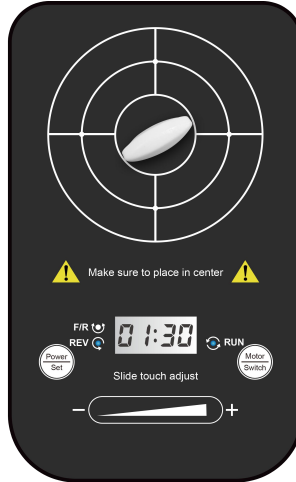


STALWART

SUM-15 Ultra-thin magnetic stirrer

Operating Manual



Annex C SUM-15 Warranty card

Description of Commodity	Ultra-thin magnetic stirrer
Type	SUM-15
Factory Number	MU-E
Purchase Date	Dec.2019
Buyer Company	
Buyer Name	
Address	
Telephone	
Fax	
Zip Code	
E-mail	

Warranty Description

Within one month of delivery, the company is responsible of exchange for breakdown caused by material or manufacture.

Within 12 months of delivery, the company is responsible of free repair for breakdown caused by material or manufacture. Proven with defect under warranty, the company will exchange the instrument or free repair it alternatively.

Warranty Coverage

Breakdown due to improper use, operation in inappropriate conditions, maintain or refitting without authorization are not in warranty coverage.

Repair after warranty will be charged reasonable cost.

Date	Repair Record	Repaired by

[Foreword]

Thank you for purchasing the SUM-15 Ultra-Thin Magnetic Stirrer. This user manual contains instrument functions and operation procedures. To ensure the correct use of the instrument, please read the manual carefully before operating the instrument. Keep the manual in a safe place so that you can read it quickly if you encounter problems.

[Check]

When the user opens the instrument box for the first time, please check the instrument and accessories against the packing list. If you find that the instrument or accessory is wrong, or the accessory is abnormal, please contact the seller or manufacturer.

[Important]

1. Important operation information of the security

Users should have an entire conception of how to use the instrument properly before operating it. Please read this operation manual carefully before using the instrument.

2. Security

The operation, maintenance and repair of the Instrument should comply with the basic guidelines and the remarked warning below. Otherwise, it will affect the scheduled using life of the Instrument and the protection provided.

This product is a normal and an indoor Instrument which conforms to Standard B style- I type- GB9706.1.



The operator should not open or repair the instrument by himself. Otherwise, the instrument will lose the qualification of repair guarantee or cause accidents. The company will repair the instrument based on warranty description.



Before connecting the power supply, make sure that the voltage of the power supply is consistent with the voltage required by the instrument. And make sure that the rated load of the power socket is not less than the requirements of the instrument.



If the power cord is damaged, it must be replaced. It must be replaced with a power cord of the same type and specification. Do not place anything on the power cord when using the instrument. Do not leave the power cord where people are moving.



Be sure to hold the plug when plugging or unplugging the power cord. When inserting the plug, make sure that the plug is fully inserted into the socket, and do not pull the power cord hard when pulling out the plug.



The instrument should be placed in a place with low humidity, little dust, and away from water and direct sunlight. Strong ventilation should be provided in the room without corrosive gases or strong magnetic fields. Keep away from heating, stoves and all other heat sources. Do not place the instrument in a humid or dusty place.



Turn off the power when you stop working. When not using the instrument for a long time, unplug the power plug and cover the instrument with a soft cloth or plastic paper to prevent dust from entering.



Annex A SUM-15 Packing List

No.	Name	Type	Quantity	Remarks
1	Ultra-thin magnetic stirrer	SUM-15	1	
2	USB cable		1	
3	Plug		1	
4	Performance Test Statement		1	
5	Operation Manual		1	
6	Warranty Card		1	
Charger:			Packing Date:	

Annex B SUM-15 Performance Test Statement

Name	Ultra-thin magnetic stirrer		Type	SUM-15	
Test Date			Production No.	MU-C188-0001	
No.	Test Content	Test Methods	Standard	Conclusion	
1	Basic Function	Visualization	Valid	<input type="checkbox"/> Qualified	
2	Appearance Demand	Visualization	Valid	<input type="checkbox"/> Qualified	
3	Outer Marks	Visualization	Valid	<input type="checkbox"/> Qualified	
4	Continuous Experiment	Experimental operation	72 hours without trouble	<input type="checkbox"/> Qualified	
Test Results					
Tester:			Confirmer:		

Chapter 5 Failure Analysis and Trouble Shooting

Failure Analysis and Processing Procedures

No.	Phenomenon	Possible causes and corresponding countermeasures
1	After running, the stirrer does not turn	Hardware failure, return to factory for repair
2	The display screen is not bright and abnormal	Hardware failure, return to factory for repair
3	Button failure, sliding touch adjustment failure	Hardware failure, return to factory for repair

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In the following cases, immediately unplug the power plug of the instrument from the power outlet, and contact the supplier or ask trained service personnel to deal with it:



- Liquid spilled into the instrument;
- The instrument is exposed to rain or water;
- The instrument is not working properly, especially if any abnormal sound or odor appears;
- The instrument has been dropped or the casing has been damaged;
- The function of the instrument has changed significantly.

3. Cleaning and maintenance

1. The case should be cleaned with a neutral soap solution. (Avoid strong alkali, strong alcohol and organic solvent solutions)

Warranty Description

Within one month of delivery, the company is responsible of exchange for breakdown caused by material or manufacture.

Within 12 months of delivery, the company is responsible of free repair for breakdown caused by material or manufacture. Proven with defect under warranty, the company will exchange the instrument or free repair it alternatively.

Warranty Coverage

Breakdown due to improper use, operation in inappropriate conditions, maintain or refitting without authorization are not in warranty coverage.

Repair after warranty will be charged reasonable cost.

Chapter 4 Operation Guide

1. Instructions

1) Power switch / option key function (Figure 1):

- a) When the instrument is powered on, press this button to start up and the screen will display.
- b) Shortly press this key after switching on to switch the target speed or target time. Slide the touch to adjust to decrease or increase the set value.
- c) Long press this key, instrument will shut down, screen does not display.



Figure 1

2) Operation/counterclockwise or clockwise switch key function (Figure 2) :

- a) After the instrument is turned on, short press this key to switch the instrument to run or stop.
- b) Long press this button, you can switch to the anti-clockwise or clockwise anti-clockwise stirring mode, and the indicator light will be lit accordingly (figure 3 and figure 4).



Figure 2



Figure 3 (clockwise and counterclockwise) Note: The recommended speed is less than 1000rpm; Adjustable according to solution.



Figure 4 (counterclockwise) Note: The recommended speed is less than 1400rpm; it can be adjusted according to the solution

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Chapter 1 Introduction

1. Product description

Ultra-thin magnetic stirrer can accurately and stably stir liquids in a wide range. It is especially suitable for small volume samples. It is an essential tool for petroleum, chemical, environmental protection, education and scientific research.

2. Features

1. Ultra-light and Ultra-thin, easy to store and save laboratory space.
2. Advanced non-wearing magnetic coil technology, quieter and more stable operation, longer service life.
3. Portable power supply, convenient for outdoor use, not limited by experimental conditions.
4. Counterclockwise and clockwise stirring functions can be switched to make the stirring more uniform and meet a variety of experimental needs.
5. The LCD screen displays the parameters in real time, the LED indicator shows the working status, and the instrument running status is more intuitive.
6. Touch buttons and sliding touch adjustment, durable, novel and stylish.
7. Dust and water proof, high protection level (IP65).

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3) Slide touch adjustment function (Figu 5) :

When setting the target speed (step: 10rpm) or target time (step: 5min), you can modify the target value by sliding touch adjustment, slide left to decrease the target value, and slide right to increase the target value.



Figure 5 (sliding touch adjustment)

- Annex A SUM-15 Packing List
- Annex B SUM-15 Performance Test Statement
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Chapter 2 Product Features

1. 1.The Normal Operation Condition

Ambient Temperature: 5°C~45°C
 Relative Humidity:≤70%
 Power: DC 5V 1A

2. Basic parameters and performance

Model	SUM-15
Max. stirring amount (H2O)(H2O)	1L
Motor output power	3W
Speed adjustable range	20 ~ 1500rpm(Increment : 10rpm)
Clockwise/counterclockwise stirring intermittent time (except single direction stirring)	45S/5S
Timing Range	0 ~ 9Hours(Increment : 5min 0 is forever)
Display method	LCD
Platform material	PVC
Platform Size	Φ110
Dimensions	W.110×D.180×H.14.5mm
Weight	0.18Kgs
Voltage	DC 5V 1A
IP Rating	IP65

Chapter 3 Basic Operation Instructions

This chapter mainly introduces the structure of the instrument and the basic operation of the instrument, as well as preparations before starting up. When using the instrument for the first time, familiarize yourself with this chapter before turning it on.

1. Panel overview

