



## S-1 ORTHODONTIC LASER PROCEDURES GUIDE

- 1. Hand Piece:** Loosen end nut, never remove the nut, insert fiber through the nut end and through the curved tip extending the fiber beyond end of the tip approx 5mm. Tighten down end nut. Your laser includes 2 curved tips that are autoclavable. You can bend the tip to increase the curve to approx 45 degrees. Watch the fiber cleaving video on the training page. <https://youtu.be/r2mrxowTYOk>  
**Fiber cleaving.** Firmly hold the fiber about 1/2 inch from the fiber end (to prevent the fiber from slipping) on a hard flat surface approx 1 inch from an edge of the surface. Open the scissors, hold one blade at a 45 degree angle on the fiber, about 3mm from the end, and pull towards you for about 1 inch, stop before reaching the end of the scissors to avoid snapping the fiber. You are making 1 scratch/score on the fiber. Snap the fiber off at the score line. Do not press hard and break the fiber. Look for a near perfect round red circle.  
**Condition the end of the fiber, carbonized Tip for 980nm.** 1.0W coat the end of the tip with carbon (ink), articulating paper or Sharpie, approx 2mm up side of fiber, with foot pedal down. You cannot overdo the amount of ink applied.
- 2. Topical:** Apply a medium thick layer, similar to applying etch, and leave to penetrate for approx 4 minutes. Wipe off and wait about 5 minutes before lasing. Patient should be numb for approx 20 minutes. Re-apply if needed.
- 3. Gingivectomy and Gingivoplasty:**  
1.0W-1.2W, pulse mode, carbonized tip, gently vaporize away the target tissue, using light contact slowly glide 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. Start at desired finish point and excise opposed to working from margin. Wipe excess tissue collected at tip of laser on wet gauze or flick into suction. No need to re-carbonize after wiping. Fibrous tissue apply more pressure with fiber tip.
- 4. Tooth Exposure:** 1.0W-1.2W, pulse mode, carbonized tip, increase power as needed for fibrous tissue, use a probe to locate tooth. Make an incision by gently lasing around the perimeter of the desired window until you can feel the tooth. You can touch tooth, bone, and metal. Depending on the desired depth, the incision may require 1 or several gentle passes. Remove the tissue flap with forceps or cotton pliers. Clean, dry, and bond.
- 5. Anterior Gingival Height:**  
1.0W-1.2W, pulse mode, carbonized tip, measure pocket depth and leave 1mm of sulcus when finished, hold fiber near perpendicular to tissue at gingival margin and paint away the tissue surface a layer at a time until height and reshaping goals are met, lightly scrub area with a tooth brush dipped into hydrogen peroxide. Apply vitamin E gel.
- 6. Beveling Anterior Tissue:**  
1.0W-1.2W, pulse mode, carbonized tip, carbonize approx 2mm up the side of the fiber. Using the side of the fiber gently thin the margin to make a knife-edge. Remove bulbous tissue areas away from the tissue margin first using the tip end and thin down as needed using a cross hatch motion. Fibrous tissue: increase power as needed 1.4W-2.0W, pulse mode.

**Topical formula: Lidocaine 12.5%, Tetracaine 12.5%, Prilocaine 3%, Phenylephrine 3% Gel. We recommend using a local compound pharmacy. Laser cuts faster on wet tissue, not flooded.**

**Start with a lower power setting and increase as needed.**

**Too much energy will produce char, which is not harmful but laser energy cannot penetrate through char and it must be cleaned to continue laser treatment area.**

**Sometimes to cut fibrous tissue char cannot be avoided. Constantly clean the area with a micro brush and water. Apply over the counter vitamin E gel from gel caps after recontouring cases.**