



SANDBLASTER

**ORO PLUS**

 **MAINTENANCE AND INSTRUCTION MANUAL**



## DESCRIPTION OF THE MACHINE

The ORO PLUS is a compact, fully fitted sandblaster combining practical and ergonomic design to competitive price. ORO has been studied to remove investment particles as well as to carry out satin-finishing operations utilizing the suitable abrasive for use in the Dental, Gold and Jewellery field, thus emphasizing reliability and ease of use of such blasting unit.

The unit is pre-arranged to be quickly and easily connected to the WAFIS dust suction and filtration system (exclusive patent by DENTALFARM), code A1021S or to PRO-3 (A1501) and PRO-3 SHAKE (A1502) extractors.

## OPERATING INSTRUCTIONS

<b>⚠ ATTENTION:</b>	<b>The sandblasting process originates toxic dust which in no way must be inhaled by the Technician. For this reason, it is absolutely forbidden to operate the machine if a proper suction system has not been previously connected to the sandblaster.</b>
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- Place the machine on the work bench.
- Plug in (37) to an approved earthed 220v AC current socket.
- Assemble on the pressure reducer (42), the pipe-fitting most suitable to the pipe-line used in the Laboratory (if in rilsan or polyethylene 8x6, screw the quick clutch - 40; if in rubber 12x6, screw the pipe-fitting - 41 and tighten by means of a hose clamp).
- Connect the pedal control on the pipe-fitting (23) located on the front of the working chamber, following the different colors.
- Fill the working chamber with the appropriate abrasive according to the operations to be carried out (apprx. Kg 6,0) as specified in the above table:

Name	Code	Description
<b>CROMCOR</b>	<b>AP036</b>	Brown corundum grainsize 36 ( $\mu$ 500 appr.) for chrome-cobalt (may be used with nozzle $\varnothing$ 3,5 <b>on request</b> ) pressure 4/6 BAR
<b>OROCOR</b>	<b>AP046</b>	White corundum grain 46 ( $\mu$ 350 appr.) for non-precious alloys (may be used with standard nozzle $\varnothing$ 3,0) pressure 4/5 BAR
<b>SUPERCOR</b>	<b>AP060</b>	White corundum grainsize 60 ( $\mu$ 250 appr.) for precious alloys (may be used with standard nozzle $\varnothing$ 3,0) pressure 3/4 BAR
<b>OROBLAST</b>	<b>AP300</b>	Glass-beads - $\mu$ 200 – for the satin-finishing of any metal (may be used with standard nozzle $\varnothing$ 3,0) pressure 3/4 BAR

- To connect the WAFIS dust filtering system patented by DENTALFARM, or any other similar system, it is sufficient to introduce the suction pipe (11) on the flange (10) - (it is also possible to fit a pipe with internal  $\varnothing$  30 or 40 mm). Plug in the electric feeding of the extractor to the socket (21), assuring the automatic operation.

## INSTRUCTIONS FOR USE

- Switch on light switch (34), if the dust extraction system connected to the machine is **not** automatically activated by the machine, **always operate the filtering system before starting the blasting process.**
- Introduce the part to be blasted inside the working chamber and close the window locking pin (19 – assuring the perfect airtight seal on the joint). We remind to close hermetically the machine every time you start to work.
- Lift the reducer knob (42) and turn it till the desired pression is set, push the knob down to block.
- To start blasting, operate the foot control (22).

<b><u>/!</u> ATTENTION:</b>	<b>Never open the glass window before the compressed air feeding valve has been duly closed.</b>
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## MAINTENANCE INSTRUCTIONS

<b><u>/!</u> ATTENTION:</b>	<b>Before carrying out any maintenance operations, for safety reasons, disconnect electrical and pneumatic feeding.</b>
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To replace:

- **the worn out nozzle** (26): remove the nozzle-holder cap from the body (25) and introduce a new unit in the same position.
- **the plastic protection screens of the glass window** (17): remove the fixing clips (16), clean accurately the glass and place a new protection screen.
- **the gloves** (18): unscrew the four screws to remove the flange (15), put the new glove on the flange holding band and re-assemble.
- **the foot-control air feeding valve** (22): by means of a small screwdriver, loosen the pliers nut, keep the spring and the sphere, disconnect the pipes, unscrew the fixing screw and replace.
- **the worn out abrasive**: move the chamber forward, remove the cap (32) from the lower part of the machine and let abrasive flow through the exhaust hole. Clean accurately and fill in the hopper with new abrasive (approx. Kg 6,0).

## TROUBLESHOOTING

### Problem: **NO LIGHTING**

Possible cause	Remedy
Bad electrical connection.	Check that the plug is correctly plugged in.
Switch is damaged.	Check the connections and operation (some dust could have entered inevitably oxidizing and seizing up contacts) - try to blow compressed air and eventually replace.

### Problem: **NO AIR**

Possible cause	Remedy
Bad pneumatic connection.	Check connection to the compressor.
Reducer is completely down.	Verify pressure parameters and setting.
Foot-control valve faulty or dirty.	Check, clean or replace.
Internal pipes are clogged.	Check the connections and condition of pipes up to the outlet end (nozzle).

### Problem: **SANDBLASTING IRREGULARITIES**

Possible cause	Remedy
Compressor capacity is not sufficient.	Check compressor features: the minimum capacity must be of at least 150 liters per minute (to assure steady power) and a tank of 100 liters (to assure autonomy).
Pressure is not suitable to the metal to be treated.	Comply with references stated in the table printed on the machine.
Abrasive is not suitable.	Proceed as above.
Abrasive is worn out.	Replace.
Tungsten nozzle is not suited to the abrasive grainsize or it is clogged.	Refer to the table and eventually replace.

### Problem: **SPRAYING NOZZLE DISPENSES ONLY AIR, NO ABRASIVE**

Possible cause	Remedy
Tungsten nozzle is worn out.	The original internal diameter is $\varnothing$ 3,0 mm, if too enlarged by abrasive flow, replace it.
Wrong position of nozzle – no abrasive suction.	The nozzle is correctly positioned only when it comes out from the nozzle-holder.
Either the nozzle or the pipes are clogged.	Check if some investment particles have entered the suction pipe or the nozzle body.

### Problem: **NO AIR COMES OUT FROM THE PROJECTOR**

Possible cause	Remedy
The projector inside nozzle is clogged.	Remove the cap and clean the injector.
Blasting valve is clogged or dirty.	Close the air intake, disassemble the valve and check; eventually contact the Technical Service.

**Problem: NOZZLE-HOLDER CAP COMES OUT DURING SANDBLASTING**

Possible cause	Remedy
Pipes and nozzles are obstructed or the abrasive is too rich in investment slags.	Stop up the end of the nozzle and operate the valve; air flow will thus be inverted eliminating any residuals from the piping; ev. replace the abrasive.

**Problem: INTERNAL LOSS OF AIR**

Possible cause	Remedy
Some of the internal pipes are not duly connected.	Check: polyethylene pipes may not be perfectly calibrated, try to cut a small piece from one end and introduce it in the pipe-fitting; ev. replace.

**Problem: DUST IS LEAKING OUT FROM THE GLASS WINDOW**

Possible cause	Remedy
Joint is not perfectly airtight.	Check plan of the sheet body, condition of the joint and pressure of the closing dowel on the window.
The filter is clogged or the extraction system is not sufficient.	Check regulary condition of the dry filter or of the extraction system.

## TECHNICAL REFERENCE REGULATIONS AND TEST PROCEDURES

The ORO sandblaster is mass-manufactured by DENTALFARM in compliance with technical and safety rules in force, as provided for by the 2006/42 CEE 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.

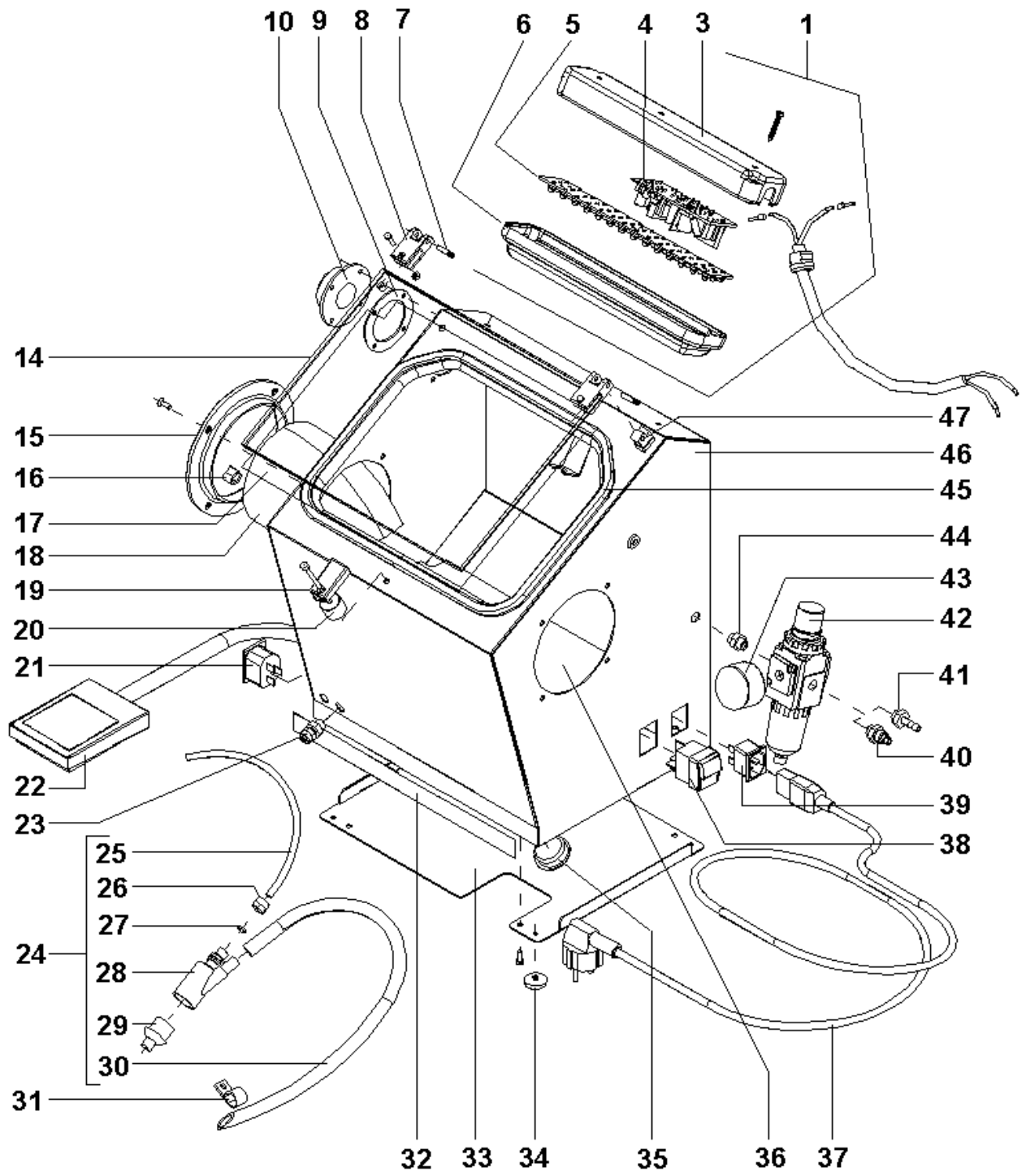
## DEMOLITION AND WASTE DISPOSAL

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



## EXPLODED DRAWING AND SPARE-PART LIST ORO PLUS (A1054S)

NO.	CODE	DESCRIPTION
1	<b>1000534</b>	COMPLETE LED LIGHTING SYSTEM
3	<b>1072037</b>	LIGHTING SYSTEM BASE
4	<b>1072040</b>	ELECTRONIC BALLAST
5	<b>1072041</b>	42 LED CIRCUIT
6	<b>1072038</b>	LIGHTING SYSTEM COVER
7	<b>RMBL028</b>	HINGE PIN
8	<b>RCB016A</b>	HINGE (MOVABLE PART)
9	<b>RWA006</b>	JOINT FOR FILTER FIXING FLANGE
10	<b>RWA007</b>	FILTER FIXING FLANGE
14	<b>1048015</b>	GLASS WINDOW
15	<b>RCB017</b>	GLOVE FIXING FLANGE
16	<b>RCB042</b>	PROTECTION SCREEN FIXING CLIP (CONF. x 4 PCS.)
17	<b>1000529</b>	GLASS PROTECTION SCREEN (CONF. x 6 PCS.)
18	<b>RCS130</b>	PAIR OF GLOVES
19	<b>RNO009A</b>	WINDOW LOCKING PIN
20	<b>RE011A</b>	SPACER FOR LOCKING PIN
21	<b>NEA047</b>	FLUSH-MOUNTED SOCKET
22	<b>RCM503</b>	COMPLETE FOOT-CONTROL
23	<b>NPR111</b>	STRAIGHT 6X4 – 1/8" MALE PIPE-FITTING
24	<b>RS521</b>	BLASTING PROJECTOR COMPLETE
25	<b>NPV040</b>	6x4 PIPE FOR PNEUMATIC CONNECTIONS
26	<b>NPR118</b>	RING NUT FOR 6x4 - M10 CONNECTIONS
27	<b>NPOR2025</b>	OR 2025 JOINT
28	<b>RS019</b>	PROJECTOR BODY
29	<b>RS023</b>	TUNGSTEN NOZZLE UNIT – SPRAYING HOLE 3 mm (YELLOW)
30	<b>NVG011</b>	RUBBER PIPE FOR ABRASIVE SUCTION
31	<b>NEA115</b>	PLASTIC COLLAR
32	<b>1048017</b>	ORO MARK LABEL
33	<b>1048012</b>	LOWER CLOSING LATCH
34	<b>NVG055</b>	SUCTION FOOT WITH RIVET
35	<b>NVP030</b>	ABRASIVE DISCHARGE CAP
36	<b>104813</b>	ABRASIVE FILTER ORO
37	<b>NEV013</b>	ELECTRIC CABLE WITH PLUG AND SOCKET
38	<b>NEC018</b>	PROTECTED BIPOLAR SWITCH
39	<b>NEA045</b>	FIXED END PLUG
40	<b>NPR119</b>	8x6 - 1/8" STRAIGHT MALE PIPE-FITTING
41	<b>NPR220</b>	7 1/8" AIR CONNECTOR
42	<b>NPS029</b>	REDUCER FILTER UNIT
43	<b>NPS040</b>	MANOMETER
44	<b>NPR202</b>	1/8" M/M PIPE-FITTING
45	<b>1064015</b>	JOINT FOR WINDOW
46	<b>1048010</b>	WORKING CHAMBER
47	<b>RE019A</b>	HINGE PIN (FIXED PART)

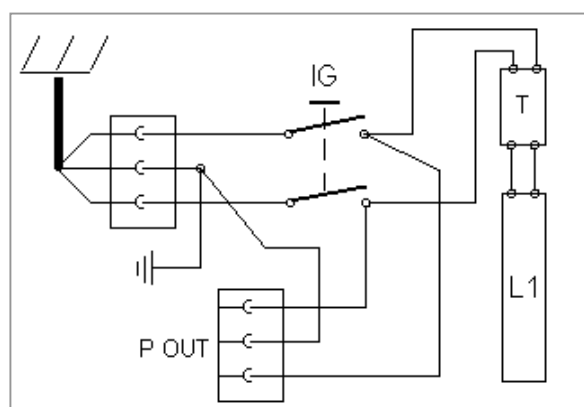


## TECHNICAL SPECIFICATIONS

Height	390 mm
Width	420 mm
Depth	290 mm
Net and gross weight	10,3 Kg – 12,3 kg
Working pressure	Min. 2 BAR – max. 6 BAR
Air consumption	100 l/min. à 4 BAR
Blasting nozzle	Ø 3,0 mm in tungsten carbide
Lighting	Energy-saving 42 LED circuit
Voltage	230 V - 50 Hz (different voltage available upon request)
Absorption	6 W - 0,2 A
Dust filtration	Connection to the WAFIS filtering system or to PRO-3 and PRO-3 SHAKE extractors

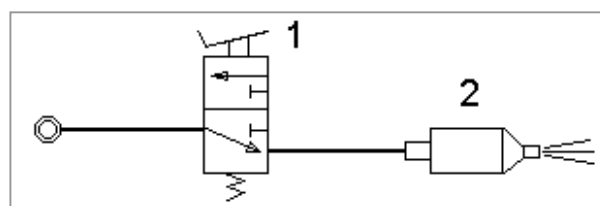
## WIRING DIAGRAM

REF.	DESCRIPTION
<b>IG</b>	LIGHT SWITCH
<b>T</b>	ELECTRONIC BALLAST
<b>L1</b>	42 LED CIRCUIT
<b>P OUT</b>	EXTRACTOR SOCKET



## PNEUMATIC CIRCUIT

REF.	DESCRIPTION
1	FOOT-CONTROL
2	BLASTING PROJECTOR



## DENTALFARM s.r.l.

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