English

OPERATING MANUAL

Overhead Stirrer

WB2000-M

WIGGENS
THE MAGIC MOTION

1.100.0330.20-V2.1

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.

Important: keep operating manual for future use

Content

1. Intended Use

To fulfill its principle task of a reliable and accurate stirring process, the Overhead StirrerWB2000-A / WB2000-M incorporates a brushless DC motor in order to be able to uphold long-term stirring tasks. It is easy to use and suitable for small batches, long-term experiments and programmable operations. Voltage fluctuations are not a concern due to the universal power supply which offers 100-240 volts.
Furthermore, the digital display, sealed housing and overload protection are standard WIGGENS features!

2. Operator Responsibility

Use For mixing/stirring liquids by various stirring tools.

Range of use (indoor use only)

- Laboratories
- Pharmacies
- Schools
- Universities

This instrument 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 instrument is operated with accessories that are not supplied or recommended by the manufacturer
- If the instrument is operated improperly or contrary to the manufacture's specifications
- If the instrument or the printed circuit board are modified by third parties.

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

CE	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.
APPROVALS European	EN61326-1: 2013, 2014/30/EU EN61010-1: 2010/A1:2019, 2014/35/EU

2.3 Technical Specifications

Model		**WB2000-M**
Speed Range		40-2000 rpm
Display/Control mode		4 digit display(±10 rpm or 1 % of reading,)/knob control
Speed accuracy(rpm)		±3%(＞300rpm)
Maximum Torque		66N-cm
Maximum Capacity (H_2O)		50 liters(13.2 US Gallons , 11UK Gallons)
Chuck range max. diameter(mm)		10
Clock wise and counter clock wise mixing		No
Input to Power Supply		AC 100-240 V, 50/60 Hz, 70VA(Must use WIGGENS supplied power supply)
Output Voltage from Power Supply to Stirrer		DC 24V
Mechanical Output Power		1/15hp, 50 W, (Brushless DC Motor)
Weight	Stirrer	3.5kg (8 lbs.)
	Power Supply	0.5kg (1 lb)
Combined Housing		Splash Proof
Operation Panel		Waterproof, Chemical Resistant Polyester
Power Cord Lengths		160cm from Stirrer to Power Supply-DC 150cm from Power Supply to Mains Plug-AC
Adjustable Chuck		Fits Onto Output Shaft of Stirrer, Adjustable up to 10 mm
Basic Order Number		100300

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
	The danger is classified using a signal word. Read and follow these important instructions for averting dangers.
	Warning! Describes a **possibly** highly dangerous situation. If these instructions are not followed, serious injury and danger to life could result.
	Caution! Describes a **possibly** 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.
	Notice! Describes a **possibly** harmful situation. If this is not avoided, the product or anything in its surroundings can be damaged.
	**Note!** Draws attention to something special.
	**Important!** Indicates usage tips and other useful information.

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
-  **Warning!** Because the options for combining products, tools, stirring vessel, experiment and medium are nearly endless, user safety cannot be ensured simply with design requirements on the part of the product. For this reason, it may become necessary for users to take other precautionary safety measures. For example, glass device or other stirring vessels that are sensitive to mechanical stress can be damaged or shattered by an imbalance, increasing the speed too quickly or too little distance between the stirring element and the stirring vessel. Users can suffer serious injury from glass breakage or from the freely rotating stirring element.
- Uncontrolled reactions can be triggered by mixing the heated material insufficiently or by the energy generated by selecting a speed that is too high. In case of these and other increased operational hazards, users must take additional appropriate safety precautions (e.g. shatter protection). In any case, when using critical or hazardous materials in your processes, *WIGGENS* recommends to use additional appropriate measures to ensure safety in the experiment. For example, users can implement measures that inhibit fire or explosions or comprehensive monitoring equipment.
- 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 the mandatory, warning, prohibition and safety labels.
- 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.
- Do not stay in the area below the instrument.
- Never operate damaged equipment.
-  **Warning!** Never operate instruments with damaged mains power cables.
- Observe all warning labels.
- Never remove warning labels.
- Repairs are to be carried out only by qualified service personnel
- 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.
-  **Warning!** This is not an explosion proof stirrer. Do not use with any highly flammable or explosive materials.
-  **Warning!** The stirrer must be securely fixed to a stable support, mounted to a stand using a heavy duty clamp, which must be provided by *WIGGENS*. If other stands or clamps are used, ensure that they are stable so that it will not fall down.

-  **Warning !** Spinning paddles or impellers can cause serious personal injuries. Operators must take extreme care and good judgment when mixing at any speed. All mixing paddles and impellers must be in good condition with straight shafts. If the stirrer vibrates at high speed, check the paddle shaft for damage and repair or replace it.
- Also, extreme care must be taken when mixing chemicals, to ensure that no chemicals are splashed outside the mixing vessel, and when changing to faster mixing speeds.
-  **Warning !** Ensure that the mixing impeller does not contact the containment vessel.
- Keep the unit dry and do not immerse any part, except the mixing paddle into any liquids.
- Protect yourself from splashes.
-  **Warning !** Ensure that no loose clothing, jewelry, or hairs are entangled in any rotating parts. A fast spinning chuck can cause injury to the operator.
- Only process media that will not react dangerously to the extra energy produced through processing. This also applies to any extra energy produced in other ways, e.g. through light irradiation.
- Process pathogenic materials only in closed vessels under a suitable fume hood.
- When in an emergency, disconnect the main power plug.
- The voltage stated on the type plate must correspond to the mains voltage.
- Please observe the permitted speed for the stirring element. Never set higher speed.
-  **Warning !** The operation of a free rotating shaft end is dangerous. Therefore, for safety reason, only insert through the stirring tool over the upper edge of housing at standstill.
-  **Warning !** Wear your personal protective equipment in accordance with the hazard category of the medium to be processed, otherwise there is a risk of:

- splashing of liquids
- Projectile parts
- Body parts, hair, clothing and jewelry getting caught.

-  **Warning !** Beware of the risk of:

- Flammable materials
- Glass breakage as a result of mechanical shaking power.

- Reduce the speed if:

- The medium splashes out of the vessel because the speed is too high
- The instrument is not running smoothly
- The instrument begins to move around because of dynamic forces
- An error occurs.

-  **Warning !** Do not touch rotating parts during operation!

-  **Warning !** There may be electrostatic activity between the medium and the output shaft which could cause a direct danger.
- After an interruption in the power supply or a mechanical interruption during a stirring process, the unit does not restart automatically.
- It is important to note that the surfaces of the motor (cooling fins) and certain parts of the bearing may get very hot during operation.
- Avoid knocking and impacting on the lower end of the shaft and the chuck gear teeth. Even minor, invisible damage can lead to imbalance and uneven shaft action
- Imbalance of the output shaft, the chuck and in particular the stirring tools can lead to uncontrolled resonant vibrational behavior of the instrument and the whole assembly. Glass apparatus and stirrer containers can be damaged or shattered by this. It can cause injury to the operator, also can damage the rotating stirring tool. In this case exchange the stirring tool for one without imbalance or remedy the cause of the imbalance. If there is still imbalance, return it to the dealer or the manufacturer along with a description of the fault.
- If the instrument is operated too long in overload or if the ambient temperature is too high, the instrument switches off permanently.

3.3. For protection of the equipment

All operators must be familiar with the stirrer and should read this entire manual.

- 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.
- Make sure that the mains power supply has low impedance to avoid any negative effects on instruments being operated on the same mains.
- Do not expose the unit to sunlight
- Sudden drops may cause damage in the interior of the instrument.
- Transport the instrument with care.
- Press the power button to interrupt the stirrer, rather than disconnect the main power plug directly.

4. Operating Procedures

4.1. Environmental Operating Conditions

The overhead 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 ±10 % are permissible
- Protection class according to EN 60 529: IP31
- The unit corresponds to Class I
- Overvoltage category II

4.2. Installation

Place the stirrer on a stable, flat surface and proper environment for operation.

Note!

The hollow shaft allows the impeller shaft to come through the top of the stirrer if necessary!

4.2.1. Installing the Overhead Stirrer

Installation Steps	
	Installing the Support Bar
	• Clamp the stirrer to a WIGGENS stand on a stable level surface. • Insert the impeller shaft into the open chuck and adjust the impeller to the desired height.
	• Connect the stirrer to the WIGGENS power supply. • Connect the power supply to a power socket with earthing contact.

4.2.2. Impeller Attachment

- Loosen the clamp connected to the support bar and raise the stirring unit to the far end of the support bar
- Tighten the clamp again and use the chuck key to open up the chuck inlet
- Insert the impeller shaft into the open chuck and adjust the impeller to the desired height. The hollow housing allows the impeller shaft to come through the top of the stirrer if necessary.
- Tighten the chuck manually until the impeller shaft hangs loosely in the chuck
- Use the chuck key to gradually tighten the chuck from all sides and make sure that the impeller is as vertical as possible.
- If necessary adjust the height of the stirrer again by loosening the clamp connected to the support bar. Make sure to tighten the clamp as much as possible after adjusting the height and before operating the unit.

4.2.3. The dimensions of the Overhead stirrer

	• Operating a freely rotating impeller shaft through the top of the stirrer is not safe. Do not allow the impeller shaft to touch or extend through the rubber gasket while the motor is powered on, the gasket is for sealing purposes only. Tighten the chucks outer ring by hand and fasten it. • If the chuck is removed without the supplier's permission, any damage will be excluded from the warranty.

4.3. Operation

4.3.1. Operation of the WB2000-M

1. over view of the WB2000-M

No.	Description
1	Housing
2	Chuck
3	Operation Panel
4	Control Knob
5	Power Indicator
6	LED Display

2. Operating Functions for WB2000-M

WB2000-M employs a digital display and knob control.

How to operate the overhead stirrer?
● Connect the power, press the back switch, and now the LED light is on at the same time. Press the knob (4) to turn on the LED display (6).
● Turn the knob (4) clockwise to increase the stirring speed and turn it counterclockwise to decrease the stirring speed.
● The operation can be stopped by pressing the turning knob (4).
● After the stirring process has completely stopped, the stirrer can be switched off by pressing and holding the turning knob.

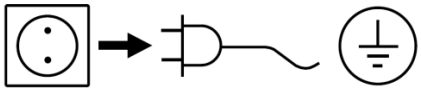
	• Make sure the stirrer is securely mounted as specified in the installation instructions. Ensure the mixing paddle or impeller is securely attached to the desired position. The stirrer is now ready for use to mix liquids and liquid / solid solutions. Appropriate impeller and container specifications must be determined by the operator, ensuring that all safety instructions are followed. • If the torque is too heavy, it is necessary to reduce the weight of the load and to restart the stirrer.

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

- Do not allow moisture to get into the appliance when cleaning.
- Wear protective gloves when cleaning the devices.
- For materials which are not listed, please request information from WIGGENS application support.
- Electrical instruments may not be placed in the cleansing agent for the purpose of cleaning.
- 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 overhead stirrer. If the overhead 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 overhead 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 overhead 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 Stainless Steel Impellers

		**Pivoting Blade Impeller** Blade Heigh:18 mm				**Straight 2-Blade Impeller** Blade Heigh:12 mm	
Rotor Ø((mm)	**Shaft Ø(mm)**	**Lengt h(mm)**	**Oder No.**	**Rotor Ø((mm)**	**Shaft Ø(mm)**	**Length (mm)**	**Oder No.**
50	8	300	9603	50	8	300	9703
50	8	400	9604	50	8	400	9704
50	8	500	9605	50	8	500	9705
		**Straight 4-Blade Impeller** Blade Heigh:12 mm				**3-Hole Blade Impeller**	
50	8	300	9053	50	8	300	9403
50	8	400	9054	50	8	400	9404
50	8	500	9055	50	8	500	9405
100	10	300	9056	100	10	300	9406
100	10	400	9057	100	10	400	9407
100	10	500	9058	100	10	500	9408
		**6-Hole Blade Impeller**				**Pitched Leaf Impeller and Pitched Blade Impeller**	
50	8	300	9503	50	8	300	9003
50	8	400	9504	50	8	400	9004
50	8	500	9505	50	8	500	9005
100	10	300	9506	100	8	300	9009
100	10	400	9507	100	8	400	9010
100	10	500	9508	100	8	500	9011
				70	8	500	9012
				100	10	650	9013
				100	10	800	9014

		**Propeller stirrers, 3 _x blades**				**Centrifugal Impeller** Blade Heigh:10mm	
Rotor Ø((mm)	**Shaft Ø(mm)**	**Lengt h(mm)**	**Oder No.**	**Rotor Ø((mm)**	**Shaft Ø(mm)**	**Length (mm)**	**Oder No.**
50	8	300	9103	90/15	8	400	9210
50	8	400	9104	90/15	8	500	9211
50	8	500	9105	90/15	10	300	9212
70	8	300	9109	90/15	10	400	9213
70	8	400	9110	90/15	10	500	9214
70	8	500	9111	90/15	10	650	9215
100	10	300	9112				
100	10	400	9113				
100	10	500	9114				
70	10	650	9115				
100	10	800	9116				
		**Anchor Impeller**				**Turbine Impeller**	
70	8	500	9610	45	7	400	9025
90	10	650	9611	65	7	400	9026
140	10	800	9612	45	8	400	9025A
				65	8	400	9026A
		**Radial Flow Impeller**				**Multi-Purpose Impeller**	
50	7	400	9030	80	10	500	9020
50	8	400	9031	120	10	500	9021

7.2 Stirring Seals

Model	Shaft Ø mm)	'A'Core	Height(mm) excl.joint	Guide Ø (mm)	Oder No.
	6	19/22	96	45	5.101.1.7
	6	24/40	96	45	5.102.7
	8	24/40	96	45	5.104.7
	10	24/40	96	45	5.105.7
	10	29/42	96	45	5.106.7
	12	29/42	110	55	5.108.7

7.3 Stand

	Dimensions (W x D)：315X200mm Max. load：5 kg		Dimensions (W x D)：315X200mm

Model	Height(mm)	Model	Height(mm)
WF11	550	WF11-D	550
WF12	750	WF12-D	750
WF13	950	WF13-D	950

	Material：Aluminum, stainless steel Dimensions (W x D)：340X300mm		Material: Aluminum, stainless steel Dimensions (W x D)：340X300mm

Model	Height(mm)	Model	Height(mm)
WH11-S	550	WH11-D	550
WH12-S	750	WH12-D	750
WH13-S	950	WH13-D	950

	For more information about Accessories please contact your local supplier
	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	1. Ensure that the mains electricity plug is plugged into a working socket outlet 2. Use a circuit meter to check if there is DC36V electricity running from the adapter output port 3. If the malfunction cannot be determined this way, please contact the WIGGENS support
After switching on the unit, the LED power light is on but the stirrer does not react to pressing the turning knob	Please contact the WIGGENS support

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 Conformation 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：Wiescher Str. 11a, 42277 Wuppertal Germany
Tel.: +49 202 373 29 58-0
info@wiggens.com

WIGGENS China
Room 426, Hall A, Office Building M8, No.1 Jiuxianqiao
East Road, Chaoyang District, Beijing 100015, China
Tel: +86 400-809-2068
service@wiggens.com
www.wiggens.com

Confirmation of condition of unit

In the case of repair, copy and complete the Conformation 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

WIGGENS

THE MAGIC MOTION

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