

OPERATING MANUAL

English

High Torque High Speed Overhead Stirrer

WB3000-D/ WB1800-D/WB6000-D



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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.

Declaration of conformity EN

**We declare under our sole responsibility that this product corresponds to the directives and conforms to the following standards or normative documents:
EN ISO**

The WIGGENS Quality Management System



ISO 9001
Certificate Registration No. 01 100084841

Unpacking and Inspection

Please unpack the device carefully. Inspect them for possible damage. 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.

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1. Intended Use

To fulfill its principle task, reliable and accurate stirring process, the High Torque / High Speed Overhead Stirrers WB3000-D / WB1800-D / WB6000-D possess a brushless DC motor and latest micro-processor technology. It is easy to use and suitable for small batches, long-term experiments and programmable operations. Even large volume and high viscosity samples are also appropriate to be used with the High Torque / High Speed Overhead Stirrers. Voltage fluctuations are not a concern due to the universal power supply which offers 100-240 volts. Furthermore, the bright digital display, smart and convenient on-touch control, the totally enclosed and compact metal casing, a spinning chuck protection, precise speed adjustment and time saving impeller adjustments are features of the High Torque / High Speed Overhead Stirrers WB3000-D/WB1800-D / WB6000-D.

2. Operator Responsibility

Use

For mixing/stirring liquids with low to high viscosities 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 must 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.

APPROVALS
European

Certificate Registration No: AE 50357240 0001
Tested according to :EN61326-1:2013

2.3. Technical Specifications

Model	WB3000-D	WB1800-D	WB6000-D
Display / Control Mode	TFT Digital Display / On-Touch Control		
TFT Display Accuracy	±10rpm or 1 % of reading		
Speed Accuracy	± 10 rpm		
Torque Accuracy	± 5% in-lb.		
Speed Range	Low: 20-600 rpm High: 601-3000 rpm	Low: 12-360 rpm High: 361-1800 rpm	Low: 40-1200 rpm High: 1201-6000 rpm
Maximum Torque	339 N·cm (100 in-oz)	565 N·cm (100 in-oz)	170 N·cm (100 in-oz)
Corresponding Torque	I :339 N·cm II :68 N·cm	I :565 N·cm II :113 N·cm	I :170 N·cm II :34 N·cm
Maximum Viscosity	100000 (mPa.s / cps) -“like sour cream”	150000 (mPa.s / cps)	70000 (mPa.s / cps)
Maximum Capacity H ₂ O	100L (26.4 US gallons, 22 UK gallons)	40L (10.6 US gallons, 8.8 UK gallons)	100L (26.4 US gallons, 22 UK gallons)
Output Power	200 W		
Input to Power Supply	AC 100-240 volts, 50/60 Hz, 200VA (Must use WIGGENS supplied power supply)		
Output Voltage from Power Supply to Stirrer	DC 36V		
Output Current from Power Supply to Stirrer	10~15 A		
Mechanical Output Power	200 W, (Brushless DC Motor)		
Weight	Stirrer	4.5kg (8 lbs)	
	Power Supply	1kg (1 lb)	
Combined Housing	Splash Proof		
Operation Panel	Waterproof, Chemical Resistant Polyester		
Power Cord	1.5 m from Stirrer to Power Supply-DC		

Lengths	2.0 m from Power Supply to wall-AC		
Adjustable Chuck	Fits onto Output Shaft of Stirrer, Adjustable up to 10 mm		
Analog Input	0-20 mA and 0-10 V		
USB	Available		
Foot pedal	Available		
Order No.	100400	100600	100800

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

-  **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.

- Make certain that the unit is set at the lowest speed before commissioning; otherwise, the unit will begin running at the speed set in last operation. Gradually increase the speed.
-  **Warning!** The operation of a free rotating shaft end is dangerous.
-  **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.
- Never cover the cooling fins on the motor or on the instrument.
- 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 will stop running for a period of time.

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 $\pm 10\%$ are permissible
- Protection class according to EN 60 529: IP21
- The unit corresponds to Class I
- Overvoltage category II

4.2. Installation

4.2.1. Installing the Stand and Stirring Unit

Installation Steps



 Installing the Support Bar



- Wind the larger part of the support bar into the designated hole in the stand base
- Wind the smaller part of the support bar onto the larger part
- Install the support clamp



- Install the stirring unit onto the stand. Make sure that the clamp is tightly fixed onto the support bar and that the shaft of the stirring unit is tightly fixed onto the clamp.
- 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



Caution !



- 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.

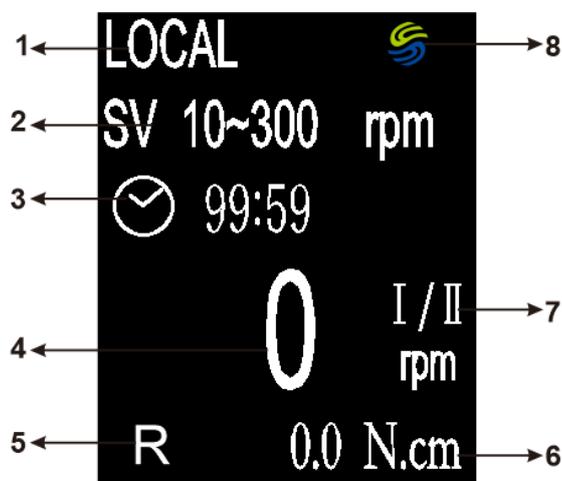
4.3. Operation

4.3.1. Overview of the Overhead stirrer



No.	Description
1	Instrument Housing
2	Rev. Key
3	Main Switch
4	Chuck
5	Adjusting Knob
6	Menu Key
7	TFT Screen

4.3.2. Display Description



No.	Description
1	Operation Mode
2	Set Speed in rpm
3	Set Time
4	Current Speed in rpm
5	Torque Reset Status
6	Current Torque in N-cm
7	Gear (I or II)
8	running status of the instrument

4.3.3. Functional Elements

Main Switch	Switch on or switch off the instrument
Adjusting Knob	<p>Pressing the knob: Start or stop the overhead stirrer.</p> <p>Twisting the knob: To adjust the parameters and control mode</p>
Menu Key	<p>Press once or more than to Select between the control mode setting, the speed setting, and the timer setting</p> <p>1. When in control setting mode:</p> <p>Press the button to select between the following modes:</p>

	<ul style="list-style-type: none">● LOCAL: Direct control via the on-touch buttons.● ANA.U: external analog voltage control, voltage range permissible is 0~10V, corresponding set speed: 0~1800/3000/6000 RPM. (speed can't be set by the keypad in this mode)● ANA.I: external analog current control, current range permissible is 0~20mA, corresponding set speed: 0~1800/3000/6000 RPM. (speed can't be set by the keypad in this mode)● FOOT: Control via foot pedal (speed can't be set by the keypad in this mode)● REMOTE: Remote control via RS485 or RS232 interface <p>Note: In remote control model when using RS485 ,the 'ADDR' 'BAUD' 'PARITY' all can be set</p> <p>Note: In remote control model when using RS232 control, only 'BAUD' and 'PARITY' can be set</p> <ul style="list-style-type: none">● SF.RPM: Set a safety speed value. In all the modes (LOCAL, ANAV, ANAI), the set speed value will be limited below the safety speed value. <p>2. When in speed setting mode:</p> <p>Press the button to set the speed rate, press to increase 10 rpm every time, press and hold to increase the value faster.</p> <p>3. When in timer setting model:</p> <p>press the button to select between the following modes:</p> <ul style="list-style-type: none">● CON: Continuous Operation● 0:00: Timer Setting (Press the Increase Button to
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	further set the Timer)
Rev Key	<p>Torque Reset Button</p> <p>When the Torque Reset Button is pressed, the current torque is set to zero. Then, the increased torque will be measured as the relative value based on this new level. Press the Torque Reset Button again and the torque value will return to the absolute value</p>

Caution!

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.

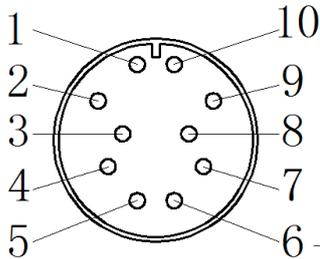
4.3.4. External Control

Besides the on-touch control, the WB3000-D / WB1800-D / WB6000-D can also be remotely controlled.

For remote control there are two operating methods available:

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 (this port is only for testing and calibration):



- 1: GND
- 2: Input 0-20mA (min-max RPM)
- 3: Input 0-10V (min-max RPM)
- 4: Input Foot
- 5: Output 0-10V (min-max RPM)
- 6: Output 0-10V (min-max N • cm)
- 7: RS-232 Tx
- 9: RS-232 Rx
- 10: GND

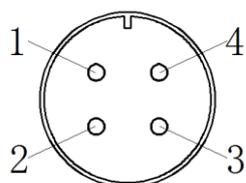
2. RS-232 Control:

Item	Input / output	Content of "#"	Meaning	Remarks
Set the equipment parameters				
Set speed	out_sp_01 #### ←	Decimal number	—	Unit: RPM
Set start/stop	out_mode_05 # ←	0	stop	
		1	start	
Set calibration mode	out_mode_08 # ←	0	normal calibration	
		1	single point calibration	
Timing sending once every 1 second, it has nothing to do with the equipment settings				
Speed	spd #### ←	Decimal number	actual speed	
Torque	tor #### ←	Decimal number	actual torque	

3. RS-485 communication control:

This machine can be connected to the computer, through the four core connector (RS-485) to control. Please refer to the following chart for pin definition (this port is only for testing and

calibration):



1. A
2. B
3. CND

The 485 communication based on the MOD Bus protocol

Note: the following parameters are HEX format

Host (PC) write data format:

Function code: 03 (read form read-write register)

04 (read form read-only register)

Device address · Function code · Starting address Hi · Starting address Lo · No. of register

Hi · No. of register Lo · CRC Lo · CRC Hi

Device returns : Device address · Function code · No. of Data Hi · No. of Data Lo · Data 1 Hi

· Data 1 Lo · CRC Lo · CRC Hi

Function code: 06 (written to the read-write register)

Device address · Function code · Starting address Hi · Starting address Lo · Data Hi · Data

Lo · CRCL · CRCH

Device returns : Device address · Function code · No. of Data Hi · No. of Data Lo · Data 1 Hi

· Data 1 Lo · CRC Lo · CRC Hi

Device address: 01~7F

Parameter address: 9C41、 9C42、 9C43、 7531、 7532(The first three is read-write register

address , after two is read-only register address)

9C41: start/stop (0 means stop; 1 means start)

9C42: out_mode_08# (0 means normal calibration; 1 means single point calibration)

9C43: set speed RPM min ~ max (speed range)

7531: current speed

7532: current torque

Number of query parameters: read contiguous address 00 01~00 04

For example: assuming that the current device address is 01

01 06 9C 41 00 01 CRCL CRCH: The parameters of the address 9C 41 are written as 00 01, you can only write one parameter at a time

01 06 9C 43 03 64 E8 CRCL CRCH: The parameters of the address 9C 43 are written as 03 E8, you can only write one parameter at a time. The set speed is 1000RPM

01 04 75 31 00 01 CRCL CRCH: read the next one parameter from begin of the address 75 31, reading current speed from device

01 04 75 31 00 02 CRCL CRCH: read the next contiguous two parameters from begin of the address 75 31, reading current speed and torque from device

4. List of Commands for External Control

out commands: The command is ended by the Carriage return, the data format following the command is ASCII, the number 1234 indicate the setting speed, is a decimal number.

Command	Parameter	Response of equipment
out_sp_01	1234	Setting the rotating speed.
out_mode_05	0	Stop running
out_mode_05	1	Start running
out_mode_06	0	Setting the rotating direction CCW
out_mode_06	1	Setting the rotating direction ACW

in commands: Asking for parameters or sending parameters periodically.

Command	Parameter	Response of equipment
Spd	None	The speed value Spd XXX is sending every one second automatically. Unit: RPM (rotation per minute)
Tor	None	The torque value Tor XXX is sending every one second automatically. Unit: N.mm

CAUTION:

Mixer adopts servo motor control and soft start and safety control, the structure of the mixer design and operation is very safe.



The WB3000-D / WB1800-D / WB6000-D adopt servo motor control and soft starting safety control. Even in heavy load situations it can still be able to maintain the set speed. When the instrument is started, the last used speed will be displayed on the TFT screen.

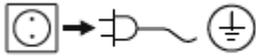
If the torque is too heavy, it is necessary to reduce the weight of the load and to restart the stirrer.

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 instruments.
- 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

Model	Rotor Ø((mm)	Shaft Ø(mm)	Length(mm)	Oder No.
 <p>Pivoting Blade Impeller Blade Heigh:18 mm</p>	50	8	300	9603
	50	8	400	9604
	50	8	500	9605
 <p>Straight 2-Blade Impeller Blade Heigh:12 mm</p>	50	8	300	9703
	50	8	400	9704
	50	8	500	9705
 <p>Straight 4-Blade Impeller Blade Heigh:12 mm</p>	50	8	300	9053
	50	8	400	9054
	50	8	500	9055
	100	10	300	9056
	100	10	400	9057
	100	10	500	9058
 <p>3-Hole Blade Impeller</p>	50	8	300	9403
	50	8	400	9404
	50	8	500	9405
	100	10	300	9406
	100	10	400	9407
	100	10	500	9408
	50	8	300	9503
	50	8	400	9504

 <p>6-Hole Blade Impeller</p>	50	8	500	9503
	100	10	300	9506
	100	10	400	9507
	100	10	500	9508
 <p>Pitched Leaf Impeller and Pitched Blade Impeller</p>	50	8	300	9003
	50	8	400	9004
	50	8	500	9005
	100	8	300	9009
	100	8	400	9010
	100	8	500	9011
	70	8	500	9012
	100	10	650	9013
	100	10	800	9014
 <p>Propeller stirrers, 3_x blades</p>	50	8	300	9103
	50	8	400	9104
	50	8	500	9105
	70	8	300	9109
	70	8	400	9110
	70	8	500	9111
	100	10	300	9112
	100	10	400	9113
	100	10	500	9114
	70	10	650	9111
	100	10	800	9116
 <p>Centrifugal Impeller Blade Heigh:10mm</p>	90/15	8	300	9209
	90/15	8	400	9210
	90/15	8	500	9211
	90/15	10	300	9212
	90/15	10	400	9213
	90/15	10	500	9214
	90/15	10	650	9215
	70	8	500	9610
	90	10	650	9611
	140	10	800	9612

Anchor Impeller				
	45	7	400	9025
	65	7	400	9026
	45	8	400	9025A
	65	8	400	9026A
Turbine Impeller				
	50	7	400	9030
	50	8	400	9031
Radial Flow Impeller				
	80	10	500	9020
	120	10	500	9021
Multi-Purpose Impeller				

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

Description	Model	Height(mm)
	WF11	550
	WF12	750

 <p>Dimensions (W x D): 315X200mm Max. load: 5 kg</p>	WF13	950
 <p>Dimensions (W x D): 315X200mm</p>	WF11-D	550
	WF12-D	750
	WF13-D	950
 <p>Material: Aluminum, stainless steel Dimensions (W x D): 340X300mm</p>	WH11-S	550
	WH12-S	750
	WH13-S	950
 <p>Material: Aluminum, stainless steel</p>	WH11-D	550
	WH12-D	750
	WH13-D	950

Dimensions (W x D): 340X300mm		
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8. Service

8.1. Trouble-Shooting

Cause	Remedy
After switching on the unit, the display shows no light and the stirrer does not react to any input	<ol style="list-style-type: none"> 1. Ensure that the mains electricity plug is plugged into a working socket outlet and check if the main switch is in the “on” position 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 display lights up but shows the error message “OH”	<ol style="list-style-type: none"> 1. 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

Please send in instrument for repair only after it has been cleaned and is free from any materials which may constitute a health hazard. For repair, please request the “**Decontamination Certificate**” form **WIGGENS**.

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

Room 303, Hall C, Office Building M8, No. 1 Jiuxianqiao East Road, Chaoyang District, Beijing 100015, China

Tel: +86 400-809-2068

Fax: +86 400-809-2068-112

info@ wiggens.com

service@wiggens.com

www.wiggens.com

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 _____

Has the device been cleaned, decontaminated/sterilized?

Yes
 No

2. 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?

3. 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, first name _____

Company _____

Department, research group Street _____

Zip code, city _____

Country _____

Phone _____

E-mail
