

VACUUM MIXER

Mix

 MAINTENANCE AND INSTRUCTION MANUAL



1.0 DESCRIPTION

MIX Vacuum mixer is an electric device which has been specifically studied to mix under vacuum and in the most correct way plasters, investment, alginates and silicon compounds currently used in dental labs, cabinets and in the jewellery field, assuring bubble-free mixing provided operating time and mode are observed.

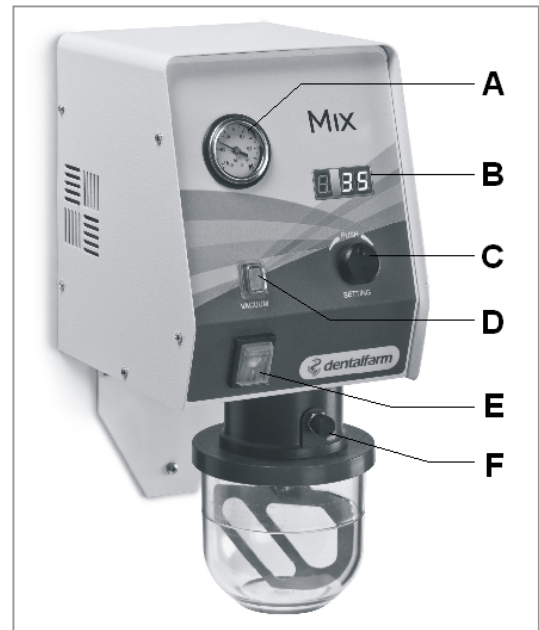
MIX may be stiff wall-mounted or be positioned on its bench stand.

A wide selection of mixing bowls is available ranging from 200cc up to 2.000cc to meet with any working requirement.

The unit is fully outfitted including all the accessories for a quick and smooth operation, it is versatile and powerful. **MIX** is equipped with a gear motor in direct drive with the propeller shaft, a piston-operated dry vacuum pump absolutely maintenance-free, protected by efficient filter.

Controls and main components

- A vacuum gauge
- B display showing the mixing time
- C multifunction encoder (time and start setting)
- D vacuum pump starting switch
- E main switch
- F vacuum exhaust valve releasing the bowl



Standard accessories supplied with:

- feeding cable with socket and plug
- 450cc bowl complete with cap and paddle
- 5 mm set screw wrench
- bracket for wall-mounted assembly

Accessories available upon request:

- 200cc bowl complete with cap and paddle
- 200cc bowl complete with cap and special paddle for alginate and silicon compounds
- 1.000cc bowl complete with cap and paddle
- 2.000cc bowl complete with cap and paddle



200cc – 200cc spec. – 450cc std – 1.000cc – 2.000cc

2.0 TECHNICAL REFERENCE REGULATIONS AND TEST PROCEDURES

The **MIX** mixing unit is mass-manufactured by DENTALFARM in compliance with technical and safety rules in force, as provided for by the 2006/42 EEC Community Directive on machinery.

Careful inspection and full routine testing is carried out singularly on each machine which is further tested by an automatic test installation assuring compliance with the fixed limits.

3.0 SAFETY PRECAUTIONS

ATTENTION: when using electric appliances, in order to prevent electrocution, wounding and risk of fire, the following safety precautions must always be observed.

1. **Keep your working place in order** – bear in mind that disorder on the working place involves risk of accidents.
2. **Environmental conditions** – do not expose electric appliances to the rain. Do not use electric appliances in damp or wet places or close to inflammable liquids or gas.
3. **Protection against electrocution** – avoid any simultaneous contact with units fitted with ground connection, namely pipes, radiators, refrigerators.
4. **Keep children away** – do not let touch either the cable or the tool by third persons, keep them away from the operating site, above all children.
5. **Store your tools safely** – place the tool in a dry and safe place away from children.
6. **Do not overload the tool** – any machine will give the best performance and work safer if utilised within the label rating specifications.
7. **Choice of the tool** – do not use weak tools or accessories requiring high power range. Do not use the tools for purposes and operations differing from those they have been studied for.
8. **Working clothes** – during work, always dress in a convenient manner, avoid loose-fitting or loose-sleeved clothes.
9. **Wear safety goggles** – always use protection goggles, if operations originating dust particles are carried out, use a mask, too.
10. **Attention to the cable** – do not lift or move the tool from the cable end and do not use it to remove the plug from the socket. Protect the cable from high temperatures, oils or sharp edges.
11. **Fix in place the piece to be machined** – make sure that the piece is well fastened and tightened. Always work by grasping the tool with your both hands.
12. **Avoid unsafe positions** – take care to be in a safe position allowing to keep always a stable balance.
13. **Take care of your tools** – in order to assure a proper work, keep your tools well sharp and clean, follow the maintenance prescriptions illustrating the replacement operation of the tools. Check regularly the cable and in case of damages have it replaced by a skilled worker. Check periodically the extension cables and replace them if damaged; the handles and the controls must be dry and clean.
14. **Replacement of the working tools** – before carrying out any repair or replacement of tools (for instance blades, tips and any consumable tools), always remove the plug from the electric socket.
15. **Do not let the service keys on the machine** – before starting to use the tools, make sure that the service keys have been taken away.
16. **Avoid any accidental starting** – before plugging in, make sure that the main switch is in idle position.
17. **Do not use the machine outdoor** – the unit must be exclusively operated indoors, in properly lighted areas.
18. **Pay always utmost attention when working** – during any working operation, never be distracted. Any negligence may cause an accident. In case more persons are working together, we recommend to stay at a safety distance from the operator and the machine.
19. **Check that the tool has not been damaged** – before using the unit, check accurately the efficiency and the perfect running of the safety devices and of any parts which may have been damaged. Check correct operation of the moving components, that they are not locked, that there are no damaged parts and that every component has been assembled in the correct way; make sure that all the conditions susceptible to affect the regular operation of the machine are ideal. Safety devices or damaged parts must be repaired or replaced by a skilled after-sale servicing centre only, unless otherwise expressly specified in our official Instruction Manual attached to each unit.

20. **For your safety, use exclusively the tools and accessories illustrated in the instruction manual** or offered in the product catalogue. The use of different accessories or tools which are not recommended in our instruction manual or product catalogue, may originate accidents.
21. **Tool repair by skilled personnel, only** – the electric appliance complies with Safety Regulations in force. The repair of electric tools must be carried out exclusively by appointed servicing centres.

4.0 INSTALLATION INSTRUCTIONS

Arrange the machine according to the preferred installation

Permanent wall-mounted

Use the bracket (X) as drilling jig (refer to the recommended height in picture). Assemble by means of min. $\varnothing$ 8mm steel dowels. When the bracket is well fixed in place, lean the mixer housing and tighten the screws supplied with by means of the proper wrench.

Bench-top

Keep the mixer housing in horizontal position, assemble the support (Y – not part of the supply, item code 5504001) by means of the supplied screws and tighten with the proper wrench.

The new bench stand has been developed to have our vibrator **MINIEXPORT** (A0125) be incorporated allowing for bubble-free casting.

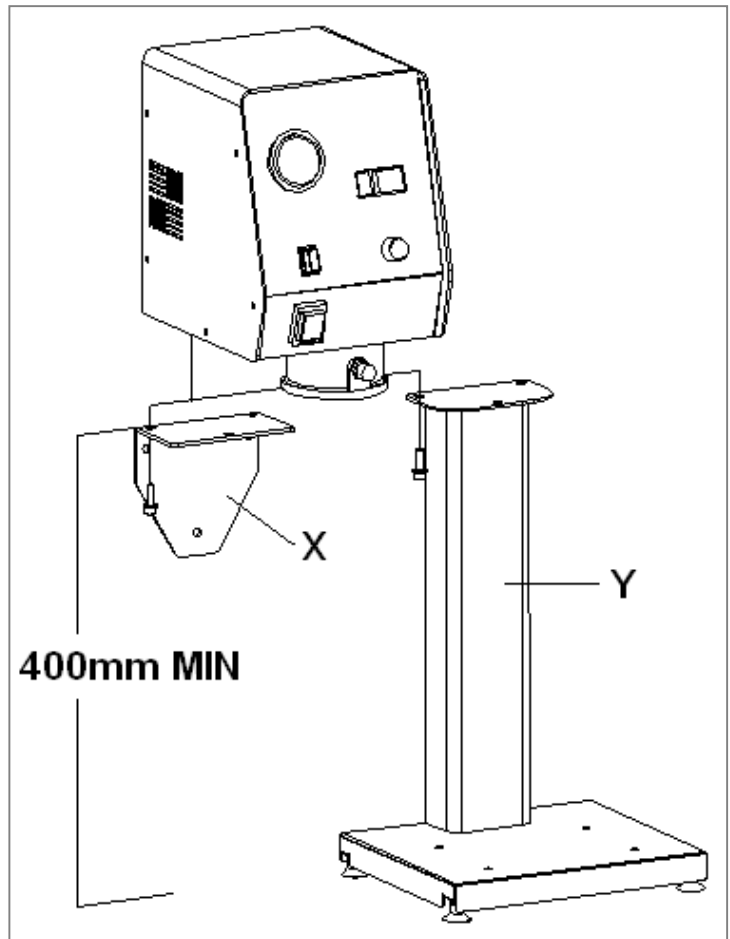
Before connecting the machine make sure that the rated voltage stated on the label corresponds to the network and that ground connection is in.

Connect the plug of the electric cable to the socket on the right side of the unit, then connect the other end plug to the network; this operation must be carried out when the main switch is open.

Feeding of the machine must be executed according to the instructions of DENTALFARM who is in no way responsible for the connection. The feeding cable supplied with is approved, anti-flash type whose section is adequate to the max. absorbed current (stated in the technical specifications).

The supplied cable is 2 meter long; should you put an extension, pls check that::

- the section of the cable is suited to the length and that its section is equivalent at least to the one of the supplied cable
- the position of the cable should not originate any damage
- the connection point to the electric supply assures the presence of all the necessary protections according to the regulations in force.

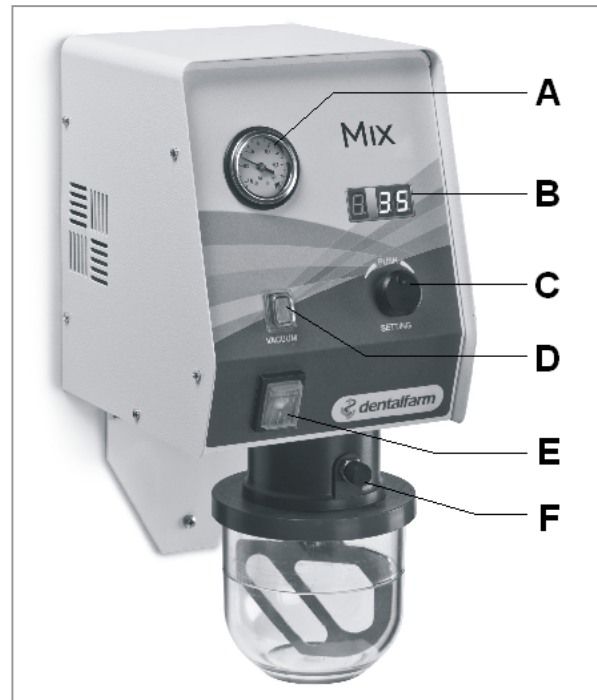


5.0 INSTRUCTIONS FOR USE

The operator must stay in front of the machine thus allowing to hold the bowl with one hand and to set the controls positioned on the front of the machine with the other hand.

Concerning the operating procedure, we recommend to follow the chronological sequence of operations:

- 1) use the main switch (E) to operate the machine
- 2) select the mixing times according to the type of material (turn C knob)
- 3) pour the recommended doses of material and liquid inside the bowl, then close it by means of the paddle-cap
- 4) Press D switch to operate the vacuum pump
- 5) Insert the bowl and cap unit inside the suction inlet located in the mixer lower part (in case you do not manage to find immediately the correct clutch position, slightly turn the bowl until the perfect connection is attained), pay attention that the cap perfectly adheres onto the joint
- 6) slightly push the bowl upwards to facilitate airtight seal
- 7) as the vacuum level indicator exceeds the value of -0.4 BAR on the instrument (A), you can stop holding the bowl which is now stuck to the support thanks to the vacuum achieved.
- 8) Press the C key to start mixing.



Important:	always wait until the pump has attained the highest vacuum level before starting the mixing operation
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9) when the preset time has elapsed, the paddle will stop. A buzzing signal will confirm that the mixing under vacuum has terminated

10) switch off the pump (E), hold the bowl and at last open the exhaust valve (F key) which will release it by introducing air into the circuit.

Attention:	never activate the exhaust valve when working, since this operation will cause the bowl to separate from the mixer housing and fall off.
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Important:	in case of current black-out during the working stage of the unit, all the devices will automatically stop and mixing times will be cleared. Just for a few minutes, vacuum manages to hold the bowl but we recommend to remove it as quickly as possible.
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6.0 INSTRUCTIONS FOR THE PERIODIC MAINTENANCE

All the maintenance operations must be carried out under idle condition of the machine, disconnected from the main.

Feeding cable

Check regularly the conditions of the supply cable, if damaged, have it replaced by a skilled technician.

Lubrication

Check regularly the smooth rotation of the paddle in connection to the bowl cap. It may occur that some material penetrating from outward tend to harden, in such an event unscrew the upper nut (31) to disassemble it. Clean accurately and lubricate with oil, finally reassemble the unit and test the efficiency of the system.

It is always a good rule to dampen with oil the OR joints of both the bowl and the suction inlet. No lubrication on the mixer inside components is necessary.

Filter replacement

This operation has to be carried out regularly by a skilled technician, at least once every 2000 cycles or in any case, every time you become aware of a malfunction of the machine, as for instance when, despite a good vacuum level is stated on the vacuum gauge, it can hardly hold the bowl.

Cleaning operation

Keep the machine always in order and well cleaned; furthermore, it is of utmost importance **to clean accurately the mixer bowl every time you use it without leaving any residuals at the inside.**

7.0 POSSIBLE INCONVENIENCES

All the illustrated operations must be carried out only when the unit is disconnected.

Do not execute any maintenance, adjustment or repair unless stated in the present Instruction and Maintenance Manual - Should you need any further assistance, pls contact our specially trained technical staff.

Problem: THE UNIT DOES NOT START UP	
Possible cause	Remedy
The unit is not fed.	Verify that the connection cable between the unit and the electric network has been well inserted in the sockets.

Problem: MIXING DOES NOT START UP OR IT IS BLOCKED	
Possible cause	Remedy
Fuses are disconnected.	If the motor works under strain (due to a too much thick product or excessive paddle friction), the fuse are likely to discontinue.

Problem: THE PADDLE IS NOT FREELY TURNING IN THE CAP	
Possible cause	Remedy
The OR joint on the pin needs to be lubricated or any outer particles have penetrated inbetween the pin and its seat.	Unscrew the nut fixing the shaft, remove the paddle, clean and lubricate both the pin and the OR joint, then re-assemble.

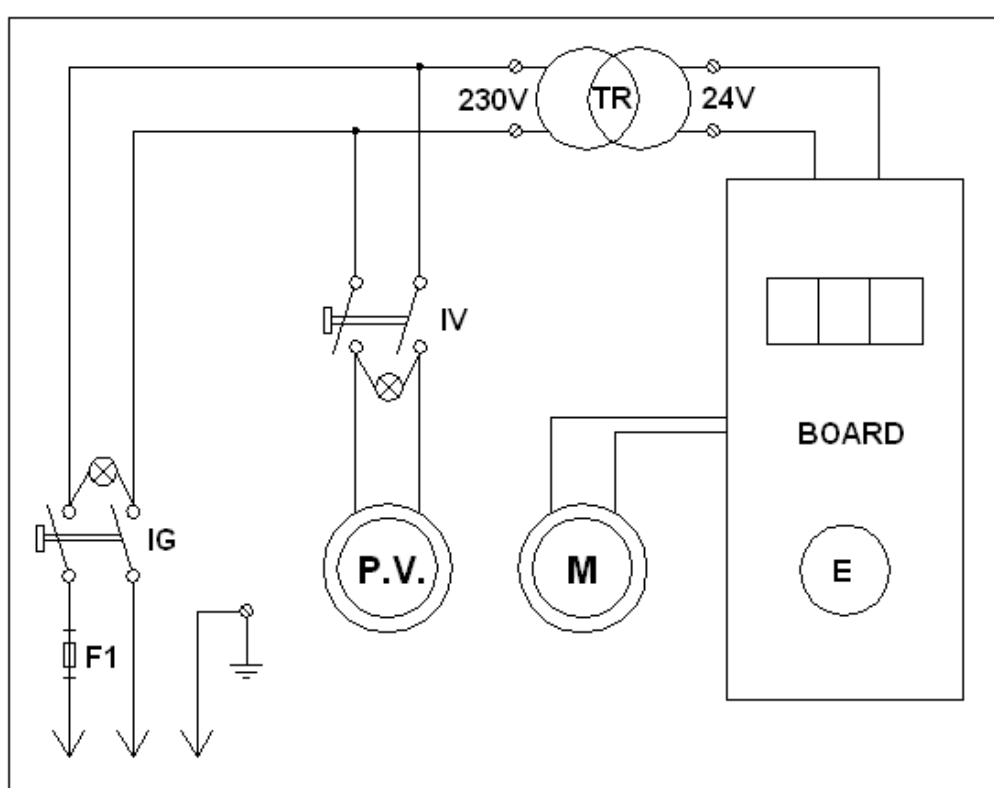
Problem: THE MIXER HARDLY HOLDS THE BOWL

Possible cause	Remedy
The OR joints on the bowl cap and suction inlet are dirty or dry, thus making no seal.	Clean accurately from any residuals then slightly oil, clean meticulously the surfaces where the OR joints are sliding – should they be damaged, replace them (pls contact qualified personnel).

Problem: THE MIXER IS NOT UNDER VACUUM

Possible cause	Remedy
The filter is clogged or obstructed.	Replace the filter (pls contact qualified personnel)
No seal in the internal circuit.	Pls contact qualified personnel.

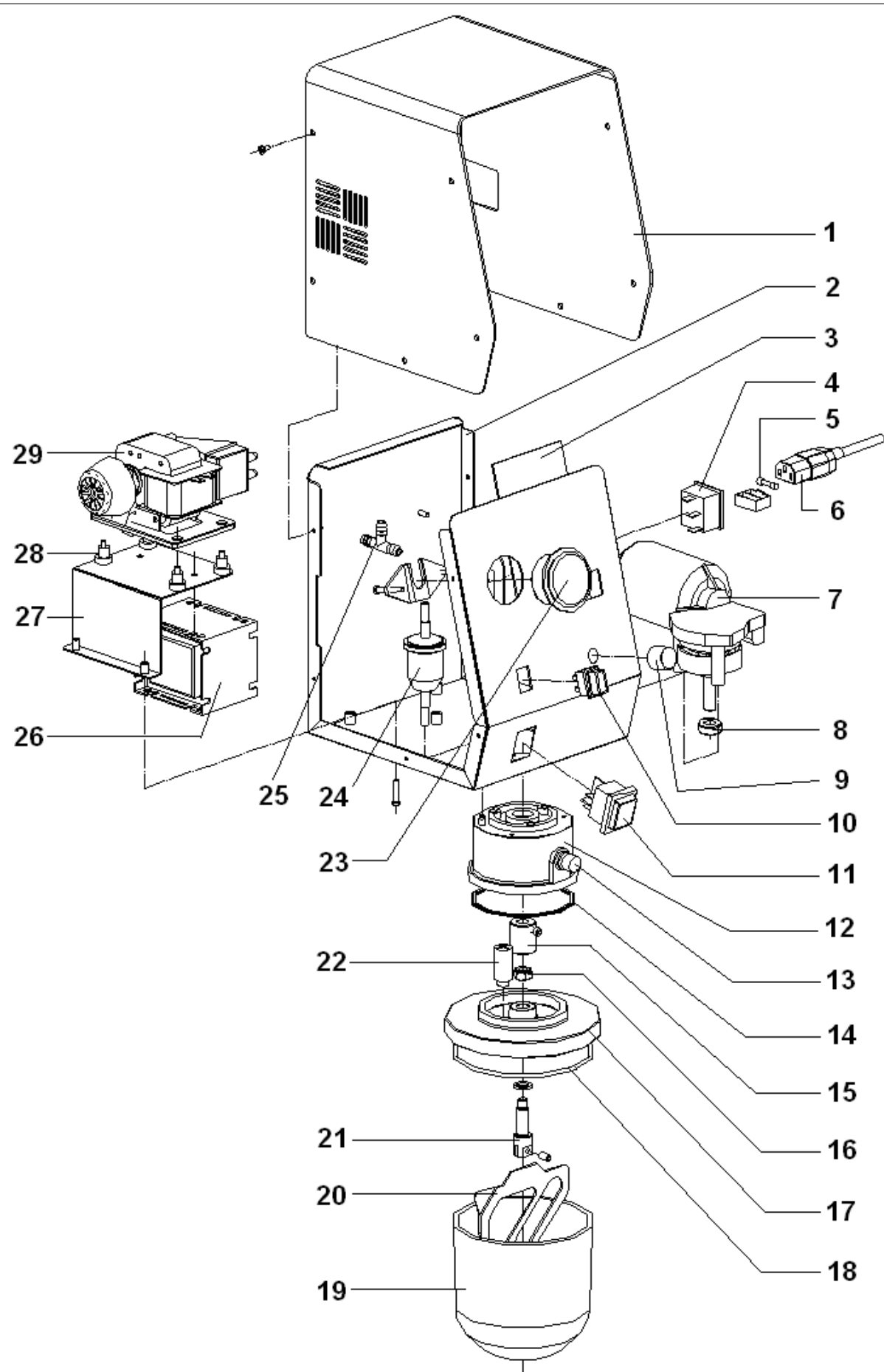
8.0 WIRING DIAGRAM



REF.	DESCRIPTION
IG	Main switch
IV	Vacuum pump switch
T	Electronic timer
F1	2° Fuse
TR	Transformer
P.V.	Vacuum pump
M	24v DC Gear motor
BOARD	Electronic board
E	Encoder

9.0 EXPLODED DRAWING AND SPARE-PART LIST

REF.	CODE	DESCRIPTION
1	5504003	METALLIC CAP
2	5504002	METALLIC BODY
3	5504100	CONTROL BOARD
4	5501112	PLUG – FUSEHOLDER UNIT
5	5504101	2° FUSE
6	NEV013	ELECTRIC CABLE WITH PLUG
7	5501150	24V – 350RPM GEAR MOTOR
8	5501153	10x18x6 SEALING RING
9	5501121	ENCODER KNOB
10	5501104	VACUUM SWITCH
11	5501103	MAIN SWITCH
12	5501020	INLET SPOUT
13	5504102	VACUUM RELEASE VALVE
14	NPOR4312	OR4312 JOINT
15	5501021	CLUTCH
16	-	STAINLESS STEEL M8 SELF-LOCKING NUT
17	5501023	500CC BOWL CAP WITH BUSH
18	NPOR4437	OR4437 JOINT
19	5501115	500CC BOWL
20	5501025	STAINLESS STEEL PADDLE
21	5501022	TRANSMISSION SHAFT
22	5501118	PRE-FILTER ON CAP
23	5501100	BUILT-IN VACUUM GAUGE
24	5501107	FILTER ON SUCTION
25	5501108	THREE-WAY PIPE-FITTING
26	5501152	50W 230V-24V TRANSFORMER
27	5504005	TRANSFORMER AND PUMP SUPPORT BRACKET
28	5504103	RUBBER FEET FOR PUMP
29	NES040	PISTON-OPERATED VACUUM PUMP
-	5504006	MIX MARK LABEL
-	5501119	5mm MALE HEXAGONAL WRENCH
-	5501008	WALL BRACKET
-	5504001	BENCH STAND



10.0 TECHNICAL SPECIFICATIONS

Description	Measurement Unit	Value
Gear Motor	-	gear type
Vacuum Pump	-	piston - dry
No. of paddle revolutions	rpm	380
Vacuum level	BAR	0.85
Feeding Tension	V	230V AC
Fuses	ampere	2.0
Absorbed power	watt	140
Absorbed current	ampere	0.75
Overall dimensions with 500cc mixing bowl	mm	190x220x400
Overall dimensions with bench support	mm	190x220x650
Weight of mixer plus 500cc bowl (net/gross)	kg	8.5 / 10.0
Weight of bench stand (net/gross)	kg	3.7 / 4.0

11.0 DEMOLITION AND WASTE DISPOSAL

According to International regulations, this unit has been classified as AEE (electric and electronic device, whose correct operation depends on electric currents and electromagnetic fields) and as a consequence, at the end of its lifetime, it can not be treated as normal waste material but it must be disposed separately, complying with the Directive 2002/96/CE.



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