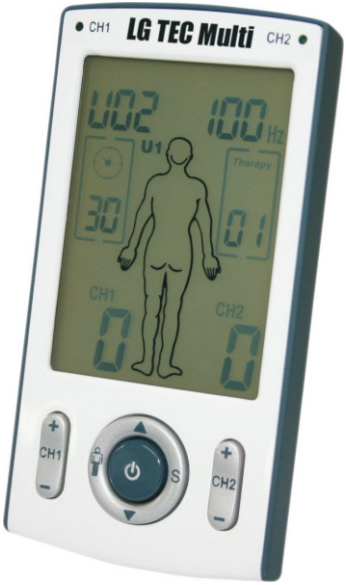
LG TEC Multi

INSTRUCTION MANUAL



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This manual is valid for the LG TEC Multi

This user manual is published by Current Solutions™, LLC

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⚠ : United States Federal Law restricts this device to sale by or on the order of a physician or licensed practitioner

Conformity to safety standards

Current Solutions™, LLC declares that the device complies with following normative documents:

IEC60601-1, IEC60601-1-2, I EC60601-2-10, IEC60601-1-4, ISO10993-5, ISO10993-10, ISO10993-1

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1. FOREWORD

1.1 Introduction

The LG TEC Multi is a battery operated pulse generator that sends electrical impulses to the body and reach the nerves and underlying muscle group, this is a unit to be used for pain relief, muscle stimulation and massage. The device provides two controllable output channels, each independent of each other, an electrode pair can be connected to each output channel. The parameters of units are controlled by button. Its intensity level is adjustable according to the needs of patients.

1.2 Medical background

What is TENS?

TENS (Transcutaneous Electrical Nerve Stimulation) gives good results in acute and chronic pain conditions of many kinds. It is clinically proven and used daily by Physical Therapists, other caregivers and top athletes around the world. High-frequency TENS activates the pain-inhibiting mechanisms of the nervous system. Electrical impulses from electrodes, placed on the skin over or near the painful area, stimulate the nerves to block the pain signals to the brain, and the pain is not perceived. Low-frequency TENS stimulates the release of endorphins, the body's natural painkillers. TENS is a safe treatment method and has, in contrast to drugs and other pain relief methods, no side effects. It may be sufficient as the only treatment form, but it is also a valuable complement to other pharmacological and/or physical treatments. TENS does not always treat the cause of pain. Consult your doctor if pain persists.

How Does TENS Control Pain?

The device provides pain relief in two ways. The first is the gate control method. When the body is injured, both pain and non-pain impulses are sent to the brain from the nervous system.These pulses travel through the cutaneous nerves to the deeper, afferent nerves, and then to the spinal cord and brain. Along the ath are many areas referred to as “gates,”

which determine which impulses are allowed to continue on to the brain. The gates prevent the brain from receiving too much information too quickly. Since the same nerve cannot carry a pain and a non-pain impulse at the same time, the stronger, non-pain impulse from the device “controls the gate.” The second method of pain control is the endorphin release method. The device can be set to trigger the body's natural pain killers, called endorphins. These chemicals interact with receptors, blocking the perception of pain. This is similar to the way the pharmaceutical drug morphine works, but without the side effect associated with morphine. No matter which pain control method is employed, the Device has been proven useful in pain management. By reading this manual and carefully following the treatment instructions provided by your clinician, you can attain maximum benefit from your device.

What is EMS?

EMS (Electrical muscle stimulation) is achieved by sending small electrical impulses through the skin to the underlying motor units (nerves and muscles) to create an involuntary muscle contraction. Neuromuscular stimulation has many usesbeyond its traditional application to prevent disuse atrophy.

How does EMS work?

Because the transdermal stimulation of nerves and muscles may be accomplished by electrical pulses, this modality can help prevent disuse atrophy. Accordingly, incapacitated patients can receive therapeutic treatment to create involuntary muscle contractions thereby improving and maintaining muscle tone without actual physical activity.

The goal of electrical muscle stimulation is to achieve contractions or vibrations in the muscles. Normal muscular activity is controlled by the central and peripheral nervous systems, which transmit electrical signals to the muscles. EMS works similarly but uses an external source (the stimulator) with electrodes attached to the skin for transmitting electrical impulses into the body. The impulses stimulate the nerves to send signals to a specifically targeted muscle, which reacts by contracting, just as it does with normal muscular activity.

2. SAFETY INFORMATION

2.1 Indications for use

This device is used in following instance:

1) Symptomatic relief of chronic intractable pain, acute post traumatic pain or acute post surgical pain.
2) Increase of blood flow in the treatment area.
3) Relaxation of muscle spasm.
4) Immediate post-surgical stimulation of muscles to prevent venous thrombosis.
5) Prevention or retardation of disuse atrophy.
6) Muscle re-education
7) Maintaining or increasing range of motion.

2.2 Contraindications

Do not use this device if you have a cardiac pacemaker, implanted defibrillator, or other implanted metallic or electronic device. Such use could cause electric shock, burns, electrical interference, or death.

2.3 Warnings

1) Not suitable for use during pregnancy or labor or if you suspect you may be pregnant.
2) Consult with your physician before using this device. Federal law (USA) restricts this device to sale by or on the order of a physician. A prescription is required.
3) If your pain does not improve, becomes more than mild, or continues for more than five days, stop using the device and consult with your physician;
4) Do not apply stimulation over your neck because this could cause severe muscle spasms resulting in closure of your airway, difficulty in breathing, or adverse effects on heart rhythm or blood pressure.
5) Do not apply stimulation across your chest because the introduction of electrical current into the chest may cause rhythm disturbances to your heart, which could be lethal.

6) Do not apply stimulation over painful areas. If you have painful areas, you should consult with your physician before using this device.
7) Do not apply stimulation over open wounds or rashes, or over swollen, red, infected, or inflamed areas or skin eruptions (e.g., phlebitis, thrombophlebitis, varicose veins).
8) Do not apply stimulation over, or in proximity to, cancerous lesions.
9) Do not apply stimulation in the presence of electronic monitoring equipment (e.g., cardiac monitors, ECG alarms), which may not operate properly when the electrical stimulation device is in use.
10) Stimulation should not take place while the user is connected to high-frequency surgical equipment, it may cause burn injuries on the skin under the electrodes, as well as problems with the stimulator.
11) Do not use the stimulator in the vicinity of shortwave or microwave therapy equipment, since this may affect the output power of the stimulator.
12) Do not apply stimulation when in the bath or shower.
13) Do not apply stimulation while sleeping;
14) Do not apply stimulation while driving, operating machinery, or during any activity in which electrical stimulation can put you at risk of injury; and
15) Do not use the device on children, if it has not been evaluated for pediatric use.
16) Consult with your physician before using this device, because the device may cause lethal rhythm disturbances to the heart in susceptible individuals; and
17) Apply stimulation only to normal, intact, clean, healthy skin.
18) This device requires a written prescription from a physician.

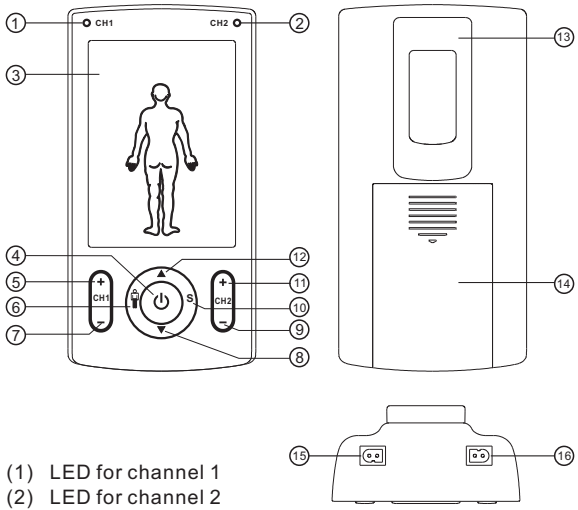
2.4 Precautions

1) TENS is not effective for pain of central origin, including headache;
2) TENS is not a substitute for pain medications and other pain management therapies;
3) TENS devices have no curative value;

4) TENS is a symptomatic treatment and, as such, suppresses the sensation of pain that would otherwise serve as a protective mechanism;
5) Effectiveness is highly dependent upon patient selection by a practitioner qualified in the management of pain patients;
6) The long-term effects of electrical stimulation are unknown;
7) Since the effects of stimulation of the brain are unknown, stimulation should not be applied across your head, and electrodes should not be placed on opposite sides of your head;
8) You may experience skin irritation or hypersensitivity due to the belt or electrode pads;
9) If you have suspected or diagnosed heart disease, you should follow precautions recommended by your physician; and
10) If you have suspected or diagnosed epilepsy, you should follow precautions recommended by your physician.
11) Use caution if you have a tendency to bleed internally, such as following an injury or fracture;
12) Consult with your physician prior to using the device after a recent surgical procedure, because stimulation may disrupt the healing process;
13) Use caution if stimulation is applied over the menstruating; and
14) Use caution if stimulation is applied over areas of skin that lack normal sensation.
15) Keep this device out of the reach of children; and
16) Use this device only with the leads, electrodes, and accessories recommended by the manufacturer or distributer.
17) You may experience headache and other painful sensations during or following the application of electrical stimulation near your eyes and to your head and face; and
18) Please stop using the device and consult your physician if you experience adverse reactions from the device, e.g. skin irritation.

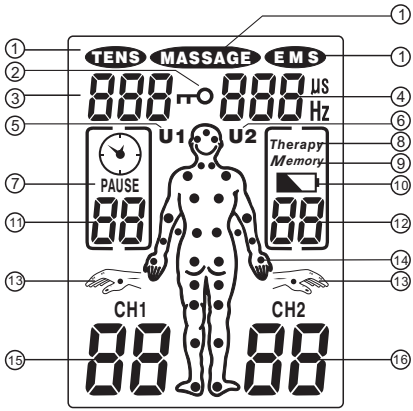
3. PRESENTATION

3.1 Front and Rear Panel



(1) LED for channel 1
(2) LED for channel 2
(3) LCD
(4) ON /OFF button
(5) Increasing the output intensity of channel 1
(6) Select User 1 or User 2
(7) Decreasing the output intensity of channel 1
(8) Program selection backward
(9) Reducing the output intensity of channel 2
(10) Enter the user program parameter setting/Pause
(11) Increasing the output intensity for channel 2
(12) Program selection forward
(13) Belt clip
(14) Battery cover
(15) Socket for channel 1
(16) Socket for channel 2

3.2 LCD Display



(1) TENS,EMS and MASSAGE display
(2) Lock intensity
(3) Program number
(4) Output pulse frequency and width
(5) User 1
(6) User 2
(7) Pause
(8) Treatment sign
(9) Memory checking
(10) Low battery indicator
(11) Treatment time
(12) Working time or memory time
(13) Treat position of hand
(14) Treat position of body
(15) Channel 1 output
(16) Channel 2 output

3.3 The Key Functions

The buttons on the device has the different functions in the different states except the basic function.

[⏻] Button

In working mode: ON/OFF the device
Stop the treatment
Press and hold on 3 seconds turn off device
In set mode: Confirmed the setting parameter and return the normal state

[▲] Button

In working mode: To select the program in the up way
Setting doctor parameter mode: Press it to adjust user program parameter.

[▼] Button

In working mode: To select the program in the down way
Setting doctor parameter mode: Press it to adjust user program parameter.

[ ] Button

In normal mode: Press it to select the U1 or U2.
In doctor mode : Press it to select the U1 or U2.

[S] Button

In normal mode: Press it to pause the treatment or to continue the treatment.
In doctor mode: Press it to select setting user program parameter and enter the next parameter set.

[CH1-] Button

In working mode: To decrease the output intensity of channel 1
To unlocked the button
In doctor mode: Press it with [S] button together for 3 seconds to lock the user program.
Press it with **[⏻] button** together for 3 seconds to reset the U1 or U2 original parameter.

[CH2-] Button

In working mode: To decrease the output intensity of Channel 2.
To unlocked the button.
In doctor mode: Press it with [S] button together for 3 seconds to enter check the recording state.

[CH1+] Button

In working mode: To increase the output intensity of channel 1.

[CH2+] Button

In working mode: To increase the output intensity of Channel 2.

4. SPECIFICATION

4.1 Accessories

No	DESCRIPTION	Q'TY
1	TENS stimulator device	1 piece
2	Electrodes Leads	2 pieces
3	40mm x 40mm adhesive electrodes	4 pieces
4	AAA Battery	4 pieces
5	Instruction Manual	1 piece
6	Carrying case	1 piece

4.2 Technical Information

Channel	Two channel
Power supply	DC6V, 4 x AAA batteries
Waveform	Biphase square-wave pulse
Pulse duration	50-300uS
Pulse frequency	1-150Hz
Treatment time	5-90 min
Intensity	Adjustable from 0 to 60mA (1000 ohm)
Operating conditions	5°C to 40°C with a relative humidity of 30%-75%, atmospheric pressure from 700 hpa to 1060 hpa
Storage conditions	-10°C to 55°C with a relative humidity of 20%-93%, atmospheric pressure from 700 hpa to 1060 hpa
Dimensions	117x60x25mm(without belt)
Weight	110g (without batteries) 140g (with batteries)

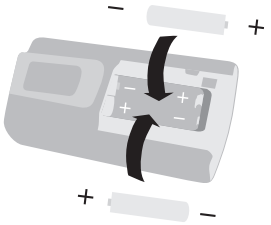
5. INSTRUCTIONS FOR USE

5.1 Check Battery

Insert a fresh 4xAAA batteries into the battery compartment. Make sure you are installing the battery properly. The battery is inserted in the casing on the back of the stimulator.

Be sure to match the positive and negative ends of the battery to the markings in the battery compartment of unit.

To remove the battery cover, press and pull down following the direction of on the battery cover.

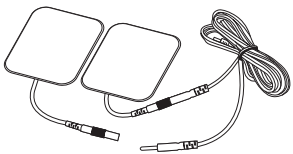


Caution:

- Remove the battery from the stimulator during storage to prevent battery leakage. Failure to do so may damage the stimulator.
- Replace a battery that has been immersed in water or liquid.
- Never heat the battery or throw it into a fire.
- If the battery is leaking a liquid, do not touch the liquid with bare skin.
- Never recharge battery. An explosion may result.
- Dispose of the battery according to current federal, state and local regulations

5.2 Connect electrodes to lead wires

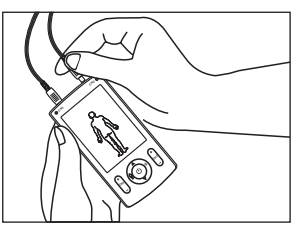
Insert the lead wire connector into electrodes connector. Make sure no bare metal of the pins is exposed.



Caution:
Always use the electrodes CE mark, or which are legally marketed in the US under 510(K) procedure.

5.3 Connect lead wires to the device

Before proceeding to this step, be sure the device is completely turned OFF. Holding the insulated portion of the lead wire connector, insert the plug into the receptacle on the top of the main unit. Ensure the lead wires are inserted correctly. The device has two output receptacles controlled by Channel 1 and Channel 2. You may choose to use one channel with one pair of lead wires or both channels with two pairs of lead wires. Using both channels gives the user the advantage of stimulating two different areas at the same time.



5.4 Electrode

5.4.1 Electrode options

The electrodes are disposable and should be routinely replaced when they start to lose their adhesive nature. If you are unsure of your electrode adhesive properties, order new replacement electrodes. Replacement electrodes should be re-ordered through or on the advice of your physician to ensure proper quality. Follow application procedures outlined in electrode packing, to maintain optimal stimulation and to prevent skin irritation.

5.4.2 Place electrodes on skin

Apply electrodes to the exact site indicated by your Physician. Before applying electrodes, be sure the skin surface over which electrodes are placed is thoroughly cleaned and dried. Make sure the electrodes are placed firmly to the skin and make good contact between the skin and the electrodes. Place the electrodes over the skin; attach them properly, firmly, and evenly.

Caution:

- Before applying the self-adhesive electrodes, it is recommended to wash and degrease the skin, and then dry it.
- Do not switch the device on when the self-adhesive electrodes is not positioned on the body.
- Never remove the self - adhesive electrodes from the skin while the device is still switched on.
- It is recommended that, at minimum,1.5" x 1.5" self - adhering based, square electrodes are used at the treatment area

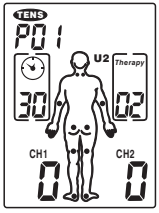
5.4.3 Electrode placement

The placement of electrodes can be one of the most important parameters in achieving success with therapy. Of utmost

importance is the willingness of the physician to try the various styles of electrode placement to find which method best fits the needs of the individual patient.
Every patient responds to electrical stimulation differently and their needs may vary from the conventional settings suggested here. If the initial results are not positive, speak to your physician about alternative stimulation settings and/or electrode placements. Once an acceptable placement has been achieved, mark down the electrodes sites and the settings, so the patient can easily continue treatment at home.

5.5 Turn on

Before using the unit for the first time, you are strongly advised to take careful note of the contra-indications and safety measures detailed at the beginning of this manual (Safety information), as this powerful equipment is neither a toy nor a gadget!



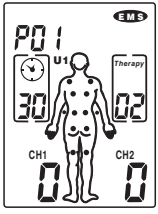
In order to turn on the device, keep the [⏻] button pressed down until the operation page appears on the screen.

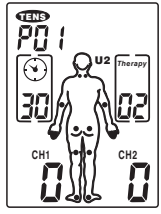
5.6 Checking the memory

- Press [S] button and [CH2-] in the same time and holding for 3 seconds to enter check menory.
- Press [▲] and [▼] button to check the up or next recording.
- Press [S] and holding for 3 seconds to clear the all data.
- Press [⏻] button back doctor mode.

5.7 Selection the treatment User (U1 or U2)

LG TEC Multi has special design which can be used and has memory for two users. The user 1 (U1) or user 2 (U2) can operate device independently with their own program and treatment memory.
Press [ ] button to select the U1 or U2.

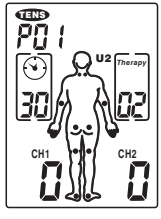




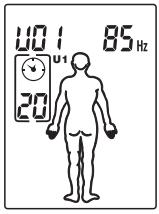
5.8 Select the treatment mode

There are two working modes in this device. One is normal modes and another is doctor mode. For the normal treatment mode it can be using the preset treatment programs and also user program U01-U10. For the doctor mode it can be set treatment time, pulse width and frequency of U01-U10 into L01-L10 programs and check the patient treatment memory by the doctor.

1) Insert the batteries first and then press [⏻] key to enter normal mode. The display as follow:



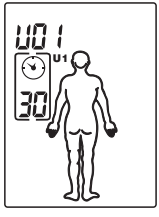
2) Press [⏻] button first and then press the [▼] button to select the doctor mode. The display as follow:



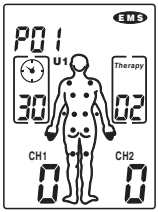
5.9 Set the parameter in the doctor mode

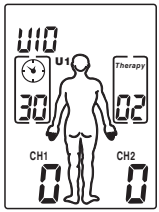
1) Select the treatment program
   - Press [⏻] button first and then press the[▼] button to select the doctor mode.
   - Press [🧍] button to select U1 or U2 for different user.
   - Press [▲] and [▼] button to select U01-U10 or L01-L10 program.

2) Set the parameter
   - Press [S] button and holding for 3 seconds to enter the setting the treatment time.



   - Press [▲] and [▼] button to set the treatment time.
   - Press [S] button to enter the setting the pulse frequency.

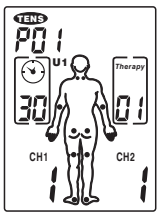




Caution:
Consult your physician for your suitable stimulation program.

5.11 Select the treatment

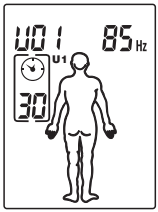
- Press [CH1+] or [CH2+] button to adjust the output intensity of channel 1 or channel 2. Press [CH1-] or [CH2-] to decrease the output intensity of channel 1 or channel 2. The step is 1mA.



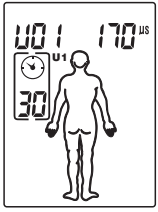
5.12 Adjust the intensity

- Press the intensity control button to control the intensity output. Slowly press the intensity button control until you reach the setting recommended by your medical professional. Repeat for the other channel, if both channels are to be used.

Caution:
If the stimulation levels are uncomfortable or become uncomfortable, reduce the stimulation intensity to a comfortable level and contact your medical practitioner if problems persist.

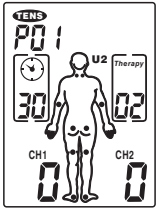


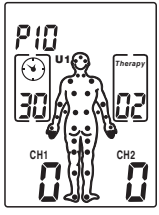
- Press [▲] and [▼] button to set the treatment frequency.
- Press [S] button to enter the setting the pulse duration.
- Press [▲] and [▼] button to set the treatment pulse width.



5.10 Select the program

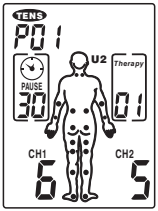
- Press [▲] or [▼] button to select the treatment program form TENS, EMS, MASSAGER and USER program.





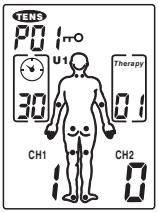
5.13 Pause

- Press [⏻] button to stop the output.
- Press [S] button to pause treatment and press again to continue the treatment.



5.14 Lock the button

If there is no operation in the panel for 10 seconds, the button will be locked automatically. The user can press the [CH1-] or [CH2-] to unlock.



5.15 Turn off

- Press the [⏻] button for 3 seconds to turn off.
- In the working mode if there is no operation in the panel for 2 minutes, the device will be switch off automatically. Unplug the electrode lead wires, grasping them by the

plug the cord. If treatment will be resumed shortly, the electrodes may be left on the skin. When the electrodes are removed, clean the skin thoroughly with mild soap and water. If there is skin irritation, consult your medical professional.

5.16 Replace batteries

To replace the batteries, open the lid cover and extract the battery. Replace it with new AAA batteries. Make sure you insert the battery correctly.

5.17 Low battery indicator

When the low power indicator flashes, the batteries should be replaced with new batteries as soon as possible. However, the stimulator will continue to operate for several more hours.

6. PROGRAMS AND SPECIAL APPLICATIONS

6.1 TENS pain relief program

Physical pain is an abnormal and unpleasant sensation caused by an injury, a disorder or incorrect functioning of a part of our organism. It is a signal sent to us by our body, which should not be ignored, and that in all cases requires us to consult a doctor if it does not disappear quickly.
The approach to pain adopted by the medical profession has changed considerably in recent years. Treatment of the cause is always fundamental, however the pain as such must be otherwise removed or at least considerably reduced and made bearable for the patient. The means to combat pain have developed greatly, and there is no longer any hesitation today in using powerful analgesics to improve the quality of life of patients.

TNES Program

program	Waveform	Frequency (Hz)	Pulse Width (us)	Treatment time (Min) default
P1	Continuous	100	200	30
P2	Continuous	80	150	30
P3	Continuous	35	200	30
P4	Continuous	2	250	30
P5	Alternate	100	200	30
P6	Adaptation	100/2	150/200	30
P7	Hans	100/2	150/200	30
P8	Burst	100	150	30
P9	Modulation	2~80	200~100	30
P10	Modulation	70~110	200~100	30
P11	Pulse rate modulation	10~100	250	30
P12	Pulse rate modulation	80~120	50	30
P13	Deep TENS	100	75	30
P14	Burst	Burst rate:2Hz Fixed rate:150Hz	200	30
P15	Burst	Burst rate:2Hz Fixed rate:35Hz	50	30
P16	Burst	Burst rate:2Hz Fixed rate:80Hz	50	30
P17	Continuous	110	175	30
P18	Hans	150/2	150/200	30
P19	Burst	100	150	30
P20	Burst	80	250	30

6.2 EMS muscle training program

1) Athletic Training

Neglected for many years, muscle preparation has today become indispensable for the competitive athlete. In this respect, muscular electro stimulation is a complementary training technique widely used by an increasing number of athletes aiming to improve their level of performance. Increasing the maximum strength of a muscle, developing muscular volume, increasing the explosive strength of muscles or improving the capacity of muscle fibres to sustain effort over long periods of time are objectives that differ according to the sporting discipline being practiced. Ensuring optimal muscle preparation immediately before competition, combining electro stimulation with voluntary muscle training, optimizing the effects of training techniques such as stretching, reproducing the muscular stress resulting from “polymeric” training or imposing a “restoration” activity on muscles is easily accessible today thanks to the high specificity of the new programs offered by your device. Use of programs of the Sport category is not suitable for atrophied muscles that have suffered any kind of pathological process.

2) Fitness programs

Today there are more fitness enthusiasts than ever before, and their number is rising. Apart from some rare individuals who have real competitive targets, the vast majority have only one aim: to restore their body to peak physical condition or maintain it at that level.
Cardio training therefore alternates with more specific exercises to develop or maintain a good quality musculature. With this in mind, the sought-after aims may differ according to who is doing the training: increasing muscle volume toachieve an imposing stature (body-building) or better muscle endurance to improve physical comfort during sustained efforts. Combined with a voluntary physical activity (aerobic exercises in the fitness facility, footing, cycling, swimming, etc.), which becomes more pleasant and therefore more effective, the programs of the Fitness category enable users to obtain a toned and harmonious figure.

3) Esthetic Program

Thanks to their great diversity and their high specificity, the Aesthetic programs provide the solution for everyone who wants to regain and keep the benefits of intense muscular activity. These programs allow you to restore and maintain a firm body, shapely figure and toned skin.
Indeed a sedentary life-style is very bad for the figure, especially if you have a poorly balanced diet. The muscles which are not used much lose their qualities: loss of strength, reduced tone, slackness. They can no longer carry out their tasks of supporting the body and holding the organs in place. The body becomes soft and loose, with clear consequences on body shape.

4) Rehabilition and Relaxtion program

The low frequency current used for the Rehabilition and Relaxtion category of programs significantly improves blood circulation in the stimulated area. Many people, more particularly women who remain standing for long periods, suffer from circulatory problems. These mainly affect the legs and are caused by stagnation of the blood and the lymph and are manifested by a feeling of “heavy legs”, swelling, or the dilatation of surface veins. The consequences are multiple: fatigue, tension, pain, lack of oxygenation of tissue and the appearance of varicose veins and edemas.

EMS Program

program	Frequency (Hz)	Pulse Width (us)	treat-ment time (min.)	Ramp up time (s)	Ramp down time (s) (default)
P1	50	150	30	2	1
P2	80	150	30	1	1
P3	80	150	30	0.5	0.5
P4	80/60/4/2	180/200/220/240	20	2	2
P5	30/30/30/2	150/170/200/200	20	2	2
P6	80/60/30/2	150/170/200/200	20	2	2
P7	80/2	200	20	2	2
P8	80/2	200	20	1	1
P9	5/60/3	200/250/200	32	3	1
P10	5/15/3	200/250/200	60	1	1
P11	5/90/3	200/250/200	40	1	1
P12	5/120/3	200/250/200	32	1	1
P13	5/80/5/2	200/270/190/210	30	1	1
P14	5~60	150/250	60	3	2
P15	2~60	150	35	3	2
P16	5~60	150/200	60	3	2
P17	8/60/5	150/200/150	25	3	2
P18	3/30/100/2	200	30	/	/
P19	5/60/3	300/300/250	32	3	2
P20	3/30/80/2	200	30	/	/

6.3 Massage program

The programs of the Massage category subject the muscles of the stimulated region to moderate activity, which produces beneficial effects that help to improve physical comfort and well-being.
Remaining in the same working position for a long time (for example, sitting in front of a computer screen), conditions of stress, repeated jostling, insufficient muscular conditioning before physical activity are all very frequent situations that are often responsible for uncomfortable bodily sensations.

Massage program

program	Frequency (Hz)	Pulse Width (us)	Treatment time (min.) (default)
P1	7/5/3	300	21
P2	2~8	250	22
P3	1~50	250	44
P4	5/8	200	30
P5	5/8	300	30
P6	5/8	200	30
P7	5/8	300	30
P8	85~130	100~200	30
P9	25~70	200	30
P10	1~15	200	30

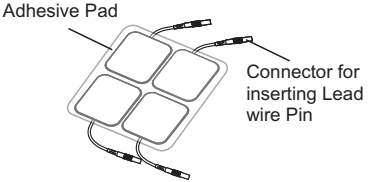
7. CLEANING AND MAINTENANCE

7.1 Cleaning the device

1) Remove the batteries from the device every time before cleaning.
2) Clean the device with a soft, slight moistened cloth. In case of more extreme soiling you can also moisten the cloth with mild soapy water.
3) Do not use any chemical cleaners or abrasive agents for cleaning.

7.2 Electrodes

1) Use the device only with the leads and electrodes provided by the manufacturer. Use only the electrode placements and stimulation settings prescribed by your practitioner.
2) It is recommended that, at minimum, 1.5" x 1.5" self - adhering based, square electrodes are used at the treatment area.
3) Inspect your electrodes before every use. Replace electrodes as needed. Reusable electrodes may cause slight skin irritation, lose adhesion and deliver less stimulation if overused



Reusable, Self-adhering electrodes

To use these electrodes:

- Attach the electrode to the lead wire.
- Remove the protective backing from the electrode surface. Do not throw away the protective backing because it is reused after the treatment session has been completed.
- Place the tacky surface to the prescribed skin area by pressing the electrode firmly against the skin.

To remove your electrodes:

- Lift the corner of the electrode and gently remove it from the skin.
- Apply the protective backing to the tacky side of the electrode. Place the electrode on the side of the protective backing that is labeled with the word, on.
- Store the electrodes in the resalable pouch or a plastic bag.

Caution:

- Do not pull on the electrode wire. Doing so may damage the and electrode.
- Always use the electrodes with CE mark, or are legally marketed in the US under 510(K) procedure.

7.3 Cleaning the Electrodes cords

Clean the electrode cords by wiping them with damp cloth. Coating them lightly with talcum powder will reduce tangles and prolong the life.

7.4 Maintenance

1) Maintenance and all repairs should only be carried out by an authorized agency. The manufacturer will not be held responsible for the results of maintenance or repairs by unauthorized persons.
2) The user may not attempt any repairs to the device or any of its accessories. Please contact the retailer for repair.
3) Opening of the equipment by unauthorized agencies is not allowed and will terminate any claim to warranty.
4) Check the device before each use for signs of wear and/or damage. Replace wear items as required.

8. TROUBLESHOOTING

If your device does not seem to be operating correctly, refer to the chart below to determine what may be wrong. Should none of these measures correct the problem, the device should be serviced.

Problem	Possible Cause	Solution
Displays fail to light up	Battery contact failure	1. Try fresh batteries.
		2. Ensure batteries are inserted correctly. Check the following contacts: • All contacts are in place. • All contacts are not broken.
Stimulation weak	Electrodes 1. Dried out or contaminated 2. Placement	Replace and re-connect
	Lead wires Old/worn/damaged	Replace
Stimulation is uncomfortable	Intensity is too high	Decrease intensity.
	Electrodes are too close together	Reposition the electrodes.
	Damaged or worn electrodes or lead wires	Replace.
	Electrode active area size is too small.	Replace electrodes with ones that have an active area no less than 16.0cm^2(4cm*4cm).
	Mayn't operate the device according to the manual.	Please check the manual before use.
Intermittent output	Lead wires	1. Verify connection is secure. Insure firmly.
		2. Turn down the intensity. Rotate lead wires in socket 90°. If still intermittent, replace lead wire.

		3. If still intermittent after replacing lead wire, a component may have failed. Call the repair department.
		Some programs will seem intermittent. This is expected. Refer to the Program
	Program option in use	Option Controls in the Operation section for a description of the program option.
Stimulation is ineffective.	Improper electrode and applicator placement Unknown	Reposition electrode and applicator Contact clinician.
The skin becomes red and/or you feel a stabbing pain	Use the electrodes on the same site every time.	Re-position the electrodes. If at any time you feel pain or discomfort stop use immediately.
	The electrodes aren't stuck onto the skin properly.	Ensure the electrode is stuck securely on the skin.
	The electrodes are dirty.	Clean the electrode pads with a damp, lint free cloth or replace new electrode pads. Clean the electrode belt according the description in user manual.
	The surface of the electrode was scratched.	Replace new electrode.
Output current stops during therapy	The electrode pads come off the skin.	Turn off the device and stick the electrode pad firmly to the skin.
	The cable is disconnected	Turn off the device and connect the cable
	The power of the batteries has been exhausted.	Please replace them with new batteries.

9. STORAGE

1) For a prolonged pause in treatment, store the device in a dry room and protect it against heat, sunshine and moisture.
2) Store the device in a cool, well-ventilated place
3) Never place any heavy objects on the device.

10. DISPOSAL

Used fully discharged batteries must be disposed of in a specially labeled collection container, at toxic waste collection points or through an electrical retailer. You are under legal obligation to dispose of batteries correctly.

Please dispose of the device in accordance with the legal obligation.

11. ELECTROMAGNETIC COMPATIBILITY (EMC) TABLES

Guidance and manufacturer's declaration - electromagnetic emissions		
The device is intended for use in the electromagnetic environment specified below. The customer or the user assures that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The device uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.

RF emissions CISPR11	Class B	The device is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations /flicker emissions IEC 61000-3-3	Not applicable	

Guidance and manufacturer's declaration — electromagnetic immunity			
The device is intended for use in the electromagnetic environment specified below. The customer or the user should assure that it is used in such an environment.			
Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, therelative humidity should be at least 30 %.

Electrical fast transient/ burst IEC 61000-4-4	±2kV for power supply lines ±1kV for input/output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1kV differential mode ±2kV common mode	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5% UT (>95% dip in UT) for 0.5 cycle 40% UT (60% dip in UT) for 5 Cycles 70% UT (30% dip in UT) for 25 Cycles <5% UT (>95% dip in UT) for 5 sec	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c mains voltage prior to application of the test level.			

Guidance and- manufacturer's declaration. Electromagnetic immunity			
The device is intended for use in. the electromagnetic environment specified below. The customer or the user should assure that it is used in such an environment.			
Immunity test	IEC 60501 test level	Compliance level	Electromagnetic environment - guidance
			Portable and mobile RF Communications equipment should be used no closer to any part of the device, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	$d=[\frac{3.5}{V1}]\sqrt{p}$
Radiated RF IEC 61000-4-3	3 V/m80 MHz to 2.5 GHz	3 V/m	$d=[\frac{3.5}{E1}]\sqrt{p}$, 80MHz to 800MHz $d=[\frac{7}{E1}]\sqrt{p}$, 800MHz to 2,5MHz

			Where P is the maximum output power rating of the transmitter In watts (W) according to the. Transmitter manufacturer and d is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,a should be less than the compliance level in each frequency range.b 

NOTE l At 80 MHz ends 800 MHz. the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the device.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [Vi] V/m

Recommended separation distances between portable and mobile RF communications equipment and the device

The device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d=[\frac{3.5}{V1}]\sqrt{p}$	80 MHz to 800 MHz $d=[\frac{3.5}{E1}]\sqrt{p}$	800 MHz to 2,5 GHz $d=[\frac{7}{E1}]\sqrt{p}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) accordable to the transmitter manufacturer.
NOTE I At 80 MHz and 800 MHz. the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) accordable to the transmitter manufacturer.
NOTE I At 80 MHz and 800 MHz. the separation distance for the higher frequency range applies.
NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

12. GLOSSARY OF SYMBOLS

LOT	Batch code
SN	Serial number
	Electrical devices are recyclable material and should not be disposed of with household waste after their useful life! Help us to protect the environment and save resources and take this device to the appropriate collection points. Please contact the organization which is responsible for waste disposal in your area if you have any questions.
	Attention: Read the operating instruction for use!
	Type BF Applied Part

13. WARRANTY

Please contact LG MedSupply in case of a claim under the warranty. If you have to send in the unit, enclose a copy of your receipt and state what the defect is.

The following warranty terms apply:

1) The warranty period for device is one year from date of purchase. In case of a warranty claim, the date of purchase has to be proven by means of the sales receipt or invoice.
2) Repairs under warranty do not extend the warranty period either for the device or for the replacement parts.
3) The following is excluded under the warranty:

- All damage which has arisen due to improper treatment.
- All damage which is due to repairs or tampering by the customer or unauthorized third parities.
- Damage which has arisen during transport from the manufacturer to the consumer or during transport to the service centre.
- Accessories which are subject to normal wear and tear.

4) Liability for direct or indirect consequential losses caused by the unit is excluded even if the damage to the unit is accepted as a warranty claim.

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