

User Manual

Patient Chair

MOON



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ATTENTION

Please read this manual carefully before using the unit. For Information on OEM products, please refer to OEM documentation.

This document is destined for dental care professionals. Describes the dental chair and its different parts as well as instructs how to operate and clean the dental unit.

1. GENERAL INFORMATION

The chair has been designed to offer the highest safety and comfort. For this reason, the backrest has not protrusions in the lower part, is completely rounded, allowing the doctors team the correct posture with laid patient.

The backrest is ultra-flat and with no protrusions in its lower part, allowing the perfect posture, with laid patient, of the medical team; at the same time it is anatomically shaped in order to distribute optimally the patient body loads, whatever his size is.

The backrest is equipped with a balance movement that allows the patient to avoid his clothes entanglement during the lowering of the dental unit and the need to adjust the headrest at the end of the movement.

The backrest is equipped with a safety system to stop all the lowering movements in case of interference with foreign bodies (for example the user's legs).

The headrest can be adapted , for geater comfort for childrent patient .

Double operating control system (on the right for the operator, on the left for the assistant) with 4 pre set programs, adjustable, programmable automatic reset and rinse and back to the last position.

The chair is available in 2 versions, with fixed installation or on wheels to be moved.



FIXED AND PERMANENT INSTALLATION



MOVEMENT ON WHEELS INSTALLATION

1.1. SYMBOLS



CAUTION

Indicates a dangerous situation which might cause material or physical damage from mild to moderate.



DANGER

Indicates a dangerous situation which might cause a injury or death.



NOTE

Warning, 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.omsdentalunits.com

e-mail: aftersales@omsdentalunits.com

Always communicate the serial number of the device.

1.3. **FOR YOUR SAFETY**

1.3.1. **Safety precaution**



DANGER

To avoid risk of electric shock, this device should only be connected to power networks with protective ground according to the regulations in force in your country.



DANGER

Before powering the device after installation, repair or any other technical intervention, verify, and if necessary, ground cables to the screw marked with the ground symbol.



DANGER

The device should be installed with electrical systems according with the regulations in force in your country.



DANGER

The installation of the device must be performed by authorized O.M.S. technician; the choice of pipelines by the designer and the laying of the same must be done by a qualified electrician in accordance with current legislation in your country



DANGER

The use of the device is not allowed to non-professional operators or who have not read the manual instructions.

Always check that the dental units is in good condition.



CAUTION

Do not use the device if any part is defective or worn out. In this case, request the assistance of O.M.S. authorized technicians.



CAUTION

Replace the faulty or worn parts only with original spare parts, guaranteed O.M.S.



DANGER

Do not use the equipment in close conjunction with anaesthetic gas or highly oxygenated environments as well as nitrous oxide.



CAUTION

Do not use the device in case of liquids on the floor.



DANGER

No modification on this unit are allowed, do not use non-approved accessories and/or unauthorized modification that might be dangerous or cause injury to persons and damage.



CAUTION

Maintenance procedures shall not be performed while equipment is in use with a patient.



DANGER

In some parts, identified with symbol "ATTENZIONE PARTI SOTTO TENSIONE"



The voltage is present even after turning off the main switch, in case you need to intervene on the parts, you must disconnect the power to the system which powers off the device before operate.



DANGER

When servicing the unit or in case of maintenance, always switch the unit off.



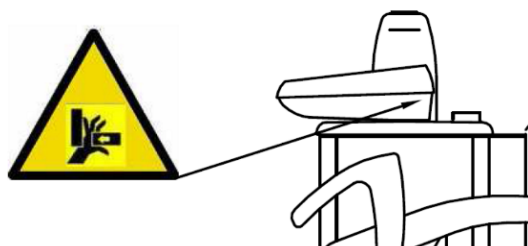
CAUTION

To connect a suction system it must be observed the instructions given in this manual and the wiring diagram; the suction system must be marked CE in accordance with Directive 93/42/EEC and s.m.i. or Regulation (UE) 2017/745 Medical devices and safety international standards CEI EN 60601-1 (medical electrical equipment-General requirements for safety), CEI EN 60601-1-2 (medical electrical equipment – collateral regulation: electromagnetic compatibility).



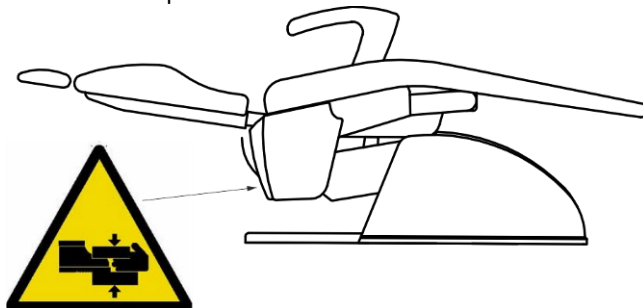
DANGER

The unit with cuspidor on the floor (PLUS), when drive the chair lift motor with the patient check the patient's arm side, to avoid the risk of crushing with the bowl.



DANGER

During the movements of the patient chair, both in manual and automatic position , do not put hands and feet near the baseplate of the chair to avoid the risk of crushing, read



the chair instructions.



CAUTION

During the automatic movement of the chair the dental user must stay closer to the dental unit.



CAUTION

Do not sit on the heatrest or on legrest lower part of the chair.



CAUTION

In case of prolonged treatment in elder patients, pay attention to the pressure ulcer



CAUTION

During the movement of the chair and in particular the headrest the patient's hair can get tangled.



ELECTRIC SHOCK DANGER

Chair on wheels: before carrying out any moving of the chair platform, disconnect the power supply, the power supply must be connected only after the correct positioning with the cuspidor of the dental unit.



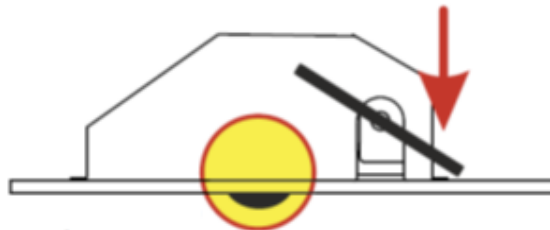
CAUTION

Chair on wheels: disconnect the connection between patient chair and unit before make any move of the platform of the patient chair



DANGER

Chair on wheels: before the patient be seated down on chair make sure the platform for is stuck on the ground by using the stop pedal.



DANGER

Patient chair on wheels: the positioning of the chair should be done without the patient.



CAUTION

Patient chair on wheels: handling area must be completely cleared.

1.4. **INTENDED USE**

Patient chair support (and of the unit).

1.5. **ENVIRONMENT CONDITION ACCEPTED**

1.5.1. **ENVIRONMENTAL CONDITIONS PERMITTED FOR TRANSPORT AND STORAGE**

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

Temperature from -40 to +70°C

Relative humidity from 10 to 100% non-condensing

Air Pressure 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%

Air Pressure 800 to 1060 hPa

Altitudine nominale di funzionamento $\leq 3000\text{m}$

Pollution degree 2

Overvoltage category II

1.6. **WARRANTY**

The standar warranty period of OMS is 36 (thirty six) months , from the date of installation belong to the end customer. The warranty conditions are shown inside the warranty book supplied with the device.


The warranty is applied to the end customer and follow the product specified INSTALLATION AND INSPECTION REPORT , Only parts are covered under warranty and under no circumstances will OMS S spa cover the labour cost

Please ensure that INSTALLATION AND INSPECTION REPORT is correctly completed in all the sections by an authorised O.M.S. spa technician, and signed by you as well as the technician. To activate the warranty, you must return the signed original INSTALLATION AND INSPECTION REPORT to O.M.S. spa by fax or certified email within TEN DAYS from the date of installation, otherwise the guarantee will not be valid O.M.S. SPA Officine Meccaniche Specializzate

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

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

2. TECHNICAL CHARACTERISTICS

Model	MOON
Manufactured by	O.M.S. S.p.A. Officine Meccaniche Specializzate Via Dante 20/A - 35030 Caselle di Selvazzano Padova Italia
Electrical Classification	Class 1 
Application parts type	B
Protection level device	IPX0
Protection level foot control	IPX1

POWER SUPPLY

Mains voltage settings	230 Vac +/-10%
Main frequency	50/60 Hz

Electrical Network connections must be according to the law of the country.

Rated current	2.5 A
Nominal power	600 W

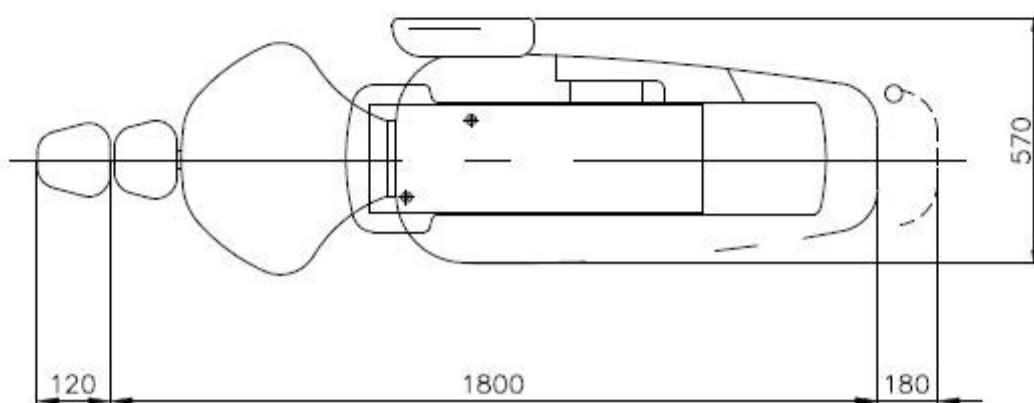
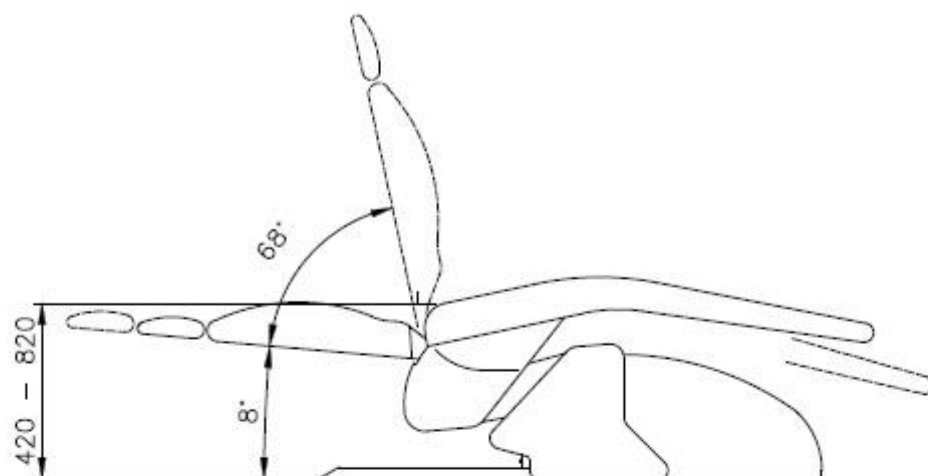
OPERATION TIME OF CHAIR LIFT AND BACKREST MOTORS

Intermittent operation 60 sec "ON", 600 sec "OFF"

OTHERS

Cable length foot control	2,5 m
Power cable length (only wheel version)	1,4 m
Total weight	about 140 Kg
Maximum load permitted on the patient chair	200 Kg with cupidor on the floor (not attached) 155Kg with cupidor attached to chair,
Minimum space recommended for installation	about 3.20x3.00x3.00 m (LxHxP)

DIMENSIONS



NOTE:

The measures are to be considered indicative and might change according to the configuration of the dental unit and backrest type.

IMPORTANT



Note:

The device is designed and manufactured in compliance with or Regulation (UE) 2017/745 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 (patient chairs) , UNI CEI EN ISO 14971 (risk analysis), CEI EN 62366 (ing. Usability), CEI EN 60601-1-6 (Usability).

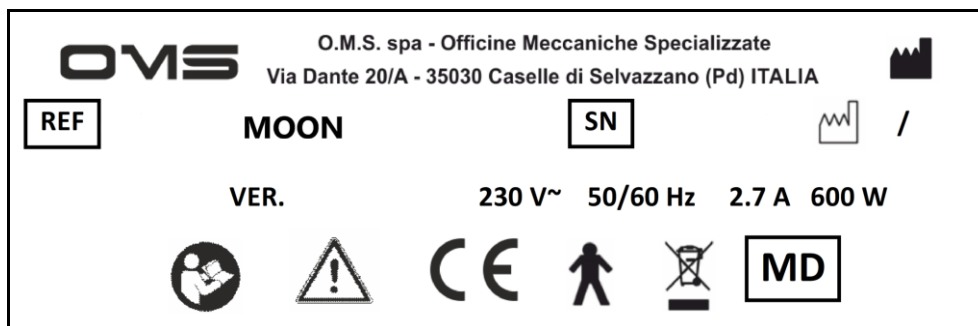


Note:

O.M.S. declines all responsibility regarding for the safty, reliability and the performance of the unit , if installation , calibrations, and repairs has not been performed by technical authorized and qualified O.M.S. with instructions and components exclusively provided from O.M.S. Electrical installation are carried out according to the appropriate requirements IEC. Equipment is used according to the instruction manual.

2.1. SYMBOLS ON PRODUCT LABELS

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



- REF: device reference
- Rated voltage and nature of current (alternating)
- Rated frequency
- Rated current
- Rated power
- SN: Device serial n°
- Manufacturer
- WEEE symbol
- MD: Medical Device symbol
- Applied part Type B
- Mandatory, see enclosed documentation
- Follow operating instructions

3. COMMAND - CONTROL - WARNING

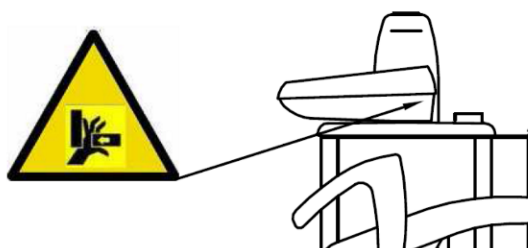
3.1. SAFETY SYSTEMS

Care should be taken when driving the patient chair to minimize the risk of collision during the movement, Obstruction in the patient chair's line of movement activate safety switches that stop the motorized movements as well as cuspidor when is out (PLUS VERSION).

DANGER



In the version with a floor cuspidor , the bowl is above the patient chair and stops upward chair movements, Move the bowl into home position to resume normal operation.



Note:

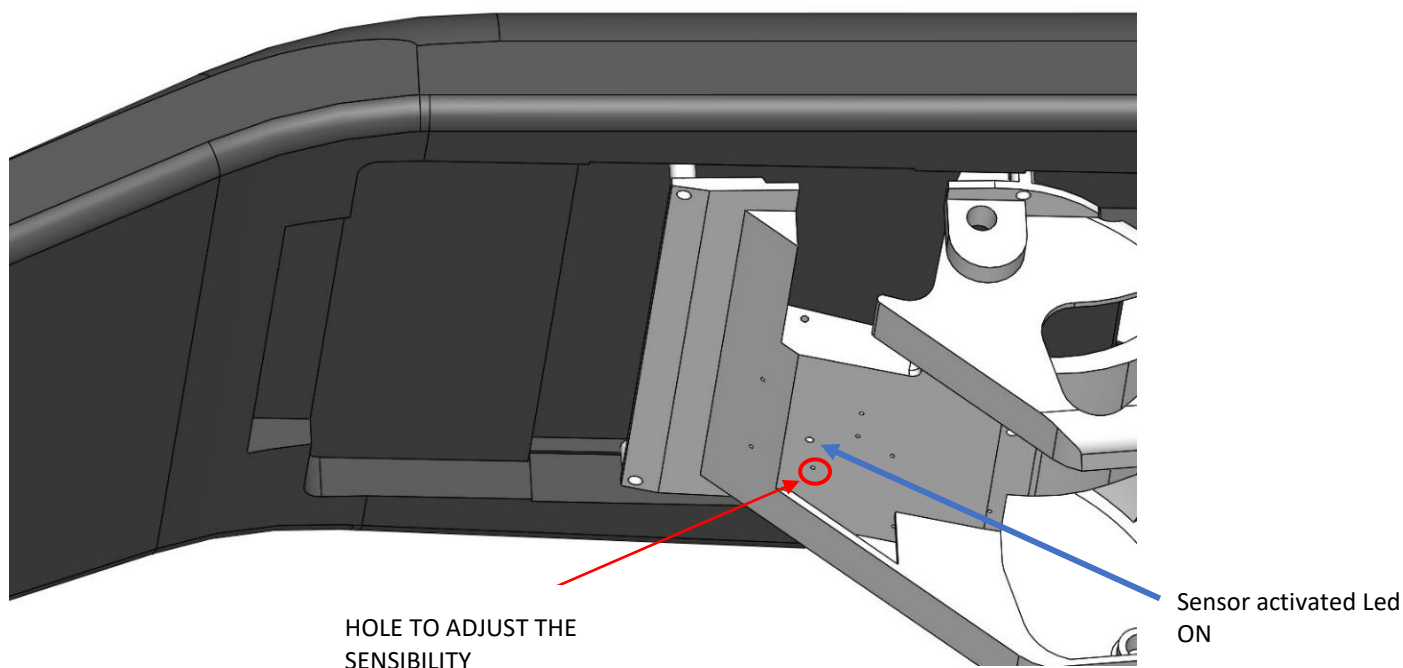
While using automatic chair position (ei: zero position , pre set or rinsing position) the movement can get stops immediately by pressing any patient chair command (from the dental unit or push off of the foot controller)

The movement of the chair, can be stuck if one or more safety switches are activated

3.2. CALIBRATING SENSOR SAFELY BACKREST

To calibrate the backrest's sensore from the MOON Chair, follow the procedur:

- Drive the chair or complete dental Unit, into the upper position;
- Use a small flat screw driver, inside the hold , and turn the trimmer , (see the following picture), turn it clockwise to decrease the sensibility or turn it anti clockwise to increase the sensibility;
- Drive towards down the chair and by touching the backrest the saftly should activated,



When the sensor is activated while the chair or backrest is driving down, the movement get stop and a sounds beep (bip-bip) inform that the safety backrest chair is activated; a Led (blue colour) (located under the seat) gets on, and stay "ON" up to the safety is activated.

The backrest has also a safaty microswitch located on backrest itself, (inside the seat, on the lower part of the backrest) as the sensore before it while the chair or backrest is driving down, the movement get stop and a sounds beep (bip-bip) inform that the saftly backrest chair is activated

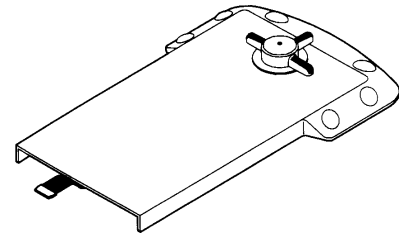


Note: If you are not longer able to drive down the chair o backrest, make sure that the LED under the seat is OFF. If not re do the calibration of the sensor following the procedure into the point 3.2.

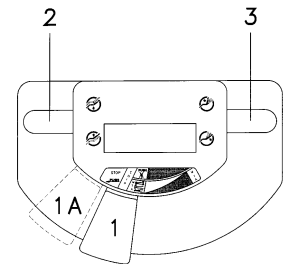
3.3. CHAIR COMMAND FROM FOOTCONTROL

MOON chair has not the manual comand, on the backrest, it has been done to get a lower thinkness backrest.

However the chair can be drive by an optional pedal installed on the lower back base . (see the picture on the this side).



When MOON chair is connected to the OMS Denal Units, LINEA ESSE, ESSE PLUS, LINEA PAVATIUM, PATAVIUM PLUS, DUKE EASY, TEMPO 9 ELX KART, the comand to driver the chiar are located on the side of the foot control (see the picture on the this side).



Pedal 1: used to the drive the instrument;

Knob 2: drive the chiar;

knob 3: drive the backrest;

Pedal 1 on position 1A: All movements are locked.

These are the following movements :



Chair up



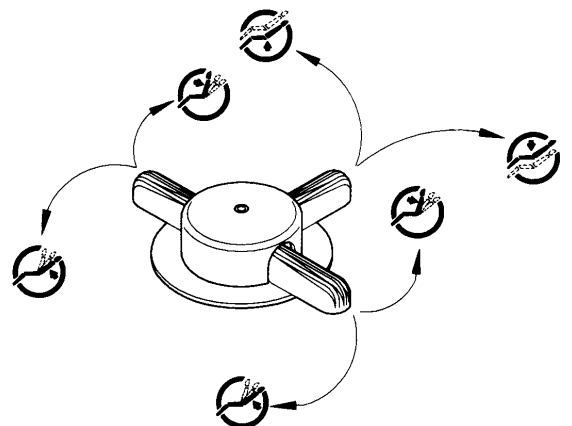
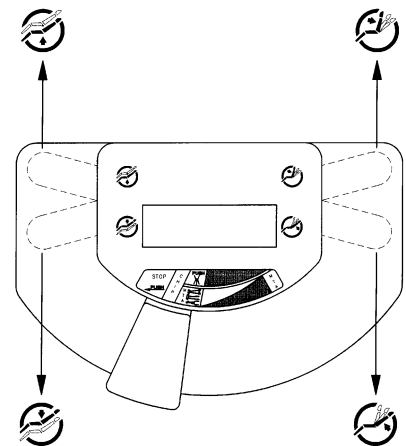
Chiar down



Backrest up



Backrest down.





Note:

All electric movements of the chair are equipped with electro-mechanical limit switches. Once you have reached the limits of the chair or backrest, they automatically break down the power of the motors.

3.1. AUTOMATIC BUTTONS FOR CHAIR

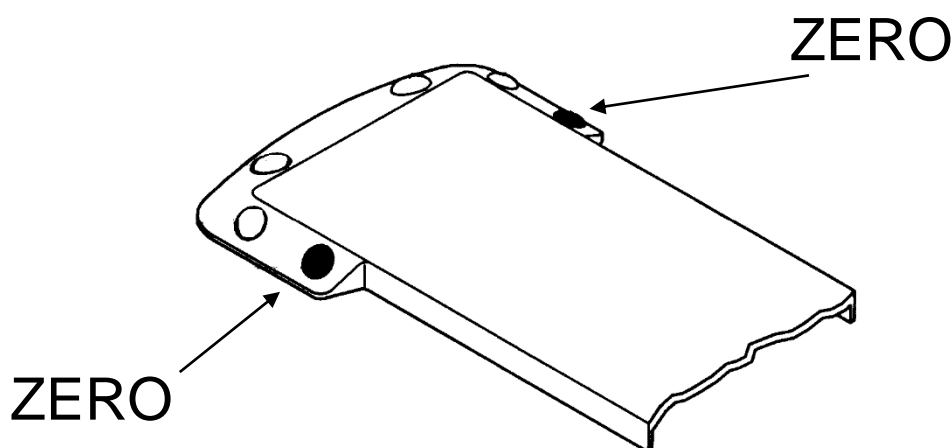
On the base of the chair has been installed the automatic position buttons, that can be used in different way, depend of which unit has been installed.

3.1.1. **MOON INSTALLED WITH DENTAL UNITS: LINEA ESSE – ESSE PLUS - LINEA PATAVIUM – PATAVIUM PLUS – TEMPO 9 ELX KART – DUKE EASY**

3.1.1.1. **USE POSITION ZERO**

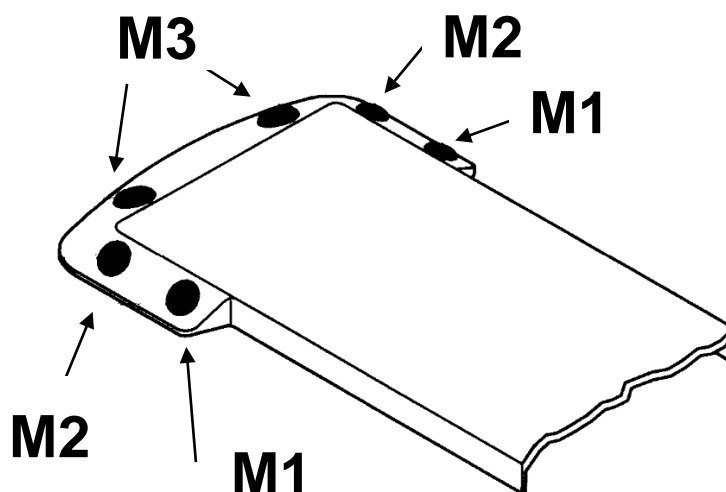
The position zero has been already saved on factory preset, Lift movements are on the lower limit, while the backrest is complete up position 90 degrees.

If you need to go to the position ZERO, you need to press once the button zero, starting from a different position not equal to ZERO POSITION.



3.1.1.2. **HOW TO USE THE PRE SET , M1, M2, M3**

The buttons pre set for use to save the memory make also different commands, it depends of the chair positions, if the chair is already **ZERO POSITION**, The buttons make M1, M2, M3.



How to call the Pre Set M1, M2 o M3, if the chair position is different to **ZERO POSITION**, Is needed use the following buttons in the following way.

PROGRAM M1: press twice the button M1;

PROGRAM M2: press M1 then press M2;

PROGRAM M3: press M1 then press M3;

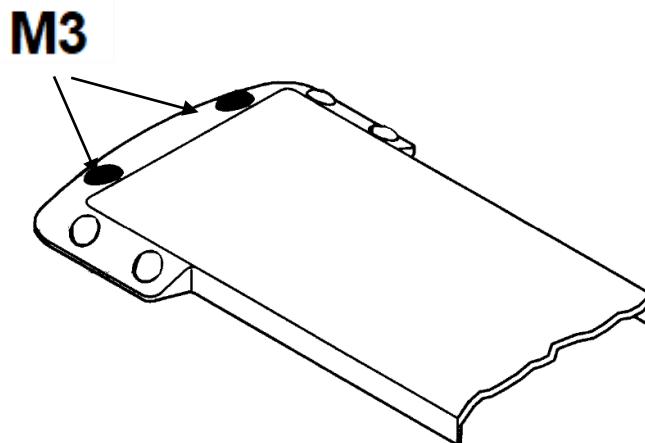


Note:

Once the button M1 has been pressed, need to pressed (M1, M2 o M3) within 2 seconds. If this is not procedure is done slower (over 2 senconds) then chair goes to **ZERO POSITION**

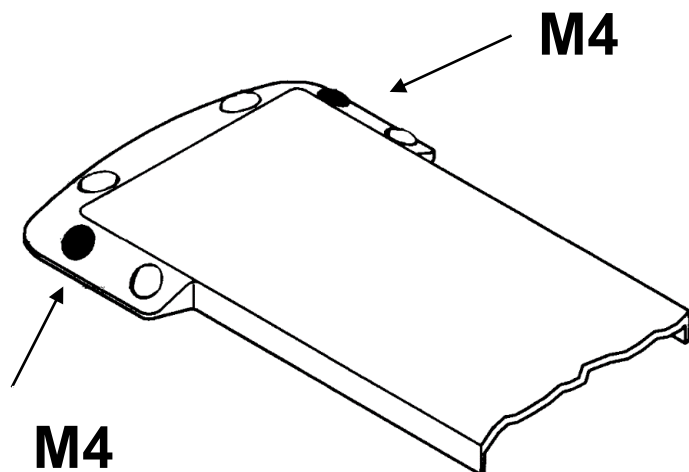
3.1.1.3. RINSING POSITION / LAST POSITION

If you need to go on rinsing position, need to use the button M3, It is very importat that the position chairs is different to **ZERO POSITION** . Press again M3 to go back to the latest work position.



3.1.1.4. PRE SET MEMORY M4

Need to start from different position from **ZERO POSITION** the button M2 will work as M4.



Note:

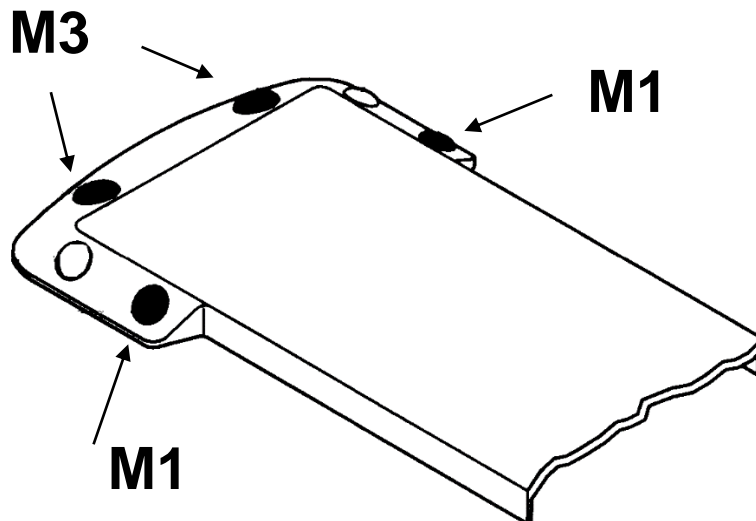
If the position of Chair is ZERO , button M4, will work as M2

3.1.1.5. SAVE THE ZERO POSITION

The MOON chair allows to the user save the best **ZERO POSITION**. However the factory default settings has already the ZERO POSITON SAVED

How to modified the ZERO POSITION:

- Drive the chair using the manual movements, choose the newver position to save the zero position
- Keep pressed at the same time M1 and M3 up to a beep will be heard beep ("bip") when position has been saved.



NOTE:

The **ZERO POSITION** can be saved just in the safety area, that can be recognized while the lift motor is going down, when it reaches this area a beep ("bip") can be heard. The newest position has been saved just for lift motor position, It is not possible change the backrest position while saving **ZERO POSITION**.

3.1.1.6. SAVING THE PRE SET M1, M2, M3 e M4

HOW TO SAVE THE PROGRAM M1

Drive the chair to the position that will be used as M1. Then keep pressed M1 (see picture) up to a beep will be heard to confirm that has been saved the position.

HOW TO SAVE THE PROGRAM M2

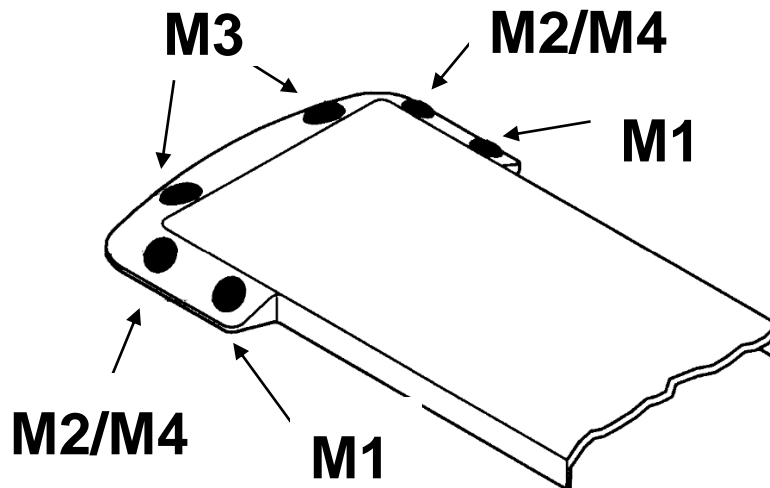
Drive the chair to the position that will be used as M2. Then keep pressed M2 (see picture) up to a beep will be heard to confirm that has been saved the position.

HOW TO SAVE THE PROGRAM M3

Drive the chair to the position that will be used as M3. Then keep pressed M3 (see picture) up to a beep will be heard to confirm that has been saved the position.

HOW TO SAVE THE PROGRAM M4

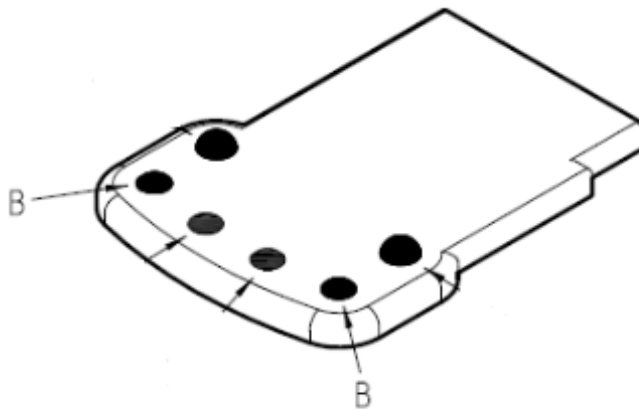
Before to save the pre set M4 need to be "used/called" (see par. 3.1.1.4. **PRE SET MEMORY M4**), then drive the chair to the position where you want to save the M4. Keep pressed button M4 (see picture) upon the signal beep is heard.



**3.1.2. MOON CHIAR with Dental Units: CARVING – CARVING PLUS – DUKE – DUKE 2020
– LINEA PATAVIUM 2020 – PATAVIUM PLUS 2020 – VIRTUOSUS – VIRTUOSUS PLUS –
VIRTUOSUS 2020 – VIRTUOSUS PLUS 2020 - PUNTO KART**

3.1.2.1. USE MEMORY POSITION

When Pre Set position have been stored into the memory you can select the Pre Set position from the control panel or base of the chair, as well as the asistent console. To use the pre set position from the base, is need selected the memory on the control panel or asistent control, then press the button B from the base to drive the chiar.

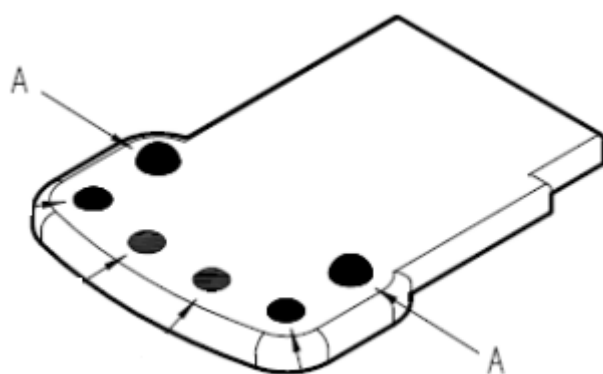


3.1.2.2. HOW TO USE ZERO POSITION.

Call Zero Position from the control panel, need to use the button .

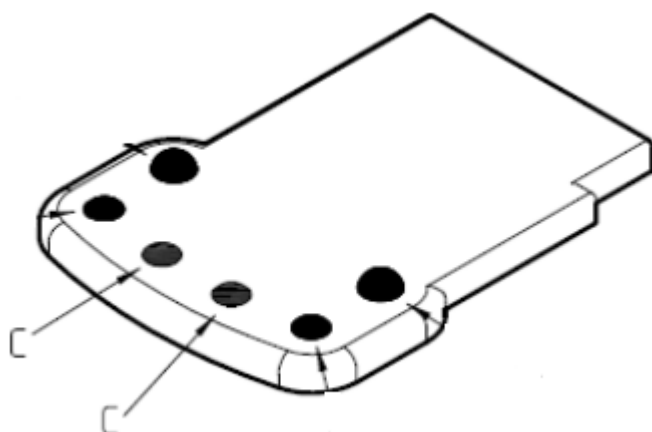


The button zero position is also on the assistent arm and can be found on the base of the chiar (button A)



3.1.2.3. RINSING POSITION/LAST POSITION

The button of rinsing position /last position can be found on the base of the chair (Button C).



If that button is pressed, the chair goes automatically to the rinsing position, by pressing it again after rinsing the chair goes to the latest position has been in use.

4. CHAIR

4.1. DOUBLE JOINT HEADREST

The double joint headrest can be adjustable, height with an excursion of about 23 cm and has two joint that can be controlled at the same time, pull out the lever located in the back, to release the locking mechanism ; manually set the headrest to the required angle, then lock again.

Positioning the headrest's cushion at 90 ° to the angle adjusted mechanism, it can be rotated on itself by 180°. It is also possible to lower the joint mechanism in a position that gives the headrest greater comfort for children patients



Note:

Once the headrest has been adjusted to the working position, place back the lever to lock the movement.



4.2. DOUBLE JOINT HEADREST CLICK

The Double Joint Click headrest can be adjustable, height with an excursion of about 23 cm and has two joint that can be controlled at the same time, pull out the lever located in the back, to release the locking mechanism ; manually set the headrest to the required angle, then lock again.



Note:

Once the headrest has been adjusted to the working position, place back the lever to lock the movement.



4.3. HEADREST WITH 3D MOVIMENT

The Double Joint Click headrest can be adjustable, height with an excursion of about 23 cm and has two joint that can be controlled at the same time, pull out the lever located in the back, to release the locking mechanism ; manually set the headrest to the required angle, then lock again.



Note:

Once the headrest has been adjusted to the working position, place back the lever to lock the movement.



4.4. **ARMREST**

The Moon chair has a left armrest always installed as optional can be installed the right armrest; the right armrest has a button (on the lower part), by pressing that button unlock the armrest and can be move forward o backwards

The armrest can be also completely removed. Moving the armrest backwards, and then pulley outside, it will get out.



Note:

To replace back the armrest following the procedure in the opposite order. Do so carefull to avoid any damage.

5. POSITION VERSION ON WHEELS

ELECTRIC SHOCK DANGER



Patient chair on wheels: Before carrying out any movement of the footprint of the chair, disconnect the main plugs, as electric power plug of the chair must be connected only after the correct alignment with the column of the dental unit.

CAUTION

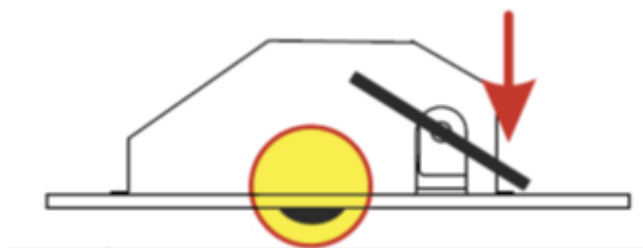


Patient chair on wheels: disconnect the connection between the chair and the unit before carrying out any movement of the footprint.

DANGER



Chair on wheels: before the patient be seated down on chair make sure the platform for is stuck on the ground by using the stop pedal.



DANGER



Patient chair on wheels: the positioning of the chair must be carried out without the patient.

CAUTION

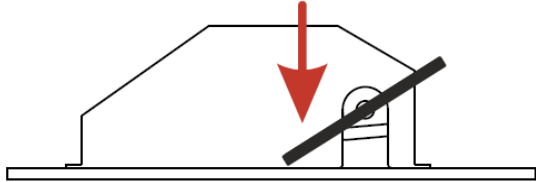


Patient chair on wheels: The movement area must be completely cleared.

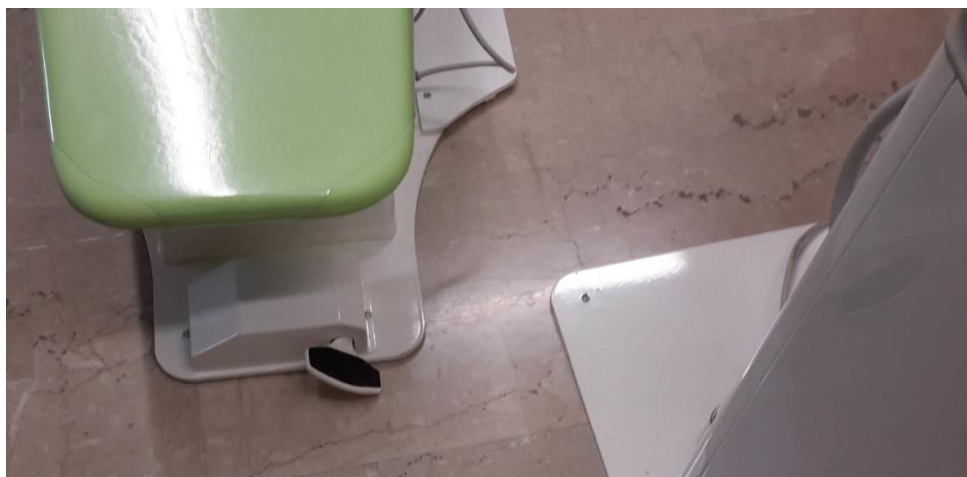
Follow the sequence shown below for a correct position of the patient chair:

1. Press to the pedal to release. Move the chair closer to the column of the unit on the side of the cuspidor

Picture of pedal in neutral position: press the pedal on the left side to lift the swiveling wheel.



2. Get closer the footprint base with the left side of the cuspodir.

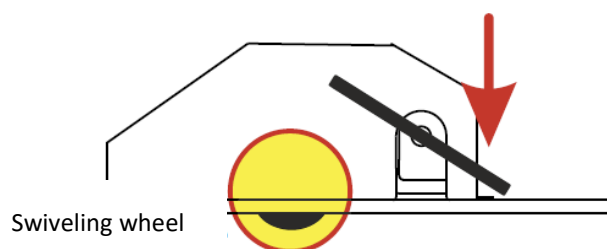


3. Place the chair on the side of the cuspidor column. Check that the long side is perfectly parallel.



4. Lock the chair on the ground using the pedal.

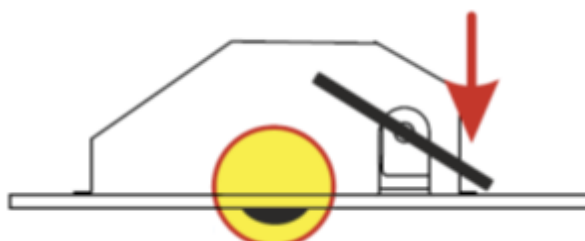
Picture of pedal in neutral position: press the pedal on the left side to lift the swiveling wheel.



DANGER



Chair on wheels: before the patient be seated down on chair make sure the platform for is stuck on the ground by using the stop pedal.



5. Use the connector on the base of the column



6. connect the chair using the appropriate power socket .



ELECTRICK SHOCK DANGER



Chair on wheels: before carrying out any moving of the chair platform , disconnect the power supply, the power supply must be connected only after the correct positioning with the cuspidor of the dental unit.

6. MAINTENANCE

To guarantee the dental unit's proper operation, the unit must be checked and serviced by a qualified OMS services technician according to the maintenance schedule that has been set for your dental units.

In the annual maintenance, "CARE KIT" the service technician replaces all parts specified by the Care Kit. These include, but are not limited to, parts in contact with air, water and suction system. In addition the service technician checks and services all dental units parts suspect to wear and tear in normal use. There includes part in the cuspidor, foot control, instrument console, arms, patient chair, assistant arm and operation light. Also the mechanical stability and electrical safety inspection is performed.

The default maintenance interval is 365 days. The message "Care Kit" will remind you the annual maintenance well in advance.

The activities are classified in:

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

6.1. CLEANING AND DISINFECTING

For hygiene (and to avoid stains of corrosive agents) clean the device frequently.

For hygiene and cleaning, without risk of damage, O.M.S. recommends the use of products that contain:

- Quaternary Ammonium
- Phenol
- 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

- SK SURFACES DISINFECTOR

Disinfectant

- SK INSTRUMENTS DISINFECTOR 1

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:

- SK SURFACES DISINFECTOR

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



Note:

O.M.S. declines all responsibility for problems or damages caused by using different product or than those recommended.

DISINFECTION AND CLEANING			
Activities	Frequency	Who makes it?	Notes/reference
Patient chair: Upholstery, headrest and armrests	After each patient	Trained operator	Use only the products indicated by OMS.
Foot Control	daily	Trained operator	Use only the products indicated by OMS.
Metal Casting Painted	daily	Trained operator	It is not recommended use cleaning agent with Ethanol (alcohol) detergents based on soda or organic solvents, they might wreck the paint and upholstery

6.1.1. PATIENT CHAIR



Note:

Daily cleaning and disinfection must be done with approved OMS products. DO NOT use aggressive product for daily upholstery cleaning

The deep cleaning of the upholstery, armrests and headrest shall carry out every 90 days, with products suitable for the treatment and following this procedure:

1. Wipe the upholstery with EMULSIO.
2. Start to treat a small surface and check that there are no changes on the upholstery, then apply it on the whole upholstery.
3. Wipe the upholstery with water to remove the EMULSION from the surface
4. Wait at least 90 days before repeat the treatment.

6.2. SCHEDULED MAINTENANCE

Scheduled Maintenance			
Activities	Frequency	Who makes it?	Note/reference
General functional checks	Annual or after 8000 hours of use	Authorized Technician	
Periodic checks of general safety/performance - IEC 62353	Two years	Authorized Technician	Mandatory by law

6.3. FUNCTIONAL AND SAFETY CHECKS

To guarantee the dental unit's proper operation, the unit must be checked by a qualified OMS services technician according to the maintenance schedule that has been set for your dental units

Medical devices are built to ensure safety even in the event of first failure for the patient, the operator or third parties, must follow the periodically checks, the level of effective safety.

ATTENTION



It is mandatory perform periodic safety tests and checks at least every two years in order to avoid any electrical failures (e.g. damaged insulation), which may reduce the initial safety level.

Such checks must be done by a OMS authorized technician, with appropriate tools and equipment and according to well-defined standards; The IEC 62353 standard is the benchmark for the control of electro-medical devices manufactured in accordance with IEC 60601-1.

Periodic tests and checks shall include visual checks, measurements of ground connections and dispersed currents; The results and measured values are necessarily recorded on specific forms and must be stored in order to demonstrate the maintenance of the appliance (complete with its accessories) in time, and to monitor the safety level of the device.

- Following the first commissioning (installation),
- After repair or maintenance work,
- During periodic checks.

DANGER



To use of dental patient chair is allowed only if all safety checks have been successful past.

6.4. EXTRAORDINARY MAINTENANCE

Some extraordinary maintenance operations are described below; Except for paint retouching, we recommend that all must be done by authorized technicians O.M.S.

O.M.S. will provide on request all wiring diagrams, list of components, descriptions, calibration instructions, or other information that assist the authorized technicians O.M.S. in the repair of the device.

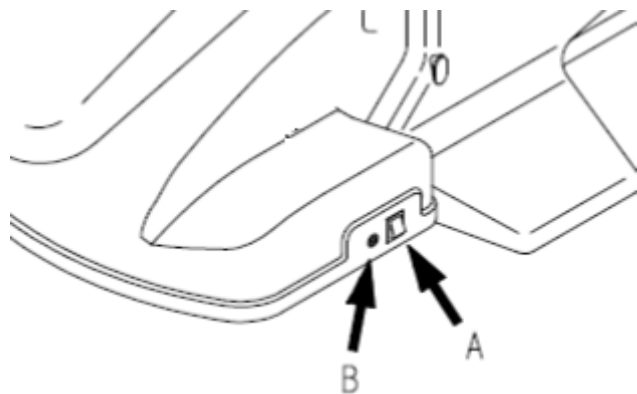
EXTRAORDINARY MANTAINENCE			
Activities	Frequency	Who makes it?	Notes/ References
Fuse Replacement	When necessary	Trained operator	Refer to the technical documentation
Anomaly, malfunction, or downtime	When necessary	Trained operator	Refer to the technical documentation

6.4.1. FUSE REPLACEMET



DANGER

Before to replace a fuse, is needed find the reason why is blown up , replace the fuse just when the problem has been fixed. The new fuse has to be the technical features as the replaced one, indicated on the electrical diagram of the dental unit.



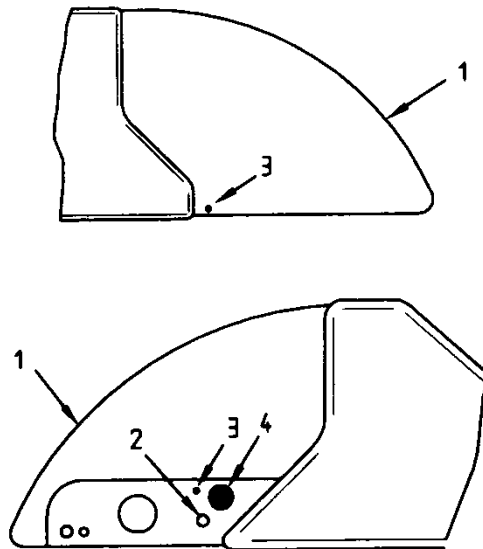
The fuse are placed on the baseplate of the chair, general fuse (B, picture above), can be easily replaced without open a covers, before to replace the fuse, make sure that main power switch (A picture above) shall be off. More fuse are placed on the Power supply PCB.



DANGER

The main power switch cut-off the device from the electrical network, Do not make any servicing on the unit while the power switch is on.

There are fuse inside the dental unit, used to protect several components.

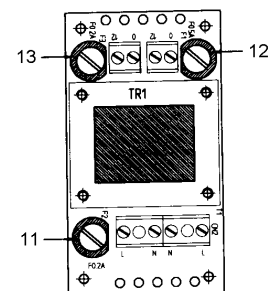
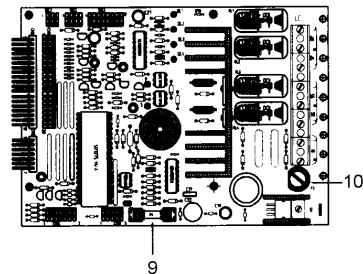


To replace the fuse inside the unit, is needed to remove the cover (1) by removing the screw (3)

There are a kit of new fuses inside the black box provided by O.M.S.

The fuses have the following technical details:

- 2 – FUSE main general power 6.3AT, 230 AC;
- 9 – FUSE chair PCB 500mAT, 12 AC;
- 10 – FUSE lift and backrest motor 6.3AT, 230 AC;
- 11 - FUSE chair trasformer 200mAF, 230 AC;
- 12 - FUSE chiar trasformer 200mAF, 12 Vac;
- 13 - FUSE trasformer chair PCB, 12 Vac.



DANGER

The replacement of the fuses must done by an authorized technician O.M. S.

7. TECHNICAL INSTRUCTIONS FOR INSTALLATION

7.1. **PACKING**

The contents of the delivery package are as follow, and the weight is 180Kg

- Patient Chair
- Fixing screws patiente chair
- Right armrest (delivery in the case of a specific request to the order)
- Suction system devices (delivery in the case of a specific request to the order)
- User Manual, wiring diagrams, warranty information

Each box has a mark showing, the order confirmation number, the device model.

7.2. **INSTALLATION**

1. Unpack and place the different unit components to one side for ease of access and installation.
2. Connect the cuspidor to chair.
3. The floor must be straight within 1%, however you may have to adjust the chair using the support of the chair.
4. Fix the chair on the floor using the two expansion anchors and screw (supplied).
5. Connect the unit to the electrical network, then place the cover.
6. Connect the ground cables to the screw marked with the earth symbol.
7. Place the headrest and right armrest.

7.3. POST INTALLATION CHECK

1. After install the unit, carry out the all relevant checking, describe on "INSTALLATION AND INSPECTION REPORT", as well as carry out the following check list.

- ☐ Check the main air and water connection
- ☐ Check the drain and suction connections
- ☐ Check the mains voltage cable and gounding connections
- ☐ Adjust the internal air and water pressures.
- ☐ Adjust the bowl and rinse & cup fill water flow rates
- ☐ Check the operation of the suction system
- ☐ Check the operation of the foot control
- ☐ Check the operation of the suction arm
- ☐ Check the operation of the safety switches
- ☐ Drive the chair lift motor
- ☐ Driver the backrest motor



DANGER

The main power switch cut-off the device from the electrical network, Do not make any servicing on the unit while the power switch is on.

8. EMC INFORMATION ACCORDANCE WITH IEC 600601-1-2

The device is designed and manufactured in compliance with the standard IEC 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 IEC 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 might be necessary 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 due to the voltage drop.

Manufacturer's Guide and declaration – Electromagnetic emissions		
The OMS dental unit is intended for use in the electromagnetic environment below specified. The customer or user of the OMS dental units should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic Environment-Guide
Emission RF CISPR 11	Group 1	OMS dental units uses RF energy only for its internal function. Therefore, 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	OMS dental units 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	
Voltage fluctuations /flicker emissions IEC 61000-3-3	In compliance	

Manufacturer's Guide and declaration – Electromagnetic immunity			
The OMS dental units is intended for use in the electromagnetic environment below specified. The customer or user of OMS dental units should assure 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 should be 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 (<i>Burst</i>) 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 (<i>Surge</i>) 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

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	power the device with a UPS or with batteries.
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 tension 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
RF conduct IEC 61000-4-6 RF irradiata IEC 61000-4-3	3 Veff from 150 kHz to 80 MHz 3 V/m from 80 MHz to 2,5 GHz	3 V 3 V/m	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: $d = 1,17 \sqrt{P}$ $d = 1,17 \sqrt{P}$ from 80 MHz to 800 MHz $d = 2,34 \sqrt{P}$ from 800 MHz to 2,5 GHz 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). 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:

			
<p>Note 1: At 80 MHz and 800 MHz, the separation distance for the highest frequency range applies.</p> <p>Note 2: These guidelines are not applicable in all situations. Electromagnetic propagation is influenced by the absorption and reflection of structures, objects and people.</p>			
<p>a The intensities fields 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</p> <p>b The field strength in the frequency range from 150 kHz to 80 MHz should be less than 3 V/M</p>			

Recommended distances separation between portable and mobile radiocommunication devices.			
<p>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.</p>			
Maximum output power of the specified transmitter W	Separation distance for transmitter frequency m		
	From 150 kHz a to 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 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</p> <p>NOTE 1: to 80 MHz and 800 MHz, applies the separation distance for the highest frequency range.</p> <p>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.</p>			

9. DISPOSING OF THE DEVICE AT THE END OF LIFE

European Directives 2012/19/UE 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.

10. REPORTING ACCIDENTS TO PEOPLE

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.

