

DUAL CHANNEL NMS & TENS UNIT

CARE
SELECT
STIM™



INSTRUCTION MANUAL

CARE REHAB®

And Orthopaedic Products, Inc.



PO Box 580
McLean, VA 22101

Phone: 1-703-448-9644 Fax: 1-703-356-2182



PO Box 580
McLean, VA 22101

Phone: 1-703-448-9644 Fax: 1-703-356-2182



Contents

Contents	Page
Letter to the Patient	3
How the CARE SELECT STIM™ Works	3
The CARE SELECT STIM™ System Components	4
The CARE SELECT STIM™ Operations Controls / Features	5
Electrodes	6
Proper Skin Care	7
Using the CARE SELECT STIM™	8
CARE SELECT STIM™ Battery Information	10
Care of your CARE SELECT STIM™	10
Important Prescription Information	11
Instructions for your Physician or Therapist	13
Technical Specifications	16





Letter to the Patient

Your physician has prescribed the CARE SELECT STIM™ System to help re-educate your muscles. Please read this operations manual carefully before using your CARE SELECT STIM™. The instructions on the following pages will show you how to use and care for your CARE SELECT STIM™ in a general manner.

IMPORTANT NOTE: Please read the prescription information and precautions in this manual before using the CARE SELECT STIM™.

You should always consult your physician or therapist if you have specific questions or

problems regarding the use of your stimulator. Your physician or therapist possesses technical knowledge about the CARE SELECT STIM™ and is familiar with your specific condition and requirements. In addition, always follow the instructions of your physician or therapist to gain the most benefit from your CARE SELECT STIM™.

CAUTION: Federal (U.S.A.) law restricts this device to sale by, or on the order of a practitioner licensed by the law of the state in which he/she practices to use or order the use of the device.

How the CARE SELECT STIM™ Works

Your CARE SELECT STIM™ is a battery powered device that generates small pulses of electrical current. These small pulses of electrical current are delivered through lead cables to electrodes placed on your skin. These electrical pulses pass through your skin, and activate underlying nerves. Your physician or therapist will instruct you on the correct degree of stimulation for your particular condition. The CARE SELECT STIM™ has two channels, allowing it to operate

two pairs of electrodes. The CARE SELECT STIM™ can deliver 19 separate stimulation patterns (“modes”). Your physician or therapist will provide you with directions on the proper mode for your condition.

It is important to realize that the CARE SELECT STIM™ is only to be used as indicated. Therefore, STIM is not a substitute for proper medical evaluation and treatment.



The CARE SELECT STIM™ System Components



The CARE SELECT STIM™ System is provided with:

- 1 CARE SELECT STIM™ Stimulator
- 1 package of electrodes (non-sterile, 1.8" X 1.8")
- 2 Lead Cables
- 1 9V battery
- 1 Operations Manual





Technical Specifications

1. Dual channel: individually isolated circuits.
2. Amplitude: 0-90 mA; indication only; actual mA will tend to be less than indicated due to electrode impedance.
3. Type: Constant Current.
4. Waveform: Asymmetrical, rectangular bi-phasic with zero DC current.
5. Selectable pulse width: 30 μ S – 400 μ S [+/- 2% accuracy].
6. Pulse Rate selection: in the continuous mode 2 – 150 Hz [+/- 2% accuracy].
7. Maximum Charge per Pulse: 41 microcoulombs.
8. Maximum Average Current 3.6 mA.
9. Duty Cycle: Ranges from 0.006% at 30 μ S, 2 Hz to 4% at 400 μ S, 100 Hz.
10. Time duration of the treatment selectable: 15, 30, 60 minutes or continuous.
11. Open Electrode Detect: If an open circuit is detected at the output of channel 1 or 2 the output current will be reset at zero.
12. NMS On Time 5 - 15 seconds.
13. NMS Off Time 5 - 60 seconds.
14. NMS Ramp up time 0.1 - 9.9 seconds.
15. NMS Ramp Down Time < 1 second.
16. Low Battery Indicator: If the battery goes below 6.9 volts +/- 0.2 volts the battery symbol will flash on/off once every second.
17. If the battery voltage is below 6.6 (+/- 0.2) volts the unit will not turn on.
18. Physical dimensions: 4.0" x 2.6" x 1.4".
19. Weight: 8 oz (including battery).
20. Environmental conditions for storage & transport:
+14 to +95 degrees
0-90% Humidity.
21. Tolerances: All electrical specifications are +/- 10% into 500 ohm.

Warranty

This unit has a one year limited warranty from the date of purchase.



The CARE SELECT STIM™ Operations Controls / Features



Amplitude Controls: Pressing the “+ Plus” button increases the amplitude for each channel. The button can be held in for a continuous increase of amplitude. Pressing the “- Minus” button decreases the amplitude for each channel. The button can be held in for a continuous reduction of amplitude. The amplitude range is between a setting of 0 – 90 mA which corresponds to the strength of the electrical stimulation delivered. Pressing the “ON/OFF” button turns the stimulator on and off. The stimulation changes in discrete steps. Select the amount of stimulation recommended by your physician or therapist. The CARE SELECT STIM™ unit will automatically shut off after the set treatment duration has elapsed, but it is recommended that you turn it off whenever you do not use a full treatment cycle in order to conserve the battery.

Output for each mode is delivered through a cable. The cable has a keyed, latch type, protected (can not be plugged into an a.c. outlet) connector.

The electrode lead wires are designed with a protected color coded connector which are connected to the distal end of the cable to a protected connector which is color coded.

Output modality selection: The CARE SELECT STIM™ operates in the NMS mode (asymmetric biphasic output) with specific programs.

Program Selection: Pressing the “PROG” button cycles through the 12 stimulation programs. Changing of programs can only be done when no program is running, turn the unit off and on again to reset.

Lead Cable Sockets: The electrode lead cables should be plugged into their sockets.

Battery Information: This device requires one 9V alkaline battery to operate. Remove the plastic cover on the back of the unit and insert the battery as indicated by the icons inside the battery compartment and replace the cover to fit tightly. Do not use a rechargeable (e.g. nickel-cadmium) battery, as this will not delivery full amplitude stimulation.



Electrodes

Reusable / Self-adhering electrodes: To use your electrodes, first attach them to your lead cable. (Note that the “pin” on the electrode cable is protected by a plastic sheath.) Then, grasp the electrode by the corner, and gently peel away the electrode from the plastic sheet it is provided with. Finally, apply the electrodes to the skin area (your physician or therapist will show you the approximate area for treatment) by firmly pressing the electrode against the skin.

When your therapy session is completed, grasp the corner of the electrode (**NEVER REMOVE THE ELECTRODE BY PULLING ON THE LEAD CABLE, AS THIS MAY DAMAGE YOUR ELECTRODES**)

and gently remove it from your skin, and place it on the plastic sheet it originally was adhered to. Another important note in the care of your electrodes is to replace the electrodes in the resealable pouch provided with your electrodes. If your electrodes dry out, you can place a few drops of water on them to re-moisten them for continued use.

After repeated usage, reusable electrodes begin to lose their adhesion, deliver less stimulation and shorten battery life. **Replace reusable electrodes as needed.**

We recommend using 1.8” x 1.8” electrodes from Care Rehab.



Stimulation Modes:

The CARE SELECT STIM™ has 19 separate output modes, described in the table below.

Program	Mode	Description
CONST 1	TENS	Constant 100 Hz, 50 µS
CONST 2	TENS	Constant 150 Hz, 80 µS
CONST 3	TENS	Constant 80 Hz, 30 µS
BURST 1	TENS	Burst of 9 pulses at 150 Hz, 200 µS repeating twice per second
BURST 2	TENS	Burst of 9 pulses at 150 Hz, 180 µS repeating twice per second
BURST 3	TENS	Burst of 9 pulses at 80 Hz, 200 µS repeating twice per second
MOD 1	TENS	Modulates from 100 uS to 50uS to 100 uS over 10 seconds, 120 Hz
MOD 2	TENS	Modulates from 50 µS to 25 µS to 50 µS over 10 seconds, 100Hz
MOD 3	TENS	Modulates from 180 µS to 70 uS to 180 µS over 10 seconds, 80 Hz
NMS 1	STIM	Constant 30 Hz, 250 µS, 5 seconds on, 5 seconds off, ramp up 2 seconds, ramp down 1 second
NMS 2	STIM	Constant 30 Hz, 250 µS, 6 seconds on, 10 seconds off, ramp up 2 seconds, ramp down 1 second
NMS 3	STIM	Constant 30 Hz, 300 µS, 10 seconds on, 10 seconds off, ramp up 2 seconds, ramp down 1 second
NMS 4	STIM	Constant 50 Hz, 250 µS, 5 seconds on, 5 seconds off, ramp up 2 seconds, ramp down 1 second
NMS 5	STIM	Constant 50 Hz, 300 µS, 10 seconds on, 20 seconds off, ramp up 2 seconds, ramp down 1 second
NMS 6	STIM	Constant 50 Hz, 250 µS, 10 seconds on, 30 seconds off, ramp up 2 seconds, ramp down 1 second
MEMTNS	Custom	Custom TENS
MEMNM 1	Custom	Custom STIM
MEMNM 2	Custom	Custom STIM
MEMNM 3	Custom	Custom STIM

Automatic Shut-Off Treatment Timer:

The CARE SELECT STIM™ has an automatic treatment timer which will shut off at the end of the selected program (mode). It will shut-off the CARE SELECT STIM™ automatically one minute after the end of the set treatment or four minutes after the last button is pressed if no program has been run.



Lock Mode Function:

A “Concealed” Lock button is included in the CARE SELECT STIM™, which allows the physician or therapist to monitor the use of the unit in two ways:-

One (L:T) to measure the time in use over one hour and the average current used leaving the parameters to be freely altered. Alternatively (L:PT) locks the unit and parameters so they cannot be easily be changed by the patient.

Locking the Unit

1. Using the end of the lead cable, gently press on the concealed lock button (inside the belt clip recess) as shown on the diagram on page 9 until you hear a double beep.

2. Press the + or - button to select (L:T) or (L:PT). Press the PROG button to lock the parameters in place.

Unlocking the Unit

1. Using the end of the lead cable, gently press on the concealed lock button (inside the belt clip recess) as shown on the diagram on page 9 until you hear a single beep.
2. The information for time in use and the average mA current used can be read on the front LCD display. Press the PROG button to unlock the unit and bring the display back to the home position.



Proper Skin Care

By properly caring for skin covered by electrodes, you will:

- Allow more stimulation to reach the targeted nerves.
- Prolong the life of your electrodes.
- Reduce the chance that any skin irritation will develop.

The following directions for proper skin care will reduce the risk of skin irritation. However, if skin irritation develops, remove the electrodes, discontinue using your CARE SELECT STIM™, and consult your physician or therapist.

1. Wash all electrode sites with mild soap and water before applying the electrodes.
2. Dry your skin thoroughly before electrode application.
3. Trim excess body hair from electrode sites with scissors.
4. Do not place electrodes on cut, broken or irritated skin
5. Change electrode sites whenever possible, but first consult with your physician or therapist about doing this.



Using the CARE SELECT STIM™

FIRST Look at the LCD display and make sure the unit is turned off. If the display is on, press the “ON / OFF” button to turn off the device.

1. Insert one 9V alkaline battery into the battery compartment as shown on the diagram. Then replace the battery cover.



2. Wash the electrode application sites with mild soap and water and dry your skin thoroughly. Also remove any excess body hair with a pair of scissors, being careful not to cut your skin.
3. Connect the lead cable to the electrodes. Do not use unnecessary force when connecting the electrodes to the lead cables.
4. Place the electrodes on the sites prescribed by your physician or therapist, and press them firmly onto the skin.
5. Insert the plug at the end of the electrode lead cable securely into the CARE SELECT STIM™ channel 1 output socket or channel 2 output socket if using a second set of electrodes.

6. Now set the “Mode”. Press the “Program” (PROG) button until the number indicating the correct mode is shown. Select the Mode prescribed by your physician or therapist.
7. Set the “Time”. Press the “Timer” button until the correct time is shown as prescribed by your physician or therapist - 15, 30, 60 minutes or continuous.
8. Then press the “+ Plus” button until you achieve the amount of stimulation prescribed by your physician or therapist. To reduce the stimulation, press the “- Minus” button.
8. Always operate the CARE SELECT STIM™ at the prescribed settings for the amount of time directed by your physician or therapist.



Instructions for your Physician or Therapist

Setting Customized Programs for TENS:

1. Set the “Mode” to MEMTNS. Press the “Program” (PROG) button until MEMTNS1 is shown.
2. Press the SET button and the Hz symbol will flash on / off, then press the + or - button on the front panel to adjust the Pulse Rate from 2 - 150 Hz.
3. Press the SET button again and the μ S symbol will flash on / off, then press the + or - button to adjust the Pulse Duration from 30 to 300 μ S.
4. Press the PROG button to store the program.

Setting Customized Programs for STIM:

1. Set the “Mode” to MEMNM1, 2 or 3. Press the “Program” (PROG) button until MEMNM1, 2 or 3 is shown.
2. Press the SET button and the Hz symbol will flash on / off, then press the + or - button on the front panel to adjust the Pulse Rate from 2 - 100 Hz.
3. Press the SET button again and the μ S symbol will flash on / off, then press the + or - button to adjust the Pulse Duration from 30 to 400 μ S.
4. Press the SET button again and the WORK symbol will flash on / off, then press the + or - button to adjust the work period from 5 - 15 seconds.
5. Press the SET button again and the REST symbol will flash on / off, then press the + or - button to adjust the rest period from 5 - 60 seconds.
6. Press the SET button again and the RAMP [Ramp up] symbol will flash on / off, then press the + or - button to adjust the ramp up period from 0.1 - 9.9 seconds.
7. Press the SET button again and the ALTERN [Alternating] or SYNCH [Synchronous] symbol will flash on / off, then press the + or - button to select ALTERN or SYNCH.
8. If SYNCH [Synchronous] is selected, press the SET button again to select DELAY, then press the + or - button to adjust time in seconds Channel 2 is delayed after Channel 1 (0 - 4 seconds).
9. Press the PROG button to store the program.



- * Stimulation should not be applied transthoracically in that the introduction of electrical current into the heart may cause cardiac arrhythmias
- * Stimulation should not be applied transcerebrally
- * Stimulation should not be applied over swollen, infected, or inflamed areas or skin eruptions, e.g., phlebitis, thrombophlebitis, varicose veins, etc.
- * Stimulation should not be applied over, or in proximity to, cancerous lesions

Precautions:

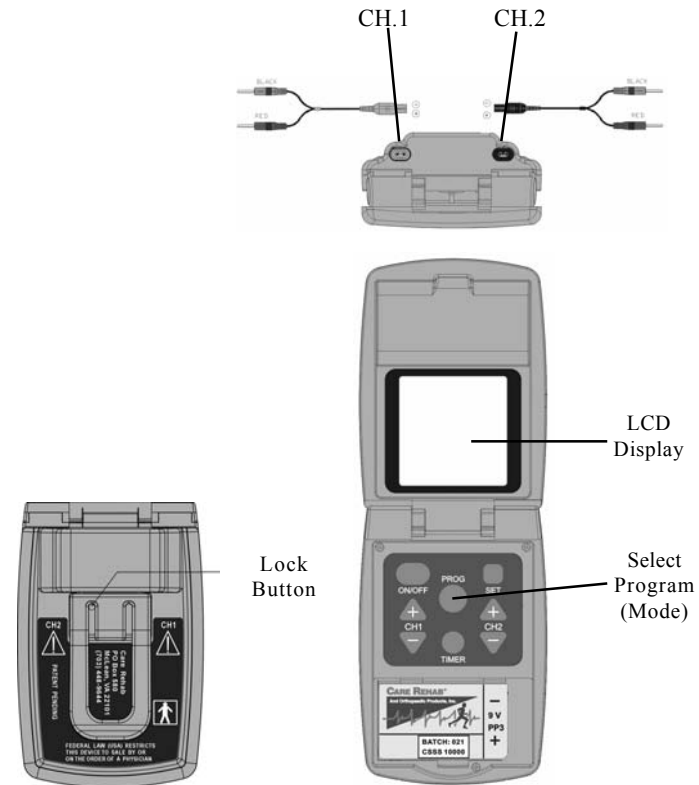
- * Safety of powered muscle stimulators for use during pregnancy has not been established.
- * Caution should be used for patients with suspected or diagnosed heart problems
- * Caution should be used for patients with suspected or diagnosed epilepsy
- * Caution should be used in the presence of the following:
 - When there is a tendency to hemorrhage following acute trauma or fracture
 - Following recent surgical procedures when muscle contraction may disrupt the

healing process

- Over the menstruating or pregnant uterus
- Over areas of the skin which lack normal sensation

- * Some patients may experience skin irritation or hypersensitivity due to the electrical stimulation or electrical conductive medium. The irritation can usually be reduced by using an alternate conductive medium or an alternate electrode placement.
- * Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner
- * Powered muscle stimulators should be kept out of the reach of children
- * Powered muscle stimulators should be used only with the leads and electrodes recommended for use by the manufacturer
- * Portable powered muscle stimulators should not be used while driving, operating machinery, or during any activity in which involuntary muscle contractions may put the user at undue risk of injury.

Adverse Reactions: Skin irritation and electrode burns are potential adverse reactions.



When your treatment session is completed, remember to do the following:

1. Press the “OFF” button and the unit will turn off.
2. Unplug the lead cable(s) from the CARE SELECT STIM™.
3. Disconnect the lead cable(s) from the electrodes, and properly store your electrodes for your next treatment session, as prescribed by your physician or therapist.



CARE SELECT STIM™ Battery Information

Whenever removing or replacing the battery from your CARE SELECT STIM™, always remember to press the “ON /OFF” button to turn the unit off.

Always use one 9V alkaline battery when operating your CARE SELECT STIM™.

Do not use a rechargeable (e.g. nickel-cadmium) battery.

Battery Care: Remove the battery during storage to prevent damage caused by battery leakage or corrosion.



Care of your CARE SELECT STIM™

Maintenance, care and cleaning of your CARE SELECT STIM™ are quick and easy procedures when these instructions are followed. When it is not in use, store your CARE SELECT STIM™ where it will be safe from accidental damage.

Cleaning: Clean the outside of the CARE SELECT STIM™ case as needed with a damp cloth and mild soap.

Never immerse your stimulator or battery in water, alcohol or other fluids, since this could seriously damage the internal electronics. Avoid using cleaning fluids or solvents to remove stains or dirt, because such liquids may damage the carrying case and unit. Lead cables need to be cleaned only if they become dirty. They should never be immersed in water or other fluids.



Important Prescription Information

Please read the following prescription information carefully before using your CARE SELECT STIM™. If you have any questions regarding this information, consult with your physician or therapist before proceeding.

CAUTION: Federal (U.S.A.) law restricts this device to sale by, or on the order of, a licensed physician. This device should only be used under medical supervision for adjunctive therapy for the treatment of medical diseases and conditions.

Indications:

- * Relaxation of muscle spasm
- * Prevention or retardation of disuse atrophy
- * Increasing local blood circulation
- * Muscle re-education
- * Immediate postsurgical stimulation of calf muscles to prevent venous thrombosis
- * Maintaining or increasing range of motion

EMS devices should only be used under medical supervision for adjunctive therapy for the treatment of medical diseases and conditions.

Contraindications:

- * EMS devices are contraindicated for patients with cardiac demand pacemakers
- * EMS devices should not be used on cancer patients
- * Adequate precautions should be taken in the case of persons with suspected or diagnosed epilepsy
- * Stimulation should not be applied over the carotid

Warnings:

- * The long-term effects of chronic electrical stimulation are unknown
- * Safety has not been established for the use of EMS devices during pregnancy
- * Adequate precautions should be taken in the case of persons with suspected heart problems
- * Sinus nerves, particularly in patients with a known sensitivity to the carotid sinus reflex
- * Stimulation should not be applied over the neck or mouth. Severe spasm of the laryngeal and pharyngeal muscles may occur and the contraction may be strong enough to close the airway or cause difficulty breathing