Instructions for Use

PERFORMANCE

Olsen

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Important

The information contained in this document is for an Olsen product equipped with all available instruments and optional items.

Your Olsen equipment may not include all of the features listed here. The information contained in this document is intended as a guide to the use of each feature, and makes no guarantee as to its existence, technical characteristics in your equipment. The illustrations, technical information, and specifications in this publication were current at the time of printing. Olsen Indústria e Comércio S/A reserves the right at any time to revise, modify, discontinue or change any model of its products without notice. Such actions shall not create any obligation or liability for Olsen or the seller in relation to the customer. The total or partial reproduction of this publication, or of its illustrations, or translations, recordings, or photocopies thereof, by mechanical or electronic means, without the prior permission of Olsen Indústria e Comércio S/A, is prohibited.

Dear Customer

Congratulations on your excellent choice.

You have acquired an equipment of high technology and durability, developed and produced following the highest national and international quality standards to provide an excellent experience to the professional and to the patient.

So that you can use the equipment with safety, high performance, and avoid unforeseen events, we recommend that you read this manual carefully, familiarizing yourself with the functions and commands, and following the instructions, recommendations, warnings, and cautions contained in the document. This way, your experience will be even more pleasant and the equipment will perform at its highest performance, ensuring your safety and that of your patient.

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1. INTRODUCTION

This manual contains all technical information, descriptions and instructions for use, cleaning, daily care and safety necessary for the operation of the Dental Equipment.

The images used are for illustrative purposes and do not determine the configuration of models or the availability of items and accessories.

DOCUMENT

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EQUIPMENT

Technical name: Examination Chair
Trade name: Clinical Chair
Brand: Olsen
Models: Performance, Performance Black Edition, Performance Titanium.

MANUFACTURER

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All technical characteristics, information, functionalities and knowledge described refer to the status of the equipment at the time of publication of this manual. Our policy is one of continuous evolution and development, therefore we reserve the right to make any changes in the equipment and manual without prior notice. Such changes do not result in any right to retrofit existing products.

2. EQUIPMENT DESCRIPTION

2.1. Equipment

- Upholstery: Mounted on a rigid frame, covered with density-33 foam and lined with laminated PVC or leather, providing easy asepsis for the assembly.
- Mechanical Structure: Made in rolled steel SAE 1020 profiles and steel A36, welded by the MIG/MAG process, in order to guarantee resistance and durability to the set.
- Electrostatic Painting: It is applied to all structural metallic parts of the equipment. The paint is polyurethane based, giving the equipment a highly resistant coating.
- Fairings: Made of high-strength ABS with acrylic coating, the fairings do not require painting and allow for polishing.
- Mains electricity: The equipment can operate in 50 or 60 Hz frequencies and can be configured by an authorized technician for connection in 118/127/220/230 V voltages. The maximum supply voltage for internal components is 24 V. The electrical system has an On/Off switch and protection fuses.
- Motors: All motors used in the equipment are produced by Robert Bosch from Brazil and present differentials such as low noise, absence of oil reservoir, uniformity in displacement, reduction of energy consumption and low maintenance cost. The engines also have a protection system that acts in the mechanical and electrical parts of the set.
- Instrument Holders: Made of ABS, they have reeds to activate the support valve, which stops the instrument's operation when it is placed in its respective support.

2.2. Operating Principles

The chair performs movements individually and independently through gear motors that convert electrical energy into mechanical movements, adjusted by foot control or hand control. The equipment may include optional accessories, such as an operating light for illumination, a water unit, and instruments such as a 3-way syringe and ejectors, as well as other accessories that enhance patient accommodation and support clinical procedures.

2.3. Intended Use

The clinical chair family is intended for patient accommodation for the performance of clinical, outpatient, oral-maxillofacial, and aesthetic procedures.

2.4. Intended User

The equipment must be operated only by duly qualified and trained professionals to perform clinical, outpatient, oral-maxillofacial, and aesthetic procedures in accordance with applicable local legislation, and who have full physical and cognitive capacity to carry out such practices.

2.5. Package Contents

The equipment is supplied in 1 reinforced cardboard package with a wooden base. The availability of items in the packages may change according to the customer's order. Optional items are supplied in individual packaging according to the chosen configuration. The contents present in the package include:

- **Chair Package:**
  - 1 Performance Chair;
  - 1 Quick Guide.
- **Options:**
  - 1 Operating Light;
  - 1 Water Unit.

2.6. Standard and Optional Features

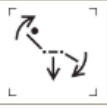
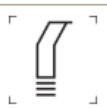
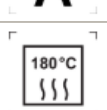
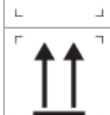
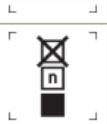
Legend	
Standard Item	●
Optional Item	○

Items	
Laminated Soft Upholstery	●
Foot Control	●
Hand Control	○
06 Work Positions (3 motors)	●
08 Work Positions (4 motors)	○
Headrest without Cutout	●
Headrest with Cutout	○
Auxiliary Pillow	●
Multi-Articulating Headrest	○
Interchangeable Armrests	●
Lateral Armrest Support	○
Padded Support for Legs/Arms	○
Specimen Collection Armrest	○
IV Pole	○
Disposable Sheet Roll Holder	○
Diagnostic Focus Operating Light	○
LED Premium Operating Light	○
Dual Color Operating Light	○
VARI8 Operating Light	○
Auxiliary Tray	○
Water Unit	○
Venturi Ejector	○
Vortex Ejector	○
Vacuum Pump Ejector	○
Anti-Stress System	○
Battery System	○
Monitor Support	○

3. SYMBOLS AND WARNINGS

3.1. Symbols

The following symbols are used in the document and on product and packaging markings:

	**Patient chair tilt backward** ISO 7000-1809		**Patient chair tilt forward** ISO 7000-1810		**Footrest up** ISO 7000-1846
	**Footrest down** ISO 7000-1847		**Patient chair up** ISO 7000-1807		**Patient chair down** ISO 7000-1808
	**Backrest up** ISO 7000-1816		**Backrest backward** ISO 7000-1815		**Automatic reset** ISO 7000-1849
	**Automatic set** ISO 7000-1848		**On/off (push-push)** IEC 60417-5010		**Foot-operated switch** IEC 60417-5114
	**Dental operating light** ISO 7000-1822		**Bowl flush** ISO 7000-1855		**Cup filler** ISO 7000-1854
	**Hand control valve** ISO 7000-1852		**Vibration** ISO 60417-6019		**Multifunction handpiece (air-water)** ISO 7000-1837
	**Saliva ejector** ISO 7000-1829		**High-volume evacuator handpiece** ISO 7000-1831		**Consult instructions for use** ISO 7000-1641
	**General mandatory action sign** ISO 7010-M001		**Refer to instruction manual/booklet** ISO 7010-M002		**Caution, consult accompanying documents** ISO 7000-0434A
	**General warning sign** ISO 7010-W001		**Warning; electricity** ISO 7010-W012		**General prohibition sign** ISO 7010-P001
	**No stepping on surface** ISO 7010-P019		**Alternating current** IEC 60417-5032		**Earth (ground)** IEC 60417-5017
	**Protective earth (ground)** IEC 60417-5019		**Type B applied part** IEC 60417-5840		**Manufacturer** ISO 7000-3082
	**Serial number** ISO 7000-2498		**Sterilizable up to the temperature specified** ISO 7000-1844		**Non-sterile** ISO 7000-2609
	**This way up** ISO 7000-0623		**Fragile, handle with care** ISO 7000-0621		**Stacking limit by number** ISO 7000-2403
	**Keep dry** ISO 7000-0626		**Keep away from sunlight** ISO 7000-0624		**Temperature limitation** ISO 7000-0632
	Humidity limitation ISO 7000-2620		**Level** ISO 7000-0159		**EU Authorized Representative** ISO 15223-1:2021/Amd 1:2025

3.2. Warnings, Notes and Cautions

Follow the instructions in the Installation section for the correct installation of the equipment.

Properly follow the operating instructions contained in the document. Incorrect use may bring safety risks and damage to the equipment that will not be covered by the warranty.

Clean the equipment properly according to the instructions in the Cleaning and Disinfection section.

Protect equipment from direct sunlight to prevent premature aging of equipment fairings.

Before starting daily activities in the office, check the compressor conditions and observe its operation until its first automatic shut-off. Then close the air reservoir drain.

Before using the equipment, perform daily checks and, when necessary, drain the moisture filters of the compressor and the equipment, such as: vapor drain, prophylaxis system filter, and compressed air line filter.

Inspect the external corrugated hoses of the equipment, positioning them to prevent crushing when executing the Return to Zero or Chair Down commands.

At the start of daily activities in the office, also check the autoclave.

To isolate the equipment from the electrical power supply, turn off the circuit breaker of the equipment's electrical power supply.

The interruption of any part of the equipment does not generate any unacceptable risk, as the equipment does not provide life support (it has no essential performance).

Prevent objects, equipment parts, or stool casters from resting on the hoses. This may cause damage to the equipment and impair its proper operation.

The power cord is exclusively for use with the Olsen equipment. Use of a component other than the one specified may compromise the electromagnetic emissions and immunity of the equipment.

Do not operate the equipment with water pressure, compressed air, or electrical voltage outside the specified ratings. This may result in loss of functionality. Equipment defects resulting from use outside its specifications will not be covered by the warranty.

This equipment must be operated only by duly qualified professionals, in accordance with applicable local regulations.

Do not replace electrical protection fuses while the equipment is powered on. Risk of electric shock!

Do not remove the equipment fairings. Risk of electric shock! Only an authorized Olsen technician may perform this type of procedure.

Do not operate the equipment with mechanical and/or electrical damage.

This equipment is contraindicated for any use or user other than those for which it is intended.

Do not install or use any electrical equipment on or near this equipment. If this is necessary, the equipment must be monitored to verify that it is operating normally in the configuration in which it will be used.

Do not perform the following procedures if there is any possibility of touching the patient, even inadvertently:
· Connection or disconnection of the equipment from the electrical power supply;
· Any repair or maintenance procedure;
· Cleaning and disinfection procedures.

3.2.1. Transport and Storage

It is recommended that the equipment be transported and stored using its original packaging.

Transport carefully, protecting the equipment from drops and impacts.

Protect from moisture, rain exposure, and direct contact with liquids.

Keep away from sunlight.

Do not exceed a maximum stacking height of 4 units.

Temperature range for transportation and storage: -12°C to +50°C.

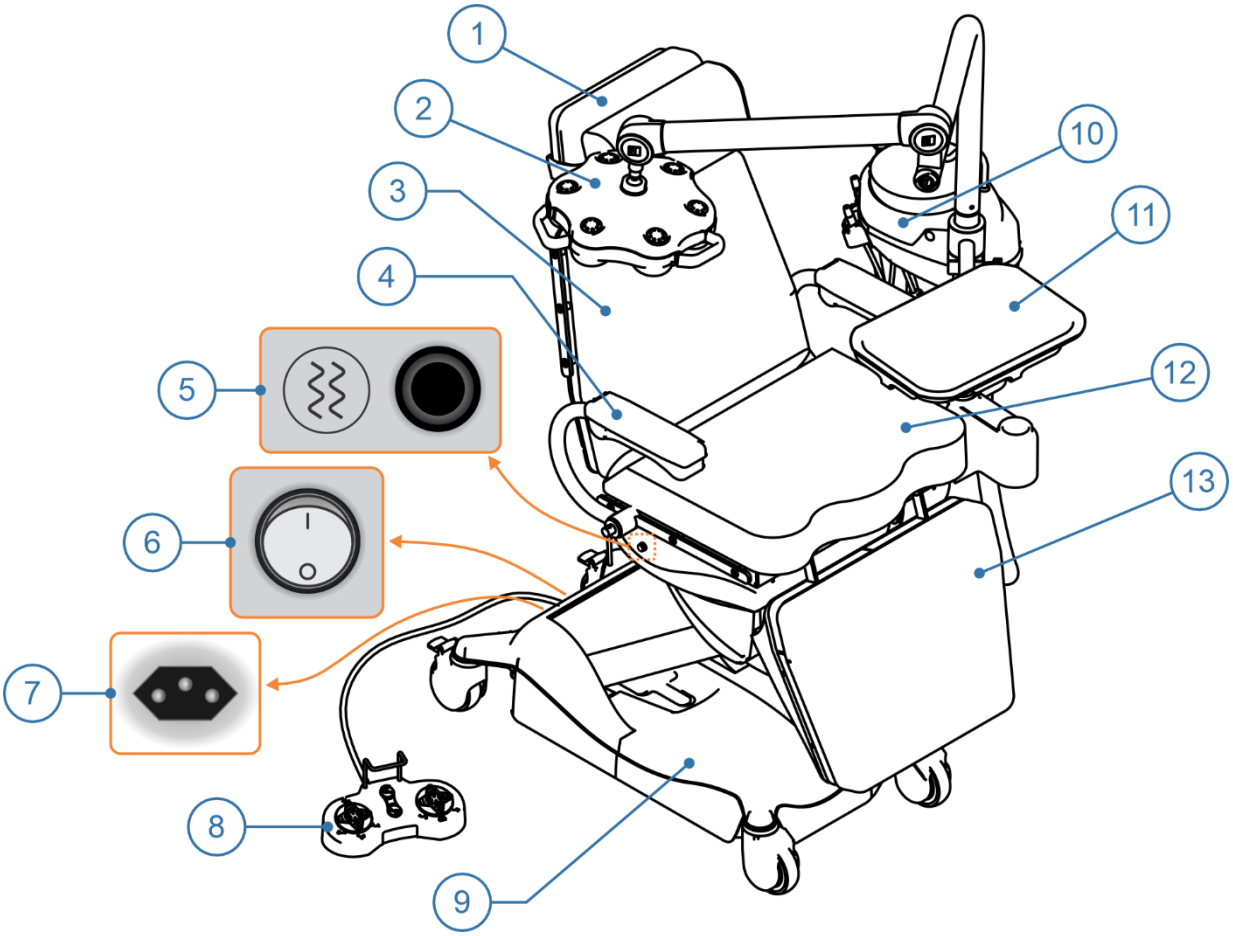
Humidity limits for transportation and storage: 20% to 70%.

Do not move or store the equipment on uneven surfaces.

Lift the chair by the base only.

Caution! Do not remove the product from its packaging outside the environment intended for use.

4. EQUIPMENT PARTS IDENTIFICATION



1. Headrest;
2. Operating light;
3. Backrest;
4. Armrest;
5. Anti-Stress Button;
6. On/Off Button;
7. Power cord;
8. Foot Control;
9. Chair base;
10. Water Unit;
11. Tray;
12. Seat;
13. Leg Rest.

5. TECHNICAL SPECIFICATIONS

5.1. Standard Classification of Equipment

Protection against electric shock:	
Class I Equipment - Type B	
Degree of Application Safety in the Presence of Flammable Anesthetic Mixture:	
Equipment not suitable for use in the presence of a flammable mixture with air, oxygen or nitrous oxide	
Use in an Oxygen-Rich Environment:	
Equipment not suitable for use in an oxygen-rich environment	
Operation Mode:	
Non-Continuous Chair: on 30 s, off 5 min; Anti-Stress: on 15 min, off 10 min; Cup Filler Water: on 4 s, off 5 min.	**Continuous** Bowl Flush Water and Operating light.
IP Protection	
Equipment: IPX0	Foot Control: IPX1

5.2. Environmental Requirements

Operating Environment	Temperature: Between 15 and 28° C
	Atmospheric Pressure: Between 75 and 106 kPa
	Humidity: Between 30 and 70% without condensation
Transport and Storage	Temperature: Between -12 and +50° C
	Atmospheric Pressure: Between 75 and 106 kPa
	Humidity: Between 20 and 70% non-condensing

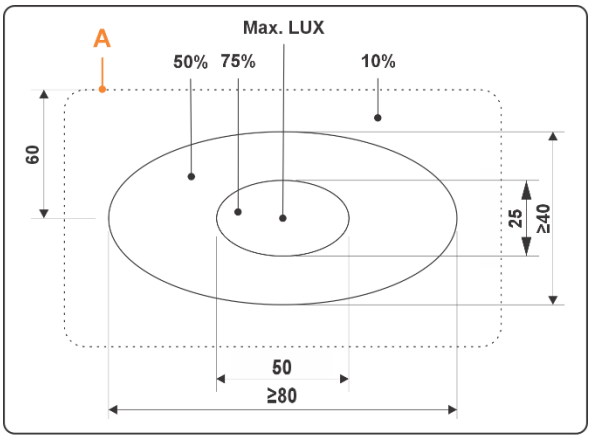
5.3. General Specifications

Nominal Voltage	118 / 127 V~	220 / 230 V~
Power	200 VA	250 VA
Fuse	5 A H	2,5 A H
Frequency	50 / 60 Hz	
Number of Phases	Single-phase	
Thermal Protection	Opens at 130°C (±3%)	
Power Cord	3x1,00 mm², 2P+T, 10A, 2 m	
Water Reservoir Capacity	1000 mL	
Safe Working Load	Patient 150 kg	
	Patient + Accessories: 157,5 kg	
Net Weight	180 kg	
Gross Weight	230 kg	
Connection Sizes	Electrical: Flexible Conduit ¾"	
	Air: Flexible Conduit ¾"	
	Water: Rigid Solderable PVC Pipe Ø25 mm, with L/R 25×½" termination	
	Drain: DN Ø40 mm	
Internal Hose Colors	Blue: air	
	Green: water	
	Clear: drain	

5.3.1. Operating Light

Model	Illumination	Color Temperature	Compatibility with restorative materials	Illumination level at the point A
Diagnostic Focus	20000 LUX	5000 K *	NA	NA
LED Premium	8000 - 30000 LUX	5000 K *	NA	~220 LUX
Dual Color	7000 - 30000 LUX	3500 / 5500 K *	3500 K	~200 LUX
VARI8	6000 - 41000 LUX	2000 K, 4000 K, 4500 K, 5000 K, 6000 K *	2000 K	~200 LUX

*The color temperature may vary slightly due to the variation in operating light intensity.



Illumination Pattern

5.4. Applied Parts

- Upholstery (armrests, backrest, seat, and leg rest).

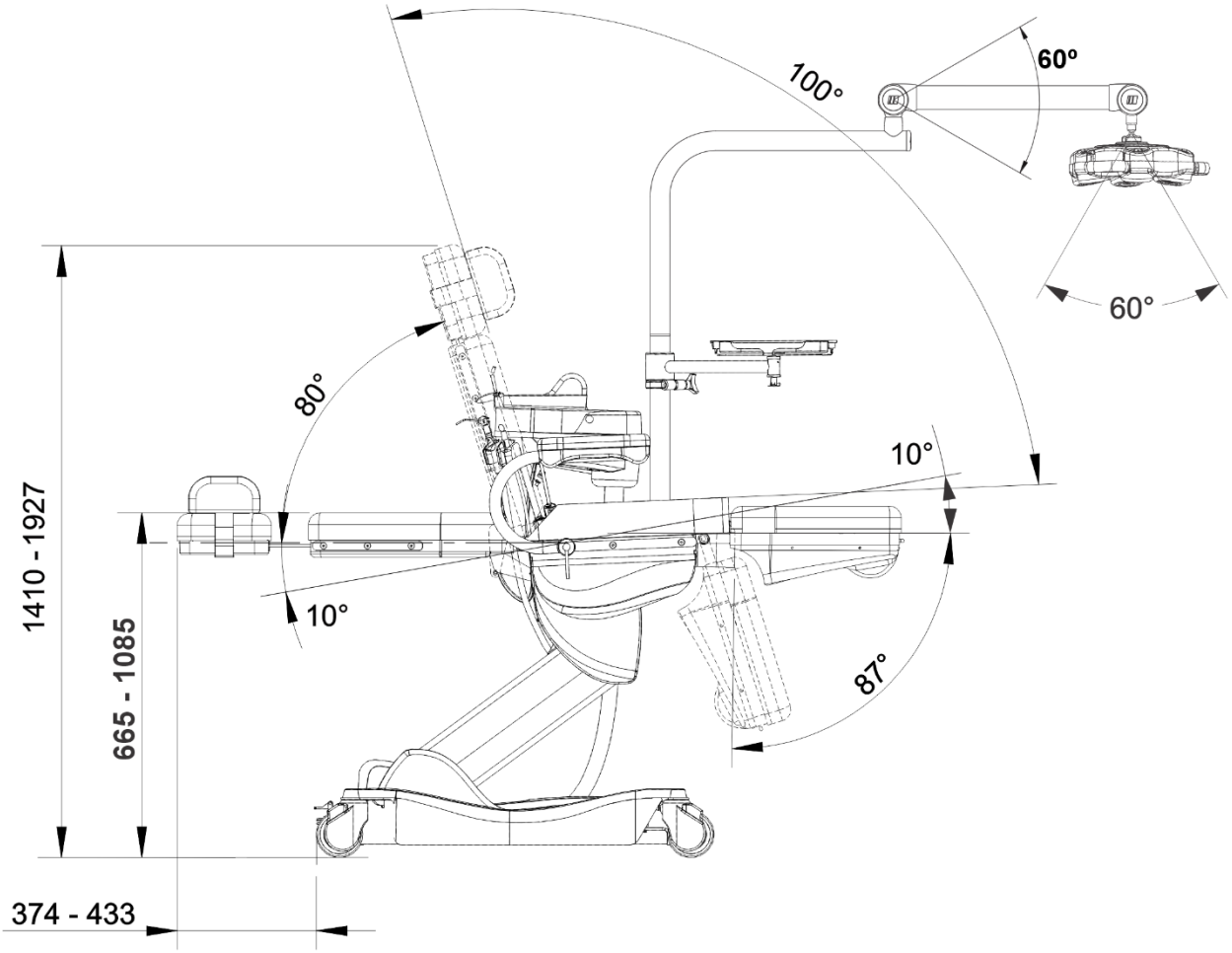
5.5. Detachable Parts

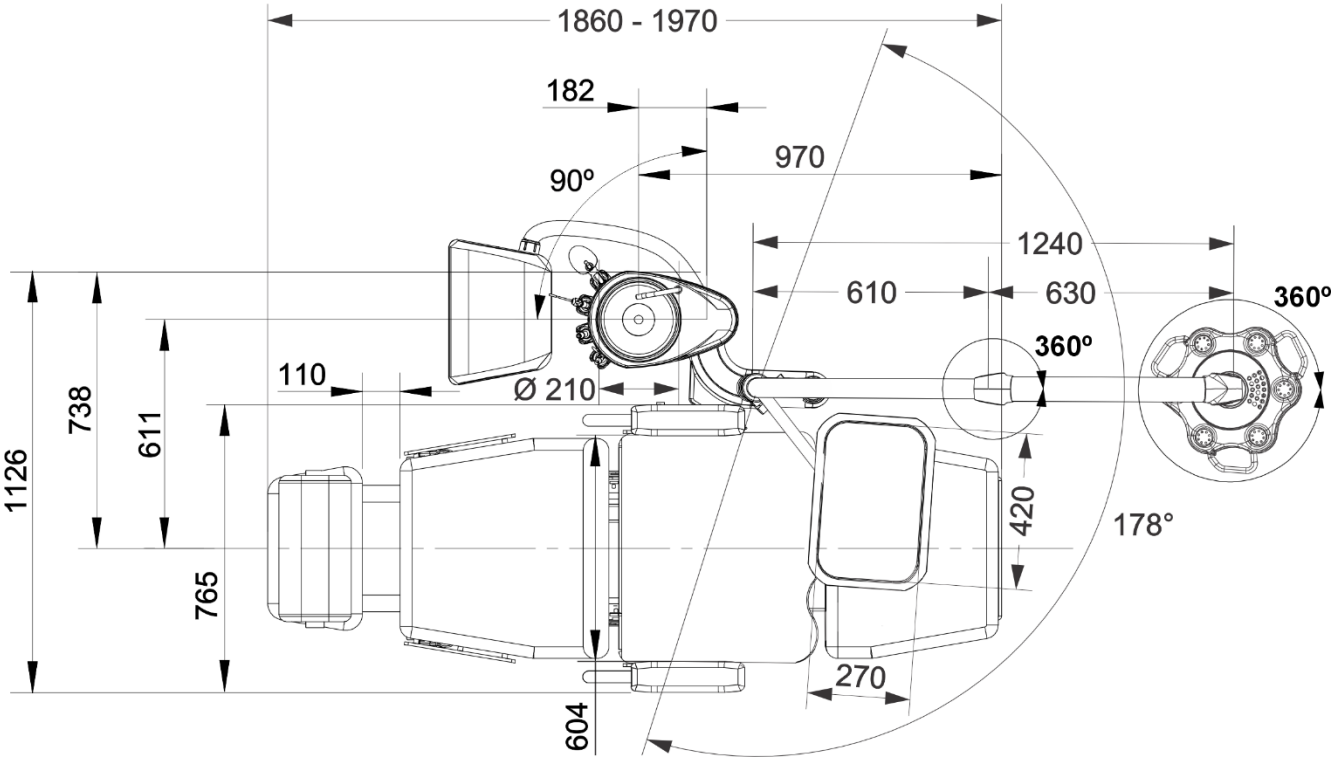
- Headrest;
- Auxiliary pillow;
- Bowl;
- Bowl water duct;
- Cup holder water duct;
- LED Premium, Dual Color, and VARI8 Operating Light handles;
- Ejector connector;
- 3-Way Syringe tip;
- Auxiliary Pillow;
- Interchangeable Armrests;
- Lateral Armrest Support;
- Padded Support for Legs/Arms;
- Specimen Collection Armrest;
- IV Pole;
- Stainless Steel Tray(s);
- Water Reservoir.

5.6. Dimensional

The dimensions below meet all models.

Measures in millimeters.



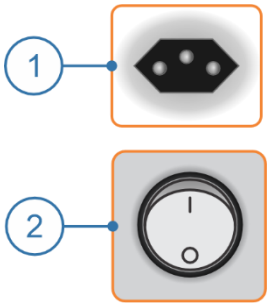


6. CHAIR OPERATING INSTRUCTIONS

6.1. Audible Alerts

The equipment's audible alerts are interpreted according to the table below:

Audible Alert	Definition
1 short beep and 1 long beep	• When powering on the equipment;
1 short beep	• When pressing the Work Position command; • When pressing the command to turn on the operating light; • When touching the VARI8 Operating Light buttons; • When reaching the minimum and maximum illumination limits of the Dual Color and VARI8 Operating Light. • Selection of the 1st anti-stress vibration stage (light vibration).
2 short beeps	• When selecting work position; • When pressing the Return to Zero command; • When reaching the minimum and maximum illumination limits of the LED Premium Operating Light. • Selection of the 2nd anti-stress vibration stage (medium vibration).
3 short beeps	• Cancellation of continuous or automatic movements; • End of the time allowed for selecting or saving a work position. • Selection of the 3rd anti-stress vibration stage (strong vibration).
2 long beeps	• Interval for saving a work position.
1 continuous beep	• Anti-Entrapment System activated.



6.2. Before Turning On the Equipment

For models without a water unit, disregard steps B and C.

a) Verify that the equipment is properly installed, in accordance with the instructions in the Installation section;

b) Turn on the compressor that supplies the equipment;

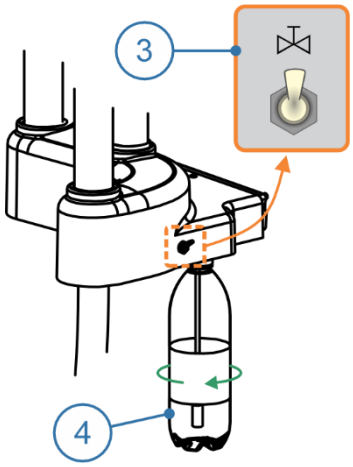
c) Open the water shut-off valve that supplies water to the equipment;

d) Connect the power cord **(1)** to the dedicated power outlet for exclusive use with the equipment;

e) Turn on the equipment's electrical power circuit breaker.

6.3. Turning On the Equipment

For models without a water unit, disregard steps B, C, D, and E.



a) Turn on the On/Off Button **(2)** located on the rear of the equipment base.

b) Press the Chair Up button on the foot control until the chair reaches its maximum height limit;

c) Close the Pressurization Valve **(3)** located on the rear of the unit;

d) Check whether the Water Reservoir **(4)** is full. If necessary, fill it with mineral or filtered water up to the level indicated on the reservoir and reattach it to the unit. If desired, low-concentration prophylactic products may be added;

e) Open the Pressurization Valve **(3)** and verify that the Water Reservoir **(4)** is properly attached and free of leaks;

f) Before beginning use of the equipment, verify the operation of all available instruments and controls, and perform cleaning and sterilization of instruments in accordance with the Cleaning and Disinfection section.

6.4. Patient, Operator, and Other Persons Positioning

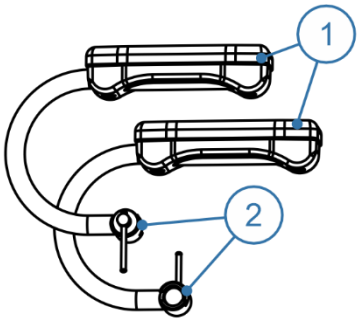
The patient should be seated on the seat, positioning their legs along the leg rest, with their back supported by the backrest and their forearms resting on the chair armrests or on their own body. The headrest may be adjusted as needed to accommodate different procedures and individual patient preferences.

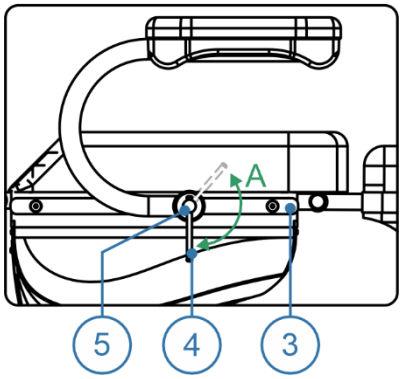
To ensure safe and proper patient positioning, the operator must instruct the patient to keep their hands within the operator's field of vision throughout all equipment movement.

The operator should position themselves near the leg rest area, observing the distance required to perform the procedures. When moving the seat and backrest, it is recommended that the operator maintain a minimum distance of 30 cm, avoiding positioning themselves along the movement path of these chair components.

Other persons must maintain a minimum distance of 50 cm from the equipment during backrest and seat movement.

The presence of the operator, other persons, or objects in the movement areas of the equipment and its components may cause damage to the equipment and/or impair its correct operation.



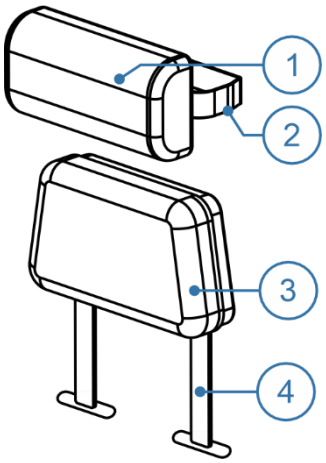


6.5. Armrest

The armrest **(1)** has adjustment rods **(2)** that allow displacement along the side rails **(3)** for depth adjustment. It may also be used to assist in the lateral restraint of the patient.

To adjust the armrest (1): pull the metal rod **(5)** counterclockwise to loosen it. Position the armrest **(1)** and turn the metal rod **(5)** clockwise to secure it to the rail.

The metal rod **(5)** moves only within the area indicated in the figure above. To turn the rod **(5)** clockwise, push it upward so that it passes through the shaft of the metal knob **(4)**, then turn it again.



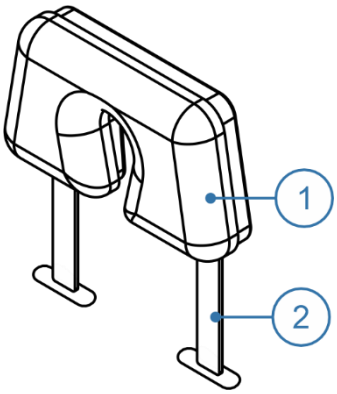
6.6. Headrest

The function of the headrest is to support the patient's head for the performance of intended procedures.

6.6.1. Headrest without Cutout and Auxiliary Pillow

Height adjustment: pull or push the headrest **(1)** away from or toward the backrest. Do not exceed a distance of 10 cm between the headrest and the backrest.

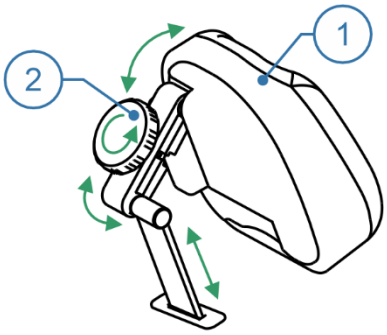
Auxiliary Pillow (3): the auxiliary pillow has elastic handles **(4)** to facilitate its use and cleaning.



6.6.2. Headrest with Cutout

The headrest with cutout allows the patient to be positioned in the prone position with a face recess.

Height adjustment: pull or push the headrest **(1)** away from or toward the backrest. Do not exceed a distance of 10 cm between the headrest and the backrest.



6.6.3. Multi-Articulating Headrest

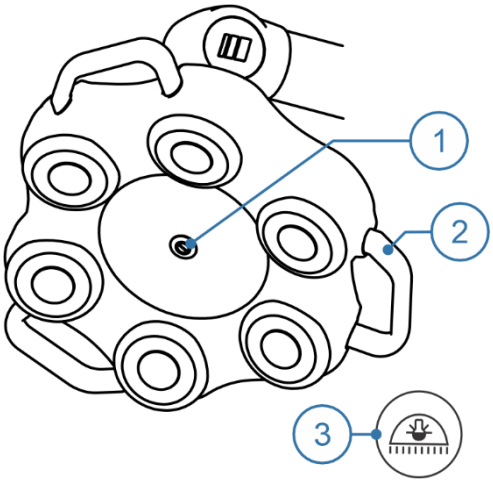
The Multi-Articulating Headrest **(1)** features two articulation axes. Position adjustment is performed manually using the Knob **(2)**.

Angle adjustment: turn the Knob **(2)** counterclockwise to loosen it. After placing it in the desired position, tighten the Knob **(2)** by turning it clockwise to lock it.

Height adjustment: pull or push the headrest away from or toward the backrest. Do not exceed a distance of 10 cm between the headrest and the backrest.

6.7. Operating Light

6.7.1. Diagnostic Focus

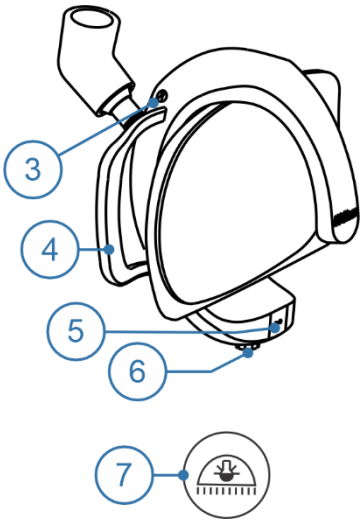


The diagnostic focus provides an intensity of 20,000 LUX generated by 6 LED focal points distributed to provide a wide illumination area.

Always move the operating light using the side handles (2). It is recommended that the side handles (2) be wrapped with disposable material to prevent cross-contamination and damage to the equipment fairings.

On/Off: press the Operating Light On/Off button on the Foot Control (3) or use the switch (1). The foot control command (3) operates only when the switch on the head unit (1) is turned on.

6.7.2. LED Premium



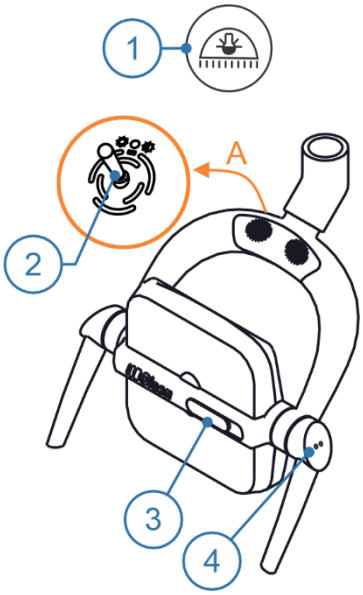
The LED Premium Operating Light features indirect illumination generated by LEDs housed in a sealed compartment, directed toward a multifaceted mirror. It has a proximity sensor (5) and a control button (6) on the head unit.

Always move the operating light using the side handles (4). The handles can be removed for cleaning by removing the Mounting Screws (3).

On/Off: press the Operating Light On/Off button on the Foot Control (7), or the Control Button (6), or pass your hand in front of the Sensor (5) at approximately 5 cm. The head unit controls are enabled only when the operating light button (7) is turned on.

Adjusting illumination intensity: hold your hand in front of the Sensor (5) or rotate the Control Button (6) until the operating light reaches the desired intensity.

On first use after turning on the equipment, to enable the Sensor and the Control Button, first press the Operating Light On/Off button on the Foot Control (7).



6.7.3. Dual Color

Operating light with indirect illumination through a multifaceted mirror, compatible with light-activated restorative materials, with gradual intensity control via a proximity sensor or a switch located on the rear of the operating light (A).

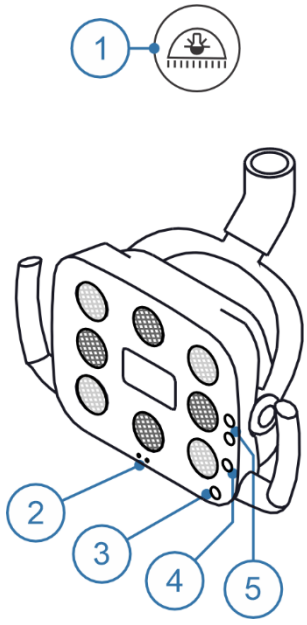
On/Off: press the Operating Light On/Off button on the Foot Control (1), or pass your hand in front of the Sensor (4) at approximately 5 cm, or slide the Switch (2) laterally to the right or left. The head unit controls are enabled only when the operating light button (1) is turned on.

Adjusting illumination intensity: hold your hand in front of the Sensor (4) at approximately 5 cm, or hold the Switch (2) laterally to the right or left, until the operating light reaches the desired intensity.

Color temperature adjustment: slide button (3) to the right (white light) or left (yellow light) to select the desired color.

Compatibility with light-activated materials: slide button (3) to the left, selecting yellow light.

Never perform procedures with light-activated restorative materials without first correctly adjusting the operating light settings. Use yellow light for procedures involving light-activated materials and white light for regular work procedures.



6.7.4. VARI8

Operating light with direct illumination through 8 LEDs (4 white and 4 orange), compatible with light-activated restorative materials, with gradual intensity control via touch-sensitive buttons or a proximity sensor.

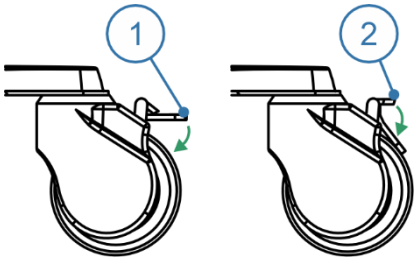
On/Off: press the Operating Light On/Off button on the Foot Control (1), or pass your hand in front of the Sensor (2) at approximately 5 cm, or touch button (3). The head unit controls are enabled only when the operating light button (1) is turned on.

Adjusting illumination intensity: hold your hand in front of the Sensor (2) at approximately 5 cm, or touch the plus or minus button (5) until the operating light reaches the desired intensity.

Color temperature adjustment: touch button (4) to change the color temperature cyclically (2000–4000–4500–5500–6000 K).

Compatibility with light-activated materials: touch button (4) until 2000 K (yellow light) is selected.

Never perform procedures with light-activated restorative materials without first correctly adjusting the operating light settings. Use yellow light for procedures involving light-activated materials and white light for regular work procedures.



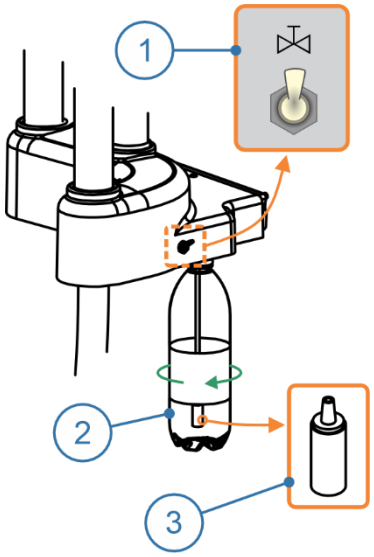
6.8. Casters with Locks

The rear caster locks can be engaged with the feet.

Locking the caster: press the lever (1) downward.

Releasing the caster lock: push the lever (2) downward.

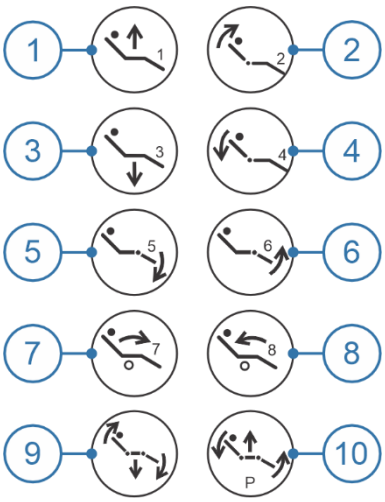
The locks must remain engaged during equipment operation. Disengage the locks only to move the equipment.



6.9. Unit

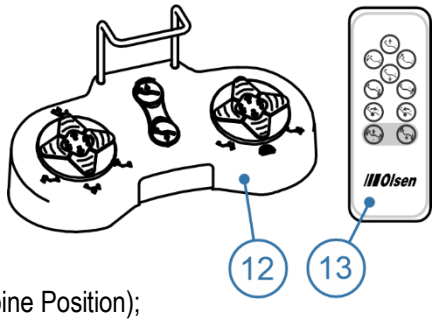
The unit is the lateral structure responsible for supporting the Water Unit, Operating Light, and other accessories.

The unit provides the Pressurization Valve (1) and the Water Reservoir (2) with a Solid Residue Filter (3) to prevent clogging in the instrument irrigation system.



6.10. Foot Control or Hand Control

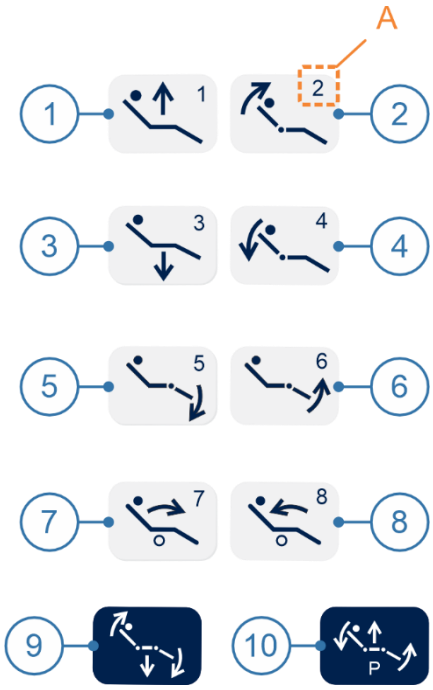
The Performance unit can be operated via foot control (12) or hand control (13). Both may feature 6 to 8 movement commands, in addition to the Return to Zero and Work Position commands.



Commands:

1 – Chair Up / Position 1;
2 – Backrest Up / Position 2;
3 – Chair Down / Position 3;
4 – Backrest Down / Position 4;
5 – Leg Rest Down / Position 5;
6 – Leg Rest Up / Position 6;
7 – Seat Tilt Forward / Position 7;
8 – Seat Tilt Backward / Position 8 (Flat / Supine Position);
9 – Return to Zero;
10 – Work Position.

The seat tilt commands (7 and 8) are optional and are not available on equipment with a water unit.



6.11. Moving the Chair

Use the movement buttons on the Foot Control to perform the operations described below.

Moving the backrest: press the Backrest Up (1) or Backrest Down (2) button until the desired position is reached.

Moving the seat: press the Chair Up (1) or Chair Down (3) button until the desired position is reached.

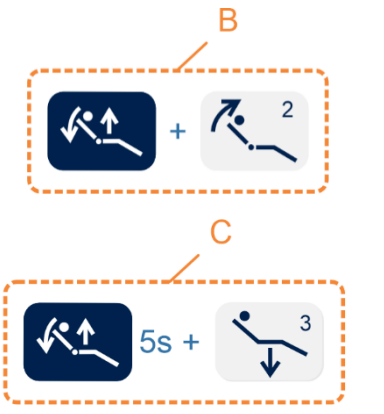
Moving the leg rest: press the Leg Rest Down (5) or Leg Rest Up (6) button until the desired position is reached.

Tilting the chair: press the Seat Tilt Forward (7) or Seat Tilt Backward (8) button until the desired position is reached.

Return to Zero and Spit Position: the Return to Zero command has 2 stages. Press the button (9) once for the Spit Position; the backrest will be set to 60° in relation to the floor, and the seat and leg rest will descend to the end of their travel.

Once the Spit Position movement is complete, press the button (9) once more to activate the Return to Zero position; the backrest will move to its highest position.

Work Position: to facilitate moving the backrest, seat, and leg rest to a specific position, 7 positions are available for activation. The Position number is indicated in the upper right corner of the movement buttons (A).



1. Executing a Work Position (B):
a) Press the Work Position button (10). The equipment will emit 1 short beep;
b) Press the desired Position button (1 to 8). The equipment will emit 2 beeps confirming the operation. The time allowed for position selection is 4 seconds. If no button is pressed within this period, the equipment cancels the operation.

2. Saving a Work Position (C):
a) Press the Return to Zero button (9);
b) Adjust the backrest to the desired position;
c) Adjust the seat to the desired position;
d) Adjust the leg rest to the desired position;
e) Press and hold the Work Position button (10) for 5 seconds. The equipment will enter recording mode for the next 2 seconds, emitting 2 long beeps. Select one of the Position buttons (1 to 7) to save the adjusted position within this interval. The equipment will emit 2 short beeps confirming that the position has been saved. Otherwise, the equipment will emit 3 short beeps, canceling the operation;

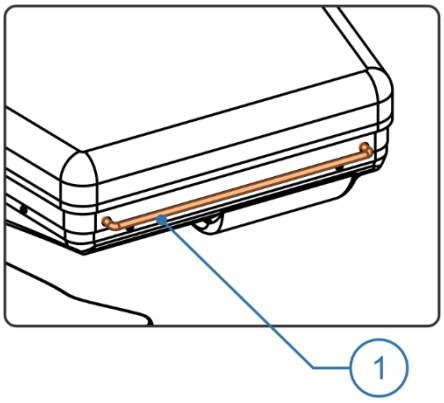
6.12. Flat/Supine Position

Position 8 (8) also allows activation of the flat/supine position, in which the equipment lowers the backrest to an angle of 180° relative to the seat and raises the leg rest to its maximum position.

Activating the flat/supine position: press the Work Position command followed immediately by Position 8 (8).

6.13. Emergency Position

The Backrest Down command at its maximum recline position provides cerebral irrigation by gravity. The maximum recline angle is -5° relative to horizontal.



6.14. Anti-Entrapment System

Installed at the end of the leg rest, the mechanical pressure sensor (1) acts to prevent accidents caused by the presence of any obstacle in the path of the leg rest movement.

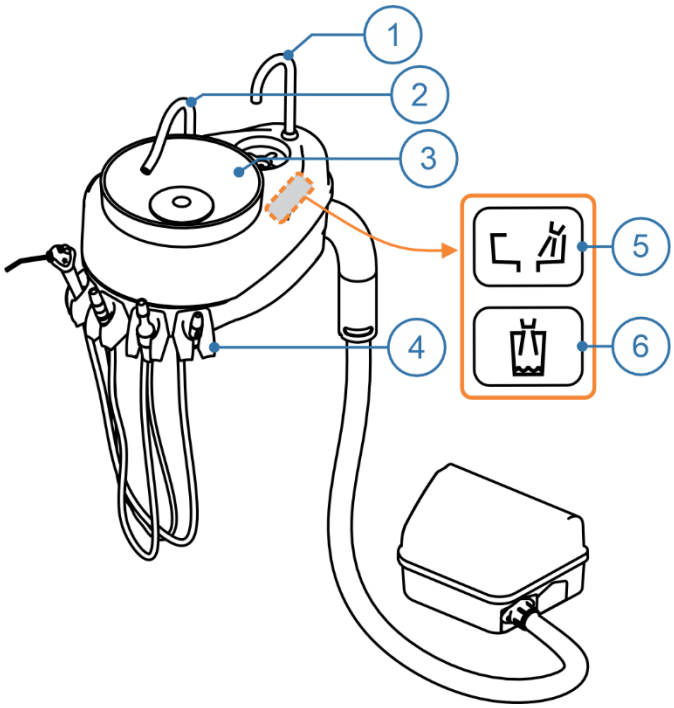
When the anti-entrapment sensor is activated, the equipment emits a continuous audible alert and blocks all equipment commands, except the Chair Up command. Raise the seat, then identify and remove the obstacle that triggered the sensor activation.

6.15. Movement Interruption

Chairs featuring automatic commands such as Work Position and Return to Zero will have their movement interrupted immediately upon execution of any movement command on the chair's foot control. When an automatic movement is canceled, the equipment emits 3 beeps.

If the operator identifies any situation that may pose a risk to the patient, the equipment movement must be interrupted immediately.

All automatic equipment movements must be supervised by the operator.



6.16. Water Unit

The primary function of the water unit is to provide a water supply point and drain connection to assist in the performance of procedures.

The water unit folds up to 90°, providing a Bowl (3) that can be easily removed for cleaning.

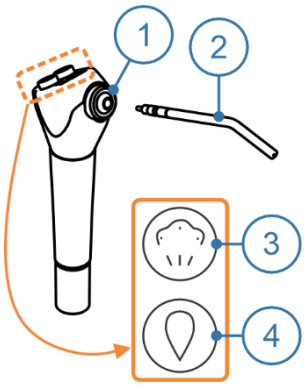
The Bowl Water Duct (2) and the Cup Holder Water Duct (1) are detachable to facilitate the unit cleaning process.

Water units may optionally be equipped with Instrument Holders (4). These are described in Chapter 7 of this document.

Activating bowl flush water: open the Bowl Flush Water valve (5).

Activating cup filler water: press the Cup Filler Water button (6).

7. INSTRUMENT OPERATING INSTRUCTIONS



7.1. 3-Way Syringe

Before beginning use of the 3-Way Syringe, connect the Syringe Tip (2) by pressing the Locking Ring (1) for correct engagement.

Air jet: press the air button (3).

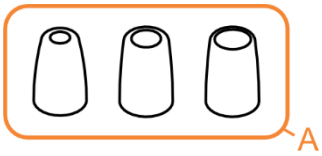
Water jet: press the water button (4).

Spray jet: press the air (3) and water (4) buttons simultaneously.

7.2. Ejector

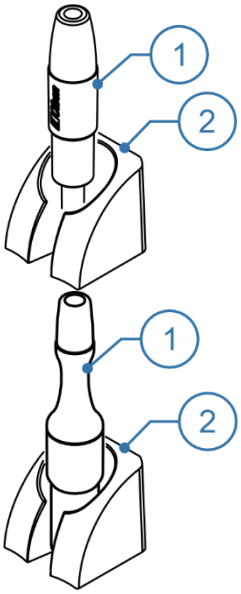
The ejector suction system is compatible with semi-dry operation.

A Quick-Release system that facilitates device removal for cleaning may be optionally applied to the Venturi and Vortex Ejector hose.



Adapters (A) allow coupling of Ø 6.3, 9.5, and 11 mm cannulas. Before beginning operation, fit the cannula into the Adapter. The Adapters are removable, facilitating replacement and cleaning.

Force required to insert/remove the cannula		
Cannula	Insert	Remove
Ø 6,3 mm	1 to 2,2 kgf	0,4 to 1,7 kgf
Ø 9,5 mm	0,9 to 1,8 kgf	0,3 to 1,2 kgf
Ø 11 mm	0,7 to 1,2 kgf	0,2 to 0,5 kgf

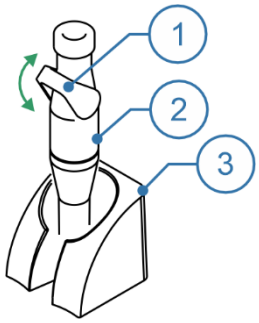


7.2.1. Venturi Ejector

Compatible with Ø 6.3 and 9.5 mm cannula adapters.
The Venturi device (1) uses compressed air from the compressor to generate suction.
Activating/Deactivating suction: remove the ejector from its holder (2) to activate, or replace it to deactivate.

7.2.2. Vortex Ejector

Compatible with Ø 6.3 and 9.5 mm cannula adapters.
Uses the Venturi system for suction; however, its volume capacity is greater, reaching up to 385 mmHg. The Vortex Ejector (1) may be used for suction in minor surgical and prophylaxis procedures.
Activating/Deactivating suction: remove the ejector from its holder (2) to activate, or replace it to deactivate.



7.2.3. Vacuum Pump Ejector

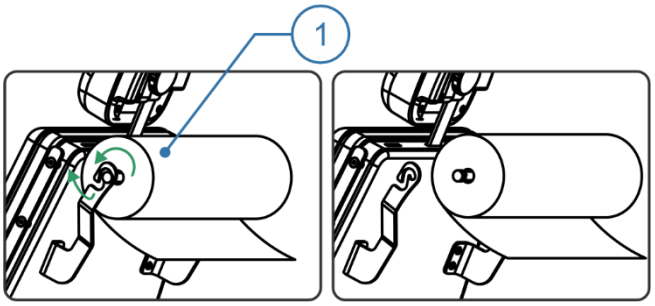
Compatible with Ø 11 mm cannulas.

Provides the use of a vacuum pump for suction in the assistant's module or water unit. The holder of this ejector is equipped with a device for automatic pump activation and shut-off. In addition, the ejectors feature suction flow control.

Activating/Deactivating suction: remove the ejector (2) from its holder (3) to activate, or replace it to deactivate.

Adjusting suction flow: to decrease or increase suction flow, move the ejector handle (1) closer to or farther from the instrument holder.

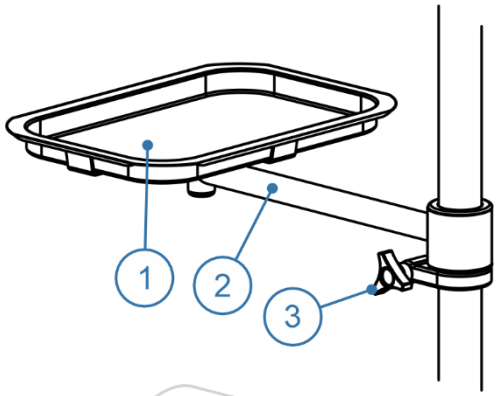
8. ACCESSORY OPERATING INSTRUCTIONS



8.1. Disposable Sheet Roll Holder

Positioned on the rear of the backrest, this holder accommodates rolls up to 100 mm in diameter.

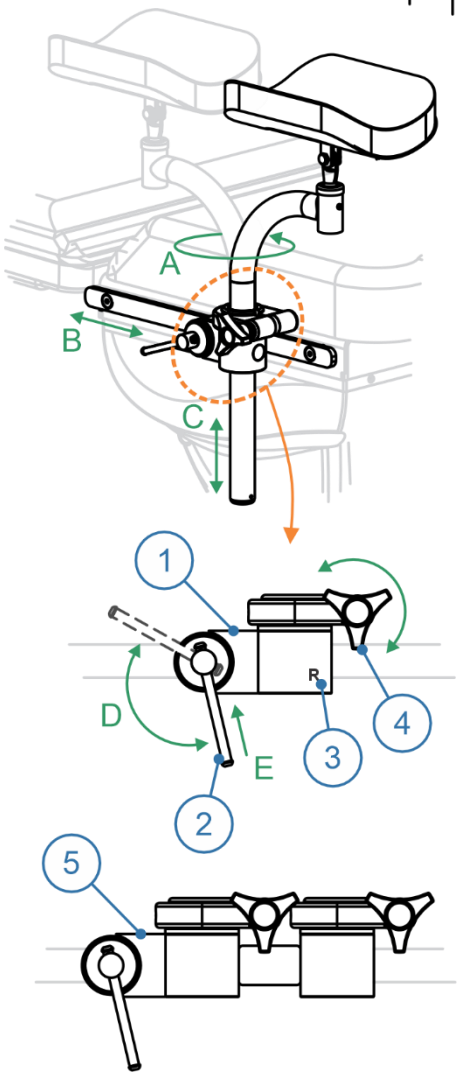
To place the sheet roll in the holder: rotate the holder shaft (1) counterclockwise, pulling it away from the backrest. It is not necessary to remove both ends of the shaft. Only one side needs to be removed to insert the disposable sheet roll.



8.2. Auxiliary Tray

Attached to the metal structure of the equipment, the auxiliary tray assembly remains stable while the table executes movements.

The tray (1) is made of stainless steel and may be autoclaved. To adjust the tray height, loosen the accessory holder knob (3), position the arm (2) at the desired height, and tighten the accessory holder knob (3). The tray also rotates freely on its axis and may be adjusted accordingly.



8.3. Left and Right Accessory Supports

Used to attach accessories to the side rails, the supports are identified according to the side of the chair on which they are to be installed. The right-side support is marked with the letter R and the left-side support with the letter L at the designated location (3). The accessory support may be single (1) or double (5).

To adjust the height (C) or rotation (A) of the accessory, turn the knob (4) counterclockwise. Adjust the accessory to the desired position and tighten the knob (5) by turning it clockwise.

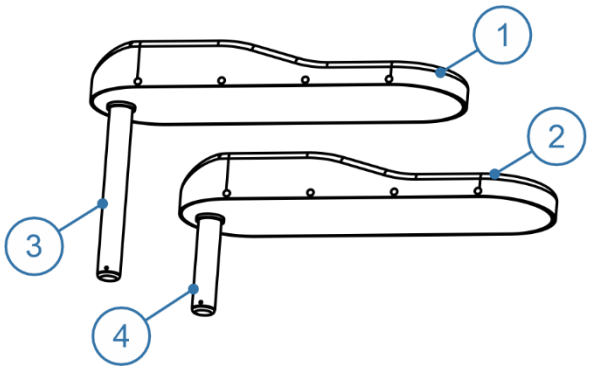
To adjust the position on the rails (B), pull the metal rod (2) counterclockwise to loosen the support on the side rail. Adjust the accessory to the desired position and turn the metal rod (2) clockwise.

Note the rotation area (D) of the metal rod (2) in the adjacent figure. To turn it clockwise, push it upward (E) so that the rod (2) passes through the shaft of the metal knob, then turn it again.

The accessories installed using the support are:

- Lateral Armrest Support / Specimen Collection Armrest;
- Padded Support for Legs/Arms;
- IV Pole.

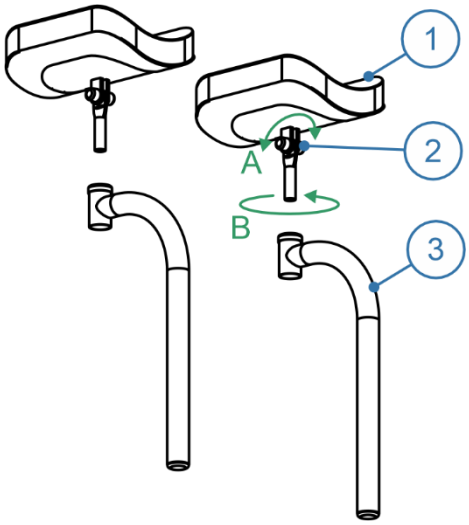
Through the left and right accessory supports, these accessories may be adjusted in height, depth, and rotation on the axis.



8.4. Lateral Armrest Support and Specimen Collection Armrest

Used to position the patient's arms for procedures on the hands or arms, as well as to facilitate intravenous medication administration or blood collection, the lateral armrest support (2) and the specimen collection armrest (1) feature a concave shape and are made of ABS for improved asepsis.

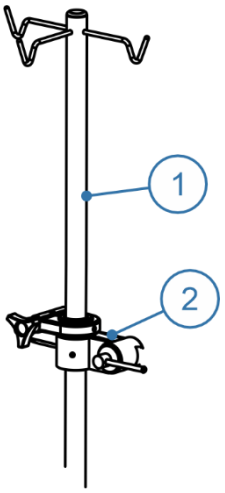
The lateral armrest support (2) has a 15 cm support rod (4), and the specimen collection armrest has a 36 cm rod (3).



8.5. Padded Support for Legs or Arms

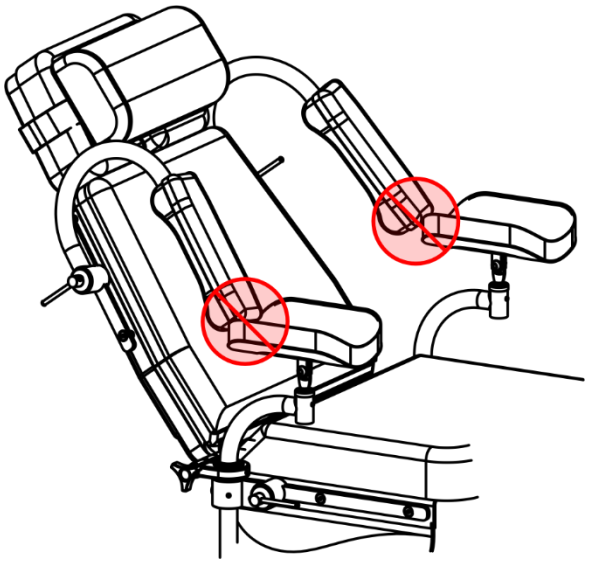
This support may be used for both leg and arm support. The upholstery (1) can be easily removed from the support (3) as it is snap-fitted, which allows rotation on the axis (B).

The axis features an articulation (2) that allows inclination adjustment (A) of the upholstery.



8.6. IV Pole

Applying the same concept of space optimization and functional diversification of the equipment, the IV pole (1) can be installed via the accessory support (2) on the side rails, both with height adjustment.

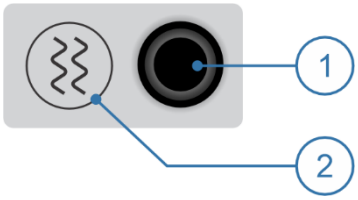


8.7. Accessory Interaction

The Performance unit allows treatment of patients in both reclined and seated positions. In each of these conditions, the installation of accessories on the side rails must be carefully observed to prevent damage to procedures and to the equipment, or discomfort to the patient.

When moving the equipment, ensure that the accessories do not collide with each other or with other elements of the equipment.

The positioning of accessories on the side rails must be carried out according to the requirements of each procedure; however, the interaction between accessories, particularly during equipment movement, is the sole responsibility of the equipment operator.



8.8. Anti-Stress System

A system designed to provide greater comfort to patients. It consists of four massagers positioned inside the upholstery to act on the lumbar and thigh regions.

Activated via button, these massagers enhance patient well-being during dental procedures.

Activating and Selecting Intensity: press and hold the On/Off button (1), identified by symbol (2) located on the right side of the seat structure. At each stage, a beep is emitted at approximately one-second intervals, indicating the intensity level:

- One beep: light vibration.
- Two beeps: medium vibration.
- Three beeps: strong vibration.

Release the button after hearing the beep corresponding to the desired intensity to begin operation.

Turning off: press the On/Off button (1) again quickly, without holding it down.

Automatic Shut-Off: the system will shut off automatically after 15 minutes of operation. A 10-minute off period must be observed to prevent overheating.

8.9. Maximum Capacities and Torques for Accessory Assembly

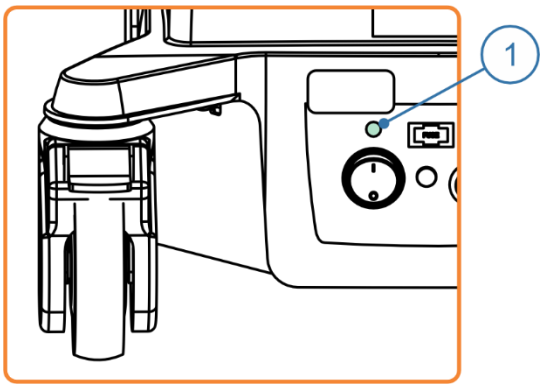
To ensure the safety and proper operation of the chair, observe the following specifications when installing accessories:

Accessory	Maximum Capacity	Assembly Torque	Removal Torque
Armrest	25 kg (each)	5 N·m	1.6 N·m
Disposable Sheet Roll Holder	1 kg (rolls ≤ Ø 100 mm)	0.5 N·m	0.5 N·m
Auxiliary Tray	2 kg	4 N·m	1.6 N·m
Accessory Support	30 kg (each)	4 N·m (knob) 5 N·m (rod)	1.6 N·m (knob) 5 N·m (rod)
Double Accessory Support	35 kg (each)	4 N·m (knob) 5 N·m (rod)	1.6 N·m (knob) 5 N·m (rod)
Lateral Armrest Support	25 kg (each)	–	–
Padded Support for Legs/Arms	30 kg (each)	–	–
IV Pole	3 kg (1 kg per hook)	–	–

Do not exceed the specified mass limits for each accessory. Overloading may compromise chair stability and cause accidents.

The accessory supports are intended exclusively for Olsen product line items. Do not install other items.

8.10. Emergency Battery



The emergency battery was developed exclusively for situations in which it is necessary to complete a procedure and there is no electrical power available from the supply network to power the equipment. It is activated automatically when a power outage occurs, or when the equipment is disconnected from the electrical network. In this case, the equipment emits the alert "Battery Mode."

The battery provides approximately 3 hours of operation, a period that may vary according to the number of commands executed by the equipment.

The LED (1) indicates the battery status according to the colors shown:

GREEN: battery ready for use (fully charged).

BLUE: battery in critical state. Connect the equipment to an energized electrical network as soon as possible. During battery charging, the blue LED will flash.

When the BLUE LED illuminates, all commands are blocked. Operation is only possible with the equipment connected to an energized electrical network. Upon reaching maximum battery charge, the LED turns green and unlocks the commands for operation in battery mode again.

Battery charge audible alerts:

The Performance unit uses the following audible alerts:

Battery Mode: equipment is not receiving external electrical power supply.

Low Battery: battery charge is below 50% and must be recharged. As long as the equipment is not connected to the electrical network, the alert repeats every 5 minutes.

Battery Discharged: battery charge at critical level. As long as the equipment is not connected to the electrical network, the alert repeats every 3 minutes. Under this condition, all commands are blocked.

Battery Full: when the battery reaches its maximum charge level.

9. CLEANING AND DISINFECTION

Turn off the equipment before beginning cleaning and disinfection.

The entire cleaning process must be carried out using appropriate protective gloves, as well as a mask and protective eyewear, in accordance with biosafety standards.

Cleaning and disinfection must be performed before each patient appointment and at the end of the working day.

Never use steel wool, abrasive sponges, and/or abrasive products, as these may damage the equipment components.

9.1. Barrier Technique

Whenever possible, use disposable barriers and replace them between patients. The barrier technique will ensure maximum long-term durability of the equipment surfaces and finishes.

9.2. Removable and Non-Removable Components

Plastic parts and painted parts must be cleaned with a damp cloth containing only neutral detergent, such as Prolystica® 2X Concentrate neutral detergent (STERIS CORPORATION), diluted according to the manufacturer's instructions until all visible soil is removed.
Disinfection may be performed with a clean cloth dampened with 0.52% hydrogen peroxide, such as OXIVIR TB EPA Reg. No. 70627-56.

9.3. Autoclave Sterilization

Do not apply any type of oil to items prior to autoclaving.

• Items that may be submitted to autoclave sterilization:

- Syringe tip.

a) Before autoclaving, clean the items, removing all organic residue from both the surface and internal ducts (if any). Then carefully dry each item, including internal ducts, applying compressed air if possible.
b) Individually package each item in sterile packaging appropriate for the autoclaving process.

- For sterilization, use a steam autoclave:
  - Syringe tip: 132°C, 4 minutes.
- The service life of the instruments and accessories mentioned is determined by wear and damage due to use or mechanical damage.

c) After completing the sterilization process, inspect the parts for tip wear or mechanical damage. In such occurrences, the parts must be discarded.

9.4. Water Reservoirs and Water Hoses

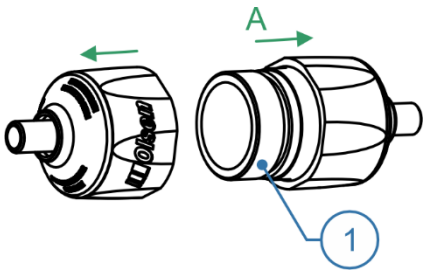
For cleaning and disinfection of water reservoirs and hoses, the use of a disinfectant based on 0.78% silver is recommended. To perform cleaning, follow the instructions provided by the product manufacturer.

Use the disinfectant in accordance with the manufacturer's recommendations.

9.5. Internal Suction Hose Cleaning

For internal cleaning of suction hoses for the Venturi, Vortex, and Vacuum Pump Ejectors, use an appropriate product with descaling action. Cleaning must be performed in accordance with the product's instructions for use.

Use the disinfectant in accordance with the manufacturer's recommendations.

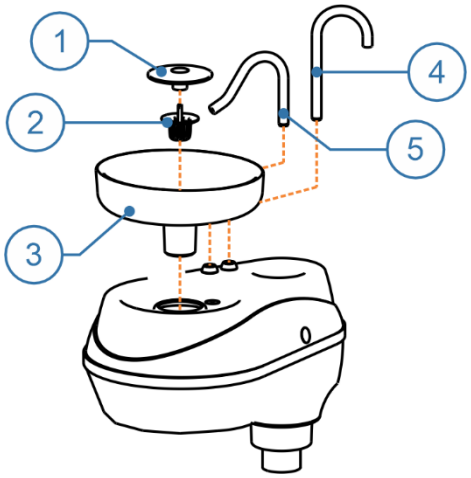


9.6. Filters

Debris separator filters must be cleaned daily. Suction efficiency may be compromised if this filter is obstructed. If a reduction in ejector performance is observed, clean the filters.

Hose filter cleaning:

a) Disengage the filter covers (A);
b) Remove the filter body (1) and proceed as described in the Cleaning and Disinfection – Removable Components section;
c) After cleaning, reassemble the assembly.



9.7. Water Unit

To remove the bowl (3) for cleaning, remove the bowl trim (1), the drain (2), and the detachable ducts (4 and 5), then remove the bowl (3).

Use forceps or gloves to remove the drain (2) to avoid contact with residue. For cleaning and disinfection, proceed as instructed in the Cleaning and Disinfection – Removable Components section.

9.8. Daily Procedure for Finalizing Operations

At the end of the working day, observe the following instructions:

- Clean the equipment by cleaning the ejectors, suction hoses, filters, water unit bowl, upholstery, fairings, and metal parts;
- Remove the syringe tip and proceed with sterilization;
- Execute the Return to Zero command and turn off the equipment On/Off switch;
- Organic residue, contaminated materials, and disposables must be disposed of properly in accordance with the requirements of the local health authority;
- Follow the instructions in the Cleaning and Disinfection section of this document for correct cleaning of the equipment and its parts.

10. INSTALLATION

This section covers the assembly of armrests, leg rests, backrest, and headrest installation, as well as the verification of compatibility between the electrical supply voltage and the equipment input voltage, and the necessary adjustment, if required, before connecting the equipment to the supply network.

Equipment installation must be performed by an authorized Olsen technician, who must record it in the equipment's operation guide. The technician will inspect the equipment to verify that it has maintained its integrity after transportation prior to use, completing the process by filling out the Check List for extended warranty and providing guidance on the operating mode, cleaning, and maintenance of the equipment.

We recommend that the equipment owner accompany the technician during this Check List procedure so that, if necessary, the items required to ensure correct equipment installation can be provided.

10.1. General Installation Precautions

Only the Technical Assistant authorized by Olsen may unpack and install the product.

To access the Olsen Authorized Technical Service Network for installation and maintenance, visit our website at www.olsen.odo.br or contact us by phone at +55 48 2106 6000.

Installation or maintenance performed by personnel not authorized by Olsen will result in loss of the product warranty.

This equipment was not designed to be installed or operated in a surgical suite.

Equipment not suitable for use in the presence of a flammable mixture with air, oxygen, or nitrous oxide.

Equipment not suitable for use in an oxygen-enriched environment.

10.2. Pre-Installation

Pre-installation consists of preparing the environment for equipment installation. This stage must be guided by an authorized Olsen service center to ensure that the installation environment is suitable for the new equipment. During this stage, all water, compressed air, drain, and electrical supply conduits must be prepared, accounting for the final positioning of the equipment and its accessories.

10.3. Equipment Positioning

The positioning of the equipment and its supply connections must comply with the measurements specified in the Installation Template, provided by Olsen in digital format along with the order confirmation for your equipment.

10.4. Compressed Air Piping

The use of braided hose specifically rated for compressed air is recommended, as indicated below:

- Up to 10 m: use ¼" hose;
- From 10 to 20 m: use 5/16" hose;

Do not use hoses for installations where the distance of the connecting piping between the compressor and the equipment exceeds 20 meters. In such cases, it is recommended that a specialist be consulted for correct sizing of the compressor and the type of piping to be used.

The compressed air shut-off valve must be easily accessible and located near the equipment.

10.5. Compressed Air

The quality of the compressed air used must comply with applicable national or international standards.

The air supplied to the equipment must meet the following requirements:

Compressed Air System	
Reservoir capacity	≥ 30 L
Air type	Oil-free (Class 0 per ISO 8573-1)
Equipment Air Inlet Parameters	
Pressure limits	5.5 to 7.0 bar (80 to 100 PSI) dynamic operating pressure
Air flow rate	Minimum 150 Nl/min
Dew point	≤ –20°C (at atmospheric pressure)
Oil contamination	Maximum 0.5 mg/m³
Suspended particles	Maximum 100 particles/m³ (for sizes between 1 µm and 5 µm)

The use of a filter at the equipment inlet is strongly recommended to prevent the entry of moisture, particles, and other contaminants, which may not only cause problems in the equipment's pneumatic system but also compromise procedures and patient safety.

10.6. Water for the Water Unit

The water supply network must present the following characteristics:

- Working pressure: 1.0 to 4.0 bar (10 to 40 m WC);
- Flow limits: > 5 L/min;
- Water hardness: < 2.14 mmol/L (< 12° dH);
- pH limits: 6.5 to 8.5;
- Maximum particle size: < 100 µm;
- Water quality: water entering the system must be potable, in accordance with local regulations.

The water supply network must have a shut-off valve that is easily accessible and located near the equipment. In cases of low water pressure, it is recommended that a professional be consulted to evaluate the hydraulic network.

10.7. Water Sample Collection Point

Installation of a water sample collection point at, or near, the equipment water inlet is recommended. It consists of an outlet connection with a collection valve. Sampling and colony counting by a laboratory is recommended prior to equipment installation to ensure water quality and the absence of unacceptable microbial contamination. Microbial counts must comply with applicable local or national standards for potable water and must not exceed 500 CFU/mL under any circumstances. After installation, this procedure must be performed periodically, or in accordance with national requirements.

10.8. Particle Filters

This equipment is supplied with water and air filters for internal system protection.

We strongly recommend the installation of filters at the water and air inlets for protection of the entire system.

Recommended filters:

- Water filter: 100 µm;
- Air filter: 50 µm.

Specifications of the internal filters supplied:

- Water filter: 65 µm;
- Air filter: 40 µm.

10.9. Water for the Reservoir

The water used in the reservoir must be filtered and potable. The use of mineral water is recommended, which can be easily obtained at any store; however, tap water may also be used, provided it is filtered and boiled.

Contact with potable and filtered water presents no known risk to the operator or patient; however, the use of clean gloves is recommended when filling the reservoirs to prevent cross-contamination.

10.10. Drain Network

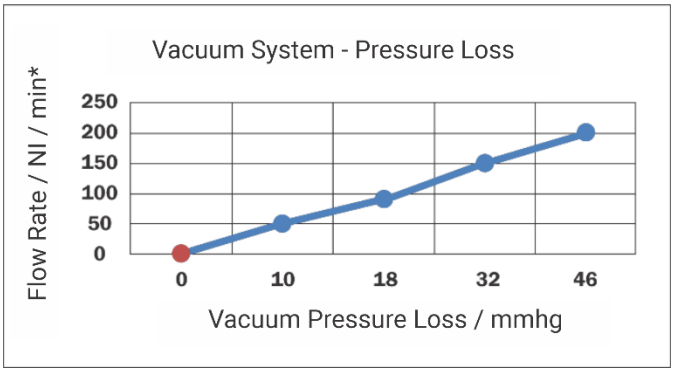
The drain network must have adequate hydraulic gradients, and its installation is preferably below floor level.

- Maximum drain network flow rate: 3.5 L/min;
- Nominal pipe diameter: Ø 40 mm;
- Minimum slope: 2°.

10.11. Vacuum Specifications

- Vacuum at the suction machine:
  - Min.: 50 mmHg;
  - Max.: 150 mmHg.
- Suction power:
  - Min.: 90 L/min;
  - Max.: 200 L/min.
- Type 2 suction system: medium flow rate.
- Filter mesh size: 1.2 mm.

*Pressure loss values above 200 Nl/min are not shown as they are well above the pressure values specified for this equipment.



If the vacuum exceeds 150 mmHg, installation of a vacuum limiter (not supplied by Olsen) is required.

10.12. Electrical Requirements

The electrical network must comply with applicable local electrical safety regulations, must feature single-phase wiring, a dedicated ground, and a 10 A / 30 mA RCD circuit breaker (applicable local standards). The circuit breaker must supply power exclusively to the equipment and must be easily and quickly accessible for disconnecting the equipment from the electrical network. If the electrical network presents voltage variation, installation of a voltage stabilizer is required.

Refer to the information below for electrical installation sizing:

Voltage (V)	Wire gauge (mm²)	Distance (m)	Current (A)
118 / 127 / 220 / 230	2,5	up to 20	5,0

All equipment leaves the factory configured for 220V. The voltage must be selected at the time of installation by an authorized technician.

Do not connect any other equipment to the dedicated electrical power supply of this equipment.

This equipment must be connected only to an electrical network with a protective ground. Risk of electric shock!

10.13. Check List

The following list is intended to provide important details related to the installation environment, supply conditions, and equipment installation:

- **a)** Did the equipment arrive as ordered and was it delivered in perfect condition?
- **b)** The supply voltage must be 118/127/220/230 V (according to the equipment's voltage selection) with a tolerance of ±10%. If the voltage was identified as exceeding the tolerance, was a voltage stabilizer installed for the equipment?
- **c)** Is the grounding, as well as the rest of the electrical installation, adequate for the correct operation of the equipment?
- **d)** Are the environmental conditions for equipment use being observed?
- **e)** Are the water and drain networks arranged in accordance with the Installation – Water for the Water Unit and Drain Network section of this document?
- **f)** Is the water supply pressure in accordance with the Installation – Water for the Water Unit section?
- **g)** Are the hydraulic connections in accordance with the Installation Template?
- **h)** Is the electrical network in compliance with applicable local electrical safety standards, with adequate wiring and grounding for the equipment as described in the Electrical Installation section?
- **i)** Is there an adequate circuit breaker for equipment protection, as described in the Electrical Installation section?
- **j)** Are the compressor and compressed air network in compliance with the Installation – Compressed Air and Compressed Air Piping section?
- **k)** Is there a filter with a vapor condenser in the compressed air piping for the equipment?
- **l)** Does the compressor turn on and off correctly during its operating cycles?
- **m)** Were the movements of the operating light and water unit arms verified?
- **n)** Does the operating light turn on and off correctly?
- **o)** Are all equipment commands operating correctly?

11. PREVENTIVE MAINTENANCE PLAN

To ensure full equipment operation and prevent potential issues, the equipment must undergo scheduled maintenance.

Olsen recommends that scheduled maintenance be performed every 6 months, even after the warranty period has expired.

Preventive or corrective maintenance performed by an authorized technician does not affect the equipment warranty period.

Hydropneumatic and electrical diagrams, installation instructions, parts lists, or other technical information required for installation and maintenance will be made available upon request via email at sat@olsen.odo.br or by phone at (48) 2106-6000.

Use only original Olsen parts and accessories. The use of non-original components may compromise equipment performance, increasing its emissions or reducing its electromagnetic immunity.

Only the Technical Assistant authorized by Olsen may replace the power cord and equipment fuses. Risk of electric shock!

The operator must not perform maintenance on the equipment.

Do not make adaptations, modifications, or alterations to the equipment or its components or accessories without the manufacturer's authorization.

Only the Technical Assistant authorized by Olsen may perform scheduled and/or corrective maintenance, under penalty of loss of warranty.

When performing preventive maintenance, the technician must record it in the Revision Log. During the revision, the technician will assess the general condition of the equipment, monitor component wear, and determine whether lubrication is required.

11.1. Troubleshooting Table

In case of doubt or identification of a problem with the equipment not mentioned in this chapter, immediately discontinue use of the equipment and contact the authorized Olsen service center.

Item	Problem	Causes	Solutions
1	Chair does not execute command	a) Equipment is not connected to the electrical network; b) Electrical network circuit breaker is off; c) Power outage; d) Protection fuse is blown.	a) Connect the equipment to the electrical network; b) Turn on the electrical network circuit breaker; c) Contact the electric utility company; d) Contact the authorized Olsen service center.
2	Chair does not save work position	a) Equipment is not connected to the electrical network; b) Recording command is incorrect; c) Electronic fault.	a) Check causes and solutions for item 1; b) Verify command in the operation guide; c) Contact the authorized Olsen service center.
3	Operating light does not turn on	a) Equipment is not connected to the electrical network; b) LED is burned out; c) Blown fuse or component failure.	a) Check causes and solutions for item 1; b) Contact the authorized Olsen service center; c) Contact the authorized Olsen service center.
4	Ejector is weak or loses suction during the procedure	a) Ejector filter is clogged; b) Insufficient air pressure to the equipment; c) Drain hose obstruction; d) Drain presents a clog; e) Blockage in the hydropneumatic system.	a) Clean the ejector filter; b) Open the air supply shut-off valve; c) Release kinked/crushed hose; d) Have the drain cleared; e) Contact the authorized Olsen service center.

11.2. Installation and Revision Log

For your records, register here the installation and scheduled revision dates for the equipment:

INSTALLATION

Service Order No.: _____

Date: _____

Technical Assist.: _____

Technician: _____

REVIEW - 6 MONTHS

Service Order No.: _____

Date: _____

Technical Assist.: _____

Technician: _____

12. DISPOSAL

Debris, residue, and infectious materials resulting from procedures performed on this equipment must be deposited in properly identified biological waste containers in accordance with current legislation.

For the appropriate disposal of this equipment and its components and accessories, we recommend that it be sent to companies specializing in recycling, to ensure the best destination for each component without environmental harm.

The disposal of this equipment and its components and accessories must be carried out in compliance with applicable local legislation.

13. ELECTROMAGNETIC COMPATIBILITY

The Chair requires special care regarding electromagnetic compatibility and must be installed and placed into operation in accordance with the electromagnetic compatibility information presented in this chapter.

Portable and mobile radio frequency (RF) communication equipment may affect the Chair.

The use of this equipment adjacent to other equipment must be avoided, as it may result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

Do not use accessories, transducers, internal component parts, or other cables other than those previously specified. The use of inappropriate components may result in increased emissions or decreased electromagnetic immunity, resulting in improper operation.

Portable RF communication equipment (including peripherals such as antenna cables and external antennas) should not be used within 30 cm of any part of the equipment, including cables specified by the manufacturer. Otherwise, degradation of this equipment's performance may occur.

The emission characteristics of this equipment make it suitable for use in industrial areas and hospitals (IEC/CISPR 11, Class A). If used in a residential environment (for which IEC/CISPR 11, Class B is normally required), this equipment may not provide adequate protection to radiofrequency communication services. The user may need to take mitigation measures, such as relocating or reorienting the equipment.

Guidance and Manufacturer's Declaration - Electromagnetic Emissions Test Levels According to IEC 60601-1-2			
The Olsen's Dental Units are intended for use in the electromagnetic environment specified below. The customer or the user of the Olsen's Dental Units should assure that it is used in such an environment.			
Emission Test	**Test Level**	**Compliance**	**Electromagnetic Environment – Guidance**
RF emissions IEC/CISPR 11	Group 1	Group 1	Dental Chairs use RF energy only for their internal functions. Therefore, its RF emissions are extremely low and are unlikely to cause any interference in nearby electronic equipment.
RF emissions IEC/CISPR 11	Class A	Class A	Dental Chairs are suitable for use in all establishments, except domestic ones and those directly connected to the public low voltage power supply network that powers buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	Class A	
Voltage fluctuation / Scintillation emissions IEC 61000-3-3	Class A	Class A	

Guidance and Manufacturer's Declaration - Electromagnetic Immunity			
The Olsen's Dental Units are intended for use in the electromagnetic environment specified below. The customer or the user of the Olsen's Dental Units should assure that it is used in such an environment.			
Phenomenon	**Basic EMC Standard or Test Method**	**Immunity Test Level**	**Compliance Level**
Electrostatic discharge	IEC 61000-4-2	± 8 KV contact	± 8 KV contact
		± 2 KV, ± 4 KV, ± 8 KV, ± 15 KV air	± 2 KV, ± 4 KV, ± 8 KV, ± 15 KV air
Radiated RF EM fields	IEC 61000-4-3	3 V / m 80 MHz - 2.7 GHz 80% AM at 1 kHz	3 V / m 80 MHz - 2.7 GHz 80% AM at 1 kHz
Fields in the vicinity from RF wireless communications equipment	IEC 61000-4-3	According to Table 9 of IEC 60601-1-2	According to Table 9 of IEC 60601-1-2

Electrical fast transients/bursts	IEC 61000-4-4	± 2 kV 100 kHz repetition frequency	± 2 kV 100 kHz repetition frequency
Surges line-to-line	IEC 61000-4-5	± 0.5 kV, ± 1 kV	± 0.5 kV, ± 1 kV
Surges line-to-ground	IEC 61000-4-5	± 0.5 kV, ± 1 kV, ± 2 kV	± 0.5 kV, ± 1 kV, ± 2 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz	3 V 0.15 MHz - 80 MHz 6 V in ISM bands between 0.15 MHz and 80 MHz 80% AM at 1 kHz
Magnetic fields at the stated feed frequency	IEC 61000-4-8	30 A/m 50 Hz or 60 Hz	30 A/m 50 Hz or 60 Hz
Voltage dips	IEC 61000-4-11	0% UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°	0% UT; 0,5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°
		0% UT; 1 cycle and 70% UT; 25/30 cycle Single phase: at 0°	0% UT; 1 cycle and 70% UT; 25/30 cycle Single phase: at 0°
Voltage interruptions	IEC 61000-4-11	0% UT; 250/300 cycles	0% UT; 250/300 cycles
Proximity magnetic fields	IEC 61000-4-39	According to Table 11 of IEC 60601-1-2	According to Table 11 of IEC 60601-1-2

NOTE 1: UT is the AC mains voltage before applying the test level.
NOTE 2: At 80 MHz and 800MHz, the higher frequency range is applicable.
NOTE 3: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Recommended separation distance according to transmitter frequency (Table 9, IEC 60601-1-2)

Test frequency (MHz)	Band (MHz)	Service	Modulation	Immunity Test Level (V/m)
385	380 -390	TETRA 400	Pulse modulation 18 Hz	27
450	430 - 470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	28
710 745 780	704 - 787	LTE Band 13, 17	Pulse modulation 217 Hz	9
810 870 930	800 - 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	28
1 720 1 845 1 970	1 700 - 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	28
2 450	2 400 - 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	28
5 240 5 500 5 785	5100 - 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9

Test levels for magnetic fields in proximity (Table 11, IEC 60601-1-2)

Test frequency	Modulation	Immunity test level (A/m)
134,2 kHz	Pulse modulation 2,1 kHz	65
13,56 MHz	Pulse modulation 50 kHz	7,5

14. ADVERSE EVENT NOTIFICATION

In the event of adverse events or technical complaints related to the product, Olsen Indústria e Comércio S/A must be notified through the following channels:

- **Olsen**: sac@olsen.odo.br or sat@olsen.odo.br

15. WARRANTY

DEAR CUSTOMER,

Congratulations on acquiring an Olsen product, a brand recognized for its durability and reliability. We are pleased to present the terms and conditions of our product warranties, for the peace of mind and security of all.

CLAUSE 1 – LEGAL WARRANTY

In accordance with local regulations, all Olsen products carry a 90-day legal warranty from the date of issuance of the Sales Invoice (SI).

During the legal warranty period, the following are covered: parts (see exclusions below), technical service, and technician travel.

CLAUSE 2 – EXTENSION OF THE LEGAL WARRANTY (CONDITIONAL)

Olsen may extend the warranty of its products for up to 1 year (after installation), provided the conditions described below are met. This additional warranty beyond the 90 days covers parts only, excluding labor and technician travel.

a) Dental equipment;

Must be installed by an authorized Olsen technician within 90 days of the issuance of the SI — in this case, the warranty period begins on the date of installation;

A revision must be performed by an authorized Olsen technician within 180 days after installation (with a tolerance of 10 days before or after);

Failure to perform the revision within 180 days of installation will result in suspension of the extended warranty, limiting coverage to 6 months of extended warranty only;

All technical service calls must be recorded on an Olsen service order, signed by both the technician and the customer;

b) Veterinary, medical, peripherals, and accessories lines;

1 year from the date of issuance of the SI.

CLAUSE 3 – WARRANTY INCLUSIONS

Proven manufacturing defects of the product;

Within the 90-day legal warranty — Parts, services, and travel;

Within the 6-month extended warranty (when applicable) — Parts only;

Within the 1-year extended warranty (when applicable) — Parts only

CLAUSE 4 - WARRANTY EXCLUSIONS

Failures or defects resulting from: misuse, negligence, recklessness, lack of technical knowledge, improper handling, failure to follow the instructions for use, lack of maintenance, absence of lubrication, failure to perform the cleaning procedures described in the product manual;

Operating light bulbs, operating light mirrors, and fuses;

Drops, impacts, improper transportation, and improper storage;

Acts of nature;

Installation of the dental chair in a location other than that specified in the Installation Service Order;

Incidents of any nature;

Application of chemical products not indicated in the product manual;

Alterations of any nature to the original characteristics of the product;

Use for purposes other than those for which the product is intended;

Contact of the equipment with materials (fabrics, leather, disposable gloves, paints, detergents, pigmented substances, sharp or piercing objects, etc.) that may alter its original characteristics;

Connection to an electrical network with voltage incompatible with the equipment's rated voltage and without adequate grounding;

Electrical, pneumatic, hydraulic, and drain infrastructure not in compliance with the owner's manual and applicable local standards;

Failure to follow the guidance and recommendations of technicians regarding maintenance needs.

CLAUSE 5 – THE WARRANTY SHALL EXPIRE OR BECOME VOID:

Upon the natural expiration of its validity period;

Due to alterations made to the equipment without written authorization from Olsen;

Due to tampering with the service order or incorrect completion thereof;

Due to installation, technical service, or scheduled revision performed by personnel not authorized by Olsen;

Due to the use of non-original Olsen replacement parts.

CLAUSE 6 – GENERAL CONDITIONS

The repair or replacement of parts during the warranty period shall not extend the original validity period of the warranty;

The right to claim apparent or easily identifiable defects expires 90 (ninety) days after the issuance of the Sales Invoice;

The customer is responsible for contacting the authorized technical service team for problem analysis and repair; Olsen makes available on its digital platforms all contacts for authorized technicians, for the customer's selection;

Warranty claims shall be handled through the Olsen authorized technician network; the customer is responsible for contacting them, and they will determine whether the warranty claim is valid or not (following the criteria set forth above);

Olsen products are registered with the relevant regulatory authorities and must comply with applicable regulatory requirements. Neither the customer nor Olsen is authorized to modify the equipment in a manner inconsistent with its regulatory registration;

The customer is responsible for all costs related to installation and scheduled revision of the product, as well as travel and accommodation expenses for the technicians involved in installation, scheduled revision, and maintenance service calls;

After verifying the services performed during installation and equipment revision, the customer must date and sign the service order provided by the technician and keep it together with the product purchase invoice, under penalty of losing the product's extended warranty when required;

To claim the warranty (after installation), the customer must present the product SI and a copy of the installation service order and scheduled revision orders (if already applicable within the time frame);

Technician travel: warranty service calls exceeding a 50 km radius are at the customer's expense;

The customer must request the service order for the installation and for all technical visits (including revisions for extended warranty purposes).

16. MESSAGE FROM THE PRESIDENT

Olsen and customers:

A successful relationship.

I have linked my name to the factory and to the dental and medical equipment that we today produce and sell in more than 100 countries, fully aware of my responsibilities and of the long-term return of this commitment.

Our equipment is modern, innovative, durable, and very low-cost to maintain. These qualities have been achieved through a competent and dedicated team, of which I am proud in every respect, committed to bringing our customers the best of our creative capacity.

The company will always be at the disposal of all those who have chosen Olsen products, for any and all information, technical support, and especially relevant feedback regarding our relationship, which we hope will always bring satisfaction, generating increasingly fruitful business for all.

Cesar Olsen

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