

COMBI 250/1000 VA

SAWING MACHINE



MODEL NUMBER: 1188174
SERIAL NUMBER: 0000704062
WEIGHT LBS: 132



118817440000704062

OPERATING, MAINTENANCE, SPARE PARTS MANUAL

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Cod. 3227118

Dear Customer,
Congratulations on your choice of purchase: IMER saws are the result of years of experience and are equipped with all the latest technical innovations.

⚠ - WORKING IN SAFETY

To work in complete safety, read the following instructions carefully before using the machine.

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This OPERATION AND MAINTENANCE manual must be kept on site by the person in charge, e.g. the SITE FOREMAN, and must always be available for consultation.

The manual is to be considered integral part of the machine and must be kept for future reference (EN 12100/2) until the machine is disposed of. If the manual is damaged or lost, a replacement may be requested from the manufacturer.

The manual contains important information regarding site preparation, machine use, maintenance procedures, and requests for spare parts. Nevertheless, the installer and the operator must both have adequate experience and knowledge of the machine prior to use.

To guarantee complete safety of the operator, safe operation and long life of equipment, follow the instructions in this manual carefully, and observe all safety standards currently in force for the prevention of accidents at work (use of safety footwear and suitable clothing, helmets, gloves, goggles etc.).

⚠ - Make sure that all signs are legible.

⚠ - It is strictly forbidden to carry out any form of modification to the steel structure or working parts of the machine.

IMER INTERNATIONAL declines all responsibility for failure to comply with laws and standards governing the use of this equipment, in particular; improper use, defective power supply, lack of maintenance, unauthorised modifications, and partial or total failure to observe the instructions contained in this manual.

IMER INTERNATIONAL reserves the right to modify features of the saw and contents of this manual, without the obligation to update previous machines and/or manuals.

1. TECHNICAL DATA

Technical data are stated in table 1 and electrical specifications in table 2.

Table 1 - TECHNICAL DATA	
Model	Combi 250/1000 VA
Max. blade diameter	10 inches
Diamond Blade hole diameter	5/8 inches
Single phase 115V/60Hz motor power	1.1 kW
Max. blade rotation speed	3400 rpm
Cutting table dimensions	1115x500 mm
Length of 90° cuts (thickness= 10mm)	950 mm
Length of cuts from above	1000 mm
Maximum cut depth with single stroke	66 mm
Maximum cut depth with two stroke	105 mm
Water pump flow rate	13 l/min
Water tank capacity	40 L
Machine dimensions	1420x636x619
Packed machine dimensions	1455x670x653 mm
Weight with packaging	65 kg

Table 2	
Feature	Motor (115V/60Hz)
Power (kW)	1.1
Rated voltage (V)	115
Frequency (Hz)	60
Absorbed current	14.4
Number of poles	2
rpm	3400
Service type	S6 40%
Insulation category	F
Protection category	IP55
Capacitor (µF)	110 (Ø 50x120)

2. DESIGN STANDARDS

Combi 250/1000 VA saws have been designed and manufactured according to the following standards: EN 12100-1-2; EN 60204-1; EN 12418.

3. SOUND PRESSURE LEVEL AND VIBRATIONS

Table 3 shows the sound pressure level measured loadless at the operator's ear (L_{pA}) and of the vibrations transmitted during operation.

Table 3			
Sawing machine	Type of motor	L_{pA}	A_{wv}
Combi 250/1000 VA	Electric	86 dB	2,57 m/s ²

4. GENERAL SAW DESCRIPTION

4.1 General description

The Combi 250/1000 VA is a saw comprising the following main sub-groups:

- cutter head (ref.A, fig.1)
- runner guide and arms (ref.B, fig.1)
- cutting tables and heads (ref.C, fig.1)
- water collection tank (ref.D, fig.1)
- frame (ref.E, fig.1)

The cutting head is mounted on a reinforced aluminium profile and is equipped with horizontal and vertical movement facilities. The aluminium profile is hinged onto die-cast arms (ref.F, fig.1) and the entire unit can rotate through 45° (fig.2) by means of the relative handwheels (ref. G, fig.2).

The machine is supported by a special metallic frame. There is a shock-proof plastic tank between the machine and the frame. The water immersion pump is mounted below the cutting surfaces on a special bracket and supplies a water distributor inside the blade guard for cooling the cutting blade during operation.

The high resistance plastic handle (ref.H, fig.2), is equipped with the main ON-OFF switch on the operator side to facilitate saw activation and shutdown. The raised position of the red OFF button on the handle is designed to facilitate shutdown of the machine in the event of an emergency. The motor capacitor is located in a protected position inside the handle.

The saw is fitted with a guard to guarantee optimal safety during operation and to protect the user during cutting cycles.

A valve is mounted above the blade guard to adjust the flow rate of water delivered to the cutting blade.

4.2 Processable materials

This saw has been designed for cutting the following materials: ceramic tiles, masonry and stone in general with maximum dimensions compatible with the length, cutting depth and dimensions of the surfaces specified in table 1.

Maximum weight of processable materials: 25 kg.

4.3 Unsuitable material

Materials unsuitable for this machine are all those not specified in paragraph 4.2.

In any event, before using the saw with materials other than as specified by the manufacturer for this saw model, contact IMER INTERNATIONAL S.p.A.

⚠ - Use of this machine with workpieces outside the specified dimensions is strictly prohibited and constitutes a hazard for the operator.

5. OPERATION SAFETY

 - Before using the saw, ensure that all protection devices are fitted.

 - Never use the saw in environments subject to the risk of explosions or fire.

The saw is not fitted with specific lighting and therefore the workplace must be sufficiently lit for this purpose (min. 300 lux).

The power lines must be laid to prevent any possible damage. Ensure that the electrical connection is protected against the risk of water penetration in connectors. Use exclusively connectors and couplings equipped with water spray protection. Never use inadequate or makeshift electrical lines or cables without earthing; if in doubt consult a specialised technician. Repairs to the electrical circuit must be performed exclusively by specialised personnel. Disconnect the machine from the power supply before performing maintenance or repairs.

6. GENERAL SAFETY WARNINGS

Note that this machine has been designed to ensure optimal performance and maximum safety; however the operator must also guarantee this level of safety by paying special attention to the machine throughout all work phases.


1. Ensure that an efficient earthing system is installed.
2. Work only with all protection devices fitted correctly and in efficient working order.
3. Keep the machine clean: general cleaning (and the work surfaces in particular) represents an important safety factor.
4. Always stop the machine and disconnect from the power supply before cleaning or removing any protection device (for maintenance or disassembly purposes). If water jets are used for cleaning, never point jets directly at the power supply unit or electric motor.
5. Remove rings, watches, bracelets or ties before using the machine; these elements constitute a serious hazard to the operator. Also ensure that sleeves are tight around the wrists, hair is tied back and robust footwear is used.
6. Never cut workpieces that have dimensions or weight that are not suited to machine capacity as specified by the manufacturer (see point 4.2)
7. Always use personal protection devices such as safety goggles, suitably sized gloves, ear muffs or plugs and hair caps when necessary.
8. Use original diamond blades as recommended by the manufacturer to ensure optimal performance of the machine.
9. Always keep hands well away from the working zone while the machine is running; before removing workpieces from the blade area, always press the stop pushbutton to shut down rotation.
10. The instructions in this manual are aimed at machine users (operators, maintenance engineers).
11. Never use diamond blades that are chipped or deformed.
12. Never use blades over the rotation speed specified by the manufacturer.
13. Use exclusively water-cooled continuous rim blades suited to the material to be cut.
14. Never dry cut material or cut when cooling water levels are low.

7. SAFETY DEVICES

The Combi 250/1000 VA has been constructed taking into account current harmonised European safety standards. According to machine directive 98/37/EEC all safety devices have been installed with the aim of safeguarding the operator.

7.1 Guards and safety devices

The machine is equipped with fixed guards, secured by means of screws and protections that prevent access to moving or dangerous parts. All fixed guards, covers, shields fixed by means of screws have been envisaged to protect the operator (maintenance engineers, technicians and others) from possible accidents caused by electrical discharge or moving mechanical parts. Therefore use of the machine with guards removed or modified in any way is strictly prohibited.

 - Before performing maintenance or repairs to the machine, turn it off via the main switch and disconnect from the power supply to prevent inadvertent start-up and isolate all machine electrical circuits.


8. MACHINE INSTALLATION

8.1 Set up

Remove the machine packing. The machine can already be used, leaving the legs folded, resting its frame on a sufficiently even surface at least as big as the tank.

Frame assembly:

1. remove the machine and tank from the folded frame.
2. remove the safety pins from the frame and open the legs.
3. put the safety pins back in the holes provided locking the legs in the open position.
4. reposition the machine and tank on the frame.


 - Make sure that the frame is positioned on a flat and even surface, capable of bearing the weight of the machine. The maximum permissible gradient in all directions is 6°.

8.2 Handling

The Combi 250/1000 VA sawing machine weighs 57 Kg and can be moved using the side handles on the tank (ref.1, fig.1). For short distances use the wheels fitted on the frame. For longer distances, before moving the machine, close the frame reversing the sequence of the operations described in point 8.1.

Every time the machine is moved, make sure the head is locked tightening the knobs (ref.L, fig.1).

 - Always empty the tank before moving the machine.


 - Always disconnect the power plug before moving the machine.

8.3 Additional table assembly (optional kit code 1188176)

The additional table can be positioned on the right or left side of the machine or on both sides at the same time.

Firstly insert the props (two for each table) in the grooves provided on the chosen side.

At this point you can install the additional table, which is supplied with the side supports already assembled. Insert these supports completely in the special housings machined in the machine sides. Then lower the additional table until it is on level with the machine table (fig.6).

 - The use of additional tables without props can cause damage to them.

9. ELECTRICAL CONNECTION

 - Ensure that voltage corresponds to machine dataplate specifications.

The power supply line must be equipped with current overload protection (e.g. thermal cutout) and protection against indirect contact (e.g. residual current circuit breaker).

Connect the machine to an efficient earthing system.

The size of the power cable wires must be based on operating current and length of the power line to prevent excessive voltage drops (table 4).

Cable length (m)	V 115 I= 14,4 A		
	0 + 12	13 + 20	21 + 32
Cable (mm ²)	1.5	2.5	4

Connect the saw plug to the mains and lighten the mechanical retainer ring with IP67 protection rating.

The saw is now ready for operation.

10. MACHINE USE

10.1 Operation


The correct side for the operator is shown in fig.4 ref.X.
Fill the water tank to the maximum level (approx. 40 litres).
Connect the machine to the power mains and start as described in paragraph 10.
Open the valve (ref.N, fig.1) and ensure sufficient flow of cooling water to the diamond blade.

10.2 Cutting

Rest the material to be cut on the cutting table against the stopper. Define the required inclination using the goniometer. To adjust the cutting head height, loosen the handwheel (ref.O, fig.3), position the head at the required height, then fully tighten the handwheel. Make sure that handwheels for sloped cutting (ref.G, fig.2) are firmly tightened. Start the sawing machine as described in paragraph 10. To proceed with cutting, press the piece to be cut on the table with your hand and move the cutter head gripping the handle and drawing it towards you. If the feed speed is too fast in relation to the thickness and hardness of the material the blade might stop turning. In this case, release the disk as quickly as possible moving the cutter head away from you until the disk recovers its nominal rotation speed. Resume cutting, adjusting the feed speed according to the characteristics of the material.

10.3 Angled cuts

Loosen the handwheels (ref.G, fig.2), set the cutting head at the required angle, retighten the handwheels, and proceed as described in the point above.


 - Ensure that the tank is kept full during all work phases and in the event of prolonged work intervals replace water regularly and remove all processing residue.

10.4 Laser pointer

The machine is fitted with a laser pointer that reproduces the cutting line on the piece being machined. The track of light indicates the trajectory of the diamond disk during the feed motion. Making the required cutting profile coincide with the laser profile, it is possible to ensure the highest accuracy of the operation.

Cuts at right angle with one side of the piece being machined do not require tracing beforehand: in fact it will suffice to make sure that the side of reference is in contact with the stopper on the resting surface. Likewise, using the goniometer, cutting at predefined inclinations is possible. The laser light will indicate the actual position of the cut. The laser pointer is activated when the machine is connected to the electric mains.

The pointer is aligned with the disk and must not be moved from its initial position.

 - The pointer used emits a low power laser light, but it is in any case advisable to avoid looking directly at the emitter itself.


11. MAINTENANCE

11.1 Premise

Routine maintenance operations can also be performed by non-specialised personnel provided that all safety standards specified in the relative sections of this manual are observed at all times.

11.2 Machine cleaning

The machine should be cleaned exclusively when it is stationary.

 - All power switches must be set to "0" and plugs must be disconnected from the mains.

1. Never use compressed air; this could cause infiltration of dust or residue in enclosed parts.
2. Ensure that the cooling water nozzles are not obstructed.
3. Above all the cooling water in the tank must be changed every day.
4. Do not use detergents or lubricants.

11.3 Waste disposal


As regards disposal of processing waste observe all current legislation in the country of use.

11.4 Repairs

Repairs to the electrical installation must be performed exclusively by specialised personnel. Use exclusively original IMER spare parts; modifications to parts are strictly prohibited. The special design of the Combi

250/1000 VA ensures that no other maintenance other than as specified above is required.

Ensure that the contacts of the power plug and plug-switch assembly are efficient. If oxidation is detected, clean immediately

 - In the event of activation of the RCCB, check the machine and arrange for repairs if necessary exclusively by specialised personnel.

11.5 Cleaning the tank

Clean the tank in the event of build-up of sediment on the base, or at least once a day. Failure to clean the tank could impair operation of the immersion pump used for circulation of the diamond blade cooling water.

To clean the tank, disassemble from the machine, lock the head, hold it by the arms and rinse with a direct water jet (this is to avoid direct contact of the water with electrical parts), the proceed with manual cleaning using cloths or brushes.

Take care not to damage cables when replacing the machine on the tank

Take care not to damage the pump when placing the machine on the surface

11.6 Blade replacement

The diamond blade is made of material that may be damaged when subject to high temperatures, and therefore must be cooled during the work phases.

To replace the blade, proceed as follows:

1. Block axial movement of the cutting head by means of the handwheels (ref.L, fig.1).
2. Disassemble the front guard (ref.P, fig.1).
3. Loosen the locknut by rotating clockwise (left thread), using a 19 mm wrench.
4. Move the cutting head forward slightly and incline to remove the blade from its seat.
5. Ensure that there are no foreign objects between the fixing flange and diamond blade. During disassembly, avoid use of tools that could dent or deform the flange.
6. Insert the new blade proceeding in reverse order of the operation described at point 4. Take special care to ensure correct direction of rotation of the diamond blade.
7. Tighten the blade locknut fully down by rotating anticlockwise (left thread), to a torque of 40 Nm.

 - Always disconnect the power plug before changing the disk.

11.7 Cleaning the cooling water supply circuit

At regular intervals (or when the flow rate of the blade cooling water is reduced) clean the cooling water supply circuit. To do this, disassemble the delivery nozzle (ref.P, fig.1) located inside the blade guard and clean in water.

Periodically clean the cooling water delivery line between the pump and valve and blade guard using water.

12. Residual risks and safety signs

Although the sawing machine has been manufactured fully in compliance with current regulations, residual risks exist that cannot be eliminated and involve the use of appropriate individual protection devices. Adequate warning signs fitted on the machine point out both the risks and the behaviour to be followed.

NOISE RISK



Ear protection must be worn

RISK OF INJURY TO THE HANDS



Safety gloves must be worn

RISK OF INJURY TO THE EYES



Eye protection must be worn

ABNORMAL USE RISK



Reading the manual before use is compulsory



Cutting with water is compulsory

DANGER DE COUPURE



DANGER D'ÉLECTROCUTION



DANGER RAYON LASER



Please be reminded that checking the use of IPDs is delegated to the employer.

14. Troubleshooting

⚠ - CAUTION!!! All maintenance operations must be performed exclusively with the machine switched off, with the selector set to "0" and the power plug disconnected from the mains.

Trouble	Causes	Remedies
The motor does not start when the start switch is pressed	Current does not reach the supply line	Check the line *
	The socket and plug are not connected properly	Restore correct connection
	The differential switch is off	Turn the differential switch on
	The power cable from the plug to the panel is cut off	Change the cable *
	An electric wire inside the motor terminal strip is cut off	Restore the connection *
Cooling water fails to reach the blade	An electric wire inside the panel is cut off	Change the switch *
	The start switch is faulty	Change the switch *
	Low water level in tank	Restore the water level
The blade does not cut	Pump filter clogged	Clean the pump filter
	Current fails to reach the pump	Check the pump electrical supply *
	Pump failure	Change the pump *
The blade does not cut	Blade fitted in the opposite direction to that of rotation	Remove the blade and reposition it in the direction shown on the blade label
	Worn blade	Change the blade

* Operation to be carried out by an electrician