

**Certifications by ...**

- CE Marked Products.
- ISO 9001 Certified.
- PL Insurance.
- Validation(IQ&OQ) Service.
- Patented. Jog Shuttle Control System.

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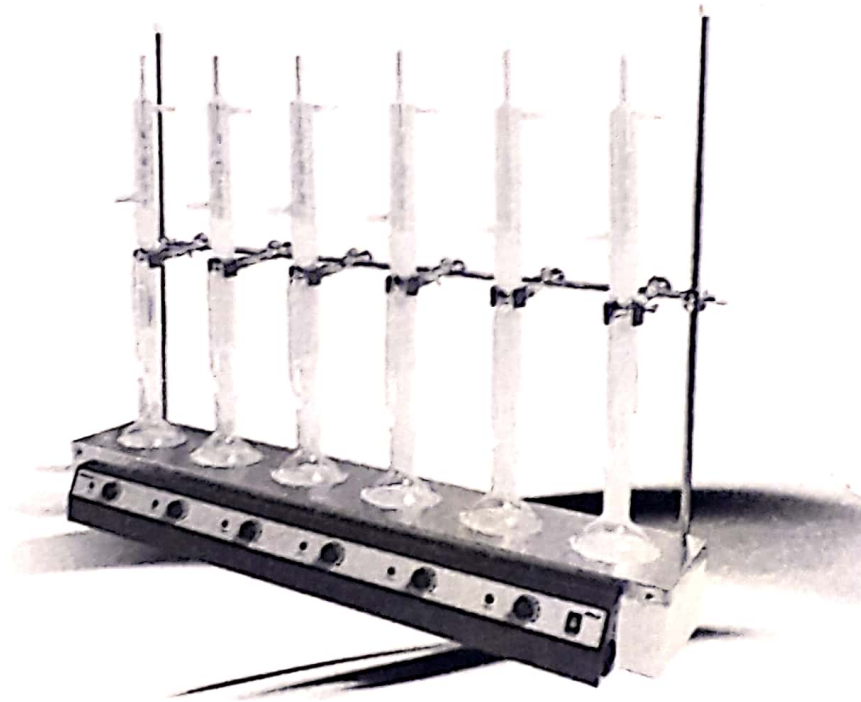
↔ Korean Page : P. 11 ~ 24

# Operation Manual

(Version 2.1.1)

written for

Model WHM12391, WHM12293



WHM-12295 Models

**Sales & Basic A/S :**  
**By the Nearest Official Distributors.**

**판매 및 기본 A/S :**  
**㈜대한과학 전국 대리점.**

Man238 (1 Sep. 2015)

## EUROPEAN DECLARATION OF CONFORMITY



We, DAIHAN Scientific Co., Ltd.,  
326, Sinpyeongseokhwa-ro, Jjeong-myeon, Wonju-si, Gangwon-do, Korea  
Tel: 82-2-967-5235, Fax: 82-2-967-5258  
declare under our sole responsibility that the product

### Heating Mantle

**WHM12391, WHM12393**

**WHM12392, WHM12394**

to which this declaration relates is in conformity  
with the following standard or other normative document

EN 61326, EN 61000-3-2, EN 61000-3-3  
EN 61010-1, EN 61010-2

following the provisions of the directives:

**Low-Voltage Directive 2014/35/EU**

**EMC Directive 2014/30/EU**

EC Directive 2006/42/EC  
RoHS - Directive 2011/65 EU

Signed: \_\_\_\_\_ (Chong ku Shu)

Date: 09, January 2017

Authority: President / CEO

For

**DAIHAN Scientific Co., Ltd.**

326, Sinpyeongseokhwa-ro, Jjeong-myeon, Wonju-si, Gangwon-do, Korea  
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## EUROPEAN DECLARATION OF CONFORMITY



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Tel: 82-2-967-5235, Fax: 82-2-967-5258  
declare under our sole responsibility that the product

### Heating Mantle

**WHM12291, WHM12293, WHM12295**

**WHM12292, WHM12294, WHM12296**

to which this declaration relates is in conformity  
with the following standard or other normative document

EN 61326, EN 61000-3-2, EN 61000-3-3  
EN 61010-1, EN 61010-2

following the provisions of the directives:

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## Introduction

Thank you for purchase of **"Analog"** Digital Multi Heating Mantle  
Those products have superior features as follows;

- Lower profile for space -saving convenience
- Ideal for repetitive extracting(Kjeldahl, Soxhlet, and other extraction procedure) refluxing and distilling laboratory applications.
- Analog controller installed.
- Rod & Clamp are offered.
- *Highly-processed Aluminum Case offers robust standing, easy handling*
- *Nickel Chrome Heating Element - Coil Type : Acid-resistant, Long Life Time.*

## Package Contents

# 2

WHM Analog Multi Heating Mantle .....	0
Rod .....	0
Power Cord .....	0
Operation Manual .....	0

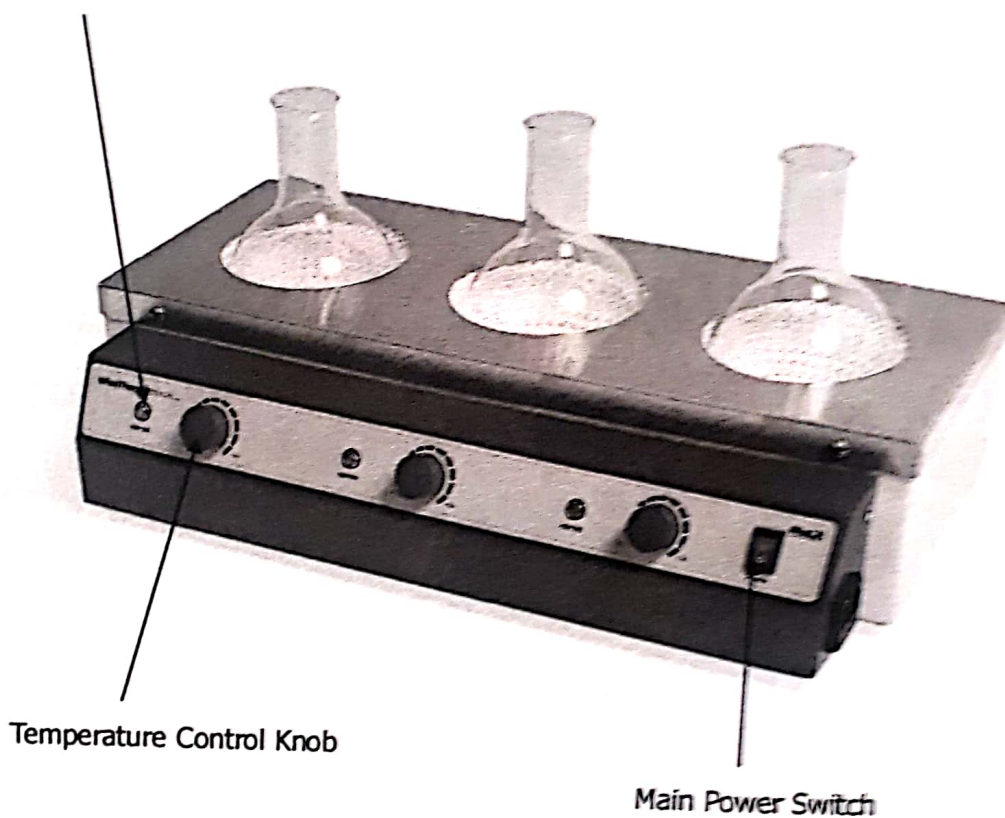


# 3

## Appearance

The appearance of Digital Multi Heating Mantle, WHM12391 is shown in <Figure 1>.

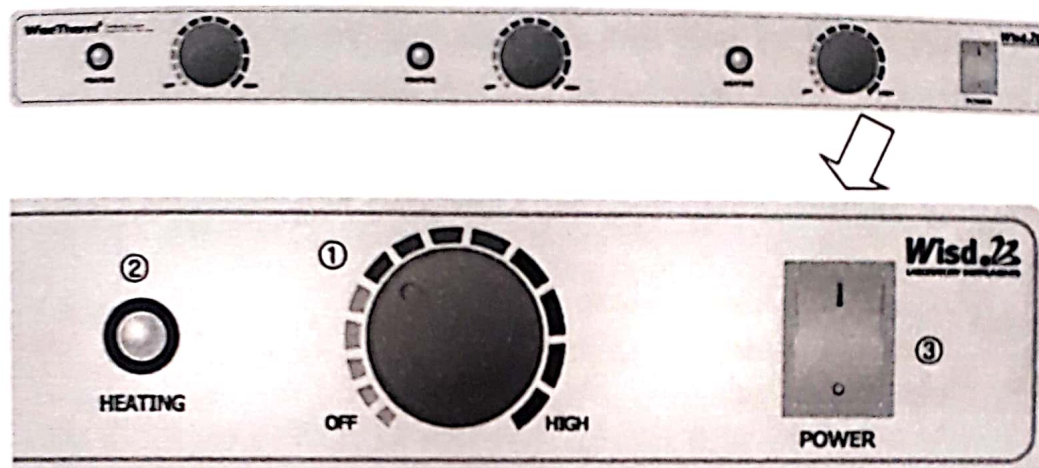
Heating LED



<Fig. 1> Appearance of WHM12391 Analog 3places Heating Mantle

## Operations

# 4



- ① Temperature Control Knob
- ② Heating LED
- ③ Power Switch

1. Power-on: Turn on the Power Switch (③), and then control temperature.

### 2. Temperature Control

: When you turn the control knob to clockwise, click sounds will on. It means that heater is on and then the Heating LED will on for start heating in mantle.

If you want more heating, have to turn the control knob to clockwise. On the other hand, if you want less heating, have to turn the control knob to other clockwise. Also if you want stop heating, have to turn the control knob to other clockwise until listen click sounds for control knob.

3. Power-off : If you finished the work and power off of all places mantle, Turn off the Power Switch (③)

# Safety Instructions

# 5



Do not modify any part of the machine - the mechanism part or electrical part. Modification made by non-technical person may cause a serious problem of the machine.



Do not use flammable material.  
Flammable materials or Chemicals must not be used in order to avoid an explosion or a fire.



The Heating Mantle could be raised up to 450°C during heating, and touching this surface may cause a serious injury.  
If you need to touch it, you should have sufficient cooling time down to 70°C on the LCD display before touching.



The recommended power supply is AC 220V, 50/60Hz, Single phase.



The machine must be standing on a stable, even surface that is as slip-free as possible.

Avoid allowing objects to push or strike the hotplate or stirring plate of the machine.

You have to use Digital Controller at indoor environment, to preserve temperature between 5°C and 40°C.



Please be careful that liquid should not penetrate into the part of control panel or back plane.

Please use the machine in clean environment for use with long lifetime.





This Symbol indicates that this product is to be collected separately.  
The following apply only to users in European countries:

- This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste.

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment(WEEE) Directive 2002/96/EC

※ All circuits and electronic parts used for this product are DAIHAN's own technology, so please do not make it repaired by anyone who isn't our own staff or technician authorized by DAIHAN.

## Specifications

# 6

6 places Analog Multi Heating Mantle, 250ml, 300ml & 500ml, 450°C

Catalog No.		Flask Capacity (ml)	Flask		Watts(W)	Inside Depth (mm)	Dimension W×D×H (mm)
with 230V	with 110V		Max. Dia. φ (mm)	Bottom			
DH.WHM12291	DH.WHM12292	250/300	83 ~ 86	Flat	840	50	800×240×110
DH.WHM12293	DH.WHM12294	250/300	83 ~ 86	Round	840	50	800×240×110
DH.WHM12295	DH.WHM12296	500	102 ~ 105	Round	1440	65	950×270×130

3 places Analog Multi Heating Mantle, 500ml & 1,000ml, 450°C

Catalog No.		Flask Capacity (ml)	Flask		Watts(W)	Inside Depth (mm)	Dimension W×D×H (mm)
with 230V	with 110V		Max. Dia. φ (mm)	Bottom			
DH.WHM12391	DH.WHM12392	500	102 ~ 105	Round	720	65	550×270×130
DH.WHM12393	DH.WHM12394	1,000	130 ~ 133	Round	1050	75	690×340×170