# Dobot Magician – 4-axis robotic arm for education



## All-in-One Robot Education

A truly cutting-edge robotic arm—it can 3D print, manipulate objects, write and draw. It has a graphical programming environment, multiple tool heads, and the capability to work with the Arduino platform. It's a robot for your creativity and desire to develop. With Dobot's exclusive tutorials and lessons, the Magician is the ideal way to learn about robotic arms, hardware development, coding and automation.
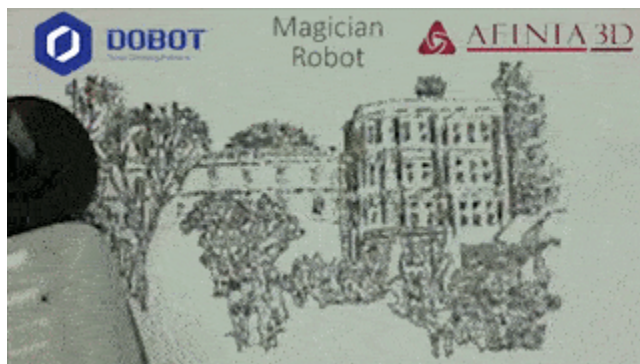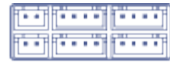


## Best multi-functional robotic arm

The advantages of high precision (0.2mm) and switchable tool heads allow for many uses: 3D printing, pick and place, write and draw, and more. Combining them brings out even more fun, learning, and creativity through unlimited possibilities. Also, Dobot Magician is the first consumer-grade robotic arm that can 3D print.
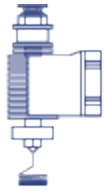
3D printing

DIY Supported (Extendible)
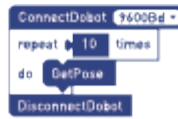
Graphical Programming

High Precision

Teach & Playback

## Cross-subject learning tool

Dobot Magician is an integration of programming, mechanics, electronics, and automation. It's a great STEAM teaching device that strengthens knowledge across multiple subjects, through a high precision and user-friendly UI, enjoyable functions, and unlimited developing possibilities. Dobot Magician's immersive and explorative experience increases interest in science and technology.
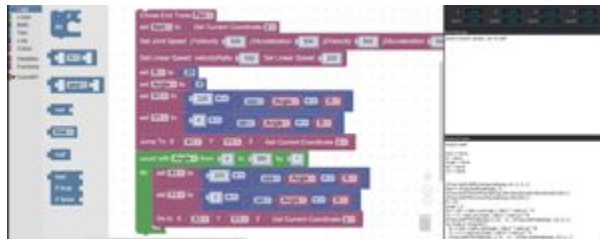


## Graphical programming environment

Dobot Magician has the most multi-functional robotic arm user interface on the market. In addition to scripting (Python), it also has a graphical programming environment, where you can write codes by simply piling up blocks!

## Highly extendable — Makers' first choice

A standardized end effector port allows you to use and create all kinds of head tools. 13 extension ports cover digital/analog I/O, power source, motor and serial port communication, and API access along communication protocols. With our official developer tutorial, you can DIY your own sensor-based accessories, creating more smart ways to use a robotic arm.

## Bringing robotic arms to all desktops

Dobot is a leading robot arm solution provider. Established in July 2015, Dobot has developed three robotic arm products, targeting both consumer and industrial uses.

# Available accessories

Expand Dobot Magician's capabilities with a [Conveyor Belt](#) or [Linear Slide Rail](#).
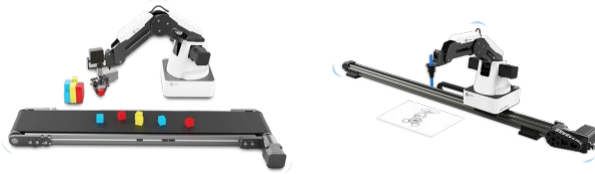


# Specifications

| | |
|---|---|
| **Number of Axes: 4** | Payload 500g |
| **Max. Reach: 320 mm** | Position Repeatability (Control) 0.2 mm |
| **Communication: USB \ WIFI \ Bluetooth** | Power Supply 100 – 240 V, 50/60 Hz |
| **Power In: 12 V / 7 A DC** | Consumption 60W Max |
| **Working Temperature** | -10℃ – 60℃ |

# Axis Movement

| AXIS | RANGE | MAX SPEED (250 G WORKLOAD) |
|---|---|---|
| | | |

| | | |
|---|---|---|
| Joint 1 base | -90° to +90° | 320 °/s |
| Joint 2 rear arm | 0° to +85° | 320 °/s |
| Joint 3 forearm | -10° to +95° | 320 °/s |
| Joint 4 rotation servo | -90° to +90° | 480 °/s |

## Physical

| | |
|---|---|
| Net Weight | 4 Kg |
| Base Dimension(Footprint) | 158 mm × 158 mm |
| Material | Aluminum Alloy 6061, ABS Engineering Plastic |
| Controller | Dobot Integrated Controller |
| Robot Mounting | Desktop |
| Packing Size(L x W x H) | 307 mm × 224 mm × 330 mm |

# Applications

| Software | DobotStudio, Repetier Host, GrblController 3.6, DobotBlockly (Visual Programing editor) |
|---|---|
| SDK(Software Develop Kit) | Communication Protocol, Dobot Program Library |
| Extensible I/0 Interfaces | 1) I/O × 10  (Configurable as Analog Input or PWM Output) <br> 2) Controllable 12V Power output × 4 <br> 3) Communication Interface UART, Reset, STOP, 12 V, 5 V and two I/O included <br><br> 4) Stepper × 2 |

# Endeffector

| 3D Printer Kit | Print Size (L × W × H ) | 150mm × 150mm × 150mm |
|---|---|---|
| | Material | PLA |
| | Resolution | 0.1mm |
| Pen holder | Pen Diameter | 10 mm |
| Vacuum Suction Cap | Cap Diameter | 20 mm |
| | Pressure | -35 Kpa |

| Gripper | Range | 27.5 mm |
|---|---|---|
| | Drive Type | Pneumatic |
| | Force | 8 N |

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