English

Owner´s Manual

CE

Sirius G8 Dental Light

Cód. 300054582 Rev.00

GNATUS

PRESENTATION OF MANUAL

OWNER'S MANUAL (INSTRUCTIONS FOR USE)

Technical Name: Dental Light

Brand: Gnatus

Models:
- Sirius G8 Sensor 5 LED's Dental Light
- Sirius G8 Sensor 4 LED's Dental Light
- Sirius G8 Sensor 3 LED's Dental Light
- Sirius G8 2 LED's Dental Light
- Sirius G8 1 LED Dental Light
- Sirius G8 Sensor 5 (3x2) LED's Dental Light
- Sirius G8 Sensor 4 (2x2) LED's Dental Light

Trade Name: Sirius G8 Dental Light

Manufacturer/ Distribuitor:
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Registration ANVISA nº: 10229030048

ATTENTION

For greater safety:

Read and understand all the instructions contained in these Instructions for Use before installing or operating this Equipment.

Note: These Instructions for Use must be read by all the operators of this Equipment.

INDEX

DESCRIPTION OF THE EQUIPMENT

Dear Customer

Congratulations. You have made a good choice when you decided to buy a GNATUS QUALITY product comparable to the best products available in the World. This manual is a general presentation of your product and it will give you important details to help you to solve possible problems.

Please, read it and keep this with you.

Identification

Technical Name: Dental Light

Brand: Gnatus

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Trade Name: Sirius G8 Dental Light

Indication of Equipment

This equipment is for dental use use only. It must be operated and utilized by specialized professional (certified professional, according to the legislation of the country) and following the instructions of the manual.

The operation of the equipment required, for the professional, the utilization of correct instruments and it should to be in perfect conditions of the use, and to protect the professional, the patients and others, in the eventual danger situation.

DESCRIPTION OF THE EQUIPMENT

Description of Equipment

Illuminating Dental Light for dentistry use adjustable up to 35.000 Lux. Smooth movements and dull white as the standard color, compatible with all surroundings.

Activation by means of the foot control of the dental chair (for the models of Dental Lights attached to the chair).

Composed by a new light emission system, using LED technology. This abbreviation is the acronym for Light Emitting Diode, a totally different form of emitting light, when compared to conventional devices with halogen light. Apart from being infinitely longer lasting (more than 50.000 hours) and with low electrical consumption, the LED's have become the most compact ergonomic devices, with easy installation and transportation.

Allows the dentist to choose the brightness according to the procedure (brightness with white light or orange light), which depends on the version chosen.

The use of white light is recommended for normal procedures of work (lighting of the operation field).

The use of orange light is recommended for procedures of work with fotocurables materials therefore do not interfere at the curing.

The following types of activation are available:

- **Through Optical Sensor and Pedal control of dental chair:**

Activation by optical sensor while approximating the hand, which provides convenience in operation, being a great ally in controlling cross infections.

The LED's protector is made of resistant and transparent material, protecting it against aerosols. The arm is made of steel with vertical and horizontal movements and has rounded corners. It also has a smooth finish and is easy to clean and is asepsis.

Structure made out of steel with a surface treatment using nanotechnology. Highly shiny smooth paint with an epoxy base, polymerized in an oven at 250ºC, resistant to corrosion and cleaning materials.

The head is made from resistant material, with a 620º rotation providing lightness, long life and extensive mobility in all positions (Standard models) The head has total angular focus adjustment for the models with "Orbital" arms.

Bi-lateral handles allow isolation avoiding the risk of cross contamination.

Physical Principles used by LED Dental Light equipment

LED is a semiconductor light source (LED = Light Emitting Diode), i.e., an electronic semiconductor component that has the ability to transform electric energy into light.

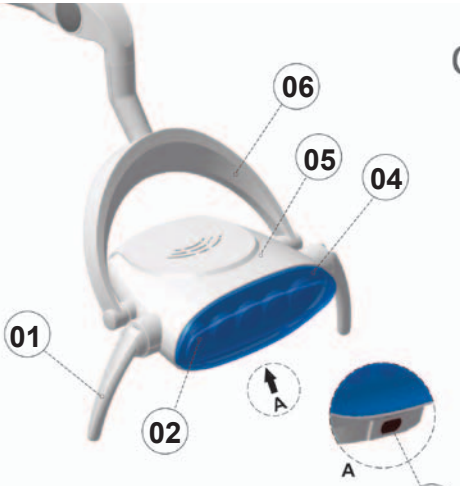
This light emission occurs as the electrons of the material's atoms are forced to change it orbit. When an electron jumps from one orbit to another is forced to release energy in order to reach the energy level of its new orbit and doing this the released energy is disclosed as light.

The LED light is not cold due to the presence of an infrared light beam.

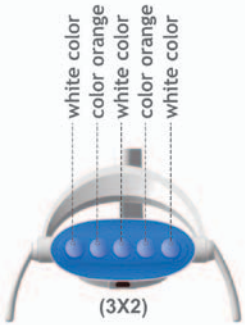
Purpose of the equipment

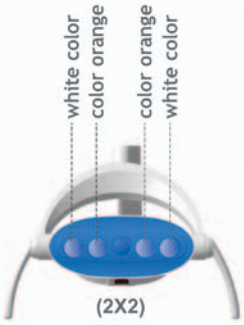
This equipment is for exclusive use in dentistry with the purpose to illuminate the operation field through the LED dental light with white light or orange light emission.

MODULES, ACCESSORIES, OPTIONS AND MATERIALS OF CONSUMPTION



01 - Puller
02 - LED's
03 - Optical Sensor
04 - Protector
05 - Dental Light Body
06 - Articulated Arc





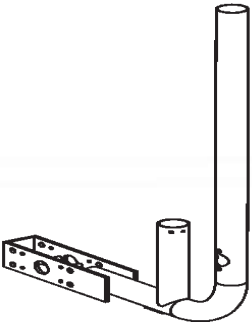
Options of headstocks

The use of options should be consulted at the time of purchase. By purchasing the product check the technical compatibility of equipment, docking and accessories.

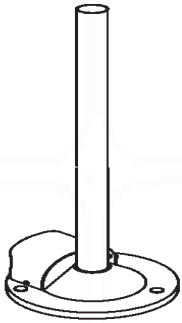
MODULES, ACCESSORIES, OPTIONS AND MATERIALS OF CONSUMPTION

*** Accessories that can accompany the product depending on the chosen version:**

Dental Light Column For attaching In TOP Chair

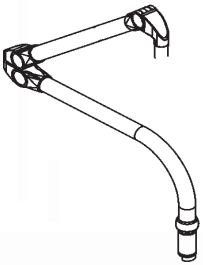


Dental Light Column For attaching In Intermediary Chair

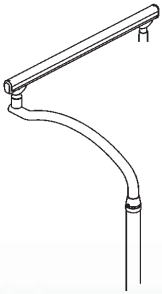


Attached Dental Light Column

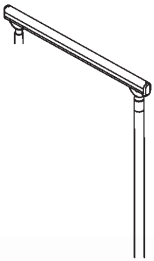
Attached Dental Light Column



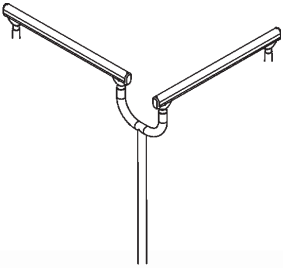
Movable Arm "Orbital"



Movable Arm "Orbital"



Single Arm Workbench



Single Arm Workbench

In order to fasten the Dental Light LED Attached to the dental set in the dental sets with a column of 38mm, please purchase the optional "Bushing Kit".

"It does not come with the product"

TECHNICAL SPECIFICATIONS

General

Classification of Equipment as per ANVISA :

Classe I

Classification of Equipment as per standard IEC 60601-1:

Protection against Electric Shock - Type B and Class I Equipment (IEC 60601-1)

Protection against harmful water penetration:

IPX 0

Mode of Operation:

Continuous operation

Led Characteristic:

White color temperature: 5.500K to 6.300K

Orange color temperature: 590nm

Models:

5 LED's / 4 LED's / 3 LED's / 2 LED's / 1 LED
5 (3x2) LED's / 4 (2x2) LED's

Power:

Model 5/4 LED's - 60VA
Model 3 LED's - 40VA
Model 2/1 LED's - 25VA

Protection Fuses: (deriving from the dentist's Chair)

Model Top: F1 and F2 = 8A - retarded action Nominal current: 8A
Operating voltage : 250V~ Opening time: T
Breaking capacity: 35A
Model Intermediary: F1 and F2 = 5A – retarded action Nominal current: 5A
Operating voltage : 250V~ Opening time: T
Breaking capacity: 35A

Distance between the head and the operating field:

70cm

weight:

Head: 1,0kg

Dental Light Column:
Attaching in Top Dental Chair: 2,8kg
Attaching in Intermediary Dental Chair: 5,8kg
Floor attaching (column and base): 6,2kg
Bound (column and braces): 2,0kg

TECHNICAL SPECIFICATIONS

Arm Weight:

Standard Movable Arm: 4.2 kg
Orbital Movable Arm: 5.5 kg
Double Arm Workbench: 6.4 kg
Single Arm Workbench: 4.2 kg

Brightness

Model 5/4 LEDs

High: 35.000 Lux (+/-10%)
Medium: 25.000 Lux (+/-10%)
Low: 15.000 Lux (+/-10%)

Model 3 LEDs

High: 30.000 Lux (+/-10%)
Medium: 20.000 Lux (+/-10%)
Low: 10.000 Lux (+/-10%)

Model 2/1 LEDs

High: 20.000 Lux (+/-20%)

Model 3x2 LEDs

High: 35.000 Lux (+/-10%)
Medium: 25.000 Lux (+/-10%)
Low: 15.000 Lux (+/-10%)
Orange 5.000 Lux (+/-10%)

Power Supply

Supply Voltage (except for 2 LEDs reflector):

90/240 Vca

Dental Light Supply Voltage (except for 2 LEDs dental light):

24 Vcc x 1,5 A (from de power supply)

2 LEDs Dental Light Supply Voltage:

9/14 Vca (from the dental set electronic board)

2 LEDs Dental Light Supply Voltage:

3/10 Vca x 1 A (from the 2 LEDs power supply)

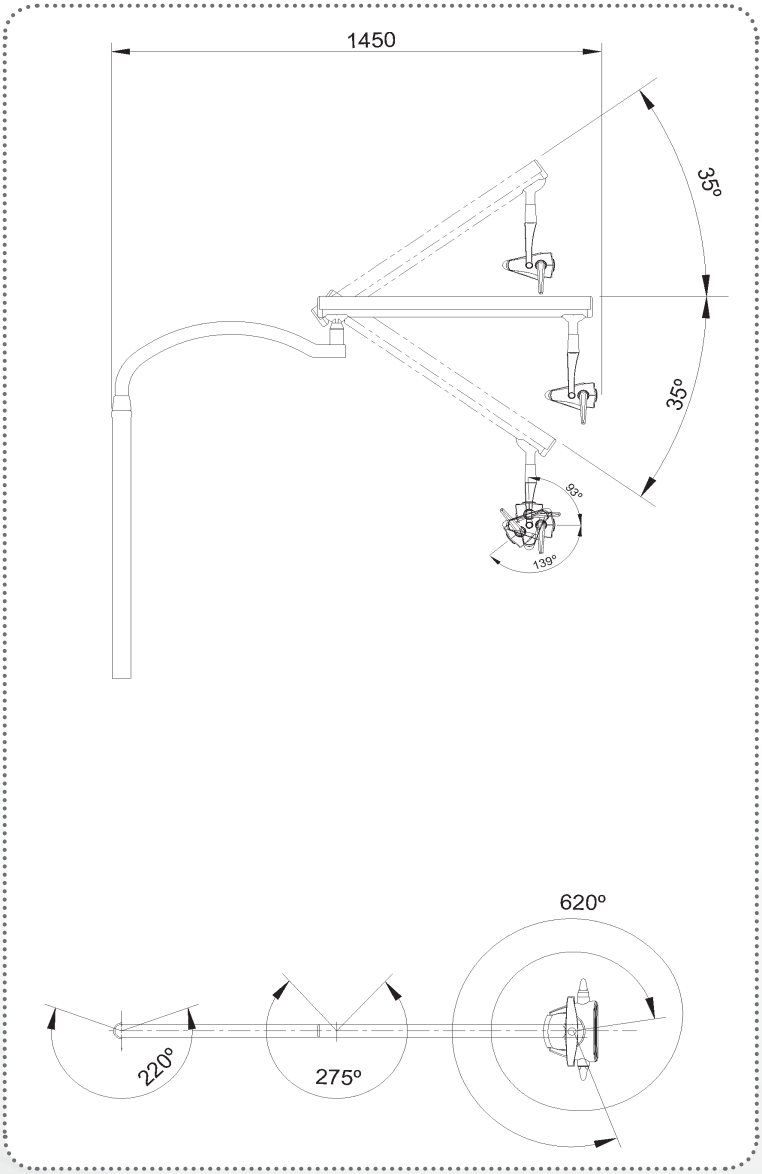
Frequency:

50/60 Hz

TECHNICAL SPECIFICATIONS

Dimensions (mm)

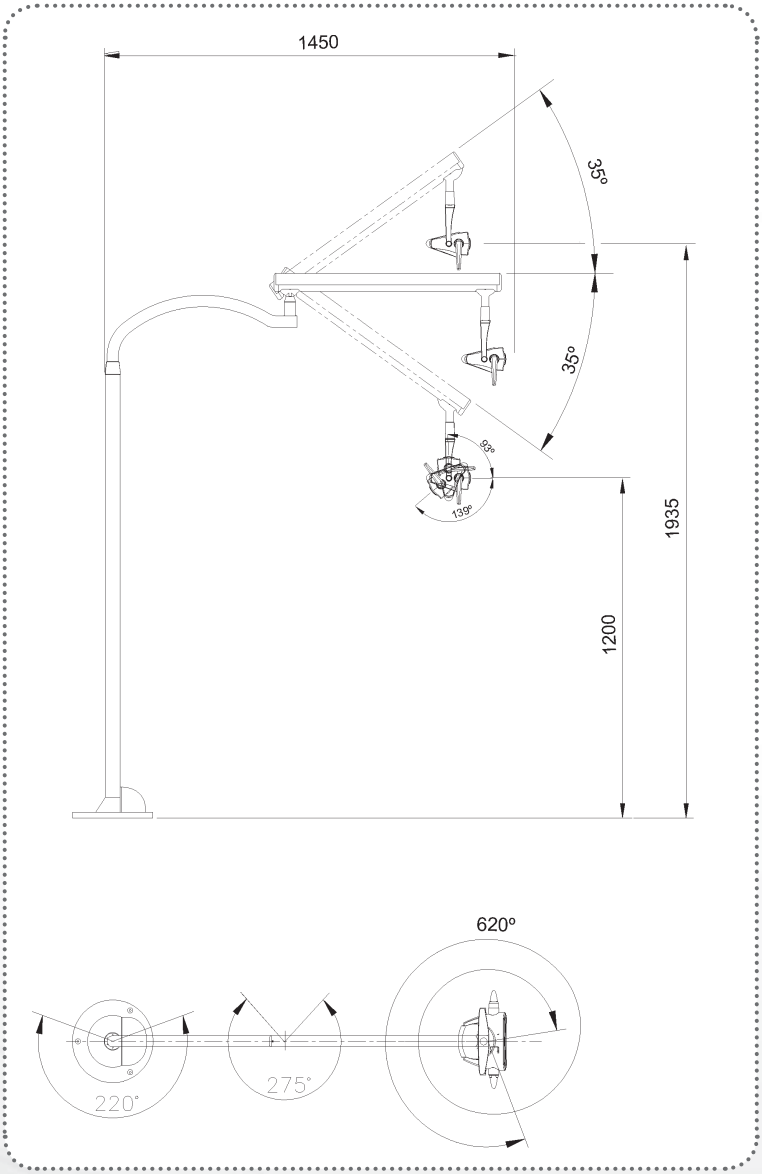
(Standard arm)



TECHNICAL SPECIFICATIONS

Dimensions (mm)

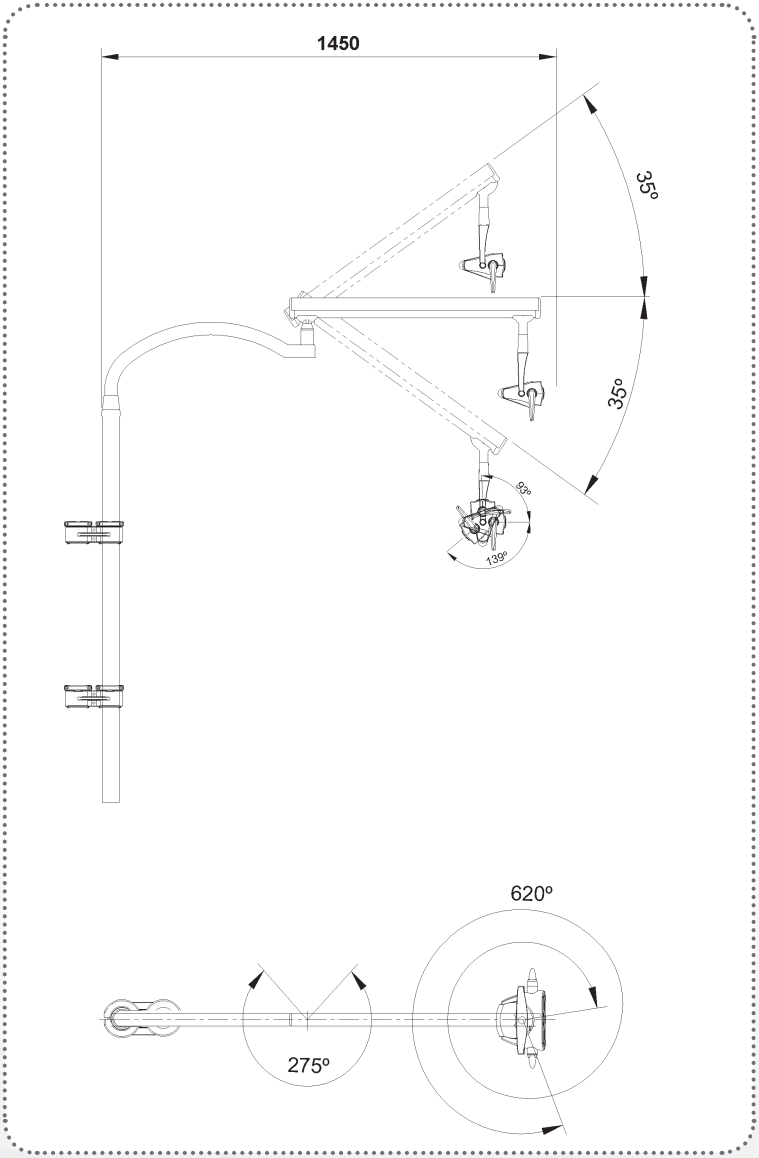
(Floor)



TECHNICAL SPECIFICATIONS

Dimensions (mm)

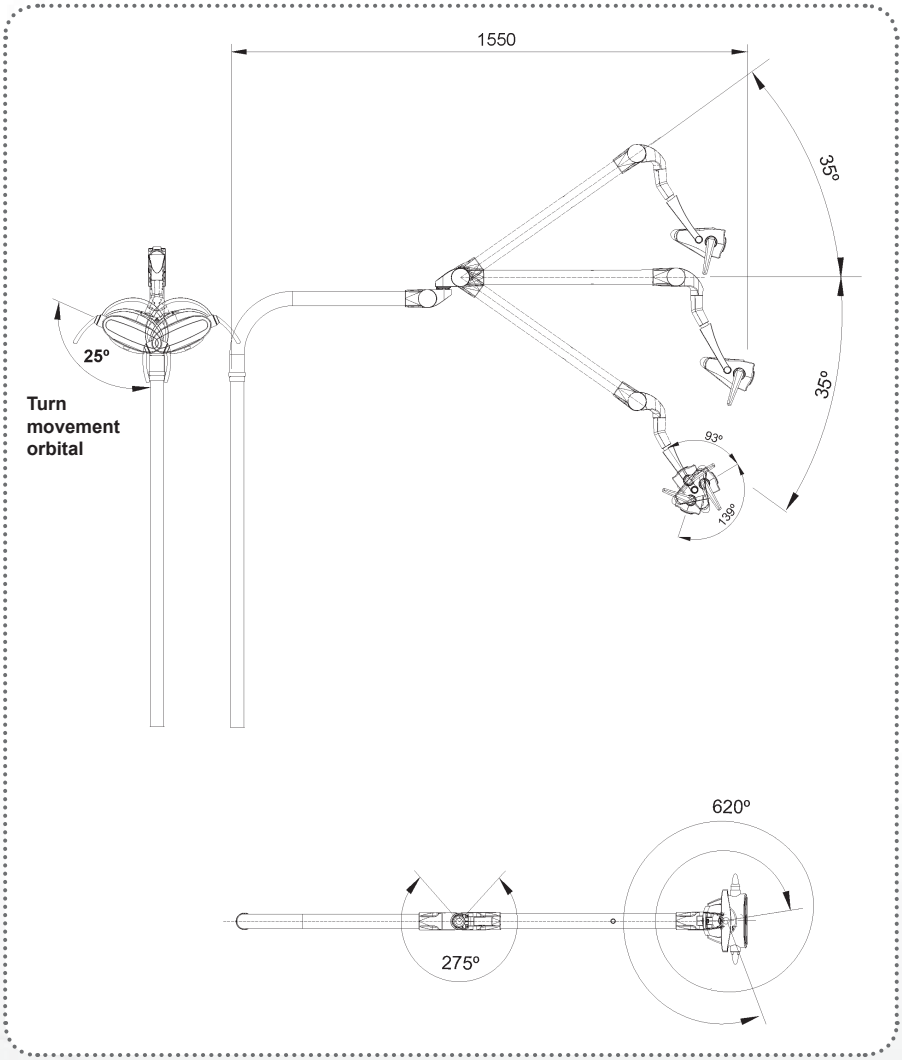
(Attached Arm)



TECHNICAL SPECIFICATIONS

Dimensions (mm)

(Orbital Arm)



TECHNICAL SPECIFICATIONS

Packing symbols

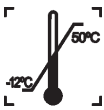
It determines the maximum quantity of boxes which can be stacked during transportation and storage "as per packaging".

Packing to be transported and / or stored avoiding humidity, rains and wet floor.

Packing to be transported and / or stored with the harrows up.

The packing must be stored and transported away from direct sun light exposure.

Packing to be transported and / or stored with care (should not suffer drop and neither receive impact).



Temperature limit for the packing to be stored or transported.

Product symbols

Important: It indicates an instruction of safety for operation of the product. Not following it, can lead to serious danger to the patient.

Note: It indicates useful information for operation of the product.

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Grounding (at several points of the equipment) indicates the condition of being grounded.

B type applied part

Warning - see the manual

Authorized representative in the European Community

Standards applied:

NBR 60601-1:1997 - Equipamento Eletromédico- Parte 1: Prescrições gerais para segurança;
NBR ISO 14971:2004- Medical devices - application of risk management medical devices;
NBR ISO 9687: 2005 - Dental equipment - graphical symbols;
EN ISO 13485-2003 - Quality systems - medical devices;
IEC 60601-1-2:2007 - Compatibilidade Eletromagnética;
NBR ISO 9680:2001 - Aparelho de iluminação bucal

The materials used to produce the equipment are Biocompatible.

TECHNICAL SPECIFICATIONS

Electromagnetic emissions

Eletromagnetic emissions		
The Sirius G8 Dental Light is made to be used in the electromagnetic environments specified below. The client or the user of the Sirius G8 Dental Light must be sure that it is used in such environment.		
Emission test	**Compliance**	**Eletromagnetic environment - Guide**
RF emissions ABNT NBR IEC CISPR 11	Group 1	This equipment uses RF energy only for internal functions. However, its emissions are too low and it's unlikely to cause any interference in the equipments next to it.
RF emissions ABNT NBR IEC CISPR 11	Class B	This equipment is proper to be used in all establishments; including domestic settings and those directly connect to a public low voltage distribution which feeds domestic buildings.
Emissions of harmonics IEC 61000-3-2	Class A	
Fluctuation of Voltage / Emissions of flicker IEC 61000-3-3	As per	

Recommended distances between portable and mobile RF communication equipments and the Sirius G8 Dental Light			
The Sirius G8 Dental Light is made to be used in an electromagnetic environment in which RF disturbances are controlled. The client or the user of the Sirius G8 Dental Light may help preventing electromagnetic interference by keeping a minimal distance between mobile and portable RF communication equipment (transmitters) and the Sirius G8 Dental Light, as recommended below, in accordance with the maximal voltage output of the communication equipment.			
Transmitter Maximum Output (W)	**Separation distance according to transmitter frequency (M)**		
	150 kHz to 80 Mhz $d = 1,2\sqrt{p}$	80 kHz to 800º Mhz $d = 1,2\sqrt{p}$	800 kHz to 2,5º GHz $d = 2,3\sqrt{p}$
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23
For transmitters with a maximum nominal output power not listed above, the recommended d separation distance in meters (M) can be determined using an equation applicable to the frequency of the transmitter, where P is the transmitter maximum nominal output in watts (W) according to the transmitter manufacturer. NOTE 1 At 80 MHz and 800 MHz, is applied the separation distance for the higher frequency range. NOTE 2 These guidelines may not apply to all situations. The absorption and reflection from structures, objects and people affect the electromagnetic propagation.			

TECHNICAL SPECIFICATIONS

Electromagnetic emissions

Guidelines and manufacturer's declaration - electromagnetic immunity

The Sirius G8 Dental Light is made to be used in the electromagnetic environments specified below. The client or the user of the Sirius G8 Dental Light must be sure that it is used in such environment.

Immunity test	ABNT test level NBR IEC 60601	Level of compliance	Electromagnetic Environment Directives
RF conducted IEC 61000-4-6 RF radiated IEC 61000-4-3	3 vrms 150 kHz up to 80 MHz 3 V/m 88 MHz up to 2,5 GHz	3 Vrms 3 V/m	It is advisable that portable and mobile RF communication equipment is not used near any part of the equipment, including cables, with a separation distance less than the one recommended, calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = 1,2\sqrt{P}$ $d = 1,2\sqrt{P}$ 80 MHz thru 800MHz $d = 2,3\sqrt{P}$ 800 MHz thru 2,5MHz Where P is the nominal maximum power of output of the transmitter in watts (W), as per the manufacturer of the transmitter, and d is the recommended separation distance in meters (m). It is advisable that the fiel intensity from the RF, transmitter as determined by means of electric inspection on-site, [a] is less than the level of compliance in each frequancy range [b]. There may be interference near the equipment marked with the following symbol: 

NOTE 1 At 80MHz and 800MHz, the highest frequency range applies.

NOTE 2 These directives may not be applicable in every situation. The electromagnetic transmission is affected by the absorption and reflection of structures, objects and people.

a The field intensities set by the fixed transmitters, such as radio base stations, telephones (mobile phone, wireless) land mobile radio, amateur radio, AM and FM radio transmissions and TV transmissions can not be predicted with accuracy. Due to the RF fixed transmitters is recommended to install an electromagnetic inspection at the local in order to evaluate the electromagnetic environment. If at the place where the equipment is be using the field intensity level exceeds the conformity level for the RF above, is recommended to observe if the operations are normal. Whether abnormal operations are observed, additional procedures shall be necessary such as reorientation or replace the equipment.

b Whether above the frequency range of 150kHz to 80 MHz is recommended a field intensity below than 3 V/m.

Use of different cables, transducers and accessories from those specified may result in increased emissions or decreased immunity of the equipment.

TECHNICAL SPECIFICATIONS

Electromagnetic emissions

Guidelines and manufacturer's declaration - electromagnetic immunity			
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Immunity test	**ABNT Test level NBR IEC 60601**	**Level of compliance**	**Electromagnetic environment Directives**
Electrostatic discharge(ESD) IEC 6100-4-2	± 6 kV Contact ± 8 kV Air	± 6 kV Contact ± 8 kV Air	Floors should be wooden, concrete or ceramic. If the floor is covered with synthetic material, the relative humidity should be at least 30%
Quick electric transitory phases / train of pulses ("Burst") IEC 61000-4-4	± 2 kV in power supply lines ± 1 kV in input / output lines	± 2 kV in power supply lines ± 1 kV in input / output lines	It is advisable that the quality of the power supply should be that of hospital or typical commercial environment
Surges IEC 61000-4-5	± 1 kV lines (s) to lines (s) ± 2kV lines (s) to ground	± 1 kV lines (s) to lines (s) ± 2kV lines (s) to ground	It is advisable that the quality of the power supply should be that of hospital or typical commercial environment
Reduction, interruption and variance of voltage in power supply input lines IEC 61000-4-11	< 5% Ut (>95% drop in Ut) for 0,5 cycle 40% Ut (60% drop in Ut) for 5 cycles 70% Ut (30% drop in Ut) for 25 cycles < 5%Ut (>95% drop in Ut) for 5s	< 5% Ut (>95% drop in Ut) for 0,5 cycles 40% Ut (60% drop in Ut) for 5 cycles 70% Ut (30% drop in Ut) for 25 cycles < 5% Ut (>95% drop in Ut) for 5s	The recommended power supply quality is the same as used for commercial or hospital environment. If is required a continuous use during energy supply outages, it is recommended that the equipment be feed by an uninterruptible power supply or a battery.
Magnetic field in frequency of power supply (50/60Hz) IEC 61000-4-8	3 A/m	0,3 A/m	If an image distortion occurs, may be necessary place the equiomento far from the supply frequency or to installa magnetic armour. The frequency magnetic field shall be measured at the installment place to assure that it is low enough.
NOTE Ut is the a.c. power supply voltage before the application of the test level			

List of pieces and circuit scheme

Gnatus Company declares that the supply of the circuit scheme, list of pieces or any other information that propitiate technical attendance for the user, can be request if there is an agreement between the user and Gnatus Company.

Content of accessible and non-accessible demarcations

INSTALLATION OF EQUIPMENT

The installation of this equipment requires specialized technical assistance (Gnatus).

OBS: These information also make part of the Manual of Installation and Maintenance of the equipment that can be found with the authorized Gnatus technician.

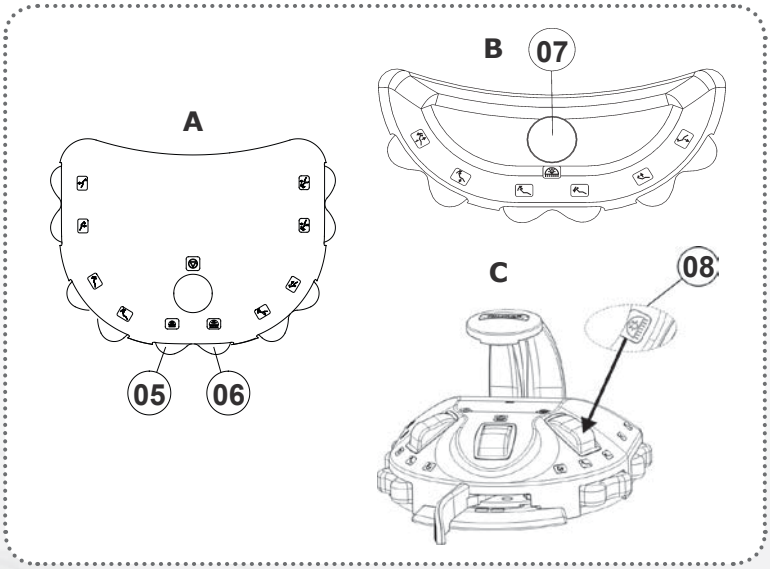
- This equipment shall only be able to be unpacked and installed by a Gnatus authorized technician, under penalty of losing the warranty, as only (s)he has the information, suitable tools and training required to execute this task.
- Gnatus bears no responsibility for damages or accidents caused by poor installation executed by a technician not authorized by Gnatus.
- Only after the equipment has been installed and duly tested by the authorized technician representing Gnatus, will it be ready to start work operations.

OPERATION OF EQUIPMENT

Driving the dental light with sensor head "by pedal"

To turn on or turn off the dental light, turn one of the buttons as shown bellow:

- For the 11 functions pedal, turn the keys (05) or (06), Figure A.
- For the 07 functions pedal, turn the key (07), Figure B.
- For the Chip Blower pedal, turn the key (08), Figure C.

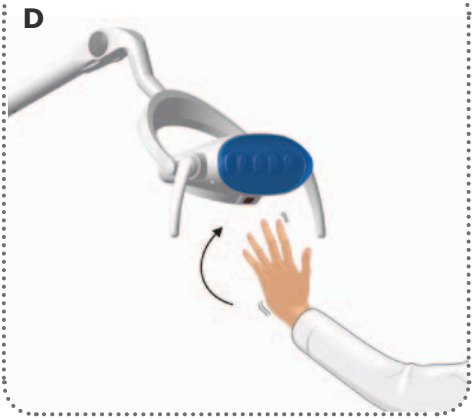


OPERATION OF EQUIPMENT

Dental Light activation through the "sensor" in the head

To turn on or turn off the dental light pass your hand close to the sensor at a maximum distance of 10 cm as shown below. It is necessary that the pedal key be connected as explained.

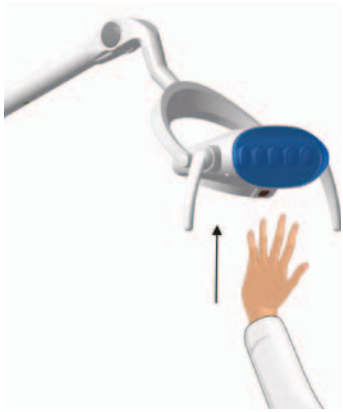
D



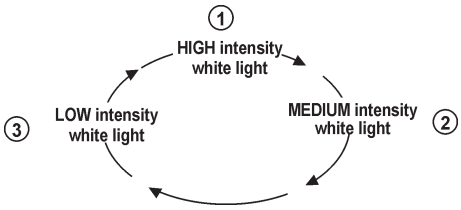
Dental light sensor brightness programming

Besides an on/off system the dental light sensor has a programming mode. With the dental light on stand your hand close to the sensor for 3 seconds (Figure D), a beep will trigger and the dental light will enter the programming mode, changing to the next level of brightness intensity. By passing the hand over the sensor, the dental light will change the light intensity as the following sequence: high intensity, medium intensity and low intensity. After choosing the intensity, wait for 5 seconds in order to save the command. A new beep will be emitted.

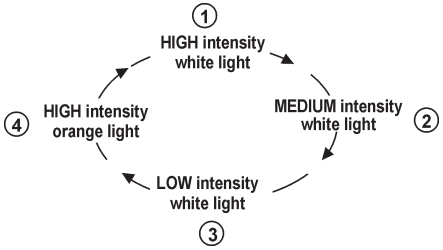
E



Brightness Sequence



Sequence for Dental Lights Models: 5 LED´s, / 3 LED´s.



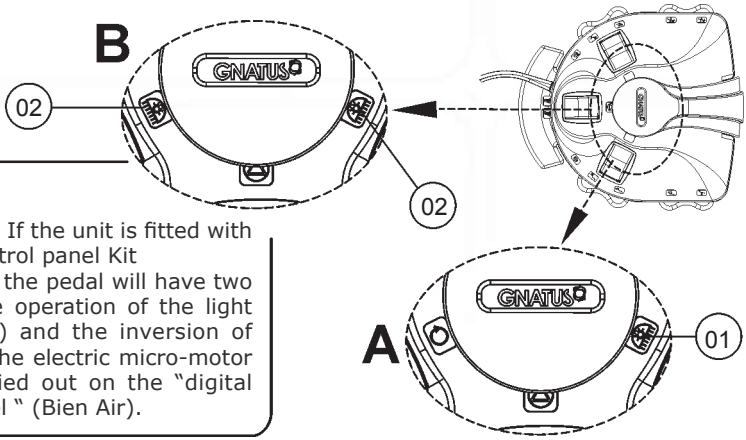
Sequence for Dental Lights Models: 5 (3x2) LED´s / 4 (2x2) LED´s

OPERATION OF EQUIPMENT

Activation of Sirius Dental Light 2,1 LEDs on chip blower integrated pedal

A This has a multifunctional key (01) for the operation of the light source.
To turn-on the Dental Light, press the button (01).
To turn-off, activate the button (01) again.

IMPORTANT:
The dental light 2 leds, can´t adjust its ilumination.

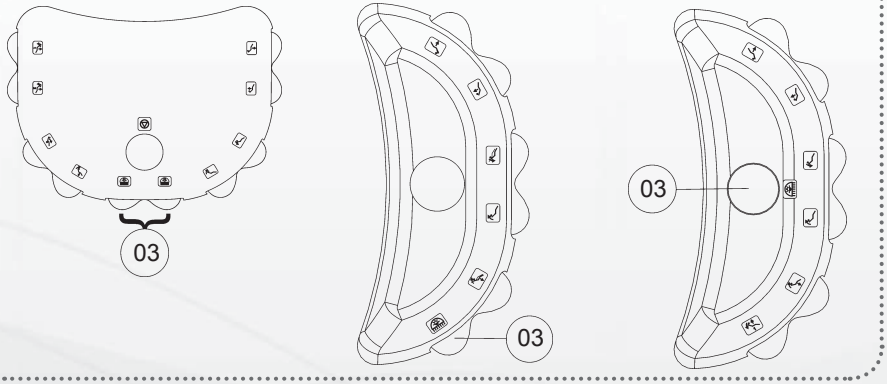


B

ATTENTION: If the unit is fitted with a digital control panel Kit
- (Bien Air), the pedal will have two keys for the operation of the light source, (02) and the inversion of rotation of the electric micro-motor will be carried out on the "digital control panel " (Bien Air).

How activate Sirius Dental Light 2,1 LEDs on foot control with 6, 7 and 11 functions

To turn-on the Dental Light, press the button (03).
To turn-off, activate the button (03) again.



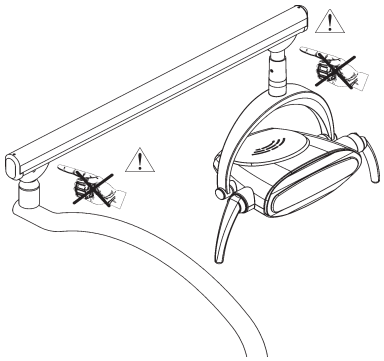
OPERATION OF EQUIPMENT

Movement of the headstock

The movement of the headstock is made through the knob, totally ergonomic designed to provide absolute isolation.

IMPORTANT:

Position the headstock 70cm of the operative field.



Warning

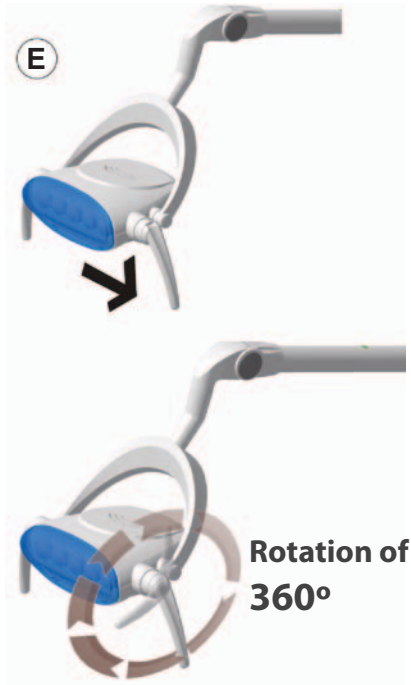
When handling the equipment, take care with the parts that could pinch fingers as illustrated.

Handle movement

Figure E.

The handle has a 360º movement to both directions, clockwise or counterclockwise.

By applying a slight effort, draw the handle, without completely disengaging it, perform the movement according to the desired need. Plug it again.



Attention:

Do not obstruct the LED dental light ventilation orifices.

PRECAUTIONS, RESTRICTIONS AND WARNINGS

Transportation, storage and operation

This equipment must be transported and stored observing the following directions:
- Avoid falls and impacts;
- Keep it dry, do not expose it to rain, water drops or wet floor;
- Keep it away from water and direct sunlight, and in it original wrapping;
- Don't move it over irregular surfaces, protect it from rain and observe the maximum stack quantity specified in the packaging;
- Transportation and storage temperature range: -12°C to 50°C.
- Ambient temperature range recommended by Gnatus +10 ° C to +35 ° C.

The Equipment maintains its condition of safety and efficacy, provided that it is maintained (stored) as mentioned in this instruction of use. Thus, the equipment will not lose or alter its physical and dimensional features.

Sensitivity to environmental conditions in normal situations of use

The equipment has been planned not to be sensitive to interference such as magnetic fields, external electrical factors, electrostatic discharge, pressure or variance of pressure, provided that the equipment is installed, maintained, clean, preserved, transported and operated as per this instruction for use.

Precautions and warnings "during the installation" of quipment

- The equipment should only be installed by Gnatus authorized technical assistance or technicians.
- Position the unit in a place where it will not get wet.
- Install the unit in a place where it will not be damaged by the pressure, temperature, humidity, direct sunlight, dust, salts, or sulfur compounds.
- The unit should not be submitted to inclination, excessive vibrations, or blows (including during transportation and handling).
- This equipment was not planned for use in an environment where vapors, anesthetic mixtures inflammable with air, or oxygen and nitrous oxide can be detected.
- Before the first use and/or after long interruptions from work such as vacations, clean and disinfect the equipment.

These information also make part of the Manual of Installation and Maintenance of the equipment that can be found with the authorized Gnatus technician.

PRECAUTIONS, RESTRICTIONS AND WARNINGS

Recommendations for the dental equipment maintenance

Your Gnatus equipment has been designed and developed according to the standards of modern techology. Similarly to other kinds of equipment, it requires special care, which is many times neglected due to several reasons and circunstances.

Therefore, here are some important reminders for your daily routine. Try to follow these simple rules, which will save you a lot of time and will avoid unnecessary expenses once they start making part of your working procedure.

Precautions and warnings "during the use" of equipment

- The equipment should only be operated by duly enabled and trained technicians (Dental Surgeons, Capacitated Professionals)
- If any maintenance should be required, only use services of the Gnatus Authorized Technical Assistance.
- The equipment has been manufactured to handle both continuous and intermittent operation; so follow the cycles described in these Instructions for Use.
- Although this equipment has been planned in accordance with the standards of electromagnetic compatibility, it can, in very extreme conditions, cause interference with other equipment. Do not use this equipment together with other devices very sensitive to interference or with devices which create high electromagnetic disturbance.
- Do not expose the plastic parts to contact with chemical substances, use in the routines of dental treatment, such as: acids, mercury, acrylic liquids, amalgams, etc.

Gnatus shall not be responsible for:

- Use of the equipment differing from that for which it is intended.
- Damages caused to the equipment, the professional and/or the patient by the incorrect installation and erroneous procedures of maintenance, differing from those described in these Instructions for use which come with the equipment or by the incorrect operation of it.

Precautions and warnings "after" the use of equipment

- Turn off the main switch of the dental set when it is not in use for an extended period of time.
- Always maintain the equipment clean for the next operation.
- Do not modify any part of the equipment. Do not disconnect the cable or other connections without need.
- After using the equipment, clean and disinfect all the parts which may be in contact with the patient.

Precautions and warnings during the "cleaning and disinfection" of equipment

- Before cleaning the equipment, turn off the main switch.
- Avoid spilling water or other liquids inside the equipment, which could cause short circuits.
- Do not use microabrasive material or steel wool when cleaning, or employ organic solvents or detergents which contain solvents such as ether, stain remover, gasoline etc.

PRECAUTIONS, RESTRICTIONS AND WARNINGS

Precautions in case of alteration in the functioning of equipment

- If the equipment has any abnormality, check if the problem is related to any item listed in the topic of unforeseen events (failures, causes and solutions). If it is not possible to resolve the problem, turn off the equipment, remove the power supply cable from the socket and contact your representative (Gnatus).

Precautions to be adopted against foreseeable or uncommon risks, related to the deactivation and abandoning of equipment

In order to avoid environmental contamination or undue use of the Equipment after it has become useless, it should be discarded in the suitable place (as per the local legislation of the country).

- Pay attention to the local legislation of the country for the conditions of installation and disposal of residue.

Additional procedures for reuse

The equipment can be reused in undetermined, i.e. unlimited, quantities, only needing to be cleaned and disinfected.

CORRECTIVE AND PREVENTIVE MAINTENANCE AND PRESERVATION

Cleaning and Disinfection

Important: In order to execute cleaning or any type of maintenance, ensure that the equipment is disconnected from the electrical network.

The cleaning procedure below should be executed at the start of the working day and after each patient.
Always turn off the main switch before executing the procedures of daily maintenance.

To clean the equipment, we recommend the use of "BactSpray **(Reg nº MS: 3.2079.0041.001-5)** or any other similar product: **Active component:** Benzalkonium chloride (tri-quaternary ammonium)

Solution 50%..... 0.329%

Chemical composition: Butyl Glycol, Decyl polyglucose, Sodium Benzoate, Sodium Nitrate, Essence, Deodorized Propane / Butane, demineralized Water.

For more information concerning cleaning procedures, see manufacturer's instructions.

NOTE: The registration at the Ministry of Health of the "BactSpray" is executed separately from the product described in this manual, as the "BactSpray" is not manufactured by Gnatus.

CORRECTIVE AND PREVENTIVE MAINTENANCE AND PRESERVATION

WARNING:

- In order to prevent risks and damages to equipment, make sure that the liquid does not enter into the unit.

- The application of other solvent-based cleaning products or sodium hypochloride isn't recommended, because they may damage the equipment.

Cleaning of the Protector and LED's

Applying a small amount of force, pull out the frontal visor "system click".

The cleaning of the frontal visor (03) and the LED's (02) must be done using just a damp flannel or cotton (dampened with water). Never use any chemical products to clean these parts, as they could cause stains.

NOTE: We recommend that the LED's are cleaned in "every 6 month" period.

Handles Cleaning

To take out the handles from the reflector (04), just pull them, as shown below. The cleaning of the handles must be done using only water and mild soap. For autoclaving, use the 134 °C cycle. The handles are designed to support more than 200 autoclave cycles.

⚠ - The piece must be properly cleaned to be packed.

Note: Use gloves and other systems of protection, during

CORRECTIVE AND PREVENTIVE MAINTENANCE AND PRESERVATION

Disinfection

Use clean and soft cloth dampened in alcohol 70% to disinfection of the equipment. Never use corrosive disinfectants or solvents.

Preventive Maintenance

The equipment should be calibrated routinely, as per the legislation in force in the country. But never with a period exceeding 3 years.

In order to protect your equipment, seek Gnatus technical assistance for periodic revisions of preventive maintenance.

Corrective Maintenance

If the equipment has any abnormality, check if the problem is related to any of the items listed in the item Unforeseen Events (situation, cause and solution).

If it is not possible to solve the problem, turn off the equipment, and request Gnatus technical assistance.

UNFORESEEN EVENTS – SOLUTION OF PROBLEMS

⚠ Upon coming across any problem in operation, follow the instructions below to check and repair the problem, and/or get in touch with your representative.

Problem	Probable cause	Solution
- The Dental Light does not turn on.	-Power failure. -Burnt fuse. - LED burnt out.	-Wait for power to return. -Turn off the chair from mains power and request a Technician presence. - Seek a GNATUS technician.
- Sensor does not drive.	- Pedal turned off. - Sensor burned; -Distance between hand position and sensor superior to 10 cm; -No energy; -Blown fuse; -Burned out LED.	-Turn on the pedal. -Request for Gnatus Technical Assistance. -Positioning hands up to 10 cm from the sensor; -Wait reestablishment of energy; -Turn off the chair from mains power and request a Technician presence. -Request for Gnatus Technical Assistance.

WARRANTY OF EQUIPMENT

This equipment is covered by the warranty terms counting from the date of installation, as specified below; provided that the defect has occurred in normal conditions of use and that the equipment has not remained stored for more than 06 months counting from the issue date of the sales document until the date of the actual installation.

- WARRANTY TERMS: Verify the guarantee certificate;
- LOSS OF THE WARRANTY:

A) Attempt to repair using an inadequate tool or by unauthorized technicians;
B) Installation of the equipment by an unauthorized technician;
C) Damage arising from inappropriate storage or signs of infringement;
D) Incorrect use of the equipment;
E) Use of a cleaning product not indicated by the factory;
F) Falls or blows which the equipment may undergo or lack of observation of an compliance with the guidelines of the Owner's Manual, which was delivered with the present document, together with the equipment. Repair or replacement of parts during the warranty period shall not extend the validity term of their warranty.

- This warranty doe snot exempt the customer from paying the service charge for the visit and the travel expenses of the technician, except when the customer sends the equipment to execute the maintenance inside the establishment of the technical assistance.

"Consumer Defense Code - art. 50, unique paragraph".

- The Warranty Certificate comes with the product and must be filled in upon the date of installation by the Gnatus Authorized Technician.
- Queries and information: GNATUS Help Desk (+55) 16 2102-5000.
- Check the warranty term attached to this manual.

FINAL CONSIDERATIONS

The most important aspect related to equipment care is that concerning spare parts.

To guarantee the life span of your equipment, use only ***original Gnatus spare parts***. They are sure to follow the technical specifications and standards required by Gnatus.

We must also point out to you our chain of authorized dealers. Only dealers that make part of this chain will be able to keep your equipment constantly new for they count on technical assistants who have been trained and on spedific tools for the correct maintenance of your equipment.

Doubts and information: GNATUS Call center (55-16) 2102-5000.

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Manufacturer/ Distribuitor:

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