

English

# OPERATING MANUAL

## Magnetic Stirrer

WH-210D / WH-410D / WH-610D



**WIGGENS**  
THE MAGIC MOTION

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## Congratulations!

You have made an excellent choice.

WIGGENS thanks you for the trust you have placed in us.

This operating manual has been designed to help you gain an understanding of the operation and possible applications of our instruments. For optimal utilization of all functions, we recommend that you thoroughly study this manual prior to beginning operation.

## Unpacking and Inspecting

Please unpack the device carefully. Check that the package is right-side-up and then open it. Check that model of the product is one that you ordered. Check that there is no damage. If there is any damage, file a damage claim with the carrier. In the case of any damage a damage report should be requested immediately. These instructions must be followed fully for us to guarantee our full support of your claim for protecting against loss from concealed damage. The form required for filing such a claim will be provided by the carrier.

Changes without prior notification reserved

**Important:** keep operating manual for future use

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## 1. Intended Use

The WH-210D / WH-410D / WH-610D is a magnetic stirrer with LED display for convenient control and monitoring of the stirring speed. The leading microprocessor control technology ensures the accuracy and stability of the stirring process and remembers the last used stirring speed after shut-down. The stirrer's top plate is made of stainless steel, which is resistant to high temperatures. The stirring speed can be adjusted by turning the speed control knobs, and the stirring speed can even be adjusted after the stirring process has started. In case of the WH-410D / WH610D each plate is individually controllable.

## 2. Operator Responsibility

### Use

- For mixing liquids

### Range of use

- Laboratories
- Schools
- Pharmacies
- Universities

This device is suitable for use in all areas except:

- Residential areas
- Areas that are connected directly to a low-voltage supply network that also supplies residential areas.

The safety of the user cannot be guaranteed

- if the appliance is operated with accessories that are not supplied or recommended by the manufacturer or if the appliance is operated improperly contrary to the manufacturer's specifications.

The products of WIGGENS ensure safe operation when installed, operated, and maintained according to common safety regulations. This section explains the potential dangers that may arise when operating the instrument and also specifies the most important safety precautions to preclude these dangers as far as possible.

- The operator is responsible for the qualification of the personnel operating the instrument.
- The personnel operating the instrument should be regularly instructed about the dangers involved with their job activities as well as measures to avert these dangers.
- Make sure all persons tasked with operating, installing, and maintaining the instrument have read and understand the safety information and operating instructions.
- When using hazardous materials or materials that could become hazardous, the instrument may be operated only by persons who are absolutely familiar with these materials and the instrument. These persons must be fully aware of possible risks.
- Only qualified personnel are authorized to perform configuration, installation, maintenance and repairs of the instrument.
- Routine operation can also be carried out by untrained personnel who should however be instructed by trained personnel.

If you have any questions concerning the operation of your instrument or the information in this manual, please contact us!

## 2.1. Disposal



At the end of its service life the instrument is to be disposed of in accordance with the local regulations specified for the disposal of electronic industry waste in an environmentally friendly manner.

## 2.2.CE Conformity



The products described in the operating instructions conform to the requirements of the following European guidelines:

Low voltage regulations with respect to legal harmonization of the member countries concerning electric devices for use within certain voltage limits.

EMC guideline with respect to legal harmonization of the member countries concerning electromagnetic compatibility.

<p><b>APPROVALS</b> European</p>	<p>EN61326-1: 2013, 2014/30/EU EN61010-1: 2010, 2014/35/EU EN50581: 2012, 2011/65/EU</p>
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## 2.3. Technical Specifications

Model	WH-210D	WH-410D	WH-610D
Display Mode		LED	
Speed Range (rpm)		150 - 1500	
Number of Stirring Positions	1	4	6
Maximum Stirring Volume for Each Position	50-3000 mL	50-2000 mL	50-2000 mL
Plate Dimensions (W x L in mm)	158 x 143	(151 x 156) x 4	(151 x 156)x 6
Top Plate Material		Stainless Steel Coated	
Electrical Output	AC 110 - 240 V, 50/60 Hz	AC 110 - 240 V, 50/60 Hz	AC 110 - 240 V, 50/60 Hz
Overall Dimensions ( L x W x H in mm)	189 x 215 x 48	344 x 377 x 48	504 x 377 x 48
Basic Order Number	400214	400215	400216

All measurements have been carried out at the stated voltage, frequency, and an ambient temperature of 25°C. Technical changes without prior notification reserved.






WIGGENS Order Numbers consist of the Basic Order Number (BON) and the Order Number Addition (ONA) which explains different characteristics of the product that can vary from country to country. Order Numbers as stated on the product label and box label are stated as Full Order Numbers (FON), consisting of the BON followed by the ONA. For a full explanation of the ONA of your product, please ask your local WIGGENS support or refer to the Order Number Guide in the *WIGGENS* General Catalog.

## 3. Safety Instructions

### 3.1. Explanation of Safety Notes

In addition to the safety warnings listed, warnings are posted throughout the operating manual. These warnings are designated by an exclamation mark inside an equilateral triangle. "Warning of a dangerous situation (Attention! Please follow the documentation)."

Symbol	Additional term / Description
<b>Warning signs</b> 	<p>The danger is classified using a signal word. Read and follow these important instructions for averting dangers.</p> <p><b>Warning !</b> Describes a <b>possibly</b> highly dangerous situation. If these instructions are not followed, serious injury and danger to life could result.</p> <p><b>Caution !</b> Describes a <b>possibly</b> dangerous situation. If this is not avoided, slight or minor injuries could result. A warning of possible property damage may also be contained in the text.</p> <p><b>Notice !</b> Describes a <b>possibly</b> harmful situation. If this is not avoided, the product or anything in its surroundings can be damaged.</p>
	<p><b>Note!</b> Draws attention to something special.</p>
	<p><b>Important!</b> Indicates usage tips and other useful information.</p>

## 3.2. For your protection

- Make sure you read and understand all instructions and safety precautions listed in this manual before installing or operating your instrument.
- Keep the operation instructions in a place where they can be accessed by everyone.
- Make sure the product is checked for proper condition regularly (depending on the conditions of use). Regularly check (at least every 2 months) the proper condition of them and a tory, warning, prohibition and safety labels.
- Make sure that the mains power supply has low impedance to avoid any negative effects on instruments being operated on the same mains.
- Connect the instrument to a power socket with earthing contact (PE-protective earth)!
- The power supply plug serves as a safe disconnecting device from the line and must always be easily accessible.
- The power supply plug serves as a safe disconnecting device from the line and must always be easily accessible.
- Do not stay in the area below the instrument.
- Never operate damaged equipment.
- Always turn off the instrument and disconnect the mains cable from the power source before performing any service or maintenance procedures, or before moving the instrument.
- Repairs are to be carried out only by qualified service personnel
- Protect yourself from splashes.
- When in an emergency, disconnect the main power plug.
- Reduce the speed if:
  - The medium splashes out of the tube platform because the speed istoo high
  - The appliance is not running smoothly
- Process pathogenic materials only in closed vessels under a suitable extractor hood.



### 3.3. For protection of the equipment

- You have received a product designed for industrial and experimental use. Nevertheless, avoid strikes to the housing, vibrations, damage to the operating-element panel, and contamination.
- This is not an explosion proof stirrer. Do not use with any highly flammable or explosive materials.
- Do not expose the unit to sunlight.
- Not recommended for use with corrosive materials or in corrosive atmospheres. Corrosive spills and fumes will damage the top plate and internal components.
- Position the device at least 45 cm (12 inches) from combustible materials under any conditions.
- Never operate the magnetic stirrer in wet areas!
- Be aware of the danger of electric shocks!
- Extreme care must be taken when mixing chemicals, to ensure that no chemicals are splashed outside the mixing vessel! When changing to faster mixing speeds, protect yourself from splashes.
- Press the power button to interrupt the stirring process, rather than disconnect the main power plug directly.
- Transport the instrument with care.
- Sudden drops may cause damage in the interior of the instrument.

## 4. Operating Procedures

### 4.1. Environmental Operating Conditions

The stirrer must operate in the following conditions:

- Indoors
- Altitudes up to 2000 meters
- Temperatures from +5°C to +40°C
- Maximum relative humidity 80% for temperatures up to +31°C, linear decrease down to 50% relative humidity at a temperature of +40°C
- Max. mains fluctuation of  $\pm 10$  % are permissible
- Overvoltage category II

### 4.2. Installation

- Place the Magnetic Stirrer on a stable, flat surface and proper environment for operation.
- Put the vessel on the top plate of the instrument.
- Connect the stirrer to the power supply.
- Connect the power supply to a power socket with earthing contact.

## 4.3. Operation

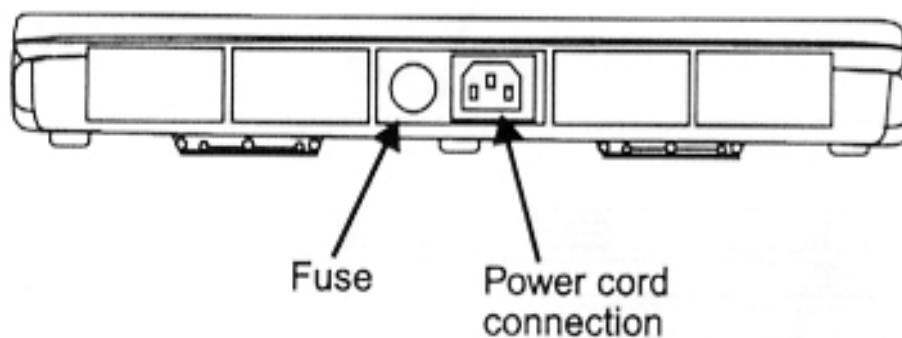
### 4.3.1. Overview of the Magnetic Stirrer

Model: WH410-D

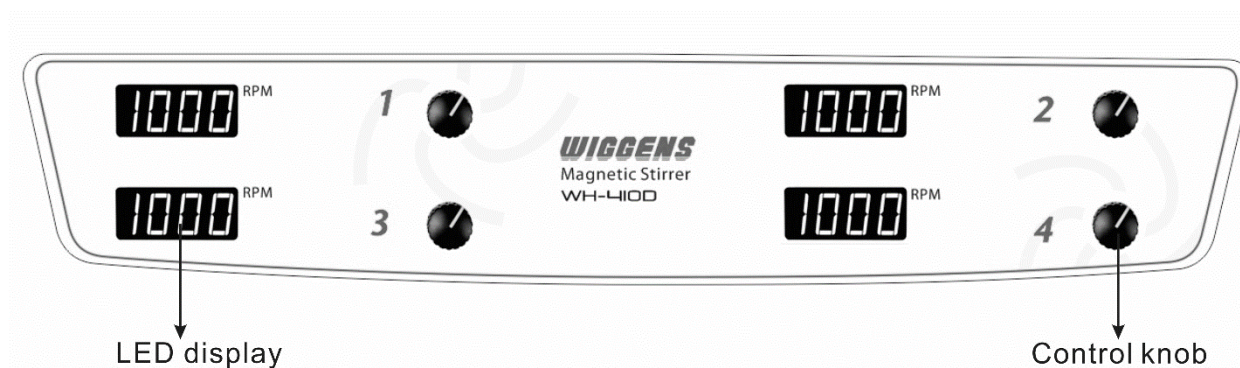
Front view



Back view



### 4.3.2. Indicators and Functional Elements



Keypad/ Display	Function/ Description
LED Display	Displays the set speed
Control Knob	Used to set the speed

### 4.3.3. General Operation Procedure

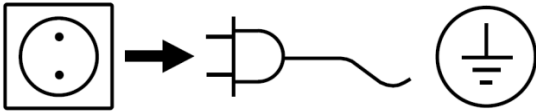
1. Connect the power cord and turn on the power switch
2. Place beakers with liquid on the marking
3. Immerse a magnetic stir bar into the beaker.
4. Adjust the beaker on the marking so that the stir bar is directly above the magnet.
5. Press and hold one of the control knobs for approximately 2 seconds until the display appears
6. Turn the control knob to set the stirring speed (turn clockwise to increase and anti-clockwise to decrease the stirring speed).
7. Press the control knob again to start the stirring process. When the stirrer is running, the small lighting points on the LED will be rolling from left to right. It is possible to further adjust the stirring speed after the stirring process has started.
8. Press the control knob to stop the stirring process.
9. In order to shut off the LED display, press and hold the control knob for 2 seconds.

## 5. Cleaning and Maintenance

### 5.1. Routine Cleaning

The device is maintenance-free.

#### Cleaning



For cleaning disconnect the main plug.

Only use cleansing agents which have been recommended by *WIGGENS*

Use to remove:

Dyes isopropyl alcohol

Construction materials isopropyl alcohol/water containing surfactant

Cosmetics isopropyl alcohol/water containing surfactant

Foodstuffs water containing surfactant

Fuels water containing surfactant

- After each use, wipe the unit with a soft cloth. Do not immerse or pour liquid over the unit as electrical shock may occur. Clean up any spills immediately. If required, the attachment may be removed.
- Wear protective gloves when cleaning the devices

Before using another than the recommended method for cleaning or decontamination, the user must ascertain with *WIGGENS* that this method does not destroy the instrument



#### **Note:**

Do not use chlorine bleach, chlorine-based cleanser, abrasives, ammonia, steel wool or scouring pads with metal content or similar harsh solvents or abrasives. These may damage the surface of the instrument.

## 5.2. Maintenance

Do not attempt to service or repair a WIGGENS stirrer. If the stirrer housing is opened the warranty becomes void. Contact WIGGENS for return authorization and return instructions.

Ordering spare parts

When ordering spare parts, please give:

- Machine type
- Manufacturing number, see type plate
- Item number and designation of the spare part.

Repair

Please only send devices in for repair that have been cleaned and are free of materials which might present health hazards. For this, use the "certificate of compliance" form which you can obtain from *WIGGENS*. If your appliance requires repair, return it in its original packaging. Storage packaging is not sufficient when sending the device - also use appropriate transport packaging.

## 6. Transport and Storage

- Clean the stirrer so that it is free from any materials which may be harmful to the health. Provide a material safety data sheet where appropriate.
- Place the stirrer unit and its parts into the original packing or a container with necessary protection to prevent damage during transport. Seal the original packing or container with packing tape.
- Store the packed unit in a dry place.






### CAUTION:

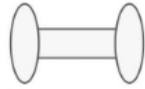

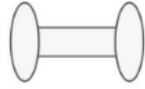
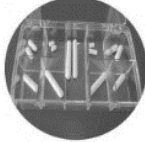

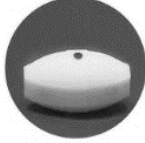


Failure to clean, maintenance, and handle the stirrer as outlined can lead to damages or be harmful to the health.

## 7. Accessories and Spare Parts

### 7.1. Stir Bar and Retriever Examples

Model	Description	Order No.
Cylindrical Stirrer Bars		001.110.6
Plain Stir Bars		001.210.6
Octahedral Stir Bars		001.513-R/B/Y
Micro Stir Bars		001.802
Colored Micro Stir Bars		001.802-R/B/Y
Oval Stir Bars		001.610
Octaoval Stir Bars		001.3319
Cylindrical Stir Bars With a Removable Pivot Ring		001.1712
Tapered Stir Bars		001.1910

Model	Description	Order No.
Test Tube Wings		001.2201.1
Cross-Shaped Stir Bars		001.2401
Crosshead Stirrer Magnets(Double Sided)		001.1110
Crosshead Stirrer Magnets(Single Sided)		001.1110.1
Hub Stirrer Magnets		001.2301
Tube Stirrer Magnets		001.1609
Disc-Shaped Stirrer Magnets		001.709
Spherical Stirrer Magnets		001.1512
Glass Encased Stir Bars		001.1206

Double Ended Stir Bars (Natural)		001.1335	Extra Large Stir Bars		001.0120
Double Ended Stir Bars (Colored)		001.1335-R/B/Y	Stir Bar Sets (18 Bars)		001.3003
Triangular Stir Bars		001.412	Rare Earth 'Turbo' Stir Bars		001.2610.RE
Ribbed Triangular Stir Bars		001.1812	Stir Bar Retrievers		004.150



For more information about Accessories please contact your local supplier



**CAUTION!**

For safety and guarantee reasons only original accessory parts are to be used!

## 8. Service

### 8.1. Trouble-Shooting

Cause	Remedy
After switching on the unit, the LED power light is not on and the stirrer does not react to any input	<ol style="list-style-type: none"> <li>1. Ensure that the mains electricity plug is plugged into a working socket outlet</li> <li>2. Open the fuse holder of the power cord, which you can find at the back of the instrument. If the fuse is damaged, replace it with a 1A / 110V fuse. Clean the holder before your replacement.</li> <li>3. If the fuse is not damaged and the malfunction cannot be determined, please contact the WIGGENS support.</li> </ol>
After switching on the unit, the power switch is lit up, but it does not react to any input	<ol style="list-style-type: none"> <li>1 Press and hold the control knob</li> <li>2 If the LED display does not light up after a few seconds, please contact the WIGGENS support</li> <li>3 If the LED display lights up, turn the control knob clockwise and press it shortly to start the stirring process</li> <li>4 If the stirring process does not start, please contact the WIGGENS support</li> </ol>



WIGGENS reserves the right to carry out technical modifications with repairs for providing improved performance of the instrument.



## 8.2. Warranty

In accordance with *WIGGENS* warranty conditions, the warranty period is 24 months. For claims under the warranty please contact your local dealer. You may also send the machine direct to our works, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs. The warranty does not cover wearing parts, nor does it apply to faults resulting from improper use or insufficient care and maintenance contrary to the instructions in this operating manual.

*WIGGENS* reserves the right to decide the validity of any warranty claim. In case of faults arising either due to faulty materials or workmanship, parts will be repaired or replaced free of charge.

Any other compensation claims, such as consumables, damages caused by corrosion or accidental breakage, are excluded from this guarantee.

This warranty may only be altered by a specifically published amendment. No individual has authorization to alter the provisions of this warranty policy or its amendments.

## 8.3. Contact /Technical Service

If your device is not working properly:

⇒ Please inform *WIGGENS* Instruments by using our contact information.

You have contacted *WIGGENS* Instruments?

⇒ Copy and complete the Confirmation of condition of unit from these operating instructions.

⇒ Please repack the device appropriately for transport and send to *WIGGENS* Instruments together with the Confirmation of condition of unit.

### Our contact details

#### **WIGGENS GmbH**

Add: Gässlesweg 22-24, 75334 Straubenhardt, Germany

Tel.: 0049 7248 4529088

#### **Wiggins Co., Ltd.**

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## Confirmation of condition of unit

In the case of repair, copy and complete the Confirmation of condition of unit and send it to *WIGGENS* Instruments.

### 1. Details about the unit

Product number \_\_\_\_\_  
 Serial number \_\_\_\_\_  
 Reason for repair \_\_\_\_\_  
 \_\_\_\_\_

### 2. Has the device been cleaned, decontaminated/sterilized?

Yes  No

### 3. Is the unit in a condition which does not represent any health threats for the staff of our service department?

Yes  No

If not, which substances has the unit come into contact with?

\_\_\_\_\_

### 4. Legally binding declaration

The customer is aware of being legally liable to *WIGGENS* Instruments for any damages arising from incomplete and incorrect information.

Date \_\_\_\_\_ Signature \_\_\_\_\_  
 Company stamp \_\_\_\_\_

## Please Note

The shipper is responsible for the return of the goods in well-packed condition, suitable for the mode of transport.

### Sender information

Name \_\_\_\_\_  
 Company \_\_\_\_\_  
 Department, research group Street \_\_\_\_\_  
 Zip code, city \_\_\_\_\_  
 Country \_\_\_\_\_  
 Phone \_\_\_\_\_  
 E-mail \_\_\_\_\_



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