USER’S MANUAL
Modular Satellite plants in 1 or 2 liters
Dichiarazione CE di Conformità
CE Conformity Declaration

TIPO DELLA MACCHINA: Impianto modulare galvanico a 2 o 4 vasche da 1 e 2 litri
PRODUCT TYPE: 1 and 2 liters Modular Plating Plant with 2 or 4 Tanks

Modello/Model

Matricola/Serial Number: Anno di costruzione/Manufacturing year

Il sottoscritto Gianni Poliero Legale rappresentante dell’azienda LEGOR GROUP SpA

DICHIARA

sotto la sua esclusiva responsabilità, che la macchina, a cui la presente dichiarazione si riferisce, è conforme alle prescrizioni delle:

- 2006/95/CE, Direttiva Bassa tensione
- 2004/108/CE, Direttiva Compatibilità elettromagnetica
- 2002/95/CE, Direttiva ROHS

Bressanvido (Vicenza),

DECLARES

under his sole responsibility that the machine, to which this declaration relates, conforms to following standards:

- Directive 2006/95/EC, on Low voltage equipment
- Directive 2002/95/EC, on ROHS

LEGOR GROUP SpA
Legale Rappresentante / Legal Representative

[Signature]
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CHAPTER 1
GENERAL DESCRIPTION OF THE SATELLITE UNIT

1.1 OPERATING PRINCIPLES AND MAIN TECHNICAL CHARACTERISTICS

The Legor Group satellite units are so called because built for the galvanisation of goldsmith objects, costume jewellery, watch-making pieces and precision mechanics when connected with the primary module only as they use their rectifier.

Thanks to this new way of electroplating satellite unit concept, with the satellite units it is possible to extend the number of tanks of a primary pilot plant – which are built in two or four tanks respectively - when the latters are to these satellites connected.

Satellite units can be connected to a plating pilot primary module - plant through suitable interconnection ports in order to guarantee the whole work with the management of only one rectifier until a maximum of three supplementary satellite units connected.

The management of primary modular pilot plants with the possibility to connect them with the satellite units gives an excellent flexibility with respect to the number of tanks choice.

The most important technical characteristics of our satellite units are:

- Digital instrumentation
- External probe digital temperature regulators
- Interconnection ports to connect them with the primary module or with a supplementary satellite unit.
- 115 V power input available on request
- Reduced weight and dimensions
- Totally made of stainless steel
- Working tanks are provided with magnetic agitation and heater
- Presence of recovery - washing tank
- Titanium platonized anode included.

NOTE: The satellite units develop vapours during the operations, due to the electrolytic galvanisation; therefore they must be placed in a working environment equipped with an adequate suction hood.
1.2 SATELLITE UNIT ARCHITECTURE

1.2.1 Introduction:

The satellite units are made up of:

- A main body containing all of the satellite unit parts: A
- 2 tanks made of Pyrex glass tanks, having a capacity of 1 or 2 liters: B
- Anodic electrode: C
- Cathodic cable (black hook wire): D
- Power cable: E
- Modules connection cable: F

Fig. 1
1.2.2 Structure of the satellite unit:

A1) Satellite unit body

The body of the satellite unit is made of stainless steel and contains all the satellite spares. The partitions are closed and tools are required to access into inside. The access area for the tanks is closed with a stainless steel cover. Aeration apertures are present on the side panels and do not permit the operator to access into the inside of the satellite unit. The satellite unit is installed on a flat surface and is made stable with four 2 cm feet. The body of the satellite unit is made of stainless steel and has no cutting parts or sharp corners that are dangerous for the operator. The satellite body provides two or four lodgings containing Pyrex glass tanks.

The lodgings for the Pyrex glass tanks are divided as follows:

- Tank on the top level closed to the control panel. This lodging is provided with heater and magnetic stirrer.
- Tank on the bottom level closed to the operator side which is used as simple washing or rinse tanks.

The control and adjustment elements are identical to those described in Point A2, related to the standard heating unit.

On the back side of the satellite unit body there is a connection socket for the satellite unit power cable, with an incorporated fuse holder.

The fuses of the satellite units are supplied with these following features:

- 2 A for 1 liter satellite unit with 230 V INPUT power;
- 4 A for 1 liter satellite unit with 115 V INPUT power;
- 3.15 A for a 2 liters satellite unit with 230 V INPUT power;
- 6.3 A for a 2 liters satellite unit with 115 V INPUT power.
A2) Control and Adjustment Area
The Control and Adjustment Area is inserted on the front part of the satellite unit body. The following controls and connections are located on the front panel:

- General “on/off” luminous red switch: A
- Programmable “Temperature °C” Digital Thermostat: B
- “Stirrer” switch for agitation of the solution: C
- Positive RED anode contacts: D
- Negative BLACK cathode contacts: E
- Output ports for the primary module connection or for a supplementary satellite unit connection: F
Descrizione delle funzioni di comando e regolazione:

<table>
<thead>
<tr>
<th>Comando/regolazione/visualizzazione</th>
<th>Funzione</th>
</tr>
</thead>
<tbody>
<tr>
<td>General “on/off” luminous red switch <strong>A</strong></td>
<td>Powers/stops all satellite unit functions</td>
</tr>
<tr>
<td>Programmable “Temperature °C” Digital Thermostat <strong>B</strong></td>
<td>Powers/stops heating of corresponding tank (max. 70° C)</td>
</tr>
<tr>
<td>“Stirrer” switch for stirring of the solution <strong>C</strong></td>
<td>Powers/stops magnetic stirring in corresponding tank</td>
</tr>
<tr>
<td>Positive RED anodic contacts <strong>D</strong></td>
<td>Output for the connection of the anodes</td>
</tr>
<tr>
<td>Negative BLACK cathodic contacts <strong>E</strong></td>
<td>Output for the connection of objects to be treated.</td>
</tr>
<tr>
<td>Interconnection terminals with a supplementary satellite unit <strong>F</strong></td>
<td>Output ports which permit the connection and the communication with the primary module or with a supplementary satellite unit.</td>
</tr>
</tbody>
</table>

**B) Tanks in Pyrex glass**

The satellite unit has lodgings for 2 Pyrex glass tanks (in the satellite unit body) having a diameter of 110 or 140 mm which volume is 1 and 2 liters respectively.

The tanks are normally used for:
- ✓ Rinsing
- ✓ Rinsing and activation
- ✓ Degreasing
- ✓ Plating process

**C) Anodic Electrodes**

The satellite unit is equipped with a set of Titanium platinized and a stainless steel anodes.

**D) Connections to the Satellite units OUTPUT**

The satellite unit are equipped with two pairs of two connections output ports that permit the communications to the Primary Module and its rectifier or with an eventual supplementary satellite unit.

**E) Power cable**

The satellite unit is supplied with the power cable with plugs to connect it to the input power.

**1.3 WARNINGS**

It is necessary to read this manual carefully before proceeding with installation, commissioning, adjustment and maintenance of the satellite unit. All of the operations described in this manual are correct, the manufacturer does not accept any responsibility for operations performed in a manner that is not in conformity with the instructions or operations not envisioned in this manual.

In the event of breakdown or malfunction of the satellite unit, apply to an authorised technical centre or to the manufacturer. The manufacturer declines any responsibility for damages to persons or property or accidents due to failure to observe the prescriptions relative to safety, due to improper use or tampering with the satellite. The safety norms described in this manual integrate and do not supersede or replace the norms in force locally, which must be observed by users in any case.
CHAPTER 2
OPERATION & CONTROL STATIONS

2.1 GENERAL
The satellite unit is used as a workstation. All controls to start and adjust the satellite unit are located on the front panel in a convenient position for the operator.

2.2 SETTING UP THE WORK AND CONTROL STATION:
The satellite unit must be placed on a flat surface to prevent the risk of falling.
The installation must be performed in a dry, well-aired and correctly illuminated environment. Additionally, there must be an appropriate water system near the place where the satellite is installed to permit cleaning of the tanks.

NOTE: The satellite unit develops vapours during operation, due to the electrolytic rhodium plating process, therefore it must be placed in a working environment equipped with an adequate suction hood.

An appropriate disposal system MUST be provided for the drainage of the galvanic solutions utilised, in harmony with the instructions supplied with the relative liquids.

CHAPTER 3
PROTECTIONS AND SAFETY PRECAUTIONS:
The satellite unit does not produce an average weighted noise A above 70 dB. The satellite has NO rotating parts that could come into contact with the operator.

The liquids used in the galvanic baths, for the preparatory operations (degreasing) and for plating are corrosive; therefore the operator must wear appropriate Personal Protective Clothing (apron, gloves, goggles).

The operator must read the instructions and prescriptions provided with the galvanic products utilised carefully.

The satellite unit develops vapours during operation, which may be toxic; therefore the workplace must be equipped with an adequate suction hood.

It is a good practice for the operator to refrain from smoking and eating or drinking near the satellite unit.

As the tanks are not provided with a cover it is advisable, once the work has been finished, to pour the used solution in suitable stock-container as bottles, tank, etc....
CHAPTER 4
IMPORTANT SATELLITE UNIT TECHNICAL DATA CHART

<table>
<thead>
<tr>
<th>External dimensions (2 tanks 1 L mod.)</th>
<th>mm</th>
<th>250x383x292 (width-depth-height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>External dimensions (2 tanks 2 L mod.)</td>
<td>mm</td>
<td>250x435x342 (width-depth-height)</td>
</tr>
<tr>
<td>Weight</td>
<td>kg</td>
<td>6,2 Kg</td>
</tr>
<tr>
<td>Power tension</td>
<td>V</td>
<td>220 Vac single phase 50-60 HZ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Also available with 115 V</td>
</tr>
<tr>
<td>Absorbed voltage (phase)</td>
<td>A</td>
<td>5</td>
</tr>
<tr>
<td>Power of heating elements</td>
<td>KW.</td>
<td>0,5</td>
</tr>
<tr>
<td>Maximum Pyrex tank capacity</td>
<td>ml</td>
<td>1000 - 2000 per tank</td>
</tr>
</tbody>
</table>

CHAPTER 5
USE OF THE SATELLITE UNIT

5.1 INTENDED USE OF THE SATELLITE UNIT
This satellite was built for the galvanisation of goldsmith objects, costume jewellery, watch-making pieces and precision mechanics.

PRECAUTIONS:
When the satellite is operating the smoke suction and disposal system must be on (suction hood, which must be installed at the worksite).
The operator must wear protective clothing, goggles and gloves and any other protective clothing envisioned on the technical charts of the components used for the galvanic baths; the satellite unit must not be tampered with.
Use only galvanic solutions supplied by the manufacturer.
Do not place objects and/or excess liquid in the tanks, as this could cause dispersion of the corrosive toxic liquid.
If this occurs, carefully follow the instructions shown on the technical charts accompanying the products used and, in any case, thoroughly clean the areas involved immediately.
To clean surface areas where galvanic liquids have been spilled, the operator must wear appropriate individual protective clothing: (gloves, apron, goggles, protective mask for the respiratory system).
Connect the satellite unit to an electrical system in conformity with legal norms.
Dispose of used galvanic liquids in accordance with the indications shown on the relative technical charts for the solutions used.

5.2 CORRECT USE OF THE SATELLITE UNIT
The satellite unit is used by operating on the control panel and in situations of emergency it can be stopped at any time, by turning the general coloured “power” switcher to the “O” position together with the one of the primary module.
The satellite unit has two Pyrex glass tanks (Fig. 3):

- The first tank on the top level closed to the panel 1 is equipped with thermostat heating system, a magnetic stirrer device and anodic output. This tank is intended to be the working tank; to place any galvanic baths (rhodium, gold, silver, nickel) or, alternatively, a degreasing solution;
- The second tank on the bottom level closed to the operator side 2, is indicated for activation with the use of a proper neutralising solution and/or rinse, recovery, washing operation;

**NOTA:**

The satellite unit has to be connected with the primary module or rectifier in order to be able to work.

This has to be done by using the suitable interconnection cables pair included with the satellite unit and by following the connections here described on picture number 5: black connection port (related to the negative electrode) has to be connected to the primary module black port or to that of a supplementary satellite unit; do the same with the red connection port which is related, instead, to the positive electrode.
5.3 UNINTENDED USE OF THE SATELLITE UNIT
It is not reasonable to envision a different use of the satellite unit than the one for which it was designed, of galvanic treatment.

5.4 INCORRECT USE OF THE SATELLITE UNIT
Operating the satellite unit in a manner other than as specified in point 5.2 of Chapter 5 constitutes incorrect use.

CHAPTER 6
MOVEMENT AND TRANSPORTATION OF THE SATELLITE UNIT
The satellite has dimensions and a weight that permits simple movement using mechanical lifts. To transport the satellite, place it in the original packaging or in other suitable packaging, with the parts in polystyrene foam; make sure the upper part of the satellite unit is oriented towards the top when performing the transportation. Move the unit with a suitable lift for transportation. Load only the packed satellite unit on the lift and do not place other objects on top of it, inasmuch as they could damage the satellite unit or fall; do not load the satellite unit on top of other objects because there could be a situation of precarious balance during transportation. Check to make sure that all satellite unit parts are properly fixed and cannot move during transportation prior to starting transportation.

CHAPTER 7
INSTALLATION OF THE SATELLITE UNIT

7.1 GENERAL
The satellite unit may operate in conditions of safety and with the best results if it is correctly installed in the working environment.

7.2 MECHANICAL INSTALLATION
The satellite unit must rest on a perfectly flat surface, on a dry and clean surface. The satellite unit may have the rear side against a wall, even if it is advisable to leave enough room around the satellite unit, at least 1 m, in order to facilitate performance of all of the cleaning operations, without having to move the satellite unit.

Additionally, it is advisable to have a larger free area on the front side of the satellite unit to facilitate the operator’s work.

The installation plan of the satellite unit is shown in attachment 1.

7.3 ELECTRICAL CONNECTION
The satellite unit must be connected to the mains for electrical power. The electrical system must be in compliance with safety norms in force and satisfy the requirements of not-flammability. Before electrical connection, it is necessary:

- Ensure that the information relative to the power line corresponds to the indications on the satellite unit identification plaque and the electric panel, as well as with the data shown in Chapter 4 of this manual;
- Ensure that the power cables have a diameter of at least 2.5 mm².
- Ensure that an automatic magneto-thermal switch is placed up line from the electrical circuit socket and that the circuit has the ground connection correctly connected to the power socket, which must
be of a suitable type for connection with the plug on the satellite unit cable. Make sure the satellite unit power is not on.

To turn on the power plug the power cable into the plant socket.
In the event of breakdown or malfunction, apply to qualified personnel.

CHAPTER 8
ASSEMBLY/DISASSEMBLY OF THE SATELLITE UNIT

8.1 INITIAL ASSEMBLY OF THE SATELLITE UNIT
The satellite unit is supplied ready for operation.
The only task to perform is to prepare the satellite unit and fill the tanks with the electrolytic liquids as shown in point 5.2a.

CHAPTER 9
PREPARATION OF THE SATELLITE UNIT FOR COMMISSIONING

9.1 GENERAL
The satellite unit is supplied ready for operation.

9.2 CHECK FOR ANY DAMAGE THAT MAY HAVE BEEN SUSTAINED BY THE SATELLITE UNIT
Before commissioning the satellite unit, clean it carefully, removing dust and any foreign substances. It is advisable for the operator to use gloves, goggles and to wear an apron when cleaning the satellite unit. Use a soft cloth to clean the satellite unit and, possibly, with plastic spatulas and tools in order to avoid streaking the tanks or other parts.

9.3 REMOVAL OF BLOCKS
The satellite unit is delivered without blocked parts; therefore no removal of blocks is required.

9.4 CLEANING THE SATELLITE UNIT
Before commissioning the satellite unit, clean it carefully, removing dust and any foreign substances. It is advisable for the operator to use gloves, goggles and to wear an apron when cleaning the satellite unit. Use a soft cloth to clean the satellite unit and, possibly, with plastic spatulas and tools in order to avoid streaking the tanks or other parts.

9.5 CONNECTION OF THE SATELLITE UNIT TO THE ELECTRICITY NETWORK
Ensure that the information relative to the power line corresponds to the indications on the satellite unit identification plaque and the electric panel, as well as with the data shown in Chapter IV of this manual. Before performing the connection, make sure the electrical components to be worked on are not powered. Plug the power cable into the socket on the rear of the satellite unit and in the socket provided in the working area.

9.6 ADJUSTMENT OF THE SATELLITE UNIT
The satellite unit requires no preliminary adjustment in order to start operation.
CHAPTER 10
COMMISSIONING OF THE SATELLITE UNIT

10.1 COMMISSIONING OF THE SATELLITE UNIT

Adhere to the following instructions in order to commission the correctly installed satellite unit:

- Put the differential switch located up line from the satellite unit in the closed position
- The operator must wear the individual protective devices foreseen for the work performed. He must then position himself in a manner to ensure perfect visibility and within easy reach of all signals and controls.

10.2 USE OF THE SATELLITE UNIT

Refer to paragraph 5.2 for instructions on the correct use of the satellite unit.

CHAPTER 11
MAINTENANCE AND REPAIR

11.1 Maintenance

General

The satellite unit requires no particular maintenance, except for cleaning of the tanks and the satellite unit itself. The satellite unit functions well only if the tanks and various parts are clean.

Cleaning tanks

Turn the satellite unit off by turning the general switch to the OFF position, cut the power off by unplugging the power cable.

Wear individual protective devices; remove the tanks from the body of the satellite unit, empty and dispose of the galvanic solutions and rinse the tanks abundantly in running water; use plastic tools that do not streak or scratch the tanks to remove the more difficult and persistent residues.

NOTE: Residues must be eliminated according to the procedures shown on the technical charts relative to the mixture used.

Maintenance of electrical connections.

The electric power cable must be checked periodically and replaced if it is not in good repair.

Changing fuses

The satellite unit is protected with a 5A 220V ca fuse.

The fused is housed in a box in the mains socket placed on the rear of the satellite unit body.

Follow these instructions to replace the fuse:

Turn the satellite unit of with the general power switch on “O”; Cut off the satellite unit from the mains socket by disconnecting the power cable from the network socket and the socket on the rear of the satellite unit.

Open the door, remove the blown fuse, insert a new fuse and close the door.

Connect the network cable to the satellite unit and the network socket.

Turn the power switch on and check the to make sure the green indicator light comes on.

If the satellite unit fails to function, apply to the seller or to the manufacturer.

11.2 Repairs

The operator must not perform any repairs; in the event of breakdown, apply to the seller or manufacturer.
CHAPTER 12
ATTACHED TECHNICAL DOCUMENTATION

12.1 LIST OF ATTACHED DOCUMENTS

The following documents are attached to this publication and are an integral part of it:

- Installation Plan of the Satellite unit: Attachment 1
- Electric wiring plan of satellite unit: Attachment 2
- CE Certification: (see at page 2)
- Warranty: Attachment 3

CHAPTER 13
INFORMATION ON SATELLITE UNIT NOISE POLLUTION

13.1 IMPORTANT VALUES

The average weighted A noise pollution is less than 70 dB

CHAPTER 14
RELATED ARTICLES

3007112  MODULAR GALVANIC EQUIPMENT 4 TANKS 2L MOD. "LEGOR GROUP" V. 230/50 M 2 HEATERS, 2 MOTORS STIRRER

3007114  MODULAR GALVANIC EQUIPMENT 4 TANKS 2L MOD. "LEGOR GROUP" V. 115/60 M 2 HEATERS, 2 MOTORS STIRRER

3007111  MODULAR GALVANIC EQUIPMENT 4 TANKS 1L MOD. "LEGOR GROUP" V. 230/50 M 2 HEATERS, 2 MOTORS STIRRER

3007113  MODULAR GALVANIC EQUIPMENT 4 TANKS 1L MOD. "LEGOR GROUP" V. 115/60 M 2 HEATERS, 2 MOTORS STIRRER

3007116  MODULAR GALVANIC EQUIPMENT 2 TANKS 2L MOD. "LEGOR GROUP" V. 230/50 M 1 HEATER, 1 MOTOR STIRRER

3007115  MODULAR GALVANIC EQUIPMENT 2 TANKS 1L MOD. "LEGOR GROUP" V. 230/50 M 1 HEATER, 1 MOTOR STIRRER

3007108  SATELLITE GALVANIC EQUIPMENT 2 TANKS 2L MOD. "LEGOR GROUP" V. 230/50 M – 1 HEATER, 1 MOTOR STIRRER

3007110  SATELLITE GALVANIC EQUIPMENT 2 TANKS 2L MOD. "LEGOR GROUP" V. 115/60 M – 1 HEATER, 1 MOTOR STIRRER

3007107  SATELLITE GALVANIC EQUIPMENT 2 TANKS 1L MOD. "LEGOR GROUP" V. 230/50 M – 1 HEATER, 1 MOTOR STIRRER

3007109  SATELLITE GALVANIC EQUIPMENT 2 TANKS 1L MOD. "LEGOR GROUP" V. 115/60 M – 1 HEATER, 1 MOTOR STIRRER

3004012  TITANIUM PLATINIZED ANODE FOR PILOT PLATING PLANTS "LEGOR GROUP"

3004019  STAINLESS STEEL ANODE FOR PILOT PLATING PLANTS "LEGOR GROUP"

3035012  5 HOOKS RACK FOR PLATING PLANTS "LEGOR GROUP" 4-6 TANKS WITHOUT CABLE

3007057  5 HOOKS RACK FOR PLATING PLANTS "LEGOR GROUP" 4-6 TANKS WITH CABLE

RBCLIPS  COUPLE OF BLACK AND RED CROCODILE CONNECTORS MAX 15 AMP

BLACKCAVMP  BLACK CABLE FOR PLATING SYSTEMS

REDCAVMP  RED CABLE FOR PLATING SYSTEMS
ATTACHMENT 1

SATELLITE UNIT

1 L: 292 mm
2 L: 342 mm

1 L: 383 mm
2 L: 435 mm

1 L: 200 mm
2 L: 200 mm

6.2 Kg
ATTACHMENT 2

UNITA' SATELLITE

230V/110V

SCHÉMA ELETTRICO A BLOCCHI unità satellite
ATTACHMENT 3

Warranty

The instruments, equipment and plants supplied by Legor Group S.p.A. are guaranteed for 12 months from the date of sale specified in the Legor invoice. During this period, the instruments will be repaired or replaced by Legor Group S.p.A. excluding all transport costs which will be sustained entirely by the customer. This warranty does not cover the parts of the satellite unitry subject to wear and listed below in point 1.2 The warranty lapses in the event of inappropriate use of the instruments, negligence on the part of the operators or accidental damage of any type. In order to take advantage of the warranty, the customer within 8 days from the discovery date of manufacturing defects, must write to Legor Group S.p.A. a letter indicating the problems and requesting authorisation for return under warranty. The products in question shall be returned to Legor Group S.p.A. appropriately packed and within 15 days from the date of the written complaint. No type of return is accepted unless explicitly authorised by Legor Group S.p.A. The Warranty lapses whether the material supplied returns to Legor Group S.p.A. inappropriately packed. In no event Legor Group S.p.A. assumes any responsibility for damages to people or things caused by bad functioning of the instruments, equipment and plants supplied.

1.1 Parts covered by warranty

All satellite unit parts not subject to mechanical wear are covered by warranty:

- current rectifiers
- control instruments (instrument displays)
- temperature probe
- conductivity probe

1.2 Parts not covered by warranty

Parts subject to normal wear are not covered by warranty:

- Level controls
- Electric motors (fumes extractor, filter pumps, agitators)
- Anodes
- Racks
- Tanks
- Push-button panel bulbs
- Glasses
- Electric cables and contacts
- Satellite unit frames

Competent Court of jurisdiction

Any dispute arising from the supply of material will be referred solely to the Court of Vicenza.
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