Dobot Magician Product Training

Shenzhen Yuejiang Technology Co., Ltd

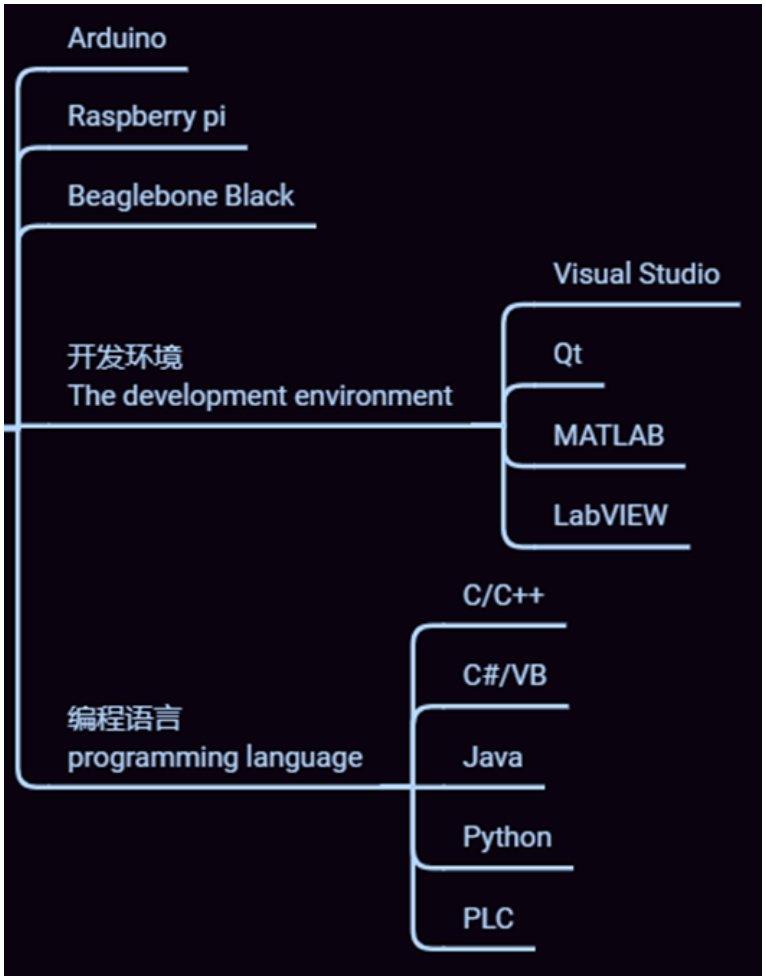
Technical Support Department

About Dobot

Dobot is a leading robot arm solution provider in China which makes technology simple and fun, easy to use and endless possibility.

Dobot Magician is a kind of Desktop level Intelligent manipulator
Dobot Magician consists of a base, two joint, and an rotating end tool.

Function:
Teaching and playback
Writing and draw
Blockly
Script-Python
Leap motion
Mouse
Laser engraving
3D printing
13 I/O port for second development



Dobot Magician's coordinate system can be divided into **joint coordinate system** and **Cartesian coordinate system**

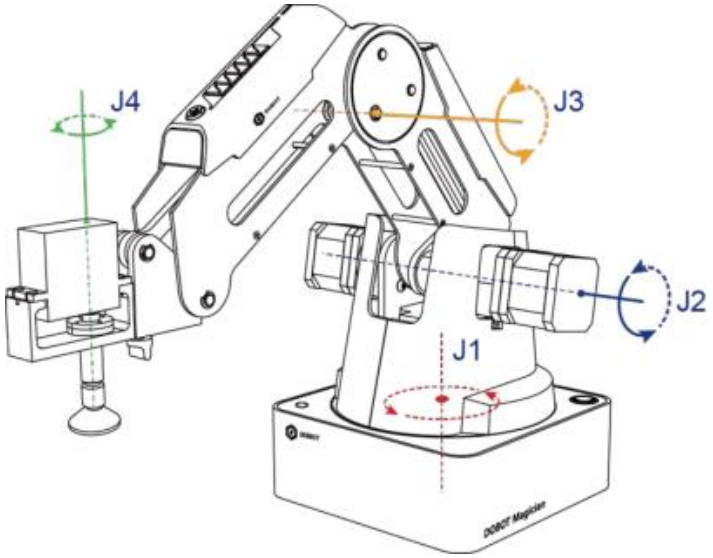


Figure 1.2 joint coordinate system

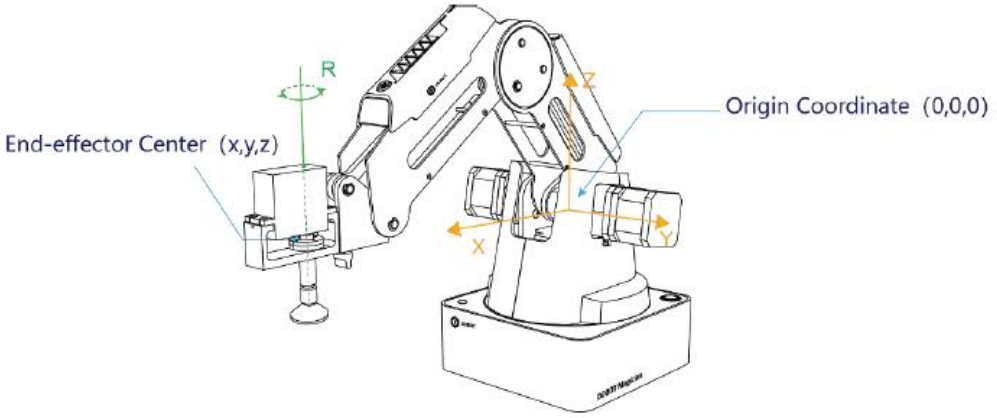


Figure 1.3 Cartesian coordinate system

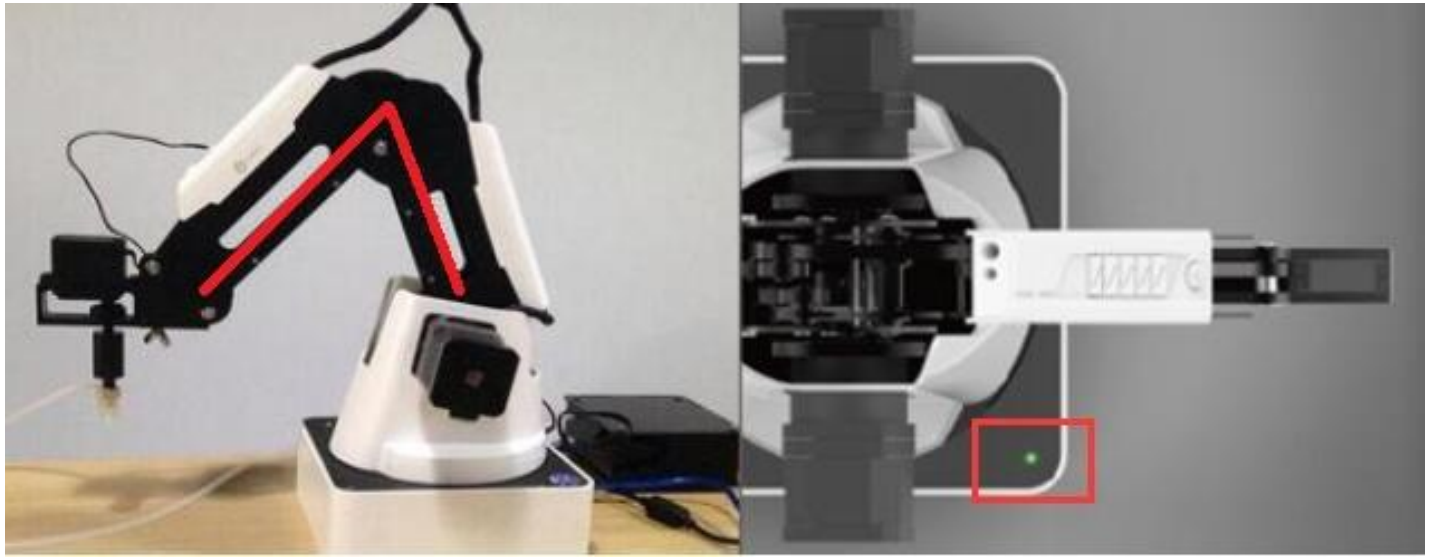
DOBOT

Technical Parameters

Name	Dobot Magician	
Maximum payload	500g	
Maximum reach	320mm	
Motion range	Base	- 90°~+90°
	Rear Arm	0°~85°
	Forearm	- 10°~+90°
	End-effector rotation	- 90°~+90°
Maximum speed (with 250g payload)	Rotational speed of Rear arm, Forearm and base	320°/s
	Rotational speed of servo	480°/s
Repeated positioning accuracy	0.2mm	
Power supply	100V-240V AC, 50/60Hz	
Power in	12V/7A DC	
Communication	USB, WIFI, Bluetooth	
I/O	20 extensible I/O interfaces	
Software	DobotStudio	
Working temperature	-10°C~60°C	

1. Power-on

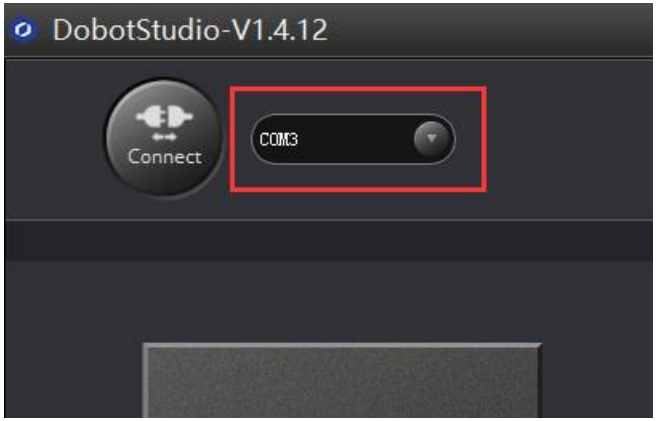
- Handhold Dobot to make the angles between the forearm and rear arm about 45°.
- Turn on the Dobot, all its arms are locked.
- The status light at the corner of base changes into green.

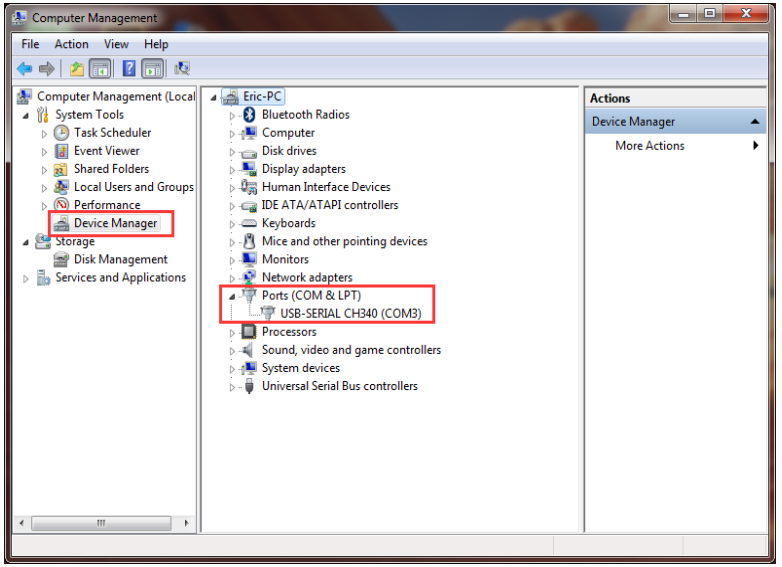


If the light is red, it shows Dobot is at a limited position.

2. Dobot Studio Download and Installation

- We use DobotStudio to control the Dobot arm. You can download the latest DobotStudio from our offical website.
- Connect Dobot to computer with USB cable.
- If you install it correctly, you can search COM port in DobotStudio.





Also you can find the corresponding COM port of “USB-SERIAL CH340” in Device Management.

Dobot Magician Instructions

DobotStudio Software Installation

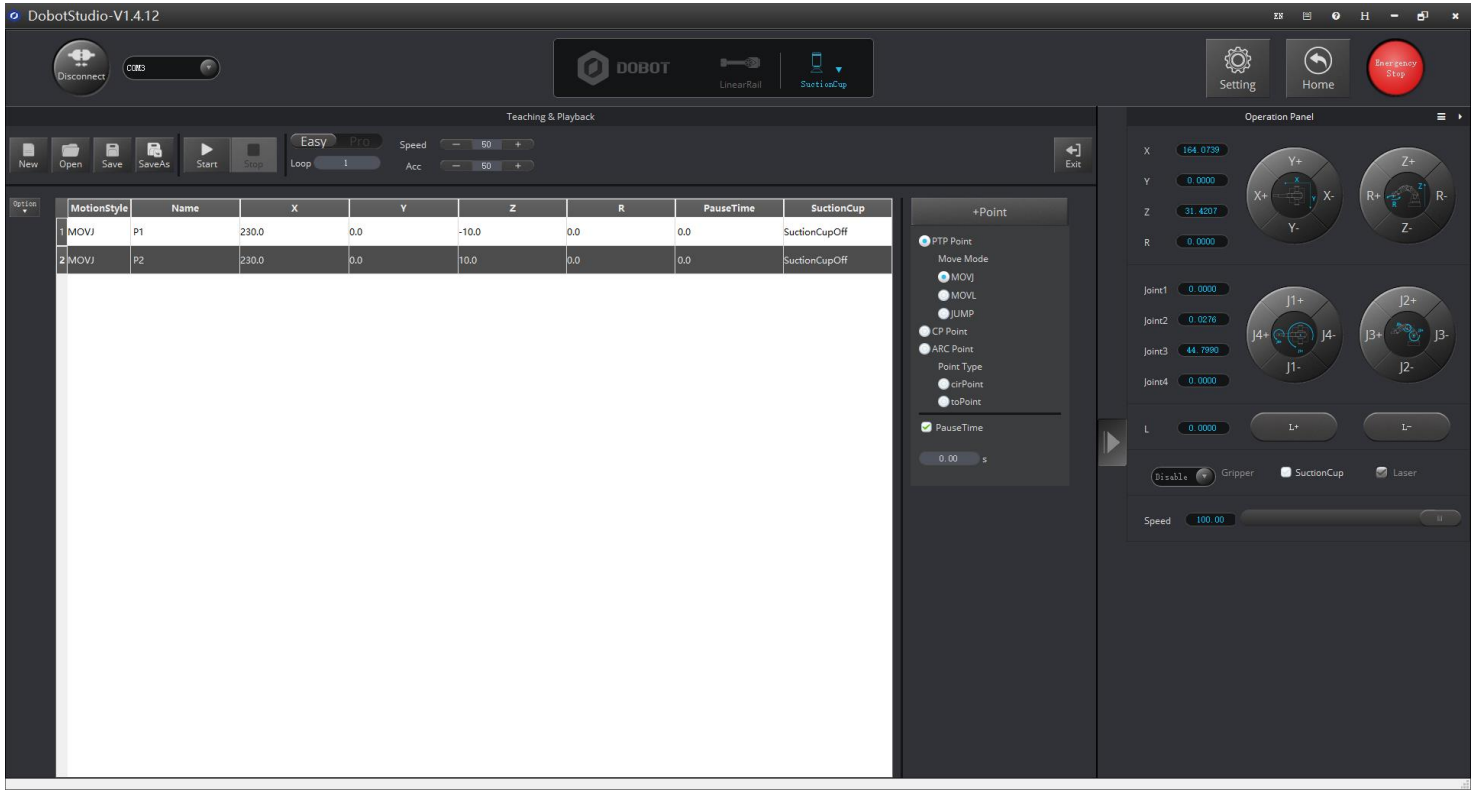
3. Teaching & Playback

A module to teach dobot arm required actions, and replace human to finish these record movements.

➢Select suction cup as an example.

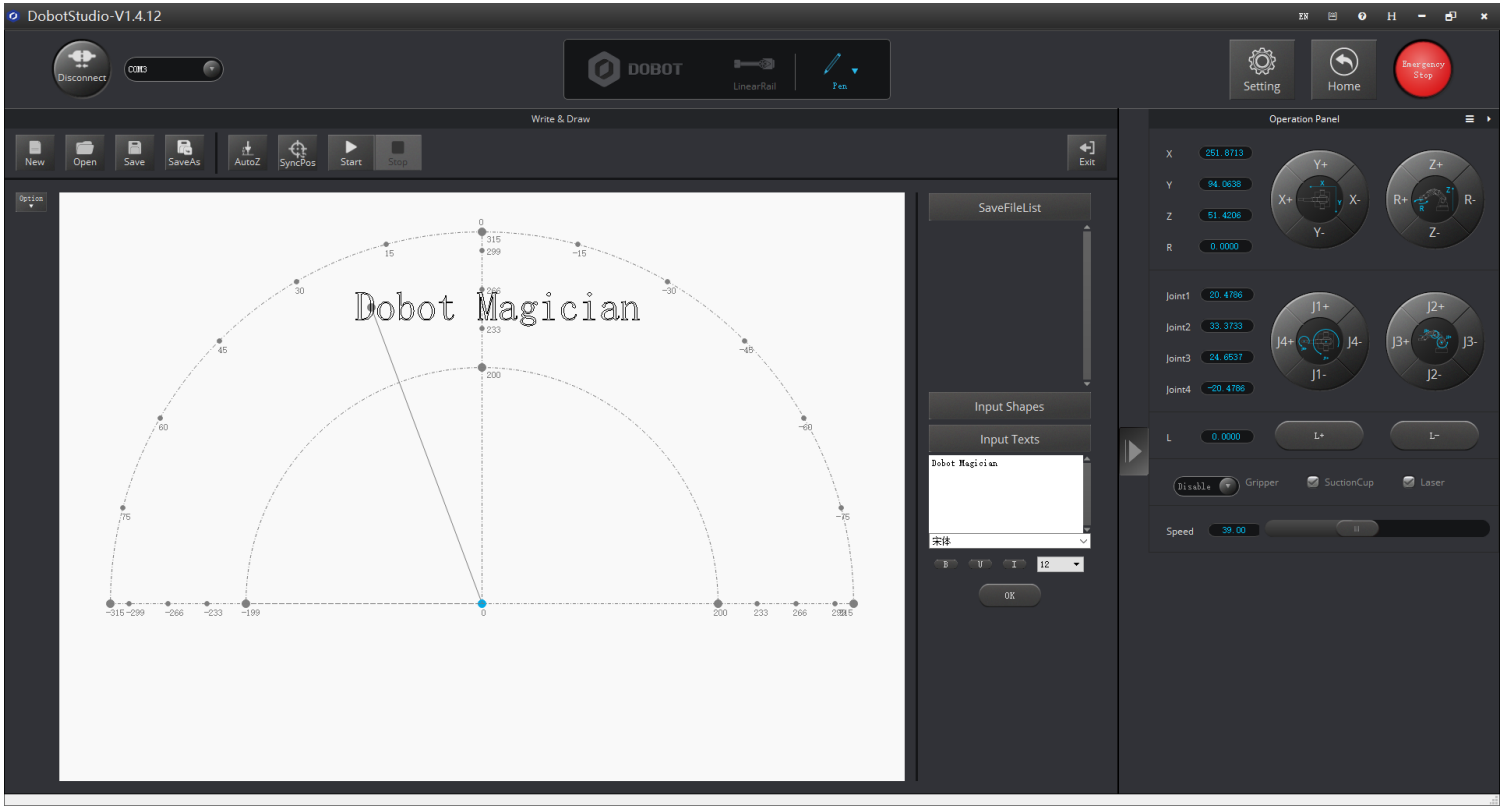
➢Connect suction cup and pump to the Dobot. Labels have shown the corresponding ports.

➢Press Unlock Key to move dobot arm, release and software will record these position automatically.



4. Write & Draw

- Select end-effector as the pen, import pictures(format: jpg, jpeg, png, bmp...).
- Click AutoZ to get the current Z value.
- Click SyncPos to move dobot arm to the top position of writing starting point.
- Click Start.




Dobot Magician Installation
Write & Draw

5. Laser Engraving-Gary scale

➢Open LaserEngraving module, and Select end-effector as the laser, import pictures.

➢Hold down Unlock Key to adjust height, and adjust knob to proper focus, click AutoZ to get the current Z value.

➢Click SyncPos to move dobot arm to the top position of engraving starting point.

➢Click Start.

Dobot Magician Instructions

Laser Engraving

6. 3D Printing

3D printing can use Repetier Host and Cura to print. In Mac system, Dobot can only be available for Cura.

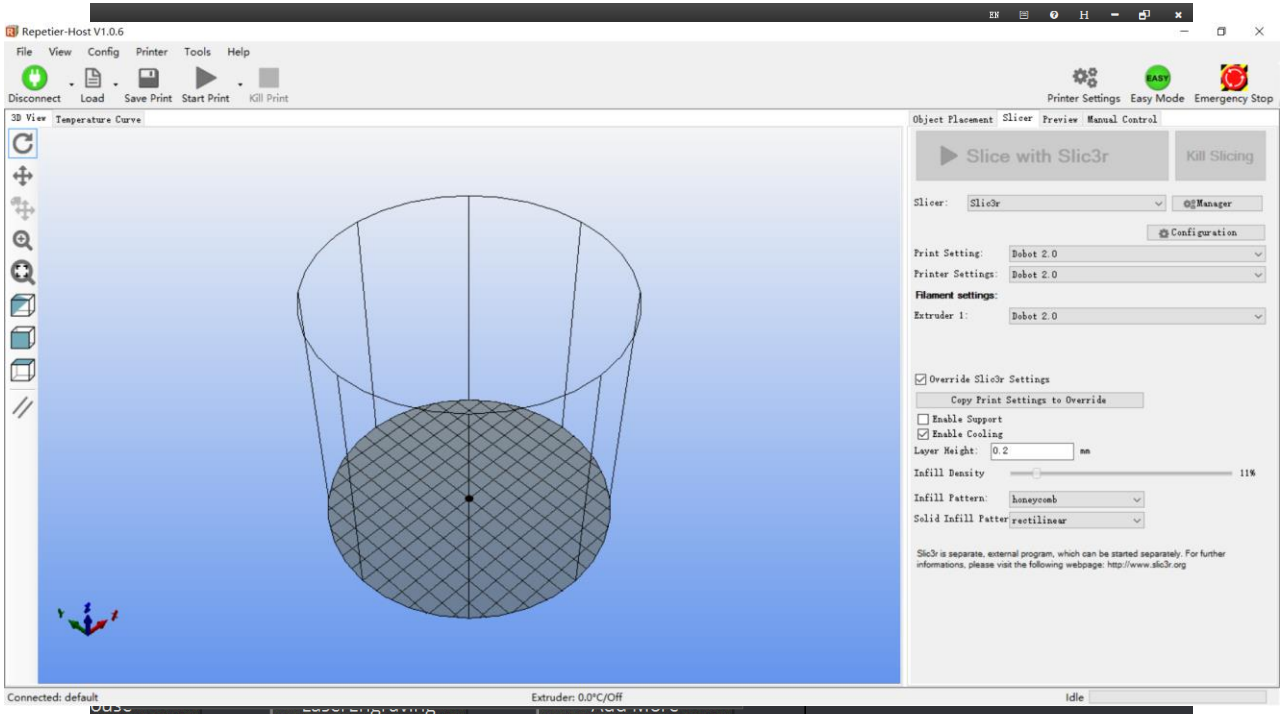
➢Install accessories of 3D Printing.

➢Set parameters of 3D printing for the first time (please refer to the User Manual).

➢Adjust the printing space and get printing coordinates.

➢Import 3D model, set slice parameters and slice up.

➢Start to print.




Dobot Magician Instructions
3D Printing

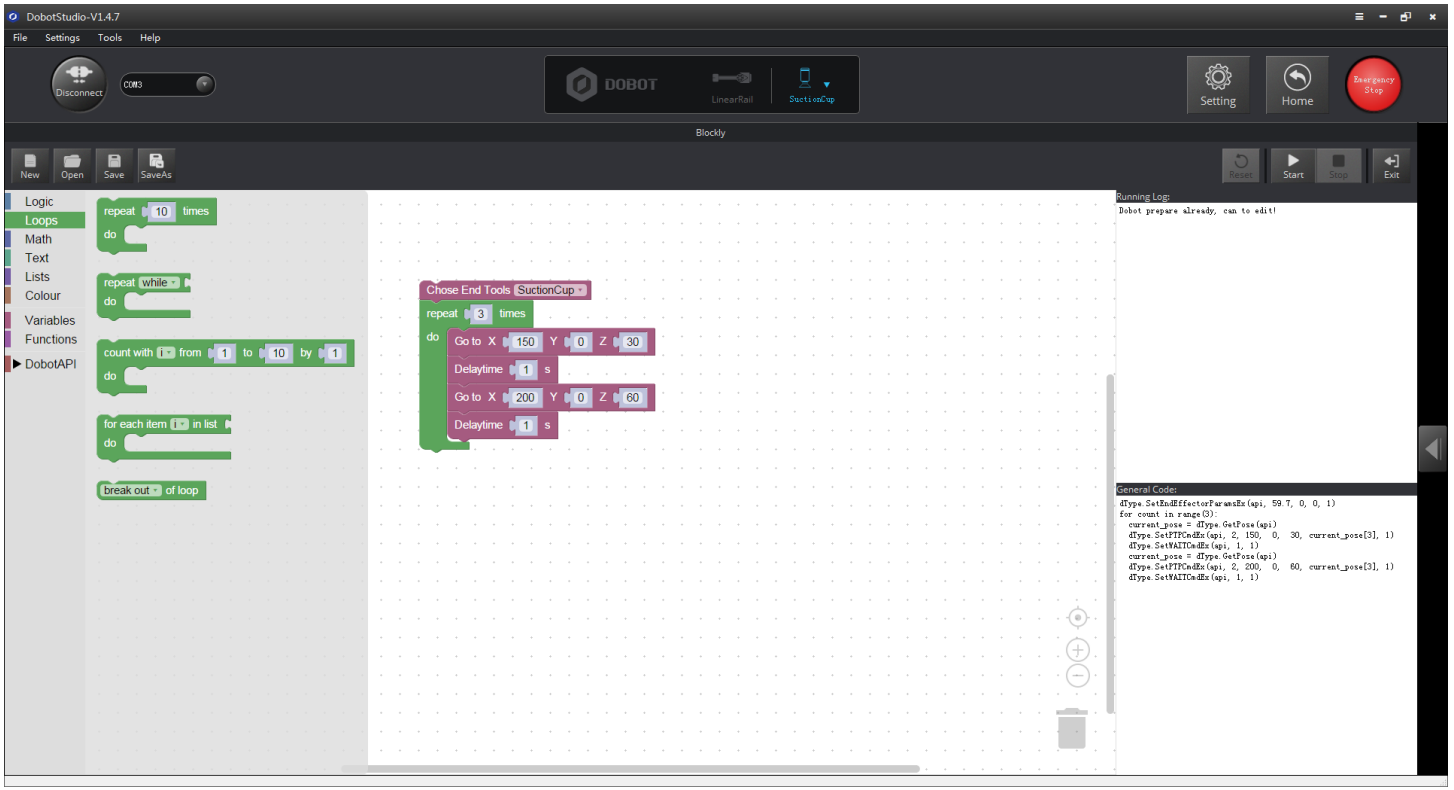
8. Blockly

Dobot Blockly is a platform of programming based on Google Blockly. In this process, users can program through puzzle, stright and easy to understand. Also, users can use the integrated API of Dobot anytime.

➢Set endeffector as SuctionCup.

➢Set the loop number as 3, and make Dobot move back and forth 3 times.

➢After this, click Start, Dobot will move accordingly.



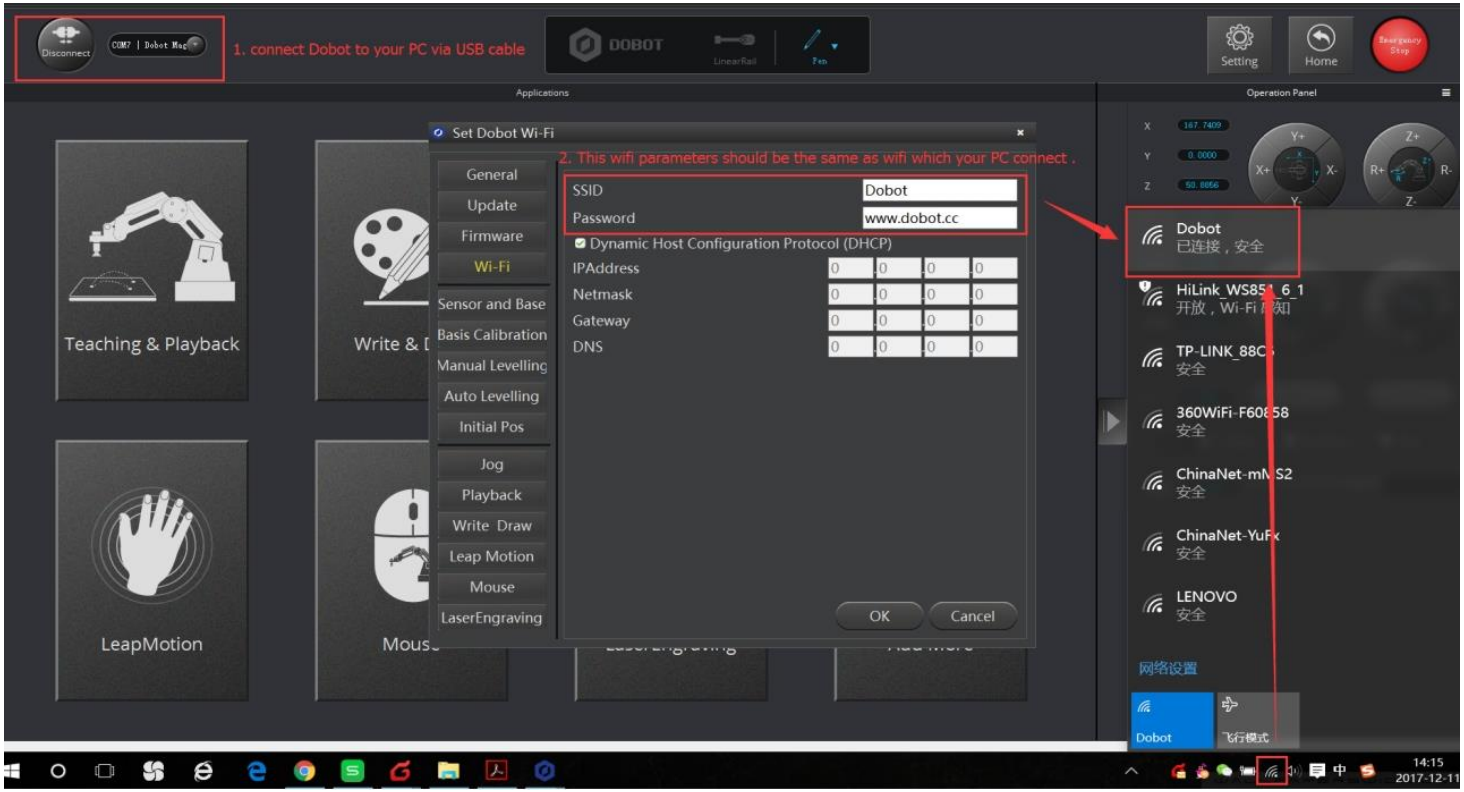
9. Bluetooth Kit

- Turn off the Dobot, plug the Bluetooth module into the communication interface.
- After installation, power on Dobot Magician and you should be able to hear three short beep sounds. It means Bluetooth module has finished initializing.
- There is a blue light lights up and a green light flashing.
- Turn on your phone bluetooth (IOS), then open the Dobot App to connect dobot arm .

Notice: Please make sure the Dobot power down completely, and then plug or unplug the external modules, such as Bluetooth module, WIFI module, USB-Host module, Infrared sensor, Color sensor, and so on. If not, it is easy to cause Dobot broken! When the Dobot power down completely, the status indicator would die out.

10. WiFi Kit

- WiFi kit contains WiFi module, connect it into Dobot communication interface.
- After installation, power on Dobot Magician and you should be able to hear two short beep sounds. It means WiFi module has finished initializing.
- If first use, you need connect USB to configure WiFi module, creating virtual serial port. After setting up, you can use WiFi module alone and do not need USB cable.



11. Stick controller kit

- Stick controller kit includes stick and USB-Host module, connect wireless module into 10pin communication port behind the controller.
- Take wireless mode for example, after installation, power on, the green led of USB-Host module will be on, and you will hear 4 short sounds that means finishing initialization.
- Press the button Home and A, start up the stick controller.

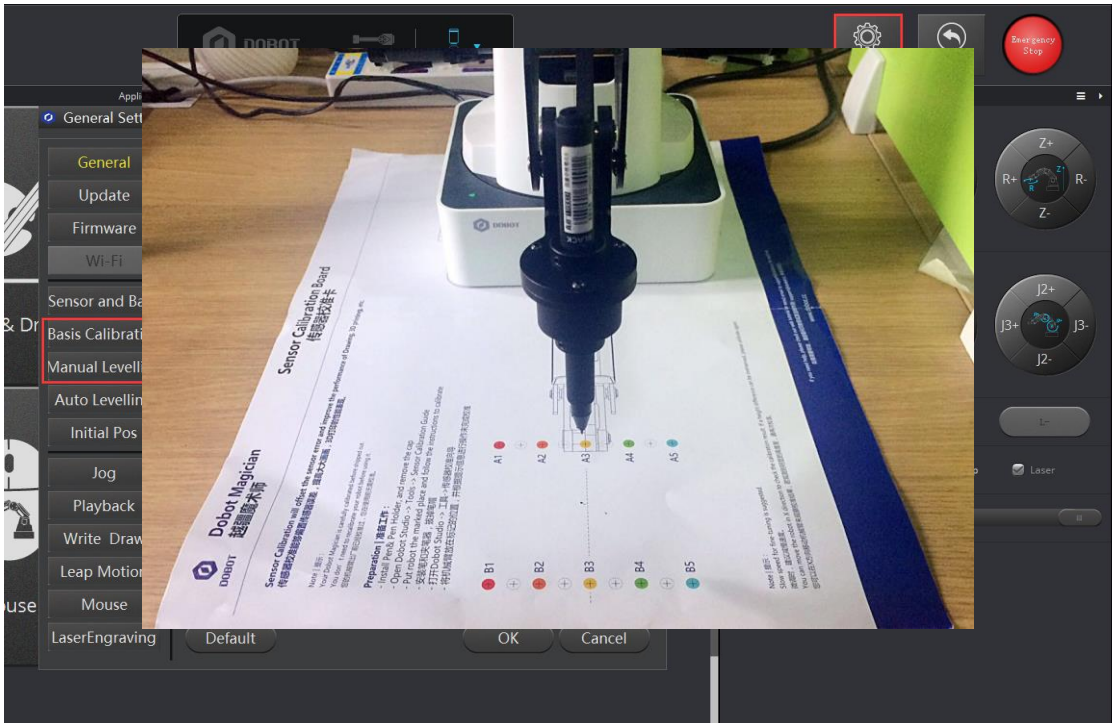
12. Calibration

➢ **Base Calibration**

If you find the home position is not in the middle of the base when use the dobot (errors between 1° -2° is in allowable range), you need to recalibrate it.

➢**Sensor Calibration / Manual Levelling**

If you find the pen would up and leave the paper surface when use Write & Draw module or 3D printing module, you need to calibrate sensor.



➢ Auto Levelling

We have upgraded the package of Dobot Magician, and the new package doesn't contain the calibration board any more. There is a levelling tool in the new package.

Using levelling tool is easier than using calibration board.

Customers just need to follow the instructions to calibrate Dobot arm.

Note: Your Dobot Magician is carefully calibration before shipped out. You don’t need to recalibration your dobot before using it.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13. More Support

- For more information, please visit our offical website:

  http://www.dobot.cc/

- Further questions, welcome to send email to

  support@dobot.cc

- After-sales hotline:

  0086-0755-33100907

- For more training videos, please visit:

  Software Installation: https://youtu.be/3_wS8YkLiv4

  Write & Draw: https://youtu.be/lcv8HG_iqcU

  Laser Engraving: https://youtu.be/k0i1X55iSUo

  3D Printing: https://youtu.be/6SsQB4_a2ig

  Conveyor Belt: https://youtu.be/1Gh26EeiiGM

  Linear Rail: https://youtu.be/6ya3m2U5ojg

DOBOT


thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
спасибо
obrigado
bedankt
dziękuję
merci
go raibh maith agat
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