

ARGO LAB AM40-D Pro and AM20-D Overhead stirrer



User manual

ARGO LAB

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1 Warranty

Thank you for purchasing an instrument Argo Lab. This instrument is warranted under normal use for a period of 24 months from the date of purchase.

The warranty is valid only if the product is in original conditions. It does not apply to any product or parts of it that have been damaged due to incorrect installation, improper connections, improper use, accident or abnormal conditions of operation.

The manufacturer declines all responsibility for damage caused by failure to follow instructions, lack of maintenance and any unauthorized modification.

2 Safety instructions

	<ul style="list-style-type: none"> • Read the instructions carefully before use • Ensure that only qualified personnel using this tool • Do not heat flammable or highly volatile substances
	<ul style="list-style-type: none"> • Before use, make sure the instrument is connected to an outlet with a ground connection..

- During the work, you must prevent the risk of:
 - Spillage of liquids;
 - Breakage of glass containers
- Follow the safety instructions, guidelines and safety regulations.
- Do not touch moving parts.
- Place the instrument in a suitable area, on a stable, clean, non-slip, dry and fireproof. Do not use the tool in explosive atmospheres, containing hazardous substances or under water.
- Increase gradually the speed.
- Observe the container when you set the speed to avoid splashing of the sample. If the instrument is not working properly, please decrease the speed of the motor.
- Attach the accessories on the move to avoid damage.
- Only use the original standard accessories listed in the "accessories", and follow the installation instructions to ensure safety.
- Check the good condition of the instrument and accessories before use. Never use damaged components. The safety and operating performance are guaranteed only if the instrument and accessories described are in order. Accessories must also be firmly

connected to the device.

- Do not cover the instrument during operation.
- The voltage on the rating plate must correspond to the mains voltage.
- Keep away from strong magnetic fields.
- The instrument can be switched off or disconnecting it from disconnecting the cable from the instrument itself .
- The instrument may only be opened by trained service technicians.
- Keep out of the instrument by electromagnetic fields.

3 Proper use

The instrument has been designed to mix liquids of different densities in school labs, chemical, pharmaceutical, industrial etc. This instrument is not suitable for using in residential areas.

4 Inspection

4.1 Receiving Inspection

Unpack the instrument carefully and check for any damages which may have arisen during transport. If it happens, please contact supplier for technical support.



Note:

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

4.2 Listing of Items

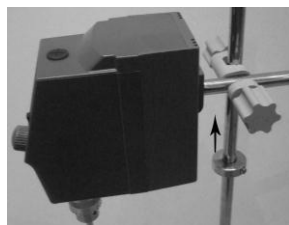
Item	Qty
Main unit	1
Power cable	1
User manual	1
Key of drill chuck	1

Table 1

5 System assembly

a. Install stand

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.



Picture 1

b. Install stirring impeller

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.



Picture 2



Picture 3

Note:

1. 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.
2. 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.



6 Trial run

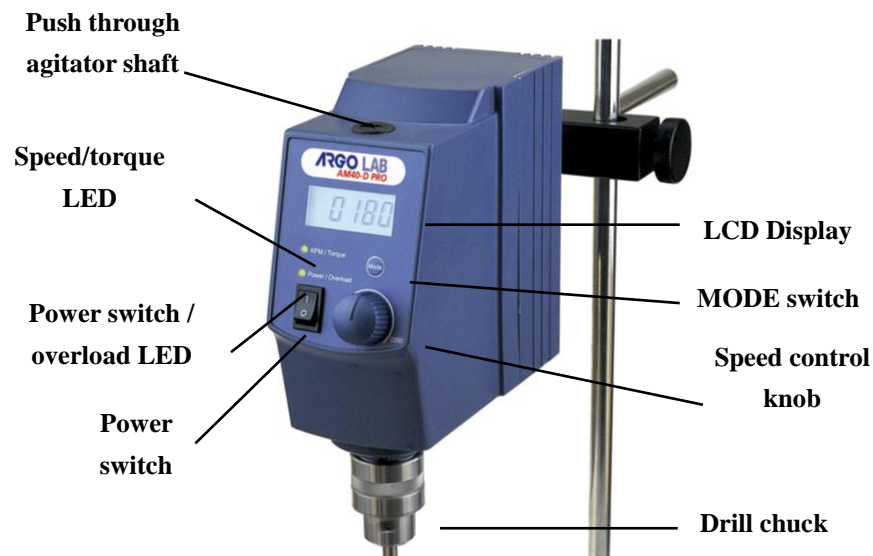
Follow the instructions below to trial operate:

- Ensure the required operating voltage and power supply voltage matched.
- Ensure the socket must be earthed reliably.
- Connect the power cable, ensure the power on and begin self-checking.
- Rotate the stirring button and set stirring speed.
- Press stirring button and start stirring.
- Press again the stirring button and stop stirring.

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.

7 Control and Display

7.1 Control AM40-D Pro

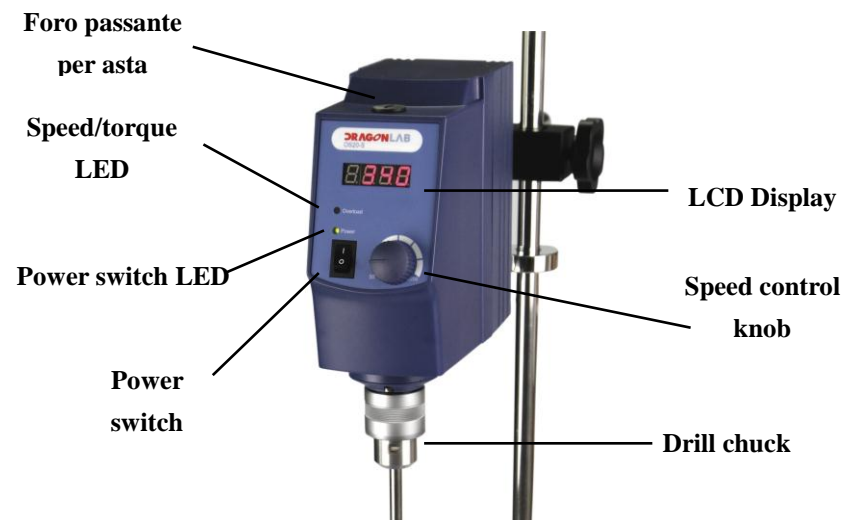


Picture 4

Items	Default settings
Speed control button Speed	Set stirring speed, press the button to start/stop stirring function.
Mode switch knob Mode	Shift speed and torque display. LCD displays the current speed value at initial running. LCD displays the current torque value when press the mode knob.
LCD display	LCD displays the real working state and all setting values.
Speed/torque light RPM/Torque	Yellow/Green LED display light. Different color of LED lights show the value for speed or torque that LCD screen currently displays. Yellow LED light shows that LCD screen currently displays speed. Green LED light shows that LCD screen currently displays torque.
Power switch /Overload protection light Power/Overload	Green/Red LED display light. LED light shows green when switch on, 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.
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.
Speed control button Speed	Set stirring speed, press the button to start/stop stirring function.

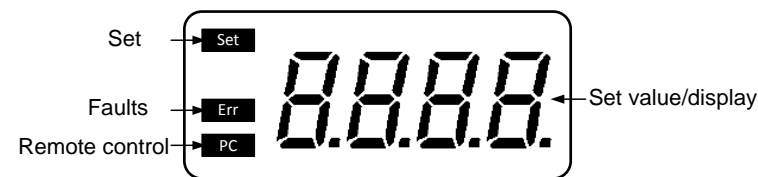
Table 2

7.2 Control AM20-D



Picture 5

7.3 Display



Picture 6

Characters	Description
Set	Display when set target speed value.
PC	Display when using external probe.
Err	Display in case of error happening.
Value set/display area	When Set display, this area shows setting value; When Set disappears, this area shows running value.

Table 3

8 Switch on instrument

8.1 Initial sequence

Place the overhead stirrer in safe and stable surface and connect power cable.

- Switch ON instrument.
- The instrument begins self-checking.
- When initialization is over, displays “set”, at the same time the area of value setting/display flashes that indicate can be set speed value.
- Rotate speed control button to set stirring speed.
- LCD display no longer flashes when press speed button, “set” disappear, the stirring function start.
- Press speed button again, LCD display flashes, “set” display, the stirring function close.

9 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, motor protection starts.
- Refer to Chapter 9 for the solutions of overload protection and motor protection.

10 Faults

- Instrument can not be powered ON when start stirring function.
 - Check whether the power cable is connected.
- Speed can not reach set point.
 - The setting speed value does not match the current medium viscosity, please reduce speed then re-start.
- 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 pressing speed control button to stop stirring function. Restart stirring 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 that caused motor protection, should be first

11 Maintenance and Cleaning

Proper maintenance can keep instrument 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

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

12 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

13 Caratteristiche tecniche

Max. stirring quantity (H ₂ O) [L]	40 (AM40-D Pro) / 20 (AM20-D)
Motor rating input [W]	120 / 60
Motor rating output [W]	100 / 50
Voltage [VAC]	100-240
Frequency [Hz]	50/60
Power [W]	130 / 70
Speed range [rpm]	50-2200 / 0-2200
Speed display accuracy [rpm]	±1
Speed display	LCD
Max. torque [Ncm]	60
Overload protection	LED light flash, auto stop
Motor protect	LED light flash, auto stop
Max. viscosity [mPas]	50000
Chuck range diameter [mm]	0.5-13
Stand (dia. x l) [mm]	14 x 220
Dimension[W x H x D] [mm]	83 x 220 x 186
Weight [kg]	2,8 / 2,6
Protection class acc. to DIN/EN 60529	IP21
Temperature [°C]	5-40
Permission relative humidity [%]	80
RS232 interface	Yes / No

14 Disposal



Information regarding the disposal of electrical and electronic equipment European Union.

Electrical and electronic equipment marked with the symbol on the side cannot be disposed of in landfills.

In accordance with EU Directive 2002/96/EC, the European users of electrical and electronic equipment have the opportunity to give back to the distributor or manufacturer upon purchase of a new one.

The illegal disposal of electrical and electronic equipment is punished with an administrative fine.