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HOME-BUILT DIY CNC

Cheap
Arduino-based
GRBL

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(/id/Homebuilt-DIY-CNC-Router-Arduino-

Already for a few months or even years, I was planning to build my own CNC milling machine. Now I decided it was time to do it! I read a lot about other DIY projects and in the end I liked the design from the Arduino CNC (<http://www.instructables.com/id/Arduino-CNC/>) intstructable that I found here.

Although the dimensions were unclear and the programming and calibration was all in Spanish, I figured all that out by myself. In the end, I only used the design for reference.

In this instructable, I'll try to explain my steps, from the very beginning of the design, until the very end of your first gcode.

Note: I used a 3D printer to make some of the parts, but if you're working accurately, it's possible to make these parts from wood as well!

READ PLEASE:

I noticed some movement in my design after the first routings. A solution might be using thicker rods than the 12mm that I used. However: This design DOES work!! I'm currently still improving the design and might update this instructable in the near future! If you have any questions, please ask and I'll try to answer them.

If you like this instructable, please vote for me in the Arduino Contest. :)

Update - December 29th: I'm really blown away by all the interest you're all showing for this project! I'll try to add some results and video's this weekend. Currently I'm routing hard foam, since it's easy to test with. For harder material speeds need to be lower, otherwise the hang-through is a bit too much. I'm looking at a way to fix this (probably thicker rails) and will update this instructable as soon as possible. I know that there are some proven ways to solve this, but it's my goal to make it as cheap as possible. :)

Update - January 3rd: I added some results and video's in step 11. I'm still figuring out the CAM functionality of Fusion 360 and didn't have much time the past days, so the final 'C' is falling off the limits of the foam. ;) However: It's clear that the machine works and that some pretty good quality can be reached!

Update - January 30th: In the past weeks, I updated this instructable for the use of 18mm steel tubes instead of 12mm rods. Also, I designed more 3D printed parts for better/easier alignment of the parts. However, because of vacation and other projects, I haven't had much time to do more tests, so these will follow soon. The design is already much stiffer than before, so I guess I can increase the feedrate, even on wood.

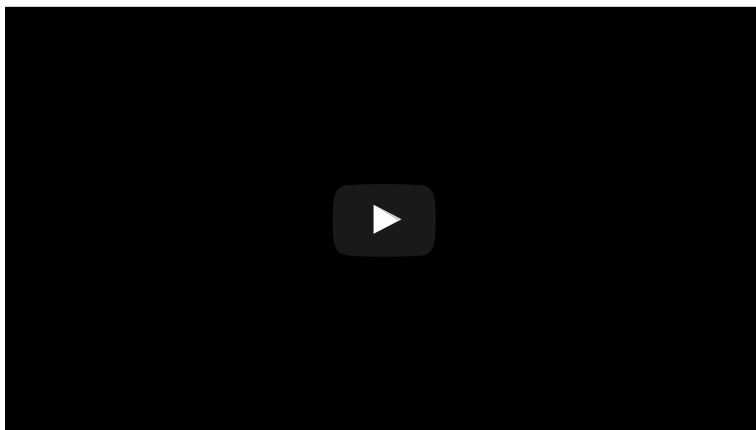
Update - February 3rd: Waahjoo! Although I didn't update this page so much (I AM working on the machine), I just got the news that I won the First Prize in the Arduino all the things Contest! Thanks a lot to everybody who voted! I'm very happy with this!!

Based-GRBL/)



ARDUINO
WIRELESS
TIME-CONTROL
SWITCH

(/id/Arduino-Wireless-433MHz-Time-Control-Switch-for-Mu/)



Have fun building!



Step 1: Materials



To make this CNC router, I used the following parts:

- 1 piece of hardwood plywood, thick 18mm, 2.44mx0.61m (€32) (local hardware store)
- ~~2 steel rods, diameter 12mm~~ 2 steel tubes, diameter 18x1.5mm, length 900mm (€5.50) (local hardware store)
- ~~2 steel rods, diameter 12mm~~ 2 steel tubes, diameter 18x1.5mm, length 528mm (€3.75) (local hardware store)
- 2 steel rods, diameter 12mm, length 188mm (€1.35) (local hardware store)
- ~~42x~~ 4x nylon linear bearing 12mm (€1.50) (local hardware store)
- 8x nylon linear bearing 18mm (€3.50) (local hardware store)
- 2x threaded rod, M8, length 1m (€4.70) (local hardware store)
- 1x threaded rod, M5, length 1m (€2.25) (local hardware store)
- 2x coupler nut 5mm-M8 (€2) (local 3D print shop, 123-3d.nl)
- 1x coupler nut 5mm-M5 (€1) (local 3D print shop, 123-3d.nl)
- 2x NEMA17 (Wantai 42BYGHW811) 1.8 degree/step stepper motor (€30) (local 3D print shop, 123-3d.nl)
- 1x NEMA17 (Wantai 42BYGHW208) 1.8 degree/step stepper motor (€12) (local 3D print shop, 123-3d.nl)
- 3x TB6560 stepper driver (€16.50) Ebay (<http://www.ebay.com/itm/CNC-Router-Single-1-Axis-Controller-Stepper-Motor-Drivers-TB6560-3A-driver-board-/251982024768?hash=item3aab4c9040:g:nEAAASw3xJVbtZQ>)
- 1x 120W (12v, 10A) power supply (€10) Ebay (http://www.ebay.com/itm/371422642034?_trksid=p2060353.m2749.l2649&ssPageName=STRK%3AMEBIDX%3AIT)
- 3x 4pin wire of 1 meter (€6) (local 3D print shop, 123-3d.nl)
- Some 608 ball bearings (€4) AliExpress (http://www.aliexpress.com/item/Best-Price-10-pcs-608-2RS-Deep-groove-ball-bearing-bearing-steel-8-22-7-mm/1752717953.html?spm=2114.01020208.3.10.6MBSJ&ws_ab_test=searchweb201556_6,searchweb201644_2_79_78_77_82_80_62_81,searchweb201560_4)
- 1x Chinese Arduino UNO (€2.50) AliExpress (http://www.aliexpress.com/item/One-Set-Version-UNO-R3-Development-Board-for-Arduino-UNO-DIY-Kit-Electronic-Production-NO-USB/32570237366.html?spm=2114.01020208.3.300.1wZWJD&ws_ab_test=searchweb201556_6,searchweb201644_2_79_78_77_82_80_62_81_61,searchweb201560_4)
- 1x Old laptop / raspberry pi / your own laptop (€??)
- Some M8 nuts, some M5 nuts and some screws

Total: Around €140,-

Note that this does not yet include the milling device. I used a Dremel 8200 series to start, but will change to add my normal router to it, or make something like a DC spindle onto it.

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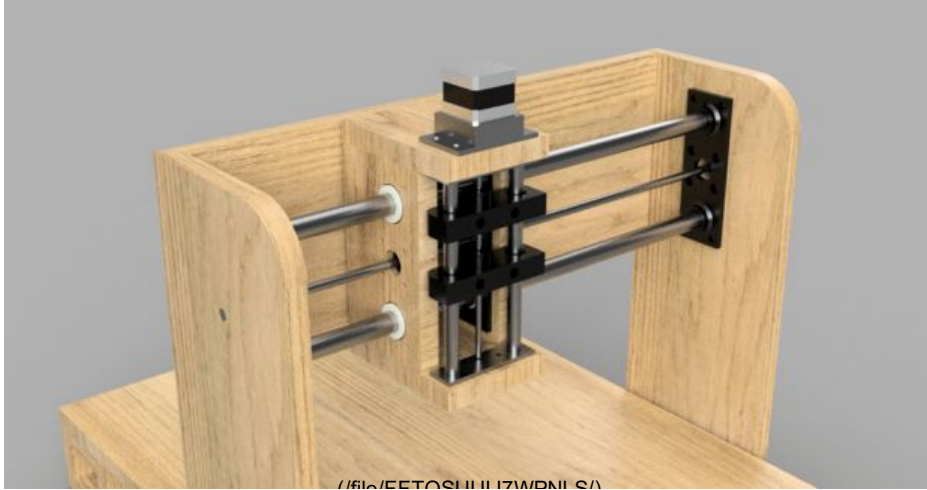
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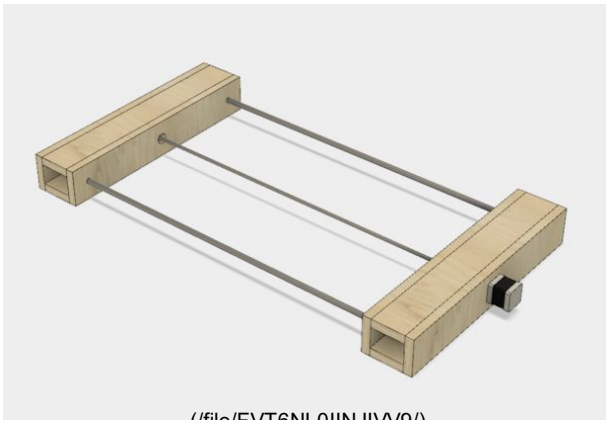
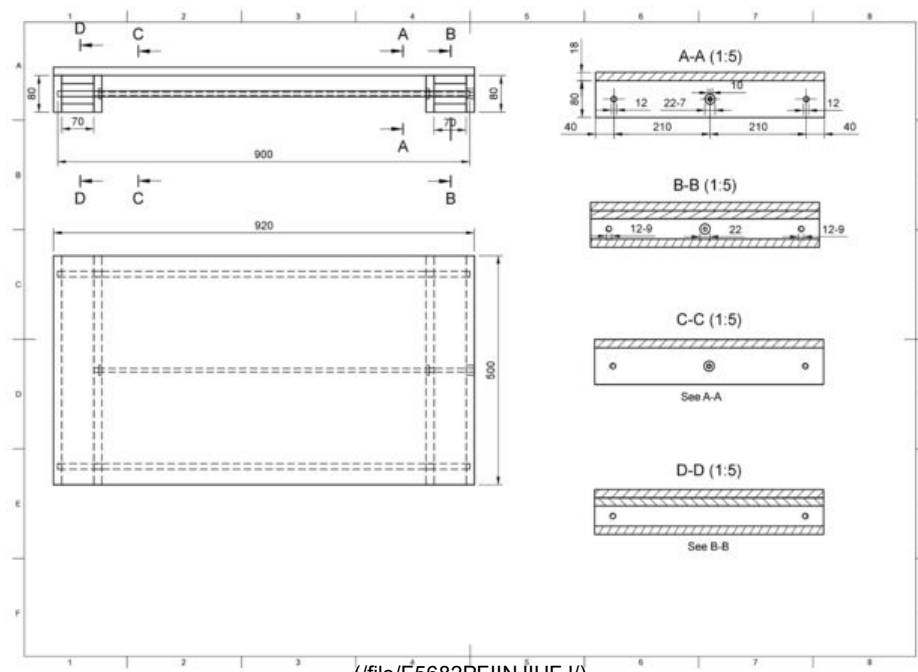
Step 2: The design



As explained in the introduction, my hardware design is based on the Arduino CNC (<http://www.instructables.com/id/Arduino-CNC/>) instructable, that I found here. Since no exact dimensions etc. were given in this instructable, I made the design all by myself again in Autodesk's Fusion 360.

I designed it to have a range of $\pm 70\text{cm}$ in y-direction, $\pm 40\text{cm}$ in x-direction and $\pm 10\text{cm}$ in z-direction.

Step 3: The y-assembly



The y-assembly is one of the easiest (and biggest) parts to make. I attached a building drawing, in which all dimensions are in mm's.

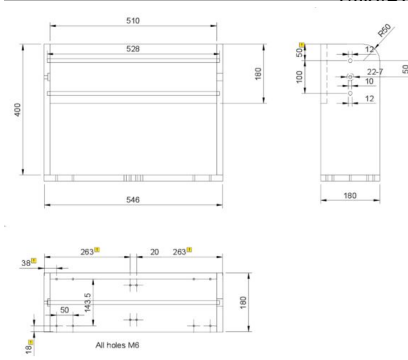
Notes:

- Where 22-7 is written, this means that you need to drill a hole with a diameter of 22mm, and only 7mm's deep. This is for the bearings.
- Panel A-A and C-C are identical.
- Panel B-B and D-D are almost identical: In panel B-B you need to drill 1 22mm hole for the coupler nut between the stepper motor and the threaded rod. In panel D-D you don't drill this hole.
- The 12mm holes in panels B-B and D-D are only 9 mm deep.

Update: 12mm rods seemed to hang through too much. Therefore, the design was changed for the use of 18mm tubes. The drawing with dimensions stays the same, ONLY in case of drilling 12mm holes, 18mm holes have to be drilled!

Before screwing the 80mm and 70mm pieces together, attach the first NEMA17 42BYGHW811 stepper motor to panel B-B. Then, attach the coupling nut and the threaded rod (cut it to 750mm) to the stepper motor. Now you can screw the 70mm and 80mm pieces together but don't attach the large board yet. Otherwise we won't be able to attach the x-assembly. You'll end up with something that looks like figure 3.

Step 4: The x-assembly



The x-assembly contains some 3d printed parts. You can find these all on Thingiverse (<http://www.thingiverse.com/thing:1228590>). For the x-assembly, you'll need:

- 4x XY-joint
- 2x Y-nut-holder

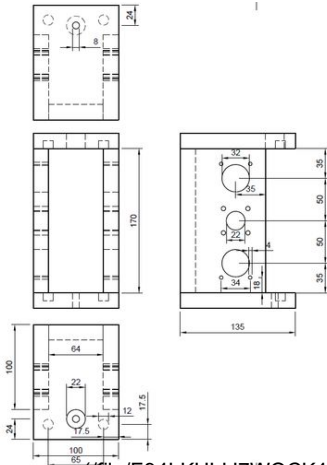
You can also make these parts from wood, but then you'll have to be a bit more creative yourself. :)

Saw the wood as shown in drawing, but don't screw all parts together before the Z-Block is finished (next step).

Note: In the left side panel, the 22mm hole is only 7mm deep (bearing) and the 10mm hole goes through. In the right panel, the 22mm hole goes through (because of the coupler nut).

Update: Just like the Y-Assembly, the 12mm rods have been replaced by 18mm tubes. Also, there are now some 3d printed parts used to help aligning these tubes. They are upload to thingiverse as well. Again: If you work accurate enough, it might not be necessary to use these 3d printed parts and make it from wood.

Step 5: Z-block assembly

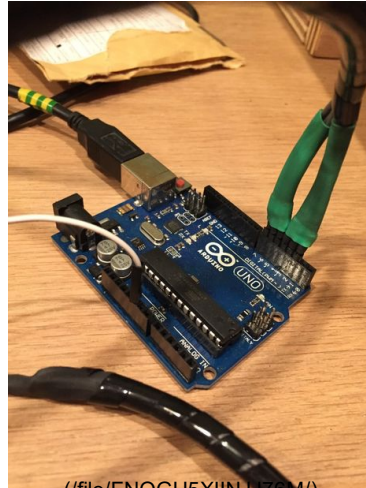
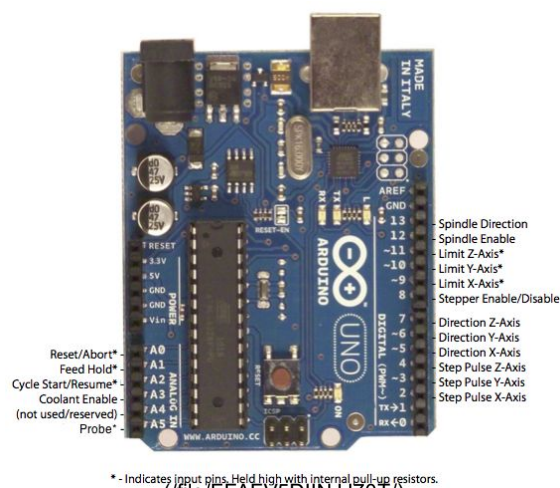
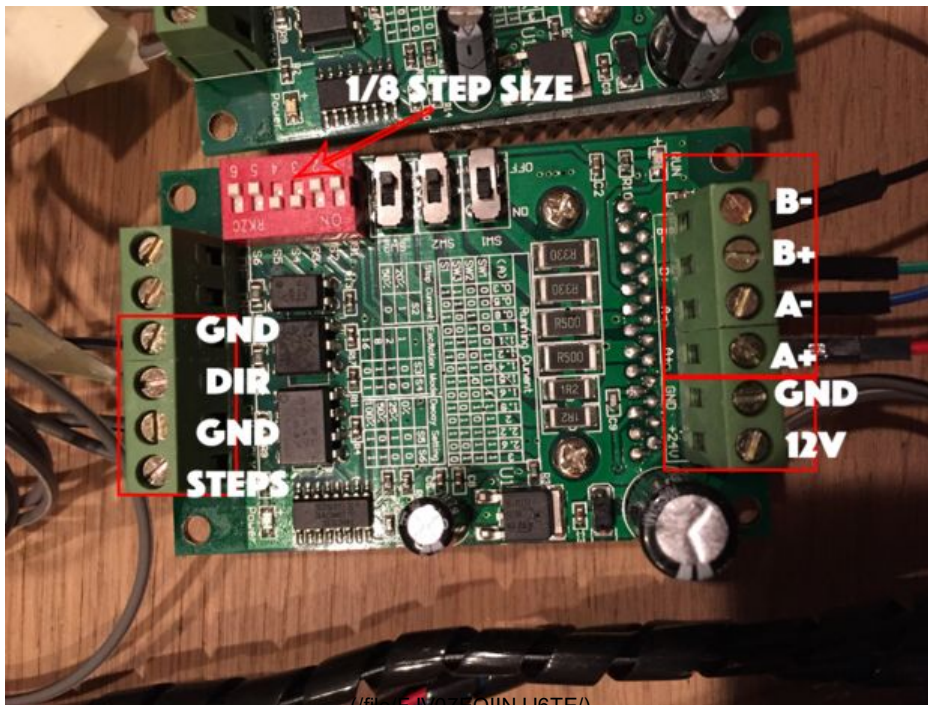


One of the most difficult part is the Z-block. Drilling of the holes has to be very precise, otherwise the friction will be too high, since the steel rods won't be perfectly aligned with the holes in the side panels of the x-assembly. My tip is to use a mitre saw to cut the wood and a drill press to make the holes! For the larger holes, I first used a drill press to make a start and then a router to make enough space.

All black parts in the design are 3d printed, since it's easier to gain high accuracy then. Those parts can be found on the thingiverse link from the previous step. The white thingies are the nylon bearings.

The wood needs to be sawn and drilled as shown in figure 2.

Step 6: Assemble all hardware



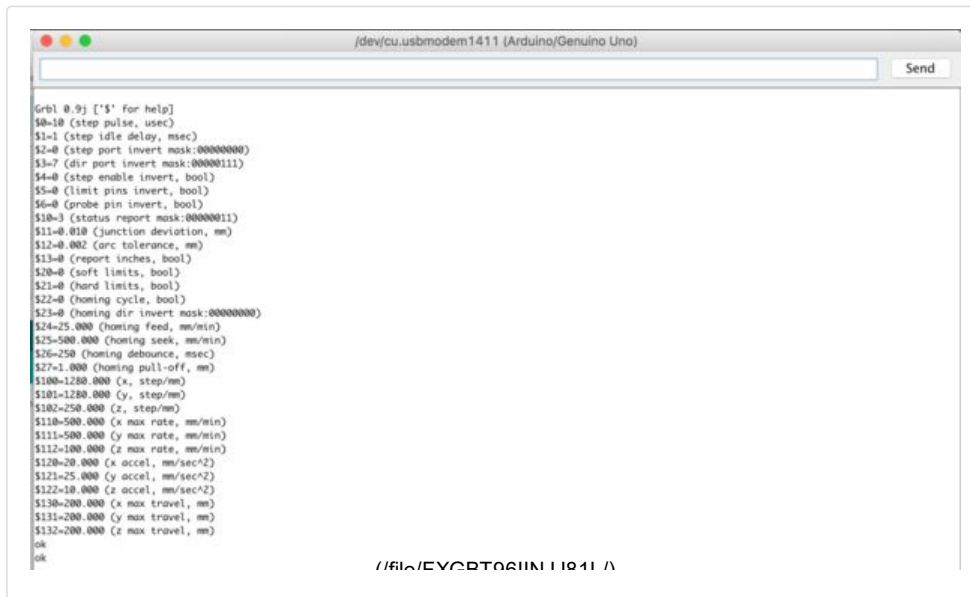
With the motor drivers I used, the wiring should be as shown in figure 1. The ground on the left of the image, is the ground from the arduino (not from the 12v power supply).

The Phase A and Phase B can be found using a simple multimeter: The resistance over a phase (A+ and A- for example) is zero. For the wiring, it doesn't matter which one is A+ or A-, as long as the resistance between both A wires, is zero. Same for the B phase.

The switches on the motor driver are not really clear to me yet, but with S3 and S4 switched in this way, the step size will be 1/8 of the normal step size, resulting is much more gentle and precise steps.

The wiring on the Arduino is as explained in the grbl wiki on Github (<https://github.com/grbl/grbl/wiki/Connecting-Grbl>). For the minimum basics, we only have to wire digital pins 2-7 and GND to the stepper driver boards.

Step 8: Flashing the arduino



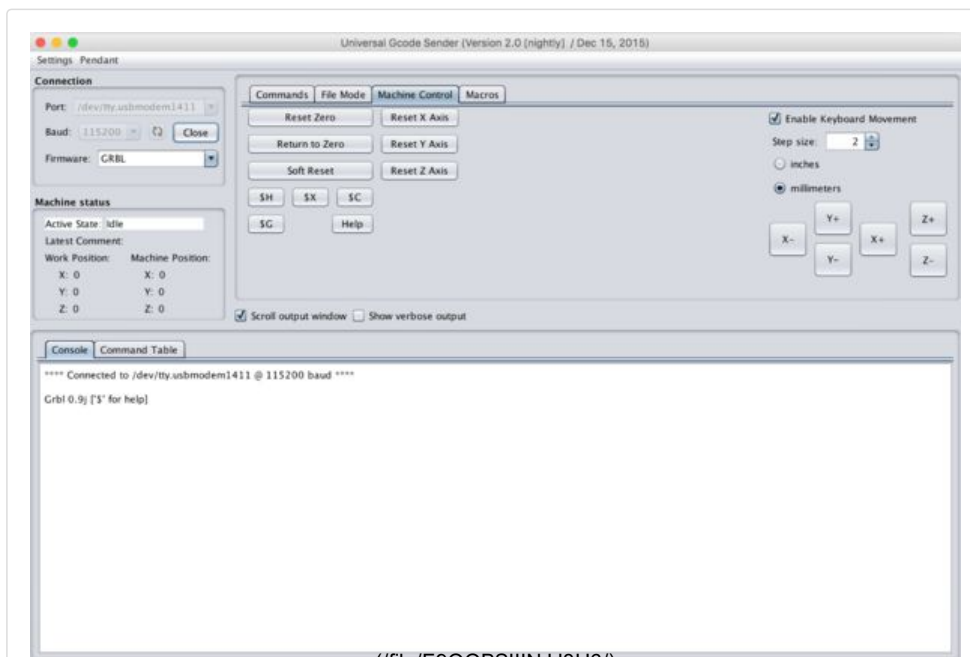
Download and extract GRBL from Github (<https://github.com/grbl/grbl>) and open the Arduino IDE. Via Sketch -> Include Library -> Add zip library select the 'grbl' directory from the just extracted folder. Restart the arduino IDE and under file -> Examples, there should now be a grbl example, named grblUpload. Open it and upload it to the Arduino.

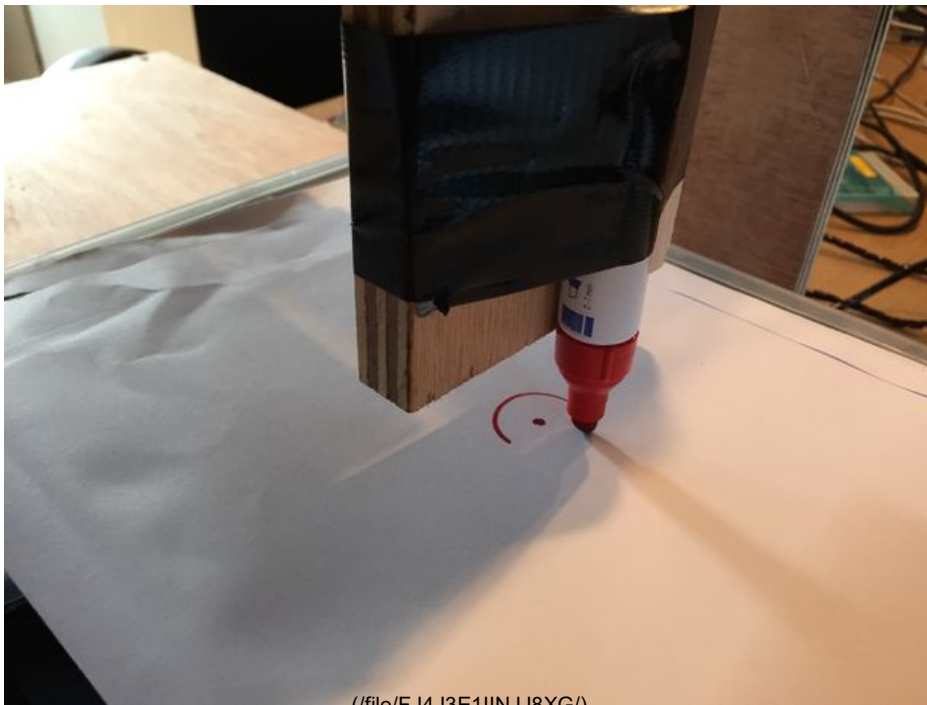
Now open the Serial monitor (under Tools) and set baudrate to 115200.

You should now get the message 'Grbl 0.9j ['\$' for help]'

So enter \$ and hit return. Now enter \$\$ and hit return. There you should see all the current settings for your grbl, which should be as default. Now, you can change everything you need. Details are explained on the grbl Github. My settings are as attached, but if your axis move in the wrong direction (because you might have B- and B+ different for example), you should switch these.

Step 9: The first circle





When the building and the flashing is done, it's time to do something! Download the Universal G-Code Sender here (<http://bit.ly/1M6z2ys>) (info on Github, here (<https://github.com/winder/Universal-G-Code-Sender>)) and connect to your Arduino with a baudrate of 115200 again.

Now power up your power supply and go to 'Machine Control'. You should now be able to move your machine using the controls on this display!!

Hook up a pen to your z-axis, and save this text (using notepad) as circle.gcode:

```
G17 G20 G90 G94 G54
G0 Z0.25X-0.5 Y0.
Z0.1
G01 Z0. F5.
G02 X0. Y0.5 I0.5 J0. F2.5
X0.5 Y0. I0. J-0.5
X0. Y-0.5 I-0.5 J0.
X-0.5 Y0. I0. J0.5
G01 Z0.1 F5.
G00 X0. Y0. Z0.25
```

When you go to the File Mode tab in the Universal G Code Sender, you open circle.gcode and as soon as you click Send, your machine should now start painting a circles with a diameter of exact 2 inches!

Step 10: Finishing





As soon as you know your machine is working, it's time to hook up your router of dremel to start milling! Because every router is different from others, you have to be a bit creative yourself. But when you have come this far, I'm sure you'll get your router attached!

Good luck!

Homebuilt (DIY) CNC router - Arduino based (GRBL)

If you liked this instructable, please vote for me in the Arduino Contest. :)
by Azilaan015 (/member/Azilaan015/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/)

((contest/arduinoallthethings/))
 

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12 Steps 

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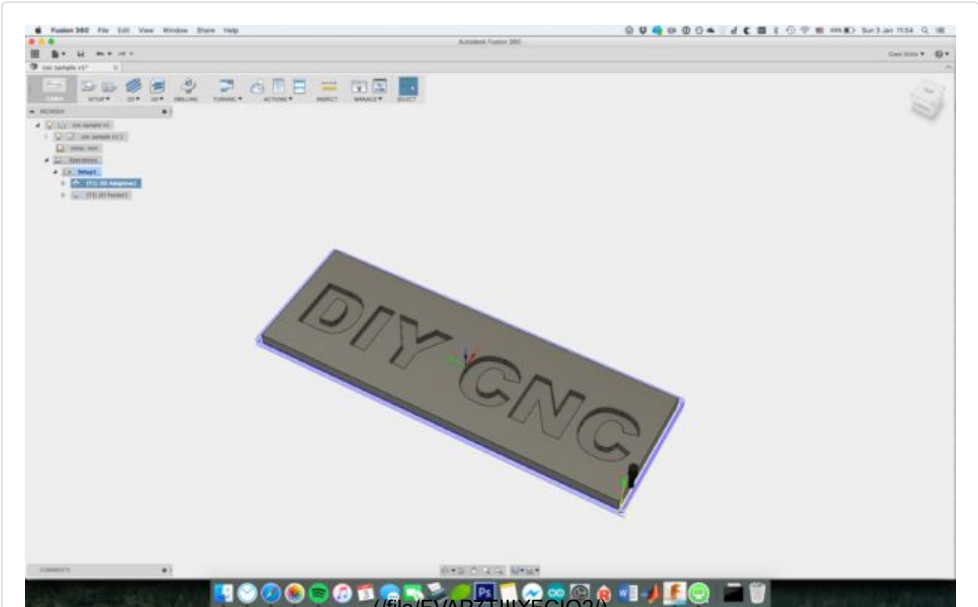
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Step 11: Update: Seeing it work




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Ok, I was lacking some time this past week, but since I promised to show you guys some results, I did my best. I'm still figuring the CAM functions of Fusion 360 out, so as you can see in the images attached: The starting point of the sample was not correct, so that the final 'C' didn't fit. This had nothing to do with the machine, but with my abilities with Fusion 360.

As you can see: The finishing of hard foam is pretty good!

Homebuilt (DIY) CNC router - Arduino based (GRBL) by

Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/) so it moved up a bit.

((contest/arduinoallthethings/))  

12 Steps ▶

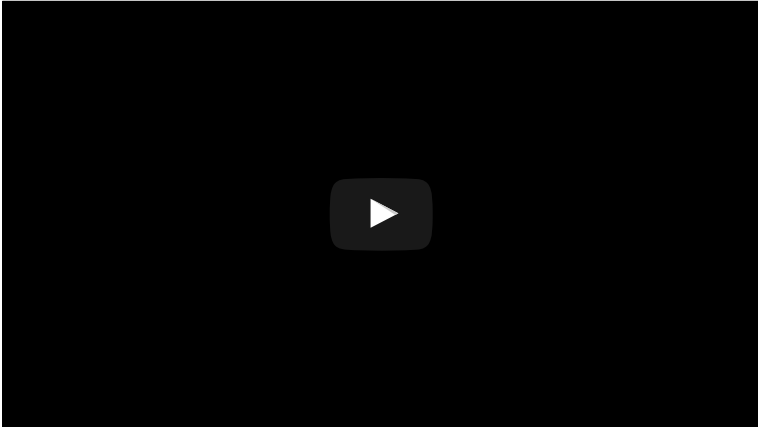
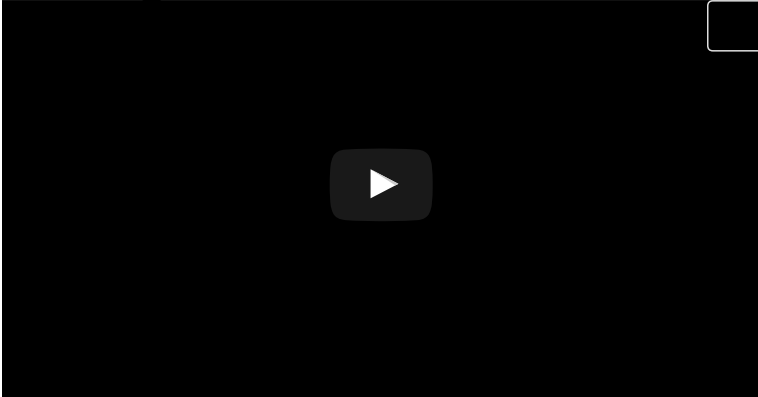
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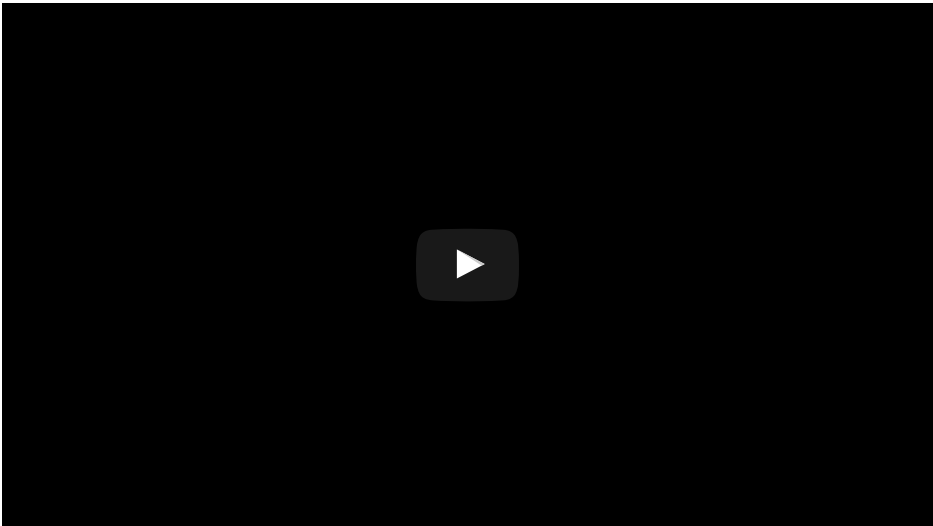


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I'm very happy with the result so far!!

Step 12: After a few weeks



Ok, we're now a few weeks later. I tested some more and I'm very happy with the updated design.

Some facts:

- I can route hardwood-plywood at a federate of 400mm/min with a 6mm 4-flute end mill at 52mm per pass.
- I also tried the same feed rate and same router with a depth of 4mm per pass, but this caused the wood to burn because the friction was too high.

(/contest/arduinoallthethings/)



Homebuilt (DIY) CNC router Arduino based (GRBL)

Azielaan0130 (/member/Azielaan0130/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/)

The accuracy however, stayed acceptable, but I don't recommend this setting.

- Because I used threaded rods instead of leadscrews, I have some backlash on the y-axis. This results in flattened circles. I can probably tune this a bit by tweaking the nuts under the x-gantry, but I'll probably switch to lead screws in the future.

Like I said: I'm very happy with it! Now I need more projects to use it for. ;-)

We have a be nice comment policy. Please be positive and constructive.

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Post Comment



ranganath c r (/member/ranganath c r)

2 months ago

Reply

i have L298 stepper motor driver ...can i do this project with this driver insted of TB6560

plz reply me soon

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AdityaP91 (/member/AdityaP91) ▶ rangnath c r (/member/ranganath c r)

Reply

I think L298 drivers are for low amperage motors. I have used L298 and the current is pretty low. any way check the ratings of the motors you are using.

2 months ago



ajinkyadixit (/member/ajinkyadixit) ▶ rangnath c r (/member/ranganath c r)

Reply

No.... GRBL Has no support for H-Bridge.

2 months ago



AdityaP91 (/member/AdityaP91)

2 months ago

Reply

I have 2 dc outputs in my power supply how can i connect 3 tb6560.



ilp73569PP (/member/ilp73569PP) ▶ AdityaP91 (/member/AdityaP91)

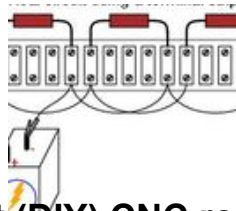
Reply

What amperage is your power supply? If it is high enough bridge them together.

2 months ago

Image source :

https://www.ibiblio.org/kuphaldt/electricCircuits/DC/DC_5.html



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Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) ▶ cnc (/tag/type-id/category-technology/channel-cnc/) <https://en.instructables.com/Arduino-based-CNC-router/>

((contest/arduinoallthethings/))



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AdityaP91 (/member/AdityaP91) ▶ ilp73569PP (/member/ilp73569PP)

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10 amps i tried and connected them in parallel and they are working. My main doubt is will it effect the performance of my stepper motors. I am trying the H-bridge.

2 months ago



NeluChereja (/member/NeluChereja)

5 months ago

Reply

Can i make it without the TB6560 stepper driver an use instead a easydriver board?



ajinkyadixit (/member/ajinkyadixit) ▶ NeluChereja (/member/NeluChereja)

Reply

Yes You can make. I have made and shared the images above. But TB6560 are always better than Easydriver for NEMA 17 / 23 and above motors.

2 months ago



Azielaan015 (/member/Azielaan015) (author) ▶ NeluChereja (/member/NeluChereja)

Reply

I think the currents are too high for the easydriver boards.

5 months ago

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NeluChereja (/member/NeluChereja) ▸ Azielaan015 (/member/Azielaan015)

Ok, thanks

5 months ago

Reply

AUTODESK



NeluChereja (/member/NeluChereja)

5 months ago

Reply

Can i do this cnc machine without the GRBL boards, and use 3 easydriven boards?



ajinkyadixit (/member/ajinkyadixit) ▸ NeluChereja (/member/NeluChereja)

Reply

Yes... u can make it. I already made it and uploaded the images in one of my comment above.

2 months ago



jgzoom (/member/jgzoom)

3 months ago

Reply

Someone wouldn't happen to have the 3d parts created in IPS, would you??



ajinkyadixit (/member/ajinkyadixit) made it!

4 months ago

Reply

I made 3 for different applications with quite different sizes.... :) Works great... :)



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Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) ▸ cnc (/tag/type-id/category-technology/channel-cnc/)

(/contest/arduinoallthethings/)



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(https://cdn.instructables.com/F7UW1FI/PT923T/F7UW1FIPT923T.LARGE.jpg)



(https://cdn.instructables.com/FAJL4I7/PT9260/FAJL4I7PT9260.LARGE.jpg)

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Azielaan015 (/member/Azielaan015) (author) ▶ [ajinkyadixit](#) (/member/ajinkyadixit)

Awesome!! Thanks a lot for sharing this, it's very cool to know that somebody made it!

4 months ago

[Reply](#)

AUTODESK



wmahesa (/member/wmahesa)

5 months ago

[Reply](#)

Hi, how about NEMA 23 ?



Azielaan015 (/member/Azielaan015) (author) ▶ [wmahesa](#) (/member/wmahesa)

You'd have to modify some parts, because the center-to-center distances of the holes are different.

5 months ago

[Reply](#)



remendab (/member/remendab)

5 months ago

[Reply](#)

Hi, great instructable. Can you tell me exactly what you are using for your 'nylon linear bearkings' I cannot imagine anything that I could get at my local hardware store. Thanks.



Azielaan015 (/member/Azielaan015) (author) ▶ [remendab](#) (/member/remendab)

I found them in a shop for Industrial Design students. Maybe look for PTFE linear bearing.

5 months ago

[Reply](#)

Homebuilt (DIY) CNC router - Arduino based (GRBL)

[Azielaan015](#) (/member/Azielaan015/) in [technology](#) (/tag/type-id/category-technology/) ▶ [cnc](#) (/tag/type-id/category-technology/channel-cnc/)

((contest/arduinoallthethings/))



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12 Steps



RodrigoL7 (/member/RodrigoL7)

+ Collection
8 months ago

I Made it!

[Reply](#)

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Hi! amazing Work!

i have a tecnical issue about NEMAs, i can't find the 2 models in my country but the 42BYGHM809. can work with this model?



Azielaan015 (/member/Azielaan015) (author) ▶ [RodrigoL7](#) (/member/RodrigoL7)

I guess any NEMA17 will do the job :)

8 months ago

[Reply](#)



DarylHooke (/member/DarylHooke)

9 months ago

[Reply](#)

Hi,

Great work. I'm really interested in building your router design. Firstly, have there been any improvements made in the last twenty days? (Before I start gathering the hardware) Secondly, three of the files in the ZIP package for 3D printing have zero content. Could the ZIP file be updated to fix the file issue?

THANKS

Daryl

[kavtoakustika](#) (/member/kavtoakustika) ▶ [DarylHooke](#) (/member/DarylHooke)





Hi Daryl, just download part by part and not zip file and you should get all parts correctly. I'm also gathering all parts so good luck to you also :)

Reply

AUTODESK



DarylHooke (/member/DarylHooke) ▶ kavtoakustika (/member/kavtoakustika)
THANKS kavtoakustika.

8 months ago

Reply



Azielaan015 (/member/Azielaan015) (author) ▶ DarylHooke (/member/DarylHooke)
Hi Daryl,

9 months ago

Reply

No, in the past 20 days I have been busy on other projects (work) and vacation (whoohoo!) Therefore, I haven't had much time to test a lot either, but I will update the topic as soon as I have more results.



Sergio Ulloa (/member/Sergio Ulloa)

9 months ago

Reply

really good cnc desing, im going to do it in 2 or 3 months :3



Imagg (/member/Imagg)

9 months ago

Reply

Is it possible to use this CNC router to work with wood/plywood instead of foam?

Homebuilt (DIY) CNC router. Arduino based (GRBL)

((contest/arduinoallthethings/))



Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/) I'm as we speak working on making it stiffer, which will make it better capable of working with wood. And as a matter of fact it already can work with wood, but it's a bit slow then.

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QJ Neo (/member/QJ Neo)

9 months ago

Reply

The best DIY CNC tutorial!



Azielaan015 (/member/Azielaan015) (author) ▶ QJ Neo (/member/QJ Neo)
Thanks!

9 months ago

Reply



samwsng (/member/samwsng)

9 months ago

Reply

Really best Arduino CNC Router project, I am planning to build one for me. Could you explain more about how to connect the wire in TB6560 Stepper drive and how to install drive in it?



Azielaan015 (/member/Azielaan015) (author) ▶ samwsng (/member/samwsng)
It isn't much more than described already. You have

9 months ago

Reply

to find out which wires of your motors belong to each other, and then 1 pair is A- and A+, the others are B+ and B-. With the switches, I haven't done much more than just trying to flip some and see what happens and found out that it's good as they are on the photo.





Amir Samir (/member/Amir Samir)

9 months ago

Reply

How much does it cost?



Azielaan015 (/member/Azielaan015) (author) ▶ Amir Samir (/member/Amir Samir)

9 months ago

Reply

€140, excluding the Dremel. The prices are listed in the materials list.



benglish1 (/member/benglish1)

9 months ago

Reply

I was thinking along the same design idea, so thank you so much because you have just saved me lots of money :) and now I don't have to waste time with 8mm rods, and lucky I never bought another two smaller Nema 17's, I however have 8mm chrome plated rods for the 3d printers but a router is lot heavier, are your rods just normal round bar mild steel ??? and when you say nylon linear bearing are there metal ball bearing in the nylon casings or do they just slide on the nylon?? the Hardware fella asked me to find out



Azielaan015 (/member/Azielaan015) (author) ▶ benglish1 (/member/benglish1)

9 months ago

Reply

I don't use the metal ball bearings for now, just the nylon bearings. It's not the best, but it was the cheapest and since I didn't knew on forehand if the design was going to work, I wanted to make it as cheap as possible. Maybe I'll upgrade to ball bearings in the future.

Homebuilt (DIY) CNC router - Arduino based (GRBL)

((contest/arduinoallthethings/))



Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/) by michelemartino (/member/michelemartino/)

9 months ago

Reply



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Azielaan015 (/member/Azielaan015) (author) ▶ michelemartino

(/member/michelemartino)

9 months ago

Reply

I modelled it with Autodesk Fusion 360 and used Repetier Host + Slic3r for 3d printing.



Azielaan015 (/member/Azielaan015) (author)

9 months ago

Reply

In the next days, I'll upgrade the gantry as shown in the attached image. I'll replace the 12mm x-axis rods by 18mm tubes, and 3D print some parts to ensure the exact alignment of the tubes with respect to each other, and make sure that there's no movement in the ends of the rods.



(<https://cdn.instructables.com/FK2/B9JN/IJ1PLZTX/FK2B9JNII1PLZTX.LARGE.jpg>)

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kwhitacre (/member/kwhitacre)

9 months ago

Reply

I want to make one. I need more hours in my day and more days in my week... loved your instructable.

AUTODESK



Azielaan015 (/member/Azielaan015) (author) ▶ kwhitacre (/member/kwhitacre)

9 months ago

Reply

Thank you!



dollarseed (/member/dollarseed)

9 months ago

Reply

This is one that I designed. The gantry is all made out of 1/2" Lexan, and all of the linear rails are stainless steel, as those seemed to be the strongest solid rod ones I could find. All of the bearings, rails, etc. I was able to purchase from a company here in the US called McMaster-Carr, although MSC has these as well. EngineeringForLess EFL CNC has a program for loading grbl to the arduino, and works quite well for a free one. It also sends the gcode to the arduino to run. I forget the name of another program I use to write the gcode at this time, but soon plan to try it with VCarve. I agree with another responder, you should up the voltage to your motors. I run mine on 24vdc and they behave really well. I've also found that using a light oil on the rails like WD40 helps everything run really smooth. Great build and ible. You've got my vote. It isn't easy building anything from just looking at pictures, and expecting it to all work out.



Homebuilt (DIY) CNC router - Arduino based (GRBL) by

Azielaan015 (/member/Azielaan015/) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/)

(/contest/arduinoallthethings/)



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schabanow (/member/schabanow) ▶ dollarseed (/member/dollarseed)

Reply

9 months ago

WD40 is not oil itself but composition, mostly useless and expensive. The lion part of it evaporates (volatiles) if you left it opened in open air. WD40 is not a light oil, the rest of it is pretty viscous stuff. I too thought it to be the light enough to use it as watch' mechanism lubricant. Any good has happened...



ChristopherM55 (/member/ChristopherM55) ▶ schabanow (/member/schabanow)

9 months ago

Reply

While the "W-D" in WD-40® stands for Water Displacement, WD-40® Multi-Use Product is a unique, special blend of lubricants. The product's formulation also contains anti-corrosion agents and ingredients for penetration, water displacement and soil removal.



schabanow (/member/schabanow) ▶ ChristopherM55 (/member/ChristopherM55)

9 months ago

Reply

I think ordinary kerosene does quite the same way. More or less.)) Maybe this is not a science approach but in MY practice kerosene and WD40 are absolutely equal stuffs. Any advantages of WD40 has been observed. Except of price and inspired pathetic text on WD40's can.))



Yes, there are certain situations occur when you have a pin-pont hole on the object to be repaired. This is the only 'star moment' for WD40 THE SPRAY cause it gives a FOAM that spreads its liquid inside the cavity of a mechanism more or less evenly. That is...



dollarseed (/member/dollarseed) ▶ schabanow (/member/schabanow)

Reply

9 months ago

3in1 Oil works well also, but anything is better than nothing. It has to be applied often, to keep it from hanging onto the fine dust particles that will gum up the bearings, and cause further problems. Because of this frequency of use, anything will work.



schabanow (/member/schabanow) ▶ dollarseed (/member/dollarseed)

Reply

9 months ago

Well you can vacuum the dust away from the cutting area with vacuum cleaner. Cyclon separator just before the vacu's inlet works great (you can check YT on 'cyclone separator').

As for lubricants - sure sth always better than nth, but some people do argue opposite point of view in a strong way concerning BIKE CHAIN for instance. I don't - I lube it regularly, saturatedly and pretty often.))

As for CNC rods - you have the gun, not me; for I've no experience in the realm of. Trust you!



Azielaan015 (/member/Azielaan015) (author) ▶ dollarseed (/member/dollarseed)

Reply

9 months ago

Wow, that looks awesome as well! Thanks for voting.

((contest/arduinoallthethings/



Homebuilt (DIY) CNC Router - Arduino based (GRBL)

Azielaan015 (/member/Azielaan015) in technology (/tag/type-id/category-technology/) > cnc (/tag/type-id/category-technology/channel-cnc/) for this project and I will try to improve the design, to help everybody on

Download

DIY CNC Machine Router-Arduino-Based-GRBL/)

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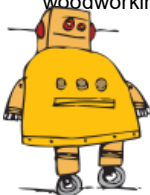
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