DA 6000

USER'S MANUAL

INDEX:

INTRODUCTION

Thank you for the confidence deposited in us and in the equipment that you have just bought. With this apparatus you will incorporate in your centre the most **advanced technology** in **electroaesthetics** and introduce a tool which will soon be indispensable for you when you want to obtain results.

This equipment gives you an option of advanced treatment of corporal remodelling. It's handling is extremely simple and it has been designed to fully satisfy the needs of the most demanding users. Tests have been carried out with different subjects and in different body and facial areas, obtaining results of a high quality.

Our company also offers to all those who request it courses of practice and functioning in the technique of body remodelling. This new service claims to offer the user the greatest possible knowledge for obtaining results of the highest quality. Information about our courses is available through internet (www.ema.es).

Before turning on the equipment, please **READ THIS MANUAL CAREFULLY.** Not doing so could be dangerous and could cause harm to third parties.

Also, please contact our distributor if you have any queries or need clarification, and we shall be pleased to answer your questions.

Yours sincerely,

The management

SAFETY NORMS

This apparatus complies with the **safety norms** in force at the time of its manufacture. However, you must observe the following advice:

1. Before operating this equipment, read this manual carefully.

2. The apparatus must never be connected to a socket which does not have an earth connection (grounding). Never connect in an installation that doesn't have differential switch.

3. It must not be used in patients that have a heart **pacemaker**.

4. The appliance produces R.F. currents and continuous (galvanic) currents. The galvanic currents circulate between the point of applcation of the needle and the metallic "return" electrode. The **heart** must not be found in the path of the galvanic current.

5. There mustn't be **metallic elements** (bony prostheses, for example) in the path of the electrodes or electrostimulation plates and infectious processes must not occur either.

6. The accessories must always be situated with the power control **at zero.**

7. Always place the accessories with the power control at zero.

8. The instructions of **qualified staff,** such as qualified beauty therapists, must be followed when using this machine.

9. The electrical safety of the patient is guaranteed by a double isolation of the mains. However, it must never be plugged into a socket that doesn't have an earth connection.

GENERAL FEATURES

DA 6000 is an appliance of digital automatic electronic epilation of the Blend System. This appliance is characterized by having galvanic current and radiofrequency current. Each current can be regulated independently and they can be combined between themselves. A single movement of pressure over a pedal activates the reinforced outlet through which the chosen currents circulate. The **control of time** and of the **intensity** of each current on behalf of the professional means that this appliance is a perfect ally to individualise the epilation to the characteristics of the patient. It also has an electrical warning that indicates the end of the selected time and the disconnection of the current.

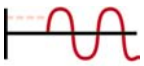
For a total freedom of choice for the beauty therapist, it also possesses a system of selection of the **mode** of epilation in **automatic** or **manual**. While the automatic mode programmes the machine with a pre-established power and time of the currents, in manual mode, the professional has, personally, the control. The manual system. The manual system is very indicated in those centres only specialized in epilation, since this system cancels the acoustic warning of the end of the passage of the current. In this way, a prolonged epilation is made more personalized and silent. The automatic system, with acoustic warning, can be used with galvanic currents or radiofrequency independently, or with both currents combined. It is this system which offers a greater effectivity in epilation with a single insertion of the needle in the hair follicle, because it attacks the bulb chemically and thermally at the same time.

DA 6000 also has a **mechanism of ionic reestablishment** incorporated in the apparatus. This innovative connection in an epilation apparatus allows you to introduce an ionisable product of local tranquilizing effects to eliminate any sensation of discomfort caused by currents and/or times of important galvanic currents or introduce a post-epilatory product that would make more effective if the treatment is necessary. In this way, the concentration of positive ions coming from the same body of the patient than is produced in the zone of application of the needle after the passage of the galvanic current.

DA 6000 is completed with some **digital luminous indicators** of power, time, selection and indication of the passage of the currents that give us instant visual references of the values that have been chosen. These luminous messages translate to us the situation of the appliance with only a look, so that professionals can optimize to the maximum their time and performance.

All these characteristics describe an appliance of epilation of great power and quality, that meets the requirements of the epilation professional looking for individualization, speed and effectivity.

TECHNICAL CHARACTERISTICS



-Electronic digital epilation through radiofrequency, galvanic current and air compressor.

-Automatic control.

-Galvanic outlet: from 0 to 5 mA.

-Radiofrequency outlet:

- 0.9 Megacycles.
- High impedance.
- Protected.

-Independent use or combined of radiofrequency and galvanic currents.

-Acoustic warning of disconnection, only in automatic.

-Digital indicators.

-ALL THE OUTLETS ARE ISOLATED WITH RESPECT TO THE MAINS.

-Supply: 230 V/110 V (with ground wire).

-Consumption: 90 w.

-Dimensions:

- Width: 440 mm.
- Depth: 280 mm.
- Height: 140 mm.

This appliance uses **currents** of radiofrequency to perform the treatment. The possible radiointerferences that it can produce have been minimized. However, certain conditions of the premises of the installation (for example, ground wire resistance too high) can reduce more the possible radiointerferences. For this, additional measures can be taken which are convenient to carry out. The **following measures** are suggested, that must be performed when there is the opportunity for this:

a. To have an **independent ground conductor** only used for appliances of electrotherapy.
b. Install the appliances in a room that acts as **Faraday** protection..

Non-ionizing radiation **doesn't produce any physiological effect** for the health, not being necessary any other precaution than the use of the same by a qualified person to apply an adequate treatment to the patient.

This system has the goal of disuading the use of the appliance by unqualified personnel or those not introduced in its use, warning of possible harmful effects that a misuse could produce on the patient.

This appliance provides a special grade of protection against electrical discharges, particularly in relation to the escape current allowable and the reliability of the connection of protection to earth.

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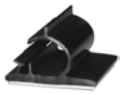
ACCESSORIES:

FOTO	REF.	DESCRIPCIÓN	Un.
	5100024	Needle holder handle	1
	5100023	Pedal with connection	1
	5111048	Self-adhesive needle holder	1
	5101212	Envelope 2 needles No. 1	1
	5111014	Indirect aluminium electrode	1
	5111076	Red banana cable	1
	210054	Mains cable	1

Optional accessories:

-5101224 Envelope 2 needles No. 1.5
-5101213 Box 25 envelopes needles No.1
-5101225 Box 25 envelopes needles No. 1.5

GENERAL DESCRIPTION OF THE CONTROLS

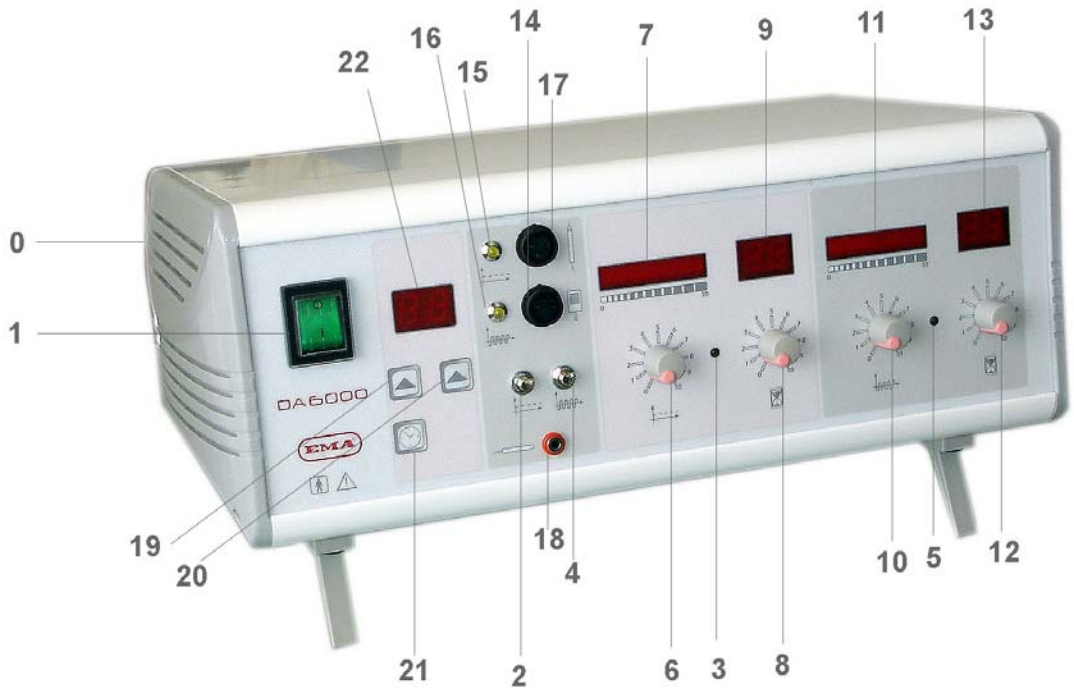
The DA 6000 has four differentiated windows:

The FIRST window allows to select the duration of the treatment session.

The SECOND window has a current output by means of the needle-holder and the treadle. This outlet also controls the return of the current to the device by means of the metallic bar. The second window of the device allows to also control the selection of the current type and to define the specific parameters oft he current such as the sequential or simultaneous passing through of the available currents (RD or galvanic).

The THIRD window controls the first of the current: the galvanic current. It has a potencymeter to select the current and another one to select the application time.

The FOURTH window controls the second of the currents: the RF or radiofrequency current. It has a potency meter to select the potency of the current and another one to select the application time.



0.- Fuse.

1.- General mains switch.

2.- Galvanic current switch. Select the entry or not of galvanic current in the needle.

3.- Luminous indicator of galvanic current. It is lit up if the galvanic current is available.

4.- Radiofrequency (R.F.) current switch. Select the entry or not of radiofrequency current in the needle.

5.- Luminous indicator of radiofrequency current. It lights up if the radiofrequency current is available.

6.- Control of intensity of galvanic current. It regulates the galvanic current that the needle conducts on pressing the pedal.

7.- Reading of the power of the galvanic current. It indicates the power of the selected current with the intensity control (6).

8.- Selector control of the time of galvanic current. It regulates the time during which the selected galvanic current circulates from the moment of pressing the pedal.

10.- Control of power of the current of radiofrequency. It regulates the current of radiofrequency that the needle conducts on pressing the pedal.

11.- Reading of the power of radiofrequency. It indicates the power of the selected current with the intensity control (10).

12.- Time selector control of the time of current of radiofrequency. It regulates the time during which the selected galvanic current circulates from the moment of pressing the pedal in AUTOMATIC.

13.- Reading of the time. It indicates the selected time with the time selector control (12).

14.-Connector of the pedal.

A single pedal connected to this connector initiates automatically the sequence of currents programmed during the programmed times.

15.- Green LED witness of galvanic current.

It is illuminated during the time of application of current of radiofreuency through the needle.

16.-Red LED witness of radiofrequency current.

It is lit during the time of application of current of radiofrequency through the needle.

17.-Needle connector.

The protected connector must be connected with the needle-holder to this connector to perform the treatment.

18.-Red connector handle.

The connector must be connected joined to the return electrode (metallic bar) to this connector to epilate. It is advisable that this bar is situated in the zone closest to the treatment area. It can also be held in the hand by the client.

19.- Button to select the tens of minutes

Pressing this button you can select the duration of the treatment in tens of minutes. (for instance, 10, 20, 30, etc).

20.- Button to select the units of minutes

Pressing this button, you can select the treatment duration in units of minutes. (for instance, 03, 13, 23, etc).

21.- Button to activate the countdown of the time/pause

Pressing this button, you can activate the countdown of the timer. Pressing once again you can stop the timer and activate the pausing.

22.- Visualisation display for the programmed time

On this display you can see the treatment time in minutes.

IDENTIFICATION OF THE DIFFERENT AUTOMATIC PROGRAMS

1. AUTOMATIC PROGRAM: GALVANIC CURRENT.

DA 6000 emits galvanic current with a power (controlled through control 6) and for a time (controlled through control 8) previously preselected by pressing the pedal connected to the outlet of the pedal (14). An acoustic warning indicates the end of the passage of the current.

2. AUTOMATIC PROGRAM: R.F.CURRENT

DA 6000 emits current of radiofrequency (RF) with a power (controlled through the control 10) and for a time (controlled through control 12) previously preselected by pressing the connected pedal to the outlet of the pedal (14). An acoustic warning indicates the end of the passage of the current.

3. AUTOMATIC PROGRAM: GALVANIC CURRENT AND R.F.

DA 6000 emits a sequence of galvanic current and RF through a single pressing of the pedal connected to the outlet of pedal combination (14). The sequence of currents is the passage of the galvanic current followed by radiofrequency current.

The passage of the galvanic current is common to the whole journey of the treatment. If this functioning is chosen, you must take into account that the galvanic current circulates a total sum of the time of galvanic current with radiofrequency current together. It only appears recommendable if you wish to work very quickly, if you have experience and if it is very strong hair.

On producing a sequential passage of currents, the galvanic current is projected in first place to then give passage to the RF current. In this option the currents don’t manage to superimpose, but flow in a staggered way. The galvanic will be the first current that will begin to pass, applying its anaesthetic properties and of chemical action in the hair follicle. Next, it will be substituted by the RF, with which a physical burn will be produced for the increase of the power in a local

and intense way. This option is that which is usually most used in all type of hair.

The power of the currents and the time during which they must be emitted are regulated through the respective controls.

SUMMARY OF THE EFFECTS

Both the galvanic current and that of radiofrequency have as an objective the microcauterization of the hairy bulb, but they have different effects over living tissues.

The galvanic current produces a microcauterization fundamentally due to the ionic change that it causes in the proximities of the needle introduced in the hairy bulb. The effect is fundamentally a *chemical* one.

The current of RF produces a microcauterization fundamentally due to the heat that is released in the proximities of the needle introduced in the hairy bulb. The high frequency eliminates the electrical sensation of passage of electrons into the interior of the tissues (the tickling that the galvanic current produces is not perceived).

The galvanic current produces very few sensitive problems and leaves the treated area with good electrical conduction for the later passage of radiofrequency. On the other hand, it has a disadvantage: the effects of cauterization by galvanic current can be made visible hours after the treatment, especially if currents that are too high have been used and/or times which are too high.

The current of radiofrequency can be uncomfortable although these problems are less if galvanic current has been made to circulate for several seconds previously. It has the advantage that the effects of the cauterization are visible straight away, and therefore, it will be difficult to inadvertently use powers which are too high.

NB: This manual has dedicated a large section to the physiological effects of both currents in the tissues so that professionals have the maximum information to understand the biological reach of the practice of electrical epilation.

PROCEDURE OF OPERATING AND EPILATION

Example of procedure of epilation. This procedure of generalized epilation is applicable to any of the methods of epilation that DA 6000 offers.

Before beginning, the professional must be in a comfortable position, relaxed with easy access to the appliance (for its manipulation) and with optimum conditions of light and vision.

1. The professional is prepared for the treatment. Make sure that you have cotton wool, some alcohol, tweezers and some tissue paper available.

2. Make sure that the needle-holder handle (17) is correctly connected.

3. Make sure that the pedal is correctly inserted in its connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in window 4 (18). The client must keep this electrode in contact with the skin throughout the whole period of the treatment. It is advisable that the bar is near to the zone to epilate.

4. Start up the device by pressing the general switch l (1).

5. Program the treatment time of your choice, by selecting the tens (19) and units (20). Then press the button to activate the timer in order to start the treatment (21). Please remember you can pause the time by pressing the button once again.

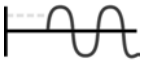
6. Select the desired currents (galvanic current (2)) and current of RF (4).

   a. *Galvanic current switch* (2): In the appliances of epilation of Blend System, it is recommendable to begin the epilation with the galvanic current because it produces the least sensitive

problems and leaves the area with good electrical conduction for the later passage of radiofrequency.

b. Switch of radiofrequency current (R.F.): the current of radiofrequency can be more painful, although these problems are less if galvanic current has been made to circulate for a few seconds previously.

7. The option of passage of the current is selected (galvanic current, RF current, Blend current). If the Blend system is chosen, the current will be projected in a sequential form:



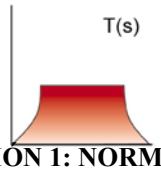
a. Sequential application of the galvanic currents and of radiofrequency (1st Galvanic; 2nd RF). The pedal activates in first place the passage of the galvanic current and in second place that of RF. The electrical sensation is lower. Option advised for **normal hair**.

7. The power of the chosen current through the control of power of corresponding current.

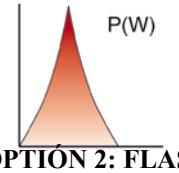
a. Galvanic current (control 6).

b. Radiofrequency current (control 10).

The powers to apply must be personalized to the maximum to limit the electrical sensation to the client and to work below the pain threshold. It is advised to begin with little quantity of power and to increase progressively as the client provides sensitive information about the electrical sensation that it causes. It is important to differentiate the power and the time in **flash epilation** (a lot of power in tenths of a second) and **normal** (low powers in periods of several seconds).



OPTIÓN 1: NORMAL.
Average powers in periods of several seconds.



OPTIÓN 2: FLASH.
High powers in periods of tenths of second.

Carefully read the physiological effects of both currents in the section destined to it in the manual to know about the effects that we are causing when we apply power. If you want to obtain the greatest impact of the current in the hairy bulb, don't forget to correctly hydrate the skin before introducing the needle. The body water conducts the current and the power to greater depth in a significant way. In this way, the possibility of generating burns by bad practice is avoided and results of greater quality are obtained with less agressivity.

The skin is disinfected

5. The area is disinfected with alcohol and cotton wool.

6. The hair is selected for epilation. It is convenient to hold it with the tweezers to identify what the direction of the follicle in the skin is and in this way be able to introduce the needle in the most reliable way.

7. The needle (17) is introduced in the hair follicle. The penetration of the needle must be gentle and must be performed with a homogenous pressure. If pain is produced to the client, suspend the introduction of the needle and rechannel the penetration of the emitting elctrode of the current. The holding of the needle-holder handle must be comfortable for the professional.

Hold the needle-holder handle with comfort and safety.

The needle is introduced into the

8. The pedal (14) is pressed until you hear the acoustic warning.

9. The hair is removed with the help of some tweezers. The hair must come out in a smooth way. If it is necessary to make a greater pressure, that will indicate to us that the discharge has not been sufficient to cause the death of the bulb. When that happens, the operation must be repeated increasing the variables of time and of power.

Air is introduced into the follicle across the needle, and, with it, a greater concentration of oxygen.

Some tweezers are used to extract the cauterized skin. If the epilation has been carried out correctly, it can be observed how the hairy bulb has been burnt.

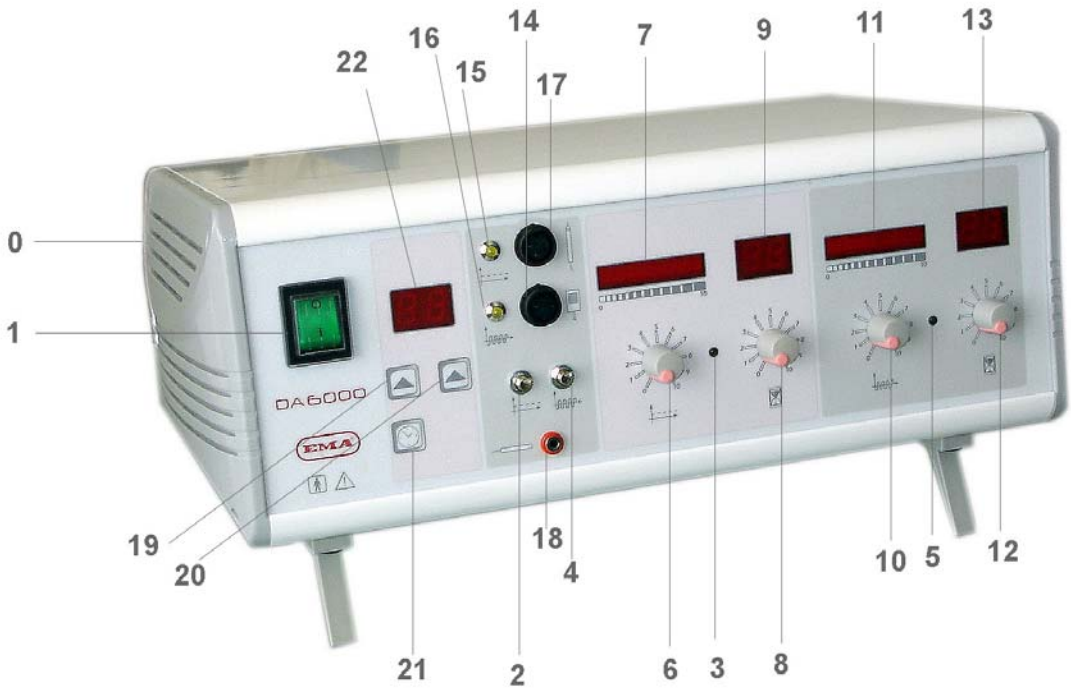
POSSIBILITIES OF USE

a. ELECTRICAL EPILATION

1. AUTOMATIC SYSTEM: GALVANIC CURRENT
2. AUTOMATIC SYSTEM: GALVANIC CURRENT FLASH
3. AUTOMATIC SYSTEM: CURRENT OF HF
4. AUTOMATIC SYSTEM: CURRENT OF HF FLASH
5. AUTOMATIC SYSTEM: BLEND (GALVANIC + HF)
6. AUTOMATIC SYSTEM: BLEND FLASH (GALVANIC + HF)

POSSIBILITIES OF USE

1. AUTOMATIC SYSTEM: GALVANIC CURRENT



1. Make sure that the needle-holder handle is correctly connected (22).

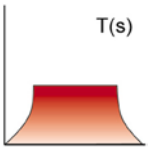
2. Make sure that the pedal is correctly inserted in the connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in window 4 (18). The client must maintain this electrode in contact with the skin throughout the whole treatment. It is advisable that the bar is near the zone to epilate.

3. The appliance is activated through the switch (1).

4. The galvanic current is selected, activating the *switch of galvanic current* (2).

Galvanic current

5. The power of the chosen current is selected through the control of power 6. The time is selected through the control 8.



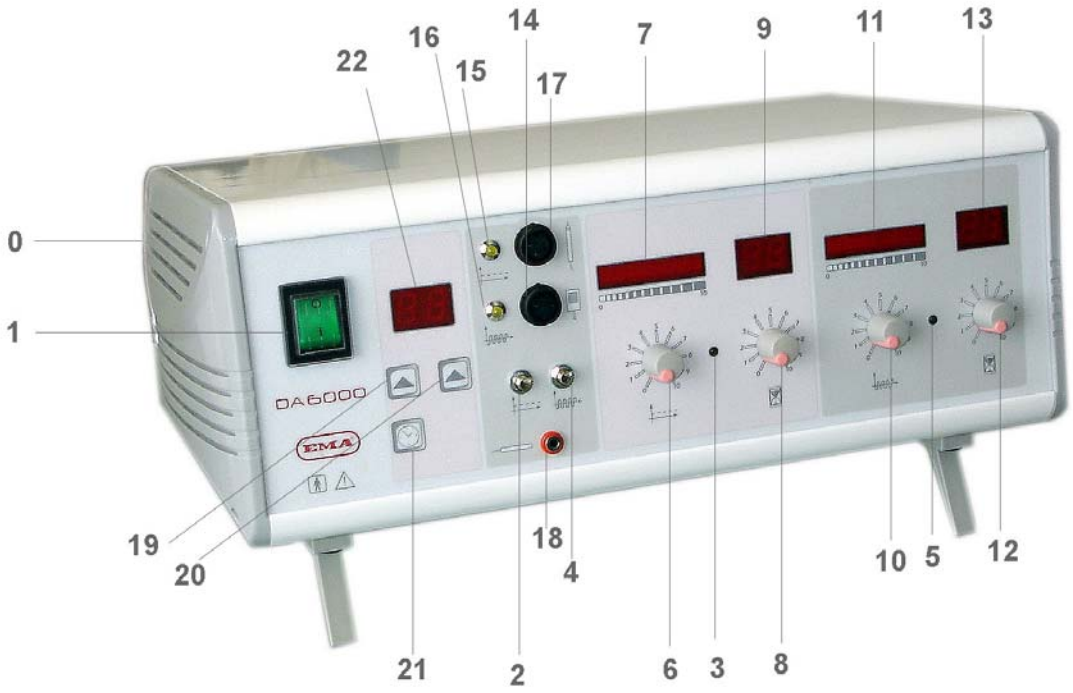
The variables are introduced for the epilation: a moderate power for several seconds of passage of current.

8. The needle (17) is introduced into the hair follicle.

9. The pedal (14) is pressed until you hear the acoustic warning. It is observed how the pilot 15 is lit for a time in which the current flows through the needle.

10. The hair is removed with the help of some tweezers.

2.AUTOMATIC SYSTEM: GALVANIC FLASH CURRENT



1. Make sure that the needle holder handle is correctly connected (17).

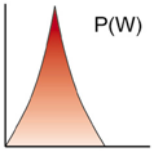
2. Make sure that the pedal is correctly inserted in the connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in the window 4 (18). The client must maintain this electrode in contact with the skin throughout the whole treatment period. It is advisable that the electrical bar is close to the zone to epilate.

3. Activate the appliance through the switch (1).

4. The galvanic current is selected, activating the *galvanic current switch* (2).

Galvanic current

5. The power of the chosen current is selected through the power control 6. The time is selected through the control 8.



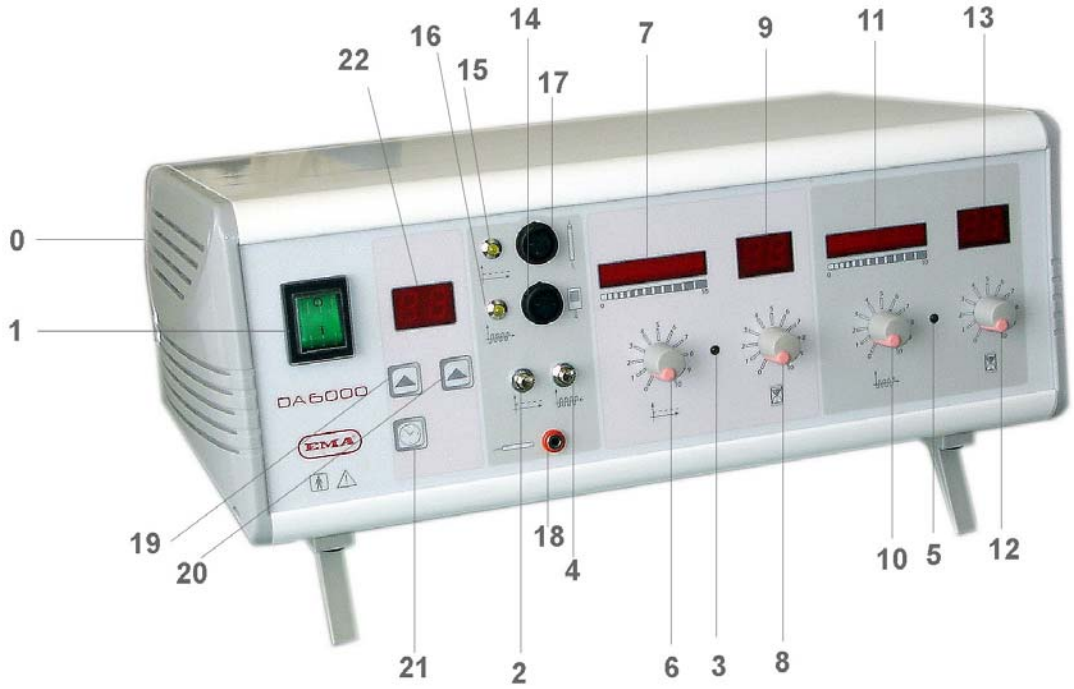
The variables for the epilation: a high power for tenths of a second of passage of the current.

6. The needle (17) is introduced in the hair follicle.

7. The pedal is pressed until the acoustic warning is heard. It is observed how the pilot 15 is lit during the time in which the current flows through the needle.

8. The hair is removed with the help of some tweezers.

2. **AUTOMATIC SYSTEM: HF CURRENT**



1. Make sure that the needle-holder handle is correctly connected (17).

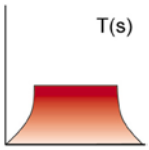
2. Make sure that the pedal is correctly inserted in the connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in the window 4 (23). The client must keep this electrode in contact with the skin throughout the whole period of the treatment. It is advisable that the bar is near to the zone to epilate.

3. The apparatus is activated through the switch(1).

4. The radiofrequency current is selected, activating the *RF current switch* (4).

RF Current

5. The power of the chosen current is selected through the power control 10. The time is selected through control 12.



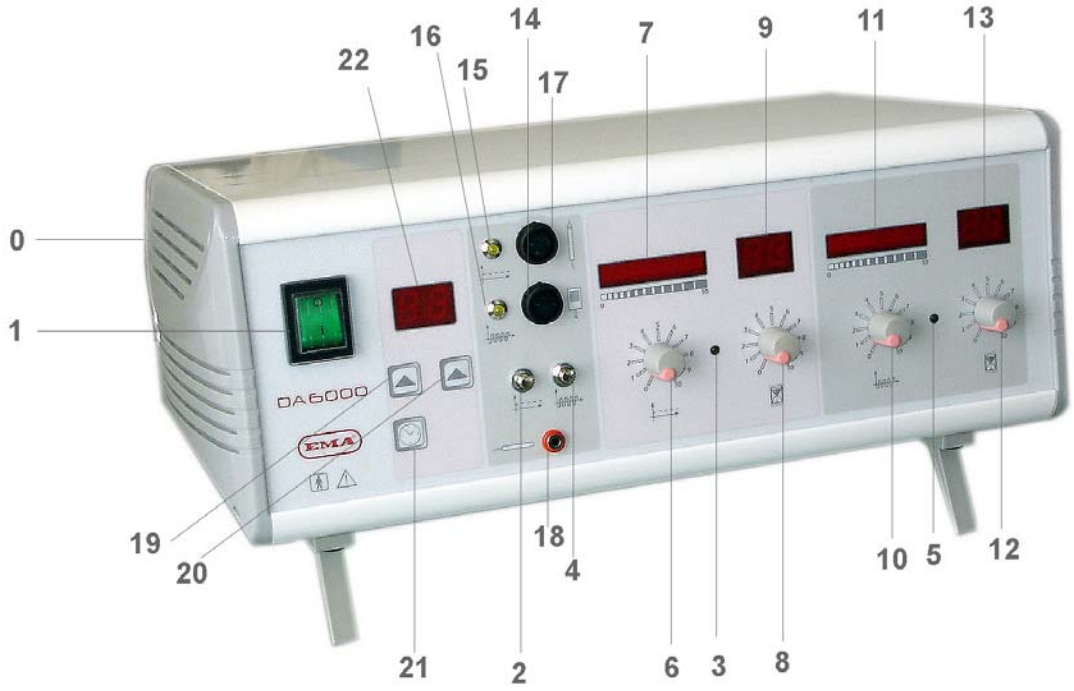
The variables for epilation are introduced: a moderate power for several seconds of the passage of the current.

6. The needle (17) is introduced in the hair follicle.

7. The pedal (14) is pressed until you hear the acoustic warning. It is observed how the pilot 16 is lit during the time in which the current flows through the needle.

8. The hair is removed with the help of some tweezers.

4. AUTOMATIC SYSTEM: HF FLASH CURRENT

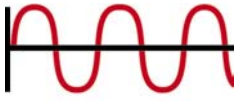


1. Make sure that the needle-holder handle (22) is correctly connected.

2. Make sure that the pedal is correctly inserted in the connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in window 4 (23). The client must maintain this electrode in contact with the skin throughout the whole period of the treatment. It is advisable that the bar is close to the zone to epilate.

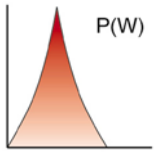
3. The appliance is activated through the switch (1).

4. The RF current is selected, activating the *RF current switch* (4).



RF Current

5. The power of the chosen current is selected through the power control 10. The time is selected through control 12.



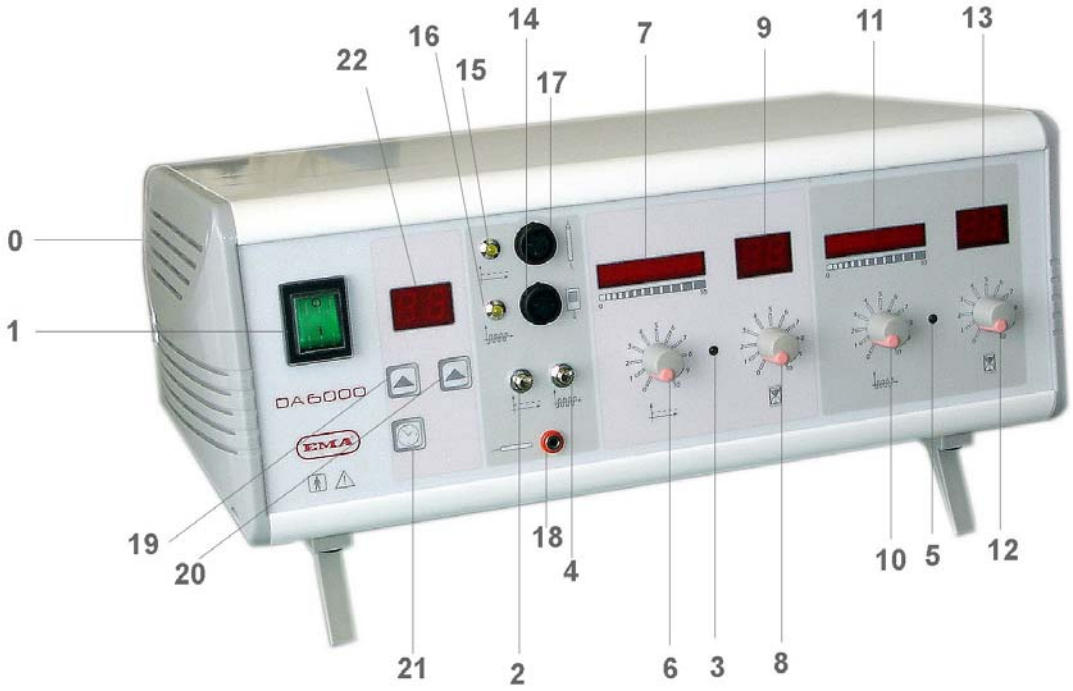
The variables for the epilation are introduced: a high power for several tenths of a second of passage of the current.

6. The needle is introduced in the hair follicle.

7. Press the pedal until you hear the acoustic warning. It is observed how the pilot 16 is lit during the time in which the current flows through the needle.

8. Remove the hair with the help of some tweezers.

5. **AUTOMATIC SYSTEM: BLEND (GALVANIC + HF)**



1. Make sure that the needle-holder handle is correctly connected (17).

2. Make sure that the pedal is correctly inserted in its connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to window 4 (18). The client must maintain this electrode in contact with the skin throughout the whole period of the treatment. It is advisable that the bar is near the zone to epilate.

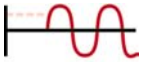
3. The appliance is activated through the switch (1).

4. The galvanic current (2) and RF current (4) are selected.

   a. *Galvanic current switch* (2).

   b. *Radiofrequency switch (R.F.)* (4).

5. The option of passage of the current is selected, if it is worked with the Blend System in any of its variations:



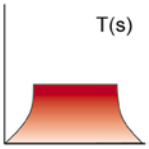
Switch of **sequential use** of the currents of galvanic and radiofrequency (1st. Galvanic; 2nd. RF). The pedal activates in the first place the passage of the current and in second place that of RF. The electrical sensation is less. Option advised for **normal hair**.

6. The power of the chosen current is selected by means of the control of power of the corresponding current.

   a. Galvanic current (control 6).

   b. Radiofrequency current (control 10).

The powers to apply must be personalized to the maximum in order to limit the electrical sensation to the client and to work below the pain threshold. It is advised to begin with little quantity of power and keep increasing progressively as the client provides sensitive information about the electrical sensation that it causes her. It is important to differentiate the power and time in **normal epilation** (low powers in periods of several seconds).



The variables are introduced for the epilation: A moderate power for several seconds of passage of the current.

The time of passage for both currents is selected:

   1. Galvanic current (control 8).

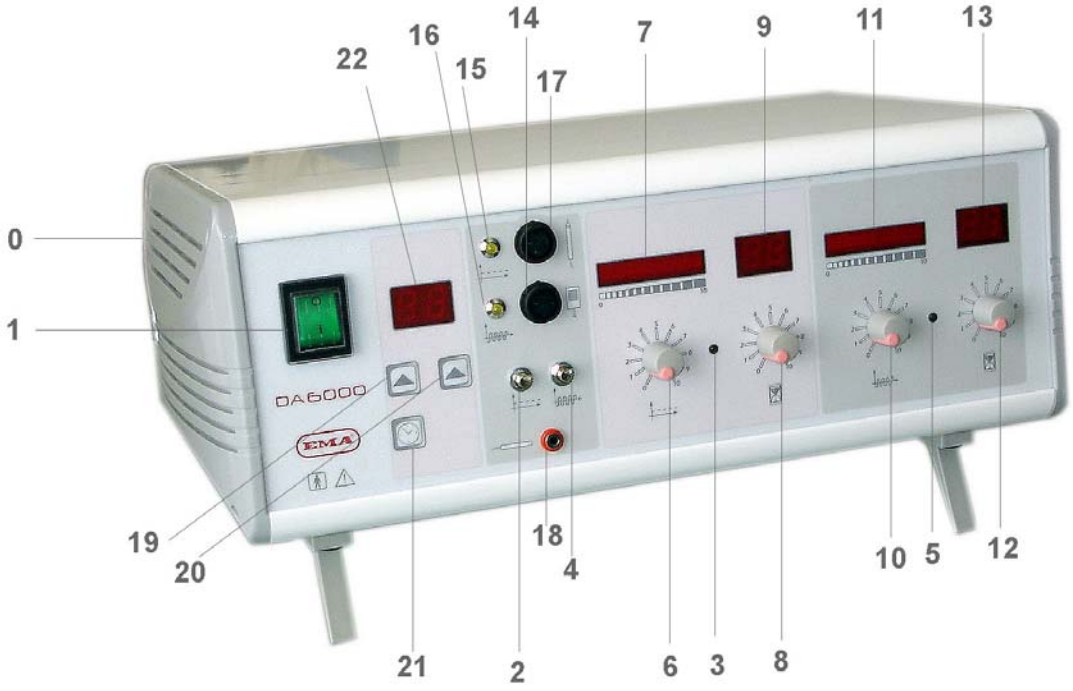
   2. Radiofrequency current (control 12).

7. The needle (17) is introduced in the hair follicle.

9. The pedal (14) is pressed until you hear the acoustic warning (automatic warning). The passage of the two currents will be able to be observed in the pilots of window 4 (galvanic current: 15; RF current: 16).

9. The hair is removed with the help of some tweezers.

6. AUTOMATIC SYSTEM: BLEND FLASH (GALVANIC + HF)



1. Make sure that the needle-holder handle is correctly connected (17).

2. Make sure that the pedal is correctly inserted in its connector (14). The red cable is connected to the indifferent metallic bar (return electrode) to the red connector in window 4 (18). The client must maintain this electrode in contact with the skin throughout the whole period of the treatment. It is advisable that the bar is near the zone to epilate.

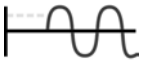
3. The appliance is activated by means of the switch (1).

4. The galvanic current (2) and current of RF (4) are selected.

   c. *Galvanic current switch* (2).

d. *Radiofrequency current switch (R.F.)* (4).

5. The option of passage of the Blend current is selected, through the sequential combination of the currents:



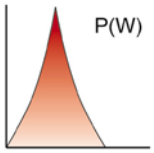
Sequential application of the currents of galvanic and radiofrequency (1st Galvanic; 2nd RF). The pedal activates in the first place the passage of the galvanic current and in second place that of the RF. The electrical sensation is less. This option is advised for **normal hair**.

6. The power of the chosen current is selected by means of the power control of the corresponding current.

   a. Galvanic current (control 6).

   b. Radiofrequency current of (control 10).

   The powers to apply must be personalized to the maximum to limit the electrical sensation to the client and to work below the pain threshold. It is advised to begin with little quantity of power and progressively increase as the client provides us with sensitive information about the electrical sensation that it causes her. It is important to differentiate the power and the time in **normal epilation** (high powers in tenths of a second)



The variables for the epilation are introduced: A high power for one or several tenths of a second.

The time of passage for both currents is selected:

1. Galvanic current (control 8).

2. Radiofrequency current (control 12).

7. The needle (17) is introduced into the hair follicle.

8. The pedal (14) is pressed until you hear the acoustic warning (automatic warning). The passage of the two currents can be observed in the pilots of window 4 (galvanic current: 15; RF current: 16).

9. The hair is removed with the help of some tweezers.

PRINCIPLES OF ELECTRICAL EPILATION

ELECTRICAL EPILATION: THE NATURE OF ITS CURRENTS

Since the origins of humanity, man has had problems with hair – too little where it was wanted and too much where it wasn't wanted. In the first archaelogical finds, tools were found with extremely sharpened blades that are thought to have been used as shaving instruments.

While for man, facial and body hair is a sign of his masculinity, a woman with an excessive growth of hair, particularly in the face is considered to be less feminine. When a man doesn't want to have a moustache or a beard, he has the option to shave them daily by means of a ritual, keeping open the option of letting them grow again. Those women that have an important growth of facial hair normally find it the most embarassing, for which they would be delighted if they could make it disappear forever.

Electrical epilation is a system of permanent elimination of the hair. As it produces the destruction of the hair follicle, performing it in a correct manner, it must not grow again. It must be performed by one of several *electrical* methods available:

- Galvanic
- Radiofrequency (RF)
- Blend

Function and evolution of the hair.

The hair does not perform any vital function in the human being, whose body could be perpetually epilated without suffering any physiological disadvantage.

The hair follicles continue being sense organs, but their main function in warm-blooded mammals is thermal insulation.

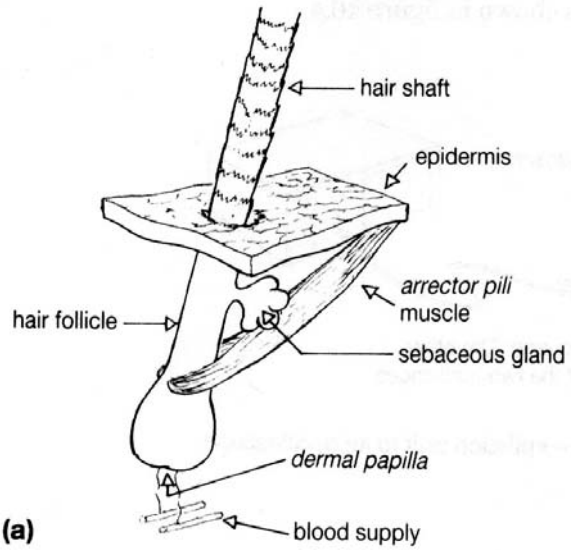
In some zones of the body, the skin forms part of an apparatus of disemination of smells, destined to sexual or social communication. However, all the hair follicles conserve a volutive remnant of the cyclical activity that allowed some predecessor to shed the hair while it was growing or according to the seasons. And the armpit and pubic regions continue being under the the hormonal control that ensures its full development and functioning during adult life.

The hair is a cylinder of **compact keratinized cells**. It can have a central medula divided into chambers or not. Its main part is formed by elongated cells of the cortex, surrounded by a cuticle. This cuticle is composed of five to ten superimposed cellular layers.

The growth of the hair varies according to the species and, within each species, according to the region of the body.

The surest measurements, by marking of pulses
with (^{35}S) cisteine and subsequent autoradiography
of hairs, give a total daily average index 0.37 mm for
the human scalp. In women, the hair of the scalp

grows more quickly and the hair of the body grows more slowly than in men.

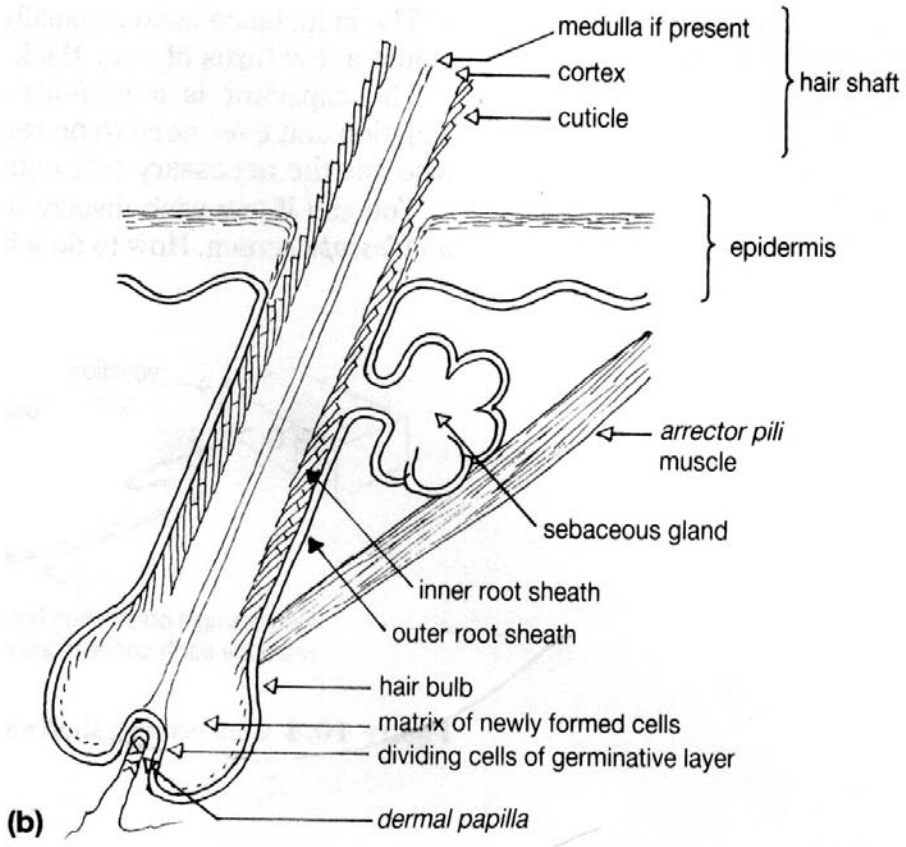


The hair follicle

Structure of the hair follicle

We are going to see what the structure of the hair follicle is to discover what our objective is.

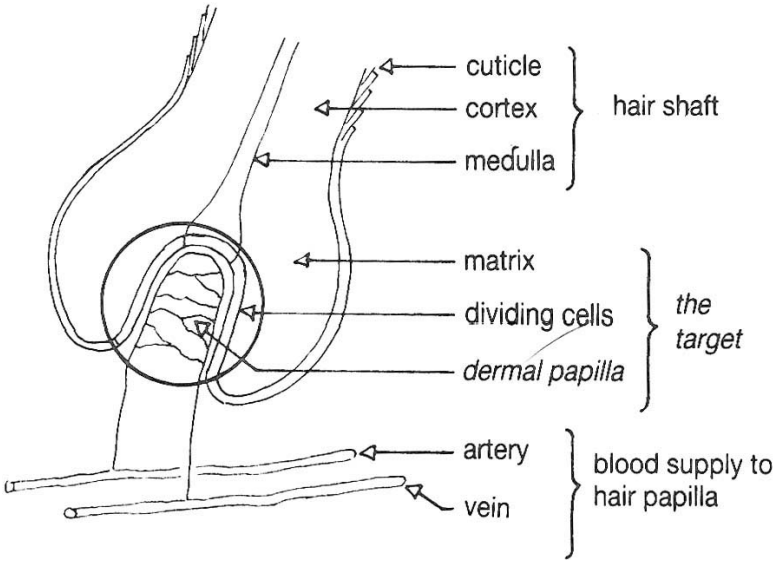
So that there isn't a regrowth of the follicle, it is essential that the element that induces the growth is destroyed. In the base of the follicle, a network of blood vessels is found, the *dermal papillae* covered by a group of *cells that divide* that are part of the germinative layer of the epidermis. It is from this layer of cells that divide from where the hair grows, since the capillaries of the *dermal papillae* are those which feed and nourish them. If the objective is to avoid the growth of new hairs, these structures must be destroyed.



Normally in electrical epilation, the current is introduced into the follicle through a *needle electrode.* A great part of our dexterity in inserting the

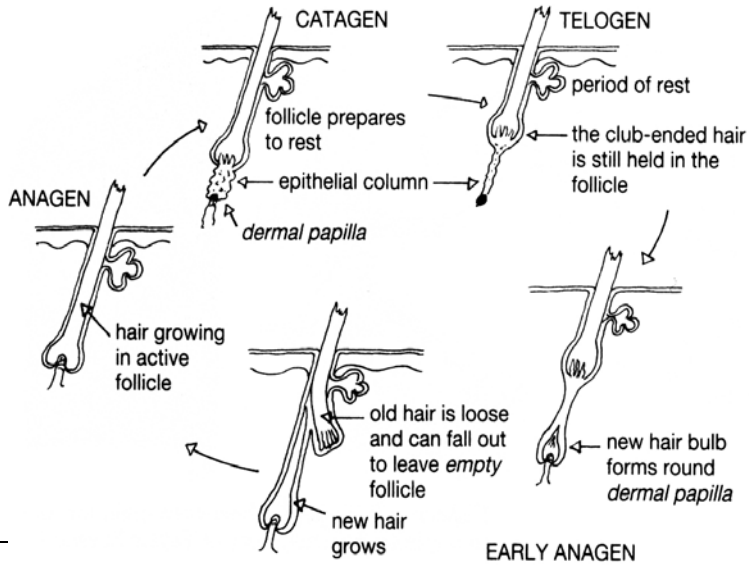
needle in the follicle will determine the destructive effects of the current over the follicle and it will arrive to the objective.

Diagram of the vertical section of the hair follicle



However, it is normal that some extracted through this method will grow again. A good operator can obtain 70% mortality of the hair follicles. There are some reasons why the hair *grows again*.
Some follicles can be "empty". The body hair can be of two types: that which grows slowly but continuously, a weak and fine veil and that which grows faster and with strong and deep-rooted endings. These hair endings go through a growth cycle.

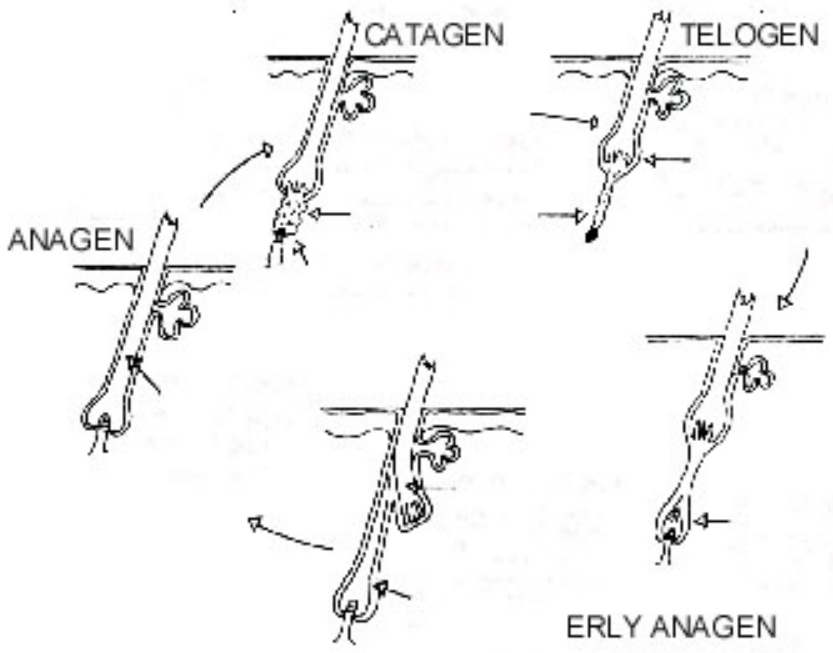
The hair grows actively during a certain period, after a period of "rest" it falls while another new one takes its place. In this phase of the process, the follicle appears to be empty, so during the epilation it will be ignored.



Cyclical activity of the hair follicles

The most important characteristic of the hair follicles lies in the fact that its activity is intermittent; each follicle has periods of rest.

The growth cycle of the hair



Towards the end of the active period, or **ANAGENOUS,** the follicles of the human scalp show a clearing of the pigment in the base of the stem, and the melanocites stop producing and transferring melanin.

The middle region of the bulb is constricted and, away from this constriction, the expanded base of the hair is keratinized forming a "layer" through which the hair then remains retained in the skin for some time. A characteristic of this phase of transition, called **CATAGEN**, is the thickening and corrugation of the virae membrane, part of the sheath of connective tissue of the follicle. The epithelial column beneath the constriction then liberates to the *dermal papillae*, and then it is lengthened as the hardened hair goes towards the surface of the skin.

The movement towards the rest period, or **TELOGEN** (Fig. 3), is completed with the cutting from below of the epithelial strand, until it is reduced to a small «secondary germ». When after a few weeks the following cycle begins, the secondary germ grows downwards to redress the *dermal papillae* and form a matrix again. This matrix produces a new skin in a way more similar to a follicle in development.

The hardened hair is lost in due time.

In the human scalp, in any given moment, less than 1 % of the follicles are in catagen and an average of 13% in telogen.

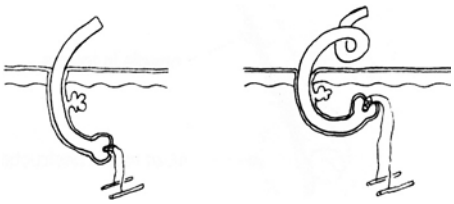
Percentage of death of hairs and reasons for their regrowth

To eliminate all the hairs of an area of skin in a treatment would be too painful and aggressive for the skin. To make the hairs disappear completely from part of an area can seem strange.

Normally, in each treatment the hairs are extracted in a random manner, gradually making them weaker in their growth so that, at the end of the series of treatments, the hair has disappeared.

The curved follicles give as a result curly and wavy hairs

Some follicles are *curved*. Even if you stretch the skin it is not possible to put the follicle in a suitable position so that the needle can arrive correctly to the objective, so that papila cannot be destroyed.



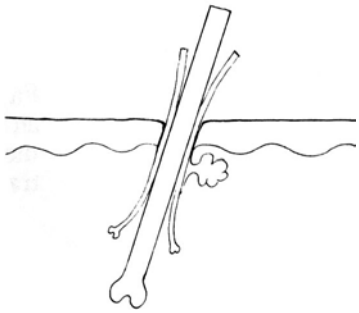
Some follicles are *multiples* and can contain a small group of compact hairs, normally one main one which is destroyed and other smaller ones. Often one of these small ones grows enough to occupy the place of the main one in the follicle.

Enlarged photograph of amultiple hair follicle.

Naturally there is always the possibility of a bad practice. The incorrect insertion of the needle, the insufficient intensity of the current, a time of passage of the current which is too short are some of the factors that can lead to the non-destruction of the *papillae.*

For this reason, the professional associations of eletrical epilation insist on the correct training and preparation of the students, as well as long period of practice on the same professionals before practicing this activity with real clients.

Section of a multiple hair follicle



1. GALVANIC CURRENT

Direct Current in therapy

The therapeutical effects of the treatments with galvanic are produced by making a direct current pass through the body.

The movement of the ions, that is the direct current, is used in direct *through-body galvanism* and *iontophoresis*.

In *through-body galvanism*, the movement of the ions stimulates the metabolism in the tissues submitted to treatment. In *iontophoresis*, the "active ions" of special cosmetics are forced into the skin by the electrical current.

The *chemical reactions* that take place at the electrodes are also used in galvanic treatments, particularly the *alkaline* effects around the *cathode*. These treatments are sometimes called cathodermy.

The original method of electrical epilation called galvanic epilation uses chemical reactions to destroy the hair follicle. This electro-chemical destruction is called *electrolysis.* From here the term *electrolysis* is derived, commonly used to denominate electrical epilation.

The last method of epilation discovered is epilation by radiofrequency (RF), which incorporates a physical effect in the destruction of the hair. This system of epilation is also called *thermolysis*.

The most modern method of epilation is that of epilation by Blend System, which combines galvanic current with currents of RF. This new combination of currents aims to destroy the *dermal papillae* by means of a very effective dual physical-chemical effect.

Galvanic current

For galvanic therapy, a smooth and direct current is necessary. It must flow smoothly without interruptions, pulses or waves that would probably be able to stimulate the motor points of the muscles and cause them to contract or wiggle. Due to the *Stratum corneum*, the exterior layer of the epidermis has a low water content and is covered by a layer of *sebum graso.* for this reason, it has a high resistance and a fairly high voltage is necessary that allows the current to pass through it. Once

penetrated in the *Statum corneum*, the current flows in a fairly simple way through the organism.

The electrodes

The outlets from which the cables are connected are very characteristic. There are two options of possible situations. There will be two separate entrances indicating + or -, or a non-reversible connection of two pins with a switch of current that will indicate + or -.

In order to form a circuit of flow of electricity through the client, two electrodes are needed. One of them, is connected to the + outlet. The other, the cathode is connected to the – of the circuit of galvanic current.

In the majority of the treatments, an electrode is used in the place of treatment of the skin. This terminal is denominated *active* electrode. The other electrode is only to complete the circuit. It is denominated *indifferent* electrode.

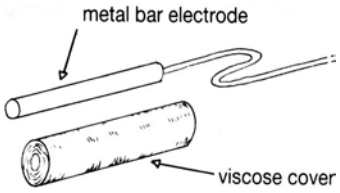
As active electrode in the electrical epilation, the needle of epilation inserted in the needle holder handle is used.

In conventional treatments with galvanic current, metallic roll-ons can be used, either covered by covering materials of viscose, or without any tissue covering them. Often the roller electrodes are used in pairs, one connected to the positive outlet and the other connected to the negative outlet of the machine.

As indifferent electrodes, a metal bar is usually used covered optionally by a tube of viscose that the client must hold in her hand or in the closest area to that of the treatment.

Roll-on used for the penetration of cosmetological substances or post-epilation products.

These electrodes must be well held in their whole extension in a way that is regular to the skin. The safety straps must hold the whole area of the electrode in contact with the skin. The elastics usually have velcro closes. This bar can also be held by the client in a place close to the zone to epilate.



Metallic bar through which the current returns to the appliance.

The effects of the galvanic current

The physical-chemical effects of the galvanic current are of two types.

The **chemical** reactions that receive the name of **electrolysis** and that are produced in the electrodes are the **polar effects**.

The physical movement of ions in the organism is the **interpolar effect**.

These effects are summarised in the following graph:

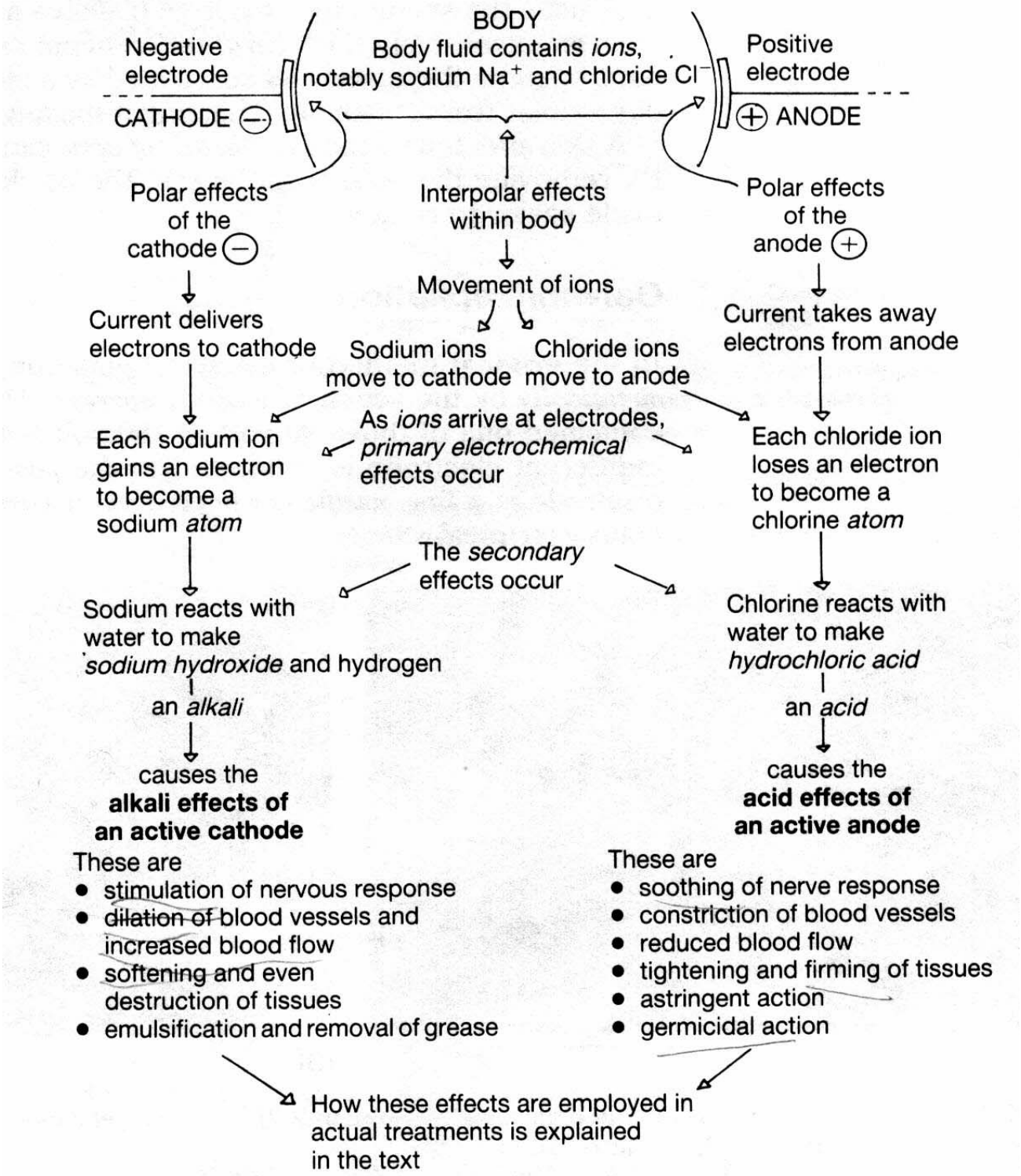


Figure 6.19 The polar and interpolar effects of the galvanic current

The use of the polar effects in the treatment

The treatments that use the alkaline reactions under the active cathode are usually known as cathodermy. Traditionally the velcrose is soaked in salt solution (sodium chloride) so that the physical effects of the treatment are the consequence of the production of alkaline sodium hydroxide in the cathode. Now the salt or similar substance is disguised in the form of special fluids or gels provided in vessels. But their action is essentially the same.

Galvanic epilation

In the method of electrical epilation through galvanic current, the hair follicle is *chemically* destroyed by means of the action of a *direct current*. This system of epilation uses a direct current of electricity to destroy the growing part of the hair follicle by *chemical action.*
In the previous graph, it can be observed how the direct current brings about the destruction of the hair follicle and how epilation with galvanic current is produced.

Electrotonus

Electrotonus is a term used to join the stimulating and calming effects of the galvanic current. This effect is produced by the effect of the nerve impulses throughout the nerve.

The transmission of the impulse is produced by the discharge of the electrical charges throughout the nerve fibres. After having passed the impulse, the nerve has to recharge itself before it can transmit the following impulse, and it is this that is affected by the galvanic current.

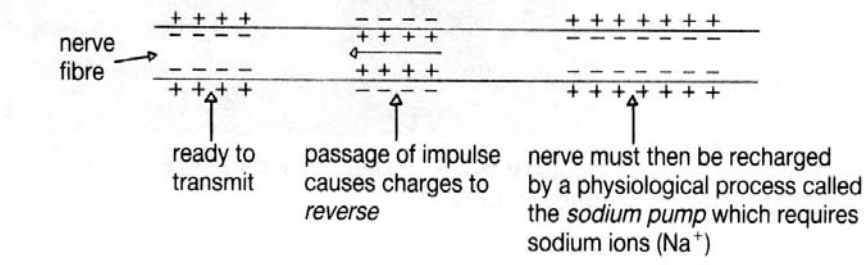


Figure 6.22 The transmission of a nerve impulse

Under the active cathode (-), the sodium ions will be acumulated and in this way they will assist the recharge of the nerves. From that factor, the nerves are stimulated.

Under the active anode (+), the sodium ions of are diseminated and consumed, inhibiting the recharge of the nerves. From there, the antalgic effect is produced. You must be careful about this effect, since an excess in the application current could cause the complete anaesthesia of the zone, for which the area of treatment would temporarily lose all tactile sensation.

Erythema

If, during the treatment, The skin reddens and becomes irritated, it means that the skin is suffering and is being attacked. If this occurred, the treatment must be stopped. The current must be applied in the opposite direction for a short period of time. This will neutralise the chemical residues that remain in the skin and will alleviate the irritation.

Iontophoresis

Once the epilation treatment has been carried out, it is interesting to apply the post-epilation roller to re-establish the ionic equilibrium of the skin and to penetrate retarding agents of the growth of the skin. For the iontophoresis of keratinolitic products, a wide range of special lotions and cosmetic gels exist in the market for the treatments. These lotions, normally provided in the form of sealed glass, must soak the spontex cover or of the gause that covers the post epilation roller (the active electrode).

The gels, normally supplied in little sealed envelopes, must be applied directly over the surface of the skin disposed for treatment. A gel is essentially the same as a lotion, but has been thickened by means of a thickening agent like methyl cellulose. This makes the product more easily controllable in the skin, but it doesn’t interfere with its conductability nor its chemical action.
The active principles in these cosmetics are ionized and in iontophoresis the current is used to impulse these ions into the skin under the principle that “*like charges are repelled”*.

Each gel or lotion is classified with a (+) or (-). This indicates the polarity of the electrode that has to be used. It is indispensable that the professional uses the correct electrode.

A lotion or gel classified as (+) will have *cations* (+). For example, the aluminium ions (Al^{3+}) of an astringent. These ions will be introduced into the skin through the active anode (+) This process is called *cataphoresis*.

A lotion or gel classified as (-) will have active *anions*. An example of this is the peroxide, a clearer of the skin (O_2^{2-}). An active cathode (-) will direct these ions into the skin. This process is called *anaphoresis*.
The terminology being a bit confusing, please take care when you use one term or another.

The intensity of the current and the treatment time are also important. Too little quantity both of intensity as of the time will not push the ions far enough. Too much current for too long will push them through the skin and will make them disappear in the blood flow. Read the instructions of the manufacturers of the cosmetological product that it applies and follow them to the letter.

Through-body galvanization

Galvanization through the tissues is the use of the movement of the ions to *stimulate* the *metabolism* of the tissues. This movement of ions agitates the contents of the cell and helps the passage of the substances inside and outside the cells through the cellular membrane.

The stimulation of the metabolism gives a "sensation of well-being" in the treated area. The stimulation added to the stimulation of the nervous system converts the galvanic current into a valuable ally in the preparation of the selected zone to epilate with electrical epilation due to the powerful anaesthetic effect that it produces.

This light anaesthesia of the treated zone favours the tranquility of the client, since she doesn't feel so much pain, and it also improves the electrical conductability so that the passage of the current of RF is more effective.

Safety in therapy with Galvanic

Galvanic therapy is a very simple treatment to perform, but in the hands of an untrained or incompetent operator, it is capable of producing intolerable damage to the client. It is very important that the client obtains an effective treatment, pleasant and *safe*.

Preparation of the client

Besides the usual contraindications, the sensitivity of the area to treat through the simple test of the needle. It is essential that the client is capable of responding to the sensation experienced during the treatment. This means that the treatment must not be performed in any area in which there is a lack of sensitivity, or rather, an *anaesthetized zone*.

The area of treatment must be inspected to discover the signs of cuts, scratches or injuries. The damaged epidermis could have a greater water content, and therefore be more conductive than the skin that surrounds it. This could cause an excessively high current channelled through the affected zone. These injuries will have to be isolated through their covering with a bit of soft parafin or petroleum jelly.

As preparation to the galvanization of the organism, the areas of the body where the electrodes or plates are going to be applied must be carefully cleaned and dried. This is performed to remove the sebum and to level any variation of resistance of the skin. This procedure must also be followed when the indifferent electrode is applied.

Warn your clients about *the taste*, especially when you work in the face. If they have fillings, the current will slightly dissolve the metal, but enough in order to produce a *metallic taste* in the mouth.

Reassure your clients that their fillings are not going to disintegrate, but in the case in which the taste becomes intolerable, prepare to stop the treatment.

Preparing the electrodes

The electrodes must be prepared *exactly* as each treatment requires. For *facial* treatments, the active electrode must be covered by a little gause soaked in salt solution or *iontophoresis* lotion. After soaking the

gause homogeneously, all excess of water must be drained and it must be applied over the electrode in a flat manner in all its points. No part of the electrode can be put in contact with the skin *accidentally*, under the risk that the current is concentrated in that point and could create a *burn*.

Limits in the intensity of the current

For safety, the current must limit itself to *a maximum of*:

0.3 miliamps per squared centimetre of the contact electrode (2 miliamps per square inch).

The total of the current for:

Facial treatment must not exceed 3 miliamps *Body* treatment must not exceed 8 miliamps

With the correct *flow* of the current, the client should communicate a sensation of itching from under the electrodes.

A treatment is always begun with a current *lower* than the maximum tolerated, until the resistance of the skin has been stabilized by itself. Next, progressively increase the current up to the *work level*.

The fault of exceeding an excessively high current can be the burn. Alkaline burns under the electrodes are very ugly, unpleasant and very slow to cure. They can leave a mark for life.

Worse still are the *burns of the bones.* An excess of the current crossing the bone can burn it. A bone burn is very painful and even slower to cure.

At the end of the treatment

As the treatment moves towards its end, the current must be gradually reduced to allow the chemical effects to complete and not leave chemical residues in the skin.

Finally, if the client notices that the treatment produces an unbearable irritation in the skin, stop the treatment and reverse the current to neutralize the cause of the irritation.

2. RADIOFREQUENCY CURRENT (RF)

Epilation through radiofrequency (RF) or high frequency

Epilation through current of RF uses an *alternating current of high frequency* to destroy the hair follicle through its *thermal effect*. It is also an exact technique that must be performed by professionals prepared with practice, but it is much faster than the galvanic method and, in the hands of professionals it is much less possible that it affects the skin negatively.

The current of RF

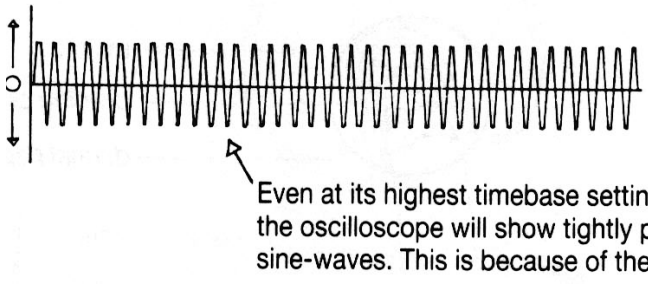
The current used in the method of current of RF is an *alternate current of high frequency*. When a current of this type feeds a needle electrode, it is possible that the needle acts as an antenna and that it transmits energy as radio waves. The current is denominated radiofrequency or "RF" for this reason.

This frequency is situated in the band of short waves, in the part of the bands of waves called Citizen's Band or "CB".

It is from there also that the treatment is known as epilation by *short wave* or *high frequency*.

The appliance of epilation by short wave

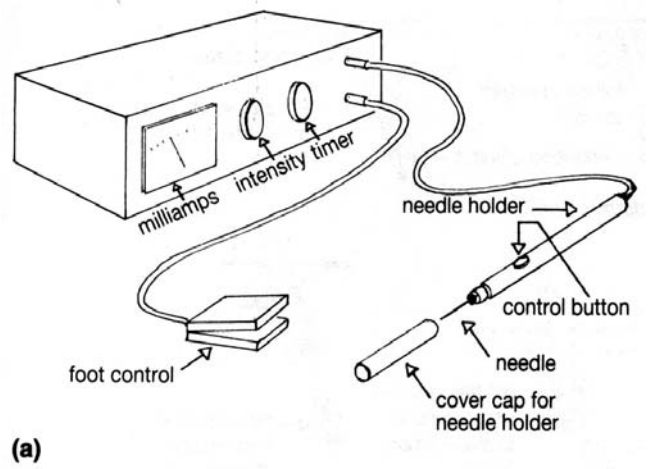
The current of high frequency of the appliances of epilation is differentiated from the machines of therapy of high frequency in various ways. Its frequency is very superior. Its voltage is considerably less, for which it is much easier to "contain it" in a cable. It is a constant alternate current or sustained and not contained.



The current of short wave as shown by an osciloscope

How long does the epilation current last?

The current must not be protected until the needle has been carefully inserted in the hair follicle. Then, it is passed only for a few seconds. The intensity and duration of the current must be found through experience and trial and error in the first sessions of treatment with the client.



Basic elements of an apparatus of epilation by RF

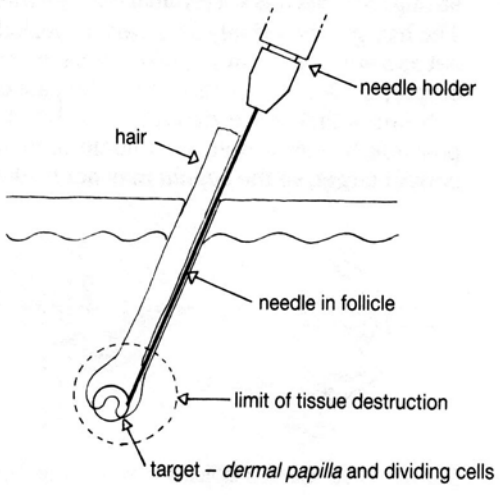
This information depends at all times on the client and not on the comfort of the professional to only maintain a pre-fixed intensity. Adjusting the intensity of the appliance to the individual conditions of each organism, the professional will be able to find out what the pain threshold is, the grade of humidity and hydration of the skin and in this way be able to adapt to these variables in the perfect form.

The adaptation of the variables of the appliance to the variables of the client are the best school to obtain results of electrical epilation of excelent quality (the hair is eliminated) with minimum sensation. You can work beneath the client's pain threshold). For this reason, this manual doesn't proportion pre-fixed and established intensities for each person and zone. For our experience, the good professional of electrical epilation must discover in each client the individual variables for which he will have to apply the apparatus. This information is noted in the client's file.
A *miliampmeter* or a display of the power shows what the intensity of the current is.

Through the automatic timer, the time and power is controlled in the front panel. The current begins to pass through a foot pedal. Once the programmed time has passed, it will then stop automatically.

How does epilation by RF function?

The needle is inserted in the follicle so that the point is close to the *dermal papillae*. The current begins to pass. The signal of high frequency is conducted by the needle to its point. Its *energy* is absorbed by the molecules of water in the cells in the base of the follicle and increases its temperature until it heats them. It concerns an inductive or diathermic heating. The heat kills and destroys the cells in the area around the point of the needle by coagulation of the proteins of the cells.



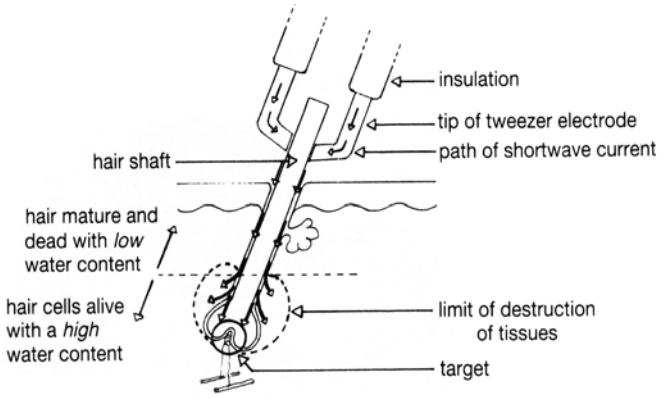
A depilation needle inserted in the hair follicle

Diference with epilation by tweezer

The method of the tweezer is neither much less effective in the short term as that of the needle. Only 30% is destroyed in comparison with 70% of the needle. The main reason is that the destruction has not arrived to the objective and the *papillae* and the germinal cells continue intact. The current has more difficulty in arriving at the area of the papillae. Several attempts may be necessary to arrive to the depth of the skin. This fact can be produced particularly if the movement is too vigorous and the hair comes out too quickly before the current has the opportunity to do its work.

As in the method of the needle, an incorrect intensity and time can lead to failure, and the problems of empty or multiple follicles are still in force.

Because of the lack of real results of this type of epilation, the manufacture of these types of appliances has been discarded.



Real practice has looked down on the method of epilation by tweezers because of the absence of results.

Blend

Before the decade of the sixties, epilation by galvanic *electrolysis* was the method of epilation. Epilation by short wave or RF was introduced in the 1960's and as it was a much shorter treatment for each follicle, it soon displaced the much slower galvanic method.

For those "difficult" curved and multiple follicles, many operators preferred galvanic.

The investigation showed that a *combination* of the galvanic current and RF could bring advantages of the two systems:

- **Galvanic:** The sodium hydroxide is very effective in the coagulation of the cellular proteins and destroying the papila of the hair.
- **RF or epilation by short wave**: because the chemical reactions are produced more rapidly in conditions of increase of temperature and heat, the heat generated by RF accelerates the process of coagulation.

At the end of the 1980's, the *blend* appliances (of combination of currents), they were introduced into the market. Since then, the *blend* method has been made popular. For the blend system, these appliances produced the two currents simultaneously. They can also be used for the methods of galvanic current and of RF independently.

However, there are more advantages through the joint or sequential application of the currents:

a. If the hair follicles tend to be dry, they are not very conducting. The heat generated using RF directly can dehydrate even more and reduce even more if its conductivity fits. In these cases, a galvanic current can be used in order to generate sodium hydroxide, after adding RF to heat and accelerate its reaction.

b. If the follicles are already wet and conductive, the RF can be used first to pre-heat the follicle and after apply galvanic to generate the sodium hydroxide that will then act more quickly.

These machines use advanced technology to sequence the currents automatically.

However, there are not fast and strict rules in the blend system. The combination or sequentiality of the currents will depend in part on the nature of the follicles and, in part, on the preferences of the experienced operator.

DISORDERS RELATED TO THE HAIR

1. **HYPERTRICOSIS:** Excessive development of hair, in quantity and quality (thickness, length) over any cutaneous area, in relation to individuals of the same age, sex and conditions of life. It means having more hair than which is cosmetically acceptable for a woman that lives within a certain culture.

2. **HAIRINESS:** It denotes excessive feminine hairiness in regions in which such development is normal for the man (beard, moustache, nose, ears, back of the fingers, shoulders, chest, lower abdomen and thighs).

It can also bring with it signs of VIRILITY such as:

- Menstrual alterations.
- Hypertrophy of clitoris.
- Androgenic alopecia.
- Deepening of the voice.
- Muscular development.
- Mammarian atrophy.
- Severe acne.
- Obesity.

The most common hairiness consists of an increase of length and roughness of the hair of: face, abdomen and thighs. Controlled by androgen and visible in masculine puberty, through which it suggests masculinity to the patient.

This hair is common in normal women from: Southern Russia, the Middle East, Southern Europe, Canada, South America. However, these women can appear hairy compared with women from Great Britain or Scandinavia.

It is necessary to determine if the hairiness represents an inherited response of terminal organ to a normal hormonal compliment or to the excess of production of some hormone. In each part of the body, the final growth of the hair is determined not only by the level of androgen circulating and the sensitivity of the follicle of said area to the same, but also for the time during which the follicles have been exposed to the androgen and it reaches its maximum development in woman and in

man. The pubic and armpit have fast rates of exchange and growth, for which they appear at the beginning of puberty and diminish rapidly with age or the deficiency of androgen. The hair of the face and the scalp have slower rates of replacement, so that baldness and the growth of the beard are developped at the end of puberty and survive longer to the removal of androgen.

The moderate production of androgen of the woman can, when she reaches old age, have produced a bit of hair on the lips and the chin, slighter frontal baldness, while in the same period of life the pubic hair and armpit hair reflects a reduction in the production of hormone.

3. **ETHNIC OR CONSTITUTIONAL HAIRINESS**: When the excess of hair is an inherited characteristic in a normal individual, the same appears in puberty and increases until 20-25 years. The appearance of facial hair, armpit or pubic in a prepubescent child is always pathological. A photograph taken up close in the first session will be very useful as base of comparison.

CHARACTERISTICS OF A WOMAN WITH PROBLEMS OF HAIRINESS

1. Distribution and quality of the hair in: upper lip, chin, chest, abdomen, thighs and forearms.
2. Menstrual alterations.
3. Androgenic equivalents (virilization).

ABOUT PRECAUTIONS AGAINST INFECTIONS

Hygiene is vital in electrical epilation, particularly, the hygiene of the *needle*. For this, the needles must be *unipersonal* and *they must* never *be shared*. This precaution is of vital importance to avoid contamination of diseases transmitted through the blood, infectious hepatitis or AIDS.

The most advisable is to use a new needle in each application. But, since the needles are expensive, it is also normal practice to store each needle in the file of each client to continue with a new session the next day. It is important to sterilize the needles before and after the treatment.

After use, the needle must be sterilized before being introduced in a special container for sharp material. These containers of used needles cannot be thrown away into containers of ordinary rubbish. Many hospitals are prepared to accept them for their disposal.

In summary:

Although a **NEW** and well wrapped needle doesn't contain germs, we must take certain simple precautions in order to prevent infections.

USE OF THE NEEDLE IN ELECTRICAL EPILATION

1.- **Never** use the same needle for two patients.

2.-Clean with some antiseptic or high frequency the zone to treat and dry it conscientiously with sterile gause or equivalent **BEFORE THE EPILATION**. At the surface of the skin there could be germs that, dragged by the needle, are introduced subcutaneously.

3.- **Desinfect** again when you finish the treatment, since the cauterized bulbs can be an *open window* for the germs.

ZONES WHERE ELECTRICAL EPILATION CAN BE APPLIED

In the upper lip

Electrical epilation can be applied in wide areas of the body with very satisfactory results. However, you must take extreme care in those areas that are importantly vascularized and in which there is lymphatic presence.

In the bikini line

In the legs

POSSIBLE TECHNICAL PROBLEMS

1. The appliance doesn't epilate. What's wrong?

Maybe the indifferent metallic bar is not situated in the appropriate place for epilation.

Maybe the client doesn't have the indifferent metallic bar.

Maybe the pedal isn't connected in the outlet of current selected.

Maybe the outlet current or currents selected haven't been activated.

Maybe the opposite program is activated to that which is desired to work (automatic or manual).

Maybe the accessories (both the pedal and the needle) can have the cable divided either at the end of connection to the needle-holder handle or to the pedal. So that the appliance functions correctly the piece whose cable is broken must be replaced.

You must also check that the plug is correctly connected and that tension reaches the appliance (for this, you must check the presence of current with another appliance). You must check the reliability of the mains cable, using this to connect another appliance. In this way it is identified that the problem doesn't come from the mains cable. When these checks have been performed, the possibility exists of examining the fuse of protection to check that it is not melted. Finally, it must be identified that the mains tension corresponds to that of the appliance.

If the appliance lights up the pilot of functioning and it doesn't work, please check with this operating manual that its procedure of acting is correct. If you can't solve the problem, consult with the technical service.

90% OF THE TECHNICAL PROBLEMS STATED ARE PRODUCED BY LACK OF CARE IN THE MANIPULATION OF THE BUTTONS AND FOR THE NATURAL WEAR AND TEAR OF THE ACCESSORIES. For this, we ask you to check all this information before contacting your closest technical service.

2. I have detected that the appliance doesn't function correctly since yesterday. And besides there was a storm...

Ocasionally, the storms and rains can affect the national hydroelectrical networks in an important way. If, after a storm, you discover problems with your electrical appliances (especially the most sensitive) it is advised to join a current stabilizer to the appliance. This electrical instrument facilitates the correct functioning of apparatuses by purifying the inconstant electrical signal that the user receives and to create a continuous and stable signal. The sensitive appliances then function correctly since they receive in all moments the same quantity of voltage of the electrical network.

GUARANTEE AND SAFETY

1. The manufacturer takes no responsibility for incorrect use of this appliance or the consequences that may result. All the uses that are not considered in this manual may be dangerous. For this, please consult the nearest authorized distribution centre in case of any doubts.

2. Our desire to incorporate possible improvements in our appliances means that we reserve the right to modify the characteristics of our appliances without prior notice.

3. All the machines are prepared for mains tensions of 230 volts. If a tension of 125 volts is needed, notify your supplier when you make the order.

4. As MANUFACTURERS we give an 18-month guarantee against any manufacturing defect.

   For this guarantee to be effective, take into consideration the following technical **specifications**:

   4.1 Some minimum specifications in the electrical installation:

- The appliances must always be connected to the electrical current through a voltage regulator with pole peak supressor to Earth

and whose range of output voltage must be between 110 and 120 volts, in the case of installations of current at this voltage (especially in Latin American countries) or of 220 and 230 volts, in the case of European countries.

- The power point where the appliance is installed must be in perfect condition.

4.2. This guarantee **loses its validity** if:

A. The appliance is used **improperly**.
B. The electrical installation or the regulator joined to the appliance is **defective**.
C. The appliance is applied to overcharges, short circuits, electrical discharges, floodings or similar cases.
D. The appliance is manipulated or repaired by personnel not authorized by EMA.

MANUFACTURER'S REMARKS:

Our desire to offer to beauty therapy equipment that increasingly adapts to the needs of this young profession leads us to carry out research on new equipment and to try and improve the existing ones. For this reason, we reserve the right to modify characteristics without prior notice.

All our equipment is made for a mains supply voltage of 230 V. If your mains supply is of 125 V, please inform your supplier when making your order.

An incorrect use of the equipment which is not mentioned in the instructions book can lead to undesirable results. The manufacturer is not responsible for this incorrect use.

GUARANTEE CERTIFICATE

1. EMA guarantees the appliance for any defect of manufacturing for 18 months from the purchase date.

2. EMA takes responsibility for expenses suffered by the change of defective components, as well as the manpower necessary during the whole period.

3. The transport costs or displacements of technical personnel are excluded from this guarantee.

4. The materials and pieces of use subjected to natural wear and tear are not covered by this guarantee.

5. If the damage is due to: an incorrect use, improper manipulation, or damage caused by falls, knocks, atmospheric causes as well as those derived from a defective electrical installation and in general any cause beyond the control of EMA, are excluded from this guarantee.

6. EMA will not accept responsibility for damage caused by improper use of the appliance.

7. The guarantee of this product will not be valid if any type of technical intervention is carried out in it by personnel not authorized by EMA.

8. If the substitution of defective components is not carried out in our installations, the necessary manpower will not be covered by our guarantee.

MODEL	SERIES	MANUFACTURE	CHECKER	DATE OF PURCHASE

DISTRIBUTOR'S STAMP

This guarantee must be kept by the user.

No claim will be accepted without the stamped guarantee.

EMA

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