MOTORIZED CENTRIFUGE

ROTOJET

🕮 INSTRUCTION AND MAINTENANCE MANUAL

dentalfarm
DENTAL EQUIPMENT SINCE 1972

0.0 INTRODUCTION

0.1 MANUAL REFERENCE GUIDE

To allow a practical and correct reference of the manual, we decided:

- to work out a glossary including the terms currently used by skilled technicians in the dental field and those specifically related to the Directories; a list of current abbreviations is also enclosed.
- to insert a detailed index of the discussed matters
- to insert the illustrations directly in the body of the text they refer to
- to mark into brackets the references for the illustrations or for the enclosed tables, identified by letters for the illustrations and by numbers for the assembly part tables (ranging from 01 to 49 referring to table no. 1 and from 50 to 99 referring to table no. 2).
- to attach to the Manual the tables with the exploded drawings allowing to be easily and promptly referred to the text.

For any information referring to the above matters we kindly invite you to contact our TECHNICAL-COMMERCIAL SERVICE and AFTER-SALES department.

0.2 GLOSSARY AND ABBREVIATIONS

CASTING RING = any casting mould with cylindric, oval or different shape normally utilized in a casting machine for use in dental lab.

CRUCIBLE = pot in refractory material suitable to contain the metal to be melted. Generally, it can have two shapes:

- "glass", designed both for electrical induction or thermo-resistance equipment;
- "cradle", for the motorized centrifuges fitted for the torch melting.

CENTERING = very important operation allowing to verify that the axle of metal sliding, represented by the hole of the crucible, perfectly combines with the injection canal obtained in the mould.

BALANCING = another very important operation in a machine exploiting the centrifugal power. In this specific case, we have to find the right position of the mobile counterweight in order to compensate (to balance) the load on the arm represented by the set: casting ring + crucible + metal.

CENTRIFUGAL ARM = set of rigid and mobile mechanical parts fixed in the middle of a transmission arm connected to the engine.

DEWAXING = procedure allowing wax to flow away from the pouring channel. This operation has to be carried out immediately after the investment setting time is over, when the chemical reaction has ended and when enough heating has been developed to melt the wax.

OPERATOR = a person with a proper technical background, qualified to execute metal casting procedures.

EXPOSED PERSON = any person who might be close to the machine during operation.

S.T. = Technical Assistance

S.C. = Commercial/Technical and After-sale Service

1.0 SAFETY

Most of the accidents occuring during the use and the maintenance of the machine, are caused by the non-compliance to and negligence of the fundamental and basic safety rules.
Most times an accident can be easily avoided simply recognizing at the right moment the potential danger of certain circumstances, before the accident occurs.

Before starting to use the machine and before any maintenance, it is of utmost importance for the personnel to read carefully and fully understand all the warnings and reminders to ATTENTION and CAUTION reported in this guide.

The basic precautions to be taken are indicated in compliance with the operations which might originate some risks.

On the machine too, some special labels calling for ATTENTION and CAUTION have been sticked, specifying the instructions to follow and to identify specific risks that, if underestimated, may originate serious lesions to the operator or to other people standing nearby.

This kind of warning is highlighted both in the present guide and specified on the labels fixed to the machine with the following symbols:

/!\ **ATTENTION** (yellow field)	Warning about the risk of lesions, also serious

/!\ **CAUTION** (yellow field)	Warning about the need to adopt precautions before and during operation

The labels sticked on the machine, specifying the warnings, are printed in the most widely spoken languages inside the European Community.

The use and maintenance of this machine carried out unproperly can be dangerous and cause serious accidents.

This machine has not to be used and maintained before having read and fully understood the instructions described in the section “INSTRUCTIONS FOR THE USE AND MAINTENANCE”.

2.0 DESCRIPTION OF THE ROTOJET

2.1 PURPOSES

ROTOJET is a machine expressly designed for the Dental Technician field, studied to assure the correct injection of the melted metal into the casting ring, exploiting the centrifugal power.

The machine can be used also to carry out the dewaxing of the rings before the hardening stage in the burn-out furnace.

2.2 PHYSICAL DESCRIPTION

The machine is very compact and it consists of:

- an easy-to-clean stainless steel tank embodying the centrifugal rotating arm, closed through a mobile lid hinged backward
- an insulated lower compartment, incorporating the control mechanisms and the electrical connections
- a front panel where the controls and the settings are located
- in addition to this, a reversible support is also provided to hang the torch.

The Regulations in force provide for the injection to be carried out under the highest safety conditions both for the Operator and for the People exposed, in a closed environment, and for the access to the mobile parts, to be forbidden until the mobile parts have not completely stopped.

Complying with the above-mentioned requirements, the machine has been designed according to the latest technical advancements.

2.3 CENTRIFUGAL ARM

The arm is the part of the equipment requiring a better knowledge as it greatly differs from any other arm assembled on similar machines.
Standard centering and balancing systems are pre-regulated and are two exclusive features by DENTALFARM expressly studied to facilitate the two settings of utmost importance for the complete success of the complete operation.
Description and operation of the two devices are deeply explained in paragraphs 5.1.1 and 5.1.2 of section “INSTRUCTIONS FOR USE”.

2.4 POSSIBLE VERSIONS OF THE ROTOJET

ROTOJET can be supplied in the following versions tailored to suit the Customer’s specific requirements:
A) to be fixed on a standard working bench
B) to be fixed to the proper table support – item code DENTALFARM **A4602B**
C) to be fitted in a special drawer of the lab furniture For the technical instructions please refer to the section "INSTALLATION AND CONNECTION INSTRUCTIONS".

3.0 UNPACKING INSTRUCTIONS

3.1 CENTRIFUGE

To carry out unpacking instructions in a safe and comfortable way, proceed as follows:

- lift the foam protection
- utilize the two proper plastic holding bands to take out the machine from the packing

/!\ ATTENTION	This operation has to be carried out by two persons due to the high weight of ROTOJET (Kg 50,0 approx.).

- cut the holding bands
- remove the protection nylon sheet and place the machine in the laboratory.

/!\ WARNING	To move the machine already unpacked, do not use the handle of the door but hold it firmly from the bottom.

/!\ WARNING	We recommend not to destroy the packing carton since the same can be recycled and not to waste in the environment the nylon sheet, the foam angles and the plastic bands which are not biodegradable.

3.2 SUPPORT

To remove the support from the packing, proceed as follows:

- pull out the support from the packing
- remove the protection nylon sheet
- assemble the support according to the sequence of colours and place it where allocated.

4.0 INSTALLATION AND CONNECTION INSTRUCTIONS

4.1 INSTALLATION VERSION A

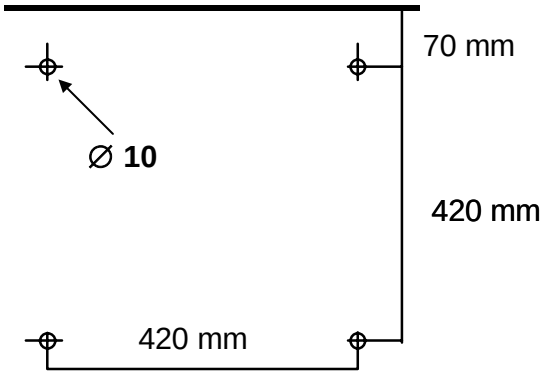
If the ROTOJET has to be positioned on a bench, we recommend, in order to work under comfortable conditions, to choose a bench ranging in height from 500 to 600 mm, if the working bench is higher, operation with the flame will inevitably result difficult.

/!\ WARNING	A fixed or a shock-absorbing anchorage is absolutely necessary to reduce vibrations.

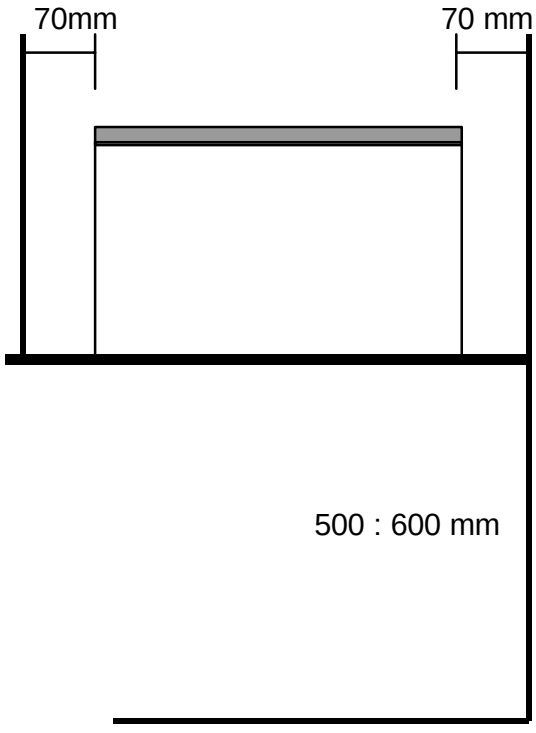
To carry out this operation, proceed as follows, referring to the diagram of picture 3/1:

1. drill 4 holes of 10mm diameter in the marked positions on the upper plane of the bench
2. place the 4 shock-absorbing rubber feet
3. place the machine well centered on the plane
4. screw 4 M8 bolts with the washers supplied with the machine in the fitting holes made in the bottom of the machine and tighten.

Let some centimeters free on every side of the machine to allow the vibration during the rotating stage of the arm and the circulation of cooling air (picture 3/2).
This solution is valid also if the ROTOJET is fixed on its floor support.



picture 3/1



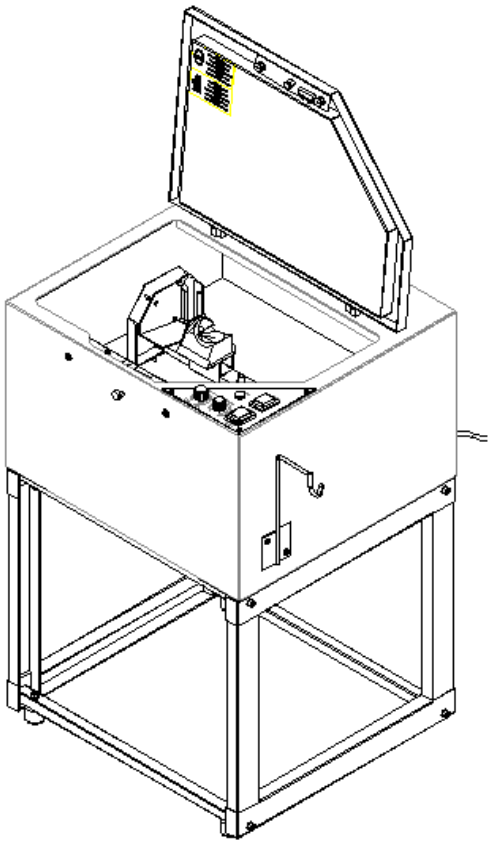
picture 3/2

/!\ ATTENTION	If the machine is simply layed down on the bench without tightening it firmly, DENTALFARM will decline all responsibility for any lesion or damage susceptible to occur.

4.2 INSTALLATION VERSION B

If the ROTOJET will be positioned on the proper support, proceed as follows:

1. place the support in its final location spacing it out from the wall or from other machines, as shown in picture 3/2
2. adjust the support feet in order to obtain a good stability and lock the screw nuts
3. place the ROTOJET well centered on the support
4. screw from the inside and close firmly the 4 screws supplied with the machine.



/!\ WARNING
It is necessary to ballast the support at the base in order to improve its stability (see Technical Specifications). We suggest to utilize the inside of the support to store the plaster or the investment bag.

4.3 INSTALLATION VERSION C

In case you decide to fit in the ROTOJET in a drawer of your lab furniture, it will be necessary to make sure that your lab furniture has been manufactured for that specific use, namely it must incorporate the special heavy-duty opening guides, suitable to carry loads of at least Kg 100 as well as to stand the vibrations originated by any centrifugal casting machine.

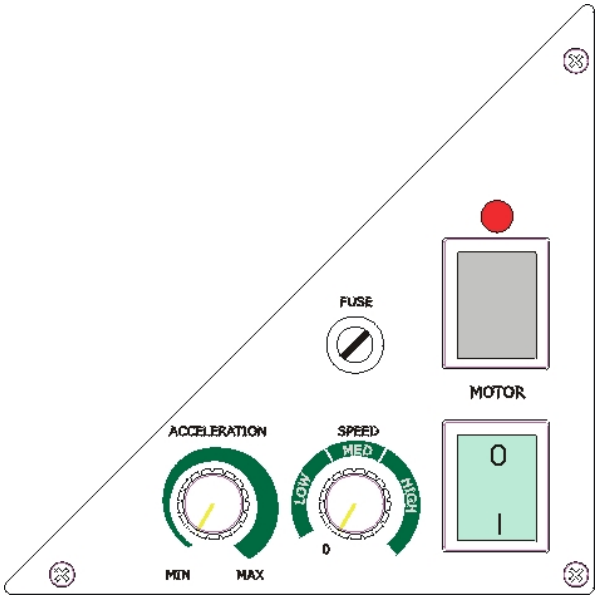
4.4 CONNECTION

After the assembly, the electrical connections can be carried out in the following way:

1. introduce the plug assembled on the feeding cable to an approved earth socket 220V-50Hz-15A placed in a position easily accessible since it could be necessary, for safety precautions, to disconnect the machine.
2. assemble the support utilizing the proper screws on the left or right side, as preferred, to hook the torch.

5.0 INSTRUCTIONS FOR USE

5.1 CONTROLS AND FUNCTIONS



All the operating push-buttons are grouped on the control panel

Green main switch = the light on indicates that tension is inside the machine.
MOTOR push-button = when pressed it allows starting the motor.
Red warning light = confirming that the motor starting control has been pre-energized and it will extinguish at the end of the cycle.

Both the engine rotation period and the door automatic locking are set by fixed internal timers, upon request different times can be set.
The engine will start only provided that the lid is fully locked and after the electrical control has been switched on.

FUSE = the compartment cap containing the network fuse.

On the left side of the control panel are located the potentiometers regulating the engine initial acceleration (**ACCELERATION**) and the engine running speed (**SPEED**).

For the acceleration setting, rely on a very simple rule: if an alloy has a very high specific weight, the motor will have to start at lower values (potentiometer leftwards), in case of non-precious alloy (low specific weight) turn the knob index up to the highest levels (fully turned rightwards).
For palladium alloys, having low specific weight (14-15) but featuring poor molecular sliding, use the highest values (potentiometer rightwards) even if they differ from the indications previously specified.

For the speed, always use average-high positions in order to obtain a good compact melting result due to pressure of the centrifugal force.

5.2 PRELIMINARY OPERATIONS

Have access to the internal tank, shift aside the front knob, remove the arm protection and take off the crucible and all the parts supplied with the machine.

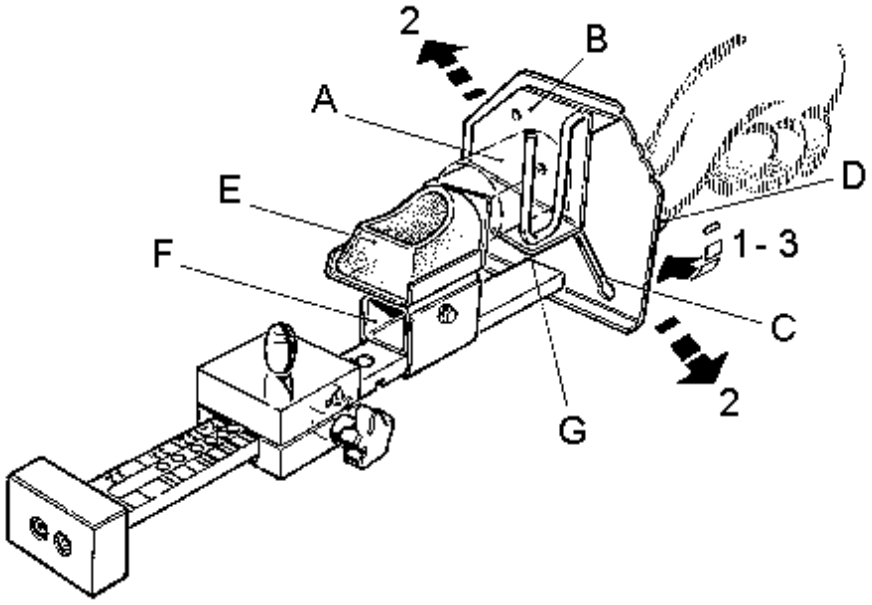
5.2.1 Positioning of the crucible

The casting crucible (E) must be introduced in the proper seating (F) with the spout turned towards the casting ring support until it fully enters the proper hole (control and centering) (see picture 5).

5.2.2 Centering of the casting ring

The centering of the casting ring (A) can be carried out by lifting or lowering the mobile support (B) sliding in a slit on the arm back wall (C) (see ill. 5).

The aim consists in keeping the center of the casting ring (injection cone) and the hole of the crucible inlet (E) (injection axle); thanks to this system, it is granted that to a reduction of the support (rise in diameter) always corresponds an equal side shifting of the holding element (G).



picture 5

You can avail of precise references pertinent to the 4 casting ring standard sizes mostly used in the dental field, namely 1*x* = *diam.30 / 3x = diam.50 / 6x = diam.65 / 9x = diam.80.*

After the right positioning has been found, close the knob (D) to lock the sliding.

Should size of the casting rings differs from standard one, it is still possible to center the piece correctly but in this case it will be necessary to check it by putting forward the crucible slade (F) until the crucible inlet mates with the injection

5.2.3 Balancing of the arm

To balance the arm, you do not need all the components (casting ring, metal, crucible) and you are not compelled to release the arm from the transmission shaft, as required by other machines, but it is simply sufficient to position the mobile counterweight (N) on the references (P) already preset by DENTALFARM (see ill. 6). To carry out this operation, loosen the knob clamping (M) and lift the knob (L) of the stop pegs and let the counterweight slide on the cursor (O) until you find the position required (this operation is correctly executed when the pegs enter the corresponding hole) and screw the knob (M). The marked references always refer to standard casting rings also in connection with investments used (plaster or phosphate base) and with the working procedures utilized (free expansion or casting in metallic casting ring or use of our patented system ISOSYSTEM) originating considerable differences in weight.
If necessary, the counterweight can be locked in position differing from the references (the peg remains lifted) but, on the contrary, you will have to tighten carefully the pressure knob (M).

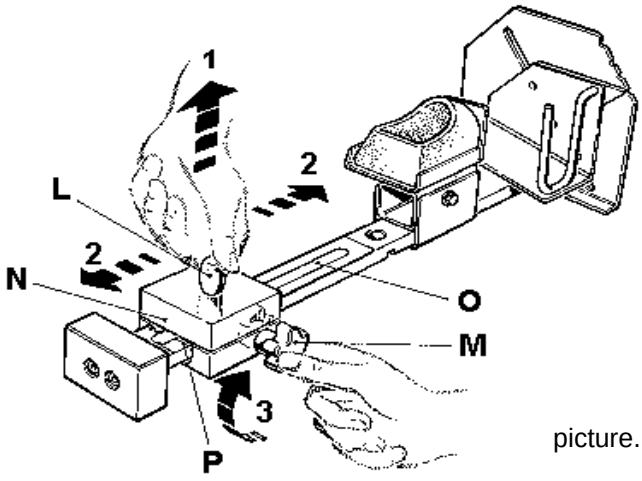
WE DETAIL HEREWITH THE TABLE OF WEIGHTS, WHICH HAVE BEEN USED TO SET THE MARKED SCALE REPORTED ON THE CENTRIFUGAL ARM; IT REFERS TO THE WEIGHT OF THE CYLINDERS ONCE THEY HAVE DRIED UP.

DEFINITION AND CASTING RING ∅	FREE EXPANSION (YELLOW)	METALLIC CASTING RING WITH PLASTER INVESTMENT (GREEN)	METALLIC CASTING RING WITH PHOSPHATIC INVESTMENT (RED)
1X - ∅ 30	**55**	**91**	**102**
3X - ∅ 50	**131**	**190**	**206**
6X - ∅ 65	**245**	**285**	**315**
9X - ∅ 80	**398**	**448**	**582**

Lines of each sector refer to the working technique:

Line	Technique
Red	Metallic casting ring with phosphatic investment
Green	Metallic casting ring with plaster investment
Yellow	Free expansion

NOTE In case the ISOSYSTEM technique is used, follow the yellow reference for casting rings no. 6 and 9.



picture. 6

/!\ ATTENTION	If the operations illustrated in points 5.1.2 and 5.1.3 are not correctly carried out, the success of the casting could be compromised, damage the external and mechanical structures or even jeopardize the Operator personal safety.
/!\ WARNING	Never start up the engine before each component has been duly located in its proper place (ring, crucible, metal) and before the arm has been correctly balanced.

5.2.4 Working position

The fixed arm has been engineered with higher casting components to improve both visibility and ergonomics.
The control panel has been conveniently located in the front part for an easy access and it is well visible and protected from accidental crashes.

/!\ WARNING	We suggest to have the melting torch support base beside the machine (use the support supplied with) and be sure that all the setting and control elements are well visible and reachable from the working position.

5.3 CORRECT OPERATING SEQUENCE

To carry out the daily work, proceed as follows:

1. switch on main
2. check setting of speed/acceleration potentiometers
3. unlock and open the lid
4. check if the crucible is not worn out and if it is still suitable for the metal to be melted (we suggest to have at least one crucible for each alloy)
5. verify the correct position of the crucible
6. position the casting ring well centered (if the standard casting rings are used it is sufficient to position it near the reference marks)
7. carry out the balancing (if the standard casting rings are used, refer to the preset marks according to the technique and the investment used)
8. position the arm in the most comfortable way according to your own working conditions
9. measure the quantity of metal necessary and eventually pour in the deoxidizer (in compliance with the products used)
10. switch on MOTOR in order to pre-excite the engine starting control (corresponding light will be on)
11. take out the casting ring from the furnace and position it on its support
12. start to melt
13. quickly close the cover: rotation of the arm will start immediately
14. wait until complete stop of the rotation (lamp will switch off), open the lid and take the work
15. close again and switch off the machine.

/!\ CAUTION	We remind that the use of glasses during the casting operation is compulsory since the metals, as temperature rises, give out infrared rays detrimental to the sight.
/!\ CAUTION	We remind that the use of athermic gloves is compulsory to take the casting rings out from the furnace and to move them inside the machine.

6.0 GUIDE TO SOLVE THE PROBLEMS

Problem: **THE MACHINE DOES NOT START**

Possible cause	**Remedy**
Lack of tension (the green main switch will not light)	Check: - the magnetothermic switch - the socket feeding switch - the fuses of the control panel.
Lack of voltage distribution (the green main switch is on but the controls are not operating)	Check the network fuse (FUSE) and eventually replace; should this inconvenience still occur, call our TECHNICAL SERVICE.

Problem: **THE ENGINE DOES NOT START**

Possible cause	**Remedy**
Lack of tension on the starting button	Check: - if the lid is well closed - condition of COVER switch
The safety microswitches are broken or interrupted.	Refer to the assembly part exploded drawing attached to the manual and check condition; ev. contact our TECHNICAL SERVICE for the replacement.
Defective anchoring of the lid locking pin.	When starting the machine, gently close the lid by pressing it onto the contrast rubber parts and holding it till complete lock.
Fuses of the motor card are interrupted	Contact our TECHNICAL SERVICE to replace the fuses
The engine carbon brushes are worn out	Contact our TECHNICAL SERVICE to replace the carbon brushes.
The timer circuit is interrupted	Contact our TECHNICAL SERVICE to verify the connections and the automatic reset.

Problem: **THE MOTOR STARTS, BUT GETS STOPPED AFTER A FEW SECONDS**

Possible cause	**Remedy**
The arm is not correctly balanced, the machine suffers from excessive vibrations, the lid lock gets open.	In case of excessive vibrations the mechanical coupling of the electric lid lock gets open, forcing the engine to stop for safety reasons. Repeat the balancing procedure described in paragraph 5.2.3.
The mechanical components of the lid closure are either loosened or not in the correct position.	With the help of the exploded drawing, try to understand how the elements should be positioned. Vibrations can loosen the locking nuts. To facilitate the placement, adjusting slots are designed on the lid for the coupling pivot, on the magnet support and on the front of the equipment for the complete locking unit.

Problem: **THE ENGINE DOES NOT STOP**

Possible cause	**Remedy**
Direct feeding.	Press the main switch and contact our TECHNICAL SERVICE due to a possible breakdown in timer circuit.

Problem: **THE LID CAN NOT BE RELEASED**

Possible cause	**Remedy**
The door hooking pin is declutched.	While unlocking the front knob,press the lid downwards to unfasten and lift it.
The door hooking pin has moved.	Unscrew the two screws on the front panel under the handle, thus separating the locking system alowing you to open the lid and recondition the mechanism.

Problem: **VIBRATION IN EXCESS DURING CENTRIFUGATION**

Possible cause	**Remedy**
The arm is not properly balanced	Repeat the balancing operation referring to point 5.1.3.
Incorrect installation of the machine	Check stability, clamping to the bench or to the support and control the ballast.

Problem: **METAL FLOWS AWAY FROM THE CRUCIBLE SIDE EDGE**

Possible cause	**Remedy**
Too much metal in the crucible	Check the capacity limits of your crucible.
Acceleration not properly adjusted	Repeat this operation referring to point 5.1.
Balancing not properly executed	Repeat this operation (5.1.3).

Problem: **IRREGULAR INJECTION (OUT OF OR ON THE EXTERNAL EDGES OF THE MELTING CONE)**

Possible cause	**Remedy**
Casting ring not centered correctly.	Repeat this operation referring to point 5.1.2.
Moulding does not comply with the limits of the machine.	Place the melting cone right at the centre of the casting ring since the self-centering system provides for the casting ring to be positioned at the axis crossing point.

7.0 GUIDE FOR THE ORDINARY MAINTENANCE

The only maintenance required by the ROTOJET Centrifuge simply consists in regular cleaning and lubrication operations.

During centrifugation, the casting rings may release dust and investment particles laying on the tank and on the arm mechanical components.

We recommend to clean accurately all the components above all after a consecutive operation or at least once every three months, acting as follows:

- for the stainless-steel tank use exclusively a cloth dampened with water or with non-irritating cleaning products
- for the external enameled metallic parts, exclusively use products containing NO acids and solvents
- for the arm mechanical components, we recommend to blow accurately with compressed air and to lubricate all the sliding parts with oil or grease.

To facilitate the cleaning operation, it is possible to pull out the arm from the tank by unscrewing the nut placed on the center axis (set screw wrench 17).

It is also necessary every three months:

- to check sliding of the crucible slade; to do this, loosen the two side screws, clean accurately, slightly lubricate and close always complying with the arm parallelism
- to lubricate the door hinges

Referring to the table, it is possible to disassemble the arm components; despite this, as this operation is considered as extraordinary maintenance, it is better to have it carried out by the TECHNICAL SERVICE.

No ordinary maintenance is contemplated for the electrical part but should this event occur, the maintenance will have to be carried out exclusively by skilled personnel, duly trained by DENTALFARM or at least by a professional technician.

Should you need any additional information, we kindly invite you to contact the TECHNICAL SERVICE.

8.0 HOW TO GET IN TOUCH WITH DENTALFARM

DENTALFARM is present on the European market through a wide network of Dealers disposing of promotional and technical material, who can provide spare parts, assistance or any other information.
If you prefer to contact directly our seat in Turin, please refer to the following numbers:
TECHNICAL COMMERCIAL SERVICE - 011 / 4346588 ☎
TECHNICAL ASSISTANCE - 011 / 4346632 ☎
FAX - 011 / 4346366 🖷
E-mail: info@dentalfarm.it

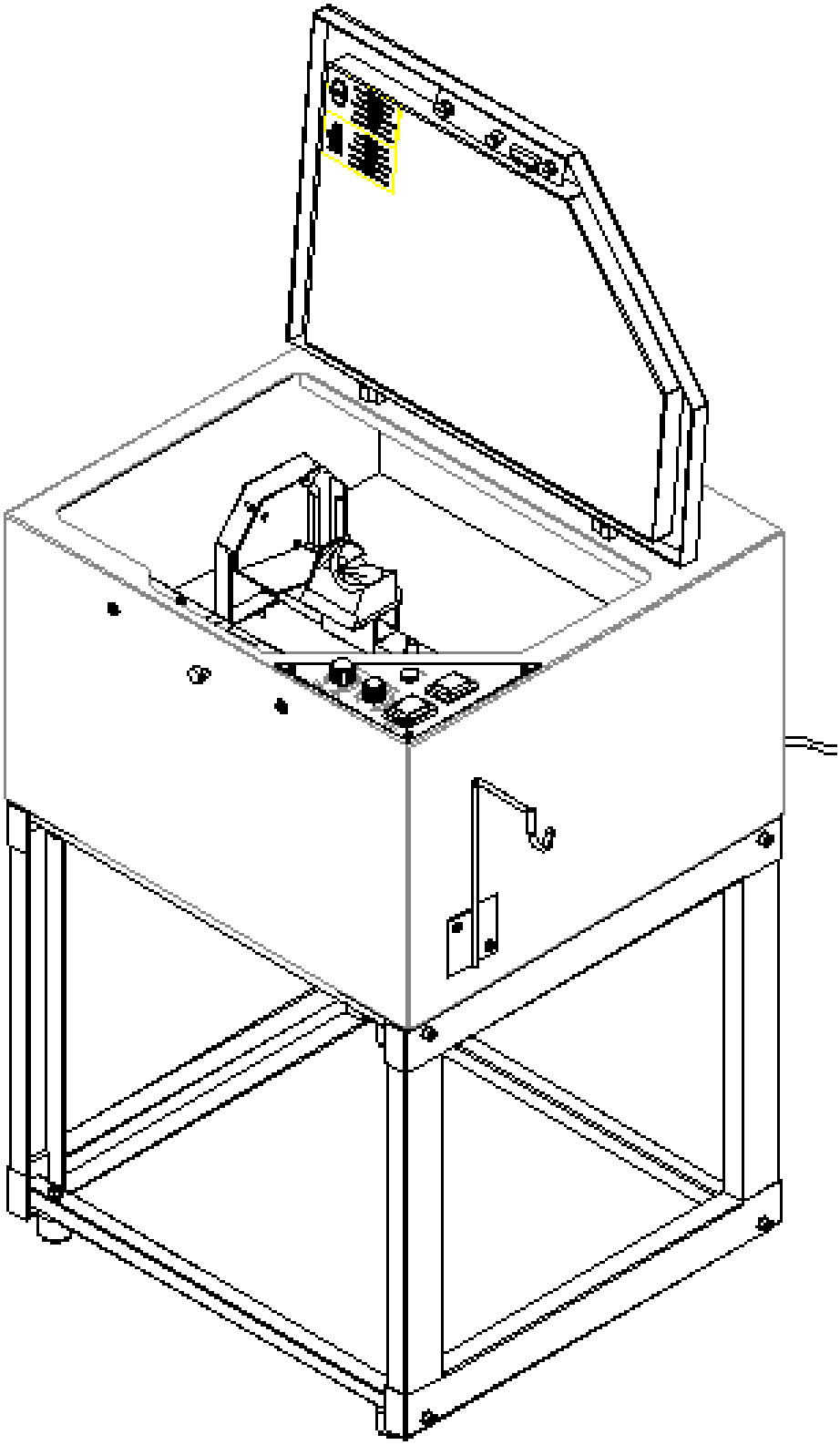
9.0 TECHNICAL REFERENCE REGULATIONS AND TEST PROCEDURES

The motorized centrifuge is mass-manufactured by DENTALFARM in compliance with technical and safety rules in force, as provided for by the 200/42 EEC Community Directive on Machinery.

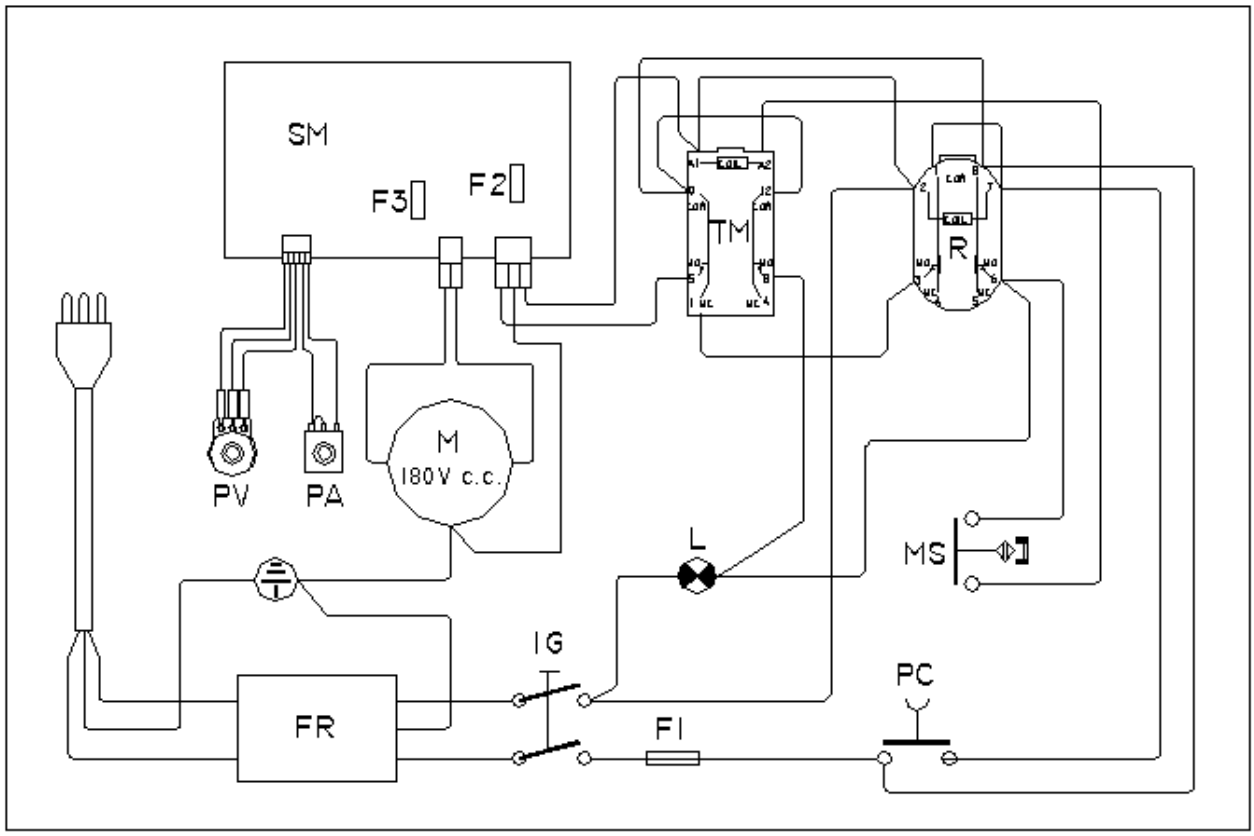
Careful inspection and full routine testing is carried out singularly on each machine which is furtherly tested by an automatic test installation assuring compliance with the fixed limits.

DEMOLITION AND WATE 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/EC.



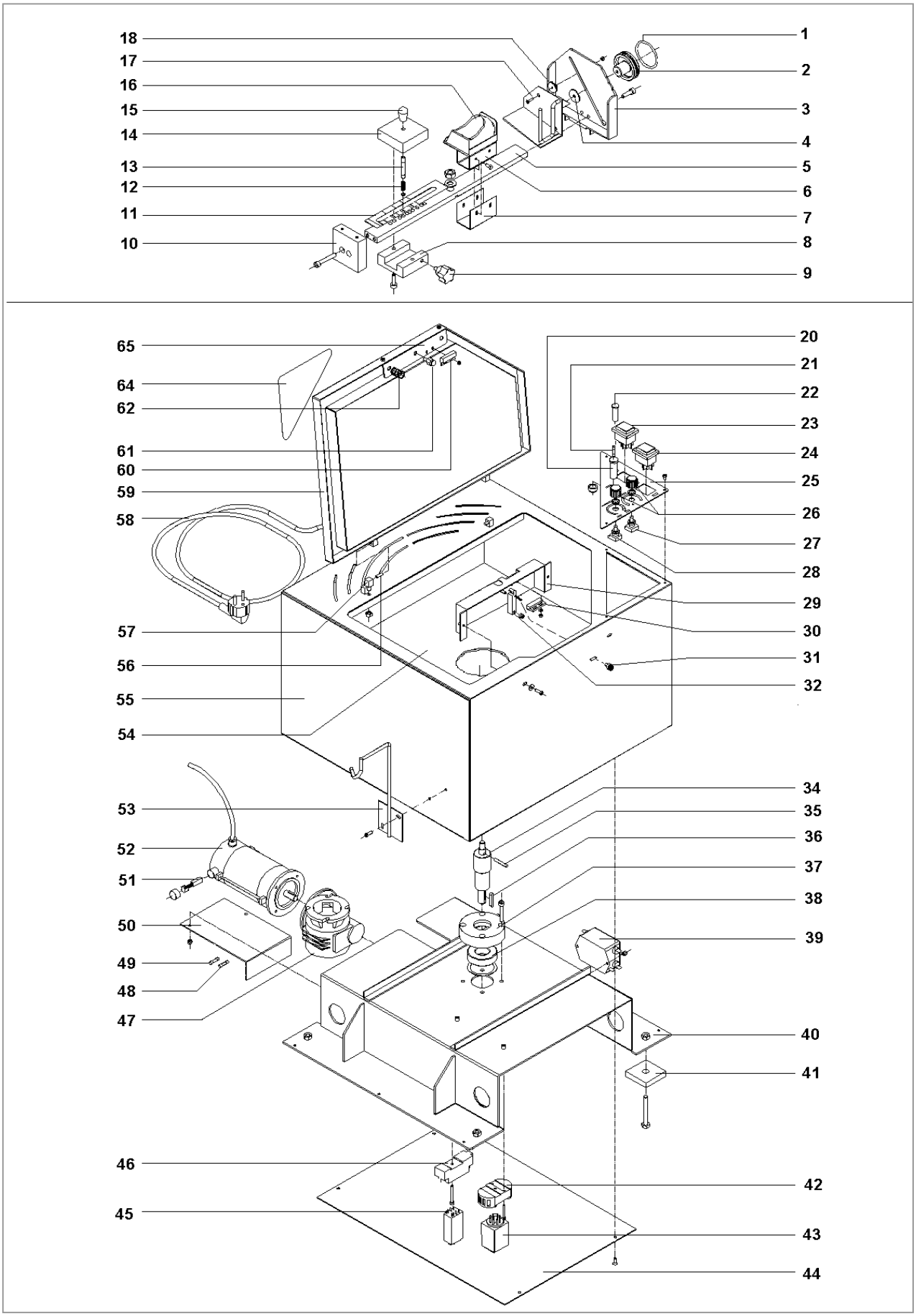
10. WIRING DIAGRAM



POS.	DESCRIPTION
SM	ENGINE POWER BOARD
F2	FUSE 4 Amp
F3	FUSE 200 mAmp
PV	SPEED POTENTIOMETER
PA	ACCELERATION POTENTIOMETER
M	EINGINE 180V DIRECT CURRENT
TM	ENGINE TIMER
R	CYCLE RELAY
MS	LID MICROSWITCH (MAGNETIC SENSOR)
CS	LID LOCK ELECTROMAGNET
PC	CYCLE KEY
IG	MAIN SWITCH
F1	FUSE 6,3 Amp
L	LAMP
FR	NET FILTER

11. EXPLODED DRAWING AND SPARE PART LIST ROTOJET

POS.	CODE	DESCRIPTION
1	NPOR149	OR JOINT 149
2	RC033	LOCKING KNOB
3	RC010A	BACK STROKE LIMIT
4	RC038	SUPPORTING WASHER
5	RC020	ARM
6	RC009	CRUCIBLE SUPPORT
7	RC013	LOWER LOCK CRUCIBLE SUPPORT
8	RC024	MOVABLE BALANCE WEGHT – LOWER PART
9	NVT171	MALE WHEEL M6x10
10	RC025C	FIXED BALANCE WEIGHT
11	RC049	ARM LABEL
12	RCS019	RETURN SPRING
13	RC026	LOCKING PIVOT
14	RC023	MOVABLE BALANCE WEIGHT – UPPER PART
15	NVT152	FEMALE KNOB M6
16	RC100	CERAMIC CRUCIBLE FOR CENTRIFUGE
17	RC011	CYLINDER SUPPORT
18	RC021A	GUIDING PIN
20	NEA060	FUSEHOLDER
21	NEA071	5x20 RAPID FUSE – 6.3A
22	NEA033	RED LAMP
23	NEC031B	WHITE PROTECTED UNIPOLAR KEY
24	NEC016	GREEN PROTECTED BIPOLAR SWITCH
25	4601045	CONTROL PANEL SUPPORT
26	NVT111	POTENTIOMETER KNOB
27	NES035A	SPEED POTENTIOMETER 10K
28	NES035B	ACCELERATION POTENTIOMETER 1M
29	4601065	DOOR LOCK SUPPORT
30	NEC044	FLAT MEGNETIC SENSOR
31	NVT150	M4 FEMALE KNOB
32	RC032	SMALL-BLOCK
34	RC030	DRIVING SHAFT
35	NVT054	CYLINDER PIN D.=5x30
36	NVT061	5x5x28 TANG
37	4601041	BEARING SUPPORT
38	NVT032	BEARING D.=25 WITH SCREENS
39	NEC134	ANTI-DISTURBING FILTER
40	4601003	STRUCTURE
41	4601063	SHOCK ABSORBING FOOT
42	NEA080	OCTAL BASE FOR RELAY
43	NEC101	OCTAL RELAY 220V
44	4601006	LOWER LOCKING PLATE
45	NEC123	ELECTRONIC PLATE
46	NEA085	TIMER BASE
47	NES033	REDUCTOR WITH WORM SCREW
48	NES035D	5x20 RAPID FUSE – 200mA
49	NES035C	5x20 RAPID FUSE – 4A
50	NES035	ENGINE FEEDING CIRCUIT
51	NES032C	CARBON SPARE PIECES
52	NES032N	PERMANENT MAGNET ENGINE
53	RC012	TORCH SUPPORT
54	4601043	STAINLESS STEEL CONTAINER
55	4601042	ROTOJET STRUCTURE
56	NVT050	CYLINDER PIN D.=5x14
57	5406011/012	HINGE PIN (2+2)
58	NEV009	ELECTRIC CABLE WITH PLUG
59	4601044	LID
60	NEC045	FLAT MAGNET UNIT
61	RC031	LID PIVOT
62	NVG056	SUPPORT RUBBER RING
64	4601064	MARK LABEL
65	4601066	LID FLASK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12.0 TECHNICAL SPECIFICATIONS

ROTOJET CENTRIFUGE

Width	510 mm
Depth	470 mm
Height	335 mm
Net and gross weight	40 kg - 43 kg
Drilling distance between centers to fix the machine on work bench	420 x 420 mm
Min distance from back wall	40 mm
Min distance from other side obstructions	40 mm
Voltage	220V 50Hz
Absorption	250 W - 1,1 A
Permanent magnet engine with torque and speed regulator	180 V CC/ 0,8A/ 0,7 HP
Max speed	490 r.p.m.
Direction of arm rotation	Counterclockwise
Time of rotation	40 seconds or upon request
Casting ring min. diameter	25 mm
Casting ring max. diameter	90 mm
Casting ring min. height	40 mm
Casting ring max. height	75 mm

CRUCIBLE

Model	"cradle" - item code **RC100**
Capacity	10 cm3 (multiply for the specific weight to determine the max. quantity of alloy to be used)
Main features	Long life, it stands every kind of deoxidizer and borax, no preheating required

TABLE SUPPORT FOR ROTOJET

Width	510 mm
Depth	470 mm
Height	480 mm
Net weight	6.7 kg
Gross weight	9 kg
Ballast min. weight to be put inside	20 kg

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