

User manual

Vacuum mixers

WAMIX – 2 / 2M / 2M(S)

WAMIX – 3M



Fig. 1: WAMIX-2M



Fig. 2: WAMIX-2



Fig. 3: WAMIX-3M



Die Basis für Ihr Labor

Dear customer,

Thank you for choosing a product from the Wassermann range. Wassermann dental equipment incorporates the highest standards of quality and the latest technology. In order to enjoy maximum performance and years of trouble-free operation, please read this user manual carefully **before** you start work, and operate the unit according to the recommended guidelines.

Keep this user manual on hand for ready reference.

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1 Features

The **WAMIX** range of vacuum mixers range can be used for mixing all types of plaster, embedding and silicone-based materials, and vacuum-washing of models for special dental procedures.

There are separate power units for vacuum generation and mixing. A timer is used to switch the mixers on and off without breaking the vacuum.

Until changed, the set mixing time (up to 240 seconds) becomes the default. An audible signal indicates the end of the mixing process.

The mixing beakers on these units are held to the flange only by vacuum, guaranteeing air is excluded.

The mixers are supplied for wall-mounting but can readily be converted for table-top operation at any time (for accessories, see 8.4).

The **WAMIX-3M** also features a pressure chamber, allowing you to achieve a more homogeneous, blister-free texture by hardening materials under pressures above atmospheric.

The **WAMIX-2M** also has a vibrator for preparing single spoonfuls, for example.

2 For your safety

2.1 Your user manual

You should read and follow carefully the instructions in this user manual for setting up and operating the unit. The unit is intended only for the specified purpose.

Especially important points are highlighted as follows:



Warning!

This is a warning of risk situations and dangers. Failure to observe this warning could be life-threatening. These warnings must be observed.

Information



This symbol draws your attention to specific features which must be observed.

2.2 Safety guidelines



- This equipment is designed to operate at 230V / 50Hz. Make sure it is always connected to the appropriate power supply.
- Always remove the plug from the power socket before undertaking maintenance or cleaning work.
- A locking plate underneath each unit prevents it coming loose once it has been mounted in the bracket.
- Allow the condensers to discharge before opening the unit.
- A valve on the pressure chamber opens automatically if the pressure exceeds 7 bar (**WAMIX-3M only**).

2.3 Responsibility for operation or damage

The responsibility for operating the unit lies exclusively with the owner or user if said unit is incorrectly serviced, maintained or altered by persons not employed by an authorised dealer or if the unit is used in a manner contrary to its specified purpose.

The unit must be maintained and operated in accordance with this user manual. Wassermann Dental-Maschinen GmbH is not responsible for damage arising from the **non-observance** of these instructions.

Guarantee and responsibility provisions contained in the sales and supply conditions of Wassermann Dental-Maschinen GmbH are not extended by these instructions.



Ensure that this user manual is accessible at all times and has been read and understood.

3 Area of application

WAMIX mixers are used for mixing under vacuum all types of plaster, embedding and silicone-based materials.

They can also be used for vacuum-washing models for special dental procedures. The insulating layer between the model and the prosthesis does not peel off prematurely, because the model is kept moist better than when washed in a pressure embedder.

The **WAMIX-3M** can *also* produce more dense material using pressures above atmospheric. When materials (embedding and silicone-coated materials) are hardened under pressure, any residual air in the mix is compressed, resulting in a more homogeneous, blister-free material. This is the best basis for smooth casts.

The **WAMIX-2M** has a vibrator which *also* allows you to prepare single spoonfuls, for example.

4 Before you start

4.1 Unpacking / Transport

- Remove the packing materials and place the unit on a firm, level surface or use the supplied bracket to mount it on the wall. Check that all items have been supplied (see 8.4).
 - Before transporting the unit, ensure that it has been unplugged from the power socket. Make sure that it is packed correctly in order to avoid accidental damage.
-

4.2 Location / storage

- Set the unit up on a level surface or mount it on the wall.
- If mounting it on the wall, check first that the wall can take the weight. Mark out the **hole template** by removing the bracket from the unit and using it as a guide for drilling the 8 mm Ø wall plugs. Leave a free area of **at least 25 - 30 cm** under the unit.
- Always ensure that the work area is large enough for easy operation (allow for the unit's size) – **do not set the unit up out of doors!**
- If the unit is to be stored for an extended period, protect it from moisture and dust.
- Connect the following **before** you turn the unit on:
 1. Plug the power cord into the socket, making sure that the mains voltage matches the mixer.
 2. **WAMIX-2 and WAMIX-3M only:**

Connect a compressed-air hose in accordance with the technical specifications. In the case of long hoses, make sure that the hose ID is at least 6 mm. Provide a monitoring unit for each air hose and use a pressure gauge to keep the pressure constant.



Accidental mixing is not possible because the motor starts only after the beaker is held by vacuum to the flange, even if a mixing time has been set.



Before you use the vacuum mixer, check that the lock plate (under the unit) has been turned through 90° (it should protrude beyond the housing). Tighten the screw on the plate to prevent the unit coming loose accidentally.

5 Start-up

- Turn on the green switch (vacuum mix) (**all WAMIX models**)
- Open the compressed-air supply (**WAMIX-2 and WAMIX-3M only**)
- **WAMIX-2 only:**

When you use the unit **for the first time**, you will have to adjust the vacuum using the regulator knob. A pressure of at least 5 bar is recommended. The regulator knob is located under the pressure gauge. Open the valve slowly, until the arrow moves from zero into the green range. The best vacuum is obtained in the middle of the range, not when the valve is fully open. Re-adjustment is only necessary if the compressed-air supply changes in some way.

- **WAMIX-3M only:**

Use the regulator (black knob to the left of the vacuum flange) to set the pressure for embedding – max. 7 bar (safety valve). Pull and turn the knob to set the desired pressure. The initial pressure will be the maximum sealing pressure. Push the knob in again.

NOTE: If you want to set a lower pressure, first turn the unit off (vent the unit), because the tank pressure is kept constant by a non-return valve. Then set the desired pressure on the gauge by turning up the regulator.



WAMIX-2: If, when you are setting the pressure, the arrow on the pressure gauge does not enter the green range, there is too little flow to the unit. Check the compressed-air supply (see also 4.2).



If the unit is not to be used for an extended period, disconnect the compressed-air supply and turn the mixer off.

6 Operation



All instructions for using the unit, whether verbal, written or in the form of practical guidance, are based on individual experience and experimentation and can only be regarded as guidelines.

6.1 VACUUM MIXING (all WAMIX models)

1. Set the mixing time (up to 240 seconds) (**automatic operation**). This time is used until a new time is set. For **manual operation**, turn the timer to 0, but set the desired mixing time only after a vacuum has been obtained.
2. Add the material to be mixed to the beaker.
3. Add the liquid and mix manually until the powder and the liquid are **well combined**.
4. Seal the beaker with the lid.
5. Insert the beaker into the mixer from below. This will start the vacuum suction. Hold the beaker until a vacuum is obtained.
6. The mixer will switch on automatically for the set time. An audible signal will indicate when mixing has finished.
7. Hold the beaker firmly before turning off the switch (vacuum). The beaker will be released from the mixer as the vacuum drops.



The sealing surfaces between the beaker and the cover must be clean – likewise the rotor mounting spigot and the top of the beaker cover – to ensure trouble-free operation.





Fill the beaker only to the *Max. mark*. Otherwise, too much material will be drawn into the system by the vacuum.

 **After the vacuum has dropped, the beaker will come away by itself. To avoid damaging the seal, *never* pull on the beaker.**

6.2 PRESSURE EMBEDDING (WAMIX-3M ONLY)

1. Set the time on the timer (up to 60 minutes).
2. Open the black latched door (**turn in the opposite direction to the arrow**) – do not try to pull it open!
3. Insert the items - max. 3 large muffle rings.
4. Close the pressure chamber and activate the green switch (embedding).
5. The pressure will rise to the set level (pressure gauge).
6. When the set time expires, the pressure chamber will vent automatically, and the items can be removed. The **pressure-embedding process** can be interrupted at any time by turning off the switch (embedding), that is, the pressure chamber will be vented.

 **If the pressure drops in the compressed-air supply hose while the mixer is running, the non-return valve will keep the pressure at the level already reached.**

 **Open the pressure chamber only when the pressure has fallen to zero. Opening the chamber prematurely can tear the rubber ring from its groove and damage it.**

6.3 VIBRATOR (WAMIX-2M only)

1. Press the white switch (vibrator).
 2. The vibrator rod and rubber ball vibrate.
 3. Hold single spoons (or small moulds) against the rubber ball and add the mixed material (plaster and similar) in small amounts. This allows you to use the one mixer for smaller jobs.
-

7 Troubleshooting

Problem	Likely cause	Likely solution
Mixer will not start	Blown fuse	Replace fuse and determine cause. If necessary, contact Service.
	Timer on 0	Set mixing time
Vacuum too low	Filter (vacuum) blocked	Check filter – clean and/or change (see 8.2)
	Faulty seal on vacuum flange for mixing beaker	Replace seal
No vacuum	Beaker filled beyond <i>Max.</i> mark, so mixing material in system	Clean system, ie, contact Service
	Faulty vacuum pump	Contact Service
Pressure does not increase in pressure chamber (WAMIX-3M)	Faulty cover seal O-ring	Check and/or replace O-ring
	Pressure regulator set to 0 (pressure gauge)	Check and/or set pressure
	Timer on 0	Set time
Vacuum set with regulator too low (WAMIX-2)	Pressure too low in air hose	Check compressed-air supply (min. 5 bar)



If the above recommendations do not solve the problem, contact your dental depot or our Service department.

8 Maintenance

8.1 Cleaning

The unit should be cleaned at regular intervals to ensure problem-free operation. It requires only normal cleaning (sponge, damp cloth, mild detergent). Do not use chemical additives.

Solvents **must not** be used to clean the mounting plate!

Keep the beaker clean. When not in use, fill with water to just below the stirrer.

The **model plate** must always be legible and should not be removed.

8.2 Servicing



Allow the condensors to discharge *before* you open the mixer.

Our vacuum mixers do not require servicing. Just make sure that the unit is kept clean and that the flange seal is not damaged.

Changing the filter:

Undo the knurled screw (on the right, near the mixer on the vacuum flange on the underside of the unit). The filter swings loose at the forward end of the screw. After changing the filter, do up the screw *finger-tight* (do not forget the O-ring).

8.3 Warranty

The warranty period for our instruments is 6 months. If faults occur within the warranty period, contact your dental depot or get in touch directly with our Service department.

Vacuum mixers should only be operated in perfect condition. If faults occur which

could harm operators or third parties, the unit should not be used until it has been fixed.

The warranty does not cover damage caused by improper use, external mechanical causes, transport damage or interference with the unit by unauthorised persons.

8.4 Spare parts and accessories

Spare parts	
Item number	Description
171219	Filter screw
171226	Locating plate
171411	Vibrator rod (WAMIX-2M only)
171416	Vibrator ball, complete (WAMIX-2M only)
180005	Muffle mount (WAMIX-3M only)
291008	Conical knob (WAMIX-3M only)
380018	O-ring 9.75 x 1.78
380023	O-ring 8 x 1.9
380026	Seal D56 x D48 x 3, black, self-sealing one side
380032	O-ring 166.4 x 3.8 (WAMIX-3M only)
392026	Flexible pad D8 - H1.6 (WAMIX-3M only)
560107	Knob, black (WAMIX-2 only)
560108	Cover for knob, black (WAMIX-2 only)
560111	Cover for knob, black with stripe, white
560112	Knob, black with stripe, white
582029	Fuse 3.15 A T 250V - D5x20
610025	Sinter filter (vacuum unit)
610028	Sound absorber (WAMIX-2 only)

Accessories	
Item number	Description
171106	Wall bracket (WAMIX-2M or 2M(S))
171112	Table stand (WAMIX-2M or 2M(S)) (not supplied)
171126	Fastener set (WAMIX-2M only)
171210	Wall bracket (WAMIX-2 only)
171212	Table stand (WAMIX-2 only) (not supplied)
171230	Beaker, small, complete, 200 ml (not supplied)
171237	Beaker, large, complete, 600 ml (not supplied)
171269	Beaker, extra large, complete, 1000 ml (not supplied)
171275	Vacuum washing beaker, 600 ml (not supplied)
171283	Beaker, medium, complete, 350 ml

171290	Fastener set (WAMIX-2 or 2M(S))
171295	Beaker, extra small, complete, 75 ml (not supplied)
171299	Adapter for "Inceram" (VITA) (not supplied)
171412	Wall bracket (WAMIX-3M only)
171424	Table stand (WAMIX-3M only) (not supplied)
171427	Fastener set (WAMIX-3M only)
320026	High-pressure air hose, blue, D8 x 6 (2 m) (WAMIX-2 or 3M)

8.5 Repairs

Servicing or repairs to the unit must only be carried out by trained technicians. Only original spares are to be used. Responsibility for the product is voided if it is altered by unauthorised persons or if inappropriate components are installed.

9 Technical data

9.1 171994 WAMIX-3M KOMBI vacuum mixer with motorised pump and compressor

Voltage:	230 V / 50 Hz
Power	1.8 A
consumption:	230 W
Output:	350 rpm
Speed:	up to 240 sec., adjustable
Mixing time:	approx. 970 mbar
Vacuum:	min. 3.5 bar
Compressed air:	
Safety class:	IP 44
Pressure chamber:	interior 130 mm high, 250 mm deep
	Capacity: 3 muffles
	Operating pressure: max. 7 bar
Overall size:	Width 475 mm
	Height 255 mm
	Depth 395 mm
Weight:	29.4 kg



**9.2 171995 WAMIX-2M(S) vacuum mixer
with motorised pump, without vibrator**

Voltage:	230 V / 50 Hz
Power consumption:	1.8 A
Output:	230 W
Speed:	350 rpm
Mixing time:	up to 240 sec., adjustable
Vacuum:	approx. 970 mbar
Safety class:	IP 44
Overall size:	Width 350 mm Height 190 mm Depth 370 mm
Weight:	16.1 kg



**9.3 171996 WAMIX-2M vacuum mixer
with motorised pump and vibrator**

Voltage:	230 V / 50 Hz
Power consumption:	2.2 A 300 W
Output:	350 rpm
Speed:	up to 240 sec., adjustable
Mixing time:	approx. 970 mbar,
Vacuum:	
Safety class:	IP 44
Overall size:	Width 350 mm Height 190 mm Depth 370 mm
Weight:	17.5 kg



**9.4 171998 WAMIX-2 vacuum mixer
with injector**

Voltage:	230 V / 50 Hz
Power consumption:	1.6 A
Output:	190 W
Speed:	350 rpm
Mixing time:	up to 240 sec., adjustable
Vacuum:	approx. 950 mbar
Compressed air:	min. 5 bar
Safety class:	IP 44
Overall size:	Width 245 mm Height 155 mm Depth 300 mm
Weight:	12.5 kg



Vacuum mixer noise emission $\leq 70 \text{ dB(A)}$



We reserve the right to make technical changes.

10 EC CONFORMITY CERTIFICATE

in accordance with 73/23/EWG (low-voltage guidelines) modified by 93/68/EWG and 89/336/EWG (EMV guidelines) and 89/392/EWG (Machinery guidelines), with modifications

Manufacturer : W A S S E R M A N N Product description : Vacuum mixer for
Dental-Maschinen GmbH dental applications
Rudorffweg 15 - 17
D-21031 Hamburg

Machine model: WAMIX-3M Kombi with motorised pump and compressor (171994)
 WAMIX-2M(S) with motorised pump, without vibrator (171995)
 WAMIX-2M with motorised pump and vibrator (171996)
 WAMIX-2 with injector (171998)

Applicable standards: EN 61010-1:1993 + A2:1995
 EN 50081-1 + EN 50082-1
 Pressure container ordinance (**WAMIX-3M Kombi only**)
 DIN 45635 Part 1

Hiermit wird bestätigt, daß die oben bezeichnete Maschine den genannten EG-Richtlinien entspricht. Diese Erklärung wird ungültig, falls die Maschine ohne unsere Zustimmung verändert wird.

This is to confirm that the above-mentioned machine complies with the described EC rules. This declaration becomes invalid if the machine is modified without our approval.


Cette machine est conforme aux normes en vigueur de la Communauté Européene. Cet avis est nul et non avenant si cette machine est modifiée sans notre accord.

Esta máquina, anteriormente mencionada, cumple con los limites requeridos por el reglamento EC. Ahora bien, esta declaración quedará invalidada en caso de realizar modificaciones al aparato sin nuestra aprobación.

Hiermee wordt bevestigd dat bovengenoemde machine voldoet aan de voorgeschreven EU normen. Deze verklaring verliest geldigheid als er zonder onze uitdrukkelijke toestemming wijzigen aan de machine worden aangebracht.

Place, date: Hamburg, den 10.Apr.2003

Company stamp :

Signed: 

Wilfried Wassermann
(Managing Director)







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