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by VELP Scientifica

Instruction Manual

CG-1996-V10
CG-1996-V10E
Heating Magnetic Stirrer

General Information

Before using the unit, please read the following instruction manual carefully.
Avant d'utiliser l'instrument, il est recommandé de lire attentivement le présent manuel d'instructions.

Caution, hot surface!
Attention, surface chaude!

Do not dispose of this equipment as urban waste, in accordance with EEC directive 2002/96/CE.
Ne pas recycler l'appareil comme déchet solide urbain, conformément à la Directive 2002/96/CE.

The product can be used with flammable liquids / Le produit peut être utilisé avec des liquides inflammables

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 non specified accessories, product's safety may be compromised.

Cet instrument ne peut être utilisé pour les applications de laboratoire à l'intérieur seulement. Le fabriquant décline toute responsabilité en cas d'utilisation non conforme aux instructions concernant ces instruments. Si le produit est utilisé d'une manière non spécifiée par le fabricant ou accessoires non spécifiés, la sécurité du produit peut être compromise.

This unit has been designed and manufactured in compliance with the following standards:
L'instrument a été conçu et fabriqué conformément aux normes suivantes:

Safety requirements for electrical equipment for measurement, control and for laboratory use	**IEC/EN 61010-1**
Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire	**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**

VELP reserves the right to modify the characteristics of its products with the aim to constantly improving their quality.
Dans le but d'améliorer constamment la qualité de ses produits, VELP se réserve le droit d'apporter des modifications aux caractéristiques de ceux-ci.

Safety Regulations / Consignes de Securité

The plug disconnects the instrument. Therefore, place the instrument where it can be quickly disconnected.
Le bouchon est le moyen de déconnexion de l'appareil. Par conséquent, placer l'appareil où il peut être rapidement débranché.

Hotplate temperature: up to 370 °C / Température de la plaque chauffante: jusqu'à 370 °C.

The heated 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.).

La solution chauffée peut libérer gaz toxiques ou dangereux. Des mesures de sécurité adéquates doivent être prises, en conformité avec les règlements de sécurité en vigueur, compris la présence de la hotte de laboratoire et équipements de protection individuelle (masques, gants, lunettes, etc.).

Beware of the effect of the magnetic field on cardiac pacemakers and data media.
Veuillez tenir compte de l'influence du champ magnétique sur les stimulateurs cardiaques ou les supports de données.

Position the instrument on a flat surface, with a distance from the wall of 30 cm (at least).
Positionner l'appareil sur une surface plat, avec une distance de la paroi de 30 cm (au moins).

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 combustible liquids that have a low combustion temperature. The product is intended for use with very small quantities of flammable liquids or flammable liquids that have a fire point higher than 625°C and a flash point higher than 600°C.
Ne pas utiliser avec des matières explosives et dangereuses pour lesquelles l'équipement n'est pas conçu. L'agitateur ne peut pas être utilisé dans des atmosphères explosives, dans un bain d'eau et pour remuer les combustibles liquides avec la température de combustion bas. Le produit est destiné à être utilisé avec de très petites quantités de liquides inflammables ou de liquides inflammables ayant un point d'incendie supérieur à 625 ° C et un point d'éclair supérieur à 600 ° C.

It is responsibility of the user appropriately decontaminate the instrument in case of dangerous substances fall on or in it accordingly to the safety datasheet of substances used and to the current laboratories safety standards. It is not possible to decontaminate the product under steam.
It is also responsibility of the user to use 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.
Est responsabilité de l'utilisateur la décontamination en cas de déversement de matières dangereuses sur ou à l'intérieur de l'équipement conformément à la fiche de données de sécurité des substances utilisées et aux normes de sécurité actuelles des laboratoires. Il n'est pas possible de décontaminer le produit sous la vapeur.
Est responsabilité de l'utilisateur à utiliser des substances qui ne produisent pas de danger pour le nettoyage ou de décontamination, qui ne réagissent pas avec les parties internes de l'appareil ou avec la matière qu'il contient. En cas de doute sur la compatibilité d'une solution de nettoyage, contactez le fabricant ou le distributeur local.

Contents

1 Introduction

The AREX-6 heating magnetic stirrer is used in the laboratory for general use and for all those applications that require high regulation for stirring speed and heating liquids.

The Aluminum alloy heating plate ensures:
- Optimum heat distribution and a high specific power thanks to the circular configuration
- Temperature homogeneity
- High resistance to thermal stress and thermal shock

Magnetic stirring is generated by an AlNiCo magnet, driven by brushless motor which offers a virtually unlimited duration.
Size and shape of the magnetic stir bar determines the stirring efficiency at any given speed.
The stirring bar code which satisfies most applications is A00001060 (10x40 mm).

NOTE: The vessel must be made of a suitable material to withstand the foreseen temperature.
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

- Unpacking
  - Check the integrity of the unit after unpacking.

- The box includes
  - AREX-6 heating magnetic stirrer
  - Power supply cord
  - Instruction manual

- First installation
  - Place the unit on not-flammable surface
  - Make sure that the values on the rating plate, correspond to those of the power supply
  - Move the main switch to the OFF position
  - Ensure that the socket provided with grounding is accordant to current safety norms and easy to reach. Use only the cable provided with the instrument
  - Insert the mains power cable into the socket

NOTE: the mains cable must remain far away from the hot plate. It can be substituted only by main cables with same features (T=90°C, connector C15).

3 Operating controls

Commissioning	➢ Switch on the instrument through the main switch ➢ The right led between the two potentiometers turns on
Stirring	➢ Adjust motor speed set point by turning the speed control potentiometer ➢ While the instrument is stirring, the led over the speed control potentiometer turns on ➢ A microprocessor ensures constant speed even when the viscosity changes (counter-reaction) ➢ Switch off the stirring by turning the speed control potentiometer to value zero
Heating	➢ Adjust heating plate temperature set point by turning the temperature control potentiometer ➢ Start heating clicking the central button. The button lights on. ➢ While the instrument is heating, the led over the temperature control potentiometer turns on. ➢ Switch off the heating clicking again the central button. ➢ When the heating plate temperature exceeds 50 °C, the left led between the two potentiometers turns on until temperature falls below 50 °C **NOTE:** this warning is not active if the instrument is not powered.

4 External thermometers

VTF	➢ Move the main switch to off position ➢ Screw the threaded support rod into its seat on the back of the instrument ➢ Fasten the VTF thermo-regulator onto the support rod ➢ Place the temperature probe in the flask ➢ Plug the VTF into the dedicated socket on the back of the instrument ➢ Switch on the instrument through the main switch and set the temperature set point on the VTF ➢ Move the temperature potentiometer to the max value* and click the central button

* 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-6 meaning that a longer heating time is required in order to reach the VTF thermoregulator temperature set reducing temperature oscillation at set point value.

5. Setting Mode

The unit can be set in two different starting mode:

Default Value	Range	Description
Stop	Stop - Run	Set starting mode: ➢ Stop: if the instrument is switched on through the main switch, the heating of the instrument doesn't work until the central button is pressed by the operator; ➢ Run: when the instrument is switched on it restarts to work with the last set points set. The central button lights on and the instrument restarts to heat without any manual operation;

It's possible to switch from Stop-to-run mode following these steps:

- Switch off the instrument through the main switch.
- Keep pressed the central button and switch on the instrument through the main switch.
- When the button starts to light on intermittently move the finger.
- Clicking the central button only once, it switches off.
- If the instrument is switched off through the main switch with the central button switched off, the stop mode is saved.
- If the central button is clicked twice, will cause it to light continuously.
- Switching off the instrument through the main switch with the central button lighted on, the run mode is saved.

If the instrument is switched off when the central button lights on intermittently, the last starting mode remains set.

6. 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 leds on the frontal panel indicate the type of malfunction:

Display indicator	**Malfunction:**
Flashing Heating led and Hot plate led ON	Overtemperature of the working probe (T> 430°C)
Flashing Heating led and Hot plate led OFF	Overtemperature of the safety probe (T>430°C)
Flashing Stirring led	Stirring system doesn't run correctly

Should any of the above occur, please contact your nearest VELP Scientific Service Center.

7. Maintenance and cleaning

Maintenance	➢ No routine or extraordinary maintenance is necessary ; ➢ Repairs must be carried out by authorized personnel only ; ➢ Instrument must be transported in its original packaging any indications present on the original packaging must be followed (e.g. palletized);
Cleaning	➢ Disconnect the unit from the power supply and use a cloth dampened with an non-inflammable non-aggressive detergent.

8. Technical data

	Models	CG-1996-V10E	CG-1996-V10
General features	Power supply	230 V / 50-60 Hz (+/-10%)	115V / 60 Hz (+/-10%)
	Dimensions WxHxD	160x105x280 mm (6.5x4.1x11 in)	160x105x280 mm (6.5x4.1x11 in)
	Weight	2.6 Kg (5.7 lb)	2.6 Kg (5.7 lb)
	Overall power	630 W	630 W
	Construction material (body)	Aluminium body – Technopolymer enclosure	Aluminium body – Technopolymer enclosure
	Working in continuous	Admitted	Admitted
	Maximum load on the plate	25kg	25kg
	Noisiness	<< 80 dBa	<< 80 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 42	IP 42
	Overvoltage category	II	II
	Pollution degree CEI EN61010-1	2	2
	Max altitude	2000 m	2000 m
Heating plate	Power (heating)	600 W	600 W
	Heating plate dimensions	Ø 135mm	Ø 135mm
	Programmable temperature range	50 - 370 °C	50 - 370 °C
	Type of temperature control	Analog	Analog
	Construction material (plate)	Aluminium	Aluminium
	Safety circuit	Separated with dedicated probe	Separated with dedicated probe
	Hot plate alarm	Over 50°C	Over 50°C
	Overtemperature alarm	Over 430°C	Over 430°C
Stir	Programmable speed range	30 – 1700 rpm	30 – 1700 rpm
	Stirring capacity	20 l di H_2O	20 l di H_2O
	Motor type	BLDC	BLDC
VTF	Electrical data	12Vdc – 1.2W (max)	12Vdc – 1.2W (max)

9. Accessories

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

10. 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.

11. 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