

Robotics



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 **DOBOT**

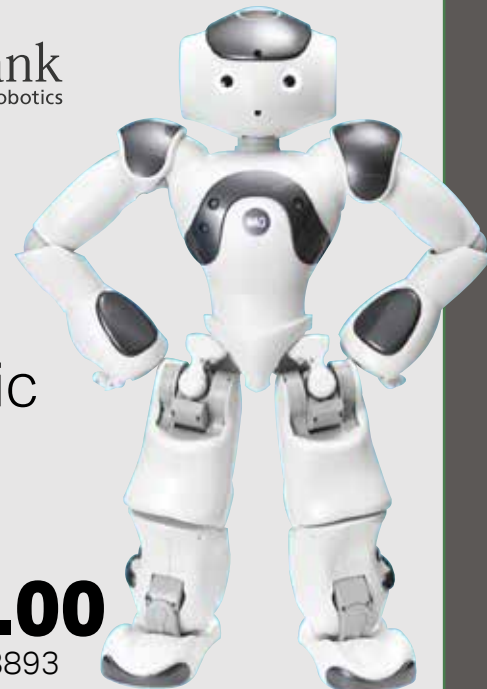


M1 Robotic Arm

£4860.48

Order code 70-0484

 **SoftBank**
Robotics



NAO6
Academic
Edition
Robot

£5400.00

Order code 70-8893

Full range of Robotics products available at:

www.rapidonline.com

ROBOTICS GUIDE

	The Robot	Product Code	The Brand	Software	Assembly Required	Tools That May Be Helpful	Soldering Required	
Ready to Go Robot	VEX 123!	70-6250	VEX		No		✗	
	Dot	70-1101	Wonder Workshop	Free Apps to download	No		✗	
	Dash	70-1100	Wonder Workshop	Free Apps to download	No		✗	
	Cue	70-1108	Wonder Workshop	Free Apps to download	No		✗	
	Codey Rocky	75-0516	Makeblock	Free downloadb ale Mblock Software	No		✗	
	Ohbot	76-0000	Ohbot	Free downloads for Windows or Pi	No		✗	
Humanoid Robots	NAO	70-8893	SoftBank Robotics	Choregraph - free to download	No		✗	
	Pepper	70-8870	SoftBank Robotics	Choregraph - free to download	No		✗	
Robotic Kit	Ohbot	76-0001	Ohbot	Free downloads for Windows or Pi	Assembly is part of the fun & learning!		✗	
	FABLE	COMING SOON!	Shape Robotics	Free Downloadable	Assembly is part of the fun & learning!		✗	
	VEX GO!	70-6311	VEX	Free software to download	Assembly is part of the fun & learning!		✗	
	VEX IQ	70-7873	VEX	Free software to download	Assembly is part of the fun & learning!		✗	
	VEX V5	70-8196	VEX	Free software to download	Assembly is part of the fun & learning!		✗	
	MakeBlock mBot2	COMING SOON!	Makeblock		Assembly is part of the fun & learning!		✗	
	mBot Ranger	75-0699	Makeblock		Assembly is part of the fun & learning!		✗	
	Sound Reversing Car Kit	13-1030	CIC		Assembly is part of the fun & learning!	Soldering Iron, Solder Wire, Long Nose Pliers, Diagonal Cutter, Screwdriver, AA Batteries	✓	
	Follow Me Robot	06-9347	CIC		Assembly is part of the fun & learning!	Soldering Iron, Solder Wire, Long Nose Pliers, Diagonal Cutter, Screwdriver, AA Batteries	✓	
	Escape Robot Kit	13-1090	CIC		Assembly is part of the fun & learning!	Soldering Iron, Solder Wire, Long Nose Pliers, Diagonal Cutter, Screwdriver, AA Batteries	✓	
	Robot Duck	13-0884	RVFM		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	Jitterbugs	13-0790	TEP		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	HexBugs	51-2267	VEX HEXBUG		Assembled		✗	
	DF Robot Insectbo - Arduino Based Walking Robot	75-0164	DF Robot	Arduino IDE	Assembly is part of the fun & learning!	Soldering Iron, Solder Wire, Long Nose Pliers, Diagonal Cutter, Screwdriver, AA Batteries	✗	
	DF Robot 4 Soldering Light Chaser Bean	75-0161	DF Robot		Assembly is part of the fun & learning!	Soldering Iron, Solder Wire, Long Nose Pliers, Diagonal Cutter, Screwdriver, AA Batteries	Yes	
Renewable Energy Kits	Sola F1	13-1070	CIC		Assembly is part of the fun & learning!		✗	
Robotic Kit Micro:Bit	MicroBot	13-5006	PICAXE		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	Robo:Bit MK3 Buggy BBC MicroBit	75-5014	4tronix		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	Bit:Bot XL Robot for BBC MicroBit	75-5019	4tronix		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
Robotic Arm	Robot Arm Wire Controlled	06-9349	Rapid		Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	Dobot Magician Robot Arm	70-0480	Dobot	Dobot Studio	Some assembly		✗	
	Dobot Conveyor Belt Kit	70-0482	Dobot	Dobot Studio	Some assembly		✗	
	Dobot M1 Robotic Arm	70-0484	Dobot	Dobot Studio	Some assembly		✗	
	Dobot Magician Lite	70-0487	Dobot	Dobot Studio	Some assembly		✗	
	Dobot AI Teaching Kit	70-0488	Dobot	Dobot Studio	Some assembly		✗	
	Fanka Emika Robot System	COMING SOON!			Some assembly		✗	
	Arduino Braccio Tinkerkit Robotic Arm	73-4447	Dobot	Arduino IDE	Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	
	Arduino Braccio ++	COMING SOON!	Dobot	Arduino IDE	Assembly is part of the fun & learning!	Screwdriver, Small Pliers	✗	

	Devices Req	Teachers Notes Available	Online Resources	From Price EX VAT	Early Years	KS1	KS2	KS3	KS4	Further & Higher Education	Hobby/Home School
	None	Yes	Yes	£99.99	✓	✓					✓
	iOS or Android phones/tablets. Apps are also available for Kindle.	Yes	Yes	£37.75		✓	✓				✓
	iOS or Android phones/tablets. Apps are also available for Kindle.	Yes	Yes	£142.75	✓	✓	✓				✓
	iOS or Android phones/tablets. Apps are also available for Kindle.	Yes	Yes	£155.40				✓	✓		✓
	PC, Laptop	Yes	Yes	£84.57				✓	✓	✓	✓
	PC, Laptop	Yes	Yes	£183.25		✓	✓	✓			✓
	PC, Laptop or Ipad	Yes	Yes	£5,400.00	✓	✓	✓	✓	✓	✓	
	PC, Laptop or Ipad	Yes	Yes	£14,300.00				✓	✓	✓	
	PC, Laptop	Yes	Yes	£122.33				✓	✓	✓	✓
		Yes	Yes	£199.00				✓	✓	✓	✓
	Windows, Mac, Chromebook, iOS & Android tablet compatible	Yes	Yes	£139.99		✓	✓				✓
	Windows, Mac, Chromebook, iOS & Android tablet compatible	Yes	Yes	£349.99		✓	✓	✓			✓
	Windows, Mac, Chromebook, iOS & Android tablet compatible	Yes	Yes	£899.99				✓	✓	✓	✓
	PC, Laptop, Ipad	Yes	Yes	£60.33				✓	✓	✓	✓
	PC, Laptop, Ipad	Yes	Yes	£149.04				✓	✓	✓	✓
	None	No	Yes	£9.43				✓	✓		✓
	None	No	Yes	£13.83				✓	✓		✓
	None	No	Yes	£16.51				✓	✓		✓
	None	No	Yes	£5.44			✓	✓			✓
	None	No	Yes	£2.22			✓	✓			✓
	None	No	Yes	£9.78			✓	✓			✓
		No	Yes	£31.13			✓	✓	✓	✓	
		No	Yes	£12.37				✓	✓		✓
	None	No	Yes	£11.15			✓	✓	✓		✓
	PC, Laptop, Ipad	No	Yes	£72.07				✓	✓		✓
	PC, Laptop, Ipad	No	Yes	£31.92				✓	✓		✓
	PC, Laptop, Ipad	No	Yes	£31.45				✓	✓		✓
	PC, Laptop, Ipad	No	Yes	£25.95				✓	✓		✓
	PC, Laptop, Ipad	No	Yes	£966.32					✓	✓	
	PC, Laptop, Ipad	No	Yes	£294.00					✓	✓	
			Yes	£4,860.48					✓	✓	
			Yes	£872.50			✓	✓	✓		
			Yes	£82.95			✓	✓	✓		
				COMING SOON!						✓	
			Yes	£155.30				✓	✓	✓	✓
			Yes	£415.00				✓	✓	✓	✓

Humanoid Research Robots



SoftBank

Robotics

Pepper Academic Edition Robot 3 Year Warranty

Pepper is an autonomous talking humanoid robot which can be programmed to perceive emotions and adapt its behaviour to the mood of the humans around it. Pepper can identify joy, sadness, anger or surprise and respond appropriately making interactions with humans incredibly natural and intuitive.

It has astonishing flexibility and fluidity of movement and can gesture with the speed and grace of a human while its 3 omni-directional wheels enable the robot to move around freely through 360°. Pepper has a total of 20 degrees of freedom. The robot also has a 10.1 inch touch screen which allows the integration of web pages, applications and images.

Pepper was designed to make interactions with human beings as natural and intuitive as possible and as a result the robot has been used in commercial applications all over the world.

Programming Pepper is easy using the bespoke Choregraphe* software which has been tried and tested on Pepper's smaller cousin NAO. Choregraphe* is used to build and manage the behaviours that you develop for the robot. Advanced users can also develop applications and behaviours using the Python and C++ SDKs.

To view Pepper's online handbook see <https://pepperhb1.ald.softbankrobotics.com/index.htm>

Academic package includes:

- Pepper robot
- 30Ah battery
- Power supply/battery charger
- 3-year warranty

Please note – Pepper is only available to schools, colleges and universities. For commercial requirements, please contact us.

A docking station for Pepper is available, see www.rapidonline.com/

softbank-robotics-pepperpod-pepper-robot-charging-station-564849.

*Mac compatibility of Choregraphe is for OS X 10.8.3 and previous. Later versions are currently not compatible.

**Pepper Robot
Academic Edition
with 3 year warranty**
Order code 70-8870
£14,300.00

PepperPod Pepper Robot Charging Station

The Pepper Charging Station is used with the battery charger supplied with Pepper. It automates recharging and gives Pepper her independence.

Instead of manually plugging in the battery charger every time Pepper wants a charge, you simply connect the battery charger to the charging station and Pepper can charge herself.

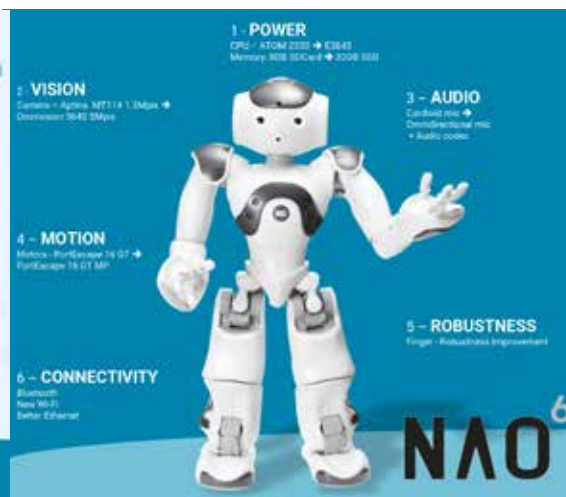
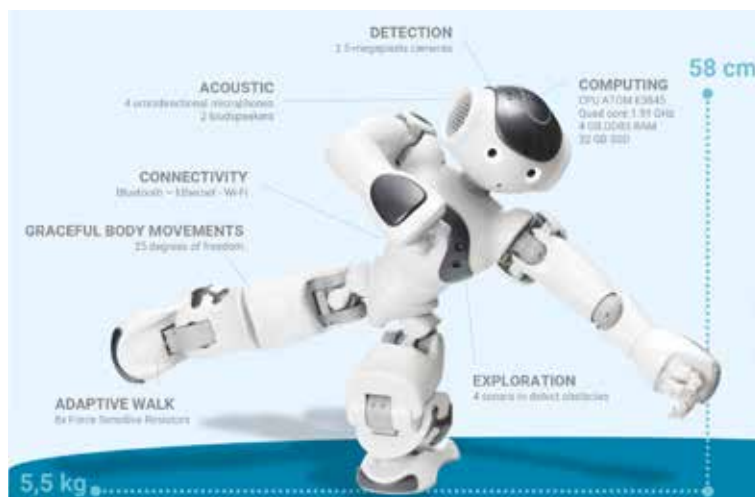
For full details visit www.rapidonline.com

Type	Order code	1+
Charging station	70-8875	899.00
		564849



Technical specification:

Height:	1.2m (4ft)
Weight:	28kg (62lb)
Battery:	Lithium-ion 30Ah (for 12 hours usage)
CPU:	ATOM Z530
Display:	LG 10.1 inch Android touch screen
Vision:	1 x ASUS Xtion SoC 3D sensor 2 x OV5640 1080p video cameras 2 x 5W speakers
Audio:	4 x microphones
Inertial unit:	3-axis gyro 3-axis accelerometer
Environment sensors:	6 x laser line generators 3 x bumper switches 2 x sonar distance sensors
Tactile sensors:	3 x head sensors 4 x hand sensors (2 in each hand)
Degrees of freedom:	Head - yaw and pitch Shoulder - pitch and roll Elbow - yaw and roll Wrist - yaw Hand - open/close Hip - roll and pitch Knee - pitch



NAO6 Academic Edition

The NAO6 is the latest generation of the brilliant NAO humanoid robot family. Having continuously evolved from the 1st generation, this 6th generation model gives even more performance and greater capabilities than ever before. Improvements have been made in virtually every area as well as a host of new features such as a dual-mode camera and auto-focus.

NAO is still the most widely used humanoid robot for academic purposes worldwide. The robot creates a unique human-robot interaction experience and is a renowned teaching aid for use in areas such as robotics, systems and control and computer sciences. Use NAO to explore programming, sensors, interaction with people and the environment and much more.

The robot is capable of autonomous movement, and can converse with anyone as well as identifying objects and interacting with its environment. Anyone can write the programs that let NAO know what you want it to do, the graphical interface of the **Choregraphe** software.

Students can explore event-based, sequential or parallel programming using the configurable behaviour boxes. You can also create your own behaviours, as well as using Python to write more complex scripts.

NAO robot can be programmed by either connecting an Ethernet cable between the robot and your computer, or via a WiFi connection. The software suite is compatible with Windows, Mac and Linux. NAO can only be supplied to schools, colleges and universities. To find out more, please contact education@rapidonline.com or call us and speak to a member of the Education Team.

- Robots available with either 2 year or 3 year warranty
- NAO robot stands 58cm tall and is packed full of technology
- Humanoid body with 25 degrees of freedom for realistic movement

Type	Order code	1+
NAO6 + 2 yr warr.	70-8893	5400.00
NAO6 + 3 yr warr.	70-8894	6300.00

NAO6 Academic Edition Robot with FREE Transport Case Bundle



Type	Order code	1+
Robot + FREE case	70-8899	5400.00

NAO6 Battery and Charger

Coming Soon

70-8863 Battery & Charger	£243.82
70-8864 Battery	£184.97

www.rapidonline.com

Rapid

NAO Humanoid Robot Hard Transport & Storage Case

Move and store your NAO robot safely and easily with this super-strong wheeled transport case.



- Retractable rubber-coated handle
- Two built-in wheels
- Four press-and-pull latches
- Two padlock loops
- Durable lightweight HPX® polycarbonate resin
- Water resistant
- Inner dimensions: 55.9 x 43.2 x 25.4cm (22 x 17 x 10in.)
- Outer dimensions: 62.5 x 50 x 29.7cm (24.6 x 19.7 x 11.7in.)
- Weight (empty) 7.62kg (16.8lb)

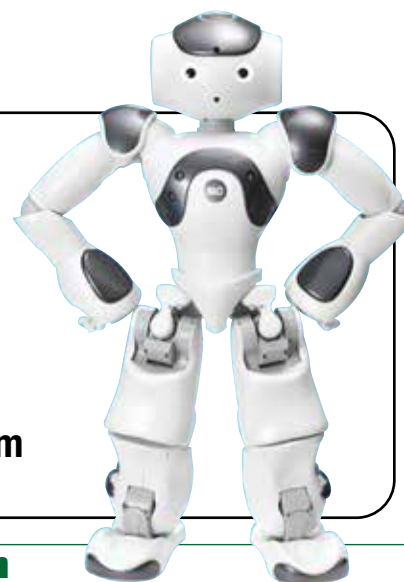
Please note: The styrofoam packing supplied with your NAO robot at time of delivery should be retained to fit inside the case. This will then give perfect protection for your robot during transportation and storage.

Type	Order code	1+
NAO transport case	70-8890	372.15

NAO Leasing Scheme

Get in touch now!

education@rapidonline.com



FRANKA EMIKA ROBOT System

COMING SOON

TQ-Robotics



FRANKA EMIKA

Franka Emika's robot is agile and sensitive — like a human arm. Programming is workflow-based and intuitive, interaction is seamless.

- Torque sensors in all 7 axes
- Setup and operation in no time
- Highest ROI in the market



CR5 Collaborative 6-Axis Robot



Lightweight, customisable and easy to program, DOBOT CR5 is dedicated to bringing safe automation of repetitive, risky tasks for manufacturers across industries.

5kg payload and 900mm radius, CR5 is the perfect robot for performing production tasks such as packing, assembly or testing.

Product Name		DOBOT CR5
Weight		25kg
Maximum Payload		5kg
Max Reach		1096mm
Rated Voltage		DC48V
Maximum Speed of TCP		3m/s
Joint Ranges	J1	±360°
	J2	±360°
	J3	±160°
	J4	±360°
	J5	±360°
	J6	±360°
Maximum Speed of Joints	J1/J2	180° /s
	J3/J4/J5/J6	180° /s
End-Effector I/O Interface	DI/DO/AI	2
	AO	0
Communication Interface	Communication	RS485
Controller I/O	DI	16
	DO/DI	16
	AI/AO	2
	ABZ Incremental Encoder	1
Repeatability		±0.02mm
Communication		TCP/IP, Modbus, WIFI
IP Rating		IP54
Temperature		0°C~ 45°C
Power		150W
Materials		Aluminum alloy, ABS plastic



£14,595

Order code
70-0486



Robotic Arms



Magician Robotic Arm+ Bundles



Meet Dobot Magician - the desktop robotic arm with incredible accuracy and repeatability. Dobot is versatile - it can be controlled via a PC, remote control, gesture control or programmed to operate as a standalone unit.

Dobot Magician's control software is called DobotStudio. It has a wealth of integrated features including teach 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 its 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.

- 4 Axis
- Maximum payload 500g
- Maximum reach 320mm
- Position accuracy 0.2mm
- Robot power supply 12V/7A
- DC Power adaptor (included) 100 to 240V AC, 50/60Hz
- Power consumption 60W maximum
- Weight 3.4kg
- Base footprint 158 x 158mm
- Made from aluminium alloy and ABS
- Available in bundles with cost savings of £200

Supplied with everything you need to use Dobot: Dobot Magician robot arm; power supply; 3 different end effectors - claw, suction cup and pen; USB cable; WiFi module; bluetooth module; joystick remote control; DobotStudio software. This version does not include a laser engraver or 3D print extruder.

Type	Order code	1+
Robotic arm	70-0480	966.23
Robotic arm and sliding rail kit bundle	70-0490	1731.55
Robotic arm and vision kit V2 bundle	70-0491	2119.11

564463



Sliding Rail Kit

An extra metre brings you endless possibilities!

As Dobot Magician's official accessory, the sliding rail kit expands its functional area to a whole new extent. With interchangeable tool heads and graphical programming environment, you'll design complicated workflows like a pro.

From organizing objects, to writing a long letter, this simple accessory will make industry 4.0 approachable like never before. The rail is made from a single piece of steel using high precision CNC milling. And it runs like silk.

The sliding rail is supplied with wire set, tool kit, attachments and assembly instructions.

Specifications

- Max. payload: 5kg
- Effective travel distance: 1000mm
- Maximum speed: 150mm/s
- Maximum acceleration: 150mm/s²
- Repeat positioning accuracy: 0.01mm
- Absolute positioning accuracy: 0.25mm
- Dimensions (L x W x H): 132 x 120 x 55mm
- Weight: 4.7kg

Dobot not included.

Type	Order code	1+
Sliding rail kit	70-0481	934.74

565241

TinkerKit Braccio Robotic Arm



Only

£155.30

Order code 73-4447

www.rapidonline.com



Magician Robotic Arm Vision Kit

The DOBOT Robot Vision Kit provides a basic software and hardware platform based on visual development. With the advantages of rich functions, stable performance and convenient operation, it perfectly meets the needs of visual applications including visual positioning, measurement, detection and recognition.

Compatible with DOBOT Magician, DOBOT M1, the Dobot Robot Vision Kit provides various types of SDK interfaces, building-block style development and strong scalability. The vision kit supports GigE Vision, USB3 Vision protocol standards and a variety of cameras of different brands can be directly connected.

With over a thousand image processing operators, high-performance algorithms and powerful visual analysis tool library, the Dobot Robot Vision Kit enables users to quickly set up a machine vision application system and fulfil their needs in different experimental projects and applications.

The Dobot Vision Studio supports graphical interactions, drag-and-drop operations and visual development. The configuration setup process is simple and flexible while the Backstage and Output interfaces can be easily customised.

Abundant teaching demos including colour recognition, barcode recognition, character recognition, measurement, calibration, alignment, image processing, etc., are provided along with the Dobot Vision Studio to help users understand the basics and operation principles of the Dobot Robot Vision Kit clearly and intuitively.

Kit includes:

- HD industrial colour camera
- Industrial C-mount 12mm focus camera lens
- 48-LED, 40,000 lux camera light kit
- USB cable
- Dongle
- Camera mounting kit

- Attachment
- Extension poles x2
- Extension pole flange support
- Tool package
- Camera plate

Type	Order code	1+
Magician vision kit	70-0485	1322.31

568893



Dobot Magician Lite

DOBOT Magician Lite 70-0487

The DOBOT Magician Lite is a multifunctional lightweight intelligent robotic arm, and is one of the core products in DOBOT's K12 customized artificial intelligence education ecosystem.

Magician Lite has various software/hardware interaction methods and expansion interfaces so that students' freedom to create is maximised. It is through using the Magician Lite that students can learn more about robotics and how artificial intelligence and mechanics work.

Dobot AI Teaching Kit 70-0488

The Dobot AI Teaching Kit is a fun and creative way for educators and students to learn the basics of Artificial Intelligence (AI).

The kit allows you to set up real life-based AI solutions within minutes. When you combine Magician Lite with this kit, students can experience real-world AI scenarios, engage in a series of hands-on activities and be inspired to prototype their own AI solutions. The kit also provides step-by-step tutorials online to help beginners start building straight away.

Dobot Magician Lite and AI Teaching Kit Bundle

This exciting bundle combines the Dobot Magician Lite (70-0487) with the Dobot AI Teaching Kit (70-0488).

Apart from the cost saving associated with the bundle, the kit will provide more opportunities for students to experience real-world AI scenarios, engage in a series of hands-on activities and be inspired to prototype their own AI solutions.

Magician Lite:

- Excellent performance
- Safe to use
- Magic Box controller for unlimited capabilities
- Graphical programming software
- All-age project-based teaching
- AI Teaching Kit:
- Ideal for use with Dobot Magician Lite
- Learn through Play
- Teach Robots to "See" & "Understand"
- Image and speech recognition
- Magician Lite + Teaching Kit Bundle
- Bundle saves you £30
- Combines robotic arm with teaching kit
- Suitable for all ages

For loads of teaching resources please see: www.rapidonline.com

Type	Order code	1+
Magician Lite	70-0487	872.50
AI Teaching Kit	70-0488	82.95
Teaching Kit Bundle	70-0489	922.95

583556



**We bring
STEAM to life**

M1 Robotic Arm

The Dobot M1 is a cost-effective robotic arm suitable for light industrial use as part of an intelligent industrial system.

The M1's high precision, wide working range, complete functions and secondary development ability, make it suitable for multiple types of assembly line work such as soldering, visual recognition and PCB loading.

No complex installation is required, the M1 can be connected just in one step. Its lightweight design means that it can be installed or moved by a single person.

With a repetitive positioning accuracy of up to 0.02mm, a maximum working range of 400mm and a maximum load of 1.5kg, the M1 is a serious and effective lightweight industrial robotic arm.

A standardized intelligent interface and open programming language make the M1 highly adaptable. With a range of different accessories, M1 can perform many diverse functions in an industrial environment.

Package includes:

- M1 robotic arm with AC power cable, PSU and DC power cable
- 4-pin connector
- Emergency stop switch kit
- DB9 serial cable
- Network cable
- M3x10 screws and 2.5mm key
- Suction cup, air pump, air tube & 4-pin connector
- Gripper
- Pen holder & pen
- Dobot type M1
- Base not included.

Note: For professional use only. Please note that no 3D Printing or Laser Engraving accessories are included in this package.



Conveyor Belt Kit

The simplest mini production line ever.

The conveyor kit for the Dobot Magician gives you a complete production line simulation. The kit consists of a conveyor belt with adjustable speed, a distance sensor and a colour sensor. Combined with the powerful and programmable Dobot Magician, these are the ideal essentials for you to create a highly effective simulated production line, or even apply it to an actual factory scenario.

The conveyor belt is supplied complete with 40 wooden cubes, a demonstration positioning board and user manual.

Conveyor belt

- Max. payload: 500g
- Effective delivering distance: 600mm
- Maximum speed: 120mm/s
- Maximum acceleration: 1100mm/s²
- Dimensions: 700 x 215 x 60mm
- Weight: 4.2kg

Distance measuring sensor unit

- Measurable range: 20 to 150mm
- Signal: analog output
- Input: 4.5 to 5.5V

Colour recognising sensor unit

- Input: 3 to 5V
- Detectable: non-glowing object
- White LED embedded, on/off controllable

Dobot not included.

Type	Order code	1+
Conveyor belt kit	70-0482	294.00

583542



Type	Order code	1+
M1 robotic arm	70-0484	4860.48

567743



Robotic Arm and Optional USB PC Interface

This Robot Arm helps you get to grips, literally, with the basics of robotic technology.

Following the detailed instructions, you can build your own wire-controlled Robot Arm, and control its movements via the remote control box. Alternatively, you can operate the Robot Arm from your PC by installing the optional USB Interface Kit (sold separately). The robot has 5 motors and 5 joints and features base rotation, elbow and wrist motion and a gripping function. A built-in searchlight means you can even operate the Robot Arm in the dark.

- Educational kit includes all necessary parts (except tools)
- Supplied complete with wired hand controller
- Add the optional USB interface and software (sold separately) to control your robotic arm from your PC
- No soldering required
- Maximum lift 100g
- Dimensions 37.5 x 16.1 x 23cm
- Weight 658g
- Requires 4x D batteries (not supplied)
- Optional USB Interface Kit is compatible with Windows Vista, Windows® XP and Windows® 7

Type	Order code	1+
Robotic arm	06-9349	25.95
USB interface	06-9350	23.32

518239

CUE™

Cue is a programmable robot who is closely related to Dash. Visually, Cue looks really similar to its brother, but the biggest difference is how Cue is programmed. Whilst Dash is ideal for learning coding at Key Stage 1 and 2, Cue is better suited to Key Stage 3



CUE
£155.40
Order code 70-1108

Cue and the curriculum

Here are a few ways in which Cue can help deliver the computing programmes of study at KS3:

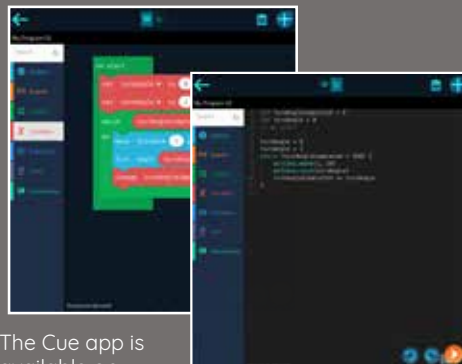
- Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems – **use Cue to simulate autonomous navigation, social robots, human-robot interaction**
- Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem – **collect and filter data from sensors to remove errors, create an algorithm to solve a maze, create an algorithm to draw a specific shape using the sketch kit**
- Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions – **Cue app allows you to use both blocks and text (JavaScript) to create programs. In both, students can create functions, variables and use events**
- Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] – **all standard Boolean logic can be implemented in the Cue app using both block and JavaScript coding**

Accessorise and customise!

Because the shell of Cue is identical to that of Dash, it is compatible with all the same accessories including the Building Brick Connectors and the Sketch Kit. (70-1110 & 70-1105)

Programming

Cue is programmed using an app using Microsoft's MakeCode platform. It's the same tech that the micro:bit programming language is built on which means it is tried and tested in an education environment. Like its micro:bit counterpart, the Cue app allows you to code in a graphical block language or using a text-based JavaScript environment.



The Cue app is available on Windows 10, iOS & Android devices.

micro:bit Robots



Robo:Bit for BBC micro:bit and Accessories



If you have a **BBC micro:bit** then you should get the **Robo:Bit** buggy. Using the basic kit, you can learn about controlling motors and use the accelerometers or compass on the micro:bit to aid navigation and collision detection. You can also make a very cool remote control robot by using another micro:bit and the radio function.

The **Robo:Bit** buggy can be assembled very quickly using only a screwdriver. No soldering is required making it a great beginners kit and the chunky wheels and powerful motors mean it works well on any surface.

There are also available a number of optional accessories to make the Robo:Bit buggy even more versatile:

The **Ultrasonic Distance Sensor** lets the robot detect objects before it collides with them allowing you to program it to avoid them. It can also be used to create a 'follow me' program where the robot tries to stay a certain distance from the object in front of it.

The **Line Follower Sensor Pack** uses two line sensors to follow a black line and keep the buggy on track. You can write more complex programs that behave as required when you meet a T-junction or crossroads.

We all like adding blinky LEDs to our electronic creations, whether it is a robot, weather station or something that reads and displays sensor data. Now with **McRoboFace** you can add emotions to everything at the same time as adding blinkies. It also comes in grey or white.

All the 17 RGB LEDs are fully addressable and can be controlled by most processors in the field using standard 'neopixel' code. This includes Raspberry Pi, Crumble, Arduino, ESP8266, micro:bit and Codebug.

The **Robo:Bit** robotics controller is a ready-assembled robotics controller board that's ready to be used with your **BBC micro:bit**, just add battery power (3 or 4 AA is ideal, but not included) and motors of your choice to make your own DIY robot. Use a small box, ice-cream carton or similar to house everything and you can build a really affordable robot for your school, coding club or home.

Robo:Bit has been cleverly designed so that with a few hexagonal pillars and screws, you can fit the motors, battery box, front casters, line following sensors and even ultrasonic distance sensors and have a very neat and simple robot!

Robo:Bit uses the ever popular DRV8833 motor driver which allows you to use most small motors that operate in the 3 to 6V range.

Connections are provided for lots of the BBC micro:bit pins, and all have immediate 3-pin access to power (3.3V) and ground. There are three separate pins for 5V if you need the extra voltage (but don't feed back 5V to the micro:bit as it won't like it!). This is the GVS (Ground, Volts, Signal) system for sensors and servos etc.

On the left side of the board (the 'front' of the robot) is a set of 4 offset holes into which you can simply poke an HC-SR04 ultrasonic distance sensor. The offset holes and gold plating ensure a good connection, but you can also solder it in permanently for added robustness.

The Robo:Bit fixings pack contains screws, hexagonal pillars and a Pololu caster. This allows you to fit standard yellow motors (not included) and immediately get a robot working.

Also available is the **Talon Grabber** (75-5008) that has a jaw that can be controlled using standard servo code, as well as the specific code added to the Bit:Bot package.

Also available is the **Robo:Bit MK3** (75-5014) that includes, along with the buggy, the line following sensor, ultrasonic distance sensor, integrated pen holder, and the LED light bar.

- Have fun and learn robotics at the same time
- Quick to assemble with just a screwdriver
- Chunky wheels and powerful motor
- Ideal for many projects
- Batteries and micro:bit sold separately

Type	Order code	1+
Robo:Bit Buggy MK3	75-5014	31.92
Line sensor	75-0127	1.57
McRoboFace white	75-0147	5.99
HC-SR04 v2	75-0146	3.87
Talon/grabber	75-5008	4.73

565005

Ready to Go Robots



Cue Robot

Meet Cue - an entertaining robot from Wonder Workshop with four hero avatars and enhanced AI which takes personality, interactive communication, and programming to a higher level.



Cue is funny, clever and a little bit sassy. It's new AI engine was designed to engage users emotionally, and its intelligence, humour, and deep content surface within chat interactions and autonomous behaviours.

Cue employs four hero avatars, each with a different personality, to deliver interactive communication and allow youngsters to learn at their own pace and level.

Cue's extensive Chat library includes 30,000 responses with a vocabulary of over 170,000 words and has auto modes (seek, avoid, and explore) to navigate tight corners or obstacles while expressing personality at every turn.

Compatible with block building, JavaScript text mode, children can use the coding skills they've acquired at school, and build on them in their own time.

Cue aims to teach children the basics of coding while having fun. To watch Cue in action go to www.rapidonline.com/cue.

- Suitable for children aged 11 to 14
- Supplied with 1 lithium battery

Type	Order code	1+
Cue Robot	70-1108	155.40

569498



Gripper Building Kit

Expand the capability of your **Dash** or **Cue** robot with this easy-to-construct Gripper kit from Wonder Workshop.

With this kit you can build mechanical arms for hands-on learning of gears, levers, and axles and master more robotics skills by simulating real-world object detection and manipulation using your robots' sensors and motors through code or manual remote control.

The Gripper arms can lift, carry, pull, pick up and place a variety of lightweight objects for a wide range of play and DIY challenges.

Kit includes:

- 1 x 76-piece construction set
- 3 building brick connectors
- 1 plastic ball



- 1 foam number cube
- 1 building instruction booklet
- 1 quick start/solution guide
- 4 activities for Dash Robot on double-sided project cards
- 4 activities for Cue Robot on double-sided project cards

Type	Order code	1+
Gripper Building Kit	70-1114	31.97

561757



Sketch Kit for Dash and Cue Robots

If you have either of the Wonder Workshop Dash or Cue robots and want to get more fun and more learning, then you need the Sketch Kit for Dash and Cue.



The Sketch Kit will encourage people to write, draw, innovate and have fun with their robots - bringing coding and creativity together in an enjoyable way.

Sketch Kit includes:

- 6x Coloured markers
- Marker harness for the robots
- 6x Project cards

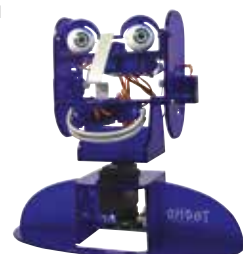
Type	Order code	1+
Sketch kit	70-1110	38.55
Markers refill pack	70-1121	0.68

520167



Ohbot 2.1 Educational Robot with Graphical Block Software

Ohbot is an educational robot for blocks/Python programming and provides an introduction to Artificial Intelligence (AI), both at school or at home. It emulates human face movements and can be programmed to talk and interact in many languages.



Simply connect Ohbot to your computer, install the Ohbot blocks graphical software and start programming amazing projects! Includes 4 software licenses.

- Available ready assembled and tested or in kit form
- Program Ohbot on blocks and Python to: speak any language, sing and play karaoke, lead a fitness class, track the weather, tell the time - and anything you can imagine!
- AI features: face recognition, motion detection, speech recognition, reacts to faces and voices
- Use Ohbot on a Windows PC, Mac, Raspberry Pi or Chromebook computer
- PC requires Windows 7 or later
- Includes 4 user Ohbot software licenses and dual USB cable
- Includes lots of learning and teaching resources
- **BETT ICT Innovator of the Year 2016 Highly Commended**
- **Education Resources Award winner 2018**
- Approx. dimensions (assembled): 200 x 190 x 100mm
- Suitable for ages 7+
- Range of accessories available separately

Type	Order code	1+
Assembled + software	76-0000	183.25
Kit + software	76-0001	122.33
Camera + brackets	76-0002	33.03
Sensor pack	76-0003	31.00
Illuminating eyes	76-0004	35.43
Sound effects pack	76-0005	34.46
Ohbrain controller	76-0006	38.58

582849

makeblock

Arduino Compatible Ultimate Robot 10 in 1 Kit

The **Ultimate 10 in 1 robot kit** from **Makeblock** is the flagship of the Makeblock range with more parts, more possibilities and more fun. At the heart of the kit is the MegaPi robotics controller which is based on the popular Arduino Mega 2560 but with additional motor driver interfaces. With dedicated motor power inputs the MegaPi can drive up to 10 x servos plus 8 x DC motors or 4 x stepper motors simultaneously with a maximum output current of up to 10A. You can program it using the mBlock graphical programming tool or as you get more confident, graduate to C/C++ using the Arduino IDE. If you have a Raspberry Pi, it can function as the brains of your robot while the MegaPi handles the low level details opening up whole new area for creativity and exploration. It also supports a Bluetooth adaptor for wireless remote control from your Apple iPad (v3 or better) or Android (v4 or better) tablet.

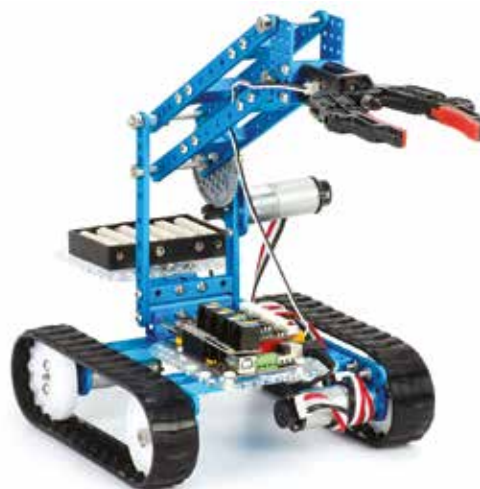
With over 160 pieces, the Ultimate kit has plenty for you to work with including a gripper, 3 x DC motors, a phone mount, plus a wealth of beams, plates and brackets to build a large model. The major mechanical parts are made from beautiful anodised 6061 aluminium giving your robot a professional, hi-tech look as well as being very sturdy. The free Makeblock tutorial page walks you through creating the 10 x different robots, by which time you'll be a robotics expert and ready to strike out on your own. You can build a tank with a robotic arm, a mobile drinks pourer, a camera dolly, two types of 360° rotating photography platforms, a self balancing

robot, a 6-legged crawler, a rolling tank, a detecting robot, and a catapult ram.

New to mBlock/Scratch? mBlock is a graphical programming system based on Scratch where you drag and drop functional blocks from a palette onto a work area to create a program. Each shape has a different function and they snap together in logical ways, some even have slots to drop in other blocks. For example, a block might order the robot to run forward at speed 50 where the direction and speed are chosen from simple drop down menus. This drag and drop interface allows quite young children to get creative with the mBot yet is capable of programming complex behaviours.

Supplied with 1 x MegaPi, 1 x MegaPi shield for RJ25, 1 x Bluetooth module, 4 x motor drivers, 3 x encoder motors, 1 x ultrasonic sensor, 1 x line follower sensor, 1 x 3-axis accelerometer and gyro sensor, 1 x RJ25 adaptor, 1 x electronic shutter release, 1 x Makeblock gripper, 1 x 360° mobile phone bracket, 1 x battery holder (for 6 x AA batteries, not supplied) plus aluminium beams, plates and brackets, plastic timing pulleys, plastic gears, tracks and wheels, cables, nuts and bolts, and other hardware and accessories.

Please note that the Raspberry Pi, Pi camera, smartphone, DSLR camera and toy props are shown for illustration purposes and are not supplied.



- 10 robots in 1 kit
- Arduino compatible robot controller
- Range of free programming tools from novice to advanced
- Free tutorial online to help get you started
- Wireless programming via Bluetooth
- Complete kit, just add batteries

Type	Order code	1+
Ultimate robot kit	75-0695	263.28

563845

makeblock

mBot Ranger Arduino Compatible STEM 3-in-1 Robot Kit

The **mBot Ranger 3 in 1** from **Makeblock** is an intermediate robotics kit for STEM or personal use. It is based around the Me Auriga programmable module with Arduino Mega 2560 compatibility which brings with it excellent online educational and tutorial resources. The Me Auriga has a wide range of programming options from novice to expert using free Open Source tools including mBlock, a graphical Scratch-like programming tool, all the way up to C/C++ using the Arduino development tools. You will be able to use the kit's range of sensors including an ultrasonic range finder, LED line follower, microphone, temperature sensor, light sensor and a 6-axis accelerometer/gyroscope. It also has a buzzer and 12 x RGB LEDs so your creation can flash and bleep messages to you.

To compliment the electronics, the Ranger kit contains all the parts you'll need (down to the last screw) to build 3 x very different robots; the tracked off-road tank, a fast trike and a fascinating self-balancing two-wheeler. The major parts are made from beautiful anodised aluminium giving your robot a professional, hi-tech look. Using the simple, step by step instructions and tools provided the kit should be ready for programming in no time. Take it for a test drive without any programming by pairing it over Bluetooth to your Apple or Android smartphone or tablet using the mBot app from the App Store or Google Play.

Programming your new gadget is where the adventure really begins. Jump into programming using the

free mBlock program on your Windows or Mac PC and the supplied USB cable. Alternatively, use the Makeblock HD app on your iPad (v3 or better) or Android tablet (v4 or better) with a Bluetooth connection to read data from the sensors, control the robot and write programs using mBlock. When you start to feel more confident you can program the Arduino compatible Me Auriga using the Arduino IDE in C/C++. Choose the programming tool that best suits your abilities and preferences.

New to mBlock/Scratch? mBlock is a graphical programming system based on Scratch where you drag and drop functional blocks from a palette onto a work area to create a program. Each shape has a different function and they snap together in logical ways, some have slots to drop in other blocks. For example, a block might order the robot to run forward at speed 50 where the direction and speed are chosen from simple drop down menus. This drag and drop interface allows quite young children to get creative with the Ranger yet is capable of programming complex behaviours.

Supplied with a printed instruction sheet, printed line-follower track, the Me Auriga Arduino compatible controller, 2 x DC encoder motors, Bluetooth module, Me Line Follower module and cable, Me Ultrasonic sensor, Makeblock beams and plates, wheels and



tracks, screws and nuts, screwdriver, spanner, USB cable, and battery holder (requires 6 x AA batteries, not supplied). Makeblock provide a free tutorial to help you get the most out of this great kit.

- Build 3 x different robots from one kit
- Simple to build and program
- Range of free programming tools from beginner to advanced
- Ideal for STEM applications
- Drive the mBot Ranger from your smartphone
- Complete kit, just add batteries
- Bluetooth v4.0 or better is required for PC or Mac connectivity

Type	Order code	1+
mBot Ranger	75-0699	149.04

563846

makeblock

P1030024 Codey Rocky Programmable Robot

What is Codey Rocky?

The MakeBlock Codey Rocky is a coding robot for STEAM education. Codey provides an entertaining learning experience and introduction to programming for ages 6+. With the combination of easy-to-use robotics hardware together with mBlock 5 block-based programming, you'll be up and coding within minutes.

Codey Rocky features an innovative 2 in 1 design structure:

Brainy Codey

Codey is the brains of the outfit, having over 10 programmable electronic modules that produce enough data for a host of applications.

Agile Rocky

Getting around is what Rocky loves best. Not only will Rocky swirl and follow lines, it will also navigate around obstacles, and you will have programmed Codey Rocky to do it.

The robot has a host of electronic modules, including a sound sensor, light sensor and an LED dot matrix display. You'll be able to code Codey Rocky to play music, follow lights, mimic facial expressions and a whole lot more.

With some easy coding you'll be able to turn imagination into reality and enhance your skills, ability and confidence while you're doing it.



Included with the kit is:

- 1 x Codey
- 1 x Rocky
- 1 x Lanyard
- 1 x Micro USB data cable
- 8 x Codey Rocky colour card
- 1 x Name Sticker

Type	Order code	1+
Codey Rocky	75-0516	84.57
Class bundle of 10	75-0519	716.62

561266

- Set your imagination free and unshackle your creativity with Codey Rocky!
- mBlock software
- Software learning + hardware creation
- Create dot matrix animations, design games, realise AI and IoT applications
- Programming as simple as playing blocks
- Switch to Python with one click for advanced programming learning

- AI ready with cutting-edge technology
- Program like building blocks
- Easy to start creating simple projects
- Low-entry for beginners to learn AI; fun with IoT, seize the future ahead
- Compatible with Makeblock Neuron
- Have fun with 10+ programmable sensors

For full details go to www.rapidonline.com

makeblock

Robot Grippers



These grippers from **Makeblock** let your robot grab and carry objects giving you a new dimension of robot building to explore.

The **Mini-gripper** is perfect for getting a grip on lightweight objects. The gripper is made from acrylic and powered by a 9g servo to grab and carry small items such as ping-pong balls, plastic cups, Makeblock parts etc. The Me RJ25 (75-0712) adaptor is required to connect the Mini Gripper to the main board of any of the Makeblock robots.

The **Robot Gripper** is for getting a dealing with bigger objects than the mini-gripper can. The gripper is made from lightweight PVC and powered by an N20 screw motor which is protected by a thermal overload fuse. Suitable for the mBot (75-0701 or 75-0702) and mBot Ranger (75-0699). The Me Dual DC Motor Driver adaptor (75-0713) is required to connect the gripper to the mBot's main board.

Mini gripper:

- Accepts items between 22 and 60mm
- Accepts items up to 60g
- Requires an Me RJ25 adaptor (75-0712), not supplied
- Operating voltage 5 to 12V DC

Robot gripper:

- Non-slip covering for safety
- Accepts items up to 65mm
- Accepts items up to 1.5kg

- Requires an Me Dual DC Motor Driver (75-0713), not supplied
- Operating voltage 12V DC

Type	Order code	1+
Mini-gripper	75-0706	14.20
Robot gripper	75-0703	26.87
RJ25 adaptor	75-0712	3.42
Dual DC motor driver	75-0713	20.49

563844

Coming soon

mBOT2

www.rapidonline.com



Alkaline Batteries

To see our full range visit www.rapidonline.com

makeblock

2.4GHz Wireless Serial Module for RF mBot

A 2.4GHz wireless serial module that is designed for use with the RF mBot



. Ideal for use in the classroom or workshop where a lot of people are using wireless communication simultaneously.

There are two parts, a wireless dongle that you plug into your computer, and a wireless module that you plug into your mCore - you can then easily establish a wireless link between the software **mBlock** and the **mBot**. The module uses the same technology as a wireless mouse, using auto pairing and automatic driver installation to get you up and running quickly. The great advantage of the module is that there is no signal interference when many wireless modules are operating simultaneously.

- Allows auto pairing
- USB Dongle support 32/64 bit Windows and Mac OS
- Driver installed automatically
- No signal interference
- Default Baud rate 115,200
- Communication distance 10 meters
- Power supply 5V DC
- Dimensions 30 x 20 x 14mm

Type	Order code	1+
2.4GHz Wireless board	75-0717	18.63

565930

makeblock

13035 Bluetooth Module for mBot

This Bluetooth module is designed to enable wireless connectivity for any Bluetooth enabled Makeblock equipment. When the module is installed in an mBot it can be controlled wirelessly from smart phones, tablets, computers, etc.



- Provided with apps for Android and iOS
- Easy to work with mBlock software for graphical programming
- Operating voltage 5V DC
- Bluetooth 2.0 and 4.0 compatible
- Level output voltage 5V high, 0V low
- Dimensions (L x W x H) 30 x 20 x 14mm

Type	Order code	1+
Bluetooth module	75-0711	13.44

564648

makeblock

10060 Me Auriga Development Board with Integrated Sensors

The Me Auriga is a development board that is an updated version of the Me Orion, and is based on the Arduino Mega2560. This updated board carries a gyroscope, 12 pixel RGB LED panel, sensors for sound and light intensity, and a passive buzzer.



The board is provided with an encoder motor port, smart servo port and LED ring panel port (with power switch). Connection to sensors, electronic modules and motor drives is easy and the board supports DC motors, stepper motors, servo motors, smart servos, encoder motors (can drive two simultaneously), etc.

The Me Auriga is compatible with the Arduino IDE and with an RJ25 port and supports Bluetooth and Bluetooth upgrade firmware. There is a special library for Arduino which is powerful and easy to understand. The board now has four Red ports, updated from the two red ports on the Me Orion. For communications there is UART and I2C, with both digital and analog I/O.

- Suitable for a wide range of Me modules
- ATmega2560 Microcontroller
- One power switch to control the whole circuit
- Reset button
- Short-circuit and over-current protection
- USB Port with anti-static protection
- Operating voltage 6 to 12V DC

Note: The plastic case may be difficult to open, so please slightly pry off its corners first, then open it.

For technical specialisation visit www.rapidonline.com

Type	Order code	1+
Me Auriga board	75-0716	43.12

564649

How to Solder Kit



Order code
85-1355

£46.69

www.rapidonline.com

Rapid

...where price meets quality

makeblock

Me Orion Arduino-Based Control Board

The ME Orion is an easy-to-use single-board computer that is based on the Arduino UNO, with certain refinements that make it ideal for education.

The Orion provides eight numbered RJ25 ports, allowing you to connect to all other Me series modules, using the colour labels to save you from creating heaps of spaghetti, allowing you more time to get creative.

The board supports most programming software (Arduino/Scratch/AduBlock), and there is also the customised graphical programming software app Scratch for Robot/Makeblock.

- Microcontroller ATmega238
- 100% Arduino compatible
- Comes with Arduino library for easy programming
- Modular installation
- Compatible with LEGO Bricks
- Two-channel motor driver integrated
- Operating Voltage 6 to 12V DC
- Detection angle 30°
- Dimensions 80 x 60 x 18mm

Type	Order code	1+
Me Orion	75-0722	26.87

565931

makeblock

ME WiFi Module

The ESP8266 from Makeblock is the main component of the Me WiFi module. As a low power consumption UART-WiFi pass-through module using serial communication, the ESP8266 can be set to connect with WiFi to construct a WiFi remote control cart, a remote control lamp, etc. Its blue/grey ID means that RJ25 cable should be used to connect it to the port with blue or grey ID on Makeblock Orion.



- Operating mode: STA (workstation) + AP (access point)
- Built-in TCP/IP protocol stack
- Support the WPA WPA2/WPA2-PSK encryption
- Support switchover of Work and PROG modes, and support WiFi programming
- White area of module is the reference area to contact metal beams
- Anti-reverse protection - connecting the power supply inversely will not damage IC
- Adopt RJ25 port for easy connection
- Provide pins to support most Arduino Baseboards
- Operating voltage: 3.3V DC
- Input voltage: 5V DC
- Wireless supported: 802.11 b/g/n standard
- Frequency range: 2.412GHz~2.484GHz
- Operating current: 50mA
- Peak current: 200mA°C
- Default baud rate: 9600
- Module size: 51 x 24 x 18mm

Type	Order code	1+
Me WiFi module	75-0945	18.90

567762

Robot Chassis

Rapid

2WD & 4WD Servo Robot Platforms



The 2WD and 4WD Robot Platforms from Rapid give you the opportunity to build a simple robot at a bargain price. They're based around an anodised aluminium chassis which is pre-cut for servos. The chassis also has a useful set of mounting holes and slots for additional hardware such as a microcontroller or sensors. These platforms are compatible with any microcontroller such as the Arduino, OrangePi, PICAXE, Genie and others, as servos do not require additional motor drivers.

All the parts for the platform are included in the box: 1 x anodised aluminium chassis, screws and nuts, just add your own microcontroller. The 2WD platform also includes 2 x servos, 2 x wheels with tyres, and 1 x castor. The 4WD platform also includes 4 x servos, and 4 x wheels with tyres.

- Strong, colourful aluminium chassis
- Supplied with servos
- All screws and nuts included
- Compatible with Arduino, OrangePi, PICAXE, Genie and others
- Does not require motor drivers

Type	Order code	1+
2WD	70-6415	15.41
4WD	70-6416	16.70

565822

Rapid

2WD & 4WD Motor Robot Platform Kits



This mini motor robot platform kit is available in 2wd or 4wd versions. The platform uses 2 or 4 DC motor gearboxes for drive, with speeds up to 100rpm and torque of 1.3kg/cm at 800mA. The robust red anodised aluminium chassis can stand up to knocks and tumbles and features additional mounting holes so that other hardware such as microcontrollers or sensors may be mounted.

The platforms are compatible with microcontrollers such as the Arduino, OrangePi, PICAXE, Genie, etc. The kit includes motors, chassis and fixings and wheels.

- Easy to assemble kit
- 60mm Diameter wheels with silicon tyres
- Wheels press-fit onto motor gearbox output shafts
- Power supply 4.5 to 6V DC
- Supplied with all fixings required

Type	Order code	1+
2WD Motor robot	70-6417	12.90
4WD Motor robot	70-6418	18.51

564035

Can't find what you need?

Get in touch education@rapidonline.com

Gears & Pulleys

Rapid

100-piece Gear Pack



A bumper pack of 100 durable miniature plastic gears.

- 4 assorted colours
- 5 assorted sizes
- 4mm centre hole
- Diameters: 10, 13, 22, 32, 42mm
- Supplied in **packs of 100**

Type	Order code	1+
Primary gear pack	37-0280	9.65

10561

Rapid

Gears

A great range of durable and sturdy plastic gears.

- 4mm centre hole
- Supplied in **packs of 10**

Reducers are available to allow these gears to fit on to a 2mm shaft. Please see order codes **37-0401** and **52-2049**.

Type	Diameter	Order code	1+
10 tooth	12mm	37-0276	2.16
20 tooth	22mm	37-0271	2.29
30 tooth	32mm	37-0266	2.94
40 tooth	42mm	37-0261	3.34
50 tooth	52mm	37-0256	3.50
60 tooth	62mm	37-0251	3.90

34859



Plastic Gear Set Red/White 20 Pieces



20 double gears 50/10 teeth, 2.9 mm hole · 20 double gears 50/10 teeth, 3.1 mm hole · 8 pinions 10 teeth, 1.9 mm hole · 4 set collars.

- 20-part

Type	Order code	1+
Gear Set Red/White	51-1763	6.03

34859



We bring
STEAM to life

Rapid

Polythene Double Gear

A double gear, ideal for gearboxes to increase and reduce motor speed.

- 40 teeth outer
- 12 teeth inner
- Overall diameter 40mm
- Thickness (across both gears) 14mm
- Recommended axle diameter 3mm
- Colour varies

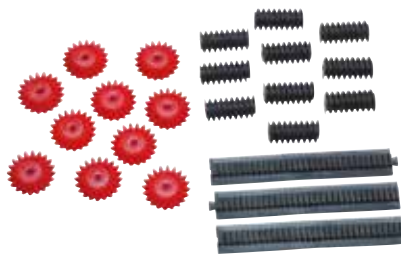


Type	Order code	MOQ 4
Double gear	06-8108	0.252

34859

Rapid

Bevel Gears, Worm Gears and Gear Rack Packs



A range of bevelled gears, worm gears and racks.

- Bevelled gears: dia. 27mm overall
- Worm gears: dia. 12mm, length 30mm
- Gear racks: length 100mm
- Bevelled gears and worm gears have a 4mm centre hole
- Gear rack sections interlock to make longer racks
- Supplied in **packs of 10**

Type	Order code	1+
Bevel gears	37-0236	4.12
Worm gears	37-0240	5.19
Gear racks	37-0246	3.98

34859

Rapid

18-piece Gear Starter Pack



This gear starter pack contains a variety of gear types and sizes, all with a 4mm centre.

- 2x 60 teeth gears
- 2x 50 teeth gears
- 2x 40 teeth gears
- 2x 30 teeth gears
- 2x 20 teeth gears
- 2x 10 teeth gears
- 2x 30mm long worm gears
- 2x 100mm racks
- 2x bevelled gears
- Supplied in **packs of 18**

Type	Order code	1+
Gear starter pack	37-0230	10.16

10557

TruMotion

Plastic Pulleys

A range of plastic pulleys ideal for use with our range of miniature motors.

- Rigid black plastic with deep V-grooves
- All sizes include motor spindle stand-offs
- Excellent for robots, mechanical constructions, science experiments as well as functional tasks
- 10mm pulley will interference fit on to a 2mm shaft
- Other pulleys will interference fit on to a 3.2mm shaft



Type	Width	Order code	MOQ 10 - In Multiples of 10
10mm dia.	10.7mm	37-0342	0.193

Type	Order code	5+
20mm dia.	37-0344	0.187
30mm dia.	37-0346	0.364

Type	Order code	4+
40mm dia.	37-0348	0.274

71522

Wheels & Axles

Rapid

Plastic Wheels - Packs of 100



Bumper packs of 100 plastic wheels, 25 each of red, green, yellow and blue.

- Strong and durable
- 4mm centre hole
- Available in 40 and 50mm diameters
- Supplied in **packs of 100**

Type	Order code	1+
40mm diameter	06-0664	10.68
50mm diameter	06-0665	11.06

10554

Pololu
Robotics & Electronics

Plastic Wheel Sets for 3mm D-Shafts

A range of plastic wheels with silicone tyres that securely press-fit onto the 3mm D-shafts of many types of motor, including micro metal gear motors and mini plastic gear motors. The wheels are the same as those used on the 3pi robot and they also work with 35:1 and 115:1 15.5D metal gear motors.



These wheel sets are just some of the many **Pololu accessories carried by Rapid**.

- Available in black or white
- Sold in pairs

Type	Order code	1+
Wheels 32x7mm black	75-0631	4.52
Wheels 32x7mm white	75-0632	4.28

56165

Rapid

Medium Polythene Wheels

39mm diameter polythene wheels ideal for heavier duty modelling applications.

- 3mm interference fit centre hole
- Colours may vary
- For spiked rubber tyres see order codes **06-0654** and **06-0656**
- Supplied in **packs of 50**



Type	Order code	1+
39mm pack of 50	37-2228	17.37

34853

Rapid

Large Polythene Wheels

Large 75mm diameter polythene wheels ideal for heavier duty modelling applications.

- 3mm interference fit centre hole
- Width 10mm
- Colours may vary
- Supplied in **packs of 10**



Type	Order code	1+
75mm pack of 10	37-2230	5.67

00000



Plastic Wheels

A range of plastic wheels from Modelcraft, suitable for use with model and toy vehicles.

- Available in a range of sizes
- Colour black

Caution: Tolerance in dimensions up to 1.5%, indicating possible



Price each - MOQ 2

Dimensions	Bore	Order code	2+
24 x 7mm	1.6mm	51-1716	1.30
44 x 16mm	2.6mm	51-1714	1.63
56 x 16mm	2.6mm	51-1713	1.91

523804

Rapid

Off-centre Mass Wheels

These small plastic mouldings fit directly onto 2mm motor spindles, providing imbalance that is required for vibrating mechanisms.

- Ideal for use in building vibrating 'bugs' and robotics
 - Obviate the need to apply any adhesive to ordinary wheels
 - Approx. dimensions: 8mm thick x 20mm diameter
- Motor not included. Suitable motors are available separately.



Price each - MOQ 5

Type	Order code	5+
Off-centre mass wheels	06-0698	0.23

71902

Rapid

Card and MDF Wheel Packs

Model wheels made from 2mm thick card or 6mm thick MDF in a range of diameters.

- Hole diameter 4mm, except for 37-0422 which is 5mm
- Supplied in **packs of 100**



Price per pack of 100

Diameter	Hole size	Order code	1+
Card Wheels			
30mm	4mm	52-2021	2.29
40mm	4mm	06-0709	3.47
50mm	4mm	06-0711	3.85
60mm	4mm	52-2023	6.68
MDF wheels			
25mm	4mm	52-2017	3.46
40mm	4mm	06-0713	10.57
50mm	4mm	06-0715	12.00
54mm	5mm	37-0421	12.50
70mm	4mm	37-0417	14.62
74mm	5mm	37-0422	14.63

71243

Propellers

Rapid

Propellers

An essential resource for your Design & Technology classroom, these plastic propellers come in 2 different styles.

- Fit onto 2mm diameter spindles
- 2-blade: 150mm diameter
- 3-blade: 125mm diameter
- Supplied **singly**



Price each - MOQ 2

Type	Order code	2+
2-blade 150mm	06-0627	0.699
3-blade 125mm	06-0629	0.471

300338

Rapid

Mini Propeller for 2mm Shaft

A high speed, low torque propeller.

- Overall length approx. 88mm
- Fits tightly on to a 2mm shaft



Price each - MOQ 4

Type	Order code	4+
Mini propeller	06-6024	0.279

78914

Rapid

Caterpillar Track

Only

£1.59

Order code 37-2550

www.rapidonline.com



Accessories

Rapid

Reducers 4mm to 2mm

Nylon reducers ideal for use with model motors, axles and wheels.



- Inner diameter 2mm
- Outer diameter 4mm
- Flange diameter 8mm
- Available in **packs of 10 and 25**

Type	Order code	1+
Pack of 10	37-0401	1.21
Pack of 25	52-2049	2.60

300345

TickiT

Plastic Axle Brackets

These plastic axle brackets from TickiT can be used in model-making and other construction projects. They can be attached to a chassis with sticky pads or screwed via the 3mm fixing holes.



- Designed to fit maximum shaft diameter of 5mm
- Supplied in pack of 100

Type	Order code	1+
Pack of 100	07-0000	9.39

563516



Shaft Collars with Grub Screws - Packs of 10 and 25

Modelcraft Shaft Collars are high grade machine components with a robust quality designed for easy installation. Surface-hardened and available in different pack sizes of 10, and an assorted pack of 25.



- M3 grub screws included

Spec.	Order code	1+
For 1.5mm dia. axles	50-9080	3.69
For 2mm dia. axles	50-9083	2.98
For 2.5mm dia. axles	50-9081	3.11
For 3mm dia. axles	50-9084	3.05
For 4mm dia. axles	50-9085	3.08
For 5mm dia. axles	50-9086	3.19
For 6mm dia. axles	50-9087	3.21
For 8mm dia. axles	50-9088	4.79
Assorted	50-9082	5.67

501189

Rapid

Steel Shafts



Steel shafts for use with miniature gears, wheels, motors, etc.

- 2 or 3mm diameter
- Can be easily cut with a hacksaw

Shaft size	Order code	1+	10+	50+
Pack of 50				
75 x 2mm dia.	37-0350	5.14	4.25	3.83
75 x 3mm dia.	37-0352	5.01	4.14	3.73
Pack of 25				
120 x 3mm dia.	37-0354	4.95	4.10	

64475

Rapid

Steel and Aluminium Axles

Steel and aluminium rod, ideal for axles for wheels, gears and cams.

- Steel 300 x 3mm dia.
- Aluminium 300 x 3.2mm dia.
- Supplied in packs of 50



Type	Order code	1+
300 x 3mm Steel	06-6032	18.42
300 x 3.2mm Aluminium	06-6034	14.58

78915

REELY

Steel Shafts 500m (L)

Modelcraft Steel Shafts 500m have been manufactured to a high standard using solid silver steel, making them ideal for building drives. These quality shafts can also be used as an axle or for similar purposes.

Price each - MOQ 2			
Type	Order code	2+	
2x500mm	50-9067	1.33	
3x500mm	50-9061	1.42	
4x500mm	50-9062	1.74	
6x500mm	50-9064	2.70	
Price each			
Type	Order code	1+	
8x500mm	50-9065	3.69	

521187

Accelerometers & Sensors



Grove Motion Sensor, Control and Actuator Modules

The Grove Motion Sensor Modules from Seeed Studio give you a range of options to monitor motion and position in your next project. The range includes accelerometers, gyroscopes, and compasses as well as distance, motion and proximity sensors. There's even a GPS receiver which is compatible with any microcontroller with a spare serial port (Arduino, Raspberry Pi etc.). If your next project needs to keep track of where it is and where it's going then take a look at the Grove add-on modules.



Type	Order code	1+
Accelerometer	75-0439	7.21
Accelerometer (±1.5g)	75-0458	6.27
Accelerometer (±16g)	75-0454	5.55
Collision sensor	75-0473	7.10
Digital gyro	75-0450	14.52
Electromagnet	75-0470	7.50
GPS receiver	75-0435	18.86
I2C Motor Driver	75-0432	17.16
IR distance sensor	75-0468	3.54
PIR Motion Sensor	75-0433	6.49
PIR Motion Sensor	75-0433	6.49
Reflective sensor	75-0465	3.97
Ultrasonic ranger	75-0427	3.09
Vibration motor	75-0466	2.20

560346

Line Follower Sensors



Optical Switch Phototransistor Output

These reflective sensors from Vishay contain an infrared emitter and phototransistor in a leaded plastic package designed to exclude visible light. The specification and feature set of these optical sensors makes them ideal for line tracking and following and also suitable for applications such as position sensor for shaft encoder, detection of reflective materials, limit switch for mechanical motion, etc.

- Available in standard and long lead versions
- Peak operating distance 2.5mm
- Operating range 0.2 to 15mm
- Typical output current 1mA
- Daylight blocking filter
- Emitter wavelength 950nm
- Dimensions 10.2 x 5.8 x 7mm
- Package includes 2x mounting clips



Type	Order code	1+
Optical switch	60-8260	1.44
Optical switch long legs	60-8261	0.706

559424

Gyro Sensor



L3GD20 Triple-Axis Gyro Breakout Board

The **Adafruit L3GD20 3-axis Gyro Breakout Board** has an adjustable full scale of ±250, ±500 or ±2000 degrees per second. It's simple to interface to a microcontroller with both I2C and SPI connectivity. Then add 3.3 to 5V logic and power compatibility and you have a very useful and versatile little board.

Supplied as a fully assembled and tested gyro board plus a strip of 0.1in. header pins for you to solder on as required. Adafruit provide a **free library** as an example to help get you started.

- ±250 to ±2000 degree per second full scale (42 to 333rpm)
- On-chip temperature sensor
- 3.3 to 5V logic and power compatible
- I2C and SPI connectivity
- Dimensions 30.7 x 19.1 x 3mm (1.2 x 0.75 x 0.12in.)
- Adafruit part no.: 1032



Type	Order code	1+
Gyro breakout board	73-5397	14.18

563269



EDUCATION PARTNER

OPEN UP TO NEW CONNECTIONS

View all boards at www.rapidonline.com

GPS Modules



Grove - Physical Sensor Modules

The **Physical Sensor modules from Seeed Studio** provides a range of specialist sensors to microcontrollers and computers such as the Arduino, Raspberry Pi etc.. The range includes gas and alcohol sensors, plus fingerprint, vibration, and touch sensors. There's even a module to measure galvanic skin response from any microcontroller with a spare analog port.



Price each			
Type	Order code	1+	
Fingerprint sensor	75-0446	30.52	
Galvanic skin sensor	75-0453	7.92	
Gas sensor CO	75-0462	5.28	

Price each - MOQ 50			
Type	Order code	50+	
Gas sensor LPG	75-0467	7.64	

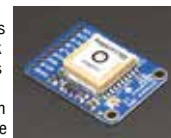
Price each			
Type	Order code	1+	
Magnetic switch	75-0469	1.98	
Piezo sensor	75-0449	4.11	
Sound sensor	75-0448	3.86	
Sound sensor	75-0460	4.66	
Touch sensor	75-0452	6.74	
Temperature sensor	75-0459	8.90	

560372



Ultimate GPS Breakout Board MTK3339 Chipset 66 Channel Version 3

A **GPS breakout board designed around the MTK3339** chipset. This high quality GPS module can track up to 22 satellites on 66 channels and also features a built-in antenna and -165dB tracking, high sensitivity receiver. Location update rate is up to 10 per second and power usage is only 20mA during navigation.



The module has a built in data-logging capability that can log time, date, longitude, latitude, and height is logged every 15 seconds and only when there is a fix. The internal FLASH can store about 16 hours of data. When a bigger antenna is required, any 3V active GPS antenna can be connected via the uFL connector. The module will automatically detect the active antenna and switch over.

Includes one fully assembled and tested module, header for breadboarding, CR1220 coin cell holder (coin cell not included).

- Onboard ultra-low dropout 3.3V regulator
- 5V Friendly design and only 20mA current draw
- Breadboard friendly + two mounting holes
- ENABLE pin to turn off module using any microcontroller pin or switch
- Footprint for optional coin cell to keep RTC running and allow warm starts
- Fix status LED

For technical specialisation visit www.rapidonline.com

Type	Order code	1+
GPS Breakout board	75-0496	34.29

559280



We bring STEAM to life



Raspberry Pi

Sense HAT - as used on Tim Peake's Astro Pi Mission

The Sense HAT is an add-on board for the Raspberry Pi, creating such an innovative and useful experimental tool (called the Astro Pi) that it has even been used on the International Space Station to carry out experiments during the Principia mission. During this mission the British astronaut Tim Peake used the Raspberry Pi and the Sense HAT to run experiments that were created and coded by school students, utilising the full range of the board and HATs features.



Now the Sense HAT is available for every budding Mr Spock to buy and add to their Raspberry Pi.

The HAT features an 8 x 8 RGB LED matrix that can display sense data via shapes, icons and text. A five-button joystick gives you full control of what's going on, serving as both keyboard and mouse, and the HAT provides the following sensors:

- Inertial Measurement Unit (IMU) - consisting of a gyroscope, accelerometer and magnetometer
- Temperature sensor
- Barometric pressure sensor
- Humidity sensor

The HAT, together with the Raspberry Pi, is great for learning about environmental conditions such as velocity, orientation and gravity measurements as well as other aspects of space science. Once the HAT and Pi are assembled you just need to install the Astro Pi software and away you go. The Raspberry Pi Foundation provide some great examples to get started with and there is also a Python library, providing easy access to everything on the board.

- Sense HAT + Pi Board = **Astro Pi**
- Plenty of sensing functionality
- Fits perfectly on top of your Raspberry Pi
- Live long and prosper

Note: You will need eight M2.5 screws and four hexagonal standoffs to attach the HAT to your Pi.

Type	Order code	1+
Pi Sense HAT	75-0765	26.29

564953



Ultimate GPS HAT for Raspberry Pi A+, B+ or 2

The Ultimate GPS HAT has a built-in Real Time Clock (RTC) and a GPS module, adding precision time and location to a Raspberry Pi Model A+, B+, or Pi 2. The module has an internal patch antenna that works quite well when used outdoors. A u.FL connector enables connection to an external antenna. Additional features include status LEDs, PPS output on fix, and it is possible to obtain 7 years timekeeping by using a CR1220 backup battery (not supplied).



- Fully assembled GPS and PCB + 2 x 20 GPIO header
- Sensitivity -165 dBm
- 10Hz Updates
- 66 Channels
- Only 20mA current draw
- Break-outs for all the Raspberry Pi's extra pins
- Plenty of prototyping area for adding LEDs, sensors, etc.
- Requires a 12mm coin battery (e.g. CR1220)

Type	Order code	1+
GPS HAT	75-0504	36.73

559287

Servos



Pro SG90 Mini Servo

The **Rapid Pro SG90 Mini Servo** is a low-cost, well specified servo ideal for use in radio-controlled models and for interfacing with microcontroller systems like Arduino, Raspberry Pi, PICAXE, etc.

- Size: 23 x 12.2 x 29mm
- Low-cost, high quality
- Supplied complete with control horns and mounting screws
- **Rapid Pro type SG90**

For technical specialisation visit www.rapidonline.com

Type	Order code	1+	25+	50+
Mini servo	37-1330	5.03	4.46	3.81

530144



FS90R Analog Micro Servo Continuous Rotation

The FS90R is an analog micro servo that is capable of continuous rotation clockwise or anti-clockwise, as opposed to moving to a set position. The servo is ideal for the beginning roboticist and is perfect for use with the Motor Shield for Arduino.

The servo can be controlled using any servo code, hardware or library and to control with an Arduino, just connect the orange control wire to pin 9 or 10 and use the Servo library included with the Arduino IDE.



Also available is a wheel (**37-1338**) that can be attached directly to the servo. The servo and wheel are also available as a package (**37-1336**).

- Good for making simple moving robots
- Small dimensions means servo can fit in confined spaces
- Lightweight
- Operating voltage 4.8 to 6V
- A 3-pin 10cm cable is available for connecting servos

For technical specialisation visit www.rapidonline.com

Type	Order code	1+
FS90R 360° Servo	37-1335	3.31
Servo and wheel	37-1336	3.90
Wheel for servo	37-1338	1.04

559636



FS90 Mini Servo 120B0 Operating Speed 0.12sec/60B0

The FS90 is an analog micro servo that has 120° of rotation.

The servo is ideal for the beginning roboticist and is perfect for use with the Motor Shield for Arduino. The servo can be controlled using any servo code, hardware or library and to control with an Arduino, just connect the orange control wire to pin 9 or 10 and use the Servo library included with the Arduino IDE.



- Good for making simple moving robots
- Small dimensions means servo can fit in confined spaces
- Lightweight
- Operating voltage 4.8 to 6V
- A 3-pin 10cm cable is available for connecting servos (**37-1337**)

For technical specialisation visit www.rapidonline.com

Type	Order code	1+	25+
FS90 Servo	37-1339	4.07	3.66

560555



CS15 Smart Control Digital Servo with Metal Gears and Brackets

The **SCServo** is a **multipurpose UART BUS robot servo** designed for use with Arduino. The unit can work in both servo mode and wheel mode. The servo mode can be wired together in robots to control limbs and set them at specific angles. The wheel mode is intended for wheel-type operations. The SCServo can give feedback on the values of position, temperature, load, speed and input voltage, as well as having the ability to set parameters such as speed of rotation, max. output torque, operating voltage limit, operating temperature limit, etc.



To connect to Arduino the TTLLinker control board is required (available separately as **37-1333**). The TTLLinker is a signal conversion board. Arduino needs to convert its UART signals to the half duplex type and through TTLLinker connect to SCServo. The TTLLinker also has more interfaces to make provision for more sensors.

- Supplied with metal gears and brackets
- A 70mm wheel with tyre is also available (**37-1334**)
- SCServo is easily controlled by Arduino
- The SCServo has a unique ID number to identify on BUS network
- Operating voltage range 6 to 8.4V
- 73 rpm Max. operating speed at 8.4V

For technical specialisation visit www.rapidonline.com

Type	Order code	1+	5+	10+
SCS15 Servo	37-1332	30.06	27.74	25.96
TTLLinker board	37-1333	2.37		
70mm Wheel and tyre	37-1334	0.223		
3-Pin servo cable	37-1337	0.399		

559635

Motors & Gearboxes



Mini Vibration Motor 3V 2.0mm Circular

The **Mini Vibration Motor** from **Seed Studio** operates from 3V DC and vibrates constantly when energised. The motor is not sensitive to the polarity of the voltage applied.



- Ø 10 x 2mm

Type	Order code	1+
Vibration motor	75-0416	0.889

560351



Worm Drive Gearbox with Motor

A robust worm-drive gearbox powered by an MM28 motor (included).

- Most suitable for applications where an easy to fit, high torque output is required
- Ideal for student based projects including robots and buggies



For technical specialisation visit www.rapidonline.com

Type	Order code	1+	10+	50+
Worm drive gearbox	37-0310	3.66	3.15	2.89

64483

Rapid

120:1 Inline Motor and Gearbox

This economy motorised gearbox is fitted with a 3 to 12V DC motor. The output shaft is 5.5mm diameter and 9mm long with 2 flats. Ratios of 1:120 give final speeds of between 70-140rpm depending on voltage used.



- Smooth running
- 3x mounting holes
- Ideal for small educational projects including fairgrounds and robots
- No load current: 70 - 130mA
- Under load at 6.0V: Motor output turning power is 1.8kgf. cm
- Dimensions 7(L) x 2(W) excluding shaft x 2(W)cm
- Weight: 30g

Type	Order code	1+	25+	100+	250+
Motor and gearbox	37-1217	3.45	2.84	2.43	2.14

81728

MFA/COMODRILLS

918D Series Fixed Ratio 25mm Diameter Spur Geared Motors



Suitable for light industrial, educational, modelling and R&D applications. They are of metal construction and fitted with quality 3 pole motors with carbon brushgear. Available in 1.5-3V or 12-24V options, they have 4mm diameter central output shafts with key flats.

For speed regulation see panel mounted PWM speed regulator (see order code **37-1245**). (Not for use below 6V operation)

- Designed for heavy duty industrial and model applications.
- Robust unit boasts a powerful high quality motor
- Sintered Steel bearings
- Precious metal motor brushes
- No maintenance is required
- Gears are equally efficient in either direction
- 3 versions available (please see specification or price panel)
- **MFA/Como 918D** series

For technical specialisation visit www.rapidonline.com

Ratio	Voltage	Order code	1+	5+	10+
15:1	1.5 to 3V	37-1085	8.85	7.45	6.62
15:1	12 to 24V	37-1086	9.11	8.14	
30:1	1.5 to 3V	37-1226	9.13	8.29	7.56
30:1	12 to 24V	37-1228	10.55	9.57	9.10
100:1	1.5 to 3V	37-1222	9.13	8.29	7.87
100:1	12 to 24V	37-1224	13.86	11.67	11.10
250:1	1.5 to 3V	37-1087	10.84	9.14	
250:1	12 to 24V	37-1088	11.32	9.51	
500:1	1.5 to 3V	37-1101	11.99	11.13	10.53
500:1	12 to 24V	37-1102	9.22	8.56	
1024:1	1.5 to 3V	37-1089	9.92	8.33	7.42
1024:1	12 to 24V	37-1090	15.74	13.24	11.73

82344

PIMORONI

Micro Metal Gearmotors with Extended Back Shaft

These **Micro Metal Gearmotors from Pimoroni** are ideal for small robot platforms or other light mechanical loads. They have a 3mm diameter D-shaped output shaft which is 9mm long and a 1mm diameter back shaft which is 4.5mm long. The back shaft is a great spot to install an encoder to track the motor's speed and position. All the motors in the range are the same size but with different gear ratios, allowing you to choose the one that's right for your next project.



- All metal gears
- Back shaft for an encoder
- Same size motor, different gear ratios

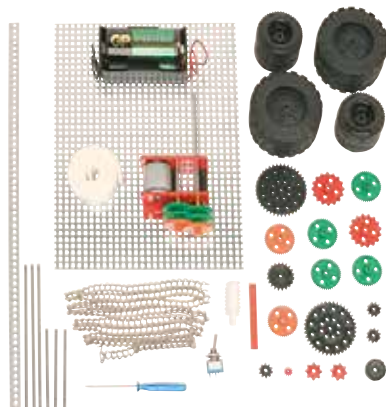
For technical specialisation visit www.rapidonline.com

Ratio	Order code	1+
50:1	75-0638	4.81
298:1	75-0639	4.81
1006:1	75-0640	4.87

561606

MFA/COMODRILLS

Geared Motor Accessory Kit



A kit containing a useful selection of mechanical parts, ideal for the construction of motorised models, robots, buggies, technology projects, etc.

- Motorised gearbox
- Wheels
- Hardware
- Gears
- Rack and pinion
- Perforated metal sheet and strips
- Axles/shafts
- Nuts
- Bolts and washers
- Chain and sprockets
- Worm drive
- Toggle switch
- Size D 1.5V zinc-chloride battery and battery box

Type	Order code	1+	5+
Geared motor kit	37-1100	25.04	24.36

64471

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AmpFlow.com



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at www.rapidonline.com/Ampflow



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www.rapidonline.com

24 hours a day

VEX Robotics - Providing the tools to inspire the problem solvers of tomorrow

VEX IQ

Key Stage 2-4



VEX IQ is a snap-together robotics system designed from the ground up to provide novice users the chance to find success quickly, while still being able to constantly challenge more advanced users. See page 35.



EDUCATION KIT

£349.99

Order code 70-7873



COMPETITION KIT

£524.99

Order code 70-7874



SMALL CLASSROOM BUNDLE

£1949.99

Order code 70-7875

VEX V5

Key Stage 3-5



The VEX V5 system includes versatile elements that take the frustration out of engineering for novice users, while still providing experienced users with endless design possibilities.

COMPETITION STARTER KIT

Take educational robotics to the next level.

£899.99

Order code 70-8196



COMPETITION SUPER KIT

The perfect all-in-one kit for any new VEX Robotics Competition team.

£1499.99

Order code 70-8197



CLAW KIT KIT

£19.93

Order code 70-6344



VEX Robotics



2nd Generation Kits and Classroom Bundles



☐ Education Kit



☐ Competition Kit

These VEX IQ 2nd generation kits and bundles makes STEM manageable for teachers and fun for students!

These kits are designed to build a single robot and are compatible with VEX IQ products and accessories.

This 2nd generation range also includes three separate IQ Classroom Bundles for multiple kits with added extras for classrooms.

These kits come with everything needed to power, remotely operate, and code your robot. The robot brain now includes a colour screen. Improvements have been made to the robot battery that now provides all-day classroom usage in most situations,

the wireless controller that enables operation and testing of robot builds, and the optical and distance sensors that enhance detection capabilities.

Even though we have made many improvements to the electronics, IQ is still forwards and backwards compatible with the 1st generation electronics. VEX IQ Robot Construction System VEX IQ is based on plastic, snap-together pieces, specifically designed to build highly functional robots. This system doesn't require any prior knowledge in robotics.

Students can easily build their first robot, and the wide variety of additional parts means that they can build anything they imagine as they continue

to learn. Every kit includes a hand tool to make assembly and disassembly easy for small hands.

Code your IQ robot using VEXcode IQ Blocks, C++, and Python. Available for Chromebooks, Tablets, Windows PCs, and Macs.

Type	Order code	1+
Education Kit	70-7873	349.99
Competition Kit	70-7874	524.99
Small Classroom Bundle	70-7875	1949.99
Classroom Bundle	70-7876	3799.98
Large Classroom Bundle	70-7877	5699.97

586637



☐ Small Classroom Bundle



☐ Classroom Bundle



☐ Large Classroom Bundle



STARTER KITS

Order code	Description	Price
70-7873	228-8899 Education Kit (2nd Generation)	£349.99
70-7874	228-7980 Competition Kit (2nd Generation)	£524.99
70-7875	228-8060 Small Classroom Bundle (Global)	£1949.99
70-7876	228-8246 Classroom Bundle (Global)	£3899.98
70-7877	228-8247 Large Classroom Bundle (Global)	£5699.97

COMPETITION

Order code	Description	Price
71-0007	Vex VRC 2021-2022 Full Field & Game Element Kit	£449.00
70-7974	VIQC Field Kit - Full 6'x8' Field	£276.97
70-7935	Full Field Perimeter & Tiles	£169.98
71-0008	Vex VIQC 2021-2022 Full Field & Game Element Kit	£99.90
70-7936	Half Field Perimeter & Tiles	£84.99
70-8213	VIQC Field Kit - 4x8 to 6x8 Field Upgrade	£89.99
71-0009	Vex VRC 2021-2022 Game Element Kit Only	£42.99
70-8182	Spare Field Corner Wall	£34.95
70-7938	Highrise Cube Kit	£29.99
70-8180	Spare Field Tile	£6.22
70-6362	VIQC 2020-2021 Scoring Element Kit	£4.99
70-8181	Spare Field Perimeter Wall	£4.99
70-6295	Amaze Trophy Plate	£2.20
70-6299	Think Trophy Plate	£2.20
71-0010	VRC 2021-2022 Field Element Kit 1	£244.90
71-0011	VRC 2021-2022 Field Element Kit 2	£169.90
70-7935	VEX IQ Full Field Perimeter & Tiles	£169.98
70-0133	VEX IQ Squared Away Scoring Element Kit	£10.28
70-8212	VEX IQ Challenge 2020-2021 Rise Above Field & Game Element Kit	£89.99

MOTION

Order code	Description	Price
70-7925	VEX IQ Wheel Kit	£19.99
70-7965	VEX IQ Turntable Base Pack (Grey)	£4.99
70-7966	VEX IQ Pulley Base Pack (Blue)	£5.49
70-7986	VEX IQ Turntable Base Pack (Blue)	£4.99
70-8001	VEX IQ Basic Motion Accessory Pack (Red)	£3.99
70-8003	VEX IQ Pulley Base Pack (Red)	£5.49
70-8005	VEX IQ Turntable Base Pack (Red)	£4.99
70-8018	VEX IQ Basic Motion Accessory Pack (Orange)	£3.99
70-8020	VEX IQ Pulley Base Pack (Orange)	£5.49
70-8021	VEX IQ Gear Base Pack (Orange)	£5.49
70-8022	VEX IQ Turntable Base Pack (Orange)	£4.99
70-8035	VEX IQ Pulley Base Pack (Black)	£5.49
70-8036	VEX IQ Gear Base Pack (Black)	£5.49
70-8037	VEX IQ Turntable Base Pack (Black)	£4.49
70-8048	VEX IQ Basic Motion Accessory Pack (Purple)	£3.99
70-8050	VEX IQ Pulley Base Pack (Purple)	£5.49
70-8051	VEX IQ Gear Base Pack (Purple)	£5.49
70-8052	VEX IQ Turntable Base Pack (Purple)	£4.99
70-8065	VEX IQ Basic Motion Accessory Pack (Yellow)	£3.99
70-8067	VEX IQ Pulley Base Pack (Yellow)	£5.49
70-8068	VEX IQ Gear Base Pack (Yellow)	£5.49
70-8069	VEX IQ Turntable Base Pack (Yellow)	£4.99
70-8082	VEX IQ Basic Motion Accessory Pack (Green)	£3.99
70-8084	VEX IQ Pulley Base Pack (Green)	£5.49
70-8085	VEX IQ Gear Base Pack (Green)	£5.49
70-8086	VEX IQ Turntable Base Pack (Green)	£4.99
70-8099	VEX IQ Basic Motion Accessory Pack (Pink)	£3.99
70-8101	VEX IQ Pulley Base Pack (Pink)	£5.49
70-8102	VEX IQ Gear Base Pack (Pink)	£5.49
70-8103	VEX IQ Turntable Base Pack (Pink)	£4.99
70-8119	VEX IQ Chain & Sprocket Kit (Orange)	£18.95
70-8121	VEX IQ Chain & Sprocket Kit (Black)	£19.99
70-8123	VEX IQ Chain & Sprocket Kit (Purple)	£19.99
70-8124	VEX IQ Tank Tread & Intake Kit (Purple)	£23.99
70-8125	VEX IQ Chain & Sprocket Kit (Yellow)	£18.95
70-8126	VEX IQ Tank Tread & Intake Kit (Yellow)	£23.99
70-8127	VEX IQ Chain & Sprocket Kit (Green)	£19.99
70-8129	VEX IQ Chain & Sprocket Kit (Pink)	£18.95
70-8190	VEX V5 Battery Charger Adapter - UK (Type G)	£0.92
70-7919	VEX IQ Shaft Add-On Kit	£5.00
70-7940	VEX IQ Competition Add-On Kit	£99.99
70-7963	VEX IQ Wheel Base Pack (Grey)	£7.00
70-7984	VEX IQ Base Motion Accessory Pack (Blue)	£2.91
70-8004	VEX IQ Gear Base Pack (Red)	£1.89
70-8117	VEX IQ Chain & Sprocket Kit (Red)	£14.54
70-8118	VEX IQ Tank Tread & Intake Kit (Red)	£3.70
70-8120	VEX IQ Tank Tread & Intake Kit (Orange)	£7.39

MOTION (Continued)

Order code	Description	Price
70-8122	VEX IQ Tank Tread & Intake Kit (Black)	£5.10
70-8128	VEX IQ Tank Tread & Intake Kit (Green)	£3.70
70-8130	VEX IQ Tank Tread & Intake Kit (Pink)	£3.70
70-7907	VEX IQ Additional Chain Pack 200 Links	£12.99
70-7911	VEX IQ Next Gen Smart Motor	£19.99
70-7921	VEX IQ Chain & Sprocket Add-on Kit	£19.99
70-7922	VEX IQ Tank Tread & Intake Kit	£23.99
70-7924	VEX IQ Gear Kit	£14.99
70-7926	VEX IQ 200mm Travel (62mm dia.) Omni Directional Wheels Pack of 2	£9.99
70-7948	VEX IQ Smart Motor Mount Pack	£4.99
70-7949	VEX IQ Long Shaft Add-on Pack	£9.99
70-7960	VEX IQ Gear Base Pack (Blue)	£5.49
70-7969	VEX IQ Basic Motion Accessory Pack (Black)	£3.99
70-8189	VEX V5 Robot Battery Charger	£9.99

CONTROL

Order code	Description	Price
70-7908	VEX IQ Controller	£39.99
70-7910	VEX IQ 2.4 GHz Data Radio	£9.99
70-7912	VEX IQ Smart Cable Pack of 6	£9.99
71-0002	VEX IQ 200mm Smart Cable (4-Pack)	£4.99
70-7946	VEX IQ Long Smart Cable(8 Pack)	£19.99
70-7904	VEX IQ Robot Brain	£99.99
70-7947	VEX IQ Smart Radio	£12.99
70-7946	VEX IQ Long Smart Cable(8 Pack)	£19.99

PROGRAMMING

Order code	Description	Price
70-7927	USB Cable	£4.99
70-7928	Tether Cable	£4.99

SENSORS

Order code	Description	Price
70-7913	VEX IQ Touch LED	£1.54
70-7918	VEX IQ Next Gen Bumper Switch	£4.99
70-7914	VEX IQ Distance Sensor	£24.99
70-7915	VEX IQ Colour Sensor	£3.13
70-7917	VEX IQ Gyro Sensor	£9.09

STORAGE

Order code	Description	Price
70-6302	Field Case	£27.25
70-7931	Storage Bin, Lid, & Tray	£16.66

POWER

Order code	Description	Price
70-7905	Robot Battery	£19.99
70-7906	Robot Battery Charger	£16.99
70-7909	Controller Battery	£9.99

STRUCTURE

Order code	Description	Price
70-7971	VEX IQ Corner Connector Base Pack (Black)	£4.50
70-7975	VEX IQ Corner Connector Foundation Add-On Pack (Black)	£4.30
70-7977	VEX IQ 1x Beam Foundation Add-On Pack (Grey)	£3.55
70-7979	VEX IQ 1x Beam Base Pack (Blue)	£0.74
70-7980	VEX IQ 2x Beam Base Pack (Blue)	£1.54
70-7985	VEX IQ Specialty Beam Base Pack (Blue)	£3.00
70-7987	VEX IQ Plastic Shaft Base Pack (Blue)	£2.46
70-7988	VEX IQ 1x Beam Foundation Add-on Pack (Blue)	£0.62
70-7992	VEX IQ Corner Connector Foundation Add-on Pack (Blue)	£1.08
70-7996	VEX IQ Connector Pin Pack (Red)	£2.06
70-8008	VEX IQ 2x Beam Foundation Add-on Pack (Red)	£1.69
70-8029	VEX IQ 1x Beam Base Pack (Black)	£0.74
70-8030	VEX IQ 2x Beam Base Pack (Black)	£1.54
70-8031	VEX IQ 4x Plate Base Pack (Black)	£0.77
70-8032	VEX IQ Connector Pin Pack (Black)	£1.54
70-8040	VEX IQ 4x Plate Foundation Add-on Pack (Black)	£1.69
70-8042	VEX IQ 1x Beam Base Pack (Purple)	£0.74
70-8044	VEX IQ 4x Plate Base Pack (Purple)	£0.77
70-8045	VEX IQ Connector Pin Pack (Purple)	£2.11
70-8046	VEX IQ Standoff Base Pack (Purple)	£1.69
70-8047	VEX IQ Corner Connector Base Pack (Purple)	£1.39
70-8049	VEX IQ Specialty Beam Base Pack (Purple)	£1.54
Order code	Description	Price
70-8056	VEX IQ 4x Plate Foundation Add-on Pack (Purple)	£0.85
70-8057	VEX IQ Standoff Foundation Add-on Pack (Purple)	£0.62
70-8059	VEX IQ 1x Beam Base Pack (Yellow)	£0.74
70-8060	VEX IQ 2x Beam Base Pack (Yellow)	£3.08
70-8062	VEX IQ Connector Pin Pack (Yellow)	£1.54
70-8107	VEX IQ 4x Plate Foundation Add-on Pack (Pink)	£4.00
70-8131	VEX IQ Large Plate Add-On Pack	£7.11
70-8133	VEX IQ Beam Long Pack (Red)	£1.46
70-8139	VEX IQ Beam Long Pack (Purple)	£1.23
70-8140	VEX IQ Beam Long Pack (Black)	£3.50
71-0000	Vex 1 x Beam Odd Length pack (Base)	£1.54
71-0001	Vex Standoff Foundation Add-On Pack (Base)	£0.94
70-7962	VEX IQ 4x Plate Base Pack (Grey)	£0.47
70-7990	VEX IQ 4x Plate Foundation Add-on Pack (Blue)	£0.85
70-7994	VEX IQ 2x Beam Base Pack (Red)	£2.22
70-8038	VEX IQ 1x Beam Foundation Add-on Pack (Black)	£0.62
70-8043	VEX IQ 2x Beam Base Pack (Purple)	£1.54
70-8055	VEX IQ 2x Beam Foundation Add-on Pack (Purple)	£0.85
70-7878	VEX IQ Differential & Bevel Gear Pack	£9.99
70-7879	VEX IQ Universal Joint Pack	£4.99
70-7920	VEX IQ Connector Pin Pack (Blue)	£9.99
70-7961	VEX IQ 1x Beam Base Pack (Grey)	£4.99
70-7964	VEX IQ Shaft Base Pack	£3.99
70-7967	VEX IQ 2x Beam Base Pack (Grey)	£9.99
70-7968	VEX IQ Rubber Shaft Collar (Pk 30)	£5.99

Order code	Description	Price
70-7972	VEX IQ Standoff Base Pack (Black)	£5.49
70-7973	VEX IQ 4x Plate Foundation Add-On Pack (Grey)	£5.49
70-7976	VEX IQ 2x Beam Foundation Add-On Pack (Grey)	£5.49
70-7978	VEX IQ Plastic Shaft Base Pack (Black)	£7.99
70-8039	VEX IQ 2x Beam Foundation Add-on Pack (Black)	£5.49
70-7958	VEX IQ Magnetic Beam Pair	£7.99
70-7958	VEX IQ Magnetic Beam Pair	£7.99
70-7959	VEX IQ VIQC Blank Team Number Plates	£1.99
70-7970	VEX IQ Specialty Beam Base Pack (Grey)	£4.99
70-7981	VEX IQ 4x Plate Base Pack (Blue)	£4.99
70-7982	VEX IQ Standoff Base Pack (Blue)	£5.49
70-7983	VEX IQ Corner Connector Base Pack (Blue)	£8.99
70-7989	VEX IQ 2x Beam Foundation Add-on Pack (Blue)	£5.49
70-7991	VEX IQ Standoff Foundation Add-on Pack (Blue)	£3.99
70-7993	VEX IQ 1x Beam Base Pack (Red)	£4.99
70-7995	VEX IQ 4x Plate Base Pack (Red)	£4.99
70-7997	VEX IQ Standoff Base Pack (Red)	£5.49
70-8006	VEX IQ Plastic Shaft Base Pack (Red)	£7.99
70-8007	VEX IQ 1x Beam Foundation Add-on Pack (Red)	£3.99
70-8009	VEX IQ 4x Plate Foundation Add-on Pack (Red)	£5.49
70-8010	VEX IQ Standoff Foundation Add-on Pack (Red)	£3.99
70-8011	VEX IQ Corner Connector Foundation Add-on Pack (Red)	£6.99
70-8012	VEX IQ 1x Beam Base Pack (Orange)	£4.99
70-8013	VEX IQ 2x Beam Base Pack (Orange)	£9.99
70-8014	VEX IQ 4x Plate Base Pack (Orange)	£4.99
70-8015	VEX IQ Connector Pin Pack (Orange)	£9.99
70-8016	VEX IQ Standoff Base Pack (Orange)	£5.49
70-8017	VEX IQ Corner Connector Base Pack (Orange)	£8.99
70-8019	VEX IQ Specialty Beam Base Pack (Orange)	£4.99
70-8023	VEX IQ Plastic Shaft Base Pack (Orange)	£7.99
70-8024	VEX IQ 1x Beam Foundation Add-on Pack (Orange)	£3.99
70-8025	VEX IQ 2x Beam Foundation Add-on Pack (Orange)	£5.49
70-8026	VEX IQ 4x Plate Foundation Add-on Pack (Orange)	£5.49
70-8027	VEX IQ Standoff Foundation Add-on Pack (Orange)	£3.99
70-8028	VEX IQ Corner Connector Foundation Add-on Pack (Orange)	£6.99
70-8034	VEX IQ Specialty Beam Base Pack (Black)	£4.99
70-8053	VEX IQ Plastic Shaft Base Pack (Purple)	£7.99
70-8054	VEX IQ 1x Beam Foundation Add-on Pack (Purple)	£3.99
70-8058	VEX IQ Corner Connector Foundation Add-on Pack (Purple)	£6.99
70-8061	VEX IQ 4x Plate Base Pack (Yellow)	£4.99
70-8063	VEX IQ Standoff Base Pack (Yellow)	£5.49
70-8064	VEX IQ Corner Connector Base Pack (Yellow)	£8.99
70-8066	VEX IQ Specialty Beam Base Pack (Yellow)	£4.99

Order code	Description	Price
70-8070	VEX IQ Plastic Shaft Base Pack (Yellow)	£7.99
70-8071	VEX IQ 1x Beam Foundation Add-on Pack (Yellow)	£3.99
70-8072	VEX IQ 2x Beam Foundation Add-on Pack (Yellow)	£5.49
70-8073	VEX IQ 4x Plate Foundation Add-on Pack (Yellow)	£5.49
70-8074	VEX IQ Standoff Foundation Add-on Pack (Yellow)	£3.99
70-8075	VEX IQ Corner Connector Foundation Add-on Pack (Yellow)	£6.99
70-8076	VEX IQ 1x Beam Base Pack (Green)	£4.99
70-8077	VEX IQ 2x Beam Base Pack (Green)	£9.99
70-8078	VEX IQ 4x Plate Base Pack (Green)	£4.99
70-8079	VEX IQ Connector Pin Pack (Green)	£9.99
70-8080	VEX IQ Standoff Base Pack (Green)	£5.49
70-8081	VEX IQ Corner Connector Base Pack (Green)	£8.99
70-8083	VEX IQ Specialty Beam Base Pack (Green)	£4.99
70-8087	VEX IQ Plastic Shaft Base Pack (Green)	£7.99
70-8088	VEX IQ 1x Beam Foundation Add-on Pack (Green)	£3.99
70-8089	VEX IQ 2x Beam Foundation Add-on Pack (Green)	£5.49
70-8090	VEX IQ 4x Plate Foundation Add-on Pack (Green)	£5.49
70-8091	VEX IQ Standoff Foundation Add-on Pack (Green)	£3.99
70-8092	VEX IQ Corner Connector Foundation Add-on Pack (Green)	£6.99
70-8093	VEX IQ 1x Beam Base Pack (Pink)	£4.99
70-8094	VEX IQ 2x Beam Base Pack (Pink)	£9.99
70-8095	VEX IQ 4x Plate Base Pack (Pink)	£4.99
70-8096	VEX IQ Connector Pin Pack (Pink)	£9.99
70-8097	VEX IQ Standoff Base Pack (Pink)	£5.49
70-8098	VEX IQ Corner Connector Base Pack (Pink)	£8.99
70-8100	VEX IQ Specialty Beam Base Pack (Pink)	£4.99
70-8104	VEX IQ Plastic Shaft Base Pack (Pink)	£7.99
70-8105	VEX IQ 1x Beam Foundation Add-on Pack (Pink)	£3.99
70-8106	VEX IQ 2x Beam Foundation Add-on Pack (Pink)	£5.49
70-8109	VEX IQ Corner Connector Foundation Add-on Pack (Pink)	£6.99
70-8110	VEX IQ 1x Beam Base Pack (White)	£4.99
70-8111	VEX IQ 2x Beam Base Pack (White)	£9.99
70-8112	VEX IQ 4x Plate Base Pack (White)	£4.99
70-8113	VEX IQ Specialty Beam Base Pack (White)	£4.99
70-8114	VEX IQ 1x Beam Foundation Add-on Pack (White)	£3.99
70-8115	VEX IQ 2x Beam Foundation Add-on Pack (White)	£5.49
70-8134	VEX IQ Beam Long Pack (Pink)	£7.99
70-8135	VEX IQ Beam Long Pack (Orange)	£7.99
70-8136	VEX IQ Beam Long Pack (Yellow)	£7.99
70-8137	VEX IQ Beam Long Pack (Green)	£7.99
70-8138	VEX IQ Beam Long Pack (Blue)	£7.99
70-8141	VEX IQ Beam Long Pack (White)	£7.99
70-8158	VEX IQ Specialty Beam Base Pack (Red)	£4.99
70-8159	VEX IQ Corner Connector Base Pack (Red)	£8.99
70-7903	VEX IQ Foundation Add-On Kit	£74.99

For more information visit www.rapidonline.com/VEXIQ



STARTER KITS

Order code	Description	Price
70-8196	VEX V5 Competition Starter Kit	£899.99
70-8197	VEX V5 Competition Super Kit	£1,499.99
70-6363	VEX 8' x 8' Field Perimeter Kit	£209.99

CABLES

Order code	Description	Price
70-8192	VEX V5 Smart Cable Starter Pack	£4.99
70-8999	VEX V5 Smart Cables (Long Assortment)	£9.99

CONTROL

Order code	Description	Price
70-8187	VEX V5 Wireless Controller	£99.99
70-8191	VEX V5 Robot Radio	£37.49

SENSORS

Order code	Description	Price
70-6344	VEX V5 Claw Kit	£19.93
70-6358	VEX V5 3-Wire Expander	£35.68
70-6325	VEX Robotics 276-4852 VEX V5 Distance Sensor	£39.99
70-6326	VEX Robotics 276-6050 VEX V5 Rotation Sensor	£33.99
70-6334	VEX Robotics 276-7043 VEX V5 Optical Sensor	£39.99
70-8154	VEX V5 Inertial Sensor	£39.59
70-6383	VEX Bumper Switch V2 (2-pack)	£8.38
70-8198	VEX V5 Vision Sensor	£67.99

COMPETITION

Order code	Description	Price
70-0139	VRC Tower Takeover - Scoring Element Kit	£6.99
70-6366	VEX Robotics Competition Field Perimeter Kit	£715.77
70-6066	VRC 2018-2019 Field Element Kit 2	£121.83
70-6247	VEX Robotics Competition Field Monitor Stand	£39.46
70-6371	VRC Anti-Static Full Field Tile Kit Includes 36 Tiles	£199.99
70-6384	VRC Anti-Static Field Tiles -18 Tiles	£99.99
70-8210	VRC Change Up - Game Element Kit	£64.99
70-8211	VEX Robotics Competition Change Up - Field Element Kit	£149.99

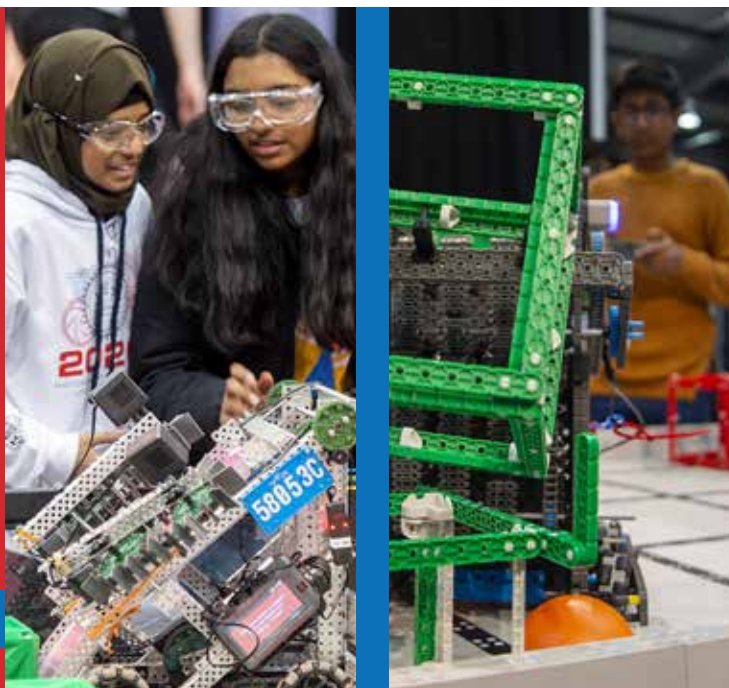
MOTION

Order code	Description	Price
70-0032	VEX V5 Motor 18:1 Cartridge Green (200 RPM)	£9.99
70-0031	VEX V5 Motor 36:1 Cartridge Red (100 RPM)	£9.99
70-0033	VEX V5 Motor 6:1 Cartridge Blue (600 RPM)	£9.99
70-8185	VEX V5 Smart Motor	£38.49
70-6529	VEX Motor 393 Refurb Kit	£4.75

POWER

Order code	Description	Price
70-8199	VEX V5 Power Cable Assortment	£24.88
70-8188	VEX V5 Robot Battery	£59.99

For more information visit www.rapidonline.com/VEXV5





Engineered by FIRST Veterans, for FIRST teams. VEX products are designed so that students can easily integrate them into their robots, thereby allowing them to focus on the important design and creative processes of the build season.



BELTS & PULLEYS

Order code	Description	Price
70-3165	VEXpro 217-3199 VersaPulley Kit HTD 5mm 42T 18mm wide	£8.49
70-3185	VEXpro 217-3225 18T Timing Pulley 9mm Double Flange Aluminium 1/2" Hex 5mm HTD	£11.49
70-3186	VEXpro 217-3227 24T Timing Pulley 9mm Double Flange Aluminium 1/2" Hex 5mm HTD	£11.49
70-3187	VEXpro 217-3229 30T Timing Pulley 9mm Double Flange Aluminium 1/2" Hex 5mm HTD	£13.99
70-3188	VEXpro 217-3231 36T Timing Pulley 9mm Double Flange Aluminium 1/2" Hex 5mm HTD	£14.49
70-3195	VEXpro 217-3248 VersaPulley Slice HTD 5mm 42T 7mm wide	£3.49
70-3196	VEXpro 217-3249 VersaPulley Slice HTD 5mm 60T 7mm wide	£3.49
70-3223	VEXpro 217-3293 Timing Belt HTD 5mm 60T 9mm Wide	£6.99
70-3224	VEXpro 217-3294 Timing Belt HTD 5mm 60T 15mm Wide	£9.49
70-3258	VEXpro 217-3455 Timing Belt HTD 5mm 70T 9mm Wide	£7.99
70-3259	VEXpro 217-3456 Timing Belt HTD 5mm 80T 9mm Wide	£7.99
70-3260	VEXpro 217-3457 Timing Belt HTD 5mm 90T 9mm Wide	£7.99
70-3261	VEXpro 217-3458 Timing Belt HTD 5mm 100T 9mm Wide	£8.49
70-3262	VEXpro 217-3459 Timing Belt HTD 5mm 104T 9mm Wide	£8.49
70-3263	VEXpro 217-3460 Timing Belt HTD 5mm 110T 9mm Wide	£8.49
70-3264	VEXpro 217-3461 Timing Belt HTD 5mm 120T 9mm Wide	£9.49
70-3265	VEXpro 217-3462 Timing Belt HTD 5mm 130T 9mm Wide	£9.49
70-3266	VEXpro 217-3463 Timing Belt HTD 5mm 140T 9mm Wide	£10.49
70-3267	VEXpro 217-3464 Timing Belt HTD 5mm 150T 9mm Wide	£10.49
70-3268	VEXpro 217-3465 Timing Belt HTD 5mm 160T 9mm Wide	£11.49
70-3269	VEXpro 217-3466 Timing Belt HTD 5mm 170T 9mm Wide	£11.49
70-3270	VEXpro 217-3467 Timing Belt HTD 5mm 180T 9mm Wide	£11.99
70-3271	VEXpro 217-3468 Timing Belt HTD 5mm 200T 9mm Wide	£13.99
70-3272	VEXpro 217-3469 Timing Belt HTD 5mm 225T 9mm Wide	£13.99
70-3273	VEXpro 217-3470 Timing Belt HTD 5mm 250T 9mm Wide	£14.49
70-3274	VEXpro 217-3472 Timing Belt HTD 5mm 70T 15mm Wide	£10.49
70-3275	VEXpro 217-3473 Timing Belt HTD 5mm 80T 15mm Wide	£10.49
70-3277	VEXpro 217-3475 Timing Belt HTD 5mm 100T 15mm Wide	£11.99
70-3278	VEXpro 217-3476 Timing Belt HTD 5mm 104T 15mm Wide	£11.99
70-3280	VEXpro 217-3478 Timing Belt HTD 5mm 120T 15mm Wide	£12.99
70-3281	VEXpro 217-3479 Timing Belt HTD 5mm 130T 15mm Wide	£12.99

70-3282	VEXpro 217-3480 Timing Belt HTD 5mm 140T 15mm Wide	£16.49
70-3283	VEXpro 217-3481 Timing Belt HTD 5mm 150T 15mm Wide	£16.49
70-3284	VEXpro 217-3482 Timing Belt HTD 5mm 160T 15mm Wide	£16.49
70-3285	VEXpro 217-3483 Timing Belt HTD 5mm 170T 15mm Wide	£16.49
70-3286	VEXpro 217-3484 Timing Belt HTD 5mm 180T 15mm Wide	£16.99
70-3287	VEXpro 217-3485 Timing Belt HTD 5mm 200T 15mm Wide	£18.99
70-3288	VEXpro 217-3486 Timing Belt HTD 5mm 225T 15mm Wide	£20.99
70-3289	VEXpro 217-3487 Timing Belt HTD 5mm 250T 15mm Wide	£23.49
70-3350	VEXpro 217-4100 Timing Pulley HTD 5mm 18T 15mm Wide Aluminium 1/2" Hex Bore	£11.49
70-3351	VEXpro 217-4101 Timing Pulley HTD 5mm 24T 15mm Wide Aluminium 1/2" Hex Bore	£11.49
70-3352	VEXpro 217-4102 Timing Pulley HTD 5mm 30T 15mm Wide Aluminium 1/2" Hex Bore	£13.99
70-3353	VEXpro 217-4103 Timing Pulley HTD 5mm 36T 15mm Wide Aluminium 1/2" Hex Bore	£14.49
70-3468	VEXpro 217-5870 12t x 9mm Wide Double Flange Aluminum Pulley GT2 3mm RS550 Motor	£11.99
70-3469	VEXpro 217-5871 12t x 9mm Wide Double Flange Aluminum Pulley GT2 3mm RS775 Motor	£11.99
70-3472	VEXpro 217-5875 24t 9mm Wide Double Flange Aluminum Pulley 3mm GT2 1/2" Hex Bore	£12.99
70-3473	VEXpro 217-5876 60t 9mm Wide Double Flange Aluminum Pulley 3mm GT2 1/2" Hex Bore	£16.99
70-3474	VEXpro 217-5881 45t x 9mm Wide Timing Belt GT2 3mm	£5.99
70-3476	VEXpro 217-5883 55t x 9mm Wide Timing Belt GT2 3mm	£6.99
70-3477	VEXpro 217-5884 60t x 9mm Wide Timing Belt GT2 3mm	£6.99
70-3478	VEXpro 217-5885 70t x 9mm Wide Timing Belt GT2 3mm	£6.99
70-3479	VEXpro 217-5886 85t x 9mm Wide Timing Belt GT2 3mm	£7.99
70-3480	VEXpro 217-5887 90t x 9mm Wide Timing Belt GT2 3mm	£7.99
70-3481	VEXpro 217-5888 100t x 9mm Wide Timing Belt GT2 3mm	£7.99
70-3482	VEXpro 217-5889 105t x 9mm Wide Timing Belt GT2 3mm	£7.99
70-3484	VEXpro 217-5891 120t x 9mm Wide Timing Belt GT2 3mm	£9.49
70-3485	VEXpro 217-5892 125t x 9mm Wide Timing Belt GT2 3mm	£9.49
70-3506	VEXpro 217-5999 1/16" Thick x 1" Wide Urethane Flat Belting 10' Long	£25.49
70-3507	VEXpro 217-6001 1/16" Thick x 1-1/2" Wide Urethane Flat Belting 10' Long	£25.49
70-3513	VEXpro 217-6087 115t x 9mm Wide Timing Belt GT2 3mm	£8.49
70-3166	VEXpro 217-3200 VersaPulley Kit HTD 5mm 60T 18mm wide	£6.18
70-3276	VEXpro 217-3474 Timing Belt HTD 5mm 90T 15mm Wide	£3.00
70-3279	VEXpro 217-3477 Timing Belt HTD 5mm 110T 15mm Wide	£3.43

70-3470	VEXpro 217-5873 36t 9mm Wide Double Flange Aluminum Pulley 3mm GT2 1/2" Hex Bore	£4.14
70-3471	VEXpro 217-5874 48t 9mm Wide Double Flange Aluminum Pulley 3mm GT2 1/2" Hex Bore	£4.43
70-3475	VEXpro 217-5882 50t x 9mm Wide Timing Belt GT2 3mm	£1.72
70-3483	VEXpro 217-5890 110t x 9mm Wide Timing Belt GT2 3mm	£2.29
70-3486	VEXpro 217-5893 140t x 9mm Wide Timing Belt GT2 3mm	£2.72
70-3487	VEXpro 217-5894 180t x 9mm Wide Timing Belt GT2 3mm	£2.72
70-3508	VEXpro 217-6002 1/16" Thick x 2" Wide Urethane Flat Belting 10' Long	£8.57

MOTORS & ELECTRONICS

70-3002	VEXpro 217-0200 Circuit Breaker 20 Amp	£4.49
70-3003	VEXpro 217-0205 Circuit Breaker 30 Amp	£4.49
70-3007	VEXpro 217-2000 CIM Motor	£27.99
70-3236	VEXpro 217-3351 BAG Motor	£25.49
70-3346	VEXpro 217-4055 12AWG Red Silicone Wire 25'	£25.49
70-3347	VEXpro 217-4056 12AWG Black Silicone Wire 25'	£25.49
70-3378	VEXpro 217-4347 775pro	£17.49
70-3387	VEXpro 217-4771 12AWG White Silicone Wire 25'	£25.49
70-3388	VEXpro 217-4772 12AWG Green Silicone Wire 25'	£25.49
70-3389	VEXpro 217-4773 22AWG CAN Wire 25'	£5.99
70-3514	VEXpro 217-8080 Talon SRX	£76.99
70-3516	VEXpro 217-9191 Victor SPX	£50.99
70-3001	VEXpro 217-0192 Circuit Breaker 40 Amp	£3.66
70-3237	VEXpro 217-3371 Mini CIM Motor	£7.29
70-3379	VEXpro 217-4358 Talon SRX Data Cable 12' 4 pack	£3.29

PNEUMATICS

70-3115	VEXpro 217-2778 Pancake Pneumatic Cylinder 3/4" Bore 1/2" Travel	£44.99
70-3142	VEXpro 217-2907 VEXpro Ball Shifter Pneumatic Fitting Kit	£8.49
70-3147	VEXpro 217-2948 SMC SY3240-6LZ Double Solenoid Valve for use with Base Mount	£71.49
70-3148	VEXpro 217-2949 SMC SY3000-26-9A Blank Station Kit	£2.99
70-3149	VEXpro 217-2950 SMC SY100-30-4A-10 Connector w/ 1M Cable 2 pack	£7.49
70-3150	VEXpro 217-2951 SMC SS5Y3-41-03-N7T 3 Station Base Mount	£35.99
70-3151	VEXpro 217-2952 SMC SS5Y3-41-04-N7T 4 Station Base Mount	£40.49
70-3152	VEXpro 217-2953 SMC SS5Y3-41-05-N7T 5 Station Base Mount	£44.99
70-3153	VEXpro 217-2954 SMC SS5Y3-41-06-N7T 6 Station Base Mount	£49.49
70-3189	VEXpro 217-3233 SMC SY3140-6LZ Single Solenoid Valve for use with Base Mount	£53.99
70-3292	VEXpro 217-3496 WCP DS Pneumatic Hardware Kit	£23.99
70-3376	VEXpro 217-4252 VEXpro Ball Shifter Pneumatic Hardware Kit v2	£8.49

GEARS		
70-3025	VEXpro 217-2614 12t 20 DP CIM Motor Gear with Mounting Hardware	£8.49
70-3073	VEXpro 217-2699 14t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£8.49
70-3074	VEXpro 217-2701 20t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£8.49
70-3075	VEXpro 217-2702 20t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£8.49
70-3076	VEXpro 217-2703 24t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£8.49
70-3077	VEXpro 217-2704 24t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£8.49
70-3078	VEXpro 217-2705 30t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£9.49
70-3079	VEXpro 217-2706 34t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£9.49
70-3080	VEXpro 217-2707 40t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£11.49
70-3081	VEXpro 217-2708 40t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£11.49
70-3082	VEXpro 217-2709 44t 20 DP Aluminium Ball Shifter Spur Gear with Bushing	£16.99
70-3083	VEXpro 217-2710 44t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£12.99
70-3084	VEXpro 217-2711 50t Aluminium Spur Gear 20 DP with 3/8" Hex Bore & VersaKeys	£19.49
70-3085	VEXpro 217-2712 50t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£19.49
70-3086	VEXpro 217-2713 60t 20 DP Aluminium Ball Shifter Spur Gear with Bushing	£21.49
70-3087	VEXpro 217-2714 60t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£21.49
70-3088	VEXpro 217-2715 64t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£21.49
70-3089	VEXpro 217-2716 72t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£25.49
70-3090	VEXpro 217-2717 84t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£29.99
70-3118	VEXpro 217-2792 VEXpro Ball Shifter Long Output Shaft with Gears	£33.99
70-3119	VEXpro 217-2793 VEXpro Ball Shifter Short Output Shaft with Gears	£33.99
70-3124	VEXpro 217-2816 VersaPlanetary Ring Gear	£8.49
70-3125	VEXpro 217-2817 VersaPlanetary 3:1 Gear Kit	£12.99
70-3126	VEXpro 217-2818 VersaPlanetary 4:1 Gear Kit	£12.99
70-3127	VEXpro 217-2819 VersaPlanetary 5:1 Gear Kit	£12.99
70-3128	VEXpro 217-2820 VersaPlanetary 10:1 Gear Kit	£12.99
70-3155	VEXpro 217-3099 12t 20 DP CIM Motor Steel Gear with Mounting Hardware	£8.49
70-3156	VEXpro 217-3100 14t Steel Spur Gear 20 DP with 3/8" Hex Bore	£9.49
70-3157	VEXpro 217-3102 VersaPlanetary 7:1 Gear Kit	£12.99
70-3158	VEXpro 217-3106 VersaPlanetary 9:1 Gear Kit	£12.99
70-3159	VEXpro 217-3107 11t 20 DP CIM Steel Gear with Mounting Hardware	£8.49
70-3168	VEXpro 217-3208 18t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£8.49
70-3169	VEXpro 217-3209 18t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£8.49
70-3170	VEXpro 217-3210 30t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£9.49
70-3171	VEXpro 217-3211 34t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£9.49
70-3172	VEXpro 217-3212 34t 20 DP Aluminium Ball Shifter Spur Gear with Bushing	£16.99
70-3173	VEXpro 217-3213 36t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£10.49
70-3174	VEXpro 217-3214 36t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£10.49
70-3175	VEXpro 217-3215 42t Aluminium Spur Gear 20 DP with 3/8" Hex Bore	£11.49
70-3176	VEXpro 217-3216 42t Aluminium Spur Gear 20 DP with 1/2" Hex Bore	£11.49
70-3177	VEXpro 217-3217 48t Aluminium Spur Gear 20 DP with 3/8" Hex Bore & VersaKeys	£15.49
70-3178	VEXpro 217-3218 48t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£15.49
70-3179	VEXpro 217-3219 50t 20 DP Aluminium Ball Shifter Spur Gear with Bushing	£21.49
70-3180	VEXpro 217-3220 54t Aluminium Spur Gear 20 DP with 3/8" Hex Bore & VersaKeys	£21.49
70-3181	VEXpro 217-3221 54t Aluminium Spur Gear 20 DP with 1/2" Hex Bore & VersaKeys	£21.49

GEARBOXES		
70-3005	VEXpro 217-1718 VEXpro Ball Shifter Encoder Hardware Kit	£8.49
70-3008	VEXpro 217-2428 VEXpro 2 CIM Ball Shifter 2 Stage	£84.99
70-3009	VEXpro 217-2454 Single Speed Double Reduction Standard Option 40/12 to 40/14	£62.49
70-3027	VEXpro 217-2615 VEXpro 2 CIM Ball Shifter 3 Stage	£106.49
70-3029	VEXpro 217-2616 VEXpro Ball Shifter Housing	£12.99
70-3102	VEXpro 217-2745 Single Speed Single Reduction Gearbox 64/12 3 Motor	£50.99
70-3103	VEXpro 217-2748 Single Speed Single Reduction Gearbox 72/12 3 Motor	£50.99
70-3104	VEXpro 217-2749 VEXpro Ball Shifter Ball Kit	£2.99
70-3105	VEXpro 217-2751 VEXpro Ball Shifter Hardware Kit	£5.49
70-3106	VEXpro 217-2752 Single Speed Single Reduction Gearbox 84/12 3 Motor	£50.99
70-3120	VEXpro 217-2796 VEXpro Ball Shifter 3rd Stage Bearing & Hardware Kit	£8.49
70-3121	VEXpro 217-2797 VEXpro Single Speed Housing Kit	£12.99
70-3137	VEXpro 217-2893 VersaPlanetary CIM Motor Output Shaft Kit	£8.49
70-3138	VEXpro 217-2894 VersaPlanetary 3/8" Hex Output Shaft Kit	£8.49
70-3139	VEXpro 217-2895 VersaPlanetary 1/2" with 1/8" Keyway Output Shaft Kit	£8.49
70-3140	VEXpro 217-2897 VersaPlanetary 1/2" Hex Output Shaft Kit	£11.99
70-3161	VEXpro 217-3141 VersaPlanetary Dual Motor Input Gearbox	£12.99
70-3162	VEXpro 217-3195 3 CIM Ball Shifter Gear-box (No Cylinder)	£84.99
70-3164	VEXpro 217-3198 CIM-ile	£50.99
70-3197	VEXpro 217-3250 3 CIM Ball Shifter Housing Kit	£12.99
70-3198	VEXpro 217-3253 CIM-ile Housing Kit	£8.49
70-3199	VEXpro 217-3254 VersaPlanetary Dual Motor Input Housing Kit	£8.49
70-3211	VEXpro 217-3267 3 CIM Ball Shifter Hardware Kit	£5.49
70-3212	VEXpro 217-3268 3 CIM Ball Shifter + 3rd Stage (No Cylinder)	£106.49
70-3213	VEXpro 217-3269 3 CIM Ball Shifter + WCD 3rd Stage (No Cylinder)	£106.49
70-3214	VEXpro 217-3271 CIM-ile Hardware Kit	£21.49
70-3215	VEXpro 217-3272 VersaPlanetary Dual Motor Input Hardware Kit	£12.99
70-3217	VEXpro 217-3287 Short Shifter Shaft 2.16 Ratio Spread	£50.99
70-3218	VEXpro 217-3288 Short Shifter Shaft 2.65 Ratio Spread	£50.99
70-3219	VEXpro 217-3289 Short Shifter Shaft 3.68 Ratio Spread	£50.99
70-3220	VEXpro 217-3290 Long Shifter Shaft 2.16 Ratio Spread	£50.99
70-3221	VEXpro 217-3291 Long Shifter Shaft 2.65 Ratio Spread	£50.99
70-3222	VEXpro 217-3292 Long Shifter Shaft 3.68 Ratio Spread	£50.99
70-3244	VEXpro 217-3421 WCP SS - Single Speed Base Kit	£63.99
70-3245	VEXpro 217-3422 WCP SS - WCD Single Speed Base Kit	£76.49
70-3246	VEXpro 217-3423 WCP DS - Dual Speed Base Kit	£226.99
70-3247	VEXpro 217-3424 WCP DS - WCD Dual Speed Base Kit	£226.99
70-3253	VEXpro 217-3433 WCP DS - WCD 3 CIM Dual Speed Base Kit	£246.99
70-3303	VEXpro 217-3564 VersaPlanetary Motor Mounting Plates with Pilot	£5.49
70-3314	VEXpro 217-3628 WCP DS - Shifter Dog Kit	£28.49
70-3315	VEXpro 217-3634 WCP Gearbox Bearing Block	£18.99
70-3318	VEXpro 217-3637 WCP DS - 3 CIM Dual Speed Base Kit	£246.99
70-3335	VEXpro 217-4018 VersaPlanetary CIM Motor Adapter	£4.49
70-3348	VEXpro 217-4098 Ball Shifter Long Output Shaft v2	£16.99
70-3349	VEXpro 217-4099 Ball Shifter Short Output Shaft v2	£16.99
70-3361	VEXpro 217-4156 Single Reduction Clamping Gearbox	£12.99

HARDWARE		
70-3091	VEXpro 217-2731 Flanged Bearing - 0.500in x 1.125in x 0.313in	£2.99
70-3093	VEXpro 217-2733 Flanged Bearing - 0.375in x 0.875in x 0.280in	£2.99
70-3094	VEXpro 217-2735 Flanged Bearing - 0.375in (Hex) x 1.125in x 0.313in	£3.49
70-3095	VEXpro 217-2736 Clamping Shaft Collar 1/2" Round Bore	£4.49
70-3096	VEXpro 217-2737 Clamping Shaft Collar 1/2" Hex Bore	£4.49
70-3097	VEXpro 217-2738 Clamping Shaft Collar 3/8" Round Bore	£4.49
70-3098	VEXpro 217-2739 Clamping Shaft Collar 3/8" Hex Bore	£4.49
70-3099	VEXpro 217-2741 Radial Bearing - 17mm x 26mm x 5mm	£4.49
70-3100	VEXpro 217-2742 Radial Bearing - 15mm x 28mm x 7mm	£4.49
70-3101	VEXpro 217-2744 Clamping Shaft Collar 8mm Round Bore	£2.99
70-3107	VEXpro 217-2753 1/2" OD Hex Stock 36" Long	£12.99
70-3108	VEXpro 217-2754 3/8" OD Hex Stock 36" Long	£11.49
70-3109	VEXpro 217-2758 1/8" Acetal Spacer 1/2 Hex 10 pack	£5.49
70-3110	VEXpro 217-2760 1/8" Key Stock	£1.99
70-3111	VEXpro 217-2761 2mm Key (5-pack)	£2.99
70-3112	VEXpro 217-2762 1/2" OD x 0.258" ID Round Tube Axle Stock 36" Long	£12.99
70-3116	VEXpro 217-2788 Radial Bearing - 0.250in x 0.375in x 0.125in	£2.99
70-3117	VEXpro 217-2789 Flanged Bearing - 0.750in x 1.375in x 0.437in	£6.99
70-3160	VEXpro 217-3109 Radial Bearing - 0.500in x 1.125in x 0.313in	£2.99
70-3193	VEXpro 217-3239 Radial Bearing - 0.375in x 0.875in x 0.281in	£2.99
70-3194	VEXpro 217-3246 Radial Bearing - 0.188in x 0.500in x 0.196in	£2.99
70-3200	VEXpro 217-3255 8mm to 1/2" Hex Adapter	£8.49
70-3201	VEXpro 217-3256 1/8" Acetal Spacer 3/8" Hex 10 pack	£5.49
70-3202	VEXpro 217-3257 1/16" Acetal Spacer 1/2" Hex 10 pack	£5.49
70-3203	VEXpro 217-3258 1/16" Acetal Spacer 3/8" Hex 10 pack	£5.49
70-3204	VEXpro 217-3259 1/4" Acetal Spacer 1/2" Hex 10 pack	£5.49
70-3206	VEXpro 217-3261 1/2" Acetal Spacer 1/2" Hex 10 pack	£5.49
70-3207	VEXpro 217-3262 1/2" Acetal Spacer 3/8" Hex 10 pack	£5.49
70-3208	VEXpro 217-3263 1" Acetal Spacer 1/2" Hex 6 pack	£5.99
70-3209	VEXpro 217-3265 2" Acetal Spacer 1/2" Hex 6 pack	£5.99
70-3210	VEXpro 217-3266 2" Acetal Spacer 3/8" Hex 6 pack	£5.99
70-3225	VEXpro 217-3309 1/2" OD Hex Stock 18" Long	£7.99
70-3226	VEXpro 217-3310 3/8" OD Hex Stock 18" Long	£6.99
70-3227	VEXpro 217-3311 1/2" OD x 0.258" ID Round Tube Axle Stock 18" Long	£8.49
70-3228	VEXpro 217-3337 Radial Bearing - 0.500in x 0.875in x 0.281in	£2.99
70-3256	VEXpro 217-3443 1" Acetal Spacer 3/8" Hex 6 pack	£5.99
70-3291	VEXpro 217-3489 Radial Bearing - 0.250in x 0.500in x 0.188in	£2.99
70-3327	VEXpro 217-3875 Flanged Bearing - 0.500in (Hex) x 1.125in x 0.313in v2	£4.49
70-3330	VEXpro 217-4006 Flanged Bearing - 13.75mm (1/2" ThunderHex) x 1.125in x 0.313in	£4.49
70-3331	VEXpro 217-4008 1/2" Hex Shaft Coupler	£16.99
70-3334	VEXpro 217-4017 1/2" Hex x 0.201" ID ThunderHex Stock 36" Long	£13.99
70-3355	VEXpro 217-4106 High Strength Clamping Shaft Collar 1/2" Hex Bore	£5.99
70-3380	VEXpro 217-4396 1/2" ThunderHex ID 1.125" OD 0.313" WD Flanged Bearing 11 Pack	£11.49
70-3433	VEXpro 217-5518 3/8" OD x 0.201" ID Round Tube Axle Stock 18" Long	£8.49
70-3434	VEXpro 217-5519 3/8" OD x 0.201" ID Round Tube Axle Stock 36" Long	£12.99
70-3437	VEXpro 217-5827 1/2" VersaHex Adapters 3/8" Hex Bore 1/8" Long 6 Pack	£4.49
70-3439	VEXpro 217-5829 3/8" ThunderHex ID 0.875" OD 0.280" WD Flanged Bearing	£2.99

SPROCKETS & CHAIN		
70-3006	VEXpro 217-1719 #25 Chain Tool	£25.49
70-3031	VEXpro 217-2627 #25 Chain 72t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£15.49
70-3032	VEXpro 217-2628 #25 Chain 66t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£13.99
70-3033	VEXpro 217-2629 #25 Chain 64t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£13.99
70-3034	VEXpro 217-2631 #25 Chain 60t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£13.99
70-3035	VEXpro 217-2632 #25 Chain 58t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£12.99
70-3036	VEXpro 217-2633 #25 Chain 54t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£12.99
70-3037	VEXpro 217-2634 #25 Chain 48t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.99
70-3038	VEXpro 217-2635 #25 Chain 44t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.99
70-3039	VEXpro 217-2636 #25 Chain 42t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.49
70-3040	VEXpro 217-2637 #25 Chain 40t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.49
70-3041	VEXpro 217-2638 #25 Chain 38t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3042	VEXpro 217-2639 #25 Chain 36t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3043	VEXpro 217-2640 #25 Chain 22t Aluminium Hub Sprocket 1/2" Hex Bore	£8.49
70-3044	VEXpro 217-2641 #25 Chain 22t Aluminium Hub Sprocket 1/2" Round Bore	£8.49
70-3045	VEXpro 217-2642 #25 Chain 16t Aluminium Hub Sprocket 1/2" Hex Bore	£6.99
70-3046	VEXpro 217-2643 #25 Chain 16t Aluminium Hub Sprocket 1/2" Round Bore	£6.99
70-3047	VEXpro 217-2644 #35 Chain 60t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£28.99
70-3048	VEXpro 217-2645 #35 Chain 54t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£23.99
70-3049	VEXpro 217-2646 #35 Chain 48t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£20.99
70-3050	VEXpro 217-2647 #35 Chain 44t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£18.99
70-3051	VEXpro 217-2648 #35 Chain 42t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£16.99
70-3052	VEXpro 217-2649 #35 Chain 36t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£13.99
70-3053	VEXpro 217-2650 #35 Chain 33t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£12.99
70-3054	VEXpro 217-2651 #35 Chain 32t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.99
70-3055	VEXpro 217-2652 #35 Chain 30t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£11.49
70-3056	VEXpro 217-2653 #35 Chain 28t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3057	VEXpro 217-2654 #35 Chain 26t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3058	VEXpro 217-2655 #35 Chain 24t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3061	VEXpro 217-2656 #35 Chain 15t Aluminium Hub Double Sprocket 1/2" Hex Bore	£13.99
70-3062	VEXpro 217-2657 #35 Chain 15t Aluminium Hub Double Sprocket 1/2" Round Bore	£13.99
70-3063	VEXpro 217-2658 #35 Chain 12t Aluminium Hub Double Sprocket 1/2" Hex Bore	£12.99
70-3065	VEXpro 217-2659 #35 Chain 12t Aluminium Hub Double Sprocket 1/2" Round Bore	£12.99
70-3066	VEXpro 217-2660 #35 Chain 15t Aluminium Hub Sprocket 1/2" Hex Bore	£12.99
70-3067	VEXpro 217-2661 #35 Chain 15t Aluminium Hub Sprocket 1/2" Round Bore	£12.99
70-3068	VEXpro 217-2662 #35 Chain 12t Aluminium Hub Sprocket 1/2" Hex Bore	£11.99
70-3069	VEXpro 217-2663 #35 Chain 12t Aluminium Hub Sprocket 1/2" Round Bore	£11.99
70-3070	VEXpro 217-2664 #25 Chain 34t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3071	VEXpro 217-2688 #35 Chain 22t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3072	VEXpro 217-2690 #25 Chain 32t Aluminium Plate Sprocket 1-1/8" Bearing Bore	£10.49
70-3113	VEXpro 217-2775 #25 Roller Chain 10'	£10.49
70-3114	VEXpro 217-2776 #35 Roller Chain 10'	£10.49
70-3154	VEXpro 217-2998 #25 Heavy Duty Master Link	£2.49
70-3290	VEXpro 217-3488 #25 Chain 18t Aluminium Hub Sprocket 1/2" Hex Bore	£6.99
70-3390	VEXpro 217-4774 #25 Heavy Duty Half Link	£2.49
70-3442	VEXpro 217-5833 #25 Chain 16t Aluminium Hub Sprocket 3/8" Hex Bore	£6.99

VERSAFRAME		
70-3216	VEXpro 217-3283 WCP SS - Output Shaft	£10.49
70-3248	VEXpro 217-3426 VersaFrame 1" x 1" x 0.040" Pre-Drilled Aluminium Tube 59" Long	£16.99
70-3251	VEXpro 217-3431 WCP Cam	£4.99
70-3252	VEXpro 217-3432 VersaBlock Kit	£21.49
70-3254	VEXpro 217-3436 WCP Side Bearing Block Kit	£21.49
70-3255	VEXpro 217-3437 VersaChassis HEX Shaft	£9.49
70-3257	VEXpro 217-3453 VersaFrame 1" x 2" x 0.100" Pre-Drilled Aluminium Tube 59" Long	£30.99
70-3293	VEXpro 217-3547 VersaFrame T Gusset 2 pack	£5.99
70-3294	VEXpro 217-3548 VersaFrame 90 Degree Gusset 2 pack	£5.99
70-3295	VEXpro 217-3550 VersaFrame Plus Gusset 2 pack	£5.99
70-3296	VEXpro 217-3551 VersaFrame 60 Degree Gusset 2 pack	£5.99
70-3297	VEXpro 217-3552 VersaFrame 45 Degree Gusset 2 pack	£5.99
70-3298	VEXpro 217-3553 VersaFrame Side Bearing Mount 2 pack	£5.99
70-3299	VEXpro 217-3554 VersaFrame End Bearing Mount 2 pack	£5.99
70-3300	VEXpro 217-3555 VersaFrame 30 Degree Gusset 2 pack	£5.99
70-3301	VEXpro 217-3556 VersaFrame 135 Degree Gusset 2 pack	£5.99
70-3302	VEXpro 217-3557 VersaChassis Gusset 8 pack	£21.49
70-3313	VEXpro 217-3627 VersaFrame Versaplane-tary Face Mount 2 pack	£5.49
70-3316	VEXpro 217-3635 WCP DS - Standard Output Shaft	£23.99
70-3317	VEXpro 217-3636 WCP DS - PTO Add-On Kit	£63.99
70-3321	VEXpro 217-3648 2014 Drive In A Day Chassis Pack (6 pieces)	£173.99
70-3322	VEXpro 217-3654 Cross Rail (2-pack)	£40.49
70-3323	VEXpro 217-3655 Chassis Accessory Rail (2-pack)	£16.99
70-3324	VEXpro 217-3656 Battery Mount Kit	£25.49
70-3325	VEXpro 217-3657 Corner Gusset (8-pack)	£16.99
70-3326	VEXpro 217-3658 Bumper Mount Angle (8-pack)	£16.99
70-3354	VEXpro 217-4104 VersaFrame 1" x 1" x 0.100" Pre-Drilled Aluminium Tube 59" Long	£21.49
70-3356	VEXpro 217-4107 VersaFrame 1" x 1" x 0.090" C-Channel 59" Length	£25.49
70-3357	VEXpro 217-4108 VersaFrame 1" x 2" x 1" x 0.090" C-Channel 59" Length	£33.99
70-3358	VEXpro 217-4109 VersaFrame 1" x 1" x 0.090" Angle 59" Length	£21.49
70-3359	VEXpro 217-4110 VersaFrame 2" x 2" x 0.090" Angle 59" Length	£29.99
70-3360	VEXpro 217-4155 Plastic Clamping Bearing Block	£6.99
70-3362	VEXpro 217-4178 VersaFrame 1" Wide VersaPlanetary Parallel Mount	£9.49
70-3363	VEXpro 217-4179 VersaFrame 2" Wide VersaPlanetary Parallel Mount	£9.49
70-3364	VEXpro 217-4180 VersaFrame 150 Degree Gusset 2 pack	£5.49
70-3366	VEXpro 217-4183 VersaFrame Face Bearing Mount 2 pack	£5.49
70-3367	VEXpro 217-4238 VersaFrame Corner Gusset	£7.99
70-3368	VEXpro 217-4239 VersaFrame VersaPlane-tary Side Mount	£9.49

VERSAROLLERS		
70-3488	VEXpro 217-5895 VersaRoller Hub 1/2" Hex Bore x 1-1/8" OD Aluminium	£4.49
70-3489	VEXpro 217-5896 VersaRoller Hub 1/2" Hex Bore x 1-1/8" OD Plastic	£3.49
70-3490	VEXpro 217-5897 VersaRoller 1/2" Hex Hub Insert 5/16-18 Tapped Hole	£3.49
70-3491	VEXpro 217-5898 VersaRoller 1/2" Hex Hub Insert 1/2" Hex Shaft x 7/8" Long	£4.49
70-3492	VEXpro 217-5899 VersaRoller 1/2" Hex Hub Insert 1/2" Hex Shaft x 2-1/2" Long	£5.99
70-3493	VEXpro 217-5900 VersaRoller 1/2" Hex Hub Insert 3/8" Hex Shaft x 2-5/8" Long	£6.99
70-3494	VEXpro 217-5901 VersaRoller Tube 1-1/4" OD x 1-1/8" ID x 1/16" Wall Aluminium 59"	£21.49
70-3495	VEXpro 217-5902 VersaRoller Tube 1-1/8" OD x 1-1/4" ID x 1/16" Wall Plastic 36"	£12.99
70-3510	VEXpro 217-6019 1.126" Carbide Tipped Chucking Reamer	£84.99

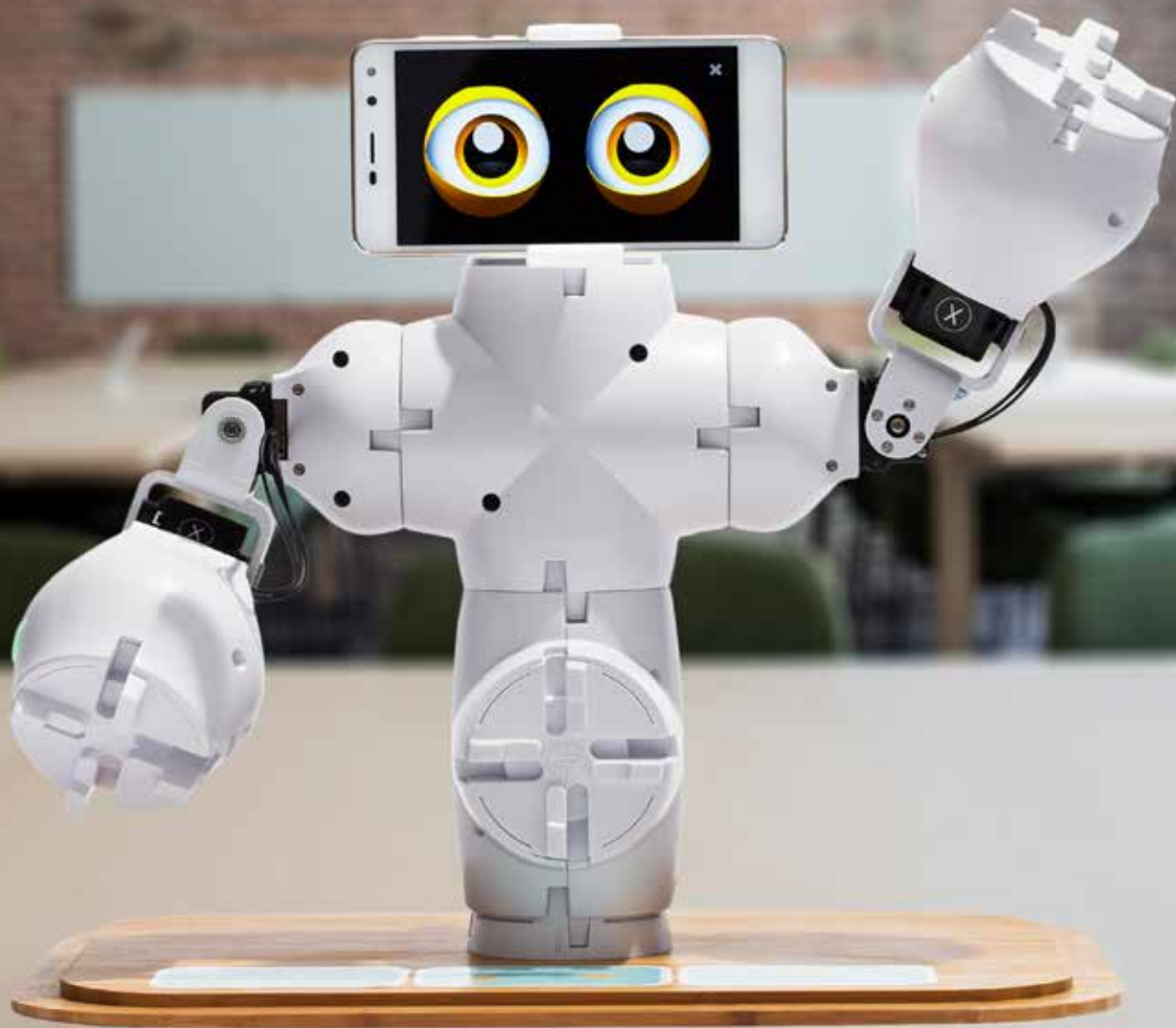
WHEELS & HUBS		
70-3004	VEXpro 217-0396 Tread Attachment Rivet 13 pack	£1.25
70-3012	VEXpro 217-2585 6" Omni Wheel	£25.49
70-3013	VEXpro 217-2586 6" Mecanum Wheel Right	£42.49
70-3014	VEXpro 217-2587 8" Mecanum Wheel Right	£62.49
70-3016	VEXpro 217-2588 4" Traction Wheel	£13.99
70-3017	VEXpro 217-2589 6" Traction Wheel	£15.49
70-3018	VEXpro 217-2590 VersaHub 1/2" Round Bore 1/8" Keyway Aluminium	£7.99
70-3021	VEXpro 217-2592 VersaHub 1/2" Hex Bore Aluminium	£7.99
70-3022	VEXpro 217-2605 8" Traction Wheel	£16.99
70-3023	VEXpro 217-2613 8" Omni Wheel	£25.49
70-3122	VEXpro 217-2799 6" Mecanum Wheel Left	£42.49
70-3123	VEXpro 217-2801 8" Mecanum Wheel Left	£62.49
70-3129	VEXpro 217-2859 4" Traction Tyre 1/2" Wide 2 per Kit	£4.49
70-3130	VEXpro 217-2860 6" Traction Tyre 1/2" Wide 2 per Kit	£5.99
70-3131	VEXpro 217-2887 1" Wide Roughtop Tread 10ft long	£12.99
70-3132	VEXpro 217-2888 1.5" Wide Roughtop Tread 10ft long	£16.99
70-3133	VEXpro 217-2889 2" Wide Roughtop Tread 10ft long	£21.49
70-3134	VEXpro 217-2890 1" Wide Wedgetop Tread 10ft long	£12.99
70-3135	VEXpro 217-2891 1.5" Wide Wedgetop Tread 10ft long	£16.99
70-3136	VEXpro 217-2892 2" Wide Wedgetop Tread 10ft long	£21.49
70-3141	VEXpro 217-2903 VEXPro Versa Wheel 4"	£5.49
70-3143	VEXpro 217-2938 6" Mecanum Roller Kit Right	£15.49
70-3144	VEXpro 217-2939 6" Mecanum Roller Kit Left	£15.49
70-3145	VEXpro 217-2940 8" Mecanum Roller Kit Right	£16.99
70-3146	VEXpro 217-2941 8" Mecanum Roller Kit Left	£16.99
70-3163	VEXpro 217-3197 VersaWheel 4" Diamond Tread	£5.99
70-3167	VEXpro 217-3202 VersaWheel 3.25" Diamond Tread	£5.99
70-3192	VEXpro 217-3238 VersaWheel 3.25" Diamond Tread 1/2" Hex Bore	£5.99
70-3249	VEXpro 217-3429 Colson Dead Hub	£15.49
70-3250	VEXpro 217-3430 Colson Live Hub	£9.99
70-3311	VEXpro 217-3605 4" Mecanum Wheel Rollers Right	£13.99
70-3312	VEXpro 217-3606 4" Mecanum Wheel Rollers Left	£13.99
70-3319	VEXpro 217-3644 4" Mecanum Wheel Right	£25.49
70-3320	VEXpro 217-3645 4" Mecanum Wheel Left	£25.49
70-3336	VEXpro 217-4045 Colson Performa (1.625" x 0.875", 1/2" Hex bore)	£4.49
70-3337	VEXpro 217-4046 Colson Performa (2.5" x 1.25", 1/2" Hex bore)	£5.99
70-3338	VEXpro 217-4047 Colson Performa (3" x 0.875", 1/2" Hex bore)	£5.99
70-3339	VEXpro 217-4048 Colson Performa (3.5" x 1.25", 1/2" Hex bore)	£11.49
70-3340	VEXpro 217-4049 Colson Performa (4" x 0.875", 1/2" Hex bore)	£12.99
70-3341	VEXpro 217-4050 Colson Performa (3" x 1.5", 1/2" Hex bore)	£12.99
70-3342	VEXpro 217-4051 Colson Performa (4" x 1.5", 1.1875" bore)	£8.49
70-3343	VEXpro 217-4052 Colson Performa (4" x 1.5", 1/2" Hex bore)	£12.99
70-3344	VEXpro 217-4053 Colson Performa (4" x 2", 1.1875" bore)	£8.49
70-3345	VEXpro 217-4054 Colson Performa (4" x 2", 1/2" Hex bore)	£13.99

FULL range of VEX PRO products available

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fable



A multi-disciplinary
modular robotics system



Shape
Robotics

sales@rapidonline.com

Learning with Fable

Fable is a modular robotics construction set, that can be used across STEM subjects, and it helps students gain the skills they will need in the 21st century.

Innovation

Fable is an open-ended system with advanced functionality. Fable encourages students to be both creative and innovative as they build robot prototypes to meet needs in the real world.

Programming

It's easy for students to start programming using a simple block-based language. Once students have mastered the basics, they can use Python to write more advanced programs and further their coding skills.

Maths

Good robot control is best achieved by applying mathematics. Robotics brings topics such as angles, percentages, trigonometry and functions to life.

Physics

Fable contains motors and accurate sensors that can be used in physics experiments to study forces and motion. Data can be logged and then analysed.

Hello! Class+

The Fable Hello Class+ allows 16-48 users up to 16 groups to build and program advanced robots. Order code 00-0428.

Play! Class+

Fable Play Class+ is a PLUS to have in the classroom. A complete teaching solution to have Fable spinning in the classroom, PLUS accessories to go with it! This kit includes ten Fable Spin modules, enough to ensure all students have the opportunity to maximise their learning with Fable. Order code 00-0429.

MakerSpace+

This kit is the absolute ultimate kit to explore everything the Fable Robot system has to offer. It consists of six Fable joints and six Fable Spin modules. It comes packed with all possible Fable accessories to maximise your Fable programming experience. Order code 00-0424.

Fable Facts

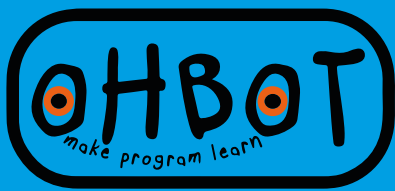
The Fable system consists of three types of modules: joint modules, construction modules and extension modules. Programming is via a bluetooth dongle.

- **Robust** design that is strong enough for use in education environment
- **Quality** components with powerful motors and accurate sensors
- **No wires** or cables: wireless programming and rechargeable batteries
- **Strong** magnetic joints, easily clicked together
- **Quick** to build up and pack away, leaving more time for teaching
- **Unique** open-ended system, which can be extended with LEGO® and your own 3D-prints



For more details visit www.rapidonline.com/fable





JESTERBOT

Robots aren't very good at writing jokes. Or at least not ones that humans find funny. But they can perform jokes that us humans have written.

Here's how to program an Ohbot robot head to deliver hilarious Jokes when its nose is touched and it senses, the lights are down and the audience is ready for Jesterbot!

WHAT YOU WILL NEED:

- An Ohbot robot (available either as a kit or preassembled)
- Ohbot light, tilt and touch sensor pack
- A computer with sound. For Windows, install the Ohbot app.

For any other computer, use our Scratch environment or Python. More information on www.rapidonline.com/ohbot.

WHAT YOU HAVE TO DO:

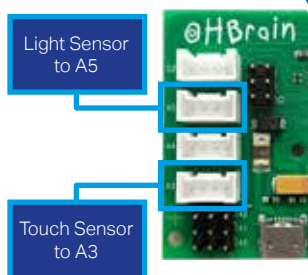
1

Fix the Touch sensor to the back of Ohbot's nose.



2

Connect the Touch sensor to socket A3 and the Light sensor to socket A5 on the Ohbrain control board.



3

Make Ohbot deliver the hilarious lines when its nose is touched



Try:
Press the Space Key then touch Ohbot's nose.

4

Make Ohbot's lips move as it speaks



Try:
Press the Green Flag to run the script. Then press Space and touch Ohbot's nose.

5

Make Ohbot wake up when it is dark and sleep in the light



GO BEYOND

Give Ohbot a comedy routine. The speech database block allows Ohbot to have a longer repertoire. Selecting random will make the joke different every time:



Use a microphone and speech recognition to get feedback from its audience.



WHY DID THE ROBOT CROSS THE ROAD?

BECAUSE HE WASN'T CHICKEN - ROBOTS HAVE NO EMOTIONS YOU SEE. HA HA HA!

Ohbot is behaving like a puppet here, performing the lines rather than writing the jokes itself. Getting a robot to write (funny) jokes is much more difficult than getting it to deliver them. We wonder if you could find a way?