DOBOT

Rapid education

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Shake Hands With The Future

Meet Dobot Magician, the desktop robotic arm with incredible accuracy and repeatability.

Dobot can be controlled via a PC, remote control, gesture control or programmed to operate as a stand-alone unit.

Dobot Magician's control software is called DobotStudio. It has a wealth of integrated features which include Teaching and Playback mode (no coding required!), graphical programming via Blockly and text programming. Dobot can also be controlled via a Leap Motion gesture control unit, remote joystick and via Bluetooth or WiFi.

Because Dobot's movements are so accurate, it is an excellent way to learn about control, automation and how industrial robots work without the need for large machinery. Dobot comes at just a fraction of the size and cost of the industrial equivalent making it ideal for the classroom environment.

Dobot also offers a large amount of flexibility through its Extended Input and Output (EIO) ports which allow users to connect their own sensors, motors, servos or additional microcontrollers.

Our education package comes with absolutely everything you need to use Dobot:

- Dobot Magician robot arm
- Power supply
- 3 different end effectors:
  - Claw
  - Suction cup
  - Pen
- USB cable
- WiFi module
- Bluetooth module
- Joystick remote control
- Leap Motion gesture controller
- DobotStudio software

Order code 70-0480

Tel: 01206 751166 Fax: 01206 751188

Software and Programming

Dobot can be controlled via a PC, mouse, joystick remote control, Leap Motion gesture control or programmed to operate as a stand-alone autonomous unit.

Dobot Magician's control software is called DobotStudio. It has a wealth of integrated features which include Teaching and Playback mode, graphical programming via Blockly and text programming using Python. Dobot can also be controlled via a Leap Motion gesture control unit, remote control or via Bluetooth or WiFi.

Teaching and Playback

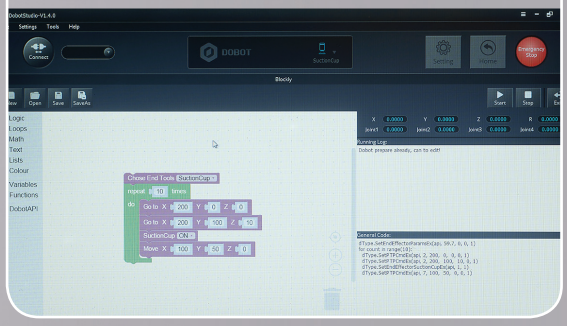
This mode allows you to teach Dobot a set of movements by physically moving the arm and storing key frames. DobotStudio will automatically interpolate movements between the key frames based on certain parameters to make seamless and accurate movements. This mode also has full control over Dobot's numerous EIO ports which means you can use your own sensors and actuators as well.

Because there is no need to write code, Teaching and Playback is ideal for those who wish to create extremely accurate, highly repeatable movements without the need to be able to program.

- No need to be able to write code
- Make very accurate and highly repeatable movements
- Make use of additional external sensors and actuators via the EIO ports
- Download to Dobot for autonomous operation

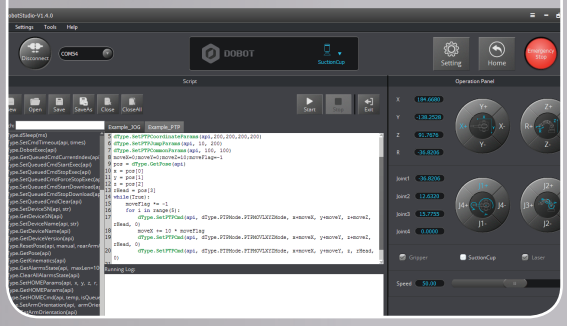
Blockly

Blockly is a graphical programming language which is an easily accessible entry point to the world of coding for those that do not have any programming experience.



Python

Python is a very popular text-based programming language which is easy to learn whilst offering more flexibility than graphical languages such as Blockly.

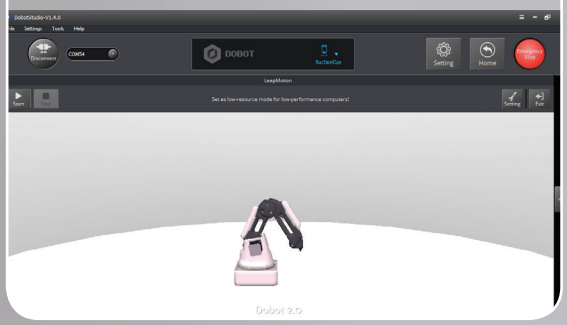


Joystick remote control

Dobot Magician is supplied with a wireless joystick remote control. This gives users live control over the robot's movements and can activate and deactivate the pneumatic pump.

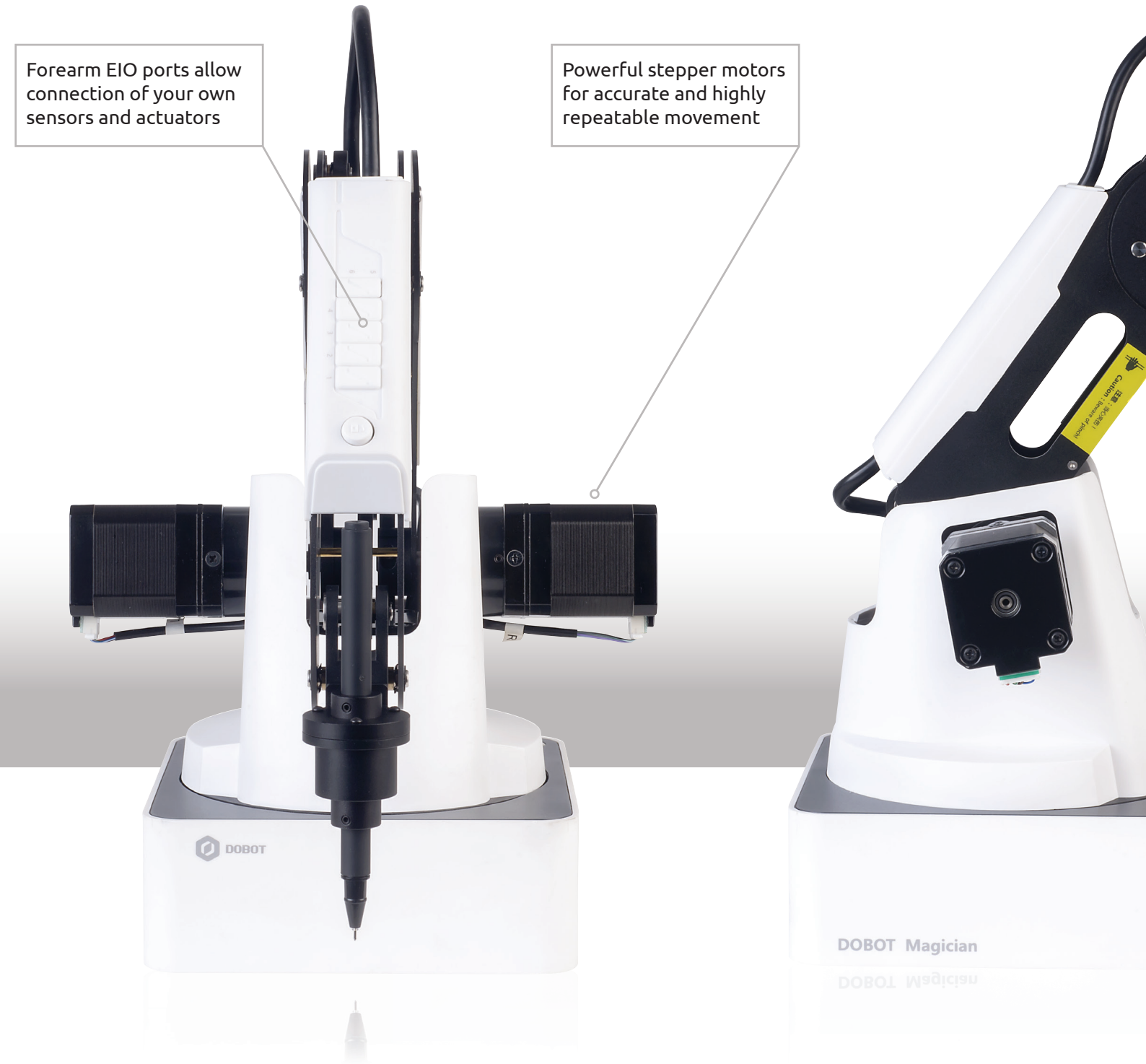
Leap Motion

Leap Motion senses your hands moving naturally in 3D. Dobot can interpret these hand gestures and turn them into movements of the robot arm.

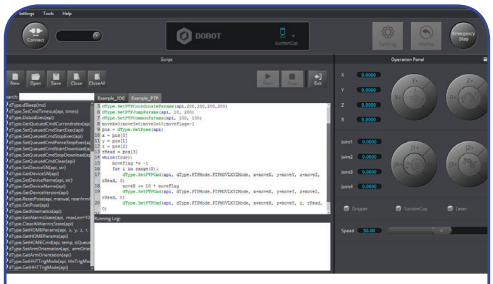


Forearm EIO ports allow connection of your own sensors and actuators

Powerful stepper motors for accurate and highly repeatable movement



Flexible control options



Programming
Use DobotStudio to write programs in Python, Blockly or teach Dobot a task using the Teaching and Playback function

Leap Motion
The Leap Motion sensor can be used to sense hand gestures and convert them in to Dobot movements

Joystick
The joystick can be used to control Dobot via Bluetooth

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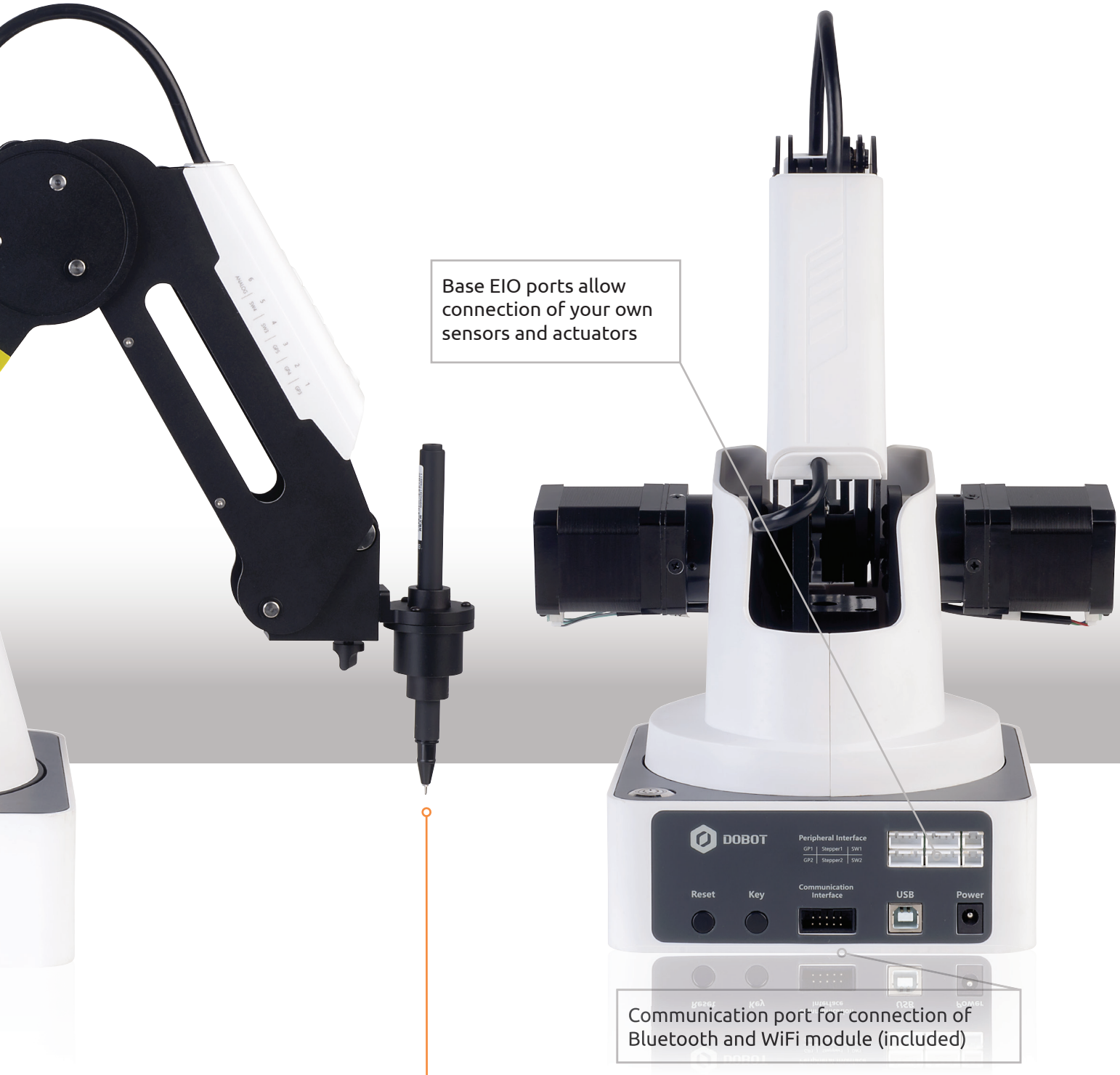

Includes 3 different heads for maximum flexibility

1 Pen Holder

Use DobotStudio's Write and Draw function to write text or draw pictures

2 Suction Cup

The suction cup can be used to collect and release objects that have a flat surface. It's mounted to a servo to allow the object to be rotated

2 Claw

A pneumatically operated claw with a powerful grip. Like the suction cup, it is mounted to a servo to allow the object to be rotated.

Technical Specification

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Number of axis	4
Maximum payload	500g
Maximum reach	320mm
Position accuracy	0.2mm
Communication	USB/WiFi/Bluetooth
Robot power supply	12V/7A DC
Power adaptor (included)	100 – 240VAC, 50/60Hz
Power Consumption	60W maximum
Weight	3.4Kg
Base footprint	158 x 158mm
Materials	6061 Aluminium Alloy and ABS

Additional I/O ports and interfaces

Forearm

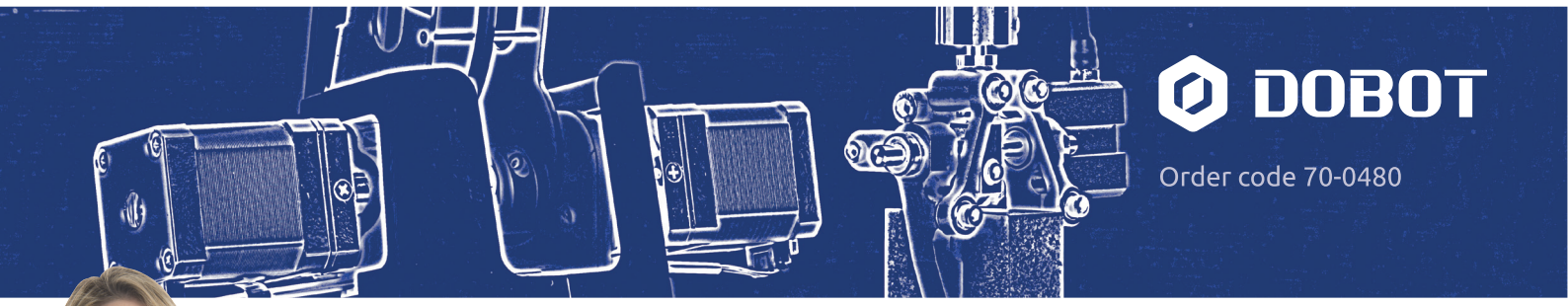
Type	Qty
PWM Output	3
ADC Input	3
Switchable 12V outputs	2

Base

Type	Qty
PWM Output	2
ADC Input	2
Switchable 5V outputs	2
Switchable 12V outputs	2
UART	1
Stop function	1

Axis Movements

Axis	Range	Max Speed (with 250g payload)
Joint 1 – Base	-135° to +135°	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



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