



LASER SAFETY

Be sure to follow standard laser safety procedures for these exercises.

- Use the laser in a controlled area with laser warning sign on door, door closed, and everyone using safety eye protection.
- These exercises will generate smoke. Smoke evacuation is advised.

WHAT CO₂ LASERS DO

Generally speaking, CO₂ lasers are used to vaporize tissue for the purposes of incision, excision, and ablation. Hemostasis of small blood vessels occurs simultaneously. What you see is what you get. CO₂ laser parameters are adjusted to permit less heat buildup for greater precision or more heat buildup for greater hemostasis – depending on the clinical need.

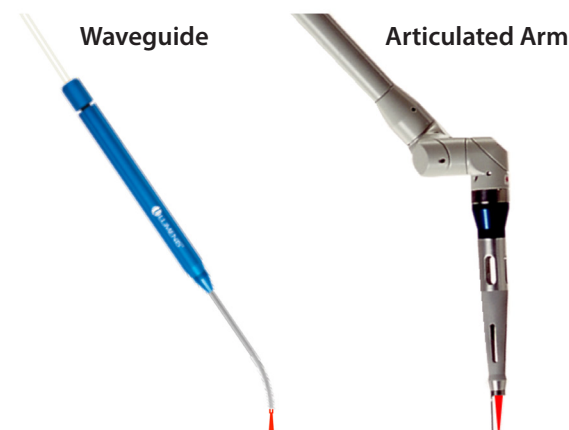
WAVELENGTH

Soft tissue is ≈70% water. Water absorbs CO₂ laser energy (10,600 nm) so efficiently that ≈ 90% is used up in the first 0.1 mm depth. Once absorbed, CO₂ laser energy instantly transforms into heat. The resulting tissue effect depends on how quickly and high the tissue temperature raises – as well as laser dwell time.

CO₂ LASER BEAM DELIVERY

Fiber-delivered laser energy is transported through a hollow flexible waveguide. Besides CO₂ laser precision, fiber delivery offers convenience and enables treatment to tight and angled spaces, through rigid and flexible endoscopes and a robot.

Free beam laser energy travels through an articulated arm. Various accessories containing lenses and mirrors attach to the arm for line-of-sight energy delivery to the target tissue. The highest level of precision can be achieved with a micromanipulator coupled to a surgical microscope.

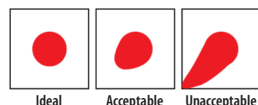




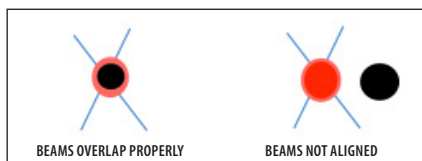
INVISIBLE TREATMENT ENERGY, VISIBLE AIMING BEAM

CO₂ laser energy is invisible to humans. Most CO₂ lasers have a red diode laser aiming beam aligned to the treatment beam to enable precise targeting of laser energy. Although today's lasers are durable, always test fire before treatment.

Waveguide Aiming Beam



Free Beam Test Fire



AIMING THE LASER BEAM

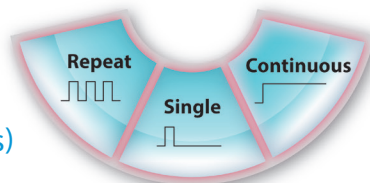
The spot size for fiber-delivered laser energy is smallest at the fiber tip. Then it enlarges as the tip is pulled away from the tissue surface. When it exits the free beam accessory, CO₂ laser energy converges and then diverges. Free beam laser energy is in focus when its spot size is smallest on the tissue surface. Always try to keep the laser beam perpendicular to the tissue surface.

1. TEST FIRE Exercise

- a. Draw an X on a tongue depressor, moisten it and set it on a wet surface.
 - Set **CW** power mode, **10 Watts**, **SINGLE** exposure mode, Time ON **0.1** sec.
 - Inspect the quality of the aiming beam. It should be sharp, small and round.
 - Aim the beam onto the center of an X on a tongue depressor and make one shot.
 - Aiming beam and laser impact should overlap; resulting impact should be very small and round.

INSTRUCTIONS FOR THESE EXERCISES:

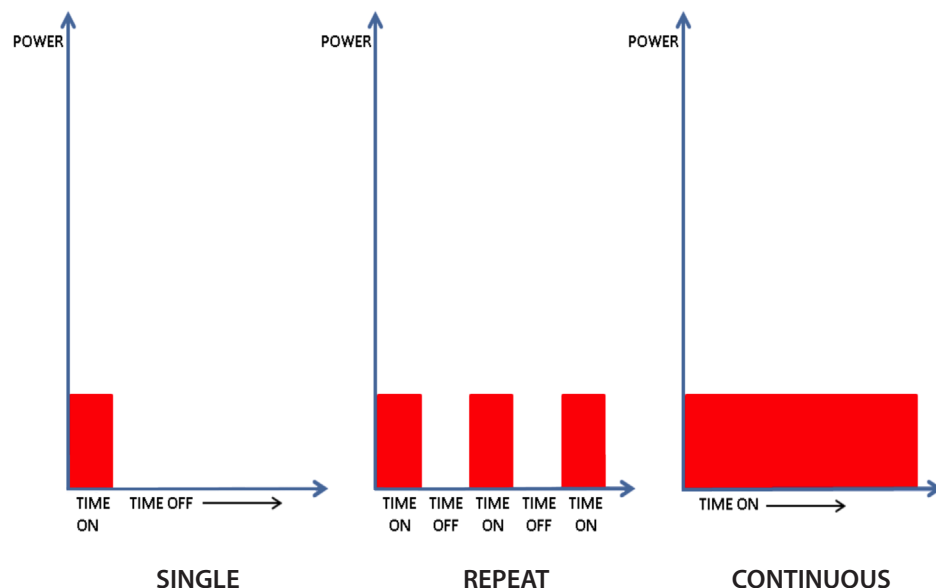
- Perform each exercise sequentially. Start by using waveguide.
- Unless directed otherwise, use smallest spot size (tip of fiber 1 mm from tissue)
- Always try to direct energy perpendicular to tissue surface.



TIMED-EXPOSURE MODES (footswitch modes)

Timed-Exposure Mode dictates how energy emits from the laser when the footswitch is depressed.

- **SINGLE.** One shot of energy. User selects time duration (Time ON).
- **REPEAT.** Successive shots of energy for as long as footswitch depressed. User selects durations for Time ON and Time OFF.
- **CONTINUOUS.** Laser emits constant stream of energy for as long as footswitch depressed.



2. TIMED-EXPOSURE MODE Exercises

- Make a row of closely spaced **SINGLE** timed-exposures; only one for each timed-exposure setting listed below.
 - CW 6 Watts, **SINGLE** timed-exposures: **0.05, 0.1, 0.2, 0.5** and **1.0** sec.
 - Look at the surface and compare width, depth and char of laser impacts. You can use a scalpel to incise a wedge of tissue through the row of shots. Examine the tissue effects from the side view.
- Now make three parallel, closely-spaced incisions.
 - **Incision 1:** CW 6 Watts, **REPEAT** timed-exposure, Time ON **0.1** sec and Time OFF **0.05** sec.
 - **Incision 2:** CW 6 Watts, **REPEAT** timed-exposure, Time ON **0.1** sec and Time OFF **0.1** sec.
 - **Incision 3:** CW 6 Watts, **CONTINUOUS** exposure mode.
 - Look at the surface and compare width, depth and char of laser impacts. You can use a scalpel to incise a wedge of tissue through the three incisions. Examine the tissue effects from the side view.



LASER POWER

Doubling laser power increases the energy density by a factor of 2.

Reducing laser power by half reduces the energy density by a factor of 2.



Higher powers produce deeper work more quickly. They require more control.

Hand movement may be slower with lower powers, resulting in more dwell time for heat build up.

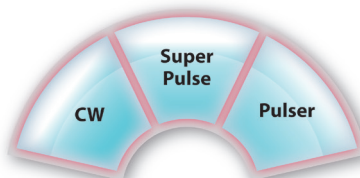
3. LASER POWER Exercises

a. Make four parallel, closely-spaced incisions using same speed.

- **Incision 1:** CW power mode, **3 W**, CONTINUOUS exposure.
- **Incision 2:** CW power mode, **6 W**, CONTINUOUS exposure.
- **Incision 3:** CW power mode, **12 W**, CONTINUOUS exposure.
- **Incision 4:** CW power mode, **25 W**, CONTINUOUS exposure.
- Look at the surface and compare width, depth and char of laser impacts. You can use a scalpel to incise a wedge of tissue through the four incisions. Examine the tissue effects from the side view.

b. Make three more parallel incisions. Try to keep all depths the same by varying hand speed. Try to avoid producing char (black).

- **Incision 1:** CW power mode, **12 W**, CONTINUOUS exposure.
- **Incision 2:** CW power mode, **6 W**, CONTINUOUS exposure.
- **Incision 3:** CW power mode, **3 W**, CONTINUOUS exposure.
- Were you able to accomplish your goal? Were you unable to prevent char for some power levels?



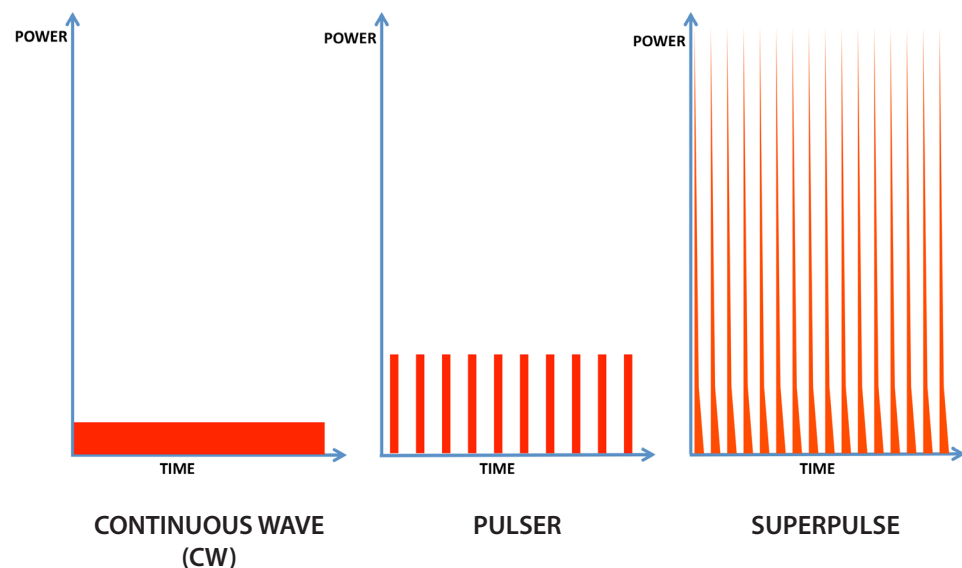
POWER MODES

Power Modes are different energy output modes from within the laser cavity.

- Energy exits at a steady uninterrupted rate –for greatest heat buildup.
- Peak power and pulse rate is constant. Pulse duration varies, depending on set average power – for moderate heat buildup.
- Very high peak power and very short pulse duration. Pulse rate (Hz) varies, depending on set power – for low heat buildup.

4. POWER MODE Exercises

- Using constant hand speed, make three parallel, closely-spaced incisions.
 - **Incision 1: CW** 6 W, CONTINUOUS timed-exposure.
 - **Incision 2: SuperPulse** 6 W, CONTINUOUS timed-exposure.
 - **Incision 3: Pulser** 6 W, CONTINUOUS timed-exposure.
 - Compare width, depth and char for the three power modes.

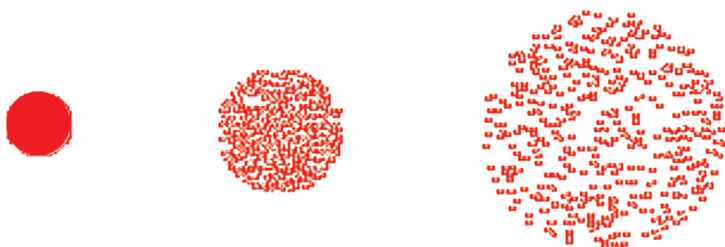




SPOT SIZE AND ENERGY DENSITY (fluence)

Reducing spot size by a half increases the energy density by a factor of 4.

Doubling the spot size reduces the energy density by a factor of 4.



When the goal is minimal thermal damage to adjacent tissue, the concentration of laser energy and dwell time on tissue is crucial. **5J/cm² delivered within less than 1 msec** is the necessary fluence for efficient vaporization. When greater hemostasis is desired, fluence must be less. Lower fluence levels produce more thermal spread to adjacent tissue, even when used for hemostasis.

5. FLUENCE Exercises

a. Make parallel, closely-spaced incisions.

- **Incision 1:** CW 6 W, CONTINUOUS exposure, **fiber tip 1 mm from tissue (or focused spot).**
- **Incision 2:** **Same speed as for incision 1.** CW 6 W, CONTINUOUS exposure, **fiber tip 5 mm from tissue (or bigger spot).**
- **Incision 3:** CW 6 W, CONTINUOUS exposure, fiber tip 5 mm from tissue. **Decrease the speed to make an incision similar to a.** Can you do it?
- When fluence is decreased, what happens to width and depth of incision? When do you produce more char? When do you produce less char?

b. **REPEAT with Pulser** power mode.

c. **REPEAT with SuperPulse** power mode.



CONTROLLING THERMAL CONDUCTION

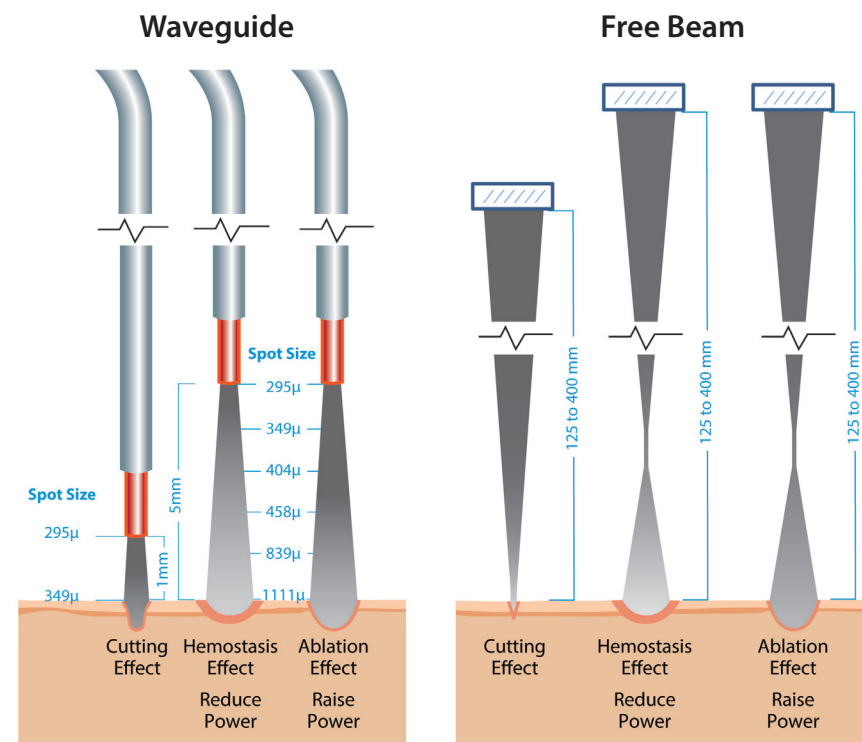
So far, most exercises have been performed using CONTINUOUS exposure mode. Laser parameters can be adjusted for less thermal conduction (precision) or greater heat buildup (hemostasis) – depending on the clinical need. Tissue response is immediate, so feel free to adjust parameters based on what you see.

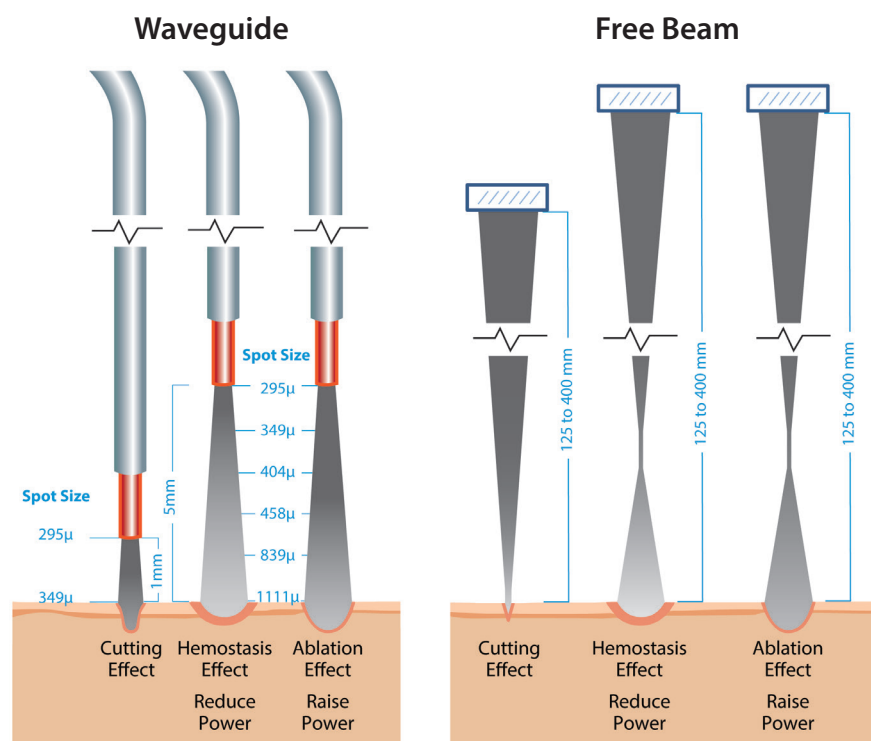
Ways to decrease thermal buildup in tissue

- Use fluence above Thermal Ablation Threshold with higher power and/or smaller spot size.
- Use Pulsed power modes: SuperPulse or Pulser.
- Minimize dwell time on tissue. Make sure laser power is sufficient to vaporize efficiently.
- Combine REPEAT exposure mode to SuperPulse or Pulser.
- Wipe black char away; it becomes very hot when laser energy is applied to it.
- Use cold saline to wipe the tissue surface.

Ways to increase thermal buildup in tissue

- Use fluence below Thermal Ablation Threshold with lower power and/or increased spot size.
- Use CONTINUOUS Wave (CW).
- Increase dwell time on tissue. Use CONTINUOUS or longer timed-exposure intervals. Move hand slowly.





6. THERMAL CONDUCTION Exercises

a. Select your own parameters.

- **Incision 1:** Select your own parameters. Make a deep incision which shows evidence of minimal thermal conduction (char).
- **Incision 2:** Select your own parameters. Make a shallow incision which shows evidence of minimal thermal conduction (char).
- **Incision 3:** Select your own parameters. Make a deep incision which shows evidence of heat buildup for better hemostasis.
- **Incision 4:** Select your own parameters. Make a shallow incision which shows evidence of greater heat buildup for better hemostasis.



ABLATION VS. INCISION

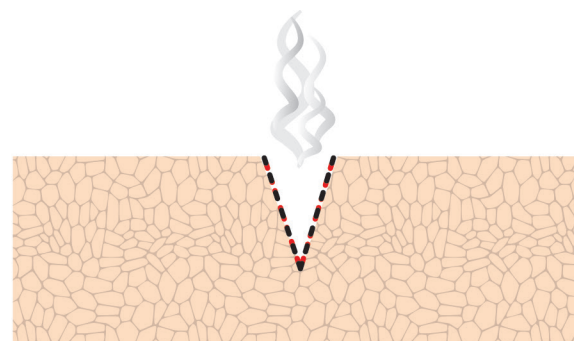
Ablation means to vaporize an area of tissue. Tissue goes up in smoke, so specimens cannot be produced with ablation. Ablation requires a larger spot size and higher power.

To ablate efficiently with minimal lateral thermal spread, laser energy should be applied in a cross-hatch paintbrush motion. Avoid creating furrows and permitting heat to build up by letting the laser beam dwell on one area too long. Any power mode can be used for ablation. CW is often used when tissue is more vascular. Pulser may be more useful when less heat buildup is desired.

When using the CO₂ laser, what you see is what you get. Let the appearance of the tissue effect guide your selection of laser parameters – depending on the clinical situation and task at hand.

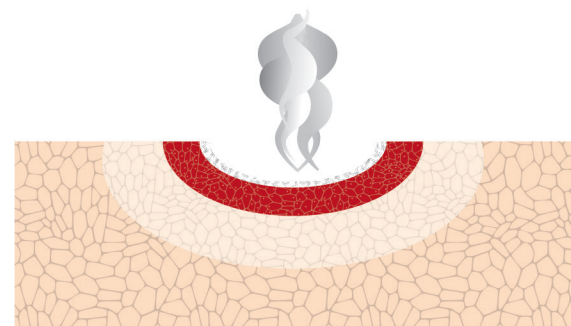
7. ABLATION Exercises

- Ablate a 1 cm cube on your specimen. Use your discretion for the laser parameters, but try to minimize char.
- Vary parameters and ablate more 1 cm cubes. Use any combination of laser operation mode, timed-exposure mode, and fluence. Which settings produce more and less char? Be sure to wipe it away.



Good for incision,
dissection
and ablation

Good for
tissue margins
with minimal
thermal zone



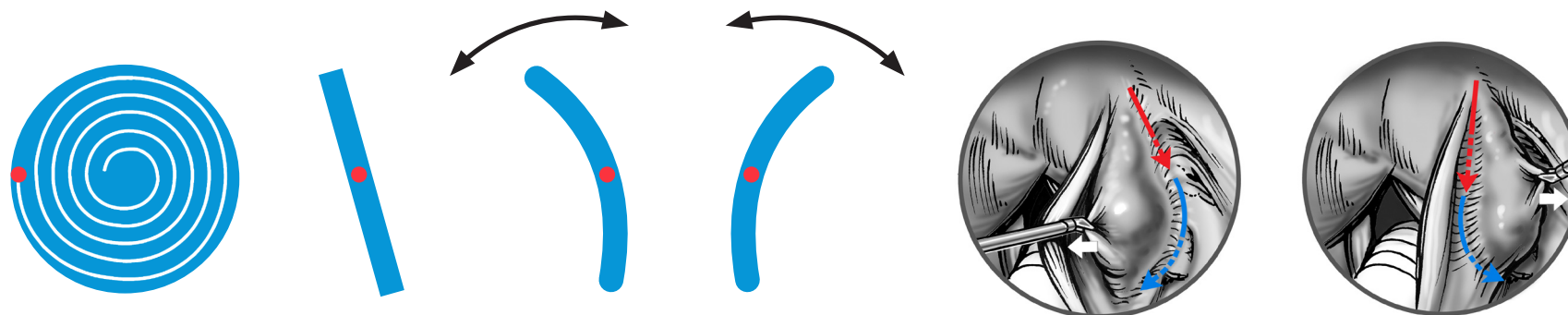
For more hemostasis



SURGITOUCH® SCANNER (free beam)

The SurgiTouch scanner enables highest-level precision by rapidly sweeping a high fluence beam (focused and high energy) automatically across the tissue surface – faster and more evenly than a human hand is able. Scanning ensures very efficient vaporization with little to no char. Depth of tissue removal is precise and reproducible – because the parameters for each microprocessor-controlled scan are exactly as requested on the control panel.

Scanning shape and size parameters are selected according to the lesion. Depending on the accessory, available scan patterns are circle (disc), straight line and curved line. Depending on the water content in the tissue, each scan depth is approximately 150 micrometers.



The circle is used for ablation and the lines are used for incision. When using the Digital AcuBlade scanning micromanipulator, line scans can be rotated 360°. While a focused laser beam is always used with the scanner, it can always be defocused if superficial hemostasis of very small vessels is desired.



8. SURGITOUCH SCANNER Exercises

When using the scanner, be sure the laser beam remains in focus. Appearance of more than a little char is evidence that the beam may not be in focus. *Always refocus the laser beam when the tissue planes change.*

If using the micromanipulator, stop and familiarize yourself with how to parfocalize the microscope with the laser beam — and the controls on the micromanipulator.

a. SINGLE and CONTINUOUS Circle Scans.

- On SurgiTouch control panel, select **specialty**, then **procedure**, then **accessory**.
- Select **circle scan** and keep the **default parameters**. Focus and fire the laser. Depress footswitch for entire duration of scan.
- Move beam to adjacent area. **Change depth to 4**. Focus and press the footswitch.
 - How do impact widths and depths compare? Is there any char?
- Set laser to deliver **CONTINUOUS** scans. Ablate 1 cubic centimeter of specimen.

b. Make an incision using Line Scan.

- Select any **line** scan shape select **1.5** mm line size. Deliver a **SINGLE** scan using the default settings on the control panel for power, power mode and depth.
- Now switch to **CONTINUOUS** exposure mode. Use the line scan to incise a 1 cubic centimeter cube. To change the orientation of the line, rotate the joystick.
 - How easy was it to cut out the cube of tissue?
- **Defocus** the beam and use the line scan to make an incision.
 - What happens to the amount of char?



AcuPulse™ DUO CO₂ Laser Hands-On Training Exercises



TYING IT ALL TOGETHER

The exercises performed with the waveguide can also be done with the free beam accessory. All the principles of use are the same, except for the convergent beam that focuses to a fine spot and then diverges for a larger spot.

WHY SELECT FIBER VS. FREE BEAM DELIVERY?

The choice is entirely yours, depending on the procedure, clinical goals and personal preference. Below are some features and benefits to consider for each modality.

Fiber Delivery	Free Beam Delivery
High CO ₂ Laser Precision for Cutting and Ablation, Low Thermal Damage	Highest CO ₂ Laser Precision for Cutting and Ablation, Lowest Thermal Damage
Work in Difficult to Reach Areas and Tight Spaces	Work in Direct Line-of-Sight
Slim Profile Rigid and Malleable Handpieces	Larger Profile Rigid Handpieces for Straight and Angled Line-of-Sight Delivery
Compatible with Rigid and Flexible Endoscopes	Compatible with Rigid Endoscopes
Handheld Instrument Feel	Scanner Capability
Simple and Easy to Use	Highly Reproducible

9. FREE BEAM Exercises

- a. Try the exercises, as you wish, for:
- Timed-Exposure.
 - Power.
 - Power Mode.
 - Spot Size and Fluence.
 - Thermal Conduction and Ablation.



KNOW YOUR EQUIPMENT

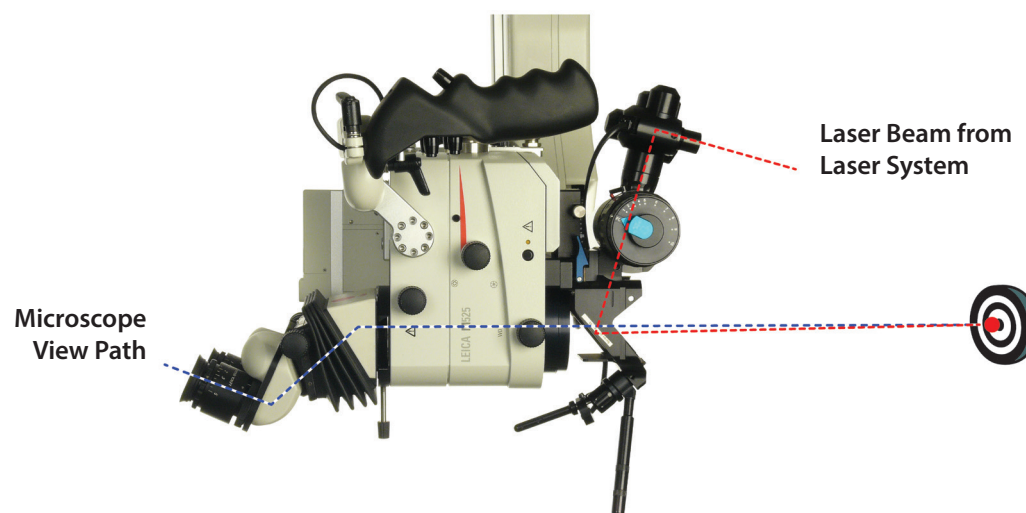
A micromanipulator delivers the CO₂ laser energy coaxial to the viewing path of the surgical microscope. The laser energy exits the articulated arm, travels thorough the micromanipulator focusing optics – then to the mirror where it reflects to the treatment site. The surgeon uses a joystick to rotate the gimbaled mirror and guide the laser beam across the tissue surface – for delicate, tremor-free control.

To enable comfortable and efficient operation, the microscope should be well positioned, well-balanced and in good focus. The laser beam must also be focused on the same plane as the microscope. Otherwise, the laser surgeon will continually need to make focal adjustments – and may even have difficulty achieving the desired tissue effect.

MAIN PARTS ON THE SURGICAL MICROSCOPE

Surgical microscopes illuminate and magnify the microsurgical field. Every surgical microscope has three main parts. All are important.

- **Suspension system** – holds the microscope body in space. The optics head is angled and rotated according to the necessary trajectory of the view path, depending on the type of surgical procedure and position of the patient.
- **Microscope body** – contains all of the optics for illumination, focus and magnification. Microscope controls can be manual or motorized (using push buttons).
- **Illumination system** – different kinds of illumination systems have different color temperatures (similar to day light vs. indoor light). Maximum light intensity can vary greatly.





AcuPulse™ DUO CO₂ Laser Hands-On Training Exercises



THE SUSPENSION SYSTEM

A well-designed and well-balanced suspension system permits the microscope to move into position with little manual effort. The style may be floorstand, wall- or ceiling-mount. Depending on the model, the locking mechanism on the suspension system may be friction knobs or electromagnetic clutches.

THE MICROSCOPE BODY

Contains the optics for illumination and stereo visualization.

FIXED VS. VARIABLE OBJECTIVE LENS

Focal distance is the (mm) measure between the objective lens and focused visual plane. The working distance is the same as the focal distance. Some microscopes have interchangeable fixed-focus objective lenses, requiring physical movement of the microscope when the focal plane needs to be moved. Others have variable focus lenses, enabling the user to optically change focal distance when the focal plane needs to be moved during surgery. **When using a micromanipulator, the focal distance on the microscope must remain fixed; microscopes with variable focus lenses have locking capability.**

FINE-FOCUS MECHANISM

When working at high magnification, proper microscope focus is essential. Most surgical microscopes have an integrated fine-focus mechanism. For ease of use, manual fine-focus controls should initially be set to mid-range. **Some microscopes have an objective lens which integrates optical fine-focus capability. When using the laser, these should be switched for fixed-focus objectives.**

SUSPENSION SYSTEM Exercise

1. Look at the suspension system for your microscope.
 - a. Identify all of the places where it articulates and swivels.
 - b. Locate knobs and levers used to loosen and tighten the movements.
 - c. Loosen and tighten a few knobs and levers. Assess how it affects the handling of the overall system.

WORKING DISTANCE and FINE-FOCUS Exercise

1. Look at the objective lens on your microscope.
 - a. Is it a fixed-focus lens or variable focus lens? What is the focal distance or variable working distance range?
 - b. Does your microscope have a fine-focus mechanism? Is it manual or motorized?



EYEPieces AND BINOCULAR TUBES

The eyepieces attach to the binoculars, which in turn attach to the microscope body. Surgeons should determine their interpupillary distance and diopter settings. Once known, diopter settings and interpupillary distance can be documented for the O.R. staff on the surgeon's case card. Otherwise, the diopters and IPD can be easily set by the surgeon.

The eyepieces permit ± 9 spherical diopter adjustment for working without glasses. Individuals with astigmatism should wear their eyeglasses. When vision is normal or when wearing eyeglasses, set the diopters to zero (0). The prescriber for corrective lenses can provide the diopter settings for each eye. Alternatively, the procedure in the exercise below can be used to determine the diopter settings.

Three styles of binoculars are commonly used on surgical microscopes: straight, inclined and inclinable (often between 0 and 180°). The latter is the most expensive, but provides the greatest comfort and flexibility.

PERSONAL NOTES:

Interpupillary Distance: _____

Diopter Settings: Right _____ Left _____

DIOPTER SETTINGS Exercise

1. Attach eyepieces to the binocular tubes. Rotate both diopter scales counterclockwise to their endstop. Detach the binocular tube from the microscope body.
2. Use the binocular system as a field binocular and view a distant object, such as a tree or house.
3. Close one eye and view the distant object with the other. Manually adjust the diopter until the object becomes clear.
4. Repeat for the other eye.
5. Write down the diopter settings.

INTERPUPILLARY DISTANCE (IPD) Exercises

1. Look through the microscope and look at a sheet of graph paper. Move the tubes farther and closer together until the visual field becomes one round circle and comfortable to view.
2. Note the IPD on the binocular measurement scale and write it down.



AcuPulse™ DUO CO₂ Laser Hands-On Training Exercises



ILLUMINATION SYSTEM

Today's surgical microscopes provide good lighting to the microsurgical field. Every microscope has a light intensity control. Some automatically compensate with increased brightness when the magnification is increased. Many have a control for the surgeon to reduce the size of the illuminated field. This can be very helpful when operating through a rigid laryngoscope.

MAGNIFICATION SYSTEM

All operating microscopes have a conveniently placed means for changing magnification. Some have manual 3- or 5-step levels of magnification. Others have manual or motorized zoom magnification, which provides a continuous range.

ILLUMINATION Exercise

1. Find the light intensity control. Turn it up and down.
2. If available on your microscope, find the control for the illumination field size. Make it large and small.

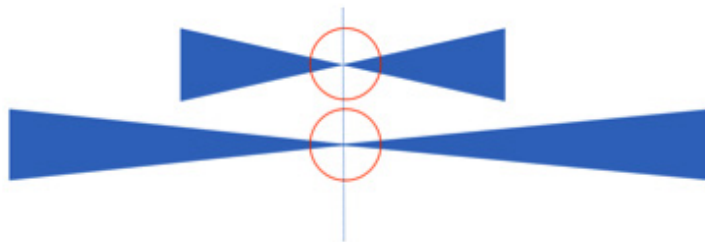
MAGNIFICATION CHANGER Exercise

1. Locate the magnification changer.
2. Change the magnifications through the entire range. Note the individual settings.



FOCAL DISTANCE AND DEPTH OF FIELD

When looking through the microscope, the optical paths for the two eyes converge at the focal point and then diverge. That's why the image gradually sharpens, is sharp – and then blurs again.



Here are some useful points to remember.

- The focal waist is the distance whereby the microscope remains in sharp focus. The beam waist is longer 400 mm than 200 mm.
- The focal waist is shortest at high magnifications compared to low.
- The microscope is in good focus when it is parfocal, i.e., when it is in focus through the entire magnification range.
- The microscope should be parfocal before attempting to focus the CO₂ laser beam.

**** NOTE: It is very difficult to start with high focus and properly orient the microscope. With practice, this critical step can be performed quickly.**

FOCUS PROCEDURE FOR THE MICROSCOPE

1. Set up microscope for use.
 - a. Check counter-balance and tightness of the movements for the microscope body and suspension system.
 - i. The suspension arm should permit forward and back movement of the microscope body.
 - ii. The microscope body should freely move along x-y-z axes and rotate.
 - b. Set the rubber cups on the eyecups (they can help remove stray light). Eyeglass wearers should keep them down.
 - c. Set the diopters on the eyepieces.
 - d. Set the IPD (Interpupillary Distance) on the binoculars.
 - e. Install proper fixed-focus objective lens or set and lock variable working distance mechanism.
 - f. Set magnification to the **lowest** level and ~~manual fine focus~~ to mid-range.
2. ~~Look through binoculars and manually position microscope until target is clear.~~
3. Continue looking through ~~microscope~~, gradually increase magnification and adjust focus. **** See Note.**
4. The microscope is in focus when focus is achieved through entire magnification range (parfocal).



AcuPulse™ DUO CO₂ Laser Hands-On Training Exercises



HOT TIP #1

Remember that the angle of the microscope view path must match the angle of the laryngoscope lumen. Otherwise the laser beam may clip the edges of the laryngoscope – and could impact non-target tissues on the face.

HOT TIP #2

As tissue is removed the focal plane will advance. Therefore you will need to refocus the microscope. Starting with good focus may lessen the number of times it is necessary to refocus.

MICROSCOPE FOCUS Exercise

1. Practice the focus procedure on a flat surface or through a laryngoscope on an anatomic model. Pay attention to how much the microscope moves when you focus through the entire magnification range (low to high).
2. How long did the focus procedure take?

It will be more challenging when you focus through the long narrow rigid laryngoscope. With practice, it will become very easy.



ACUSPOT™ MICROMANIPULATOR

Once the microscope is well focused, working with the micromanipulator is easy.

ASEPSIS

- **For sterile procedures,** the micromanipulator can be draped. The laser drape has an opening for the beam to exit.
- **For non-sterile procedures,** sterilizable covers can be applied to the joystick and controls for working distance and spot size controls.

SETTING-UP THE MICROMANIPULATOR

- Install joystick cover.
- Install handrest for right- or left-hand use, if desired.
- Adjust tension ring on joystick for personal preference.
- Set Spot Size Limiter tab to the desired DEFOCUS setting.
(This facilitates changing spot size without looking away from binoculars.)

AcuSpot Micromanipulator Controls

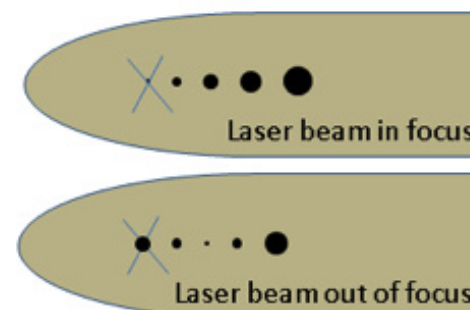
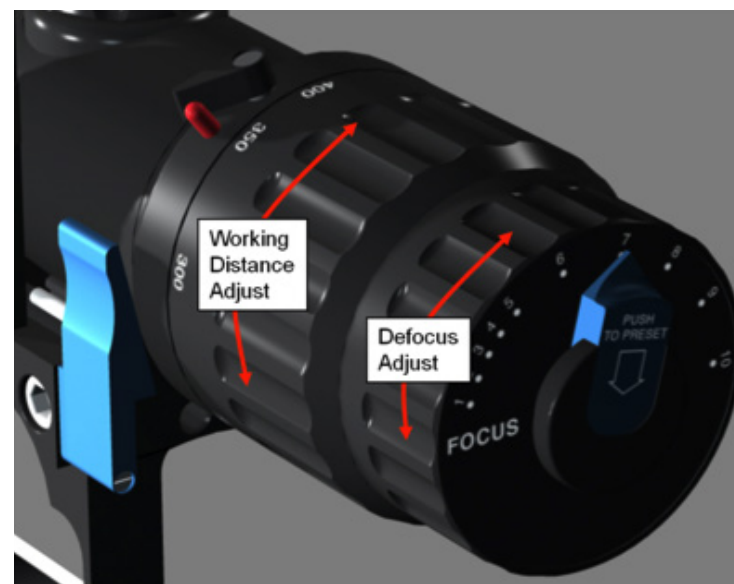


- Working Distance Control
- Lock for Working Distance
- Indicator for Working Distance
- Spot Size Control
- Limiter Tab for Spot Size
- Adjustable Handrest
- Tension Ring for Joystick
- Joystick with Removable Cover

ACUSPOT SPOT DIAMETERS (MM) FOR FOCUS AND DEFOCUS SETTINGS 1-10

Defocus	Working Distance				
Scale	200 mm	250 mm	300 mm	350 mm	400 mm
Focus	0.16	0.18	0.20	0.24	0.27
1	0.30	0.36	0.40	0.46	0.50
2	0.46	0.54	0.60	0.70	0.77
3	0.63	0.73	0.83	.94	1.04
4	0.80	0.90	1.05	1.20	1.30
5	0.96	1.10	1.30	1.44	1.60
6	1.30	1.50	1.73	1.95	2.17
7	1.67	1.93	2.20	2.50	2.77
8	2.00	2.30	2.64	3.00	3.30
9	2.34	2.70	3.10	3.50	3.90
10	2.80	3.20	3.70	4.14	4.60

Note that minimum and maximum spot size is affected by working distance.





LASER BEAM FOCUS AND TEST FIRE

- Focus microscope onto target, as previously described.
- Set spot size to FOCUS. Use joystick to move aiming beam onto visual field.
- Set laser focus by looking through binoculars. Slowly rotate working distance control until aiming beam is small and sharp.
- Perform Test Fire Procedure to check laser focus.
 1. Set laser to CW 10 Watts, SINGLE, 0.1 sec.
 2. Moisten tongue depressor and place it on a flat surface protected with wet towel.
 3. Make microscope focus parfocal on tongue depressor.
 4. Focus laser beam on tongue depressor.
 5. Make a row of laser impacts, at **FOCUS, DEFOCUS 1, 2, 3, 4,** and **5.**
 6. Examine the quality of the beam impacts. They should gradually enlarge.
- Once laser beam and microscope are parfocal, no need to change micromanipulator working distance during procedure. Instead, re-focus microscope when tissue plane changes.

LASER FOCUS Exercise

1. Perform laser focus and test fire procedure as above.
2. Did the impact diameters gradually enlarge? If not, refocus and test again.



www.lumenis.com

© 2013 Lumenis, Ltd.

PB-1001761_B