

# Vortex Mixer

## User Manual

Adjustable Speed Vortex

Fixed Speed Vortex

*Please read the User Manual carefully before use,  
and follow all operating and safety instructions!  
Technical specifications and outline are subject to  
change without prior notice.*



Ver.20180830

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## **Preface**

Welcome to the “Vortex Mixer (Adjustable and Fixed Speed Models) User Manual”. Users should read this manual carefully, follow the instructions and procedures, and beware of all the cautions.

## **Service**

When help needed, you can always contact the service department of manufacturer for technical support in the following ways:

Please provide the customer care representative with the following information:

- Serial Number (on the bottom panel)
- Certification
- Description of problem
- Methods and procedures adopted once to resolve the problems
- Your contact information

## **Warranty**

This instrument is warranted to be free from defects in materials and workmanship under normal use and service, for a period of 24 months from the date of invoice. The warranty is extended only to the original purchaser. It shall not apply to any product or parts which have been damaged on account of improper installation, improper connections, misuse, accident or abnormal conditions of operation.

For claims under the warranty please contact your local dealer. You may also send the instrument direct to our works, enclosing the invoice copy and by giving reasons for the claim.

# 1. Safety Instructions



## Warning!

- Read the operating instructions carefully before use.
- Ensure only trained staff uses the instrument.



## Protective ground contact!

- Make sure the socket is grounded before use.

- Wear the personal safety items to avoid the risk from
- Splashing of liquids.
- Mechanical vibration may lead to glass breakage.
- Trapping parts of the body, hair or pieces of clothing in the moving parts.
- During manual manipulation:
  - Keep medium vessels vertical as much as possible.
  - Mix the medium in the minimum pressure required.
  - Use attachment supplied when mixing a mass of different medium.
- Set up the instrument in a spacious area on a stable, clean, non-slip, dry and fireproof surface. Do not operate the instrument in explosive atmospheres, with hazardous
- Put the speed control knob to the lowest position. Gradually increase the speed (adjustable speed model),

reduce the speed if:

- The medium splashes out of the vessel because of **too** high speed.
- The instrument is not running smoothly or moves on the stage.
- Safe operation is only guaranteed with the accessories described in the “Accessories” chapter.
- Accessories must be securely attached to the instrument and can not come off by themselves.
- Check the instrument and accessories before each use. Do not use damaged components.
- Place a vessel at the center of the mixing head and spread out others uniformly.
- A sharp edged vessel can wear-out the mixing head.
- Always disconnect the plug before fitting accessories.
- The instrument may heat up when in use.
- The operating voltage required on the label and voltage supply network must match.
- Protect the instrument and accessories from bumps and impacts.
- The instrument may only be opened by qualified and trained technician.

## 2. Proper use

The instrument is designed for mixing liquids in schools, laboratories or factories. This device is not suitable for use in residential areas or other areas that may cause danger to the user or instrument as mentioned in Chapter 1.

## 3. Inspection

### 3.1 Receiving Inspection

Unpack the equipment carefully and check for any damages which may have arisen during transport. Please contact manufacturer/supplier for technical support.



**Note:**

If there is any apparent damage to the system, please do not plug it into the power line.

## 3.2 Listing of Items

Package includes the following items:

Items	Qty
Main unit	1
User manual	1

Table 1

Please retain all packing materials. Additional shipping charges will be assessed if packing is unavailable for the system warranty service.

## 4. Trial run

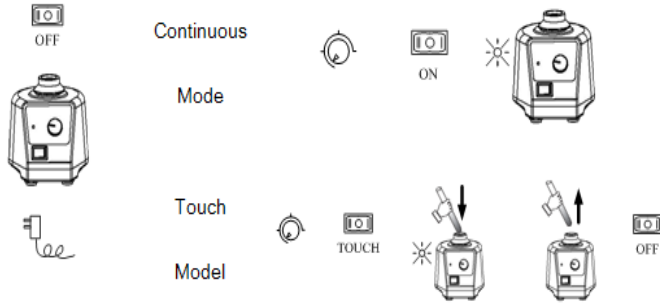


Figure 1



**Note:**

Ensure that the two-direction switch must be in the middle (off state) before powering on.

If these operations above are normal, the instrument is ready to operate following the “operation” chapter. If these operations are not normal, the instrument may be damaged. Please contact manufacturer/supplier for technical support.

## 5. Operation



Figure 2

### 5.1 Continuous operating

**ON**



**OFF**



Figure 3

- Place speed control knob at the lowest position. Put the

instrument on a stable and safe place and plug in the main power.

- Push the two-direction switch left to ON and power LED is lit.
- Turn the speed control knob to set speed (Adjustable speed model).
- Push the two-direction switch right gently to turn OFF.

## 5.2 Touch operating



Figure 4

- Place the speed control knob at the lowest position. Put the instrument on a stable and safe place and plug in the main power.
- Push the two-direction switch right to the touch mode.
- Turn the speed control knob to set speed (Adjustable speed model).
- If a test tube is pressed into the mixing head vertically, the instrument will begin to work and the power LED

will be lit.

- Push the two-direction switch left gently to OFF.



**Note:**

- Place vessels as vertical as possible into the center of mixing head for proper mixing.
- Adjust the speed control knob slowly in order to have the instrument works smoothly.
- Don not run continuous operating mode at high speed area.

## 6. Maintenance and cleaning

- Proper maintenance can keep instrument working and extend its life time.
- Do not spray the cleanser into the instrument when cleaning.
- Unplug the power line when cleaning.

- Only use cleanser as shown below:

Dyes	isopropyl alcohol
Construction materials	water containing tenside / isopropyl alcohol
Cosmetics	water containing tenside / isopropyl alcohol
Foodstuffs	water containing tenside
Fuels	water containing tenside

**Table 2**

- For materials which are not listed, please request information from manufacturer/supplier.
- Before using other method for cleaning or decontamination, the user must ascertain with the manufacturer/supplier whether this method will not harm the instrument.
- Wear the proper protective gloves during cleaning of the instrument.



**Note:**

- Electrical instruments may not be placed in the cleansing agent.
- The instrument is a sophisticated electronic product, please avoid severe shaking during use and transportation.

- The instrument must be cleaned and put it into the initial packaging carton before sending for service, avoid contamination.
- Switch OFF the instrument and put it in a dry, clean, stable place at room temperature in long-term disuse.

## 7. Associated standards and regulations

Construction in accordance with the following safety standards:

EN 61010-1

Construction in accordance with the following EMC standards:

EN 61326-1



Associated EU guidelines:

EMC-guidelines: 89/336/EWG

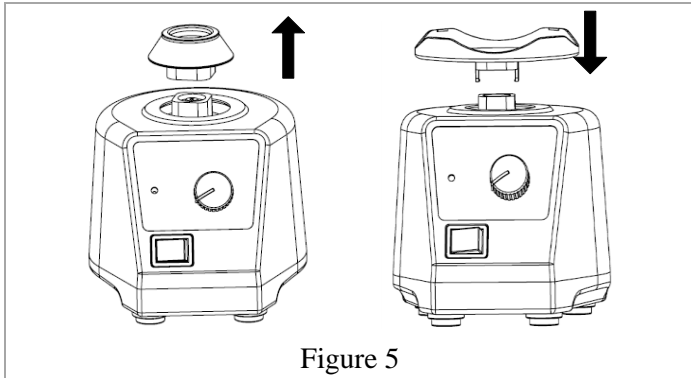
Instrument guidelines: 73/023/EWG

## 8. Technical data

Items	Specifications
Voltage [VAC]	220-230 / 110-120
Frequency [Hz]	50, 60
Power [W]	60
Shaking movement	orbital
Orbital diameter [mm]	4
Motor type	Shaded-pole motor
Motor rating input [W]	58
Motor rating output [W]	10
Speed range [rpm]	0-2500(Adjustable speed model) 2500(Fixed speed model)
Speed display	Scale
Run type	Continuous/touch operation
Dimensions (mm)	127×130×160

Items	Specifications
Weight [kg]	3.5
Permitted ambient temperature[°C]	5-40
Permitted relative humidity	80%
Protection class acc. to DIN 60529	IP21

***Changing attachment:***



## 9. Applications

Attachments	Fixed speed model (2500rpm)		Adjustable speed model (0-2500rpm)	
	Touch mode	Continuous mode	Touch mode (High speed area)	Continuous mode (Low speed area)
VTI.1	Y	Y	Y	Y
VTI.2 + VT1.3.1	Y		Y	
VTI.2 + VT1.3.2	Y		Y	
VTI.2 + VT1.3.3	Y		Y	
VTI.2 + VT1.3.4	Y		Y	
VTI.2 + VT1.3.5	Y		Y	
VTI.3 + VT1.3.6	Y		Y	
VTI.3 + VT1.3.1				Y
VTI.3 + VT1.3.2				Y
VTI.3 + VT1.3.3				Y
VTI.3 + VT1.3.4				Y
VTI.3 + VT1.3.5				Y

# 可调式/固定式混匀仪

## 使用说明书

可调式混匀仪

固定式混匀仪



请仔细阅读说明书，并在说明书的操作指导下安全使用本仪器。

外形和性能指标如有变动，概不另行通知。

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## 前言

欢迎使用《可调式/固定式混匀仪使用说明书》。用户应仔细阅读本说明书，了解各种注意事项，并按照说明书指导进行相应操作。

## 如何获取帮助

如果您在安装和使用可调式/固定式混匀仪的过程中遇到任何问题或需要帮助，请及时与制造商/供货商的售后服务部门取得联系，制造商的联系方法如下：

请您准备以下资料：

- 产品序列号（在仪器底板上）
- 质保卡
- 问题现象的描述
- 您为了解决问题所采取的方法及操作步骤
- 您的电话、传真、Email 地址等联络方式

## 质量保证书

根据制造商的质量保证条款，在本说明书规定的正常使用条件和操作方法下使用该仪器时，该仪器的保修期为 24 个月（自购买之日起）。由于错误安装与操作、私自拆卸与维修以及其他违反说明书中规定的操作条款造成的仪器性能下降和损坏，不能按照本质量保证进行保修。如出现质保条款中的相关问题，请联系制造商/供货商。

# 1. 安全事项



## 警告!

- 操作仪器前请认真阅读本操作手册并遵守安全操作规范。
- 经过专业培训的人员才能操作本仪器。



## 安全接地保护!

- 为保证安全，使用本仪器前请确认电源插座良好接地。

- 工作时，请穿戴防护工作服装，否则可能由以下事项引发危险：
  - 振荡液体飞溅
  - 机械振荡力导致玻璃容器破碎
  - 身体，头发，衣服和首饰等被卷入
- 手工操作时
  - 保持样品管尽可能的竖直
  - 混合过程中请施加所需最小的压力
  - 处理多个样品时请使用配件
- 请把仪器置于宽敞通风的区域内，并确保工作台平稳、干净、防滑、干燥和防火，请勿在易爆的环境中、危险物质或水下操作使用本仪器。
- 开始工作前，请把调速旋钮调至最低，并逐渐增大转速(可调式)。
- 如果振荡过程中仪器产生共振，请尽快降低转速。
- 出现以下情况必须降低转速：
  - 转速过高导致液体溅出

- 仪器转动不平稳或开始移动
- 请使用“配件”章节中列出的标准配件，以确保安全。
- 配件应牢固安装，避免振荡容器损坏或甩出。
- 每次工作前检查仪器和配件是否损坏，不要使用已损坏的部件。
- **用附件振荡单个样品时请将振荡容器置于中心位置,振荡多个样品时将振荡容器平均分布于配件上。**
- 避免使用边缘锋利的容器磨损混匀头。
- 安装配件之前请先断电。
- 仪器使用过程中可能会发热。
- 确保电源电压跟铭牌要求一致。
- 防止撞击和挤压仪器或配件。
- 只有经过专业训练的人员才能打开本仪器。



## 2. 使用范围

本仪器是为学校、实验室和工厂等应用环境设计的，用于对液体进行搅拌。本仪器不适合在住宅区以及第 1 章中规定的一些限制条件下应用。

## 3. 检查

### 3.1 开箱检查

用户如发现任何包装损伤，请在收据上注明。在打开包装后如果发现任何内部损伤，请联系制造商/供货商。



**注意：**

如发现仪器上有任何明显的损伤，请不要将其连接到电源。

### 3.2 装箱清单

名称	数量
主机	1 台
使用说明书	1 本

表 1

请妥善保管仪器的包装材料以备返厂维修时使用。

## 4. 试运行

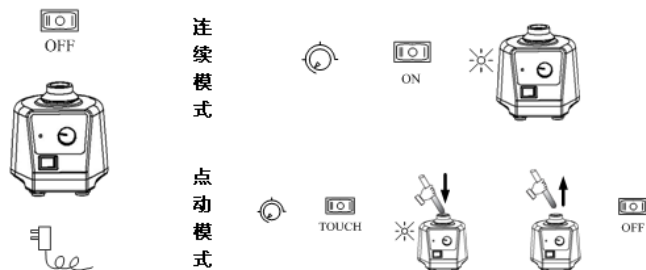


图 1



**注意：**

接入电源之前请确保双向开关置于中间关闭状态。

如果上述操作运行正常，则仪器可以开始正式使用。如果无法正常运行，仪器可能已损坏，请联系制造商/供货商。

## 5. 操作



图 2

### 5.1 连续工作模式



图 3

- 将混匀仪置于安全平稳处，确认速度调节旋钮处于零位，接入电源。
- 向左推动双向开关至 ON 处，工作指示灯 POWER 亮，仪器开始运行。
- 旋转速度调节旋钮，设置需要的转速(可调式)。
- 向右推动双向开关至 OFF 处，工作指示灯 POWER

熄灭，关闭仪器。

### 5.2 点动工作模式



图 4

- 将混匀仪置于安全平稳处，确认速度调节旋钮处于零位，接入电源。
- 向右推动双向开关至 TOUCH 处。
- 旋转调节旋钮，设置需要的转速(可调式)。
- 用试管垂直压下夹具，仪器开始运行，同时工作指示灯 POWER 亮。
- 向左推动双向开关至 OFF 处，关闭仪器。

#### 注意：



- 试管等容器应尽量垂直压入振荡头中央，使混匀仪工作平稳进行。
- 缓慢旋转电机调节旋钮，使仪器平稳运行。
- 请勿在高速区使用连续工作模式。

## 6. 维护和清理

- 正确地使用和维护混匀仪，使其处于良好的工作状

态，以延长使用寿命。保持仪器整洁，切勿将溶液流入机内。

- 维护和清理之前必须断电，请使用我们推荐的方法清理仪器。祛除方法：

染料	异丙醇
建筑材料	含活性剂的水溶液/异丙醇
化妆品	含活性剂的水溶液/异丙醇
食物	含活性剂的水溶液
燃油	含活性剂的水溶液

- 没有列出的材料，请先咨询制造商售后服务部门。
- 在采用其他清理方法之前，用户必须与制造商/供货商确认该方法不会损坏仪器。
- 清理时，请戴上防护手套。



**注意：**

- 电子设备不能用清洁剂清理。
- 本仪器属精密电子产品，工作及运输时避免剧烈震动。
- 送修仪器前必须清理，避免危险物质的污染，请把仪器放回原始包装箱发送。
- 当产品长期不用时，请将仪器断电存放，并置于干燥、洁净、常温、平稳的环境。

## 7. 相关标准

仪器结构符合以下安全标准：

EN 61010-1

仪器结构符合以下电磁兼容标准：

EN 61326-1

符合以下欧盟标准

EMC 标准： 89/336/EWG

仪器标准： 73/023/EWG

## 8. 技术参数

项目	参数
电压 [VAC]	200-240 / 100-120
频率 [Hz]	50, 60
功率 [W]	60
运行方式	圆周
周转直径 [mm]	4
电机类型	罩极电机
电机输入功率 [W]	58
电机输出功率 [W]	10
速度范围 [rpm]	0-2500（可调式）
转速显示	刻度
运行方式	点动 / 连续运转

项目	参数
外形尺寸 [mm]	127×130×160
重量 [kg]	3.5
允许环境温度 [°C]	5-40
允许相对湿度	80%
保护等级	IP21

更换配件:

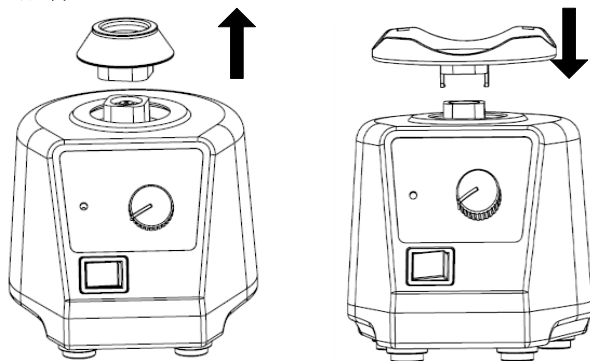


图 5

## 9. 应用

附件	固定式 2500rpm		可调式 0-2500rpm	
	点动	连续	点动 (高速区)	连续 (低速区)
VTL1	Y	Y	Y	Y
VTL2 + VT1.3.1	Y		Y	
VTL2 + VT1.3.2	Y		Y	
VTL2 + VT1.3.3	Y		Y	
VTL2 + VT1.3.4	Y		Y	
VTL2 + VT1.3.5	Y		Y	
VTL3 + VT1.3.6	Y		Y	
VTL3 + VT1.3.1				Y
VTL3 + VT1.3.2				Y
VTL3 + VT1.3.3				Y
VTL3 + VT1.3.4				Y
VTL3 + VT1.3.5				Y

