

LUMISCOPE®

A Graham-Field Brand



Transcutaneous Electrical
Nerve Stimulation
(TENS) Device
Model SW-1000
Operation Manual

Read this manual before operating the TENS device. Save this manual for future reference.

SW-1000-INS-LAB-RevA08

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INTRODUCTION

Indications

This device is restricted to sale or use by or on the order of a physician licensed in the state in which he or she is practicing. It is to be used solely for the symptomatic relief of chronic intractable pain.

Contraindications

1. Do not place the TENS electrodes over the carotid artery (neck) region.
2. Patients with implanted electronic devices (for example, a pacemaker) or metallic implants should not undergo TENS treatment without first consulting a physician.
3. Do not apply the TENS electrodes so that current passes transcerebrally (through the head).
4. The use of TENS whenever pain symptoms are undiagnosed and the etiology has not been established.

To the Patient

You have been diagnosed as having a type of pain discomfort that may be alleviated by the use of transcutaneous electrical nerve stimulation. The

SW-1000 generates electrical pulses that are sent through the electrodes which are placed over nerve centers. The various pulses employed by SW-1000 can block pain signals normally sent to the brain through nerve fibers, thereby interrupting the brain's awareness of pain. The SW-1000 may activate the release of endorphins which are chemicals used by the body to suppress pain naturally.

Transcutaneous Electrical Nerve Stimulation (TENS) is:

- Safe.
- Non-invasive.
- Non-pharmaceutical.
- Non-addictive.

Many clinical studies have shown the effectiveness of TENS for the relief of pain. Your SW-1000 can reduce the need for pharmaceuticals if used as prescribed by your physician. Abide by the warnings and contraindications listed in this manual when undergoing TENS treatment.

SAFETY

- ⚠ WARNING:** Indicates a potential hazard situation or unsafe practice that, if not avoided, could result in death or serious personal injury.
- ▲ Caution:** Indicates a potential hazard or unsafe practice that, if not avoided, could result in minor personal injury or product/property damage.

Warnings

- ⚠ WARNING:** The safety of TENS devices for use during pregnancy or delivery has not been established.
- ⚠ WARNING:** The effectiveness of TENS for pain of central origin, such as for headaches has not been established.
- ⚠ WARNING:** TENS devices should be used only under the continued supervision of a physician.
- ⚠ WARNING:** TENS devices have not been established to have curative value.
- ⚠ WARNING:** TENS is a symptomatic treatment, and as such suppresses then sensation of pain which would otherwise serve as a protective mechanism.

⚠ WARNING: TENS devices must be kept out of reach of children.

⚠ WARNING: TENS may interfere with electronic monitoring equipment such as ECG monitors and ECG alarms.



PLEASE READ THIS MANUAL COMPLETELY AND CAREFULLY BEFORE USING THE TRANSCUTANEOUS ELECTRICAL NERVE STIMULATOR (TENS).

CONTENTS OF THIS SW-1000 KIT

Qty	Description
One	SW-1000 unit
One	Set of electrodes
Two	Sets of wire leads
One	9V battery
One	Operation Manual
One	Carrying case

PRODUCT SPECIFICATIONS

Note: All values have $\pm 20\%$ tolerance	
Channels	Dual, isolated between channels.

Pulse	Amplitude	Adjustable 0-80 mA peak either positive pulse or negative pulse into 500Ω load each channel, constant current.
	Frequency	Adjustable, 2-150Hz
	Width	Variable, 60-250μ sec
Mode	Modulation	Pulse width is automatically varied in a cyclic pattern over an interval of nominally 4.0 seconds. Pulse width decreases linearly over a period of 1.0 seconds from the control setting value to a value which is decreased 40% maximum. The narrower pulse width will continue for 1.5 seconds maximum, then increase linearly over a 1.5 second period to its original value. The cycle is then repeated.
	Burst	2 bursts per second, 7 pulses per burst, at maximum pulse rate.
Wave Form	<p>Modified square wave with zero net DC component</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: left;"> <p>LOAD MODE: 500.00Ω VER. MODE: CH1 TIME/DIV: 0.1MS VOLT/DIV: 5.0V</p>  </div> <div style="text-align: left;"> <p>LOAD MODE: 1MΩ (OPEN CIRCUIT) VER. MODE: CH1 TIME/DIV: 0.1MS VOLT/DIV: 5.0V</p>  </div> </div> <p>All of the adjustable parameters are set at the midpoint of the specified range.</p>	
Voltage (open circuit)	0-110V maximum (either positive pulse or negative pulse).	

Maximum Charge per Pulse	16 micro coulombs maximum. Positive pulse and negative pulse separate.
Battery μ	9V battery (alkaline or rechargeable NiCad).
Battery Life	Approximately 70 hours at nominal settings.
Size (WxDxH)	2.52 x .94 x 3.74 inches(64 x 24 x 95 mm)
Weight	Battery included: .03 lb (13 g)

INSTRUCTIONS FOR USING THE SW-1000

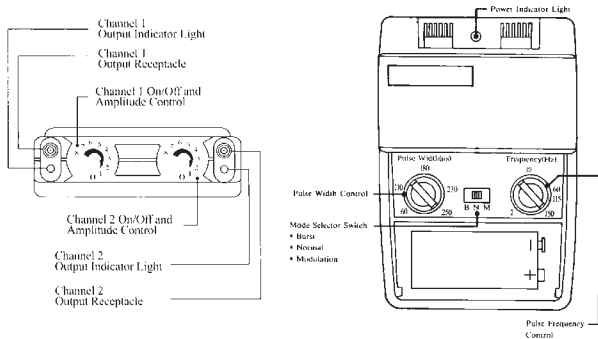
1. The ON/OFF switches are the amplitude control knobs located on the top of the unit. There are two amplitude control knobs: Channel 1 and Channel 2. The unit is set to the OFF position when this knob is set to 0. If one of the knobs is set to a position other than 0, the corresponding channel is currently in the ON position. The amplitude increases in intensity as the control knob is moved from 1 to 8. Each channel operates independently from the other. Turning ON one channel gives a steady fast flashing yellow power indicator light located next to the channel. A green light located between the two amplitude control knobs will light up when the unit is in the ON position. A weak battery is indicated when this light becomes dim.

2. Set the Pulse Frequency Control. This regulates the frequency of the pulses from 2 to 150 pulses per second (pps or Hz).
3. Set the Pulse Width Control. This regulates the width (duration) of each pulse from 60 to 250 micro seconds.
4. Set the Mode Selector Switch to one of the three modes of stimulation:
 - M** Modulation Mode: This mode cycles every 4 seconds. The pulse width and frequency remain adjustable.
 - B** Burst Mode: This mode produces two bursts of pulses every second. Each burst has 7 pulses; each pulse at the 100Hz rate. The pulse width remains adjustable.
 - N** Normal Mode: This mode provides a steady stream of pulses. The pulse width and pulse frequency remain adjustable.
5. Setting the Pulse Width and Pulse Frequency:
 - a. Conventional settings: set the pulse width to 90 to 100 microseconds.
 - b. Low rate settings: Set the pulse width to 200 to 220 microseconds. Set the pulse frequency to 2 to 4 Hz.
 - c. Brief intensity settings: Set the pulse width to 200 to 250 microseconds.

6. Holding the insulated portion of the lead wire plug, push the plug into one of the channel output ports located on the top of the unit; one or two sets of wires may be used. (The lead wires have one end which inserts into the electrodes and one end which inserts into the channel output port.)
7. Batteries: Use **ONLY** 9V or 9V rechargeable NiCad batteries with this unit.

▲ Caution: Effectiveness of TENS treatment is highly dependent upon patient selection by a qualified physician.

SW-1000 CONTROL DIAGRAM:



USING ELECTRODES:

To maximize comfort while using electrodes the following measures are recommended:

1. Before applying or removing electrodes turn the unit to the OFF position using the Amplitude Control Knobs.
2. Read and follow the instructions for use for the electrodes utilized.
3. Place the electrode onto the skin over the desired nerve fiber region. Note: If a component of the electrode is not affixed to the skin a tingling sensation may occur at the spot of poor contact which may cause discomfort. Be sure the entire electrode is firmly in place.
4. Insert the lead wire into the Channel Output Receptacle after the electrode is applied.

Suggestions:

Never remove an electrode while the unit is in the ON position. This may cause an uncomfortable tingling sensation to occur.

Never disconnect either end of a wire lead by pulling on the wire. Disconnect the lead wire by holding the insulated portion of the lead wire end.

▲ Caution: Skin irritation may occur at the electrode site following long-term application.

SKIN CARE:

To reduce the chance of skin irritation, the following is recommended:

1. Closely clip or shave hair before applying an electrode to encourage better contact and connectivity between the skin and the electrode.
2. Only apply clean electrodes to clean dry skin.
3. Firmly press the electrode onto the skin to ensure complete contact is achieved. If a component of the electrode is not affixed to the skin a tingling sensation may occur at the spot of poor contact which may cause discomfort.
4. When removing the electrode, pull GENTLY on the electrode.
5. Do not apply an electrode over broken skin as this may produce discomfort.
6. When applying an electrode, do not allow the skin or the electrode to be stretched.

▲ Caution: Improper application of electrodes or TENS settings may cause electrode burns. Use the TENS unit as directed by your physician.

CARING FOR THE SW-1000

1. When not in use, store the SW-1000 in the case provided to protect it from external damage.
2. Make sure the electrode and the skin are both clean.
3. Firmly press the electrode onto the skin to ensure complete surface contact is achieved. If a component of the electrode is not affixed to the skin a tingling sensation may occur at the spot of poor contact which may cause discomfort.
4. When removing the electrode, pull GENTLY on the electrode.
5. Do not apply an electrode over broken skin as this may produce discomfort.
6. When applying an electrode, do not allow the skin or the electrode to be stretched.
7. The SW-1000 may be cleaned by wiping it gently with a damp cloth moistened with mild soap and water. Never immerse the device in water or other liquids. The lead wires may be cleaned with a damp cloth moistened with soap and water.

▲ Caution: Improper application of electrodes or TENS settings may cause electrode burns. Use the TENS unit as directed by your physician.

TROUBLESHOOTING:

If the TENS unit does not function properly:

1. Make sure the battery is properly installed or replace the battery.
2. If the Channel Amplitude knobs are turned to the OFF position and there is a light blinking or glowing do not use the unit. Contact an authorized GF Health Products, Inc. representative.
3. If the Channel Amplitude knobs are turned to the OFF position and any stimulation is felt do not use the unit. Contact an authorized GF Health Products, Inc. representative.
4. If the lights are functioning correctly and no stimulation is felt, check to ensure the lead wires are properly connected and the electrodes are in place. If the unit appears to be functioning and no stimulation is felt, the lead wires or electrodes may need to be replaced.
5. If any problems occur, contact an authorized GF Health Products, Inc. representative. Do not try to repair the unit.

Note: The life of a NiCad battery is about 12% as long as the life of an alkaline battery. At a medium setting, the battery life of an alkaline battery will be approximately 70 hours.

WARRANTY

GF Health Products, Inc. warrants the Lumiscope SW-1000 TENS Device for a period of three years for defects in workmanship and materials. During the warranty period, defective items will be repaired or replaced at manufacturer's option at no charge. Any evidence of misuse, abuse, alterations, or externally caused damage may void this warranty.

Batteries, electrodes, and/or lead wires are not covered by this warranty. This warranty guarantees you specific rights, but you may have additional rights which vary from state to state.

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