

# CLINICAL PROCEDURE GUIDE



## SPECTRALASE 980

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## INTRODUCTION

Spectrum Lasers Inc and Spectrum International Inc want you to be totally satisfied with your new laser and use it on a regular basis. Please contact us if you need any assistance with any aspect of clinical treatment or set up.

The SPECTRALASE Diode Laser is indicated for conservative orthodontic soft tissue procedures. Most procedures can be performed easily and quickly with a TAC 20 topical anesthetic without bleeding, recession, swelling, or pain.

**All clinical procedures performed with SPECTRALASE diode laser must be subjected to the same clinical judgment and care as with traditional techniques. Patient risk must always be considered and fully understood before clinical treatment. The practitioner should always set the laser system for minimal exposure to the patient. Optimal parameters for laser surgery may be achieved by starting with the power as low as possible and increase each parameter as necessary. Power levels affect precision of cut, rate of tissue removal and thermal damage to adjacent tissues.**

The Directions For Use Manual and this manual must be read thoroughly and understood prior to use of the laser system.

Caution: The intended use is for dentists only. Adjustments to controls or internal parts may result in hazardous energy exposure.

This manual is meant to be a guideline and it is recommended that additional laser education be obtained.

4.

**GENERAL LASER TIPS:** A diode laser is an end cutting instrument. The hand piece should be held with a pen grasp at a 45-90 degree angle. Make light contact with the tissue and use short and slow paint brush strokes to gently vaporize away the target tissue. The target tissue should be kept as dry as possible. Lightly glide the fiber tip on the target tissue removing a thin layer at a time. Use suction to collect the slight plume and a damp with water 2x2 to remove any tissue that may collect on the fiber tip. The tip does not require re-carbonizing after each wiping. Clean loose tissue and tissue tags with hydrogen peroxide and a cotton roll or micro brush. Puncture a vitamin E gel cap and massage gel on tissue prior to dismissing the patient.



Everyone within 6 feet of the laser beam should wear protective laser glasses, including the patient.

SPECTRALASE has virtually no affinity to water or hydroxyapatite. This allows the SPECTRALASE to be safely used in close proximity to tooth structure, bone, and metal.

**When cutting tissue, always use a carbonized tip and CW (continuous wave) mode.** The pulse setting is only used by a hygienist to decontaminate the sulcus usually in conjunction with scaling and root planning. In 39 states a hygienist is licensed to use a laser for curettage.

**It is always best to use the lowest energy setting possible to achieve your goal while avoiding charring.** Any dark brown or black char is the result of too high an energy setting. Char must be lightly scrubbed away with 3% hydrogen peroxide with a micro brush or cotton roll. The user cannot lase through charred tissue. It will exfoliate within 24 hours.

**Start at 1.0W-1.2W for normal tissue and increase as needed. Fibrous tissue will usually require 1.6W-1.8W.** Higher wattage is rarely used. SPECTRALASE wattage extends to a 3W setting used for thick and/or fibrous tissue excision.

For patient comfort use air to cool on the target tissue while lasing if needed.

**Post Operative Instructions:** Brush gently with a soft tooth brush, avoid salty, spicy, and citrus foods. Ibuprofen can be prescribed if needed. To our knowledge, pain medication has not been necessary.

5.

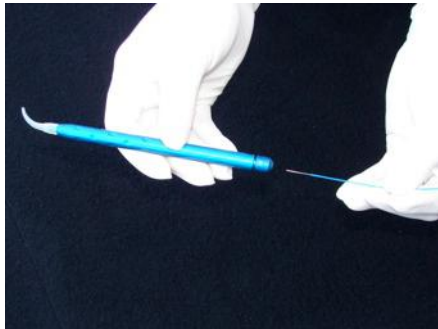
## PROCEDURES GUIDE

### PREPARATION

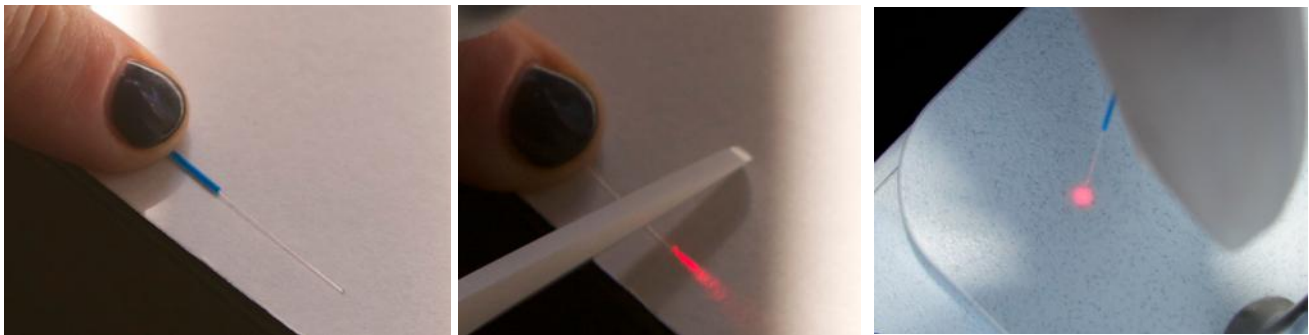


**Strip Fiber:** Insert the fiber through the round hole fiber guide approximately 1 inch. Squeeze handles together and firmly pull fiber out with other hand. Similar to stripping electrical wire.

**Hand Piece:** Loosen hand piece nut, insert fiber through the nut end and through a clear tip



extending fiber beyond tip approximately 5mm. Tighten down end nut. Do not remove end nut to avoid losing the compression fitting.



**Fiber Cleaving.** Cleave the fiber after each procedure.

Always wear safety goggles during fiber cleaving procedure. With the aiming on. Hold the fiber approx 1 inch parallel to the edge of a counter.

6.

Hold the fiber firm so it won't slip. Open the blades of the scissors and make 1 score or scratch approx 3mm from the end of the clear fiber end. With an open blade held at about a 45 degree angle, pull the blade towards you for about a 1/2 inch. Not hard to break the fiber and stop before reaching the end the blade. Look for a red light scratch mark, break off and check for a circle of light.



**Carbonizing the Fiber Tip.** Set laser at 0.8W pulse, contact the fiber tip with the shiny side of the articulating film furnished or a Sharpie and depress foot pedal. Coat the tip and approximately 2mm up the side of the fiber the tip with carbon. Carbonization is very important and must be done to cut tissue at low energy settings. Re-carbonize after every 2-3 minutes of use. The tip does not require re-carbonizing after each tip wiping. A black Sharpie can be used instead of articulating paper.

**Topical:** For normal tissue apply a medium thick layer, similar to applying etch, and leave to penetrate for approximately 3 minutes. Leave for an additional 2-3 minutes for fibrous or thick tissue. Reapply if needed. Remove before lasing by wiping or using suction. Do not rinse.

**Tray Setup:** periodontal probe, dish with 3% hydrogen peroxide, topical, cotton applicator, cotton rolls, 2x2 gauze, articulating paper, 2 vitamin E gel caps, and forceps.



7.



**ACCESS GINGIVECTOMY/GINGIVOPLASTY:** 1.0W-1.2W pulse Carbonized tip, Begin at the gingival margin and gently vaporize away the target tissue, similar contact to a water coloring stroke, lightly gliding the fiber tip on the tissue removing a thin layer at a time until the desired height is reached. Fibrous tissue: increase power setting to 1.4W-2.0W CW, Excisions: grip with forceps and lase at the base.

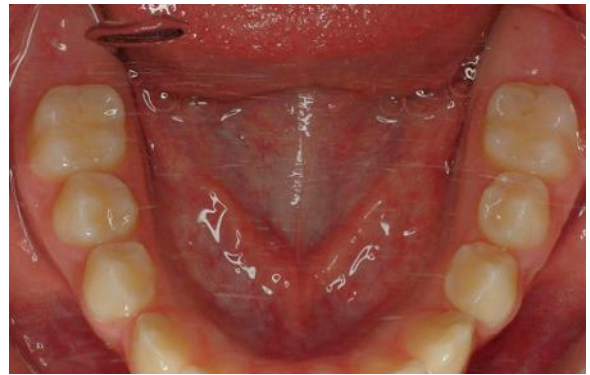


8.





9.



**TOOTH EXPOSURE:** 1.0W-1.2W, pulse, carbonized tip, increase power as needed for fibrous tissue, use a probe to locate tooth and mark guide lines in the attached tissue with a periodontal probe. Gently make an incision around the perimeter of the tooth by lasing away a layer of tissue at a time. This may require a number of passes to make an incision deep enough to reach the tooth. The incision is not made with one pass as with scalpel incisions. Upon reaching the tooth, retract the flap covering the tooth with cotton pliers and lase underneath to release it. A simple exposure should take about 1 minute to complete. Molars and deep exposure will require more time.

10.



**Biological Width:** Care must be taken to avoid violation of the biological width. Probe to mark desired gingival height guidelines while ensuring 1mm of sulcus remains when finished.

11.



**SMILE DESIGN/ANTERIOR GINGIVAL HEIGHT:** 1.0W-1.2W, pulse, carbonized tip, Smile design is much easier and less time consuming if the tissue has 3 to 5 months to settle after de-banding. Results will be predictable by using low energy levels. Care must be taken to avoid violate of the biological width. Probe to mark desired gingival height guidelines while ensuring 1mm of sulcus remains when finished. For minor adjustments start at the gingival margin and lase to the guide mark cleaning skin tags with peroxide frequently. Start with a central incisor and finish one side of the midline; then lase the contralateral side to establish symmetry. Apply vitamin E gel to lased areas before dismissing the patient.

**Soft Tissue Crown Lengthening** 1.0W-1.2W, pulse, carbonized tip. For cases in which 3mm or more will be removed, start at the probe mark and lase an incision to the tooth, shaping to the desired arc for the case. Lift away the excess tissue, clean and lase the contralateral side for symmetry.

**Recontouring Anterior Tissue:** 1.0W-1.2W, pulse, carbonized tip, Thin bulbous tissue by beginning 2-3mm above the gingival margin and moving the fiber tip lightly, quickly and both vertically and horizontally cross-hatching the area. It is important to frequently scrub away loose tissue with hydrogen peroxide and a cotton roll.

**Beveling the Gingival Margin:** 1.0W-1.2W, pulse, carbonized tip, To smooth the edges and to give the tissue a knife edged appearance, carbonize the tip up the side of fiber approximately 2mm. Lay the fiber on its side. Using the side of the fiber tip and a very light feather touch, quickly move the fiber vertically on the gingival margin to slightly thin the tissue.



13.



Day of Laser Surgery



Eleven Days



Six Weeks



**Frenectomy** 1.7W-2.0W, pulse, carbonized tip, Retract the lip using a 2x2 gauze and pull the frenum taut. Lase with a horizontal stroke approx 3mm up from the frenum base at the bone. Tissue will absorb the energy for approx 10 seconds before cutting, continue with a horizontal stroke and move up towards the lip. The depth of the wound should be near the periosteum. Do not cut the periosteum. Increase the width of the diamond shaped wound and smooth the edges to avoid reattachment. Smooth the remaining tissue at the base of the frenum. Sutures or dressing are generally not necessary.





Access Gingivectomy



Access Gingivectomy

**Operculectomy:** 1.6W pulse, carbonized tip, Isolate the area and apply topical anesthetic for 6-7 minutes. Remove and allow approximately 10 minutes for the topical to absorb into the tissue. Dry the area as well as possible before lasing. Grab loose flapping tissue and pull taut. Make an incision with a series of passes to reach the desired depth. Undermine the flap and lift off the tissue piece. Smooth the edges. Because the tissue is fibrous and thick you may need to re-apply topical for patient comfort.

**Aphous ulcers:** 2.0W, pulse, non-carbonized tip, Begin by placing the fiber tip approx 1" from the lesion and move as close as possible without causing discomfort, usually 6-8mm. Lase during four 30 second intervals with approximately 10 seconds to cool between applications. Use air on the lesion to cool while lasing.

**Hemostasis:** 2.0W, cw, non-carbonized tip, out of contact, 1-2mm away from the site and use a very slow sweeping motion.



**Laser Troughing/Margin Exposure, 1.0-1.2W, pulse mode, carbonized tip**

Use short brush strokes to gently widen the sulcus around the tooth. Angle the fiber slightly toward the tooth and vaporize an epithelial cell layer with each pass. Use light pressure around a quarter of the tooth at a time. Two or three passes may be required to achieve the desired trough depth or width. Lasing time is usually 2-3 minutes per tooth.



**Gingivectomy and Gingivoplasty: 1.0W-1.2W, pulse mode, carbonized tip**, gently vaporize away the target tissue, similar contact to a water coloring stroke, lightly and slowly gliding the fiber tip on the tissue removing a thin layer at a time. **Fibrous tissue: increase power as needed 1.4W-2.0W, pulse mode.**



Excisions, grip with forceps and lase at the base.



### **Periodontal Therapy, closed pocket**

The patient is anesthetized with local anesthetic and pocket depths are probed. Laser therapy is an adjunct procedure to scaling and root planing

#### **Step 1. Perio De-contamination, 0.6W, pulse mode, non carbonized tip**

Set the fiber length to the depth of the deepest pocket and place the fiber in the sulcus parallel to the root or implant surface at the bottom of the sulcus. Use a light paint brush stroke aiming the fiber at a slight angle toward the pocket lining and not the root surface. Keep the fiber moving slowly and gently with horizontal and vertical motion from the pocket base towards the coronal portion of the tooth for approximately 10 seconds per tooth depending on pocket depth and location. Decontamination includes the entire circumference of the tooth or implant. Periodontal bacteria are selectively destroyed by the laser's light energy resulting in a significant reduction in sulcular bacterial levels. The calculus adherence to the root surface is modified by the laser energy so its removal is readily accomplished.

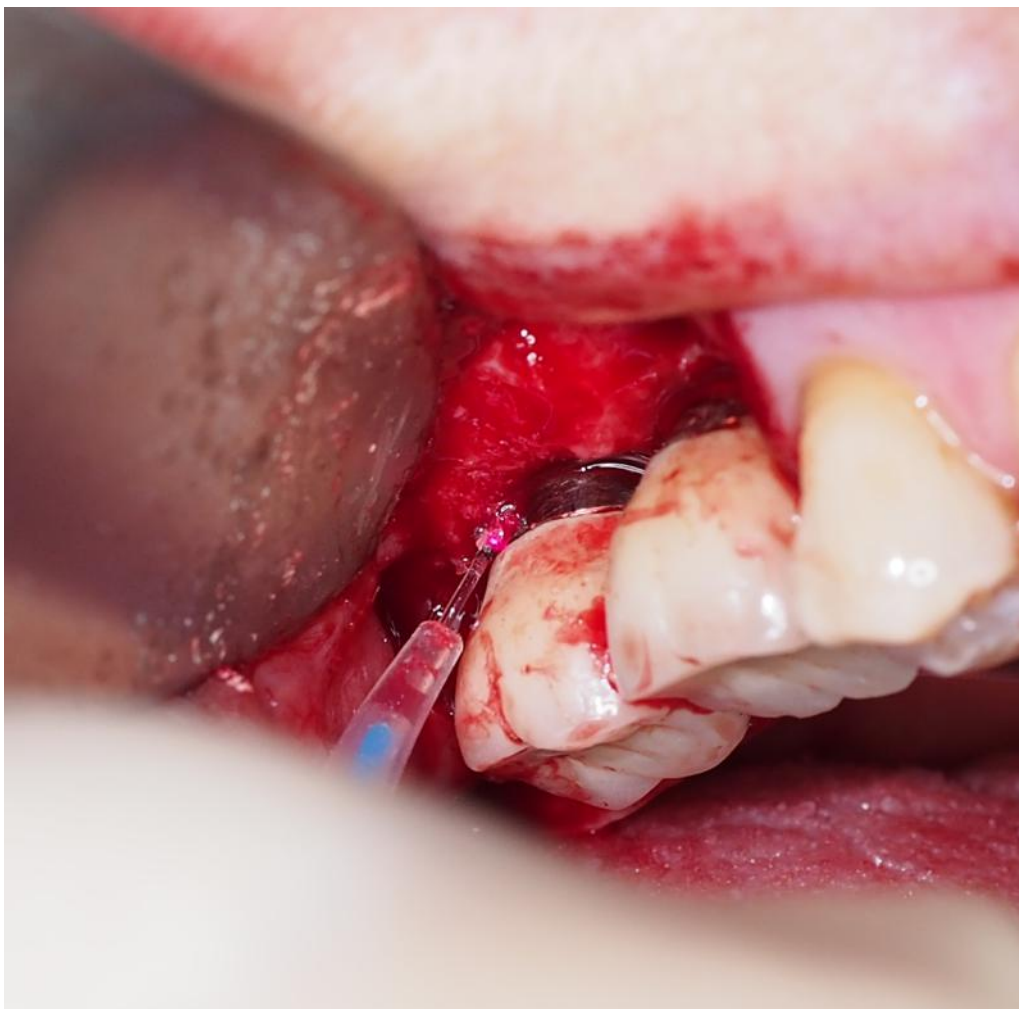
**Step 2. Remove hard deposits with ultrasonic scaler and hand instruments.**

**Step 3. Laser Curettage/Sulcular Debridement, 0.7W, pulse mode, carbonized tip**

Remove the diseased epithelial lining using the same motion as above for 30 seconds to 1 minute per area depending on depth and location. Inter-proximal areas will take longer than facial or lingual areas. Molars with furcation involvement require increased time. Flush the pockets with water. Laser energy selectively removes the diseased, infected and inflamed pocket epithelium while preserving healthy connective tissue. Aseptic hemostasis is achieved. Compress the gingival tissue against the root surface. No sutures or adhesives are needed. Mobile teeth above class II mobility are splinted. Occlusal adjustments may be required to remove interferences and minimize trauma. Laser curettage will require up to 10 minutes per quadrant or 30-45 minutes for the entire mouth during one appointment.

**Step 4. Post Operative Instructions**

Laser curettage rarely causes post-operative discomfort. Ongoing periodontal maintenance appointments are scheduled. Patients are monitored after 30 days and then every 3 months for periodontal maintenance. No subsequent probing is performed for nine months to a year to allow sufficient healing and reattachment. Decontamination should be performed during perio maintenance appointments only at the top of the pocket with caution to avoid disturbance of newly formed attachments at the base of periodontal pockets.





## **SETTINGS FOR IMPLANTOLOGY LASER, OTHER LASERS USE ABOVE PERIO SETTINGS**

### **Step 1. Peri-Implantitis, de-contamination, CLOSED POCKET treatment, 0.6W, pulse mode, non carbonized tip**

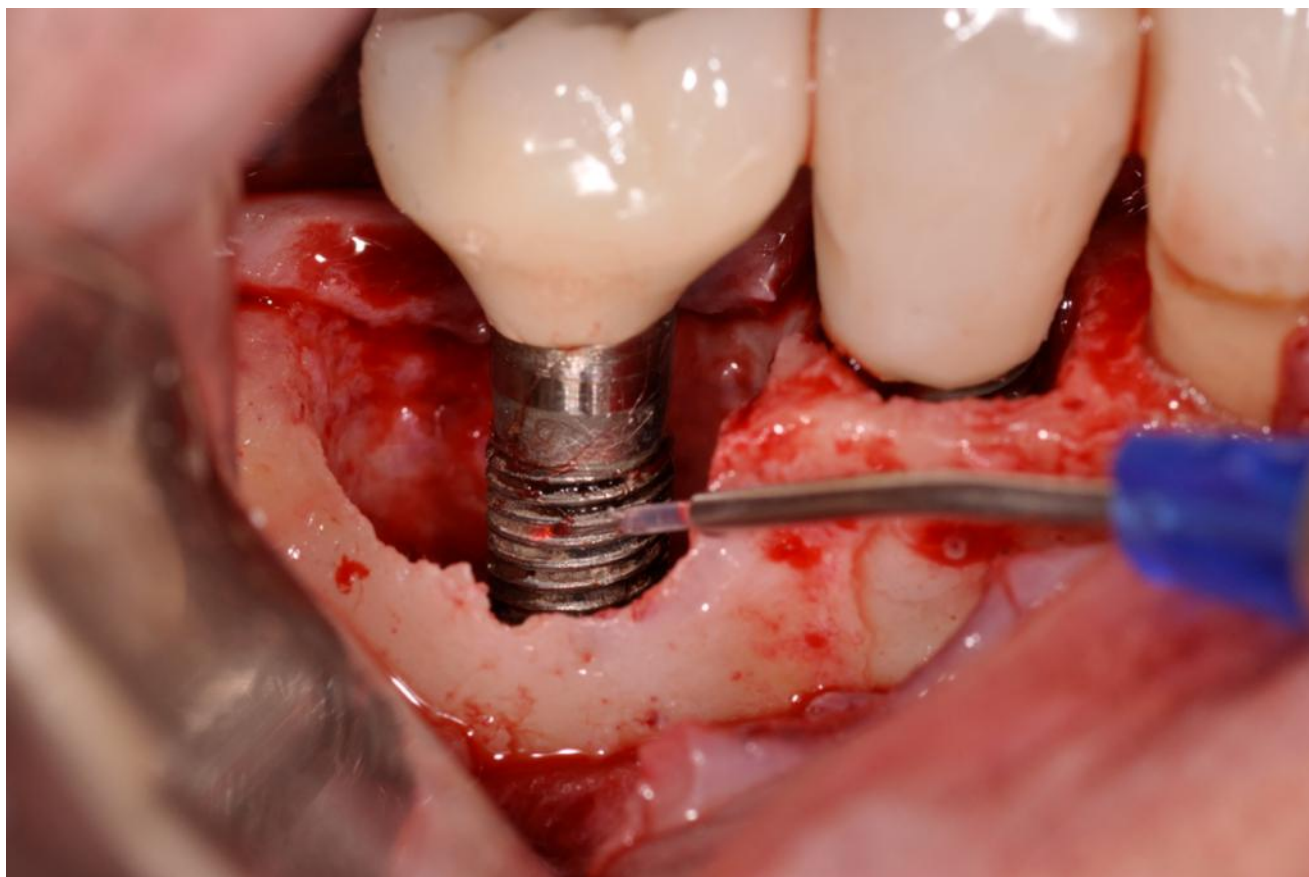
Set the fiber length to the depth of the deepest pocket and place the fiber in the sulcus parallel to the implant surface at the bottom of the sulcus. Use a light paint brush stroke aiming the fiber at a slight angle toward the pocket lining and not the implant surface. Keep the fiber moving quickly and gently with horizontal and vertical motion from the pocket base towards the coronal portion of the tooth for a maximum of 15 seconds per tooth. Decontamination includes the entire circumference of the implant. Periodontal bacteria are selectively destroyed by the laser's light energy resulting in a significant reduction in sulcular bacterial levels. The calculus adherence to the root surface is modified by the laser energy so its removal is readily accomplished.

### **Step 2. Remove hard deposits and debris with ultrasonic scaler and hand instruments.**

### **Step 3. Sulcular Debridement, 0.6W, pulse mode, carbonized tip**

Remove the diseased epithelial lining using the same motion as above for 30 seconds to 1 minute per area depending on depth and location. Inter-proximal areas will take longer than facial or lingual areas. Flush the pockets with water. Laser energy selectively removes the diseased,infected and inflamed pocket epithelium while preserving healthy connective tissue.

### **Step 4. Follow up with De-contamination**





**SETTINGS FOR IMPLANTOLOGY LASER, OTHER LASERS USE ABOVE PERIO SETTINGS**

**Step 1. Standard protocol, remove hard deposits and debris with ultrasonic scaler and hand instruments, citric acid, etc.**

**Step 2. Peri-implantitis, OPEN FLAP, 0.7W, pulse mode, non carbonized tip, out of contact,** use laser as last step after standard protocol: hand instruments, ultrasonics, citric acid, etc.

Approx 5mm out of contact of implant (look for red spot size of approx 3mm), lase wet implant surface moving over ENTIRE implant surface for 15 seconds with 30 second cooling interval.

Repeat 3-4 times to insure coverage of entire implant area. Do not exceed 15 seconds or increase power. Use same method for bone and tissue defect area, 2 - 15 second intervals.

**Step 3. Follow ups,** same as step 2 or closed pocket de-contamination

## **LIMITED WARRANTY**

The SPECTRALASE diode dental laser is warranted to be free from defects in material and workmanship for a period of 24 months from the date of shipment. Hand-pieces, fibers and other accessories are warranted to be free from defects in material and workmanship for a period of 60 days from the date of shipment.

In order to comply with this warranty, all internal adjustments or modifications must be made by Spectrum International, Inc. or its authorized representative. The liability of Spectrum International, Inc. under valid warranty claims is limited to repair or replacement at Spectrum International, Inc. facility or purchaser's place of business, at the option of Spectrum International, Inc.

This warranty doesn't cover defects or damage to the laser and its accessories that result from: improper operation or misuse; accident or neglect such as dropping the Product onto hard surfaces; contact with water, rain, extreme humidity or heavy perspiration; contact with extreme heat; spills of food or liquid. The warranty doesn't cover physical damage to the surface of the Product, including scratches, cracks or other damages to the housing, front keypad or other externally exposed parts.

The forgoing warranty is exclusive and in lieu of all other warranties, whether written, oral, or implied, and shall be the purchaser's sole remedy and Spectrum International, Inc. sole liability under contract or warranty or otherwise for the Product.

Spectrum International, Inc. disclaims any implied warranty of merchantability or fitness for particular purposes. In no event shall Spectrum International, Inc. be liable for any incidental or consequential damages or for any incidental or consequential damages arising out of or in connection with the use or performance of the Product delivered hereunder.

**PARTS AND SUPPLIES:**

**BTT 12.5 Topical**, Lidocaine 12.5%, Tetracaine 12.5%, Prilocaine 3%, Phenylephrine 3% Gel, ask for instructions, 855-876-3060 [http://www.woodlandhillspharmacy.com/best\\_topical\\_ever.php](http://www.woodlandhillspharmacy.com/best_topical_ever.php)

**TAC 20 Topical:** C-Lido 20%, Tetra 4%, Phen 2%, Gel, \$29 per 20 gram jar, Professional Arts Pharmacy Lafayette, LA 888-237-5053

**Ultradent Laser Tips** part #1361 800-552-5512,

**Bendable perio tips:** Ultimate Dental #7683-315118, 800-388-7868

**Fuses:** (2) 1 Amp 250 V

**CUSTOMER SERVICE**

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