



## OS20 & OS40 LED Digital Overhead Stirrer

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



# user manual

english

# User Manual



## OS20 & OS40 LED Digital Overhead Stirrer

### Preface

Users should read this Manual carefully, follow the instructions and procedures, and beware of all the cautions when using this instrument.

### Service

In order to guarantee this equipment Works safely and efficiently, it must have a regular maintenance. In case of any faults, do not try to repair it yourself. If help is needed, you can always contact your distributor or Labbox via [www.labbox.com](http://www.labbox.com)

Please provide the customer care representative with the following information:

- Serial number
- Description of problem
- Your contact information

### Warranty

This instrument is warranted 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. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claim under the warranty please contact your supplier.

# 1. Safety Instructions



	<p><b>Warning!</b></p> <ul style="list-style-type: none"><li>• Read the operating instructions carefully before use.</li><li>• Ensure that only trained staff works with the instrument.</li></ul>
	<p><b>Protective ground contact!</b></p> <ul style="list-style-type: none"><li>• Make sure that socket must be grounded (protective ground contact) before use.</li></ul>

Table 1

- When working, wear the personal guard to avoid the risk from:
  - Splashing liquids
  - Broken glass containers
- Follow the safety instructions, guidelines and accident prevention regulations.
- Do not touch the running parts, moving instrument care not rolling your fingers.
- Set up the instrument in a spacious area on a stable, clean, non-slip, dry and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous substances or under water.
- Please note the vessel when set up the speed, to avoid splashing the sample. If the instrument does not run smoothly, please decrease the motor speed.
- Firmly secure the accessories and vessels in place to avoid damage or risk.
- Preparation of samples may lead to dangerous flammable substances. Only process samples that will not react dangerous.
- Use the standard accessories listed in the “accessories” section, and follow the instructions to use accessories to ensure safety. Please switch off the power before assembly of accessories, confirm the instrument and accessories are intact before switch on each time.
- The instrument only be opened by expert, please switch off before use.
- The voltage stated on the nameplate must correspond to the mains voltage.
- Do not cover the instrument during running. Prevent the collision and extrusion to instrument and accessories.
- Keep away from high magnetic field.

## 2. Proper Use

The instrument is designed for mixing sticky substances in schools, laboratories or factories. It can be installed on a variety of impeller, for different viscosity of the medium. This device is not suitable for using in residential areas or other constraints mentioned in Chapter 1.

Do not use the accessories recommended by the manufacturer, or failure to use the instructions, may be caused unsafe situation.

## 3. Inspection

### 3.1. Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact manufacturer/supplier for technical support.



**Note:**

If there is any apparent damage to the system, please do not plug it into the power line.

### 3.2. Listing of Items

The package includes the following items:

<b>Items</b>	<b>Qty</b>
Main unit	1
Power cable	1
User Manual	1
Key of drill chuck	1

Table 2

## 4. Function

### 4.1. Control



Figure 1

	Items	Default settings
<b>OS20 &amp; OS40 series</b>	Speed control button "Speed"	Set stirring speed, press the button to start/stop stirring function.
	LED Display	LED displays speed value and warning code.
	Overload protection light "Overload"	LED display light. LED light shows red when starts overload protection. When the torque reaches limited value, overload protection function will be started. At the same time overload protection light flashes, while the system stops running.
	Power switch light "Power"	LED displays light. LED light shows green when switch on.
	Drill chuck	Can be held stirring impellers.
	Push-through agitator shaft	If needed, shaft can push-through agitator.
	Power switch "I/O"	Switch ON or OFF the instrument

Table 3



Figure 2

Display area	LED Displays speed value under normal conditions. LED Displays warning code under abnormal conditions
--------------	--

Table 4

## 5. System Assembly

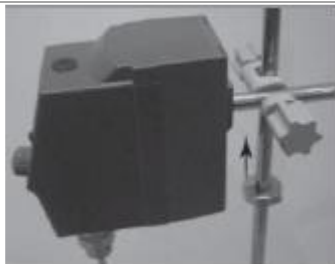



<p><b>a. Install stand</b></p> <p>The stand must be assembled according to the following instructions. Adjust the height of the main unit, and the distance from main unit to the support holder by rotating the locking device. Anti-drop protector can be adjusted up or down, ensure the locking position is suitable for fixing the main unit, and then attach the main unit to the stand.</p>	 <p>Figure 1</p>
<p><b>b. Install stirring impeller</b></p> <p>Plug the stirring impeller into the drill chuck, and adjust the depth of stirring impeller into vessel. Rotate the drill chuck with your fingers to fix the stirring impeller, and then clockwise tighten evenly the drill chuck using chuck key.</p>	 <p>Figure 2</p>  <p>Figure 3</p>
	<p><b>Note:</b></p> <ol style="list-style-type: none"> <li>Overhead stirrer is a high-speed running device. The system are required to lock securely the corresponding components in each step of the assembly to avoid any movement of the main unit or stirring impeller which would be caused harm or damage to peripheral instrument and personnel.</li> <li>The stand is a support device for overhead stirrer. The corresponding components are required to be locked securely to avoid any movement which would be caused harm or damage.</li> <li>When install main unit and anti-drop protector, take care of your fingers to avoid harm</li> </ol>

Table 5

## 6. Trial Running

Follow the instructions below to trial operate:

- 
- Place the overhead stirrer in safe and stable surface
  - Ensure the required operating voltage and power supply voltage matched.
  - Ensure the socket must be earthed reliably.
  - Counter-clockwise rotate the speed control button to the end before switch on instrument.
  - Connect the power cable, ensure the power on and switch ON instrument.
  - Clockwise rotate the speed control button to the target speed value, and start stirring function.
  - Counter-clockwise rotate the speed control button to stop stirring function.
  - Turn the unit off by pressing the switch
- 

**If these operations above are normal, the instrument is ready to operate. If not, the instrument may be damaged during transportation, please contact technical support of manufacturer/supplier.**

---



**Note:**

Do not touch components of high-speed running instrument during operation to avoid damage and harm.

---

## 7. Overload protection

Overhead Stirrer works continuous, the motor current is electronically limited to achieve security stall and overload protection. When the torque reaches limited value, overload protection function will be started. At the same time overload protection light flashes.

- Starts overload protection
  - When the setting speed value does not match the current medium viscosity, starts overload protection.
  - When the motor output shaft is stuck.
- Refer to Chapter 8 for the solutions of overload protection and motor protection.

## 8. Faults

Instrument can not be powered ON when start stirring function.

- Check whether the power cable is connected

Stirring function suddenly stop.

- Overload protection light changed to red, display area shows “Er 03”, indicate the current failure is “overload protection”. When the setting speed value does not match medium viscosity that caused overload protection, should be first switching OFF the instrument. Switch ON the instrument after lowered setting speed value. If overhead protection continues starting, then repeat the process and gradually reduce the speed.
- Overload protection light changed to red, display area shows “Er 04”, indicate the current failure is “motor protection”. When the motor output shaft is stuck caused motor protection, should be first switching OFF the instrument, remove the power cable, remove the block material, and then switch ON the instrument to start stirring function.

If these faults are not resolved, please contact manufacturer/supplier.

## 9. Maintenance and Cleaning

- Proper maintenance can keep instruments working properly and lengthen its lifetime.
- Do not spray cleanser into the instrument when cleaning.
- Do not remove the power line when cleaning.
- Only use recommended cleansers:

Dyes	Isopropyl alcohol
Construction materials	Water containing tenside / Isopropyl alcohol
Cosmetics	Water containing tenside / Isopropyl alcohol
Foodstuffs	Water containing tenside
Fuels	Water containing tenside

Table 6

- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer that this method will not harm the instrument.
- Wear the proper protective gloves during cleaning of the instrument.



**Note:**

- Electronic device cannot clean with cleanser.
- If you require maintenance service, must be cleaned the instrument in advance to avoid pollution of hazardous substances, and to send back into original packing.
- If the instrument will not use for a long time, please switch off and place in a dry, clean, room temperature and stable location.

## 10. Associated Standards and Regulations

Construction in accordance with the following safety standards:

EN 61010-1  
UL 3101-1  
CAN/CSA C22.2(1010-1)  
EN 61010-2-10

Construction in accordance with the following EMC standards:

EN 61326-1



## 11. Specifications

Items	Specifications	
	OS20 series	OS40 series
Max. stirring quantity (H <sub>2</sub> O) [L]	20	40
Motor rating input [W]	60	120
Motor rating output [W]	50	100
Voltage [VAC]	100-240	100-240
Frequency [Hz]	50/60	50/60
Power [W]	70	130
Speed range [rpm]	0-2200	0-2200
Speed display	LED	LED
Speed display resolution [rpm]	±1	±1
Max. torque [Ncm]	40	60
Max. viscosity [mPas]	10000	50000
Overload protection	LED light flash, auto stop	LED light flash, auto stop
Motor protect	LED light flash, auto stop	LED light flash, auto stop
Chuck range diameter [mm]	0.5-13	0.5-13
Dimensions (w x h x d) [mm]	83 x 220 x 186	83 x 220 x 186
Weight [kg]	2.6	2.8
Protection class acc. To DIN 60529	IP42	IP42
Temperature [°C]	5-40	5-40
Permitted relative humidity	80%	80%

Table 7

## 12. Accessories

Please get in touch with our company to order the following accessories available for this device:

STIV-A05-001	Crossed stirrer, shaft length 40 cm, stirrer diameter 5 cm, 316L stainless steel
STIV-A06-001	Straight stirrer, shaft length 40 cm, stirrer diameter 6 cm, 316L stainless steel
STIV-A07-001	Blade stirrer, shaft length 40 cm, stirrer diameter 6,8 cm, 316L stainless steel
STIV-A08-001	Centrifugal stirrer, shaft length 40 cm, stirrer diameter 9 cm, 316L stainless steel
STIV-A09-001	Crossed stirrer, shaft length 35 cm, stirrer diameter 6,5 cm, PTFE coated
STIV-A10-001	Straight stirrer, shaft length 35 cm, stirrer diameter 7 cm, PTFE coated
STIV-A11-001	Blade stirrer, shaft length 35 cm, stirrer diameter 6,8 cm, PTFE coated
STIV-A12-001	Centrifugal stirrer, shaft length 35 cm, stirrer diameter 8,5 cm, PTFE coated

Table 8

### 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](http://www.ecosystem.eco)).

L'élimination illégale d'appareils électriques et électroniques est punie d'amende administrative.

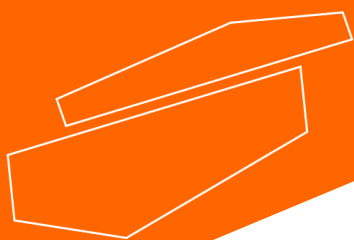
### Nota importante per le apparecchiature elettroniche vendute in Italia

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](http://www.labbox.com)