ROTRICS

Product Catalog

WE ARE

Rotrics is an innovative desktop robot solution provider for educators, engineers, makers, and light industry all over the world. We focus on the development and manufacturing of original and easy-to-use robot products. And we believe that advanced robot technology and design can make everyone's life much easier and better.

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$1,400,000+

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1,400,000+ USD
Most Funded Robot Arm

GO Most Funded Robot Arm

100+ COUNTRIES

Currently, we have been selling robot products worldwide, and we have thousands of active users communicating and sharing their ideas in our community every day. We also have built long-term cooperation relationships with world-famous companies and institutions.

Design Award

iF PRODUCT DESIGN AWARD 2020 —

Global Partner

Mercedes-Benz

MD Anderson
Cancer Center

Rotrics DexArm

Modular design

0.05mm high repeatability

Up to 500g payload

Noiseless design

Abundant accessories

**Safety enclosure**

Easy-to-use software

Rich resources

Scratch programming

DexArm is the most versatile desktop robot arm with interchangeable modules, it can easily switch between various functions such as 3D printing, laser engraving, writing and painting, and teach&playback. With the modular design, it can meet the requirements of different applications such as STEAM education, personal creation, and light industrial production.

Features
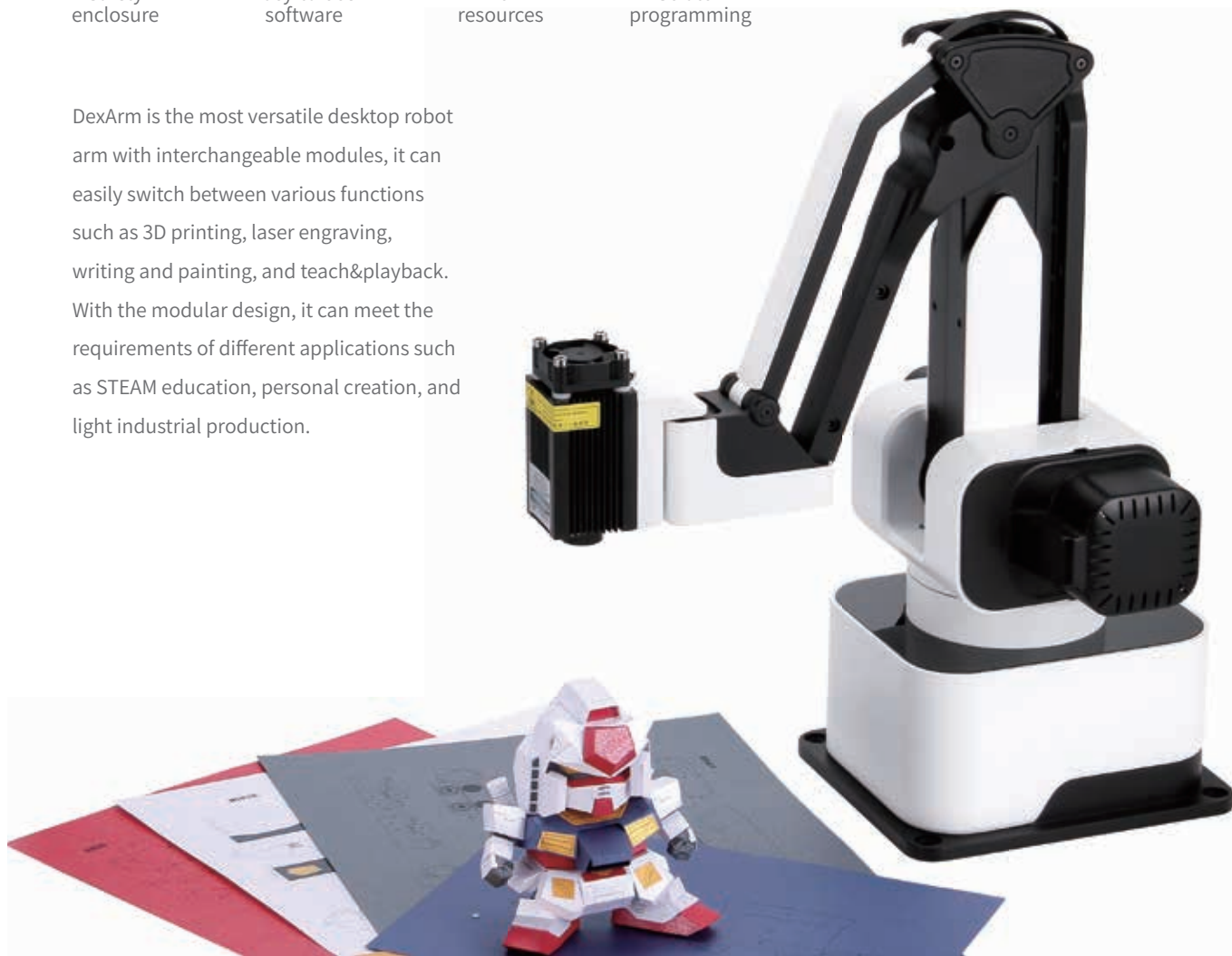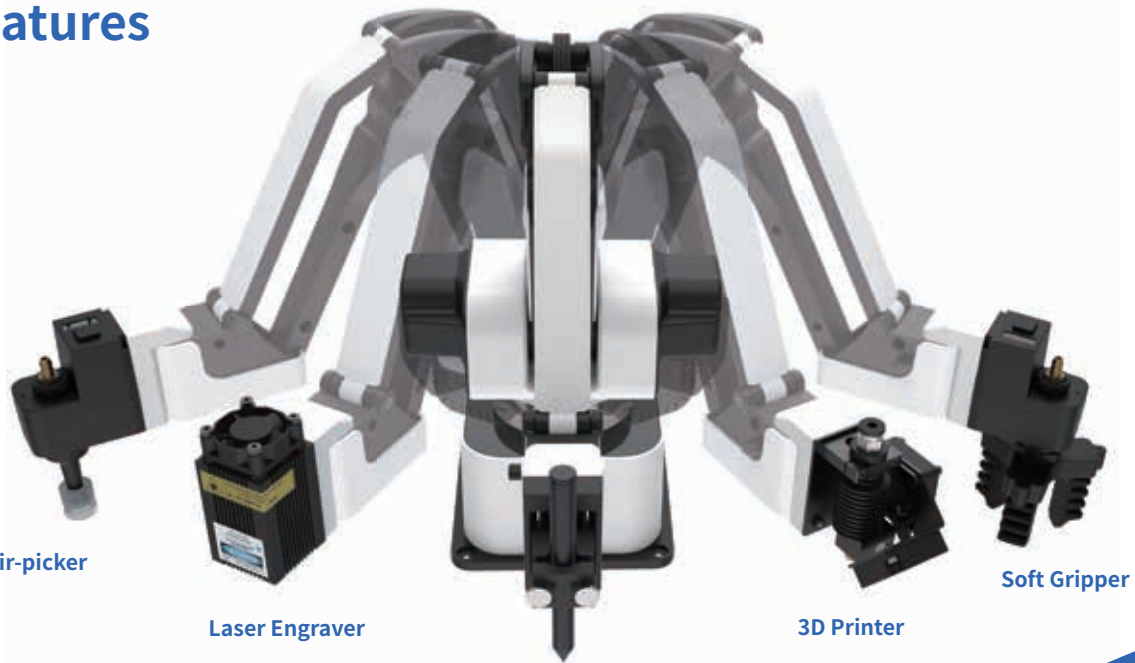
Air-picker

Laser Engraver

Pen Holder

3D Printer

Soft Gripper

High Precision

With the patented reducer design, DexArm is empowered with 0.05 mm high repeatability, which makes it perfect for high-precision required applications such as 3D printing and laser engraving.

Modular Design

DexArm uses an innovative modular design. With just one-click, you can switch between different modules seamlessly. Also DexArm supports customized modules, you can DIY your own modules to complete special tasks.

Noiseless Operation

Integrated with the advanced mute motor driver chip TMC2209, the noise produced during robot arm movement is largely reduced. DexArm working noise is below 40 decibels, it won't cause any distraction to users.

Safety Enclosure

The safety enclosure provides 360° safe protection for users and their families from the dangerous laser beam and harmful fume. With the interlock switch, it can automatically pause working when the door is opened.

Easy-to-use Software

The self-developed Rotrics Studio software is integrated with all the functions for the robot arm. The simple and user-friendly UI design allows users to get started easily.

Abundant Accessories

DexArm is equipped with abundant accessories, including computer vision kit, conveyor belt, sliding rail, and DIY kit. You can even build a mini production line on your desktop, or create projects such as color recognition.

Scratch Programming

Rotrics Studio is embedded with graphical programming tools based on Scratch 2.0. By dragging the code blocks, you can quickly build a project and control robot arm functions.

Open Source API

Based on Marlin firmware, DexArm is compatible with G-code control command. In addition, it supports various programming languages, including Python, C/C++, Java, Javascript.

1 Industrial Automation Introduction
2 Programming & Control Principle
3 Desktop Robot Arm Application
4 Microcontroller & Robot Arm application
5 AI Programming & Automated Production Line
6 IoT in Production Planning

36 course

Rich Resources

We have prepared a full set of courses specifically designed for STEAM education. Combined with Arduino open-source hardware and graphical programming, DexArm can teach students the latest AI knowledge and industry 4.0 concepts.

STEM Education

With the rapid development of technology, automatic manufacturing has become the most famous knowledge that modern people have to learn and master. Under this requirement, STEAM education is becoming a brand-new learning method. Different from traditional education, it integrates the knowledge of science, technology, engineering, art, mathematics, etc. It encourages students to explore and solve problems in the form of projects. And in the progress of problem-solving, it helps to improve students' logical thinking and teamwork ability.

We have specially designed 6 unit courses for DexArm. The 36 hours course covers programming design, open-source electronic hardware application, robot arm application, and IoT application. It allows students to learn the latest knowledge of artificial intelligence and robots.

36 course

1 Industrial Automation Introduction

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Maker Culture

In the past decades, the maker movement has flourished. Production has gradually moved from the industrial production line to personal garage and desktop. We believe that modular and easy-to-use tools can dramatically improve the efficiency of makers and designers, and help them turn their ideas into reality.

It is for this reason that DexArm has adopted the modular design, with just one-click, it can easily turn into a 3D printer, a laser engraving machine, and a pen plotter. In addition, we provide DIY modules for users to design their own customized tools and integrate DexArm into any project.

Light Industry Application

Traditional industrial robotic arms are extremely expansive and also complicated to operate. A compact, high-precision, and affordable desktop robot arm is needed by light industrial production lines such as mobile phones. DexArm provides a perfect solution. The patented reducer brings DexArm ultra-high 0.05mm repeatability, and the payload of 500 grams can satisfy most of the light industry requirements. With the easy-to-use software and the teach&playdback function, workers can quickly schedule the working procedure. In particular, the newly designed rotary module and computer vision kit are perfect for auto-recognition, picking and placing, and components assembly. It is also compatible with various robot operations systems. It provides a complete set of low-cost solutions for robot learners and educational institutions.

Specifications

Basic Spec

Axis	4
Precision	0.1mm
Repeatability	0.05mm
Payload	500g (max)
Speed	500mm/s (max)
Communication	Wi-Fi, USB-C, 12-Pin External Motor Interface, 5-pin Font-end Interface
Noise Level	40 dB
Working Temperature	0 - 50 °C (32 °F - 122 °F)
Dimension	6.8'x5'x12.4' (175x128x315 mm)
Weight	5.29lb / 2.4 kg
Module	Pen holder module, 3D printing module, Laser engraving module, Pneumatic module

3D Printing

Build Volume	larger than 150x150x270mm
Layer Resolution	0.1-0.3mm
Supported Materials	PLA, TPU, Wood, Carbon Fiber
Nozzle Diameter	0.4mm
Nozzle Temperature	250°C (max)
Supported File Types	STL, OBJ

Pneumatic Kit

Payload	400g(max)
Working Area	380mm
Pressure	~35Kpa
Suction Cup Diameter	5mm, 10mm, 15mm
Softgripper Diameter	30mm

Conveyor Belt

Payload	500g
Effective Length	700mm
Max Speed	120mm/s
Precision	0.2mm
Material	alumina
Dimension	750x220x82mm
Weight	5kg

Laser Engraving

Working Area	Larger than 210x297mm
Laser Power	2500mW
Wavelength	405nm
Supported Materials	Paper, wood, bamboo, leather, fabric, non-transparent acrylic, Anodized Aluminum, etc
Non-supported Materials	Steel, copper, glass, gem, transparent material, reflective materials, etc
Supported File Types	SVG, JPEG, PNG, etc
Safety Level	Class 4

Sliding Rail

Effective Length	1000m
Power	12V/2A
Max Speed	250mm/s
Payload	5kg
Dimension	1250x300x100mm
Weight	5kg

Packing List

Robot Arm

Laser engraving module

Pen holder module

3D printing module

Pneumatic softgripper

Pneumatic suction cup

Air-pump box

Conveyor belt

3.5-inch touchscreen

Safety enclosure

Sliding rail

Computer vision kit

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