Riuniti attorno a un'idea

Instruction handbook

Dental Unit

LINEA ESSE

CE 0051

DIRECTIVE 2007/47/EEC

ENGLISH (TRANSLATION OF THE ORIGINAL INSTRUCTIONS)

WARNING

Before using the equipment, read the O.M.S. instruction manual completely and any instructions supplied with the accessories.

This document is intended for dentists and operators in a dental practice.

1. GENERAL INFORMATION

Linea Esse offers a wide range of instruments to be positioned in the four existing housings.

Linea Esse is available in two versions, with a spittoon unit suspended over the chair or on the floor.

Its special kinematism allows for reduced vertical travel of the instrument return arms, total self-balancing in the maximum extraction position and maximum freedom of the feed tubes in all directions.

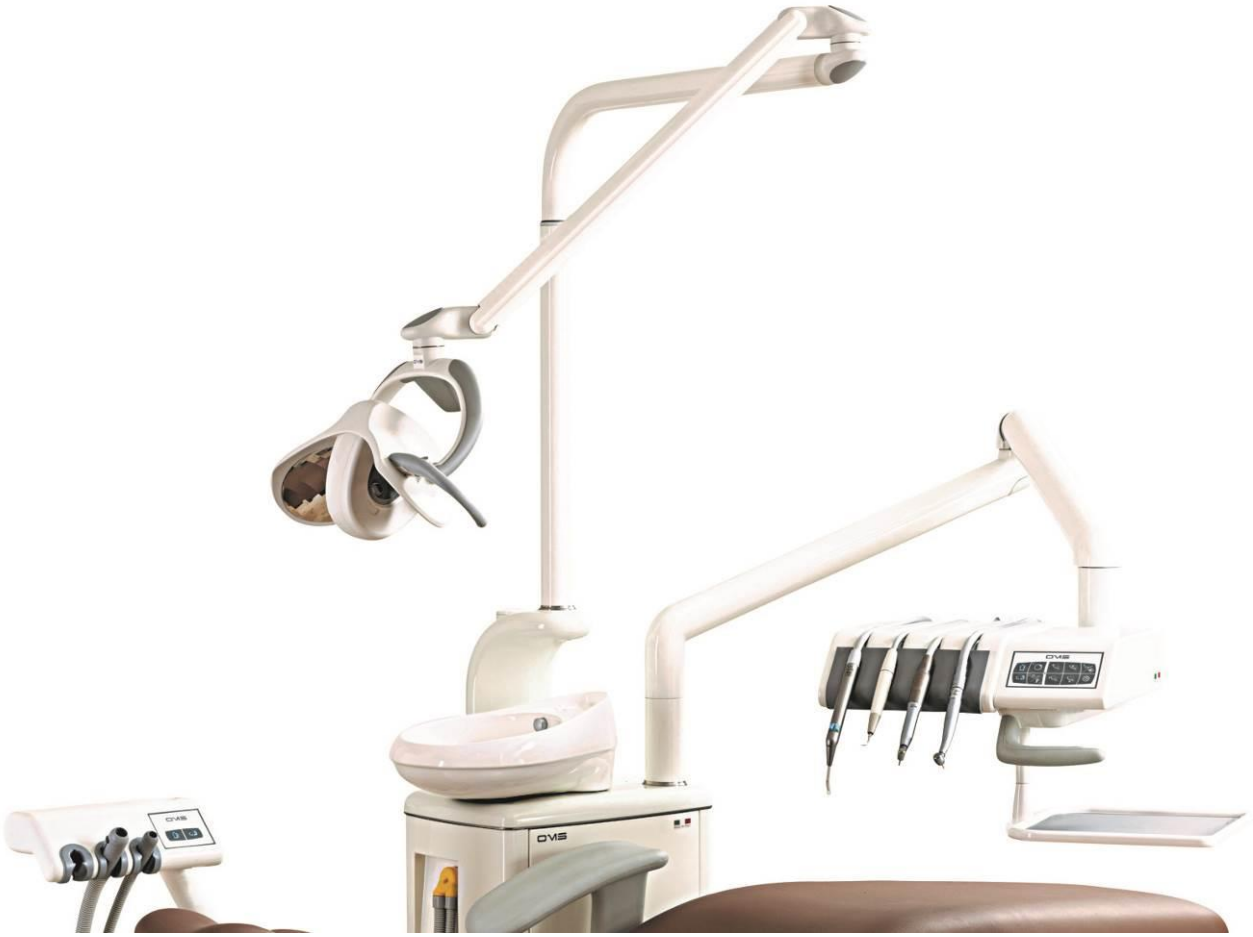
All the top part of the spittoon unit is painted resin, the basin is ceramic and has no interstices for better cleaning and increased hygiene. The cannulae to wash the basin and fill the cup can be easily removed and are autoclavable.

The high-speed suction tubes and connections are easy to remove for disinfection purposes. At the same time, the filter can be extracted in an easy and hygienic manner too.

Linea Esse can be combined with patient chairs Moon, Arcadia EXT, Arcadia P and Swan, compliant with Directive 93/42/EC and its successive amendments and additions produced by O.M.S.

The CE 0051 certification applies to Linea Esse only.

Version with suspended spittoon unit



Version with floor spittoon unit

1.1. SYMBOLS

	**WARNING**	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.
	**NOTE**	Warning, explanation or addition, important information for users and technicians.

1.2. SERVICE

O.M.S. SPA Officine Meccaniche Specializzate

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

tel: +39 0498976455 - www.omsstaff.com

e-mail: assistenzatecnica@omsstaff.com

Always communicate the serial number of the device.

1.3. SAFETY

1.3.1. RULES

	**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 authorised 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.

WARNING

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

WARNING

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

DANGER

Do not operate the equipment on patients with pacemakers.

DANGER

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

WARNING

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

WARNING

Tips and dental drills for micromotors, 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.

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 ad material damages.

WARNING

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

DANGER

Some parts, identified by the symbol "WARNING – LIVE PARTS"

are energised with mains voltage even after switching off the power switch. If these parts require service, cut out voltage to the system supplying power to the equipment, before making any operations.

DANGER

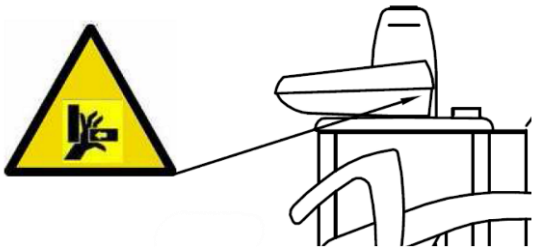
The power switch isolates the equipment from the mains electricity. So, before performing any operations in the equipment, make sure that the power switch is off.

WARNING

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).

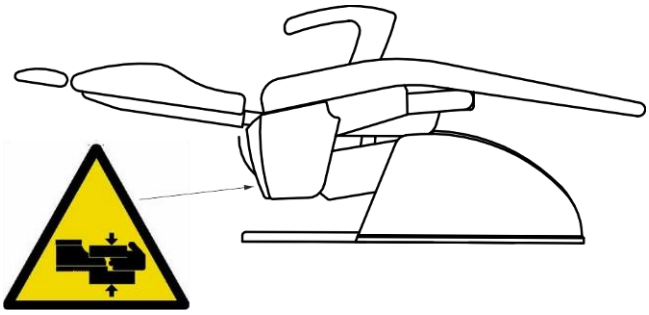
DANGER

In the version with the spittoon unit on the floor, when the chair moves upwards, check the position of the patient's arm on the armrest, to prevent the arm from hitting the basin.



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, read the chair instructions carefully.



WARNING

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

WARNING

When moving the instrument table, assistant table and operating lamp, be careful of the patient and personnel in the surgery to avoid injuring or crushing the patient or personnel in the surgery.

WARNING

Never sit on the tip or foot of the chair.

WARNING

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

WARNING

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.

WARNING

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

WARNING

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

WARNING

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.

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. ENVIROMENTAL CONDITIONS PERMITTED FOR TRANSPORT AND STORARGE

The unit packed can be exposed for a period not exceeding 15 weeks to the following environmental conditions:

Temperature from -40 to +70°C

Relative humidity from 10 to 100% non-condensing

Atmospheric pressure from 500 to 1060 hPa

1.5.2. PERMITTED ENVIRONMENTAL CONDITIONS FOR OPERATION AND OTHER SPECIFICATIONS

Temperature from +10 to +40°C

Relative humidity from 30 to 75%

Atmospheric pressure from 800 to 1060 hPa

Altitudine nominale di funzionamento ≤ 3000m

Pollution degree 2

Overvoltage category II

1.6. WARRANTY

The product is covered by a warranty period of 36 (thirty six) months from the date of installation from the purchaser. The warranty conditions are shown inside the warranty book supplied with the device.

The guarantee is applied to the purchaser also to the product specified in the installation, testing report and covers all mechanical and electrical interventions relating to the product concerned.

The guarantee will be operative after the ordering party will compiled and send to O.M.S. spa the record of installation and testing. Essential condition to access the warranty is to return to O.M.S. spa of installation and testing record, in original by fax or by certified mail within ten days of installation, penalty the decadence of the guarantee.

O.M.S. SPA Officine Meccaniche Specializzate

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

fax: +39 0498975566 - e-mail: garanzia@omsstaff.com - PEC: omsstaff@legalmail.it

2. TECHNICAL CHARACTERISTICS

Model	LINEA ESSE
Manufactured by	O.M.S. S.p.A. Officine Meccaniche Specializzate
	Via Dante 20/A - 35030 Caselle di Selvazzano Padova Italia
Class	I 
Application parts type	B
Protection level device	IPX0
Protection level foot control	IPX1

POWER SUPPLY

Rated voltage	230 Vac +/-10%
Rated frequency	50/60 Hz

Network connections that comply with the rules in force in the territory.

Rated current	4 A
Nominal power	900 W

HYDRO-PNEUMATIC SUPPLIES

Pneumatic supply	from 450 kPa to 650 kPa (from 4.5 to 6.5 bar)

(consumption of aspirated air equalling approx. 40 litres/minute)

Water supply	from 200 kPa to 400 kPa (from 2 to 4 bar)

(consumption of water equalling approx. 2 litres/minute)

Max. temperature	30 °C

OPERATION TIME

Anticipated equipment for continuous use with the followings intermittent loads:

chair	intermittent	1’ on / 10’ off
Syringe 6F (hot water)	intermittent	5' on / 10' off
Polymerization lamp	intermittent	20’ on / 3’ off
Tooth scaler (with water)	intermittent	3' on / 5' off
Micromotor	intermittent	3' on / 3' off
Operating lamp	continuous	
Syringe 3F (cold water)	continuous	

EDI OPERATING LAMP (with cooling fan)

Halogen lamp: 17 Vac, 95 W

Colour temperature: 5,000 °K

Focal distance: 700 mm

Operating field (at 700 mm): 60x180 mm

Max. luminous intensity (at 700 mm): 25000 Lux.

ALYA SPOT LIGHT (led)

Colour temperature: 5,000 °K

Focal distance: 700 mm

Operating field (at 700 mm): 170x85 mm

Max. luminous intensity (at 700 mm): 8000-50000 Lux.

Cri (colour rendering index) >85

MAIA SPOT LIGHT (led)

Colour temperature: 5,000 °K

Focal distance: 700 mm

Operating field (at 700 mm): 170x85 mm

Max. luminous intensity (at 700 mm): 3000-35000 Lux.

GCOMM POLARIS OPERATING LAMP (led)

Colour temperature: 4200-6000 °K

Focal distance: 700 mm

Operating field (at 700 mm): 70x140 mm

Luminous intensity: 15000-30000 Lux.

MISCELLANEOUS

Length of foot control cable 2.5 m

Dimensions of the version with suspended spittoon unit approx. 1.08x0.84x1.05 m (LxHxD)

Dimensions of the version with floor spittoon unit approx. 1.08x110x1.05 m (LxHxD)

Total weight of the version with suspended spittoon unit approx. 50 Kg

Total weight of the version with floor spittoon unit approx. 100 Kg

Minimum space recommended for device installation approx. 3.20x3.00x3.00 m (LxHxD)

IMPORTANT

Note:

The device is designed and manufactured in compliance with Directive 93/42/EEC medical devices (and s) and international safety regulations CEI EN 60601-1 (medical electrical equipment-General requirements for safety), CEI EN 60601-1-2 (medical electrical equipment – collateral regulation: electromagnetic compatibility), IEC 80601-2-60 (Medical electrical equipment: Particular requirements for basic safety and essential performance of dental equipment), ISO 7494-1 (dental unit) , UNI CEI EN ISO 14971 (risk analysis), CEI EN 62304 (ing. Software), CEI EN 62366 (ing. Usability), CEI EN 60601-1-6 (Usability).

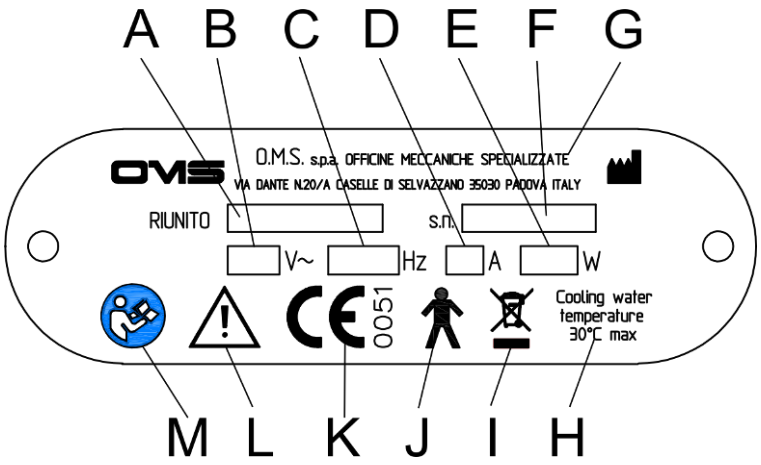
Note:

O.M.S. declines every responsibility to the effects of the safety and the reliability if the assemblage, the additions, the ritaratures, the changes or reparations are not effected from technical authorised O.M.S. with instructions and components exclusively furnished from O.M.S. and if the electric plant of the environment in matter is not conforming to the norms IEC and/or the instrument is not used in conformity to the use instructions.

2.1. DATA PLATE

On the instrument a nameplate is applied that brings the general data of the instrument.

In the version with suspended water group the nameplate is fixed to the support of the water group, in the version with water group to floor the nameplate is fixed at the base of the water group.



A. Device model

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

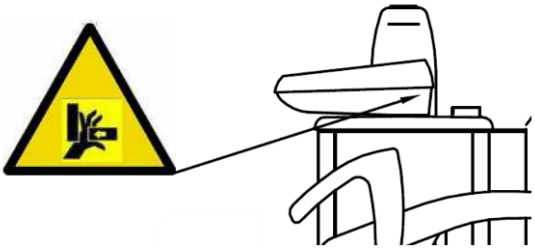
3. COMMAND - CONTROL - WARNING

3.1. SAFETY SYSTEMS

The unit is equipped with safety devices that minimize the risk of collision during the movement of the chair, in particular there is a safety on the basin floor water group in version, which intervenes when the tray is rotated by the side of the chair, limiting the ascent of the chair at a defined height.

DANGER

In the version with a floor water group during the ascent of the chair check the positioning patient on the arm to prevent the risk of crushing with the basin.



Note:

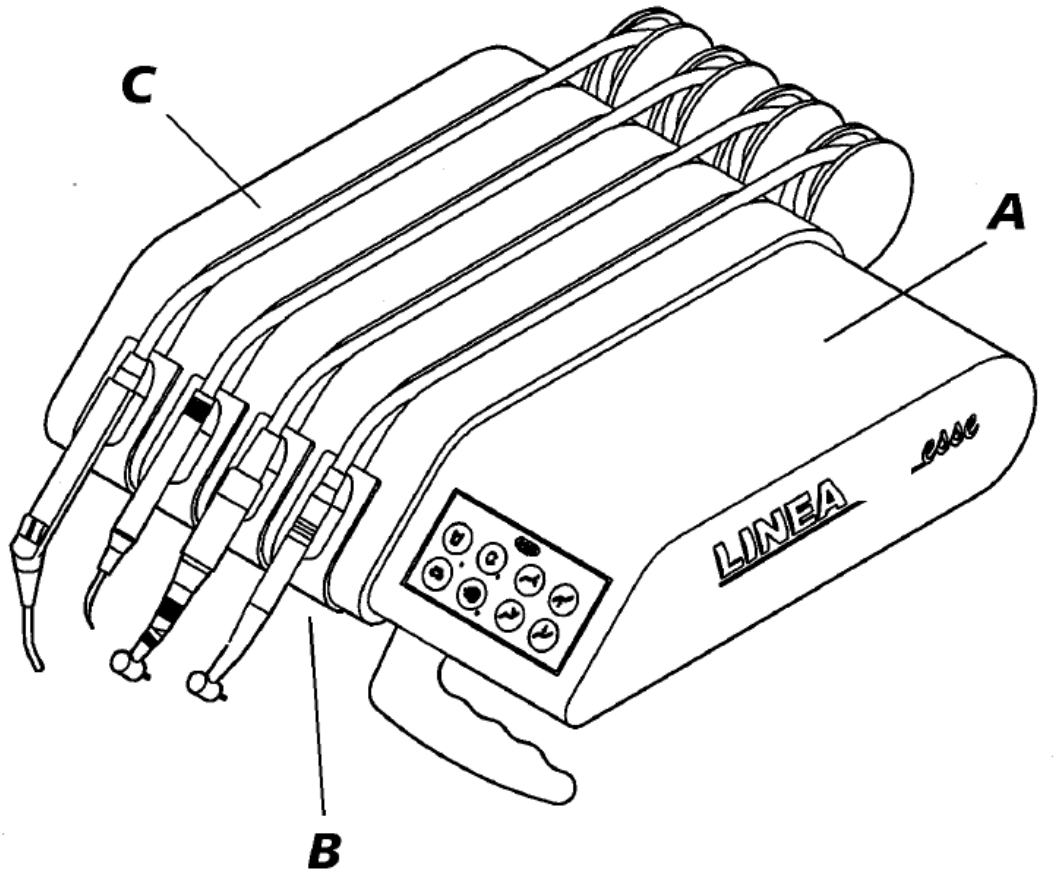
During any automatic chair movement (reset, memory placement or rinse position) by pressing any patient chair command (from the dental unit or push off of the foot controller) the chair stops immediately.

The movement of the chair, either at power-up that in normal use, can be prevented if one or more safety systems are active

Note:

Lifting the assistant's table locks the pantograph and backrest downward movement.

3.2. INSTRUMENT TABLE



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

The sector **A** 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 sector **B** 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 sector **C** is the portion of the table where instruments are positioned.

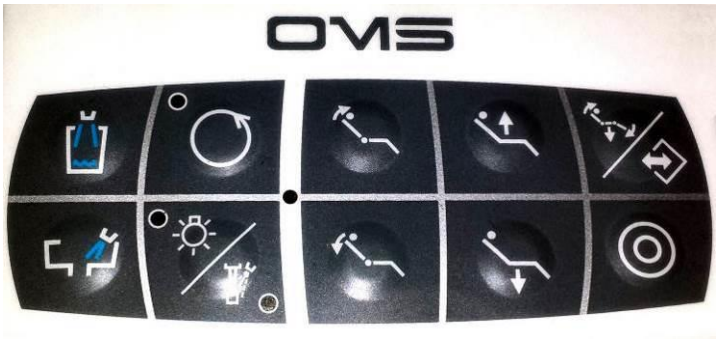
3.2.1. MEMBRANE

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

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

With the equipment powered, the central LED is on - LED power (equipment powered)

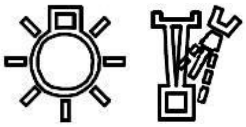
Key functions are the following:



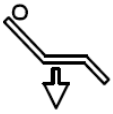
 Filling the cup with cold water

 Rinsing the basin

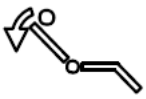
 Micro-motor rotation inversion control with micro-motor rotation inversion LED (when the LED is off, rotation is normal)

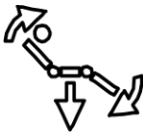
 Spray and optical fibre pre-selection control (with prolonged pressure of the button for 3 seconds), with optical fibre light pre-selection LED and spray pre-selection.

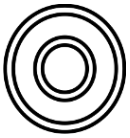
 Patient chair pantographic arm rise (up) control

 Patient chair pantographic arm descent (down) control

 Patient chair back rise (up) control

 Patient chair back descent (down) control

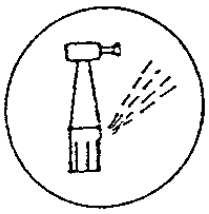
 Control to recall the zero-set positions and chair memory No. 01

 Patient chair rinsing/last position control

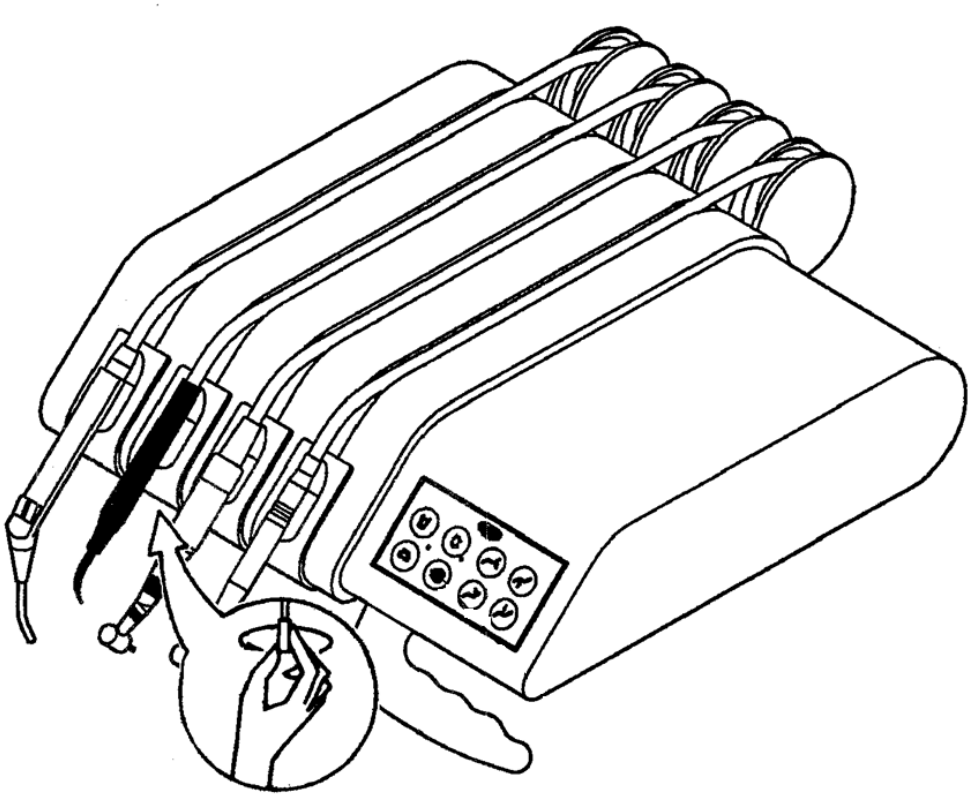
3.2.2. INSTRUMENT GENERAL FUNCTIONS

3.2.2.1. SPRAY

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



The spray function is then operated by pressing the rheostat 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.

3.2.2.2. CHIP BLOWER

After extracting the instrument from its housing, by pressing lever (A) of the rheostat in the rest position the chip-blower is activated;

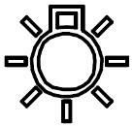
3.2.3. TURBINE MODULE

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).

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

The spray is always pre-selected. The water delivered to the spray is regulated by opening/closing the tap located near the instrument under the turbine module. When the tap is rotated clockwise, the flow of water to the spray decreases until it stops; when turned anticlockwise, the opposite occurs. We recommend not using other regulation devices located alongside the spray tap.

If the instrument is provided with optical fibre lighting, this can be activated by pressing the button

 on the keypad.

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.

Note:

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

3.2.4. ELECTRIC MICROMOTOR 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).

With this movement, the micro-motor will rotate in a clockwise direction.

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

The micromotor enables work with a variable number of revolutions ranging from a minimum of 900 per minute to a max. of 40,000 per minute.

To reverse the sense of direction, place the instrument in its rest position and activate the inversion control

 on the instrument table.

Note:

Invert the sense of rotation with the instrument in its rest position, so that the micro-motor is not damaged.

Doing the same operation again makes you revert to the starting situation.

Spray is pre-selecting entering the command  on the main keyboard. Also see paragraph MICROMOTOR OPERATION.

The water delivered to the spray is regulated by opening/closing the tap located under the micromotor 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  installed in the main table keyboard.

Note:

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

3.2.5. SCALER MODULE

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).

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

Pressing control  to pre-select the spray. See the SCALER OPERATION paragraph.

The water delivered to the spray is regulated by opening/closing the tap located under the tooth scaler module: when turned anticlockwise, the flow of water to the spray is gradually reduced; when turned clockwise, the opposite applies.

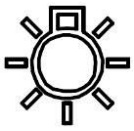
Some scalers are fitted with the Endo and Perio modes.

EMS scaler:

- to use the Endo function, the appropriate tip must be fitted and the necessary power (between 10 and 30%) must be set on the display. Attention, in any case 30% of maximum power must never be exceeded in Endo mode.

- to use the Perio function, the appropriate tip must be fitted and the necessary power (between 10 and 50%) must be set on the display. Attention, in any case 50% of maximum power must never be exceeded in Perio mode.

The regulation of the power of the SATELEC SP NEWTRON scaler has to be done according to the tip on the handpiece.

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

Note:

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

3.2.1. COMPOSITE LAMP MODULE

The composite lamp is activated when it is lifted from its housing and moved towards the operating range and, depending on the model, when the controls on the lamp itself are operated.

Note:

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

3.2.2. 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.

The syringe can be installed (on request) on both the instrument table and assistant table and comes in two versions: with 3 (air and cold water) or 6 (air and warm water) functions. Switching is done by rotating the bottom of the syringe. The LED on the bottom of the syringe will show the function selected (LED off for cold air/water, LED on for warm air/water).

If the syringe is provided with an optical fibre lighting system, the light will come on automatically when pressing the fluid supply buttons.

Note:

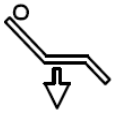
For further details refer to the manufacturer's operating instructions enclosed.

3.3. ARMCHAIR

3.3.1. MANUAL CONTROLS

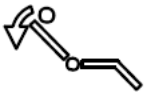
The chair movement can be activated from the instrument table as well as from the rheostat.

Patient chair pantographic arm rise (up) control



Patient chair pantographic arm descent (down) control

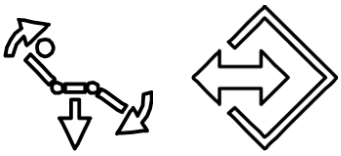
Patient chair back rise (up) control



Patient chair back descent (down) control

3.3.2. MEMORY SELECTION AND RECALLING THE ZERO POSITION

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



The first selection zeroes the chair position, pressing the button again recalls the chair's position 1 memory. To store position 1, zero the memory, position the chair in the desired position and keep pressing the button until you hear a beep.

3.3.3. CALLING UP THE RINSING/LAST POSITION

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

.

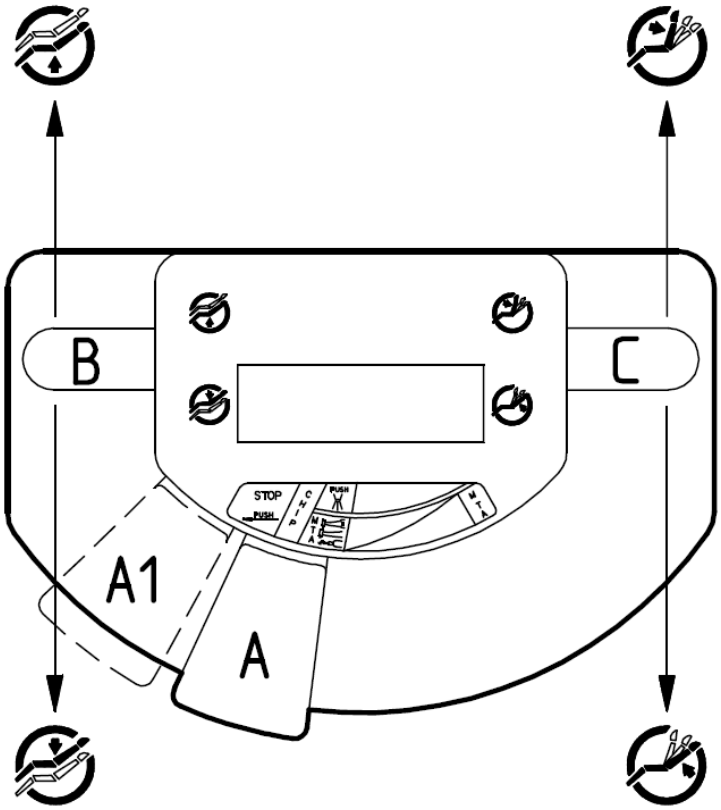
On Linea Esse with the spittoon unit on the floor it is possible to store the rinsing position: zero the memory, position the chair in the desired position and keep pressing the button until you hear a beep.

On Linea Esse with the suspended spittoon unit, the position can be stored only from the chair.

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

3.4. FOOT CONTROL

The dental unit is fitted with foot control.



The equipment foot control was designed to control all the possible functions of the instruments with a simple movement of the lever (A).

Lever (A), positioned with a slight pressure towards the left (see figure, reference A1), allows stopping all chair movement, letting the operator carry out all operations without any dynamic instruments on the patient and without risking accidental movements of the chair itself.

This inhibition is automatic whenever lever (A) is used towards the right.

Note:

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).

Chip-Blower

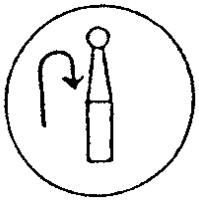
Pressing lever (A) of the rheostat at rest, the chip-blower is activated (as standard on the turbine and as an option on the micro-motor).

Levers B and C are used to move the chair.

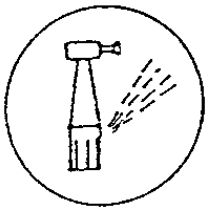
3.4.1. TURBINE OPERATIONS

Extract the instrument from its housing. Then:

- pressing the lever (A) of the foot control in the rest position will enable the chip-blower;



- move the lever A to the right to operate the instrument;



- If lever A is pressed simultaneously, the turbine is sprayed (standard configuration).

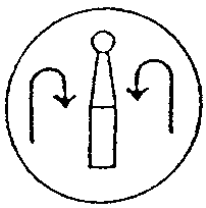
Note:

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.

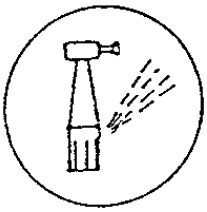
3.4.2. MICROMOTOR OPERATIONS

Extract the instrument from its housing:

- pressing the lever (A) of the foot control in the rest position will enable the chip-blower; The spray is pre-selected in the instrument table by engaging the control 



- move the lever A to the right to operate the instrument; To invert the micromotor rotation, move the foot control lever A to the left and press it downwards



- Then, spray delivery is possible when the foot control lever (A) is slightly pressed with the instrument in operation (standard configuration).

Note:

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.

3.4.3. SCALER OPERATIONS

Extract the instrument from its housing and move the lever (A) to the right to operate the instrument. 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).

Note:

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.

3.4.4. CHAIR CONTROLS FROM THE FOOT CONTROL

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

moving the lever (B) up will raise the seat;

moving the lever (B) down will lower the seat;

moving the lever (C) up will lower the backrest;

moving the lever (C) down will raise the backrest.

Note:

All electrical movements of the chair are fitted with electro-mechanical limit switches. Once the end of the pantograph or backrest travel is reached, they stop the supply to the motor in question, without the violent stress produced by mechanical limit switches.

3.4.1. OTHER ACCESSORIES

Note:

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

3.5. ASSISTANT TABLE

The assistant table has three housings to support the suction cannula, one of which is normally empty, and is fitted on an arm that can be:

- fixed, with the cannula table rotating by about 90°;
- articulated, with a double-hinged rotating movement (arm and cannula table);
- pantographed, with pantographic and rotating movement.

The cannula holder table features two housings for the aspiration tubes (11 and 16 mm in diameter) and another housing, usually empty, which is intended for the containment of accessories such as the dental assistant syringes or the composite resin lamp (a fourth external housing may be provided to fit additional accessories).

The table has two assistant controls that allow water selection and deselection:

- the water flows into the basin (after five minutes the basin switches off automatically)
- the water flows to the cup (timed)

3.5.1. ASSISTANT KEYBOARD

The keypad contains the following controls:

 Fill the cup with cold water

 Water delivery to the spittoon on/off

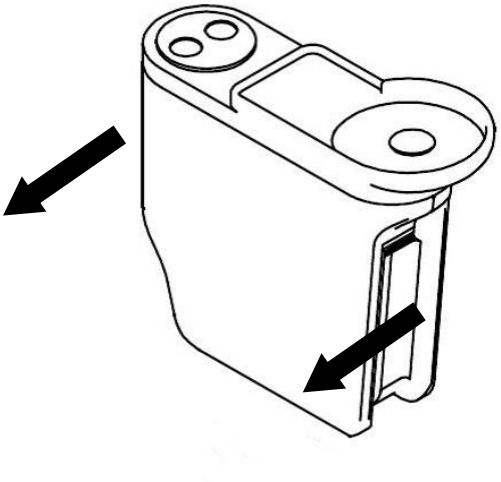
DANGER

In the version with suspended spittoon, the area around the assistant table and relative support arm must be free of all obstacles during the chair movement. The assistant table is provided with a safety device that protects it against the collision with any objects underneath while the chair goes down.

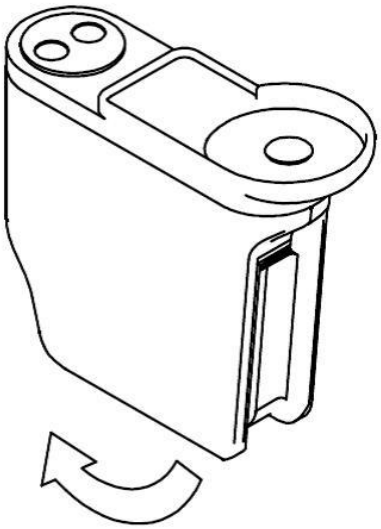
3.6. MAIN UNIT

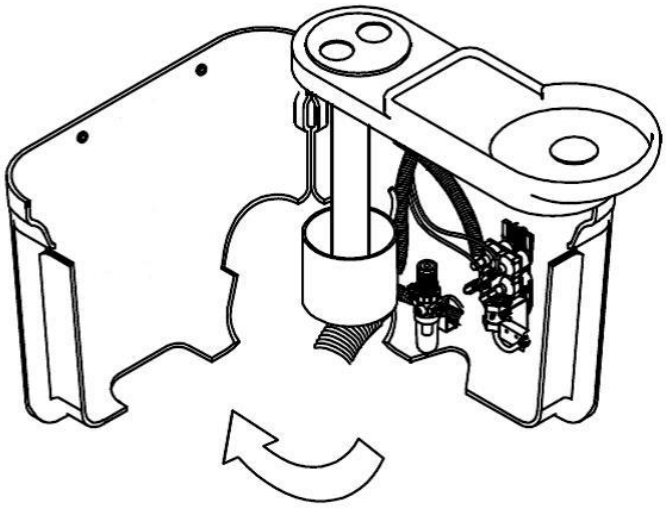
3.6.1. VERSION WITH SPITTOON UNIT ON THE CHAIR

The spittoon unit houses all the electric, water and pneumatic control systems of the dental unit as well as aspiration devices (liquid-air), if fitted. Access is obtained by delicately pulling the panel outwards using both hands at the same time, making sure you disconnect the unit before opening it (as described in the SAFETY RULES paragraph).



The hinged panel is an option too, access is obtained by carefully opening the panel outwards, making sure you disconnect the unit before opening it.





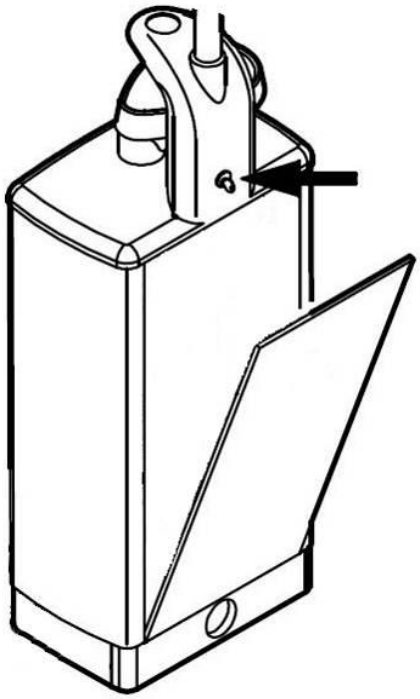
The 90° openable spittoon unit is also available as an option.

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.

3.6.2. VERSION WITH FLOOR SPITTOON UNIT

The spittoon unit houses all the 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 paragraph SAFETY RULES).



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.

3.6.3. 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.

3.6.4. MAIN UNIT WATER PRESSURE

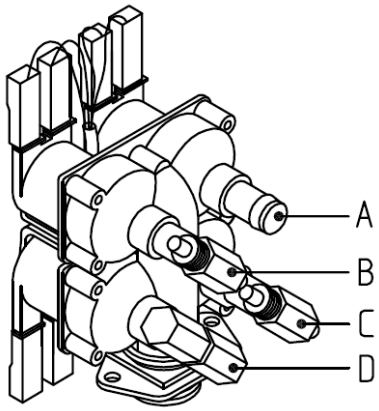
The water pressure regulator is used to keep the water pressure of the instrument in the table constant. The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.

Note:

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

3.6.5. WATER FLOW TO CUP AND SPITTOON

Inside the spittoon unit, a block is installed including four solenoid valves that are mounted on a fitting, which contains the water filter. Each solenoid valve features a tap for controlling the water flow. The tap is adjusted using a screwdriver to reduce the water flow when turned clockwise, and increase it when turned anticlockwise:



A. Free;

B. Regulation of cold water to the cup;

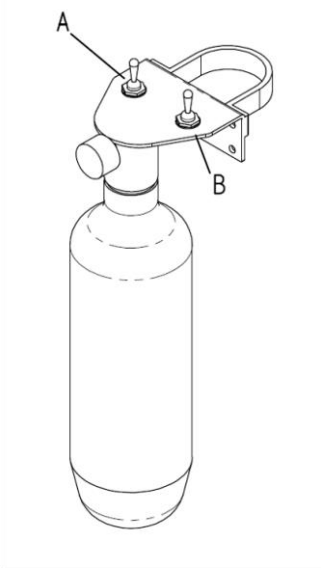
C. Regulation of water to the spittoon;

D. Free;

3.6.6. 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. The circuit is equipped with a switch (B) to fill instruments with physiological solution or tap water. A second switch (A) emits air (max 2 bar) to pressurise the physiological solution container. Before removing the container, turn the air switch (A) OFF.



3.6.7. AMALGAM SEPARATOR

A device capable of separating the amalgam can be installed inside the spittoon unit, refer to the instructions for use of the installed device.

Note:

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

3.6.8. WATER DECONTAMINATOR

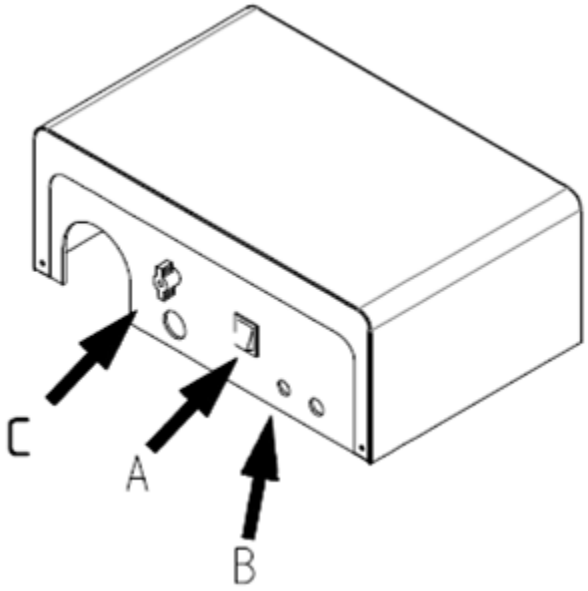
A device capable of decontaminating water automatically by adding disinfectant, can be installed inside the spittoon unit, refer to the instructions for use of the installed device.

Note:

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

3.7. FOOR BOX

The floor box can be built-in (in this case it is in front of the chair base, at the front guard) or separated (in this case it is on the floor near the equipment). Inside, the equipment to the electric mains, water mains, drain, compressed air mains and to the pipe coming from the surgical aspiration motor, if fitted, can be connected.



Visible outside the floor box are:

C. the general water tap, that controls the water supply to the entire unit;

A. the main switch (on the side of the floor box guard) that controls the supply to the whole apparatus and the chair, if connected to the dental unit.

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.

WARNING

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.

3.8. OPERATING LAMP

The use of the lamp is limited to just two operations:

- switching on / off;

- brightness adjustment.

Note:

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

4. HIGH SPEED ASPIRATION

The equipment can be connected to a high speed air ring, liquid ring or ecological liquid ring type aspiration system. The main unit is supplied with a cannula arm (see section CANNULA HOLDER). Some aspiration elements (e.g. the separator tank) can be fitted in the main unit.

The aspiration system consists of the following parts:

A. a drain (located on the column);

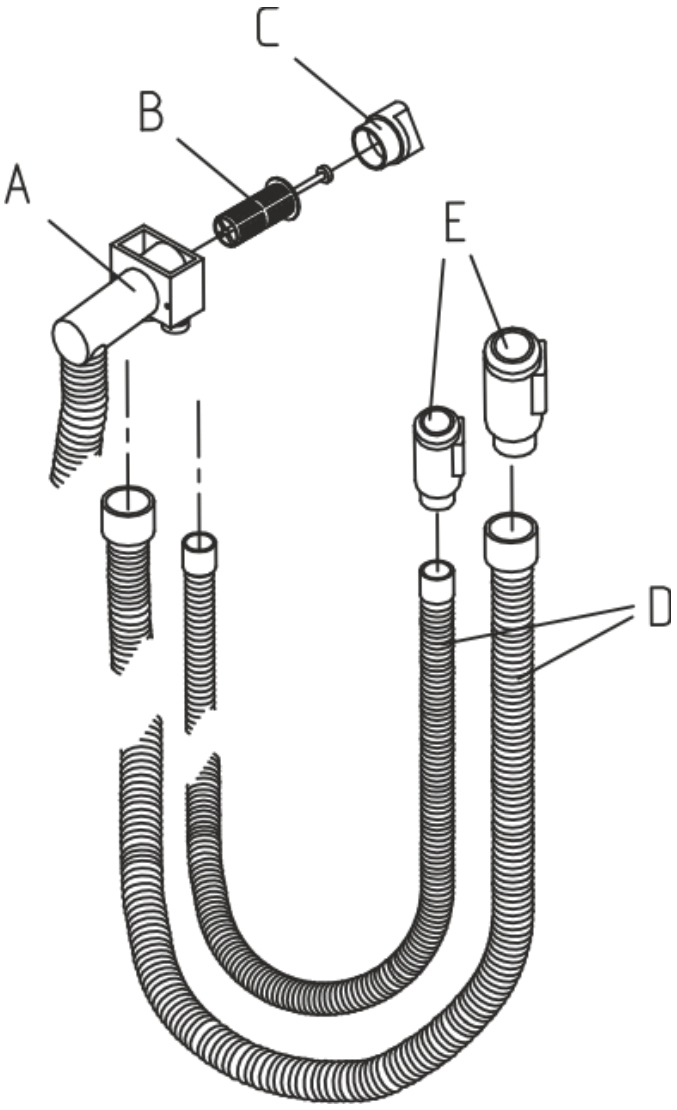
B. a filter;

C. a drain plug;

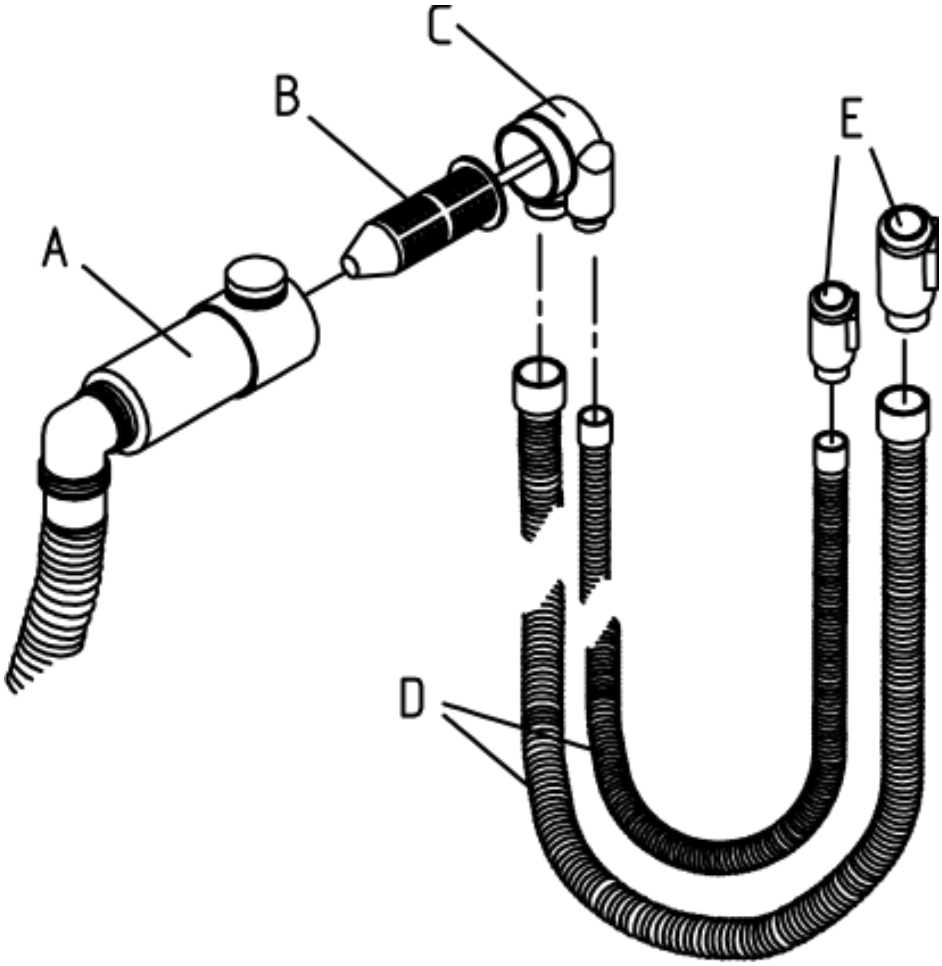
D. 2 aspiration tubes, approx. 1.5 m in length and 11 and 16 mm in diameter;

E. aspiration end pieces, 11 and 16 mm in diameter.

4.1.1. VERSION WITH SPITTOON UNIT ON THE CHAIR



4.1.2. VERSION WITH FLOOR SPITTOON UNIT



Note:

If the dental unit is connected to a centralized aspiration system, the main unit shall feature a shutter solenoid valve to select the work station.

The aspiration system of the dental unit can also be connected to amalgam separation systems that are fitted inside the main unit.

5. MAINTENANCE AND KEEPUP

The operations described, which we strongly recommend to carry out with the procedures and periodicity indicated, is to ensure maximum durability and efficiency over time to your equipment.

The following paragraphs list the various maintenance activities, with the relative frequency, the indication of the executing officer and any reference details.

The activities are classified in:

- Cleaning/disinfecting,
- adjustments,
- scheduled maintenance,
- extraordinary maintenance.

View all the configurations using the various accessories available in the list and therefore must be applied according to the options you have chosen when ordering.

5.1. CLEANING AND DISINFECTING

For hygiene (and to avoid prolonged exposure of surfaces to stains of corrosive substances) clean the device frequently.

For hygiene and cleaning, it's raccomanded, without incurring any risk of damage, O.M.S. recommends the use of products that contain:

- Quaternary Ammonium
- Phenolic compounds
- Iodophors

That do not contain:

- Alcool
- Hypochlorite
- Soda

  Organic Solvents

O.M.S. recommends these products already tested, always refer to the manufacturer's instructions and safety data sheetsDetergente

- ZETA 4.

  Disinfectant

- OROCID MULTISEPT.

Upholstery Patient chair

For the thorough cleaning of the upholstery of the patient chair you can use a product suitable for the treatment of skay such as

- EMULSIO.

For daily cleaning and disinfection use a little aggressive product such as:

- GREEN & CLEAN SK.

O.M.S. provides, on request, the tested and proven products in the company.

Note:

O.M.S. declines all responsibility for problems arising from the use of substances other than those recommended.

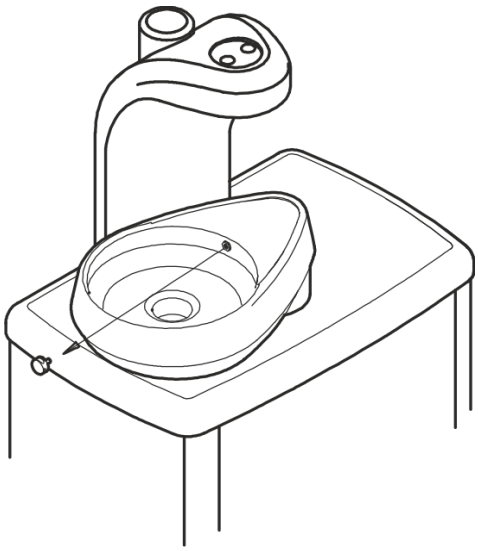
CLEANING AND DISINFECTION			
Activity	**Frequency**	**By whom?**	**Note/references**
Instrument table, instrument tube exterior	After each patient	Trained operator	Only use products indicated by OMS.
Instrument table: instrument holder, handles, tray mat Assistant table mat	After each patient	Trained 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.
Operating lamp components	After each patient	Trained operator	Clean, disinfect and sterilise when indicated by the manufacturer's instructions.
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.

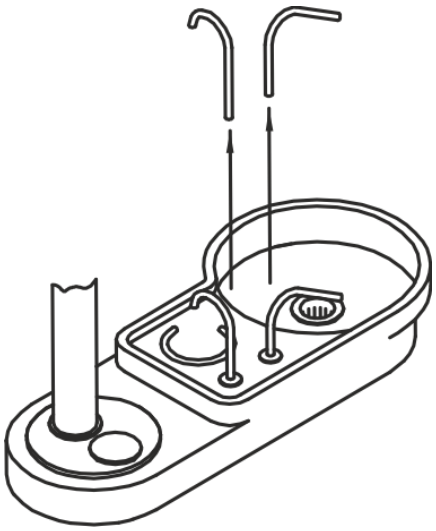
5.1.1. INSTRUMENTS

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.

5.1.2. SPITTON

The ceramic surface of the spittoon allows for rapid and easy daily cleaning using suitable products. The spittoon output water cannula can easily be removed for cleaning and sterilisation in an autoclave, if necessary.





Note:

Avoid cleaning the spittoon causing high and fast temperature changes (i.e.. directly aiming steam jets on the spittoon at room temperature) that cause damage and subsequently break the ceramics.

5.1.3. ARMCHAIR

Note:

Daily cleaning and disinfection must be done with the use of unaggressive products for the upholstery in the Skay of the patient chair.

The periodical thorough cleaning of the upholstery, armrests and headrest must done with products suitable for the treatment of the Skay and adopting the following procedure:

1. Shake well before use.
2. Pour the product onto a dry cloth, do not pour directly onto the surface to be treated.
3. Start to treat a small surface by verifying that there are no alterations on the Skay, then extend to the rest of the upholstery and go up to the complete evaporation.
4. Pass a damp cloth to take away residues from the treated surface.

Do not abuse in use and wait at least 60 days before repeating the treatment.

5.1.4. HIGH SPEED ASPIRATION

The best performance is obtained from your high speed aspiration system if the simple operating and maintenance instructions below are strictly adhered to. Failure to comply with these instructions would jeopardise the performance of the aspirator performance, sometimes with serious consequences.

After each intervention, we recommend aspirating clean water for a few seconds in order to rinse the tubing. Dental tips must be thoroughly cleaned and sterilised: We recommend brushing the cannulas both inside and outside using the supplied pigs (to be found in the “aspiration system accessory kit”) and a suitable detergent.

Aspiration end pieces supplied by O.M.S. can be autoclaved at a temperature of 130°C.

In order for the aspirated deposits not to clog the filter and corresponding aspiration tubing the following washing cycle must be carried out at the end of each working day.

1. Use one of the two aspiration cannulas to aspirate the amount of solution indicated in the bottle making sure that only the cannula end is introduced into the bottle.

2. Let the aspirator run for 3 to 4 minutes, then stop it. Drain the liquid and repeat the previous operation with the other cannula. Aspirate using one cannula at a time so that the other cannula can be used for air suction, thus preventing the aspiration system from getting blocked due to an excessive aspiration of liquid.

3. Unscrew the drain plug and clean the filter inside the drain (in the column). Replace it, if necessary. Periodically grease the drain and plug mouthpiece with vaseline, because disinfectants may stiffen these parts, thus making plug extraction difficult.

4. Do not mix detergents having different features.

5. Never immerse aspiration tubes if they do not fit the required cannula.

5.2. ADJUSTMENTS

ADJUSTMENTS			
Activity	**Frequency**	**By whom?**	**Note/references**
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)
Clutch adjustment (accessible from the exterior)	When necessary	Trained operator	
Cup/spittoon water flow adjustment	When necessary	Trained operator	
Oscillating arm spring adjustment (interior)	When necessary	Authorised technician	
Main unit water pressure adjustment	When necessary	Authorised technician	Pressure regulator calibration
Main unit air pressure adjustment	When necessary	Authorised technician	Pressure regulator calibration

5.2.1. 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.

5.2.2. MAIN UNIT AIR PRESSURE

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

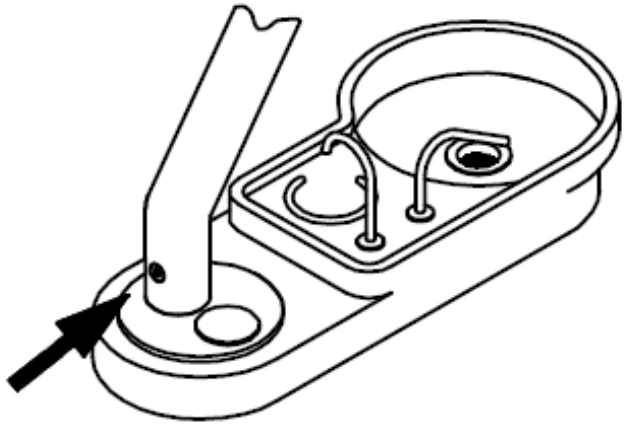
The regulator is calibrated during the testing phase at O.M.S. and calibration can be changed exclusively for technical reasons. This operation must be performed by an authorised technician.

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

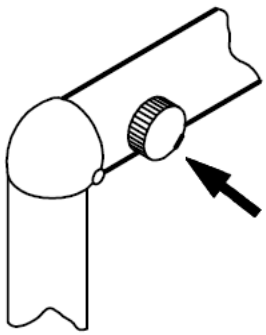
5.2.3. CLUTCH ADJUSTMENT

Rotating and pivoting movements can be adjusted so as to obtain the desired friction level for each of them:

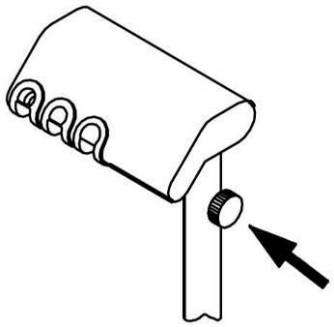
- **adjustment clutch of the instrument table arm movement;**



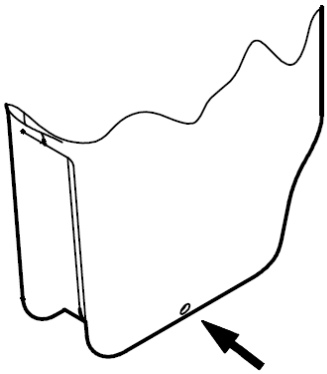
- **adjustment knob of the instrument table tilting movement;**



- **adjustment knob of the cannula table tilting movement;**



- **adjustment clutch of the cannula table arm movement.**

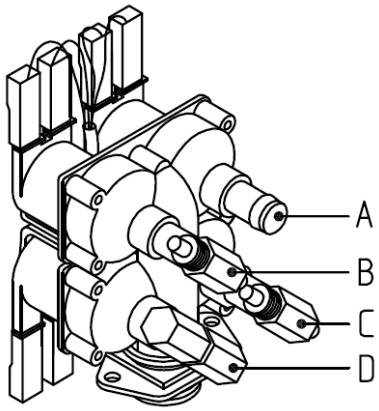


Note:

For the adjustment of the rotating movement of the instrument and cannula table arm, use the appropriate spanner supplied with the dental unit.

5.2.4. WATER FLOW TO CUP AND SPITTOON

Inside the spittoon unit, a block is installed including four solenoid valves that are mounted on a fitting, which contains the water filter. Each solenoid valve features a tap for controlling the water flow. The tap is adjusted using a screwdriver to reduce the water flow when turned clockwise, and increase it when turned anticlockwise:



A. Free;

B. Regulation of cold water to the cup;

C. Regulation of water to the spittoon;

D. Free;

5.2.5. SWIVEL ARM SPRING

The strength of the table-holding arm can be regulated by means of an adjustable spring. This device perfectly offsets the weight of the table, which changes according to the new instruments that are added to it or the actual use being made of it (light or heavy loads). This adjustment must be performed by an authorised O.M.S. technician.

5.2.6. 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.

Note:

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

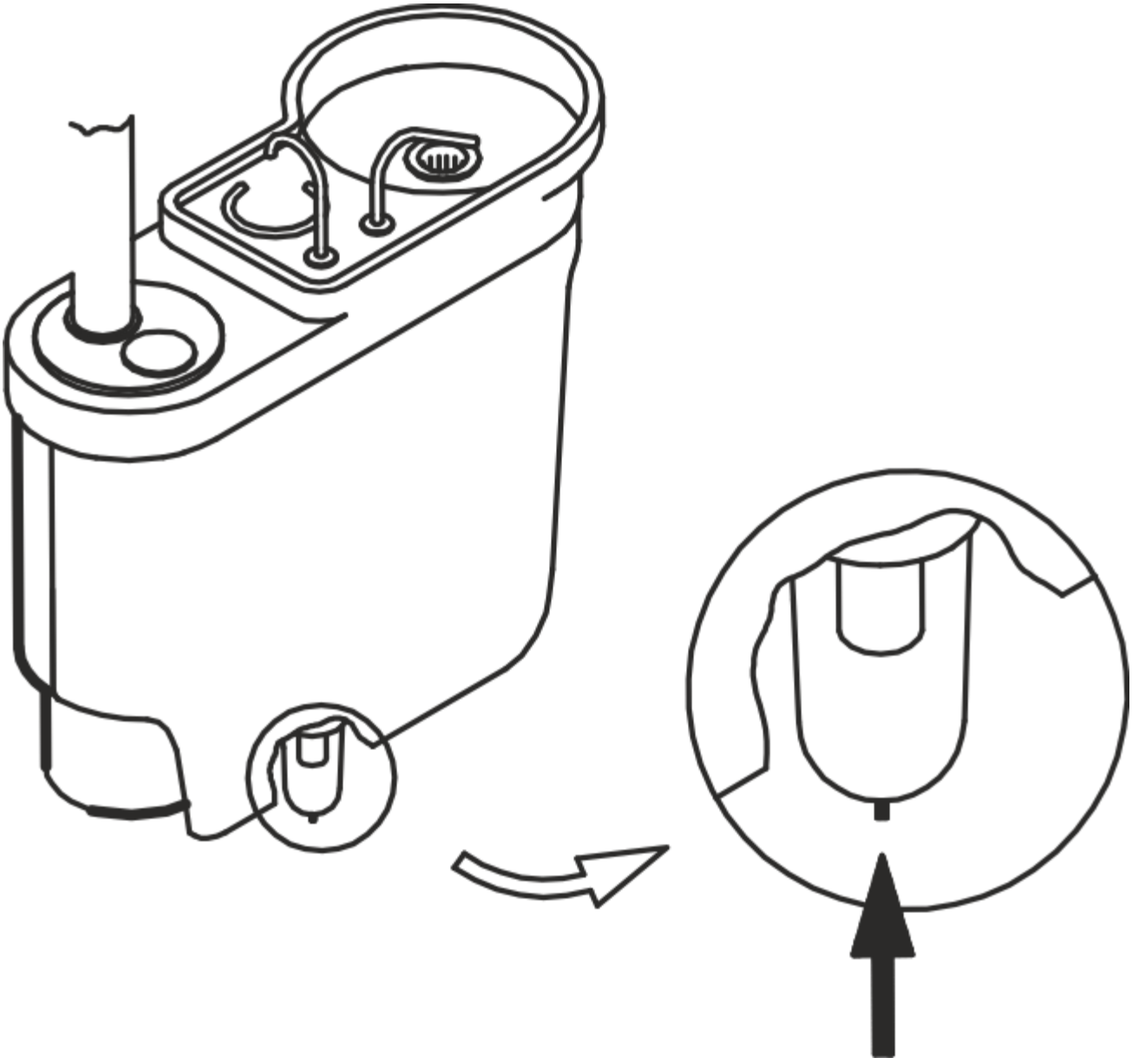
5.3. SCHEDULED MAINTENANCE

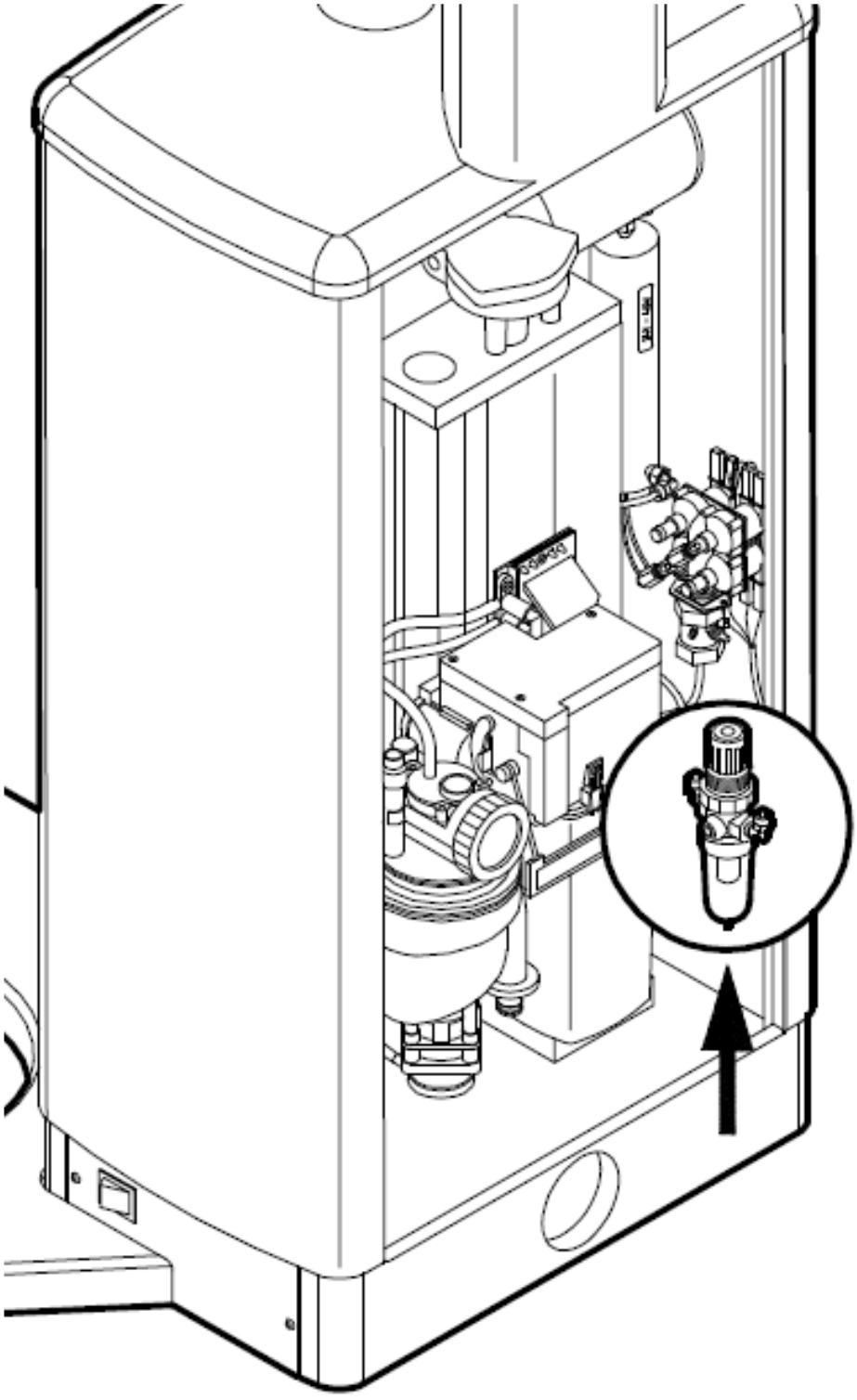
SCHEDULED MAINTENANCE			
Activity	**Frequency**	**By whom?**	**Note/references**
Condensation drain	Weekly	Trained operator	
Instrument lubrication	According to the instrument manufacturer's instructions	Trained operator	
Aspiration system check and cleaning	Monthly	Authorised technician	Recommended
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 pipe control	Semi annual	Authorised technician	
Main water supply pipe replacing	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

5.3.1. 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 shown in figure.





Note:

Check for condensate on a weekly basis.

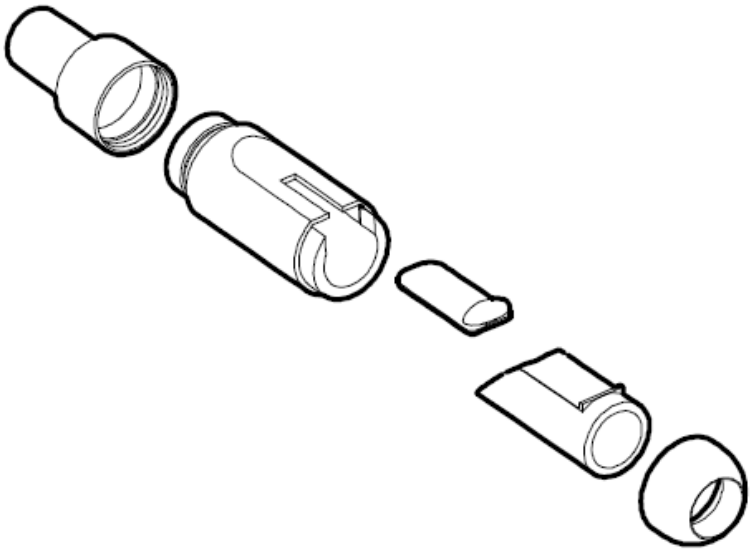
5.3.2. ASPIRATION SYSTEM

Note:

Every 30 days of operation (and especially in the event of system inactivity for several days) check the entire aspiration system and make sure that it works correctly. This check must be performed by an authorised technician.

If foam-generating substances are used (e.g. hydrogen peroxide, etc.), the system may temporarily stop. If this malfunctioning occurs, use “antifoam agent” tablets. These tablets (a sample of which is included in the aspiration accessory kit) must be placed in the drain filter and usually last a few days of operation.

All the parts of the aspiration cannulas are easy to disassemble (see Figure 19CT) for disinfection and cold sterilization.



Note:

Every 15 days spray the closing tabs of each cannula with silicon spray. Spray the end piece inside when the tab is closed, and the outside when the tab is open. Then, open and close each end piece repeatedly.

Note:

For functional and hygienic reasons we recommend replacing the external aspiration tubes and end pieces at least once a year**.**

5.3.3. INSTRUMENT WATER CONTAINER DISINFECTION

Note:

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

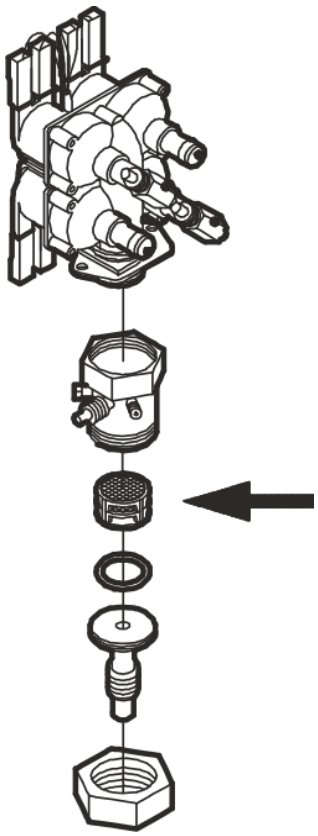
Note:

Frequently check and sanitise the container; if deteriorated or deformed, replace it with an original OMS container.

5.3.4. MAIN UNIT WATER FILTER

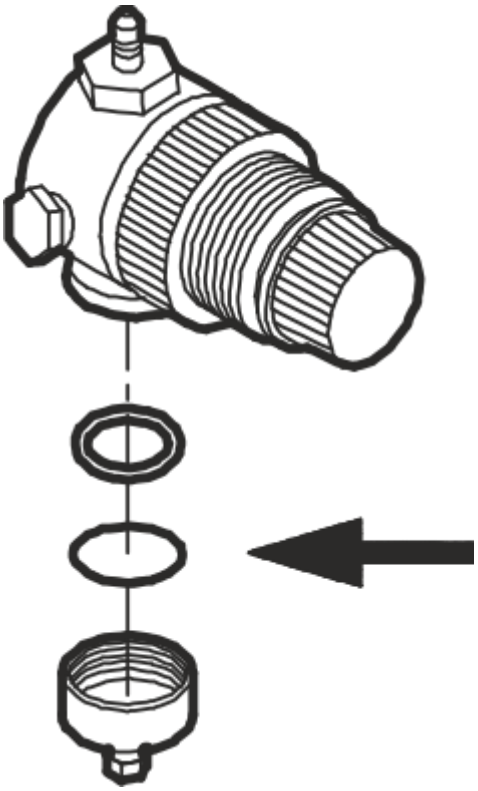
Note:

Small impurities may be present in the water mains and may stop in the water filter inside the main unit. This causes clogging and, consequently, a reduction of the available water flow. If this is the case, clean the filter located inside the chromium-plated fitting at the base of the quadruple solenoid valve in the main unit. This operation must be performed by a skilled technician during periodic equipment overhaul.



5.3.5. 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.



Note:

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.

5.3.6. 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.

WARNING

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.

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 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.

DANGER

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

5.4. 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

5.4.1. TOUCH-UPS

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.

5.4.2. FUSE REPLACEMENT

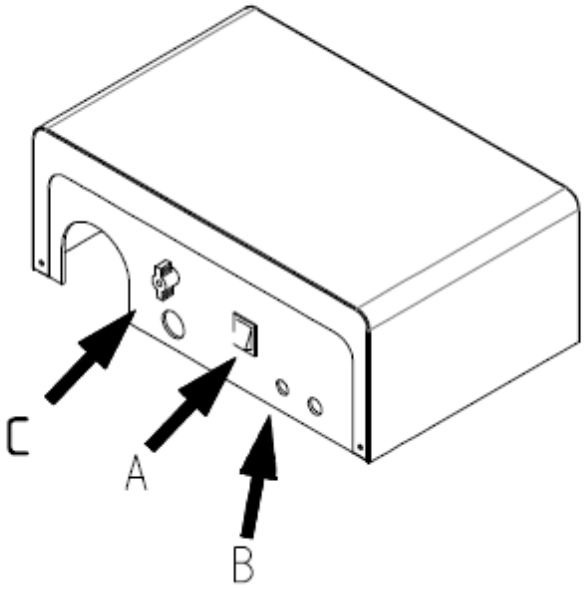
DANGER

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

WARNING

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.

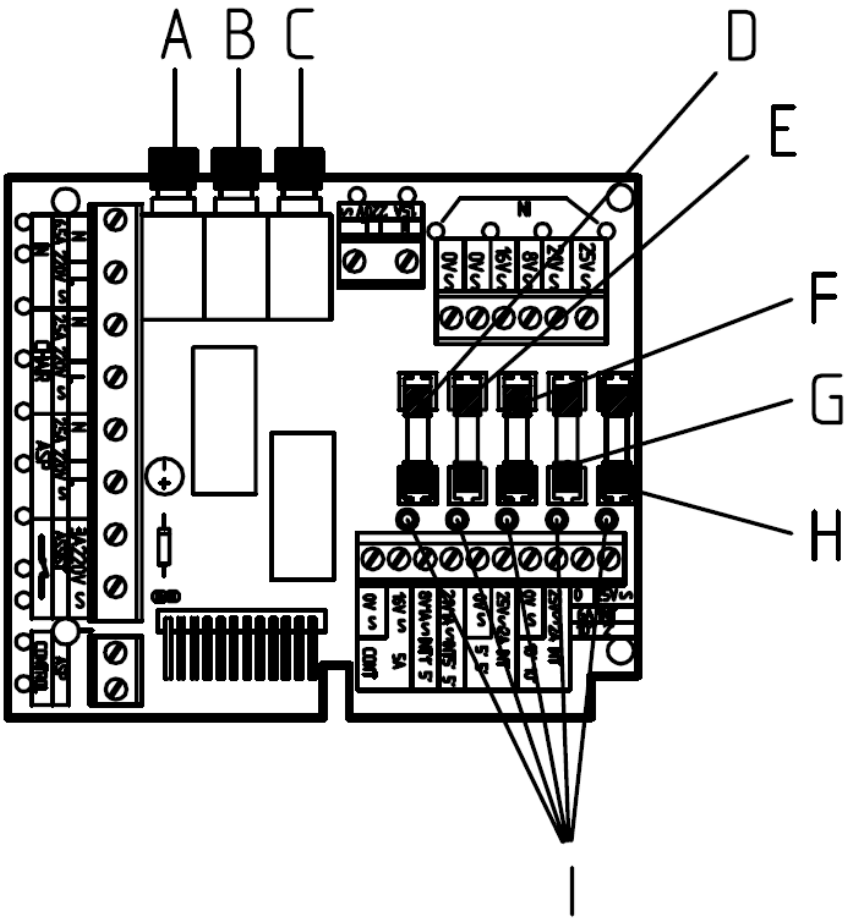
The general protection fuse can be easily found at the bottom of the column or chair (B in figure), replaceable from the exterior using a screwdriver; before replacement, make sure the main switch (A in figure) is off. The fuse should only be replaced after removing the cause the triggered it..



The transformer supplying the dental unit is located inside the floor box (at the base of the chair), under the electronic board containing the fuses protecting the various functions of the apparatus. The replacement of the fuses in case of a fault must be carried out by an O.M.S. authorised engineer.

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

A. General T.6.3 AT, 230 Vac



A. Patient chair motors 5AT, 230 Vac

B. Suction 5AT, 230Vac

C. Dental unit 2.5AT, 230Vac

D. Lamp 5AT, 17 Vac, 14.3 Vac

E. Free

F. Backrest motor 5AT, 24Vac (Only for version with floor spittoon unit)

G. Spittoon unit 4AT, 24 Vac

H. General board 6.3AT, 24Vac

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.

6. TECHNICAL INSTRUCTIONS FOR INSTALLATION

6.1. PACKAGING

Note:

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

Note:

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

The device is shipped in two crates that contain:

Crate 1: Spittoon unit, rheostat, accessory box, documentation, assistant table arm, lamp*, lamp arm*, aspirator*.

Crate 2: Instrument table

(*) Only included where specifically requested at the time of order.

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

6.2. ASSEMBLY

6.2.1. Version with spittoon unit on the chair

1. Remove the equipment from its packaging;
2. Install the chair, secure the seat, insert the headrest and, where supplied, the right armrest.
3. Lift the spittoon unit, fixing it to the chair with the supplied screws. As a precaution against accidental damages, it may be better not to remove the packaging until the unit is fixed to the chair.
4. Open the external spittoon unit guard and insert the instrument arm with small rotating movements.
5. Proceed with the connections between the table and the spittoon unit. Pay close attention to insert the "Panduit" connectors correctly and to the numbers of the wires to secure to the terminal box.
6. Free the instrument group from all packaging and apply any accessories.
7. Proceed connecting the transformer and dental unit to the floor box, complying with the numbering of the wires to be connected to the terminal box of the transformer and inserting the "Panduit" connector correctly.
8. Finally, connect the rheostat to the transformer, inserting the blue connector directly onto the transformer board, with the wires downwards.
9. If the lamp is to be connected to the dental unit, the lamp stem must be fixed in the relative housing. The two fixing screws are already in the spittoon unit.

WARNING

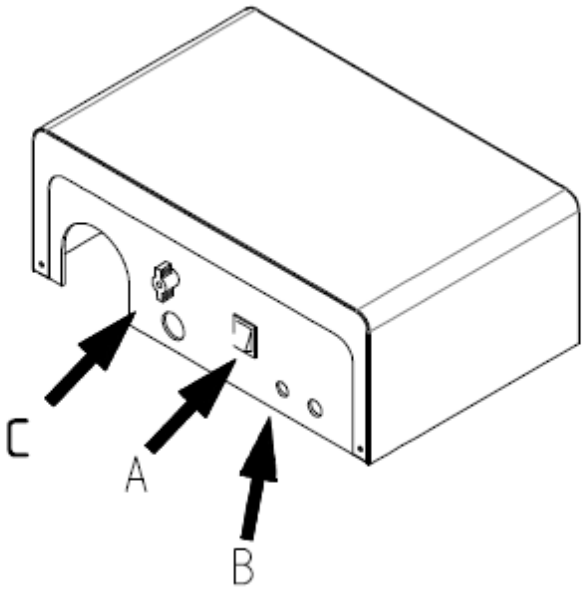
Pay attention to the position of the water pipe so that it does not come into contact with the armchair engine (if present)

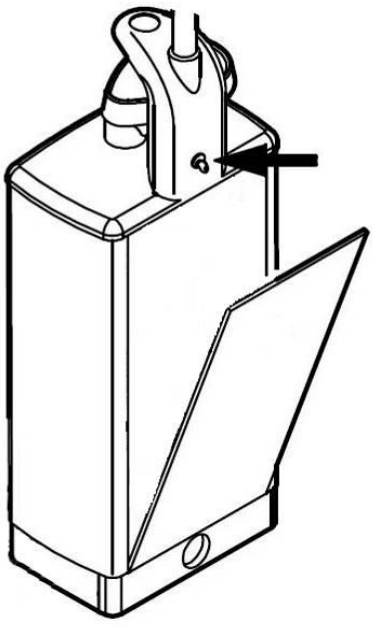
Note:

Refer to the wiring and installation diagrams provided for all electrical connections.

6.2.2. Version with floor spittoon unit

1. Remove the equipment from its packaging;
2. if required, disassemble the chair lifting the cover positioned between the column and the base, disconnecting the electrical cables and removing the screws securing the two bases together;
3. position the column in the previously prepared area following the installation plan;
4. adjust the feet under the base and use a level to make the surface on the patient chair support flange perfectly horizontal;
5. re-assemble the patient chair and turn the adjustment feet correctly until possible “gaps” are registered, screw the chair to the floor with the two expansion bolts supplied;
6. reconnect the cables and fit back the cover that had previously been removed;
7. install the patient chair seat and secure it (from underneath) with the 4 screws supplied;
8. remove the spittoon unit guard using the supplied wrench and make the required connections;
9. install the microscope arm and make the electrical connection;
10. fit the monitor (if any) and connect it electrically together with the relative supply unit;
11. if an operating lamp is featured, install it and connect it to the mains;
12. check and, if necessary, connect the grounding cables to the screw identified by the grounding system symbol;
13. for the connection of the suction pump (see the wiring diagram), follow the same instructions as for the power supply cables described in the next paragraph (cable fixing and traction).
14. connect the water and air systems, followed by the drain and electrical systems. The electrical network must be connected only to the appropriate terminal block in the floor box, while all the other connections can be done either in the floor box or inside the spittoon unit.





15. Remove the guard of the floor box, removing the handle of the tap (C in the figure in the FUSE REPLACEMENT paragraph) and loosening the screw next to the tap, to connect the water and air (see the CONNECTIONS par.), suction and drain.

16. Proceed with the electrical connection in the floor box, connecting the cables from the spittoon unit and the transformer electronic board, 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 a fault of the fastening devices (straps), the protection conductor is not taut so long as the mains conductors are still connected to the terminal. If the cables of the electrical network come from underneath the spittoon unit, they must go through a sleeve and then connected to the terminal board inside the floor box.

17. fit the accessories (instruments), if any, on the instrument and dental assistant tables.

Note: if required, the instrument arm and table can be disassembled:

a. unplug the electric, pneumatic and water connections;

b. pull out the instrument arm upwards, using small rotating movements;

c. after positioning the equipment, re-install the arm; we recommend checking and adjusting the fixed arm rotation clutch, if necessary (see the CLUTCH ADJUSTMENT paragraph);

d. restore the electrical, hydraulic and pneumatic connections inside the chair support arm.

Note:

Refer to the wiring and installation diagrams provided for all electrical connections.

6.3. CONNECTIONS

First, make sure that the flow of air and water from the water and pneumatic mains is regular. O.M.S. declines any and all responsibility for faults or damage originating from non-compliance with the warning below:

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 2 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 2 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.

WARNING

Pay attention to the position of the water pipe so that it does not come into contact with the armchair engine (if present)

Note:

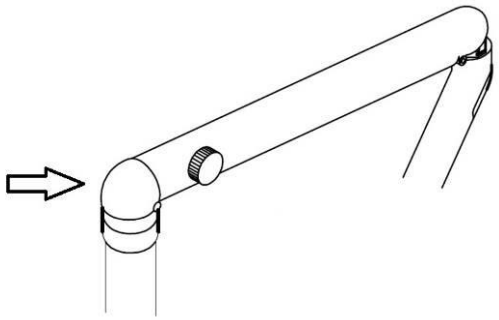
Refer to the wiring and installation diagrams provided for all electrical connections.

6.4. TESTING AND PUTTING INTO OPERATION

Note:

During testing, the device's mechanical stability must be checked once all moving parts and accessories (table, light, spittoon unit, etc.) have been set to their most unfavourable positions. If the chair cannot be fastened to the floor, stabilizer elements are available.

1. if an unusual tilting is identified, adjust the instrument table using the screw located inside the front part of the arm.



2. Check the correct setup of the chair-dental unit group; if an unusual tilting is identified, loosen the 4 screws securing the spittoon unit and relative support and then adjust the 4 dowels until the correct position of the dental unit-chair group is achieved.

3. Check the correct setup of the spittoon unit-instrument block: if an unusual tilting is identified in the instrument block, adjust it using the screw located inside the front part of the arm.

4. 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. Check and store correct positioning of the 3 programs (see sections 4.4.1 MANUAL CONTROLS and 4.4.2 AUTOMATIC CONTROLS).

5. Check that limit switches and safety systems are working properly (see section 4.1 SAFETY SYSTEMS).

6. 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.

7. Make sure that the water flow to the cup and spittoon is normal.

Note:

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.

DANGER

Before performing any operations in the equipment, always make sure that the power switch is off.

7. INFORMATION RELATING TO ELECTROMAGNETIC COMPATIBILITY IN ACCORDANCE WITH IEC 600601-1-2

The device is designed and manufactured in compliance with the standard CEI en 60601-1-2 (Electro-medical apparatus, collateral standard: electromagnetic compatibility) and therefore has a degree of immunity and emissions such as not to create dangerous interference with devices complying with the same norm. Warning: Interference with electrical equipment that has a level of emission or immunity that does not conform to CEI en 60601-1-2 may occur. In such cases, these equipment should not be used at the same time with O.M.S. equipment; If the device is in a stalemate due to such interference, it is sufficient to turn it off and on again.

In the presence of particular holes in the supply voltage, it is possible that the micromotor has a momentary drop in speed that does not affect the safety and performance of the same, the duration of the event is limited to the duration of the voltage drop.

Manufacturer's Guide and declaration – Electromagnetic emissions		
The device is intended to work in the electromagnetic environment below specified. The customer or user of the device must ensure that it is used in this environment.		
Emission test	**Complience**	**Electromagnetic Environment-Guide**
Emission RF CISPR 11	Gruop 1	The device uses RF energy only for its internal operation. As a result, its RF emissions are very low and probably does not cause any interference in the electronic devices located nearby.
Emission RF CISPR 11	Class B	The device is suitable for use in all environments, including domestic ones and those connected directly to a low-voltage public network power supply that feeds buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Fluctuations voltage emissions /flicker IEC 61000-3-3	In complience	

Manufacturer's Guide and declaration – Electromagnetic immunity			
The device is intended to work in the electromagnetic environment below specified. The customer or user of the device must ensure that it is used in this environment.			
Immunity test	**Test level IEC 60601**	**Level of Compliance**	**Electromagnetic Environment-Guide**
Electrostatic discharge (ESD) IEC 61000-4-2	contact ± 6 kV air ± 8 kV	± 6 kV ± 8 kV	The floors must be in wood, concrete or ceramic tiles. If the floors are covered with synthetic material, the relative humidity should be at least 30%.
Transients/rapid electrical pulse sequence *(Burst)* IEC 61000-4-4	± 2 kV For power lines ± 1 kV For input/output lines	± 2 kV ± 1 kV	The quality of the main voltage should be that of a typical commercial or hospital environment.
Surge *(Surge)* IEC 61000-4-5	± 1 kV between the phases ± 2 kV between phases and ground	± 1 kV ± 2 kV	The quality of the mains voltage should be that of a typical commercial or hospital environment
Voltage gaps, short interruptions and voltage variations on the input lines dell'alimentazione	<5 % U_T (>95 % hole in U_T per 0.5 cycle)	<5 % U_T 0.5 cycle (10mS)	The quality of the mains voltage should be that of a typical commercial or hospital environment. If the user of the device requires continuous operation during the interruption of the mains voltage, it is recommended to power the device with a UPS or with batteries.

IEC 61000-4-11	40 % U_T (60 % hole in U_T per 5 cicli) 70 % U_T (30 % hole in U_T per 20 cicli) <5 % U_T (>95 % hole in U_T per 5S)	40 % U_T 5 cycle (100mS) 70 % U_T 20 cycle (500mS) <5 % U_T 5S	
magnetic field at Network frequency (50/60 Hz) IEC 61000-4-8	3 A/m	3 A/m	The magnetic fields at network frequency should have characteristic levels of a typical locality in a environment such as commercial or hospital.
NOTE: U_T is the network tention in c.a. before the application of test level.			

Manufacturer's Guide and declaration – Electromagnetic immunity			
The device is intended to work in the electromagnetic environment below specified. The customer or the user of the device must ensure that it is used in this environment.			
Immunity test	**Level test IEC 60601**	**Level of Compliance**	**Electromagnetic Environment-Guide**
			Portable and mobile RF communication equipment should not be used near any part of the device including cables, the recommended separation distance calculated with the equation applicable to the frequency of the transmitter. Recommended Distance Separation: *d = 1,17 √P* *d = 1,17 √P* from 80 MHz to 800 MHz *d = 2,34 √P* from 800 MHz to 2,5 GHz
RF conduct IEC 61000-4-6	3 Veff from 150 kHz to 80 MHz	3 V	where P is the maximum rated output power of the transmitter in Watts (W) according to the manufacturer of the transmitter and D is the recommended separation distance, in meters (m).
RF irradiata IEC 61000-4-3	3 V/m from 80 MHz to 2,5 GHz	3 V/m	The field intensities of fixed RF transmitters, as determined by an electromagnetic investigation on site A should be below the level of compliance for each frequency range B. Interference may occur near devices marked with the following symbol:

Note 1: At 80 MHz and 800 MHz, the separation distance for the highest frequency range applies.

Note 2: These guidelines are not applicable in all situations. Electromagnetic propagation is influenced by the absorption and reflection of structures, objects and people.

a The intensities fiels for stationary transmitters, such as the base stations for radio telephones (cellular and cordless) and terrestrial radiomobiles, radioamateur devices, transmitters in AM/FM and TV transmitters can not be foreseen theoretically with precision. An electromagnetic survey of the site should be considered to evaluate an electromagnetic environment caused by fixed RF transmitters. If the field strength measured in the place do to the device is used exceeds the applicable level of compliance above, the operation of the device should be observed. If you notice abnormal performance, additional measures may be required as a different orientation or position of the device

b The field strength in the frequency range from 150 khz to 80 MHz should be less than 3 V/M

Recommended distances separation between portable and mobile radiocommunication devices.

The device is intended to operate in a environment electromagnetic space where RF radiated disturbances are under control. The customer or the user of the device can help prevent electromagnetic interference by ensuring a minimum distance between mobile and portable RF communication devices (transmitters) and the device as recommended, in relation to the maximum output power of the radio equipment.

Maximum output power of the specified transmitter **W**	**Separation distance for transmitter frequency** **m**		
	From 150 kHz a to MHz *d = 1,17 √P*	**from 80 MHz to 800 MHz** *d = 1,17 √P*	**from 800 MHz to 2,5 GHz** *d = 2,34 √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

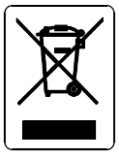
For the transmitters specified for maximum output power not shown above, the recommended separation distance d in meters (m) can be calculated using the equation applicable to the frequency of the transmitter, where p is the maximum rated output power of the transmitter in Watts (W) according to the manufacturer of the transmitter

NOTE 1: to 80 MHz and 800 MHz, applies the separation distance for the highest frequency range.

NOTE 2: These guidelines may not be applied in all situations. Electromagnetic propagation is influenced by the absorption and reflection of structures, objects and people.

8. DISPOSING OF THE DEVICE AT THE END OF LIFE

European Directives 2002/96/EC and 2003/108/EC electrical and electronic on waste equipment (RAEE).



The symbol of the crossed bin shown on the equipment or its packaging indicates that the product at the end of its useful life must be collected separately from the other waste. The user must, therefore, confer the equipment reached at the end of the life of the appropriate waste collection centres of electronic and electrotechnical, or return it to the retailer at the time of purchase of a new equipment of equivalent type, in reason of one by one.

The appropriate separate collection for the subsequent start of the equipment disposed of recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and health and promotes the reuse and/or recycling of the materials of which the equipment is composed.

9. REPORTING ACCIDENTS TO PEOPLE

Dir. 93/42/CEE All. II (D.G. 2/1 Rev. 0)

CUSTOMER NAME _____
ADDRESS _____
SERIAL NUMBER OF DEVICE _____
ACCIDENT _____
_____
_____
DAMAGE TO THE PATIENTS OR USER HEALTH _____
_____
_____
Date_____
Signature_____

Space reserved for the company (Quality assurance)
Possible cause of the accident:

- ❑ Malfunction
- ❑ deterioration of characteristics and/or performance
  Shortage of operating instructions

Other_____
Damage _____
_____
Proposed operational decisions_____
_____
Date_____
Signature_____

Space reserved for the Company (Directorate General)
Operational decisions_____
_____
_____
_____
_____
Corrective actions_____
_____
_____
_____
_____
Date_____
Signature_____

In case of an accident send the form to O.M.S.. with the maximum priority.

O.M.S. spa - Officine Meccaniche Specializzate
Via Dante, 20/A - 35030 Selvazzano Dentro (PD) ITALIA Tel. +39 049 8976455 - Fax +39 049 8975566 - www.omsstaff.com - info@omsstaff.com - PEC omsstaff@legalmail.it
C.F. e P. IVA 00228440285 TVA/VAT IT 00228440285 CCIAA PD 87089 Mecc. PD 000016 - Tribunale 4911 (Vol.Doc. 9278) - Cap. Soc. € 702.000 int. ver.
Iscrizione al Registro A.E.E. NI: IT08020000000899