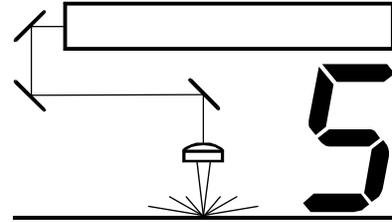


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## SECTION 5

# Options & Accessories



There are several options and accessories available for this laser system. The new 3D Effects option is now available as a standard feature. The Rotary Fixture, Cutting Table, Air Assist System, Air Assist Compressor, various Focus Lens Kits, and the Dual Head option are available at additional cost.

## 3D Effects

The 3D Effects option can be used to create rubber stamps or produce a three-dimensional engraving appearance on other materials. As an example of how this option works, we will describe how to make rubber stamps with the laser system.

### Rubber Stamps

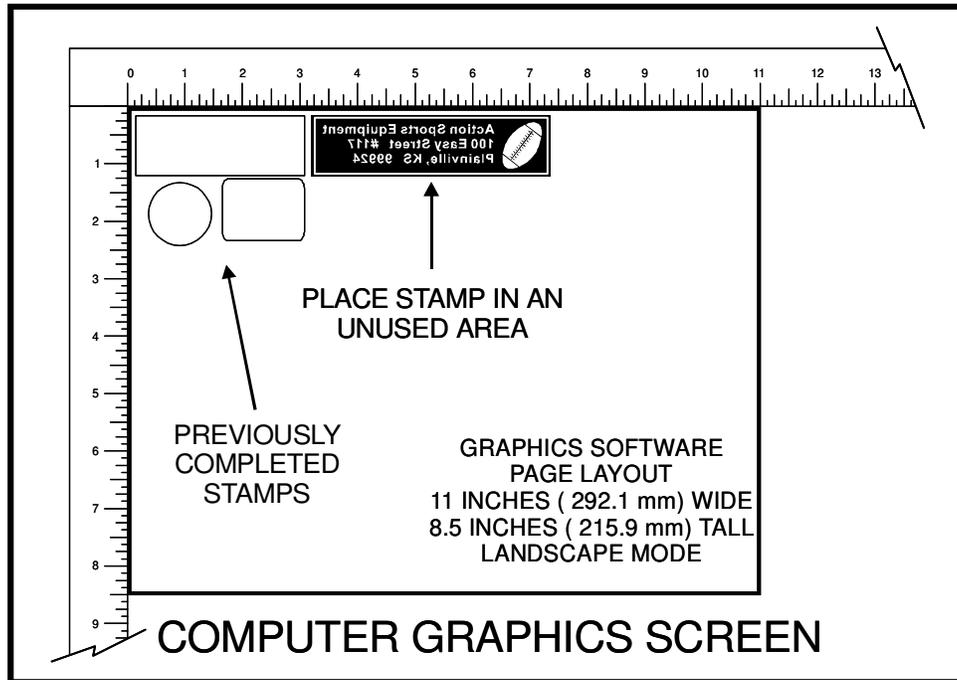
There are two methods used to create a rubber stamp, the single stamp method and the full sheet method. In the following examples will show you the step by step method of creating both a single rubber stamp and a full sheet of stamps.

### Single Stamp Method

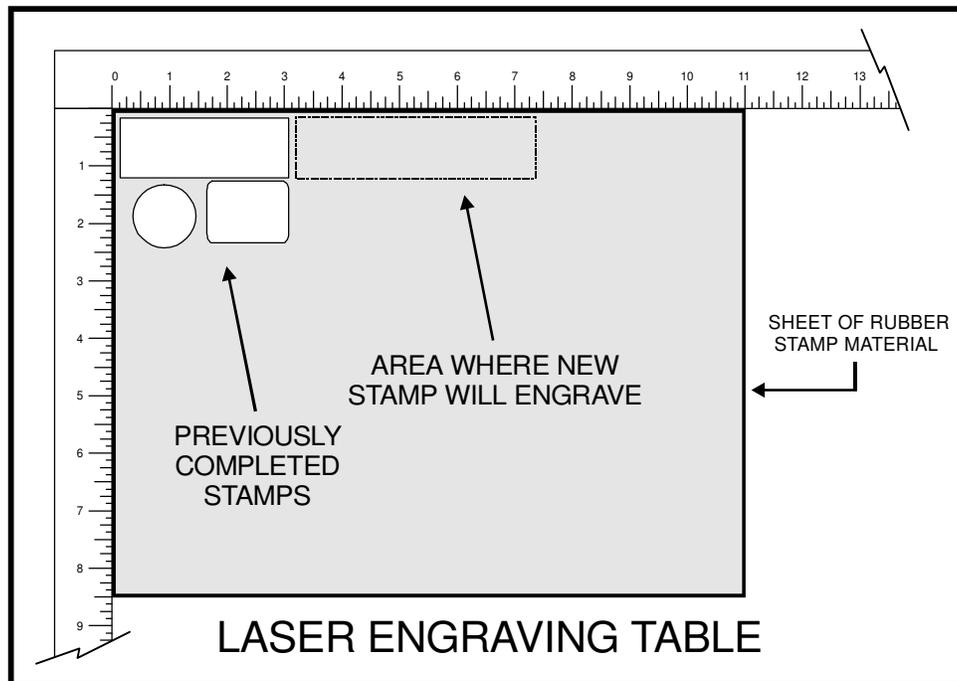
To create the artwork and engrave only one or a few stamps, set the page size in the graphics program to something smaller than the full field. Just as an example, we will use a page size that is 8.5 x 11 inches (215.9 x 292.1 mm) in the Landscape mode. In this way we can output to a paper printer, before engraving, for proofreading. Make sure that this page size is set up the same in the printer driver. Create a negative style stamp by drawing a black box slightly larger than the size of the stamp desired. Type in or add graphics within that area and color them with a fill of white. If you want the laser to cut out your stamp, draw a red outline box that is the smallest possible line thickness as your program allows. **Make sure that the red outline is inside the black box by at least .050 inches, otherwise there will be a little rubber strip of rubber sticking up around the border that will unintentionally appear when using the stamp.**



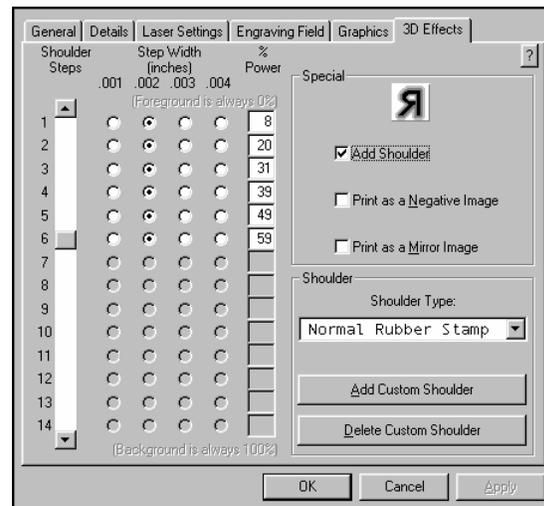
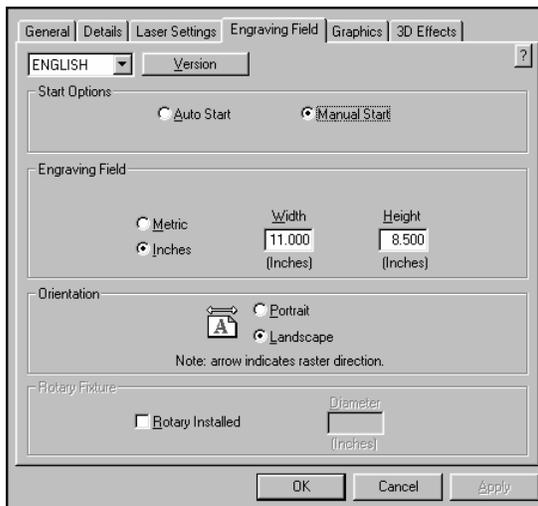
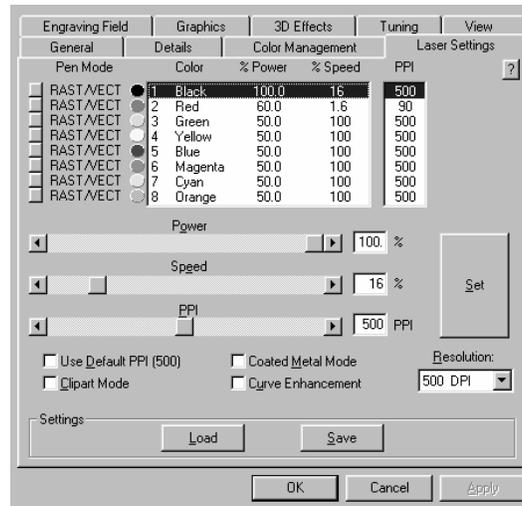
## 5-2 Options & Accessories



Place the stamp (on screen) where you want it to engrave in laser system. Avoid the spots where you have already engraved and cut out other stamps.



Place a sheet of rubber stamp material into the **UPPER LEFT CORNER** against the rulers, as the following diagram illustrates, and be sure to properly focus on the material. Now, set the printer driver settings as shown on the following page.



### Settings for a 30 Watt System

There is a considerable difference between rubber blends, thickness, and hardness between different manufacturers. Use these settings as a starting point for a 30 Watt system. You might need to experiment with different settings to obtain the desired results.

As you can see, we set the page size in the driver equal to the graphics programs page size. We also selected "Add Shoulder" and "Normal Rubber Stamp". We did not choose "Print as Negative Image" or "Print as Mirror Image" because these switches are only used when printing a full sheet of stamps.

After making all driver selections, print the graphic to the laser system. Start engraving and watch the stamp engrave and cut in the correct position on the rubber sheet. The background area, since it is colored black is being engraved and the letters remain standing up. When the engraving part is done, the stamp gets cut out along the red cut line due to the stronger settings that were assigned in the driver for the color red.

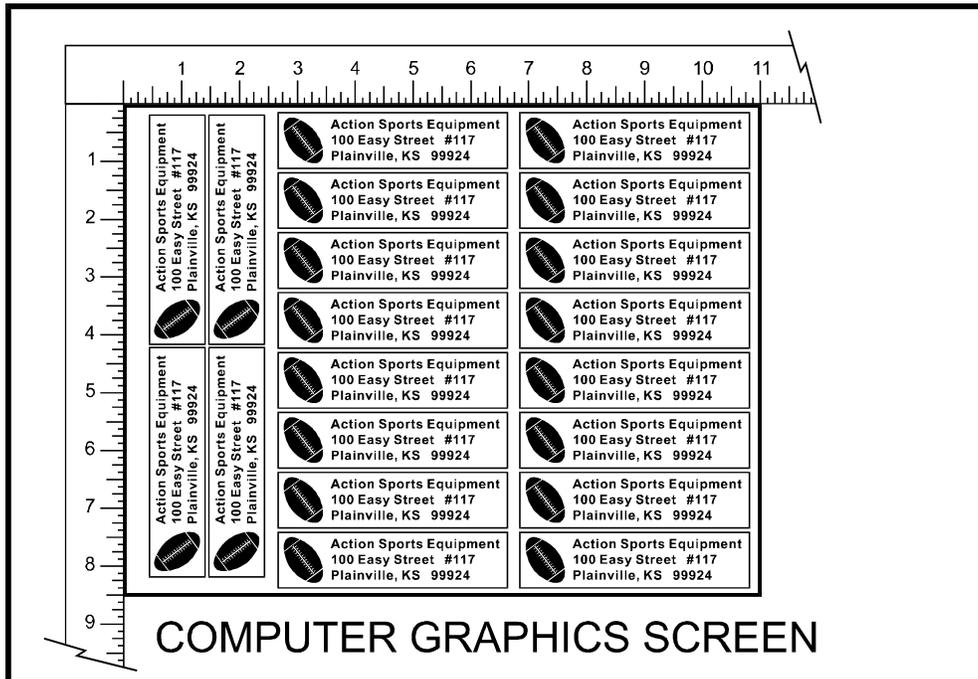
## 5-4 Options & Accessories

### Full Sheet Method

The second method is to create a full sheet of rubber stamps and engrave them all at the same time. First create a stamp as a positive image as shown below.

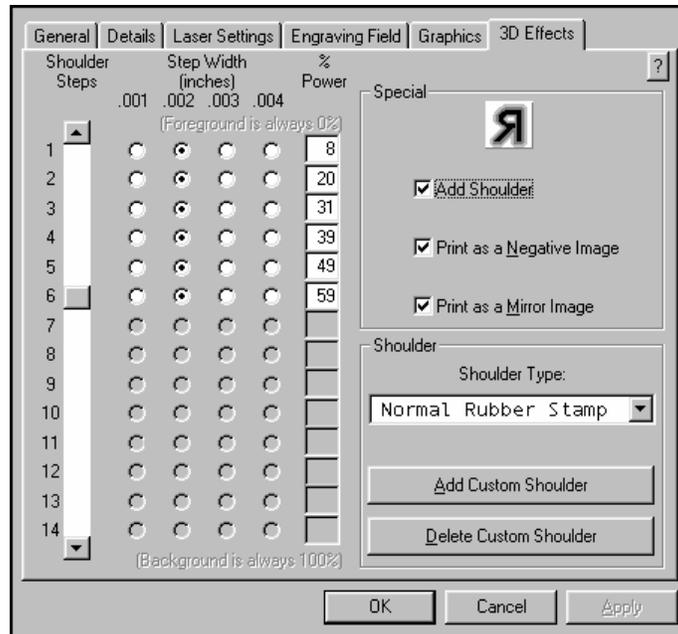


Create more stamps to fill the entire page. They can be the same stamp or different ones.



If desired, output the page to a paper printer for proofreading. Printing out a positive image to a printer is easier to read and uses less toner or ink than a negative print.

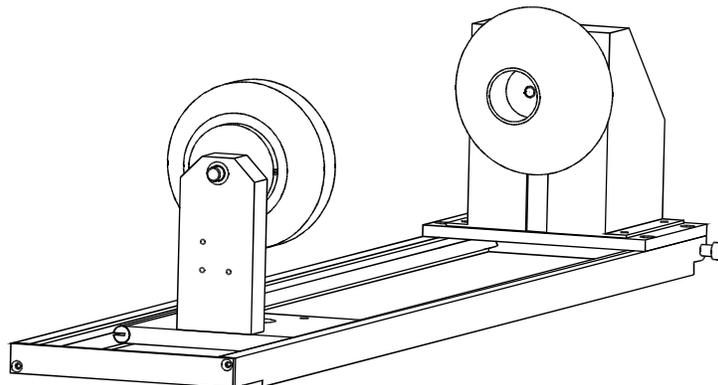
In the laser systems printer driver, use the same settings as the previous example but with only minor modifications. In the “3D Effects” tab, select all three “Special” options; “Add Shoulder”, “Print as Negative Image” and “Print as Mirror Image” as the diagram below illustrates.



Print to the laser system. Position the full sheet of rubber stamp material in the same upper left location on the engraving table and begin engraving. The driver automatically adds the shoulder, mirrors the entire page, and creates a negative image for engraving, and cuts out the stamps.

## Rotary Fixture

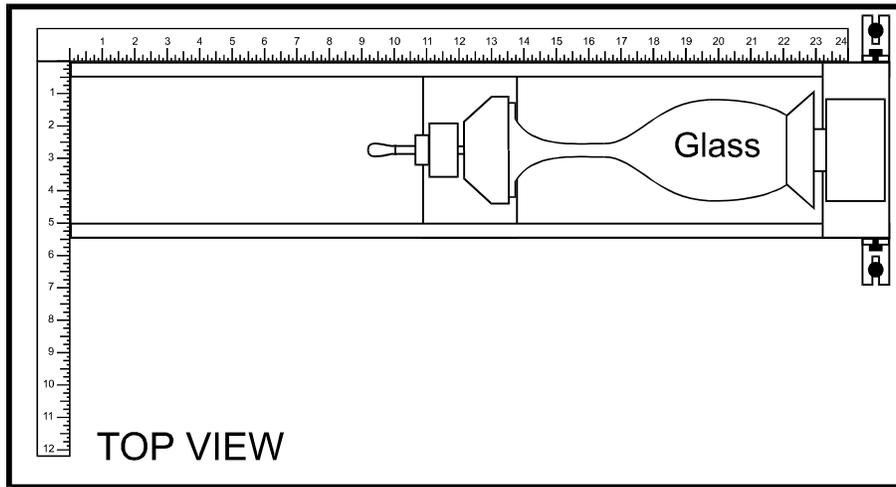
The Rotary Fixture has been designed to engrave cylindrical objects. Two attachments come with the fixture, a cone shaped disk attached to the motorized end of the fixture and an inverted cone shaped disk attached to the adjustable end of the fixture. These attachments are used to hold wineglasses, mugs, cups, etc.



## 5-6 Options & Accessories

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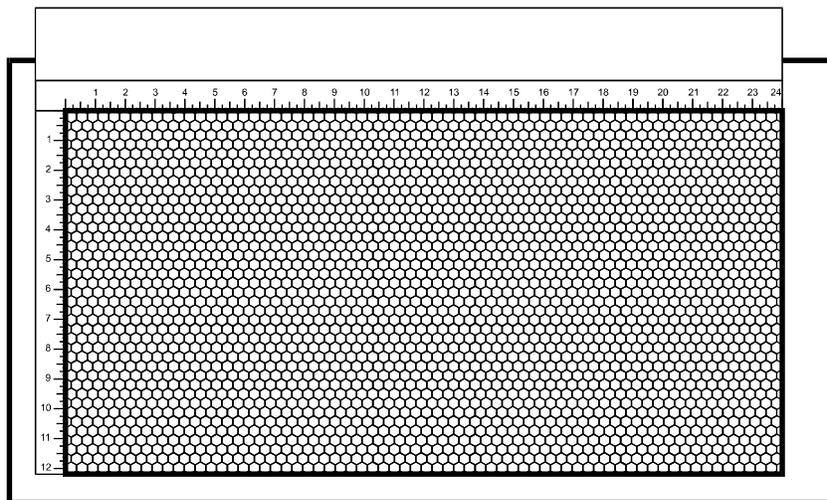
The Rotary Fixture is placed on the engraving table as the following diagram illustrates.



Please refer to the instructions supplied with the Rotary Fixture on how to properly install and use this option.

## Cutting Table

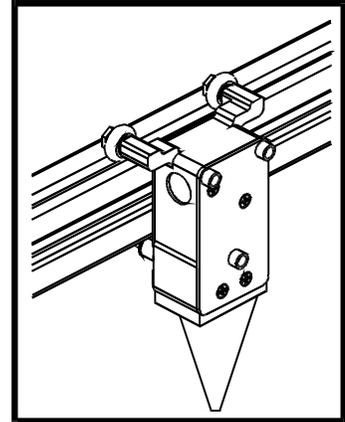
The purpose of the Cutting Table is to support the material that you are cutting off of the engraving table's surface to minimize surface contact area. It also redirects exhaust airflow below and above the material for better smoke removal. The Cutting Table is installed directly on top of the engraving table. It is composed of a sheet metal box, alignment rulers, and a replaceable honeycomb style bed. The honeycomb material is reflective only in the area that contacts your material to minimize laser beam reflection.



Please refer to the instructions supplied with the Cutting Table on how to properly install and use this option.

## Air Assist System

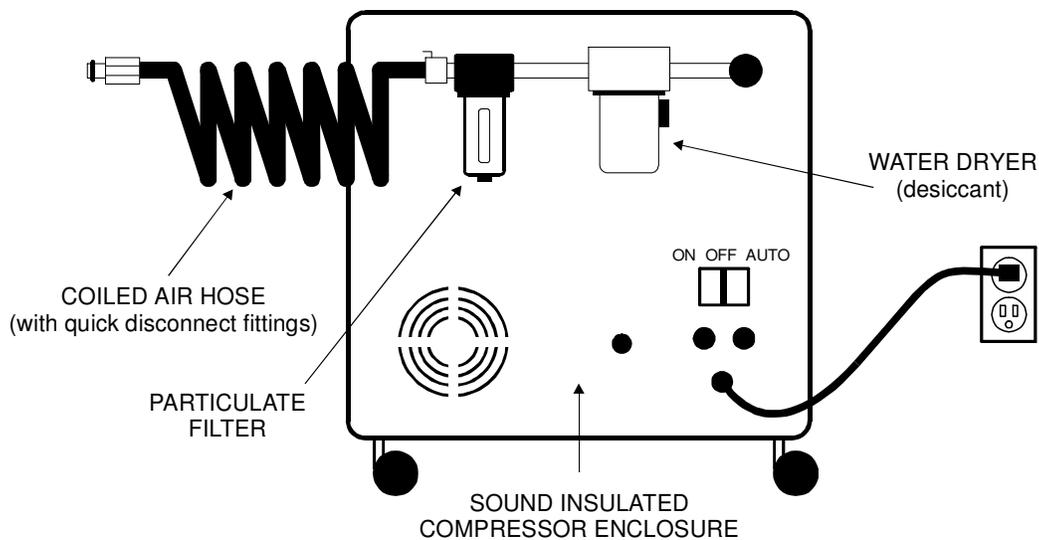
The Air Assist System consists of a nozzle that attaches to the focus carriage, Optics protection adapters, tubing, mounting brackets, needle valve, and pressure gauge. The purpose of this system is to force air or other types of gases directly onto the surface of your material to reduce the burning effects of the laser beam and helps disperse the smoke and gases created when cutting or engraving materials. The optics protection parts assist in helping keep the optics cleaner from flying debris created from the pressurized nozzle. Use of this system requires a minimum compressed air source capable of 50 PSI @ 2.5 cfm. This supply **MUST** be free from oil, water, and particulate matter. Another option called the "Air Assist Compressor", can supply this source. The Air Assist System is truly a unique option that is a must for serious laser system production.



Please refer to the instructions supplied with the Air Assist System on how to properly install and use this option.

## Air Assist Compressor

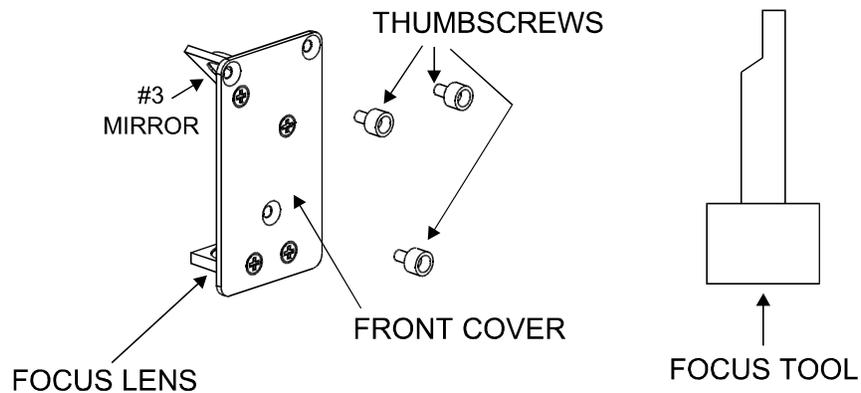
The Air Assist Compressor option is a 50 PSI @ 2.5 cfm source for oil-free, water-free, and particulate matter-free compressed air. It contains a sound insulated air compressor, water dryer (desiccant), and coalescent particulate filter. This compact and custom designed unit is a great compliment to the Air Assist System option.



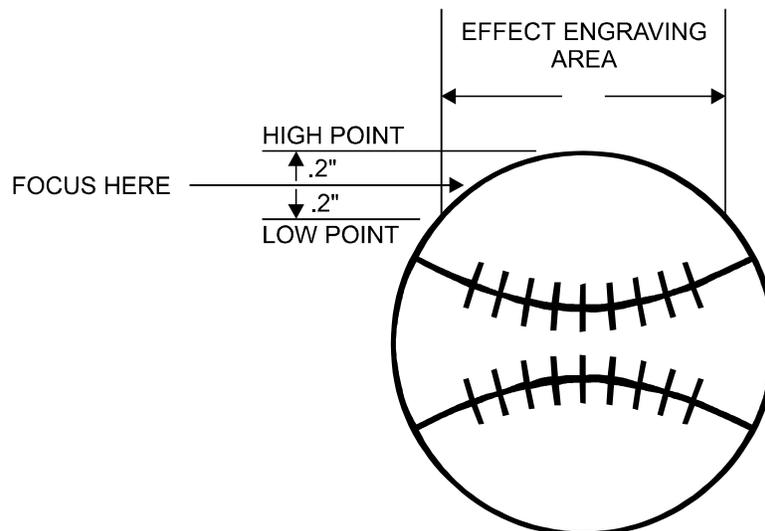
Please refer to the instructions supplied with the Air Assist Compressor on how to properly install and use this option.

## Focus Lens Kits

There are three optional Focus Lens Kits available other than the standard 2.0", they are the 1.5", 2.5", and the 4.0" kits. Included in these kits are the focus lens, #3 mirror, front plate, thumbscrews, and a focus tool.



Different lenses produce different spot sizes and have different focal ranges. For example, the 1.5" lens produces a spot size of .003" and has an effective focal range of  $\pm .075$ ". This lens can engrave very fine detail but can only be used on very flat materials. On the opposite end, the 4.0" lens has a spot size of .013" but has an effective focal range of  $\pm .2$ ". Although this lens cannot engrave very fine detail, its focal range allows you to engrave on slightly rounded or curved objects without the need for rotation. Using a baseball as an example, focus the beam halfway between the highest point and the lowest point of engraving. Since a 4.0" lens has a greater focal range than a shorter lens, you can engrave a considerable distance around the ball without having to rotate it. Attempting to engrave further around the ball will result in a loss of engraving power and a distorted image.



Refer to the following chart for spot sizes and focal ranges of the lenses available.

<b>FOCAL LENGTH</b>	<b>SPOT SIZE</b>	<b>FOCAL RANGE</b>
1.5 "	.003 "	+ / - .075 "
2.0 "	.005 "	+ / - .100 "
2.5 "	.007 "	+ / - .125 "
4.0 "	.013 "	+ / - .200 "

If you would like to order any of the accessories described in this section, please speak with your salesperson or call us directly to place an order or to get current pricing. Most of these items are in stock and are available for immediate shipment.