

SOP

EPILOG 24 MINI LASER

Training is required before using this equipment

Reservations are required when using this equipment

Closed Toed Shoes required

Eye Protection required

**NEVER LEAVE THE LASER CUTTER UNATTENDED
WHEN IT IS OPERATING**



MATERIAL SPECIFICATIONS

*If your selected material is not on this list please contact an NIS staff member.
Provide SDS (Safety Data Sheets) for materials requiring approval.*

- **Approved Materials:**
 - Acrylic/Plexiglass
 - Plywood
 - Chipboard
 - Mat Board
 - Solid Wood
 - Poster Board
 - Paper
 - ABS plastics
 - Laserable Stamp Material
 - Glass (etch only)
 - Alumna mark
 - Corian
 - Anodized Aluminum (etch only)
 - Powder coated or painted metals (etch only)
 - Metals with etching spray applied (etch only)

- **Banned Materials**
 - Materials containing Chlorine (PVC, Moleskin)
 - Polycarbonate (Barlo, Calibre, Hyzod, Makralon, Palsun, Sustanat, Tecanat, Tristar, Makroclear, Arcoplus)
 - Lexan
 - Fr4 Boards
 - Fiberglass
 - Vinyl

- **METAL CAN BE ETCHED BUT CANNOT BE CUT ON THIS MACHINE.** Treated metal (painted, powdercoated, anodized) can be etched directly. Untreated metal must have Cermark spray applied, available for \$5.00 per application.

- Maximum material dimensions: **24" x 12"** (609mm x 304 mm)
- Maximum material thickness, vector cut: 3/8"
- Maximum material thickness, etch: 8"

Turn on the Air Filtration System and Air Assist Pump

There are 2 ventilation systems that must be turned on before you activate the laser. One is located on the wall below the glass board and to the left of the TV labeled "Ventilation Button".

PULL knob to activate the ventilation system.

The ventilation system is used by all lasers. If your project is complete do not turn off the ventilation if other lasers are being used.



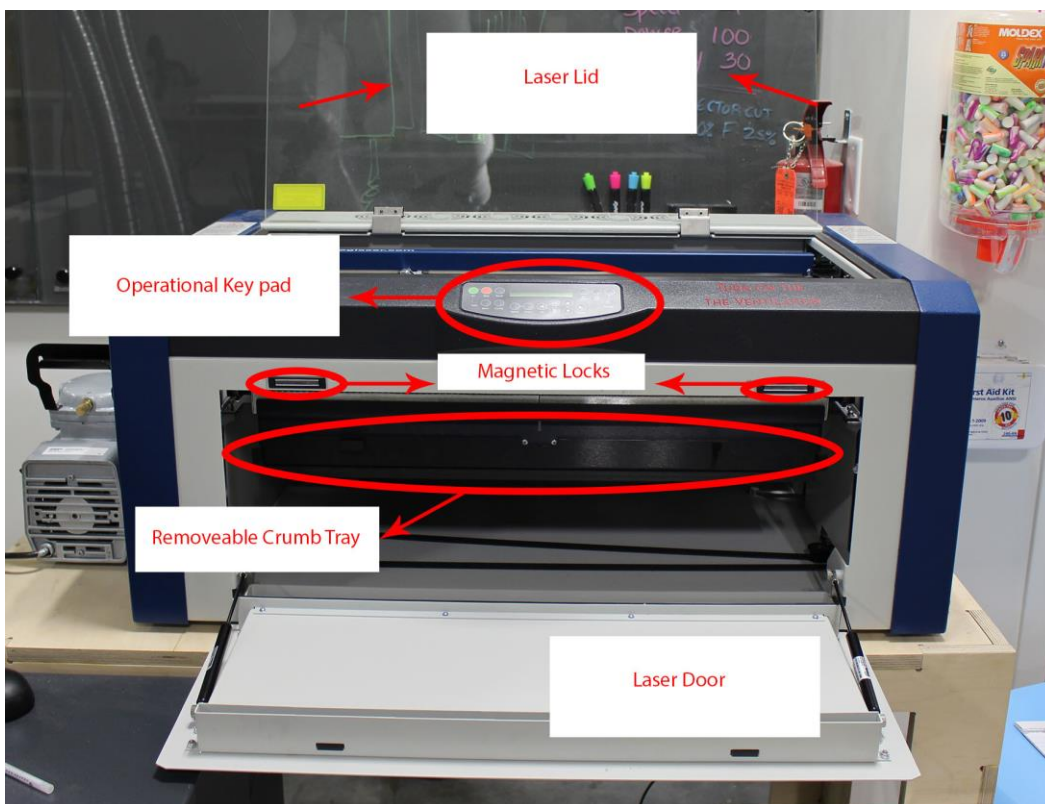
The air assist pump is located next to or on the floor beside each laser. Each laser has its own pump.



A 2" flame is okay for short lengths during a cutting pass.

- If the flame persists make sure that both ventilation systems are on.
- If your material is on fire push the stop button on the control panel, open the laser lid and smother the flame by blowing on it, misting it with plain water, or using scrap plywood to smother it.
- If a fire extinguisher is needed contact an NIS staff member immediately.

Laser Cutter Components:



The laser **will not fire if the lid and/or the front door is open**. The pointer will move through the motion of your print which creates a "ghost cut" allowing you to check if your file is located correctly on your material.

Step 1: Turning on the Laser

The Laser must always be turned on to receive your job.

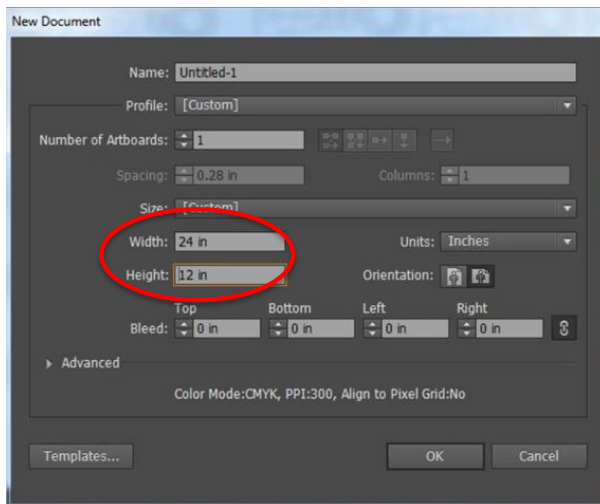


The lens will move and reset its position to home in the upper left hand corner. When this is complete the operational keypad should read <JOB:>



Step 2: Setting up your file to print

- Open your project using Adobe Illustrator
 - Make sure your project's artboard is defined as the same size as your piece of material, and no larger than the print bed (24" x 12").
 - MAXIMUM MATERIAL SIZE IS 24" X 12"
 - Your Artboard is the white area in Illustrator.



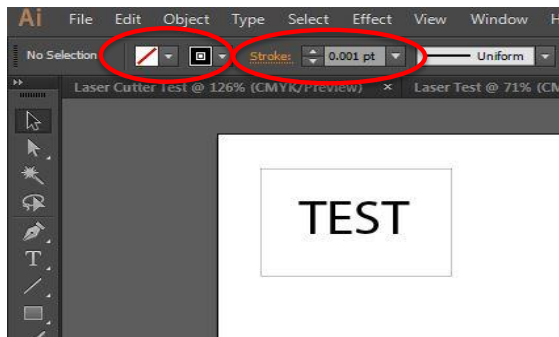
*Your design file should be created outside of your reservation time. Each member is able to reserve each laser **once per day for up to 2 hours**.
You cannot reserve more than one laser at a time.*

Adobe Creative Suite, AutoCAD, Rhino, Fusion 360 and Solid Works are available on other computers in NIS for you generate your design files

Vector and Raster

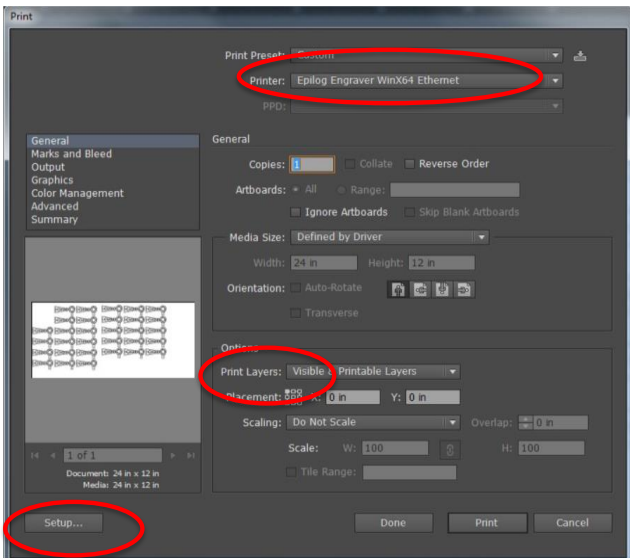
- To **Vector (Cut)** lines must be .12pt or smaller
(NIS recommends you set the lines to .001 pt stroke width to keep consistency between AutoCAD and Illustrator)
- To **Raster (Engrave)** lines must be .13pt or larger.
- An image file not created using design software will be a raster only file. If you want to vector cut on or around your image you will need to perform an image trace and define your vector lines.
- Set your stroke and fill accordingly

Commented [JRJ1]:

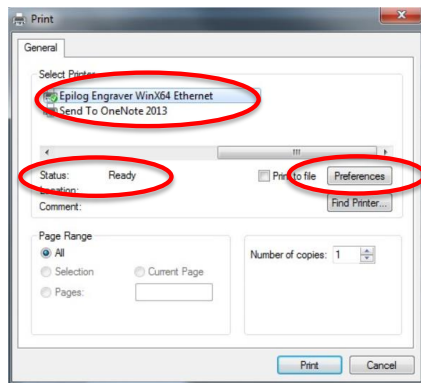


Step 3: Sending your Job to the Print Driver

- Save your file before sending to the printer
- Select **File >> Print** in Illustrator
- Make sure **<Epilog Engraver WinX64 Ethernet >** is selected
- Under **Options>Placement**, click on the upper most left box in the placement area
- Never use the Auto-Rotate. Rotate your design in illustrator and then print
- Click on **<Set-up>** in the print driver

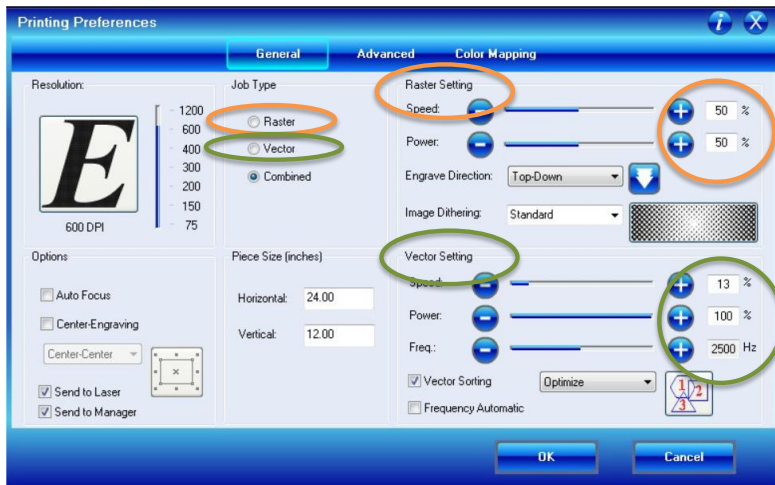


- Confirm the selected printer is “Epilog Engraver WinX64 Ethernet” and “Ready” status is displayed
- Click on **<Preferences>** to access the Print Driver



Step 4: Selecting your Print Preferences

- Select your job type: <Raster>, <Vector>, or <Combined>.
 - Raster will engrave
 - Vector will cut
 - Combined will raster then vector
 - **If you are etching on glass or metal always select raster**



- Use the chart in the owner's manual or the laminated settings charts to enter the appropriate values for the Raster and Vector Settings. *These are recommended settings and can change from job to job depending on the quality of your material.*

**NOTE:

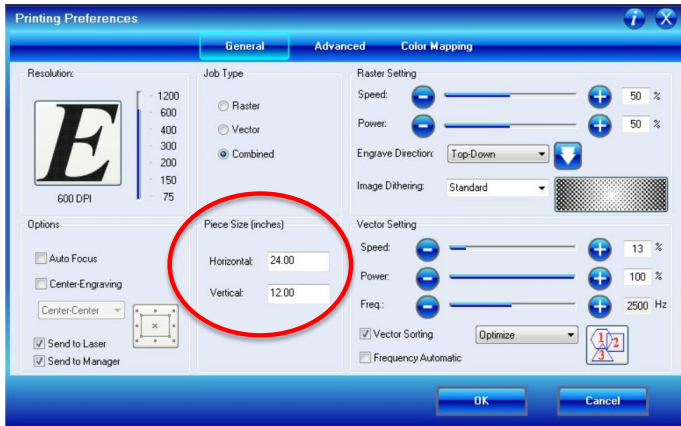
- In this chart they do not have vector frequency settings for materials.

Frequency Settings for the Mini 24:

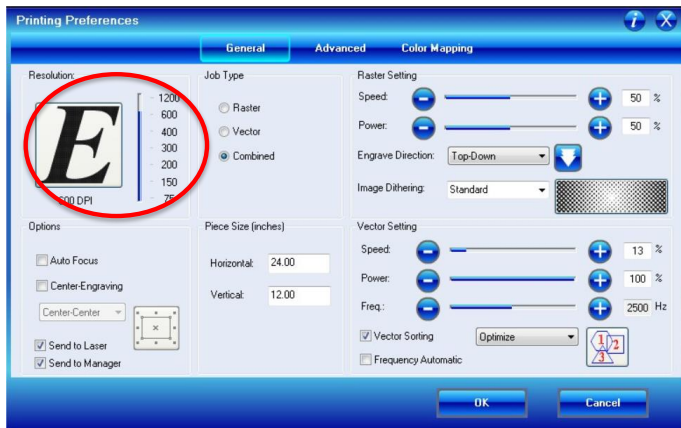
Wood, Paper, Leather, Mat board, Fabric	2500hz
Plywood	500 hz
Acrylic	5000 hz

If your materials are burning too much or melting adjust your frequency to a lower number. Check the Owner's Manual for recommended settings.

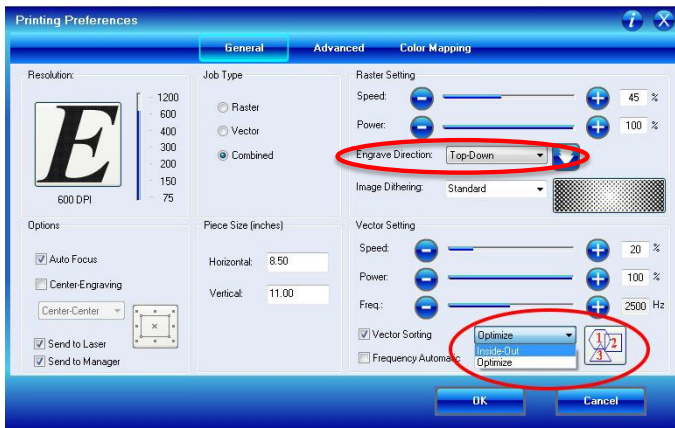
- Set **<Piece Size>** the same as your material size. Your artboard should also be the size of your material. Maximum piece & material size for the mini is 24Hx 12V



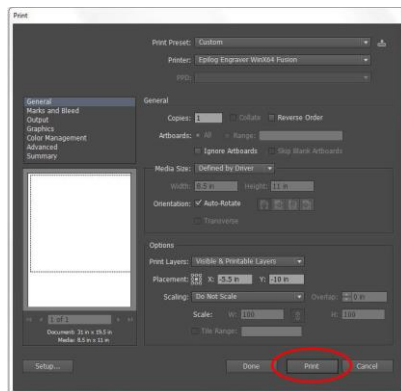
- Make sure your **DPI is set to 600** – if you adjust your DPI reference the recommended raster & vector setting in the User’s Manual for the selected DPI.



- Change your engrave direction to your preference. Either **<Top-Down>** or **<Bottom-Up>**. This will tell the laser which direction to start cutting your print. *It is recommended when engraving on paper that you always start from the bottom-up direction.*
- Your default origin on the Mini Epilog Laser is in the upper left hand corner.
- When Vector Sorting is checked you have the option to *Optimize* your cuts or to cut from the *Inside-Out*. The default is set to optimize.



- Click **<OK>** when all of your settings are correct.
- In the print driver click on **<Print><Setup><Print>**. This will set your “media size” to correspond to your “document” (artboard) size in the Illustrator print window. Illustrator media size defaults to 8.5x11 and must be changed or your job will fail
- To send your job to the laser click **<Print>** in the print dialog box.



- The control Panel Should show the name of your job
- <JOB: (#)Title of piece>



- There is no print time estimation on this machine.

Step 5: **Placing your material**

Place your material in the upper left hand corner of the print bed. Do not push down on the Vector Cutting Grid or place heavy objects on top of your material if it is warped. Use masking tape to secure your material to the rulers to aid in flattening.

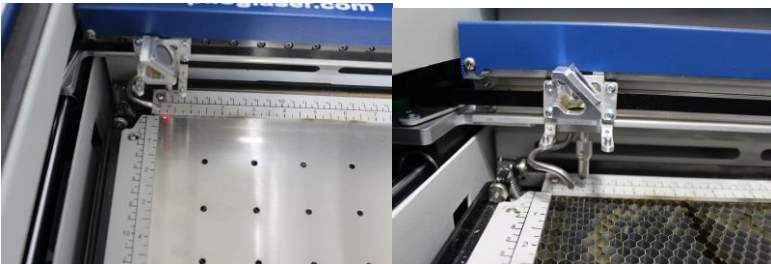


Step 6: **Changing the Vector Cutting Grid to use the Task Plate.**

- **The Vector cutting grid must be used when vector cutting.**
- **The task plate must be used when rastering heavy objects.**

Task Plate

Vector Cutting Grid



- To remove and install the task plate and vector grid press down the black metal angle that is attached to the outside of each of the three rulers so the ruler flips up and out of the way. Then lift out it out of the laser.





- Now you can remove the Vector Cutting Grid and insert the task plate.

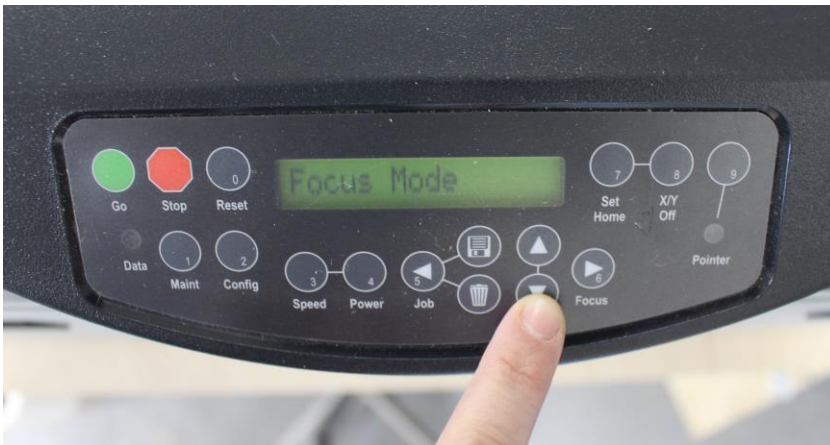


Step 7: Lowering the Laser Bed

- Press the focus key



- Press the down arrow key to lower the bed to allow enough space to fit your object into the laser.



Step 8: Setting the <X/Y> Home Position

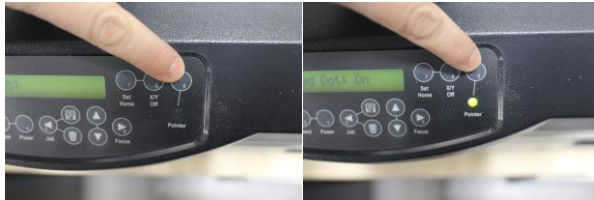
The laser cutter has a default home position in the upper left hand corner. If the default home position has been changed by a previous user you can reset the default home position by doing the following:

- Press the #1 button marked "Maint"
- The display should now read "1. Restore Home" If not, press the down arrow until Restore Home appears
- Press the "Go" button

The print head should now move itself to the home position

Step 9: Manually Setting the <X/Y> Home Position

- Turn on the Pointer (9) on the operational key pad



- THERE IS NO JOG FEATURE ON THIS MACHINE
 - You must disable the laser carriage.
 - Press the **X/Y Off** Key



- The read out on the keypad will say < **X/Y Off? GO/STOP** >



- Press the Green **GO** Button for Yes



- The screen should now read < **X/Y Disabled** >

- Now you will be able to manually move the laser carriage by hand to your desired position



- Press the Set Home Key

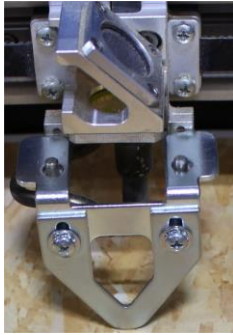


- Your New Home Position/Origin has been set.

Step 10: Focusing the Laser

You must manually focus your laser before every job. Material thickness differences require a new focus point.

- Press the **<FOCUS>** button. The print head should move away from the home position
- Place the focus tool on the 2 pins located on the front of the laser head
- Raise or lower the bed using the up and down arrows until the focus tool just makes contact with your material
- Remove the focus tool and place it back on the magnet on the front of the laser
- Your focus distance is now set (there is no set button-the laser will focus at the point you left it)
- Push the **<RESET>** button to exit focus mode and return to the **<JOB>** screen



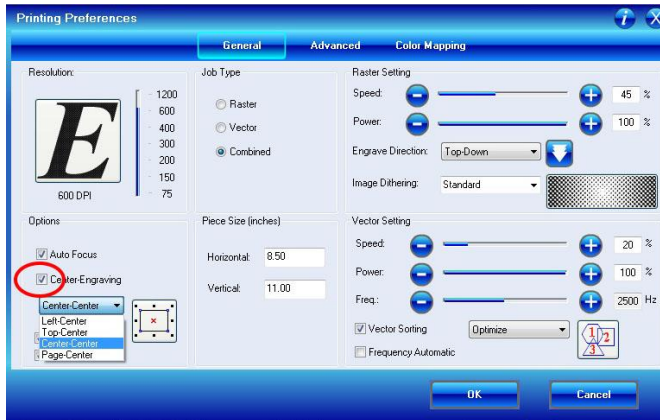
Step 10: Center Engraving

You have two options when center engraving.

- You can use the “Center-Engraving” setting in the laser print driver.
- You can set your object in the center of your illustrator artboard and use the default XY home position (step 8).

Using the Center settings in the Laser Print Driver:

- Check the “Center-Engraving” option in the laser’s print driver.
- Select the desired position from the drop down menu.



- If the object you are engraving is taller or thicker than $\frac{1}{4}$ ” you will need to lower the laser bed. See step 7.
- You must reset your home position as outlined in step 9 to the **CENTER** of your material or object.

Step 12: Turn on the Air Filtration System and Air Assist Pump

- The air assist pump is located next to the laser or on the ground next to the laser. This pump cools the laser when it is operating so it **MUST** be on when the laser is operating
- Each laser has its own air assist pump
- Turn off air assist pump when your job is complete



TURN ON THE AIR FILTRATION SYSTEM

The Air Filtration system is marked "VENTILATION BUTTON" and is located below and to the left of the TV.

This system filters the air for all lasers. If your project is complete and other lasers are in use you must leave this system on.

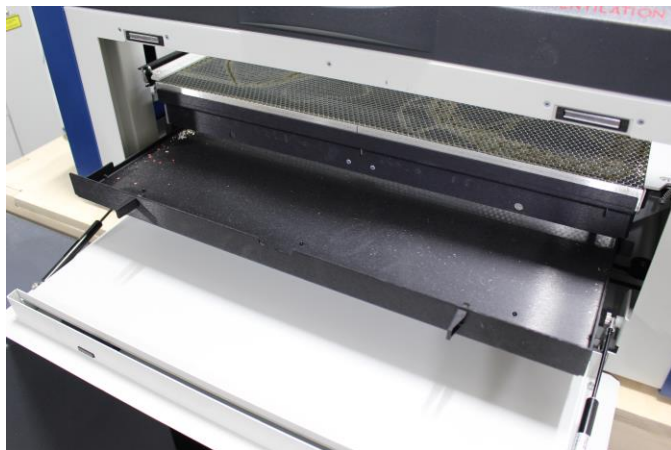


Step 13: Printing your Project

- Close the lid of the printer.
- Make sure you are on the correct laser job.
- Hit the <GO> button on the control panel.
- Hitting <STOP> will pause your print. Hit <GO> again to resume your printing.
- Hitting <RESET> will cancel you current job and reset laser to the home position.

Step 14: Emptying the Debris Tray

- Open the front door of the laser to remove any small pieces and remove the debris tray and empty it into the trash.



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