



## **ACHIEVER™ Overhead Stirrer**

**e-A51ST020**

**e-A51ST040**

**e-A51ST060**

**e-A51ST100**

**e-A51ST200**

**User Guide**

EN

ES

FR

DE

IT

PT

SE

NL

DK

PL

NO

CZ

HU

CN



## 1. General Information



Before using the unit, please read the following instruction manual carefully.



Do not dispose of this equipment as urban waste, in accordance with EEC directive 2002/96/CE.

- This unit must be used for laboratory applications indoor only. The manufacturer declines all responsibility for any use of the unit that does not comply with these instructions. If the product is used in a not specified way by the manufacturer or with not specified accessories, product's safety may be compromised.
- This unit has been designed and manufactured in compliance with the following standards:
  - Safety requirements for electrical equipment for measurement, control and for laboratory use: IEC/EN 61010-1 IEC/EN 61010-2-051
  - Electrical equipment for laboratory use: UL 61010-1
  - General requirement - Canadian electrical code: CAN/CSA-C22.2 No.61010-1
- The EU Declaration of Conformity is available online at [www.ohaus.com/ce](http://www.ohaus.com/ce).
- OHAUS reserves the right to modify the characteristics of its products with the aim to constantly improving their quality.

### 1.1. Safety Regulations

- The plug disconnects the instrument. Therefore, place the instrument where it can be quickly disconnected.
- The values indicated on the rating plate of the instrument must correspond to those of the power supply.
- Position the instrument on a flat surface, with a distance from the wall of 30 cm (at least).
- Fasten the unit to the support rod (30586771) using the double clamp (30586773). Secure the receptacle using the ribbon clamp (30586774).
- Safe working conditions are ensured only when the accessories described in the dedicated chapter are used.
- The working speed set on the instrument must be such as to avoid wobbling and/or splashes.
- Do not use with explosive or dangerous materials for which the equipment is not designed. The stirrer must not be used in explosive atmospheres, in bain-marie or to stir harmful liquids prior using protective measures according to the safety standards of the processed products and/or in force in the laboratories including personal protective equipment and the presence of an extraction hood which ensures at least 10-fold air change in accordance with the standards EN 14175 and DIN 12924.
- It is dangerous to run the unit with the stirring blade turning in free air. Always place the stirring shaft in the receptacle before turning the unit on.
- It is responsibility of the user appropriately decontaminate the instrument in case of dangerous substances fall on or in it.

- It is also responsibility of the user to use safety substances for cleaning or decontaminating, which do not react with internal parts of the instrument or with the material contained in it. In case of doubts on the compatibility of a cleaning solution, contact the manufacturer or local distributor.
- The solution may release toxic, dangerous or poisonous gases. Adequate safety measures must be taken, in accordance with the safety regulations in force, including the presence of hood and personal protective equipment (masks, gloves, goggles, etc.).
- Switch off the the stirring before opening chuck locking ring. Switch off the instrument before removing chuck.

## 1.2. Introduction

The overhead stirrers with electronic speed control, brushless motor, and advanced safety features are able to satisfy the most difficult laboratory applications in terms of viscosity and volume. The new chuck ensures higher safety for the operator and allows to use a passing rod of up to 8.5mm in diameter.



Figure 1. e-A51ST200

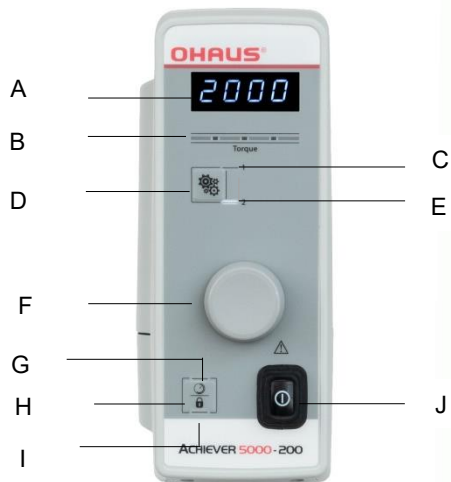


Figure 1. e-A51ST200 - Frontal view

- |   |  |
|---|--|
| A. 7 Segment Display LED  | G. Timer LED (for e-A51ST200) /<br>Upper lock LED for other models |
| B. Torque indicator bar   | H. Timer key (for e-A51ST200) /<br>Lock key for all models         |
| C. Low speed LED (only e-A51ST200)                                  | I. Lower Lock LED  |
| D. Gear key (only e-A51ST200) /<br>Timer key for other models       | J. Main switch   |
| E. High speed LED (only e-A51ST200) /<br>Timer LED for other models | K. Keyless chuck   |
| F. Speed control knob   |  |

## 2. Assembly and Installation

### 2.1 Unpacking

Check the integrity of the unit after unpacking.

The box includes:

- e-A51STxxx Digital overhead stirrer
- Power supply cable
- User Guide
- Allen key and allen head screw
- Shaft support overhead stirrer

### 2.2 Installation

- Place the unit on non-flammable surface
- Fix the shaft support to the instrument with the allen head screw
- Fasten the unit to the support rod (30586771) using the double clamp (30586773).
- Secure the receptacle using the ribbon clamp (30586774).
- Slide the stirring shaft into the chuck and tight it
- Make sure that the rating value of the instrument corresponds to the one of the power supply
- Ensure that the socket provided, with grounding, is compliant with the current safety norms and easy to reach.

## 3. Working

<b>Commissioning</b>	<ul style="list-style-type: none"> <li>➤ Switch on the instrument through the main switch (J)</li> <li>➤ Display (A) shows software version, last set point value and OFF (if "Mode" is set on Stop, see chapter 4.</li> </ul>
<b>Stirring</b>	<ul style="list-style-type: none"> <li>➤ Set the operating speed range by clicking Gear key (D) (Only e-A51ST200).</li> <li>➤ Adjust speed set point by turning the speed control knob (F).</li> <li>➤ Click the knob to start stirring.</li> <li>➤ Speed increases until set point achievement.</li> <li>➤ A microprocessor ensures constant speed even when the viscosity changes (counter-reaction).</li> <li>➤ Switch off the stirring by clicking the knob.</li> </ul>
<b>Timer</b>	<ul style="list-style-type: none"> <li>➤ Click Timer key (D or H). HH:MM appears on display.</li> <li>➤ Rotate speed control knob (F) to set the desired value. Click to confirm.</li> <li>➤ Once timer is set, timer LED lights up:               <ul style="list-style-type: none"> <li>- (G) for e-A51ST200</li> <li>- (E) for other models</li> </ul> </li> <li>➤ The LED lights continuously until the instrument starts to stir. When the instrument stirs, the LED flashes.</li> <li>➤ It's possible to visualize (or modify) countdown in each moment during the analysis by clicking timer key.</li> <li>➤ When countdown finishes, "End" is visualized on the display.</li> </ul>

<b>Gear (only for e-A51ST200)</b>	<ul style="list-style-type: none"> <li>➤ Set the operating speed range by clicking Gear button (D).</li> <li>➤ The gear set has its relative LED (C or E) lighted on.</li> <li>➤ It's possible to select between two gears:             <ul style="list-style-type: none"> <li>- <b>Gear 1:</b> Low speed (6 – 400 rpm) High torque (till 200 Ncm).</li> <li>- <b>Gear 2:</b> High speed (30 – 2000 rpm) Low torque (till 40 Ncm).</li> </ul> </li> </ul>
<b>Torque</b>	<ul style="list-style-type: none"> <li>➤ The torque indicator bar (B), made by four LEDs, shows the intensity of the torque applied</li> </ul>
<b>Lock</b>	<ul style="list-style-type: none"> <li>➤ Holding the Lock key (H) for 3 seconds it's possible to lock the control panel.</li> <li>➤ Unlock the control panel by holding key H for 3 seconds.</li> <li>➤ When the instrument is locked,             <ul style="list-style-type: none"> <li>- LED (I) lights on for e-A51ST200</li> <li>- LED (G) and (I) light on for other models</li> </ul> </li> </ul>

#### 4. Menu

Hold the control knob (F) for 3 seconds to enter into the setting mode when stirring is off. Turning the control knob (F) it is possible to pass from one of the following parameters to the next one. Click the knob to modify

Parameter shown on display	Default value		Range	Description
MODE	STOP		STOP - RUN	Set starting mode: <ul style="list-style-type: none"> <li>➤ Stop: when the instrument is switched on through the main switch, <b>OFF</b> is displayed.</li> <li>➤ Run: when the instrument is switched on, it restarts to work with the last set points.</li> </ul>
LIMIT	e-A51ST200	400 (1) 2000 (2)	100 - 400 100 - 2000	Set the maximum value of speed set point.
	e-A51ST100	1300	100 - 1300	
	e-A51ST060	2000	100 - 2000	
	e-A51ST040	2000	100 - 2000	
	e-A51ST020	2000	100 - 2000	
Run				Running time in H. If "." is showed before the number, the running time is in Day.
UPGr				To install a new software version
RESET	n0		YES - n0	To restore default setting parameters
REL	n0		YES - n0	To reset torque zero value

## 5. Keyless Chuck

Keyless chuck (K) allows to fix stirring shaft with one hand.

- Open the chuck: From work position (Figure 3), turn Locking Ring 90° to the left (Figure 4). Pull Locking Ring down (Figure 5).
- Close the chuck: Push Locking Ring up (Figure 6) and turn it 90° to the right.



Figure 3.  
Working position



Figure 4.  
Intermediate position



Figure 5.  
Open position



Figure 6.  
Intermediate position

## 6. Maintenance

### 6.1 Cleaning



**WARNING:** Electric Shock Hazard. Disconnect the equipment from the power supply before cleaning.

Make sure that no liquid enters the interior of the instrument.



**Attention:** Do not use solvents, chemicals, alcohol, ammonia or abrasives to clean the housing or control panel.

The housing may be cleaned with a cloth dampened with a mild detergent if necessary.

### 6.2 Troubleshooting

The following table lists common problems and possible causes and remedies. To remove the error message, disconnect the instrument from the power supply. If the problem persists, contact OHAUS or your authorized dealer.

Error Code	Possible Cause
AL1	Motor doesn't start stirring
AL2	High internal motor temperature
AL3	Motor overload
AL4	High driver temperature
AL5	Safety relay fault

### 6.3 Service Information

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent. For service assistance or technical support in the United States call toll-free 1-800-672-7722 ext. 7852 between 8:00 AM and 5:00 PM EST. An OHAUS product service specialist will be available to provide assistance Monday through Friday. Outside the United States, please visit our web site, [www.ohaus.com](http://www.ohaus.com) to locate the OHAUS office nearest you.

## 7. Technical Data

		Models	e-A51ST020, e-A51ST040, e-A51ST060, e-A51ST100, e-A51ST200	e-A51ST020, e-A51ST040, e-A51ST060, e-A51ST100, e-A51ST200
<b>General features</b>	Power supply		230 V / 50-60 Hz (+/-10%)	115V / 60 Hz (+/-10%)
	Dimensions (WxHxD)	e-A51ST200	90x315x235 mm (3.54x12.40x9.25 in)	90x315x235 mm (3.54x12.40x9.25 in)
		Other Models	90x285x235 mm (3.54x11.22x9.25 in)	90x285x235 mm (3.54x11.22x9.25 in)
	Weight	e-A51ST200	4,6 kg (10,14 lb)	4,6 kg (10,14 lb)
		e-A51ST100	4,1 kg (9,04 lb)	4,1 kg (9,04 lb)
		Other Models	4,1 kg (9,04 lb)	4,1 kg (9,04 lb)
	Power input		190 W	190 W
	Construction material (structure)		Aluminum	Aluminum
	Working in continuous		Admitted	Admitted
	Settable restart modality		Stop or work	Stop or work
	Noisiness		<< 60 dBa	<< 60 dBa
	Environmental temperature admitted		+5...+40 °C	+5...+40 °C
	Storage temperature admitted		-10...+60 °C	-10...+60 °C
	Max humidity		80%	80%
	Level of electrical protection CEI EN60529		IP 54	IP 54
	Overvoltage category		II	II
	Pollution degree CEI EN61010-1		2	2
Max altitude		2000 m	2000 m	
<b>Stir</b>	Stirring capacity	e-A51ST200	100 l H <sub>2</sub> O	100 l H <sub>2</sub> O
		e-A51ST100	100 l H <sub>2</sub> O	100 l H <sub>2</sub> O
		e-A51ST060	40 l H <sub>2</sub> O	40 l H <sub>2</sub> O
		e-A51ST040	25 l H <sub>2</sub> O	25 l H <sub>2</sub> O
		e-A51ST020	25 l H <sub>2</sub> O	25 l H <sub>2</sub> O
		e-A51ST200	6-400rpm (1) – 30-2000rpm (2)	6-400rpm (1) – 30-2000rpm (2)



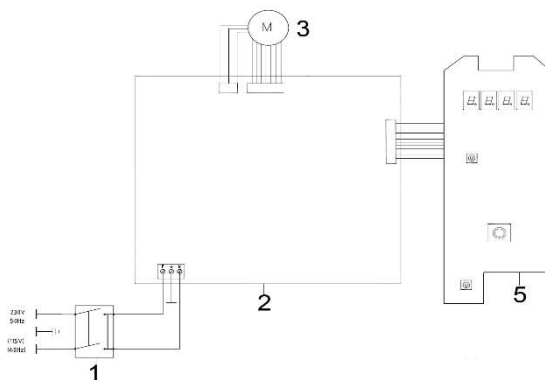
	Programmable speed range	e-A51ST100	30-1300rpm	30-1300rpm	
		e-A51ST060	30-2000rpm	30-2000rpm	
		e-A51ST040	30-2000rpm	30-2000rpm	
		e-A51ST020	30-2000rpm	30-2000rpm	
	Motor type		BLDC		BLDC
	Speed selection		1 rpm step		1 rpm step
	Stirring alarm		Motor fault		Motor fault
Motor rating output		150 W		150 W	
Torque	Max torque admitted	e-A51ST200	200 Ncm (1) – 40 Ncm (2)	200 Ncm (1) – 40 Ncm (2)	
		e-A51ST100	100 Ncm	100 Ncm	
		e-A51ST060	60 Ncm	60 Ncm	
		e-A51ST040	40 Ncm	40 Ncm	
		e-A51ST020	20 Ncm	20 Ncm	
Counters	Motor counter	Working hours	Working hours	Working hours	

### 8. Accessories / Spare parts

30586771	Support Stand Universal-H	30586778	Stirrer Shaft 40x0.7 cm, Folding Blade
30586772	Support Stand Telescopic-H	30586779	Stirrer Shaft 51x0.7 cm, Paddle 6 Holes
30586773	Double clamp	30586780	Stirrer Shaft 40x0.7 cm, Propeller
30586774	Ribbon clamp	30586781	Stirrer Shaft 40x0.7 cm, Turbine
30586775	Stirrer Shaft 40x0.7 cm, Anchor Blade	30586782	Stirrer Shaft 40x0.7 cm, Turbo Propeller
30586776	Stirrer Shaft 40x0.7 cm, Fixed Blade	30586842	Chuck Cover e-A51
30586777	Stirrer Shaft 40x0.7 cm, Floating Blade	30586791	Knob e-A51

### 9. Wiring diagram

1. Main switch /
2. Main board /
3. Electric motor /
5. Display board /



## FCC Supplier Declaration of Conformity

Unintentional Radiator per 47CFR Part B  
Trade Name: OHAUS CORPORATION  
Model or Family identification: e-A51...

Party issuing Supplier's Declaration of Conformity:  
Ohaus Instruments (Changzhou) Co., Ltd.  
2F, 22 Block, 538 West Hehai Road, Xinbei District, Changzhou  
Jiangsu 213022  
China  
Phone: +86 519 85287270

Responsible Party – U.S. Contact Information:  
Ohaus Corporation  
7 Campus Drive, Suite 310  
Parsippany, NJ 07054  
United States  
Phone: +1 973 377 9000  
Web: [www.ohaus.com](http://www.ohaus.com)

### FCC Compliance Statement:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.