Intelect®

MOBILE COMBO



User Manual

Operation & Installation Instructions for:

2778- Combination Ultrasound and Stimulation Mobile Unit

chattanooga

DJO is an ISO 13485 Certified Company

Electromagnetic Compatibility (EMC) Tables

TABLE OF CONTENTS

FOREWORD 1
PRODUCT DESCRIPTION 1
SAFETY PRECAUTIONS 2
PRECAUTIONARY DEFINITIONS 2
CAUTIONS 3
WARNINGS 5
DANGERS 7
INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ELECTROTHERAPY 9
Indications for VMS, Russian, TENS, High Voltage Pulsed Current (HVPC), 2 Pole IFC, 4 Pole IFC, and Premodulated Waveforms 9
Additional Indications for Microcurrent, 2 Pole IFC, 4 Pole IFC, Premodulated, VMS™, and TENS Waveforms 9
Indications for Galvanic Continuous Mode 9
Contraindications 9
Additional Precautions 9
Adverse Effects 10
INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ULTRASOUND THERAPY 11
Indications for Ultrasound 11
Contraindications 11
Additional Precautions 11
Potential for Burns 12
Preventing Overheating of the Sound Heads 12
Preventing Adverse Effects 12
OVERVIEW 14
Common Terms 14
Description of Ultrasonic Field 19
NOMENCLATURE 20
SPECIFICATIONS 24
UNIT SPECIFICATIONS 24
DESCRIPTION OF DEVICE MARKINGS 24
WAVEFORM SPECIFICATIONS 25
ULTRASOUND TECHNICAL SPECIFICATIONS 32
SOUND HEAD SPECIFICATIONS 33
SETUP 34
MOUNTING THE UNIT ON THE WALL 34
INSTALLING THE BATTERY PACK 38
CHARGING THE BATTERY PACK 40
USING THE BATTERY PACK 40
PATIENT PREPARATION 41
ELECTROTHERAPY PATIENT PREPARATION 41
Electrode Placement 41
DURA-STICK® Electrodes 42
Reusable Carbon Electrodes 42
DURA-STICK® Electrode Instructions 43
Connecting Lead Wires 43
Securing Electrodes 43

TABLE OF CONTENTS

Reusable Carbon Electrodes 44
Connecting Lead Wires 44
Conductive Medium 44
Securing Electrodes 44

ULTRASOUND THERAPY PATIENT PREPARATION 45

OPERATION 46

STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY 46

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY 51

STARTING, STOPPING, AND INTERRUPTING COMBINATION THERAPY 56

USING CLINICAL INDICATIONS 60

CREATING A USER PROTOCOL FOR ELECTROTHERAPY 61

CREATING A USER PROTOCOL FOR ULTRASOUND THERAPY 63

CREATING A USER PROTOCOL FOR COMBINATION THERAPY 65

USING PROTOCOLS 68

SYSTEM UTILITIES 70

Audible Tones 70
Changing Protocol Parameters 70
Changing Default Protocols for Electrotherapy 71
Changing Default Protocols for Ultrasound Therapy... 73
Changing Default Protocols for Combination Therapy. 74
Brightening or Dimming the LCD..... 77
Restoring Factory Protocols 78
Changing Languages 79
Restoring Factory Settings 80
Viewing Unit Version Information..... 81

TROUBLESHOOTING 83

ERROR CODES 83

TROUBLESHOOTING THE DISPLAY AND ERROR MESSAGES 85

Troubleshooting the Display 85
Troubleshooting Error Messages 85

ACCESSORIES 86

Standard Accessories 86
Optional Accessories..... 86
Mains Power Cords 86

MAINTENANCE 87

MAINTAINING THE UNIT..... 87

Cleaning the Unit and the Accessories..... 87

FACTORY SERVICE 87

WARRANTY 88

FOREWORD

This manual has been written for the users of the Intelect® Mobile Combo units. It contains general information on the operation, precautionary practices, and maintenance information. In order to maximize use, efficiency, and the life of the unit, read this manual thoroughly and become familiar with the controls, as well as the accessories before operating the system.

Specifications put forth in this manual were in effect at the time of publication. However, owing to DJO, LLC's policy of continual improvement, changes to these specifications may be made at any time without obligation on the part of DJO, LLC.

Before administering any treatment to a patient, the users of this equipment should read, understand, and follow the information contained in this manual for each mode of treatment available, as well as the indications, contraindications, warnings, and precautions.

Consult other resources for additional information regarding the application of electrotherapy.

Product Description

The Intelect Mobile Combo, designed and manufactured by DJO, offers a new dimension in clinical electrotherapy and ultrasound made possible by software design and digital signal processing.

Effectiveness of this treatment is dependent upon correct use. If treatment times are exceeded, the therapy may not result in positive clinical outcomes.

Stay current with the latest clinical developments in the field of electrotherapy. Observe all applicable precautionary measures for treatment.

Keep informed of appropriate indications and contraindications for the use of electrotherapy and ultrasound.

This equipment is to be used only under the prescription and supervision of a licensed practitioner.

NOTE: The unit was calibrated during the manufacturing process and is ready to be placed into service upon delivery.

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SAFETY PRECAUTIONS

PRECAUTIONARY DEFINITIONS

The precautionary instructions found in this section and throughout this manual are indicated by specific symbols. Understand these symbols and their definitions before operating this equipment. The definition of these symbols are as follows:

⚠ CAUTION

Caution
Text with a "CAUTION" indicator will explain possible safety infractions that could have the potential to cause minor to moderate injury or damage to equipment.

⚠ WARNING

Warning
Text with a "WARNING" indicator will explain possible safety infractions that will potentially cause serious injury and equipment damage.

⚠ DANGER

Danger
Text with a "DANGER" indicator will explain possible safety infractions that are imminently hazardous situations that would result in death or serious injury.



Dangerous Voltage
Text with a "Dangerous Voltage" indicator serves to inform the user of possible hazards resulting in the electrical charge delivered to the patient in certain treatment configurations of TENS waveforms.



Corrosive
Text with a "Corrosive" indicator will explain possible safety infractions if the chemical components of the battery are exposed to air, skin or other materials.



Spontaneous Combustion
Text with a "Spontaneous Combustion" indicator will explain possible safety infractions that could create conditions for a spontaneous combustion if the material is mishandled and not disposed of properly.



Biohazardous Materials
Text with a "Biohazard" indicator serves to inform the user of possible hazards resulting in improper handling of components and accessories that have come in contact with bodily fluids.



Non-Ionizing Electromagnetic Radiation
Text with a "Non-Ionizing Electromagnetic Radiation" indicator informs the user of possible hazards resulting from elevated, potentially dangerous, levels of non-ionizing radiation.

NOTE: Throughout this manual, "NOTE" may be found. These Notes are helpful information to aid in the particular area or function being described.

SAFETY PRECAUTIONS

CAUTIONS

⚠ CAUTION

- Read, understand, and practice the precautionary and operating instructions. Know the limitations and hazards associated with using any electrical stimulation or ultrasound device. Observe the precautionary and operational decals placed on the unit.
- DO NOT operate the Intelect Mobile Combo unit when connected to any unit other than DJO devices.
- DO NOT operate this unit in an environment where other devices are being used that intentionally radiate electromagnetic energy in an unshielded manner. Portable and mobile RF communications equipment can affect Medical Electrical Equipment.
- DO NOT use sharp objects such as a pencil point or ballpoint pen to operate the buttons on the control panel.
- This unit should be operated, transported, and stored in temperatures between 15 °C and 40 °C (59 °F and 104 °F), with relative humidity ranging from 30%-60%, and where the atmospheric pressure is between 950 h Pa and 1050 h Pa.
- The Intelect battery pack is designed for use only with Chattanooga Intelect Mobile Stim, Combo, Laser, and Ultrasound systems.
- The unit should be routinely checked before each use to determine that all controls function normally; especially that the intensity control properly adjusts the intensity of the electrotherapy and ultrasonic power output in a stable manner. Also, determine that the treatment time control actually terminates electrotherapy and ultrasonic power output when the timer reaches zero.

⚠ CAUTION

- Inspect cables and connectors before each use.
- The Intelect Mobile Combo is not designed to prevent the ingress of water or liquids. Ingress of water or liquids could cause malfunction of internal components of the system and therefore create a risk of injury to the patient.
- DO NOT permit any foreign materials or liquids to enter the unit. Take care to prevent any foreign materials including, but not limited to, inflammables, water, and metallic objects from entering the unit. These may cause unit damage, malfunction, electrical shock, fire, or personal injury.
- Handle the applicator with care. Inappropriate handling of the applicator may adversely affect its characteristics.
- Before each use, inspect the applicator for cracks, which may allow the ingress of conductive fluid.
- This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to other devices in the vicinity. However, there is no guarantee that interference will not occur in a particular installation. Harmful interference to other devices can be determined by turning this equipment on and off. Try to correct the interference using one or more of the following: reorient or relocate the receiving device, increase the separation between the equipment, connect the equipment to an outlet on a different circuit from that to which the other device(s) are connected and consult the factory field service technician for help.

SAFETY PRECAUTIONS

CAUTIONS (CONTINUED)

⚠ CAUTION

- Where the integrity of the external protective earth conductor arrangement is in doubt, equipment shall be operated from its internal electrical power source.
- Using a high intensity electrotherapy setting in conjunction with high intensity ultrasound setting may cause the unit to reset.
- The battery pack should be removed when storing the unit for extended periods of time.
- DO NOT disassemble, modify, or remodel the unit or accessories. This may cause unit damage, malfunction, electrical shock, fire, or personal injury.
- DO NOT remove the cover. This may cause unit damage, malfunction, electrical shock, fire, or personal injury. There are no user-serviceable parts inside the unit. If a malfunction occurs, discontinue use immediately and consult the dealer for repair service.

⚠ CAUTION

- Failure to use and maintain the Intelect Mobile Combo and its accessories in accordance with the instructions outlined in this manual will invalidate your warranty.
- Nylatex® Wraps contain dry natural rubber and may cause allergic reactions in patients with allergies to latex.
- Use of parts or materials other than DJO's can degrade minimum safety.
- Unit contains an internal battery charger. Never attempt to charge the battery using an external power source.

SAFETY PRECAUTIONS

WARNINGS

⚠ WARNING

- These devices are restricted to sale by, or on the order of, a physician or licensed practitioner. This device should be used only under the continued supervision of a physician or licensed practitioner.
- Make certain the unit is electrically grounded by connecting only to a grounded electrical service receptacle conforming to the applicable national and local electrical codes.
- Care must be taken when operating this equipment around other equipment. Potential electromagnetic or other interference could occur to this or to the other equipment. Try to minimize this interference by not using other equipment in conjunction with it.
- The safety of TENS waveforms for use during pregnancy or birth has not been established.
- TENS is not effective for pain of central origin. (This includes headache.)
- TENS should be used only under the continued supervision of a physician or licensed practitioner.
- TENS waveforms have no curative value.
- TENS is a symptomatic treatment, and as such, suppresses the sensation of pain which would otherwise serve as a protective mechanism.
- The user must keep the device out of the reach of children.
- Electronic monitoring equipment (such as ECG monitors and ECG alarms) may not operate properly when TENS stimulation is in use.

⚠ WARNING

- Powered muscle stimulators should be used only with the leads and electrodes recommended for use by the manufacturer.
- Before administering any treatment to a patient you should become acquainted with the operating procedures for each mode of treatment available, as well as the indications, contraindications, warnings, and precautions. Consult other resources for additional information regarding the application of electrotherapy and ultrasound.
- To prevent electrical shock, disconnect the unit from the power source before attempting any maintenance procedures.
- Keep electrodes separated during treatment. Electrodes in contact with each other could result in improper stimulation or skin burns.
- Long term effects of chronic electrical stimulation are unknown.
- Stimulation should not be applied over the anterior neck or mouth. Severe spasm of the laryngeal and pharyngeal muscles may occur and the contractions may be strong enough to close the airway or cause difficulty in breathing.
- Stimulation should not be applied transthoracically because the introduction of electrical current into the heart may cause cardiac arrhythmia.
- Stimulation should not be applied over swollen, infected, and inflamed areas or skin eruptions, e.g., phlebitis, thrombophlebitis, varicose veins, etc.
- Stimulation should not be applied over, or in proximity to, cancerous lesions.

WARNINGS (CONTINUED)

⚠ WARNING

- Output current density is inversely related to electrode size. Improper application may result in patient injury.
- Always keep the sound head in constant motion.
- Always keep the sound head in full contact with the patient's skin or submerged under water when setting intensity.
- Use ample conductive gel to ensure good coupling throughout the treatment. If needed, apply when setting intensity.
- Be sure to read all instructions for operation before treating a patient.
- Dispose of all products in accordance with local and national regulations and codes.
- Use of controls, adjustments, or performance of procedures other than those specified herein may result in hazardous exposure to ultrasonic energy.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous conditions causing damage to the battery pack or cells.
- To prevent electrical shock, disconnect the battery pack from the system before attempting any maintenance procedures.
- Do not drop the applicator on hard surfaces. Do not cool an overheated sound head with ice water or ice packs. Do not allow the sound head to reach maximum temperatures repeatedly. All of these conditions are likely to damage the sound head crystal. Damage resulting from these conditions is not covered under the warranty.

⚠ WARNING

- In the event that an Error message or Warning appears beginning with a 2 or 3, immediately stop all use of the unit and contact the dealer or DJO for service. Errors and Warnings in these categories indicate an internal problem with the unit that must be tested by DJO or a Field Service Technician certified by DJO before any further operation or use of the system.
- Use of a unit that indicates an Error or Warning in these categories may pose a risk of injury to the patient, user, or extensive internal damage to the system.
- Do not turn the unit on or off while it is connected to the patient.
- Do not apply the Ultrasound Applicator to the patient during the Head Warming period. Applicator must remain in Applicator Hook during the Head Warming period.
- Use only accessories that are specially designed for this (table, unit, device, etc). Do not use accessories manufactured by other companies on this (table, unit, device, etc). DJO is not responsible for any consequence resulting from using products manufactured by other companies. The use of other accessories or cables may result in increased emissions or decreased immunity of this (table, unit, device, etc).
- Remove the Ultrasound or Laser Applicator by pulling the cable connector only. DO NOT remove by pulling the cable.

SAFETY PRECAUTIONS

DANGERS

DANGER



- Stimulus delivered by the TENS waveforms of this device, in certain configurations, will deliver a charge of 25 microcoulombs (µC) or greater per pulse and may be sufficient to cause electrocution. Electrical current of this magnitude must not flow through the thorax because it may cause a cardiac arrhythmia.
- Patients with an implanted neurostimulation device must not be treated with or be in close proximity to any shortwave diathermy, microwave diathermy, therapeutic ultrasound diathermy, or laser diathermy anywhere on their body. Energy from diathermy (shortwave, microwave, ultrasound, and laser) can be transferred through the implanted neurostimulation system, can cause tissue damage, and can result in severe injury or death. Injury, damage, or death can occur during diathermy therapy even if the implanted neurostimulation system is turned "off."
- Before each use, check the condition of the housing and the insulation of the electrodes, electrode connection cable, and the power supply cable. Also make sure that the cables have been routed correctly.

DANGER



- DO NOT connect the unit to an electrical supply without first verifying that the power supply is the correct voltage. Incorrect voltage may cause unit damage, malfunction, electrical shock, fire, or personal injury. Your unit was constructed to operate only on the electrical voltage specified on the Voltage Rating and Serial Number Plate. Contact your DJO dealer if the unit is not properly rated.
- NiMH Batteries contain Class E corrosive materials. In the event of battery cell rupture or leakage, handle battery pack wearing neoprene or natural rubber gloves. Contents of a ruptured or leaking battery can cause respiratory irritation. Hypersensitivity to nickel can cause allergic pulmonary asthma. Contents of cell coming in contact with skin can cause skin irritation and/or chemical burns.
- Never, under any circumstances, open the battery pack housing or cells. Should an individual battery from a battery pack become disassembled, spontaneous combustion of the negative electrode is possible. There can be a delay between exposure to air and spontaneous combustion.

DANGERS (CONTINUED)

DANGER

- Charge the battery pack according to the instructions found in this manual. Never attempt to charge the battery pack on any other charging mechanism.
- Use the battery pack only with the Intelect Mobile Series units.
- Do not reverse the polarity of the battery pack. Doing so can increase the individual cell temperature and cause cell rupture or leakage.
- Never dispose of the battery pack in fire. Never short circuit the battery pack. The battery pack may explode, ignite, leak, or get hot causing serious personal injury.
- Dispose of NiMH batteries according to national, state, and local codes and regulations.

INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ELECTROTHERAPY

Indications for VMS, Russian, TENS, High Voltage Pulsed Current (HVPC), 2 Pole IFC, 4 Pole IFC, and Premodulated Waveforms

- Relaxation of muscle spasms
- Prevention or retardation of disuse atrophy
- Increase local blood circulation
- Muscle re-education
- Maintaining or increasing range of motion

Additional Indications for Microcurrent, 2 Pole IFC, 4 Pole IFC, Premodulated, VMS™, and TENS Waveforms

- Symptomatic relief of chronic, intractable pain
- Post-traumatic acute pain
- Post-surgical acute pain

Indications for Galvanic Continuous Mode

- Relaxation of muscle spasms

Contraindications

- This device should not be used for symptomatic local pain relief unless etiology is established or unless a pain syndrome has been diagnosed.
- This device should not be used when cancerous lesions are present in the treatment area.
- This device should not be used when open wounds are present in the treatment area.
- Other contraindications are patients suspected of carrying serious infectious disease and or disease where it is advisable, for general medical purposes, to suppress heat or fevers.
- Electrode placements must be avoided that apply current to the carotid sinus region (anterior neck) or transcereberally (through the head).
- Safety has not been established for the use of therapeutic electrical stimulation during pregnancy.
- Powered muscle stimulators should not be used on patients with cardiac demand pacemakers.
- There should not be any use of TENS waveforms on patients with cardiac demand pacemakers.

Additional Precautions

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

INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ELECTROTHERAPY (CONTINUED)

- 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 alternative conductive medium or an alternative electrode placement.
- Electrode placement and stimulation settings should be based on the guidance of the prescribing practitioner.
- Powered muscle stimulators should be used only with the lead wires and electrodes recommended for use by the manufacturer.
- With TENS waveforms, isolated cases of skin irritation may occur at the site of electrode placement following long-term application.
- The effectiveness of TENS waveforms is highly dependent upon patient selection by a person qualified in the management of pain patients.

Adverse Effects

- Skin irritation and burns beneath the electrodes have been reported with the use of powered muscle stimulators.
- Potential adverse effects with TENS are skin irritation and electrode burns.

INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ULTRASOUND THERAPY

Indications for Ultrasound

Application of therapeutic deep heat for the treatment of selected sub-chronic and chronic medical conditions such as:

- Relief of pain, muscle spasms and joint contractures
- Relief of pain, muscle spasms and joint contractures that may be associated with:
  - Adhesive capsulitis
  - Bursitis with slight calcification
  - Myositis
  - Soft tissue injuries
  - Shortened tendons due to past injuries and scar tissues
- Relief of sub-chronic and chronic pain and joint contractures resulting from:
  - Capsular tightness
  - Capsular scarring

Contraindications

This device should not be used:

- For symptomatic local pain relief unless etiology is established or unless a pain syndrome has been diagnosed.
- When cancerous lesions are present in the treatment area.
- When open wounds are present in the treatment area.
- On patients suspected of carrying serious infectious disease and or disease where it is advisable, for general medical purposes, to suppress heat or fevers.
- Over or near bone growth centers until bone growth is complete.
- Over the thoracic area if the patient is using a cardiac pacemaker.
- Over a healing fracture.
- Over or applied to the eye.
- Over a pregnant uterus.
- On ischemic tissues in individuals with vascular disease where the blood supply would be unable to follow the increase in metabolic demand and tissue necrosis might result.

Additional Precautions

Additional precaution should be used when the ultrasound is used on patients with the following conditions:

- Over an area of the spinal cord following a laminectomy (i.e., when major covering tissues have been removed).
- Over anesthetic areas.
- On patients with hemorrhagic diatheses.

DANGER



Patients with an implanted neurostimulation or defibrillator device must not be treated with or be in close proximity to any shortwave diathermy, microwave diathermy, therapeutic ultrasound diathermy or laser diathermy anywhere on their body. Energy from diathermy (shortwave, microwave, ultrasound, and laser) can be transferred through the implanted neurostimulation system, can cause tissue damage and can result in severe injury or death. Injury, damage or death can occur during diathermy therapy even if the implanted neurostimulation system is turned "off."

INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ULTRASOUND (CONTINUED)

Potential for Burns

It is possible for ultrasound therapy to cause burns if the therapy is not properly performed. Skin burns can result from one or more of the following:

- If the intensity (power) is too high.
- If you are using too low a frequency.
- Using a stationary technique (holding the sound head in one place).
- Moving the sound head too slowly.
- Treating an area with sensory nerve damage (or the loss of normal skin sensations).
- Desensitized areas can be overheated or burned without the patient's knowledge. Use extreme caution with these patients (e.g., diabetes, neural damage, etc.).
- Bony prominences are especially vulnerable: they reflect sound waves and increase intensity to the periosteum.

Preventing Overheating of the Sound Heads

To prevent the sound head from becoming overheated, do the following:

- Check to be sure proper contact is being made throughout the treatment.
- When treating in water, make sure that the sound head is completely under water.
- For direct coupling, you may need to apply more conductive gel or lotion during the treatment to achieve better coupling.
- You can also reduce the power or duty cycle during the treatment if you are treating an area where it is difficult to obtain good coupling.

Preventing Adverse Effects

Perform the following procedures to avoid the negative effects of ultrasound therapy.

Sound Head Movement

If movement of the sound head is too slow, the patient may feel periosteal pain characterized by a deep ache or pain. If motion is too fast, or if the sound head does not maintain good contact with the skin, the therapeutic effect of the sound waves will be reduced and the sound head may overheat.

Patient Susceptibility

Some patients are more sensitive to ultrasound output and may experience a reaction similar to a heat rash. Be sure to inspect the treatment area during and following treatment. Discontinue if an adverse reaction occurs.

Output Power

Choose a lower watt setting to reduce output or select a pulsed duty cycle. Higher output levels have a greater potential for patient discomfort.

INDICATIONS, CONTRAINDICATIONS, AND ADVERSE EFFECTS FOR ULTRASOUND (CONTINUED)

Coupling

Coupling is described as contact between the sound head and the treatment site and may be accomplished through the use of a coupling agent, such as gel, lotion, or water (underwater treatments only). Anything used as a coupling agent must be highly conductive. Air is a very poor conductor of ultrasonic waves.

Head Max. Temp. Disclaimer

Head Max. Temp. is for the protection of the equipment, not for the protection of the patient. For more information, see page 85.

The Intelect Mobile Combo, designed and manufactured by DJO, offers a new dimension in portable electrotherapy and ultrasound made possible by advanced software design and digital signal processing. The result is a unit with extraordinary versatility based on simplicity of operation.

The Intelect Mobile Combo offers "On the Go" clinical electrotherapy and ultrasound. The unit provides an innovative case design, with a logical control system and a large, easy to read graphical LCD. User defined protocols allow you to customize any treatment to the specific needs of your patient. The repositional base allows the unit to be configured for desktop or wall-mount use.

The following features are available on the Intelect Mobile Combo:

- Two channels of electrotherapy stimulation output
- Eleven currents - 2 & 4 Pole IFC, Galvanic, High Voltage Pulsed Current (HVPC), Microcurrent, VMS, TENS, Russian, Träbert, Monophasic, and Diadynamic
- 1 or 3 MHz frequencies for each applicator (excluding the 1 cm^2 sound head)
- Four available sound heads: 1 cm^2, 2 cm^2, 5 cm^2, and 10 cm^2
- Fifteen user-defined memory positions
- Lightweight design
- Battery powered option

Common Terms

Applicator - This apparatus is the hand held assembly used to deliver ultrasonic energy. The applicator includes the sound head, transducer, and related electronics.

Accommodation - This condition is where nerves lose their ability (sensitivity) to respond to electrotherapy.

Amplitude Modulation (Ampl. Mod.) - Amplitude Modulation is an increase and decrease in intensity during treatment. For example, at an 80% amplitude modulation, with the intensity set to 10 mA, the intensity decreases to 2 mA, and then increases to 10 mA throughout the treatment. The available amplitude modulations are 40%, 60%, 80%, 100%, and Static (none).

Beam Non-Uniformity Ratio (BNR) – By nature, an ultrasound beam is not homogeneous. The BNR is a ratio of the highest intensity found in the beam field to the average intensity as indicated on the output display of the unit. This measure may not exceed 5.0:1. Because of the areas of increased intensity, the sound head is moved continuously during the treatment.

Beat Fixed - Associated with the Interferential waveform, Beat Fixed is the parameter at which the beat frequency remains constant. When the Sweep setting is turned off, you must select a fixed beat for the therapy session. The available settings for Beat Fixed are 1 to 100 Hz.

Beat Frequency - Associated with the Interferential waveform, Beat Frequency is the frequency at which the amplitude of the current increases and decreases. The beat frequency is considered to be the therapeutic frequency and is measured in hertz (Hz).

Beat High - During a sweep, the Beat High setting is the highest number to which the beat frequency increases. The available range for the Beat High parameter is 2 to 200 Hz. This parameter is unique to the 2 Pole and 4 Pole IFC waveforms.

Beat Low - During a sweep, the Beat Low setting is the lowest number to which the beat frequency decreases. The available range for the Beat Low parameter is 1 to 199 Hz. This parameter is unique to the 2 Pole and 4 Pole IFC waveforms.

Burst - A burst is a series of pulses at a predetermined pulse frequency.

Burst Frequency (Freq.) - This is the number of bursts per second (bps). The available burst frequencies on the Intelect Mobile Combo are 1 to 10 bps.

Carrier Frequency (Freq.) - Associated with the Interferential and Russian waveforms, Carrier Frequency is the frequency of the un-modulated medium frequency current. The available carrier frequencies are 2000, 2500, 4000, 5000, and 10000 Hz.

CC/CV - This is the abbreviation for Constant Current/Constant Voltage. Constant current is a stimulator capable of delivering an electric current that flows at the same amplitude regardless of changes in tissue impedance over time. Constant voltage is a stimulator capable of delivering a source of voltage at the same amplitude regardless of changes in tissue impedance over time. Keep in mind that the amount of stimulation is directly proportional to the current.

Channel Mode - The available channel modes are Single Channel (in which electrotherapy is distributed from one channel), Reciprocal (where electrotherapy alternates between channels), and Co-Contract (where electrotherapy is distributed from both channels at the same time).

Clinical Indications™- An efficient approach for setting up a treatment using preset parameters.

Clinical Library- Select this button to access the following functions: Clinical Indications, Retrieve User Protocols, Restore Factory Settings, Restore Factory Protocols, Language and View Unit Information.

Collimating (Coll)- The shape of the ultrasound beam. While neither focused nor dispersed, this ultrasound beam resembles a column when applied from the unit through the sound head.

Continuous Mode – The output of the ultrasound is not interrupted during the treatment time. This mode imparts the most energy to the tissues and is used when a maximal effect is desired. (See Duty Cycle).

Coupling Media – An agent used to insure that the ultrasound is transmitted from the sound head to the tissue to be treated. Gels or lotions labeled for therapeutic ultrasound use are recommended.

Cycle Time - Cycle Time is the alternating time which the current is "on" and "off." Using the 10/30 setting as an example, the current is on for 10 seconds and off for 30. The available cycle times are Continuous, 5/5, 4/12, 10/10, 10/20, 10/30, and 10/50.

Display - Available only on the High Volt waveform, the Display feature allows you to change the displayed Intensity parameter from Volts to Peak Current (Amps).

Duty Cycle - This is the ratio of the "On" time to "Total" time of the cycle, expressed as a percentage. The duty cycle describes the pulsed modes of electric stimulation and ultrasound. The lower the percentage, the lower temporal average intensity. 100% is continuous electrotherapy. The available Duty Cycles are 10, 20, 30, 40, 50%.

Effective Radiating Area (ERA) – A measure of the ultrasound beam made underwater, 5 mm from the radiating surface of the sound head. The ERA is always smaller than the geometric area of the sound head, but should be as close as possible. This measurement is used to calculate the ultrasound intensity in W/cm^2.

Frequency (Electrotherapy) - Frequency is the number of times per second a pulse, cycle, burst, or beat will repeat itself. The unit is selectable from 0-200 Hz (beat), 20-100 Hz (burst), and 2000-10000 Hz (carrier).

Frequency (Ultrasound) – Selectable to 1 or 3 MHz with the 2 cm^2, 5 cm^2, or 10 cm^2 sound head (excluding the 1 cm^2 sound head). The lower the frequency, the longer the wavelength, the deeper the penetration of ultrasound.

Frequency Modulation (Freq. Mod.) - This is the rhythm at which a frequency changes. The available frequency modulations are 0 to 250 Hz in increments of 5 Hz.

Intensity (Electrotherapy) - Intensity is the output of electrotherapy distributed by the unit to the patient. Depending on the waveform, intensity is measured in milliamps (mA), volts (V), and micro amps (µa).

Intensity (Ultrasound) – Ultrasound power delivered to the patient expressed in total power as watts (W) or in terms of the sound head's effective radiating area, watts per centimeter squared (W/cm^2).

LCD- The LCD (Liquid Crystal Display) allows the user to view and monitor the information displayed during ultrasound therapy. The following information is displayed on the LCD: Frequency, Duty Cycle, Power, Treatment Time and Clinical Indications.

Lead Zirconate Titanate – A synthetic crystal used to create the ultrasound beam by vibrating 1,000,000 (1 MHz) or 3,300,000 (3 MHz) times per second. This type of crystal is both durable and efficient in its functions.

Leadwires - The leadwires consist of the main plugs that are connected to the unit, and 4 leads (2 black and 2 red) that connect to electrodes.

Medium Frequency Current - These are the currents used by the Traditional Interferential (IFC 4-Pole), Interferential Premodulated, and Russian waveforms that is higher than 1000 Hz, but lower than 10000 Hz.

Operating Channels - Operating Channels are the paths by which the electrotherapy is distributed from the unit to the patient. The unit provides two channels of electrical stimulation.

Phase Duration - This is the time in which the current flows in one direction only. Phase duration is the determined period of time elapsing from the beginning to the end of one phase, usually expressed in microseconds (µsec) or milliseconds (ms).

Phase Interval - Available only with the Monophasic waveforms, it is the brief interruption of current flow between the individual phases of a pulse. The available phase intervals are 5 to 5000 ms in increments of 5 ms.

Polarity - Polarity refers to the charge of an individual lead: positive or negative.

Polarity Reversal - This is a feature available on the unit in which the polarity changes at a determined time.

Power – A measure of the intensity of the ultrasound delivered to the patient. The unit of measure is watts (W).

Protocol – A group of parameters (e.g., Frequency, Duty Cycle, etc.) unique to a form of therapy (i.e., electrotherapy or ultrasound).

Pulse Duration – Refers to the amount of time the ultrasound is being delivered in the pulsed mode. For example, in the 20% duty cycle mode, the ultrasound is delivered for 2 msec and off for 8 msec (at 100 Hz) throughout the treatment period.

Pulse Frequency – The pulse frequency is the number of pulses per second and is expressed in hertz. The available pulse frequencies for ultrasound therapy are 16, 48, and 100 Hz.

Pulsed Mode (Electrotherapy) – This is an available mode on the unit in which electrotherapy is distributed intermittently.

Pulsed Mode (Ultrasound) – The output of the ultrasound is automatically interrupted during the treatment time. This limits the amount of energy delivered to the tissues.

Ramp - Ramp is the gradual increase and decrease in current. The purpose of ramping up the current is to maximize patient comfort by preventing the abrupt and sudden exposure to the current.

Sound Head – The aluminum face of the applicator that contacts the patient's skin. It covers a transducer mechanism that converts electrical energy to mechanical energy in the form of a vibrating crystal.

Sweep - This is the modulation of therapeutic frequency commonly used to prevent accommodation. Sweeps are measured in pulses per second (pps) and Hertz (Hz). The available sweeps are 1-120 pps and 1-10 pps.

Treatment Time – Measured in minutes and seconds, it is the suggested time in which therapy is given.

Type - Displayed as a parameter on the unit, Type is used to signify the specific kind of waveform. For example, there are two types of Monophasic waveforms available on the unit: Monophasic Rectangular and Monophasic Triangular.

Vector - A vector is a geometrically descriptive feature used to increase the effective therapeutic current at the crossing point of Traditional Interferential (IFC 4 Pole).

Vector Position - The available vector positions are 0 to 90 degrees.

Vector Scan - Measured in percentages, vector scans are the rhythmic changes of the position of vector. The available vector scans are Manual, Auto 40%, and Auto 100%.

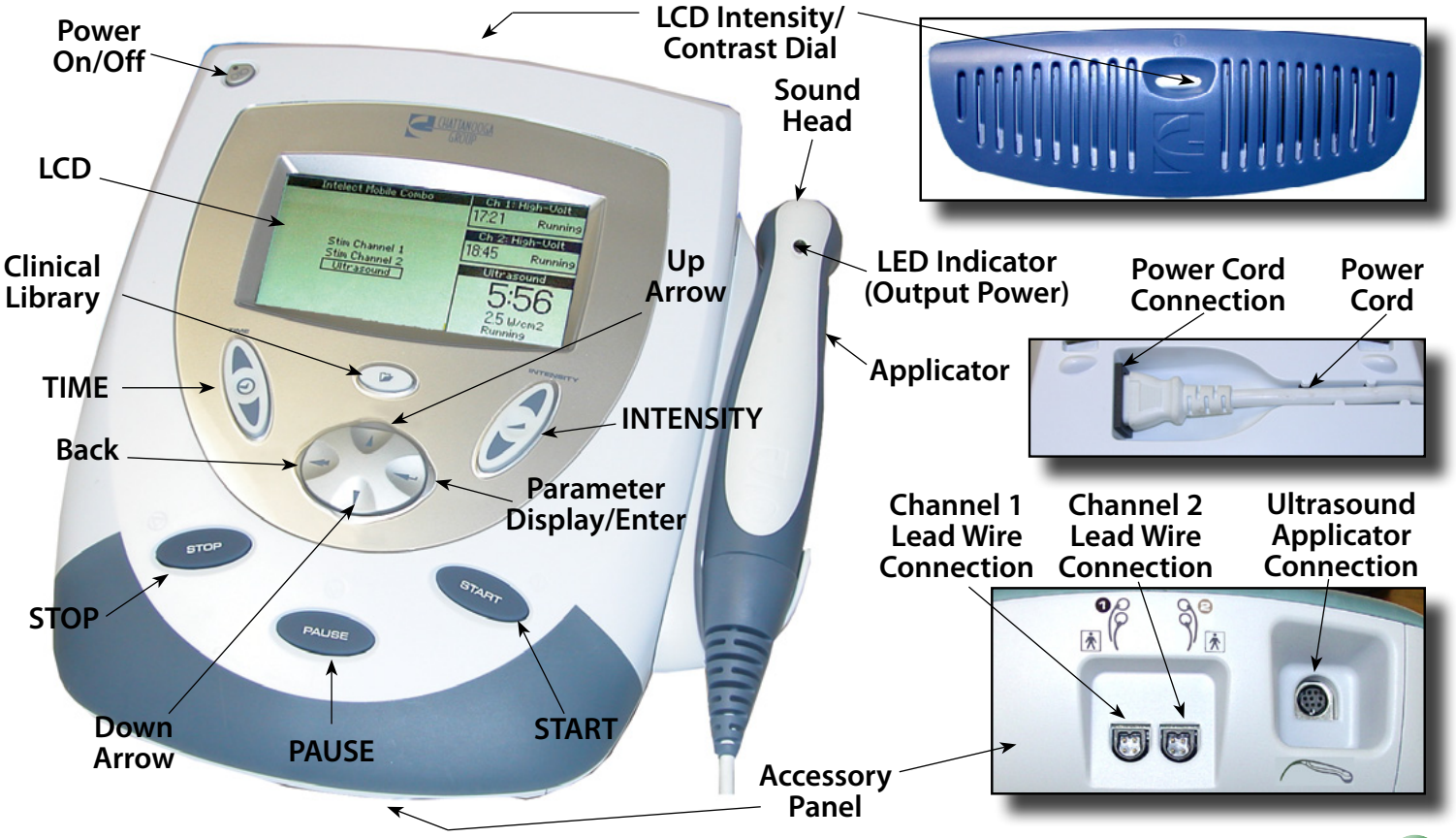
Waveforms - Waveforms are current or voltage that is varied by time and are the geometrical descriptions of a DC, AC, or pulsed DC/AC current. Current waveforms are described as either monophasic or biphasic. A biphasic wave is further described as either symmetrical or asymmetrical and as balanced or unbalanced. For more specifications and types of waveforms available on the Intelect Mobile Combo, refer to the section entitled **"Waveform Specifications."**

Description of Ultrasonic Field

The spatial distribution of the radiated field is essentially a collimated beam of the ultrasonic energy having a cross-sectional area of 8.5 cm^2 for the 10 cm^2 sound head when measured at a point 5 mm from the transducer face.

The energy distribution within the radiated field is 3.0 W/cm^2 peak and it takes a generally conic shape, having decreasing intensity at progressively increasing distance from the face of the transducer. This field distribution applies for the radiation emitted into the equivalent of an infinite medium of distilled, degassed water at 30 °C and with the line voltage variations in the range of 10% of the rated line voltage.

NOMENCLATURE



Power On/Off

The Power On/Off button controls the flow of electricity to the unit.

NOTE: Make certain there are no electrodes on the patient when turning the unit on or off.

LCD

The LCD (Liquid Crystal Display) allows the user to view and monitor the information displayed before, during, and after therapy.

Clinical Library

Select this button to access the following functions:

- Clinical Indications
- Retrieve User Protocol
- Restore Factory Settings
- Restore Factory Protocols
- Languages
- View Unit Information

TIME

Press the Up or Down arrow buttons to set total treatment time of therapy.

Back

Use this button to return to the previous window.

STOP

Select this button to stop a treatment session.

Down Arrow

When the window displays a list of options, press the Down Arrow button to scroll down the list.

PAUSE

Use this button to pause the treatment session. To restart therapy, press the PAUSE button.

Sound Head
The aluminum face of the applicator that contacts the patient's skin. It covers a transducer mechanism that converts electrical energy to mechanical energy in the form of a vibrating crystal.

LED Indicator (Output Power)
When illuminated, this green light signifies that ultrasound energy is being distributed through the applicator.

Applicator
The hand held assembly used to deliver ultrasonic energy. The applicator includes the sound head, transducer, and related electronics.

Accessory Panel
The Accessory Panel serves as a port of connection for the electrodes and ultrasound applicator.



Channel 1 Lead Wire Connection
This port serves as the connection point between the unit and the Channel 1 Lead Wire.



Channel 2 Lead Wire Connection
This port serves as the connection point between the unit and the Channel 2 Lead Wire.



Ultrasound Applicator Connection
This port serves as the connection point between the unit and the ultrasound applicator.



START
Select Start to begin a treatment session.



Parameter Display/Enter
Select this button to display the parameters of the waveform during treatment. Also, this button is used to accept the highlighted selection.



INTENSITY
Use the up or down arrow on the INTENSITY button to increase or decrease output power.



Up Arrow

When the window displays a list of options, press the Up Arrow button to scroll up the list.



Battery Indicator

When displayed on the LCD, this symbol indicates the battery pack option is present on the unit. This symbol also displays the charge status of the battery.



LCD Intensity/Contrast Dial

If the intensity of the LCD display diminishes, turn the dial until the display contrast is optimal.



Charge Indicator

This symbol displays when the unit is connected to mains power and the battery pack is charging.

NOTE: During battery operation, if the unit is left on, but is not active for more than five minutes, it will power off to conserve battery power. To restore power, press the Power On/Off button.

SPECIFICATIONS

UNIT SPECIFICATIONS

Dimensions

Width . . . . . .25.7 cm (10.125 in)
Height . . . . . 25.7 cm (4.375 in)
Depth . . . . . 29.2 cm (11.5 in)

Weight

Standard Weight (w/ base). . . . . 2.3 kg (5.07 lb)
Battery Pack . . . . . .0.85 kg (1.87 lb)

Power

Input . . . . . 100 - 240 V~, 50/60 Hz, 180 VA
Output . . . . . +24 V, 3.125 A
Mode of Operation . . . . . Continuous
Electrical Class . . . . . CLASS I
Electrical Type (Degree of Protection) . . . . . .Ultrasound TYPE B, ...Electrotherapy TYPE BF
Battery Type . . . . .Nickel Metal Hydride (NiMH) (1.2 V x 20 size AA)

Operating Environment

Temperature. . . . . .Between 15 °C and 40 °C (59 °F and 104 °F)
Relative Humidity 30%-60%
Atmospheric Pressure. . . . . 950-1050 h Pa

Complies with:
UL/IEC/EN 60601-1
IEC/EN 60601-1-2
IEC 60601-2-10
IEC 60601-2-5

CE 0473

NOTE: All waveforms except High Voltage Pulsed Current (HVPC) have been designed with a 200 mA peak current limit. All waveform output intensities are measured, specified, and listed to peak, not peak to peak.

DESCRIPTION OF DEVICE MARKINGS

The markings on the Intelect Mobile Combo are your assurance of its conformity to the highest applicable standards of medical equipment safety and electromagnetic compatibility. One or more of the following markings may appear on the device:

Classified by Intertek Testing Services NA Inc.
Complies with 21CFR 1040.10 & 1040.11
IEC/UL/EN 60601-1, 60601-1-2, and 60601-2-22
CAN/CSA C22.2 No. 601.1-M90 w/A2.

Intertek 3187214

CE 0473

Refer to Instruction Manual/Booklet

Equipment capable of delivering output values in excess of 10 mA r.m.s. or 10V r.m.s. averaged over any period of 5 s

Type B and BF Equipment

Council Directive 2002/96/EC concerning Waste Electrical and Electronic Equipment (WEEE). Indicates a requirement not to dispose of WEEE as municipal waste. Contact your local distributor for information regarding disposal of the unit and accessories.

SPECIFICATIONS

WAVEFORM SPECIFICATIONS



2 Pole IFC

2 Pole IFC (Interferential) current is a medium frequency waveform. Current comes out of one channel (two electrodes). The current intensity is modulated: it increases and decreases at a regular frequency (the Beat Frequency).

Output Intensity. . . . . 0-100 mA
Carrier Frequency. . . . . 2000-10000 Hz
Beat Fixed (Sweep Off) . . . . . 1-200 Hz
Sweep Low Beat Frequency . . . . . 1-200 Hz
Sweep High Beat Frequency. . . . . 1-200 Hz
Cycle Time. . . . . Continuous, 5/5, 4/12, 10/10, 10/20, 10/30, and 10/50
Mode Selection . . . . . CV (Constant Voltage)
Carrier Frequency. . . . . 2000-10000 Hz
Treatment Time. . . . . 1-60 min



4 Pole IFC

4 Pole IFC (Interferential) current is a medium frequency waveform. Current is distributed through two channels (four electrodes). The currents cross each other in the body at the area requiring treatment. The two currents interfere with each other at this crossing point, resulting in a modulation of the intensity (the current intensity increases and decreases at the beat frequency).

Carrier Frequency. . . . . 2000-10000 Hz
Beat Frequency. . . . . 1-200 Hz
Sweep Time . . . . . 15 sec
Sweep Low Beat Frequency . . . . . 1-200 Hz
Sweep High Beat Frequency. . . . . 1-200 Hz
Scan Percentage. . . . . Static, 40%, and 100%
Amplitude. . . . . 0-100 mA into 500 ohm
Treatment Time. . . . . 1-60 min
Mode Selection. . . . . CV (Constant Voltage)

WAVEFORM SPECIFICATIONS (CONTINUED)



GALVANIC: Continuous

Galvanic Current is a direct current flowing in one direction only.

Output Intensity . . . . . .0-80 mA

Polarity . . . . . Positive or Negative

Polarity Reversal . . . . . .On or Off

With Polarity Reversal On, Polarity will change halfway through the treatment.

Cycle Time. . . . . .Continuous, 5/5, 4/12, 10/10, 10/20, 10/30, and 10/50

Treatment Time. . . . . 1-60 min



GALVANIC: Interrupted

Galvanic Current is a direct current flowing in one direction only.

Output Intensity . . . . . .0-80 mA

Polarity . . . . . Positive or Negative

Polarity Reversal . . . . . .On or Off

With Polarity Reversal On, Polarity will change halfway through the treatment.

Cycle Time. . . . . .Continuous, 5/5, 4/12, 10/10, 10/20, 10/30, and 10/50

Treatment Time. . . . . 1-60 min

SPECIFICATIONS

WAVEFORM SPECIFICATIONS (CONTINUED)

TENS- Asymmetrical Biphasic

The Asymmetrical Biphasic waveform has a short pulse duration and is capable of strong stimulation of nerve fibers in the skin and in muscle tissue. This waveform is often used in TENS devices. Because of its short pulse, the patient typically tolerates the current well, even at relatively high intensities.

Output Intensity ..... 0-110 mA
Phase Duration ..... Adjustable 20-1000 µsec
Frequency ..... 1-250 Hz
Mode Selection ..... CC or CV*
Burst Frequency ..... 0-10 bps
Frequency Modulation ..... 0-250 Hz
Amplitude Modulation ..... Off, 40%, 60%, 80%, and 100%
Treatment Time ..... 1-60 min

TENS- Symmetrical Biphasic

The Symmetrical Biphasic waveform has a short pulse duration and is capable of strong stimulation of nerve fibers in the skin and in muscle tissue. This waveform is often used in portable muscle stimulation units, and some TENS devices.

Output Intensity ..... 0-80 mA
Phase Duration ..... Adjustable 20-1000 µsec
Frequency ..... 1-250 Hz
Mode Selection ..... CC or CV*
Burst Frequency ..... 0-10 bps
Frequency Modulation ..... 0-250 Hz
Amplitude Modulation ..... Off, 40%, 60%, 80%, and 100%
Treatment Time ..... 1-60 min

DANGER

Stimulus delivered by the TENS waveforms of this device, in certain configurations, will deliver a charge of 25 microcoulombs (µC) or greater per pulse and may be sufficient to cause electrocution. Electrical current of this magnitude must not flow through the thorax because it may cause a cardiac arrhythmia.

*CC= Constant Current
CV= Constant Voltage

WAVEFORM SPECIFICATIONS (CONTINUED)



High Voltage Pulsed Current (HVPC)

The High Voltage Pulsed Current (HVPC) has a very brief pulse duration characterized by two distinct peaks delivered at high voltage. The waveform is monophasic (current flows in one direction only). The high voltage causes a decreased skin resistance making the current comfortable and easy to tolerate.

Output Intensity.....0-500 V
Polarity..... Positive or Negative
Ramp.....0.5 sec, 1 sec, 2 sec, 5 sec
Display..... Peak Current or Volts
Sweep.....Continuous, 80/120 pps, 1/120 pps, 1/10 pps
Frequency.....10-120 pps
Cycle Time.....5/5, 4/12, 10/10, 10/20, 10/30, 10/50, Continuous
Treatment Time..... 1-60 min



Microcurrent

Microcurrent is a monophasic waveform of very low intensity. The literature reports beneficial effects of this waveform in the treatment of wounds. The physiological working mechanism of this effect is as yet not clearly understood. It is thought to stimulate tissue healing by stimulating the 'current of injury', a current which naturally occurs in healing tissue.

Output Intensity.....0-1000 µA
Polarity..... Positive, Negative, or Alternating
Treatment Time..... 1-60 min
Frequency..... 0.1-1000 Hz

SPECIFICATIONS

WAVEFORM SPECIFICATIONS (CONTINUED)

VMS™

VMS is a symmetrical biphasic waveform with a 100 µsec interphase interval. Because the pulse is relatively short, the waveform has a low skin load, making it suitable for applications requiring high intensities, such as in muscle strengthening protocols.

Output Intensity..... 0-200 mA
Channel Mode .....Single, Reciprocal, and Co-Contract
Phase Duration..... 20-1000 µsec
Mode Selection ..... CC or CV*
Set Intensity .....Individual Channel Intensity Setting in Reciprocal and Co-Contract modes
Cycle Time.....Continuous, 5/5, 4/12, 10/10, 10/20, 10/30, 10/50
Frequency.....1-200 pps
Ramp.....0.5 sec, 1 sec, 2 sec, 5 sec
Treatment Time..... 1-60 min

Russian

Russian Current is a sinusoidal waveform, delivered in bursts or series of pulses. This method was claimed by its author (Kots) to produce maximal muscle strengthening effects without significant discomfort to the patient.

Output Intensity..... 0-100 mA
Channel Mode .....Single, Reciprocal, and Co-Contract
Duty Cycle..... 10%, 20%, 30%, 40%, 50%
Mode Selection ..... CV*
Cycle Time. 5/5, 4/12, 10/10, 10/20, 10/30, 10/50, and Continuous
Burst Frequency .....20-100 bps
Ramp..... 0.5, 1, 2, and 5 sec
Treatment Time..... 1-60 min

*CC= Constant Current
CV= Constant Voltage

WAVEFORM SPECIFICATIONS (CONTINUED)



Träbert (Ultrareiz)

It is a monophasic waveform with a phase duration of 2 ms and a pause of 5 ms resulting in a frequency of approximately 143 Hz.

Output Intensity . . . . . .0-80 mA
Polarity Reversal . . . . . .On or Off
With Polarity Reversal On, Polarity will change halfway through the treatment.
Treatment Time. . . . . 1-60 min



Monophasic: Monophasic Triangular Pulsed

The Monophasic Triangular Pulsed waveform is an interrupted unidirectional current with a triangular pulse shape.

Output Intensity. . . . . 0-80 mA
Phase Duration . . . . . 0.1-500 ms
Phase Interval . . . . . 5-5000 ms
Treatment Time. . . . . 1-60 min

WAVEFORM SPECIFICATIONS (CONTINUED)

Monophasic: Monophasic Rectangular Pulsed

The Monophasic Rectangular Pulsed waveform is an interrupted unidirectional current with a rectangular pulse shape.

Output Intensity.....0-80 mA
Phase Duration ..... 0.1-500 ms
Phase Interval ..... 5-5000 ms
Treatment Time..... 1-60 min

Diadynamic Waveforms

The Diadynamic waveforms are rectified alternating currents. The alternating current is modified (rectified) to allow the current to flow in one direction only.

Output Intensity.....0-80 mA
Treatment Time..... 1-60 min

MF: (Monophasé Fixe) - Frequency of 50 Hz: phase duration of 10 ms followed by a pause of 10 ms.

DF: (Diphasé Fixe) - Frequency of 100 Hz: phase duration of 10 ms followed immediately by another identical phase of 10 ms.

CP: (Modulé en Courtes Périodes) - 1 second of MF followed abruptly by 1 second of DF.

LP: (Modulé en Longues Périodes) - Rhythmical fluctuation between 2 MF currents.

CP-iso: (Courtes Periodes Isodynamic) - A combination of MF and DF waveforms.

SPECIFICATIONS

ULTRASOUND TECHNICAL SPECIFICATIONS

Sound Heads ..... 1 cm^2, 2 cm^2, 5 cm^2, 10 cm^2

Duty Cycles

Pulsed ..... 10%, 20%, and 50%

Continuous 100%

Pulse Frequency ..... 16, 48, and 100 Hz

Output accuracy ..... +/- 20% above 10% of maximum

Amplitude ..... 0 to 2.5 W/cm^2 in Continuous mode, 0-3 W/cm^2 in pulsed modes

Temporal Peak to Average Ratios

2:1, +/- 20%, for 50% Duty Cycle

5:1, +/- 20%, for 20% Duty Cycle

9:1, +/- 20%, for 10% Duty Cycle

Maximum Treatment Time ..... 30 Minutes

Output

Pulsed ..... 1 MHz or 3 MHz signal, modulated 100% by the 100 Hz rectangular wave with the selected Duty Cycle.

Continuous ..... 1 MHz or 3 MHz, nominal signal that is activated as long as the timer is operating.

Timer Accuracy ..... +/-0.2 Minutes

IPXX Rating for Unit IPX0

IPXX Rating for Applicator IPX7

Pulse Duration									
Modulation Frequency (Hz)	Modulation Period (ms)	On Times (ms)				Off Times (ms)			
		10%	20%	50%	100%	10%	20%	50%	100%
100	10.000	1.000	2.000	5.000	Continuous	9.000	8.000	5.000	0.000
48	20.833	2.083	4.167	10.417	Continuous	18.750	16.667	10.417	0.000
16	62.500	6.250	12.500	31.250	Continuous	56.250	50.000	31.250	0.000

SPECIFICATIONS

SOUND HEAD SPECIFICATIONS

1 cm² Sound Head

Frequency ..... 3 MHz (all +/- 5%)
Power ..... 0 watt to 2 watts
Effective Radiating Area ..... 0.7 cm² – 1 cm²
Maximum beam non-uniformity ratio 5.0:1
Beam Type ..... Collimating

2 cm² Sound Head

Frequency ..... 1 MHz, 3 MHz (all +/- 5%)
Power ..... 0 watt to 4 watts
Effective Radiating Area ..... 1.4 cm² – 2 cm²
Maximum beam non-uniformity ratio 5.0:1
Beam Type ..... Collimating

Head Warming Feature

The Head Warming feature of an Intelect Advanced Combination Therapy System utilizes Ultrasound output resulting in warming of the Sound Head to increase patient comfort.

With Head Warming enabled, ultrasound is emitted without pressing the Start button. The Applicator LED will not illuminate during the Head Warming period. US Channel will indicate "Head Warming".

Output ..... 0 - 50% Cycling of maximum power
Frequency ..... 3 Mhz
Sound Head Temperature ..... 29.4 °C - 43.3 °C (85 °F - 110 °F)

5 cm² Sound Head

Frequency ..... 1 MHz, 3 MHz (all +/- 5%)
Power ..... 0 watt to 10 watts
Effective Radiating Area ..... 3.5 cm² – 5 cm²
Maximum beam non-uniformity ratio 5.0:1
Beam Type ..... Collimating

10 cm² Sound Head

Frequency ..... 1 MHz, 3 MHz (all +/- 5%)
Power ..... 1 MHz: 0 watt to 20 watts
(0 to 15 watts if 2 channels of electrotherapy are used simultaneously)
..... 3 MHz: 0 watt to 10 watts
Effective Radiating Area ..... 6.8 cm² – 10 cm²
Maximum beam non-uniformity ratio 5.0:1
Beam Type ..... Collimating

⚠ WARNING

Do not apply the Ultrasound Applicator to the patient during the Head Warming period. Applicator must remain in Applicator Hook during the Head Warming period.

MOUNTING THE UNIT ON THE WALL

The Intelect Mobile Combo can be operated while the unit is resting on a flat surface or mounted on a wall (the equipment required to mount the unit is not included). To mount the unit on a wall, do the following:

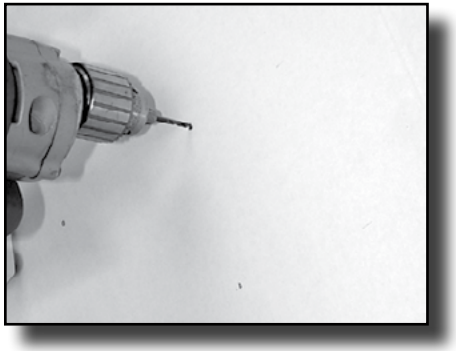


1. Remove the repositional base from the back of the unit.

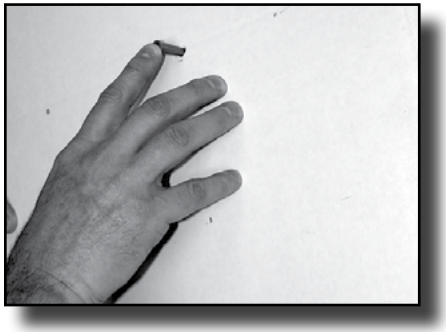


2. Using the repositional base as a guide, mark the 4 wall holes with a pencil or pen.

MOUNTING THE UNIT ON THE WALL (CONTINUED)

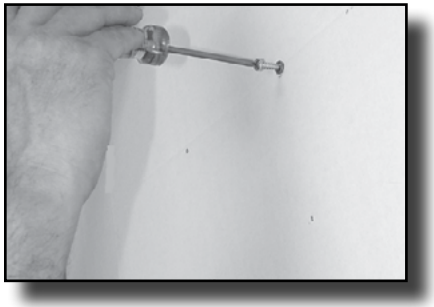


3. Using an appropriate size drill bit, drill the four holes you marked in the previous step.



4. Press 4 appropriately sized drywall anchors into the wall so that the drywall anchor is flush with the wall.

MOUNTING THE UNIT ON THE WALL (CONTINUED)



5. Screw four #8 pan head sheet metal screws (2.54 cm or 1 inch) into the wall anchors. Make sure you leave 0.635 cm (¼ of an inch) between the wall and the head of the screw.



6. Replace the repositional base on the back of the unit.

MOUNTING THE UNIT ON THE WALL (CONTINUED)



7. Line up the screw heads with the holes on the repositional base, and slide the unit down slightly until the screw heads are securely fastened to the repositional base.

INSTALLING THE BATTERY PACK

The Intelect Mobile Combo accommodates both AC mains power and an optional battery pack. The pack contains 20 Nickel Metal Hydride (NiMH) drycell batteries.

To install the battery pack in the Intelect Mobile Combo, do the following:



1. Locate the battery access door at the bottom of the unit and loosen the screw with a flat head screwdriver.



2. Remove the battery access door and retain it.

INSTALLING THE BATTERY PACK (CONTINUED)



3. Connect the battery pack cable to the unit's battery connector in the bottom of the battery recess.



4. Put the battery pack into the unit, making sure to orient it as shown.

INSTALLING THE BATTERY PACK (CONTINUED)



5. Replace the battery access door and re-tighten the screw using the screwdriver.
6. Reverse the steps in this section in order to remove the battery pack.

CHARGING THE BATTERY PACK

The battery pack is automatically charged by the unit whenever there is mains power connected. Charging may be interrupted during operation of the unit by the control circuitry to limit total power consumption. A fully charged battery will provide 2-5 hours of treatment depending on the applicator and the pulsed mode used.

NOTE: Even when the battery pack is connected, the unit will default to mains power when plugged in.

USING THE BATTERY PACK

To save battery power, the Intelect Mobile Combo is equipped with a "power off" function. This function is activated when the unit is powered on and has been left idle for approximately 5 minutes, at which time the unit powers off. To restore power, press the Power On/Off button.

ELECTROTHERAPY PATIENT PREPARATION

Electrode Placement

Use the following guidelines when preparing patients for electrotherapy:

- Examine the skin for any wounds and clean the skin.
- Apply the electrodes to the treatment area.
- Ensure the electrodes are applied securely to the skin.
- Ensure good contact between each electrode and the skin.
- Check the electrode contact regularly during the treatment.
- Examine the skin again after the treatment.
- Choose electrodes that fit the anatomy.
- Follow electrode manufacturer instructions.

⚠ WARNING

- Keep electrodes separated during treatment. Electrodes in contact with each other could result in improper stimulation or skin burns.
- Output current density is inversely related to electrode size (i.e., the larger the electrode, the lower the current density). Improper application may result in patient injury. If any question arises as to the proper electrode size, consult a licensed practitioner prior to therapy session.
- Powered muscle stimulators should be used only with the leads and electrodes recommended for use by the manufacturer.

ELECTROTHERAPY PATIENT PREPARATION (CONTINUED)

DURA-STICK Electrodes

Chattanooga DURA-STICK Electrodes are a self adhesive, single patient, one time use disposable product designed specifically for use with Chattanooga Electrotherapy systems.

It is recommended that Chattanooga DURA-STICK Electrodes be used whenever possible to ensure the highest level of contact with the treatment area and most uniform delivery of the prescribed electrotherapy treatment.

Properly dispose of used DURA-STICK Electrodes upon completion of the therapy session.



Reusable Carbon Electrodes

If used for delivery of electrotherapy, the Carbon Electrodes must be inserted into the sponges moistened with distilled water prior to placement on the patient.

These Carbon Electrodes should be secured to the treatment area using the Nylatex® Wraps shipped with the unit.



⚠ CAUTION

The Nylatex® Wraps contain dry natural rubber and may cause allergic reactions in patients with allergies to latex.

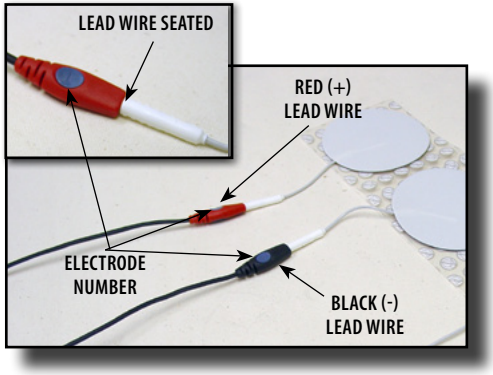
ELECTROTHERAPY PATIENT PREPARATION (CONTINUED)

DURA-STICK Electrode Instructions

Connecting Lead Wires

Insert the lead with the Red (+) electrode connector into one DURA-STICK Electrode. Insert the lead with the Black (-) electrode connector into the other electrode.

Make certain the lead wires are seated completely into the electrodes. Also, ensure that the numbers on the electrodes correspond to the appropriate color being used (i.e., the black electrode labeled number 1 should be used with the red electrode labeled number 1).



NOTE: Use of conductive medium or sponges is not required or recommended. DURA-STICK Electrodes are manufactured to ensure the optimum conductivity during therapy when properly applied.

NOTE: For combination therapy, place the electrode on the black (-) lead and use Stim Channel 1.

Securing Electrodes

Remove the DURA-STICK Electrodes from the protective backing and apply to the treatment area as prescribed. Ensure the entire electrode surface is in contact with patient skin by pressing into place.



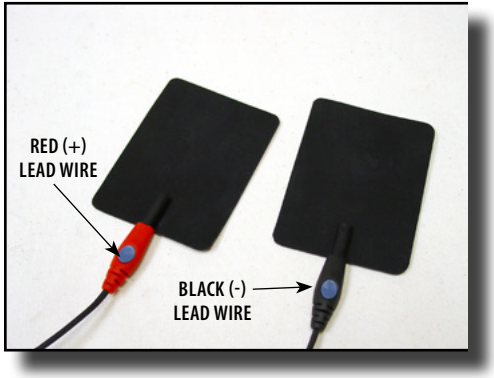
ELECTROTHERAPY PATIENT PREPARATION (continued)

Reusable Carbon Electrodes

Connecting Lead Wires

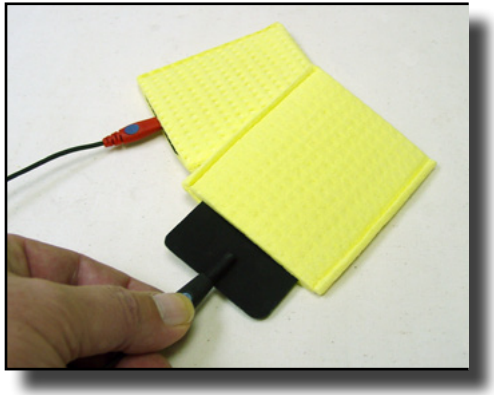
Insert the lead with the red (+) electrode connector into electrode. Insert the lead with the black (-) electrode connector into the other electrode.

Make certain the lead wires are seated completely into the electrodes.



Conductive Medium

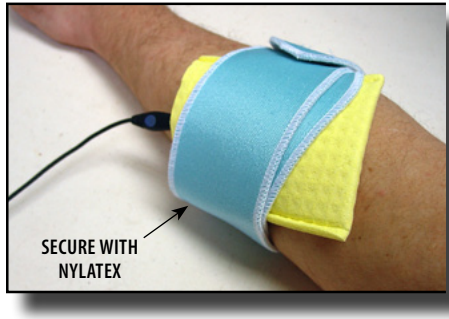
Use wet sponges or liberally apply Conductor™ Transmission Gel to electrode prior to placement on patient.



NOTE: For combination therapy, place the electrode on the black (-) lead and use Stim Channel 1.

Securing Electrodes

Use the Nylatex® Wrap to secure each electrode in position on the patient.



⚠ CAUTION

The Nylatex® Wraps contain dry natural rubber and may cause allergic reactions in patients with allergies to latex.

PATIENT PREPARATION

ULTRASOUND THERAPY PATIENT PREPARATION

Before applying the sound head to the patient, you must first prepare the patient's skin for ultrasound therapy. By properly preparing the patient's skin for ultrasound therapy, you will allow more ultrasound energy to reach the targeted areas and reduce the risk of skin irritation.

To prepare the patient's skin for ultrasound therapy, do the following:



1. Thoroughly wash the skin on which you intend to place the sound head with mild soap and water.
2. Dry the skin thoroughly.
3. Apply the ultrasound gel generously to the target area on the patient.

NOTE: For combination therapy, place the electrode on the black (-) lead and use Stim Channel 1.

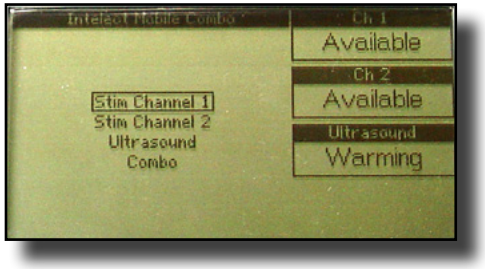
STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY

The Operator Interface consists of buttons with a liquid crystal display (LCD). The operator is able to view parameter options on the display and make selections by pressing the buttons on the control panel. The LCD will provide continuous information during the treatments concerning power and elapsed time. Parameters are adjusted using control panel buttons on the front of the unit. The output can be stopped by pressing the "PAUSE" or "STOP" buttons located on the control panel.

⚠ WARNING

Do not turn the unit on or off while it is connected to the patient.

To apply electrotherapy, do the following:



1. Follow all appropriate procedures listed in the section entitled "Electrotherapy Patient Preparation" beginning on page 41.
2. Turn system power "ON" by pressing the Power On/Off button.

   The message "Initializing System" displays. The unit will go through self diagnostics, and the home screen displays on the LCD.

STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY (CONTINUED)

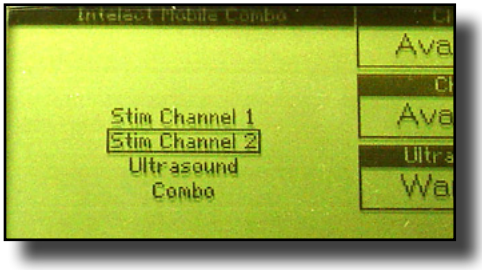


3. Connect the Lead Wires to the appropriate electrodes.
   To see a list of recommended electrodes and their preparation, see pages 41-45.
   NOTE: Do not use unnecessary force to connect the electrodes to the lead wires.
4. Place the self adhesive electrodes on the sites prescribed by a qualified practitioner. Make sure you press them firmly on the patient's skin to ensure good conductivity.

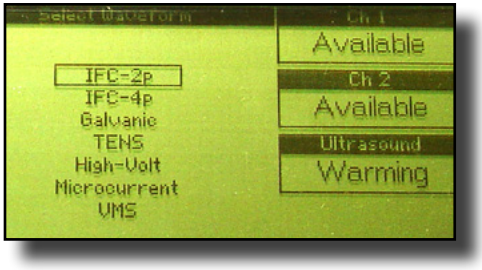


5. Depending on the type of waveform you intend to use and the number of patients you intend to treat, insert the Lead Wire into Channel 1, Channel 2, or both Lead Wire Connections on the Accessory Panel.

STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY (CONTINUED)

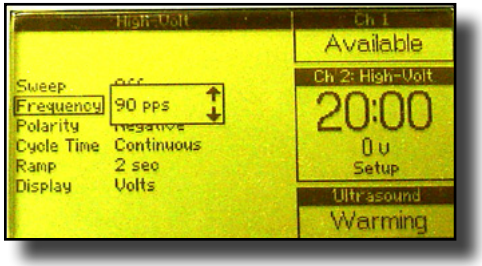


6. Use the Up and Down Arrow buttons to highlight either Stim Channel 1 or Stim Channel 2.
7. Press the Enter button.
   The Waveform screen displays.



8. Use the Up and Down Arrow buttons to highlight the appropriate waveform.
9. Press the Enter button.
   The Electrotherapy parameter screen displays.

STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY (CONTINUED)



10. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
11. Press Enter to accept the parameters.

    The Parameter screen refreshes and the new parameters are displayed.
12. To begin therapy, press the START button.

    The timer counts down, the output power ramps up, and "Running" displays below the timer.

NOTE: When the therapy time has expired, the unit beeps three times.

During therapy, you can press the TIME button to raise or lower treatment time (in one minute increments) using the up and down arrows.

During therapy, you can press the INTENSITY button to raise or lower the output using the up and down arrows.

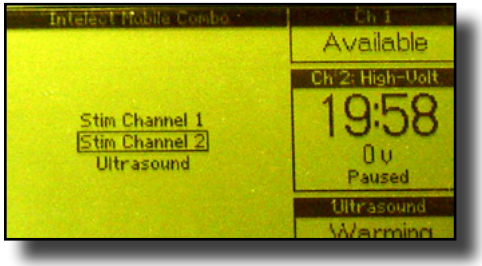
Therapy can be interrupted at any time by pressing the STOP or PAUSE buttons.

When the STOP button is pressed, the unit stops emitting output, and the unit returns to the home screen. To resume therapy, repeat steps 6-11.

During treatment, the following occurs whenever the PAUSE button is pressed:

- the timer pauses
- the unit beeps quickly 5 times
- "Paused" displays below the timer
- the unit stops emitting output

To resume therapy, press the PAUSE button or the START button.



STARTING, STOPPING, AND INTERRUPTING ELECTROTHERAPY (CONTINUED)

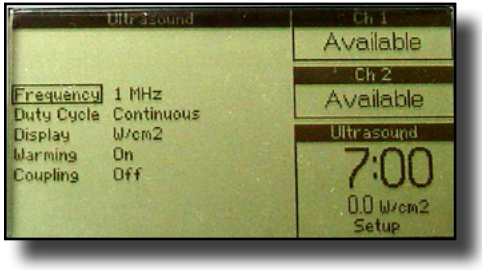
13. When you have completed treatment, remove all electrodes from the patient.
14. Turn system power "OFF" by pressing the Power On/Off button.
    The unit beeps once and the blue light on the Power On/Off button flashes intermittently.

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY

To apply ultrasound therapy, do the following:

1. Ensure the ultrasound applicator is plugged in.
2. On the Home screen, use the Up and Down Arrow buttons to highlight Ultrasound.
3. Press the Enter button.

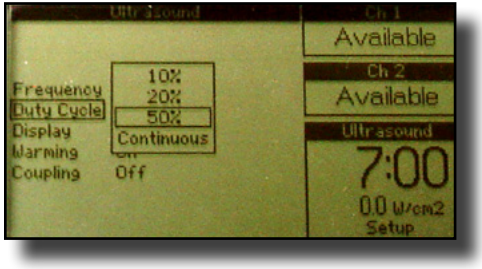
   The Ultrasound parameters screen displays.
4. Press the Up and Down Arrow buttons to highlight Frequency.
5. Press the Enter button to select 1 or 3 MHz.



   When the button is pressed, the frequency will toggle from 1 to 3 MHz and back again as long as the button is being pressed (excluding the 1 cm^2 sound head).

   An audible tone will be heard when changes are made.

   NOTE: With 2 cm^2 and 5 cm^2 sound heads, switching from 1 to 3 MHz results in no change in power. When using a 10 cm^2 head with greater than 10 watts, changing from 1 to 3 MHz reduces power to 10 watts.
6. Press the Up and Down Arrow buttons to highlight Duty Cycle.
7. Press the Enter button to display the Duty Cycle menu.
8. Press the Up and Down Arrow buttons to highlight 10%, 20%, 50% or Continuous duty cycle.



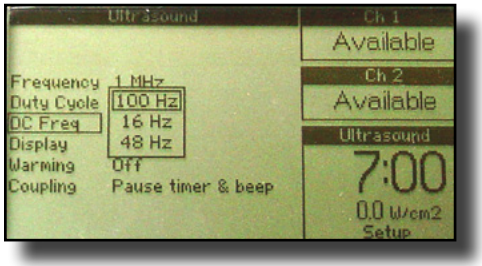
   When the buttons are pressed, an audible tone will be heard as the duty cycle toggles through the options on the LCD.
9. Press the Enter button to accept the selection.

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY (CONTINUED)

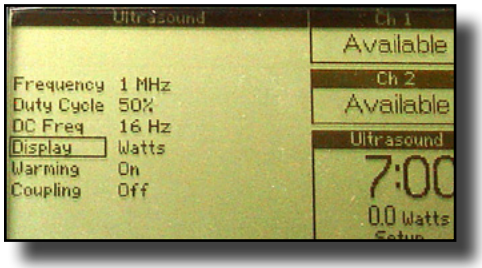
10. Press the Down Arrow button to highlight DC (Duty Cycle) Freq.

    NOTE: This parameter is unavailable if the Continuous duty cycle was selected in the previous step.

11. Press the Enter button to display the DC Freq menu.



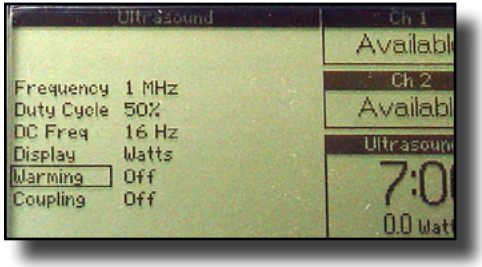
12. Press the Up and Down Arrow buttons to highlight a pulse frequency of 16, 48, or 100 Hz.
13. Press the Enter button to accept the selection.



14. Press the Down Arrow button to highlight Display.
15. Press the Enter button to select either Watts or W/cm^2.

    When the button is pressed, the frequency will toggle from Watts to W/cm^2 and back again as long as the button is being pressed.

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY (CONTINUED)



16. Press the Down Arrow button to highlight Warming.
17. Press the Enter button to select either On or Off.

    When the button is pressed, the head warming feature will toggle from On to Off and back again as long as the button is being pressed. When the head warming feature is On, the sound head will warm to slightly above body temperature. The "Warming" message displays in the status window.
18. Press the Down Arrow button to highlight Coupling.
19. Press the Enter button to display the Coupling menu.

    The coupling feature is designed to indicate when the sound head is not making adequate contact with the patient's skin. "Good coupling" is achieved when the appropriate amount of gel is used, and the sound head is making satisfactory contact to the patient's skin. Good coupling results in the most efficient use of ultrasound therapy.

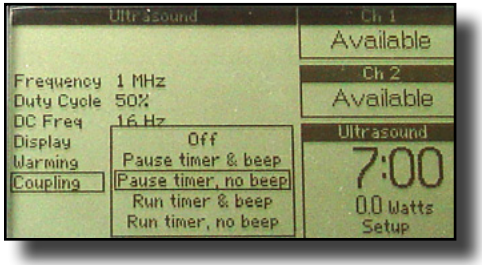
NOTE: The green light located on the back of the applicator flashes intermittently when the sound head breaks contact with the patient.

Also, when the applicator becomes uncoupled, the message "Uncoupled" displays in the status window.

⚠ WARNING

Do not apply the Ultrasound Applicator to the patient during the Head Warming period. Applicator must remain in Applicator Hook during the Head Warming period.

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY (CONTINUED)



20. Press the Up and Down Arrow buttons to select the manner in which you want to be notified when the sound head becomes uncoupled.

    The following list details these options:

    - Pause timer & beep - the timer stops and the unit beeps once.
    - Pause timer, no beep - the timer stops but the unit does not give an audible tone.
    - Run timer & beep - the timer continues to count down and the unit beeps once.
    - Run timer, no beep - the timer continues to count down, but the unit does not give an audible tone.

    NOTE: When the applicator becomes uncoupled during treatment, it continues to distribute ultrasound energy.

21. Press the Enter button to accept the selection.

22. Press the Time button and raise or lower treatment time using the up and down arrows.

23. Press the INTENSITY button and raise or lower the unit's output using the up and down arrows.

24. Press the Start button. The unit will beep 5 times and the ultrasound power will distribute the selected output.

    NOTE: When treatment time has expired a tone will sound three times.

STARTING, STOPPING, AND INTERRUPTING ULTRASOUND THERAPY (CONTINUED)

25. The therapy can be interrupted at any time by pressing the STOP or PAUSE buttons. When the STOP button is pressed, the applicator stops emitting ultrasound energy, and the unit returns to the default settings. To resume therapy, press the Start button.

    When the PAUSE button is pressed, the timer pauses and the applicator stops emitting ultrasound energy. To resume therapy, press the PAUSE button again.

26. The parameters of the therapy can be changed at any time during the therapy session by pressing the appropriate button.

27. After therapy is complete, wipe excess ultrasound gel from the patient's skin and the sound head.

STARTING, STOPPING, AND INTERRUPTING COMBINATION THERAPY

Combination therapy consists of using electrotherapy and ultrasound therapy simultaneously. You may choose to use one or both channels of electrotherapy in conjunction with ultrasound.

Combination therapy utilizes the ultrasound modality in conjuction with High Voltage Pulsed Current (HVPC), VMS, Asymmetrical Biphasic, Symmetrical Biphasic, 2 Pole IFC, or 4 Pole IFC to generate a therapeutic effect. In this mode of therapy, the sound head of the ultrasound applicator becomes one half of the electrical circuit. An electrode attached to the black (-) Lead Wire completes the circuit.

To do this, do the following:



1. Follow all appropriate procedures listed in the section entitled "Electrotherapy Patient Preparation" on page 41 and "Ultrasound Patient Preparation" on page 45.
2. Connect the Lead Wires to the appropriate electrodes.

   For example, for all waveforms used by Channel 1 (all waveforms except 4 Pole IFC), use the black (-) Lead Wire as the negative and the applicator as the positive.

   For the 4 Pole IFC waveform, you will use three lead wires and the applicator for combination therapy: use the black (-) Lead Wire for Channel 1 as the negative electrode, the applicator as the positive, and the other Lead Wires for channel 2 as you would for an electrotherapy treatment.

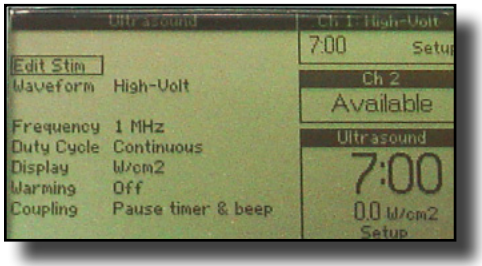
   NOTE: Do not use unnecessary force to connect the electrodes to the Lead Wires.
3. Place the self adhesive electrodes on the sites prescribed by a qualified practitioner. Make sure you press them firmly on the patient's skin to ensure good conductivity.
4. Ensure the ultrasound applicator is plugged in.
5. Depending on the type of waveform you intend to use, insert the Lead Wire into Channel 1 or both Lead Wire Connections on the Accessory Panel.
6. On the Home screen, press the Up and Down Arrow buttons to highlight Combo.

STARTING, STOPPING, AND INTERRUPTING COMBINATION THERAPY (CONTINUED)

7. Press the Enter button.

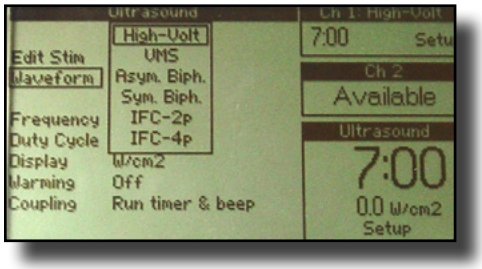
   The Ultrasound parameters screen displays with the Edit Stim option highlighted.

   NOTE: When you are using combination therapy for Channel 1 (all waveforms except 4 Pole IFC), you may only set up electrotherapy for Channel 1. If you want to use both channels of electrotherapy in conjunction with ultrasound, you must first begin treatment. You may set up electrotherapy for Channel 2 later in these procedures (step 21).



8. Press the Up and Down Arrow buttons to highlight Waveform.
9. Press the Enter button.

   The Waveform menu displays.

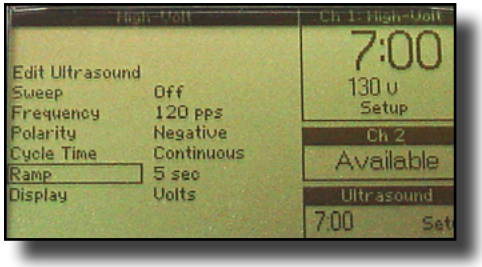


10. Press the Up and Down Arrow buttons to highlight the appropriate waveform.
11. Press the Enter button to accept the selection.

    The Waveform menu closes.
12. Press the Up and Down Arrow buttons to highlight Edit Stim.
13. Press the Enter button to accept the selection.

    The current waveform's parameters display.

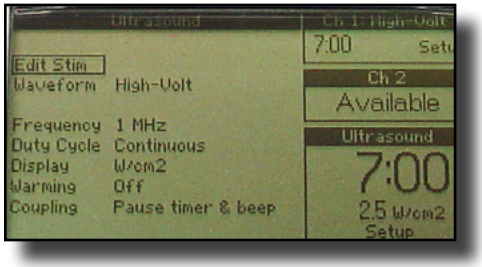
STARTING, STOPPING, AND INTERRUPTING COMBINATION THERAPY (CONTINUED)



14. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
15. Press Enter to accept the parameters.

    The Parameter screen refreshes and the new parameters are displayed.
16. Press the up and down arrows on the INTENSITY button to raise or lower the electrotherapy output.
17. Press the Up and Down Arrow buttons to highlight Edit Ultrasound.
18. Press the Enter button to accept the selection.

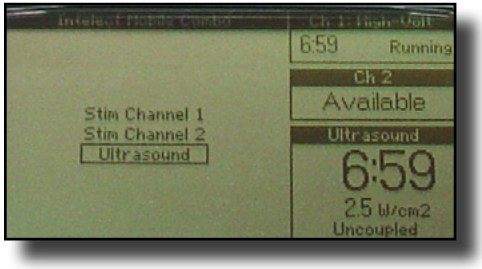
    The Ultrasound parameter screen displays.



19. Continue with steps 4-23 of the section entitled "Starting Stopping and Interrupting Ultrasound Therapy" on pages 51-55.
20. Press the START button.

    The unit will beep 5 times, you are returned to the Home screen, and the ultrasound and electrotherapy is distributed.

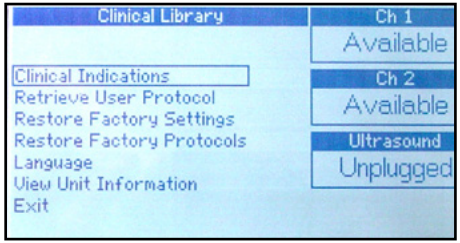
STARTING, STOPPING, AND INTERRUPTING COMBINATION THERAPY (CONTINUED)



21. If you want to use Channel 2 for additional electrotherapy, continue with step 22.
    If you do not want to use additional electrotherapy, skip to step 25.
22. Press the Up and Down Arrow buttons to highlight Stim Channel 2.
23. Press the Enter button.
    The Select Waveform screen displays.
24. Follow steps 8-12 of the section entitled "Starting, Stopping, and Interrupting Electrotherapy" on pages 48-49.
25. You may make parameter changes and stop or pause therapy on Channel 1, Channel 2, or Ultrasound by highlighting the appropriate form of therapy, and making the necessary changes.
26. When you have completed treatment, remove all electrodes from the patient.
27. Turn system power "OFF" by pressing the Power On/Off button.
    The unit beeps once and the blue light on the Power On/Off button flashes intermittently.

USING CLINICAL INDICATIONS

The indications contained in this section are to be used only as guidelines. Each patient should be individually assessed to determine the appropriateness of the parameter setting prior to use. To select an indication for a patient, do the following:



1. Press the Clinical Library button.
   The Clinical Library menu displays.
2. Using the Duty Cycle (up arrow) and Frequency (down arrow) buttons, highlight Clinical Indications and press the DISPLAY (enter) button.
   The Clinical Indications menu displays.
3. Using the DUTY CYCLE (up arrow) and FREQUENCY (down arrow) buttons, highlight the appropriate indication.
4. Press the DISPLAY (enter) button to accept the highlighted selection.
   You are returned to the main screen with the settings from the indication you selected displayed.



5. Review the final protocol settings for the ultrasound treatment. Make any necessary modifications or corrections.
6. Press the Intensity button (either the up or down arrow) to adjust the output to the prescribed intensity.
7. To begin therapy, continue with the instructions outlined in the section entitled "Patient Preparation" on pages 41-45. Then, proceed to step 7 on page 48.

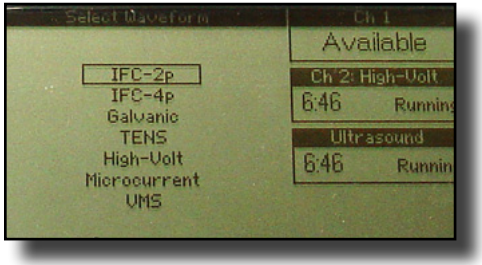
CREATING A USER PROTOCOL FOR ELECTROTHERAPY

This is a library you create. You may store up to 15 protocols in the User Protocol Library. To create User Protocols for electrotherapy, do the following:

1. On the home screen, press the Up and Down Arrow buttons to highlight either Stim Channel 1 or Stim Channel 2.
2. Press the Enter button.

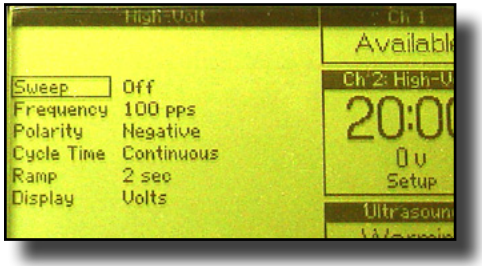
   NOTE: User protocols can be used on any channel (Stim Channel 1, Stim Channel or Ultrasound). It does not matter on which channel they are created.

   The Select Waveform screen displays.



3. Use the Up and Down Arrow buttons to highlight the appropriate waveform.
4. Press the Enter button.

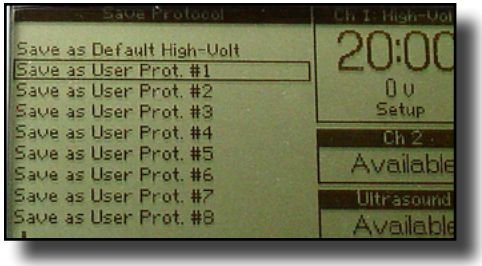
   The Parameter screen displays.



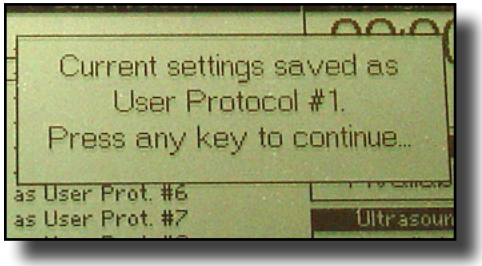
5. On the parameter screen, press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
6. Press the Clinical Library button.

   The Save Protocol screen displays.

CREATING A USER PROTOCOL FOR ELECTROTHERAPY (CONTINUED)



7. Press the Up Arrow and Down Arrow buttons to highlight any unused user protocol.
   If you select the Save as Default protocol, this will become the protocol displayed when the waveform is selected on the Waveform screen.
8. Press the Enter button to accept the highlighted selection and save your custom protocol.
   The User Protocol Confirmation window displays to indicate that the protocol is now saved as the number you specified.



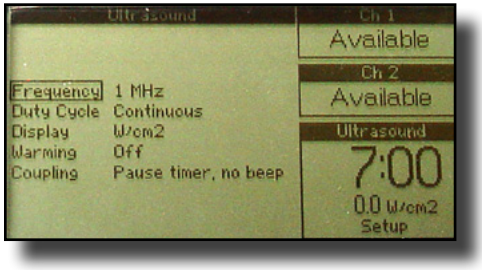
9. Press any button on the Operator Interface.
   The Parameter screen displays and your new protocol is now saved.

CREATING A USER PROTOCOL FOR ULTRASOUND THERAPY

To create User Protocols for ultrasound therapy, do the following:

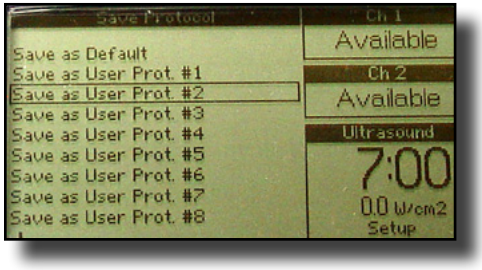
1. On the Home screen, press the Up and Down Arrow buttons to highlight Ultrasound.
2. Press the Enter button.

   The Ultrasound parameter screen displays.



3. On the parameter screen, press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
4. Press the Clinical Library button.

   The Save Protocol screen displays.

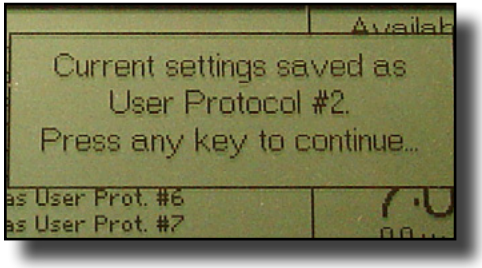


5. Press the Up Arrow and Down Arrow buttons to highlight any unused user protocol.

   If you select the Save as Default protocol, this will become the protocol displayed when Ultrasound is selected on the Home screen.
6. Press the Enter button to accept the highlighted selection and save your custom protocol.

   The User Protocol Confirmation window displays to indicate that the protocol is now saved as the number you specified.

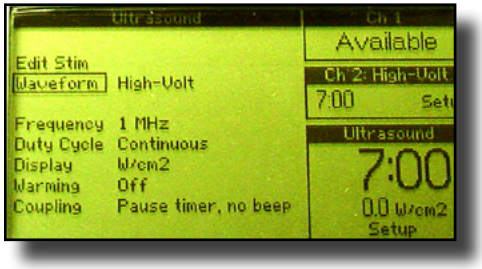
CREATING A USER PROTOCOL FOR ULTRASOUND THERAPY (CONTINUED)



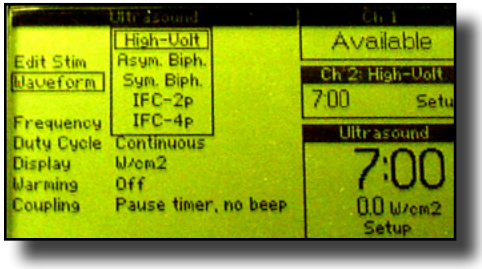
7. Press any button on the Operator Interface.
The Parameter screen displays and your new protocol is now saved.

CREATING A USER PROTOCOL FOR COMBINATION THERAPY

To create User Protocols for combination therapy, do the following:

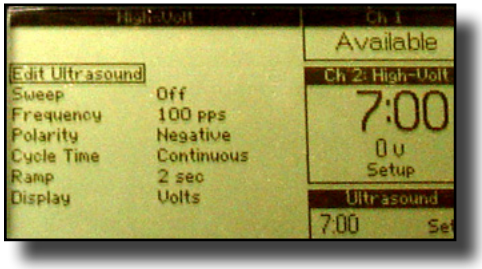


1. On the Home screen, press the Up and Down Arrow buttons to highlight Combo.
2. Press the Enter button.
   The Ultrasound parameter screen displays.
3. Press the Up and Down Arrow buttons to highlight Waveform.
4. Press the Enter button.
   The Waveform menu displays.



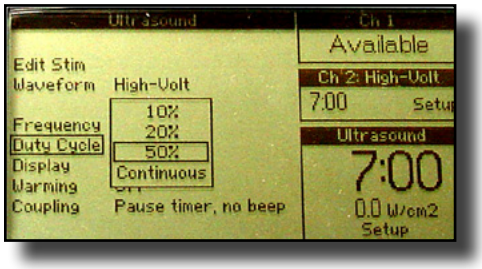
5. Press the Up and Down Arrow buttons to highlight the appropriate waveform.
6. Press the Enter button to accept the selection.
   The Waveform menu closes.
7. Press the Up and Down Arrow buttons to highlight Edit Stim.
8. Press the Enter button to accept the selection.
   The waveform's parameters display.

CREATING A USER PROTOCOL FOR COMBINATION THERAPY (CONTINUED)



9. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
10. Press the Up and Down Arrow buttons to highlight Edit Ultrasound.
11. Press the Enter button to accept the highlighted selection.

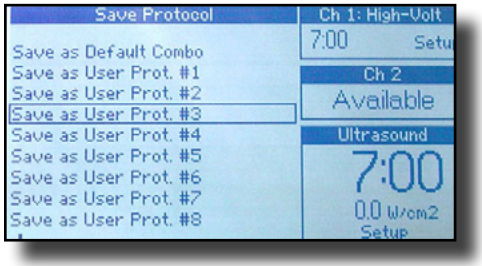
    The Ultrasound parameter screen displays.



12. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
13. Press the Clinical Library button.

    The Save Protocol screen displays.

CREATING A USER PROTOCOL FOR COMBINATION THERAPY (CONTINUED)

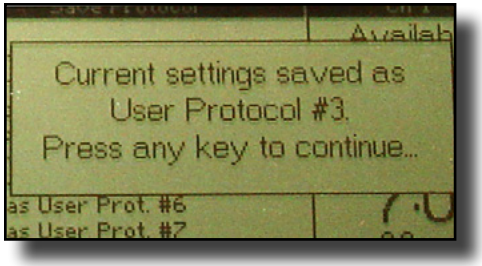


14. Press the Up Arrow and Down Arrow buttons to highlight any unused user protocol.

    If you select the Save as Default protocol, this will become the protocol displayed when Combo is selected on the Home screen.

15. Press the Enter button to accept the highlighted selection and save your custom protocol.

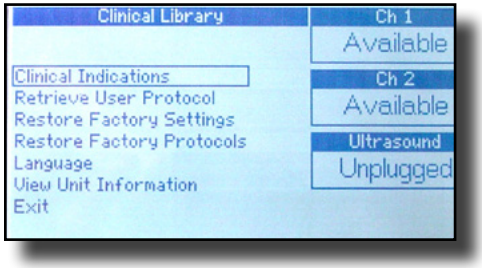
    The User Protocol Confirmation window displays to indicate that the protocol is now saved as the number you specified.



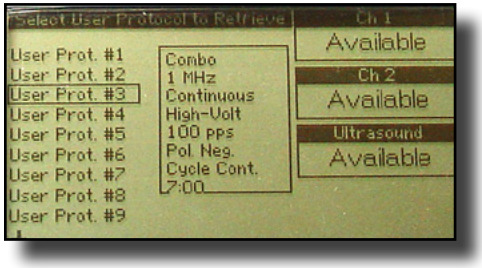
16. Press any button on the Operator Interface.

    The Parameter screen displays and your new protocol is now saved.

USING PROTOCOLS

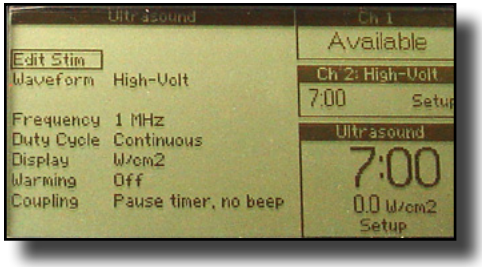


1. On the home screen, press the Clinical Library button.
   The Clinical Library screen displays.
2. Using the Up Arrow and Down Arrow buttons, highlight the Retrieve User Protocol option.
3. Press the Enter button to accept the highlighted selection.
   A list of user-defined protocols displays.



4. Press the Up and Down Arrow button to highlight the appropriate protocol.
   As you highlight each protocol, a description of the protocol's parameters displays to the right.
5. Press the Enter button to select the highlighted protocol.
   The Parameters screen displays the parameters of the protocol you selected.

USING PROTOCOLS (CONTINUED)



6. Verify the parameters of this program, and use the appropriate buttons on the Operator Interface to adjust any setting, if necessary. For example, to adjust the time, press the up and down arrows on the TIME button.
7. To begin therapy, and depending on if you intend to apply electrotherapy, ultrasound therapy, or combination therapy, perform the appropriate procedures outlined on pages 41-59.

SYSTEM UTILITIES

Audible Tones

Audible tones will be heard in the following conditions:

- Any button is pressed.
- The rechargeable battery's power is low (in which case the Low Battery icon will display).
- Any error message is displayed.
- Therapy begins.
- The therapy time reaches 0:00.

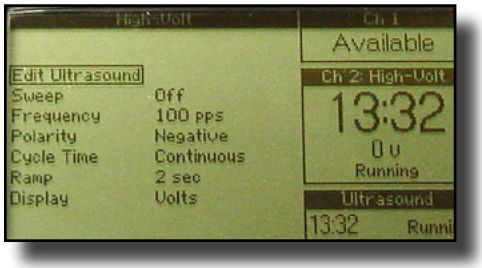
Changing Protocol Parameters

You may change any parameter prior to or during therapy. To make Intensity and Treatment Time changes, touch the respective buttons and use the up or down arrows to advance to the desired settings.

To change other parameters during therapy, do the following:

1. On the home screen, use the Up and Down Arrow buttons to highlight the channel on which therapy is currently running.
2. Press the Enter button to select the highlighted option.

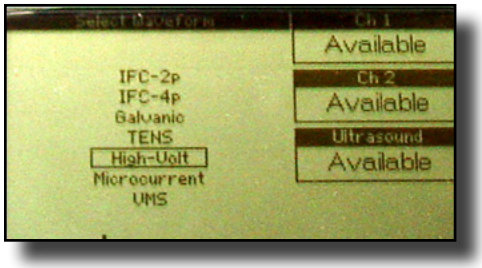
   The parameters of the current therapy session display.
3. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.



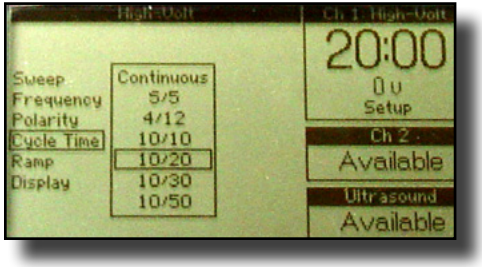
Changing Default Protocols for Electrotherapy

To change the power up presets, do the following:

1. On the home screen, press the Up and Down Arrow buttons to highlight either Stim Channel 1 or Stim Channel 2.
2. Press the Enter button to select the highlighted option.
   The Select Waveform screen displays.

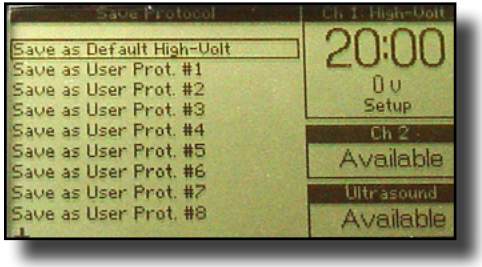


3. Use the Up and Down Arrow buttons to highlight the appropriate waveform.
4. Press the Enter button.
   The parameter screen displays.

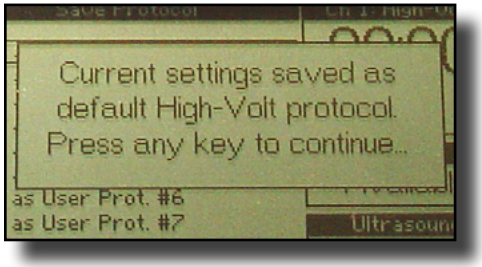


5. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
6. Press the Clinical Library button.
   The Save Protocol screen displays.

SYSTEM UTILITIES (CONTINUED)



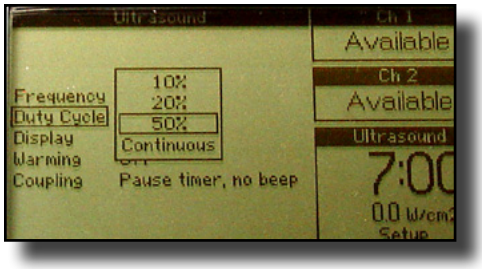
7. Use the Up Arrow and Down Arrow buttons to highlight Save as Default protocol.
   This will become the protocol displayed when the waveform is selected on the Waveform screen.
8. Press the Enter button to accept the highlighted selection.
   The Default Protocol Confirmation window displays.



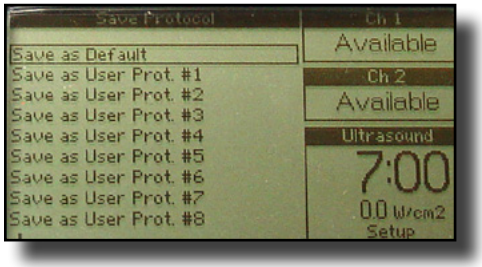
9. Press any key to confirm the settings.
   You are returned to the Clinical Library menu.

SYSTEM UTILITIES (CONTINUED)

Changing Default Protocols for Ultrasound Therapy

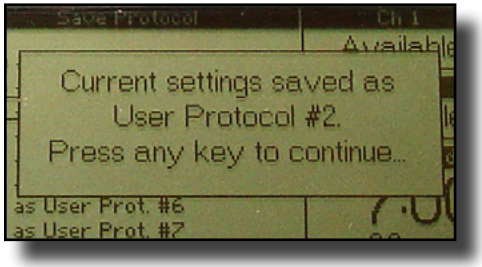


1. On the home screen, press the Up and Down Arrow buttons to highlight Ultrasound.
2. Press the Enter button to select the highlighted option.
   The Ultrasound parameters screen displays.
3. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
4. Press the Clinical Library button.
   The Save Protocol screen displays.



5. Use the Up Arrow and Down Arrow buttons to highlight Save as Default protocol.
   This will become the protocol displayed when Ultrasound is selected on the Home screen.
6. Press the Enter button to accept the highlighted selection.
   The Default Protocol Confirmation window displays.

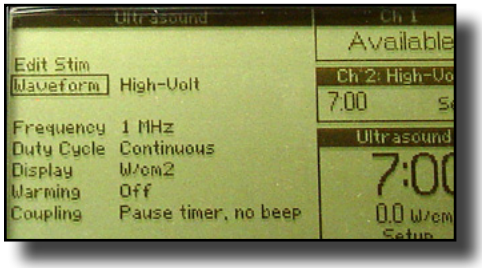
SYSTEM UTILITIES (CONTINUED)



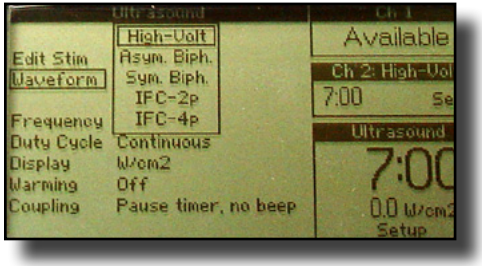
7. Press any key to confirm the settings.
   You are returned to the Clinical Library menu.

Changing Default Protocols for Combination Therapy

1. On the home screen, press the Up and Down Arrow buttons to highlight Combo.
2. Press the Enter button to select the highlighted option.
   The Ultrasound parameters screen displays.
3. Press the Up and Down Arrow buttons to highlight Waveform.
4. Press the Enter button.
   The Waveform menu displays.



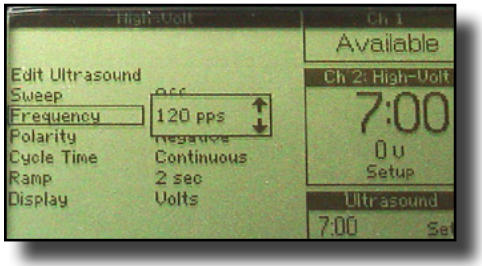
SYSTEM UTILITIES (CONTINUED)



5. Press the Up and Down Arrow buttons to highlight the appropriate waveform.
6. Press the Enter button to accept the selection.

   The Waveform menu closes.
7. Press the Up and Down Arrow buttons to highlight Edit Stim.
8. Press the Enter button to accept the selection.

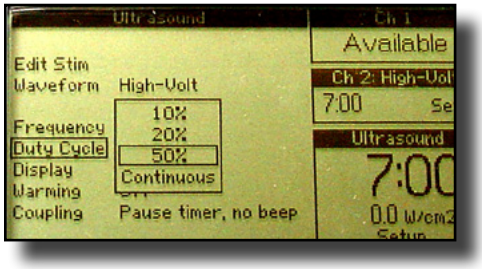
   The waveform's parameters display.



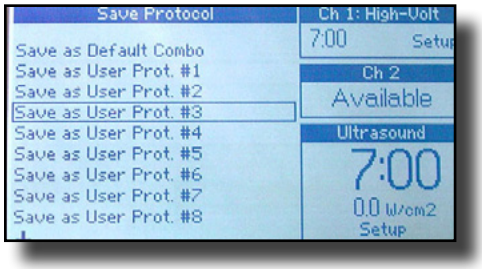
9. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
10. Press the Up and Down Arrow buttons to highlight Edit Ultrasound.
11. Press the Enter button to accept the highlighted selection.

    The Ultrasound parameter screen displays.

SYSTEM UTILITIES (CONTINUED)

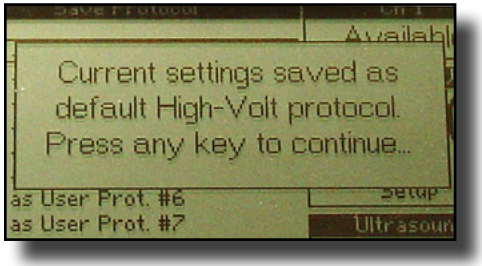


12. Press the Up and Down Arrow buttons to highlight the parameter you want to change and adjust it accordingly, making sure to press the Enter button after each adjustment.
13. Press the Clinical Library button.
    The Save Protocol screen displays.



14. Use the Up Arrow and Down Arrow buttons to highlight Save as Default protocol.
    This will become the protocol displayed when Ultrasound is selected on the Home screen.
15. Press the Enter button to accept the highlighted selection.
    The Default Protocol Confirmation window displays.

SYSTEM UTILITIES (CONTINUED)



16. Press any key to confirm the settings.
You are returned to the Clinical Library menu.

Brightening or Dimming the LCD



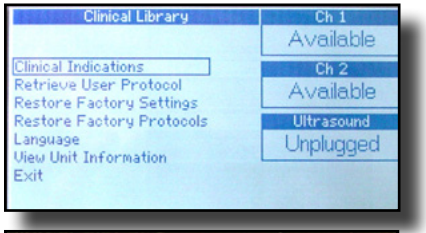
To brighten or dim the LCD, turn the contrast control dial until the display contrast is optimal.

SYSTEM UTILITIES (CONTINUED)

Restoring Factory Protocols

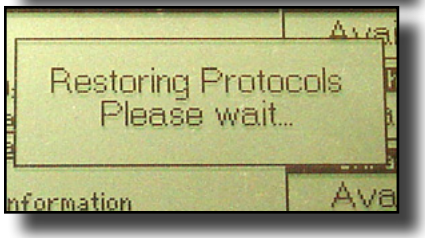
If necessary, you can choose to restore the unit's original (default) waveform parameters when it was shipped to you.

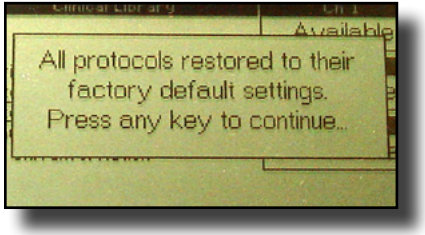
NOTE: This procedure will erase all user-defined protocols.



To restore the unit's original waveform parameters, do the following:

1. On the Home screen, press the Clinical Library button.
   The Clinical Library window displays.
2. Press the Up Arrow or Down Arrow buttons to highlight Restore Factory Protocols.
3. Press the Enter button to accept the highlighted selection.
   The unit displays the message "Restoring Protocols Please wait."
   The user-defined protocols are erased and the waveforms are restored to the original parameters. Then the Restore Factory Protocols Confirmation window displays.



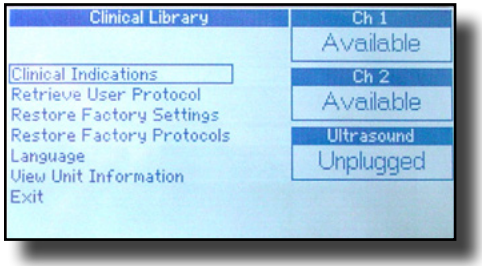


4. Press any button on the Operator Interface.
   You are returned to the Clinical Library window.

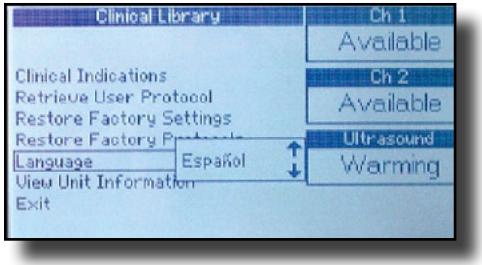
SYSTEM UTILITIES (CONTINUED)

Changing Languages

To change the language displayed on the LCD, do the following:

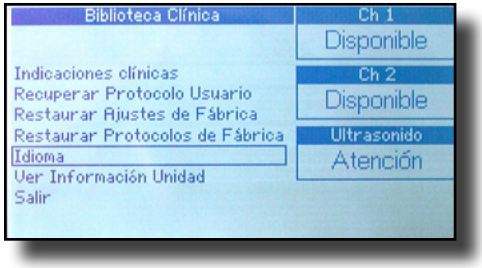


1. Press the Clinical Library button.
   The Clinical Library screen displays.
2. Use the Down Arrow and Up Arrow buttons to highlight the Language option.
3. Press the Enter button to accept the highlighted selection.
   The Language menu displays.



4. Press the Up and Down Arrow buttons to highlight the appropriate language.

SYSTEM UTILITIES (CONTINUED)

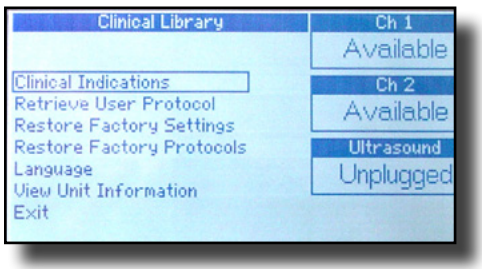


5. Press the Enter button to accept the highlighted selection.
   The unit now displays the language you selected.

Restoring Factory Settings

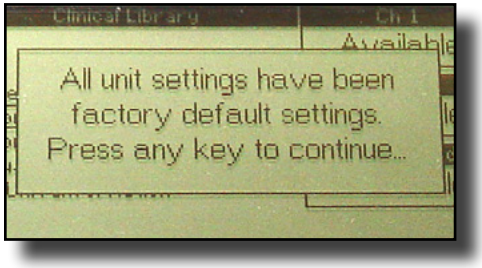
To restore the original language on the unit, do the following:

1. On the Home screen, press the Clinical Library button.
   The Clinical Library screen displays.



2. Press the Up Arrow or Down Arrow buttons to highlight the Restore Factory Settings option.
3. Press the Enter button to accept the highlighted selection.
   The Restore Factory Settings Confirmation screen displays.

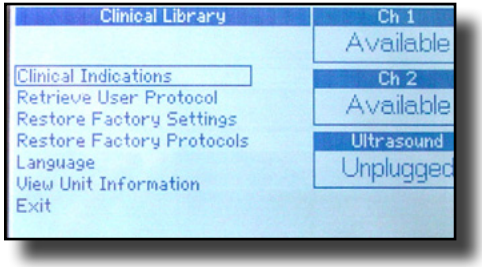
SYSTEM UTILITIES (CONTINUED)



4. Press any button on the Operator Interface.
   The default power up settings are restored and you are returned to the Clinical Library screen.

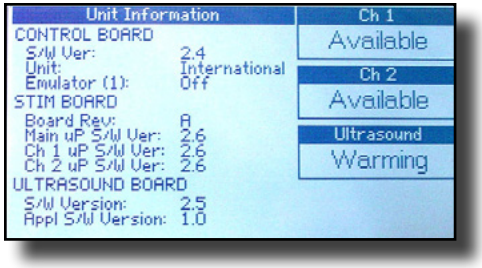
Viewing Unit Version Information

Use this utility to determine the unit's software version. To do this, do the following:



1. On the Home screen, press the Clinical Library button.
   The Clinical Library screen displays.
2. Use the Up Arrow and Down Arrow buttons to highlight the View Unit Information option.
3. Press the Enter button to accept the highlighted selection.
   The Unit Version Information screen displays.

SYSTEM UTILITIES (CONTINUED)



4. Press any key to return to the Clinical Library window.

ERROR CODES

The Intelect Mobile Combo displays error messages to inform the user of problems or potential problems with the unit, modality, or accessories. These are numbered so the user can possibly correct the problem without the aid of service personnel. Use the following Troubleshooting Charts to define the error codes, and locate the probable cause and possible remedies before contacting the dealer or factory for technical service.

Code Number	Type Message	Probable Cause	Possible Remedies
104	Message	User attempted to perform an electrotherapy session, but both channels are already in use.	**A.** Wait until the previous therapy session finishes. **B.** Press the STOP button to end the therapy session on either channel.
105	Message	User selected a two channel electrotherapy treatment, but at least one channel is already in use.	**A.** Wait until the previous therapy session finishes. **B.** Press the STOP button to end the therapy session on either channel.
106	Warning	Overcurrent	**A.** Check Electrodes and Lead Wires. Make certain Lead Wires are not damaged and are properly connected to the system. Make certain Lead Wires are properly connected to the Electrodes and that electrodes are not damaged and are making proper contact with treatment area. **B.** Replace Lead Wires and Electrodes.
107	Warning	Bad Contact Quality	**A.** Make certain Electrodes are making proper contact with the treatment area. **B.** Make certain Lead Wires are properly connected to Electrodes. **C**. Replace Electrodes and Lead Wires.
108	Warning	Shorted Lead Wires	**A.** Check Electrodes and Lead Wires. Make certain Lead Wires are not damaged and are properly connected to the system. Make certain Lead Wires are properly connected to the Electrodes and that electrodes are not damaged and are making proper contact with treatment area. **B.** Replace Lead Wires and Electrodes.
109	Message	While performing ultrasound therapy using the 10 cm^2 sound at an intensity greater than 15 W (1.7 W/cm^2), user attempted to begin an electrotherapy session on a second channel.	**A.** Use a smaller sound head. **B.** Set the ultrasound at an intensity less than 15 W (1.7 W/cm^2). **C.** Wait until ultrasound session is complete.
200-399	Message	Refer to Warning on next page.	Refer to Warning on next page.

ERROR CODES (CONTINUED)

⚠ WARNING

In the event that an Error message or Warning appears beginning with a 2 or 3, immediately stop all use of the unit and contact the dealer or DJO for service. Errors and Warnings in these categories indicate an internal problem with the unit that must be tested by DJO or a Field Service Technician certified by DJO before any further operation or use of the system.

Use of a unit that indicates an Error or Warning in these categories may pose a risk of injury to the patient, user, or extensive internal damage to the system.

TROUBLESHOOTING THE DISPLAY AND ERROR MESSAGES

Troubleshooting the Display



the

If you press the Power On/Off button, and the LCD remains blank longer than a few seconds, the contrast may require adjusting. To adjust it, turn the contrast control dial clockwise until

display contrast is optimal.

Troubleshooting Error Messages

The following messages are displayed on the LCD under the following conditions:

Message	Displayed When
Over Temp	sound head reaches a temperature which could damage the crystal
Unplugged	sound head not plugged in or faulty sound head
Uncoupled	sound head is not making good contact with the patient

Standard Accessories

Ref.	Description	Qty
27378	Electrotherapy Accessory Kit- Includes the following:	1
27312	Channel 1 Lead Wire [16/18 AWG, 98.43 in (250.012 cm), Unshielded]	1
27313	Channel 2 Lead Wire [16/18 AWG, 98.43 in (250.012 cm), Unshielded]	1
10648	Nylatex® Wrap	2
79967	6 x 8 cm Carbon Electrodes	4
79970	6 x 8 cm Electrode Sponges	4
42044	7 cm (2.75 in) Round Disposable Electrodes (4 per pack)	1
27335	5 cm^2 Applicator (Blue) [26 AWG, 68.89 in (174.143 cm), Shielded]	1
4248	Ultrasound Transmission Gel 255 g (9 oz) bottle	1
27979	User Manual (CD-ROM)	1

Optional Accessories

Ref.	Description
27333	1 cm^2 Applicator (Blue) [26 AWG, 68.89 in (174.143 cm), Shielded]
27334	2 cm^2 Applicator (Blue) [26 AWG, 68.89 in (174.143 cm), Shielded]
27336	10 cm^2 Applicator (Blue) [26 AWG, 68.89 in (174.143 cm), Shielded]
27478	NiMH Battery Pack
27467	Intelect Mobile Carrying Bag

Mains Power Cords

Ref.	Type	Qty
21284	Euro [18 AWG, 80 in (203.2 cm), Shielded]	1
78121	US [18 AWG, 80 in (203.2 cm), Shielded]	1
20971	Australian [18 AWG, 80 in (203.2 cm), Shielded]	1
20972	Swiss [18 AWG, 80 in (203.2 cm), Shielded]	1
20973	UK [18 AWG, 80 in (203.2 cm), Shielded]	1
20974	Danish [18 AWG, 80 in (203.2 cm), Shielded]	1
20975	Japanese [18 AWG, 80 in (203.2 cm), Shielded]	1
20976	Indian [18 AWG, 80 in (203.2 cm), Shielded]	1
20977	Israeli [18 AWG, 80 in (203.2 cm), Shielded]	1

NOTE: The Power Cord shipped with the unit will accommodate the electrical requirements for the country of use.

MAINTAINING THE UNIT

Cleaning the Unit and the Accessories

With the unit disconnected from the power source, clean the unit with a clean, lint free cloth moistened with water and mild antibacterial soap. If a more sterile cleaning is needed, use a cloth moistened with an antimicrobial cleaner.
Do not submerge the unit in liquids. Should the unit accidentally become wet, contact the dealer or DJO Service Department immediately. Do not attempt to use a unit that has been wet inside until inspected and tested by a Service Technician Certified by DJO.

To clean the Lead Wires, disconnect them from the unit and wipe down with a clean, lint free cloth moistened with water and mild antibacterial soap.

To clean the reusable electrodes, remove them from the Lead Wires and use distilled water on a damp cloth to wipe the surface regularly after usage.

The following items should be checked at least monthly to ensure proper operation of this unit:

- Power cord and plug: Check to make sure the cord is not frayed, kinked, and does not have torn or cut insulation.
- Applicator cable: Check to make sure the cable is flexible, free of kinks, not frayed, and the insulation is intact.
- Sound head face: Check to see that there is no build-up of gel or foreign material on the aluminum face.

NOTE: The sound head must be cleaned with alcohol between each therapy session. The aluminum surface may be disinfected with alcohol, but avoid the plastic area.

NOTE: The unit must be recalibrated annually.

SERVICE

Should the unit require service, warranty, or repair, please contact the selling dealer or your local DJO customer service.

Council Directive 2002/96/EC concerning Waste Electrical and Electronic Equipment (WEEE) indicates a requirement not to dispose of WEEE as municipal waste. Contact your local distributor for information regarding disposal of the unit and accessories.



WARRANTY

DJO, LLC ("Company"), warrants that the Intelect Mobile Combo ("Product") is free of defects in material and workmanship. This warranty shall remain in effect for three years (36 months) from the date of original consumer purchase. If this Product fails to function during the three year warranty period due to a defect in material or workmanship, at the Company's option, Company or the selling dealer will repair or replace this Product without charge within a period of thirty days from the date on which the Product is returned to the Company or the dealer. All repairs to the Product must be performed by a service center certified by the Company. Any modifications or repairs performed by unauthorized centers or groups will void this warranty.

The warranty period for accessories is 180 days. Accessories include Lead Wires, Electrodes, and Nylatex.

The warranty period for applicators is one year (12 months).

This warranty does not cover:

- Replacement parts or labor furnished by anyone other than the Company, the selling dealer, or a service technician certified by the Company.
- Defects or damage caused by labor furnished by someone other than Company, the selling dealer, or a certified Company service technician.
- Any malfunction or failure in the Product caused by product misuse, including, but not limited to, the failure to provide reasonable and required maintenance or any use that is inconsistent with the Product User's Manual.
- DJO, LLC is not responsible for injury or damage resulting from modifications or service performed by non-authorized DJO, LLC service personnel.

COMPANY SHALL NOT BE LIABLE IN ANY EVENT FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some locations do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

To obtain service from Company or the selling dealer under this warranty:

1. A written claim must be made within the warranty period to the Company or the selling dealer.
2. The Product must be returned to the Company or the selling dealer by the owner.

This warranty gives you specific legal rights and you may also have other rights which vary from location to location.

The Company does not authorize any person or representative to create for it any other obligation or liability in connection with the sale of the Product.

Any representation or agreement not contained in the warranty shall be void and of no effect.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED,
INCLUDING ANY WARRANTY OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

chattanooga™

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