

The PyroPrinter X

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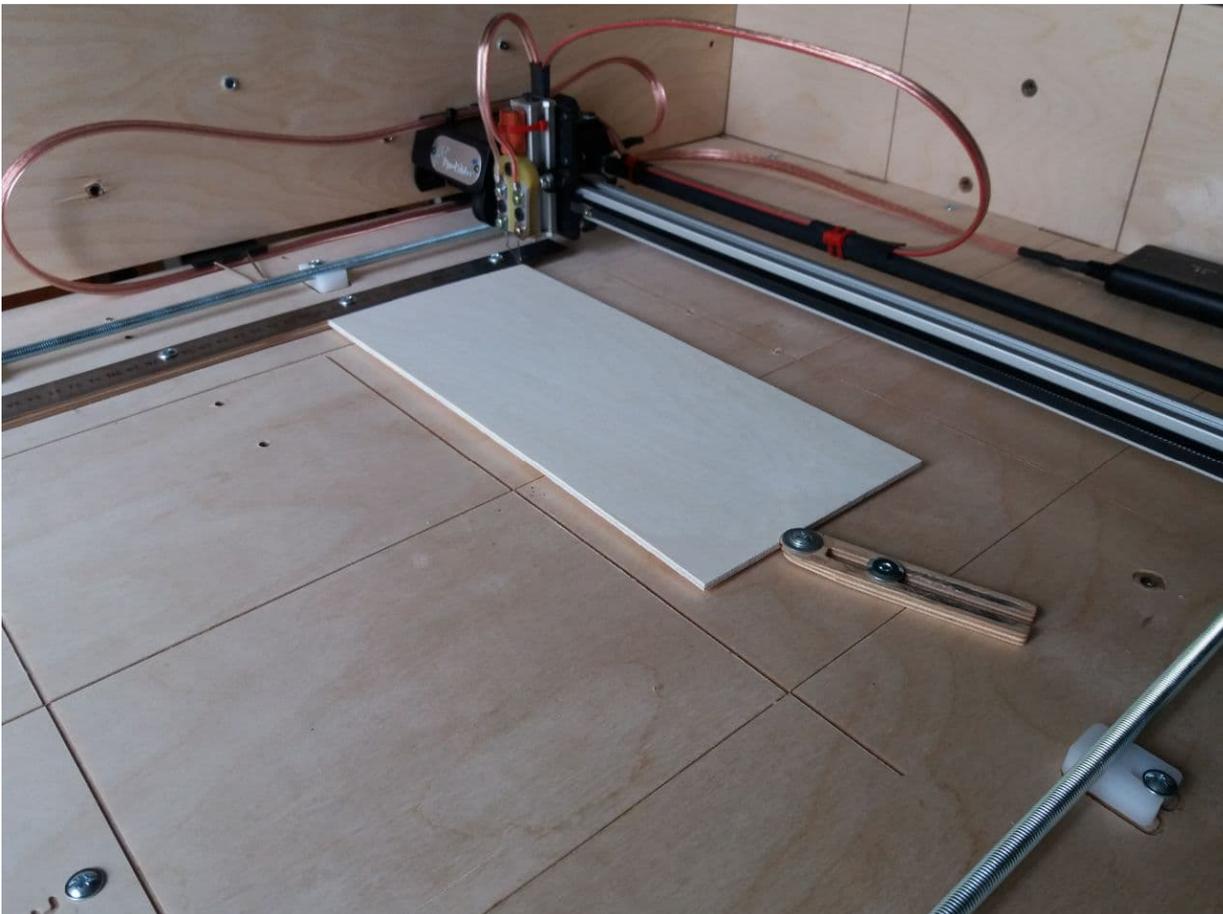
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PyroPrinter CNC machine that burns images on a wooden surface with Kanthal wire. Power of the machine is about 150 watts.



- The size of the working field is about 43x42 cm. But it can be easily increased to 43x92. To make your working field bigger you need to

replace guides and ruler(not in set).

- OS **Windows XP - Windows 10**, connection via **USB** and **Wi-Fi**.
- The managing program is “PyroPrinter”.
- The PyroPrinter automatically switches out when work is done
- You need 1-3 hours to create one A4 picture

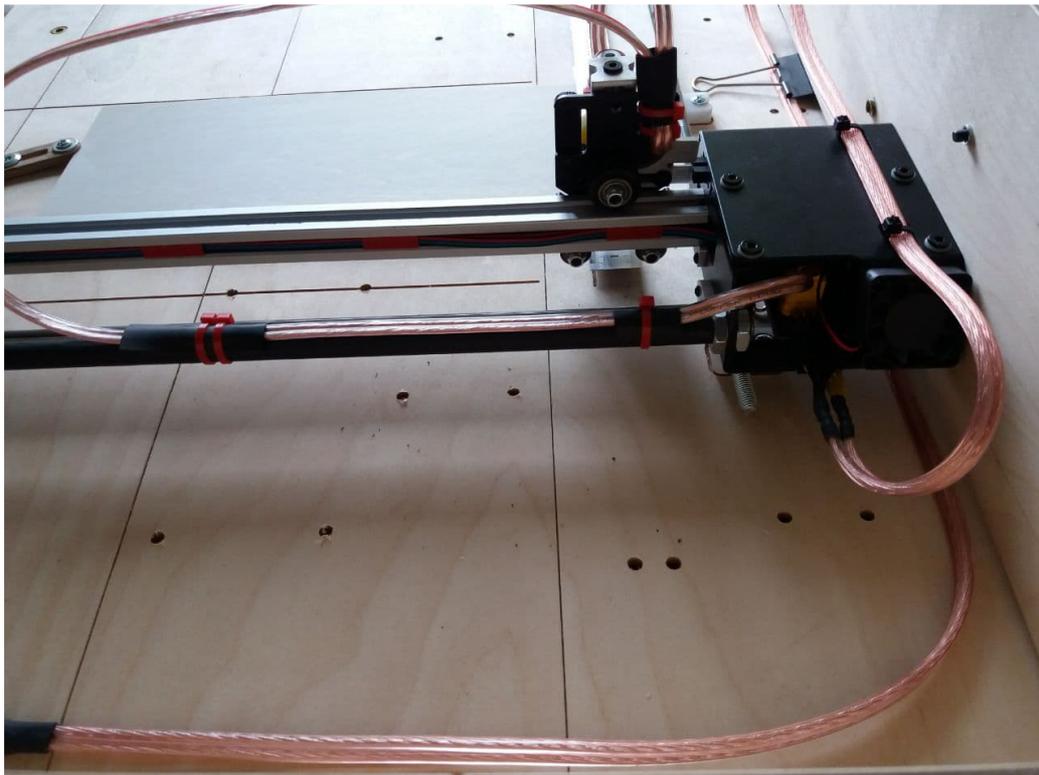
The machine creates a picture line by line. Speed changes let the PyroPrinter make different tones. Dark tone is created by a low speed; light tone is created by a high speed. As a result, you need more time to create a dark picture. The “PyroPrinter” program manages all these processes.

Assembling and connection

[The video shows how to assemble it.](#)

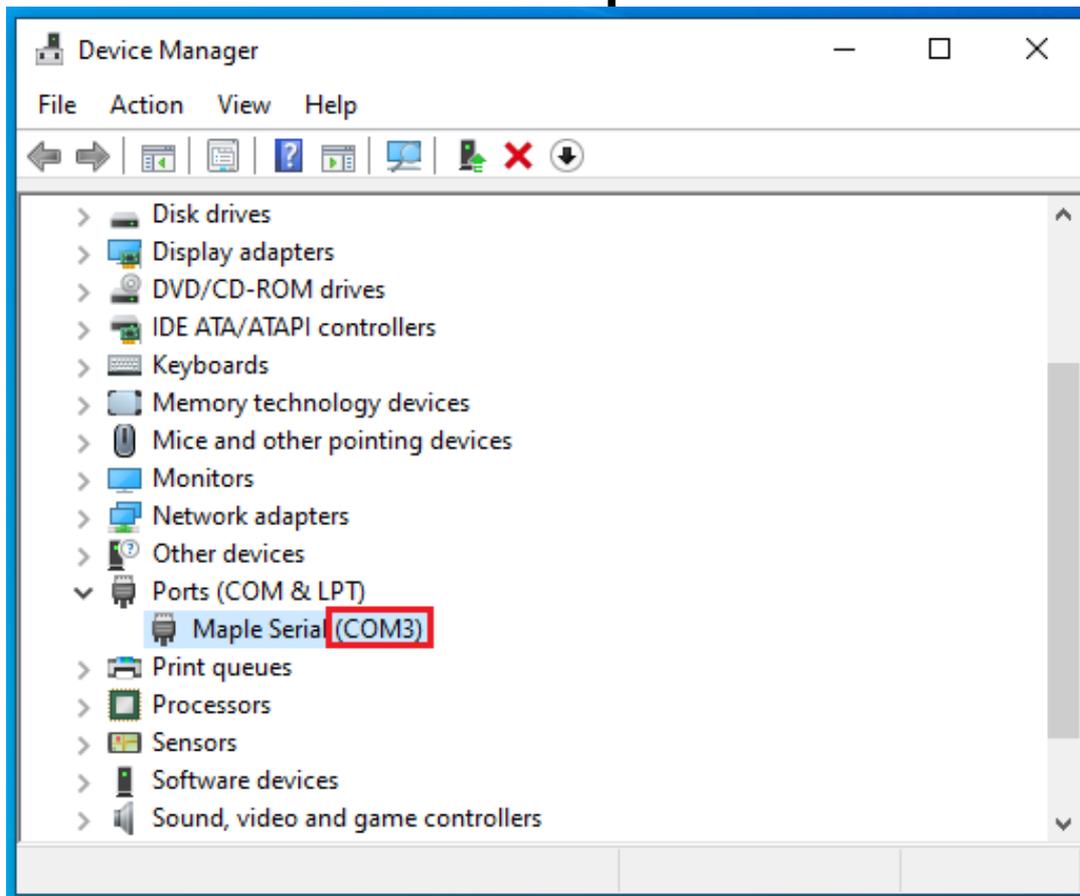
This is link to the “YouTube” - <https://goo.gl/iJZ72w>

Install the program “PyroPrinter” from flash-card (**flash-card included in set**) in to your computer.



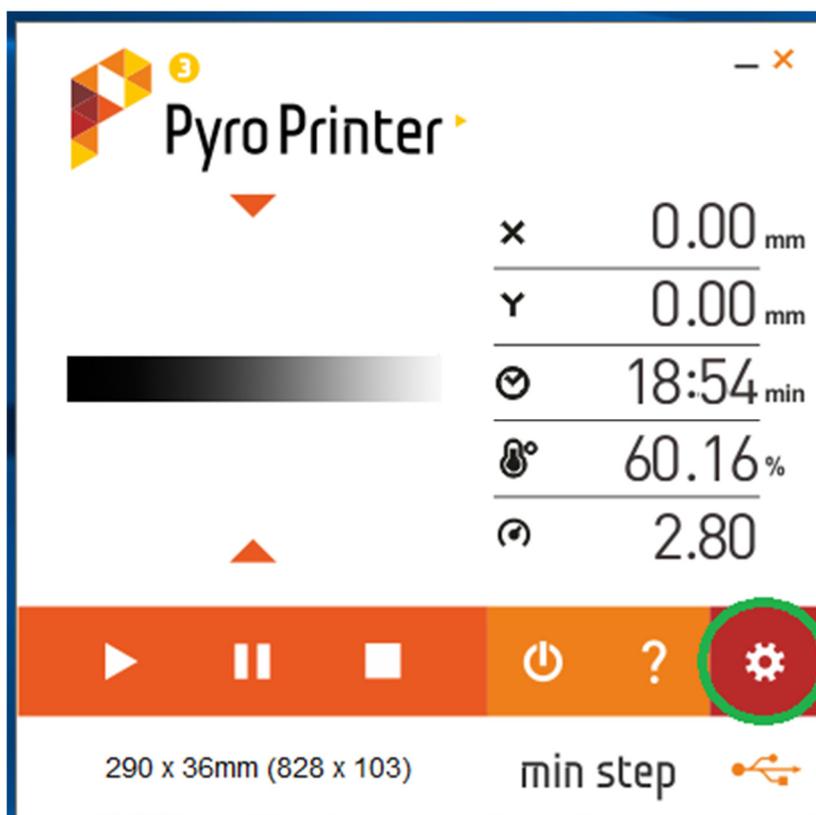
Next, you need to find out which of the **COM-port** numbers the device is connected to.

What is the COM-port number?

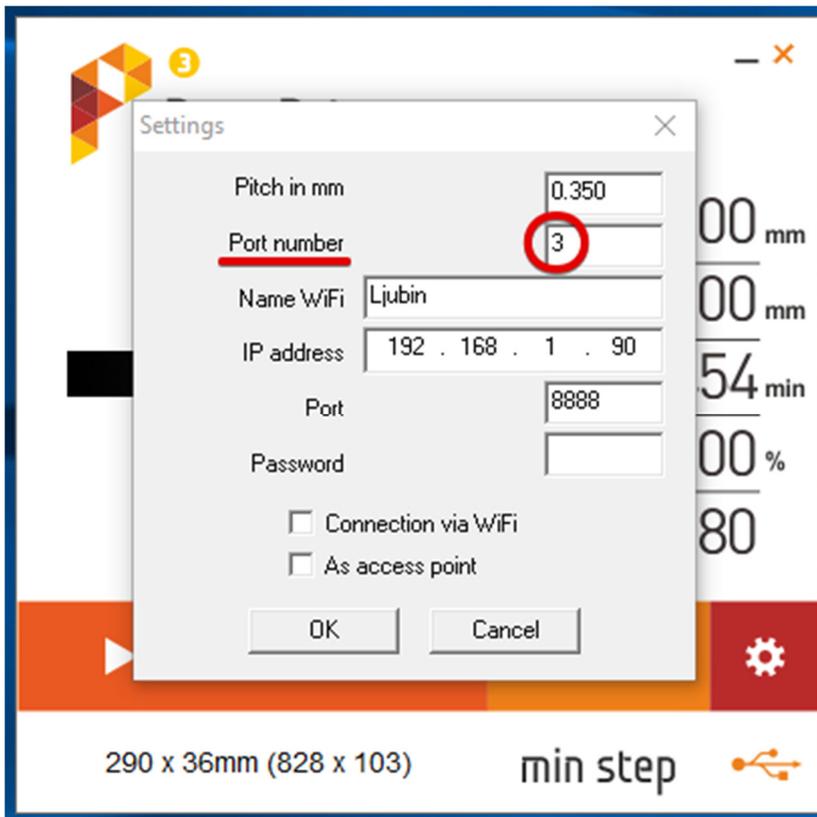


COM3 - this is a COM-port number.

If you have a different number (COM1 or COM2 or... so on) You need open the program “**PyroPrinter**” and press button - "settings".



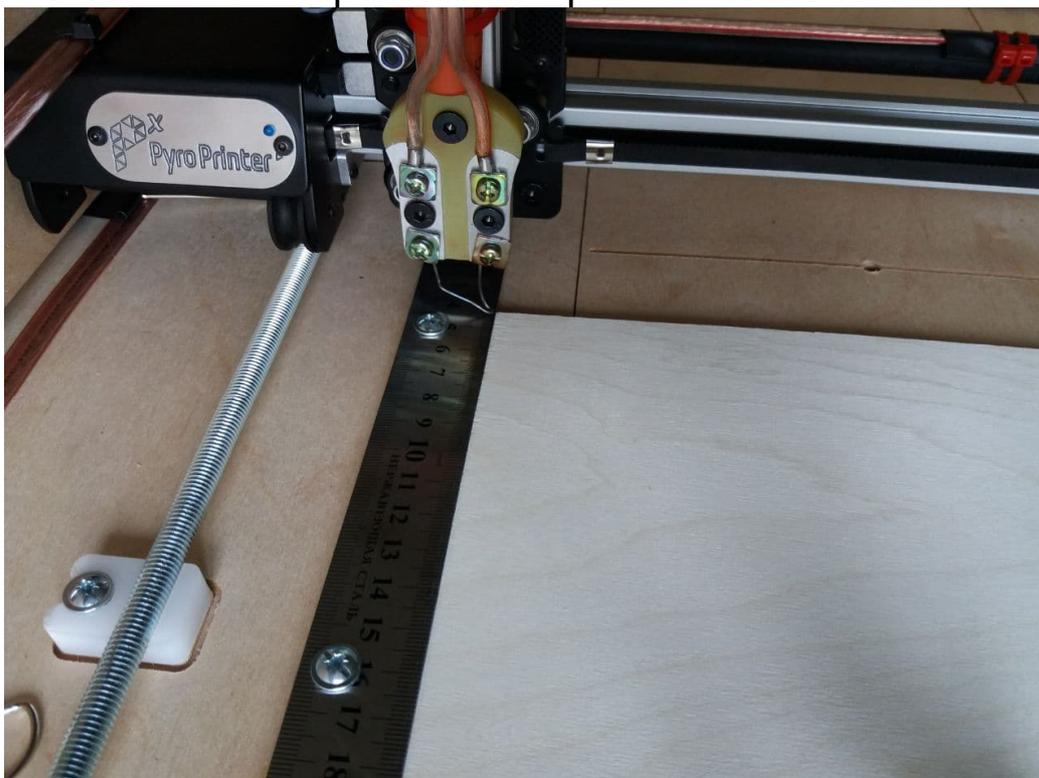
Replace the Port number - **3** to the number - **1** or **2**... or so on.
And click – “Ok”.



And now you can turn on the voltage.

ATTENTION!!!

The tip will start to heat up immediately after the voltage is connected. The tip should be placed on the ruler.



Now device ready to work.

If the PyroPrinter does not work, try installing additional distributive package (**CR_Hyb_x86_64_14.12.2012**) from flash-drive in to your computer.

Signals of the “blue diode” on the device.

The device operates in three modes.

1. **USB** - always works.
2. **WIFI** - Connect through the router.
3. **As access point** - Device working like the router.

After turning on the device, about 15 seconds, the blue diode will blink.

1. One time - connected via **USB**.
2. Two times – connected via **WIFI**.
3. Three times – device created **access point**
4. Five times - error connection.

Note. If device can't connect via **WIFI** or **as access point** and USB cable disconnected, blue diode blinks five times and device will be waiting to connect via USB.

The program PyroPrinter.

Hot keys:

- **R** – start
- **S** – stop
- **P** – pause
- **Z** – returning to the zero
- **SPACE** – extra stop
- **Ctrl+ click on window with image** - rotate image
- **Shift + click on window with image** - resize the image
 - Tip positioning:
 - **Left/Right** – coordinate **X**
 - **Up/Down** – coordinate **Y**
 - Set up the movement distance:
 - **F1** or **1** – minimal movement
 - **F2** or **2** – 0.5 mm movement
 - **F3** or **3** – 10 mm movement
 - **F4** or **4** – 100 mm movement

for example: **F3** + Left/Right or Up/Down
button **3** + Left/Right or Up/Down

- Tap **V** and then tap +/- increase/decrease speed coefficient.
- Tap **T** and then tap +/- increase/decrease the tip temperature.
- **F12** – to set up a zero
-



1. The necessary time to complete the work.
2. Tip temperature.
3. Speed of work.
4. Run.
5. Pause.
6. Stop.
7. Turn off the device after work or not.
8. User Manual.
9. Image size.
10. USB connection.

To replace the image, click on the 'test image' in the program window
To get started, click **Run** or press the "R" button on the keyboard.

The correct way to use the clamp.



How to prepare plywood?

If you want to get a good result you need to treat your plywood.

1. Buy qualitative plywood. Quality should be not lower than CP-CP.
2. Treat the work side of the plywood using Perhydrol (20%) - hydrogen peroxide.

You will not be able to buy hydrogen peroxide in a chemist's shop. But you can buy it via Amazon (<https://www.amazon.com>).

3. Wet your plywood, using sponge.

Be careful, do this in latex gloves, so as not get a chemical burn!

4. Wait 24 hours, the plywood will change color.

After that, dissolve one teaspoon of soda in a glass of hot water (boiling water). After the water has cooled, wet the work surface of the plywood with this solution, using sponge.

5. For best results, use treated plywood for burning 7 days (minimum) after processing.

Prepare the image – Photoshop (algorithm).

1. Image - Mode - Grayscale - Discard
2. Rectangular marquee tool / Fixed Ratio - width: 1
height: 1,41
3. Image - Crop
4. Duplicate Layer / Ctrl+J
5. Filter - Blur - Smart Blur
6. Duplicate Layer / Ctrl + J - Color Dodge
7. Images - Adjustment - Invert
8. Filter - Blur - Gaussian Blur
9. Copy all to one Layer / Ctrl+All+Shift+E
10. Multiply
11. Image - Adjustments - Levels(Input Levels)
12. Brush tool - Set foreground color (white)
13. Filter - Sharpen - Smart Sharpen
14. Image - Image size. For example: size A4 – (846 X 600), size A3 (1200 X 851)
15. Save the image in **.bmp** format, and when the window “BMP Options” appears, set the value for **Windows** and **8 bit**.

The image size.

PyroPrinter creates an image line by line. One line is one pitch. The minimum pitch is one pixel. One pixel is = 0.35mm.

For example: You need to make an A4 image.

A4 has a size = 210x297 mm.

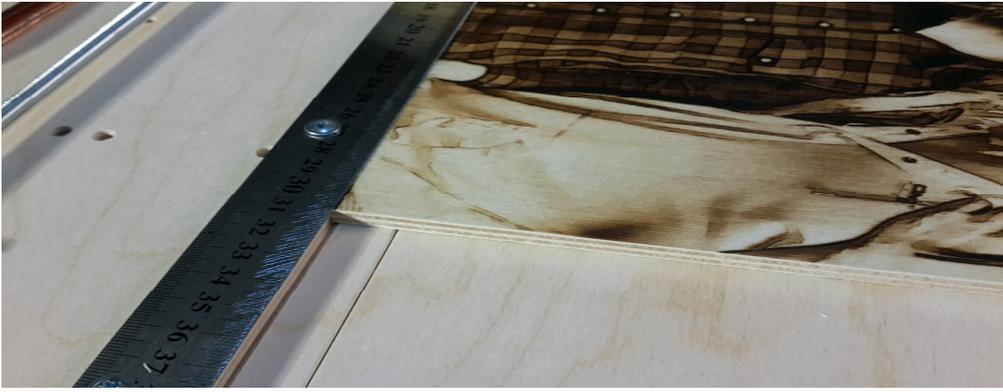
You need to divide $210 / 0.35 = 600$ pixels,

$297 / 0.35 = 846$ pixels.

Result: Size for A4 image = 600x846 pixels.

What is the ruler for?

The ruler cleans the tip and fixes the plywood. The plywood should be under the ruler.

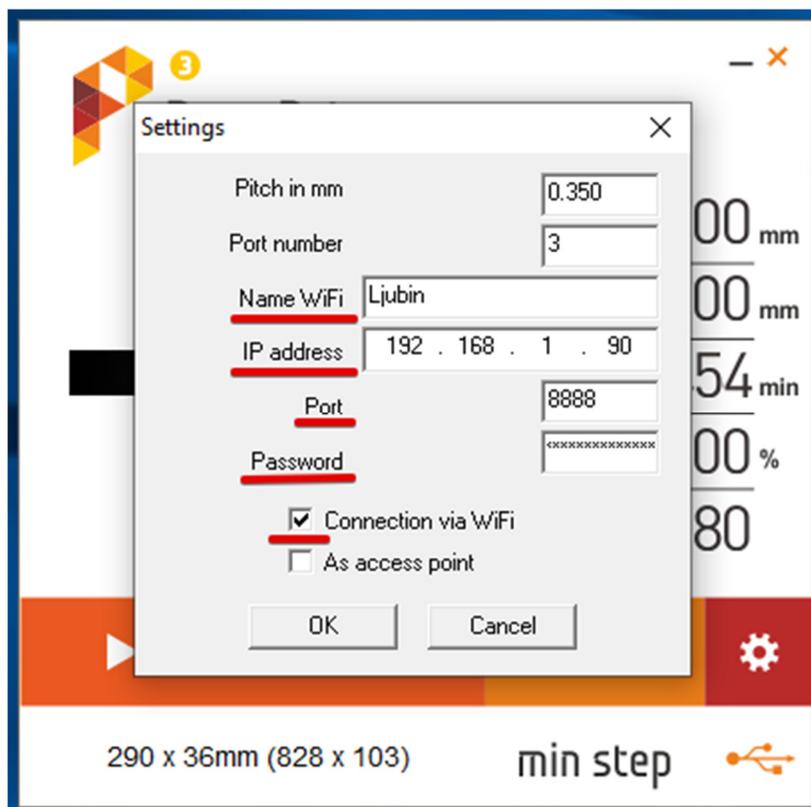


Connection via WiFi.

If you have a home Wi-Fi router, you can connect the device via WiFi connection. To do this, you need to know the **IP address** of the router. Usually it is **192.168.0.1** or **192.168.1.1**

To find out:

1. Press the **Win + R** on your keyboard,
2. Enter **cmd** in the field and click **OK**. The **Command prompt** will open.
3. Enter - **ipconfig** and press **Enter**.
4. Find the line - **Default Gateway** this is the IP address of your router.
5. Connect the device via **USB**.
6. Run the PyroPrinter program.
7. Click the “Settings” button and fill in the required fields.



Name WiFi - The name of your home **WiFi** network

IP address - If the **IP** of your router is **192.168.0.1**

Replace the last digit - **90**.

You get the **IP address** - **192.168.0.90**

You can set any digit in the range from **2** to **255**

for example - **192.168.0.245**

If the **IP** of your router is **192.168.1.1**

You get the **IP address** - **192.168.1.90**

Set this **IP** in the program field.

Port - Do not replace.

Password – Set the password of your home **WiFi** network.

Connection via WiFi – Set the checkbox.

Click - **OK**. The program will reboot.

After that, you can see the icon - connection via WiFi.



Now you can disconnect the **USB** cable.

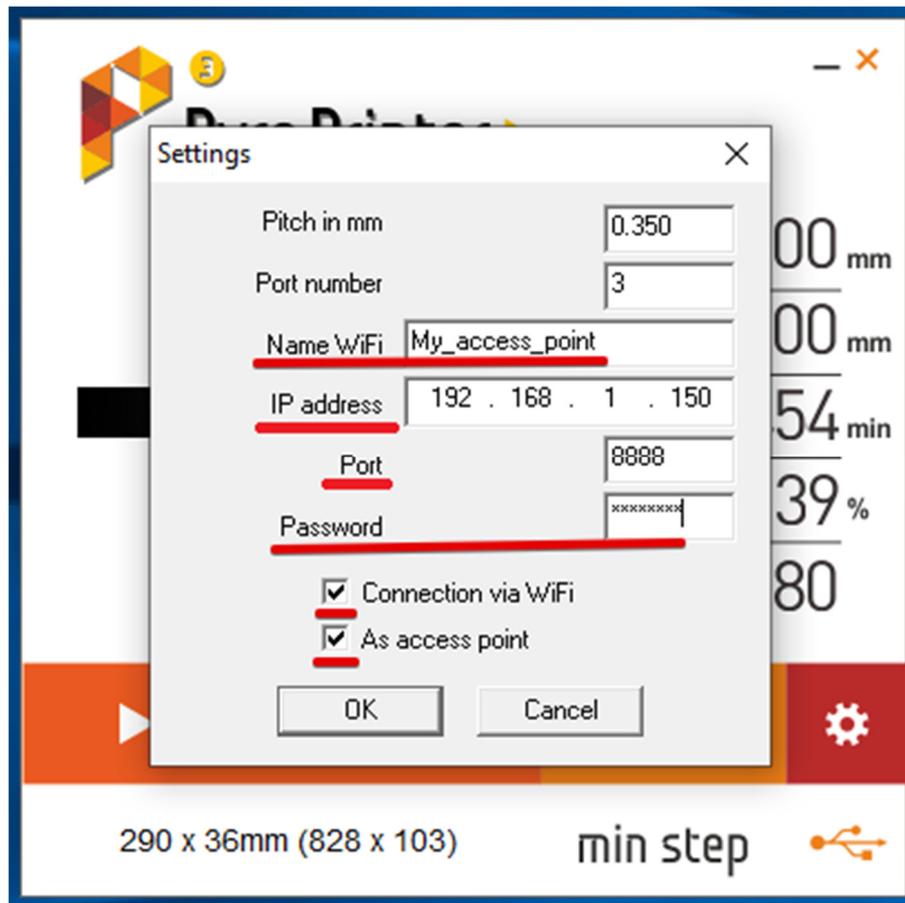
As access point.

If you don't have WiFi router, in any case, you have the ability to connect the device via WiFi. The device will work as an "access point".

1.Connect the device via **USB**.

2. Run the PyroPrinter program. You should hear that the device is connected.
3. Tap the button 'settings'.

You need to fill in the following fields.



Name Wi-Fi - Come up with a name, the name must be unique.

IP address - Read the section “Connecting via WiFi”.

Password - Come up with a password. **The password must be strictly eight characters**, no more and no less.

Connection via Wi-Fi - Set the checkbox.

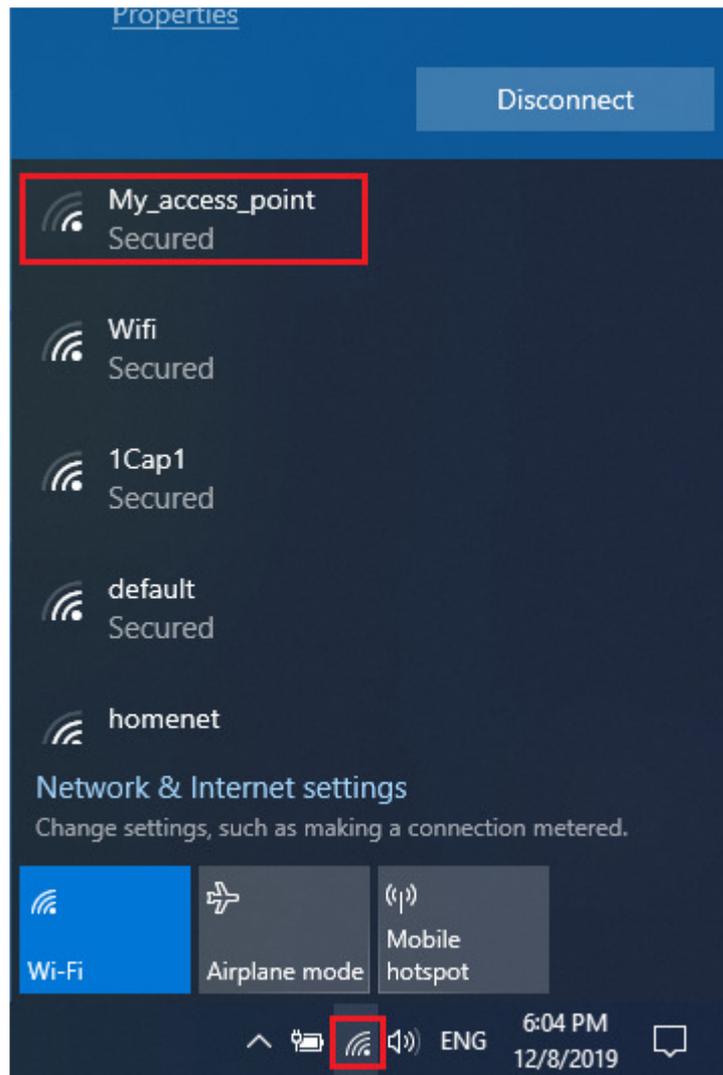
As access point - Set the checkbox.

Click - **OK**. Be waiting! The program will reboot.

Close the program.

Disconnect the USB cable.

Find your **access point** and connect it (using an eight-digit password).



Run the Pyroprinter program again. You will hear the device start to work. If you don't hear, you did something wrong.!? Try again.)

A strange lines appear on the picture.

Causes.

- Wind.
- The tip are dirty.
- Inspect the spring on the floating head.
- Inspect a bolts of the floating head which hold the tip.