**Hi, how do you know the initial position of the arm for inverse kinematics with steppers?**

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[Aug 30, 2018](https://www.thingiverse.com/thing:1718984/comments/#comment-2051915)

look at the drawings, they are given in endstop position. Hold the robot in position by hand. with the steppers still off, drive the robot to the position and then lock the position in by turning on the steppers.

**The gripper has a metal linkage that connects the center circular part to the gripper fingers. How has everyone made it?**

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[Dec 22, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1662870)

1mm steel wire.

**Hi,  
I'm trying to develop my own software; need to calculate steps of motors according to X,Y,Z axises. I mean, robot is in a 3d space. so when I send G1 X2Y3Z4 I want it to go 2-3-4 milimeters in that axis. In robotgeometry.cpp you already gave some mathematics, As I understood, Its a function that generates radian degrees of motors from axis movements in mm. Am I right? In calculation, is home position all zero?  
When I convert radians to degrees and visualize on C# its movements doesnt make sense.**

**Please Help**

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[Jul 22, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1443768)

Look into robotGeometry.pdf, there is everything you need.

The Zero Point is in the Robots Main Axies, So you can't get there. Try Z120 Y120 X0, which is straight up and horizontal.

after every command you send the robot must answer with an "ok". If not, something with the communication is not working properly.

**I changed the baud rate on the serial monitor and in the robotArm.ino setup() function down to 1200. It no longer freezes! However the robotArm.exe not longer works ... I guess you have programmed the baud rate somewhere in there? Would it be a simple matter of altering some line in the delphi code to change this?**

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[Jun 2, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1370255)

Yes, I will make that change. And I also move everything to github.

**Hi Ftobler, I'm trying to change the acceleration/deceleration value. Can you give me some suggestion?**

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[May 11, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1334849)

use F in Gcode Commands.

**How many Endstops you using? i have buyed 6 of them for each stepper 2 , how to handle the gripper withoud endstoper?**

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[May 8, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1328632)

I didn't use any endstops, so you have to plan that by yourself. The Only Thing I have is a mechanical (hard) endstop.  
to "home" the gripper, I just close it. It's the same thing as applying clamping force to grab something.

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[Jan 7, 2017](https://www.thingiverse.com/thing:1718984/comments/#comment-1125166)

there is only a mechanical endstop.

The 28byj-48 pins are on the ramps AUX-1 connector. Pin 40, 59, 63 & 64.

**Hi folk,  
I am testing the arm and found that the gripper on/off button cause the stepper motor to rotate in the SAME direction.  
Is that correct?**

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[Dec 16, 2016](https://www.thingiverse.com/thing:1718984/comments/#comment-1089162)

Certainly not. Try playing around with the wiring. There are 24 combinations you can get in total, most of them just vibrate a bit. Didnt know there is a single rotation combination.

**If I try to go from the endstop position to G1 X0 Y0 Z0 it goes up and forwards for a while then in starts skipping steps and drop the a whole different position.  
If I go from endstop position to G1 X0 Y120 Z150 it goes down as intended and back up if I give Z120  
But if I move to G1 X0 Y20 Z120 and then do the same moving the Z from 120 to 150 it doesn't go up and down it also goes slightly backward going down and slightly forward going up. Any idea on what's wrong?**

**PS: Are you Romanian?**

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[Dec 15, 2016](https://www.thingiverse.com/thing:1718984/comments/#comment-1088742)

X0 Y0 Z0 is inside the robot, so a bad idea.  
Not sure what exactly goes wrong, probably some stepper wiring, so they turn in opposite directions.  
The Position X0 Y120 Z120 is Straight up and Horizontal. Another Important one is X0 Y120 Z0, in which the height should be around equal to the center of the Big Gears.

PS: No, swiss.

**Hi, it worked now, but I have 3 new stories.**

**1 The X and Z buttons are reversed, when I activate X the Z moves, the reverse also happens.**

**2 The movements are also limited, I can only move a few steps, after some movements do not move anymore, I need to hang up and connect again.**

**3 When moving the X, the Y moves along and with Z there is also interference in the movements of other engines.**

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[Nov 23, 2016](https://www.thingiverse.com/thing:1718984/comments/#comment-1061248)

[@FilipeNeves](https://www.thingiverse.com/FilipeNeves/about), Sry the coordinate thing is proven to make some confusion.... For the ramps use: rotate=Z, lower=Y, higher=x. In case your steppers still turn in the wrong direction you can correct that in the wiring or edit the code and at line 53..55. Set a negative value for the particular stepper. It doesn't matter if you give a negative reduction ratio OR a negative steps per rev value. Just not both.

Also your firmware might not be aware of the physical position of the robot.

* Power steppers down
* Blindly move to endstop position
* Move robot physically to endstop position and hold it there
* Power steppers up again
* Home position should now be straight up and horizontal

**Hi, is there any scheme of connections to the ramps plate engines?**

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[Nov 4, 2016](https://www.thingiverse.com/thing:1718984/comments/#comment-1040556)

Rotation: Z  
Lower: Y  
Higher: X

**Hi, is it possible to add limit switches to this arm? Or is there some way of homing currently? Thanks, this design looks awesome, can't wait to try it out when all my components get here!**

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[Aug 24, 2016](https://www.thingiverse.com/thing:1718984/comments/#comment-972811)

for homing, there is the endstop. Hold your arm at the position and power up the stepper after that, then you are in a absolute position.

But there are issues. The Z-Axis doesn't have anything and the repeated accuracy isn't very great. Maybe microswitches would solve it.