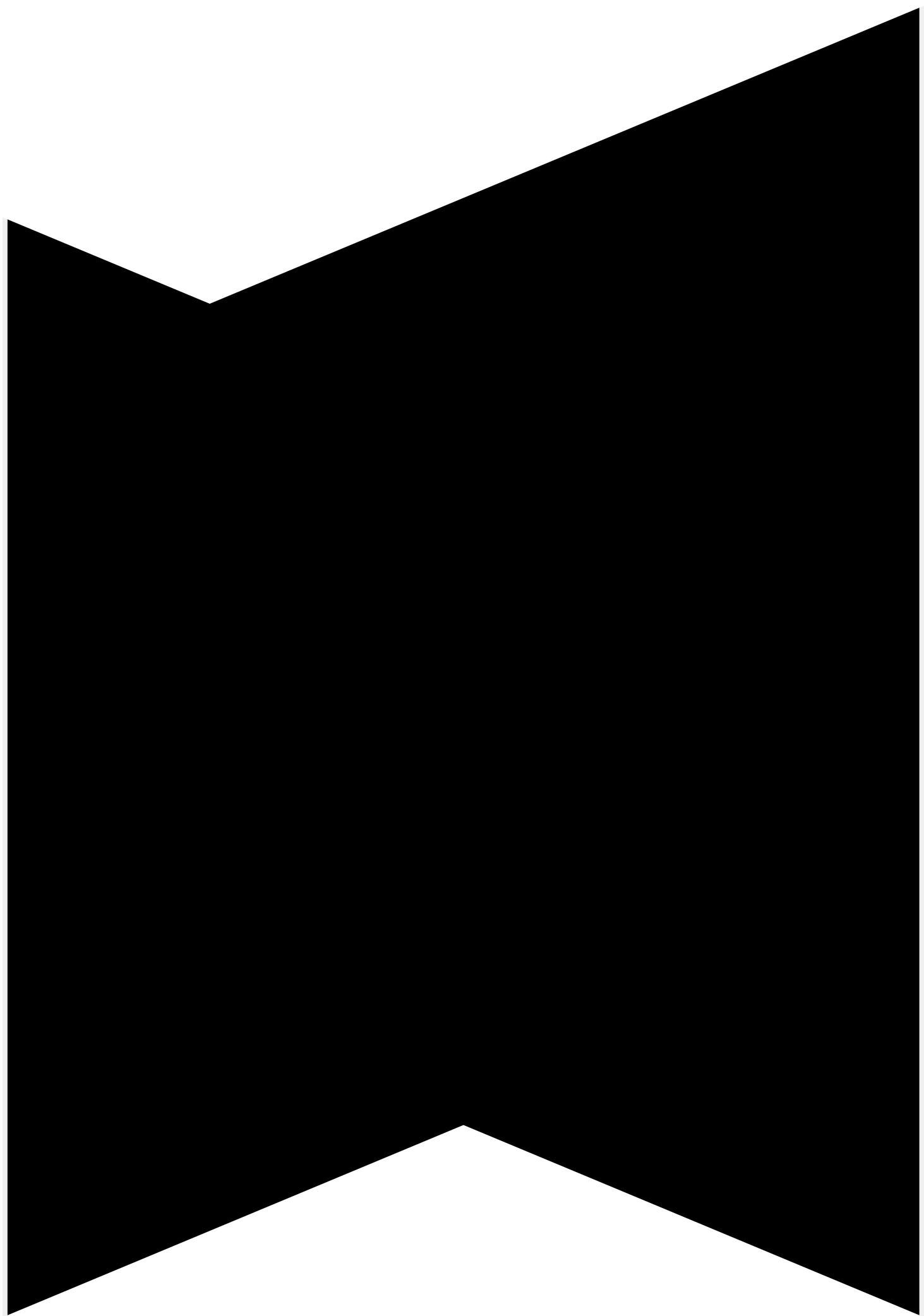
Nota importante per le apparecchiature elettroniche vendute in Italia

Istruzioni sulla protezione ambientale e sullo smaltimento dei dispositivi elettronici:



Le apparecchiature elettriche ed elettroniche contrassegnate con questo simbolo non possono essere smaltite come rifiuti urbani.

In conformità con la Direttiva 2012/19 / UE, gli utenti dell'Unione Europea di apparecchiature elettriche ed elettroniche hanno la possibilità di restituire i propri RAEE per lo smaltimento al distributore o al produttore di apparecchiature dopo averne acquistato uno nuovo. La rimozione illegale di apparecchiature elettriche ed elettroniche è punibile con una sanzione amministrativa.



www.labbox.com