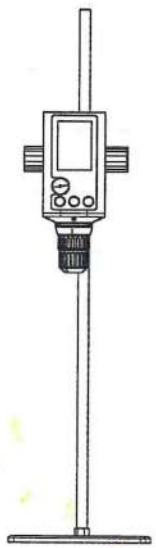
ENS LYON

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Stirring&Heating

LCD Timing Overhead Mixer Instructions



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Foreword

Welcome to "LCD Timing Overhead Mixer Instructions". The user should read this manual carefully before using this instrument, operate according to the instruction manual, and understand various precautions.

How to Get Help

If you encounter any problems or need help during installation and use, please contact the after-sales service department of the manufacturer/supplier in a timely manner.

Please prepare the following documents:

- Product serial number (on the instrument nameplate)
- Warranty card
- A description of the problem phenomenon
- The actions and actions you took to resolve the problem
- Your telephone, fax, Email address and other contact information

Quality Assurance

The instrument is guaranteed for 24 months (from the date of purchase) when used under the normal conditions of use and methods of operation as set out in this manual, in accordance with the manufacturer's quality assurance terms. Performance degradation and damage to the instrument due to incorrect installation and operation, private disassembly

and maintenance, and other violations of the operating terms specified in the instruction manual cannot be repaired in accordance with this quality guarantee. Please contact the manufacturer/supplier in case of any problems related to this warranty.

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.
- Use the standard accessories listed in the "Accessories" section and use the accessories according to this instruction manual to ensure safety. 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.
- Only professionals should turn on the instrument, unplug it before turning it on.
- The operating voltage specified on the nameplate must match the grid supply voltage.

- 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 a variety of stirring paddle, 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. Install a standard stand set

Install the standard support set according to the figure, and adjust the height of the host and the distance between the host and the support by rotating the locking handle on the support. The fall off protection can be adjusted up and down, and the locking position should ensure that the stirring paddle will not touch the instrument layout plane when the main engine is attached to this position. Mount the overhead mixer unit on the standard stand set.

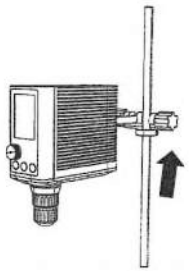


Figure 1

b. Install the mixing paddle

Insert the mixing paddle into the drill chuck hole of the top mixer engine, adjust the depth of the mixing paddle into the container, hold the drill body with one hand and the mixing slurry spindle, so that the mixing slurry is naturally vertical and in a "relaxed" state, and slowly rotate the drill chuck jacket with the other hand to

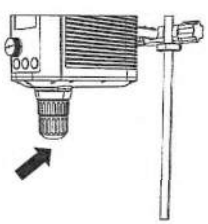


Figure 2

tighten the mixing slurry (as shown in 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 Test Run

Follow these steps for a trial run operation:

- Check that the operating voltage specified on the nameplate matches the grid supply voltage
- The outlet is well grounded
- Connect the power cable, turn on the power switch, and start the self-test
- Rotate the speed adjustment button to set the corresponding speed
- Press the speed adjustment button to turn on the rotation function
- Press the speed adjustment button again to turn off the stirring function

If the above operation works properly, the instrument can be officially used.

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. Control And Display

6.1 Control

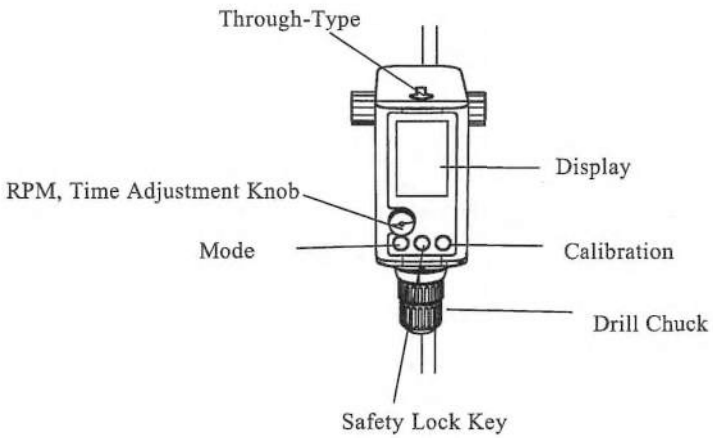


Figure 3

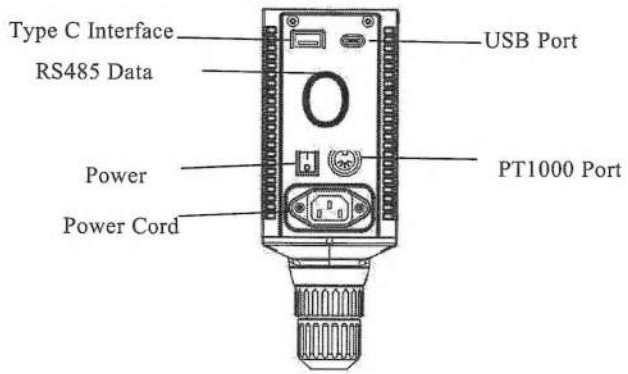


Figure 4

Table 1

LCD digital display type	
LCD 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	Prevent changing instrument Settings by false touch.
Calibrating keys	Calibrate the instrument temperature.

6.2 Display

Max. Torque 40/60N.cm

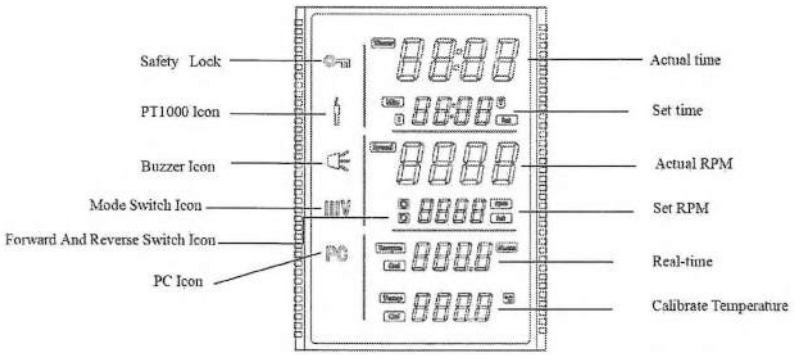


Figure 5

Max. Torque 400N.cm

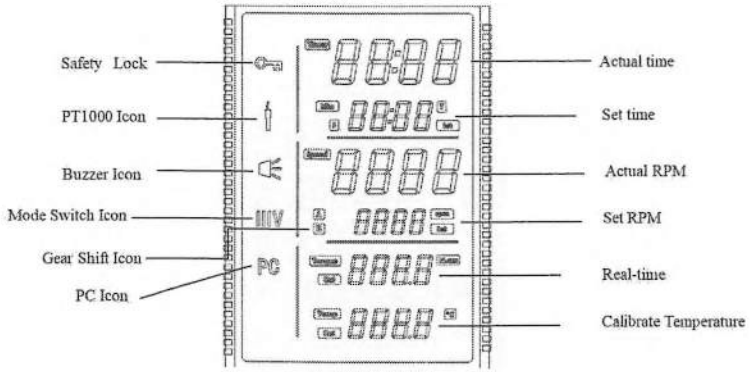


Figure 6

7. Operations And Settings

7.1 Operation mode settings

Turn on the power switch and click the "Mode" button to adjust the operation mode of the instrument:

- Operation mode I: After the current operation ends or the instrument is turned off, the current speed and time Settings will be saved;

- Operation mode II: the current speed and time Settings will not be saved after the current operation ends or the instrument is turned off;
- Operation mode III: The machine can be powered off and restarted, that is, the current speed and time Settings will be saved after the current operation ends or the instrument is turned off;

The value can be changed, and the value of restarting after shutdown is the same as that before shutdown.

- Operation mode IV: After the current operation ends or the instrument is turned off, the current speed and time Settings will be saved, but the value cannot be changed.

7.2 Speed、time、reverse and reverse rotation, gear setting:

Click the "Mode" button, then the character at the screen time setting flashes, and adjust the required time by rotating the knob; Click the "Mode" button again to enter the speed setting, and adjust the required speed by rotating the knob.

For Max. Torque 40/60N.cm: Click the "Mode" button again to enter the forward and reverse Settings, select forward or reverse through the knob, click the knob and the instrument will start.

For Max. Torque 400N.cm: click the "Mode" button again to enter the gear setting,

select A gear (speed adjustment range 10-400rpm) or B gear (speed adjustment range 50-2000rpm) through the knob, and click the knob to start the instrument.

The buzzer will sound three "drops" at the end of the instrument's run.

7.3 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.

7.4 Calibrate settings

Connect the external temperature sensor, press the calibration button, the actual temperature of the instrument will be displayed at the actual temperature, and the user input temperature will be displayed at the torque position. The user can adjust the corresponding temperature through the knob, after confirming the calibration temperature, click the calibration button to exit the 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.

8. 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.

9. 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.

10. 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.

11. 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

12. Technical Parameters

Table 2

Technical Parameters	Max. Torque 40N.cm	Max. Torque 60N.cm	Max. Torque 400N.cm
Maximum agitation [H_2O]	30L	50L	100L
Speed Range	50~2200rpm	50~2200rpm	First gear: 10-400rpm Second gear: 20-2000rpm
Timing range	0min-99h59min	0min-99h59min	0min-99h59min
Maximum torque	40N·cm	60N·cm	400N·cm
Maximum Viscosity	10000mPa·s	50000mPa·s	50000mPa·s
Motor Type	Dc brushless motor	Dc brushless motor	Dc brushless motor
Speed Display	LCD	LCD	LCD
Torque Display	LCD	LCD	LCD
Positive And Negative Rotation	Stir forward, reverse, and intermittently	Stir forward, reverse, intermittently	
Temperature Display Accuracy	0.1 ℃	0.1 ℃	0.1 ℃
External Temperature Sensor	0-100 ℃	0-100 ℃	0-100 ℃
Overload Protection Display	LCD	LCD	LCD
Drill Chuck Grip	0.5 to 10 mm	0.5 to 10 mm	0.5 to 10 mm

Diameter Range			
Data Interface	RS485, Type-C, USB	RS485, Type-C, USB	RS485, Type-C, USB
Voltage	100~240V, 50/60 Hz	100~240V, 50/60 Hz	100~240V, 50/60 Hz
Motor input and output power	60W/50W	120W/100W	
Power	70W	130W	
Dimensions [length x width x height]	90x240x227mm	90x240x227mm	
Weight	3.5 Kg	3.5 Kg	4.0 Kg
Allow Ambient Temperature Humidity	5~40℃,80%RH	5~40℃,80%RH	5~40℃,80%RH

Attention: Overhead Mixer with a maximum torque of 400N.cm is still in the development phase and relevant parameters may change later.