

OPERATING MANUAL

Remotely Controllable Ultra High Torque /
High Speed Stirrers

WB1800-C / WB1800-EC

WB3000-C / WB3000-EC



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

Content

1. SAFETY INSTRUCTIONS	4
2. GENERAL INSTRUCTIONS	5
3. TECHNICAL SPECIFICATIONS.....	6
4. INSTALLATION IN THE LABORATORY	10
5. ENVIRONMENTAL OPERATING CONDITIONS	11
6. OPERATION INSTRUCTION	12
6.1. Analog Input /Output control:.....	14
6.2. COM connection:	15
7. ROUTINE CLEANING, SERVICE, TRANSPORT&STORAGE.....	16
8. WARRANTY AND PRODUCT LIABILITY	17
8.1Warranty.....	17
8.2. Contact /Technical Service	18

1. SAFETY INSTRUCTIONS

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

The stirrer must be securely fixed to a stable support, mount to a WIGGENS stand using a WIGGENS heavy duty clamp. If other stands or clamps are used, the unit must be secured such that it will not fall if tipped.

CAUTION: This is not an explosion proof stirrer. Do not use with any highly flammable or explosive materials.

Spinning paddles or impellers can cause severe personal injuries. Operators must use 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 speeds check the paddle shaft for damage and repair or replace it.

Extreme care must be taken when mixing chemicals to ensure that no chemicals are splashed outside the mixing vessel. Care must be taken when changing to faster mixing speeds.

Ensure that the mixing impeller does not contact the containment vessel.

Do not operate while standing in water. Keep the unit dry and do not immerse any part, except the mixing paddle into any liquids. Protect from splashing.

Ensure that no loose clothing, jewelry, or hair can become entangled in any rotating parts. A fast spinning chuck can cause injury to operator.

Power can be interrupted to the stirrer by pressing the power button. In an emergency, disconnect the mains cord.

2. GENERAL INSTRUCTIONS

Read safety instructions

Unpack the stirrer carefully. Ensure the stirrer is not damaged and verify the contents against the packing list. If the stirrer is damaged or the contents do not correspond with the packing list, notify your supplier immediately.

Read the manual carefully! Make sure that all users read this manual thoroughly before operating the stirrer.



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, 2014/35/EU

EN50581: 2012, 2011/65/EU

3. TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATION – WB1800-C

Model	WB1800-C
Speed Range	20-800rpm
LCD Display Accuracy	±10rpm or 1 % of reading,4 digit
Torque Display	Stirrer converts output current to torque, reflecting the changing load of motor
Maximum Torque	1320 N·cm
Rated Torque	188 N·cm
Input to Power Supply	AC 100-240 volts,50/60 Hz (Must use WIGGENS supplied power supply)
Electrical Output from Power Supply to Stirrer	DC 24V, 7.0 A
Mechanical Output Power	150 watts,(Brushless DC Motor)
Weight Stirrer	2.3kg (5 lbs)
Remote Controller	0.5kg (1.1 lbs)
Maximum Volume	50 liter
Maximum Viscosity	150000 cps
Key Pad	Waterproof, chemical resistant polyester
Power Cord Lengths	300cm from Stirrer Motor to Remote Controller(1.5,6,10m cable optional) 150cm from Remote Controller to wall-AC
Analog Input	0-20mA and 0-10V
Analog Output	0-10V
RS232 Connection	Available
Foot pedal Connection	Available
Order No.	100601

TECHNICAL SPECIFICATION – WB1800-EC

Model	WB1800-EC
Speed Range	20-800rpm
LCD Display Accuracy	± 10 rpm or 1 % of reading, 4 digit
Torque Display	Stirrer converts output current to torque, reflecting the changing load of motor
Maximum Torque	1640 N·cm
Rated Torque	464 N·cm
Input to Power Supply	AC 100-240 volts, 50/60 Hz (Must use WIGGENS supplied power supply)
Electrical Output from Power Supply to Stirrer	DC 24V, 11.0 A
Mechanical Output Power	450 watts, (Brushless DC Motor)
Weight Stirrer	3.4kg (7.5 lbs)
Remote Controller	0.5kg (1.1 lbs)
Maximum Volume	50 liter
Maximum Viscosity	300000 cps
Key Pad	Waterproof, chemical resistant polyester
Power Cord Lengths	300cm from Stirrer Motor to Remote Controller (1.5, 6, 10m cable optional) 150cm from Remote Controller to wall-AC
Analog Input	0-20mA and 0-10V
Analog Output	0-10V
RS232 Connection	Available
Foot pedal Connection	Available
Order No.	100602

TECHNICAL SPECIFICATION – WB3000-C

Model	WB3000-C
Speed Range	70-3000rpm
LCD Display Accuracy	±10rpm or 1 % of reading,4 digit
Torque Display	Stirrer converts output current to torque, reflecting the changing load of motor
Maximum Torque	330 N·cm
Rated Torque	47 N·cm
Input to Power Supply	AC 100-240 volts,50/60 Hz (Must use WIGGENS supplied power supply)
Electrical Output from Power Supply to Stirrer	DC 24V, 7.0 A
Mechanical Output Power	1/5hp, 150 watts,(Brushless DC Motor)
Weight Stirrer	1.8kg (4 lbs)
Remote Controller	0.5kg (1.1 lbs)
Maximum Volume	100 liter
Maximum Viscosity	100000 cps
Key Pad	Waterproof, chemical resistant polyester
Power Cord Lengths	300cm from Stirrer Motor to Remote Controller(1.5,6,10m cable optional) 150cm from Remote Controller to wall-AC
Analog Input	0-20mA and 0-10V
Analog Output	0-10V
RS232 Connection	Available
Foot pedal Connection	Available
Order No.	100401

TECHNICAL SPECIFICATION – WB3000-EC

Model	WB3000-EC
Speed Range	70-3000rpm
LCD Display Accuracy	±10rpm or 1 % of reading,4 digit
Torque Display	Stirrer converts output current to torque, reflecting the changing load of motor
Maximum Torque	410 N·cm
Rated Torque	116 N·cm
Input to Power Supply	AC 100-240 volts,50/60 Hz (Must use WIGGENS supplied power supply)
Electrical Output from Power Supply to Stirrer	DC 24V, 11.0 A
Mechanical Output Power	250 watts,(Brushless DC Motor)
Weight Stirrer	2.8kg (6.2 lbs)
Remote Controller	0.5kg (1.1 lbs)
Maximum Volume	100 liter
Maximum Viscosity	200000 cps
Key Pad	Waterproof, chemical resistant polyester
Power Cord Lengths	300cm from Stirrer Motor to Remote Controller(1.5,6,10m cable optional) 150cm from Remote Controller to wall-AC
Analog Input	0-20mA and 0-10V
Analog Output	0-10V
RS232 Connection	Available
Foot pedal Connection	Available
Order No.	100402

Technical specifications subject to change without notice.

4. INSTALLATION IN THE LABORATORY

Installing the Motor

Mount the stirrer to a stand on a stable, level surface. See safety instructions on page 2.

Connect stirrer Remote Controller, connect power supply to a grounded electrical outlet.

The connection from the stirrer motor to the stirrer shaft is not provided. A proper stirrer shaft and a reliable connector between the motor axle and the stirrer shaft should be selected based on the maximum load of the stirrer. Please refer to the following diagram for combination sleeve for the stirring shaft.

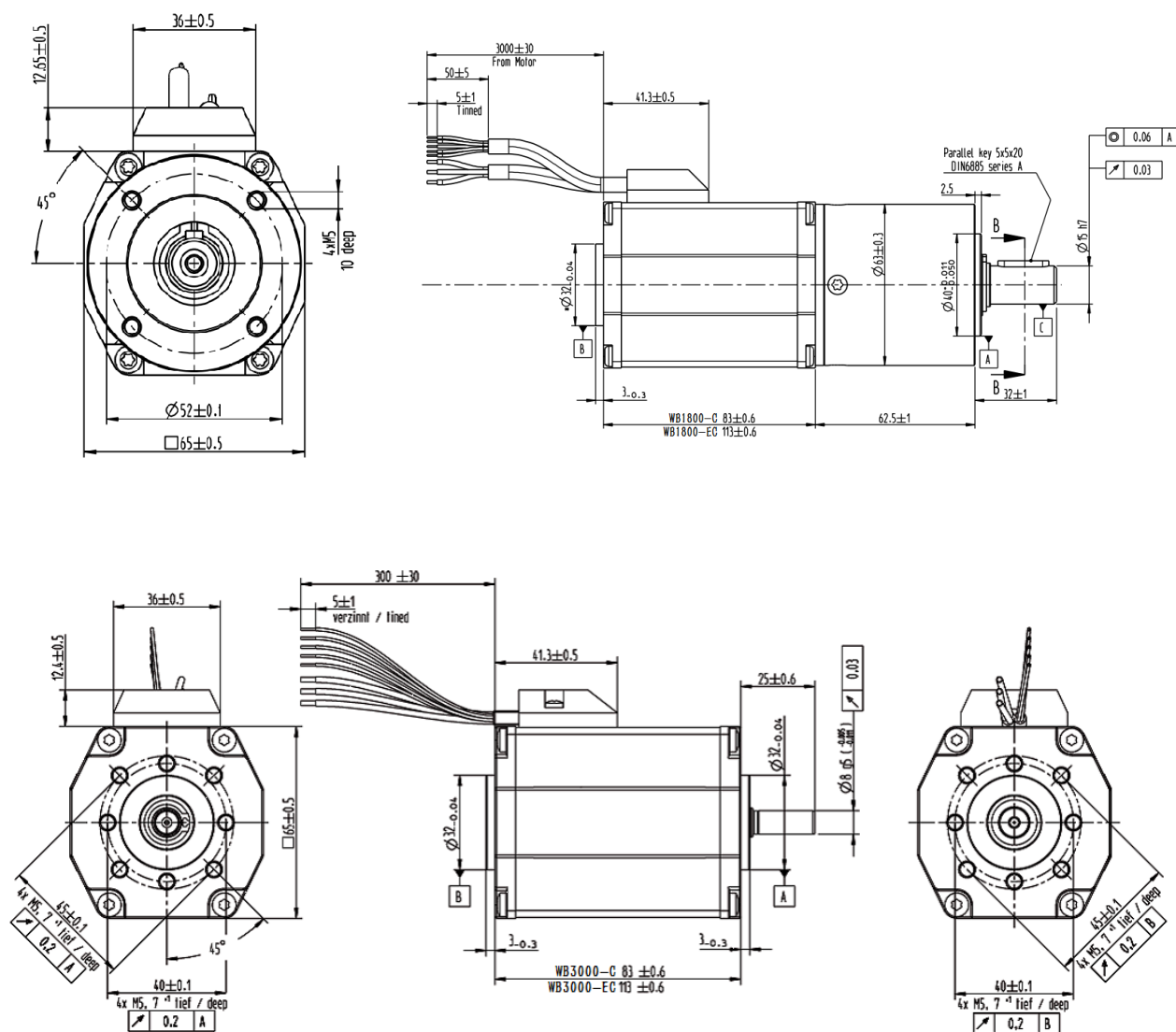


Fig. 1 The mounting of the motor

Connection of the Remote Controller

Please refer to the following diagram for the connection of the motor to remote controller or further more connection to a PC.

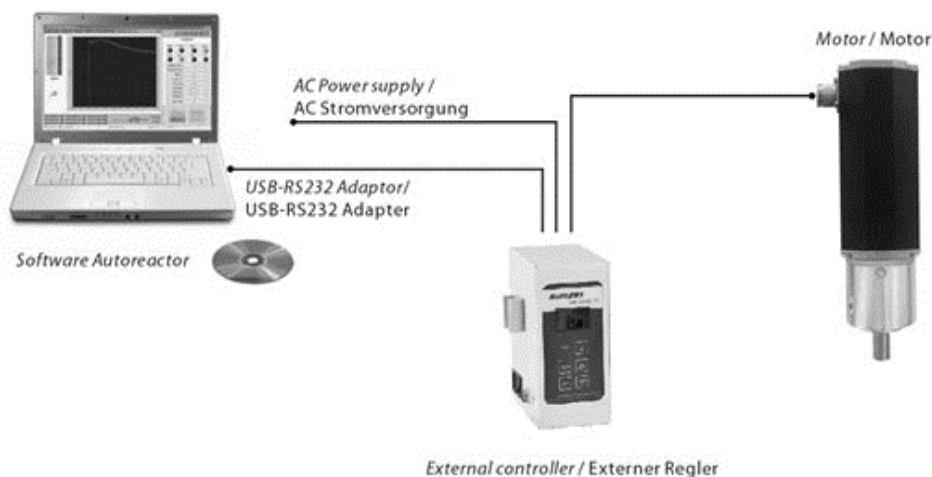


Fig.2 Connection of the system

5. ENVIRONMENTAL OPERATING CONDITIONS

All WB serial stirrers 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 decreasing linearly to 50% relative humidity at 40°C

Pollution degree 2 in accordance with IEC 664

“Normally only non conductive pollution occurs. Occasionally, however, temporary conductivity caused by condensation must be expected.”

GENERAL OPERATING INSTRUCTIONS

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.

6. OPERATION INSTRUCTION

The serial products are the version with remote functions of the WB serial stirrer products. There are following three operating methods:

Key pad operation methods:

Operate the Remote Controller

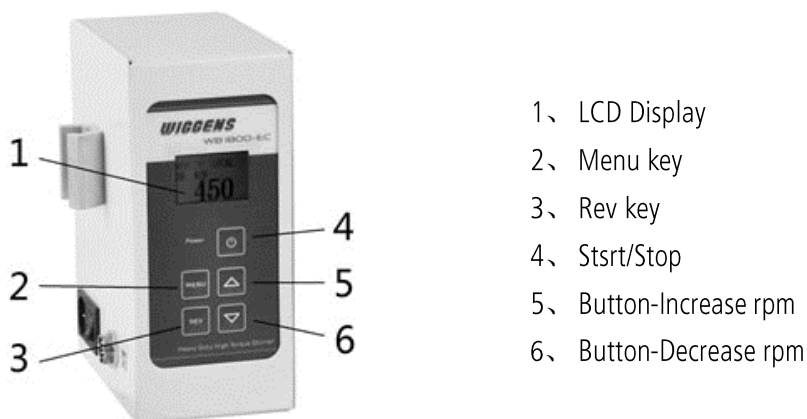


Fig. 3 The operating key pad

The stirrer compact design fits into any area of the lab. It is easy to use and is suitable for small batches and continuous operation, and programmable operating.

Voltage fluctuations are not a concern due to the universal power supply which offers 100-240 volts.

WIGGENS features such as digital display, hollow through shaft, grounded power cord, brushless (sparkless) DC motor, sealed housing and overload protection are standard-of course!

Display and Button Operating Functions for the Remote Controller

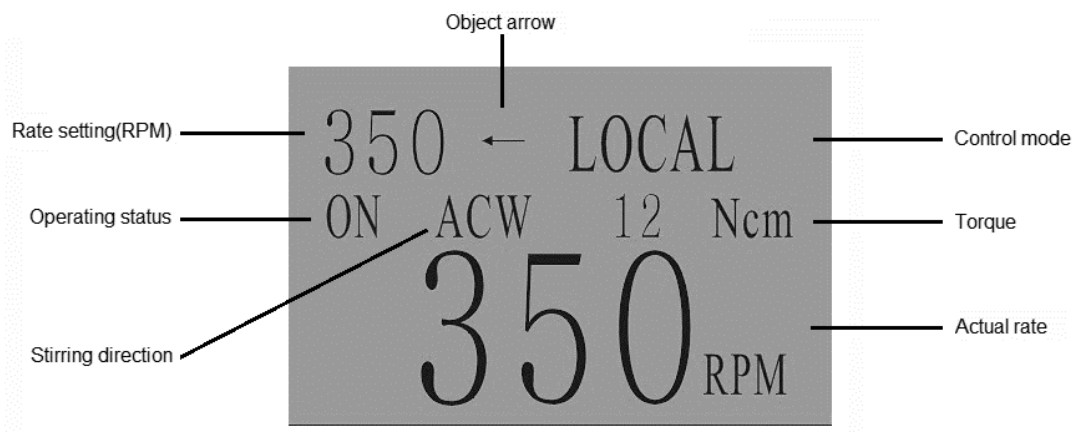


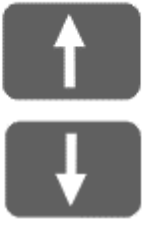



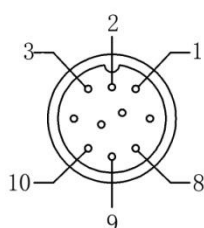
Fig. 4 LCD screen

	<p>Start/stop key: Start or stop stirrer.</p>
	<p>Menu key: Select different set objects. An arrow switches among the control modes setting, RPM setting and ACW/CCW.</p> <p>When the control mode is pointed, there are the following control modes to select with the up/down keys:</p> <p>LOCAL: Stirrer Key pad control</p> <p>ANA U: external analog voltage control, voltage range: 0~10V, corresponding set speed: 0~MAX (for example, for WB1800-C, 800 RPM).At this time speed can't be set by keypad.</p> <p>ANA I: external analog current control, current range : 0~20mA, corresponding set speed: 0~MAX (for example, for WB1800-C, 800 RPM).At this time speed can't be set by Keypad.</p> <p>FOOT: Foot switch mode. At this mode speed can be set.</p> <p>When the RPM setting is pointed to, the stirring rate can be adjusted by the up/down keys.</p> <p>When the ACW/CCW setting is pointed to, the stirring direction can be adjusted by the up/down keys.</p>

	<p>UP and DOWN keys: To select between the setting parameters in different modes.</p>
	<p>Revert key: Set the relative value of the torque measurement to zero, press the Rev key the current measurement value will be revert to zero at anytime when the motor is operating.</p>

6.1. Analog Input /Output control:

Use 0-20mA or 0-10V signal to drive the stirrer (It can also be connected to a pedal switch).Please refer to the pin assignment as following:



- 1: Ground
- 2: Output 0-10V (0-MAX TOR)
- 3: Output 0-10V (0-MAX RPM)
- 8: Input 0-20mA (0-MAX RPM)
- 9: Input 0-10V (0-MAX RPM)
- 10: Input Foot

6.2. COM connection:

The product can be connected to a personal computer to realize a remote control function. Use a standard USB cable to connect the machine to the PC, and the machine can be control through a COM port through RS-232 interface. A software is provided by the manufacture can be used to perform the control. An integration to a central control system is also possible. Please contact the dealer for further information.

CAUTION:

Stirrer adopts servo motor control and soft starting safety control. The structure of the mixer design and operation is very safe.

The stirrer adopts servo motor control, even in heavy load situation still to be able to maintain the set speed. When you open the instrument the last used speed will be displayed on the LCD screen. Stirrer adopts soft start method, when the increase or decrease key is pressed, speed will steadily increase or decrease.

Changing stirrer direction is valid in the off state. Using the same soft start method is to ensure safety of the stirrer.

If the stirrer of the load is too heavy, so it is necessary to reduce the weight of the load, restart the stirrer.

7. ROUTINE CLEANING, SERVICE, TRANSPORT&STORAGE

Cleaning

Using a mild soap and water solution, wipe the housing and control panel of the unit with a damp cloth. For heavier soiling use isopropyl alcohol.

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.

Service

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. See page 5.

Transport and Storage

Clean stirrer so that it is free from any materials which may be harmful to the health. Provide a MSDS where appropriate. Place stirrer unit and its parts into the original packing or a container with the 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, service, and handle the stirrer as outlined can cause it to fail which could impair the safety of the user.

8. WARRANTY AND PRODUCT LIABILITY

8.1Warranty

WIGGENS warrants the herein described product of its manufacture for two years from receipt of the equipment by the purchaser, against defects in material and workmanship. Warranty registration is available on-line. Point your browser to (www.wiggens.biz) or fill out the supplied warranty registration card.

This limited warranty covers parts and labor.

If the stirrer housing is opened the warranty becomes void.

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. Expendable items are not covered by this warranty. Damages due to corrosion or accidental breakage are not covered.

8.2. 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: Gässlesweg 22-24, 75334 Straubenhardt, Germany

Tel.: 0049 7248 4529088

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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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