BlueCarve Spark Plasma CNC MYPLASM Set Up

Your purchase of a BlueCarve Spark Plasma CNC comes with free use of the MyPlasm and MiniCAD Software.

<u>The software must be installed before connecting the controller USB to your computer</u>

Technical basics:

- Communication: USB 2.0 Port
- Operation system: Windows 7,8,10 32/64 bit (Mac OS is not supported)

Check the most stable version on Proma Elektronika's website here https://proma-elektronika.com/to-download/

The purpose of the MyPlasm software is to control the machine to cut a 2D drawing and not on the basis of G-codes as in other programs. This significantly reduces the required level of knowledge - the system does many operations automatically without the participation of the operator.

An additional advantage is the integration in one system of very simple MyMiniCAD modules for making simple drawings as well as MyMiniCAM for automatic toolpath creation, which completely excludes the purchase / installation / use of additional external programs for simple parts as well as reduces to a minimum the preparation time of the cutting process. For more complex projects and/or to create advanced paths, you can use external CAD / CAM tools and import the finished cutting path into the system.

The system is intuitive and very easy to use - enough for most simple operations. However, it cannot compete with advanced control systems available on the market, which have unlimited possibilities and are operated by professional programmers and CNC operators. For the control of your BlueCarve Spark Plasma CNC, you can only use the MyPlasm software to control your CNC.

Prerequisites

You will need to operate your BlueCarve Spark Plasma CNC

1. A CNC with Myplasm controller
2. A laptop or computer with a USB 2.0 cable
3. 24V 7.5A power supply connected to your controller box <u>ONLY</u>

1. Safety

Together with common sense and vigilance, the following safety precautions are to be followed.

1. It is a condition of the purchase and use of the BlueCarve Spark Plasma CNC that the user is competent and will not use the plasma cutter for any harmful or unintended purposes.
2. Whilst the power is connected and or plasma cutter is in operation;
   a. do have the plasma cutter torch connected to the appropriate mount, attached to the Z axis with the plasma cutter torch head pointing down
   b. do **not** leave your plasma cutter unattended at any time while connected to GPO mains
   c. do wear appropriate PPE including appropriate safety goggles specific for your plasma cutter
   d. do **not** have any body parts near the plasma cutter
   e. **do not** look directly at the emitted plasma, even if the emitted plasma is off and not firing
   f. do lock the door of the room/ garage/ shed the laser is situated to prevent persons without PPE specific to the use of plasma cutters from entering
3. Choice of materials
   a. Beware that burning material may contain harmful fumes
   b. Ensure there is adequate ventilation for fumes to escape including a fuses extractor
   c. Using the incorrect power and speed settings may cause your material to catch fire
   d. Do not cut aluminium while in contact with water such as a water bed

First screen after installation

The first screen you will see after installing MyPlasm will look like this:

Click **USB device not found** to initialize

Your CNC controller must be powered by the 24v power supply and turned on to connect

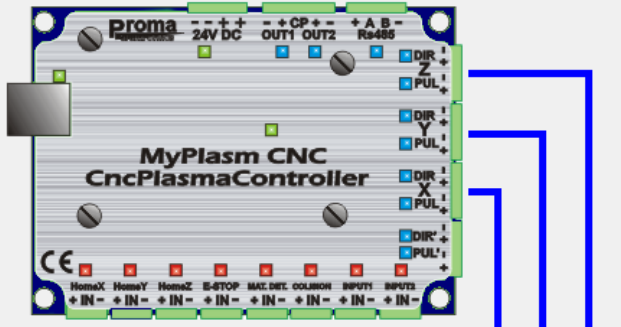**PLEASE FOLLOW THE INSTRUCTIONS, PAYING ATTENTION TO THE YELLOW BOXED PARTS**

Click and select

Click and select **Elektronics.** Change the following settings exactly as per the picture below

Click and select **Machine.** Change the following settings exactly as per the picture below
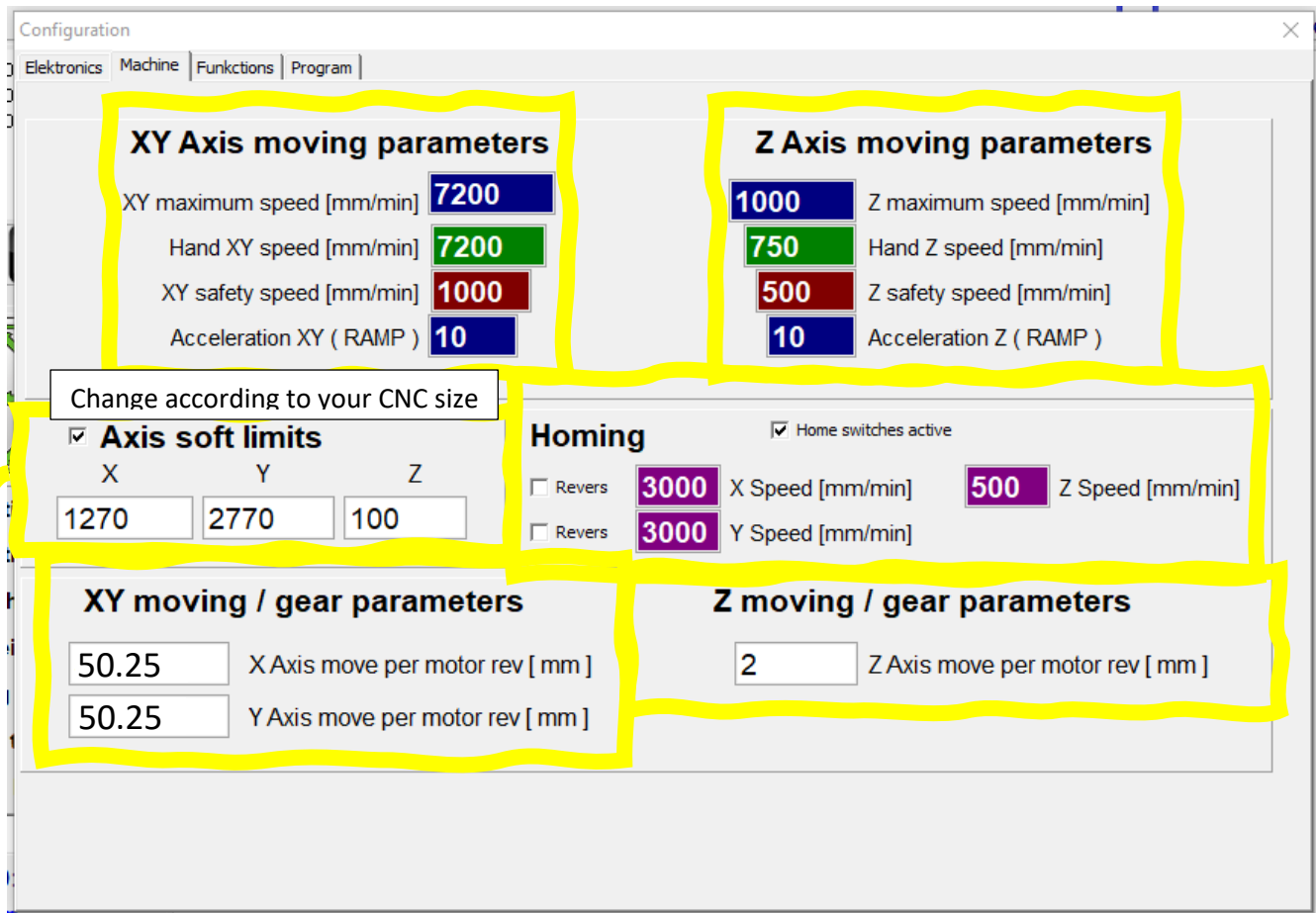
Please note that your settings for Axis soft limits might be different depending on your configuration.

1x1

- **X** 770 **Y** 770 **Z** 100

1.5x1

- **X** 1270 **Y** 770 **Z** 100

1.5x1.5

- **X** 1270 **Y** 1270 **Z** 100

1.5x2.7 (if shipped)

- **X** 1270 **Y** 2470 **Z** 100

1.5x3

- **X** 1270 **Y** 2770 **Z** 100

Click and select **Funkctions.** Change the following settings exactly as per the picture below

Configuration   ✕

Elektronics | Machine | Funkctions | Program |

Z axis initial height

| Test |

☐ Touch ohmic Sensor   `0.254`   ohmic correction [mm]

☑ Floating head switch   `3.81`   switch correction [mm]

`12.7`   detection height [mm]   `508`   detection speed

Objects

Apply Cutting Speed 2   `25.4`
for ojects smaller that [mm]

Park   X   Y   Z

F1			max
F2			+1
F3			max
F4			max

Finish | | |

| Special |

> There is good chance you will need to adjust the switch correction to calibrate your set up. Do this by starting a cut without the plasma on. Once the Z has touched off to start the cut, pause the cut. Measure the distance under the torch nozzle to the material. Adjust the correction to suit and retest.

Understanding the control interface

Machine coordinates

Work coordinates

This is the reference point of your start position

Voltage output of the Plasma unit while firing

```
X  0010.00    0010.00
Y  0050.00    0050.00
Z -0055.06    0025.00
ARC --- V
```

Ref

These buttons will enable you to home your CNC to the bottom left

Ref Z = Z only

X-Y = X & Y only

Ref XYZ = Home all

Jogging control

These controls physically move your CNC

Ref Z
X-Y
Ref XYZ
Z=0

Project position

Project position

Changing the project position will change the start reference of your cut

Z=0

Resets your work reference of Z to 0. **Note:** Move your Z within 12mm of your work then click this button. If you are any higher, when you start your cut, your CNC will error.

7200 [mm/min] Cutting speed	**Cutting speed:** Set the cutting speed
7200 [mm/min] Cutting speed 2	**Cutting speed 2:** Set the cutting speed for smaller objects like holes
2.54 [mm] Cutting height	**Cutting height:** Height of cutting if THC is off
ON **0** [V] Cutting height (THC)	**Cutting height (THC):** Set point for THC. Keep at 0V and **ON** for auto
2.5 [mm] Piercing height	**Piercing Height:** Start height for piercing material before cutting
2000 [ms] Piercing time	**Piercing time:** Waiting time for material to pierce effectively
12.7 [mm] Floating height	**Floating height:** Height the Z retracts to move to next cut
Parameters for the material	**Parameter for the material:** Library of cutting parameters

Working Time : 00:00

~00000 mm/min

Useful starting points

Information on the MyPlasm system. Please note, please do not deviate from the settings above or to start tinkering with your Plasma controller or settings. **Changing connections or settings may lead to damage and or void of warranty.**
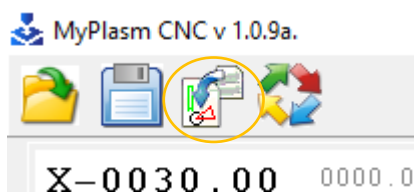
https://www.proma-elektronika.com/download/MyPlasm/MyPlasmCNCen.pdf

Guides and tutorials on MiniCAD

https://www.proma-elektronika.com/download/MyPlasm/MyMiniCADen.pdf

Proma Eletronika official YouTube channel

Proma-Elektronika - YouTube
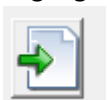
Starting a design
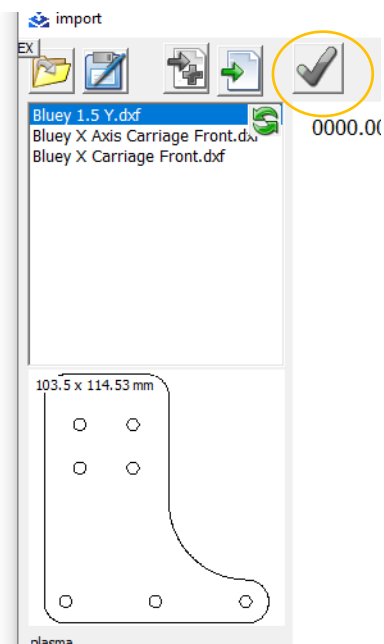
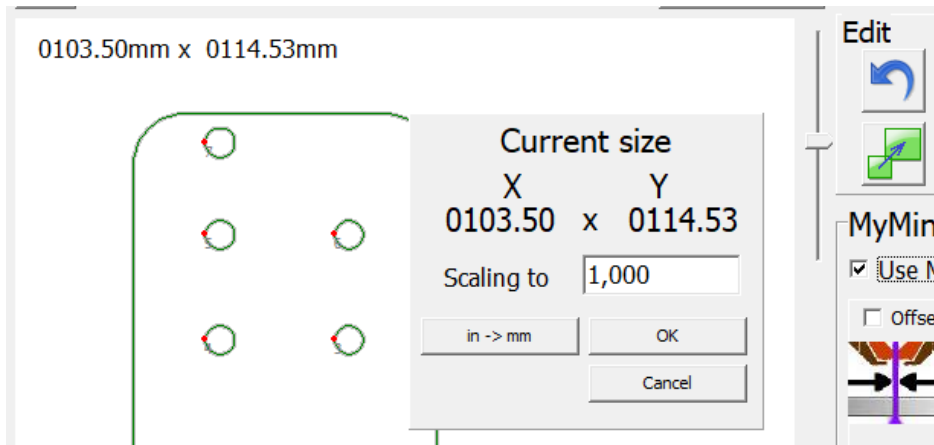1. **Click** and select

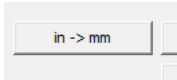2. **Click** and select

3. **Select** your file in DXF
4. **Select** and highlight the file.
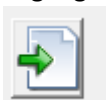
5. **Select** the ⬜ icon to move the file to the visualiser

6. If the aspect ratio is in correct, the original file might be set to inches. Click on the icon and click

in -> mm

.

0103.50mm x 0114.53mm

Edit

Current size

X	Y
0103.50	x 0114.53

Scaling to 1,000

in -> mm   OK

Cancel

MyMini

☑ Use M

☐ Offset

7. **Click** on the icon to move the file to the controller main page
8. Move the CNC torch head by controlling with the arrows to the start bottom left position of your material
9. **Click** on the bottom left of the **Project position** to **set the work coordinates**

Project
position

XY = 0

g speed
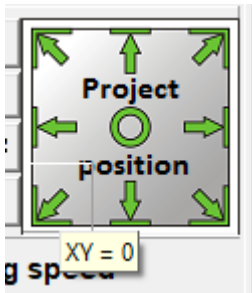
10. Move the Z down to the material and click Z=0 to set the seek height before cutting. **You need to be within 12.7mm of the material or else the height detection will time out. This is a safety feature.**

Z=0

[mm/min] Cu
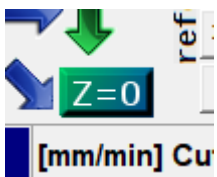
Before starting, do the following checks:

- Safety precautions have been addressed
- Ground clamp is attached to the material
- Compressor is turned on and connections are secure
- Plasma cutter is turned on

11. Start the carve by pressing the play button

12. Enjoy!