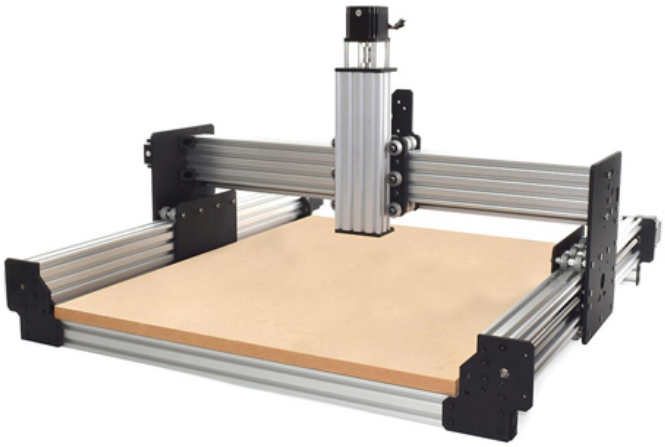
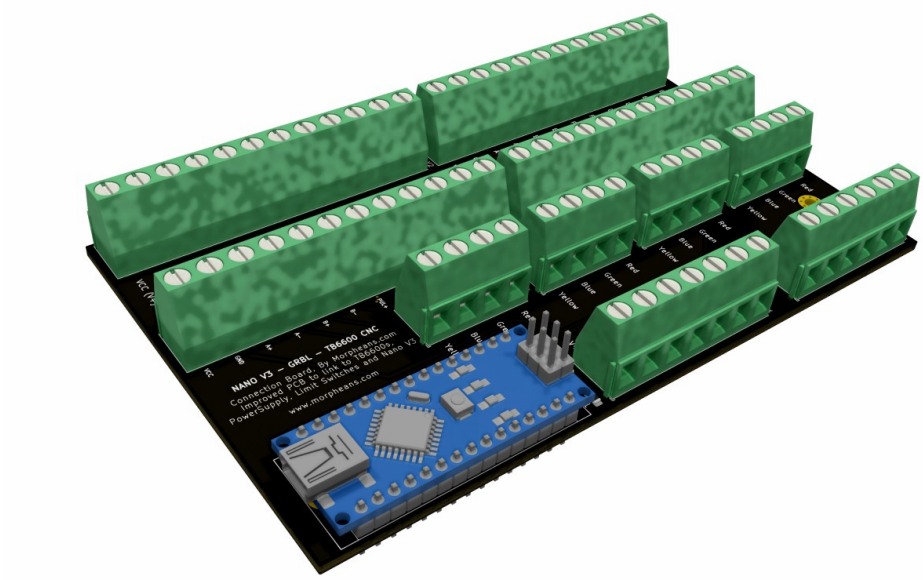
MORPH-CNC6600

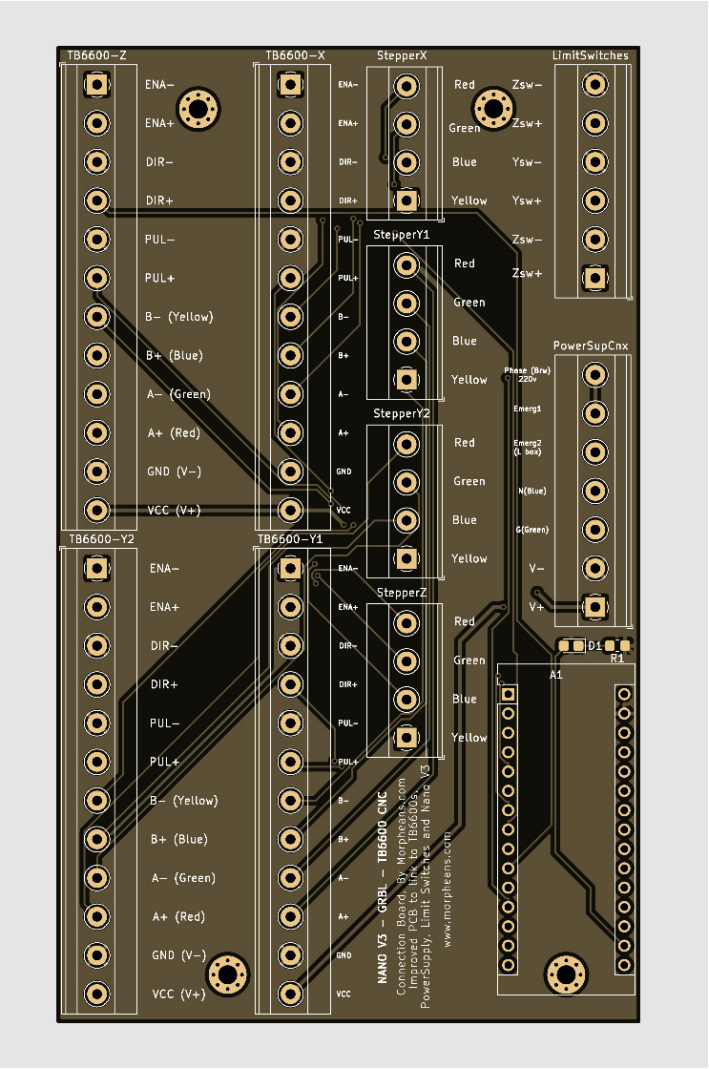
BULKMAN 3D QUEENBEE

UPGRADE BOARD





www.morpheans.com



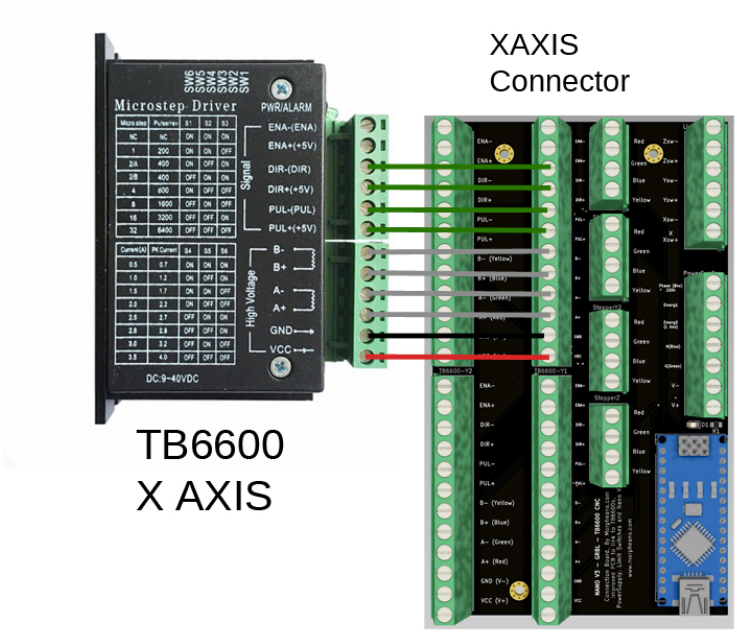
Description of the board

This Upgrade PCB has been designed to reduce the risk of bad wiring and insecure connection between all the parts of the CNC tool. The CNC comes with very basic wiring instuctions and the original connectors may be fragile when you need to connect 2 or more wire in the same hole.

We designed the MORPH-CNC6600 board to simplify the job for beginners, to ease the attachments of the differents parts and to simplify the integration in a box without this strange spaghetti feeling.

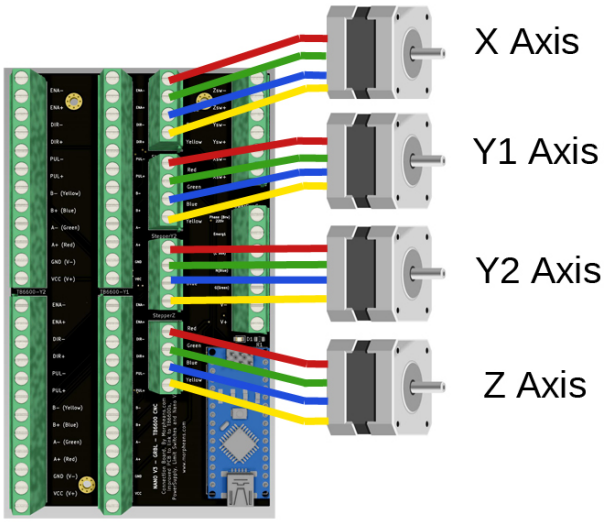
We also wanted to remove the NANO shield board to reduce the fragility It has been moved to the upgrade board.

How to wire the board



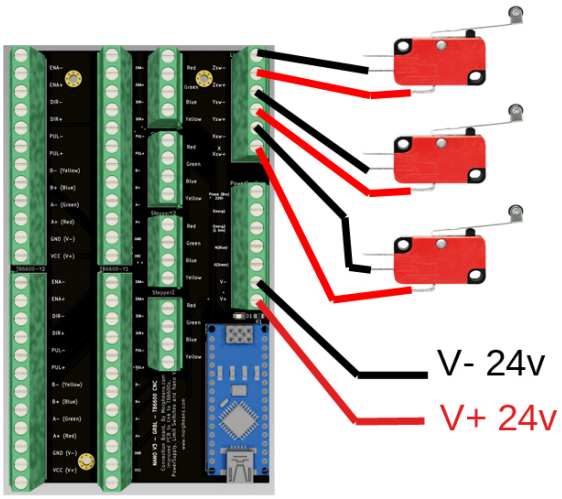
Connecting the X Axis TB6600
to the PC BOARD

On the left of the PCB you have four 12 pins terminal blocks connectors (green). 1 for the X axis nema wires , 2 for Y axis, 1 for Z axis. You have to connect each TB6600 driver to each 12 pins terminal bloks named TB6600-X, TB6600-Y1 , TB6600-Y2 and TB6600-Z . TB6600 X axis driver pinouts going to PCB TB6600-X terminal block connectors. See diagram. Repeat the operation for the 4 different TB6600 drivers.



How to wire the 4 nema23 Steppers

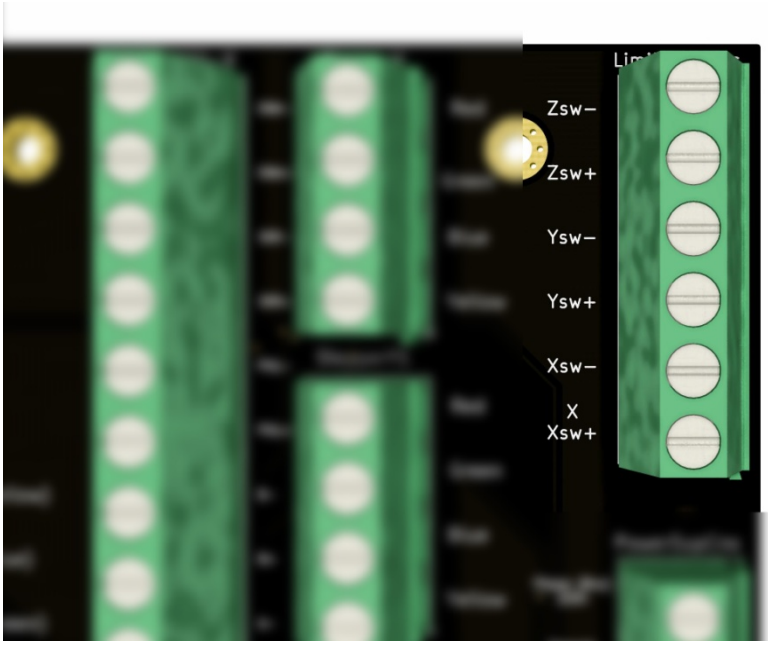
You have to connect the 4 nema23 cables (1 cable= 4 wires, RED A+, GREEN A-, BLUE B+, YELLOW B-).



How to wire the limit switches and power supply

Connect the 3 limit switched to the connectors on the left up part of the MORPH-CNC6600 board.

Connect the 24V power supply V+ & V- as in the diagram

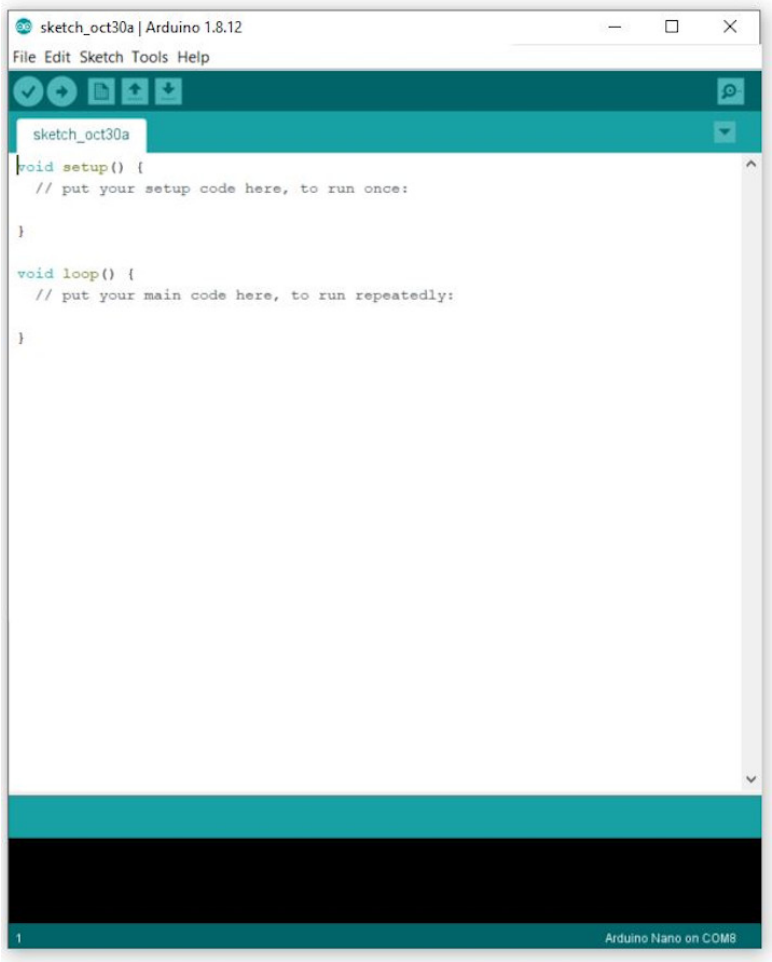


How to flash the NANO V3 with GRBL

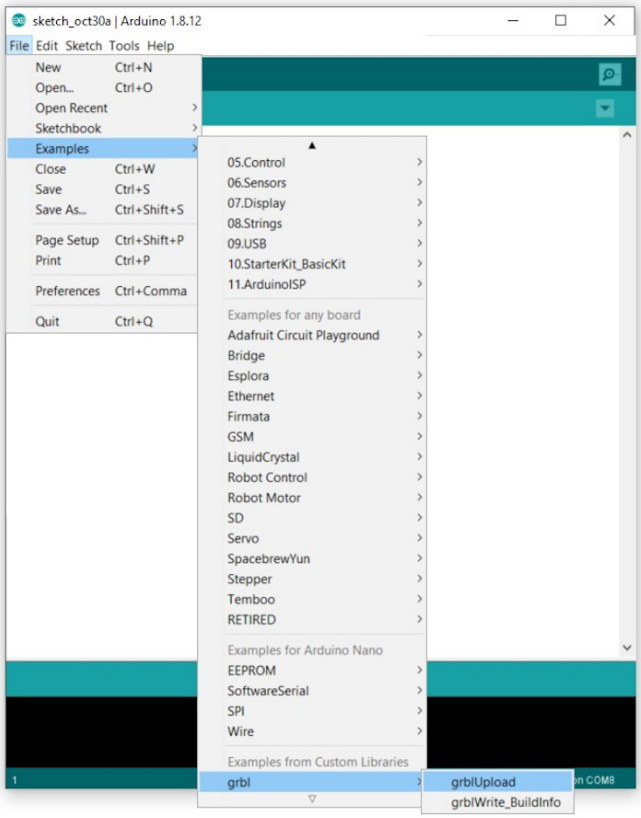
After the arduino IDE installation process has been completed, we can install the GRBL firmware. To do this, please follow the steps below **in order**:

Download the GRBL firmware from the Github archive **Here**.

- To install the GRBL firmware, please extract the downloaded grbl file named grbl-master. Please locate the file named **grbl** and copy this file to the Arduino libraries folder. This Arduino IDE folder can be found in **Documents\Arduino\libraries**.
- Microcontroller type and Port must be selected. To choose the microcontroller, please select Tools in the menu select Arduino Nano.
- To choose the bootloader type, please select Tools in the menu and select Atmega328P **(Old Bootloader)**.
- To choose the port, please select Tools in the menu and select the port that the arduino is connected too. In this example, the port is **COM3**. Yours may be different.



After installing, please open the Arduino IDE program and locate the installed library. Please go to File/Examples/grbl/grblUpload


sketch_oct30a | Arduino 1.8.12
File Edit Sketch Tools Help
New Ctrl+N
Open... Ctrl+O
Open Recent
Sketchbook
Examples
Close Ctrl+W
Save Ctrl+S
Save As... Ctrl+Shift+S
Page Setup Ctrl+Shift+P
Print Ctrl+P
Preferences Ctrl+Comma
Quit Ctrl+Q
05.Control
06.Sensors
07.Display
08.Strings
09.USB
10.StarterKit_BasicKit
11.ArduinoISP
Examples for any board
Adafruit Circuit Playground
Bridge
Esplora
Ethernet
Firmata
GSM
LiquidCrystal
Robot Control
Robot Motor
SD
Servo
SpacebrewYun
Stepper
Temboo
RETIRED
Examples for Arduino Nano
EEPROM
SoftwareSerial
SPI
Wire
Examples from Custom Libraries
grbl
grblUpload
grblWrite_BuildInfo


grblUpload | Arduino 1.8.12
File Edit Sketch Tools Help
grblUpload
This sketch compiles and uploads Grbl to your 328p-based Arduino!
To use:
- First make sure you have imported Grbl source code into your Arduino
IDE. There are details on our Github website on how to do this.
- Select your Arduino Board and Serial Port in the Tools drop-down men
NOTE: Grbl only officially supports 328p-based Arduinos, like the Un
Using other boards will likely not work!
- Then just click 'Upload'. That's it!
For advanced users:
If you'd like to see what else Grbl can do, there are some additiona
options for customization and features you can enable or disable.
Navigate your file system to where the Arduino IDE has stored the Gr
source code files, open the 'config.h' file in your favorite text
editor. Inside are dozens of feature descriptions and #defines. Simp
comment or uncomment the #defines or alter their assigned values, sa
your changes, and then click 'Upload' here.
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#include <grbl.h>
// Do not alter this file!
1
Arduino Nano on COM8

Please click the upload button to upload the firmware to the controller. The firmware will then start uploading to the controller. This can take up to a minute. Upon finishing the upload, a message will display that it has uploaded successfully.