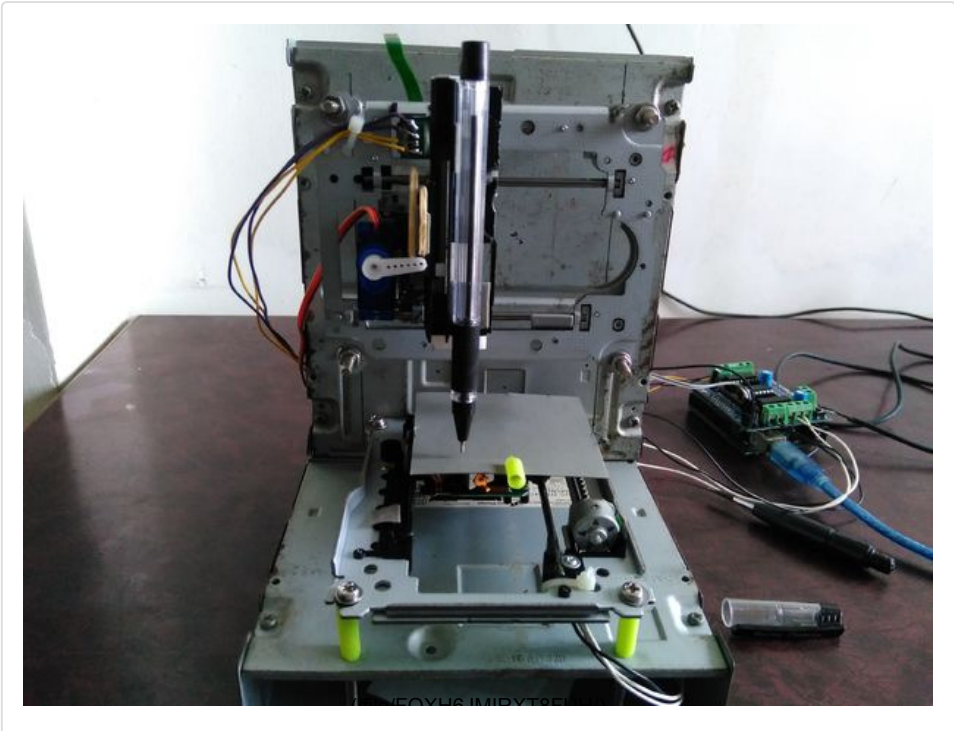


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this a mini CNC 2D plotter made from old DVD drive and L293D motor shield very cheap but intresting
let see how to make in

Ad

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How to Make Mini CNC 2D Plotter Using Scrap DVD Drive, L293d

Motor Shield & Arduino

Step 1: Video by Sandeep_UNO (/member/Sandeep_UNO/) in technology (/tag/type-id/category-technology/) > arduino (/tag/type-id/category-technology/channel-arduino/)

Bio: Electrical engineer by profession



More by Sandeep_UNO:

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CNC SHIELD + CH340G UNO R3 + A4988 STEPPER MOTOR... [NOCHMAL SCHAUEN](#)

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Step 2: Material need for this project



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- 1) 2 X SCRAP DVD DRIVE
- 2) 1 X ARDUINO
- 3) 1 X L293D MOTOR SHIELD
- 4) 1 X SERVO MOTOR (TOWER PRO 9G)
- 5) JUMPER WIRES
- 6) SOME HARDWARE NUT BOTS ETC
- 7) DOUBLE SIDE 3M TAPE

Library For Adafruit Shield Driver Motors

extract the file and past them to

arduino/libraries



AccelStepper-master.zip (/files/orig/FXN/CJOI/IRXT8FYF/FXNCJOIIRXT8FYF.zip)



Adafruit-Motor-Shield-library-master.zip

(/files/orig/F8M/CEVY/IRXT8FYG/F8MCEVYIRXT8FYG.zip)

Step 3: Assembling the machine



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(/file/FTIAF00IRXT8G42/)

(/file/FNMRD00IRXT8GDM/)

Show All Items

Open the scrap DVD Drive and remove internal moving tray..

This tray having stepper mechanism on it this will act as our X-axis & Y-axis.

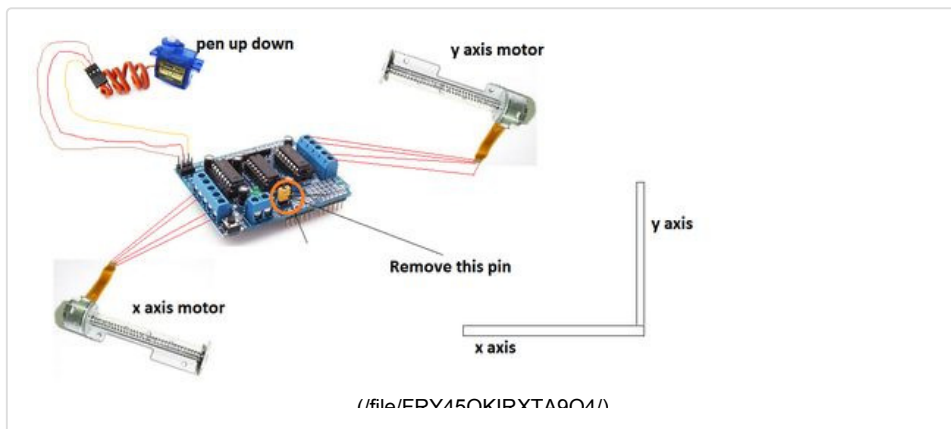
Go through the attached pictures for understanding how to assemble your machine.

make hole on empty DVD drive case mount our X-axis and Y-axis on respective DVD case with the help of

nut bolts.

Now place them perpendicular

Step 4: Wiring details



watch the picture carefully and wire components accordingly

Step 5: CNC Code for arduino

upload the code to arduino using arduino IDE



CNC_code.ino (/files/orig/F8U/TGX0/IRXTAAHA/F8UTGX0IRXTAAHA.ino)

Step 6: G code

To make gcode files that are compatible with this cnc machine you have to use the Inkscape.

Inkscape is professional quality vector graphics software which runs on Windows, Mac OS X and Linux. It's used by design professionals and hobbyists alike to create a variety of graphics such as illustrations, icons, logos, diagrams, maps and Web graphics. Inkscape uses the W3C open standard SVG (Scalable Vector Graphics) as its native format, and is free and open-source software. Download and install Inkscape from



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standard SVG (Scalable Vector Graphics) as its native format, and is free and open-source software. Download and install Inkscape from

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<https://inkscape.org/en/download/windows/>
(<https://inkscape.org/en/download/windows/>)

(Important: download 0.48.5 version)
Now you need to install an Add-on that enables the export images to gcode files.
This add on can be found here with installation notes.

<https://github.com/martymcguire/inkscape-unicorn>
(<https://github.com/martymcguire/inkscape-unicorn>)

please follow the video on you tube how to create G-code file

Seite gesperrt.
BMW Web Policy auf proxy.muc hat die Seite gesperrt.

Die Seite "www.youtube.com" kann nicht gezeigt werden, da die Seite nicht der BMW Webpolicy entspricht .

Access denied.
BMW web policy on proxy.muc has denied access to the website.

special thanks to instructABDO
some ready made G-code files

-  **Gilyas.gcode** (/files/orig/FM2/4NGC/IRXTAB4I/FM24NGCIRXTAB4I.gcode)
-  **girl.gcode** (/files/orig/FPL/3ZW0/IRXTAB4J/FPL3ZW0IRXTAB4J.gcode)
-  **Hisoka.gcode** (/files/orig/FRQ/D0B0/IRXTAB4K/FRQD0B0IRXTAB4K.gcode)
-  **papay.gcode** (/files/orig/FLP/MOT7/IRXTAB4L/FLPMOT7IRXTAB4L.gcode)
-  **sanfour1.gcode** (/files/orig/FRG/C4FO/IRXTAB4M/FRGC4FOIRXTAB4M.gcode)
-  **spong1.gcode** (/files/orig/F57/LDYQ/IRXTAB4O/F57LDYQIRXTAB4O.gcode)
-  **F69K945IE17WI9N.zip** (/files/orig/FV4/42K2/IRXTABXN/FV442K2IRXTABXN.zip)

Step 7: Processing IDE program (GCTRL)

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Motor Shield & Arduino

by Sandeep_UNO (/member/Sandeep_UNO/) in technology (/tag/type-id/category-technology/) > arduino (/tag/type-id/category-technology/channel-arduino/)

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```

1 import java.awt.event.KeyEvent;
2 import javax.swing.JOptionPane;
3 import processing.serial.*;
4
5 Serial p;
6
7 // select
8 // leave
9 String p1;
10 //String
11 //String
12 //String
13
14 boolean
15 float sp;
16 String[]
17 int i =
18
19 void open
  
```

INSTRUCTIONS
 p: select serial port
 1: set speed to 0.001 inches (1 mil) per jog
 2: set speed to 0.010 inches (10 mil) per jog
 3: set speed to 0.100 inches (100 mil) per jog
 arrow keys: jog in x-y plane
 page up & page down: jog in z axis
 \$: display gctrl settings
 h: go home
 0: zero machine (set home to the current location)
 g: stream a g-code file
 x: stop streaming g-code (this is NOT immediate)

current serial port: null
 current jog speed: 0.001 inches per step

You are running Processing revision 0242, the latest build is 0243.

Upload the gctrl file to processing IDE

and click on PLAY button in processing window.

first press 'p' to select you com port

if you want you can set jog speed by pressing 1,2, or 3 button from keyboard


press 'g' to load G-code file

your machine is ready to plot as soon as you hit enter by selecting g code file


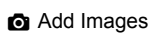

now you have done your plotter is ready



thanks for your attention

 **gctrl.pde** (/files/orig/FLT/W2G9/IRXTABCW/FLTW2G9IRXTABCW.pde)



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

 **ahmedj8** (/member/ahmedj8) 10 days ago 

i want to write my own code , can you simple with keywords explain ideas of program ?

 **alaah5** (/member/alaah5) 11 days ago 

hi gctrl not run with win10

How to Make Mini CNC 2D Plotter Using Scrap DVD Drive, L293d

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I think some library may missing in your processing, if you share what error message is coming it will help me to help you.....

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alaah5 (/member/alaah5)

12 days ago

Reply

Hi I need wiring diagrams of motors . its amazing instructables



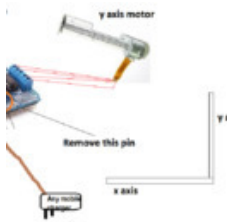
Sandeep_UNO (/member/Sandeep_UNO) made it! (author) ▶ alaaah5

(/member/alaah5)

12 days ago

Reply

please seen the pic for wiring details



(<https://cdn.instructables.com/FUF9LVY/IT6HV6BN/FUF9LVYIT6HV6BN.LARGE.jpg>)



lyh17 (/member/lyh17)

13 days ago

Reply

Hi, nice instructables! Is this cnc code designed by you only for this plotter, or is it universal? I am new to all this.



Sandeep_UNO (/member/Sandeep_UNO) (author) ▶ lyh17 (/member/lyh17)

13 days ago

Reply

G codes are use in many CNC, main reason of using G codes are its software "InkScape" is open source and easily available to download thats the reason you find G codes in many CNC projects, But in commercial level CNC machine they prefer .NC type files may be they are more accurate and reliable. but at this prototype level Gcodes are best.



lyh17 (/member/lyh17) ▶ Sandeep_UNO (/member/Sandeep_UNO)

Reply

Thanks! Is it possible to build a plotter with 2 different cd drives (I have two different scrap drives, the motors are probably different)?



Sandeep_UNO (/member/Sandeep_UNO) (author) ▶ lyh17 (/member/lyh17)

12 days ago

Reply

Yes you can build a plotter CD Drives are best, motors may different but basically they are Stepper motors with four terminals you can connect them directly to L293D motor shield.



RafaelS145 (/member/RafaelS145)

14 days ago

Reply

hello my friend, i have one doubt from L293D motor shield, I put the cables from motor A + A-, B + B- or A + B +, A- B-?

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andrewty (/member/andrewty)

16 days ago

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Reply

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where are the instructions.

Many pics but no details to manufacture the mechanisms.

Not much about how to control the electronics.



Sandeep_UNO (/member/Sandeep_UNO) (author) ▶ [andrewty \(/member/andrewty\)](#)

16 days ago

Reply

There is wiring detail in Step 4

There is material details in Step 2,

there is no need to manufacture any of mechanisms, all are ready made available with DVD drives just required some basic skill of understanding how to use parts, just be creative,

very much interested to help you if you stuck in between on any point or step.



mbonifax (/member/mbonifax)

17 days ago

Reply

please tell us wath is

"instructABDO". I did find nothing about



Sandeep_UNO (/member/Sandeep_UNO) (author) ▶ [mbonifax \(/member/mbonifax\)](#)

16 days ago

Reply

"instructABDO" is the person's user name on instructable, from whom i was inspire regarding Gcodes..



Wragie (/member/Wragie)

17 days ago

Reply

I wonder if this could be adapted to lay down etch resisting ink onto the copper of small pcb's? If it could it would be very handy for laying out boards without using a transfer or other system.



GeoR1 (/member/GeoR1) ▶ [Wragie \(/member/Wragie\)](#)

17 days ago

Reply

I used to use an Artline permanent marking pens , many times, to make PCBs, I still have samples made from the 1970s. First clean the PCB with AJAX and a green scouring pad. wipe down the PCB with methylated spirits and let dry. Do not touch the PCB with (oil) fingers.

PCB is now ready for marking with pen. Use a brand new, juicy, pen.



Wragie (/member/Wragie) ▶ [GeoR1 \(/member/GeoR1\)](#)

17 days ago

Reply

I have seen quite a few guys using Sharpy brand or Stadatelar brand black or red felt pens with good results. I haven't tried this myself but for the price of a pair of used drives and a felt pen it would be a cheap experiment to try!



Sandeep_UNO (/member/Sandeep_UNO) (author) ▶ [Wragie \(/member/Wragie\)](#)

17 days ago

Reply

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Sandeep_UNO (/member/Sandeep_UNO) in technology (/tag/type-id/category-technology/) > arduino (/tag/type-id/category-technology/channel-arduino/)



How to Make Mini CNC 2D Plotter Using Scrap DVD Drive, L293d Motor Shield & Arduino by Sandeep_UNO (/member/Sandeep_UNO) 17 days ago

Download

It is not enough for etch resisting, I have used this type pen to touch up a board before etching. If not I think using another pen it can be disassembled, using rubber gloves and some care, remove the absorbent medium wash out the ink and reload it with the etch resisting ink. Replace the cap when not in use to prevent drying thus prolonging its life. Once done it should take right off. This would be excellent for rapid prototyping of PCBs .

Collection

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Sandeep_UNO (/member/Sandeep_UNO) (author)

23 days ago

Reply

here i use 5v dc this is enough, whichever axis's servo is not working test it separatly weather stepper may be faulty this happens to me also,, attache stepper at pin

8, 9, 10, 11 and upload the code " Stepper_one revolution " this code is available at.

open arduino IDE--FILE---EXAMPLES---STEPPER--
STEPPER_ONEREVOLUTION

upload the code and check if your stepper move its Ok, either you stepper is faulty



hgautam1 (/member/hgautam1)

24 days ago

Reply

Hey could you please tell me how much power, you provided to the motors?? Because I have managed to build up the complete plotter but it's x axis is not working when I used to mount the pen on it... I think it is a power issue.... So would you please tell me?



Sandeep_UNO (/member/Sandeep_UNO) (author)

a month ago

Reply

ya sure note down

sharmaz747@gmail.com



Sandeep_UNO (/member/Sandeep_UNO) (author)

a month ago

Reply

phyogyii

as soon as you download inkscape-unicorn-master zip file, unzip it

" select scr + licence + redme " copy them & past to the location as per your system

OS X - `/Applications/Inkscape.app/Contents/Resources/extensions`

Linux - `/usr/share/inkscape/extensions`

Windows - `C:\Program Files\Inkscape\share\extensions`

if it still not working, then open SRC folder copy all 4 files and paste on same previous location where you past SRC folder..



phyogyi (/member/phyogyi) ▶ Sandeep_UNO (/member/Sandeep_UNO)

Reply

Thank you sir,

a month ago


Now I get gcode and i running the arduino but not ok sir.I am still trying to complete project.Thank You to reply to me.Can i get your email if i have a difficulty to ask and i really want to finish my CNC project.

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by Sandeep_UNO (/member/Sandeep_UNO/) in technology (/tag/type-id/category-technology/) > arduino (/tag/type-id/category-technology/channel-arduino/)

I don't know how to do this step.

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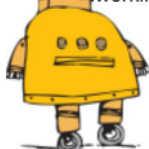
Copy the contents of src/ to your Inkscape extensions/ folder.

Please guide to me how to copy the contents of src .

Thank a lot

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