

# Twister

No. 1820-0000 / 1820-1000

## Bedienungsanleitung

*Instruction manual • Mode d'emploi • Istruzioni d'uso*

*Instrucciones para el servicio • Gebruiksaanwijzing*

*Instrukcja obsługi • Инструкция по эксплуатации*

操作手冊 • 取扱説明書 • 사용설명서 • إرشادات التشغيل



# Twister

## No. 1820-0000 / 1820-1000

ENGLISH

## 1. Introduction

We are pleased with your decision to purchase a *Twister* vacuum mixer.

Please observe the following information in order to ensure long and trouble-free service.

## 2. Application Area

The *Twister* vacuum mixer is designed for homogeneous, bubble-free mixing of only dental casting and modelling materials such as plasters, investments, and silicons.

### 2.1 Environmental Conditions (according to DIN EN 61010)

The device may only be operated:

- In interior areas;
- Up to an altitude of 2,000 m above sea level;
- At an ambient temperature range between 5-40°C [41-104°F];
- At a maximum relative humidity of 80% at 31°C [87.8°F], dropping in a linear manner to 50% relative humidity at 40°C [104°F];
- At mains power fluctuations where the voltage fluctuations do not exceed 10% of the nominal value;
- At contamination level 1.

## 3. Safety Information

- **Before starting the device, compare the information on the nameplate with the specifications of your local power supply.**
- **Immediately replace damaged power cords.**
- **Only authorized service personnel may perform repairs to the open device.**
- **Disconnect the device from the power supply before beginning any maintenance work.**
- **Manipulating the automatic bowl coupler and the intake opening can result in damage to the device and personal injury.**
- **The device may only be used to mix plaster, investment, and silicon.**
- **Never connect the paddle without the mixing bowl.**

### 3.1 Liability Exclusion

Renfert GmbH shall be absolved from all claims for damages or warranty if:

- The product is employed for any purposes other than those cited in the operating instructions;
- The product is altered in any way other than

those alterations described in the operating instructions;

- The product is repaired by other than an authorized facility or if any but Renfert OEM parts are employed;
- The product continues to be employed, despite obvious safety faults;
- The product is exposed to mechanical shocks or is being dropped.

## 4. Installation

### 4.1 Wall Mounting (with set enclosed)

Please have the following items on hand: pencil, drill template, Phillips head screwdriver, drill + drill bit 8 mm [0.3152 inch] - appropriate for the wall material.

**Make sure the wall on which you intend to mount the device is capable of bearing its weight.**

1. Determine the optimum operating height (Fig. 1).
2. Align the drill template and mark the drill holes (Fig. 2).
3. Drill the required holes (with an 8 mm [0.3152 inch] bit to a depth of at least 55 mm [2.167 inch]) + insert the dowels (Fig. 3).
4. Screw the top screws into the dowels. Allow the screws to protrude 9-10 mm [0.3546 - 0.394 inch] (Fig. 4).
5. Screw the lower mounting bracket into place (Fig. 5).
6. Hang the unit on the wall (Fig. 6).
7. Secure the device by tightening the knurled nut. Tighten the knurled nut securely (Fig. 7).

### 4.2 Benchtop Models (Stand must be ordered as an optional accessory)

1. Position the device stand on a level surface (Fig. 8).
2. Hang the device in the stand (Fig. 9).
3. Secure the device by tightening the knurled nut. Tighten the knurled nut securely (Fig. 10).

## 5. Operating elements

Front (Fig. 11):

- (A) Vacuum display
- (B) Mixing time display
- (C) Speed adjustment
- (D) ON/OFF switch
- (E) Control button

Underside (Fig. 12):

- (F) Power cord
- (G) Device fuse
- (H) Motor fuse
- (J) Bowl detection pin
- (K) Intake filter

## 6. Commissioning / Operation

1. Connect the device to the wall outlet (Fig. 13).
  2. Switch the device on (Fig. 14).
  3. Adjust the desired speed >>> 100–400 rpm (Fig. 15).
  4. Set the mixing time >>> 0-5 min. (Fig. 16).
- Your *Twister* is now ready for use.

### 6.1. Mixing Process

1. Select an appropriate mixing bowl size.

**Do not fill the mixing bowl over the maximum mark. This limit is valid for powders and liquids measured before mixing.**

**Note:** Attempting to mix small quantities in large bowls will result in inadequate mixing.

2. Using a spatula, lightly mix the materials together (Fig. 17).



**Before mixing investment materials, please observe the security instructions of their manufacturers (health endangering dusts).**

**Advice:** The *Twister* mixing paddle slowly starts moving and achieves after approx. 4 seconds the programmed speed. This soft start supports the premix.

3. Install the appropriate paddle (Fig. 18). **Make sure the bowl rim (Fig. 19a) and cover rim (Fig. 19b) are clean.**
4. Couple the mixing bowl to the device (Fig. 20) and hold it until the bowl is fixed automatically.

**Note:** The motor should start automatically and run briefly when the bowl is inserted. The device is equipped with an automatic coupling aid that locks the paddle to the motor shaft when the bowl is inserted.

The vacuum pump starts automatically.

5. Wait until sufficient vacuum has been created >>> the indicator must be out of the red range on the scale (Fig. 21a). To start mixing, press the control button (Fig. 21b). The device will beep when mixing is completed.
6. To remove the mixing bowl, press the control button (Fig. 21b). **Caution: Hold the bowl securely!** The bowl will be released in a few seconds.

## 6.2 Interrupting the Mixing Process

1. To stop the motor, press the control button once (Fig. 21b).
2. To shut off the vacuum, press the control button again (Fig. 21b).

**Caution:** Hold the bowl securely!

## 6.3 Adjustments During the Mixing Process

- You can change the mixing time and speed while the device is operating (Fig. 15/16).
- The mixing time you set before starting the process is saved.
- If you change the mixing time during the process, the new time will **not** be saved.

**Tip:**

*Only mix the same type of material in a given bowl. Residue from previous mixing processes can have a negative influence (e.g., silicon fails to harden, etc.).*

*We recommend a separate bowl for each type of material (plaster, investment, silicon).*

## 7. Cleaning / Maintenance

The *Twister* vacuum mixer is practically maintenance-free. You should, however, clean the intake filter and seal surfaces from time to time.

### 7.1 Intake Filter

1. Switch the device off.
2. Unscrew the intake filter (Fig. 22).
3. Clean the filter in an ultrasound bath (we recommend GO-2011 plaster solvent, Art. No. 2011-0000).
4. Reinstall the intake filter (Fig. 22).

**Never operate the device without the intake filter!**

### 7.2 Seal Surfaces

The following seal surfaces must always be kept clean in order to ensure correct vacuum built up and the secure retention of the mixing bowl during the mixing process:

- a) Seal between the device and the paddle (Fig. 23a);
- b) Seal between the paddle and the bowl (Fig. 23b).

**Tip:**

*You should regularly coat the rubber seals with Vaseline. This will significantly increase their service life and optimize to unit's function*

## 7.3 Replacing the Device and Motor Fuses

1. Unplug the device from the power supply (Fig. 13).
2. Unscrew the fuse holder (Fig. 24)
  - a) Device fuse: *Twister*, 230 V = T 1.6 A  
*Twister*, 120 V = T 3.15 A
  - b) Motor fuse = T 8 A
3. Remove the old fuse and install the new one (Fig. 25).
4. Reinstall the fuse holder (Fig. 24).

## 8. Spare Parts

Please refer to the enclosed spare parts list for all consumables and spare / replacement parts.

## 9. Warranty

Provided the unit is properly used, Renfert **warrants** the *Twister* for a **period of 3 years**. Components subject to natural wear (e.g., paddles, mixing bowls, and intake filters) are excluded from this warranty. The warranty is voided in case of improper use; failure to observe the operating, cleaning, maintenance, and connection instructions; in case of independent repairs or repairs by unauthorized personnel; if spare parts from other manufacturers are employed, or; in case of unusual influences or influences not in compliance with the utilization instructions. Warranty service shall not extend the original warranty.

## 10. Technical Specifications

Mains voltage:	230 V, 50-60 Hz 120 V, 50-60 Hz
Protection class in accord. with IEC 536:	I
Power consumption:	150 W
Speed:	150 to 400 rpm
Device fuses:	T 1.6 A ( <i>Twister</i> 230 V) T 3.15 A ( <i>Twister</i> 120 V)
Motor fuse:	T 8 A
Capacity:	15 l/min.
Vacuum, max.:	approx. 200 mbar, absolute
Dimensions (WxHxD):	140 x 325 x 225 mm [5.516 x 12.805 x 8.865 inch]
Weight:	9.2 kg, without mixing bowl

## 11. Standard Delivery

- 1 *Twister* vacuum mixer
- 1 Mixing bowl, 500 ml, incl. paddle
- 1 Set of Operating Instructions
- 1 Spare parts list
- 1 Drill template
- 1 Mounting set

## 12. Delivery Versions

- No. 1820-0000 *Twister*, 230 V, 50-60 Hz,  
incl. 500 ml mixing bowl with paddle
- No. 1820-1000 *Twister*, 120 V, 50-60 Hz,  
incl. 500 ml mixing bowl with paddle

## 13. Accessories

- No. 1821-0101 Stand for benchtop device  
WxHxD: 230 x 680 x 290 mm  
[9.062 x 26.772 x 11.426 inch]

- No. 1820-0200 Bowl, incl. paddle 200 ml
- No. 1820-0210 Blunger 200 ml
- No. 1820-0220 Mixing bowl 200 ml

- No. 1820-0500 Bowl, incl. paddle 500 ml
- No. 1820-0510 Blunger 500 ml
- No. 1820-0520 Mixing bowl 500 ml

- No. 1820-0700 Bowl, incl. paddle 700 ml
- No. 1820-0710 Blunger 700 ml
- No. 1820-0720 Mixing bowl 700 ml

# 14. Troubleshooting Guide

Problem	Possible cause	Corrective action
<b>ON/OFF switch fails to work.</b>	<ul style="list-style-type: none"> <li>• Power not connected.</li> <li>• Device fuse blown.</li> <li>• Damaged power cord.</li> </ul>	<ul style="list-style-type: none"> <li>• Check the power supply.</li> <li>• Replace the fuse (refer to Sec. 7.3).</li> <li>• Have the device repaired.</li> </ul>
<b>Motor fails to start.</b>	<ul style="list-style-type: none"> <li>• Motor fuse blown.</li> <li>• Motor fault.</li> </ul>	<ul style="list-style-type: none"> <li>• Replace the fuse (refer to Sec. 7.3).</li> <li>• Have the device repaired.</li> </ul>
<b>No, or insufficient vacuum (not in the green range on the scale).</b>	<ul style="list-style-type: none"> <li>• Intake filter plugged.</li> <li>• Seal surfaces dirty.</li> <li>• Vacuum pump fault.</li> <li>• Vent valve fault.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the filter (refer to Sec. 7.1).</li> <li>• Clean the seal surfaces (refer to Sec. 7.2).</li> <li>• Have the device repaired.</li> <li>• Have the device repaired.</li> </ul>
<b>No vacuum or vacuum formation too slow</b>	<ul style="list-style-type: none"> <li>• Intake filter plugged.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the filter (refer to Sec. 7.1).</li> </ul>
<b>Vacuum release / venting, too slow.</b>	<ul style="list-style-type: none"> <li>• Intake filter plugged.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the filter (refer to Sec. 7.1).</li> </ul>
<b>Vacuum pump running continuously.</b>	<ul style="list-style-type: none"> <li>• Bowl detection pin sticking.</li> </ul>	<ul style="list-style-type: none"> <li>• Have the device repaired.</li> </ul>
<b>Paddle does not rotate.</b>	<ul style="list-style-type: none"> <li>• Paddle is overloaded, motor fuse (8A) is blown.</li> </ul>	<ul style="list-style-type: none"> <li>• Clean the paddle and the bowl.</li> <li>• Replace the fuse (refer to Sec. 7.3).</li> </ul>





