

# E-STIM II

**DUAL CHANNEL  
STIMULATOR**  
(with Milli & Micro-  
current settings)

## INSTRUCTION MANUAL



## INTRODUCTION

The Dual Channel T.E.N.S. stimulator E-Stim II is designed for T.E.N.S. treatment used by a practitioner. Besides, this device is provided with a Milli-amps (normal current) or Micro-amps (micro current) selectable switch. Before using the system, carefully read this manual so that your patient will obtain maximum benefit, as well as full usage of the system.

### SAFETY PRECAUTIONS -Warnings

**Heart Patient**-Adequate precautionary measures should be considered prior to stimulating patients suspected of having heart disease. Current clinical data cannot sufficiently prove that no adverse results can occur in such patients.

**Carotid sinus**-Do not stimulate over the carotid sinus nerves, especially in patients with known sinus reflex sensitivity.

**Neck Stimulation**-Severe spasm of the laryngeal and pharyngeal muscles may occur when the electrodes are placed across the neck or the mouth. This may be strong enough to close off the airway.

**Cardiac Pacemakers**-Stimulation will inhibit the output of some demand cardiac pacemakers and, therefore, it is not recommended for patients with this type of pacemaker.

**Pregnancy**-The safety of electrical nerve stimulation for use during pregnancy or delivery has not been established.

**Other**-Electrical nerve stimulation, as far as is presently known, is a symptomatic treatment, and as such may suppress the progress of pain which would otherwise serve as a protective influence on the outcome of a disease process. The potential for physical and/ or psychological dependence upon nerve stimulation as a means of relieving pain has not yet been determined.

It has been noted that some patients find the sensation of electrical stimulation extremely unpleasant and should probably be excluded from further use of the stimulator.

Do not apply electrical nerve stimulation current transcranially.

Do not apply electrical nerve stimulation when pain syndromes are undiagnosed until etiology is established.

Electrical nerve stimulation devices should be used only under the continued supervision of a physician. Electronic monitoring equipment (such as EKG monitors and EKG alarms) may not operate properly when electrical nerve stimulation is in use. Avoid use in post-operative recovery rooms when a heart monitor is on.

Keep out of reach of children.

## THE SYSTEM

Included in the system with the dual channel stimulator E-Stim II are electrical cables. The stimulator contains the power source and the electronics of the system. The stimulating signal is transferred to the patient via the cables and electrodes.

The stimulator is contained in a high-impact case with 3 control knobs (2 knobs <INT> control the output intensity of each channel separately, and 1 knob <CPS> to control the frequency of the output for both channels), and 1 selectable switch for Milli-amps (normal current) or Micro-amps (micro current), and 2 cable jacks located on top. The stimulator is provided with a belt clip, and small enough to be carried in most pockets.

The control knobs are positioned for ease of adjustment and visibility. The control knobs marked with numerical (CPS) controls the number of pulses generated per second (output rate) for both channels. When in a fully counterclockwise position, the rate is at minimum. Turning the control clockwise will increase the rate to maximum.

The control knobs marked with numerical (CH1,CH2) serve as the output controls and incorporate an on/off switch for the channels 1 & 2 separately. Turning the control(s) clockwise will turn the stimulator on and increase the amplitude (output) to maximum.

The stimulator is operated from a 9 volt battery (alkaline type is recommended), when adequate stimulation can no longer be maintained, the low battery indicator LED will light to alert the user to change a new battery.

The cable is connected to the jack located on the top of the stimulator.

In the treatment, the electrodes are clipped by the alligator type connecting wire and connected to the stimulator.

## **SPECIFICATIONS**

E-Stim II	Dual Channel
Size of the unit	12.5 x 6 x 2.4 cm (5" x 2.5" x 1")
Weight of the unit	110g
Power source	9V Battery, type PP3. 6F22 or its equivalent (alkaline type is recommended)
Pulse shape	Biphasic Square Wave with negative spike
Pulse rate (adjustable)	2 Hz ~ 100 Hz ( $\pm 20\%$ )

Output current (adjustable) at Milli on 500 $\Omega$ load	0-40 mA ( $\pm$ 20%)r.m.s.
Output current (adjustable) at Micro on 500 $\Omega$ load	0-2 mA ( $\pm$ 20%)r.m.s.
Pulse width	260 $\mu$ sec ( $\pm$ 20%)
Indicator Lamp	Green lamp(s) to show power on and pulse rate speed of channel 1 and 2 separately.  Yellow low battery lamp which is to illuminate when battery power drops to about 5.1V.
Operating Temperature	10°C to 40°C (50°F to 104°F)
Output Jack	3.5mm diameter jack

Electrical specifications are  $\pm$  20% with 500 ohm load.

## **USING THE SYSTEM - BATTERY INSTALLATION**

The stimulator is relatively simple to use extensively. First install a new battery according to the following steps:

1. Turn off all intensity control dials.
  2. Slide the battery cover open (located on the lower rear side of the unit).
  3. Insert the battery into the battery compartment, correctly with the polarity according to the diagram shown in the battery compartment label. Make sure the directions of positive and negative poles of battery inserted are correct and be sure you are using a fresh battery. Alkaline type batteries are recommended.
  4. Close the battery cover.
  5. Battery life is 4 to 20 treatment hours depending on how high the current is set and how long each treatment session is. Many short treatment sessions give longer battery life than fewer longer sessions.
- To avoid battery leakage, remove the battery when the unit will not be used for an extended period of time.

## **USING THE SYSTEM - Preparations:**

1. Set all the controls (CPS & INT) at minimum or off position.
2. With the electrodes in place, connect the alligator clip to the electrodes securely.
3. Connect the cable (or both cables to the unit if 2 channels will be used at the same time) to the unit by inserting the plug(s) into the jack(s) of the device.
4. Set the Output selectable switch to either Milli-amps (normal current) or Micro-amps (micro current). If Milli-amps is selected, an electric stimulation can be easily felt from the electrodes. However, when Micro-amps is selected, only a weak stimulation may be felt from the electrodes as the device is now delivering micro current output intensity.
5. Slowly advance the output (INT) control(s) (for channel 1 or 2, one by one) until the electrical stimulation ( a tingling or buzzing sensation) is felt. Continue to increase the amplitudes until the sensation is strong but not uncomfortable.
6. Next, rotate the frequency control (CPS) to adjust required frequency (rate). If the sensation becomes excessive as the rate is adjusted, decrease the controls (CPS) slightly.
7. After going through the complete rate range, a setting that will be comfortable for the patient should be found. Some patients find that a particular setting gives them the best stimulation. Other find that it is more comfortable to change the rate often.



8. As you become familiar with the stimulator, you will be able to quickly establish the control setting combinations that are the most effective for controlling your patients pain.
9. Turn off all the channels and controls after the treatment ends.
10. Detach the alligators from the electrodes.
11. Store the cable(s) properly inside the units case.

## **MAINTENANCE**

Maintenance of the stimulators is limited to cleaning the stimulator battery contacts and cable replacement.

### **Cleaning**

**DO NOT IMMERSE THE STIMULATOR IN ANY CLEANING SOLUTION.**

The stimulator should be periodically wiped clean using a damp cloth and a solution of mild soap and water. Use of other cleaning solutions may damage the case.

The cables (alligator type connecting wire) should be wiped clean with a cloth dampened with a mild soap solution and then wiped dry.

## **Maintenance**

The stimulator can be operated from a 9 volt battery. When adequate stimulation can no longer be maintained, change the battery.

Remove the old battery and replace it with a new battery.

The system will provide stimulation only if the battery is properly installed.

## **TROUBLE SHOOTING...SERVICE**

If your E-Stim II unit seems to be functioning improperly, check below procedures to determine what may be wrong.

If none of these measures correct the problem, the unit should be serviced. Do not attempt to repair the unit by yourself, return the unit to your local authorized dealer or to the manufacturer as listed in this manual for repair or service.

Indicator lights up but unit does not function Properly.	Low battery lamp illuminate	No indicators light up.
a. Check control settings, are they set to values correctly. b. Check if frequency control is turned on (not too low, or at zero setting) c. Check cables, make sure all alligator are firmly clipped to the acupuncture needles. d. Replace cable with another one to check for broken wires.	Replace battery with a new one.	Replace battery with a new one.

1. Battery replacement - Battery should be replaced whenever sufficient stimulation cannot be maintained.
2. Care of Device - The stimulator and cables should be kept clean. The stimulator should not be immersed in any liquid. Avoiding rough use will help prevent premature failure.

## **Accessories**

Alligator type connecting wire	2pcs.
Battery 9V	1pc.
Instruction manual	1pc.
Hard case	1pc.

## **Storage and Transportation**

Store unit in a dry location free from dust and contamination where the temperature remains fairly constant and within the range of  $-16^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  ( $3.2^{\circ}\text{F}$  to  $104^{\circ}\text{F}$ )

Do not drop, mishandle, or expose to temperature or humidity extremes  $<$  outside the range of  $-16^{\circ}\text{C}$  to  $40^{\circ}\text{C}$  ( $3.2^{\circ}\text{F}$  to  $104^{\circ}\text{F}$ ), 15-95% RH non-condensing  $>$  Do not use if the unit malfunctions or has been damaged in any manner.

There is generally no restricted "shelf-life" of the device.

## Limited Warranty.....

This warranty is in lieu of any other warranty expressed or implied:

This E-Stim II unit is warranted to the initial purchase ("purchases") and to no other person against any defects in material and workmanship for a period of 1 year from the date of purchase. If the stimulator is found to be defective within the warranty period, it will be repaired or replaced if returned prepaid to an authorized service center. This warranty does not cover damage caused by rental, misuse, negligence, accident, abuse or alternation or modification of the unit. Repairs after the warranty period will be made and charged to the customers on the basis of rates, which are available on request. Except for personal injury, no liability is held in either tort or contract for any loss or damage, direct, consequential, or incidental arising out of the use, misuse or inability to use this product.

Serial No. \_\_\_\_\_  
(Located on the rear side of the unit, next to the battery compartment door)

Date Purchased \_\_\_\_\_  
Customer: Please record this information

## **Disposal**

Please follow environment requirement when disposal the equipment.



**Manufacture date.....**

Date of Manufacture : see unit

**Dist. By :** Lhasa OMS, Inc., Weymouth, MA. USA.  
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