

Moon

INSTRUCTION HANDBOOK S.T.01/3L-GB-Rev. 1



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NOTE

Symbol ■ denotes that instrument or function described is optional.

Before using the equipment in question, carefully read the instruction booklet.

July '97 rev. 1

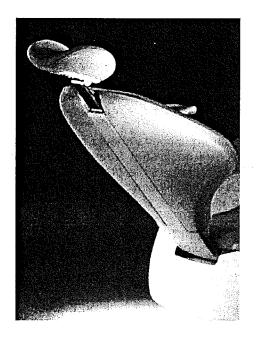
GENERAL INFORMATION

O.M.S. dental chairs are designed to guarantee utmost safety and comfort to patients. Our **Moon** model chair enables a wide range of upright position settings (33 cm. min. to 79 cm. max.), thus providing the most ideal work set-up for operators, both from a standing and sitting position. All the electrical and electronic equipment runs on a power supply voltage of 24 Vac, which is considered practically risk-free.

Moon dental chairs have been designed and tested to withstand and lift up to 400 kg. The reclining backrest is fitted with a shift compensation mechanism that prevents the undesired «clothes-stretching» effect during backrest reclining operations and does away with the need to readjust the headrest every time.

The backrest on our **Moon** is absolutely flat and totally free of projecting parts. It also incorporated a special safety contact sensor that shuts off automatically to prevent injuries to the legs of operators while reclining.

The headrest hinge may be lowered below the edge of the backrest for smaller and medium height patients.



Double chair controls are provided (right-hand side for operators, left-hand side for assistant) for 4 settings, including programming, alteration and recalling of programs, automatic resetting, mouth rinse and last position shifting operations.



DEFINITION OF INTENDED USE

A support accessory (in accordance with EEC Dir. 93/42, Art. 1, point 2, letter b) for patients, with seat and backrest shift facility. Designed for use by dental surgeons in Type-A or Type-B medical surgeries (defined by IEC 64-4 Standards, referring to electrical writing systems in premises for medical practices). Apparatus designed for continuous operation under temporary loads.

CLIMATIC CONDITIONS

Recommended climatic conditions during transport and warehouse storage:

If stored in suitable packaging, the apparatus can withstand exposure for periods no more than approx. 15 weeks to climatic conditions within the range specified:

- temperature ranging between -40 and +70°C
- relative humidity rate between 10% and 100%
- atmospheric pressure values between 500 and 1060 hPa

Recommended operating conditions:

- temperature ranging from 10 to +40°C
- relative humidity ranging from 30 to 75%
- atmospheric pressure ranging from 700 to 1060 hPa

Electromagnetic potential:

The equipment has been designed and manufactured in accordance with IEC 601-1-2 regulations (referring to Electrical medical equipment, electromagnetic compatibility, 1993) and therefore its immunity and emission properties will not produce critical interference with other equipment complying with the same standards. Interference may instead occur with electrical equipment featuring immunity or emission properties that are not compliant with IEC 601-1-2 (1993) Standards.

In these cases, these non-compliant equipments should not be used while an O.M.S. IEC-compliant dental unit is in operation (if necessary, it may be possible to call on the technical Service department of O.M.S. SpA to analyse the problem).

If any O.M.S. equipment is stalled or malfunctioning due to this kind of interference, it may sometimes be sufficient to switch the unit off and then back on again to solve the problem.

Safety rules

- Do not allow unskilled operators and/or professional staff who have not carefully read the instructions manual to use the equipment;
- Always check that the unit is in proper working conditions;
- Do not use equipment if any part shows signs of damage or wear. In these cases, call an authorised O.M.S. technician to solve any problems on the unit;
- Make sure that only original, guaranteed O.M.S. spare parts used to replace worn or broken components;
- Never place foreign objects under tha water assembly, as these may cause irreparable damage to the assembly or cause the dental unit to topple over when turned on.

DENTAL CHAIR WARRANTY

O.M.S. guarantees its products for a period of three years from the date of their installation It is therefore of considerable importance to fill in the warranty form, as illustrated in the example below, at the moment of installation of the product (this form is enclosed with all the other documents delivered together with the equipment).

After having filled in the warranty, this is to be forwarded to O.M.S. at the address indicated below within ten days from installation:

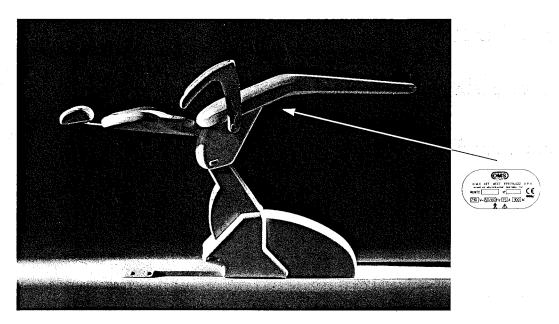
O.M.S. S.p.A. - Via Dante 20/A - 35030 CASELLE DI SELVAZZANO (PADOVA) - ITALIA remember to tear off and keep the first copy of the warranty.



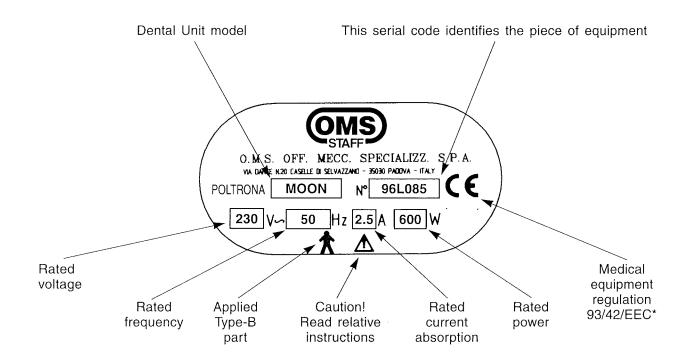
We highly recommend that all the O.M.S. warranty provisions be read carefully in order to avoid misunderstandings and waste of time.

RATING

Under the seat of every O.M.S. dental chair, there is a label with all the data of the unit.



The following information are provided:



SERIAL CODE OF THE UNIT

96LXXX

TECHNICAL FEATURES

Dental chair model

MOON

Manufactured by

O.M.S. SpA Officine Meccaniche Specializzate

Via Dante 20/A

35030 Caselle di Selvazzano Padova - Italia

Class

В

Applied Part Type

À

Electric Power Supply

Nominal Voltage

230 V. ac

Nominal Current

2,5 Amps - Intermittent operation (10' On)

Nominal Frequency

50 Hz

Connection to mains

With cables complying with local standards.

Pantograph motor

220 V ac

150 W

50 Hz

1380 rpm

Bakrest motor

220 V ac

100 W

50 Hz

1380 rpm

Control panel power supply 12 V ac

500 mA

Net weight

140 Kg

Gross weight, incl. packaging 180 Kg

Dimensions of packaging box 135 x 90 x 82 cm

Vertical load capacity

Tested for loads up to 400 kg

Vertical shift

33 cm min. / 79 cm max.

IMPORTANT

O.M.S. equipment is designed and constructed in accordance with directive 93/42 EEC Medical devices, IEC 601-1 international safety regulations, IEC 601-1-1 e IEC 601-1-2.

O.M.S. declines all responsibility for the safety and reliability of its products if:

- assembly
- additions
- recalibrations
- modifications or repairs

are not carried out by O.M.S. authorized personnel and under written authorization, with instructions and components supplied only by O.M.S., and if:

- the electric installation of the working environment does not conform to IEC norms;
- the equipment is not used according to the instructions for its use.

O.M.S. reserves the right to modify its products without notice.

TECHNICAL INSTRUCTIONS FOR INSTALLATION

PACKING

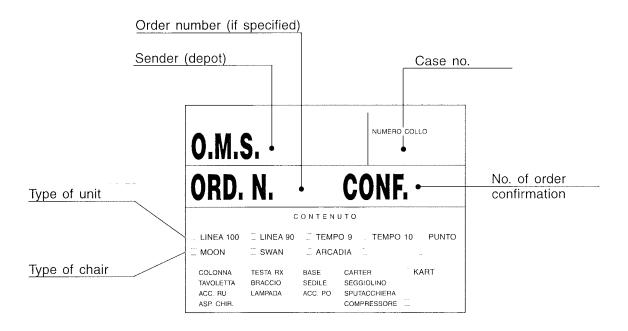
The chair is packed in one case holding all components, as follows:

Inside the case there is:

Case 1 (weight approx. 180 Kg.):

- Patient chair
- Patient chair casing
- Seat
- Headrest
- Right armrest*
- Fixing screws for chair and unit

Each case is marked externally as follows (see figure below):



(*) Packed only if specifically ordered.

Loose packing is marked in the same way.

N.B. Dental stools are separately packed.

ASSEMBLY

- 1) Firstly, it is necessary to unpack and set the dental chair in place near the supply connectors that have been previously installed for the purpose, following the installation layout available from the local installer/supplier.
- 2) Fasten the seat to the dental chair, insert the headrest and the right-hand armrest (if supplied).
- 3) Temporarily remove the rubber grommets covering the base of the chair.
- 4) Adjust the four Allen screws that vary the height of the base stabiliser plates to stop the chair base from «rocking».
- 5) Replace the rubber grommets and carry out the necessary electrical wiring connections.

TESTING AND SETTING UP

Check that the upward and downward (pantograph & backrest) lift controls are working properly from each control point and that all the automatic limit switches are in proper working order.

Check that the programmable positioning controls (i.e. memory, mounth-rinse and previous position controls) are operating correctly.

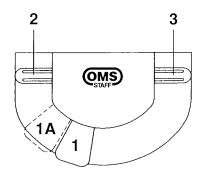
Store the various programs for the work positions most commonly used. Programme the reset "zero" memory for the most suitable position (See paragraph on "SETTING THE RESET ZERO POSITION"

CONTROLS AND ADJUSTMENTS

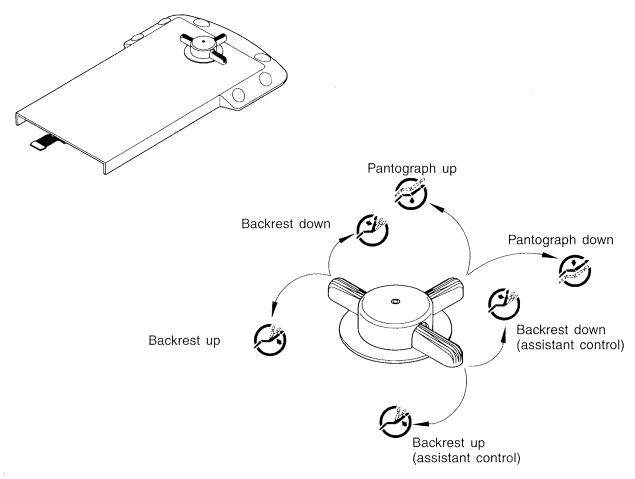
MANUAL CONTROLS

Manual adjustment controls on the Moon model dental chair have been removed from the backrest, thus providing evident ergonomical and hygienic advantages. Chair adjustments may be made by:

- 1) Assigning the dental chair controls to the rheostat (optional features), as follows:
 - Lever 1 controls dynamic instrument operation
 - Lever 2 for pantograph controls
 - Lever 3 for backrest controls
 - Lever 1 shift to position 1A to disable chair controls.



2) Installing a pedal control onto the rear section of the dental chair base and whose functions are described in the drawing below.



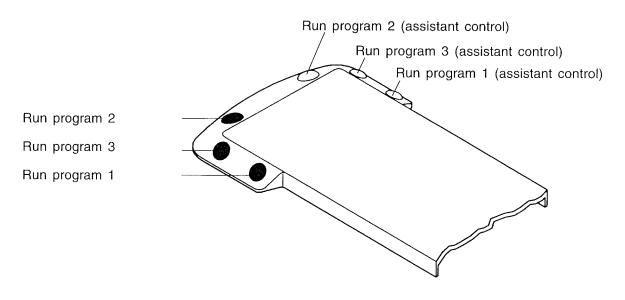
N.B. If the Moon model dental chair is installed in combination with a Linea 100 dental unit, another set of chair positioning controls will also be included as standard on the instrument tray.

CALLING UP PROGRAMMED POSITION SETTINGS

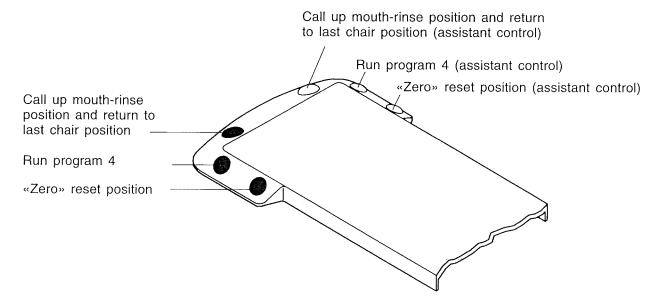
Double chair positioning controls are available on our Moon model dental chair (i.e. on the right-hand side for dental surgeons and on the left-hand side assistants) for four programmable settings, which may be modified, or called up, for zero position resetting, mouth-rinsing and last working position settings.

When calling up the various MOON program settings, the operator must bear in mind an important consideration, that is, that the dental chair controls work in a different manner depending on whether the chair is in the "zero" reset position or in any position other than that of the "zero" reset.

When in the zero reset position, the chair control functions operate as follows:

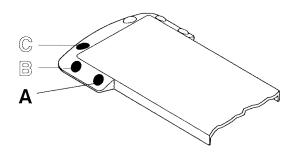


When in a situation other than the "zero" reset position, the chair control functions operate as follows:



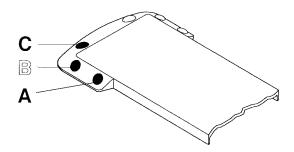
When calling up programs 1, 2 or 3 with the chair in any position other than that of "zero" reset, the operator has to proceed as follows:

Program 1



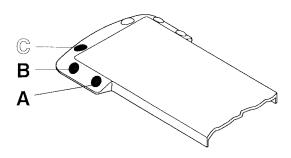
Press push-button A twice.

Program 2



First press push-button A, then push-button C.

Program 3

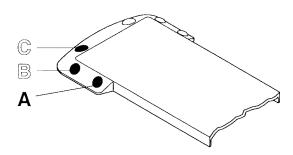


First press push-button A, then push-button B.

N.B. After having pressed push-button A, the next push-button (either A, B or C), has to be pressed within the next 3 seconds in order to call the desired program. Otherwise the dental chair will automatically reset itself to the "zero" position.

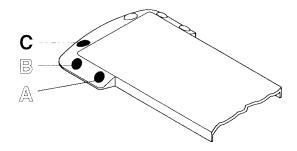
STORING PROGRAMS

Storing Program 1



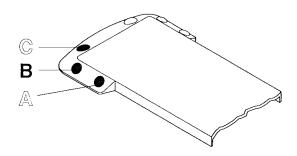
Set the dental chair to the desired position and hold-button **A** pressed until you hear a «beep», then let it go.

Storing Program 2



Set the dental chair to the desired position and hold push-button **C** pressed until you hear a «beep», then let it go.

Storing Programs 3 & 4



Set the dental chair to the desired position and hold push-button **B** pressed until you hear a «beep», then let it go to set program **3**.

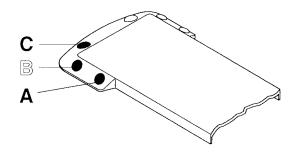
To store program 4, first you need to call it up (see section on "Calling up Programs"), then set the dental chair to the desired position and hold push-button ${\bf B}$ pressed until you hear a "beep", then let it go.

SETTING THE RESET ZERO POSITION

The MOON model dental chair enables operators to set the most suitable reset zero position to suit their own personal needs. The MOON chair is already factory programmed during test procedures by O.M.S. with a reset zero position.

To change this setting, proceed as follows:

- call up the current dental chair reset zero position
- use the pantograph lift and descent control to adjust the chair to the new reset zero position
- store the new reset zero position by pressing and holding push-buttons **A** and **C** simultaneously until you hear a «beep», then let them go.

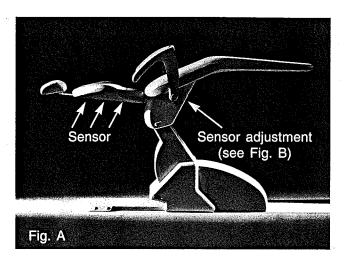


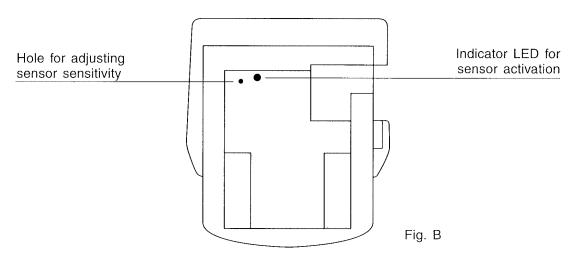
Important Note: the Reset Zero position can be stored only when the chair is in the safety area, which is signalled by an intermittent beep while the pantograph is descending.

SAFETY DEVICES

When calibrating the backrest sensor on your MOON dental chair, carry out the following procedure:

- set the dental chair and dental unit assembly to their definite position
- insert a small screwdriver into the hole situated on the bottom side of the seat (see figure below)





- call up the descent of either the pantograph or the backrest and ask the operator to touch the dental chair backrest during movement (see Fig. A) to test the ideal sensitivity of the backrest sensor. If necessary, adjust the sensitivity by turning the screwdriver in a clockwise direction to decrease and in an anticlockwise direction to increase it (see Fig. B). Every time the safety sensor is activated while the dental chair (either the pantograph mechanism or the backrest) is being lifted or lowered, movement is stopped immediately and an alarm signal (a beeper) goes off to warn the operator that the safety mechanism has been activated. Furthemore a LED indicator, also situated on the bottom side of the seat, remains on until the obstacle is removed from the backrest of the dental chair. After having removed the obstacle that caused the backrest lift mechanism to stop, the operator has to select the desired function again.

Besides the safety sensor the dental chair is also fitted with a mechanical safety mechanism located within the backrest which, like the sensor device, blocks all downward movements of the pantograph or backrest in the event of obstacles being placed within the area of action of the backrest.

N.B. In the event that the dental chair refuses to start up movement of the pantograph or backrest again, check if the LED indicator under the seat is on and, if so, adjust the sensor for a lower sensitivity, following the instructions described earlier.

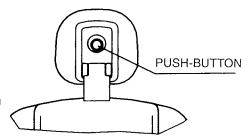
HEADREST

The MOON dental chair provides a choice of two different types of headrest, namely:

- A standard swivel type with central push-button, and
- A double swivelling hinged type.

STANDARD HEADREST

The height of standard headrest models with a single swivel point may be adjusted up to 20 cm. This headrest may also be tilted forwards with respect to the backrest by up to 15° and backwards up to 45°, by simply pressing the push-button located on the back of the headrest, as illustrated.

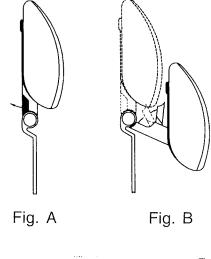


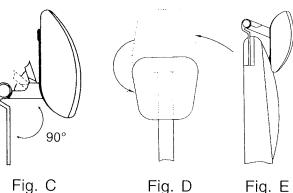
DOUBLE SWIVELLING HINGE HEADREST ■

The height of this headrest version is also adjustable up to about 23 cm. However, it also features a double swivelling mechanism that may be simultaneously swung up or down by means of a lever located on the rear section (see Fig. A).

This makes it possible to rotate the headrest on two axes as can be seen from the drawing in Fig. B, which also shows how the headrest can be shifted forwards.

Furthemore, by setting the headrest cushion at a 90° angle with respect to the hinge (see Fig. C), this will enable the cushion to be rotated 180° (see Fig. D). Thus, thanks to the cavity situated on the upper part of the backrest, which enables the mechanism to be retracted fully to reduce the height of the lower headrest hinge, the headrest may be used at a position extending below the top edge of the backrest (see Fig. E), making it therefore suitable for use also with smaller patients.

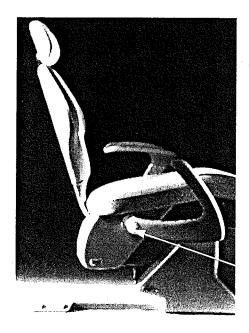


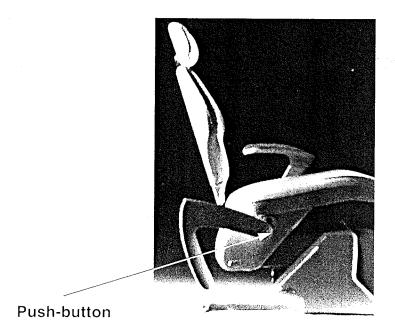


ARMREST

This dental chair may be supplied either in standard version with the left armrest that swivels in synchronism with the backrest, or optionally with both armrests that swivel in synchronised motion with the backrest.

For dental chairs with the double swivelling option, in order to ease access for patients getting on or off the chair, the right armrest may be swung forwards or backwards, or even taken off by simply pressing the push-button shown in the figure below.





To remove the armrest from the chair, press the push-button (see photos), rotate the armrest in an anticlockwise direction and keep it pulled outwards while wiggling it back and forth to free it from the chair body.

To reinsert the armrest, perform these operations in reverse order, making sure that it is pushed fully into the chair body before rotating the armrest back to its original position.

To swing the armrest forwards, just press the push-button (see photo) and rotate the armrest in a clockwise direction.

When removing or reinserting the armrests, all operations are to be carried out with utmost care in order to prevent damage. Avoid forcing the armrests, even in the event of difficulty during removal and insertion operations.

ORDINARY MAINTENANCE OPERATIONS

The MOON model dental chair is made to do away with the need for maintenance operations, as it has been designed and manufactured with a particular concern to achieving utmost reliability and long life.

Even lubrication of moving parts has been done away, as all hinges and sliding surfaces have been designed to include special self-lubricating components.

Some operations of extraordinary maintenance are described below. O.M.S. strongly recommends that the following operations of ordinary maintenance should be carried out as and when indicated, for maximum efficiency and high performance.

CLEANING, TOUCHING UP, DISINFECTION

For regular cleaning operations on the dental unit and chair without the risk of damaging them, upon request O.M.S. can supply "DENA", its own proprietary product that consists of a neutral anti-foam detergent. This special product has undergone long trials and testing by the manufacturer on varnished and enamelled surfaces, as well as on furniture and other objects made of plastic and imitation leather.

For perfect hygiene of tray table and patient chair, without the risk of damage, O.M.S. recommends

products which contain:

- quaternary ammonium base
- phenol compounds
- iodophors

and which do not contain:

- alcohol
- hypochlorite

O.M.S. recommends the products below because they were tested at our premises:

- ZETA 4
- OROLIN ASEPTIK
- OROCID MULTISEPT
- GREEN & CLEAN SK

Upon customer's request, O.M.S. shall supply a cleaning product that was experimented and tested at our premises.

SPECIAL MAINTENANCE OPERATIONS

The following is a list of instructions for special maintenance operations.

Except for operations involving the replacement of burnt out fuses, we recommend that <u>all operations should be carried out only by authorised O.M.S. technicians.</u>

All the electrical components of the wiring system are connected to a power supply that incorporates a mains transformer with separate primary and secondary windings and features a maximum supply voltage of 25 Vac. This voltage is considered as risk-free for operators and patients by safety standards of most countries all over the world.

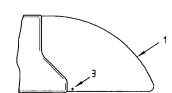
Push-buttons, limit switches and <u>certain parts of the main electronic circuit board</u> may therefore be touched without risk of any harm to people.

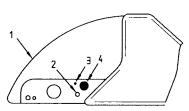
REPLACING BURNT OUT FUSES

The main power fuse is situated at the base of the dental chair (see figure).

This fuse is easy to access and replace (by using a screwdriver (2) and without having to open the chair body, whereas to replace the other fuse located on the internal circuit board, the cover (1) will have to be removed by unscrewing the screws (3) fastening it to the body.

The electronic circuit boards are installed inside the base of the chair and the fuses are situated as follows:

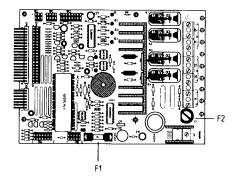




Main chair control board

F1 = T0,5A chair circuit board power supply

F2 = T6,3A

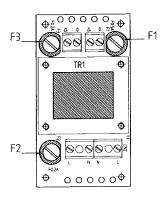


Dental chair power supply circuit

F1 = F0,5A chair circuit board power supply

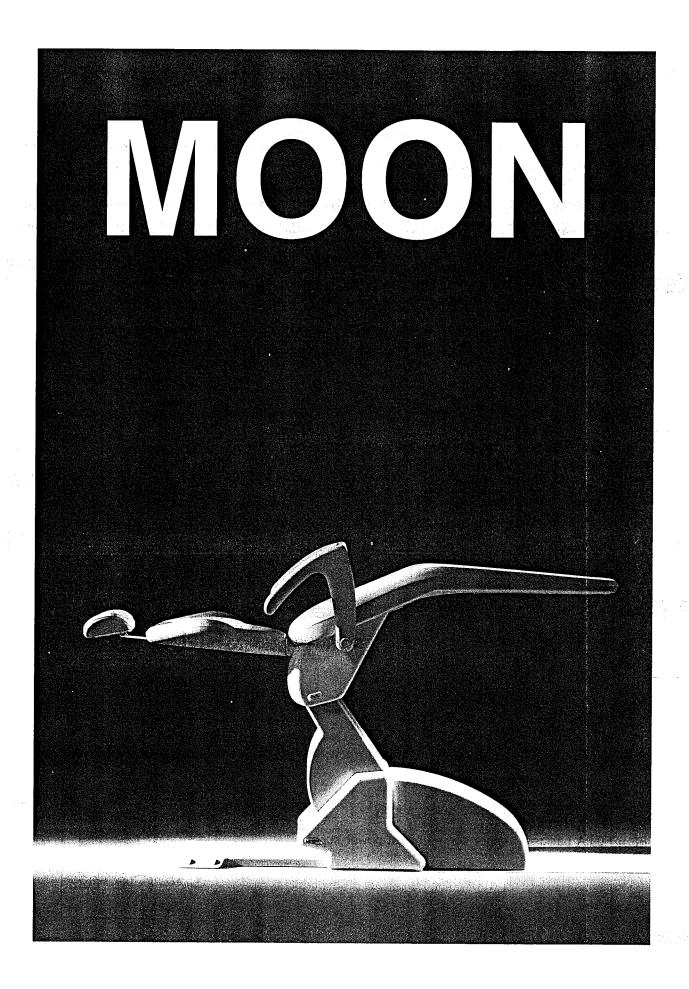
F2 = F0.2A TR1 power supply

F3 = F0,2A backrest sensor control board power supply





Before carrying out any maintenance operations inside the floorbox (1), make sure that the main power switch (4) is turned off.



A.Q. 13/2 F Date 16/04/96 Rev. 1

Accident report



EEC 93/42 Dir. Annex II

CUSTOMER'S NAME				
ADDRESS				
SERIAL N° OF UNIT				
DESCRIPTION OF ACCIDENT				
INJURY TO PATENT OR OPERATOR				
Date	Signature			
SPACE TO BE FILLED OUT BY THE FIRM				
QUALITY ASSURANCE				
POSSIBLE CAUSE OF ACCIDENT:				
• Equipment malfunction 🗇				
• Degrading of technical features and/or performance □	Degrading of technical features and/or performance □			
$ullet$ Inadequate instructions for use \Box				
Other				
SERIOUSNESS OF INJURY				
PROPOSED OPERATIVE MEASURES				
Date	Signature			
GENERAL MANAGEMENT				
OPERATIVE MEASURES				
CORRECTIVE MEASURES				
Date	Signature			

In the event of accidents, please fill in and return this form to OMS as soon as as possible!