MODEL FINISHING UNIT

MF 400

🕮 MAINTENANCE AND INSTRUCTIONS MANUAL

dentalfarm
DENTAL EQUIPMENT SINCE 1972

1.0 TECHNICAL SPECIFICATIONS MF-400

Description	Measuring Unit	Voltage 230 V
Absorbed power	Watt	370
Electric engine	-	monophase
Max absorbed power	A	2.9
Network power frequency	Hz	50
Engine rounds per minute	rpm	2.800
Cutter base dimensions	mm	Diameter 6
Cutter dimensions	mm	diam.12.5 x 25
Cutter rounds per minute	rpm	2.800
Overall dimensions	mm	210x280x310
Workable materials	-	gypsum-plastics
Weight	kg	10

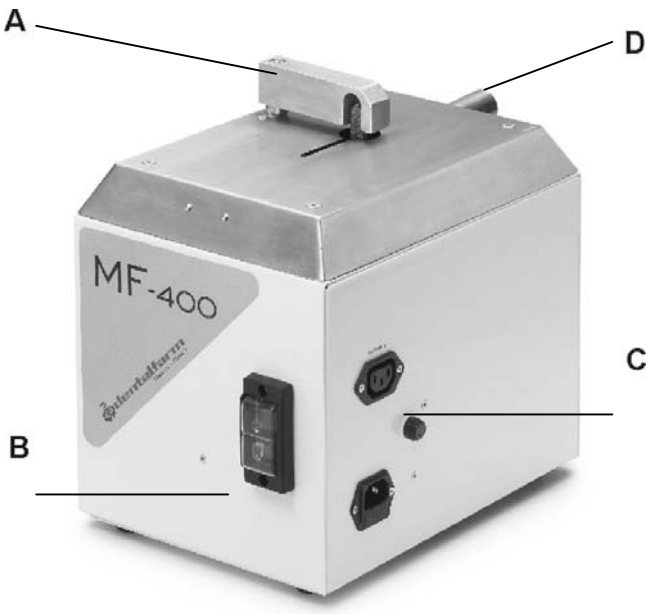
2.0 COMMAND OPTIONS

1 – **Power ON switch**: it is the shutter supplying tension and allowing the engine to start; when the light of the shutter is on, tension is supplied to the equipment.
2 – **Power OFF switch**: this shutter has two different functions: under normal conditions, it will be used to stop the machine; in case of emergency, it will as well stop the machine, when the operator strikes it rapidly and instinctively.
3 – **Electric plug**: it connects the equipment to the electric network, through the power supply cable.
4 – **Fuse holder**: contains the fuse protecting the engine.
5 – **Suction pipe power plug**: it is the element where the electric cable of the suction system is connected, in order to be started automatically.

3.0 GENERAL INDICATIONS ABOUT THE EQUIPMENT

This equipment has been manufactured for the purpose of refining the outlines of the dental models and emptying the internal structure of the models used in the dental lab.
The equipment can work with gypsum, but also with several other materials like resins, investments, plexyglass, abs, etc.
MF 400 is made by a metalllic, spray painted structure, which contains:
- the engine mounting the cutter,
-a stainless steel working bench, on which the models are positioned; the particular structure of the bench lets dust convey towards the suction system connected by means of the backside collection pipe.
- the electric installation, which includes keys, chip and the warning light.

In order to improve the safety of this equipment, the following measures have been undertaken:



- **cutter safety shield (A)**: this mobile protection covers the cutter almost completely, in order to avoid any hazardous contact. It is anchored on one side and it moves as it is pushed by the object to be cut. As soon as the work has been finished, a spring pushes it back into the start position.
- **power off key with thermic differential (B)**: this key has a double function, that of a power on/off switch during normal use and that of an emergency power switch (its position allows the operator to strike it rapidly in case of wrong moves; if the power supply stops, the switch deactivates, avoiding the engine restart. The switch deactivates automatically even when the absorption is too high, this due to stress conditions.
- **connection with a suction system (C-D)**: this model finishing unit is equipped with a collection pipe and an electric plug for a suction unit of average power, fit to remove any dust and deposits generated during work. For these reasons, it is recommended to connect a suction system and keep it working with efficiency, by frequently cleaning the filter and the connection pipes.
- **Driving shaft bearings**: besides ensuring a longer duration, this type of bearings brakes the rotation of the cutter stopping it in a few seconds after operating the switch.

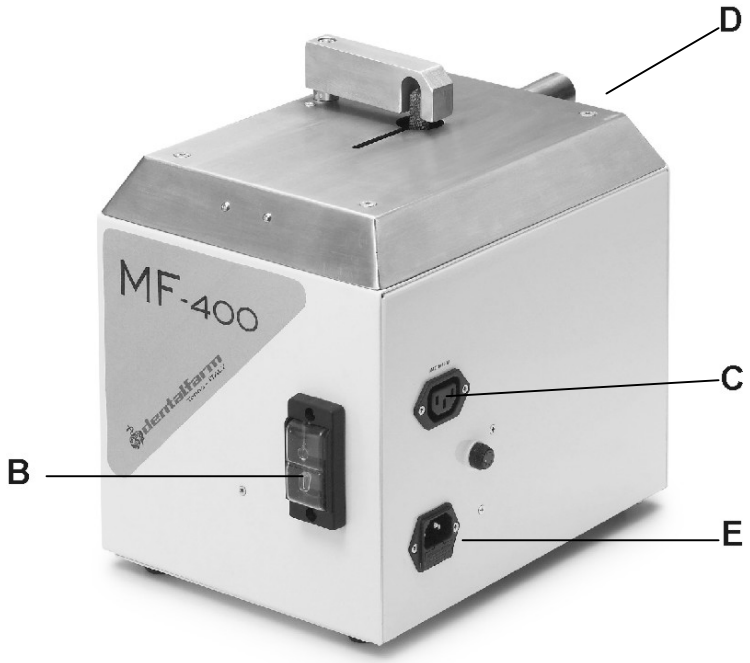
WARNING!	**It is strictly forbidden to remove / avoid any fixed or mobile safety devices.**

To enhance safety, the operator working with this machine should wear adequate protection units in order to avoid dust and splinters, in particular:
- protective eye-glasses
- gloves
- antidust mask.

WARNING!	**It is highly recommended to wear the described protections and to use a suction system before working with this equipment.**

4.0 INSTALLATION OF THE EQUIPMENT

Installation
Put the device in a stable position, in a good enlighted and dry place, leaving at least 30 cm free on each side.
Do not cover the air intakes below and on the back of the machine; they should be always free to allow the necessary air flow used to cool the engine.
Do not throw away package, but store in case the machine will be moved in the future.



Electric connection
Before connecting the equipment, make sure that the power tension indicated on the label corresponds to that of the power network and that an earthing is available. Insert the first plug of the cable into socket (E), then connect the other end of the cable network.
Perform this operation with opened power switch (B) (position 0). The power supply cable is homologated, with section adapted to maximum absorbed stream (as indicated in the teechnical specifications). The cable is 2 meters long, if you are using extension cables, please verify that:
- the section of the cable is coordinated with its length and that the section is at least equal to the original cable.
- the position of the cable preserves it from any damages
- the point of connection to the power source disposes of all necessary safety protections as provided for by current regulations.

Connection to suction system
This operation will have to be carried out by qualified personnel.

Important	Before connecting the suction device, make sure it has a power of 800 / 1000 W in order to guarantee a sure and constant evacuation.

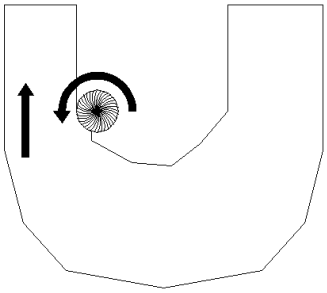
To carry out the connection, act as follows:
- remove the machine plug from the supply socket
- Connect the flexible connection pipe of the suction system to the equipment, by inserting it in the backside attachment (D) (if necessary, use the adapter supplied with the equipment); the pipe must have an internal diameter not less than 20 mm, in order to guarantee an air flow section of at least 3 cm^2 and a minimum length, in order to mimize losses of load. It should not present any bends and should be possibly straight.
- Insert the suction system plug into the socket (C) to start evacuation.

5.0 MOVING THE MACHINE

Keep the package in case it should be needed when transporting the machine. In that case, please follow the mentioned instructions:
a) switch off the equipment
b) unplug the power supply cable, put the equipment and all its parts into the cardboard box, putting soft and antishock material among the single parts.
c) insert the instruction manual, finish packaging and close the box.

6.0 INDICATIONS ABOUT THE USE OF THE EQUIPMENT

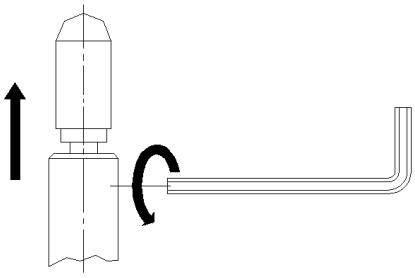
The operator will have to stand in front of the equipment, in order to work properly.
To use the machine, please perform the following operations:
1 – switch on the suction system
2 – switch on the power switch; as the engine starts, the warning light will be on.
3 – verify that the cutter rotates concentrically
4 – wear protections as prescribed (eyeglasses, gloves and antidust mask).
5 – lay the model on the woring bench, holding it firmly with both hands, and push it towards the mobile protection, which will move and start the finishing.
6 – During the cutting, preferably move the model in the opposite way with respect to the cutter rotation. Do not press excessively the model against the cutter, that could lead to excessive vibrations or break the model.
7 – Once finished, operate the power switch and shut the machine off.



7.0 MAINTENANCE

All maintenance operations should be performed when the equipment is stopped and powered off.

Power supply cable.
Check the conditions of the supply cable, if it is damaged, let it replace by a qualified technician.
Lubrication
Since engine bearings are airtight, thus no lubrication is here needed. Instead, the stem of the cutter should be occasionally oiled or greased, at least when it is necessary to unmount it or replace the cutter.
Replacing the cutter
The cutter should be replaced any time its conditions prevent it to be used safely. Replace it if it is splintered, if it does not rotate concentrically or it is worn out. You can detect if the cutter is worn out by evaluating the stress the operator must put in order to perform the finishing.



Warning! Before replacing the cutter, make sure that the machine plug is disconnected from the power socket.
Remove the 4 screws fixing the working bench, then unloose (by means of the supplied screw wrench) the screw blocking the cutter on the driving shaft and pull it out.
Clean the cutter slot with compressed air and oil it.
Mount the new cutter and execute the above steps in the reverse order.

Important:	Before starting any new work, check that the equipment rotates centrally with respect to its axis.

8.0 INCONVENIENCES AND REMEDIES

All operations are to be carriedo out when the machine is disconnected. Do not maintin, adjust or repair differently from what is explicitly indicated in this instruction manual; in case of need, contact our Technical After-Sale Service.

Inconvenience	Cause	Remedy
The machine does not switch on.	No electric supply	Verify that the power supply cable is correctly plugged in.
The suction pipe works, but does not absorb dust	The suction filter is clogged --- The connection pipe is clogged, bent or deformed.	Clean / empty the filter --- Verify and repair
The gipsy of the model tends to split and melt with the cutter.	The model has got a too high degree of moisture.	Verify that the model is properly dry.
During work, the cutter vibrates, splinters the model and does not operate correctly.	The cutter does not rotate concentrically --- The cutter is worn out --- The model can't be steadily blocked with hands	Verify that the fixing screw is properly tightened. --- Check that the cutter is not deformed because of shocks --- Check that the cutter has been correctly mounted. --- Replace the cutter --- Block the model strongly with hands pushing it against the working bench.
The mobile safety shield does not reposition	The spring is detached or broken	Unmount the working bench and check the spring (refer to qualified technician).

If, after these verifications, the problem has not been solved, it is recommended to contact the seller or the manufacturer. For all inconveniences regarding the drive gear, the engine or the electric components, please get in touch with the manufacturer.

9.0 TECHNICAL REFERENCE REGULATIONS AND TEST PROCEDURES

This umit is mass-produced 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 furtherly tested by an automatic test installation assuring compliance with the fixed limits.

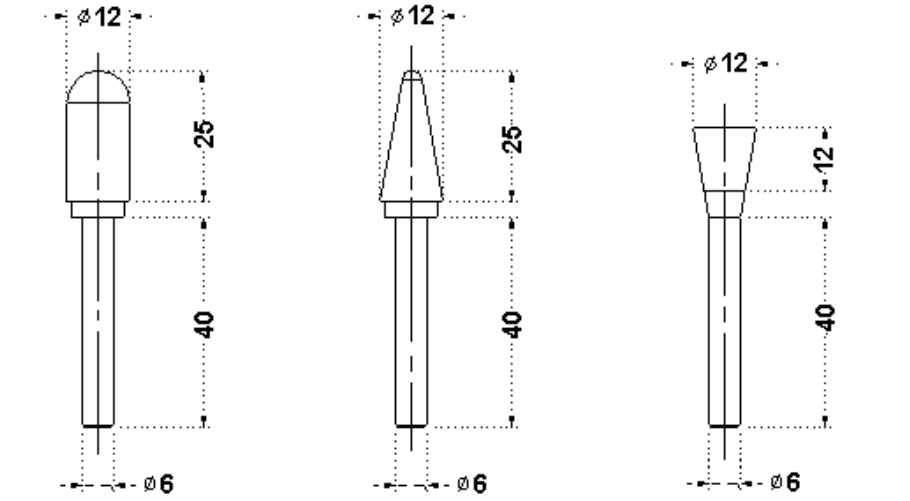
10.0 DEMOLITION AND WASTE DISPOSAL

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

11.0 ACCESSORIES

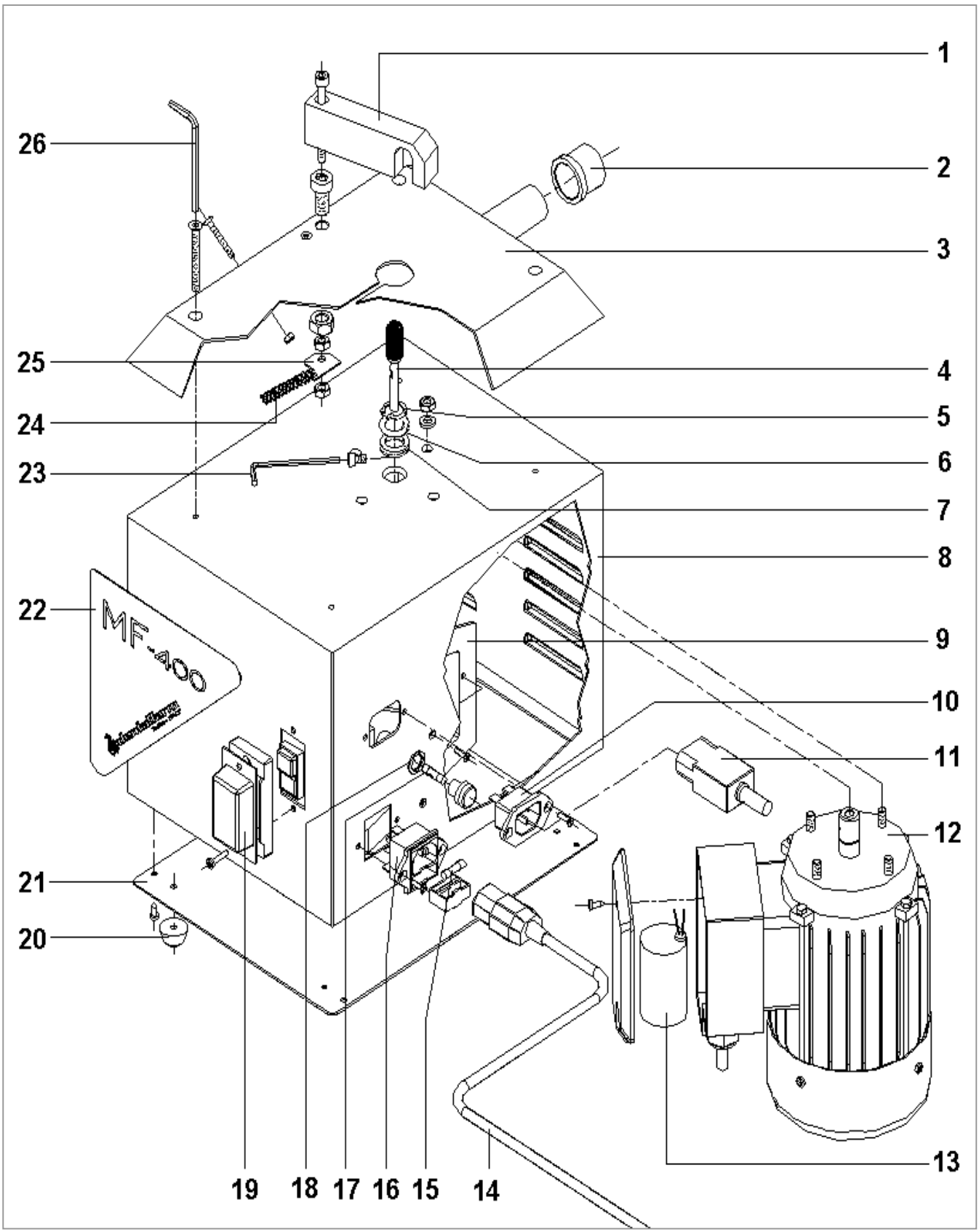
Following accessories are supplied:
- power supply cable with plug and socket
- 2,5 mm screw wrench
- 3 mm screw wrench
- 3,15 A fuse
- plastic adapter for suction collection pipe (for pipes with different internal diameter)

Accessories available on request:
- cutters with different shapes



12.0 EXPLODED DRAWING AND SPARE-PART LIST A5610 MF-400

REF.	CODE	DESCRIPTION
1	**5610008**	CUTTER PROTECTION SHIELD
2	**5610011**	ADAPTER FOR SUCTION COLLECTION PIPE
3	**5610006**	STAINLESS STEEL WORKING BASE
4	**5610002**	CYLINDRIC CUTTER
-	**5610003**	CONE CUTTER
-	**5610004**	REVERSED CONE CUTTER
5	**5610015**	SEEGER E15 RING
6	**5610017**	SUPPORTING WASHER
7	**5610019**	ANTIDUST JOINT
8	**5610005**	METAL BODY
9	**5610012**	CONNECTION BOX CAP
10	**NEA043**	SUCTION PIPE PLUG
11	**NEA044**	SUCTION CABLE PLUG
12	**5610013**	ENGINE
13	**5610014**	CONDENSATOR
14	**NEV013**	ELECTRIC CABLE WITH PLUG
15	**NEA071**	FUSE 6.3A
16	**NEA046-I**	PLUG AND FUSE-HOLDER UNIT
17	**NEA070**	FUSE 3.15°
18	**NEA060**	ENGINE FUSE-HOLDER
19	**5610018**	MAIN SWITCH
20	**NVG052**	RUBBER BUMPER
21	**5610007**	LOWER CLOSING PLATE
22	**5610001**	MARK LABEL
23	**NVT202**	FOLDED HEXAGON WRENCH N°4
24	**5610010**	RETURNING SPRING
25	**5610009**	GUIDING PLATE
26	**NVT201**	FOLDED HEXAGON WRENCH N°3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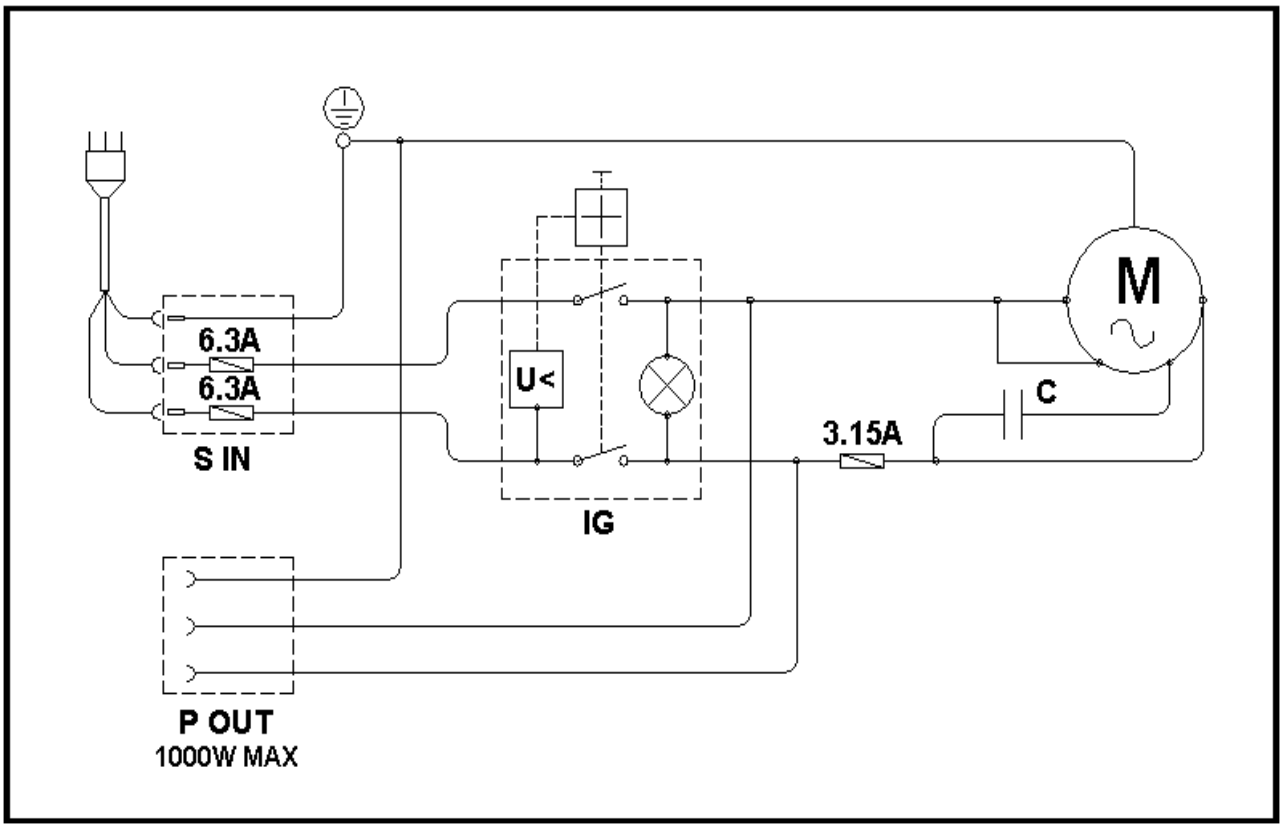
13.0 ELECTRIC DIAGRAM



Symbol	Description
S IN	Power socket group
P OUT	Suction system connection socket
IG	Main power switch
C	Condensator
M	Engine

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