

MARCH 2011

Laser *Engravings*

LASER MANUAL & *Supplies*



P. Graham
DUNN

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PERSONALIZATION CENTER OVERVIEW



What does Laser mean? Laser is an acronym for:

L I G H T
A M P L I F I C A T I O N B Y
S T I M U L A T E D
E M I S S I O N O F
R A D I A T I O N



We have discovered that for most people the two most powerful words in the English language are their first name and their last name! Accordingly, we have designed a system whereby a customer can walk into a store with a personalization center and in just a couple of minutes walk out with one of a variety of gift items engraved with their name.

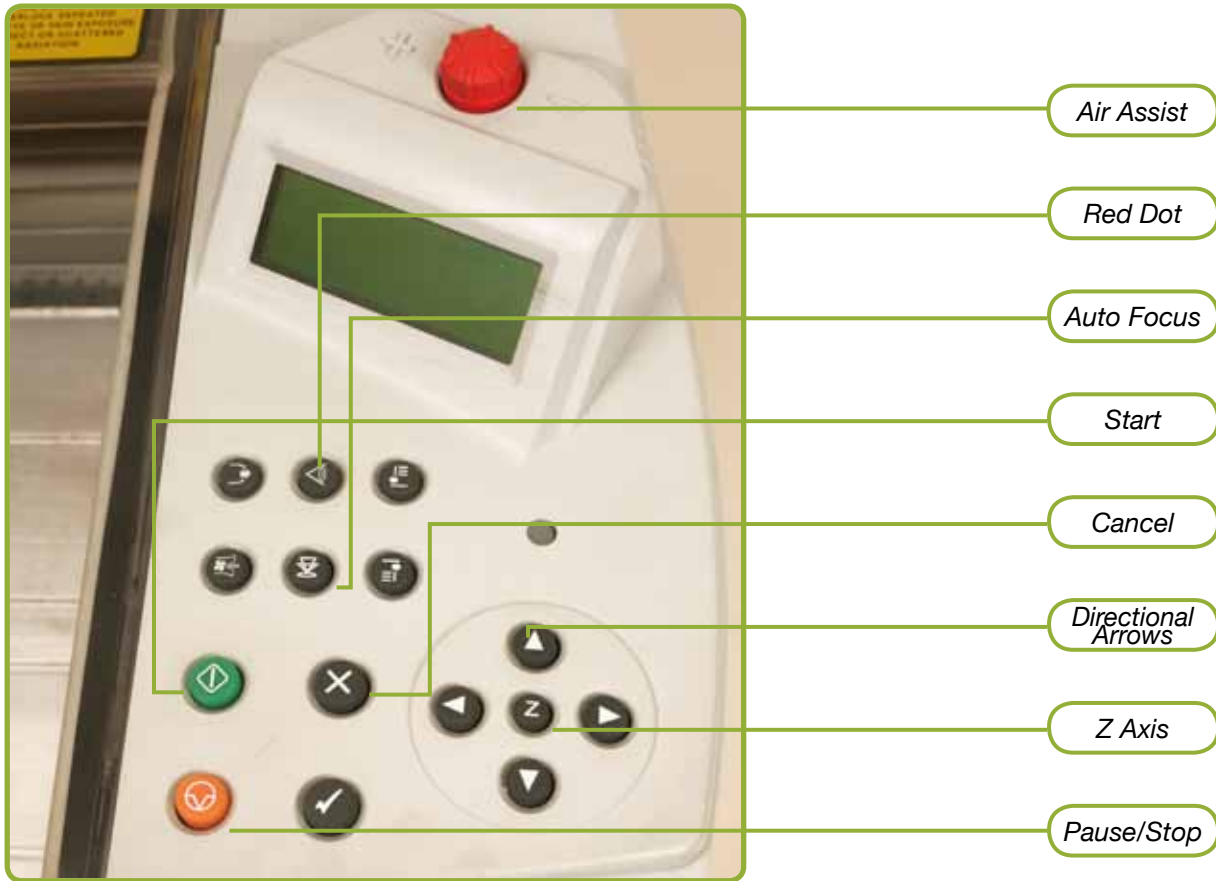
Traditionally, retailers who have chosen to pursue the personalization market are required to carry floor racks stocked with 250 girls' names and 250 boys' names. If you carry ten different personalized items, you have to stock 10 different racks. Then, of course, you run into the problem of not having the particular name the customer is after, not to mention attempting to maintain inventory for the popular names that are inevitably sold out. In this day and age of many unique names (and uniquely-spelled names!) it can be difficult to compete in the personalization market.

Our personalization program offers a simple solution to all of these problems. You never have to worry about a customer requesting a name that isn't stock—you make it for them on the spot. You never have to worry about stocking thousands of SKUs; you simply have to monitor the number of blank items and be sure to maintain adequate inventory. Additionally, your floor space is not tied up with personalization racks that often detract from a store's visual appeal. We offer over 100 different items for personalization including clocks, photo frames, Christmas ornaments, knives, pens, key chains, and office accessories—in short, something for every gift-giving occasion.

Our system of personalization is extremely easy to operate. With a minimal amount of training, an operator is ready to take orders. The customers love the opportunity to actually watch their name being engraved. You can even have them participate by hitting the "little green button" to activate the lasering process! Having the laser machine operate in the sales area is an attention magnet for other shoppers, leading to additional sales.

UNDERSTANDING THE CAPABILITIES

Components of the Laser



Laser machine buttons

Air Assist – If installed, this will adjust the flow of air directed at the laser point (most PGD machines do not have this option)

Red Dot – Enable/Disable the red dot pointer. When the red dot is on, the laser beam is disabled.

Auto Focus – Press to auto focus at the current location of the head.

Start – After sending the job, press this button to begin lasering.

Cancel – Used in menus, not generally needed.

Z Axis – Press to set the table height manually using the up/down arrows

Directional Arrows – Use to move the head around, usually before manually focusing

Pause/Stop – Pauses the currently running job, press the green Start button to continue. To stop the running job completely, press one of the Directional Arrows after the Pause/Stop button has been pressed (you will not be able to resume the current job if you do this).

Components of the Smoke Collector

Speed – Adjusts the blower speed, may not be used.

On/Off/Auto – The preferred setting is Auto when running a job.

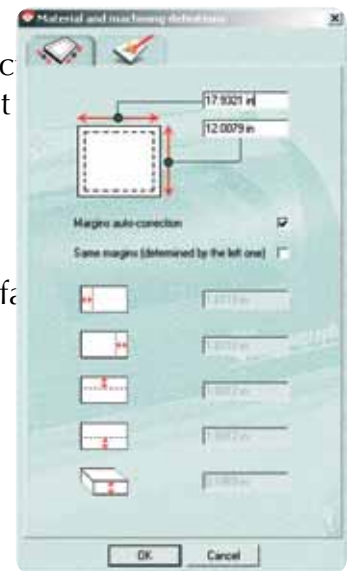
Power Cord – Plug into electrical outlet.

Remote – Plug in the cable included between the smoke collector and the laser.

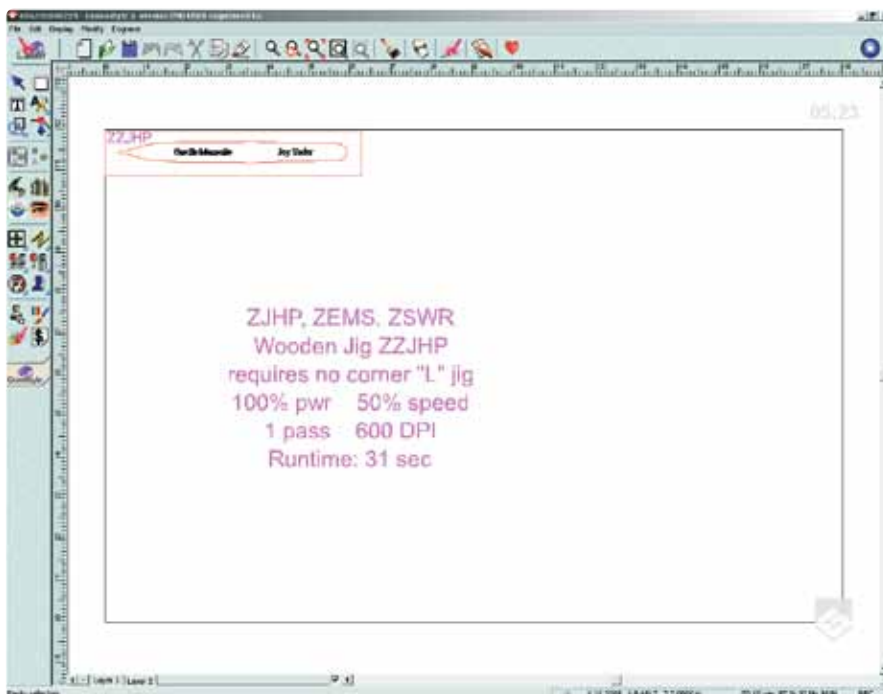


Getting Started with the Gravostyle Software

1. Start the Gravostyle software by double-clicking on the desktop icon.
2. Click "OK" to close the Material and machining definitions dialog box.
3. Now you are ready to open the engraving file. Locate the correct product in the Personalization Catalog and position the bar code scanner over the correct button on the scanner to accept the code when you are ready.
4. If you are asked to save changes to the current file, select "No".
5. The file will open, and you will see what jig is needed, and what the default settings are.

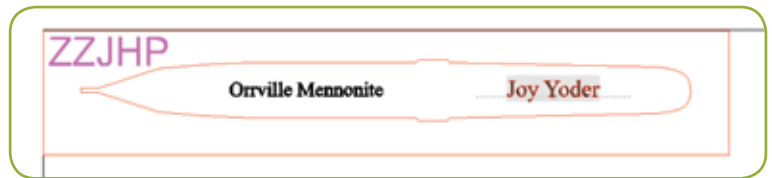


Material and machining definitions box



A screenshot of a pen file in Gravostyle.

6. Double click on the name, then type in the new text.



7. If the text is too small to read easily, use the Magnifying Glass tools to zoom in on part of the file.



8. When the customer has approved the text, click on the “Marking” button to open the Laser Dialog Box.



9. All settings should be correct, but if need be, they can be changed at this point.



The Laser Dialog Box settings

10. Click the “Run” button to send the job to the laser. The laser will beep when it has finished receiving the job

11. Place the correct jig and product in the upper left corner of the laser bed, close the lid and press the green “Start” button

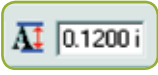
12. Remove the product when finished, and wipe the smoke residue off with a damp cloth if needed and apply the product with shoe polish when applicable.

ADJUSTING TEXT

Changing Text Size

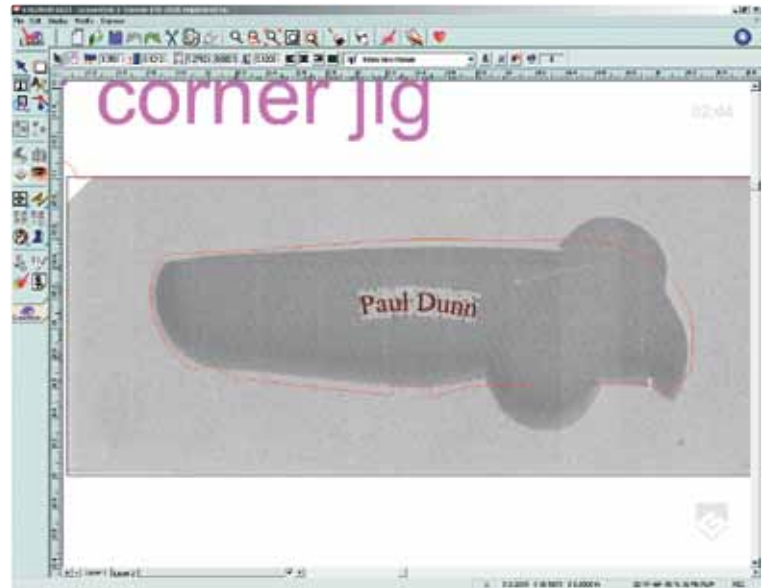
Select the text that you would like to make larger or smaller by double-clicking on it.

In the tool bar there is a letter “A” with a vertical arrow. This is where you change the text size.



In the box to the right of the “A”, you can make the text larger by increasing the number or smaller by decreasing the number.

The size of 0.1200 is the standard 12 pt font found in many documents, including this one.



Changing the text properties.

Changing Font

Select the text that you would like to change by double-clicking on it. You can also click text that you want to change with the point tool and then click on the “T” text tool.



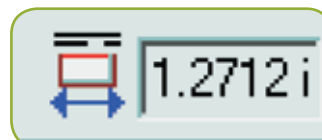
Locate the font display on the tool bar.

Click on the down arrow to the right of the font to select from available fonts. Once a font is chosen, click on the selected font and press the “Enter” key on your keyboard. The text will change to the desired font.

Reducing the Length of Text

There are two ways of doing this:

1. Dragging the Text
 - a. Select the text you want to change—it should have 9 red boxes around it
 - b. Put your cursor on the middle box on the extreme right or left—a horizontal arrow should appear
 - c. Click on the box, and holding down your cursor, drag it to the size you want
 - d. When you let go of the cursor, the text will stay in the new length
2. Specifying the Length
 - a. Double click on the text so it is highlighted in gray
 - b. Type the desired length into the Max Length box



Making a Curved Text

Select the text that you would like to curve by double-clicking on it. Click on the “Text Tools” icon on the left side of the screen (It has 3 letter “A”s). Click on “Text on an arc” button. That will bring up a new window. On the right there are 4 styles to choose from. Decide which style of curve you want and click on it.



On the left is a box attached to a green arrow. That will give you the tightness of the curve. If you want a tight curve, enter in a small number (1–3). If you want a wider curve, enter in a larger number (4–7). Click on “OK” and see what kind of curve it is. Experiment until you get the curve you want.

IMPORTING LOGOS & INSERTING IMAGES

Symbol Library



Browse the folders and files for an appropriate image. Click the image and select “OK”. Place the image on the material where you would like it. Use the red boxes around the image to adjust the size and shape of the image to fit the object to be engraved.

Adding an Image to the Symbol Library

You should have the image you wish to import saved on your computer. This may be artwork you have designed, a scanned image, or a logo from a website. Vector files (such as .ai and .eps) are preferred, but not required. Import the image into Gravostyle using the File, Import command (Ctrl + I).

Run the image on test material (paper or alder wood) to ensure it engraves as shown. Select the image and then select the symbol library icon. Place in folder of your choice. Right click on folder names to add a new folder. Then click on “Add” and name the symbol. Now the files will always be available in your Symbol Library under the folder that you designated it.

ABILITIES OF THE VECTOR TRAY

Making Magnets or Name Tags

Decide what shape you want the magnet to be. The shape can be created by the following two different ways:

1. Click on the “Geometrical Shapes” button.



Choose which shape you want to make by clicking on it. Draw that shape by clicking and holding down the mouse button—when it’s the right size, release it. If you have a specific size that you want, press “F2” while the item is selected and specify your measurements.

2. Click on "Symbol Library"



Go to "Contours" and chose which contour you would like. Either double-click or press "OK" to select the shape. If you have a specific size that you want, press "F2" while the item is selected. This allows you to make it a specific size. You can also click (holding down) and dragging on the corner or sides of the shape to make it bigger to smaller.

Once you have created your shape, change the shape from raster to vector (cut out).



Select the shape. Click on "Laser Colors" Click on the red colored button Turn on "Vector Mode" which is located four spaces to the right of the red button.



Adding Text:

Click on the "Text tool" and add any text that you want. Move it to the place you want, centering it using the alignment tools button or under the "Modify" drop down menu. The font and size can also be changed to fit the magnet.

When the layout is finished, everything in the middle (text or clip art) should be black and the outline should be red. Laser it Put the vector tray and wood in the machine aligned in the top left corner.

Settings:

Make sure the "Auto-focus" is on.

Black: Power 100%, Speed 70%, 1 time

Make sure the "Z-drop" is set to 1 inch.

Red: Power 100%, Speed 20%, 2 times

TROUBLESHOOTING

Text isn't Moving to Correct Location

1. Click on the "Text Mode" button.



2. In the text menu on the left there is a picture of a white hand.



3. Click on the hand and that will activate manual text mode which will allow you to move the text to where you want it.

The Text is Off-Center on Product

If the file lasers off-center, you'll have to move it.

1. Draw a box or circle around the text you want to laser.



2. Change it to a red, vector outline using the "Laser Colors."

3. Make sure the box is exactly the size of the text you want. Select the box and laser it using the red light. Adjust the box to the correct place and use the red light again to check it.

4. Once the box is in the right place, then center the text inside the box using the "Alignment Tools" button. Delete the box from the file and laser the text OR select the text and laser it.



Engraving is Fuzzy/Hazy

Lens may be dirty or scratched – Clean using a cotton swab and lens cleaning solution.

Item is out of focus – To check, pause the laser in the middle of the job, and place the focus tool between the bottom of the lens and the item being engraved, if the space is greater or less than the tool length, adjust the bed to fix.

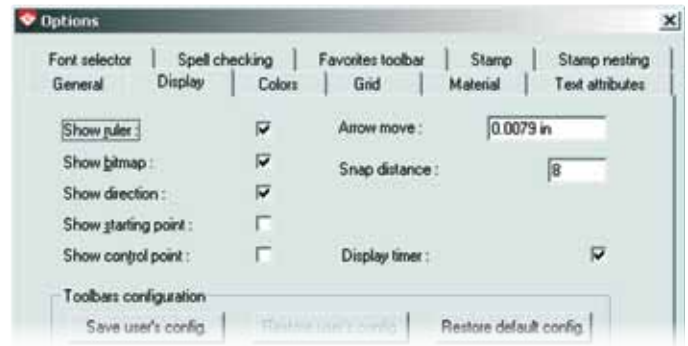
Auto Focus Sensor Keeps Hitting Product In Laser Bed:

Increase the Z-up number in the laser settings dialog box (arrow up Z icon)

Menu's are not Showing

1. Press the “F10” button on your keyboard (brings up the Gravostyle options screen).
2. Select the “Display” tab.
3. Press the “Restore Default Config” button.

Menus should appear again. This happens as sometimes they are inadvertently dragged off the screen.



I Can Only “Undo” 3 Steps

1. Press the “F10” button on your keyboard (brings up the Gravostyle options screen).
2. Select the “General” tab.
3. Set the “Undo Level” to 99 (or number of your choice).



FILE ALIGNMENT

Alignment of Laser Files

Beginner:

Run your file using the red dot.

In Gravostyle use the arrow keys to adjust the position of the object you want to laser and run the file again with the red dot.

Repeat these steps until the red dot is running where you would like the item to laser.

Note: The red dot does not mark the spot where the laser will engrave precisely. On very small items this may be evident.

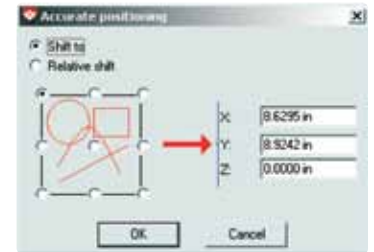
Advanced:

Start by turning on the red dot on your machine, and then use the directional keys on the laser to place the red dot at exactly the center of the object you would like to laser. Often measuring the item and marking lightly with a pencil ensures a precise location for the center of your material.

When the red light is on the center of the object you will laser, write down the X and Y coordinates on the machine's display.

Important: subtract the Y value from 12. The machine (LS100) counts up from 0, while the software counts down from 12.

In Gravostyle select the object you which to laser and move it, while continuing to hold down the mouse button hit the F2 button on your keyboard while you are still moving the object. (There is no other shortcut to this menu). The accurate positioning menu will display.



Select the radio button "shift to." Select the center button of the 9 displayed - this will align the center of the object to the position entered (should you want to line up to the left hand corner of the object on the machine, this is where you select the position of the object you are aligning).

Enter the X and Y numbers pulled from the machine (remember Y needs to be subtracted from 12)

The object in Gravostyle will move to the coordinates entered from the machine. Run your job with the red dot enabled to double-check.

Additional Alignment Tips

Draw a box around the object to engrave.

Set the outline to red and vector.

Run the red light along the vector and line that up to your object by either the beginner or advanced way of aligning files.

Once aligned, center the text/objects to engrave to your outline, erase the outline, and engrave. A common mistake is forgetting to erase that outline. Be sure to do so or you may vector the item as well as engrave it.

Aligning Text on Small Items

Change the color of the text to red and vector.

Run the job with the red light. The light will follow the contours of each letter.

Align using the arrow keys in Gravostyle, or Accurate Positioning.

Run the job with the red light. Repeat until satisfied with position.

Change the text color back to black in order to run the job in raster mode.

FILE MANAGEMENT

Organizing your Laser Files

All the laser files you will need from day to day will be set up for you in a folder. Your Gravostyle program will be set up to automatically access the correct the folder each time you try to open a file. Each file can easily be accessed by scanning the barcode in the catalog or on the product.

For sorting the various custom laser files that you want to save, we recommend the following system for your laser folders and files:

- Folders named by program type (if you are using both Gravostyle and Corel)
- Folders named by type of item (example: pens, plaques, key chains, etc.)
- Folders named by item code (example: HFA, ERP, etc.)
- Files saved as customer name

For organization of paperwork, we suggest using a three-ring binder with folders labeled as "Pending Layout," "Pending Approval," and "Items to Laser." A separate location for completed orders is usually necessary as paperwork accumulates.

LASER MAINTENANCE

Needed Cleaning Supplies

You will need the following items to keep your laser clean and working efficiently:

- | | | |
|---------------------|---------------------------|-----------------------|
| -Particulate Filter | -Cotton Swabs/Optic Wipes | -Lens Cleaner |
| -HEPA Filter | -Paper Towels | -White Lithium Grease |
| -Carbon Filter | -Glass Cleaner | |

Everyday Maintenance

Clean machine with glass cleaner and paper towels. Make sure the laser machine is shut off before cleaning. Spray glass cleaner onto paper towel, not directly into machine which could cause damage to the lenses. Thoroughly wipe the surface of the laser tray, the inside and the outside of the glass hood. It is also recommended to organize the work area to maintain a clean station for customers and laser operators.

Weekly Maintenance

Clean lenses and mirrors. Using a cotton swab or optic wipe and lens cleaner, clean both sides of the laser lens. Also clean the mirror above the lens, and the mirror on the far right side of the laser arm.

Changing/Checking Disposable Filters. Turn off exhaust system. Unhook clasps on either side of

the exhaust lid (which is attached to the hose). Lift entire lid and remove from exhaust system.

The top layer is your particulate filter (also known as the 2" disposable filter). Check this for dust and smoke residue – these usually need to be replaced every one to two weeks, depending on how frequent the machine has been used. Diligent maintenance and replacement of these filters will cut down on the wear and tear to the other more expensive filters in the exhaust system.

Monthly Maintenance

Changing/Checking HEPA Filters. The second layer in your exhaust system is the HEPA filter. With proper maintenance of your machine this should only need to be changed once every couple of months, but it is a good idea to check the HEPA filters at least once a month in case increased activity has caused it to degrade more quickly.

Long-Term Maintenance

Changing/Checking brushes. Your exhaust system will require the brushes to be replaced every 500 hours. It is dependent upon use; we find that with steady use it usually needs replaced once every 6 months, but can vary from machine to machine.

HELP DESK INFORMATION

P. Graham Dunn Contact Information

Laser Center Phone Support 1-800-828-5260 (Option 5)
Laser Center Online Support www.pgrahamdunn.com/laser

Gravograph Contact Information

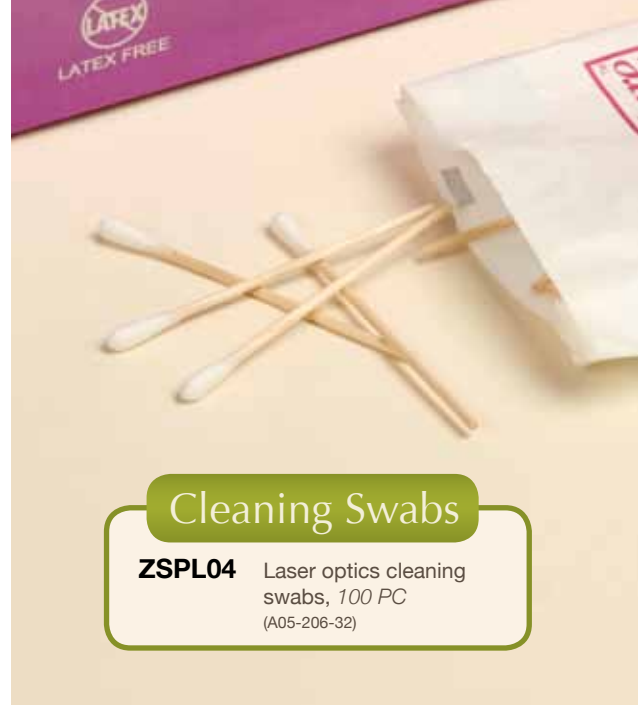
Customer Service 1-800-634-6335 (in Continental U.S) or 1-770-623-0331

Press option 4, then option 2. If you get a message, please leave your Name, Number, City, State and a brief description of the problem. Please make sure to mention that this is the PGD laser program. The next available technician will give you a call.



Vector Tray

ZSPL07 Vector tray 18"W x 12"H
(A00-50106-32)



Cleaning Swabs

ZSPL04 Laser optics cleaning swabs, 100 PC
(A05-206-32)



Digital Caliper

ZSPL01 6" Digital caliper
(A00-0306-32)



Cleaning Tissue

ZSPL02 Laser optics cleaning tissue
(A00-506-32)



Cleaner

ZSPL03 Laser optics cleaning solution, 1 OZ
(A00-0106-32)



Shoe Polish

ZSPL06 Brown shoe polish and 3 rags
(A00-906-32)



Shoe Polish

ZSPL20 Black shoe polish and 3 rags
(A00-906-32)



Particulate Filter

ZSPL09 Pleated particulate filter,
6 PC
(A00-1506-32)



HEPA Filter

ZSPL10 HEPA filter
(A00-52106-32)



Motor Brushes

ZSPL13 Replacement interrupter
type brushes
(A09-68106-32)



Chemical Filter

ZSPL11 General purpose chemical
filter (module & media)
(A02-30406-32)
ZSPL12 Media only, (A06-79106-32)



Sensor

ZSPL19 Autofocus sensor
(A00-0106-32)



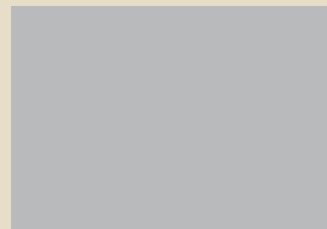
Wheel

ZSPL21 Smoke collector
replacement wheel
(A00-0106-32)



LCD Mount

ZSPL14 LCD mount
(A00-0608-32)



Sandpaper

ZSPL15 Sandpaper
(A05-106-32)



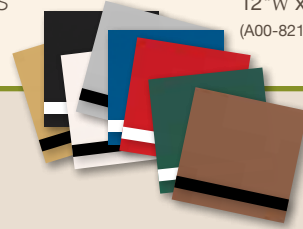
Rub 'n Buff

ZSPL16 Rub 'n Buff, Black
(A00-506-32)
ZSPL17 Rub 'n Buff, Gold
(A00-506-32)

Laserable Plastic

Vector Tray required

 <p>ZGLD01 Brushed Gold Surface Black Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	 <p>ZGLD04 Brushed Silver Surface Black Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	 <p>ZGLD07 Pine Green Surface White Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>
 <p>ZGLD02 Black Surface White Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	 <p>ZGLD05 Blue Surface White Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	 <p>ZGLD08 Brushed Copper Surface Black Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>
 <p>ZGLD03 White Surface Black Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	 <p>ZGLD06 Red Surface White Core 12"W x 12"H, 10 <i>PIECES</i> (A00-06106-32)</p>	<p>ZGLD09 Variety Package, 1 <i>OF EACH</i> <i>COLOR (ZGLD01-08)</i> 12"W x 12"H, 8 <i>PIECES</i> (A00-82106-32)</p>



Alder

ZALD025 Alder 12"W x 5"H, 25 *PC*, (A00-0506-32)



Ribbon

ZRIB01 Ribbon
100 *PC*
(A00-5206-32)

Magnets

ZMGN01 1½"W x 2"H
150 *PC*
(A05-6206-32)

Magnets

ZMGN02 Nametag
magnets, 10 *PC*
(A00-2206-32)

Laser Bed Alignment

ZZLAP Laser Alignment Plate
(A00-506-32)

Laser Bed Alignment

1. Place the alignment plate in the top left corner of the laser bed
2. Run this file
3. Measure the offset between the box you lasered, and the box that was already lasered.
4. Turn the laser off, then back on.
5. As soon as the word "Gravograph" appears on the display, press and hold the X button.
6. Select the option "ReAlign Machine"
7. Select the option (ReAlign X Y)
8. Increase or decrease the X and Y values by the offset you measured
9. Press the check button, it will beep if the new values are accepted.

Troubleshooting:

If your machine will not allow the offset you need to enter, you'll need to reset your fence.

In the package of tools that arrived with the machine, there will be an allen wrench that will fit the screws along the rulers on the X and Y axis.

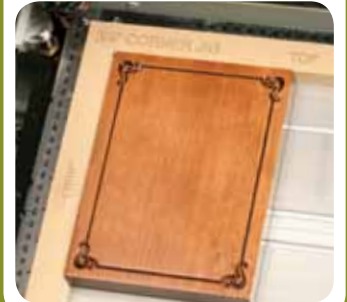
Move the rulers as far in as possible. Run your red light along each axis to ensure the rulers are secured straight.



Corner Jigs



ZZCORNER 1/4, 1/2, 3/4 jigs
These jigs are used (as shown in the photo below) when engraving the product.
(A00-506-32)



CONFIGURE SCANNER

Scan the barcodes on the right from top to bottom to setup scanner

Enter Configuration Mode



Exit Configuration Mode



Barcode Scanner

ZSPL08 Metrologic USB barcode scanner, (A00-00206-32)

This scanner may be used to quickly, easily, and reliably open laser files from this catalog. The laser operator only needs to scan the product barcode in the catalog and the correct file will be opened. The file contains details on required jig, speed, power, and lasering suggestions.

Scan the barcodes (on this page) from top to bottom to configure scanner.

The scanner will only open files that are in the default directory (the directory that comes up when you pick File, Open).

To prevent this directory from being accidentally changed (particularly in a multi-user environment), we suggest you locate your Gravostyle.ini file (usually in C:\GravoStyle5200\Config), right click, choose Properties, and select the Read-only property.

The barcode scanner will not function at all if Caps-Lock is on, so be sure to check this if you are having trouble.

Font Plaque



ZHFA Small plaque
5½"W x 7¼"H
(A05-806-32)

Engraved this plaque with your favorite fonts to show your customers the font options available.



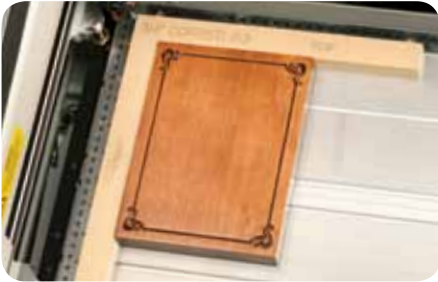
LASER DETAILS:

Jig: ¼ corner jig

Speed: 30% Power: 100%

Notes: Shoe polish

* • settings based on a 30 watt CO2 laser



POP Displays

Empty displays are available for purchase. These displays are a great way to display product.

POPCOR/B Empty display, 6 hooks
15"W x 9"H x 6"D
(A00-506-32)



Pen Display

POPPE Empty pen display, holds 6 pens
7"W x 31¼"H x 2½"D
(A00-0106-32)

Knife Display

MODKNF/F1 Loaded display
19"W x 26½"H x 19"D
(A00-81506-32)
7 of each
ZKNF01, ZKNF04, ZKNF30, ZKNF60, ZKNF61, ZKNF63,
ZKNF64, ZKNF66, ZKNF78, ZGTB12, ZGTB13, ZMTL19

Laser Engravings

SAMPLE LASER CENTER IN 12'X 8' FOOTPRINT



Recommended Starting Order and Fixtures:

\$5,000 product purchase
Receive 4 free towers, cabinet, laser stand and POPCOR/B

or purchase any tower or cabinet for \$300 per unit

Two level bridge shelf \$100

A. POPMOD/I
knife case

B. POPMOD/J
glass shelf unit

C. POPMOD/K
slat wall unit

D. POPMOD/L
header

E. POPMOD/M
cabinet

F. POPMOD/N
laser stand

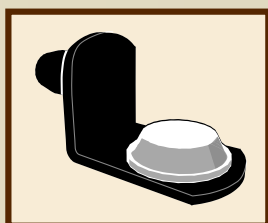
G. POPMOD/P
two level bridge shelf

The drawing above is the suggested layout of our Laser Center.

In under 100 square feet, we have incorporated the following:

- 4 MOD towers to display engravable product, each with enclosed storage in the base
- A 3' x 2' storage cabinet / table for jigs, inventory, and general storage
- Stand-alone laser with integrated smoke collection

This entire layout takes up an area only 12' wide x 8' deep in your store, and has proven to be an excellent return based on sales per square foot.



Each of these components ship with four bolts that are used to secure the module to the module below it with an Allen wrench provided with each header.

Diagram of POPMOD/J shelf support and bumper to keep glass shelf stable.



P. Graham Dunn is pleased to offer tri-fold Laser Gift Brochures. Please note the blank space on the back and lack of PGD contact information; these are made especially for you. Stamp or sticker your store information on the back and these will be a great tool to promote Laser Gifts. Additional brochures are available for purchase.



Brochure

ZBRO09 Laser Gifts Tri-fold Brochure, 100 PC

Poster

ZPOS09 Laser Gifts Poster 12.75"W x 18.75"H

Catalog

ZCAT09 Laser Gifts Catalog

P. GRAHAM DUNN HAS A NEW LASER SUPPORT SITE.

STAY CONNECTED: We invite you to submit news, ideas and join the discussion forums. Share product designs and marketing ideas with other laser centers nationwide. The latest resources and laser information are at your fingertips!

ADDITIONAL TRAINING: Basic and advanced projects are available for any level user.

This is your source for downloading the most recent Laser Files. **VISIT...**

WWW.PGRAHAMDUNN.COM/LASER

TO FIND THE LASER SUPPORT SITE

Other resources are also available on the Laser Support Site, such as:

- Scan Books
- The Training Manual
- Order forms (password req.)
- Laser Tips
- Road Map for Success
- Product Design Ideas
- Gravostyle Training
- Video & Text Based Tutorials
- Business/Marketing Ideas
- & much more...