

# Operating instructions

**Dental Unit**

**PUNTO KART**



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**CAUTION**

Before using the device, you must read the O.M.S. user guide from start to finish along with any and all instructions attached to the accessories provided.

This document is intended for dentists and dental office personnel.

# 1. GENERAL INFORMATION

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The O.M.S. spa **PUNTO KART** di O.M.S. unit offers a wide range of instruments to be positioned in the five existing housings.

The unit is made up of a hanging hose ceramic instrument table housed on a mobile cart.

The entire top of the table is ceramic, without gaps for easy and greater cleaning. As with all hanging hose devices, this equipment stands out for its extreme flexibility that lets you use it according to your personal work style.

PUNTO KART can be combined with the Moon dental chair meeting Directive 93/42/EC as amended and produced by O.M.S..

Power is provided by the floor box in two versions:

- with permanent installation - 508663



- non-permanent installation with power plug - 508726



## 1.1. **SYMBOLS**



### **CAUTION**

Indicates a hazardous situation that can lead to property damage or mild to moderate injury.



### **DANGER**

Indicates a hazardous situation that may result in serious injury or death



### **N.B.:**

Warnings, explanation or integration, important information for users and technicians.

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## 1.2. **SERVICE**

**O.M.S. SPA Officine Meccaniche Specializzate**

**Via Dante 20/A 35030 Caselle di Selvazzano (PD) Italy**

**tel: +39 0498976455 - [www.omsstaff.com](http://www.omsstaff.com)**

**e-mail: [assistenza@omsstaff.com](mailto:assistenza@omsstaff.com)**

**Always indicate the equipment serial number.**

## 1.3. **SAFETY**

### 1.3.1. **Overview**

#### **DANGER**



To prevent the risk of electrical shocks, the equipment must be connected exclusively to power lines provided with a grounding system according to the law in force in your country.

#### **DANGER**



Before powering the equipment after installation, a repair or technical service, check and, if necessary, hook up the connection of the grounding cables to the screw identified by the grounding system symbol.

#### **DANGER**



The device must be installed in rooms featuring electrical systems that are up to local code.

#### **DANGER**



The installation of the dental unit has to be done by an OMS authorized technician; the choice of the pipelines is up to the designer of the electrical system and they have to be placed by a qualified technician according to the law in force in the country.

#### **DANGER**



Never allow the device to be used by non-professional operators or anybody who has not read the instruction manual.

Always check that the device is in good condition.

#### **CAUTION**



Do not use the device if any part of it is defective or worn. If this is the case, call in authorized O.M.S. technical personnel.

#### **CAUTION**



Have defective or worn parts replaced with original, warranted O.M.S. spare parts only.

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**DANGER**

Do not operate the equipment on patients with pacemakers.

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**DANGER**

Device not suitable for use in rooms where use is made of a flammable anaesthetic mixture with air or with oxygen or with nitrous oxide.

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**CAUTION**

Do not use the device when there is liquid on the floor.

---

**CAUTION**

Tips and dental drills for micro motors, tooth scalers and turbines are not included in O.M.S. supply. We recommend using parts conforming to the standard ISO 10993 that have to be cleaned and sterilised according to the methods defined by their manufacturers.

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**DANGER**

Do not make changes to this device without the manufacturer's permission. The use of unapproved accessories and/or unauthorised changes can cause imminent personal injury hazards as well as material damages.

---

**CAUTION**

All maintenance work must be carried out with the device switched off and with no patient in the chair.

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## DANGER



Some parts, identified with the "CAUTION LIVE PARTS" symbol



are still powered even when the master switch is set to off; when needing to perform work on said parts, power must be cut off to the system supplying the device before work can start.

---

## DANGER



The power switch isolates the equipment from the mains electricity. So, before performing any operations in the equipment, make sure that the power switch is off.

---

## CAUTION



For special operations that require chair movements to be locked, make sure to enable the specific function (see par. LOCKING CHAIR MOVEMENTS).

---

## CAUTION



The instructions found in this manual and in the wiring diagram must be followed to connect a suction unit; the suction unit must have EC markings as per directive 93/42/EEC as amended "Medical Equipment" and meet international safety regulations IEC EN 60601-1 (Medical electrical equipment – General safety regulations), IEC EN 60601-1-2 (Medical electrical equipment – Collateral standard: Electromagnetic compatibility).

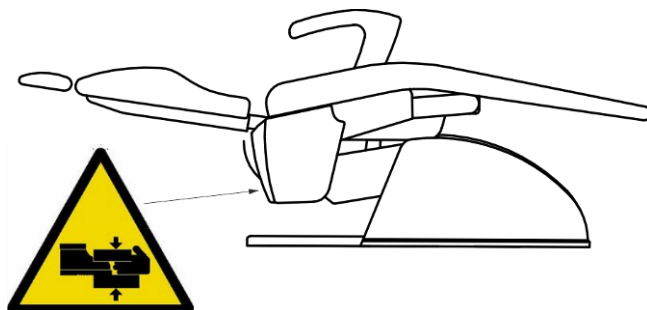
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## DANGER



When moving the chair, both in manual and especially in automatic mode, do not place hands and feet near the bottom of the chair to avoid crushing hazards. Carefully read the chair instructions for use.



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## CAUTION



During automatic chair movement, the operator must stand near the dental unit.

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## CAUTION



Never sit on the tip or foot of the chair.

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## CAUTION



During instrument table movement, patients and personnel in the surgery could be injured by sharp instrument tips.

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**CAUTION**

Before putting equipment into operation after periods of disuse, accurately disinfect the air and water supply lines, clean and drain the lines and then proceed with disinfection.

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**CAUTION**

In the event of prolonged dental work on senior citizens, be careful of the formation of bedsores.

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**CAUTION**

When moving the chair and, especially, the head rest, the patient's hair could become entangled.

---

**CAUTION**

The equipment is equipped with a general water tap. During use, the tap should be open. At the end of the work day, the tap should be closed or, alternatively, close the unit's general supply tap in the surgery.

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## 1.4. **DEFINITION OF INTENDED USE**

Dental unit intended to treat dental pathologies, intended for professional operator use (dentists).

## 1.5. **ADMITTED ENVIRONMENTAL CONDITIONS**

### 1.5.1. **ADMITTED ENVIRONMENTAL CONDITIONS FOR TRANSPORTATION AND STORAGE**

The packaged device can be exposed for a period of no more than 15 weeks to the following environmental conditions:

Temperature range -40 to +70°C

Relative humidity range: 10 to 100% non-condensing

Atmospheric pressure from 500 to 1060 hPa

### 1.5.2. **ADMITTED ENVIRONMENTAL CONDITIONS FOR OPERATIONS AND OTHER SPECIFICATIONS**

Temperature range +10 to +40°C

Relative humidity from 30 to 75%

Atmospheric pressure from 800 to 1060 hPa

Nominal operating altitude ≤ 3000m

Pollution grade 2

Over voltage category II

## 1.6. **WARRANTY**

The product is covered by a 36 (thirty-six) month warranty period from the date of installation at the purchaser's premises. The warranty conditions are indicated in the Warranty Booklet supplied with the equipment.

The warranty applies to the purchaser and product specified in the Installation and Inspection Report and covers all mechanical and electrical work on the product in question.

**The warranty only applies after the purchaser completes and sends the Installation and Inspection Report to O.M.S. spa.** For the warranty to be applied, the **Installation and Inspection Report**, true copy via fax or via certified e-mail, must be returned to O.M.S. spa within **TEN DAYS** of installation, or be considered null and void.


**O.M.S. SPA Officine Meccaniche Specializzate**

**Via Dante 20/A 35030 Caselle di Selvazzano (PD) Italy**

**fax: +39 0498975566 - e-mail: [garanzia@omsstaff.com](mailto:garanzia@omsstaff.com) - PEC: omsstaff@legalmail.it**

## 2. TECHNICAL SPECIFICATIONS

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<b>Models</b>	<b>PUNTO KART</b>  <b>Version 508663 – permanent installation</b>  <b>Version 508726 – non permanent installation with power plug</b>
<b>Manufactured by</b>	O.M.S. S.p.A. Officine Meccaniche Specializzate  Via Dante 20/A - 35030 Caselle di Selvazzano, Padova, Italy
<b>Class</b>	I 
<b>Applied part Type</b>	B
<b>Equipment protection level</b>	IPX0
<b>Foot control protection level</b>	IPX1

### ELECTRICITY SUPPLY

<b>Rated voltage</b>	230 Vac +/-10%
<b>Rated frequency</b>	50/60 Hz
Connection to the mains that complies with current code in the given area of use.	
<b>Rated current</b>	8A
<b>Rated power</b>	1800 W

### HYDRO-PNEUMATIC SUPPLIES

<b>Pneumatic supply</b>	from 450 kPa to 650 kPa (from 4.5 to 6.5 bar)  (consumption of aspirated air equalling approx. 40 litres/minute)
<b>Water supply (version 508663)</b>	from 200 kPa to 400 kPa (from 2 to 4 bar)  (consumption of water equalling approx. 2 litres/minute)
<b>maximum temperature</b>	30 °C

## OPERATING PERIODS

Equipment designed for continuous use with the following intermittent loads:

Chair	intermittent	1' on / 10' off
Syringe 6F (hot water)	intermittent	5' on / 10' off
Polymerization lamp	intermittent	20" on / 3' off
Scaler (with water)	intermittent	3' on / 5' off
Micro motor	intermittent	3' on / 3' off
Operating lamp	continuous	
Syringe 3F (cold water)	continuous	

## MISCELLANEOUS

Foot control cable length	2.5 m
Maximum overall dimensions	approx. 0.53x0.80x0.42 m (LxHxD)
Total weight	
PUNTO KART	approx. 28.5 Kg
Minimum space recommended for device installation	approx. 3.20x3.00x3.00 m (LxHxD)

## IMPORTANT NOTE



**N.B.:**

The device is designed and built in compliance with directive 93/42/EEC "Medical Devices" (as amended) and meet international safety regulations EN 60601-1 (Medical electrical equipment – General safety regulations), EN 60601-1-2 (Medical electrical equipment – Collateral standard: Electromagnetic Compatibility), IEC 80601-2-60 (Medical electrical equipment: Particular requirements for basic safety and essential performance of dental equipment), ISO 7494-1:14971 (dental units), EN ISO 14971 (risk analysis), EN 62304 (ing. Software), EN 62366 (ing. Usability), EN 60601-1-6 (usability).



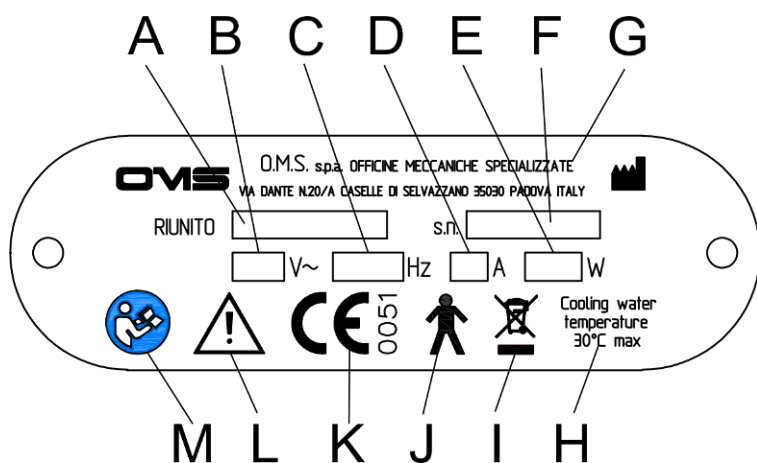
**N.B.:**

O.M.S. declines any and all responsibility for equipment safety and reliability in the following cases: if installation, additions, re-calibration, modifications or changes are not performed by O.M.S. authorised technicians following the instructions and using the components supplied by O.M.S. exclusively; if the electric system installed in the workplace does not comply with IEC standards; and/or if the equipment is not used according to the operating instructions.

## 2.1. NAMEPLATE DATA

An identification plate is affixed to the equipment indicating general device data.

In the version with hanging spittoon unit, the plate is affixed to the spittoon unit support, in the version with standing spittoon unit, the plate is affixed to the spittoon unit base.



- A. Equipment model and version
- B. Rated voltage and nature of current (alternating ~)
- C. Rated frequency
- D. Rated current
- E. Rated power
- F. Device serial n°
- G. Manufacturer
- H. Cooling fluid temperature
- I. WEEE symbol
- J. Applied part Type B
- K. Certification markings: Medical device directive 93/42/EEC and subsequent amendments
- L. Mandatory, see enclosed documentation
- M. Follow operating instructions

## 3. CONTROLS - ADJUSTMENTS - INDICATORS

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### 3.1. SAFETY SYSTEMS

The dental chair is supplied with safety devices which minimise the risk of crushing or collision with underlying objects during chair descent. Safety devices include a special sensor on the dental chair back and an electromechanical safety device installed at the base of the dental chair back.



**N.B.:**

**During automatic movements of the dental chair (position reset, memorised positions or rinsing positions), press any control of the dental chair (on the push-button panels of the dental unit or foot control) to immediately stop the dental chair.**



**N.B.:**

**Dental chair movement may be disabled both at equipment switch on and during normal operation, if one or more than one safety system is active. When a safety device is engaged and prevents a control from being performed, an alarm triggers and a message appears on the display indicating the active safety device**

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## 3.2. LIST OF DISPLAYED ALARMS/SIGNALS



**N.B.:**

**Messages may appear on the display as error codes (i.e.: E000). These messages identify erroneous use or possible faults. Before requesting OMS authorised technician service, check for a possible solution and then turn the device off and back on to see whether the alarm persists.**

Alarm/Signal			Solution
Standard display	Colour display	Cause	
E000	Foot control board error	The foot control board is not connected or is malfunctioning.	Call an OMS authorised technician
E001	Push-button panel board error	The push-button panel board is not connected or is malfunctioning.	Call an OMS authorised technician
E002	Box error	The board of the floor-mounted box is not connected or is malfunctioning.	Call an OMS authorised technician
E003	Table error	The board of the assistant table is not connected or is malfunctioning.	Call an OMS authorised technician
E004	Chair error	The dental chair board is not connected or is malfunctioning.	Call an OMS authorised technician
E005	General error	The general board is not connected or is malfunctioning.	Call an OMS authorised technician
E006	Cabinet error	The cabinet board is not connected or is malfunctioning.	Call an OMS authorised technician
E007	MM error	An error has occurred with the micro motor engagement.	Call an OMS authorised technician
E016	Error 16	"Other error" – Brushless Bien Air	Call an OMS authorised technician
E017	Error 17	"Power protection" error – Brushless Bien Air	Call an OMS authorised technician
E018	Error 18	"Motor phase missing" error – Brushless Bien Air	Turn on the micro motor
E019	Error 19	"Serial communication time-out" error – Brushless Bien Air	Call an OMS authorised technician
E020	Error 20	"Invalid EEPROM" error – Brushless Bien Air	Call an OMS authorised technician
E021	Error 21	"Over temperature" error – Brushless Bien Air	Call an OMS authorised technician
E022	Error 22	"Under voltage" error – Brushless Bien Air	Call an OMS authorised technician
E023	Error 23	"Over voltage" error – Brushless Bien Air	Call an OMS authorised technician
E024	Error 24	"Additional board disconnected (after start-up)" error – Brushless Bien Air	Call an OMS authorised technician
E025	Error 25	"Time-out with additional board" error – Brushless Bien Air	Call an OMS authorised technician
E026	Error 26	"Invalid additional board version" error – Brushless Bien Air	Call an OMS authorised technician
E027	Error 27	"Invalid EEPROM in additional board" error – Brushless Bien Air	Call an OMS authorised technician
E028	Error 28	"Invalid mode" error – Brushless Bien Air	Call an OMS authorised technician
E029	Error 29	"ED out of control monitoring" error – Brushless Bien Air	Call an OMS authorised technician
E030	Error 30	"Frame error" – Brushless Bien Air	Call an OMS authorised technician

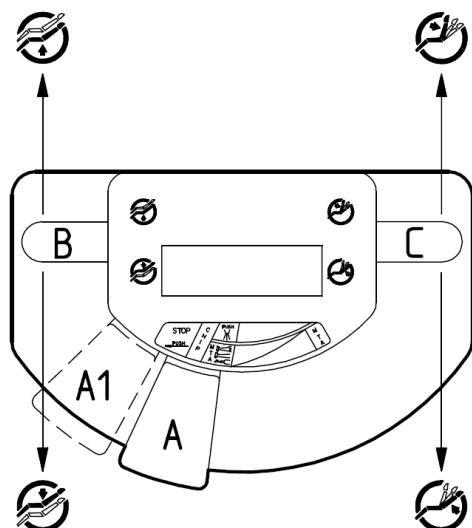
E031	Error 31	RS232 communication error with – Brushless Bien Air	Call an OMS authorised technician
E032	Error 32	28DC power fuse broken (transformer board fuse F8)	Call an OMS authorised technician
E033	Error 33	24AC power fuse 1 broken (transformer board fuse F7)	Call an OMS authorised technician
E034	Error 34	Lamp fuse broken (transformer board fuse F4)	Call an OMS authorised technician
E035	Error 35	24AC power fuse 2 broken (transformer board fuse F6)	Call an OMS authorised technician
E036	Error 36	Suction unit short circuit	Call an OMS authorised technician
E037	Error 37	Assistant request out short circuit	Call an OMS authorised technician
E038	Error 38	Over current in branch 2, 24 AC	Call an OMS authorised technician
E039	Error 39	Board and bus overcurrent	Call an OMS authorised technician
E040	Error 40	Switching overheated	Check correct micro motor and scaler operations
E041	Error 41	Stabilised 28 DC voltage error	Call an OMS authorised technician
E042	Error 42	Rectified 28 DC voltage error	Call an OMS authorised technician
E043	Error 43	24 AC voltage error	Call an OMS authorised technician
E044	Error 44	Lamp voltage error	Call an OMS authorised technician
E045	Error 45	Stabilised 24 DC voltage error	Call an OMS authorised technician
E046	Error 46	Over current in branch 1, 24 AC	Call an OMS authorised technician
E047	Error 47	Lamp overcurrent	Call an OMS authorised technician
E064	Error 64	“Motor safety device” signal error	Check lateral chair movement, lock the chair in a position.
E065	Error 65	spittoon unit EEPROM board error	Call an OMS authorised technician
E066	Error 66	EEPROM error: general board	Call an OMS authorised technician
E067	Error 67	EEPROM error: push-button panel	Call an OMS authorised technician
E068	Error 68	a key is stuck in the instrument table keyboard	Call an OMS authorised technician
E069	Error 69	a key is stuck in the assistant table keyboard	Call an OMS authorised technician
E070	Error 70	DAC error: dc micro motor and scaler	Call an OMS authorised technician
E071	Error 71	Overheating error sensed in micro motor driver	Leave the micro motor idle for a few minutes
E072	Error 72	wireless foot control board battery low error	Charge the foot control board with the specific cable
EP01	Power SV 01	power solenoid short circuit	Call an OMS authorised technician
EP03	Power SV 03	Short circuit to power solenoid grounding system	Call an OMS authorised technician
EA01	Water SV 01	water solenoid short circuit	Call an OMS authorised technician
EA03	Water SV 03	Short circuit to water solenoid grounding system	Call an OMS authorised technician
EC01	Chip SV 01	chip solenoid short circuit	Call an OMS authorised technician

EC03	Chip SV 03	Short circuit to chip solenoid grounding system	Call an OMS authorised technician
ES01	Spray SV 01	spray solenoid short circuit	Call an OMS authorised technician
ES03	Spray SV 03	Short circuit to spray solenoid grounding system	Call an OMS authorised technician
EL01	Washing OUT 01	Washing unit output short circuit	Call an OMS authorised technician
EL03	Washing OUT 03	Short circuit to grounding system of washing unit output	Call an OMS authorised technician
EZ01	Shutter valve OUT 01	Shutter valve output short circuit	Call an OMS authorised technician
EZ03	Shutter valve OUT 03	Short circuit to grounding system of shutter valve output	Call an OMS authorised technician
EX01	Shutter valve 1 OUT 01	Shutter valve 1 output short circuit	Call an OMS authorised technician
EX03	Shutter valve 1 OUT 03	Short circuit to grounding system of shutter valve output 1	Call an OMS authorised technician
EY01	Shutter valve 2 OUT 01	Shutter valve 2 output short circuit	Call an OMS authorised technician
EY03	Shutter valve 2 OUT 03	Short circuit to grounding system of shutter valve output 2	Call an OMS authorised technician
EH01	Request OUT 01	Short circuit of assistant request or open door output	Call an OMS authorised technician
EH03	Request OUT 03	Short circuit to grounding system of assistant request or open door output	Call an OMS authorised technician
ER01	Suction OUT 01	Suction unit short circuit	Call an OMS authorised technician
ER03	Suction OUT 03	Short circuit to suction unit output grounding system	Call an OMS authorised technician
EQ01	Water ex. OUT 01	Short circuit in distilled / standard water exchange output	Call an OMS authorised technician
EQ03	Water ex. OUT 03	Short circuit to grounding system of distilled / standard water exchange output	Call an OMS authorised technician
EB01	Piston OUT 01	Chair release piston output short circuit	Call an OMS authorised technician
EB03	Piston OUT 03	Short circuit to grounding system of chair release piston output	Call an OMS authorised technician
CHAIR MOVEMENT FAULT 11	FAULT 09	chair movement fault	Call an OMS authorised technician
CHAIR MOVEMENT FAULT 11	Fault P02	chair movement fault	Call an OMS authorised technician
CHAIR DISABLED	Chair blocked	Chair lock enabled from keyboard	Unlock chair from keyboard
SAF. TABLE OR SPITTOON	Saf. table or spittoon	Assistant table or spittoon safety on	Safety on since assistant table lifted.
BACK SAFETY	Saf. back	Chair back safety on	Chair back safety on, adjust sensor sensibility if necessary.
PLATFORM OR ASS. TABLE SAFETY	Saf. Platform or ass. table	Platform behind the back safety device or assistant table safety device on	The platform safety device behind the chair back or safety device turned on because the assistant table is lifted.
CHAIR SAFETY	Chair saf.	Chair block under the assistant table safety on	Turn off the chair safety lock switch under the instrument table.

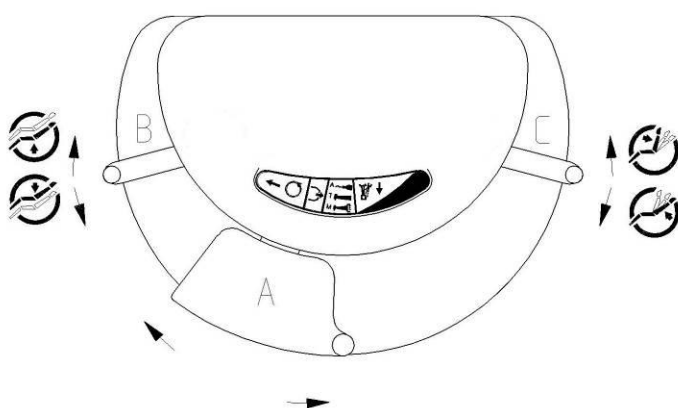
### 3.3. **FOOT CONTROL**

The unit is equipped with a foot control to run various commands, the TYPE 1 model is exclusively connected to the unit via permanent cable while the TYPE 2 model is connected via a permanent cable or in wireless (optional):

- **TYPE 1** wired



- **TYPE 2** wired or wireless



The models differ by the different micro motor reverse drive management (see paragraph MICRO MOTOR OPERATIONS).

The dental unit foot control is designed to control all tool functions with a single, simple movement of the central lever (A).



**N.B.:**

**When the instrument is extracted, it is automatically connected to the foot control, thus disabling all the other instruments even at a subsequent extraction (by the dental assistant, for instance).**

### **3.3.1. TURBINE OPERATIONS**

Extract the instrument from its housing (this operation is shown on the display):

- pressing the lever (A) of the foot control in the rest position will enable the chip-blower;
- move the central lever (A) to the right to operate the instrument. If central lever (A) is pressed simultaneously, the turbine is sprayed (standard configuration). Upon request, at the time of installation, the technician can change the connections so that the spray function can be operated without having to press the lever.

Upon request, the turbine fitted can be variable (option), i.e. it has a variable rotation speed depending on the position of the foot control lever (the display shows a message indicating whether the turbine is standard or variable, and whether it has fixed or progressive operation).

### **3.3.2. MICROMOTOR OPERATIONS**

Extract the instrument from its housing (this operation is shown on the display):

1. pressing the lever (A) of the foot control in the rest position will enable the chip-blower;
2. moving the central lever (A) to the right will enable the progressive/increasing dynamic movement of the micro motor;



The spray is pre-selected in the instrument table by engaging the control . Then, spray delivery is possible when the foot control lever (A) is slightly pressed with the instrument in operation (standard configuration). Upon request, at the time of installation, the technician can change the connections so that the spray function can be operated without having to press the lever.

#### **3.3.2.1. Reversing rotation direction**

- **Type 1** To invert the micro motor rotation, move the foot control lever A to the left and press it downwards. This operation is viewed on the display, and an on-off beep accompanies this function, which is disengaged by moving the central lever (A) to the left again and pressing it downwards.
- **Type 2** To invert the micro motor rotation, move the central lever A to the left (Type 2 foot control). This operation is viewed on the display, and an on-off beep accompanies this function, which is disengaged by moving the central lever (A) to the left again.

### **3.3.3. SCALER OPERATIONS**

Extract the instrument from its housing (this operation is shown on display) and move the central lever (A) to the right to operate the instrument. The spray function is operated by pressing the central lever (A) with the tool on (standard configuration). Upon request, at the time of installation, the technician can change the connections so that the spray function can be operated without having to press the lever.

### 3.3.4. CHAIR CONTROLS FROM THE FOOT CONTROL

The foot control is equipped with two side levers (details B and C) that are operated to position the dental chair using foot controls:



Pantographic arm up control;



Pantographic arm down control;



Chair back up control;



Chair back down control;



**N.B.:**

**All electric chair movements are equipped with electro-mechanical limit stop. Once the pantographic arm or chair back limits are reached, they automatically cut-off power to the motor in question to avoid the violent stress that would be produced using the mechanical limit stops.**





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### 3.3.5. WIRELESS FOOT CONTROL FEATURES

The Wireless Foot Control has the same features as the similar controller which is permanently attached to the dental unit manufactured by O.M.S. spa, except that functions are operated by radio control, without requiring a connecting cable between the foot control and the dental unit.

The Wireless Foot Control includes an internal rechargeable battery lasting fifteen days of work under normal conditions of use of the dental unit. The battery is charged by connecting the appropriate cable between the Wireless Foot Unit and O.M.S.'s Dental Unit.

Foot control LED operations:

- GREEN LED  flashing when a lever is operated;
- RED LED  flashing indicates low battery, connect the foot control unit cable to the unit;
- RED LED  on indicates battery charging with foot control unit cable connected to the unit;
- GREEN LED  on indicates battery charged with foot control unit cable connected to the unit.

#### CAUTION



The lithium battery in the wireless foot control should only be replaced by OMS Authorised Service Personnel.

#### POWER SUPPLY - BATTERY

Internal battery	Lithium 3.7V 800mAH rechargeable
Battery life	15 days under normal conditions of use
Battery charging	Via the cable connecting it to the dental unit
Charging time	8 hours
Max charging time	Up to 300 cycles



#### N.B.:

**Partial charges could significantly reduce battery working life.**

#### MAXIMUM RANGE

Max distance from the dental unit 2 m

#### SIZE

Overall dimensions	approx. 20x15x12 cm (LxHxW)
Weight	2.8 kg

## NAMEPLATE DATA

The nameplate attached to the device contains general data about the device.


- A. Model
- B. Manufacturer
- C. Power
- D. Serial number
- E. Medical device directive 93/42/EEC and subsequent amendments
- F. IP rating
- G. Follow operating instructions



### 3.3.5.1. CONNECTING THE PEDAL TO THE DENTAL UNIT BY CABLE

When the “**E072 - wireless pedal battery low error**” message appears on the display when operating a lever or the cursor, this means the battery needs to be charged.

With the battery low, the RED LED  on the foot control unit starts to flash.

To charge, simply connect the cable from the dental unit to the foot control unit, the RED LED  on the pedal turns on. Perform this operation even if the radio system is not operating:

Pivot the cover protecting the connection socket on both the foot control and the dental unit








Take the data cable and plug in the connectors, turning the connector screw upwards, and then tighten the lock nut



This will directly connect the pedal to the chair

GREEN LED  will flash continuously

The battery will start charging:

- the RED LED  will turn on and remain on until the battery is fully charged.
- The GREEN LED  will turn on (not flashing) to indicate that the battery is fully charged.



**N.B.:**

**Partial charges could significantly reduce battery working life.**

---



**N.B.:**

**Continuing work while ignoring the battery low signal may cause damages.**

---

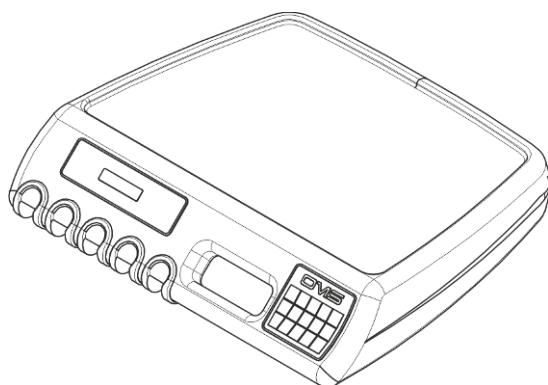


**N.B.:**

**When charging is complete, pull out the connector and pivot the cover to protect the socket on both the foot control and the dental unit.**

---

### 3.4. **INSTRUMENT TABLE**



**Hanging Tube table**

The instrument table can house up to five instruments (syringe included) and comprises three different sectors.

The first sector includes the instrument unit controls and options, if any. The general board for dental unit operation is installed here along with all the electrical connections of the instruments.

The second sector includes the instrument solenoid valve unit where all the adjustment devices are well visible. A description of the function of each device is provided in the instrument module chapters. Adjustments that are not equipped with a handle must be made by authorised O.M.S. technicians.

The third sector is the portion of the table where instruments are positioned.

All the controls are beneath a sealed membrane, which guarantees greater working safety, no interstices and the surface can be disinfected.

### 3.4.1. HANGING TUBE TABLE CONTROLS

#### 3.4.1.1. MAIN MEMBRANE



- Speed or fixed/progressive power control



- Optic fibre lighting and intensity regulation pre-selection control (by holding down the key)



- Spray pre-selection control, Clean Spray on/off (with rested instruments only) and spray heater on/off (with rested instruments only and by holding down the key)



- Cup filling with hot water (and storing of filling time)



- Cup filling with cold water (and storing of filling time)



- Spittoon rinsing (and storing of rinsing time)



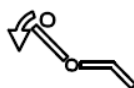
- Dental chair pantographic arm up control



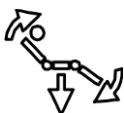
- Dental chair pantographic arm down control



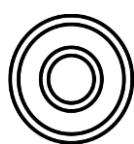
- Dental chair back up control



- Dental chair back down control



- Dental chair reset control



- Dental chair rinsing/last position control



- Storage and call up of program 1 – dental chair instrument and memory 1



- Storage and call up of program 2 – dental chair instrument and memory 2



- Storage and call up of program 3 – dental chair instrument and memory 3

### 3.4.1.2. SECONDARY MEMBRANE WITH DISPLAY



#### **FAST**

- Fast mode selection (on with led on) (for enabled micro motors)

#### **AUTO REVERSE**

- Auto reverse mode selection (on with led on) (for enabled micro motors)

#### **AUTO FORWARD**

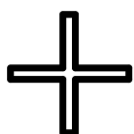
- Auto forward mode selection (on with led on) (for enabled micro motors)

#### **TORQUE**

- Maximum torque selection (for enabled micro motors)

#### **RATIO 1X**

- Used knob transmission ratio selection (BRUSHLESS micro motors only)



- Increase parameter key (power, revolutions, transmission ratio, torque, etc.) and chair rotation release



- Decrease parameter key (power, revolutions, transmission ratio, torque, etc.) user profile selection



- Operating lamp switch on and off control



- Request for assistant/open door



- Time/date settings (and Auto forward time selection for enabled micro motors)

#### **OK**

- Confirm/save instrument lighting and clock parameter

### 3.4.2. USER PROFILE

No. 4 user profiles can be selected. The current user is indicated at the bottom right with code:

- U1,
- U2,
- U3,
- U4.

Each user profile has no. 3 program memories and rinse position:



- Dental chair rinsing/last position control



- Storage and call up of program 1 – dental chair instrument and memory 1






- Storage and call up of program 2 – dental chair instrument and memory 2



- Storage and call up of program 3 – dental chair instrument and memory 3

#### 3.4.2.1. USER PROFILE SELECTION

Press  until "CURRENT USER No." appears and change using  and . Confirm the value using **OK**.

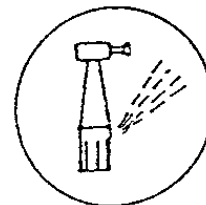
### **3.4.3. GENERAL INSTRUMENT FUNCTIONS**

#### **3.4.3.1. SPRAY**



Spray is pre-selecting entering the command on the main keyboard.

The spray function can then be operated by pressing the foot control lever (A) with the tool on (standard configuration).



The water delivered to the spray is regulated by rotating the tap located under the relevant instrument module: when turned anticlockwise, the flow of water to the spray is gradually reduced; when turned clockwise, the opposite applies. We recommend not using other regulation devices located alongside the spray tap.

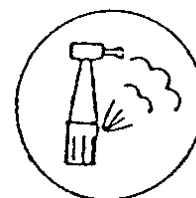


**N.B.:**

**Turbine spray is always pre-selected.**

#### **3.4.3.2. CHIP BLOWER**




After removing the instrument from its housing, press the foot control lever (A) to operate the chip-blower;



**N.B.:**

**This function is not included with the scaler**

#### **3.4.3.3. INSTRUMENT LIGHTING**

To adjust lighting intensity, keep the  key pressed for a few seconds until the menu opens where you can change the intensity using keys  and , after which confirm the setting by pressing **OK** key .



### 3.4.4. TURBINE MODULE

The turbine operates when the instrument is lifted from its housing and moved towards the operating field, and when the foot control is engaged (see paragraph TURBINE OPERATION).

---



**N.B.:**

**When the instrument is lifted from the table, all the other dynamic instruments and the dental chair movements are disabled. Chair movements may be permitted but not on with instruments lifted during the device settings phase.**

---

The turbine fitted can be variable (option), i.e. it has a variable rotation speed depending on the position of the foot control lever (the display shows a message indicating whether the turbine is standard or variable, and whether it has fixed or progressive operation).



If the installed turbine is progressive, press the

key to operate it in either standard (fixed) or progressive mode:

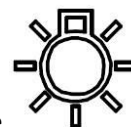
- when the button is disabled (corresponding LED off), the turbine works in progressive mode;
  - when the button is enabled (corresponding LED on), the turbine works in standard mode (fixed).
- 



**N.B.:**

**Turbine spray is always pre-selected.**

---



If the instrument is equipped with an optic fibre lighting system, the lights go on when the the keyboard is pressed (when this function is enabled, it has an impact on all the instruments).

key on

---



**N.B.:**

**For spray regulation, lighting and chip-blower activation, see paragraph "General Instrument Functions".**

---



**N.B.:**

**Recommended air pressure (measured during turbine operations) is calibrated at O.M.S. factory inspection. The calibration must be checked when installing the equipment using a gauge and observing the pressure values indicated by the turbine manufacturer. This operation must be performed by an authorised O.M.S. technician.**

---



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

---

### **3.4.5. ELECTRICAL BRUSH MICRO MOTOR MODULE**

The micromotor operates when the instrument is lifted from its housing and moved towards the operating field, and when the foot control is engaged (see paragraph MICROMOTOR OPERATION).





**N.B.:**

**When the instrument is lifted from the table, all the other dynamic instruments and the dental chair movements are disabled. Chair movements may be permitted but not on with instruments lifted during the device settings phase.**

---

The micro motor enables work with a variable number of revolutions ranging from a minimum of 900 per minute to a max. of 40,000 per minute. As an option, the micro motor min. speed can be reduced to 50 rpm using a special board.

After extracting the instrument, the operator can adjust the rotation speed of the micro motor by setting the

number of revolutions (rpm) using the  and  buttons on the keyboard. The revolution set point is shown on the display of the instrument table.

#### **3.4.5.1. Fixed or progressive speed**



The key on the keyboard enables micro motor operation at fixed speed depending on the set point or at progressive speed (the display shows whether the speed is fixed or progressive):

- when the button is disabled (corresponding LED off), the micro motor speed is progressive and ranges from the minimum speed to the pre-set number of revolutions depending on the foot control lever position;
- when the button is enabled (corresponding LED on), the micro motor speed is fixed on the number of revolutions shown on the display within the entire field of action of the foot control lever.

#### **3.4.5.2. Rotation direction**

Usually, the micro motor rotates clockwise. To invert the rotation direction, move the foot control lever to the left. Then, press it and release it. A buzzer (beep) triggers to indicate that the function is active. The function is also shown on the display with a change in the arrow direction.

When the foot control lever is moved to the left again, the initial condition is restored and the buzzer (beep) is silenced.



**N.B.:**

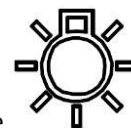
**Reverse rotation direction with the instrument idle to avoid micro motor damages.**

---





Spray is pre-selecting entering the command on the keyboard.

The water delivered to the spray is regulated by opening/closing the tap located under the micro motor module: when turned anticlockwise, the flow of water to the spray is gradually reduced; when turned clockwise, the opposite occurs. We recommend not using other regulation devices located alongside the spray tap.



If the system is equipped with an optic fibre lighting system, the lights go on when the control on the keyboard, installed in the table keyboard is engaged (when this function is enabled, it has an impact on all the instruments).

To adjust lighting intensity, keep the key pressed for a few seconds until the menu opens where you can



change the intensity using keys  and , after which confirm the setting by pressing key


**OK**

Micro motor memory programming



When the instrument is extracted, keys , , on the keyboard are used to store 3 work programs.

Select the desired memory and set the speed using the  and  keys on the keyboard. The spray

is also enabled by pressing the  key on the keyboard, and the fixed or progressive speed with key



on the keyboard.

The selected functions are set by pressing the previous button for a few seconds (until the beep starts).

Programming is disengaged by pressing the button of the enabled memory.



**N.B.:**

**For spray regulation, lighting and chip-blower activation, see paragraph "General Instrument Functions".**



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

### **3.4.6. BRUSHLESS MICROMOTOR MODULE**

The BRUSHLESS micromotor operates when the instrument is lifted from its housing and moved towards the operating field, and when the foot control is engaged (see paragraph MICROMOTOR OPERATION).

When the instrument is lifted from the table, all the other dynamic instruments and the dental chair movements are disabled.

Controls on the instrument table are described in paragraph KEYBOARD.

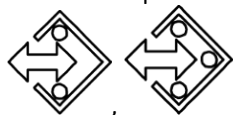
#### **3.4.6.1. SHARED FUNCTIONS**

##### **3.4.6.1.1. Saveable programs**

Up to 3 custom work programs can be saved for each brushless micro motor.

Extract the concerned micro motor and set the operating mode (Fast, Auto reverse or Auto forward (ENABLED BRUSHLESS only), the transmission ratio (Ratio), maximum torque (Torque), Auto forward time (ENABLED BRUSHLESS only), rpm and whether fixed or progressive, optic fibre lighting pre-selection and spray pre-selection as described in previous paragraphs.

Once all the parameters have been set, press the key relative to the desired program (keys



, ) until the beep sounds to confirm the program has been stored. Follow the same procedure for each micromotor.



To recall a stored program, press the key relative to the memory where it is stored.

##### **3.4.6.1.2. Rotation direction**

Usually, the micro motor rotates clockwise. To invert the rotation direction, move the foot control lever to the left. Then, press it and release it. A buzzer (beep) triggers to indicate that the function is active. The function is also shown on the display with a change in the arrow direction.

When the foot control lever is moved to the left again, the initial condition is restored and the buzzer (beep) is silenced.



**N.B.:**

**Reverse rotation direction with the instrument idle to avoid micro motor damages.**

#### 3.4.6.1.3. Fixed or progressive speed



The key on the keyboard enables micro motor operation at fixed speed depending on the set point or at progressive speed (the display shows whether the speed is fixed or progressive):

- when the button is disabled (corresponding LED off), the micro motor speed is progressive and ranges from the minimum speed to the pre-set number of revolutions depending on the foot control lever position;
- when the button is enabled (corresponding LED on), the micro motor speed is fixed on the number of revolutions shown on the display within the entire field of action of the foot control lever.

#### 3.4.6.1.4. Brushless safety systems

If the BRUSHLESS micro-motor requires too much power, the electronic system automatically reduces the torque to prevent the micro-motor overheating. To reset the torque at 100%, leave the micro-motor running at minimum for a while and then stop it for a few seconds.

#### 3.4.6.1.5. Transmission ratio

To get a correct reading of the number of revs and of the maximum torque on the tool, the transmission ratio

**RATIO  
1X**

of the hand piece used must be set. With the instrument stopped, press the key and use the



and



keys to change the transmission ratio (see table 1 for admissible values). Confirm

**RATIO  
1X**

changes by pressing

.



N.B.:

For spray regulation, lighting and chip-blower activation, see paragraph "General Instrument Functions".



N.B.:

For further details refer to the manufacturer's operating instructions enclosed.

### 3.4.6.2. Bien Air BRUSHLESS micromotor models

	<b>MX2</b>					<b>MCX ENDO</b>					<b>MX-i CHIROPRO</b>				
Speed range	100-40000 rpm					100-40000 rpm					100-40000 rpm				
Maximum torque	3,5 Ncm					2,5 Ncm					5 Ncm				
Torque control	YES					YES					YES				
Auto reverse mode	YES (100-6000 rpm)					n.d.					n.d.				
Auto forward mode	YES (100-6000 rpm)					n.d.					n.d.				
LED lighting regulation	YES					YES					YES				
Weight	90 gr					79 gr					115 gr				
Dimensions	Ø 21x50 mm					Ø 21x42 mm					Ø 23x91 mm				
Knob transmission ratio	1:5	1:4	1:2	1:1	10:1	16:1	20:1	22:1	27:1	30:1	64:1	100:1	128:1	256:1	
Yield %	80	80	90	100	75	75	72	72	75	50	50	50	50	40	

Table 1



**N.B.:**



**The displayed torque is a function of yield for the specific knob selected.**

### 3.4.6.3. MX2

**MX2** can operate in three modes:

1. **FAST** – fast mode, with variable micro motor revolutions from 100 to 40.000 per minute,
2. **AUTOREVERSE** - slow mode, with variable micro motor revolutions from 100 to 6.000 per minute. The micro motor automatically reverses rotation direction when the set torque is reached.
3. **AUTOFORWARD** - slow mode, with variable micro motor revolutions from 100 to 6.000 per minute. The micro motor automatically reverses rotation direction when the set torque is reached (as with Auto reverse mode) then, after the set time, reverses direction again and resumes the initial rotation direction.

By setting the transmission ratio on the hand piece, the torque is controlled and the display shows the number of revs of the tool being used (cutter, etc.).

With the instrument extracted, the rotation speed can be adjusted for each of the working mode (fast and slow), by setting the number of rpm with the keys  and  on the secondary keyboard, the number of rpm will be shown on the display.



**N.B.:**

**With the instrument lifted off the table and idle, the display shows the maximum set rpm and torque while, when the instrument is operating, the display indicates the actual rpm on the instrument in real time.**

---



The key on the keyboard enables micro motor operation at fixed speed depending on the set point or at progressive speed (the display shows whether the speed is fixed or progressive):



**N.B.:**

**Drive can only be reversed in FAST mode. Reverse is automatic according to set torque in Auto Reverse and Auto Forward modes.**

---



**N.B.:**

**Reverse rotation direction with the instrument idle to avoid micro motor damages.**

---








**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

---

#### 3.4.6.3.1.

#### AUTO-FORWARD TIME



With the instrument not in use, press the  key and use keys  and  to change the  auto-forward time (range between 0.5 and 3.5 seconds), then confirm the new value by pressing the  key.

#### 3.4.6.3.2.

#### Maximum torque

The torque limiter is electronic and the maximum torque is set by the operator.

When the instrument is not working, two maximum torque values must be set, one for fast mode and one for slow mode (auto-reverse or auto-forward).

To change the torque, enter the relative mode, press the **TORQUE** key for fast, auto reverse and auto forward modes, then press key (B) and use keys  and  to change the value, after which confirm the new value by pressing the **TORQUE** key.





#### 3.4.6.4. MCX ENDO

MCX lets you work with variable micro motor rpm from 100 to 40000.

By setting the transmission ratio on the hand piece, the torque is controlled and the display shows the number of revs of the tool being used (cutter, etc.).

After extracting the instrument, the operator can adjust the maximum rotation speed of the micro motor by

setting the number of revolutions (rpm) using the  and  keys on the keyboard. The revolution set point is shown on the display.



The key on the keyboard enables micro motor operation at fixed speed depending on the set point or at progressive speed (the display shows whether the speed is fixed or progressive):



**N.B.:**

**Reverse rotation direction with the instrument idle to avoid micro motor damages.**



##### 3.4.6.4.1. Maximum torque

The torque limiter is electronic and the maximum torque is set by the operator.



**N.B.:**

**Change torque when the instrument is not in use.**

To change torque, press the **TORQUE** key and use the  and  keys to change values.

Confirm the value by pressing **TORQUE**.

With the instrument lifted off the table and idle, the display shows the maximum set rpm while, when the instrument is operating, the display indicates the actual rpm on the instrument in real time.



**N.B.:**

**With the instrument lifted off the table and idle, the display shows the maximum set rpm and torque while, when the instrument is operating, the display indicates the actual rpm on the instrument in real time.**



**N.B.:**



**For further details refer to the manufacturer's operating instructions enclosed.**

### 3.4.6.5. MX-i (CHIROPRO)

MX-i lets you work with variable micro motor rpm from 100 to 40000.

By setting the transmission ratio on the hand piece, the torque is controlled and the display shows the number of revs of the tool being used (cutter, etc.).

After extracting the instrument, the operator can adjust the maximum rotation speed of the micro motor by

setting the number of revolutions (rpm) using the  and  keys on the keyboard. The revolution set point is shown on the display.



The key on the keyboard enables micro motor operation at fixed speed depending on the set point or at progressive speed (the display shows whether the speed is fixed or progressive):



**N.B.:**

**Reverse rotation direction with the instrument idle to avoid micro motor damages.**



#### 3.4.6.5.1. **Maximum torque**

The torque limiter is electronic and the maximum torque is set by the operator.



**N.B.:**

**Change torque when the instrument is not in use.**

To change torque, press the **TORQUE** key and use the  and  keys to change values.

Confirm the value by pressing **TORQUE**.

With the instrument lifted off the table and idle, the display shows the maximum set rpm while, when the instrument is operating, the display indicates the actual rpm on the instrument in real time.



**N.B.:**

**With the instrument lifted off the table and idle, the display shows the maximum set rpm and torque while, when the instrument is operating, the display indicates the actual rpm on the instrument in real time.**



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

### 3.4.7. SCALER MODULE

Extract the instrument to view the work set-up parameters on the display, which can be edited by pressing the following buttons on the keyboard:



for Scaler function



for Perio function



for Endo function

a LED indicates the function enabled.



**N.B.:**

**Enabling the SCALER, PERIO AND ENDO functions depends on the installed scaler model.**

---

The tooth scaler operates when the instrument is lifted from its housing and moved towards the operating field, and when the foot control is engaged (see paragraph TOOTH SCALER OPERATION).





**N.B.:**

**When the instrument is lifted from the table, all the other dynamic instruments and the dental chair movements are disabled. Chair movements may be permitted but not on with instruments lifted during the device settings phase.**


---

### **3.4.7.1. Power adjustment**

The operator can adjust the operating power by setting a value ranging from 10% to 100% of the max. power

using the  and  buttons on the keyboard after the instrument has been extracted. The value set is shown on the display of the instrument table.

#### **3.4.7.1.1. Fixed or progressive speed**

The  key on the keyboard enables tooth scaler operation at a fixed power corresponding to the value set or at a progressive power (the display shows whether the power is fixed or progressive):

- when the button is disabled (corresponding LED off), the tooth scaler power is progressive and ranges from the minimum power to the percentage value set depending on the foot control lever position;
- when the button is enabled (corresponding LED on), the tooth scaler power is fixed according to the percentage value shown on the display within the entire field of action of the foot control lever.



**N.B.:**

**For spray regulation and lighting, see paragraph "General Instrument Functions".**

---



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

---

### **3.4.1. LAMP MODULE FOR COMPOSITES**

The composite lamp is operated by lifting the instrument from its housing, moving it towards the operating field and, according to the model, pressing the relevant buttons on the lamp.



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

---

### **3.4.2. SYRINGE MODULE**

The syringe operates at any time by simply pressing one of the two levers enabling either water or air supply (left-hand lever for water and right-hand lever for air). When these two supply buttons are pressed simultaneously, spray water is delivered.









**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

---

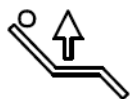
### **3.4.3. CLOCK AND DATE SETUP**

Press and hold down the  key for 3 seconds: the month starts flashing and can be set using the  and  keys. Press the  key again to set the day in the same way. These operations must be repeated until the date and time are set up. At the end, the newly entered values must be confirmed by pressing the **OK**  key, which also enables exiting the set-up mode. Press the  key for 3 seconds to exit set-up mode without storing the newly entered values.

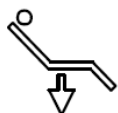
## 3.5. **CHAIR**

### 3.5.1. **MANUAL CONTROLS**

Chair movements can be run from the instrument table, foot control (see relevant paragraph) and assistant table (see relevant paragraph).



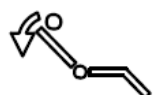
Dental chair pantographic arm up control



Dental chair pantographic arm down control



Dental chair back up control



Dental chair back down control

### 3.5.2. **AUTOMATIC CONTROLS**

The chair is equipped with the following drive controls:

- No. 3 programs that can be saved and edited by the operator;
- Automatic reset program;
- Rinse position program;
- Return to last position program.

### 3.5.3. **SAVING OPERATOR PROGRAMS**

To save a dental chair position, move the chair to the required position and hold down the key until you hear the beep indicating that the position is saved.



memory 1



memory 2

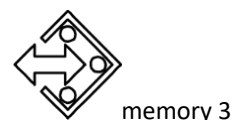
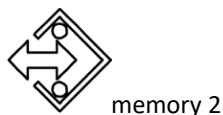
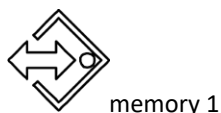


memory 3

The controls for storing the programmed positions are also present in the dental assistant table (see paragraph DENTAL ASSISTANT PUSHBUTTON PANEL).

### **3.5.4. MEMORY SELECTION**

To select a memory press the corresponding button on the instrument table:




Selection of the memory is signalled by a LED that switches on under the button.

### **3.5.5. RECALLING SAVED POSITIONS**


Stored positions are called up from the instrument table by pressing the corresponding button that activates the desired memory. Then, press the button again to call the memory up.

The controls for calling up the programmed positions are also present in the dental assistant table (see paragraph DENTAL ASSISTANT PUSHBUTTON PANEL).


### **3.5.6. STORING THE RESET POSITION**

Press the reset control  for at least 3 seconds until a short beep is produced. This enables storage of the pantographic arm reset position.


The controls for storing the reset position are also present in the dental assistant table (see paragraph DENTAL

ASSISTANT PUSH-BUTTON PANEL), pressing the key .

### **3.5.7. RECALLING THE RESET POSITION**

The reset position is called up from the instrument table by pressing the corresponding button .

The reset controls are also present in the dental assistant table (see paragraph DENTAL ASSISTANT PUSH-

BUTTON PANEL), by pressing the  key.

### **3.5.8. STORING THE RINSING POSITION**

Press the rinse control



for at least 3 seconds until a short beep is produced. This enables storage of the rinse position.

The controls for storing the rinse position are also present in the dental assistant table (see paragraph DENTAL

ASSISTANT PUSH-BUTTON PANEL), pressing the key



### **3.5.9. CALLING UP THE RINSING/LAST POSITION**

The rinsing/last positions are called up from the instrument table by pressing the corresponding button



The rinsing/last position controls are also present in the dental assistant table (see paragraph DENTAL ASSISTANT PUSHBUTTON PANEL).

When the controls are enabled, the chair gets positioned in either the rinsing position or the last position before the control was given.



### **3.5.10. LOCKING CHAIR MOVEMENTS**

Some special operations may require chair movements to be locked to prevent accidental actuation by the operators or due to other causes.

To ensure that chair movements are locked, just actuate the toggle switch located under the tool tray (when the chair is locked the message "Chair safety" will appear on the display). To reset and allow movements again, simply move the toggle back to its original position.

Press the **OK** key for approx. 3 seconds until a beep is heard to disable the dental chair (the new dental chair status is shown on the display). The dental chair cannot be controlled until the **OK** key is pressed again.

### **3.5.11. REQUEST FOR ASSISTANT/OPEN DOOR**

The **F** key engages a relay which, on its turn, produces a request signal or an open door signal. This button can be pressed at any time, regardless of the position of the instruments and of the dental chair.



---

**N.B.:**

**For all electric connections refer to the enclosed wiring diagram.**

---

### 3.6. **OTHER ACCESSORIES**

For accessories not previously described buy indicated in the product description, see the specific user manuals supplied with the equipment.

### 3.7. **FLOOR BOX**

The floor box houses all electric, water and pneumatic control systems of the dental unit as well as aspiration devices (liquid-air), if fitted. Access is gained using the supplied key after cutting out voltage (as instructed in section SAFETY RULES).

Visible outside the floor box are:

- the main switch that controls unit electrical power;
- the general protection fuse;
- the general water tap, that controls water supply to the entire unit (version 508663);

#### **3.7.1. VERSION WITH PERMANENT INSTALLATION - 508663**



#### **DANGER**



The power switch isolates the equipment from the mains electricity. So, before performing any operations in the equipment, make sure that the power switch is off.

#### **3.7.1. VERSION WITH NON PERMANENT INSTALLATION - 508726**



#### **DANGER**



Unplug the power plug from the electrical socket before performing any work.

---

### **3.7.2. AIR PRESSURE REGULATOR**

The air pressure regulator is used to keep the air pressure of the instrument in the table constant.

The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.

The regulator collects any condensate present in the compressed air. For condensate draining refer to paragraph CONDENSATE DRAINAGE.

In the version with non-permanent installation with power plug - 508726, the regulator is inside the unit column.

### **3.7.3. WATER PRESSURE REGULATOR**

The water pressure regulator is used to keep the water pressure of the instrument in the table constant. The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.

The regulator has a filter that must be checked periodically and replaced, if necessary, as described in paragraph WATER FILTERS.

The regulator is only included in the version with permanent installation - 508663.

### **3.7.4. INSTRUMENT PHYSIOLOGICAL SOLUTION FILLING CIRCUIT**

Clean Spray is a filling circuit for physiological solution taken from a specific container installed in the water unit.

The physiological solution can be used to fill the water circuit in all the tools on the instrument and assistant's tray on the dental unit.

#### **3.7.4.1. VERSION WITH PERMANENT INSTALLATION - 508663**

- The device is housed in the spittoon unit. To turn all instrument filling with physiological solution off or on, remove one of the instruments (except for the brushless micro motors)

and press the instrument tray button marked with this symbol



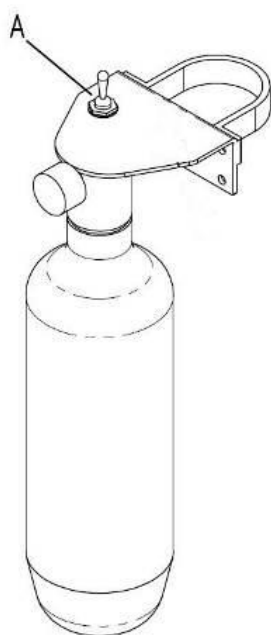
. Otherwise, supply comes from the water mains.

#### **3.7.4.2. VERSION WITH NON PERMANENT INSTALLATION - 508726**

- The device is only supplied by clean Spray, there is no supply from the water mains

The symbol **Ω** appears on the instrument tray display when this function is turned on.

The switch (A) emits air (max 2 bar) to pressurise the physiological solution container. Before removing the container, turn the air switch (A) OFF.





### **3.7.5. PERISTALTIC PUMP**

The peristaltic pump lets you use sterile rinsing liquids, especially indicated during dental surgery or implants. The application allows you to feed the instrument water circuit with sterile physiological solution.

Turning on the peristaltic pump feeds the instrument water circuit with liquid from a specific container. The container is not supplied. Normally, only the brushless micro motor is powered. Other instruments can be enabled upon customer request in the production phase.

A specific knob on the instrument table adjusts the amount of liquid flowing from the pump.

The peristaltic pump is turned on with a switch under the instrument table in O.M.S. dental units equipped with heater and two brushless micro motors.

In other O.M.S. dental units, the peristaltic pump is turned on by holding down the spray key  until the LED over the key starts to flash. The LED flashes until the function is turned off by pressing the  key again.



**N.B.:**

**For further details refer to the manufacturer's operating instructions enclosed.**

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#### **CAUTION**

The equipment is equipped with a general water tap. During use, the tap should be open. At the end of the work day, the tap should be closed or, alternatively, close the unit's general supply tap in the surgery.

---

## 4. SERVICE AND MAINTENANCE

---

A number of operations are described below. We strongly recommend you perform this work following the procedures given at the stated intervals in order to keep your equipment at peak efficiency.

The following paragraphs list the various maintenance activities, with the relevant frequency, required worker and reference details.

Activities are classified in:

- Cleaning/disinfection,
- Adjustments,
- Scheduled maintenance
- Extraordinary maintenance

They take into account all configurations using the various accessories in stock and thus can be applied based on the options you selected in the order.

### 4.1. CLEANING AND DISINFECTION

For the sake of hygiene (and to avoid surfaces being exposed at length to spots of corrosive substances), clean the equipment frequently.

Furthermore, for the sake of hygiene and cleaning, and to avoid the risk of damage, O.M.S. recommend you use products that contain:

- Quaternary ammonium
- Phenolic compounds
- Iodophors
- that do **not** contain:
- Alcohol
- Hypochlorite
- Soda
- Organic solvents

O.M.S. recommends these factory tested products. Always refer to the manufacturer's instruction and safety sheets:

Detergent

- ZETA 4.

Disinfectant

- OROCID MULTISEPT

### **Chair upholstery**

To thoroughly clean chair upholstery, a product suitable for skay can be used such as:

- EMULSIO.

For daily cleaning and disinfection, use a gentle product such as:

- GREEN & CLEAN SK.

O.M.S. provides factory tested and inspected products upon request.



**N.B.:**

**O.M.S. decline all responsibility for problems resulting from the use of substances other than those recommended.**

---



CLEANING AND DISINFECTION			
Activity	Frequency	By whom?	Note/references
Instrument table, instrument tube exterior	After each patient	Trained operator	Only use products indicated by OMS.
Instrument table: instrument holder, handles, tray mat Assistant table mat	After each patient	Trained operator	Autoclave (if applicable) Only use products indicated by OMS.
Instruments and syringe	After each patient	Trained operator	Clean, disinfect and sterilise when indicated by the instrument manufacturer's instructions.
Chair: upholstery, headrest and armrests	After each patient	Trained operator	Only use products indicated by OMS.
Foot control cleaning	Daily	Trained operator	Only use products indicated by OMS.
Spittoon, cannula and spittoon filter	Daily	Trained operator	Only use products indicated by OMS.
Painted cases	Daily	Trained operator	You are strongly advised not to use denatured alcohol or cleaners containing soda or organic solvents as they could damage the paintwork and upholstery.

#### **4.1.1. INSTRUMENTS**

For instrument cleaning, sterilization and lubrication, we recommend consulting the instructions supplied by the manufacturer(s) for each model that are attached to this manual and added to the equipment packaging.

#### **4.1.2. FAULT 11**



**N.B.:**

**Gentle skay upholstery products must be used for daily cleaning and disinfection.**

Products suited for skay must be used for periodic in-depth upholstery, armrest and headrest cleaning following the procedure below:

1. Shake well before use
2. Pour the product on a dry cloth, do not pour directly on the surface to be cleaned

3. Start with a small surface, making sure the skay remains unaltered, extending onto the rest of the upholstery until fully evaporated
4. Remove residue from the cleaned surface with a dry cloth
5. Do not overly use and wait at least 60 days before the next cleaning

#### **4.1.3. ADJUSTMENTS**

<b>ADJUSTMENTS</b>			
<b>Activity</b>	<b>Frequency</b>	<b>By whom?</b>	<b>Note/references</b>
General surgery water tap	End of the work day	Trained operator	Close the dental unit water supply tap
Instrument spray water pressure adjustment	When necessary	Trained operator	Tap under the instrument table (adjustment without tool)
Instrument air pressure adjustment	When necessary	Authorised technician	Tap under the instrument table (adjustment with tool, authorised technician only)
Main unit water pressure adjustment	When necessary	Authorised technician	Pressure regulator calibration
Main unit air pressure adjustment	When necessary	Authorised technician	Pressure regulator calibration

#### **4.1.4. INSTRUMENT SPRAY PRESSURE**

The water delivered to the spray is regulated by rotating the tap located under the relevant instrument module: when turned anticlockwise, the flow of water to the spray is gradually reduced; when turned clockwise, the opposite applies.

#### **4.1.5. MAIN UNIT AIR PRESSURE**

An air pressure regulator is installed in the spittoon unit that keeps air pressure constant in table instruments.

The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.

The regulator collects any condensate present in the compressed air. For condensate draining refer to paragraph CONDENSATE DRAINAGE.

#### **4.1.6. MAIN UNIT WATER PRESSURE**

The water pressure regulator is used to keep the water pressure of the instrument in the table constant. The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.



**N.B.:**

**The regulator has a filter that must be checked periodically and replaced, if necessary, as described in paragraph MAIN UNIT WATER FILTERS.**

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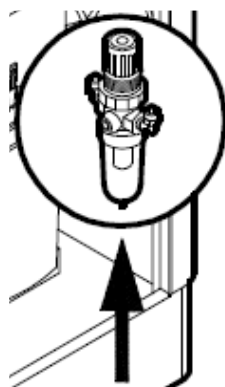
#### 4.1.7. SCHEDULED MAINTENANCE

SCHEDULED MAINTENANCE			
Activity	Frequency	By whom?	Note/references
Condensation drain	Weekly	Trained operator	
Instrument lubrication	According to the instrument manufacturer's instructions	Trained operator	
Aspiration system check and cleaning	Monthly	Authorised technician	Recommended
Aspiration anti-foam agent tablet change	Every 2 – 3 days (when necessary)	Trained operator	Place in drain filter
Aspiration cannula tab lubrication	15 days	Trained operator	Silicone spray
Aspiration tube replacement	Annually	Authorised technician	
Main water supply tube check	Every six months	Authorised technician	
Main water supply tube replacement	Annually	Authorised technician	
Disinfect separate distilled water container for instrument supply	Monthly	Trained operator	
Replace the main unit water filter	Annually	Authorised technician	
Check the instrument water filter	Every 2 years	Authorised technician	
Replace amalgam tank	When indicated by separator	Trained operator	According to the instrument manufacturer's instructions
Replace disinfection system disinfectant cartridge	When indicated by the disinfection system	Trained operator	According to the instrument manufacturer's instructions
General functional checks	Yearly or after 8000 operating hours	Authorised technician	
Periodic safety/performance checks – IEC 62353	Two years	Authorised technician	Mandatory by law

#### **4.1.8. CONDENSATION DRAIN**

The equipment is supplied with an air filtering device and a condensate drain valve.

Any condensate accumulating in the transparent cup is expelled by pushing upwards the needle valve located on the cup bottom, as illustrated.



**N.B.:**

**check for condensate on a weekly basis.**

#### **4.1.9. INSTRUMENT WATER CONTAINER DISINFECTION**



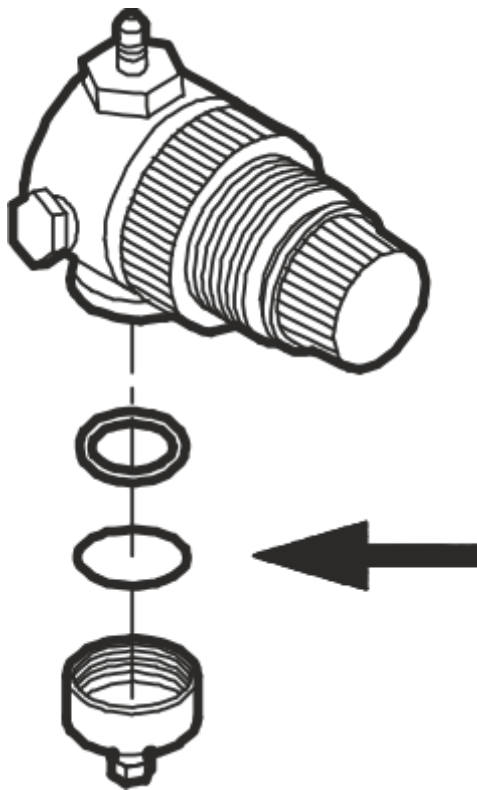
**N.B.:**

**We do not recommend you keep distilled water in the container for prolonged periods of time. This could generate a dangerous bacterial load.**

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#### **4.1.10. INSTRUMENT WATER FILTER**

To prevent impurities that are always present in the water mains from jeopardising instrument operation, the water flows through a filtering pad located near the water pressure regulator.



**N.B.:**

**Every 12 to 24 months ask a technician to check the filter for possible clogging during the periodic overhaul. Replace the bronze sintered pad, if necessary.**

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#### **4.1.11. FUNCTIONAL SAFETY CHECKS**

To guarantee dental unit operating and functional safety, have an authorised OMS technician perform routine maintenance once a year.

Medical electrical devices are built to guarantee patient, operator or third party safety in the event of fault. Consequently, the actual level of safety must be periodically checked.

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#### **CAUTION**



Run periodic safety checks and tests at least once every two years to find any electrical faults (i.e. damaged insulation) that could reduce the initial level of safety.

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These checks should be performed by an authorised OMS technician with suitable tools and equipment according to specific standards; regulation IEC 62353 is the reference standard for medical electrical device controls manufactured in accordance with IEC 60601-1.

Periodic checks and tests include visual inspection, grounding connection measures and dispersed currents; the results and values measured must be recorded in a specific form and kept to demonstrate device compliance in time (complete with its accessories) and to monitor device safety levels.

Technical safety checks must be performed and documented:

- after first start up (installation),
- after repairs or maintenance work,
- during periodic tests.

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#### **DANGER**



Dental unit use is only permitted if all safety checks were passed.

---

## 4.2. **EXTRAORDINARY MAINTENANCE**

Some extraordinary maintenance activities are described below and, except for paint touch-ups, we recommend they all be performed by authorised O.M.S. technicians.

Upon request, O.M.S. will provide all wiring diagrams, component lists, descriptions, calibration instructions or other information to assist authorised O.M.S. technicians in device repairs.

EXTRAORDINARY MAINTENANCE			
Activity	Frequency	By whom?	Note/references
Paint touch-ups	When necessary	Trained operator	
Fuse replacement	When necessary	Authorised technician	Refer to technical documentation
Work due to malfunctions, faults or downtime	When necessary	Authorised technician	Refer to technical documentation

### 4.2.1. **TOUCH-UPS**

Any minor scratches on the enamel can be touched up with the bottle of paint provided in the accessories box for this very purpose. Shake the bottle before use and mix the paint well, plunging the brush up and down several times inside the bottle containing the enamel. Touch up by "dabbing" the damaged area with small drops of paint.



#### 4.2.2. FUSE REPLACEMENT

##### DANGER



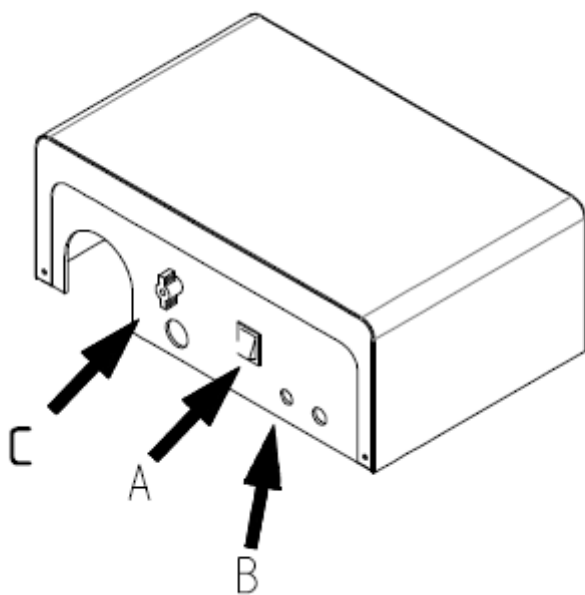
The power switch isolates the equipment from the mains electricity. So, before performing any operations in the equipment, make sure that the power switch is off.

##### CAUTION



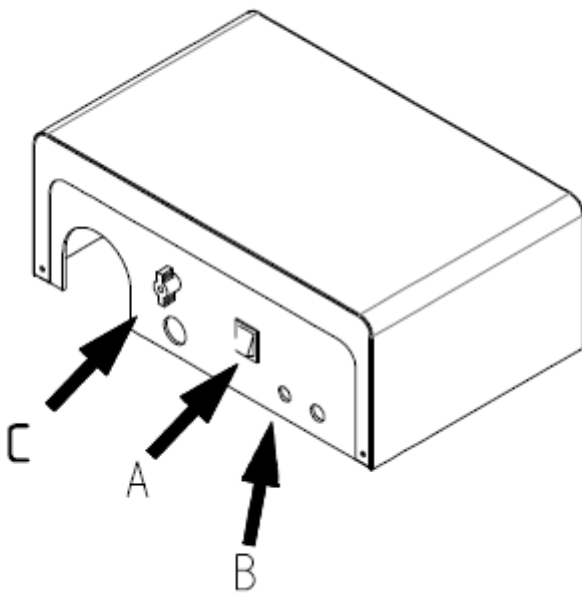
Before replacing a fuse, you must first determine the reason why it has blown and carry out the replacement only once the causes have been eliminated. The new safety fuse must have the same features as the replaced fuse. These specifications are shown in the electrical diagram of the equipment.

The general protection fuse can be easily found at the bottom of the column or chair (B in the illustration), replaceable from the exterior using a screwdriver; before replacement, make sure the main switch (A in the illustration) is off. The fuse should only be replaced after removing the cause the triggered it.

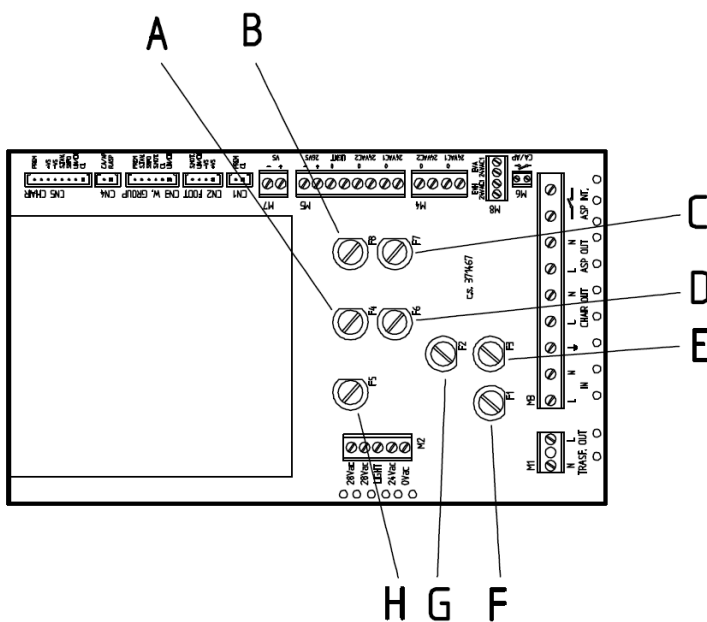


Protection fuses are also found on the electronic boards.

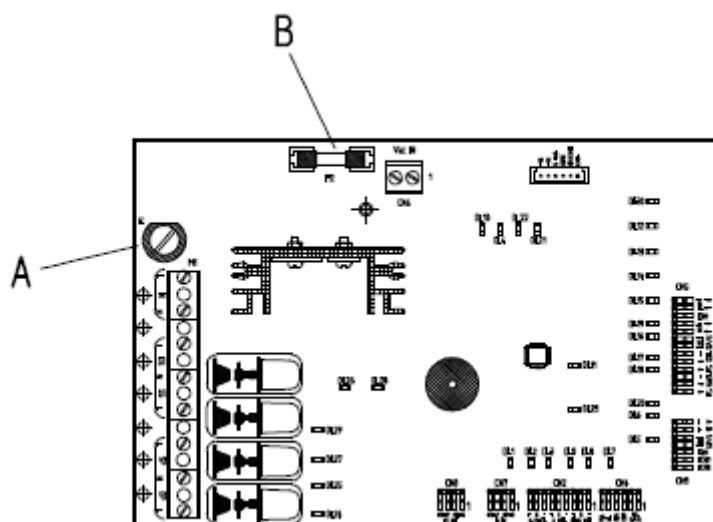
Below is an indicative list of the values required for the main fuses installed in the equipment:



B. general fuse 8AT, 230 Vac



- A. operating lamp 6.3AT, 16 or 22.8 Vac;
- B. Micro motor, progressive turbine, tooth scaler, instrument table solenoids lamp, Machine Dr. 6.3AT, 28 Vdc
- C. cup heater, amalgam separator and water unit solenoids 6.3AT, 24 Vac;
- D. syringes, polymerizing lamp 6.3AT, 24 Vac;
- E. dental chair motors 5AT, 230 Vac;
- F. primary transformer fuse 4AT, 230 Vac;
- G. aspiration system output OUT 5AT, 230 Vac;
- H. board and bus power supply 24VS 8AT, 28 Vac.



- A. 6.3 AF (rapid) for dental chair motors (230 Vac)
- B. 1AT electronic board power supply

Spare fuses supplied by O.M.S. are packed in the accessory box.

## DANGER



Fuses should only be replaced by an authorised O.M.S. technician.

## 5. TECHNICAL INSTRUCTIONS FOR INSTALLATION

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### 5.1. PACKAGING

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**N.B.:**

Markings on the outside of each box give the order number, order confirmation number and device model.

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**N.B.:**

If an O.M.S. stool has been ordered, this will be packed separately.

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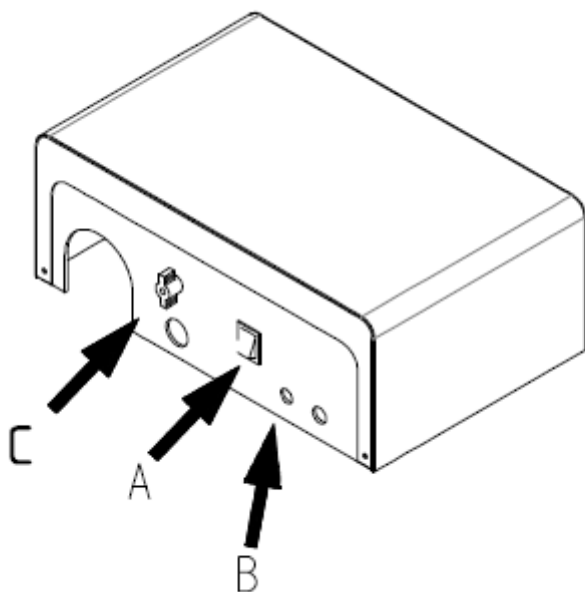
The equipment is shipped in a crate that contains:

Crate 1: Kart, foot control, accessory box, documentation, floor box, foot control.

## 5.2. **ASSEMBLY**

### **5.2.1. VERSION WITH PERMANENT INSTALLATION - 508663**

1. Remove the equipment from its packaging;
2. check and, if necessary, connect the grounding cables to the screw identified by the grounding system symbol;
3. complete water, air and, lastly, the power mains connections. The power mains should only be connected to the specific terminal board in the floor box while all other connections can be directly made in the floor box.



#### **CAUTION**



Be careful when fitting the water tube so that it does not come into contact with the chair motor (if applicable)

4. Install the foot control by connecting the cable to the CN1 connector on the transformer electronic board and connect the grounding wire to the screw marked with the grounding symbol.
5. Remove the grounding box cover, removing the tab knob (C in the illustration in paragraph FUSE REPLACEMENT) and loosen the screw on the guard on the opposite side, for water and air connections (see paragraph CONNECTIONS), aspirator and drain.
6. Electrically connect the floor box and, lastly, the power mains (general terminal); general terminal board power wires must be secured with nylons straps to the specifically perforated insulated base and placed under the terminal. Specifically, it must be guaranteed that, in the event of fastening device fault (straps), the protection conductor is not taut while the mains conductors are connected to the terminal. If the power mains wires come from under the floor box, they must pass inside a specific sheath to then be connected to the terminal board in the floor box.
7. fit the accessories (instruments), if any, on the instrument table.



**N.B.:**

**For all electric connections refer to the enclosed wiring diagram.**

---

### **5.2.2. VERSION WITH NON PERMANENT INSTALLATION - 508726**

1. Remove the equipment from its packaging;
  2. Install the foot control by connecting the cable to the CN1 connector on the transformer electronic board and connect the grounding wire to the screw marked with the grounding symbol.
  3. fit the accessories (instruments), if any, on the instrument table.
- 



**N.B.:**

**For all electric connections refer to the enclosed wiring diagram.**

---

## 5.3. **CONNECTIONS**

### **5.3.1. VERSION WITH PERMANENT INSTALLATION - 508663**

First, ensure regular air and water flow from the water and pneumatic mains. O.M.S. cannot be held liable for any faults or damages due to failure to observe the following warning:

Water supply:

Water with medium/low salt content (fit a water softening device if necessary), to be connected to the 6x8 diameter tube (see paragraph TECHNICAL SPECIFICATIONS for admitted pressure).

Pneumatic supply:

Compressed air, preferably dehumidified and oil-suspension free, to be connected to the 4x6 diameter tube (see paragraph TECHNICAL SPECIFICATIONS for admitted pressure).

We recommend making a temporary direct connection between the water delivery pipe and the drain pipe, and letting the water circulate for a few seconds before installing the equipment. This enables elimination of any impurities from the tubes.

---

#### **CAUTION**



Be careful when fitting the water tube so that it does not come into contact with the chair motor (if applicable)

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**N.B.:**

**For all electric connections refer to the enclosed wiring diagram.**

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### **5.3.1. VERSION WITH NON PERMANENT INSTALLATION - 508726**

Punto Kart version 508726 does not include permanent installations.

Electricity supply:

Use the specific power plug that should be connected to an EEC 7/7 230 V - 16A electrical socket (Schuko).



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#### **SHOCK HAZARD**



Before moving the unit, unplug the power plug. Only connect the power plug after correctly positioning the dental chair.

Do not pull on the power cord to unplug the power plug.

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Pneumatic supply:

Compressed air, preferably dehumidified and oil-suspension free, to be connected to the supplied quick coupling 4x6 diameter tube (see paragraph TECHNICAL SPECIFICATIONS for admitted pressure).



## 5.4. TESTING AND PUTTING INTO OPERATION

1. Check the manual pantograph base and backrest up and down controls, and the automatic return to exit, rinse position and return to last position control to ensure they are working properly. Memorize the 3 programs and check that the relevant positions are correct (see sections MANUAL CONTROLS and AUTOMATIC CONTROLS).
2. Check that limit switches and safety systems are working properly (see section SAFETY SYSTEMS).
3. Check correct calibration of the pressure regulators and general flow regulators and that of each instrument. These devices have already been calibrated by O.M.S. in the workshop, but they may require an inspection or re-calibration.



**N.B.:**

**We recommend closing the general water tap whenever leaving the dental surgery in order to prevent flooding due to accidental system breakages.**

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### 5.4.1. VERSION WITH PERMANENT INSTALLATION - 508663



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#### **DANGER**



The power switch isolates the equipment from the mains electricity. So, before performing any operations in the equipment, make sure that the power switch is off.

---

#### **5.4.2. VERSION WITH NON PERMANENT INSTALLATION - 508726**



#### **DANGER**



Unplug the power plug from the electrical socket before performing any work.

## 6. INFORMATION ON ELECTROMAGNETIC COMPATIBILITY AS PER IEC 60601-1-2

The device is designed and built to the IEC standard EN 60601-1-2 (Medical electrical equipment; Collateral standard: Electromagnetic compatibility) and hence its level of immunity and emissions is such as not to create dangerous interference with equipment built in compliance with the same standard. WARNING: Interference can instead occur with electrical equipment with a level of emissions or immunity that do not meet IEC standard EN 60601-1-2. In such cases, this equipment must not be used at the same time as O.M.S. equipment. Should the device freeze due to said interference, switching it off and back on again may be sufficient to resume normal operation.


In the event of brownouts, the micromotor may temporarily lose speed that does not jeopardise its safety and performance. The duration of the event is limited to the duration of the brownout.

Manufacturer's guide and statement – electromagnetic emissions		
The device is intended to operating in the electromagnetic environment indicated below. The device customer or user must guarantee that it is used in this environment.		
Emission test	Conformity	Electromagnetic environment - guide
RF emissions CISPR 11	Group 1	The device only uses RF energy for its internal operations. Consequently, its RF emissions are very low and most likely do not cause any interferences with nearby electronic equipment.
RF emissions CISPR 11	Class B	The device is suited for use in all environments, including home ones and those directly connected to a low voltage public mains that powers buildings used for residential purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuation emissions/flicker IEC 61000-3-3	Compliant	

Manufacturer's guide and statement – electromagnetic immunity			
The device is intended to operating in the electromagnetic environment indicated below. The device customer or user must guarantee that it is used in this environment.			
Immunity test	IEC 60601 test level	Level of conformity	Electromagnetic environment - guide
Electrostatic discharge (ESD) IEC 61000-4-2	on contact $\pm 6$ kV in air $\pm 8$ kV	$\pm 6$ kV $\pm 8$ kV	Floors must be made of wood, cement or ceramic tile. If floors are lined with synthetic material, relative humidity must be at least 30%.
Transistors/Burst (Burst) IEC 61000-4-4	$\pm 2$ kV for power lines $\pm 1$ kV for input/output lines	$\pm 2$ kV $\pm 1$ kV	The mains voltage quality must be that typical of a retail or hospital environment.
Surge (Surge) IEC 61000-4-5	$\pm 1$ kV between phases $\pm 2$ kV between phase and grounding	$\pm 1$ kV $\pm 2$ kV	The mains voltage quality must be that typical of a retail or hospital environment.
Brownouts, short blackouts and voltage variations on input power lines	$<5\% U_T$ ( $>95\%$ brownout in $U_T$ for 0.5 cycles)	$<5\% U_T$ 0.5 cycles (10ms)	The mains voltage quality must be that typical of a retail or hospital environment. If the device user requires continuous operations during a blackout, the device should be powered by a UPS or batteries.

IEC 61000-4-11	40 % $U_T$ (60 % brownout in $U_T$ for 5 cycles)  70 % $U_T$ (30 % brownout in $U_T$ for 20 cycles)  <5 % $U_T$ (>95 % brownout in $U_T$ for 5 S)	40 % $U_T$ 5 cycles (100mS)  70 % $U_T$ 20 cycles (500mS)  <5 % $U_T$ 5S	
Magnetic field at mains frequency (50/60 Hz)  IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields at mains frequency should have levels typical of a retail or hospital environment.
N.B.: $U_T$ is the AC mains voltage before the application of the test level			

Manufacturer's guide and statement – electromagnetic immunity			
The device is intended to operating in the electromagnetic environment indicated below. The device customer or user must guarantee that it is used in this environment.			
Immunity test	IEC 60601 test level	Level of conformity	Electromagnetic environment - guide
Conducted RF  IEC 61000-4-6	3 V <sub>eff</sub>  from 150 kHz to 80 MHz	3 V	Portable and mobile RF communication devices should not be used near any part of the device including wires, from the recommended separation distance calculated with the equation applicable to the transmitter frequency.  Recommended separation distance:  $d = 1.17 \sqrt{P}$  $d = 1.17 \sqrt{P}$ from 80 MHz to 800 MHz  $d = 2.34 \sqrt{P}$ from 800 MHz to 2.5 GHz
Radiated RF  IEC 61000-4-3	3 V/m  from 80 MHz to 2,5 GHz	3 V/m	where $P$ is the maximum rated transmitter output power in Watt (W) according to the transmitter manufacturer and $d$ is the recommended separation distance in metres (m).  The fixed RF transmitter field intensity, as determined by an on-site <sup>a</sup> electromagnetic survey, should be under the level of conformity for each frequency interval <sup>b</sup> .

			<p>Interferences may occur near devices marked by the following symbol:</p> 
<p>NOTE 1: At 80 MHz and 800 MHz, the separation distance is applied for the highest frequency interval.</p> <p>NOTE 2: These guidelines may not apply to all situations. Electromagnetic propagation is influenced by building, object and individual absorption and reflection.</p>			
<p>a Fixed transmitter field intensities, like base stations for radio telephones (mobile and cordless phones) and land line radio communication devices, radio stations, AM and FM radio transmitters and TV transmitters cannot be theoretically foreseen with precision. To evaluate an electromagnetic environment caused by fixed RF transmitters, an on-site survey should be considered. If field intensity measured at the device installation site exceeds the applicable level of conformity indicated above, device operations should be monitored. If abnormal performance is noted, additional measures such as a different device orientation or position may be necessary.</p> <p>b Field intensity in the frequency interval from 150 kHz to 80 MHz should be under 3V/m.</p>			

Recommended separation distance between portable and mobile radio communication devices and the device			
<p>The device is intended to work in the electromagnetic environment in which radiated RF disturbances are under control. The device customer or user can contribute in preventing electromagnetic interferences by ensuring a minimum distance between RF mobile and portable communication devices (transmitters) and the device and recommended below, according to the maximum radio communication device output power.</p>			
Specific transmitter maximum output power  W	Separation distance from transmitter frequency  m		
	from 150 kHz to 80 MHz  $d = 1.17 \sqrt{P}$	from 80 MHz to 800 MHz  $d = 1.17 \sqrt{P}$	from 800 MHz to 2,5 GHz  $d = 2.34 \sqrt{P}$
0.01	0.12	0.12	0.24
0.1	0.37	0.37	0.74
1	1.17	1.17	2.34
10	3.70	3.70	7.40
100	11.70	11.70	23.40
<p>For specified transmitters for a maximum output power not indicated above, the <math>d</math> recommended separation distance in metres (m) can be calculated using the equation applicable to the transmitter frequency where <math>P</math> is the maximum transmitter rated output power in Watt (W) according to the transmitter manufacturer</p> <p>NOTE 1: At 80 MHz and 800 MHz, the separation distance is applied for the highest frequency interval.</p> <p>NOTE 2: These guidelines may not apply to all situations. Electromagnetic propagation is influenced by building, object and individual absorption and reflection.</p>			

## 7. DISPOSAL OF THE DEVICE AT THE END OF ITS SERVICE LIFE

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European Directives 2002/96/EC and 2003/108/EC on Waste Electrical and Electronic Equipment (WEEE).



The cross-out wheeled bin symbol featured on equipment or on its packaging indicates that the product must be collected separately from other waste at the end of its service life. Consequently, at the end of the equipment's life, the user is required to take it to a suitable separate collection facility handling electronic and electrical waste or return it to the dealer on purchasing a new piece of equivalent equipment, on a one-for-one basis.

Suitable separate collection with a view to the subsequent recycling, treatment and environmentally friendly disposal of the discarded equipment helps avoid negative effects on the environment and on health and encourages the re-use and/or recycling of the equipment's component materials.

### 7.1. FURTHER INFORMATION RELEVANT TO ITALY

In accordance with art. 13 of the Italian Legislative Decree (D.Lgs) of 25 July 2005, no. 151 "Implementation of Directives 2002/95/EC, 2002/96/EC and 2003/108/EC, relating to the reduced use of hazardous substances in electrical and electronic equipment, as well as the disposal of waste".

In the case of professional users (companies or bodies), in accordance with the above-mentioned provision, the separate collection of this equipment at the end of its service life is organized and taken care of:

- a) directly by the user, in the event the user decides to get rid of the equipment without replacing it with an equivalent piece of new equipment designed to serve the same purpose;
- b) by the manufacturer, namely the entity that first introduced and sold in Italy, or that resells in Italy under its own brand, the new equipment that was used to replace the previous equipment in the event the user - on deciding to get rid of the equipment at the end of its life - purchases a product of an equivalent type designed to serve the same purpose. In this latter case, the user shall be entitled to ask the manufacturer to collect this equipment no later than 15 consecutive calendar days from the delivery of the above-mentioned new equipment.

Unlawful disposal of the product by the user shall result in the application of fines as imposed by current law.

## 8. INCIDENT AND INJURY REPORT FORM

Dir. 93/42/EEC App. II (D.G. 2/1 Rev. 0)

CUSTOMER NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
DEVICE SERIAL N° \_\_\_\_\_  
DESCRIPTION OF INCIDENT \_\_\_\_\_  
\_\_\_\_\_

DAMAGE TO HEALTH OF PATIENT OR USER \_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

### SPACE FOR COMPANY USE (QUALITY ASSURANCE)

#### POSSIBLE CAUSE OF INCIDENT

- ☐ Malfunction
- ☐ Deterioration of characteristics and/or performance
- ☐ Missing operating instructions/Failure to observe operating instructions

Other \_\_\_\_\_

SERIOUSNESS OF DAMAGE \_\_\_\_\_  
\_\_\_\_\_

PROPOSED OPERATIONAL DECISIONS \_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

### SPACE FOR COMPANY USE (GENERAL MANAGER)

OPERATIONAL DECISIONS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CORRECTIVE ACTION \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

Signature \_\_\_\_\_

In case of accident, promptly send the form to O.M.S. S.p.A..

