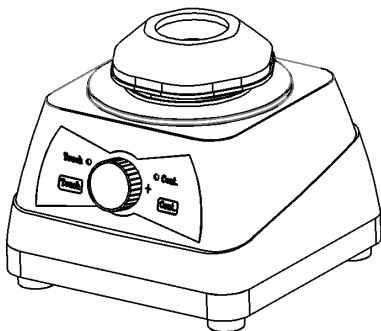
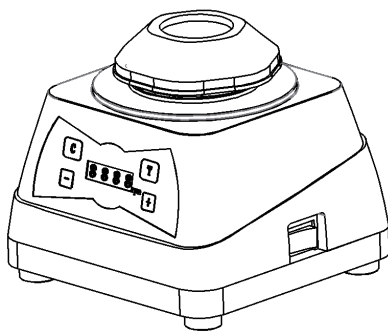


# User's Manual of **Vortex Mixer**



◇ SMV-3500 (Knob type)



◇ SMV-4500B (Button type)

# Key Directions

## ■ The Practice

**Note:** Note that the item contains particularly important information, please read it carefully. If you do not follow the instructions, it may cause the device damaged or not functioning properly.

**WARNING!** A WARNING message calls for special caution in a procedure or method. If not properly followed, it may result in serious personal injury

## ■ Safety

When operating, maintaining and repairing this instrument, the following basic safety measures must be observed. Failure to observe these precautions or other warnings indicated in this instruction manual could compromise the protection provided by the instrument. At the same time, it may violate the safety standards of design and manufacture and the intended range of use of the instrument.

Wuhan Servicebio Technology Co., Ltd. shall not bear any responsibility for all consequences caused by the user's non-compliance with the following requirements:

**Note:** This instrument is a product for indoor use.

### a) Keep away from live circuits

Operators are not allowed to disassemble the instrument without authorization. Replacement of components or internal adjustment must be done by certified professional maintenance personnel. Do not replace components with the power cord connected.

### b) Pay attention to the use of power

Before connecting the AC power supply, make sure that the voltage of the power supply is consistent with the voltage required by the instrument ( $\pm 10\%$  deviation is allowed). And make sure that the rated load of the power socket is not less than the requirements of the instrument.

### c) Pay attention to the placement of the instrument

The instrument should be placed in a place with low humidity, less dust and far away from water sources (such as near pools, water pipes, etc.) and strong light sources. The room should be well ventilated, free from corrosive gas or strong magnetic field interference, and away from heating equipment and other heat sources. Do not place the instrument in a humid or dusty place.

When the instrument is not used for a long time, unplug the power plug, and cover the instrument with a soft cloth or plastic paper to prevent dust from entering.

**Note:** Under the following circumstances, immediately unplug the power plug of the instrument from the power outlet, and contact the supplier or ask a qualified maintenance personnel to deal with:

- ◆ 1 There is liquid spilled into the instrument;
- ◆ 1 The instrument is exposed to rain or water;
- ◆ 1 The instrument is not working properly, especially if there is any abnormal sound or smell;
- ◆ The instrument is dropped or the shell is damaged;
- ◆ The function of the instrument has changed significantly;

## ■ Module installation and instrument maintenance

When fixing or replacing the tray, use a professional hex wrench to tighten the four screws to fix the tray. When tightening the screws, the force should be as uniform as possible, and at the same time, ensure that each screw is tightened.

If the surface of the instrument is stained, it can be cleaned with a soft cloth soaked in water and wrung out.

**Warning!** When cleaning the surface of the instrument, the power must be cut off.

The surface of the instrument is strictly prohibited to be cleaned with corrosive cleaning agents.

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# Chapter 1 Introduction

The vortex mixer is easy to operate and widely used in medicine, biochemistry, genetic engineering, medicine and other research fields. necessary common instruments. This product has the following features:

- ◆ Easy to operate, two safe operation modes "jog" and "continuous" can be switched at will;
- ◆ The maximum speed of the knob type is 3500RPM; the maximum speed of the button type is 4500RPM, stepless speed regulation;
- ◆ The vibration module is easy to install;
- ◆ Silicone foot pads, super shockproof, suitable for high-speed work;
- ◆ A variety of vibration module adapters are available;
- ◆ Button models have speed display;

# Chapter 2 Features

This chapter mainly introduces the use, transportation and storage conditions of the instrument, as well as the basic parameters, performance and functions of the instrument.

## 1 Normal working conditions

Ambient temperature: 5° C~40° C

Relative humidity: ≤ 80%

Input power supply: AC100V ~ AC240V

AC frequency: 50Hz/60Hz

Output power: 24V 1.5A 36W

Note: Before using the instrument, please confirm whether the working conditions meet the above requirements.

## 2 Transport and storage conditions

Ambient temperature: -20°C ~+55°C

Relative humidity: ≤ 80%

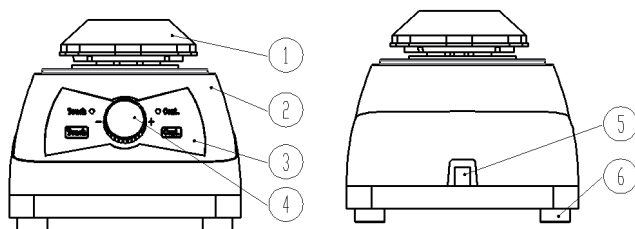
## 3 Basic parameters

Items	Parameters
Model	SMV-3500 (Knob type) SMV-4500B (Button type)
Speed setting range	Knob type 260-3500RPM Button type 260-4500RPM
Oscillation mode	Circumference
Operation mode	Jog/continuous operation
Motor type	DC brushless motor
Input power	36W
Voltage	AC100-240V/50-60Hz
Dimensions	140 × 140 × 127mm
Weight	4.4kg

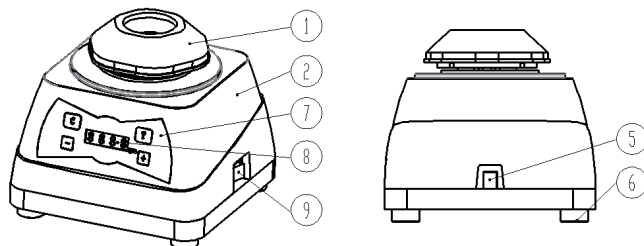
## Chapter 3 Machine Description

### 1 Structure diagram

#### 1.1 Knob type



#### 1.2 Button type



- ① Standard slot ② Machine body ③ Membrane switch ④ speed adjustment knob  
⑤ Power jack ⑥ Floor mat ⑦ Keyboard ⑧ Speed display screen ⑨ Rocker switch

### 2 Optional accessories

Model	Description
SMX-H	Silicone(Aperture<108mm)
SMX-A	Silicone(Aperture<30mm)
SMV-0296	Suitable for 96-well PCR plate,8-strip PCR tubes
SMV-0220	Suitable for 1.5mL,2mL centrifuge tubes
SMV-1504	Suitable for 15mL centrifuge tubes
SMV-5002	Suitable for 50mL centrifuge tubes

If you need to customize other types of modules, please contact the supplier.

### 3 Installation Instructions

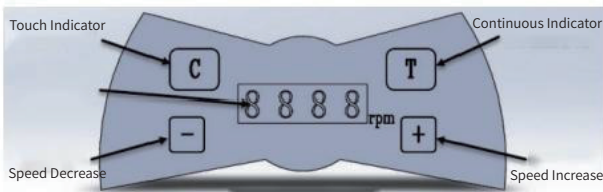
1. Ensure a good working environment, no explosive dangerous goods and flammable substances.
2. Open the package, check whether the accessories of the instrument are complete, and place the instrument on a horizontal workbench.
3. If you use multiple instruments at the same time, please keep a distance of more than 10cm between each instrument.
4. Before the instrument is powered on, please keep the input voltage in line with the product standard.
5. Before installing accessories, please cut off the power supply, gently remove the original accessories, and then connect the accessories to be replaced with screws. Before turning on the instrument each time, please confirm that the instrument and its accessories are not damaged.

## Chapter 4 Operation Guide

1. Place the instrument on a stable horizontal workbench, confirm that the speed adjustment knob is at zero, and connect to the power supply.
2. The machine defaults to the inching mode when it is turned on, and it needs to be in the constant motion mode by clicking the constant motion button.
3. The switch and speed adjustment of the knob type are realized by the knob. When the speed is adjusted to 0, continue to rotate to the left until the limit, the indicator light goes out, and the instrument is turned off.
4. The button switch is controlled by the ship switch, and the speed adjustment is controlled by the -/+ symbol on the interface.
5. When mixing, press the bottom of the centrifuge tube down on the center of the oscillating head to mix the samples in the tube.
6. Please turn off the power when the instrument is not in use.
7. When replacing the adapter, remove the standard head, place the required adapter base on the tray, and fix it with screws to ensure that the screws are tightened so as not to affect the operation of the instrument.



Operation interface(Knob type)



Operation interface(Button type)

## Chapter 5 Precautions

- 1 The main components of this series of products are fragile. Be careful not to bump or drop the product during packaging, transportation and use, which may cause damage to the product or cause the product to fail to use normally.
- 2 After daily use, please wipe off the water stains and dust on the surface of the instrument in time.
3. When using a circular adapter, due to the high center of gravity, please lightly press the instrument with an object at the beginning of the instrument operation to ensure that the centrifuge tube will not move, and release it until the instrument runs smoothly.
4. The adapter is a consumable item. Please replace it in time when the fixing hole becomes loose, so as not to affect the use.

## Chapter 6 Warranty Card and Maintenance Records

### Warranty Card

Username		Tel	
Device model		Serial number	

Warranty date	Fault and maintenance records	Date	Maintenance worker

