USER'S MANUAL

Four & Six one and two Litre Tank Galvanic Plants

Article 3007051 ; 3007068 ; 3007075

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CHAPTER 1
GENERAL DESCRIPTION OF THE MACHINE

1.1 OPERATING PRINCIPLES AND MAIN TECHNICAL CHARACTERISTICS

Legor galvanising machines are built for the galvanisation of goldsmith objects, costume jewellery, watch-making pieces and precision mechanics.

The objects to be galvanised are treated in the machines before being degreased and performing other jobs such as rhodium, gold, platinum or palladium plating.

Degreasing is generally performed by placing the objects in the tank the furthest to the right on the machine, where there is a degreasing/pickling solution, whose action is activated by the passage of electric current.

The other galvanic treatments, on the other hand, can be performed in the other tanks, by placing the objects in the electrolytic solutions and running the appropriate working current through them.

The most important technical characteristics of our galvanising machines are:

- Digital instrumentation
- Programmable work timer
- External probe digital temperature regulators
- 12V / 10 A switching current rectifiers
- Possibility to perform processing in all tanks
- 110V available on request
- Modest weight and dimensions
- Totally made of stainless steel
- Magnetic agitation (only for Articles 3007052, 3007053,3007054,3007056
- Anodes in platinum plated titanium instead of mixed oxides

NOTE: The machines develop vapours during operation, due to the electrolytic galvanisation; therefore they must be placed in a working environment equipped with an adequate suction hood.

1.2 MACHINE ARCHITECTURE

1.2.1 Introduction:

The machines are made up of:

- A main body containing all of the machine parts.

  The machine body is equipped with a top that covers all four or six of the Pyrex glass tanks where the various phases of galvanisation take place.
- Four or six Pyrex glass tanks,, having a capacity of 1 or 2 liters and a graduated scale from 500 to 1500 ml.
- Anodic electrodes **(a / Fig. 1).**

- Cathodic cable (black hook cord **(b / Fig. 1).**
- Power cable **(b / Fig. 1).**

1.2.2 Make up of the machine:

A1) Machine body.

The machine body is made from stainless steel and contains all of the machine parts. The partitions are closed and tools are required to access the inside. The access area for the four tanks is closed with a stainless steel cover.

The cover is fixed to the machine body with hinges and protects the operator from sprays of electrolytic solution. There are aeration apertures on the side panels, which do not permit the operator to access the inside of the machine. The machine is installed on a flat surface and is made stable with four 2 cm feet. The body of the machine is made of stainless steel and has no cutting parts or sharp corners that are dangerous for the operator. The machine body provides from four to six lodgings containing four or six Pyrex glass tanks.

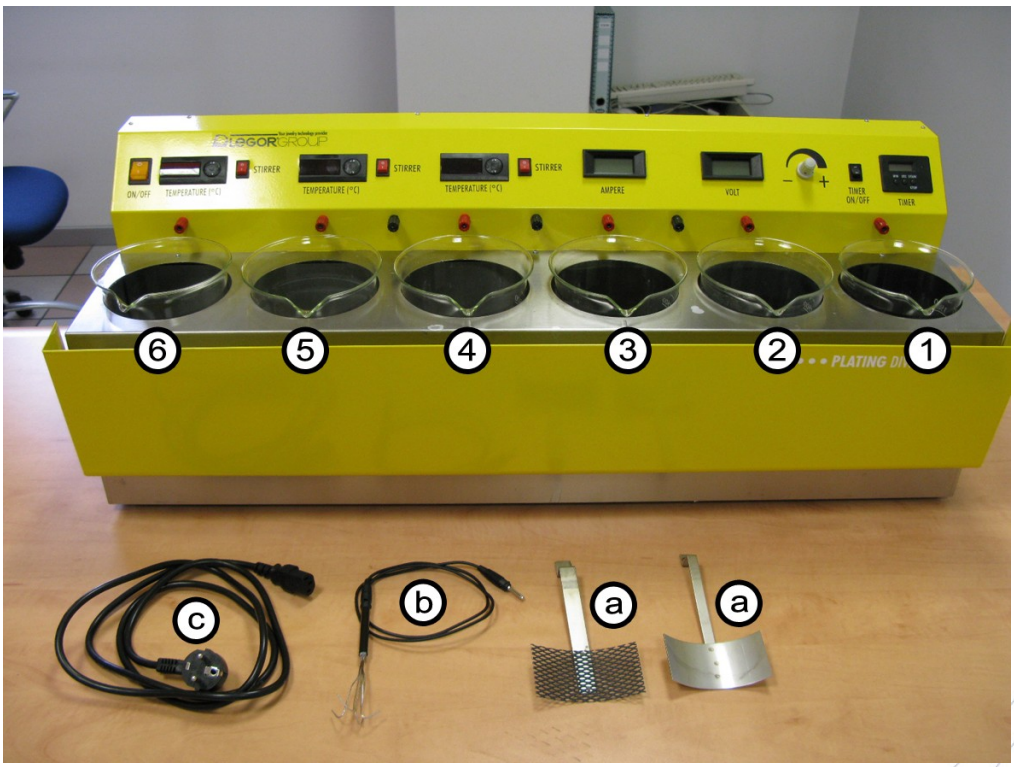


Fig. 1

The lodgings for the Pyrex glass tanks are divided as follows **(Fig. 1):**

- 1st tank (from right): generally used for degreasing; it has no thermostat and is complete with an anode socket.
- 2nd and 3rd tanks: These tanks can be used for rinsing or for treatment tanks for solutions that do not require temperature control; both tanks have anode sockets.
- 4th tank (for articles 3007051,007052,3007068,3007075): tank complete with digital thermostat and magnetic solution agitation for use in galvanisation (only article 3007052).
- 4th tank (for article 3007053): can be used as a rinsing tank or for treatment with solutions that do not require temperature control. This tank also has an anode socket.
- 5th and 6th tanks (for plants 3007053,3007054,3007056): tank complete with digital thermostat and magnetic solution agitation for use in galvanisation. In article 3007054, the 4th tank also has the same characteristics.
- All of the plants are equipped with a variable current and tension rectifier from 0 to 12 volts, 0 – 10 Amperes

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

On the rear of the machine body there is a connection socket for the machine power cable, with an incorporated fuse holder for a 5A 220 Vac fuse.

NOTE: The machine 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.

The control and adjustment section is located on the front of the machine body.

A2) Control and Adjustment Section

The Control and Adjustment Section is inserted on the front part of the machine body.

The following controls and connections are located on the front panel (Fig. 2 and 3):

- General “on/off” luminous red switch (a)
- Programmable “Temperature °C” Digital Thermostat (b)
- “Stirrer” switch for agitation of the solution (c)
- Amperometer (d) and voltage meter (e)
- Current regulator 0-12 V (f)
- Timer for programmable and digital timer treatment (g)
- On/off timer switch (h)
- Positive RED anode contacts (i)
- Negative BLACK cathode contacts (l)


a
b
LEGOR GROUP
ON/OFF
TEMPERATURE (°C)
STIRRER
c
TEMPERATURE (°C)
STIRRER

Fig. 2

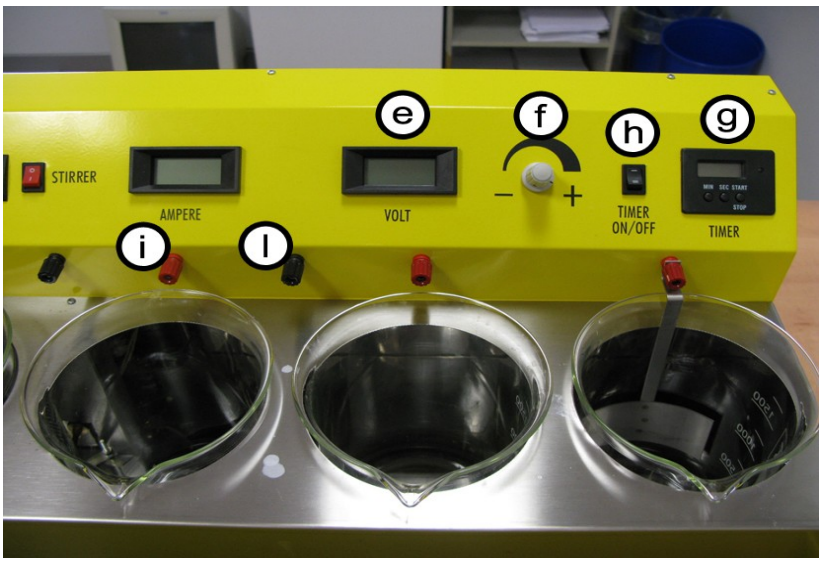

STIRRER
AMPERE
e
VOLT
f
h
TIMER ON/OFF
g
TIMER
i
l

Fig. 3

Description of control and adjustment functions:

Control/adjustment/display	**Figs. 2 and 3)**
General “on/off” luminous red switch (a)	Powers/stops all machine functions
Programmable “Temperature °C” Digital Thermostat (b)	Powers/stops heating of corresponding tank (max. 70 °C)
“Stirrer” switch for agitation of the solution (c)	Powers/stops magnetic agitator in corresponding tank
Amperometer (d) and voltage meter (e)	Respectively display absorbed current and distributed voltage.
Current regulator 0-12 V (f)	Adjusts voltage from 0 to 12 Volts.
Timer for programmable and digital timer treatment (g)	Used to set treatment time for galvanic deposit The timer activates and deactivates distribution of current in all treatment tanks.
On/off timer switch (h)	Enables or disables timer function. The machine continues to distribute current independently of the timer setting when the switch is placed in the “off” position. Distribution of tension stops when the time set on the timer expires, when the switch is placed in the “on” position.
Positive RED anode contacts (i)	Terminals for the connection of anodes
Negative BLACK cathode contacts (l)	Terminal for the connection of objects to be treated.

b) Tanks in Pyrex glass.

The machine has lodgings for 4 Pyrex glass tanks (in the machine body) having a diameter of 135 mm, a capacity of 2000 ml and a graduated scale from 500 to 1500 ml.

The tanks are normally used for:

• Rinsing	• Rinsing and activation
• Degreasing	• Rhodium/gold/palladium plating

c) Anodic Electrodes.

The machine is equipped with a set of anodic electrodes in platinum plated titanium.

d) Power cable

The machine is equipped with a power cable with plugs for connection to the socket on the rear of the machine body and for connection to the mains, which must be present in the place where the machine is installed.

1.3 Warnings

It is necessary to read this manual carefully before proceeding with installation, commissioning, adjustment and maintenance of the machine. 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 machine, 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 machine. 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 machine is used as a workstation. All controls to start and adjust the machine are located on the front panel in a convenient position for the operator.

2.2 SETTING UP THE WORK AND CONTROL STATION:

The machine must be placed on a flat surface to prevent the risk of turnover. On request, a suitable metallic platform may be provided to support the machine.

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 machine is installed to permit cleaning of the tanks.

NOTE: The machine 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 FOR OPERATORS AND MAINTENANCE PERSONNEL:

The machine must not produce an average weighted noise A above 80 dB. The machine 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 rhodium 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 machine 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 machine.

CHAPTER 4
IMPORTANT MACHINE TECHNICAL DATA CARD

External dimensions (4 tank 1 l mod.) External dimensions (4 tank 2 l mod.) External dimensions (6 tank mod.)	mm mm mm	540x270x300 (width-depth-height) 625x290x350 (width-depth-height) 935x290x350 (width-depth-height)
Weight	kg	15 Kg (4 tanks) 20 Kg (6 tanks)
Power tension	V	220 Vac single phase 50-60 HZ Also available with 115 V
Absorbed voltage (phase)	A	5
Adjustment of galvanic tension and distributable current	V	0-12 V – 10 A
Timer	h/m/s	Maximum 9 hrs.
Power of heating elements	KW.	0,5
Maximum Pyrex tank capacity	ml	1000 - 2000 per tank

CHAPTER 5
USE OF THE MACHINE

5.1 INTENDED USE OF THE MACHINE

This machine was built for the galvanisation of goldsmith objects, costume jewellery, watch-making pieces and precision mechanics.

PRECAUTIONS:

When the machine 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 cards of the components used for the galvanic baths; the machine must not be tampered with.

Use only galvanic solutions supplied by the manufacturer.

Do not place objects and/or excess liquid in the tanks, inasmuch as this could cause dispersion of the corrosive toxic liquid.

If this occurs, carefully follow the instructions shown on the technical cards 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.

Before turning the machine power on, lower the cover to seal off the Pyrex glass tanks.

Connect the machine to an electrical system in conformity with legal norms.

Dispose of used galvanic liquids in accordance with the indications shown on the relative technical cards for the solutions used.

5.2 CORRECT USE OF THE MACHINE

The machine is used by operating the controls and in situations of emergency it can be stopped at any time, by turning the general green coloured “power” switch to the “O” position.

a) Preparation of electrolytic solutions and filling machine tanks.

The machine has four or six Pyrex glass tanks:

Four-tank models (Fig. 4a):

- The first tank (1) on the left is equipped with a heating thermostat and possibly with a stirring device. This tank is indicated for galvanic baths (rhodium, gold, silver, nickel);
- The second tank (2) is indicated for activation with the use of a neutralising solution;
- The third tank (3) can be used for rinsing in water;
- The fourth tank (4) is for degreasing.

Six-tank models (Fig. 4b):

- The first three tanks (1, 2 and 3) from the left are equipped with a heating thermostat and possibly with a stirring device. These tanks are indicated for galvanic baths (rhodium, gold, silver, nickel);
- The fourth tank (**4**) is indicated for activation with the use of a neutralising solution;
- The fifth tank (**5**) can be used for rinsing in water;
- The sixth tank (6) is for degreasing

Fig. 4a

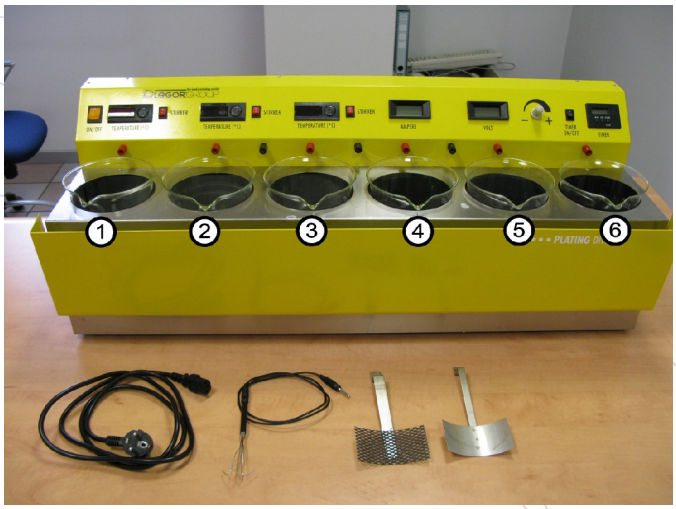


Fig. 4b

NOTE:

The paragraphs indicating the use of the tanks are purely indicative, inasmuch as Legor galvanic plants have anode contacts in all of the tanks. Therefore, the sequence of use of the galvanic tanks can be modified by the user according to his specific needs.

The solutions used for the galvanic baths, degreasing and neutralisation must be purchased ready made in order to ensure safe and valid processing.

Alternatively, the solutions can be prepared by the operator, in which case the instructions shown on the technical cards of the products used must be followed.

Before placing the solutions in the respective tanks, they must be mixed.

Place enough solution in the tanks to cover the electrodes.

The solutions must be placed in the tanks when the machine is prepared and when they are exhausted they must be replaced.

OPERATIONAL STEPS TO OBTAIN PERFECT FINAL RESULTS

1. **Degreasing with ultrasounds**
2. **Rinsing in running water**
3. **Electrolytic degreasing**
4. **Rinsing in running water**
5. **Rinsing in demineralised water**
6. **Neutralisation/activation**
7. **Rinsing in running water**
8. **Rinsing in demineralised water**
9. **Galvanic treatment (rhodium, gold, palladium plating)**
10. **Rinsing in running water**
11. **Rinsing in demineralised water**
12. **Drying**

1) Initial preparation of objects to be galvanised.

The objects must be carefully washed using the ultrasonic washing machines, and then rinsed (operational steps 1 and 2)

2) Degreasing (electrolytic degreasing) (Figs. 5 and 6)

Open the cover of the machine, turn on the power by moving the general switch (a) to the "1" position, make sure the timer switch (h) is in the "ON" or "OFF" position, according to whether it is desired to use the timer or not (g). Hang the object on the special negative electrode hook (cathode), immerge the object in the galvanic bath for degreasing of the tank (4 or 6) (Fig. **4)** When the desired time has elapsed, remove the object from degreasing and go on the phases of rinsing and neutralisation (operational steps 3, 4, 5, 6, 7 and 8)

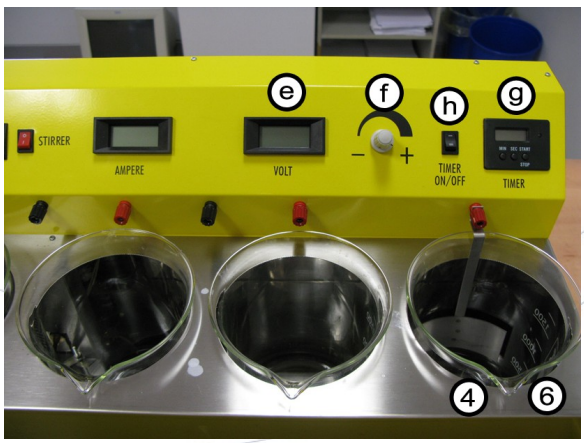


Fig. 5

3) GALVANISATION (rhodium, gold, palladium plating)

Check to make sure the suction hood is operating.

Lift the cover and ensure the machine is on by checking the general “ON/OFF” switch (a). Turn on the stirring device with the “stirrer” button (c). Set the desired temperature on the thermostat (b) and wait for the temperature to be reached. Hang the object on the hook on the negative electrode (cathode) and immerge it in the galvanic bath; adjust the tension with the potentiometer (f), verifying the value set on the digital voltage meter (e) on the panel.

If the timer has been activated with the (h) switch, adjust it (g) to start the galvanic process. Once the galvanic process has terminated, go on to the successive phases of rinsing (operational steps 9, 10, 11 and 12).

Important note: Remove the objects from the galvanic bath before cutting off the tension in the bath.

Fig. 6

4) Stop the processing cycle.

Turn the machine off with the general switch (a).

Keep the suction hood running for at least ten minutes after interruption of the processing cycle.

5.3 UNINTENDED USE OF THE MACHINE

It is not reasonable to envision a different use of the machine than the one for which it was designed, of galvanic treatment.

5.4 INCORRECT USE OF THE MACHINE

Operating the machine in a manner other than as specified in point 5.2 of Chapter 3 constitutes incorrect use.

CHAPTER 6
MOVEMENT AND TRANSPORTATION OF THE MACHINE

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

CHAPTER 7
INSTALLATION OF THE MACHINE

7.1 GENERAL

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

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

The installation plan of the machine is shown in attachment 1.

7.3. ELECTRICAL CONNECTION

The machine 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 non-inflammability. Before electrical connection, it is necessary:

- Ensure that the information relative to the power line corresponds to the indications on the machine identification plaque and the electric panel, as well as with the data shown in Chapter IV of this manual;
- Ensure that the power cables have a diameter of at least 2.5 mm^2.

Ensure that an automatic magneto-thermal switch is place 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 machine cable.

Make sure the machine 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 MACHINE

8.1 INITIAL ASSEMBLY OF THE MACHINE

The machine is supplied ready for operation.

The only task to perform is to prepare the machine and fill the tanks with the electrolytic liquids as shown in point 5.2a.

CHAPTER 9
PREPARATION OF THE MACHINE FOR COMMISSIONING

9.1 GENERAL

The machine is supplied ready for operation.

9.2 CHECK FOR ANY DAMAGE THAT MAY HAVE BEEN SUSTAINED BY THE MACHINE.

When the packaging is removed from the machine, carefully inspect every part to ensure that it has not been damaged during transportation. If damages are discovered, contact the carrier first, then the seller or the manufacturer. Also ensure that the machine has been received, complete with all of its parts.

9.3 REMOVAL OF BLOCKS

The machine is delivered without blocked parts; therefore no removal of blocks is required.

9.4 CLEANING THE MACHINE

Before commissioning the machine, 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 machine. Use a soft cloth to clean the machine and, possibly, with plastic spatulas and tools in order to avoid streaking the tanks or other parts.

9.5 CONNECTION OF THE MACHINE TO THE ELECTRICITY NETWORK

Ensure that the information relative to the power line corresponds to the indications on the machine 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 machine and in the socket provided in the working area.

9.6 ADJUSTMENT OF THE MACHINE

The machine requires no preliminary adjustment in order to start operation.

CHAPTER 10
COMMISSIONING OF THE MACHINE

10.1 COMMISSIONING OF THE MACHINE

Adhere to the following instructions in order to commission the correctly installed machine:

- Position the differential switch located up line from the machine 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 MACHINE

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

CHAPTER 11
MAINTENANCE AND REPAIR

11.I. MAINTENANCE

GENERAL

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

Cleaning tanks

Turn the machine 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 machine, 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 residue

NOTE: Residue must be eliminated according to the procedures shown on the technical cards 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 machine 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 machine body.

Follow these instructions to replace the fuse:

Turn the machine of with the general power switch on “O”;

Cut off the machine from the mains socket by disconnecting the power cable from the network socket and the socket on the rear of the machine.

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

Connect the network cable to the machine and the network socket.

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

If the machine 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 Machine: Attachment 1
- Drawing showing machine displacement: Attachment 2
- Electric wiring plan of machine: Attachment 3
- CE Certification: Attachment 4
- Warranty : Attachment 5

CHAPTER 13
INFORMATION ON MACHINE NOISE POLLUTION

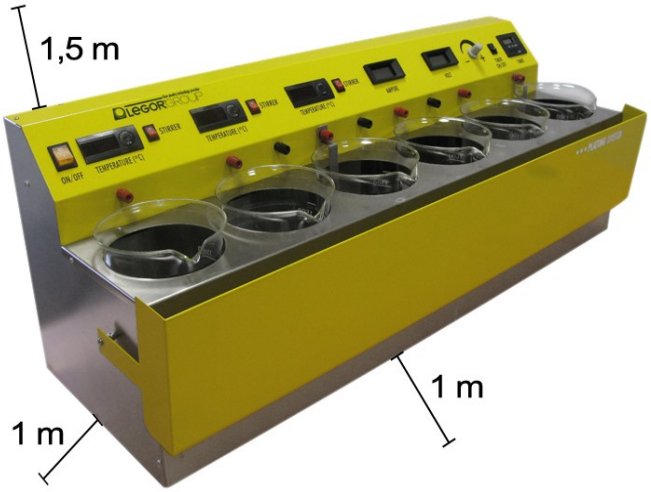
13.1 IMPORTANT VALUES

The average weighted A noise pollution is less than 70 dB

CHAPTER 14
RELATED ARTICLES

3007051	GALVANIC EQUIPMENT 4 TANKS 2L MOD. LEGOR GROUP V. 220/50 M-1HEAT
3007052	GALVANIC EQUIPMENT 4 TANKS 2L MOD. LEGOR GROUP V. 110/60 M -1HEAT
3007053	GALVANIC EQUIPMENT 6 TANKS 2L MOD. LEGOR GROUP V. 220/50 M -2HEAT-2MOV.
3007054	GALVANIC EQUIPMENT 6 TANKS 2L MOD. LEGOR GROUP V. 220/50 M-3HEAT-3MOV.
3007056	GALVANIC EQUIPMENT 6 TANKS 2L MOD. LEGOR GROUP V. 110/60 M-3HEAT-3MOV.
3007068	GALVANIC EQUIPMENT 4 TANKS 1L MOD. LEGOR GROUP V. 220/50 M-1HEAT
3007075	GALVANIC EQUIPMENT 4 TANKS 1L MOD. LEGOR GROUP V. 110/60 M-1HEAT
3004012	TITANIUM PLATINIZED ANODE FOR PLATING PLANTS "LEGOR GROUP" 4-6 TANKS
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:



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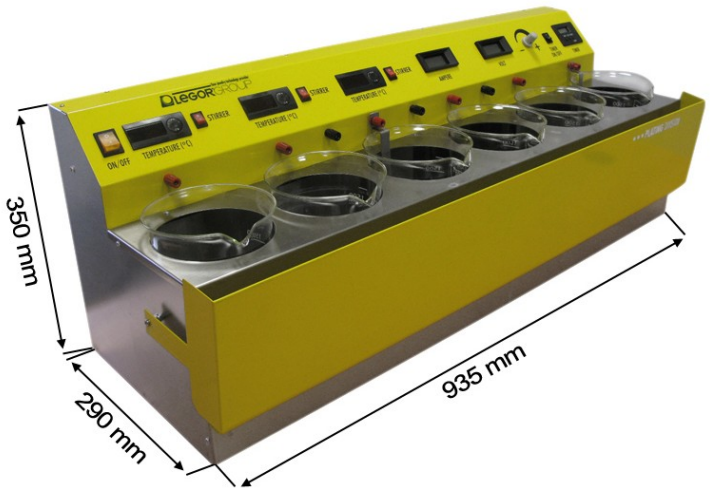

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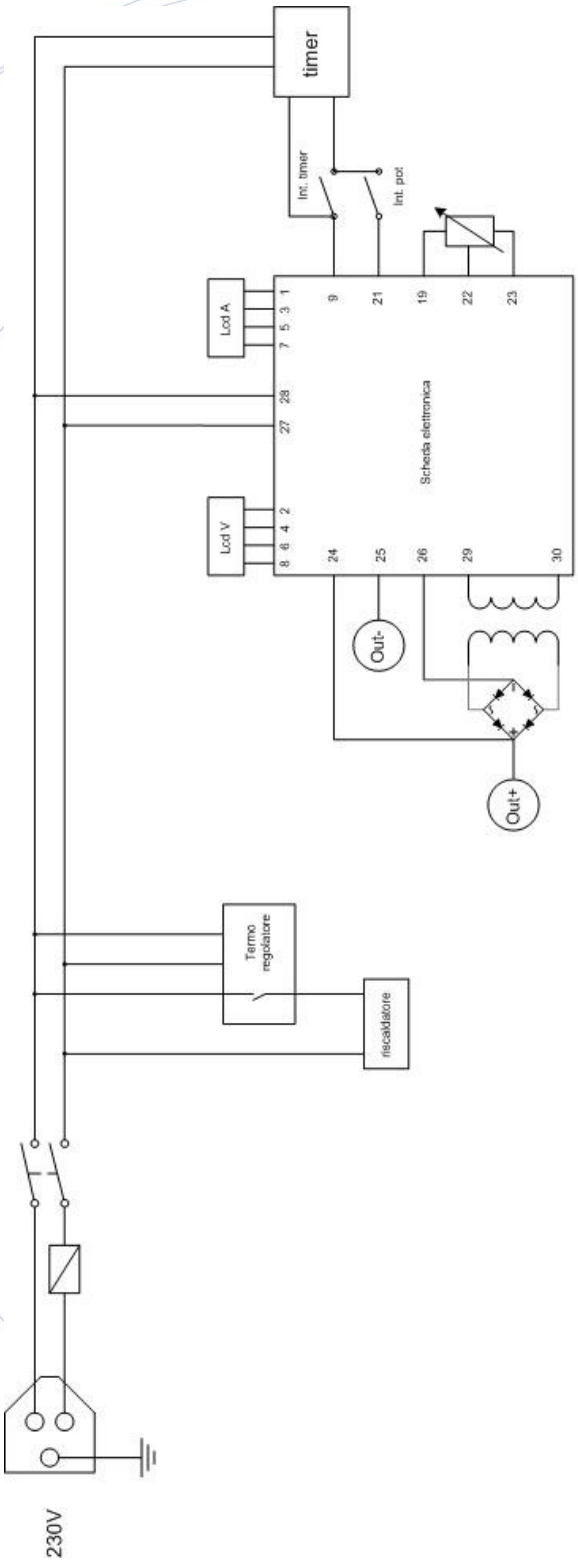

SCHEMA ELETTRICO A BLOCCHI GALVANO 4 v 1r.

Schema elettrico rodiatrice

ATTACHMENT 4:

Your jewelry technology provider
LEGOR GROUP
• • • MASTER ALLOY DIVISION PLATING DIVISION MACHINERY AND TOOLS DIVISION

Dichiarazione CE di Conformità

CE Conformity Declaration

TIPO DELLA MACCHINA:	IMPIANTO GALVANICO
PRODUCT TYPE:	GALVANIC PLANT

Modello/
Model

Matricola/
Serial Number:

Anno di costruzione/
Manufacture year

Dichiarazione di conformita' alla direttiva CEE 89/392 relativa alla sicurezza delle macchine: il costruttore dichiara che questo apparecchio è conforme alle prescrizioni delle direttive , 93/68, 73/23,Rohs 2002/95/EC della CEE relativa alla sicurezza delle macchine.

Declaration of conformity with 89/392 EEC directive regarding machinery safety: the costructor declares that the machine suits the EEC directives, 93/68, 73/23,Rohs 2002/95/EC , regarding machinery safety.

Bressanvido (Vicenza),

LEGOR GROUP

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ATTACHMENT 5:

Warranty

The instruments, equipment and plants supplied by Legor Group Srl 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 Srl excluding all transport costs which will be sustained entirely by the customer. This warranty does not cover the parts of the machinery 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 Legor Group Srl a letter indicating the problems and requesting authorisation for return under warranty. The products in question shall be returned to Legor Group Srl 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 Srl. The Warranty lapses whether the material supplied returns to Legor Group Srl inappropriately packed. In no event Legor Group Srl assumes any liability for damages to people or things caused by bad functioning of the instruments, equipment and plants supplied.

1.1 Parts covered by warranty

All machine 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)
- Valves and hydraulic pipes
- Filter cartridges and filter holder
- Heating elements
- Anodes
- Item holder frames
- Tanks
- Push-button panel bulbs
- Glasses
- Electric cables and contacts
- Machine 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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