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SSD-500

SHORTWAVE DIATHERMY

INSTRUCTION MANUAL

Precautionary Instructions

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-

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-

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

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



CAUTION

- Read, understand and practice the precautionary an operating instructions. Know the limitations and hazards associated with using any electrical stimulation device. Observe the precautionary and operational decals placed on the unit.
- DO NOT operate the unit in an environment of short-wave diathermy use.
- DO NOT use sharp objects such as a pencil point or ballpoint pen to operate the buttons on the control panel as damage may result.
- This unit should be operated, transported and stored in temperatures between 59^oF and 104^o (15^o C and 40^oC), with Relative Humidity ranging from 30%-60%.



WARNING

- This device should be kept out of the reach of children.
- 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.

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1. INSTRUCTION FOR THE USER OF SHORTWAVE THERAPY

Please read this instruction manual carefully before using **SSD-500** because it is unsafe to start using the device before reading the whole manual. The instructions on the following pages will show you how to use and care for your **SSD-500** in a general manner. You should be particularly familiar with the prescription information and precautions before proceeding.

CAUTION: This device should be used only under the continued supervision of a physician or licensed practitioner.

1.1 Indications for use:

- Increased circulation
- Increased out-flow of lymph
- Increased removal of waste products
- Relaxation of spastic muscles
- Overall reduction of pain and decrease spasm
- Vasodilatation

It provides therapeutic heat indicated for the treatment of:

- Disorders of the musculoskeletal system, e.g. degenerative joint disease
- Chronic rheumatoid arthritis and osteoarthritis
- Sprains & Strains
- Hematoma
- Muscle and tendon tears
- Capsule lesions
- Inflammatory conditions (chronic or acute)
- Carbuncles Sinusitis
- Pelvis conditions

1.2 Contraindications

Shortwave Therapy is contraindicated for treatment in following cases:

- **Pacemakers:** Some but not all pacemakers can be adversely influenced by shortwave and pulsed shortwave fields. The current recommendation is that a 3m separation should be maintained between a patient with a pacemaker and an operating shortwave (continuous or pulsed) unit.

- **Over Bleeding Tissues:** It is fine to apply pulsed shortwave diathermy soon after an injury so long as in the clinical judgment of the therapist, tissue bleeding has stopped.
- **Hemorrhage:** The heating of tissues by a diathermy current causes dilatation of blood vessels, so it should not be employed directly after an injury or in any case where hemorrhage has recently occurred it should not be applied to the abdomen or pelvis during menstruation nor should it be used for conditions in which hemorrhage might occur, such as gastric or intestinal diseases associated with ulceration or hemophilia.
- **Malignancy:** Pulsed shortwave diathermy, like Ultrasound and Laser has the capacity to increase the rate of division of malignant tissue.
- Avoid active epiphysis regions in children.
- Severe circulatory compromise or deficit including ischemic tissue, thrombosis and associated conditions.
- **Arterial disease: SSD-500** should not be applied to parts which have a defective arterial blood supply. The inability of the circulation to disperse the heat could result in an increase of temperature to a level which could produce a tissue burn. Moreover the unsatisfied tissue demand for nutrients could precipitate gangrene.
- **Pregnancy: SSD-500** should not be applied to the abdomen or pelvis during pregnancy. Disturbed skin sensation it is safer to avoid the application of diathermy to areas where there is loss skin sensation.
- **Tumors: SSD-500** should not be applied in the region of malignant growths. The increase in metabolism resulting from the increase in temperature could accelerate the rate of growth.
- **X-ray therapy:** X-rays devitalize the tissues and render them more susceptible to damage. **SSD-500** should therefore not be applied to areas recently exposed to therapeutic of X-Rays.
- **Patients at particular risk:** It is unsafe to apply **SSD-500** to patients who are unable to understand the degree of heating required and the necessity of reporting excessive heating. For this reason small children and mental defectives are not suitable for treatment, similarly it is not safe to treat unconscious patients or those who are liable to lose consciousness, such as epileptics.

1.3 Warnings

- Should not be used while sleeping.
- Persons with pacemakers or other implants, who have cancer or cognitive dysfunction, who have epilepsy, who have had recent surgery or injury, are under medical care or who are pregnant should not use the product unless they have cleared it with their doctor first.
- Do not use the unit in close proximity (Approx 3 Mtr.) to short wave or microwave therapy equipment or if you are connected to high-frequency surgical equipment (e.g. diathermy) because of the risk of device malfunction due to electronic interference.
- This product is not intended to diagnose, treat, cure or prevent pain or disease.
- From considerations of safety, only original electrode cables and electrodes from manufacturers should be used.
- The patient must be in sight of the therapist at all times.

1.4 Precautions

- Avoid treatment of the abdomen and pelvis during menstruation.
- Avoid specialized tissues such as eye and chest.
- The electrode cables must run free from surrounding objects and must maintain sufficient distance with respect to each other as well as with respect to the treated patient.
- The patient must be warned not to touch the electrodes.
- Any electrical current applied to the head may cause giddiness. All diathermy treatments to the head should be given with the patient fully supported and if possible, with the head in a horizontal or an erect position.
- The action of cardiac pace-makers, hearing aids and other electronic devices may be affected by disturbances set up by the short wave diathermy current.
- Leads may be damaged by overheating if they are allowed to make contact with a conductor.

- Treatments should not be carried out with the patient resting on a spring mattress, as sparking between the springs may be sufficient to ignite the mattress.
- Metal objects and anything that is damp should be removed from the vicinity of the area to be treated i.e. at least 30 cm away from the electrodes.
- Wounds and sinuses must be cleansed and covered with a dry dressing before commencing treatment.
- Hearing aids must be removed and left well away from the unit, as induced currents may cause serious damage to them.

1.5 Adverse Reaction

Some patients may experience minor heat burns, blisters or skin irritation due to the concentration of electric field, hypersensitivity, impaired blood flow or skin being in contact with leads. Patients may feel giddiness due to improper position during treatment or slight faintness in some cases. If burns or inflammation persist discontinue treatment and consult your therapist.

2. INTRODUCTION

Your health care provider has chosen to prescribe or order the SSD-500 for your use. The SSD-500 has been designed by engineers with years of expertise and knowledge in the medical device industry. This is one of the first units to provide shortwave diathermy with a solid state generator. Solid State Shortwave Therapy SSD-500 is a device that uses electromagnetic energy in the shortwave frequency range (3-30 MHz) for therapeutic purposes. The unit includes the shortwave generator with all associated electronics, controls, enclosures and the electrodes. The shortwave generator generates radio-frequency radiation and transfers it, via cables and electrodes (pad), to the selected treatment area. The unit has two modes, continuous and pulsed to produce heat in the deep tissue. The heat increases the flow of blood in the tissues through dilation of the blood vessels. This in turn increases capillary pressure, cellular membrane permeability, and metabolic rate, causing a more rapid transfer of nutrients from the blood across cell membranes. These actions help reduce pain and promote quicker healing.

3. DESCRIPTION

This new elegant High power Shortwave Therapy **SSD-500** unit is mounted on wheels for easy mobility with Pad Electrodes is easy to handle and is very sturdy equipment. **SSD-500** is a shortwave unit that enables HF energy to be applied selectively deep in the tissues and joints without unnecessarily affecting the surrounding area.

SSD-500 unique induction field circuitry provides a short-wave frequency of 27.12 MHz that penetrates deep into muscle tissues with negligible heating in the fatty layer or bone. This is affected through capacitive or inductive electrodes. The capacitive electrodes have a larger surface effect, the induction electrodes provides a larger effect in the deeper tissues. The equipment is only meant to be used by professionals or trained personnel in physiotherapy, rehabilitation or any type of Hospital setup.

4 ACCESSORIES**Standard Accessories:**

S.No.	Name of Accessory	Qty.
1.	Pad Electrodes	2
2.	SWD Cable	2
3.	AC Cord	1
4.	Instruction Manual	1
5.	Pad Stand Black	1
6.	Fuse Fast Blow 250V 5A	20

Optional Accessories:

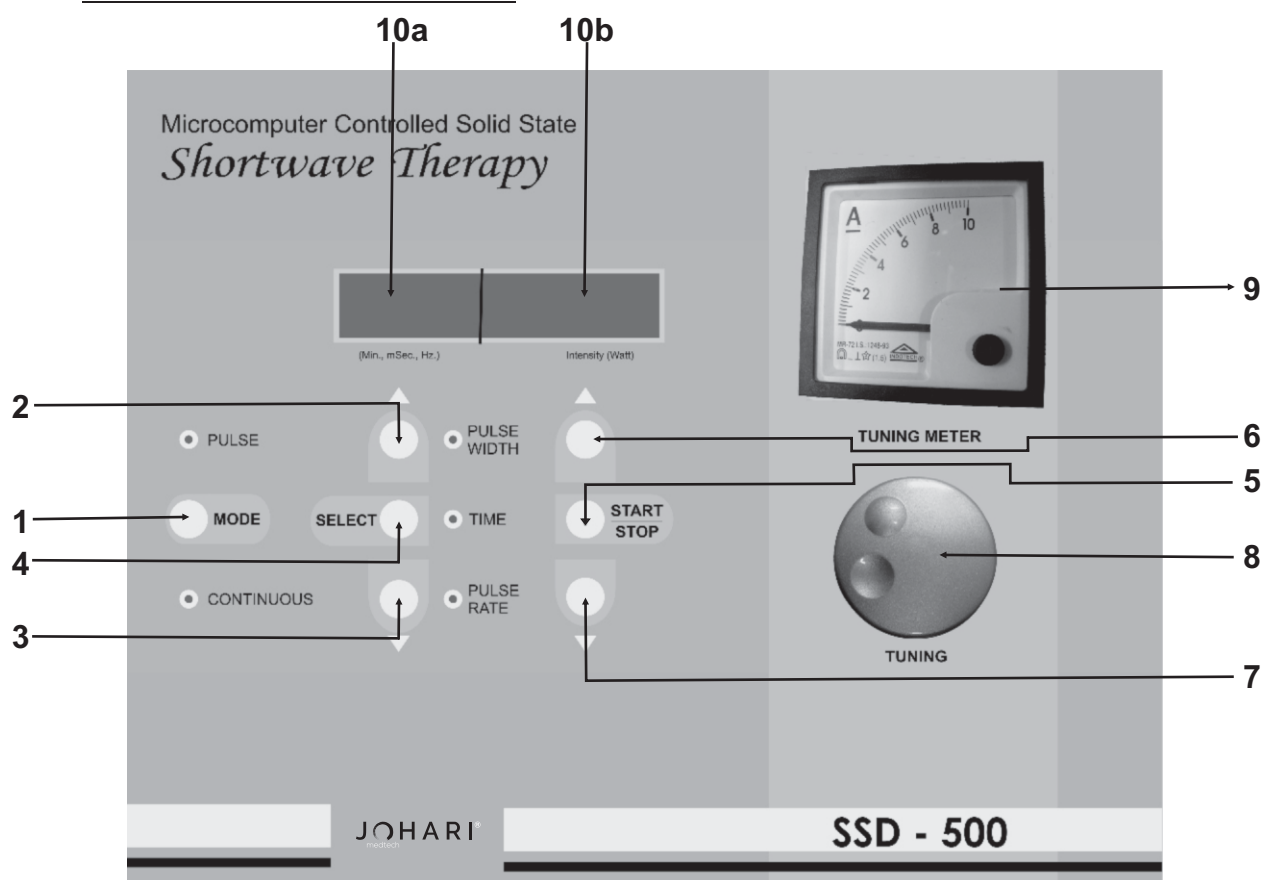
S.No.	Name of Accessory	Qty.
1.	Disc Electrode	2

Note: Charges will be made for optional accessories.

*For ordering of accessories, please refer to page #13.

5 TECHNICAL SPECIFICATIONS

Description	Specifications
Waveform	Symmetrical Biphasic Square Wave
Mode	Continuous and Pulsed
Output Power	Continuous Mode: 250 Watt Pulsed Mode : 500 Watt
Treatment Time	Selectable from 1 to 30 minutes
Power Selection	Selectable in 4 steps
Pulse Width	Selectable from 1 to 4 millisecond (in pulse mode only)
Pulse Rate	Selectable 100, 150, 200 & 225 Hz (in pulse mode only)
Frequency	27.12 MHz
Wave Length	11 Meters
Operating Voltage	220 VAC/ 50 Hz.

6. CONTROLS & FUNCTIONS

1. **Mode Key:** To select desired mode (continuous or pulse)
2. **Increment Key:** To select pulse width in Pulse mode and also to increase the values of Pulse width, Pulse rate and treatment time.
3. **Decrement Key:** To select Pulse rate in Pulse mode and also to decrease the values of Pulse width, pulse rate and treatment time.
4. **Select Key:** To select Pulse width, Pulse rate, treatment time and to enter the selections.
5. **START/ STOP Key:** To start/stop the unit.
6. **Increment Key:** To increase the intensity.
7. **Decrement Key:** To decrease the intensity.
8. **Tuning knob:** To tune intensity.
9. **Tuning Meter:** Displays maximum current flow when tuning is adjusted.
10. **Display:** Segment 10a is for Time, Pulse Width and Pulse Rate and Segment 10b is for Intensity.



- 11. Output Sockets**
- 12. Pads (Electrodes)**
- 13. SWD Cable**

7. OPERATING INSTRUCTIONS

NOTE:

1. Do not Remove "Foam" from pad electrodes.
2. Please do not ON the unit without inserting cables & pads.
3. To Prevent the unit from overheating, unit must rest for 10-15 minutes between the next treatment.
4. Do not overlap or short both pads while machine is in "ON-STATE"

Step 1: Insert SWD Cable into the Output Socket and its other end into the Pad Electrodes.

Step 2: Insert 3 Pin AC Cord into the AC receptacle and Switch ON the unit using Rocker Switch.

Note: LED at TIME & CONTINUOUS will glow.

Display will show "015" as default treatment time and "000" as default intensity.

Continuous Mode

Step 3: When the unit is switched On Continuous mode is selected by default.

Step 4: Press TIME key to select treatment time.

Note: "015" in the display window and TIME LED will start flashing.

Step 5: Select desired treatment time using ▲ or ▼ key, above the SELECT Key. (Selectable from 1 to 30 minutes)

Step 6: Press SELECT key to confirm.

Step 7: Press START/STOP key to start the treatment.

Note: "000" in the intensity display window will start flashing.

Step 8: Select desired Output intensity using ▲ or ▼ key, above the START/STOP Key. (Selectable 100, 150, 200 and 250)

Step 9: Tune the intensity using TUNING knob.

Note: The output intensity in Amperes will be displayed in TUNING METER. During the treatment, display window will always indicate balance treatment time and selected intensity. Treatment time ends with buzzer's beep sound and the unit will goes to main menu.

Step 10: Switch OFF the unit using the Rocker Switch.

Pulse Mode

The user can switch between the modes by pressing the MODE Key. To take treatment in Pulse Mode follow the steps given below:

- Step 1:** Press MODE key to select PULSE MODE.
Note: LED at PULSE will glow.
- Step 2:** Press PULSE WIDTH key.
Note: Display will show the default pulse width.
- Step 3:** Press SELECT key.
Note: The default pulse width in the display window and PULSE WIDTH LED will start flashing.
- Step 4:** Select desired pulse width using ▲ or ▼ key, above SELECT Key. (Selectable from 1 to 4 millisecond)
- Step 5:** Press PULSE RATE key.
Note: Display window will show the default pulse rate.
- Step 6:** Press SELECT key.
Note: the default pulse rate and LED at PULSE RATE will start flashing.
- Step 7:** Select desired pulse rate using ▲ or ▼ key, above SELECT Key. (Selectable 100,150,200 and 225 Hz)
- Step 8:** Press TIME key to select treatment time.
Note: Default treatment time and LED at TIME will start flashing.
- Step 9:** Select desired treatment time using ▲ or ▼ key, above SELECT Key. (Selectable from 1 to 30 minutes)
- Step 10:** Press SELECT key to confirm.
- Step 11:** Press START/STOP key to start the treatment.
Note: Display will start flashing “000” at intensity display window.
- Step 12:** Select desired Output intensity using ▲ or ▼ key, above SELECT Key. (Selectable 100,200,350 and 500)
- Step 13:** Tune the intensity using TUNING knob.
Note: The output intensity in Amperes will be displayed in TUNING METER. During the treatment display window will always indicate balance treatment time and selected intensity.
Treatment time ends with buzzer's beep sound and the unit will goes to main menu.
- Step 14:** Switch OFF the unit using the Rocker Switch.

8. MAINTENANCE

Cleaning

- The soiled unit should be cleaned with a damp cloth.

Storage

- Keep the unit properly covered, when not in use. This will help to keep out of dust.
- Do not store the unit in a damp environment.
- Pads and Cable should be kept loosely winded or breakage may occur.

9 WARRANTY

This product's warranty extends to the original consumer/ purchaser of the product.

Warranty Coverage

This product is warranted to be free from defects in materials and workmanship for a period of one (1) year. This warranty ceases if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service, commercial use, repair by unauthorized personnel or cause not arising out of defect in materials or workmanship. This warranty does not extend to any units which are used in violation furnished by manufacturer, or to units which have been altered or modified, or to damage to products or parts which had the serial number removed, altered or defaced or rendered illegible.

Warranty Disclaimers

This warranty is in lieu of all warranties expressed or implied and no representative or person is authorized to assume for manufacturer any other liable in connection with the sale of our products. There shall be no claims for defects or failure of performance or product failure/ any theory of sort, contract or commercial law including, but not limited in negligence, gross negligence, and strict liability, breach of warranty and breach of contract. Some states do not allow the exclusion or limitation of implied warranties or consequential damages, so the above limitations may not apply to you. Manufacturer is not responsible or liable for indirect special or consequential damages arising out of or in connection with the use/performance of the product or other damage with respect to loss of property or loss revenues or profit.

Legal Remedies

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

Warranty Performance

During the above one-year warranty period, a product with a defect will be repaired or replaced with a reconditioned comparable unit at distributor's

option when the product is returned to the distributor. The repaired or replacement product will be in warranty for the balance of the one-year warranty period and an additional one month period. No charge will be made for such repair or replacement.

Consumer Service

For in warranty service for a product covered under the warranty period, no charge is made for service and return postage. Please return the product insured, packed with sufficient protection, postage insurance, prepaid to the address. Customer's duty/brokerage fee, if any, must be paid by the consumer.

Out Of Warranty Service

There will be charges rendered for repairs made to the product after the expiration of the one (1) year warranty period, after purchaser is advised appropriately.

The distributor cannot assume responsibility for loss or damage during shipment. For your protection, carefully pack the product for shipment and insure it with the carrier. Ensure that you return the unit and accessories related to your problem and also that you indicate full return address. Also send a copy of sales receipt or other proof of purchase to determine warranty status. C.O.D. shipments cannot be accepted

List of accessories : (In case of replacement or ordering)

Name of Accessory	Part No.
Pad Electrodes	40CFG00010
SWD Cable	40CFG00040
AC Cord	40SEC00136
Pipe PVC Flexible	30BME00022
Disc Electrode	40CPG00039
Pad Stand Black	40CPG00005
Fuse 5A 250V	40SEE00048



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