

# GLOBUS

ITALIAN EXCELLENCE

## MAGNETO THERAPY



User Manual

MAGNUM 2ProDrive



CE  
0476

## **DEAR CUSTOMER**

**THANK YOU FOR CHOOSING A GLOBUS PRODUCT. WE REMAIN AT YOUR ENTIRE DISPOSAL FOR ANY ASSISTENCE OR ADVICE YOU MAY NEED**



**DOMINO s.r.l.**

via Vittorio Veneto 52

31013 - Codognè - TV - Italy

Ph. (+39) 0438.7933

Fax. (+39) 0438.793363

e-mail: [info@globusitalia.com](mailto:info@globusitalia.com)

[www.globuscorporation.com](http://www.globuscorporation.com)

The device has been manufactured in compliance with applicable technical standards and has been certified, in compliance with Directive 93/42/EEC as amended by directive 2007/47 on medical devices, by the Notified Body Kiwa Cermet Italia, Via Cadriano 23, 40057 Granarolo Dell'Emilia (BO) Italy (n. 0476), in order to ensure product safety.

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## TECHNICAL FEATURES

### Device

Dimensions: 160x99x35.4 mm

Weight: 404 g

Protection level of the case: IP 20 + IP 02

### Storage and transport conditions

The storage and transportation of the device and its accessories, in their original packaging, are subject to the following limits:

Storage and transportation temperature: -25°C to 70°C

Max. relative humidity: 0% -93%

If the accessories are not stored into the original package, please comply with the storage conditions of the single products.

### Use conditions

Temperature: 0°C to 35°C

Maximum relative humidity: 15% to 93%

Atmospheric pressure: from 700 hPa to 1060 hPa

### Magnetic intensity with flexible diffusers

200 average gauss per channel

400 Gauss on average on the whole (for 2 channels)

**Output channels for diffuser connection:** 2 channels

**Adjustable frequency:** 5 to 200 Hz

### Power supply

Brand: GLOBTEK

Model: GTM41060-2512

PRI: 100-240Vac 50-60Hz Max 0.6A

SEC: 12V  2.08A

Polarity: 

### EQUIPMENT

The magnetotherapy device is supplied with its diffusers; when opening the package, please make sure it contains the full standard equipment.

If some elements are missing, contact your authorized retailer immediately.

Check carefully that the device and the diffuser are intact.

- 1 flexible diffuser (Ref G1407)
- 1 Soft 4 mat (Ref G4276)
- Power supply (see technical features)
- User manual and guide
- Device with rechargeable battery
- IP 02 waterproof case
- Magnum test
- Carrying bag

#### Magnum Test



The Magnum Test is used to check that the solenoids work properly. Connect the solenoid to the device, start a program, put the box upon a coil and check that a vibration is felt.

#### Description of the accessories

The Magnum devices can be used with a few accessories:

##### **G4275 Single soft solenoid**

Soft and comfortable 1-turn solenoid, easily cleanable and sanitizable fabric. Dimensions: 12x12 cm.



### **G1407 Flexible solenoid**

Two-solenoid flexible diffuser, easily cleanable and sanitizable fabric. Dimensions: 30x10 cm.



### **G5988 Pocket Pro solenoid**

Solenoid formed by two coils in a soft pad and placed inside a zip-up case that is easily washable and sanitized (see chapter on maintenance and cleaning). Dimensions: 15.5x9.5 cm.



### **G4276 Soft mat 4**

Soft and comfortable two-channel mat, made up of 4 total coil turns, easily cleanable and sanitizable fabric. Ideal for lumbar, hip, foot and hand applications. Dimensions 25x25 cm



### **G1408 Flexible solenoid**

This solenoid contains 4 coils, all oriented with the north towards the same side and is particularly suited to cover a large surface, such as the back or the femur. Dimensions 40x150 cm



These solenoids can be used individually by placing them directly on the treatment area or, by purchasing two, they can be used in opposed mode.

### **G4277 magneto Y cable**

With this accessory you can split the channels by using, for example, 2 single SOFT solenoids on the same channel or two rigid or flexible solenoids.

Warning: the splitter cable works only by connecting solenoids of the same type.



### **Mats**

**G5944 Mat 100 Memory Foam:** the new Globus mat with a double layer of Memory Foam, which has 4 solenoids inside. It is particularly suited for long treatments in which the user, despite staying in contact with the mat, is free to move without being tied to the device through traditional solenoids.



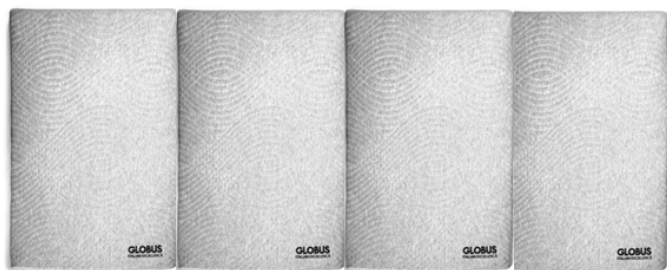
**Total Body Memory Foam mat:** the new mat with two layers of Memory Foam, composed of four sections, each of which can contain up to 4 solenoids. B-Mat Memory Foam must be placed above the regular mat and is particularly suitable for treatments during the night or for people with motor difficulties and bedridden. The Total Body Memory Foam mat is available in multiple versions:

**G5947 Total Body 200 Memory Foam Mat,** 2 active mats out of 4, 8 total solenoids

**G5948 Total Body 400 Memory Foam Mat,** 4 active mats out of 4, 16 total solenoids



## MAGNUM 2 PRO DRIVE



For further information, visit our website [www.globuscorporation.com](http://www.globuscorporation.com)  
To purchase these accessories, please contact your dealer.

### INTENDED USE

The product has an estimated usable life of 5 years. It is advisable to return the device to the producer or an authorized center to perform security and maintenance checks every two years.

Magnum 2 Pro Drive has been conceived to be used in the following operating environments:

- domestic environment in the Muscle / Skeletal area;
- clinics in the Muscle / Skeletal area;
- physiotherapy centers in the Muscle / Skeletal area ;
- rehabilitation in general in the Muscle / Skeletal area;
- pain treatments or Muscle / Skeletal dysfunctions;
- aesthetic and sporting use.

By exploiting the principle of low frequency magnetotherapy, the device may be considered as a first-choice therapeutic method, especially in the treatment of inflammatory, traumatic and degenerative pathologies of the osteoarticular and musculotendinous system.

Let's see in summary what are the benefits of magnetotherapy on the musculoskeletal system:

- improves osteogenesis by stimulating the activity of osteoblasts, accelerating the formation of callus and mobilizing calcium ions;
- reduces inflammations;
- improves the flow of capillaries and microcirculation;
- promotes the re-absorption of edemas and interstitial fluids;
- improves cellular exchange;
- relieves pain.

The intended user can be the patient himself (appropriately informed of the methods of use and conditions of use of the device), medical and paramedical staff.

CE0476 does not cover non-medical treatments.

### INSTRUCTIONS FOR THE USE OF THE WATER-PROOF CASE

To ensure the IP 22 water-proof level in home use, put the device into the water-proof case included in the equipment. Then pressure-close the zip and let the cables come out of the upper corner of the case. Use a twist tie to seal the closure on the corner.

Complete the insertion as in the picture below.



## CONNECTIONS

### Device

Magnum 2 Pro Drive works both with batteries and in connection to mains. To connect the power supply to the connector, plug it as shown below.



Warning: If the case, the cable or the connector of the power supply show signs of wear or damage, replace it instantly.

### Connecting the diffusers

To connect the diffusers to the device, plug the connectors to the specific inlets in the upper part of the unit (see picture). **The cables must be inserted with the grooves facing down.**



### Accessories (connect the solenoids with a Y cable)









The Y cable allows to connect 2 diffusers of the same type to one output of the machine. The power established for the treatment will be divided between the two diffusers; the value







of the emitted field displayed on-screen will be the actual field emitted by the 2 diffusers. It is possible to use a single Y cable on each output channel of the machine.

Plug the connectors of each one of the two diffusers into the inlets of the Y cable. Plug the connector of the Y cable into the specific output slot of the channel you want to use.

**WARNING:** do not detach any connector of the Y cable or of the diffusers if the unit is operating.

## LABELLING AND SYMBOLS

	It refers to the manufacturer
	Warning
	Keep the device dry
	This symbol on your device indicates that it complies with the requirements of the directives on medical devices (93/42/EEC 47/2007EEC). The number of the notified body is 0476.
	It indicates that this is a class II device.
	It indicates that this device has BF-type applied parts.
	<p>WEEE symbol (Waste of Electrical and Electronic Equipment). Recycling symbol.</p> <p>The WEEE symbol used for this product indicates that the product cannot be treated as a household waste. The proper disposal of the product will contribute to protecting the environment. For further information on the recycling of this product, please contact the concerned office of your local body, the household waste management company or the store where the product was purchased.</p>
	It indicates that the product has been produced in compliance with the directive 2011/65/EEC.

	It indicates the recommended temperature for the storage and transportation of the product.
	It informs the operator that it is compulsory to read the manual before using the device.
IP20-IP02	It indicates water protection.
	It informs the client of the compulsory behavior
	It indicates the pressure of the environment in which the device and the accessories are transported and stored.
	It indicates the humidity of the environment where the device and the accessories are used and stored.
Model	It indicates the power supply model.
PRI	Output electric features of the power supply.
SEC	Output electric features of the power supply.
Input power	Input electric features of the device
Output freq.	It indicates the frequency range of the magnetic field emitted by the device
Output power	It indicates the maximum magnetic field emitted by the device
Type	It indicates the device type
	It indicates the serial number of the device.

## Device

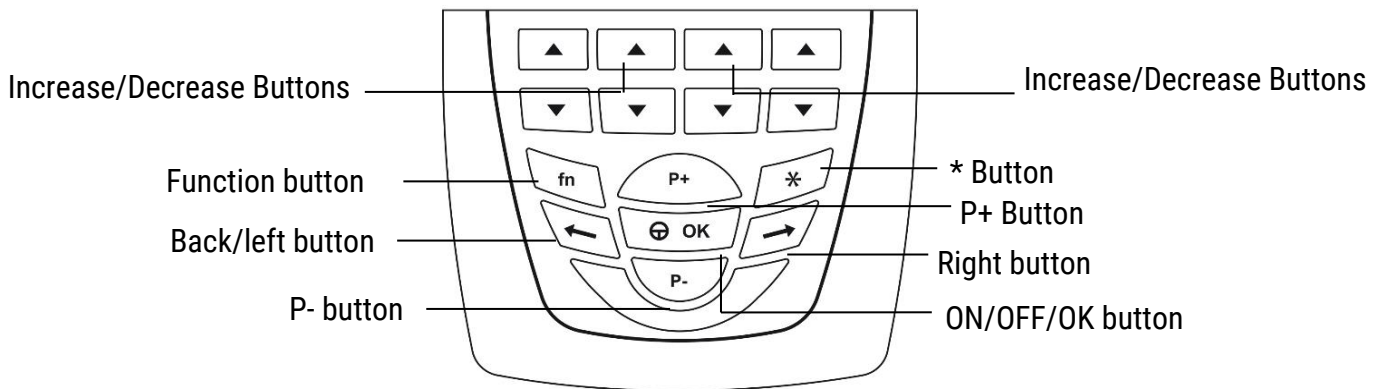
The image is just for indication. For technical data see the first chapter.



## SN

The first 4 digits of the serial number indicate the week and year of manufacture of the device you purchased (for example, if the code is \*\*\* 2319 \*\*\*\*\*, it means that the device was manufactured in week 23 of 2019).

## DASHBOARD AND KEYBOARD



### ON/OFF/OK button

To confirm the selection. While a program is running, it activates the pause.

3" = turning on/off.

### Back/left button

Moves the selection to the left.

To go back to the previous selection.

If pressed for 3" while the program is running, it returns to the previous step.

### P+ button

It moves the selection upwards.

### P- button

Moves the selection downwards.

### Forward/right button

Moves the selection to the right.

If pressed for 3" while the program is running, it moves on to the next phase.

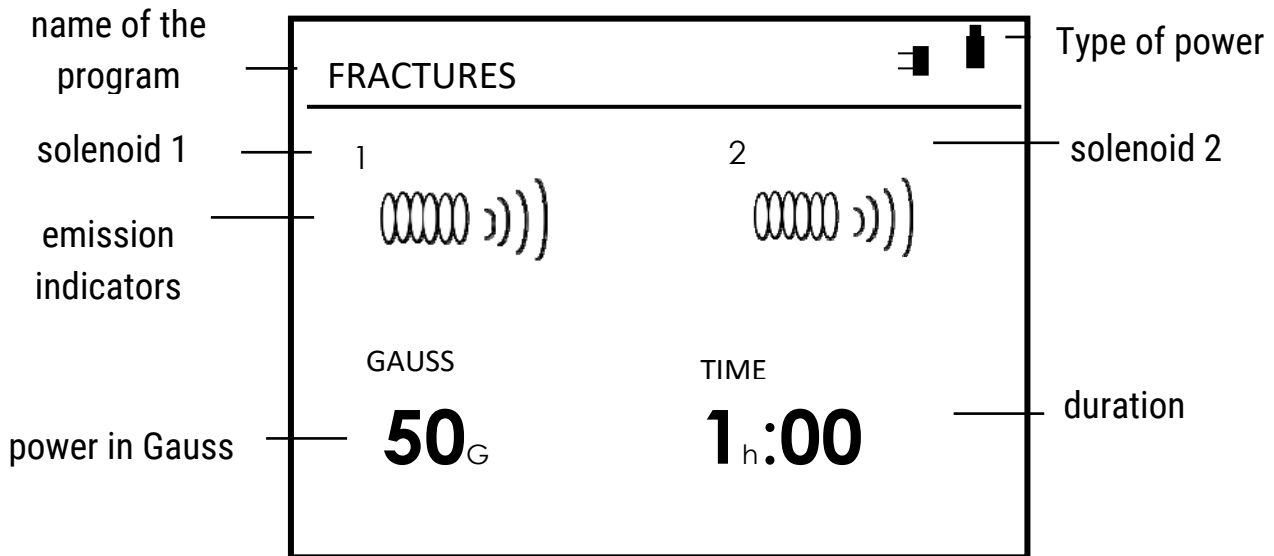
### \* Button

Display peak Gauss emitted by the machine

### Function Button (fn)

To adjust treatment duration (see use instructions paragraph)

## Display/Interface



## ALARMS

### Compliance

Certifications: CE MDD certificate

Sound and acoustic signals are in compliance with the 60601-1-8 directive.

### Open circuit

The device is equipped with a power emissions control.

Therefore, before starting any treatment, it is necessary to ensure that the diffuser is connected to the device and placed on the area to be treated.

	<u>Correct emission</u> of power The treatment proceeds correctly.
	<u>Cable not connected</u> Check that the cable is connected to the correct output.
	<u>Device in pause mode</u> Press OK to continue the treatment.

**NOTE:** If the "Unplugged cable" message appears, ensure that the device, the cables and the diffuser are intact and correctly used.

If the problem persists, please contact the customer care.

## WARNINGS AND CONTRAINDICATIONS



### Mandatory behavior

To ensure maximum safety, the device must be used respecting the rules and the limitations indicated by the user manual.

The manufacturer declines all responsibility for all use differing from what is indicated in this manual.

The full or partial reproduction in any form and by any electronic or mechanical means of the texts and/or pictures contained in this manual without the written authorization of the manufacturer is forbidden.

- If the package, the cable or the connector of the power supply show signs of wear or damage, replace it instantly.
- The device should be connected to the mains with its power supply. Before starting this operation, make sure that the power system complies with the directives in force in your country. Make sure that the power supply will be easily unplugged from the mains.
- Do not transport the device by holding it from the electric cable; do not unplug the cable by pulling it out of the socket; keep the cable away from oils and object with sharp edges, do not use electric extension cords.
- Avoid violent impacts, which may damage the device and lead to malfunctioning even if not immediately detectable.
- The unit must be used only for the intended therapeutic purpose, only with the methods described in this instruction Manual.
- The device must be used following the indications and under the strict control of a qualified physician or physiotherapist.
- The unit must be used only with the diffusers included in the original equipment (or Globus brand) and according to the therapeutic methods described.
- Do not leave the device in the reach of children or of incapacitated persons, without surveillance.
- Do not use accessories or elements not indicated by the manufacturer.
- Do not use the device in environments with combustible gases, flammable vapors or rooms with presence of flammable mixtures, like anesthetic mixtures or mixtures of oxygen, nitrogen, potassium, etc.
- Do not use the device in contact with powders or liquids.



- Do not use the device in places where it might be exposed to environmental conditions like rainfall, sources of heat, dust, humidity, direct sunlight and sources of high electromagnetic emission.
- Do not remove the labels on the device.

### **Warnings before use**

- It is recommended to read carefully the entire operating manual before using the device; keep this operating manual with care.
- It should be used only by people older than 18 and, in any event, able to understand and take action.
- Do not use the device with other electronic devices simultaneously, especially if they maintain vital functions. Read the enclosed tables to operate the device correctly. If you have to use the device near or upon other devices, pay attention to how it is working.
- The device is indicated for non-invasive use.
- The device must be used only on intact skin.
- If there is any health problem, it must be used only after consulting a physician.
- It is recommended to use the device and the accessories in a clean environment to avoid contamination with dust and dirt.
- Before every use, always check the integrity of the device. This is a fundamental requirement for carrying out the therapy; do not use the device if the buttons or the cables are defective or malfunctioning.
- As you turn the device on, make sure that the software version and the model of the device appear on the screen, which means that the device is working and ready to be used. If it does not show that information or does not show all the segments, turn it off and on again. If the problem persists, contact the customer service and do not use the device.

The device allows to edit default parameters and create new ones. This function is particularly useful in case of medical prescriptions where specific treatment parameters are specified. In this case, the doctor or a properly informed operator in the sector can set the device by storing the specific program.

We strongly advise the end user against intervening autonomously (without medical supervision) on default protocols, as these were programmed according to the data collected by scientific literature and subject to medical device certification.

### **Warnings during the use**

The device is intended for continuous operation.

While using Magnum 2 Pro Drive, please comply with a few indications:

- Make sure that the unit is placed on a stable surface.
- The cables of the diffusers and of the power supply must not be wound up around the neck of people to avoid all risk of strangulation or suffocation.
- Keep the unit, the power supply cable and the diffusers far from sources of heat.
- The device must be used free in air and not wrapped in clothes or other things.
- It is recommended to use the device in a ventilated, well-aired space.
- Always use the device and the accessories with clean hands.
- Do not place close to the diffuser, when active, any electric or electronic device and do not get close to these devices if you are moving and using the device on yourself; for example, do not put the solenoids close to any kind of screen (monitor, TV, etc.), as this may cause the distortion of images and colors.
- Mobile and fixed radio communication devices may affect the functioning of the device: see the tables attached to this manual.

### **Side effects**

Phenomena of general intolerance to magnetic field therapy have been reported, such as: somnolence, restlessness, insomnia and nausea. In our experience these phenomena are very rare and have been observed mainly in the treatment of the cervical spine. If problems follow the execution of programs for this body area, it is advisable to avoid treatments of more than thirty consecutive minutes.

### **Contraindications**

#### **Absolute contraindication**

Treatment of patients with heart pacemakers or other permanent electrostimulators (e.g. vertebral ones).

#### **Relative contraindications**

- patients with cardiac rhythm disorders;
- dermatitis and fungal infections;
- tendency to bleed;
- severe ischemic pathologies;
- during the menstrual cycle if particularly abundant;
- this treatment is not indicated for pregnant women, persons with electrical and/or acoustic prostheses and intrauterine devices;
- it is recommended not to carry out this therapy at the same time as TENS and/or HOLTER;
- do not use in regions with metal prostheses (screws, nails, etc.) made of ferromagnetic

material and where there are magnetizable intra-tissue synthesis means. If you have any doubt, see your physician;

- in subjects under the age of fifteen or on children;
- on noble organs (ovaries, heart, head, etc.);
- on feverish subjects;
- in case of tumor diseases it is necessary to consult the physician or the oncologist before using magnetotherapy;
- in case of severe blood pressure imbalances;
- do not use in the presence of tuberculosis.

## MAINTENANCE AND CLEANING

### Maintenance and cleaning of the device

- In case of real or alleged malfunctioning, do not tamper with the device and do not try to repair it by yourself. Do not try to repair the device and do not open it. Only specialized and authorized centers can repair it.
- To clean it, turn the device off and disconnect it from the electric line.
- Do not clean the device with diluent, diesel, kerosene, alcohol or chemicals.
- If the device accidentally falls in the water, do not use it and contact an Authorized Support Service.
- After a long period without use, make sure that the device works properly (contact Authorized Support Center).
- Maintenance must be made only with original products and spare parts.
- The improper use of non-original products and spare parts entails the non-compliance of the product.
- It is recommendable to clean the device after every use.

### Maintenance and cleaning of the diffusers (or solenoids)

- Handle the diffuser with care.
- Inappropriate handling may affect its features.
- Do not tie or twist the connection cable.
- For cleaning, disconnect the diffusers from the device.
- Do not plunge the diffusers into liquids and do not use liquids directly on them. Use a dampened cloth.
- Do not use sprays, liquids or solvents near the diffuser.
- Avoid using aggressive solvents, alcohol or detergents that may damage the case.

### How to clean the Soft solenoid and the Soft 4 mat

- Clean using only disinfectant with sodium hypochlorite or quaternary ammonium salt (percentage: 0.2 - 0.3%) diluted with distilled water. After cleaning the solenoids, dry them perfectly with a clean cloth.
- In case liquids penetrate, do not use the solenoid and contact an authorized support center.
- Cleaning should be done after every use.

### **How to clean the Pocket Pro cases**

The Pocket Pro solenoid cases can be machine washed at 40 ° with mild soap. Do not tumble-dry.

Cleaning procedure:

- extract the pad containing the coils from the case;
- after washing and drying the case, reinsert the pad containing the two coils. Be careful when re-inserting: the two Ns (indicating North) printed on the coils must be on the same side as the N printed on the case.

### **Cleaning the flexible solenoids**

- Clean these solenoids with a clean cloth dampened with disinfectant with sodium hypochlorite or quaternary ammonium salt diluted with distilled water (percentage: 0.2 - 0.3%). Allow the accessory to dry completely before using it again.
- Otherwise, sanitize the solenoid with steam appliances (steam gun, steam iron...). For an antibacterial result, use a jet of at least 100 ° of temperature, trying to keep a distance of about 10 cm from the accessory, and perform steps of a few seconds on each side.

### **Diffuser check**

- Every time the diffuser is cleaned and after every treatment, it is necessary to check that it has no tears or other signs of wear that could make it inefficient.
- If the diffuser is not intact, replace it immediately.

### **Disposal of the device**

Do not throw the device or parts of it into the fire; dispose of the product in the specialized centers and respecting the regulations in force in your country.

When the product has to be disposed of, the user can give it back to the retailer when purchasing a new device.

Correct waste separation or following the above-mentioned procedure contribute to avoiding possible negative effects on environment and health and promote the reuse and/or recycle of the materials that compose the device. The illegal disposal of the product entails the application of administrative fines in accordance with applicable regulations.

# INSTRUCTIONS FOR USE

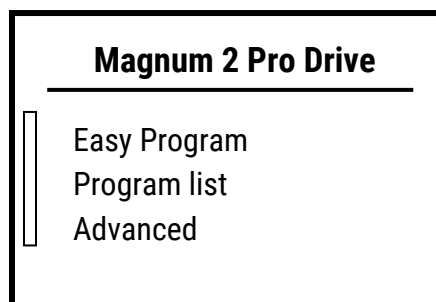
## Turn on/off

To turn on or off, press and hold **OK** until the acoustic signal is heard.

When turning the device on, the animation indicating the model will be displayed on the screen.

## Homepage

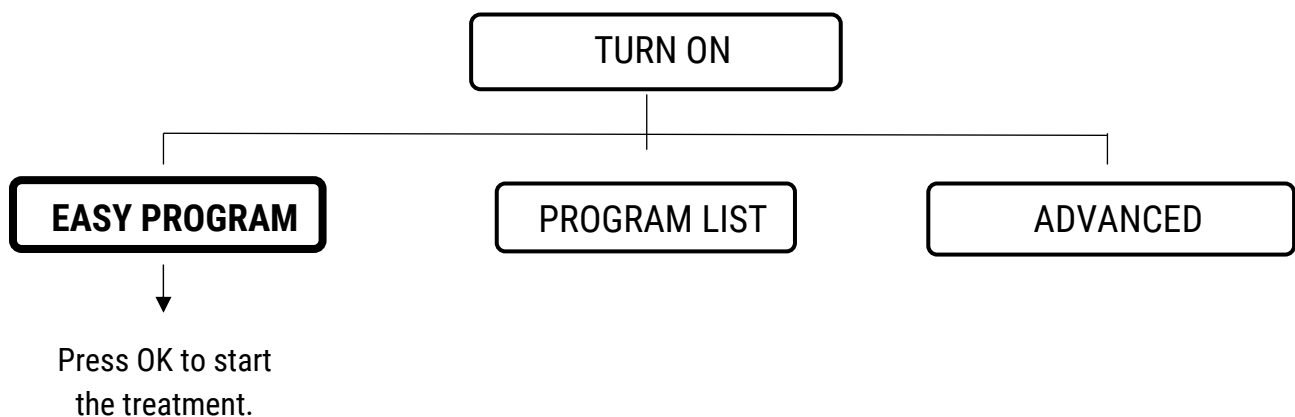
Use **P+** and **P-** to make the selection and press **OK** to confirm your choice.



## Easy Program

This function allows to start a magnetotherapy treatment in few simple clicks.

The parameters can be edited quickly by pressing the increase and decrease buttons placed below each parameter. To start the treatment, just connect the solenoids and press OK.

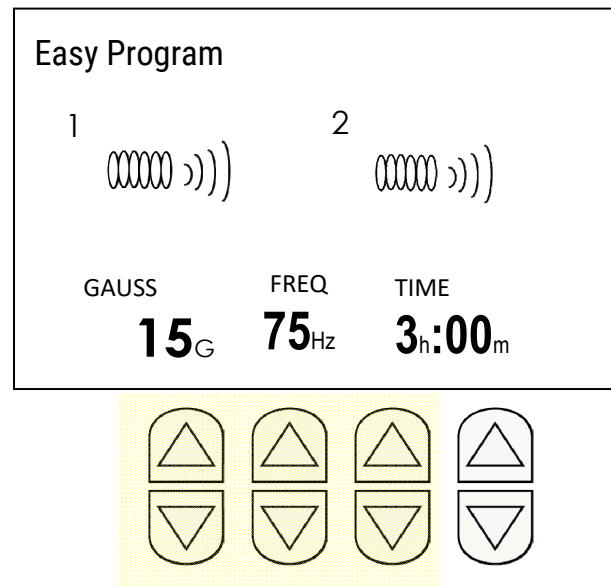


At the first start, the program is set with the parameters of a generic anti-inflammatory program.

## Editing parameters quickly on Easy Programs

To change the Gauss, the frequency and the duration of the therapy, use the first three pairs of increase/decrease buttons (highlighted in yellow in the picture below). Each button edits

the corresponding parameter on the screen.

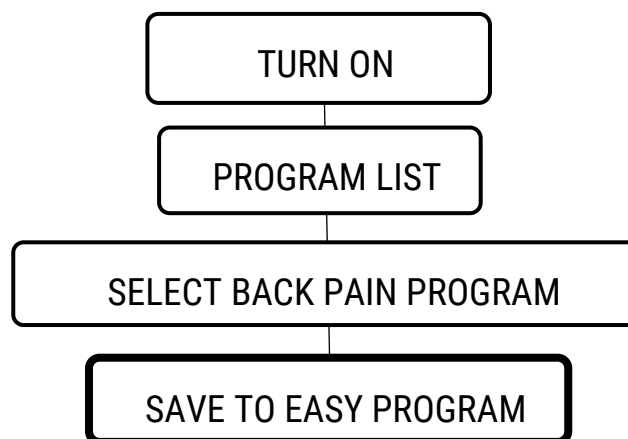


The new parameters will remain in memory even when the machine is turned off or the page is quit by pressing the back button.

This allows an easy setting of the parameters indicated, for example, by the physician. After the first setup, every time the device is turned on, the treatment can start in two clicks.

## Saving a program quickly from Program List to Easy Program

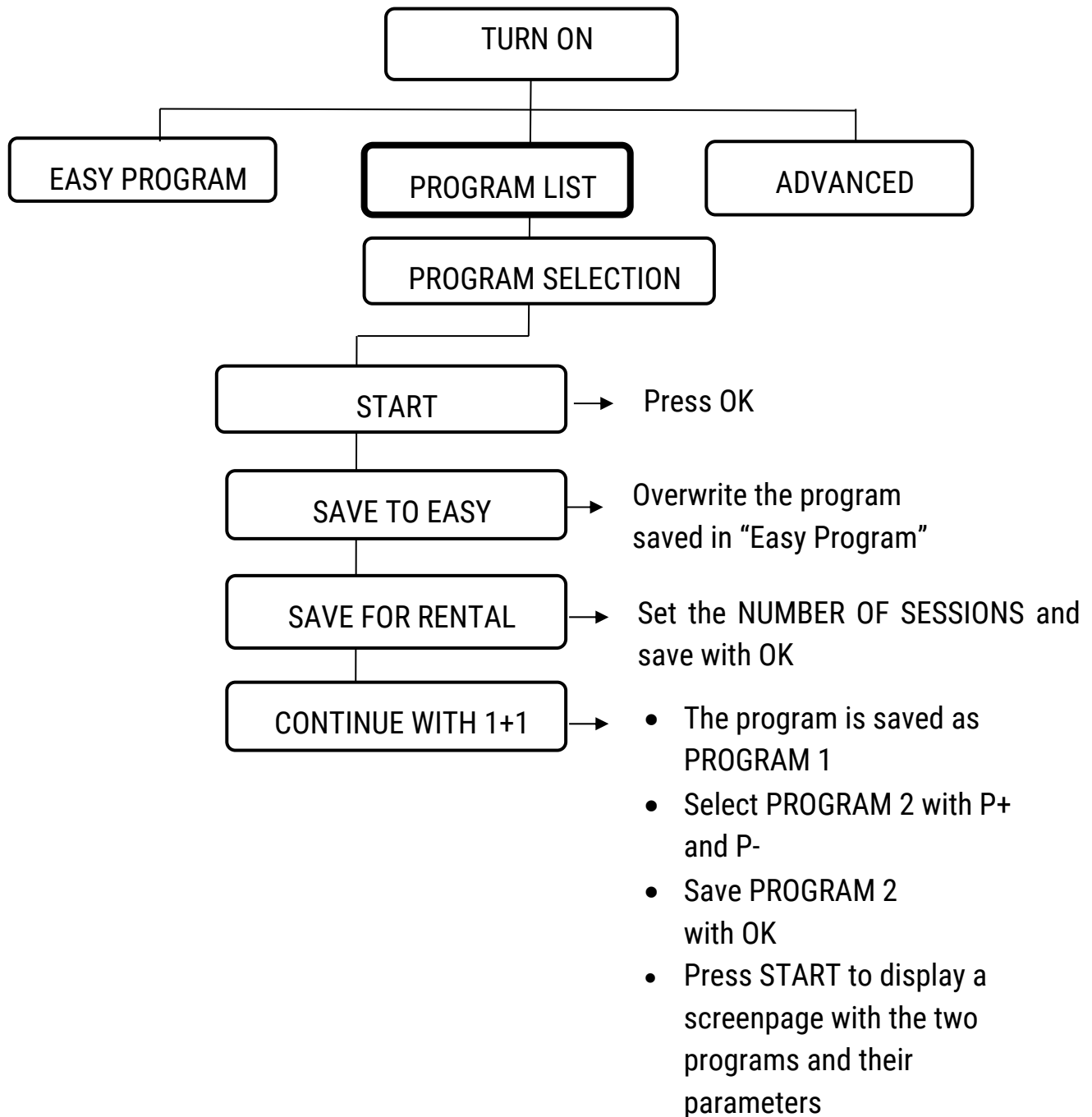
If the user needs to carry out a pre-set program (for example back pain), but the doctor has prescribed a duration and/or a power that is different from the pre-set one, follow these steps:



After choosing the program, press back to go to the starting menu and select Easy Program. Edit the parameters and make the treatment. The edited program will be always available on Easy Program.

## Program list

Use P+ and P- to select the program and press OK to confirm your choice.

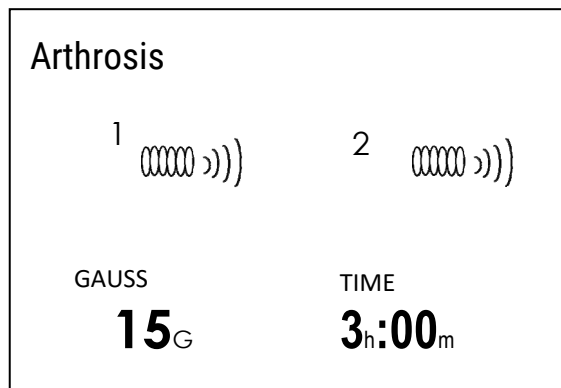


## Start program

To start the program confirm your choice by pressing OK. You will see on your display the program name, the connected solenoids, the total time of the treatment and the emitted Gauss.

**Important:** the Gauss value refers to the intensity emitted for each channel and each coil. Therefore, if a 2-coil flexible solenoid is connected, the total emitted value must be multiplied by 2.





### How to pause/stop the program

To pause the program, press OK. Press OK again to go back to the program execution.

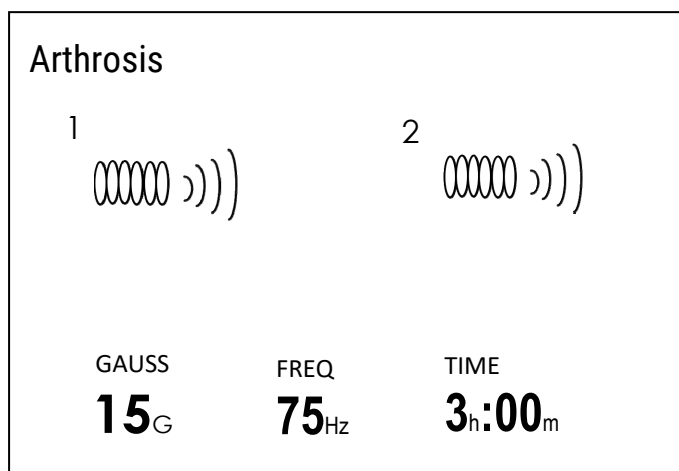
During the pause, pause icons appear on the screen. To stop the program in advance, when necessary, hold OK down until a continuous beep is heard.

### Display peak Gauss

While the device is operating, it is possible to display the maximum intensity of the field by pressing \*. This value indicates the intensity peaks of the magnetic field.

### Adjusting program parameters (Runtime function)

To edit the default parameters of a program **press the FUNCTION (fn) button**. A screenpage summarizing Gauss, frequency, duration and duty cycle will appear. To edit the values, use the buttons with the arrows on the keyboard; each arrow increases or decreases the value above.



The maximum duration of the treatment is 9 hours 59 minutes.

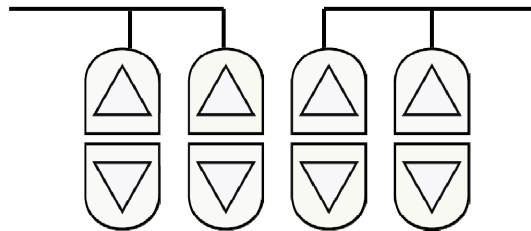
The duty cycle can be adjusted from 10% to 50% in steps of 5.

After adjusting the parameters, wait a few seconds until the area is deselected and the running program is displayed again.

## Increase/decrease default power

To edit the preset power (Gauss) press the increase/decrease buttons directly.

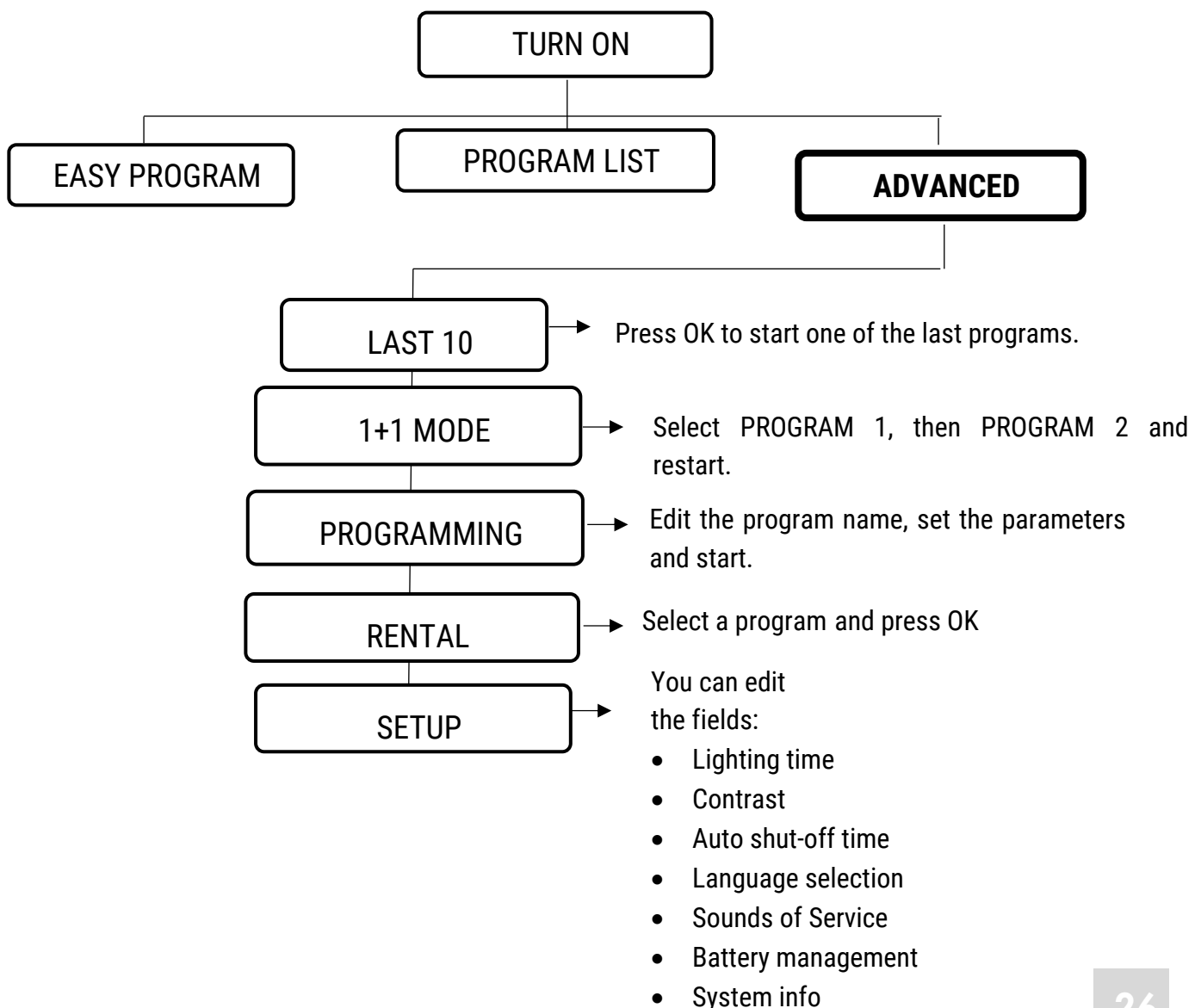
- Variation of Gauss units



- Edit Gauss tens

## Advanced

Use P+ and P- to select the menu and press OK to confirm your choice.



### **"Last 10" menu**

Magnum 2 Pro Drive stores the last ten executed programs. This way, these are available for a quick and very easy execution.

The programs are automatically stored at the end of the execution. If the memory is full, the "oldest" program is automatically deleted.

When the device turns on, select "Last 10" and then confirm with OK

Select the program you want to run (if there is no program in this menu you will read "EMPTY").

After confirming the selection 2 entries will appear:

a - Start

b - Delete from the list

By placing the cursor on "Start" and pressing OK it is possible to execute the selected program.

By pressing "Delete from list", instead, the program will be deleted from the "Last 10" list.

**Important:** if during the execution of a program the duration of treatment and/or the emitted field are modified, the program stored among the "Last 10" will maintain the duration and Gauss changes.

This function can be particularly useful if the user has to carry out a treatment cycle with a program that has a longer duration than the default one.

### **Quick save of a program in the "Last 10"**

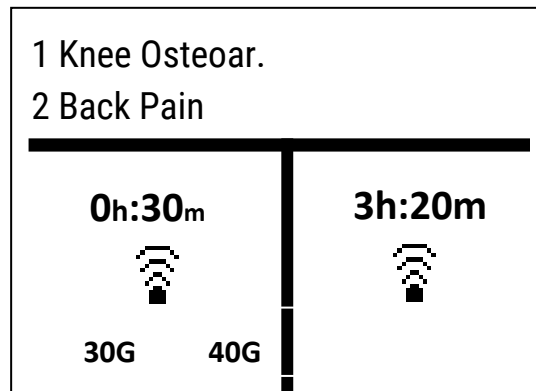
Sometimes, there may be a need to change the duration and the emission field of a treatment and find the changes made in the last 10 programs, but you don't have the time to wait for the end of the program. Pressing the right button for few seconds, the running program will end and will be stored in the last 10 along with the changes (duration and field, while duty cycle and frequency will remain those of the default program).

### **"1+1 Function" menu**

The device allows to run 2 different programs simultaneously allowing the simultaneous treatment of more subjects or more areas of the body on the same subject.

To execute two different programs simultaneously, choose the first desired program in the "Program list".

At this point, select "Continue in 1 + +1" and choose the second program.  
during the execution in 1+1 mode, the following screen appears:



The program on the left side of the screen will work on channel 1, while the one on the right side on channel 2.

To edit the power of both programs use P+ or P-. To edit the power of the single program use the increase/decrease buttons near the Gauss value on the display (the two columns of central buttons).

It is possible to change the duration of the two programs by pressing Fn. To adjust the Gauss use the increase/decrease arrows: the first two columns of arrows change the duration of the first program and the last two change that of the second.

In 1+1 mode you can only edit the duration and power of the single program, not the frequency and the duty cycle.

## **"Programming" menu**

Magnum 2 Pro Drive offers the possibility of creating/editing new programs. This makes the device flexible and adaptable to users' requirements.

From the "Programming" menu, it is possible to create new programs (when the word EMPTY appears) and to execute those that have already been personalized. These can be modified at any time (see "Edit program").

The programs created in the programming menu will not be stored in the last 10.

## **How to create a new program**

With P+ or P- select the place (number) where you want to create the program and confirm with OK.

## **How to type the name of the program**

Use the joypad buttons to select the letters and confirm with the OK button. To delete a

letter, select "Delete". After inserting the name of the program select "OK".









### Set the parameters

After performing these steps, a screen will appear to modify the four necessary parameters as needed: field (Gauss), frequency (Hz), time and duty cycle (in %).

After entering all the parameters, press the OK button and confirm the saving.

Programming			
<i>New program name</i>			
GAUSS	FREQ	TIME	DC%
<b>15<sub>G</sub></b>	<b>100<sub>Hz</sub></b>	<b>0<sub>h</sub>:30<sub>m</sub></b>	<b>50</b>

EDIT FREQUENCY		EDIT DUTY CYCLE	
			
			
EDIT GAUSS		EDIT TIME	

**NOTE:** if the n.c. message appears in programming, it identifies the failure to connect the solenoid. Connect the solenoid to proceed with the programming.

### Execution

The programs created and saved in programming can be run by choosing the "Run" option, which will be followed by the options:

- Start
- Save to Easy Program
- Save for rental

### Edit or delete a program

Within the "Programming" menu it is possible to modify or delete previously stored programs.

Press "fn" + "P+" to edit and "fn" + "P-" to delete.

### **"Rental" menu**

The Rental function lets the user lock the device to allow only the treatments that have been saved through the special function "Save for rental" in the screenpage before the execution of the program.

This feature has been conceived for the rental of the device to inexperienced users and/or patients who have to perform only specific protocols decided by the professional.

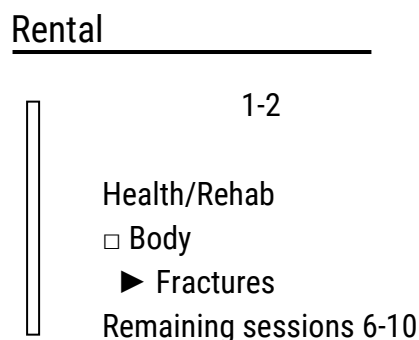
### **How to save a treatment in the rental menu**

Once you have chosen the program you want to run you can select "Save for rental". Use P+ and P- to set the number of sessions and confirm with OK.

This way the program has been saved and can be found in the rental menu.

### **Execute a treatment stored in rental**

Once you have selected the rental menu you will see a screen like this:



In the example image, treatment 1 is displayed at the top right (out of a total of 2 stored) for which 6 out of the 10 scheduled sessions still need to be performed.

By pressing the Ok button you can start the program or delete it from the list.

### **Activation of Rent function**

Press and hold the buttons fn + --> (right button) for at least 3 seconds until the area where treatments have been saved appears.

After the rental function has been activated, the device will have a limited number of functions.

### **Deactivation of the Rental function**

Hold the fn + <-- (left) buttons down for at least 3 seconds until the main menu appears.

**Warning:** if you turn the device on and the main menu does not appear check that the Rental function is not on.

Try to deactivate it.

If the problem persists, contact the customer service.

### **Customizing a preset program and storing it in the Rental menu.**

To store a preset program to which you have made changes (on treatment duration or field intensity) in the rental memory you have two different options:

- 1) let the program end;
- 2) press the right button for a few seconds. In this way the device skips the work phase and ends the program.

For both modes, once the program is finished, the option to choose again will be displayed on the screen:

- Start
- Save to Easy Program
- Save for rental
- Continue with 1+1

By choosing the option "Save for rental" you will be asked to enter the number of scheduled sessions.

The program will be stored in the treatment area along with changes (except for frequency and duty cycle, which remain as in the default program).

### **"Setup" menu**

In the setup menu it is possible to edit the following fields:

- Lighting time
- Contrast
- Auto shut-off time
- Language selection
- Sounds of service
- Battery management
- System info

### **Lighting time**

It allows to adjust how long the display will remain lit after the last command given to the device, during its operation.

### Contrast

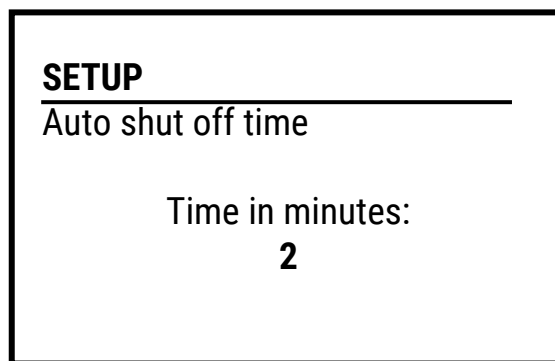
It allows to adjust the display contrast to better see the characters.

### Auto shut-off time

It allows to set the time after which, if not used, the machine switches off.

It is possible to select from 2 to 9 minutes. Use P+ and P- to select and confirm with the Ok button.

This special function is only active in the case of use with battery.



### Language selection

It allows to modify the language of the menus.

Use P+ and P- to select and confirm with the Ok button.

It is possible to choose among the following languages (where available):

1. Italian
2. English
3. Spanish
4. French
5. German
6. Portuguese

### Sounds of Service

It allows to enable (YES) or disable (NO) the acoustical beeps the device emits.

### Battery management

The values shown in this menu allow the manufacturer to verify the charge state of the battery, if the device has a one.

### System info

Contains information useful for the manufacturer.



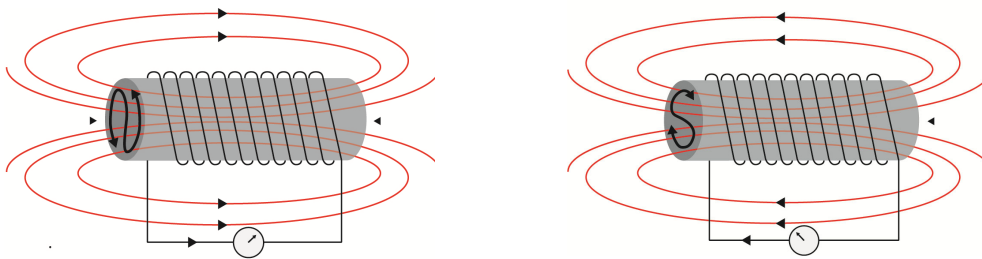
## ACTION PRINCIPLE AND APPLICATION METHODS

### What is magnetotherapy

Magnetotherapy is a form of physiotherapy that uses electromagnetic energy to stimulate tissue regeneration.

Magnetotherapy is a physical therapy based on low-frequency and low-intensity Pulsed Electro Magnetic Fields (PEMFs).

To do this, it uses the action of a magnetic field induced by the electric current flowing through a coil (solenoid). The solenoid consists of a metal conductor wound in a series of turns.

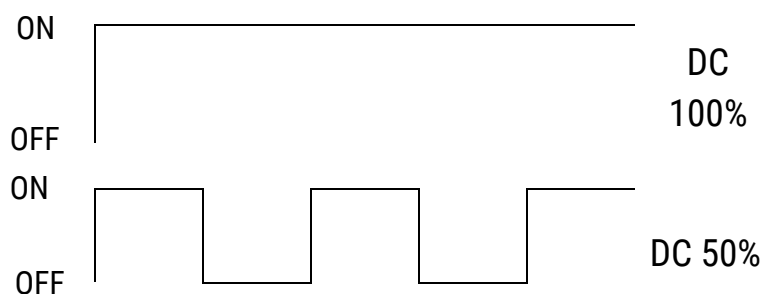


### Treatment Parameters

Globus magnetotherapy devices emit low frequency rectangular signals (up to 100 Hz). The **frequency** is the number of pulses per second. The intensity of the magnetic field is measured in **Gauss** (G), while the **Duty Cycle** (DC) is the time in which the device emits the active magnetic signal and the time in which it is in pause. When the duty cycle is 100% we talk about continuous emission, if it is less than 100% we talk about pulsed emission.

In our devices, the duty cycle is set at 50%.

As a general rule, the higher the frequency the lower the duty cycle, in order to avoid an overheating of the tissues.



### Effects of magnetotherapy

Magnetotherapy facilitates the repairing processes of tissues and stimulates the natural organic defenses.

On the basis of biological effects, the therapeutic action of magnetic fields may be

synthesized in two main points:

1. Anti-inflammatory and anti-oedematogenous action;
2. Stimulating tissue rearing processes.

Cell membranes are similar to "tiny batteries" and their tension can be measured. More precisely, in healthy nerve cells, the potential difference between the core and the external membrane corresponds to 90 millivolts, whereas the tension in the other cells corresponds to about 70 millivolts.

When the tension within the cells tends to wind down, the organism feels the effects in the form of inflammatory processes, pain in the bones, in joints, back pain, wounds that do not heal.

When the cells "become ill" because of an infection, a trauma or other causes, they lose their energy stock. The tension of a sick cell corresponds to 50/55 millivolts, whereas the tension of a healthy cell is around 70 millivolts. When this voltage falls below 30 millivolts, necrosis occurs, i.e. cell death.

The aim of magnetotherapy is to recharge and regenerate the cells which have lost their vital energy.

Musculoskeletal pathologies are the most specific field of application of magnetotherapy.

All traumatic events, from a small sprain to a serious fracture may benefit from this therapy, at times even allowing remarkable recovery times. Other bone pathologies have shown shorter repair processes and recovery times too when treated with magnetotherapy.

### **General application methods**

During magnetotherapy, the patient has no direct perception of the magnetic field being applied. The action is strictly connected to the reaction ability of the tissue components to the phenomena of magnetic induction.

The duration of exposure to the field is of paramount importance and must be considered in relation to the pathology to be treated. The gradual action and the effectiveness of the treatment can be fully observed over a long time. This treatment is to be preferred for chronic diseases but the acute trauma can benefit with a reduction of the recovery time. In the symptomatic treatment of pain in the acute phase, other forms of physical therapy can be added for a more immediate response (laser, TENS).

### **The solenoids**

The solenoids can be coated with different types of material and can be single or double.

## Flexible two-coil solenoids



Fig. A

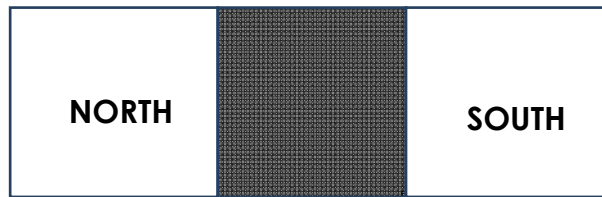


Fig. B

A two-coil flexible diffuser is shown in figure A. In figure B the same has been schematized to understand the arrangement of the coils contained in it. The side marked with **South Side** identifies the south of the solenoid. The flexible solenoids can be fixed above the area to be treated using the special Velcro straps supplied.

## One-coil soft solenoids



Fig. C

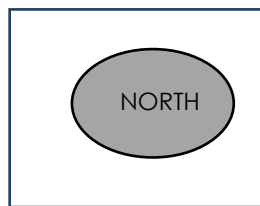


Fig. D

One-coil soft solenoid is shown in figure C, the same solenoid has been shown schematically in figure D in order to understand the orientation of the coil contained inside. The polarity is oriented as follows: the South corresponds to the smooth part of the solenoid, the North to the part where the buttonhole is. To fix the solenoid to the body, insert the supplied elastic band under the slot, then close the band on itself in order to hold the solenoid steadily.

## Pocket Pro solenoids



Fig. C

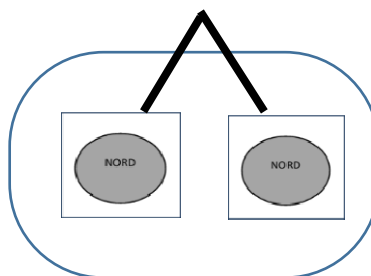


Fig. D

Figure C shows the Pocket Pro solenoid containing two coils. In figure D the same has been schematized to understand the arrangement of the coil contained in it. The polarity is oriented as follows: the side marked with **S** indicates the south of the solenoid while the side marked with **N** indicates the north.

To fix the solenoid to the body, insert the supplied elastic band under the slot (either horizontally or vertically), then close the band on itself in order to hold the solenoid steadily (Fig. E and F)



Fig. E



Fig. F

Polarity is indicated on both sides of the case, N (North) and S (South).

We suggest to use Pocket Pro solenoids always in pairs (where the anatomical area allows it). In this case, in contact with the skin, there must be two opposite poles (a solenoid with the N in contact with the skin and a solenoid with the S in contact with the skin).

See Fig. G

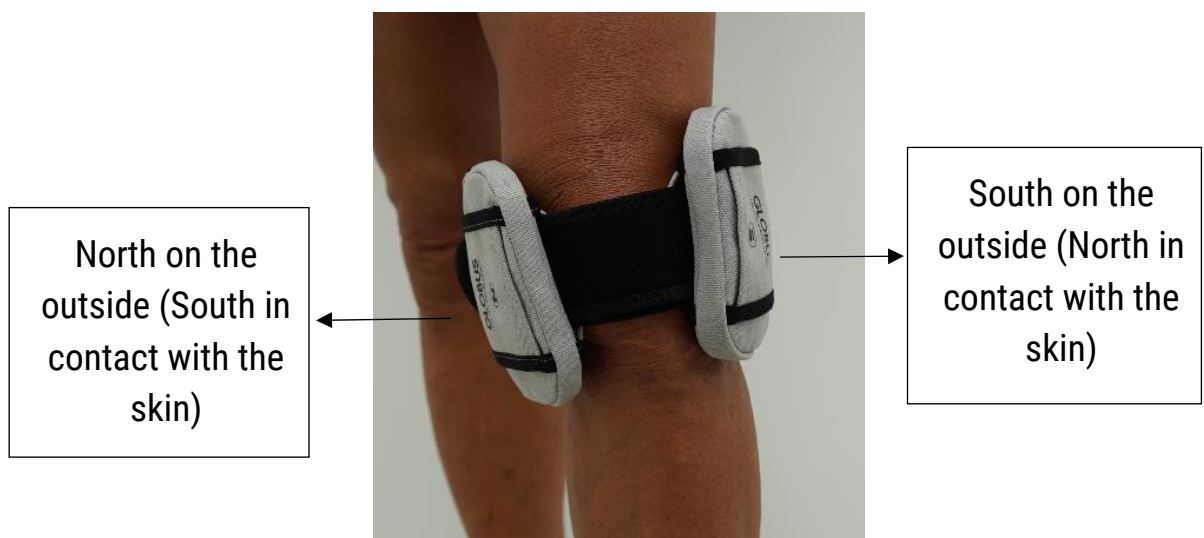


Fig. G

## One-coil soft solenoids



Fig. H

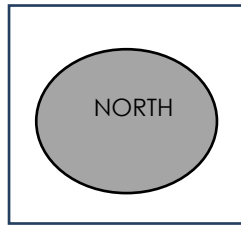


Fig. I

The one-coil soft solenoid is shown in figure H. The same solenoid has been shown schematically in figure I in order to understand the orientation of the coil contained in it. The polarity is oriented as follows: the South corresponds to the smooth part of the solenoid, the North to the part where the buttonhole is. To fix the solenoid to the body, insert the supplied elastic band under the slot, then close the band on itself in order to hold the solenoid steadily.

## Application

Magnetotherapy can be applied by placing solenoids in two different ways:

- Adjacent solenoids
- Opposed solenoids

The application mode with **adjacent solenoids** allows to exploit the magnetic field generated by each solenoid. This area will affect the entire area covered by the solenoid and the neighboring one, also expanding towards its perpendicular (and therefore penetrating into the tissues). In this way it will be enough to place the solenoids on the area to be treated, taking care to fix the band so that the discs inside correspond to the painful area.

Concerning a central pain in the vertebral column, for example, it is important to place the solenoids in the vertical direction, while for a more widespread and lateralized lumbar pain it is preferable to place the solenoids in the horizontal direction.

For the correct positioning of the solenoids, refer to the user guide Rev.01 supplied with the device.

The flexible solenoid must be placed with the Velcro outward. This way you can use the black bands to secure the solenoid in the desired position.



Examples of  
positioning with  
adjacent solenoids



In the **opposed solenoids** mode, a single and concatenated magnetic field is obtained. It penetrates deeper into the areas to be treated. This method is particularly suitable for joint problems, in case of fractures and in all musculoskeletal disorders where it is necessary to act in depth. In order to obtain a concatenated magnetic field it is necessary to pay attention to the correct positioning of the solenoids, which have to be oriented with the same polarity.

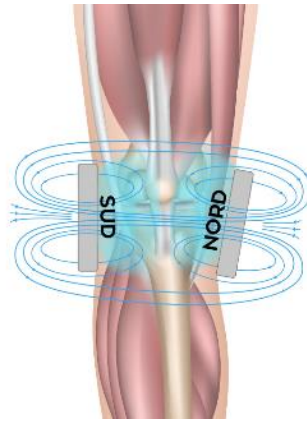
The flexible solenoids contain two coils with polarity already inserted so that they can be easily opposed. Just place the band around the area to be treated, carefully placing the two coils in parallel. With the other solenoids it is recommended to pay attention to the polarity, making sure to contrast the North side of one solenoid with the South side of the other.



Examples of  
positioning with  
opposed  
solenoids



When using this mode, check that the two coils inside the solenoid are as parallel as possible between each other.



## INDICATIONS ABOUT PROGRAMS

Below, you will find some general indications on the programs available in the various Magnum devices.

**Warning:** being a general list that covers all the models in the Magnum line, it is not certain that the programs listed here fall within the device in your possession. To find out about the programs of your device, refer to the “Program list” chapter of this manual.

**Fractures:** the programs for fractures can be used from the very first days after the traumatic event. The treatment can also be carried out on casts and braces. In this case we recommend increasing the suggested power by 50-60% as the thickness of the plaster increases the distance between the solenoids and the bone.

We remind you of the importance of positioning the solenoids in opposite mode (if the area to be treated allows it) and in correspondence with the fracture. If two diffusers are available, it is possible to place both of them to have a magnetic flow of wider coverage and higher intensity. This is particularly useful when the area to be treated has a large diameter, for example a femur or over a cast of the tibia.

**Fracture consolidation delay:** this program can be used when a fracture is not healing in the appropriate terms. Often these fractures affect people with osteoporosis or with vascular/metabolic alterations. When possible, place the solenoids in opposed position. The daily treatment time can vary from a few hours up to 10-12 hours. For a more precise and personalized protocol, consult your doctor.

**Pseudoarthrosis:** the program is particularly suited when the delay in fracture consolidation lasts longer than 9 months. Often in these cases the patient has already undergone surgery and/or there are means of synthesis, plates, screws or external fixators that can complicate the fixing of the solenoids. For this reason, consulting the treating physician is fundamental to receive more specific and targeted indications about the patient's situation.

**Osteoporosis:** the program is indicated in cases of progressive weakening of the bone structure due to this pathology. Bone tissue is vital and its remodeling mechanism is continuous throughout our life. In the presence of osteoporosis this mechanism is altered and produces the progressive weakening of the bone.

The pulsed electric fields are able to activate the anabolic functions on the bone tissue, improving the balance between osteoblasts (cells that produce new bone) and osteoclasts (cells responsible for the erosion of the bone).

For the treatment of large areas of the body Mat 100 or B-Mat can be useful (pay accessories; for further information visit our website [www.globuscorporation.com](http://www.globuscorporation.com)).

**Osteoarthritis, arthrosis, arthritis, joint pain:** our devices are equipped with various programs to treat these pathologies which, although very different in the cause, are all characterized by joint pain and stiffness. In these cases, magnetotherapy contributes by producing a local anti-inflammatory effect with an analgesic action. Each program is set with the parameters recommended in the bibliography, while at the end of this manual you will find indications for the correct positioning of the solenoids on the different joints.

**Hip and knee prosthesis:** these specific programs are suitable for recovery after implantation. As a matter of fact, pulsed magnetic fields promote the engraftment of the prosthesis and of possible bone grafts. As far as application time is concerned, the scientific bibliography suggests a treatment of at least 3-4 hours a day, but also in this case the doctor may prescribe different application times.

**Post knee surgery:** these are specific programs to use after surgery for the reconstruction of the anterior cruciate ligament (Post ACL) or after cartilage cleaning. In these cases, the use of pulsed magnetic fields, from the first days after surgery, reduces pain, edema and inflammation, allowing for faster recovery.

**Carpal tunnel:** the program is indicated since the earliest symptoms of the disorder. It is in this phase, actually, that clearer improvements will be perceived. Carpal tunnel is due to the compression of the median nerve, which descends from the forearm to the hand through a channel called the carpal tunnel.

The magnetic fields will contribute to reducing pain, have an anti-inflammatory effect and improve the mobility of the hand and the fingers.

**Tendinitis, epicondylitis, rotator cuff:** these programs have been added to treat inflammations of tendons and insertional disorders. The solenoids should be placed over the painful area and, when possible, opposite positioning is preferred. The treatment with magnetic fields can be carried out during the acute phase, also in combination with other physical therapies or medications prescribed by your doctor,



as well as during the sub-acute phase as a conservative treatment.

**Edemas, contusions, ankle sprains:** in all these programs the main goal of the treatment with electromagnetic fields is of reducing the edema of traumatic origin and the resulting pain caused by inflammation. Pulsed magnetic fields adjust the permeability of the capillaries and therefore they help to demobilize interstitial fluids allowing a much quicker recovery.

## PROGRAM LIST

In accordance with the latest regulations of the Ministry of Health, medical programs are those in the list below.

AREA	PROGRAM	GAUSS *	TREATMENT*
ARTHROSIS/ARTHRITIS	Knee arthrosis	25	30', 3-4 times a week
	Cervical arthrosis	25	30', 3-4 times a week
	Arthritis	20	30', 3-4 times a week
	Arthrosis	20	30', 3-4 times a week
	Hand arthrosis	40	30', 3-4 times a week
	Hip arthrosis	20	30', 3-4 times a week
	Shoulder arthrosis	20	30', 3-4 times a week
	Column arthrosis	20	30', 3-4 times a week
PAIN	Algodystrophy Sudeck disease	– 50	From 4-6 hours a day
	Back pain	15	20' to 45' a day
	Joint pain	100	15' to 40' a day
INFLAMMATIONS	Anti-inflammatory	15	3h a day
	Tendinitis	15	1h, twice a day
	Epicondylitis	60	30', 5 times a week
	Epitrochleitis	60	30', 5 times a week
	Carpal tunnel	3-10	30', 2 times a day
	Shoulder tendinitis	15	1h a day
ORTHOPEDICS	After ACL surgery	15	4h a day
	Cartilage lesion	15	4h a day
	Knee prosthesis	15	4h a day
	Hip prosthesis	50	3 h a day
	Spinal fusion	12	8h a day
	Osteotomy	18	8h a day
BONE PATHOLOGIES	Fractures	30	8h a day
	Scaphoid fracture	30	8-10 hours a day
	Wrist Fracture	30	8h a day

	Shoulder Fractures	30	8h a day
	Collarbone fracture	30	8h a day
	Forearm Fractures	30	8h a day
	Pelvic fracture	30	8h a day
	Tibial fracture	30	8h a day
	Femoral fracture	30	8h a day
	Delayed Fracture Consolidation	20	3-8h a day
	Fracture with plaster	60	30' a day
	Osteonecrosis	15	8h a day
	Osteoporosis	50	8-10 hours a day
	Pseudoarthritis	25	8-10 hours distributed over the day
	Bone edemas	20	8h a day
TRAUMAS-EDEMAS-WOUNDS	Ankle sprain	2-10	30' a day
	Edemas-contusions	10	10', 2-3 times a day
	Ulcers	28	4 h a day

The data in the Gauss and Treatment columns are taken from scientific literature and undergo clinical evaluation in compliance with the European directive on medical devices. Always check with your specialist physician in case of different dosage (according to the clinical specifications of the subject).

*Because of the presence of clinical programs, this product is a medical device. Therefore it is certified by Kiwa Cermet Italia n. 0476 according to the 93/42/EEC EU directive on medical devices. The certification covers clinical applications.*

## WARRANTY CONDITIONS

The device is guaranteed to the first purchaser for 24 months from the purchase date against material or manufacturing faults (12 months if the device is used for professional purposes), provided that it is used properly and maintained under normal operating conditions.

Warranty coverage is limited in the following cases:

- six (6) months for supplied accessories subject to wear, e.g. batteries, power supplies, solenoids.

In order to take advantage of the warranty service, the user must comply with the following warranty clauses:

1. The products have to be sent for repairs by and at the expenses of the Customer in their original packages and with their full original equipment.
2. The product's warranty is subject to the production of a fiscal document (fiscal receipt, receipted bill or sale invoice), attesting the product's purchase date.
3. The repair work shall have no effect on the original expiry date of the warranty and shall neither renew nor extend it.
4. If no defects are found, during the repair work, the costs related to inspection times shall in any case be charged.
5. The warranty becomes void if the damage is caused by: impacts, falls, erroneous or improper use of the product, use of non-original external charger/power supply, accidental events, alteration, replacement/detachment of the warranty seals and/or tampering with the product. Moreover, the warranty does not cover damages caused during transportation due to unsuitable packages (see point 1).
6. The warranty does not cover the inability to use the product, other incidental or consequential costs or other expenses incurred by the purchaser.

NOTE: Before returning the device for repairs, we suggest reading carefully the user manual and consulting the Globus website.

If you have to return the product for repair, please contact your dealer or the Globus customer service.

## EMC accompanying documents

### Essential performance

PERFORMANCE	CONDITION	RISK	ACCEPTED EVENT
Magnetic field emission.	Disturbance outside the electronic circuit.	Display information no longer readable.	<p>The machine must stop the emission.</p> <p>The machine must maintain the emission and accept the commands.</p>
	Lack of internal power supply in the absence of external power supply.	Interruption of the treatment.	The machine must signal the battery exhaustion and the interruption of the treatment.
	Lack of internal power supply in the presence of external power supply.	Interruption of the treatment.	In the presence of external power supply the machine must operate thanks to that source of energy and it has to recharge the battery as a source of internal energy.
	Lack of external power supply.	Interruption of the treatment.	<p>The machine, if equipped with a battery, must continue the treatment signaling that operation is carry out in battery mode.</p> <p>If the machine turns off, it mustn't restart the treatment when the power supply is restored.</p>
	Overheating of the emission solenoids/diffusers.	Burn.	The device must control the current flowing inside the solenoids and stop the operation if the current exceeds the limits over which it can lead to a dangerous overheating of

			the solenoids.
Execution of pre-set programs.	Error in the loading of memory data, erroneous data inside the memory.	Improper execution of the treatment.	The machine must be equipped with safety systems aimed at verifying the correctness of the data inside the memory and of the loading of data from the memory and allowing the execution of the treatment only if no errors are detected. If errors are detected, the machine must prevent the execution of the treatment and signal the anomaly.
Battery charge.	Battery overheating.	Damaging of the device, improper emission of ultrasonic signal, display information no longer readable, explosion, fire.	A fuse must stop the battery connection in case of high temperature or intense current.

Warning: Radiofrequency communication devices (including accessories like antennas or antenna cables) must be used at least 3 meters away from every part (including cables and accessories) of the Magnum device. Otherwise performance can be affected.



# GLOBUS

ITALIAN EXCELLENCE

DOMINO S.R.L. - Via Vittorio Veneto, 52 - 31013 Codognè (TV) - Tel. (+39) 0438.7933

[globuscorporation.com](http://globuscorporation.com) |   