Chemglass Life Sciences

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by VELP Scientifica

Instruction Manual

CG-1995-V-10

Heating Magnetic Stirrer

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 only.
The manufacturer declines all responsibility for any use of the unit that does not comply with these instructions.

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**
Electrical equipment for laboratory use	**UL 61010-1**
General requirement - Canadian electrical code	**CAN/CSA-C22.2 No.61010-1**

VELP reserves the right to modify the characteristics of its products with the aim to constantly improving their quality.

Safety Regulations

Hotplate temperature: up to 370 °C.

Beware of the effect of the magnetic field on cardiac pacemakers and data media.

It must not be used in atmospheres at risk, bain-marie and to stir combustible liquids with a low combustion temperature.

Position the instrument on a flat surface, with a distance from the wall of 30 cm (at least).

Contents

1. Introduction

The application of new technology has led to the creation of these modern magnetic stirrers for laboratory use whose basic features are safety, reproducibility of results, high performance and energy saving.
The structure of the unit is made out of pressure die-cast aluminum treated with epoxy resins offering a high resistance to the many chemical aggressions typical of the laboratory environment. The meticulously studied design of the pressure die-cast casing combines aesthetic fluidity with ergonomics. A wide central recess on both sides offers a good grip and facilitates bench-top handling whilst the handle moulded directly into the rear of the die-cast structure can be used to transport the instrument once it has been disconnected from the power supply.
The pressure die-cast structure is designed so that accidental liquid spills cannot reach the internal parts of the unit. The electrical connections are recessed into the rear of the instrument and offer optimum electrical protection of the external electrics in the case of liquid spills.
The engineering of the unit facilitates internal inspection if technical assistance is required.
The heating plate is made out of aluminum alloy with ceramic coating and is specially treated to ensure:
- Optimum heat distribution and a high specific power thanks to the circular configuration
- Optimum temperature homogeneity across the plate
- High resistance to thermal stress and thermal shock, chemical aggressions, scratches and surface abrasions.

Magnetic stirring is generated by the VELP Scientifica Patented Composite Magnet driven by an asynchronous mono-phase brushless motor in alternating current which offers a virtually unlimited duration.
NOTE: using the heating plate at high temperatures may cause discoloring. This does not alter the thermal, mechanical and chemical resistance of the plate in any way.

2. Assembly and installation

Check the integrity of the unit after unpacking. The box includes:
- AREX 3 Heating Magnetic Stirrer
- Power supply cord
- Instruction manual

2.1 Electrical connections

After having unpacked the instrument, place the unit on the laboratory bench.
Before connecting the instrument to the power supply, make sure that the values on the rating plate correspond to those of the power supply. Connect the unit to the power supply using the transformer supplied.
Ensure that the socket and the relative cut-off device conform to current safety norms and are easy to reach.

2.2 Start-up

Rotate the speed (right) and temperature (left) knobs completely to the left. Place the flask containing the sample and a suitable magnetic stirring bar on the stirring plate. Then, set the speed and temperature by turning the dedicated knobs.

3. Operating controls

REGULATION KNOBS — The right knob on the front of the unit can be used for quick precision regulation of mixing speed from 50 to 1200 rpm. The left one is for temperature, up to 370 °C.

ON-OFF SWITCH — The on-off switch turns the unit on and off. If the switch is in the “OFF” position the unit is off; if the switch is in the “ON” position the unit is on.
Always turn the unit off after use.

3.1 Using the thermoregulator VTF

Screw the threaded support rod (optional accessory, A00001069) into its seat on the back of the instrument and fasten the VTF thermoregulator onto the support rod. Place the temperature probe in the receptacle making sure that it is completely immerged in the sample. Connect the two instruments (AREX 3 and VTF) by plugging the VTF into the dedicated socket on the back of the AREX 3.
Select the operating temperature required on the VTF thermoregulator. Turn the temperature control knob on the front panel of the AREX 3 to maximum.
The heating magnetic stirrer always has primary control of the heating plate temperature.
When using the VTF thermoregulator always select the max temperature on the AREX 3. The temperature control function of the heating plate can also be used as a safety thermostat. In this case the maximum temperature of the heating plate will not exceed the temperature setting on the AREX 3 meaning that a longer heating time is required in order to reach the VTF thermoregulator temperature setting.

3.2 Error messages

The unit is fitted with safety devices which cut-off the power supply to the heating plate in the case of malfunctions.
The led display on the front panel indicates the type of malfunction:

Display indicator:	Malfunction:
Flashing Stirrer led (twice/second)	Fault in the overheating circuit
Flashing Heating led (twice/second)	Heating plate in overtemperature
The Heating led doesn’t light up	Fault in the temperature reading circuit

Should any of the above occur, please contact your nearest VELP Scientifica service centre.

4. Maintenance

No routine or extraordinary maintenance is necessary apart from periodically cleaning the unit as described in this manual.
In compliance with the product guarantee law, repairs to our units must be carried out in our factory, unless previously agreed otherwise with local distributors.
The instrument must be transported in its original packaging and any indications present on the original packaging must be followed (e.g. palletized).

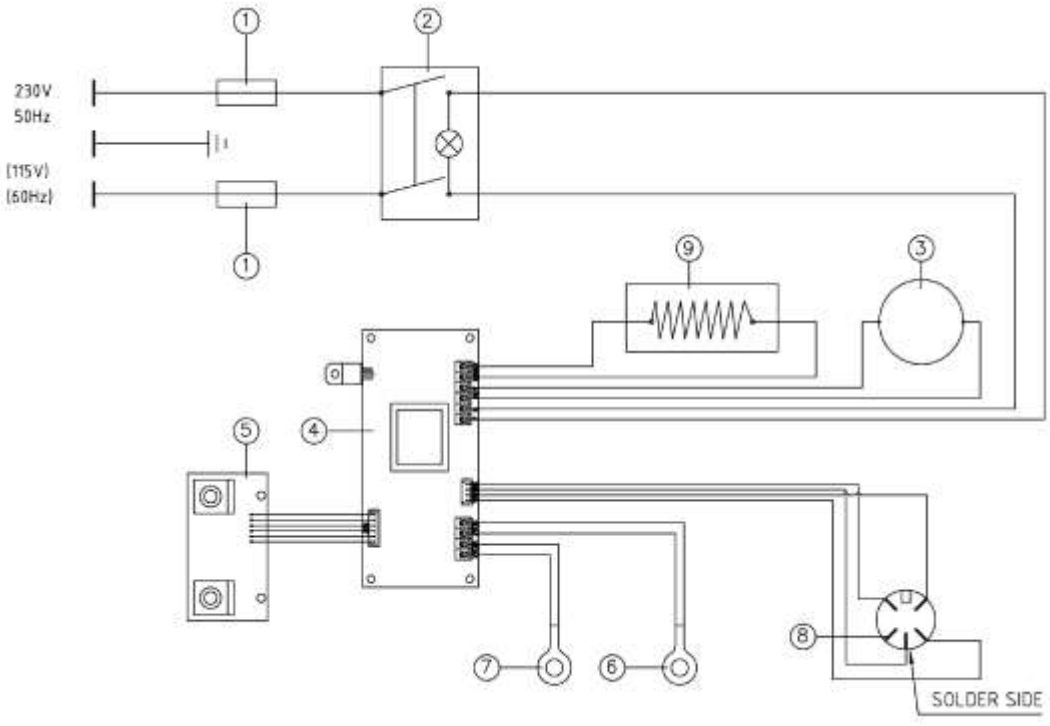
4.1 Cleaning

Disconnect the unit from the power supply and use a cloth dampened with an non-inflammable non-aggressive detergent.

5. Technical data

Dimensions WxHxD	165x115x280 mm
Weight	2.5 kg
Overall power	630 W
Power of the heating plate	600 W
Diameter of the heating plate	135 mm
Programmable temperature range	50 – 370 °C
Type of temperature control	Analog
Overtemperature protection	Yes
Stirring power	30 W
Stirring capacity	20 liters of H_2O
Programmable speed range	50 – 1200 rpm
Type of motor control	Electronic
Temperature range	+5…+40 °C
Storage temperature range	-10…+60 °C
Max humidity	80%
Level of electrical protection CEI EN60529	IP 42
Pollution degree CEI EN61010-1	2

6. Wiring diagram



1. Fuse
2. ON-OFF switch
3. Electric motor
4. Electronic board
5. Controls electronic
6. Safety Probe
7. Temperature probe
8. Vertex socket
9. Resistance

7. Accessories

Please contact Chemglass Life Sciences for more details about accessories.
www.cglifesciences.com Phone: 1-800-843-1794

8. Warranty

The unit is guaranteed against production defects for 25 months from our invoice date.

In accordance with this guarantee Chemglass Life Sciences undertakes to repair any units resulting as faulty due to the quality of the materials used or poor workmanship.
Units rendered faulty due to inexpert handling/use or carelessness will not be replaced or repaired under warranty.

Exclusions:
The guarantee will be considered null and void for faults resulting from:
- inexperience and carelessness of the operator
- repairs, maintenance or replacement of parts carried out by personnel or Companies not authorized by the manufacturer
- use of the instrument that does not comply to the instructions/recommendations given in the present operating manual
- use of non-original spare parts.

9. Declaration of conformity CE

We, the manufacturer VELP Scientifica, under our responsibility declare that the product is manufactured in conformity with the following standards:

EN 61010-1 (2001)
EN 61326-1 (2006)
2011/65/EU (RoHS)
2002/96/CE (RAEE)

and satisfies the essential requirements of the following directives:

- Machinery directive 2006/42/EC
- Low voltage directive 2006/95/EC
- Electromagnetic compatibility directive 2004/108/EC
- plus modifications