# Rapid
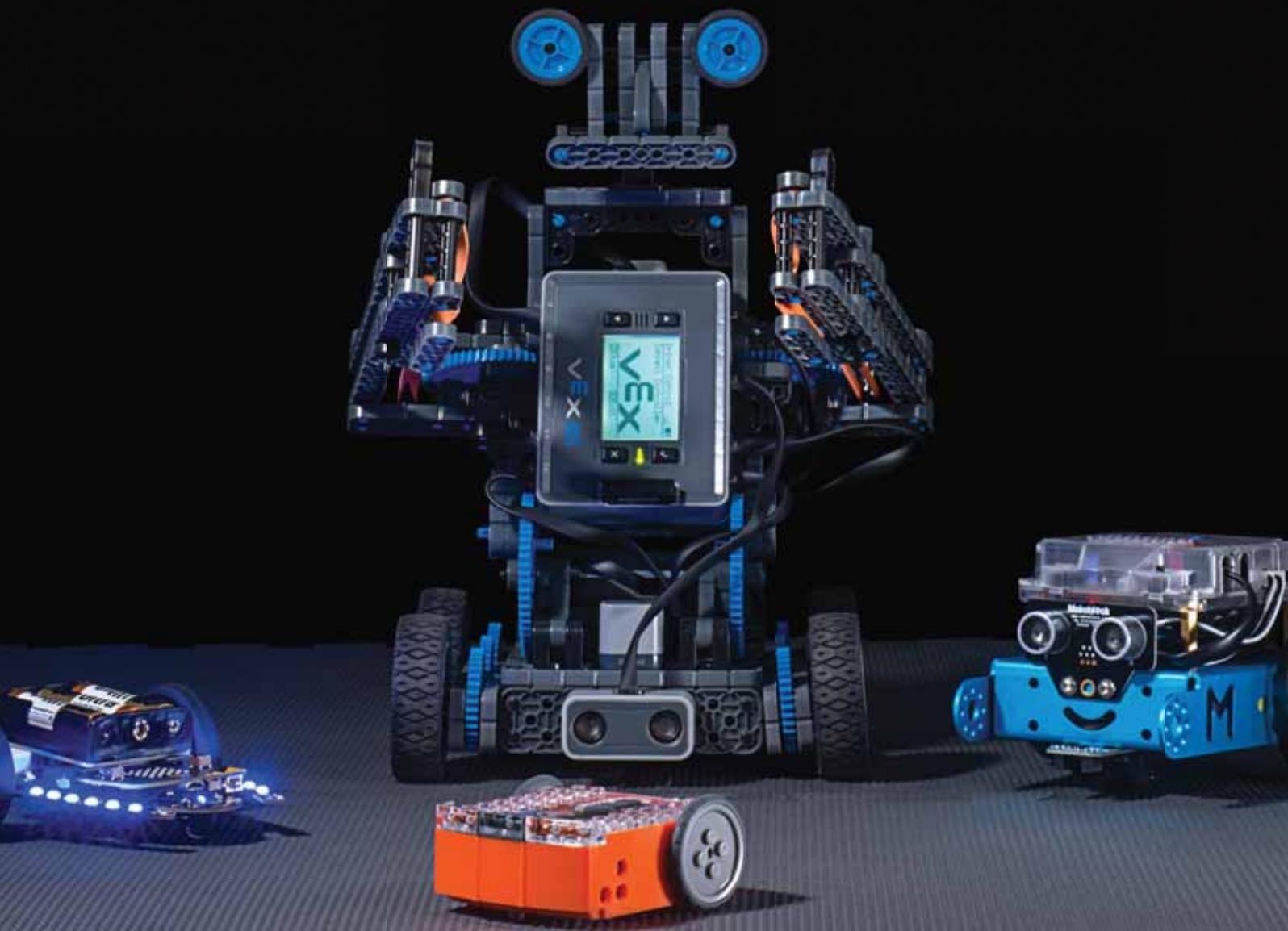
## education

# www.rapidonline.com

Rapid Education part of the CONRAD Group

# VEX Robotics Competition – In the Zone

The 2017/18 VEX Robotics Competition is here! Introducing "In the Zone".

## THE AIM OF THE GAME

In the Zone is played on a 12ft x 12ft (3.6m x 3.6m) square field configured as shown. Two alliances – one "red" and one "blue" – composed of two teams each, compete in matches consisting of a fifteen second autonomous period designed to test students coding skills followed by one minute and forty-five seconds of driver-controlled play.
The object of the game is to get a higher score than the opposing alliance by stacking cones on goals, by scoring the mobile goals in goal zones, by having the highest stacks, and by parking robots on the coloured tiles at the end of the match.

### For ages 11 to 18

# VEX IQ Challenge – Ringmaster

The 2017/18 VEX IQ Challenge is "Ringmaster".
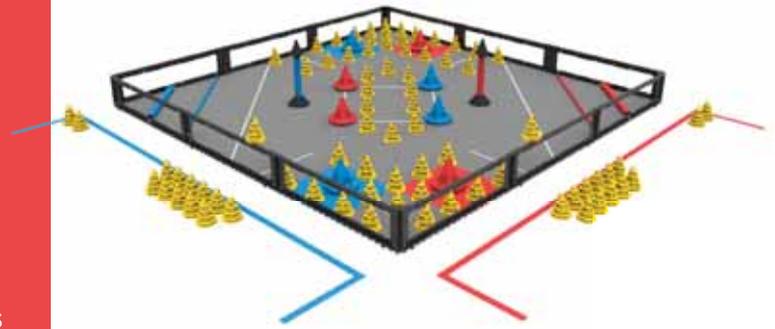
## THE AIM OF THE GAME

Ringmaster is played on a 4ft x 8ft (1.2m x 2.4m) rectangular field configured as shown. Two robots compete in the Teamwork Challenge as an alliance in 60 second long teamwork matches, working collaboratively to score points. Teams also compete in the Robot Skills Challenge where one robot takes the field to score as many points as possible. These matches consist of Driver Skills Matches, which will be entirely driver controlled, and Programming Skills Matches, which will be autonomous with limited human interaction, pushing the coding skills of the students to the limit.

The object of the game is to get the highest score by scoring coloured rings on the floor goal and on posts, by having uniform posts where all scored rings are the same colour, by emptying starting pegs of all their rings and by releasing the rings in the bonus Tray.

### For ages 8 to 14

## HOW TO TAKE PART

**VEX:** Firstly you'll need to get some VEX equipment to build your robot with. For new teams, we recommend either the Classroom and Competition Mechatronics Kit or Super Kit as a starting point.

You'll also need some programming software – for this we recommend ROBOTC which is completely free to use.

**VEX IQ:** Firstly you'll need to get some VEX IQ equipment to build your robot with. For new teams, we recommend the Super Kit which contains everything you need.

You'll also need some programming software – for this we recommend either Modkit or ROBOTC, both of which are completely free to use

Finally, you'll need to register your team at **www.robotevents.com**. Robot Events is the organisation that manages team registrations for the VEX Robotics Competition and VEX IQ Challenge globally and is not part of Rapid. Registration costs £125 for the first team and £75 for any additional teams. When you register, you'll be sent a sample of the game elements that you need to design your robot around.

Once you are registered, you can use Robot Events to find competitions that are local to you and sign up to take part.

To find out more about how to get involved, visit **www.rapidonline.com/VEX**, **www.rapidonline.com/VEXIQ** or contact **education@rapidonline.com**.
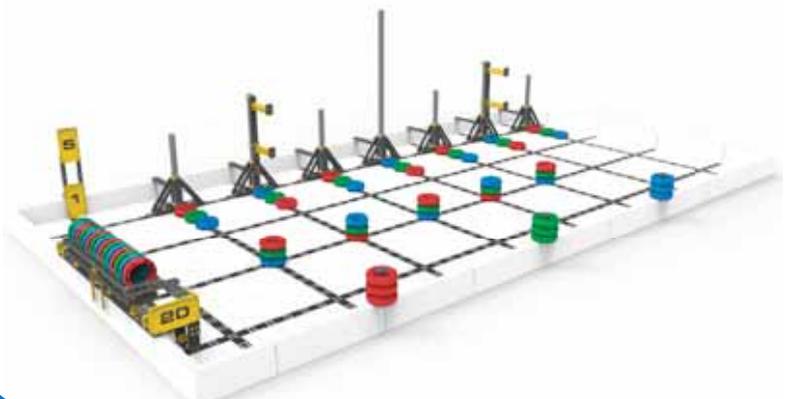
# VEX ROBOTICS COMPETITION KITS

## Mechatronics Kit

The Mechatronics Kit is a great place to start when looking for a kit from which to build your first robot. It contains everything you need including Cortex programmable microcontroller, remote control, motors, mechanical and structural parts and all required batteries and chargers.
• Cortex programmable microcontroller
• Remote control
• Hundreds of structural parts
• Wide selection of gears, chains, sprockets etc.
• A selection of wheels including 2 omni-directional wheels
• 6 motors
• Batteries, chargers and connecting cables

70-7895   **£649.99**

## Super Kit

The Super Kit has everything the Mechatronics kit has but it also adds a full set of sensors, 2 more motors and more omni-directional wheels.
• Cortex programmable microcontroller
• Remote control
• Wide range of sensors
• Hundreds of structural parts
• Wide selection of gears, chains, sprockets etc.
• A selection of wheels including 4 omni-directional wheels
• 8 motors
• Batteries, chargers and connecting cables

70-7894   **£829.99**

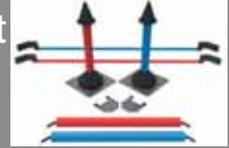A full set is comprised of 4 Game Element Kits and 1 Field Elements Kit

### Game Element Kit
70-8150
**£62.50**

### Field Element Kit
70-8151
**£124.99**

### Cone Kit
Pack of 2 cones. Ideal as spares or for practice

70-8152
**£4.99**

For a full range of add-on and spare parts, visit **www.rapidonline.com/vex**

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# VEX IQ COMPETITION KITS

## Super Kit

The Super Kit contains everything you need for your first competition robot including programmable brain, motors, sensors, lots of structural and mechanical parts, remote control, and all batteries and chargers. Everything is completely reusable year after year.
• Over 850 structural and motion components
• VEX IQ Brain
• VEX IQ Joystick and Radios
• 4x Smart motors
• 7x Sensors (2x Touch LEDs, colour sensor, distance sensor, gyro sensor, 2x bumper switches)
• All batteries, chargers and connecting cables
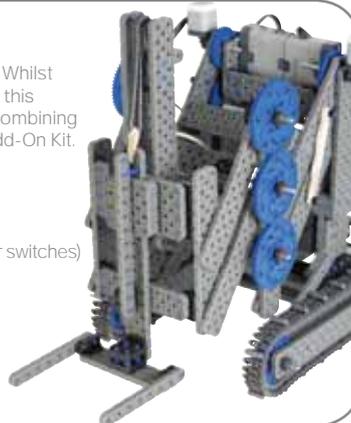• Storage bin and tray for organised storage of all parts

70-7891   **£269.99**

## Challenge Team Bundle

The VEX IQ Challenge Team Bundle is the ultimate kit for starting a VEX IQ Team. Whilst the VEX IQ Super Kit contains enough parts to build your first competition robot, this Challenge Team Bundle allows you to take your designs to the ultimate level by combining a VEX IQ Super Kit with an additional Competition Add-On Kit and a Foundation Add-On Kit.
• Thousands of structural and motion parts
• VEX IQ Brain
• VEX IQ Joystick and radios
• 6 Smart Motors (the maximum number allowed for the VEX IQ Challenge)
• 7 Sensors (2x Touch LEDs, colour sensor, distance sensor, gyro sensor, 2x bumper switches)
• 16 Wheels (including omni-directional)
• Chain and Sprocket Kit
• Tank Tread/Intake Kit
• All batteries, chargers and connecting cables
• 2 Storage bins and trays for organised storage of all parts

70-7953   **£399.99**

### Full Field and Game Element Set
70-8155
**£79.99**

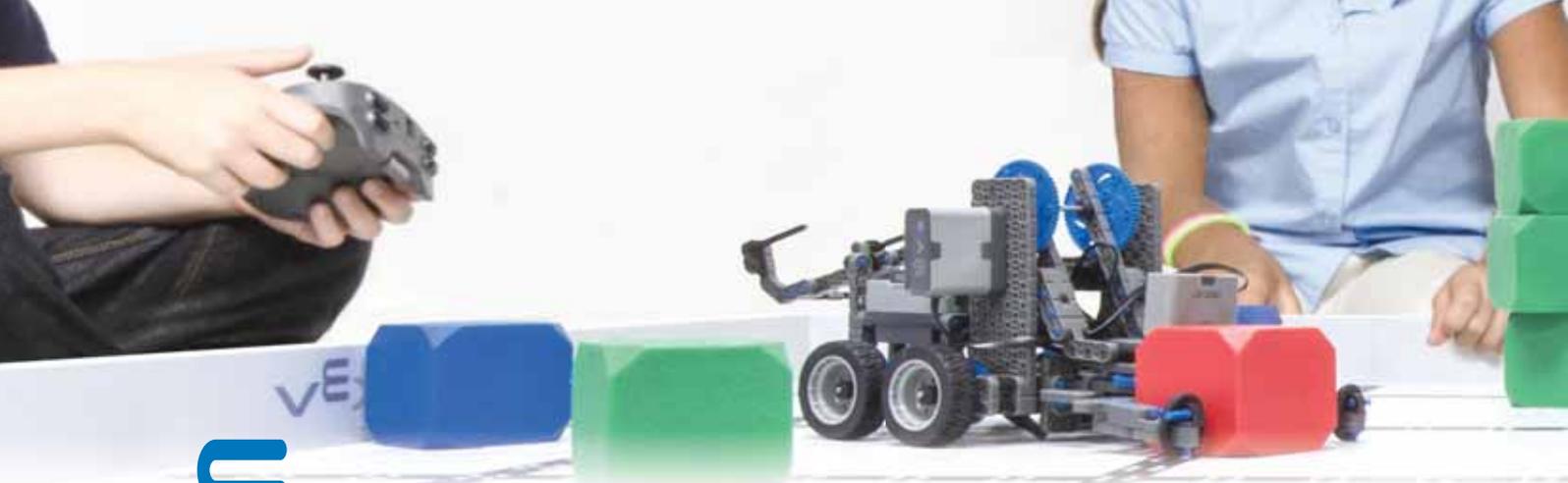### Full Field Perimeter and tiles
70-7935
**£174.99**

### Game Element Kit
Pack of 3 rings. Ideal as spares or for practice

70-8156
**£2.99**

For a full range of add-on and spare parts, visit **www.rapidonline.com/vexiq**

# VEX IQ

## SIMPLE

Designed to be easy for young students to use. Tool-less, snap-together pieces mean that students as young as 8 can build and drive fun robots like the Clawbot IQ or Armbot IQ in minutes. Plus, the free VEX IQ curriculum available from **www.vexcurriculum.co.uk** provides a comprehensive introduction to STEM principles from the ground up.

## FLEXIBLE

VEX IQ takes the complications out of robot design and construction. With 850+ pieces in each of the affordable yet extensive Starter Kits, students will be able to hit the ground running. New creations can be driven with a gamepad-style controller, run autonomously using advanced sensors, or a combination of both with the Super Kit.

### Super Kit

The ultimate all-encompassing introduction to STEM and robotics; contains both a controller and advanced sensors.

| | |
|---|---|
| 850 | Structural Components |
| 1 | Robot Brain & Battery |
| 4 | Smart Motors |
| 7 | Sensors* |
| 1 | Controller & Battery |
| 2 | 2.4 GHz Radios |
| 1 | Storage Bin & Tray |
| 1 | Programming software |

70-7891
## £269.99

✔ **IDEAL FOR COMPETITION**

*2x Bumper Switches, 2x Touch LEDs, 1x Colour Sensor, 1x Gyro Sensor, 1x Distance Sensor

## POWERFUL

Unleash the potential of educational robotics with VEX IQ. Whether it's the ability to use up to 12 Smart Motors or sensors at once, make chain or tank tread fit any length, swap gears and stay perfectly on pitch, or choose between two FREE software options designed specifically for budding programmers, your students won't grow out of VEX IQ any time soon.
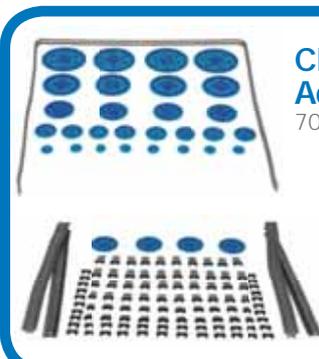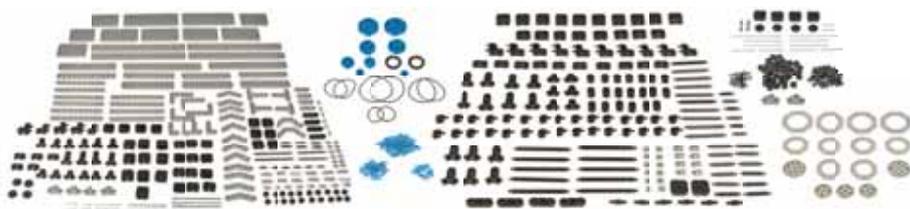
### Chain & Sprocket Add-on Kit
70-7921  **£15.99**

### Omni-Directional Wheel
70-7926 **£7.99**

### Tank Tread & Intake Kit
70-7922  **£19.99**

### Wheel Kit
70-7925  **£14.99**

2

The VEX IQ Classroom Bundles are designed to support classroom learning by providing enough equipment to support groups of 10, 20 or 30 students working in groups of two.

Each pair will have a VEX IQ Super Kit containing a VEX IQ Brain, Controller, 4 motors, 7 sensors and 850 structural parts as well as all batteries, chargers and download cables. Each kit is supplied in a stackable storage bin for easy storage at the end of each lesson.

The ROBOTC and Modkit programming languages are included with all VEX IQ starter kits and bundles. This means that absolutely everything you need to design, build and program robots is included.

All kits are supplied with Highrise cubes for use in your own classroom competitions. The 30 student bundle also includes a full VEX IQ Challenge field which can be built or packed away in minutes.

• Use the included Modkit or ROBOTC software to program your robots
• Classroom Curriculum available to download from www.vexcurriculum.co.uk
• Kits can also be used to enter the national VEX IQ Challenge
• All kits include batteries, chargers and storage boxes for every robot

| | Group Bundle | Small Class Bundle | Classroom Bundle |
|---|---|---|---|
| | 70-7950 | 70-7951 | 70-7952 |
| | **£1,349.99** | **£2,699.99** | **£3,999.99** |
| No. of students | 10 | 20 | 30 |
| Super Kits | 5 | 10 | 15 |
| Highrise Cubes | 18 | 36 | 36 |
| IQ Challenge Field | No | No | Yes |

## Starter Kit with Controller

Everything you need to start building a robot that can be driven by a human or controlled autonomously.

| | |
|---|---|
| 850 | Structural Components |
| 1 | Robot Brain & Battery |
| 4 | Smart Motors |
| 2 | Bumper Switches |
| 1 | Controller & Battery |
| 2 | 2.4 GHz Radios |
| 1 | Storage Bin & Tray |
| 1 | Programming software |

70-7893
**£219.99**

✔ **IDEAL FOR CLASSROOM**

## Starter Kit with Sensors

Everything you need to start building a robot that can be controlled autonomously using advanced sensors.

| | |
|---|---|
| 850 | Structural Components |
| 1 | Robot Brain & Battery |
| 4 | Smart Motors |
| 2 | Bumper Switches |
| 2 | Touch LEDs |
| 1 | Colour Sensor |
| 1 | Gyro Sensor |
| 1 | Distance Sensor |
| 1 | Storage Bin & Tray |
| 1 | Programming software |

**CLAWBOT IQ**
Instructions included in all Starter Kits

70-7892
**£219.99**

## Foundation Add-On Kit

The ideal kit for expanding a VEX IQ collection. Contains over 850 structural and motion components to build additional robot mechanisms or teach more lessons. Includes storage bin and tray.

70-7903
**£74.99**

**Smart Motor x2**
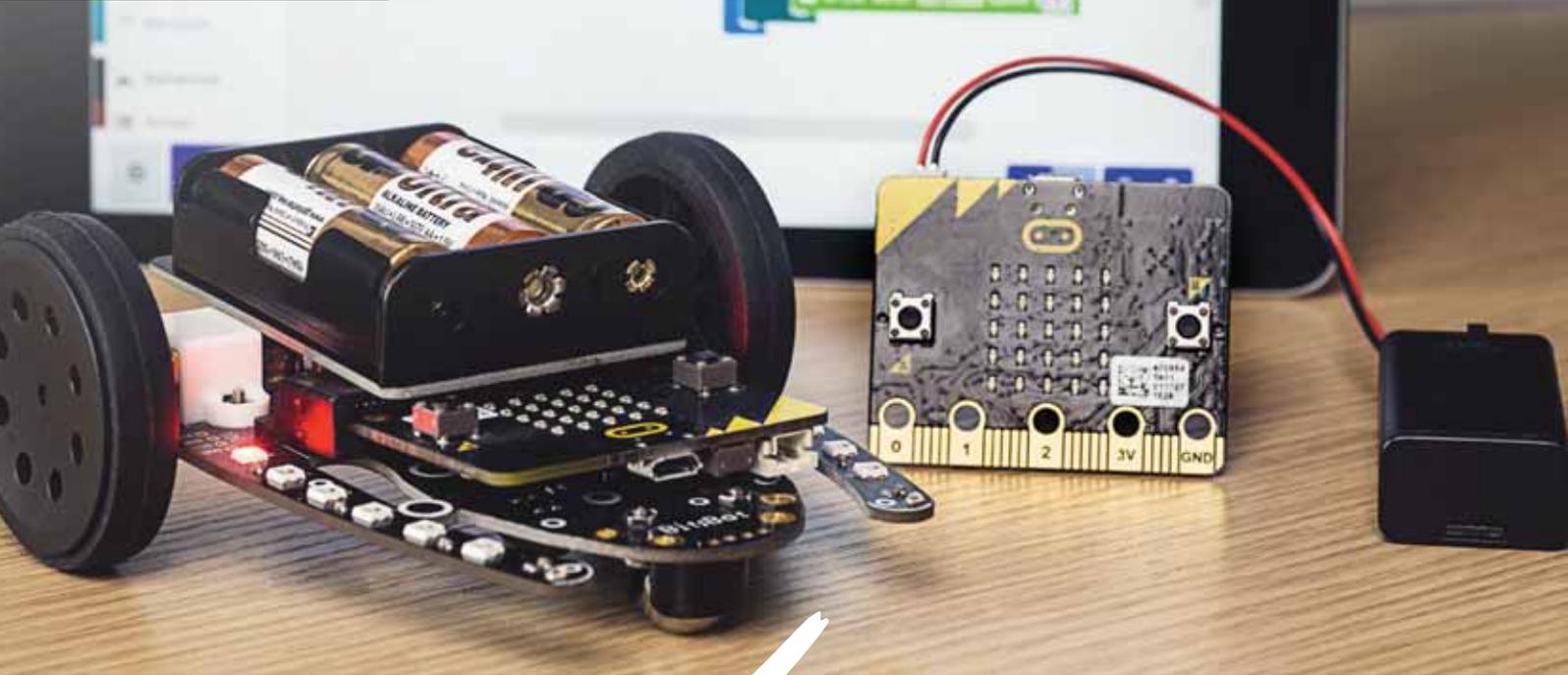70-7911 **£14.99**

## Competition Add-On Kit

The best VEX IQ expansion bundle for competitive teams. Complements a Super Kit with the advanced motion components needed to gain a competitive edge.

**SAVE £13.95** on buying separately

70-7940
**£74.99**

# PROJECT IDEA ✔

## Here is a fun little project to control your Bit:Bot remotely using another micro:bit.

There are loads of ways of achieving this but this is a really simple one to get you started. Once you have mastered the basics, you can try adding reverse or perhaps use the addressable LEDs to greater effect!

What you will need:
• A Bit:Bot fitted with a micro:bit and 3 AA batteries
• A second micro:bit and battery box with 2 AAA batteries
• A computer and access to the micro:bit webpage

This example uses the JavaScript block editor to create the program. Head over to **microbit.org** and click on **Let's Code**. Then choose the **JavaScript Blocks Editor**.

You are going to need to create two programs – one to run on the standalone micro:bit (which will act as your remote control) and one to run on the Bit:Bot. We'll do the program for the remote control first. This program is made up of 2 main parts:



**micro:bit program**
(Controller)

Let's break the program down and look at what it is doing:



The micro:bit radio can be used to transmit on 256 different channels or groups – 0 to 255. This means that you can share data between many micro:bits in the same group, or in a classroom environment it can be useful to assign each student their own group number to use so that their projects do not interfere with one another. In this case, we are setting this micro:bit to operate on group 1 the moment the program starts.

Next we have a **forever loop**. This means that the instructions in the loop are executed continuously over and over until the power is turned off.



The first block is used as the speed control. The micro:bit broadcasts a message or "packet" that is made up of two parts. Firstly, it sends the string "acc" which is short for acceleration. The name of this string is up to the user to define, you can call it whatever you like. Secondly, it sends the numerical accelerometer value of the Y axis, i.e. tilting the micro:bit forwards and backwards.



Next we have an **if** statement that checks to see if button A on the micro:bit has been pressed. If it has, the micro:bit will broadcast a packet that contains the string "A" and the number 1. It also switches on one of the LEDs at position 0, 0 of the display using the **plot** command. This is to show the user that the button on the remote has been pressed.

If the button is not pressed (**else**), the micro:bit broadcasts a similar packet, but with a 0 rather than a 1. It also switches off the LED at position 0, 0 using the **unplot** command.



This **if** statement is very similar to the one for the A button, but instead checks the B button and broadcasts a slightly different packet and uses an LED at location 4,0 to tell the user that the button has been pressed.

# MICRO:BIT

The BBC micro:bit is an educational platform which is perfect for learning the basics of coding and getting started with embedded computing. It's a low cost but feature-packed device that will inspire both students and teachers to get excited, engaged and enthralled by STEM education.
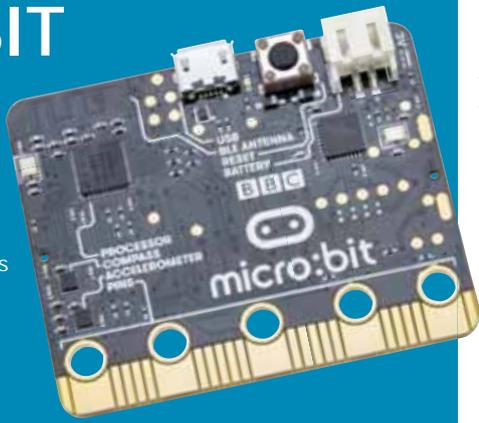
## £10.49
Order code 75-0115

### STARTER KIT
Kit includes:
1x micro:bit board
1x 1m USB download cable
1x switched battery box
2x AAA batteries

## £12.49
Order code 75-0116

### SWITCHED BATTERY BOX 2 X AAA

## £0.79
Order code 18-2899

### USB 2.O CABLE TYPE A TO MICRO B BLACK 1M

## £0.935
Order code 45-4009

# BIT:BOT

The Bit:Bot Robot is a feature-packed little robot that is almost ready to go, requiring no soldering, no wires and nothing more than a screwdriver to complete it.
• 2x motors
• Super-smooth metal ball front caster
• 12x neopixel LEDs
• 2x line following sensors
• 2x analogue light sensors
• Sounder for making beeps wherever you go!
• Expansion connections for adding the Ultrasonic Distance Sensor

*Batteries and micro:bit sold separately - see page 30 for batteries*

## £29.75
Order code 75-0117

### SOCKETED ULTRASONIC SENSOR
## £3.00
Order code 75-0121

### SOLDERED ULTRASONIC SENSOR
## £3.00
Order code 75-0119

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Now let's take a look at the program for the micro:bit that is on the Bit:Bot robot. This program is made up of 3 main parts.

**bit:bot program**

You might have noticed that the program uses some bright green blocks that aren't in the normal command set. This is because Bit:Bot has its own library of commands. To access them, you need to add the library by clicking **Add Package**. In the search box, type BitBot and then click on the **BitBot** package to add it to the list of commands.

Firstly, the micro:bit on the robot needs to be set to the same group as the remote control.

This part of the program looks for an incoming signal sent from another micro:bit. It is looking for a packet of data made up of a string and a number value which will temporarily be stored in variables called **name** and **value**.

If the string received is **"acc"** (remember we used this to represent the accelerometer value) then the numerical value is stored in a variable called **speed**. We'll use this later to tell our robot how fast to go.

If the string received is **"A"**, we know this is the data from button A being pressed which will be either 0 or 1. This value is stored in a variable called **A**.

If the string received is **"B"**, we know this is the data from button A being pressed which will be either 0 or 1. This value is stored in a variable called **B**.

The **forever** loop part of the program is the part that makes the robot actually move and it also lights up some of the NeoPixel LEDs around the edge of the robot.

The first command in the **forever** loop is **show leds**. You need to use this command every time you want the LEDs to change state.

The first **if** statement is checking to see if the variable **A** is equal to 1 (i.e. button **A** is pressed). If A = 1 then the pixel at address 0 is set to green. Don't forget, it won't actually change colour until the program gets back to the **show** command.

The **drive** block controls the speed and direction of the left motor – a positive number makes it go forwards and a negative number makes it go backwards. If A does not equal 1, then the button is not pressed so the speed is set to zero so the wheel stops and the pixel is set to red.

The second **if** statement is almost identical to the first, but it looks to see if the **B** button is pressed and controls the right wheel rather than the left.

Visit **www.rapidonline.com/BitBot** to download the example .hex files and see a video of the remote control bit:bot in action!

## Pi2Go Raspberry Pi Robot Inc. Motors, Sensors and Driver Board

Order code
75-0283
**£55.00**

If you're hungry for some robot action then the Pi2Go is the beast for you. The Pi2Go is the complete robot for use with your Raspberry Pi and supports all models (except the very first release, which has no mounting holes): Model A, Model B, Model A+, Model B+, Pi 2 Model B and Pi 3 Model B. Assembly is quick and simple, with no separate chassis - everything is connected to the main circuit board. There is no soldering or gluing required, the assembly just screws together.

For software, a python library module is available that has some example programs that will demonstrate:

• Move motors forwards, backwards, spin left/right or do sweeping turns
• Read the values from all the IR sensors (On or Off)
• Read the distance using the ultrasonic sensor
• Read the value of the switch
• Set the RGB LEDs to any colours you want
• Set the position of each servo

Visit the Pi2Go website for assembly details, software downloads and news updates.

*Note: Raspberry Pi and batteries not included.*

## Picon Zero Intelligent Robotic Controller for Raspberry Pi Zero

Order code
75-0285
**£13.30**

The Picon Zero is an intelligent robotics controller designed for your Raspberry Pi Zero. It supports all models of Raspberry Pi with a 40-pin connector (Zero, Model A+/B+ and Pi 2 or 3 Model B). The built-in processor handles all the direct communication with your input and output devices, leaving you to worry about the overall control with your Raspberry Pi program.
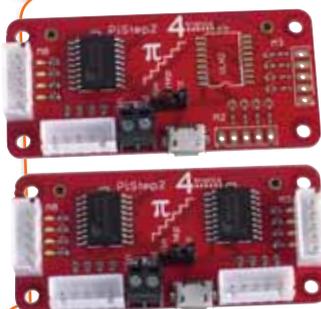
## RoboHAT Robotics Controller Board for Raspberry Pi

Order code
75-0284
**£19.95**

The RoboHAT is the complete robotics controller for your Raspberry Pi based mobile robot. The board supports all models of Raspberry Pi that have the 40-pin connector (Model A+/B+, as well as Pi 2 and 3 Model B).

• Supplied fully assembled
• Perfect with Pi
• Python library module for super-easy use

## PiStep2 Dual/Quad Stepper Motor Controllers for Raspberry Pi

Dual
Order code
75-0288
**£8.00**

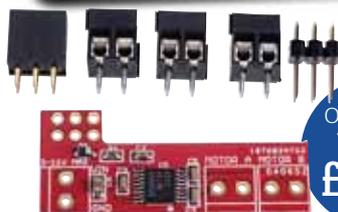Quad
Order code
75-0289
**£10.50**

These stepper motor control boards are designed for use with all versions of the Raspberry Pi with the 40-pin GPIO connector. The boards are available in dual (2 steppers) or quad (4 steppers) versions.

• Fully assembled - no soldering required
• Raspberry Pi Zero form factor
• Each pin has an associated LED to see stepper signals

Note: Stepper motors and Raspberry Pi not included.

## PZM Motor Controller Shim for Raspberry Pi Zero

Order code
75-0286
**£5.00**

The PZM Pi Zero Motor Shim is a brilliant way of adding motor control to (almost) any Raspberry Pi project. Although specifically designed for use with the Raspberry Pi Zero, the board can be used with any other Pi.

• PZM Shim supplied ready assembled
• Mount with supplied headers
• Or solder directly to bottom of Pi header
• Reverse polarity protection

## Educational Traffic Light for Raspberry Pi

Order code
75-0287
**£2.95**

The Pi-Stop is an educational traffic light project for Raspberry Pi. The low cost hardware module is designed to allow you to use your Raspberry Pi to take the first steps into interfacing with the real world. You'll be on the first rung of the Internet of Things ladder as soon as the lights change to green. The brilliant thing about the Pi-Stop is the familiarity of the elements, everyone knows what they are and how they can be used.

*Note: Raspberry Pi not included.*
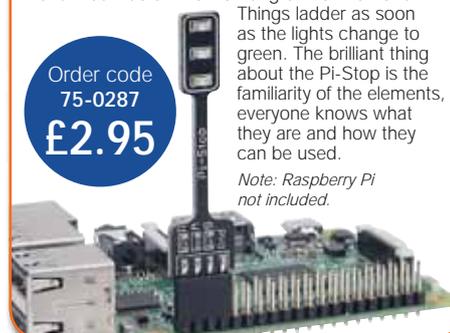
## Ultimate Initio 4WD Robot Platform for Raspberry Pi with RoboHAT

The Ultimate Initio is a 4WD robot platform that is ideal for use with Raspberry Pi single board computers. The platform is a doddle to assemble and easy to use and comes with the RoboHAT robotics board and an assembled 2DOF pan-tilt servo assembly, as well as a number of other sensors that make this platform extremely flexible and perfect for a wide range of projects.

The main chassis comes pre-built, with the wheels, motors, gearboxes, battery box and wheel sensors all in place. The powerful 170-size motor is coupled to a high-quality gearbox and there are built-in speed encoders on each side. Each wheel can be individually decoupled from the gearbox so you can run the robot in 1WD, 2WD or 3WD modes if you want.

Kit contents:
• Main Initio chassis (with wheels, motors, gearboxes, battery box, wheel sensors, screws and all mountings)
• RoboHAT Robotics Controller Board 75-0284
• Pan-Tilt 2DOF assembly with servos (ready assembled)
• 2x IR Obstacle sensors
• 2x IR Line sensors
• 1x Ultrasonic sensor
• All connecting cables as required for above items
• Build instructions and example code can be found on the 4tronix website

*Note: Raspberry Pi and batteries not included.*

Order code
75-0282
**£95.00**
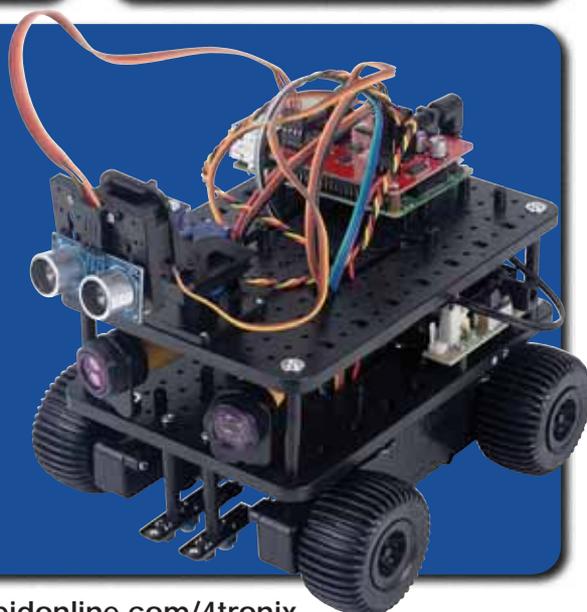
For full details and to see our full range of 4Tronix products visit **www.rapidonline.com/4tronix**
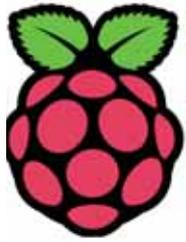
# Raspberry Pi®
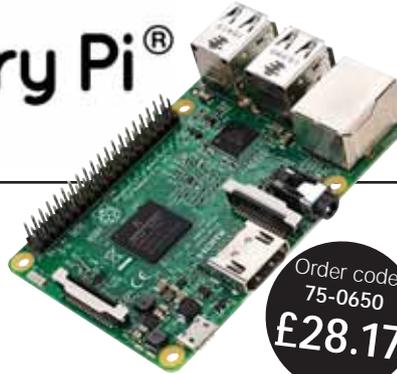
## Raspberry Pi 3 Model B 1.2GHz Quad Core 1GB RAM WiFi and Bluetooth

Order code 75-0650
**£28.17**

If your Internet connection was a bit slow on February 29th 2016 it was because the new Raspberry Pi 3 went on sale. The Raspberry Pi Foundation has persuaded their chip supplier, Broadcom, to build them a new processor with a 64-bit Cortex A-52 quad-core CPU running at 1.2GHz. They've also increased the speed of the RAM and the video processor (GPU) while keeping full code compatibility with the Pi 2. The Pi 3 is a complete drop-in replacement for the Pi 2 in fact, it fits the same cases, has all the same ports and GPIO pins, only a few LEDs have moved.

- 50% performance boost over the Pi 2
- Built-in Wi-Fi 802.11n and Bluetooth 4.1
- Fully compatible with the Pi 2 and Pi B+
- Learn to code with free tutorials
- Learn electronics with hundreds of add-on boards
- Play retro-games on your HDTV (HDMI)
- 1Gbyte RAM, supports up to 32Gbyte micro-SD cards
- 4 x USB 2.0 ports, 10/100 ethernet port
- Require 5V micro-USB power supply
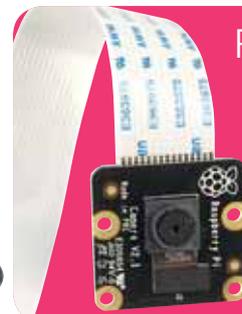
## Raspberry Pi Basic Student Kit

Order code 75-0692
**£58.81**

The Raspberry Pi 3 model B is the third generation of Raspberry Pi single board computers that introduces on-board WiFi and Bluetooth and has many features that make the Pi easy to use and versatile in its applications, such as USB ports for device and peripheral connection and a HDMI output for HDTVs.

To help users get started Rapid has produced a basic student kit that contains a Raspberry Pi 3 model B plus a power supply, excellent Pibow case, MicroSDHC card, cables and keyboard and mouse.

For programming, the latest version of the operating system for the Raspberry Pi can be downloaded for free from **www.raspberrypi.org/downloads/**, and can be loaded onto the microSDHC card for use on the Pi.

- Kit contains everything to get started
- Easy to use
- Large online community of users

## Raspberry Pi 3 Official Starter Kit

Order code 75-0764
**£99.00**

Welcome to the world of Raspberry Pi with the Raspberry Pi 3 Official Starter Kit.

What is the Raspberry Pi 3 Official Starter Kit?

This kit contains all you need to get involved in the world of Raspberry Pi, Single Board Computers (SBC), the Internet of Things (IoT), Wi-Fi applications, and a whole lot more. You will be able to learn, experiment, design, produce, refine, program, invent, and enjoy - whether it be in the laboratory, classroom, man-cave, woman-cave, workshop or kitchen table.

- Perfect introduction to Raspberry Pi
- Everything you need to get started
- High quality construction
- ARM Cortex-A53 MCU technology
- Create many projects
- Wi-Fi and Bluetooth connectivity

## Adventures in Raspberry Pi Component Companion Kit

Order code 75-0037
**£12.88**

This kit contains a host of components suitable for prototyping work. Includes a solderless breadboard, headers, pots, switches, LEDs, buttons, resistors and cables. The kit is an ideal companion to the book 'Adventures In Raspberry Pi' by Carrie Anne Philbin.

- Suitable for any prototyping project

For full details visit **www.rapidonline.com/raspberry-pi**

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## Official Pi 3 Model B Case Red/White

Order code 75-0752
**£4.95**

## Raspberry Pi Camera Board v2 8MP 3280 x 2464

Order code 75-0530
**£18.99**

## Raspberry Pi NoIR Camera Board v2 8MP 3280 x 2464

Order code 75-0531
**£20.49**

## Plugtop PSU for Raspberry Pi 3 2.5A 5.1V

Order code 75-0715
**£5.80**

## Raspberry Pi Official HDMI Leads

- Official Raspberry Pi HDMI cable assemblies
- Black or white in 1 or 2m lengths
- Male HDMI to male HDMI

| Type | Order code | 1+ |
|------|-----------|-----|
| HDMI Lead white 1m | 75-0760 | £2.99 |
| HDMI Lead black 1m | 75-0761 | £2.99 |
| HDMI Lead white 2m | 75-0762 | £3.70 |
| HDMI Lead black 2m | 75-0763 | £3.70 |

564951

## Adventures in Raspberry Pi by Carrie Anne Philbin

Order code 97-2140
**£13.08**

# mBot V1.1

# STEM Robot Kit

The mBot is the perfect introduction to Makeblock. It's quick and easy to assemble but has plenty of sensors to keep your students interested. mbot has an ultrasonic distance sensor, can measure light levels, has a line follower and has a buzzer and RGB LED for outputs. The infrared sensors can be used to send messages and data between mBots and the robot can also be controlled with the infrared controller included in the kit (requires CR2025 coin cell).

**Do I need the Bluetooth or 2.4GHz version?**
The version you need depends on how you want to program your mBot. Essentially, the Bluetooth version is used if you want to program using an iPad or Android tablet and the 2.4GHz version is used if you want to use a Windows desktop PC, laptop or a Mac (although these can be used to program the Bluetooth version if the computer has a compatible Bluetooth feature)

| Programming Software | For device type | mBot Bluetooth | mBot 2.4GHz |
|---|---|---|---|
| mblock | Windows and Mac | ✔* | ✔ |
| Makeblock HD | Tablets – iPad3 and above or Android 4.0 and above | ✔ | ✘ |
| mBot | Smart phones - iPhone 4S and above or Android 2.3 and above | ✔ | ✘ |
| mBlocky | Tablets – iPad3 and above | ✔ | ✘ |

\* Your PC or Mac must support Bluetooth 4.0

| Order Code | Description | Price |
|---|---|---|
| 75-0701 | mBot v1.1 2.4GHz | **£71.62** |
| 75-0702 | mBot v1.1 Bluetooth | **£66.62** |
| 18-0485 | CR2025 Coin Cell | MOQ 5 **£0.402** |

## Programming your Makeblock creations

### mBlock
**Compatibility**
Windows, Mac
**Robot Compatibility**
Starter Robot, mBot, mBot Ranger, Ultimate 2.0

mBlock is a drag and drop interface based on the ever popular Scratch programming language. It's really easy to learn, very powerful and the chances are, your students have already encountered Scratch.

You can download your programs to your robot via a USB cable, using the 2.4GHz RF adaptor or over Bluetooth if your computer has a compatible Bluetooth interface.

## Add-On Kits

### mBot 6-Legged

This kit is an expansion pack for the mBot robots which allows you make a six-legged walking robot based on the mBot chassis, motors, controller and sensors. Learn about levers and linkages whilst making a creepy crawly beetle!

| Order Code | Description | Price |
|---|---|---|
| 75-0705 | mBot 6 Leg Add-on | **£20.78** |

### mBot Servo Pack

The mBot Servo Add-on pack from Makeblock lets you add extra movement to your latest mBot creation. For example, you could mount the mBot's ultrasonic range finder onto the servo allowing your bot to "scan" its environment.

Supplied with 1 x 9g servo and adaptor, 1 x RGB LED, 2 x brackets, 2 x plates, 4 x cuttable linkages, 4 x brass risers (M4 x 25), plus a spanner, cables, screws and nuts.

| Order Code | Description | Price |
|---|---|---|
| 75-0704 | mBot Servo Pack | **£20.78** |

### Me Blue LED Matrix 8x16

The Me 8 x 16 LED matrix from Makeblock lets you add bling and character to your latest mBot creation. Attach the matrix to the front of your bot and it can smile, frown and blink. Display numbers and letters or flash patterns, it's up to you. The matrix is compatible with the mBlock software and it has it's own block that lets you create simple animations or text.

| Order Code | Description | Price |
|---|---|---|
| 75-0707 | LED Matrix 8x16 | **£7.98** |

Please note: Add-On kits requires an mBot 2.4GHz or mBot Bluetooth, sold separately.

Education

Test Equipment

# VOLTCRAFT

### VC130-1 Digital Multimeter – 2000 Counts

The Voltcraft VC-130-1 is a Digital Multimeter that is a robust unit with a manual selection range. The VC-130-1 offers something for every user, and can handle measurements up to 250V.

- Diode test
- Acoustic: Continuity tester
- Non-contact AC Voltage Detector
- hFE transistor testing
  (with optional adaptor)
- Hold function
- Low battery indication
- Robust housing with soft
  rubber protection
- Supplied with Test leads,
  9V battery and manual
- Available as a **Classpack of 16**
- Manufacturer's part:
  **Voltcraft VC-130-1**

Classpack of 16 Multimeters

| Multimeter Order code **55-9059** |
|---|
| **£15.08** |

| Multimeter Classpack Order code **86-1090** |
|---|
| **£179.99** |

## UNI-T

### UT20B Series Pocket Size Digital Multimeter

This digital multimeter is a compact, light tool and a bargain if you need something cheap and reliable. The instrument has a large LCD display. This pocket-size digital multimeter, comes complete with test leads, battery.

- Power: 12V Battery A23
- LCD Size: 31 x 13mm
- Product colour: Red and grey
- Product weight: 125g
- Product size: 95 x 52 x 26mm
- Standard accessories: Test lead,
  battery, English manual
- Standard accessories: Test lead,
  battery, English manual

| Order code | 1+ | 5+ | 10+ |
|---|---|---|---|
| **85-4082** | £5.90 | £5.00 | £4.50 |

400437

# VOLTCRAFT

# DSO-1062D-VGA Digital Oscilloscope, 60MHz with VGA Interface

The Voltcraft DSO-1062D-VGA is an Entry-Level Digital Storage Oscilloscope with a VGA Interface for connection to a large screen or projector if required. This oscilloscope provides two channels with a bandwidth of 60MHz, a real-time sampling rate of 1GSa/s, and a memory depth of 512kpts per channel, which are available when using only one channel to 1Mpts.

The oscilloscope has a large 17.7cm (7 inch) colour display with a resolution of 800 x 480 pixels as well as WINDOWS-style interfaces and menus for easy operation. The oscilloscope provides context-sensitive, hyperlinks, and an index to enable you to master all operations on the device easily and quickly, improving your efficiency in production and development. It has also a VGA interface for connection to a large screen for classroom demonstration purposes.

**What's in the Box?**
Voltcraft DSO-1062D-VGA
2 probes (each 1: 1/10: 1)
Power cord
USB cable
Software
Detailed instruction manual (English)
Quick Guide (multilingual)

| Oscilloscope Order code **52-0935** | **£277.00** |
|---|---|

**Please Note:** *The oscilloscope screen is still valid when connection to a large screen is made.*

# VOLTCRAFT

## PS-1152A, 22.5W Single Output DC Bench Power Supply

At just 16cm wide, the Voltcraft PS-1152A makes an ideal basic space saving bench power supply for lower voltage ranges from 1.5V to 15V.

This electronically regulated linear power supply has a fixed current limit at 1.5A. The PS-1152A is protected against overheating and short circuit. The PSU is convection cooled.

- Overheating protection
- Short circuit protection
- Outputs: 1
- Max power: 22.5W
- Analogue display
- Convection cooled
- PSU Technology: Linear

• DC bench power supply • Manual • Power cable not included

| Order code **51-1823** |
|---|
| **£41.54** |

## Rapid

### 30V 2.5A Regulated Power Supply

The Rapid PS3025 is a new high quality, fully regulated, power supply capable of supplying up to 30V at a maximum of 2.5 amps with additional fixed 5V and 12V outputs at 500mA.

- Voltage and current outputs are individually displayed on liquid crystal displays
- Output voltage is continuously adjustable via a single control from 0 to 30V DC
- Output current limiting is fully adjustable up to 2.5A, again by a single control
- The 30V output is terminated with 4mm colour coded terminals
- The 5V and 12V outputs are terminated via a spring loaded colour coded terminal block
- All outputs are overload and short circuit protected

| Order code **85-1705** | **£91.51** |
|---|---|

## Rapid

### Dual Rail 1A Regulated Power Supply

A versatile supply offering a wide range of stabilised DC voltages in both single and dual rail mode. The use of separate 4mm terminals for each of the positive and negative outputs gives the user eleven single rail voltages ranging from 3V to 30V and thirty three dual rail voltages (symmetrical and asymmetrical) in the range 5-0-5V to 15-0-15V.

- A maximum of 1A per rail is available
- All outputs are short circuit protected
- Dimensions 140 x 125 x 240mm

| Order code **85-1715** | **£98.27** |
|---|---|

## TruConnect

### 4mm Stackable Test Leads 500mm

These banana to banana test leads are available with a lead length of 500mm. The stackable 4mm banana plugs have been machined from brass and nickel plated. They also have a moveable multi-lam contact cage spring for tight fit.

| Type | Order code | 1+ | 25+ | 100+ | 500+ |
|---|---|---|---|---|---|
| Black 4mm test lead | 17-2836 | £0.884 | £0.631 | £0.579 | £0.542 |
| Blue 4mm test lead | 17-2837 | £0.884 | £0.631 | £0.579 | |
| Green 4mm test lead | 17-2838 | £0.884 | £0.631 | £0.579 | |
| Red 4mm test lead | 17-2839 | £0.884 | £0.631 | £0.579 | £0.542 |
| Yellow 4mm test lead | 17-2840 | £0.884 | £0.631 | £0.579 | |

083063

## TruConnect

### Standard Crocodile Clip

A low cost bright metal crocodile clip. The uninsulated clip has a 4mm socket that will accept a 4mm banana plug. The wire can also be connected by means of the fitted screw or soldered in to place. The grip is very strong within its jaw opening of 8.5mm.

MOQ 10

| Type | Order code | 10+ | 100+ | 500+ | 1000+ |
|---|---|---|---|---|---|
| Standard crocodile clip | 17-2873 | £0.115 | £0.082 | £0.073 | £0.067 |

083079

## TruConnect

### Ready Assembled BNC Test Leads

| Type | Cable length | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|---|
| BNC 4mm Plugs | 1.2m | 16-0300 | £6.84 | £5.60 | £5.06 |
| BNC Croc Clips | 1.2m | 16-0315 | £4.50 | £3.66 | £3.26 |
| BNC-BNC | 1.2m | 16-0330 | £3.87 | £2.98 | £2.62 |
| BNC-BNC | 2m | 16-0340 | £4.82 | £3.70 | £3.28 |

063654

## FEETECH

### 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 (**37-1337** )

| Type | Order code | 1+ |
|---|---|---|
| FS90R 360° Servo | **37-1335** | 4.07 |
| Servo and wheel | **37-1336** | 5.10 |
| Wheel for servo | **37-1338** | 1.24 |

559636

### Mini Servo 120° Operating Speed 0.12sec/60°

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**)

| Type | Order code | 1+ | 25+ |
|---|---|---|---|
| FS90 Servo | **37-1339** | 2.63 | 2.42 |

560555

### SCS15 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 TTLinker control board is required (available separately as **37-1333**). The TTLinker is a signal conversion board. Arduino needs to convert its UART signals to the half duplex type and through TTLinker connect to SCServo. The TTLinker also has more interfaces to make provision for more sensors.

When an Arduino is being used to control the SCServo an Arduino library is required.

| Type | Order code | 1+ | 5+ | 10+ |
|---|---|---|---|---|
| SCS15 Servo | **37-1332** | 19.52 | 18.03 | 17.46 |
| TTLinker board | **37-1333** | 2.58 | | |
| 70mm Wheel and tyre | **37-1334** | 1.24 | | |
| 3-Pin servo cable | **37-1337** | 0.464 | | |

559635

## MODELCRAFT

Order code **51-2338**
**£5.77**

### Micro Servo MC1811

Affordable micro servo from Modelcraft, suitable for use as a replacement servo for ARF models or as part of the standard equipment for the hobby workshop.

- Mounting material included

Order code **49-9395**
**£5.12**

### BMS-410C Plastic Gear JR Standard Servo Analogue Servo

The Modelcraft BMS-410C Standard Servo is not only economical, but ideal for many applications in **Radio Control** modelling owing to its **standard dimensions**. It is also compatible with microcontroller systems such as PICAXE, Arduino and Raspberry Pi.

- Standard dimensions
- Includes control horn and screw
- **Modelcraft type BMS-410C**

Order code **51-1617**
**£12.48**

### Standard Servo RS2 MG/BB with Ball Bearings and Metal Gears

The Modelcraft RS2 Servo is ideal for numerous applications in the modelling field, such as radio controlled models like cars, airplanes and robots.

- Metal drive

## ≡RVFM

### Tower Pro SG90 Mini Servo

The Tower 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
- **Tower Pro type SG90**

| Type | Order code | 1+ | 25+ | 50+ |
|---|---|---|---|---|
| Mini servo | **37-1330** | 2.85 | 2.61 | 2.36 |

530144

## HiTEC

### HS Series Analog Servos

A range of analog servos from Hitec.
Visit **www.rapidonline.com** to see the full range.

Order code **64-1480**
**£6.96**
HS-322HD Carbonite

Order code **64-1479**
**£8.99**
HS-311 Plastic

## Bluebird BMS Series Digital & Analogue Servos with JR Connectors

A range of servos from Bluebird.
Visit **www.rapidonline.com** to see the full range.

Order code **64-0923**
**£14.51**
BMS-390DMH Digital

Order code **64-0902**
**£12.89**
BMS-620MG Analogue

For full details visit www.rapidonline.com

Tel: 01206 751166  Fax: 01206 751188

# seeed studio

## Mini Vibration Motor 3V Rectangular

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

- Operating Voltage: 2.2 to 3.6V DC
- Rated Voltage: 3.0V DC
- Rated Speed: 12,000  90mA max
- Stall Current: 120mA max
- Starting Voltage: 2.0V DC max
- Mechanical Noise: 50db(A) max
- Weight: 2g approx.
- Dimension: 12 x 4.6 x 4.6mm

Order code
75-0417
**£1.89**

## Mini Vibration Motor 3V 2.0mm Circular

The Mini Vibration Motor from Seeed 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

Order code
75-0416
**£0.88**

## *RVFM*
### 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 | 2.29 | 1.98 | 1.66 | 1.46 |

081728

## *RVFM*
### Single and Dual Output Shaft Inline Motor and Gearbox 1:200

A choice of either dual output shaft or single output shaft inline motor and gearbox assemblies.

The gearbox delivers a ratio of 1:200 and is made from high quality plastic. Ideal for use in the construction of robotics and other models. All you need to do is add wheels, hubs or tracks.

- Available with dual or single output shaft
- Gear Ratio: 1:200
- Power: 3 to 12V DC
- Single motor
- Without loading: 40-230mA/25-100rpm
- Output torque: 2-12kgf.cm
- Weight: 31.9g
- Size 68 x 20mm
- Shafts: 7mm diameter, 4.5mm flat edge, 5mm long
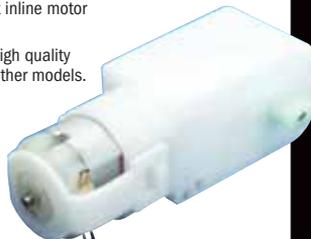
| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| Dual output shaft motor | 37-1221 | 2.27 | 1.85 | 1.70 |
| Single output shaft motor | 37-1214 | 2.27 | 1.85 | 1.70 |

119281

## *RVFM*
### Motor and Gearbox 1:220

A low-cost miniature DC motor suitable for many applications including models, robotics and educational demonstration equipment.

- Solder tag termination
- Nominal voltage: 6V DC
- Direction of rotation: Bidirectional
- Change of polarity changes the direction of the motor
- 5mm output shaft with 2 flat sides
- Gear ratio: 1:220
- Overall dimensions excluding output shaft 48 x 47 x 24mm

| Type | Order code | 1+ | 50+ | 100+ | 250+ |
|---|---|---|---|---|---|
| Motor and gearbox | 37-1216 | 2.18 | 1.98 | 1.66 | 1.46 |

180822

## *RVFM*
### 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

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Worm Drive Gearbox with Motor | 37-0310 | 2.29 | 2.03 | 1.98 |

064483

## TruMotion
### 3V, 13100 RPM DC Motor

A low-cost miniature DC motor with many applications including models, robotics and educational demonstration equipment.

- Operating voltage 1.5 to 4.5V DC
- Two flat sides make the motor ideal for mounting on a PCB
- Rotates counter-clockwise when viewed from shaft end
- Solder tag termination

| | | | MOQ 2 | |
|---|---|---|---|---|
| Type | Order code | 2+ | 25+ | 100+ |
| 3V, 13,100 rpm | 37-0140 | 0.52 | 0.408 | 0.305 |

061539

## TruMotion
### Miniature Motor 3V 5240rpm

A low-cost miniature motor offering a higher stall torque.

- Ideal for models, robotics, etc.
- Operating voltage 1.5 to 4.5V DC
- Rotates clockwise when viewed from shaft end
- Solder tag termination

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| 3V, 5240 rpm motor | 37-0142 | 0.755 | 0.564 | 0.516 |

061541

## TruMotion
### Miniature Motor 3V 8000rpm

A high torque miniature DC motor for higher power requirements.

- Operating voltage 1.5 to 6.0V DC
- Rotates clockwise when viewed from shaft end
- Solder tag termination

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| 3V, 8000 rpm motor | 37-0144 | 0.726 | 0.575 | 0.498 |

061542

## TruMotion
### Miniature Low Inertia Solar Motor 2V 1540 RPM

The TruMotion Miniature Low Inertia Solar Motor 2V 1540 RPM is a low inertia precision solar motor with a starting current making it ideal for low power applications (2V nominal).

- Direction: Clockwise
- Constant volts: 2.0V
- No load speed rpm: 2200
- No load current (A): 0.025
- Max efficiency speed (rpm): 1540
- Max efficiency current (A): 0.06
- Torque g-cm: 5.5
- Output watts: 0.05
- Stall torque g-cm: 11
- Diameter: 24mm
- Weight: 21g

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| Miniature Low Inertia Solar Motor | 37-0441 | 1.61 | 1.34 | 1.16 |

061542

## *RVFM*
### Self Adhesive Motor Mount

A push fit motor mount to suit our range of miniature motors.

- Base has self adhesive surface for easy mounting of the motor as required
- Colour may vary
- Supplied in **packs of 10**

| Type | Order code | 1+ | 10+ |
|---|---|---|---|
| Motor mount | 37-0360 | 3.06 | 2.59 |

064468

For technical specifications and data sheets visit **www.rapidonline.com**

Education    Motors

INPUT

## Miniature Light Dependent Resistor

**TruOpto**

A compact low cost cadmium sulphide light dependent resistor (LDR) housed in a small package.

- 5mm diameter

*Note: This product contains cadmium sulphide, the use of which is restricted by the RoHS directive.*

| | MOQ 5 – In Multiples of 5 | | | |
|---|---|---|---|---|
| Order code | 5+ | 25+ | 100+ | 1000+ |
| **58-0134** | 0.412 | 0.337 | 0.256 | 0.221 |

034796

## Light Dependent Resistor NORPS12

*Silonex*

Cadmium sulphide light dependent resistor (LDR).

- Housed in a robust plastic package with clear end window
- Resistance reduces as the light falling on the LDR increases

*Note: This product contains cadmium sulphide, the use of which is restricted by the RoHS directive.*

| Order code | 1+ | 25+ | 100+ | 500+ |
|---|---|---|---|---|
| **58-0132** | 1.01 | 0.852 | 0.767 | 0.651 |

034793

## NTC Disc Thermistors

A range of miniature disc thermistors for general purpose applications such as temperature measurement and thermal compensation circuitry.

| | | MOQ 5 | | | |
|---|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ | 500+ |
| 100Ω | **61-0398** | 0.384 | 0.287 | 0.229 | 0.193 |
| 300Ω | **61-0400** | 0.253 | 0.196 | 0.145 | 0.134 |
| 1kΩ | **61-0405** | 0.287 | 0.229 | 0.166 | 0.143 |
| 5kΩ | **61-0410** | 0.287 | 0.229 | 0.166 | 0.143 |
| 20kΩ | **61-0415** | 0.287 | 0.229 | 0.166 | 0.143 |
| 100kΩ | **61-0420** | 0.253 | 0.196 | 0.145 | 0.134 |

031916

## Miniature Toggle Switches

**SCI PARTS**

A range of low cost panel mounting miniature toggle switches.

- Single pole and double pole options including momentary biased options
- All switches are fully approved to **UL** and **CSA**

*For biased switches (On) indicates momentary action.*

| | MOQ 5 – In Multiples of 5 | | | |
|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ |
| SPST | **75-0125** | 0.71 | 0.63 | 0.56 |
| SPDT On-Off | **75-0130** | 0.70 | 0.64 | 0.58 |
| SPDT Centre-Off | **75-0135** | 0.706 | 0.608 | 0.545 |
| SPDT On-Off-(On) | **75-0152** | 0.81 | 0.75 | 0.67 |

| | | Price each | | |
|---|---|---|---|---|
| Type | Order code | 1+ | 25+ | 100+ |
| SPDT (On)-Off-(On) | **75-0157** | 0.928 | 0.829 | 0.739 |
| DPDT On-On | **75-0140** | 0.83 | 0.74 | 0.69 |
| DPDT Centre-Off | **75-0145** | 0.943 | 0.802 | 0.734 |

030254

PROCESS

## Microcontrollers Version 2

**GENIE**

The new version 2 **GENIE** microcontrollers have been designed as replacements for the older version 1 devices. The version 2 MCUs are faster and more powerful and are capable of storing larger flowchart or BASIC programs.

*Note: In order to program these version 2 GENIE microcontrollers, either Circuit Wizard 3 or the free GENIE Programming Editor software is required.*

| Type | Order code | 1+ | 25+ | 100+ | 250+ |
|---|---|---|---|---|---|
| GENIE 08 MCU | **13-6040** | 1.65 | 1.58 | 1.34 | 1.25 |
| GENIE 14 MCU | **13-6041** | 1.93 | 1.72 | 1.68 | |
| GENIE 18 MCU | **13-6042** | 2.34 | 2.27 | 2.17 | |
| GENIE 20 MCU | **13-6043** | 2.47 | 2.34 | 2.18 | |
| USB Download cable | **13-6023** | 13.34 | 12.88 | | |

552404

## PICAXE Chips

**PICAXE**

**PICAXE** is a microcontroller system that uses low cost FLASH memory based microcontrollers with a unique, pre-programmed **PICAXE** bootstrap code. Suitable for education, industry and hobbyists.

- Low cost and simple to use
- Wide range of variants
- Can be programmed using an intuitive graphical flowchart
- Free, easy to use Programming Editor software

| Type | Order code | 1+ | 25+ | 100+ | 250+ |
|---|---|---|---|---|---|
| PICAXE-08M2 | **13-5022** | 2.75 | 2.64 | 2.24 | 2.09 |
| PICAXE-14M2 | **13-5024** | 3.46 | 3.10 | 3.00 | 2.91 |
| PICAXE-18M2 | **13-5026** | 4.00 | 3.74 | 3.55 | 3.29 |
| PICAXE-20M2 | **13-5028** | 3.64 | 3.39 | 3.30 | |
| PICAXE-28X1 | **13-0862** | 8.31 | 8.11 | 8.04 | |
| PICAXE-40X1 | **13-0864** | 8.50 | 8.31 | 8.21 | |

079671

OUTPUT

## Rainbow Colour Cycling 5mm LED

**TruOpto**

Innovative, eye catching colour change LEDs. The 5mm LED contains an inbuilt IC that causes the LED to cycle through the red, green and blue elements, individually and then in combination. Colour cycles in 33s.

- Water clear or diffused lens types
- Ideal for use in warning devices, indication panels, alarm systems, mood lighting, toys

| | | MOQ 5 – In Multiples of 5 | | | | |
|---|---|---|---|---|---|---|
| Type | Lens type | Order code | 5+ | 100+ | 500+ | 1000+ |
| Rainbow LED | Clear | **55-1904** | 0.713 | 0.531 | 0.354 | |
| Rainbow LED | Diffused | **55-1906** | 0.713 | 0.531 | 0.354 | 0.303 |

075160

## High Intensity LEDs

**TruOpto**

A range of high intensity LEDs in a 5mm package that features a blade cathode which acts as a heat sink to dissipate heat at high current levels.

- High luminous intensity for use in a wide range of indication and illumination applications requiring a high output
- Manufactured using the latest technologies for long life, energy efficiency and high reliability
- Suitable for PCB and panel mounting applications
- Water clear lens

| | | MOQ 5 – In Multiples of 5 | | | | |
|---|---|---|---|---|---|---|
| Type | Colour | Order code | 5+ | 100+ | 500+ | 1000+ |
| 5mm LED | White | **55-2484** | 0.541 | 0.417 | 0.342 | 0.291 |
| 5mm LED | Warm white | **55-2600** | 0.664 | 0.404 | 0.347 | |
| 5mm LED | Red | **55-2476** | 0.257 | 0.217 | 0.19 | 0.152 |
| 5mm LED | Orange | **55-2486** | 0.313 | 0.21 | 0.185 | 0.149 |

| | | MOQ 5 – In Multiples of 5 | | | | |
|---|---|---|---|---|---|---|
| Type | Colour | Order code | 5+ | 100+ | 500+ | 1000+ |
| 5mm LED | Yellow | **55-2478** | 0.257 | 0.217 | 0.19 | 0.152 |
| 5mm LED | Green | **55-2480** | 0.355 | 0.251 | 0.217 | 0.204 |
| 5mm LED | Cyan | **55-2488** | 0.347 | 0.246 | 0.21 | |
| 5mm LED | Blue | **55-2482** | 0.355 | 0.251 | 0.217 | 0.204 |

073421

## Standard 5mm LED

**TruOpto**

A range of industry standard 5mm diameter LEDs housed in a coloured diffused lens package.

- Suitable for PCB or panel mounting applications
- Viewing angle 60°

| | | Price per pack of 100 | | |
|---|---|---|---|---|
| Type | Order code | 1+ | 10+ | 25+ |
| Red | **55-1790** | 5.07 | 4.73 | 4.26 |
| Bright red | **55-1796** | 6.64 | 5.31 | |
| Yellow | **55-1794** | 6.92 | 5.54 | |
| Green | **55-1792** | 6.92 | 5.54 | 5.02 |
| Blue | **55-1754** | 13.93 | 11.34 | |
| White | **55-1758** | 14.27 | 11.63 | |

061374

## 14.2mm High Efficiency Red LED Display Cathode

**Kingbright**

High efficiency red 14.2mm (0.56in high) seven segment LED display from Kingbright.

These well designed components have been categorised for luminous intensity, and use only the best materials with the source colour devices made of gallium phosphide. On top of that, the connectors along top and bottom simplify wiring in multi-digit applications. The unique Kingbright LED Display is also economical to use, in the process making it excellent value on the market place.

- Low current operation
- White segments and grey display surface to maximise on/off contrast
- Attractive character appearance
- Easy mounting on PC boards or sockets
- IC compatible
- Common cathode
- 14mm (0.56 inch) digit height
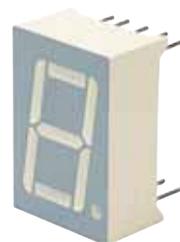
| | | MOQ 5 – In Multiples of 5 | | | |
|---|---|---|---|---|---|
| Type | Mftrs. suffix | Order code | 5+ | 25+ | 100+ |
| Common cathode | | | | | |
| Red | 11HWA | **57-0125** | 0.693 | 0.617 | 0.53 |

029374

## For full details on these and thousands more Input,

## SCI PARTS
### SPST Snap-in Rocker Switch

A low cost nylon rocker switch.

- 15.2mm dia. panel cut-out
- Silver plated brass terminals
- Snap-in mounting
- Dimensions 25mm(L) x 19mm diameter
- **UL flame 94V-2** approved

| MOQ 5 – In Multiples of 5 | | | | |
|---|---|---|---|---|
| Order code | 5+ | 25+ | 100+ | 500+ |
| 75-0057 | 0.49 | 0.44 | 0.39 | 0.34 |

071446

## ≡RVFM
### Miniature Push-button Switches

A range of low-cost, miniature push to make and push to break switches that are available in various button colours.

- Panel cut-out 7mm
- Dimensions 28mm long, ø10.5mm

*Note: These switches are not recommended for industrial applications.*

| MOQ 10 – In Multiples of 10 | |
|---|---|
| Colour | Order code |
| **Push to make** | |
| Black | **78-0118** |
| Red | **78-0100** |
| Blue | **78-0119** |
| Green | **78-0120** |

077607

| MOQ 10 – In Multiples of 10 | |
|---|---|
| Colour | Order code |
| White | **78-0121** |
| Yellow | **78-0122** |
| **Push to break** | |
| Black | **78-0105** |
| Red | **78-0123** |

077607

| 10+ | 100+ | 500+ |
|---|---|---|
| £0.176 | £0.159 | £0.143 |

## ≡RVFM
### Miniature Slide Switches

A miniature slide switch with solder tag connections and break before make DPDT contacts.

- Suited to a wide range of miniature electronic equipment
- Contacts rated at 0.3A, 125V AC
- Fixing centres 19mm
- 2x M2 fixing holes

| MOQ 10 – In Multiples of 5 | | | | |
|---|---|---|---|---|
| Order code | 10+ | 100+ | 500+ | 1000+ |
| 76-0100 | 0.221 | 0.158 | 0.122 | 0.10 |

030266

## TruSens
### Ultrasonic Ranging Module

The HC-SR504 is a non-contact ultrasonic ranging module with a 20 to 4000mm range. The module includes ultrasonic transmitter, receiver, and control circuit - all on a compact circuit board.

- Easy to use
- Ranging accuracy up to 3mm
- Compact dimensions

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Ultrasonic ranging module | 74-1109 | 2.00 | 1.90 | 1.75 |

082276

## MaKey MaKey
### Inventors Kit

The MaKey MaKey kit can turn almost anything into a keyboard or mouse, even unlikely things like your cat, a carrot or a coin. Anything that can conduct even the smallest amount of electricity will work completely safely, there's no danger of shocking the cat!

See what works for you - plants, coins, your grandma, silverware, anything that is wet, most foods, dogs as well as cats, aluminium foil, rain, and a lot more. The list goes on and you can always experiment with more.
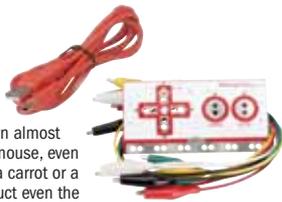
Order code 73-5500
**£33.94**

## orangepip
### Arduino Compatible Open Source Development Boards

**OrangePip** is a distinctive new range of open source boards that are based on the **ATmega2560** and **ATmega328** microcontrollers. The **OrangePip** boards offer a colourful introduction to coding and prototyping and are fully compatible with Arduino shields, sensors, accessories and software – giving users access to the global Arduino community of makers and projects.

- A colourful introduction to coding and prototyping
- Based on **Arduino** boards
- Similar to the Arduino Uno and Mega
- Compatible with Arduino IDE
- A 500mm USB A male to B male cable is also available

Kona328 Order code 75-0550
**£11.48**

USB cable Order code 75-0552
**£2.04**

Mega2560 Order code 75-0551
**£20.15**

## ≡RVFM
### Electronic Buzzer 6V with 10cm Lead

Low-cost electronic buzzer with 10cm flying leads.

- Resonant frequency 400Hz
- Black ABS case material
- Voltage rating 6V
- 30mA current rating
- Sound output 75dB at 20cm
- Weight 8g

*Suitable for education and hobbyist use only.*

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| 6V Buzzer + lead | **35-3596** | 0.932 | 0.786 | 0.70 |

036772

## ≡RVFM
### Piezo Buzzer Miniature

A miniature piezo buzzer with flying leads.

- Offers a high output with low power consumption

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| Piezo buzzer | **35-0115** | 1.30 | 0.996 | 0.898 |

030205

## ≡RVFM
### Low Profile Buzzers

These PCB mounting buzzers have a loud but pleasant 85dB tone and operate from a either 6 or 12VDC supply. They are only 7.5mm high when mounted on the PCB. They will work with supply voltages ranging from 3 to 8V DC or 8 to 15V DC depending which version is required.

| Type | Order code | 1+ | 25+ | 100+ |
|---|---|---|---|---|
| 6V low profile buzzer | **35-0040** | 0.811 | 0.627 | 0.541 |
| 12V low profile buzzer | **35-0041** | 0.811 | 0.627 | 0.541 |

083003

## GENIE
### Serial LCD Kit

The **GENIE** Serial LCD module allows GENIE-based projects to display messages on a LCD. The kit includes full instructions on how to construct the LCD module and then explains how to connect to **GENIE** microcontrollers in order to output text and graphics.

- 16 character by 2 row liquid crystal display (LCD)
- Contrast dial for display
- Testing mode included
- Full and comprehensive instructions can be obtained here

**Note:** *The* **GENIE Design Studio** *software is free to download directly from* www.genieonline.com.

| Type | Order code | 1+ | 26+ |
|---|---|---|---|
| GENIE Serial LCD kit | **13-6026** | 14.50 | 11.15 |
| LCD Control chip | **13-6036** | 3.00 | |

200110

## WINSTAR
### 16x2 LCD Display Reflective

A 16 x 2 LCD display that has a reflective type 6 o'clock display with a STN positive yellow/green LCD module. HD44780 standard.

- Low power consumption
- Alphanumeric character display
- HD44780 standard
- UL Approved

| Type | Backlight | Order code | 1+ | 10+ | 25+ | 50+ |
|---|---|---|---|---|---|---|
| LCD Display | Reflective | **57-2224** | 3.91 | 3.57 | 3.12 | 2.79 |

500160

## PICAXE
### Serial OLED Display Kits

A range of OLED displays and associate components that will provide important components in PICAXE systems. OLEDs are state-of-the-art components that are the future of optoelectronic displays. OLEDs typically have a much brighter display, better viewing angle and lower current consumption than conventional LCD displays and are a feature in many modern electronic devices.

**Serial/I2C OLED and Clock Module AXE033Y (13-1274)**
This module consists of a pre-populated PCB that supports the 16 x 2 OLED yellow on black alphanumeric display.

**Serial OLED Kits 16 x 2 AXE133Y (13-1276) and 20 x 4 AXE134Y (13-1277)**
These budget-conscious serial OLED modules, available with 16 x 2 or 20 x 4 yellow on black alphanumeric displays, allow the visual display of user instructions, sensor reading, etc. of PICAXE microcontroller projects.

**Serial OLED/LCD Driver Kit AXE132 (13-1270)**
The **AXE132** is the same serial interface board that is supplied in the **AXE133Y** and **AXE134Y** kits. The heart of the board is the **PICAXE-18M2** microcontroller which is pre-programmed with the open source **AXE133** firmware, allowing the module to drive an OLED or LCD display.

*For kit contents and assembly instructions see relevant datasheets.*

| Type | Device | Order code | 1+ |
|---|---|---|---|
| 16x2 OLED kit | AXE033Y | **13-1274** | 30.94 |
| 16x2 OLED kit | AXE133Y | **13-1276** | 23.66 |
| 20x4 OLED kit | AXE134Y | **13-1277** | 45.44 |
| OLED/LCD Driver | AXE132 | **13-1270** | 11.85 |

503102

## Process and Output devices visit www.rapidonline.com

## 60/40 Tin/Lead Flux-Cored Solder Wire

A high grade solder wire containing 60% tin and 40% lead, available in a wide variety of diameters and reel sizes.

Rapid 60/40 Tin/Lead Solder Wire provides excellent solder joint reliability, superior joint strength and excellent thermal and mechanical fatigue resistance. It has a rosin-activated flux which requires little cleaning after making the solder joint. It is ideal for use in applications requiring good activation.

- High grade 60/40 tin/lead alloy solder wire
- Melting temperature 190°C
- Recommended minimum bit temperature 300°C
- Rosin activated flux manufactured to **JISZ3283**

*Please note: This product contains lead and rosin.*

Technical specification

| Reel size | Gauge | Approx.length | Order code |
|---|---|---|---|
| 100g | 22SWG | 35 metres | **85-0592** |
| 0.5kg | 22SWG | 175 metres | **85-0595** |
| 0.5kg | 18SWG | 61 metres | **85-0610** |
| 2.0kg | 18SWG | 244 metres | **85-0615** |

| Type | Order code | 1+ | 5+ | 10+ |
|---|---|---|---|---|
| 100g 22SWG solder | **85-0592** | 4.67 | 4.46 | 4.15 |
| 500g 22SWG solder | **85-0595** | 20.27 | 19.13 | 17.98 |
| 500g 18SWG solder | **85-0610** | 20.27 | 19.13 | 17.98 |
| 2kg 18SWG solder | **85-0615** | 56.32 | 53.90 | |

030236

## Premium Lead Free Solder with Silver and Copper

Lead-free solder wire with a Rosin activated-flux core. It offers excellent joint reliability and superior joint strength along with excellent thermal and mechanical fatigue resistance. The solder wire is ideal for applications requiring good activation and is suitable for no-clean processes.

- Sn95.5Ag3.9Cu0.6 alloy
- 217°C melting point
- Excellent solder joint reliability
- Superior joint strength
- Excellent thermal and mechanical fatigue resistance
- Suitable for no-clean process

Technical specification

| Order code | Mftrs Part No. | |
|---|---|---|
| **85-6610** | 85-6610 | 20SWG 12g |
| **85-6612** | 85-6612 | 22SWG 100g |
| **85-6614** | 85-6614 | 22SWG 500g |
| **85-6616** | 85-6616 | 18SWG 12g |
| **85-6618** | 85-6618 | 18SWG 500g |

| Type | Order code | 1+ | 5+ | 10+ |
|---|---|---|---|---|
| 20SWG 12g | **85-6610** | 3.01 | 2.80 | 2.59 |
| 22SWG 100g | **85-6612** | 14.97 | 14.76 | 14.45 |
| 22SWG 500g | **85-6614** | 67.59 | 64.47 | 62.39 |
| 18SWG 12g | **85-6616** | 3.01 | 2.80 | |
| 18SWG 500g | **85-6618** | 67.59 | 64.47 | 62.39 |

066160

## Lead-free Solder Wire

Rapid high purity lead-free tin/copper solder is a cost-effective and versatile alternative to conventional lead solder and is suitable for all but the most demanding general purpose applications.

- Tin alloy with 0.7% copper
- Flux cored
- Melting point 227°C
- Available in 18SWG and 22SWG
- Supplied on **100g** or **500g reels**
- Also available in 1.0mm diameter in a **handy 12g tube**

Technical specification

| Order code | Mftrs Pt No. | SWG | Diameter | Pack size |
|---|---|---|---|---|
| **85-1165** | 85-1165 | 19 | 1.0mm | 12g tube |
| **85-1162** | 85-1162 | 18 | 1.2mm | 100g reel |
| **85-1164** | 85-1164 | 18 | 1.2mm | 500g reel |
| **85-1166** | 85-1166 | 22 | 0.7mm | 100g reel |
| **85-1168** | 85-1168 | 22 | 0.7mm | 500g reel |

| Type | Order code | 1+ | 5+ | 10+ |
|---|---|---|---|---|
| 19SWG 12g tube | **85-1165** | 2.59 | | |
| 18SWG 100g reel | **85-1162** | 5.09 | 4.57 | 4.05 |
| 18SWG 500g reel | **85-1164** | 24.95 | 23.81 | 21.31 |
| 22SWG 100g reel | **85-1166** | 5.09 | 4.67 | 4.46 |
| 22SWG 500g reel | **85-1168** | 25.37 | 24.33 | 23.29 |

072696

## XS25W Soldering Iron 230V with Silicone Cable and 13A Plug

Highly respected by both industrial and education users alike, Antex soldering irons have become one of today's classic soldering tools. It is a tribute to the simple, yet highly effective basic design of the XS25W miniature electric soldering iron that it has changed little over the years.

- Supplied complete with 2.3mm bit and mains cable

**Soldering iron**
Order code 85-1145
**£19.99**

## Thermally Balanced 25W Soldering Iron

A professional quality, thermally-balanced 25W, 230V mains soldering iron, ideally suited to the demands of both industry and education environments.

| Type | Order code | 1+ | 5+ | 10+ |
|---|---|---|---|---|
| 25W iron with 13A plug | **85-0640** | £13.46 | £12.66 | £11.13 |
| Spare 25W 230V element | **85-0642** | £3.36 | | |
| Barrel & barrel nut assembly | **85-0666** | £1.65 | £1.27 | £1.06 |

178125

# Weller®

## Analogue Soldering Station

The Weller WHS40 is a 40W analog soldering station with a temperature range that can be controlled between 200 and 450°C.

- Desired temperatures can be set precisely, avoiding overheating sensitive areas
- LED status indicator
- Temperature is controlled by means of a rotary potentiometer
- Includes analogue power unit with UK plug, soldering iron with nickel-plated 2.0mm tip and iron support
- **Weller type WHS40**

**Analogue station**
Order code 85-5700
**£79.99**

## Digital Soldering Station

A digital soldering station with LED display and push-button temperature control.

- Temperature range 150 to 450°C
- Digital read-out shows the precise soldering tip temperature (pre-set and real value)
- Display has integrated LED to monitor the heater
- Temperature adjusts via push-buttons
- Consist of power unit with UK plug, soldering iron with 2.0mm longlife tip and iron support
- **Weller type WHS40D**

**Digital station**
Order code 85-5702
**£139.99**

## Set with WT 1 PSU, WSP 80 Iron and WSR 201 Safety Rest

The Weller WT 1012 set consists of a WT 1, 90W power supply unit, a WSP 80 80W soldering iron and a WSR 201 safety rest.

- See order codes 85-4910, 85-5325 and 85-4924 for full details at **www.rapidonline.com**
- **Weller type WT 1012 set**

**WT1012 Set**
Order code **85-4915**
**£284.99**

## 48W Adjustable Temperature Analogue Soldering Station

This no-nonsense, low-cost soldering station is ideally suited to applications where durability, physical size and budget are the main concerns. The included 48W iron is ideal for both traditional and lead-free solders.

A range of replacement tips is available to keep your iron in top condition.

- 48W mains powered soldering station with iron
- Adjustable temperature from 150 to 450°C
- Tip cleaning sponge included
- Integral soldering iron holder

*The soldering iron may give off non-hazardous fumes for approximately 30 minutes on first use.*

**48W soldering station**

| 1+ Order code 85-5900 | **£14.68** |
|---|---|
| 10+ Order code 85-5900 | **£13.76** |

**Replacement sponge**

| 1+ Order code 85-5910 | **£1.11** |
|---|---|
| 10+ Order code 85-5910 | **£0.999** |

## Air Extraction Unit

This air extraction unit uses a flexi-duct to carry away extracted air, either via a standard domestic vent or simply placed through a partially opened window, making the unit very portable and convenient. The unit can be used in two positions, either upright for 3D items such as models, PCBs, etc. where they can be rested on the surface and where solder fumes and general solvent and gas extraction is performed, or in a reclining position which is designed for accommodating artwork up to A3 size for spray mounting, aerosol lacquers and fixatives, etc.

Filtration is performed by a particulate (intake) filter that is a 3-stage graduated fibre filter that has a high particle holding capacity, giving the filter a long operational life. Extraction is then performed via the 2m x ø100mm flexi-duct. This filtration/extraction process vastly reduces and/or eliminates operator exposure to potentially hazardous substances.

- Steel construction
- Dove grey finish
- Replaceable plastic spray/fume shield
- Can be assembled in seconds
- Centrifugal blower
- Sealed electrical wiring and switch, downstream of filters
- Brushless motor with external rotor
- **UL, VDE** and **CSA** approved

Order code 87-5504
**£231.74**

## Air Filtration Hoods and Spray Booths

These units have been designed to be used as spray booths in the studio/classroom/workshop to protect operators and maintain environmental cleanliness and are ideal for art, graphics, design technology, crafts, modelling, etc. The spray booths use two filters for effective air filtration. The particulate (intake) filter is a 3-stage graduated fibre filter that has a high particle holding capacity. The second filter is a carbon type filter that assists in the reduction of solvent odours.

Designed to be used in one of two ways. 3D items such as models, PCBs, etc. may be placed onto the hood base for spraying, cleaning, sanding, etc. For artwork applications the hood enclosure will accept standard drawing boards (A2 **87-5502**, A1 **87-5503**) which may be placed at an angle for efficient overspray capture.

- Quiet in operation
- Steel construction
- Dove grey finish
- Fan/filter unit mounted onto hood enclosure
- Axial fans
- Sealed electrical wiring and switch, downstream of filters
- Brushless motor with external rotor
- **UL, VDE** and **CSA** approved

650m³/hr
Order code 87-5503
**£772.49**

325m³/hr
Order code 87-5502
**£565.47**

## Air Extraction Spray Booths

These air extraction units are ideally suited to use as spray booths for a wide variety of applications in the studio, classroom or workshop. There is a choice of air volume capacities to cater for application and useage and all odours and gases exrtacted are vented to atmosphere via flexi-duct so that the working environment can be kept free of contaminants. The design of the units mean that they are suitable for use with objects such as: prototypes, models, ceramic parts, PCBs, etc. Drawing boards, either A2 (**87-5505**) or A2 and A1 (**87-5506**), can be accomodated, being put in at an angle for efficient overspray capture.

Air extraction is carried out by centrifugal blowers via a three stage graduated fibre particulate filter that has a high particle holding capacity, ensuring long filter life. The filtered air is exhausted via flexi-ducts (1x for **87-5505** and 2x for **87-5506**) which may be either fixed to a standard domestic vent or placed through any convenient window. This dual process of extraction and filtration greatly reduces or eliminates operator exposure to contaminants and harmful airborne substances.

- Steel construction
- Dove grey finish
- Particulate filter
- Carry handle
- Centrifugal blower (2x for **87-5506**)
- Sealed electrical wiring and switch, downstream of filters
- Brushless motor with external rotor
- **UL, VDE** and **CSA** approved

710m³/hr
Order code 87-5506
**£957.89**

355m³/hr
Order code 87-5505
**£684.94**

## Fume Extraction Hoods and Cabinets

These fume filtration hoods are intended for use where external venting is required. The attached flexi-duct vents to atmosphere, either through a standard domestic vent or a convenient window. Filtration is carried out by a 3-stage graduated fibre filter with a high dust holding capacity that ensures a long filter life. This dual process of filtration and extraction means that operators and environments are protected from exposure to potentially hazardous substances.

The units may be used both for 3D items such as PCBs, models, etc. and 2D artwork, the units accepting standard drawing boards (A2 **87-5519**, A1 **87-5520**). A clear polycarbonate panel is mounted on the hood and hood lighting is also included. The whole unit can be assembled in seconds and may be placed on a desk, bench or trolley. Ideal for use in the workshop, dental/medical labs, design technology classroom, pharmaceutical lab, etc.

- **TechFlo** fume cabinets of 355 or 710m³/hr capacity
- Capture, contain, filter and expel for a cleaner, safer working environment
- Extraction cabinets vent to atmosphere via flexi-duct of 2m x ø100mm
- **87-5520** has two flexi-duct vents
- Three-stage particulate filter
- Can accomodate standard drawing boards
- Clear polycarbonate panel for protection
- Hood lighting
- Steel construction with dove gray finish
- Sealed electrical wiring and switch, downstream of filters
- **UL, VDE** and **CSA** approved

710m³/hr
Order code 87-5520
**£1234.97**

355m³/hr
Order code 87-5519
**£818.85**

## Desk/Bench Top Fume Cabinets

These fume cabinets are for use in situations where external venting is impractical but where there is a need for contaminant capture and air filtration. Especially suitable for use in dental labs, for electronic design and rework, pharmaceutical labs, design technology, science and other industrial and educational uses. Applications for which the fume cabinets are ideal include: filtration of fumes and capture of contaminant particles from monomers, adhesives, hazardous powders/particulates, conformal coatings, resins, sealants, solders, light grinding particles and dust, organic solvents, etc.

In operation the fume cabinet has two stages of filtration. The particulate (intake) filter is a 3-stage graduated fibre filter that has a high dust holding capacity, prolonging its life. The second stage of filtration is by by a high grade bonded carbon filter (3.5kg **87-5513**, 7kg **87-5514**). The high performance of the fume cabinet is aided by a folding clear plastic fume shield that can be removed and stored if not required, reducing the footprint of the unit.

- Steel fan/filter casing
- Dove grey finish
- Folding clear PETG plastic fume shield
- Particulate filter
- **87-5514** has dual airspeed function to facilitate higher vapour absorbtion
- Carry handle
- Can be assembled in seconds
- Centrifugal blower
- Sealed electrical wiring and switch, downstream of filters
- Brushless motor with external rotor
- **UL, VDE** and **CSA** approved

325m³/hr
Order code 87-5513
**£1019.69**

650m³/hr
Order code 87-5514
**£1440.97**

For full details and data sheets visit
**www.rapidonline.com/benchvent**

Education

Prototyping/PCB

## ≡RVFM
### 360 Point Prototyping Breadboard

- Sockets are on a 2.54mm matrix, allowing all dual-in-line integrated circuits, plus many other components to simply be plugged into the board
- An ideal system for the teaching of electronic systems and circuit design
- Two sets of 30 rows of 6 interconnected contact sockets
- Allows up to 5 connections to each pin of ICs placed across the central gap
- Total of 360 tie points
- All contact positions are clearly defined on an alphanumeric grid
- Adhesive foam base
- An ideal introduction to solderless circuit development systems

| Type | Order code | 1+ | 10+ | 40+ |
|---|---|---|---|---|
| AD-100 Protobloc | 34-0666 | 1.93 | 1.82 | 1.69 |

517587

## ≡Rapid
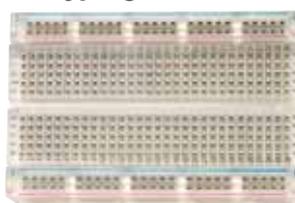### 390 Point Prototyping Breadboard

- Sockets are on a 2.54mm matrix, allowing all dual-in-line integrated circuits, plus many other components to simply be plugged into the board
- An ideal system for the teaching of electronic systems and circuit design
- Two sets of 29 rows of 5 interconnected contact sockets
- 4 rows of 25 interconnected sockets suitable for use as power supply rails
- Adhesive foam base
- Can accommodate up to three 16-pin devices
- An ideal introduction to solderless circuit development systems

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Protobloc 1 | 34-0650 | 3.26 | 2.93 | 2.67 |

029458

## ≡Rapid
### 400 Point Transparent Prototyping Breadboard

- Transparent Solderless Breadboard
- Sockets are on a 2.54mm matrix, allowing dual-in-line integrated circuits, plus many other components to simply be plugged into the board
- Two sets of 30 rows of 5 interconnected contact sockets
- Allows up to 4 connections to each pin of ICs placed across the central gap
- 2 rows of 50 contacts for power supply distribution
- Total of 400 tie points
- All contact positions are clearly defined on an coloured alphanumeric grid
- Adhesive foam base

*These boards can be slotted together for larger circuits but do not physically fit with Protoblocs.*

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Transparent breadbord | 34-0671 | 3.48 | 3.41 | 3.22 |

518906

## ≡RVFM
### 840 Point Prototyping Breadboard
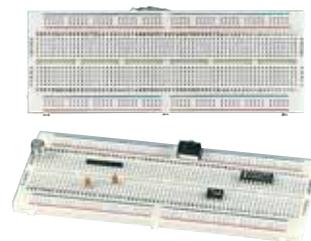
- Sockets are on a 2.54mm matrix
- 2 sets of 64 rows of 5 interconnected contacts
- Allows up to 4 connections to each pin of ICs placed across the central gap
- 4 rows of 50 contacts for power supply distribution
- Total of 840 tie points
- All contact positions are defined on an alpha-numeric grid
- Adhesive foam base

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Protobloc 2 | 34-0655 | 5.61 | 4.92 | 4.55 |

029459

## ≡RVFM
### 840 Point Protobloc 2A

This **protobloc 2A (breadboard h21b)** features 4 rows of 50 interconnected sockets suitable for use as power supply rails. All positions are clearly defined on an alphanumeric grid.

The ABS polymer board is mounted onto a rigid base plate complete with three 4mm terminals in red, black and green for power connections. A mounting bracket, which clips into the base, is also provided to accept a variety of components including switches and potentiometers, etc.

- v2 (29x5) grid size
- 840 holes
- 0.3 to 0.8mm wire size acceptability
- 3A contact current
- ABS polymer body material
- Silver nickel contact material
- White colour
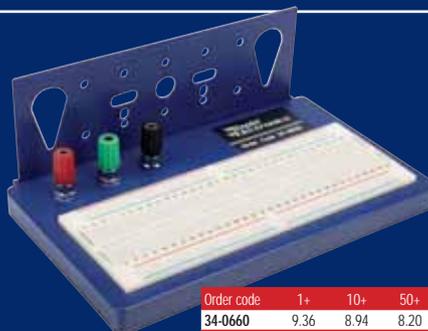
| Order code | 1+ | 10+ | 50+ |
|---|---|---|---|
| 34-0660 | 9.36 | 8.94 | 8.20 |

029460

## ≡Rapid
### Copper Track Cutter

This simple tool is ideal for easy copper track cutting on stripboards and prototyping boards. Simply insert the tool in a hole at the point where the break is required and twist clockwise.

- Swivel top handle for easy turning
- Bit size 3.5mm
- Overall length 115mm

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| Stripboard cutter | 34-0608 | 3.12 | 2.88 | 2.47 |

550885

## ≡Rapid
### Breadboard Jumper Wires

A bundle of 75 assorted reuseable Jumper Links for use with Protobloc prototyping boards and other breadboards.

- Made from insulated 22AWG solid copper wire
- Fitted with plugs that fit the connectors in the breadboard without damage
- 4 lengths
- Assorted colours for easy identification
- Supplied in **packs of 75**

Technical specification
| Length | Quantity |
|---|---|
| 100mm | 55 |
| 140mm | 10 |
| 180mm | 5 |
| 230mm | 5 |

**Jumper wires 1+ Order code 34-0673**
**£3.48**

## ≡Rapid
### Jumper Wire 40 Way Ribbon Cable

These high quality **jumper wires** come in a strip of 40 with four pieces of each of **ten colours**. They have 0.1in sockets on either end and fit cleanly next to each other on a standard pitch (2.54mm) header. You can always pull the ribbon wires off to make individual jumpers, or keep them together to make neatly organised wire harnesses.

- Available in male-female, male-male and female-female versions
- Length 200mm
- 40 ways

| Type | Order code | 1+ | 10+ | 100+ |
|---|---|---|---|---|
| F to F | 34-0684 | 3.89 | 3.39 | 3.09 |
| M to F | 34-0686 | 3.89 | 3.39 | 3.09 |
| M to M | 34-0688 | 3.89 | 3.39 | 3.09 |

564327

## ≡RVFM
### Jumper Wire Kit

This **jumper wire kit** has been designed for use with protobloc prototyping boards has a variety of colours for easy identification and comes in a wide range of sizes.

- Convenient hinged plastic storage case
- Variety of colours for easy identification
- Pre-cut and pre-formed jumper wires with ¼in stripped end bent 90°
- Box dimensions: 270 x 124 x 30mm

**Set includes 25 each of the following lengths:** *0.1in (no insulation), 0.2in, 0.3in, 0.4in, 0.5in, 0.6in, 0.7in, 0.8in, 0.9in, 1in, 2in, 3in, 4in and 5in.*

**Jumper wire kit 1+ Order code 34-0495**
**£10.04**

**Jumper wire kit 10+ Order code 34-0495**
**£9.43**

## ≡Rapid
### Stripboard

These **stripboards** provide a simple form of printed circuit, ideal for prototype and development work. Featuring holes with a 2.54mm pitch, while manufactured with copper clad paper and phenolic laminate body material.

- Can be readily cut to size
- Copper strips form the interconnections and can easily be cut where required

Technical specification
| Board Size | Tracks No. | Holes |
|---|---|---|
| 25 x 64 | 9 | 25 |
| 64 x 95 | 24 | 37 |
| 95 x 127 | 36 | 50 |
| 95 x 432 | 36 | 170 |
| 119 x 455 | 46 | 179 |

| | | MOQ 5 | |
|---|---|---|---|
| Board Size (mm) | Order code | 5+ | 10+ | 50+ |
| 25 x 64 | 34-0500 | 0.292 | 0.269 | 0.236 |

| | | Price each | | |
|---|---|---|---|---|
| Board Size (mm) | Order code | 1+ | 10+ | 50+ |
| 64 x 95 | 34-0505 | 0.83 | 0.797 | 0.707 |
| 95 x 127 | 34-0515 | 1.56 | 1.39 | 1.32 |
| 95 x 432 | 34-0535 | 5.53 | 4.87 | 4.50 |
| 119 x 455 | 34-0540 | 6.70 | 6.32 | 6.13 |

029453

## ≡RVFM
### Plain Copper-Clad Fibreglass Circuit Board

High quality 305g/m copper clad boards in epoxy glass material.

- Grade: FR4
- Plain fibreglass board
- 35 Micron copper thickness
- Suitable etchant: ferric chloride solution
- Thickness: 1.6mm

| Type | Order code | 1+ | 20+ | 50+ |
|---|---|---|---|---|
| 100x160 | 34-0800 | 1.08 | 0.864 | 0.76 |
| 233.4x160 | 34-0805 | 2.30 | 2.06 | 1.87 |
| 100x220 | 34-0810 | 1.40 | 1.21 | 1.04 |
| 233.4x220 | 34-0815 | 3.11 | 2.82 | |
| 203x95 | 34-0360 | 1.24 | 1.10 | |
| 203x305 | 34-0365 | 3.63 | 3.26 | 2.99 |

029478

## ≡RVFM
### Low Cost Copper-Clad SRBP Circuit Board

Single-sided copper-clad printed circuit board made from SRBP: a paper-based material.

- Excellent for low-cost printed circuit boards
- Easier to drill than epoxy glass fibre
- Results in longer life for drills and cutting tools
- Suitable etchant ferric chloride solution

| Type | Order code | 1+ | 10+ | 50+ |
|---|---|---|---|---|
| 100 x 160 | 34-0860 | 0.60 | 0.54 | 0.48 |
| 100 x 220 | 34-0862 | 0.812 | 0.74 | 0.63 |
| 233 x 160 | 34-0864 | 1.32 | 0.988 | 0.853 |
| 233 x 220 | 34-0866 | 1.84 | 1.55 | 1.45 |
| 203 x 305 | 34-0868 | 2.19 | 1.64 | 1.42 |

032634

# Virtuoso A4 and A3 Sublimation Printing Starter Kits

These Mega Virtuoso A4 and A3 **Sublimation Printing Starter Kits** provide an easy and cost-saving way to help you get started with sublimation printing. They each include a Virtuoso printer, heat press, ink cartridges, sublimation paper and heat resistant tape, to get you up and running as soon as possible.

- Each kit contains 2 x packs of sublimation paper and 2 rolls of Heat Tape
- The A3 kit also contains a Sublimation Materials Starter Pack
- Please see the individual product entries for full details

Technical specification

| Printer size | Printer type | Heat press size | Heat press type | Cartridges | Mega type |
|---|---|---|---|---|---|
| A4 | Virtuoso SG400 | 29 x 38cm | Cadet swing | Black (42ml), Cyan (29ml), Yellow (29ml), Magenta (29ml) | 71-V-A4-Cadet |
| A4 | Virtuoso SG400 | 28 x 38cm | Apollo | Black (42ml), Cyan (29ml), Yellow (29ml), Magenta (29ml) | 71-V-A4-Apollo |
| A3 | Virtuoso SG800 | 40 x 50cm | Apollo | Black (75ml), Cyan (68ml), Yellow (68ml), Magenta (68ml) | 71-V-A3-Apollo |

**A4 Virtuoso SG400/ Cadet Swing Press**
Order code **13-1774**
£515.00

**A4 Virtuoso SG400/ Apollo Press**
Order code **13-1776**
£761.17

**A3 Virtuoso SG800/ Apollo Press**
Order code **13-1778**
£1508.95

## A4 and A3 RICOH Sublimation Special Paper – Packs of 200

This slow-drying, high ink-release paper is excellent for use with soft plastics, because the paper doesn't stick to the printed product. This high quality sublimation paper has been specially formulated for use with Ricoh printers.

- Suitable for use with a wide range of materials including soft plastics
- Print on the coated side without the watermarks
- Available in A4 and A3 sizes
- Supplied in packs of 200

*Because the ink is slow drying, it should be left before heat pressing. Designs with large areas of black are sometimes difficult to achieve.*

**A4 200 sheets**
Order code **13-1618**
£46.69

**A3 200 sheets**
Order code **13-1620**
£89.14

## Adult T-Shirts

### 100% POLYESTER FOR SUBLIMATION PRINTING

These 100% polyester, adult sized Tee-Shirts are ideal for decorating with your own designs using the sublimation printing technique.

The fabric allows a permanent image to be printed that will not fade, even with machine washing at 60°C. The 210gsm fabric allows the image to stretch, has superb moisture management performance and has the look and feel of a soft cotton garment.

**Medium pack of 5**
Order code **13-1686**
£19.02

**Large pack of 5**
Order code **13-1688**
£19.02

**Extra large pack of 5**
Order code **13-1690**
£19.02

## Digi Coat Coatings and Promotor for Sublimation Printing

This range of coatings allow you to prepare your own items and materials for best results with sublimation printing. To accept a sublimation transfer print, most products must first be given a coating of polymer for the sublimation inks to adhere to.

Range includes:
- Clear coat for most common materials
- Opaque coat for dark or black materials
- Adhesion promotor for hard, smooth materials like glass and ceramics

**Clear coating**
Order code **13-1640**
£15.86

**White coating**
Order code **13-1642**
£15.86

**Adhesion promotor**
Order code **13-1644**
£13.74

## Draw-String Sports Bag

### FOR SUBLIMATION PRINTING

A fabric drawstring sports bag suitable for sublimation printing.
- Hard wearing polyester fabric
- Size 450 x 335mm

**Drawstring bag**
Order code **13-1660**
£1.50

## Blank Ceramic Durham Mugs

### FOR SUBLIMATION PRINTING

Blank ceramic mugs suitable for applying your own design using the sublimation printing technique.

- Recommended for printing in a mug press
- Mugs supplied in **packs of 36**
- Matching postage boxes supplied in **packs of 25**

**Mugs pack of 36**
Order code **13-1796**
£40.06

**Boxes pack of 25**
Order code **13-1676**
£8.81

## Heat-Resistant Tape 10mm x 16m for Sublimation Printing

Heat-resistant tape, ideal for securing sublimation printed artwork during the heating process.
- Width 10mm
- Supplied on 16m rolls

**Heat resistant tape**
Order code **13-1638**
£5.25

Education

Sublimation Printing

## HUION 绘王

# A3 and A2 LED Tracing Boards/ Lightboxes

**Only 8mm thick**

These Huion LED Tracing Boards have acrylic opal diffusers that produces bright, smooth and even light distribution across their entire work surface. A simple touch-switch controls On, Off and Brightness adjustment.

The tracing boards remain cool in operation and generate no heat, making them suitable for 24 hour use.

- Elegant and stylish
- Sleek - only 8mm thick
- Maintenance-free
- No bulbs to replace
- Long life: approx. 50,000 hours
- Convenient for use on desk or lap
- Easy storage and transport
- Supplied complete with UK mains power supply

**A2 Order code 19-0702 £59.18**

**A3 Order code 19-0700 £50.59**

| Technical specification | | |
|---|---|---|
| Model | A3 | A2 |
| Dimensions | 479 x 361 x 8mm | 570 x 373 x 8mm |
| Working area | 430 x 310mm | 520 x 320mm |
| Work surface | Acrylic panel | Acrylic panel |
| Rated power | 5W | 6W |
| Light source | LED | LED |
| Working voltage | 12V DC | 12V DC |
| Weight | 2.3kg | 3.5kg |

## LightCraft

# A3/A4 LED Lightboxes with Plug

**A4 Order code 34-0646 £46.34**

**A3 Order code 34-0648 £64.36**

These **LED lightboxes** from **Lightcraft** are energy efficient and feature a dimmer. Equipped with a host of other excellent features, including the consistent light across the whole panel face, tracing area and low heat emission. Ideal for tracing designs and patterns for stencilling, embossing, scrap-booking, quilting, sewing, embroidery, calligraphy, lettering and displaying slides and transparencies. Included is a 2m USB cable for use through PC/ laptop, plus a mains UK/EU plug with USB slot.

- Voltages available: 220-240V, 50hz
- Output voltage: 5V, 7W
- Available in both **A3 and A4 sizes**
- Colour temperature: 6000-6500 kelvin
- Input: AC100-240V, 50-60Hz

## LINEX

# A3 Student Drawing Board Saver Bundle

A cost-saving drawing bundle including drawing board, set squares, ruler, compass and eraser.

The cost-effective drawing board features straightedge guide slots on four sides, graduation with markings for format and paper margin, magnetic clamping rail with windows for control of paper margin and extra paper clamp in the lower right corner.

- Drawing board ruler features handle with stop-and-go locking facility and protractor with inverse scale
- Board is made of impact-proof plastic and has antislip protection on the underside
- Supplied complete with fabric protective storage/carry bag

**Order code 34-2601 £30.07**

# A3 Technical Drawing Board

Drawing board sold separately without the extras in the 'Saver Bundle' above.

**Order code 34-2602 £25.74**

## DALER • ROWNEY

# Graphic Pencils

Artists graphic pencils formed from high-quality graphite.

- Contains: 9B, 8B, 7B, 6B, 5B, 4B, 3B, 2B, B, HB, F and 2H
- Supplied in a **tin of 12**

**Order code 06-6200 £4.32**

**£5.14 Each**

9B: Order code **06-9551**
6B: Order code **06-9554**
4B: Order code **06-9556**
2B: Order code **06-9558**

# Artist's Graphic Pencils

Daler-Rowney Artists' Graphic Pencils are formed from high-quality graphite.

- Suitable for use with a wide range of smooth and textured papers
- Supplied in **packs of 6**

| Pack contains: | |
|---|---|
| 620 Cadmium Yellow (Hue) | 651 Lemon Yellow |
| 503 Cadmium Red (Hue) | 619 Cadmium Orange (Hue) |
| 435 Purple Grey | 529 Perylene Red |
| 127 Indigo | 410 Lavender |
| 111 Coeruleum (Hue) | 123 French Ultramine |
| 354 Hooker's Green Dark | 381 Viridian |
| 355 Leaf Green | 378 Vivid Green |
| 667 Raw Sienna | 578L Flesh Tint Light |
| 527 Light Red | 578D Flesh Tint Dark |
| 264 Van Dyke Brown | 663 Yellow Ochre |
| 036 Mars Black | 053 Cool Grey |
| 009 Titanium White | 104 Blue Grey |

**Order code 06-6194 £11.14**

# Wet and Dry Watercolour Pencils

These watercolour pencils are an extremely versatile medium, perfect for both wet and dry artwork.

- Range of colours developed to complement Daler-Rowney Artists Watercolours
- Formulated from the finest modern and traditional pigments
- Offers unparalleled performance and permanence
- Available in **tins of 24**

## ≡RVFM

# Economy Coloured Pencils

Economical, good quality hexagonal colouring pencils available in classpacks of 144.

- Hexagonal coloured pencils
- **Classpacks of 144**

Set includes the following: 12 x Yellow, 12 x Orange, 12 x Red, 12 x Pink, 12 x Burgundy, 12 x Light Blue, 12 x Dark Blue, 12 x Violet, 12 x Light Green, 12 x Dark Green, 12 x Brown, 12 x Black.

**Order code 52-0767 £7.92**

# To see our full range of Graphics products visit www.rapidonline.com

## Pigment Based Drawing Pens

0.1mm black
Order code **34-1800**
0.3mm black
Order code **34-1805**
0.5mm black
Order code **34-1810**
0.7mm black
Order code **34-1815**

A range of high quality pigment based ink drawing pens.

- Four point sizes with black ink colour
- The pigment based ink is waterproof on paper, lightfast and permanent
- **Staedtler type 308** series

## Set Squares

Standard set squares with either 45/45° or 60/30° angles.

- Metric measuring scales along one edge

45°/45°
Order code **34-2670**
**£1.23**

60°/30°
Order code **34-2672**
**£1.23**

## 300mm (12in.) Shatter-Resistant Plastic Ruler

Standard, transparent shatter-resistant 30cm (12 in) rulers.

- Graduated in both inches and millimetres

Order code **34-2660**
**£0.64**

## Order online

Activate your account for online ordering. For further information:
**www.rapidonline.com/ activate**

## A4/A3 Tracing Paper – 62gsm

This **tracing paper** is ideal for a host of various projects, including art and crafts. The 62gsm sheets are also great for drawings, sketches, transfers and overlays in pencil, marker and ink.

- Available in **packs of 100 sheets** or **40 sheets per pad**

| Size | Pad/sheets | Order code | 1+ |
|---|---|---|---|
| A4 | Pad of 40 sheets | 06-0981 | £1.28 |
| A3 | Pad of 40 sheets | 06-0983 | £2.26 |
| A4 | 100 loose sheets | 06-0985 | £3.05 |
| A3 | 100 loose sheets | 06-0987 | £5.50 |

563397

## RVFM A4 250gsm White and Coloured Card

Medium weight A4 card, available in plain white or assorted colour packs.

- Assorted colour pack contains 20 sheets each of: Red, Yellow, Mid Green, Mid Blue and Dark Blue
- Acid-free
- Supplied in **packs of 100** sheets

| Type | Order code | 1+ |
|---|---|---|
| A4 White card | 06-0930 | £6.39 |
| A4 Coloured card | 06-0932 | £7.45 |

070710

## RVFM White and Black Card

Order code **06-1980**
**£3.16**

A pack of blank 240gsm card, suitable for all craft making projects.

- Ideal for pen and ink, pencil, light washes, crayon, wood block and stamping
- Perfect for do-it-yourself Christmas cards, birthday cards and greeting cards or whatever you want to create
- A4 black and white sheets
- Supplied in **packs of 32** (20 White and 12 Black)

## Rapid A4 Card – 220gsm

These **packs of A4 card** are ideal for a host of various projects, including art and craft activities. The premium quality 220gsm sheets are also great for card making, posters or even printing tickets and invitations.

- Available in **black**, **white**, **bright** or **pastel**
- Consistent colouring guaranteed
- **Pack size 30 sheets**, ideal for classroom size
- Laser and inkjet compatible*

*Check printer specification for maximum thickness your printer can take.

| Colour | Order code | 1+ |
|---|---|---|
| White | 06-0949 | £1.11 |
| Black | 06-0951 | £1.32 |
| Bright | 06-0953 | £1.35 |
| Pastel | 06-0955 | £1.21 |

563389

## RVFM Economy Board

- Made from 100% recycled material
- Will work with most printers
- Can be used for oil, pastel and pencil work
- Folds easily and is ideal for making cards and calendars
- 280 micron thickness
- Supplied in **packs of 100 sheets**

*Not recommended for use with photo copiers.*

| Type | Order code | 1+ |
|---|---|---|
| A4 Economy board | 06-7174 | £3.48 |
| A3 Economy board | 06-7176 | £7.23 |
| A2 Economy board | 06-7178 | £12.84 |

079737

## RVFM Modelling Board

White and grey modelling board, in various thicknesses, for all your design needs.

- Greyboard 635 x 762mm supplied in **packs of 12**
- White card 450 x 640mm supplied in **packs of 100**

| Type | Order code | 1+ |
|---|---|---|
| Greyboard 0.9mm | 06-0176 | £7.76 |
| Greyboard 1.1mm | 06-0178 | £8.19 |
| Greyboard 1.7mm | 06-0180 | £12.73 |
| White card 0.23mm | 06-0182 | £23.12 |

066028

## Rapid Aluminium Ruler (30cm/12in)

A high quality 30cm ruler clearly graduated in both millimetres and 1/16in. Graduations start from the very end of the ruler permitting measurement from an edge.

- Anodised aluminium construction
- Non-slip rubber insert on rear
- Bevelled edges
- Convenient hanging hole
- Width 35mm

| Type | Order code | 1+ | 5+ |
|---|---|---|---|
| 30cm Aluminium ruler | 34-2662 | £1.37 | £1.28 |

070842

## rolson Self-Healing Cutting Mats

Non-slip self-healing cutting mats available in A4, A3 and A2 sizes.

- Surface printed with 10 x 10mm grid to assist positioning
- Self-healing properties prevent knife blade being diverted into previous score marks

| Type | Order code | 1+ |
|---|---|---|
| 300 x 220 (A4) | 34-2686 | £2.21 |
| 450 x 300 (A3) | 34-2688 | £4.62 |
| 600 x 450 (A2) | 34-2690 | £5.96 |

178164

## STANLEY Disposable Craft Knives

Pack of 3
Order code **86-0066**
**£1.89**

Disposable craft knives for use on a wide variety of craft applications like cutting cardboard.

- Blade permanently attached
- Supplied with blade guard
- Supplied in **packs of 3**

## TOOLCRAFT Scalpel with 5 Blades

This **scalpel** from **Toolcraft** has 5 blades is ideal for fine building and cutting work with paper, cardboard and film.

- Blades made of high-quality SK-5 steel
- Aluminium hand-grip with furrowed grip zone

| Type | Order code | 1+ | 10+ |
|---|---|---|---|
| Scalpel with 5 blades | 51-2612 | £2.92 | £2.46 |

524507

*Products covered by the Offensive Weapons Act 1996. To purchase and accept delivery of this product, you must be over the age of 18.*

## Cast Acrylic Solid Colour Sheets

These **cast acrylic sheets** from Perspex® are available in a choice of sizes and in a range of vibrant, **bright colours**. These coloured sheets will make any project get noticed – whether it's a sleek storage unit, a specialist point of sale display or a new corporate identity. With excellent resistance to outdoor weathering, unsurpassed batch-to-batch colour consistency and excellent environmental credentials, Perspex® Solid colours will help you bring your creative ideas to life.

*Other colours available from Rapid on request.*

| Size (mm) | Colour | Order code | 1+ |
|---|---|---|---|
| 600 x 400 x 3 | Red | 37-3701 | £4.90 |
| 600 x 400 x 3 | Blue | 37-3702 | £4.90 |
| 600 x 400 x 3 | Green | 37-3703 | £4.45 |
| 600 x 400 x 3 | Yellow | 37-3704 | £4.45 |
| 600 x 400 x 3 | Black | 37-3705 | £4.45 |
| 600 x 400 x 3 | Orange | 37-3706 | £4.45 |
| 600 x 400 x 3 | White | 37-3707 | £4.45 |
| 600 x 400 x 3 | Violet | 37-3708 | £4.45 |
| 600 x 400 x 3 | Pink | 37-3709 | £4.45 |
| 600 x 400 x 3 | Opal | 37-3710 | £4.45 |
| 600 x 400 x 5 | Red | 37-3712 | £7.99 |
| 600 x 400 x 5 | Yellow | 37-3715 | £8.85 |
| 600 x 400 x 5 | Black | 37-3716 | £7.99 |
| 600 x 400 x 5 | Orange | 37-3717 | £8.85 |
| 600 x 400 x 5 | White | 37-3718 | £7.99 |
| 600 x 400 x 5 | Pink | 37-3719 | £8.85 |
| 600 x 400 x 5 | Opal | 37-3720 | £8.85 |
| 1000 x 500 x 3 | Red | 37-3722 | £11.95 |
| 1000 x 500 x 3 | Blue | 37-3723 | £11.95 |
| 1000 x 500 x 3 | Green | 37-3724 | £11.95 |
| 1000 x 500 x 3 | Yellow | 37-3725 | £11.95 |
| 1000 x 500 x 3 | Black | 37-3726 | £11.95 |
| 1000 x 500 x 3 | Orange | 37-3727 | £11.95 |
| 1000 x 500 x 3 | White | 37-3728 | £8.99 |
| 1000 x 500 x 3 | Violet | 37-3729 | £8.99 |
| 1000 x 500 x 3 | Pink | 37-3730 | £11.95 |
| 1000 x 500 x 3 | Opal | 37-3731 | £8.99 |
| 1000 x 500 x 5 | Red | 37-3733 | £17.29 |
| 1000 x 500 x 5 | Black | 37-3737 | £17.29 |
| 1000 x 500 x 5 | Orange | 37-3738 | £13.15 |
| 1000 x 500 x 5 | White | 37-3739 | £18.44 |
| 1000 x 500 x 5 | Opal | 37-3741 | £18.44 |

553998

## Cast Acrylic Clear Sheets

These clear **cast acrylic sheets** from Perspex® transmit 92% of all visible light – that's better even than glass. Add to this excellent resistance to outdoor weathering, high tensile strength and rigidity, light weight and resistance to impact and it is easy to see why Perspex® **Clear** sheets are ideal for applications requiring critical visual performance and durability. Available in a range of sizes and thicknesses.

- High gloss, hard surface
- Easy to clean
- Long service life
- Safety glazing material meeting the requirements of ANSI Z.97 and BS 6262
- Easy to thermoform with low-cost tooling

| Size | Order code | 1+ |
|---|---|---|
| 600 x 400 x 3mm | 37-3700 | £3.95 |
| 600 x 400 x 5mm | 37-3711 | £6.49 |
| 1000 x 500 x 3mm | 37-3721 | £8.25 |
| 1000 x 500 x 5mm | 37-3732 | £12.90 |

553997

## Gammacril
### Cast Clear Acrylic Rods

These **Gammacril cast acrylic round rods** from **Perspex®** are turned from square to produce diameters up to 25mm.

Final polishing ensures that Gammacril round rods have a highly polished and brilliant surface and give the best optical finish available.

- Available in **500mm lengths**

| Diameter | Order code | 1+ |
|---|---|---|
| Length 500mm | | |
| 6mm | 37-3823 | £0.87 |
| 10mm | 37-3825 | £1.56 |
| 12mm | 37-3826 | £2.17 |

554002

| Diameter | Order code | 1+ |
|---|---|---|
| Length 500mm | | |
| 15mm | 37-3827 | £2.98 |
| 20mm | 37-3828 | £4.29 |
| 25mm | 37-3829 | £7.02 |

554002

## Extruded Clear Acrylic Tubes

These clear **Esacril extruded acrylic tubes** from Perspex® are available up to 100mm in diameter and with a wall thickness of 2 or 3mm dependent on diameter.

- Available in **500mm lengths (approx.)**

| Outside dia. | Inside dia. | Order code | 1+ |
|---|---|---|---|
| Length 500mm | | | |
| 10mm | 6mm | 37-3810 | £0.65 |
| 12mm | 8mm | 37-3811 | £0.69 |
| 25mm | 21mm | 37-3814 | £1.29 |
| 40mm | 34mm | 37-3815 | £2.69 |
| 50mm | 44mm | 37-3816 | £3.69 |

554001

| Outside dia. | Inside dia. | Order code | 1+ |
|---|---|---|---|
| Length 500mm | | | |
| 60mm | 54mm | 37-3817 | £4.29 |
| 70mm | 64mm | 37-3818 | £4.29 |
| 80mm | 74mm | 37-3819 | £5.59 |
| 90mm | 84mm | 37-3820 | £6.19 |

554001

### Order online
Activate your account for online ordering.
For further information:
**www.rapidonline.com/activate**

## Square Section Jelutong

| 8x8mm Pack 100 Order code **06-0801** | **£16.59** |
|---|---|
| 10x10mm Pack 100 Order code **06-0757** | **£18.94** |
| 12x12mm Pack 50 Order code **06-0767** | **£11.87** |

Value packs of square section Jelutong in a range of sizes.

- Essential for model building
- 600mm lengths
- 8 x 8mm and 10 x 10mm supplied in **packs of 100**
- 12 x 12mm supplied in **packs of 50**

## Dowel

Bumper packs of wooden dowelling, ideal for axles, structures and buggy construction.

- High quality Ramin
- 600mm lengths
- Available in a wide range of diameters
- 6mm and below supplied in **packs of 100**
- 8mm and above supplied in **packs of 10**

| Type | Order code | 1+ |
|---|---|---|
| 3mm (100) | 06-0763 | £6.52 |
| 4mm (100) | 06-0765 | £6.52 |
| 5mm (100) | 06-1197 | £8.13 |
| 6mm (100) | 06-1299 | £10.66 |
| 8mm (10) | 06-1201 | £2.35 |
| 9mm (10) | 06-1199 | £2.42 |
| 10mm (10) | 06-1203 | £2.48 |
| 12mm (10) | 06-1205 | £3.52 |
| 16mm (10) | 06-1207 | £4.80 |
| 19mm (10) | 06-1209 | £5.88 |
| 25mm (10) | 06-1211 | £7.55 |

300354

## MDF Sheets

| 3mm Pack 36 Order code **06-0755** | **£32.76** |
|---|---|
| 6mm Pack 30 Order code **06-0759** | **£33.08** |

300 x 600mm MDF sheets available in two thicknesses.

- Ideal for construction, 3D work and numerous D&T projects
- 3mm thickness supplied in **packs of 36**
- 6mm thickness supplied in **packs of 30**

## High Impact Polystyrene Sheets

**RVFM**

A range of High Impact Polystyrene (HIPS) sheets in a range of colours and sizes.

- Sheets can be used as conventional flat material, or are sized for economic use in **vacuum forming** machines
- Virgin grade for consistency of moulding
- The 1mm white HIPS offers a cost-effective method for students to prototype their designs prior to manufacture in a thicker material
- It has the added advantage that students can paint the finished moulding
- Supplied in **packs of 10** sheets of a single colour and size

*Tolerance ±1.5mm.*

Technical specification
457 x 254mm sheets are suitable for: Clarke's 725 and 917, SATRO 330 and 329
457 x 305mm sheets are suitable for: Formec 300X, Clarke's 1210 (2 sheets)

| Type | Order code | 1+ |
|---|---|---|
| **1mm thickness** | | |
| 1mm 457 x 254 red | 37-3100 | £9.11 |
| 1mm 457 x 254 blue | 37-3102 | £9.11 |
| 1mm 457 x 254 green | 37-3104 | £9.11 |
| 1mm 457 x 254 yellow | 37-3106 | £9.11 |
| 1mm 457 x 254 white | 37-3148 | £7.77 |
| 1mm 457 x 254 black | 37-3150 | £7.77 |
| 1mm 457 x 254 clear | 37-3178 | £12.47 |
| 1mm 457 x 305 red | 37-3108 | £10.49 |
| 1mm 457 x 305 blue | 37-3110 | £10.49 |
| 1mm 457 x 305 green | 37-3112 | £10.49 |
| 1mm 457 x 305 yellow | 37-3114 | £10.49 |
| 1mm 457 x 305 white | 37-3152 | £8.40 |
| 1mm 457 x 305 black | 37-3154 | £8.40 |
| 1mm 457 x 305 clear | 37-3174 | £13.20 |
| **1.5mm thickness** | | |
| 1.5mm 457 x 254 red | 37-3116 | £12.80 |
| 1.5mm 457 x 254 blue | 37-3118 | £12.80 |
| 1.5mm 457 x 254 green | 37-3120 | £12.80 |
| 1.5mm 457 x 254 yellow | 37-3122 | £12.80 |
| 1.5mm 457 x 254 white | 37-3156 | £10.43 |
| 1.5mm 457 x 254 black | 37-3158 | £10.43 |
| 1.5mm 457 x 254 clear | 37-3180 | £16.05 |
| 1.5mm 457 x 305 red | 37-3124 | £14.01 |
| 1.5mm 457 x 305 blue | 37-3126 | £14.01 |
| 1.5mm 457 x 305 green | 37-3128 | £14.01 |
| 1.5mm 457 x 305 yellow | 37-3130 | £14.01 |
| 1.5mm 457 x 305 white | 37-3160 | £11.77 |
| 1.5mm 457 x 305 black | 37-3162 | £11.77 |
| 1.5mm 457 x 305 clear | 37-3176 | £18.63 |
| 1.5mm 900 x 600 black | 37-3163 | £42.79 |
| **2mm thickness** | | |
| 2mm 457 x 254 red | 37-3132 | £15.63 |
| 2mm 457 x 254 blue | 37-3134 | £15.63 |
| 2mm 457 x 254 green | 37-3136 | £15.63 |
| 2mm 457 x 254 yellow | 37-3138 | £15.63 |
| 2mm 457 x 254 black | 37-3182 | £15.09 |
| 2mm 457 x 305 red | 37-3140 | £17.06 |
| 2mm 457 x 305 blue | 37-3142 | £17.06 |
| 2mm 457 x 305 yellow | 37-3146 | £17.06 |

036628

## PVC and Styrofoam Modelling Foam

**RVFM**

Fantastic range of modelling foams, ideal for design and build projects.

- Foam sheets are 1220 x 610 x 3mm
- Styrofoam sheets are 600 x 1219mm and are available in either 25 or 50mm thicknesses
- Foam supplied in **packs of 5** assorted colours (colours may vary)
- White sheets of Styrofoam **supplied singly**

| 3mm Foam Order code 06-0152 | £63.50 |
|---|---|
| 25mm Styrofoam Order code 06-0154 | £19.70 |
| 50mm Styrofoam Order code 06-0156 | £27.72 |

## Corrugated Plastic Sheet Joiners

**RVFM**

Joiners for use with 4mm corrugated plastic sheet material.

- The joiners simply push-fit into the flutes of the sheet, to produce butt joints and right-angle joints, and for fixing axles, etc.
- Supplied in **packs of 10 sets** (100 joiners)

| Pack 100 Joiners Order code **37-3320** | £3.49 |
|---|---|

## Corriflute Corrugated Plastic Board

**RVFM**

| Corruflute Pack of 20 Order code **37-3325** | £46.04 |
|---|---|

Polypropylene corrugated board is often referred to by the trade name Correx. It is a lightweight, tough material, which is easy to cut using a craft knife. The material can be joined using a wide variety of techniques, from gluing and stitching, through to fastening with click rivets or Corri-Joiners (see order code **37-3320**).

- Sheets have large internal channels offering good rigidity
- Sheets are 605 x 605 x 4mm
- Pack contains 4 each of Blue, Black, Green, Red and Yellow
- Supplied in an assorted coloured **multi-pack of 20** sheets

## Plywood Sheets
*Class Pack of 24*

| 3mm & 6mm Pack 24 Order code 06-0761 | £39.29 |
|---|---|

This birch plywood selection contains 24 sheets each measuring 300 x 600mm, in two thicknesses, 3mm and 6mm.

- Great for construction and design projects
- Supplied in **packs of 24 sheets**

## Thin & Thick Balsa Packs

| 75mm width Pack 30 Order code 06-1221 | £16.80 |
|---|---|
| 100mm width Pack30 Order code 06-1225 | £18.08 |

Packs of Balsa in a range of thicknesses.

- Length 450mm
- 10x 1.6mm thick
- 5x 2.4, 3.2, 4.8 and 6.4mm thick
- Available in 75 and 100mm widths
- Supplied in **packs of 30** pieces

# NUTS, BOLTS, WASHERS AND SCREWS

affix

## Pan Head Pozidriv Self-tapping Screws

A range of pan head Pozidriv self-tapping screws.

- Steel grade 4.8
- Zinc and clear passivated steel
- Supplied in **packs of 100**

| Type | Length (mm) | Order code | 1+ | 10+ |
|------|-------------|-----------|------|------|
| No.4 (2.9mm) | 6.5 | 33-3150 | £1.73 | £1.31 |
| | 9.5 | 33-3155 | £1.77 | £1.29 |
| | 13.0 | 33-3160 | £1.71 | £1.28 |
| No.6 (3.5mm) | 6.5 | 33-3180 | £2.26 | £1.68 |
| | 13.0 | 33-3190 | £2.27 | £1.71 |
| | 19.0 | 33-3195 | £2.13 | £1.58 |
| No.8 (4.2mm) | 9.5 | 33-3220 | £1.38 | £1.14 |
| | 12.7 | 33-3225 | £2.02 | £1.52 |
| | 19.0 | 33-3230 | £1.61 | £1.38 |

064752

## Countersunk Pozidriv Self-tapping Screws

A range of countersunk pozidriv head self-tapping screws.

- Steel grade 4.8
- Zinc and clear passivated steel
- Supplied in **packs of 100**

| Type | Length (mm) | Order code | 1+ | 10+ |
|------|-------------|-----------|------|------|
| No.4 (2.9mm) | 6.5 | 33-3410 | £1.23 | £0.90 |
| | 9.5 | 33-3415 | £1.03 | £0.782 |
| | 13.0 | 33-3420 | £1.40 | £1.03 |
| No.6 (3.5mm) | 9.5 | 33-3445 | £2.09 | £1.51 |
| | 13.0 | 33-3450 | £1.94 | £1.40 |
| | 19.0 | 33-3455 | £1.14 | £1.03 |
| No.8 (4.2mm) | 9.5 | 34-3460 | £1.18 | £1.07 |
| | 12.7 | 34-3465 | £1.29 | £1.18 |

064754

## Pan Head Pozidriv Machine Screws

A range of bright zinc plated, Pozidriv cross head, coarse threaded steel screws.

- Steel grade 4.8
- Bright zinc plated and clear passivated
- Manufactured to **BS4183**
- Supplied in **packs of 100**

| Type | Length (mm) | Order code | 1+ | 10+ |
|------|-------------|-----------|------|------|
| M2 | 10 | 33-2210 | £1.06 | £0.911 |
| M2.5 | 6 | 33-2200 | £0.964 | £0.878 |
| | 10 | 33-2202 | £1.13 | £0.942 |
| | 12 | 33-2205 | £1.06 | £0.889 |
| | 20 | 33-2207 | £1.11 | £0.921 |
| M3 | 6 | 33-2300 | £0.942 | £0.825 |
| | 8 | 33-2302 | £1.83 | £1.72 |
| | 10 | 33-2305 | £1.11 | £1.01 |
| | 12 | 33-2310 | £1.11 | £1.01 |
| | 16 | 33-2315 | £1.01 | £0.908 |
| | 20 | 33-2320 | £1.43 | £1.30 |
| | 25 | 33-2325 | £1.79 | £1.66 |
| | 30 | 33-2330 | £2.54 | £2.23 |
| M4 | 6 | 33-2410 | £1.79 | £1.66 |
| | 10 | 33-2415 | £1.43 | £1.25 |
| | 12 | 33-2420 | £1.31 | £1.05 |
| | 16 | 33-2425 | £1.33 | £1.07 |
| | 20 | 33-2430 | £1.38 | £1.10 |
| | 25 | 33-2435 | £1.74 | £1.56 |
| | 30 | 33-2440 | £1.99 | £1.64 |
| M5 | 6 | 33-2445 | £2.06 | £1.69 |
| | 10 | 33-2450 | £2.33 | £1.92 |
| | 12 | 33-2455 | £1.94 | £1.58 |
| | 16 | 33-2460 | £1.98 | £1.61 |
| | 20 | 33-2465 | £2.50 | £2.08 |
| | 25 | 33-2470 | £3.37 | £2.71 |

064727

## Order online

Save time, and place your order at:
**www.rapidonline.com**
24 hours a day

## Countersunk Pozidriv Screws

Bright zinc-plated and clear passivated Pozidriv head screws manufactured to **BS4183**.

- Steel grade 4.8
- Supplied in **packs of 100**

| Type | Length (mm) | Order code | 1+ | 10+ |
|------|-------------|-----------|------|------|
| M3 | 6 | 33-2950 | £3.41 | £2.49 |
| | 10 | 33-2952 | £2.20 | £1.58 |
| | 12 | 33-2955 | £2.01 | £1.74 |
| | 16 | 33-2957 | £1.65 | £1.21 |
| | 20 | 33-2960 | £0.921 | £0.697 |
| | 25 | 33-2962 | £1.79 | £1.64 |
| M4 | 6 | 33-2965 | £1.88 | £1.46 |
| | 10 | 33-2967 | £1.71 | £1.42 |
| | 12 | 33-2970 | £2.06 | £1.51 |
| | 16 | 33-2972 | £2.08 | £1.54 |
| | 20 | 33-2975 | £2.11 | £1.56 |
| | 25 | 33-2977 | £2.36 | £2.01 |
| M5 | 10 | 33-2980 | £2.94 | £2.39 |
| | 12 | 33-2982 | £3.17 | £2.58 |
| | 16 | 33-2984 | £3.89 | £3.14 |
| | 20 | 33-2986 | £4.02 | £3.26 |
| | 25 | 33-2988 | £4.65 | £3.73 |

064733

## Steel Washers

A range of bright zinc plated washers, available in a variety of thread sizes.

- Plain washers to **BS4320** made from mild steel
- Supplied in **packs of 100 or 1,000**

| Type | | Order code | 1+ | 10+ |
|------|------|-----------|------|------|
| Packs of 100 | M2 | 33-1750 | £0.654 | £0.536 |
| | M2.5 | 33-1755 | £0.685 | £0.611 |
| | M3 | 33-1760 | £0.578 | £0.536 |
| | M4 | 33-1765 | £0.461 | £0.428 |
| | M5 | 33-1770 | £0.825 | £0.697 |
| Packs of 1000 | M2 | 33-1943 | £4.80 | £4.36 |
| | M2.5 | 33-1945 | £5.48 | |
| | M3 | 33-1950 | £5.47 | £4.96 |
| | M4 | 33-1955 | £3.86 | £3.59 |
| | M5 | 33-1957 | £5.92 | £5.38 |

518546

## Steel Nuts

A range of bright zinc plated coarse threaded steel full nuts.

- Nuts are manufactured in **BS3692** grade 8
- Supplied in **packs of 100 or 1,000**

| Type | | Order code | 1+ | 10+ |
|------|------|-----------|------|------|
| Packs of 100 | M2 | 33-1725 | £0.935 | £0.84 |
| | M2.5 | 33-1705 | £0.672 | £0.599 |
| | M3 | 33-1710 | £0.578 | £0.536 |
| | M4 | 33-1715 | £0.683 | £0.609 |
| | M5 | 33-1720 | £0.746 | £0.704 |
| Packs of 1,000 | M2 | 33-1925 | £6.56 | £6.10 |
| | M2.5 | 33-1930 | £5.37 | £4.79 |
| | M3 | 33-1935 | £4.27 | £4.11 |
| | M4 | 33-1940 | £4.91 | £4.31 |
| | M5 | 33-1942 | £5.80 | £5.27 |

518545

To see our full range of Affix products visit
**www.rapidonline.com/affix**

## ISO Metric Steel Screw Kits

A range of kits of bright zinc-plated slotted pan head screws, washers and nuts.

- Steel grade 4.8
- All sizes of screw are individually packed in resealable polythene bags
- See **Workshop Equipment & Storage** for suitable storage cabinets - visit **www.rapidonline.com**.

**Technical specification**

| M2.5 kit contents: | M3 kit contents: | M4 kit contents: |
|---|---|---|
| Total 900 items | Total 1500 items | Total 1200 items |
| 100 M2.5 6mm screws | 200 M3 6mm screws | 100 M4 6mm screws |
| 100 M2.5 12mm screws | 100 M3 12mm screws | 100 M4 12mm screws |
| 100 M2.5 20mm screws | 100 M3 20mm screws | 100 M4 20mm screws |
| 300 M2.5 nuts | 100 M3 25mm screws | 100 M4 25mm screws |
| 300 M2.5 washers | 500 M3 nuts | 400 M4 nuts |
| | 500 M3 washers | 400 M4 washers |

| Type | Order code | 1+ | 5+ |
|------|-----------|------|------|
| M2.5 screw kit | 13-0330 | £8.15 | £7.62 |
| M3 screw kit | 13-0335 | £8.53 | £6.72 |
| M4 screw kit | 13-0340 | £8.34 | £6.67 |

064726

**Assortment kit in steel box**
Order code **49-0239**

# £44.56

**Refil kit**
Order code **49-0240**

# £30.93

# 3000-Piece Screw Assortment Kits

The 3000-Piece Screw Assortment Kits are galvanised screws manufactured to a high standard.

*Included in the kit are the following pieces:*

| | | | | | |
|---|---|---|---|---|---|
| 80 cylinder head screws | DIN 84 | M3 x 16mm | 4 hexagonal steel screws | DIN 933 | M10 x 40mm |
| 60 cylinder head screws | DIN 84 | M3 x 25mm | 4 hexagonal steel screws | DIN 933 | M10 x 60mm |
| 50 cylinder head screws | DIN 84 | M4 x 20mm | 380 washers | DIN 125 | M3 3.2mm |
| 40 cylinder head screws | DIN 84 | M4 x 30mm | 240 washers | DIN 125 | M4 4.3mm |
| 38 cylinder head screws | DIN 84 | M5 x 25mm | 118 washers | DIN 125 | M5 5.3mm |
| 20 cylinder head screws | DIN 84 | M5 x 40mm | 60 washers | DIN 125 | M6 6.4mm |
| 10 cylinder head screws | DIN 84 | M6 x 45mm | 32 washers | DIN 125 | M8 8.4mm |
| 90 countersunk screws | DIN 963 | M3 x 12mm | 20 washers | DIN 125 | M10 10.5mm |
| 60 countersunk screws | DIN 963 | M3 x 20mm | 300 spring rings galvanised | DIN 127 | A3 |
| 50 countersunk screws | DIN 963 | M4 x 16mm | 200 spring rings galvanised | DIN 127 | A4 |
| 40 countersunk screws | DIN 963 | M4 x 30mm | 118 spring rings galvanised | DIN 127 | A5 |
| 40 countersunk screws | DIN 963 | M5 x 20mm | 60 spring rings galvanised | DIN 127 | A6 |
| 24 hexagonal steel screws | DIN 933 | M6 x 16mm | 32 spring rings galvanised | DIN 127 | A8 |
| 16 hexagonal steel screws | DIN 933 | M6 x 20mm | 20 spring rings galvanised | DIN 127 | A10 |
| 10 hexagonal steel screws | DIN 933 | M6 x 30mm | 300 nuts | DIN 934 | M3 |
| 10 hexagonal steel screws | DIN 933 | M8 x 20mm | 190 nuts | DIN 934 | M4 |
| 10 hexagonal steel screws | DIN 933 | M8 x 30mm | 118 nuts | DIN 934 | M5 |
| 13 hexagonal steel screws | DIN 933 | M8 x 35mm | 60 nuts | DIN 934 | M6 |
| 6 hexagonal steel screws | DIN 933 | M8 x 50mm | 32 nuts | DIN 934 | M8 |
| 6 hexagonal steel screws | DIN 933 | M10 x 16mm | 20 nuts | DIN 934 | M10 |
| 6 hexagonal steel screws | DIN 933 | M10 x 30mm | 20 lens-headed countersunk screws | DIN 965 | 5.0 x 47mm |

## Nylon Insert Nuts Type T – Thin

**Fastenings**

Metric threaded steel nuts with nylon locking inserts.

- Zinc trivalent clear finish
- Conform to **DIN 985/DIN 6924**
- Supplied in **packs of 100**

| Type | Across flats | Height | Order code | 1+ | 10+ |
|------|-------------|--------|-----------|------|------|
| M3 | 5.5mm | 4mm | **33-4402** | 2.22 | 1.87 |
| M4 | 7mm | 5mm | **33-4404** | 2.58 | 2.12 |
| M5 | 8mm | 5mm | **33-4406** | 1.62 | 1.28 |
| M6 | 10mm | 6mm | **33-4408** | 1.82 | 1.50 |

530563

## DRAPER

## 305-Piece Self-Tapping Screw Assortment

An assortment of popular size self-tapping screws with plated finish for corrosion protection. Packed in a handy plastic storage case.

- Self tapping screw set contains 305 pieces
- Various sizes from 3 x 12 to 5 x 60
- Handy split-level divided storage case with transparent lid
- Dimensions 205 x 105 x 45mm
- Draper type HW8

**Self-tapping set**
Order code **13-0416**

# £6.61

## Washable Red Label PVA Adhesive

Ideal for general classroom use, this Red Label PVA glue adhesive exhibits some of the characteristics of premium Black Label PVA but with the avantage of being fully washable when dry.

- Fully washable
- Supplied in **5 litre** and convenient **180ml** dispensers

5L Order code 87-6022 **£7.82**

180ml Order code 87-6024 **£0.88**

## Black Label PVA Glue

General purpose, Black Label PVA Adhesive which bonds a variety of materials from paper to light materials and wood. Dries to a very flexible, crystal-clear finish. Can be mixed with paints without loss of colour intensity. Ideal for modelling, sticking, glazing and much more.

- Non-washable medium glue
- Supplied in **5 litre** and convenient **180ml** dispensers

5L Order code 87-6076 **£12.56**

180ml Order code 87-6078 **£0.98**

## EVO-STIK
## Weatherproof Wood Adhesive

This adhesive from **Evo-Stik** is the UK's market leading **waterproof wood adhesive** and is ideal for exterior use on all types of wood.

- Ideal for soft, hard, chipboard and plywood
- Fast setting and extra strong
- When glue has dried it forms a bond stronger than the wood itself
- Resealable cap
- Dries to a clear finish
- Clog free nozzle
- Anti-roll bottle with non-clogging twist cap
- Developed for interior and exterior use
- Complies with **EN 204 Type D3** -weatherproof, water resistant wood adhesive
- Available in **250ml, 500ml, 1 litre and 2.5 litre bottles**

| Pack size | Order code | 1+ | 5+ |
|---|---|---|---|
| 250ml | 87-4093 | £2.93 | £2.42 |
| 500ml | 87-4094 | £3.50 | £2.72 |
| 1 litre | 87-4095 | £6.43 | £5.33 |
| 2.5 litres | 87-4096 | £15.18 | £12.70 |

077528

## All-purpose Adhesive

7ml Order code 87-2458 **£0.71**

20ml Order code 87-2460 **£1.23**

35ml Order code 87-2462 **£1.42**

125ml Order code 87-2464 **£2.98**

The original UHU all-purpose adhesive.

- Fast, permanent, transparent and adjustable
- Doesn't wrinkle paper
- Adhesive layer remains elastic

## MAGMA BOND
## Cyanoacrylate Superglue Gel Adhesive

MagmaBond Cyanoacrylate Superglue Gel Adhesive is a fast curing, very high viscosity Ethyl Cyanoacrylate-based adhesive.

The gel formulation is suitable for bonding poorly mating components and for porous substrates such as china and other ceramics. It is also suitable for use on vertical and over-head surfaces as it will not drip or slump.

- High viscosity, gel superglue adhesive
- Fast curing
- Bonds most metals, wood, card, plastics, rubbers, leather, fabrics and other common materials
- Suitable for bonding poorly mating components and for porous materials like china and other ceramics
- Suitable for use on vertical and over-head surfaces
- Does not drip or slump
- Supplied in **3g tubes**

3g Order code 87-8018 **£1.43**

Technical specification

| Viscosity | Gap Fill | Temperature Range | Cured strength | Description |
|---|---|---|---|---|
| 50,000 to 90,000cps | 0.5mm | −50 to +80°C | 15 to 27N/mm² | Gel superglue |

## rolson QUALITY TOOLS
## Precision Super Glue

Superglue in a convenient tube with a precision applicator and anti-clog nozzle. Perfect for bonding metal, wood, many plastics, ceramics, rubber, leather and much more.

- Precision applicator
- Drop control
- Self-piercing, anti-clog cap
- Supplied in a **pack of 3x 3g tubes**
- Includes instructions including precautionary notes and warnings
- **Rolson type 60380**

3x 3g Order code 86-9709 **£1.05**

## MAGMA BOND
## Rapid Epoxy Resin Twin Syringe

1+ Order code 87-8014 **£4.53**

10+ Order code 87-8014 **£3.97**

The MagmaBond Rapid Epoxy Resin Twin Syringe contains 12ml each of resin and hardener and dispenses equal amounts of each for perfect mixing.

- 2-part epoxy resin syringe
- Produces a strong bond in seconds
- Sets in 5 minutes
- Ideal for use with ceramics, wood, chipboard, glass, metal, stone and most hard plastics
- Temperature range −40 to +100°C
- Supplied in a **25ml twin syringe**

## EVER BUILD
## Threadlock GP Blue

10g Order code 84-6456 **£1.98**

Medium strength anaerobic, allows for disassembly, thixotropic non-drip formula. For nuts, bolts, screws and threads. Can be used on oil contaminated parts.

## Araldite professional adhesives
## Rapid 2x 15ml Glue

Araldite Rapid is a quick-setting version of the famous Araldite two-part epoxy resin glue, which bonds ceramics, wood, chipboard, glass, metal and most hard plastics.

- Fast setting and very strong
- Solvent free
- Heat, cold, water and oil resistant
- Supplied with one tube of adhesive and one tube of hardener
- Suitable for bonding almost all materials in common use
- Sets with virtually no shrinkage and joints are resistant to chemical attack
- Provides a seal which is impervious to moisture
- Ideal for electrically insulating and a protection against electrolytic corrosion
- Available in **2x 15ml tubes**

| Type | Order code | 1+ | 6+ | 12+ |
|---|---|---|---|---|
| Rapid 2x 15ml | 87-4036 | £5.26 | £4.81 | £4.42 |

077504

## MAGMA BOND
## Anaerobic Nutlock

MagmaBond Anaerobic Nutlock is a general-purpose, medium strength, thixotropic nutlock designed for use where threaded and push-fit parts must remain secure in normal use, but can be disassembled with hand tools when servicing is required.

MagmaBond Anaerobic Nutlock is a blue liquid that cures when confined in the absence of air, e.g. on close-fitting metal surfaces and is suitable for all metric and imperial nuts and bolts, preventing vibration loosening, and leakage through the threads.

The thixotropic nature of MagmaBond Nutlock prevents run off, dripping and migration after assembly. Once applied, parts slip together easily, lubricated by the adhesive.

- General-purpose, medium strength, thixotropic nutlock
- Can be disassembled with hand tools when servicing is required
- Suitable for all metric and imperial nuts and bolts
- Prevents vibration loosening, and leakage through threads
- Thixotropic nature prevents run off, dripping and migration after assembly
- Parts slip together easily, lubricated by the adhesive
- Available in **10 and 50ml bottles**

| Type | Order code | 1+ | 10+ |
|---|---|---|---|
| 10ml | 87-8006 | £3.97 | £3.73 |
| 50ml | 87-8008 | £9.07 | £8.51 |

517801

## Volume pricing

Need to buy larger quantities?

Contact us now for a volume pricing quotation

**01206 751166**

## Anvil Hand tools
### Light Duty Wire Stripper

A high quality, light-duty, precision wire stripper with an adjustable gauge selector and spring loaded action.

- Adjustable gauge selector
- PVC handles
- Return spring
- Overall length 130mm

| Type | Order code | 1+ | 10+ | 20+ | 40+ |
|------|-----------|-----|-----|-----|-----|
| 130mm Light duty stripper | 86-0350 | £3.13 | £2.88 | £2.53 | £2.44 |

030555

## ≡Rapid
### Economy Mini Side Cutters

Economy electronic miniature side cutters offering excellent value for money. Large contract purchases placed with manufacturers enable us to offer these tools at a fraction of their normal cost elsewhere.

- Lap jointed
- PVC handles
- Return spring
- Overall length 115mm

| Type | Order code | 1+ | 10+ | 20+ | 40+ |
|------|-----------|-----|-----|-----|-----|
| 115mm side cutters | 85-0205 | £2.88 | £2.48 | £2.34 | £2.20 |

064400

## ≡Rapid
### Electronics Snipe Nose Pliers

Economy electronic snipe nose pliers offering excellent value for money. Large contract purchases placed with manufacturers enable us to offer these tools at a fraction of their normal cost elsewhere.

- Lap jointed
- PVC handles
- Return spring
- Overall length 130mm

| Type | Order code | 1+ | 10+ | 20+ | 40+ |
|------|-----------|-----|-----|-----|-----|
| 130mm snipe pliers | 85-0225 | £2.94 | £2.62 | £2.34 | £2.19 |

064403

## ≡Rapid
### Flat Blade, Round Shaft, Parallel Tip Screwdrivers

A range of high quality flat bladed screwdrivers.

- Fully hardened and tempered high grade steel shafts
- Chrome vanadium steel blades

| Type | Order code | 1+ | 12+ | 48+ |
|------|-----------|-----|-----|-----|
| 75 x 3mm flat blade | 86-0400 | £1.12 | £0.989 | £0.818 |
| 100 x 3mm flat blade | 86-0405 | £1.19 | £1.06 | £0.859 |
| 150 x 5mm flat blade | 86-0410 | £1.61 | £1.39 | £1.25 |

030559

## ≡Rapid
### Phillips Round Shaft Screwdrivers

A range of high quality Phillips screwdrivers.

- Fully hardened and tempered high grade steel shafts
- Chrome vanadium steel blades

| Type | Order code | 1+ | 12+ | 48+ |
|------|-----------|-----|-----|-----|
| 75mm No.0 Phillips | 86-0450 | £1.17 | £1.03 | £0.854 |
| 75mm No.1 Phillips | 86-0455 | £1.74 | £1.45 | £1.29 |
| 100mm No.2 Phillips | 86-0460 | £2.17 | £1.85 | £1.65 |
| 150mm No.3 Phillips | 86-0465 | £2.67 | £2.47 | |

030560

## ≡Rapid
# 5-Piece Basic Electronics Tool Kit in Zip Case

This extremely economical zipped case tool kit contains five of the most commonly used tools within electronics.

| | |
|---|---|
| 1+ Order code **85-0064** | **£8.77** |
| 10+ Order code **85-0064** | **£8.23** |
| 50+ Order code **85-0064** | **£7.49** |

- Side cutter
- Snipe nose plier
- Wire stripper
- Flat blade screwdriver
- Phillips screwdriver
- Black textured, reinforced and padded case
- Heavy-duty zip fastener closing along three sides
- Elasticated straps with various opening sizes for retention of tools in transit
- Overall opened size is 260 (W) x 245mm (H)

## TOOLCRAFT

### 9-Piece Precision Screwdriver Set

The Toolcraft 9-Piece Precision Screwdriver Set is ideal for fine or filigree jobs in electronics, precision mechanics, hobbies and model-making.

- Rotating caps
- 3x screwdriver slot 2.0, 2.4 & 3.0mm
- 3x cross-head PH 0, PH 00 & PH 1
- 3x T-profile T6, T8 & T9
- Storage box

| Order code **51-2570** | **£13.84** |
|---|---|

### 6-piece Phillips and Pozidriv Screwdriver Set

A set of Phillips and Pozidriv screwdrivers with comfortable, 2-component anti-slip handles. The 4 largest sizes have hexagonal sections at the top of the blade that allow turning assistance from spanners or pliers.

- Chromium-vanadium-molybdenum-steel
- Phillips sizes: Ph0 x 60mm, Ph1 x 75mm & Ph2 x 100mm
- Pozidriv sizes: Pz0 x 60mm, Pz1 x 75mm & Pz2 x 100mm

| Order code **51-2536** | **£15.57** |
|---|---|

### 6-piece Slotted Screwdriver Set

This set of 6 **slotted screwdrivers** from **Toolcraft** includes the following sizes: 4 x 100mm, 5 x 100mm, 6.5 x 150mm, 7 x 150mm, 8 x 175mm and 9 x 200mm.

- Designed with a 2-component grip
- Supplied with a hexagonal attachment
- Manufacturer's part **821022**

| Order code **51-2571** | **£14.71** |
|---|---|
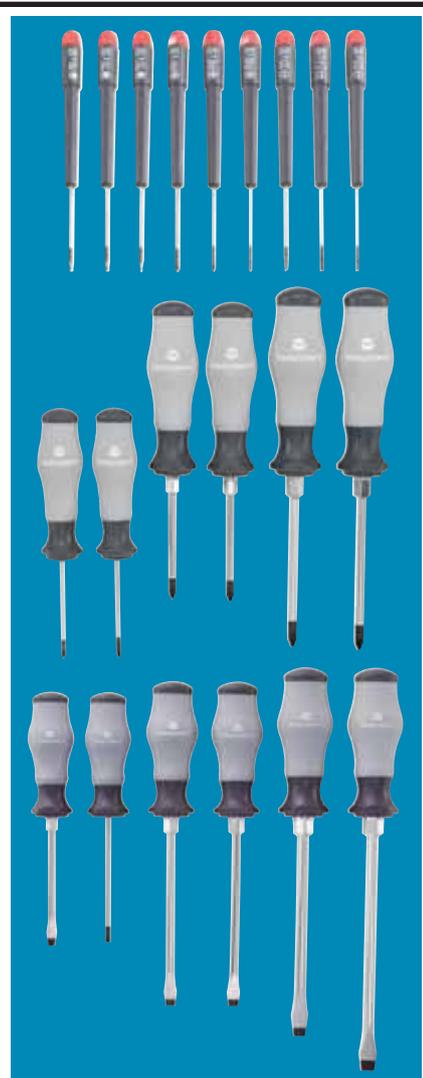
## Need to kit out your workshop with tools?

Contact us to get a quote on customised tool kits from our extensive range of big brand hand tools

Email: **quotes@rapidonline.com**

## Digital Vernier Callipers

**SEALEY POWER PRODUCTS**

These hardened and tempered **stainless steel** digital **callipers** from **Sealey** have a satin finish and a large LCD display with 11mm high figures for ease of reading.

- Metric and Imperial readings with conversion between the two
- Zero setting control for comparative measurement
- Supplied in carry/storage case

| 150mm Order code **89-0280** | **£21.42** |
| --- | --- |
| 200mm Order code **89-4539** | **£44.66** |
| 300mm Order code **89-6217** | **£49.82** |

Technical specification

| Model No: | AK962EV | AK9622EV | AK9623EV |
| --- | --- | --- | --- |
| Range: | 0 to 150mm/0 to 6in. | 0 to 200mm/0 to 8in. | 0 to 300mm/0 to 12in. |
| Resolution: | 0.01mm/0.0005in. | 0.01mm/0.0005in. | 0.01mm/0.0005in. |
| Accuracy <100mm: | ±0.02mm/0.001in. | ±0.02mm/0.001in. | ±0.02mm/0.001in. |
| Accuracy >100mm: | ±0.03mm/0.001in. | ±0.03mm/0.001in. | ±0.04mm/0.002in. |
| Battery: | 1 x LR44 (1.5V) | 1 x LR44 (1.5V) | 1 x LR44 (1.5V) |

## Vernier Calliper

**rolson QUALITY TOOLS**

A high quality, high accuracy vernier calliper manufactured from stainless steel with a satin finish.

- Jaw depth 40mm
- Overall measuring capacity 150mm
- 4-way measurement: internal, external, depth & step
- Graduated in millimetres only
- A thumbscrew allows the calliper to be locked at a particular setting for repeated go/no go batch testing
- Resolution 0.02mm
- **Rolson type 50919**

| 1+ Order code **86-1474** | **£9.50** |
| --- | --- |
| 5+ Order code **86-1474** | **£9.38** |
| 10+ Order code **86-1474** | **£9.26** |

## Stainless Steel Rulers

**rolson QUALITY TOOLS**

Stainless steel rulers with both metric and imperial scales.

- Available in 150mm and 300mm lengths
- Easy to read black figures and graduations
- Subdivided down to 0.5mm and 1/64 inch
- Conversion table on the reverse side (inches to mm)
- Spring tempered stainless steel
- Hanging hole

| 150mm 1+ Order code **86-1644** | 150mm 5+ Order code **86-1644** | 150mm 20+ Order code **86-1644** |
| --- | --- | --- |
| **£0.71** | **£0.61** | **£0.40** |
| 300mm 1+ Order code **86-1646** | 300mm 5+ Order code **86-1646** | 300mm 20+ Order code **86-1646** |
| **£0.83** | **£0.77** | **£0.71** |

## Junior Hacksaw

**Siegen tools**

Steel construction with bright chrome plating. Supplied with finger guard and two 150mm blades.

- Steel construction with bright chrome plating.
- Supplied with finger guard and two 150mm blades.
- **Sealey model S0527**

| Junior hacksaw Order code **89-0434** | **£2.15** |
| --- | --- |

## Hard Point Tenon Saw

**rolson QUALITY TOOLS**

| Order code 86-0927 | | |
| --- | --- | --- |
| 1+ | 5+ | 10+ |
| £2.10 | £2.00 | £1.90 |

178188

A budget tenon saw with comfortable soft-grip handle.

- Rigid back tenon saw with hard point teeth for prolonged life
- Rubber and plastic comfort handle fixed to the blade by two screws
- Length: 250mm
- **Rolson type 58375**

## Hacksaw Frame – 300mm

**SEALEY POWER PRODUCTS**

Lightweight design with profiled handle for comfortable grip. Accepts standard 12in./300mm HSS and Bi-Metal blades. Quick and easy blade change. Supplied with blade.

- Lightweight design with profiled handle for comfortable grip.
- Accepts standard 12in./300mm HSS and Bi-Metal blades.
- Quick and easy blade change.
- Supplied with blade.
- **Sealey model S0481**

| 300mm hacksaw Order code **89-0428** | **£1.97** |
| --- | --- |

## Coping Saw Frame and Blade

**DRAPER EXPORT**

An Expert Quality, chrome plated coping saw frame with wooden tensioning handle.

- Blade can be turned through 360° for intricate work
- Supplied complete with 1 blade
- 15tpi, 165mm, pin-ended blades are available separately in **packs of 10**
- **Draper types 64408 (saw) 64416 (blades)**

| Coping Saw Order code **86-0936** | **£5.16** |
| --- | --- |
| Pk 10 blades Order code **86-0932** | **£2.18** |

## Rubber Grip Coping Saw + 5 Blades

**rolson QUALITY TOOLS**

This coping saw from Rolson has a 2-coloured rubber grip handle and is ideal for cutting intricate shapes in wood, metal etc.

- Supplied with 5 assorted blades
- Blades can be turned through 360 degrees for increased flexibility

| Coping saw Order code **86-9541** | **£3.08** |
| --- | --- |

## Bi-Metal Hacksaw Blades 300mm – Packs of 10

**DRAPER EXPORT**

**Expert Quality** saw edge, manufactured from high speed steel strip, electron beam welded to high quality carbon steel backing.

- Display packed ten blades per card
- **Conforms to BS 1919**

| 18 tpi Order code **91-4464** | **£11.41** |
| --- | --- |
| 24 tpi Order code **91-4465** | **£13.25** |
| 32 tpi Order code **91-4466** | **£13.88** |

Education

Hand Tools

Education

Power Tools

## Einhell
### 18V Cordless Drill Driver 1 x 1.3Ah NiCd

The Einhell BT-CD 18 cordless drill/ screwdriver is a high-quality, extremely versatile tool for the highest demands on a broad spectrum of drilling and screwdriving jobs everywhere in the home, workshop and garage.

Excellent power parameters are assured by the powerful, high-torque motor with reversing facility.

The BT-CD 18 can be stored neatly and safely in a practical transport and storage case.

- Charging time: 3 to 5h
- Number of gears: 1
- Idle speed: 0 to 550rpm
- Max. torque: 9Nm
- Number of torque steps: 22
- Dimensions: 280 x 285 x 96mm
- Weight: 1.5kg

| Order code 84-4896 | £28.52 |

## Einhell
### Cordless Drill Driver 12V 2 x 1.3Ah Li-Ion

The Einhell TE-CD 12 Li cordless drill/ screwdriver is a high-quality, high-performance and compact tool for the highest demands on drilling and screwdriving jobs everywhere in the home, workshop and garage.

The lithium ion battery has a battery management system for optimum control and long battery life.

- Charging time: 1h
- Number of gears: 2
- Idle speed (gear 1): 0 to 350rpm
- Idle speed (gear 2): 0 to 1300rpm
- Max. torque: 25Nm
- Number of torque steps: 18
- Dimensions: 330 x 95 x 265mm
- Weight: 0.96kg

| Order code 84-4978 | £92.68 |

## BOSCH
### Invented for life
### Cordless Combi Drill

The Bosch PSB 1800 LI-2 Cordless Combi Drill is ideal for screwdriving, drilling and impact drilling in wood, metal and masonry. It has 20 pre-selectable torque settings plus a drill and impact drill setting providing optimum power for every application.

- Powerful lithium-ion battery and 60-minute charger, for use with all DIY and garden tools in the Bosch 18 volt system
- No memory effect, no self-discharge
- Intelligent 3-stage charge level indicator
- 2-speed planetary gearbox
- Keyless chuck with Bosch Auto-Lock for the fastest and easiest tool changes

| Order code 85-9959 | £83.32 |

## DeWALT
### Compact Drill Driver 2x 2.0Ah Li-Ion - 10.8V

This 10.8V compact drill driver from DeWalt features the new slide battery system. It has a compact, lightweight design and 15-position adjustable torque control for consistent screwdriving into a variety of materials with different screw sizes and LED light for improved visibility. The 10mm single sleeve keyless chuck has an automatic spindle lock for quick and easy bit change and two speed settings, variable speed and reverse switch, plus all metal gearing for efficient power transmission and long tool life.

- No load speed: 0-400/0-1,500/min
- Max torque: 16Nm, 15 settings
- Capacity: wood: 19mm, steel: 10mm
- Weight: 0.91kg

| Order code 84-3124 | £116.95 |

## DRAPER
### 5 Speed Bench Drill 350W 230V

This Draper five-speed bench drill is ideal for educational use. The drill is manufactured with a steel pillar, heavy-duty 350W motor, 13mm capacity chuck and a large heavyweight stabilising foot. The table height is controlled via a rack-and-pinion system with left-right adjustment.

The drill is supplied with a telescopic chuck guard and a front-mounted NVR (No Volt Switch) for added convenience and safety. It is fitted with a BS approved non-rewireable 3-pin moulded UK plug and cable.

| Order code 85-9379 | £74.12 |

## DRAPER
### 650W 230V 16 Speed Floor Standing Heavy Duty Drill

16 speed heavy duty floor standing drill complete with 16mm capacity chuck suitable for the machine workshop. The 16 speeds are driven by a powerful 650W motor giving total flexibility for drilling hard and soft materials. Fitted with sealed bearings as standard, it features an adjustable circular tilting table complete with rise and fall rack and pinion. Fitted with a BS approved non-rewireable 3 pin moulded plug and cable. Carton packed on pallet.

**VDE no-volt switch**

| Order code 91-5368 | £490.13 |

## DRAPER
### 85W 400mm Fretsaw

A high quality fretsaw with a steel base and table. The parallel-action arm design allows quick and accurate cuts.

- Integral dust blower keeps the cutting line clear
- Connector for dust extraction
- Worktable tilts from 0 to 45°
- Uses 127mm pin-end fretsaw blades
- Fitted with BS approved non-rewireable 3-pin moulded UK plug

| Order code 85-8332 | £96.41 |

## SEALEY POWER PRODUCTS
### Professional Bandsaws

These professional **bandsaws** from **Sealey** have a steel chassis with locking blade wheel covers. Supplied with quick adjusting rip fence, mitre gauge, dust extraction port, blade wheel brushes and push sticks.

- Fully approved to current CE regulations
- Smooth operation by bearing mounted blade wheels and belt drive induction motors
- Micro switches prevent operation when either blade wheel cover is open
- No-volt release switches prevent uncontrolled blade re-start after power interruption
- Fitted with tilting tables for cutting compound mitres
- Fitted with blade wheel brush to prevent dust accumulation

| 245mm throat depth | |
| Order code 89-4115 | £192.01 |
| 305mm throat depth | |
| Order code 89-4116 | £480.40 |
| 335mm throat depth | |
| Order code 89-4959 | £530.72 |

# Today's technology for plastics

## 432 x 228mm Vacuum Former

The C R Clarke 725FLB quickly, efficiently and consistently produces professional, high quality, high definition vacuum formings on a small to medium scale as required by model makers, development engineers and students.

**230V Vacuum Former**
Order code 34-8582
**£2499.00**

## S and D Range Single/Double Sided Hot Wire Strip Heaters

This range of hot wire strip heaters provides a quick and efficient solution for the local heating of thermoplastic sheets up to 10mm (3/8in.) thick. It uses single-sided (600S, 1000S & 1500S) or double-sided (600D, 1000D & 1500D) multiple wire heating.

**600mm Single Sided Hot Wire Strip Heater**
Order code 34-8504
**£469.00**

CR Clarke

For more details and to see our full range of CR Clarke products visit
**www.rapidonline.com/c-r-clarke**
ALL PRODUCTS ARE MADE TO ORDER

## DREMEL
### BIG ON DETAIL

### 3000 Tool and Stand Set

Order code
**85-0357**
**£64.99**

This cost-saving package combines the Dremel 3000 Series Tool with 15 Accessories, 85-0547, and the Dremel 220 Drill Stand, 85-0409. This combination of drill and stand is ideal for drilling PCBs using drills with a 3.15mm shank.

- **3000 Series Tool:** 130W
- Variable speed control
- **220 Drill Stand:**
- Drill vertically or at an angle
- Adjustable in increments of 15°
- Can hold tool horizontally for polishing and sanding
- Cord management keeps cord safely stowed
- Depth markings for consistant depth measurement
- Base marked in both mm and inches
- Dimensions: 152 x 152 x 305mm
- Weight 454g

### 4-Star Promo Kit with Plastic Tool Box

Order code
**85-0362**
**£66.65**

The **3000 4 Star Kit** from **Dremel** includes the popular 3000 **Multi-Tool** plus 3 useful attachments and 55 high quality Dremel accessories. This kit contains a varied selection of items which allow the user to begin using the kit immediately for a variety of DIY projects.

- Instruction manual supplied
- Rated power input 130W
- Voltage 230V
- Variable speed setting
- Maximum speed 33000rpm

Set includes: *Multipurpose cutting kit; line and circle cutter; flexible shaft; 1 fibreglass reinforced cut-off wheel 32mm; 1 cut-off wheel 24mm; 1 EZ SpeedClic mandrel; 5 EZ SpeedClic cutting wheels; 2 polishing wheels; 1 silicon carbide grinding stone 19.8mm; 2 sanding bands; multipurpose spiral cutting bits; 1 x 19mm bristle brush; 1 high speed cutter; 1 aluminium oxide grinding stone; polishing compound; chess game.*

### 200 Series Multitool plus 5 Accessories

Order code
**85-0383**
**£37.50**

The Dremel 200-series is the ideal multitool to get started with Dremel. It's easy and comfortable to use and offers trusted Dremel quality and reliability at an affordable price. The Dremel multitool is compatible with all Dremel accessories and attachments, and with the enclosed accessories for sanding, metal cutting and grinding you can start working with Dremel straight away.

- Powerful 125W motor
- Compatible with all Dremel accessories and attachments
- Hanging loop to hang the tool on the Dremel Tool holder
- 2 speed settings (15,000 and 35,000 rpm)
- Suitable for most DIY and Hobby projects
**Contents**
- Dremel 200 Series tool fitted with a 3.2mm collet compatible with most Dremel accessories
- 5 high quality Dremel accessories
- Inspiring information DVD and Instruction manual

## Anvil Hand tools

### Variable Speed Rotary Tool 135W 230V & 119 piece Accessory Set

A comprehensive multi-tool set containing an Anvil AV-RT119 mains powered variable high-speed rotary tool and a wide selection of 119 accessories for drilling, cutting, engraving, polishing, wire-brushing, grinding and sanding.

The power tool and accessories are all contained in a convenient storage/carry case that keeps the tool and accessories securely in position and on show, ready for use.

- Voltage: 230 to 240V AC, 50Hz
- Rated input: 135W
- No-load speed: 8000 to 33,000 rpm
- Collet diameters: 1.6mm, 2.4mm & 3.2mm
- **Anvil type AV-RT119**

Order code
**85-8196**
**£20.39**

### 400-Piece Rotary Tool Accessory Set

A comprehensive set of 400 high quality accessories for miniature power drills.

- Sanding
- Grinding
- Cleaning
- Drilling
- Cutting
- Polishing
- High visibility storage/ carry case
- Case can be wall-mounted
- For full list of contents visit www.rapidonline.com
- **Anvil type AV400**

To see the full list of contents visit
**www.rapidonline.com**

Order code
**85-8198**
**£12.49**

## MEGA
### Reground Tungsten Carbide Drill Bits

High quality reground pre-used tungsten carbide **drill bits**, ideal for use with printed circuit boards.

- Reground to be as sharp as new
- May be shorter than standard 38mm
- Tolerance -0.2mm
- Not recommended for use in CNC drills
- Common shank size 3.18mm
- Supplied in **packs of 10** drills

| Size | Order code |
| --- | --- |
| 0.6mm | 86-2710 |
| 0.7mm | 86-2715 |
| 0.85mm | 86-2722 |
| 0.9mm | 86-2725 |
| 0.95mm | 86-2730 |
| 1.0mm | 86-2735 |
| 1.05mm | 86-2740 |
| 1.15mm | 86-2754 |
| 1.25mm | 86-2756 |

1+
**£14.41**

3+
**£13.69**

030639

## Heisinger 125 Years
### Reduced Shank PCB Twist Drill Bits

High-speed twist drills with 2.35mm shanks.

- Ideal for use with PCB drills

| Size | Order code |
| --- | --- |
| 0.6mm | 85-0451 |
| 0.8mm | 85-0450 |
| 0.9mm | 85-0452 |
| 1.0mm | 85-0455 |
| 1.2mm | 85-0457 |
| 1.4mm | 85-0460 |
| 1.6mm | 85-0462 |

1+
**£1.30**

10+
**£1.20**

030609

## DRAPER EXPERT
### Expert HSS Twist Drills

Expert Quality, high speed straight shank twist drills, supplied in pack quantities.

- Manufactured to **DIN 338** and **ISO 235/1** specifications
- 0.5 to 10mm supplied in **packs of 10**
- 11mm and above supplied **in packs of 5**

| Diameter | Box quantity | Order code | 1+ |
| --- | --- | --- | --- |
| 0.5mm | 10 | 85-9753 | £1.34 |
| 1.0mm | 10 | 85-9754 | £1.34 |
| 1.5mm | 10 | 85-9756 | £1.34 |
| 3.3mm | 10 | 85-9760 | £2.58 |
| 3.5mm | 10 | 85-9761 | £2.58 |
| 4.0mm | 10 | 85-9762 | £2.72 |
| 6.0mm | 10 | 85-9766 | £6.39 |
| 6.5mm | 10 | 85-9767 | £7.43 |
| 7.0mm | 10 | 85-9768 | £9.02 |
| 7.5mm | 10 | 85-9769 | £10.22 |
| 8.0mm | 10 | 85-9770 | £12.26 |
| 8.5mm | 10 | 85-9771 | £11.82 |
| 9.0mm | 10 | 85-9772 | £19.95 |
| 9.5mm | 10 | 85-9773 | £20.75 |
| 10.0mm | 10 | 85-9774 | £19.95 |
| 11.0mm | 5 | 85-9776 | £10.61 |
| 11.5mm | 5 | 85-9777 | £12.36 |
| 12.5mm | 5 | 85-9779 | £19.39 |
| 13.0mm | 5 | 85-9780 | £17.60 |

081130

## To see our full range of power tools and accessories visit www.rapidonline.com

# Zinc Chloride - AA, AAA, C Cell, D Cell & PP3 Batteries

A range of super heavy duty zinc chloride batteries that have been designed to provide long lasting energy to all your devices with constant low power consumption. The batteries are available in AA, AAA, C cell, D cell and PP3 batteries.

- Non rechargeable
- Mercury-free
- Cadmium free
- Suitable for a wide range of applications
- Available in **AA, AAA, C cell, D cell & PP3**
- CE approved

**Technical specification**

| Order code | Mftrs Part No. | |
|------------|---------------|---|
| 18-1440 | ER03X | AAA Battery |
| 18-1442 | ER6MX | AA Battery |
| 18-1444 | ER14MX | C Battery |
| 18-1446 | ER20MX | D Battery |
| 18-1448 | E6F22MX | PP3 Battery |

| | | MOQ 4 – Sold in Multiples of 4 | | |
|------|------------|------|------|------|
| Type | Order code | 4+ | 20+ | 100+ |
| AAA Battery | 18-1440 | £0.229 | £0.155 | £0.107 |
| AA Battery | 18-1442 | £0.265 | £0.168 | £0.119 |
| C Battery | 18-1444 | £0.332 | £0.275 | £0.215 |
| D Battery | 18-1446 | £0.586 | £0.394 | £0.334 |
| PP3 Battery | 18-1448 | £0.54 | £0.346 | £0.285 |

080144

## GP Batteries

# PP3 Zinc Chloride Batteries

The GP Greencell GP1604G is a Mercury Free Zinc Chloride PP3 Type Battery that can be used in all domestic devices. This reliable battery is best for devices that do not require much power. It provides good value for price conscious customers. Applications: Fire alarms, CD players, radios, toys, and clocks.

- Voltage: 9V
- Mercury Free
- Reliable power
- Weight: 36g
- Dimensions: 48.5(L) x 17.5(D) x 26.5(W)mm
- Supplied as PP3 Type
- Supplied singularly

| Type | Order code | 1+ | 10+ | 40+ | 200+ |
|------|------------|-----|------|------|------|
| PP3 | 18-1058 | £0.545 | £0.424 | £0.382 | £0.347 |

062227

## GP Batteries

# Lithium Coin Cell Batteries

A range of lithium manganese 3V coin cells.

- Non-rechargeable
- Operating temperature –20°C to +60°C
- Used in miniature electronic equipment, calculators and watches
- PCB versions are ideally suited to memory backup applications

| Type | V | Capacity | Size (hxø) | Weight | Order code | 1+ | 25+ |
|------|---|----------|-----------|--------|------------|-----|------|
| CR1220 pack of 5 | 3V | 36 mAh | 2 x 12 | 0.8g | 18-0363 | £4.10 | £3.10 |
| CR1616 pack of 5 | 3V | 50 mAh | 1.6 x16 | 1.2g | 18-0367 | £4.58 | £3.98 |
| CR1620 pack of 5 | 3V | 78 mAh | 2 x 16 | 1.2g | 18-0377 | £5.88 | £4.93 |
| CR2016 pack of 5 | 3V | 75 mAh | 1.6 x 20 | 1.7g | 18-0486 | £4.42 | £3.52 |
| CR2032 pack of 5 | 3V | 220 mAh | 3.2 x 20 | 3.1g | 18-0493 | £2.93 | £2.21 |
| CR2430 pack of 5 | 3V | 280 mAh | 3 x 24.5 | 4.0g | 18-0374 | £6.29 | £4.89 |

074895

## GP Batteries

# Ultra Alkaline AA and AAA Batteries
## Packs of 24 or 40

These **batteries** from **GP** are the ideal choice for devices such as digital cameras, audio players, toys and torches. They have been specially formulated to meet the increasing demands of today's new generation of power hungry devices and are both inexpensive and give plenty of power.

They offer higher energy capacity, better high and low temperature performance, and longer-term storage.

- For use with all high drain devices
- Long shelf life
- Positive terminal clearly marked
- Power rating 1.5V
- Available in two of the most popular sizes: AA and AAA
- Supplied in **packs of 24 or 40**

| Battery size | Pack size | Order code | 1+ | 10+ |
|--------------|-----------|------------|-----|------|
| AA | 24 | 18-2107 | £6.47 | £5.89 |
| AA | 40 | 18-2112 | £10.42 | £9.35 |
| AAA | 24 | 18-2108 | £6.47 | £5.89 |
| AAA | 40 | 18-2113 | £10.42 | £9.35 |

524127

## DURACELL

# Alkaline Manganese Dioxide Batteries, AA, AAA, C, D, PP3

A range of Industrial Duracell Alkaline-Manganese Dioxide Batteries. These Duracell batteries will provide you with the quality power that you know and trust from Duracell, at a great price.

Consumers want a battery they can trust, to serve as the heart of their devices, and Duracell has a reputation for going on long after their rivals have stopped. These batteries can be used in a wide variety of equipment including torches, flashlights, safety equipment (such as gas detectors), microphones, communication devices, measuring and medical instruments.

Whether you are powering the ordinary devices you use most often or those that are most critical to your job, Duracell has alkaline batteries engineered to suit your professional needs.

- Designed and packaged for wholesale and professional trade customers
- Non rechargeable (Alkaline)
- Suitable to a wide range of applications
- Higher energy content than zinc carbon
- Available in **packs of 10** and **100**
- Available in **AA**, **AAA**, '**C**' **cell**, '**D**' **cell** and **PP3** battery sizes

| Type | Voltage | Quantity | Order code | 1+ | 10+ |
|------|---------|----------|------------|-----|------|
| AA – LR6 | 1.5 | 10 | 18-3341 | £3.72 | £3.29 |
| AAA – LR3 | 1.5 | 10 | 18-3342 | £3.34 | £2.97 |
| C Cell – LR14 | 1.5 | 10 | 18-3343 | £8.06 | £7.21 |
| D Cell – LR20 | 1.5 | 10 | 18-3344 | £10.08 | £9.13 |
| PP3 – 6LR61 | 9.0 | 10 | 18-3345 | £12.20 | £10.70 |
| D Cell – LR20 | 1.5 | 100 | 18-3347 | £86.52 | |

547598

# Alkaline AA Batteries

An essential in the kitchen drawer of every household. These excellent value alkaline AA batteries from Conrad Energy offer the quality and endurance you would expect from premium brands at an unbeatable price. AA batteries are the most commonly used battery in the world, so keeping a few spare around the house is always a good idea. They are available in packs of 4, and also in money-saving packs of 24.
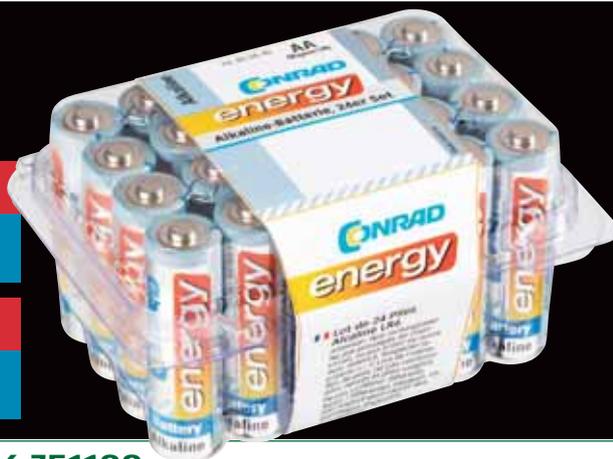
- High quality
- Rating: 1.5V
- Alkaline batteries maintain their charge longer than rechargeable batteries
- Available in **packs of 4** and also in money saving **packs of 24**

**AA Pack of 4**
Order code **51-2129**
£0.907

**AA Pack of 24**
Order code **51-2127**
£4.80

## Trupower
# Battery Holders with Flying Leads

1x N    1x AA    2x AA    2x AAA

A range of battery holders with red and black flying leads for quick connection to equipment.

- Ideal for volume production applications
- Moulded in black thermoplastic
- Lead length 150mm

| | | MOQ 5 - Price each in Multiples of 5 | | |
|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ |
| 1x N | 18-0123 | £0.343 | £0.257 | £0.18 |
| 1x AA | 18-0121 | £0.343 | £0.256 | £0.197 |
| 2x AA | 18-0122 | £0.375 | £0.278 | £0.218 |
| 2x AAA | 18-0124 | £0.343 | £0.257 | £0.214 |

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## Trupower
# Battery Boxes with Covers

Enclosed AAA and AA size battery boxes with detachable lids, moulded in black ABS.

- Lids may be secured with the small screws provided
- Terminated in red and black stranded 26AWG wires approx. 150mm long
- Also available with fitted miniature On/Off switch wired into the black (negative) wire

| | | MOQ 5 - In Multiples of 5 | | | |
|---|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ | 500+ |
| 2x AAA With Switch | 18-2900 | £0.724 | £0.577 | £0.524 | £0.498 |
| 3x AAA With Switch | 18-2901 | £0.868 | £0.685 | £0.623 | £0.591 |
| 4x AAA With Switch | 18-2902 | £0.921 | £0.723 | £0.641 | £0.618 |
| 2x AAA | 18-2903 | £0.514 | £0.389 | £0.346 | £0.327 |
| 3x AAA | 18-2904 | £0.697 | £0.505 | £0.459 | £0.436 |
| 4x AAA | 18-2905 | £0.676 | £0.541 | £0.492 | £0.477 |
| 2x AA With Switch | 18-2906 | £0.811 | £0.649 | £0.591 | £0.56 |
| 3x AA With Switch | 18-2908 | £1.09 | £0.833 | £0.689 | £0.653 |
| 4x AA With Switch | 18-2909 | £1.01 | £0.812 | £0.738 | £0.713 |
| 2x AA | 18-2910 | £0.587 | £0.469 | £0.426 | £0.404 |
| 3x AA | 18-2912 | £0.921 | £0.723 | £0.558 | £0.528 |
| 4x AA | 18-2913 | £0.90 | £0.723 | £0.574 | £0.545 |

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## Trupower
# AA Cell Battery Holders

A comprehensive range of battery holders manufactured from quality black thermoplastic moulding and metal components to ensure a secure and reliable connection.

- Holder range caters for battery sizes AA accommodating 1, 2, 3, 4, 6, 8 or 10 cells
- Available with either press stud and solder tag fixing
- Principle applications include portable equipment and memory back-up.

18-0125 2 x AA L59, W25
18-0126 3 x AA L58, W 48.3
18-0110 4 x AA L11, W25
18-0115 4 x AA L59, W30
18-0120 6 x AA L61, W45
18-0128 8 x AA L109, W32
18-0143 10 x AA L80, W60

| | | MOQ 5 - In Multiples of 5 | | |
|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ |
| 1x AA Solder tag | 18-0150 | £0.30 | £0.221 | £0.182 |
| 2x AA Press stud | 18-0125 | £0.343 | £0.257 | £0.214 |
| 3x AA Press stud | 18-0126 | £0.664 | £0.499 | £0.354 |
| 3x AA Solder tag | 18-0127 | £0.504 | £0.418 | £0.361 |
| 4x AA Press stud | 18-0110 | £0.557 | £0.431 | £0.312 |
| 4x AA Press stud | 18-0115 | £0.578 | £0.434 | £0.309 |
| 6x AA Press stud | 18-0120 | £0.771 | £0.583 | £0.476 |
| 8x AA Press stud | 18-0128 | £0.793 | £0.607 | £0.492 |

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## ≡Rapid
…where price meets quality

## ≡RVFM
# D Cell Battery Holder

A battery holder to take up to four D size batteries.

- Batteries are linked in series
- 4mm sockets are connected to each 1.5V division allowing the user to select 1.5V, 3.0V, 4.5V or 6V
- The individual D cell holders are securely mounted to a rigid Perspex back plate
- Ideally suited to electricity/basic electronics teaching

| Type | Order code | 1+ | 10+ | 25+ |
|---|---|---|---|---|
| D cell holder | 18-3722 | £14.18 | £12.98 | £12.31 |

062281

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## Trupower
# Battery Clips for PP3 Batteries

These battery clips suit PP3 and PP6 type 9V batteries.

- Lead length 150 or 200mm

Technical specification
| Order code | | Wire length |
|---|---|---|
| 18-0105 | | 150mm |
| 18-0106 | | 200mm |

| | | MOQ 10 – In Multiples of 10 | | |
|---|---|---|---|---|
| Type | Order code | 10+ | 100+ | 1000+ |
| 150mm | 18-0105 | £0.181 | £0.145 | £0.132 |
| 200mm | 18-0106 | £0.249 | £0.20 | £0.182 |

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## Trupower
# Heavy Duty PP3 Battery Clips with Stripped and Tinned Ends

A heavy duty battery clip with wires entering the cover at one end.

- The hard moulded ABS cover makes the clip more robust
- Fitted with colour coded 150, 200 or 300mm leads with stripped and tinned ends

Technical specification
| Order code | Mftrs Part No. | |
|---|---|---|
| **18-0092** | BS-IR-1 | End entry 150mm |
| **18-0093** | BS-IR-1-200 | End entry 200mm |
| **18-0097** | BS-IR-1-300 | End entry 300mm |

| | | MOQ 10 – In Multiples of 10 | |
|---|---|---|---|
| Type | Order code | 10+ | 100+ |
| End entry 150mm | 18-0092 | £0.245 | £0.194 |
| End entry 200mm | 18-0093 | £0.255 | £0.183 |
| End entry 300mm | 18-0097 | £0.367 | £0.301 |

062284

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## Trupower
# PP3 Battery Holder with Flying Leads

A 9V battery holder with 150mm flying leads.

- Ideal for many applications
- Male and female snap-in terminals assure positive contact and correct polarity
- Positive and negative legends clearly marked
- Withstands severe shock and vibration
- Moulded from black thermoplastic
- Incorporates screw fixing holes

| | | MOQ 5 – In Multiples of 5 | | |
|---|---|---|---|---|
| Type | Order code | 5+ | 25+ | 100+ |
| PP3 Battery holder | 18-0163 | £0.354 | £0.265 | £0.23 |

078026

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## Volume pricing
Need to buy larger quantities?
Contact us now for a volume pricing quotation
**01206 751166**

# AM Radio Project Classpack

This excellent projects package contains a wide range of components for schools working on radio type projects. Linked to the National Curriculum, this **classpack of 20** projects offers a substantial saving on parts bought separately which is ideal for schools working to tight budgets. The kit is supplied in a strong box with lid.

- Dimensions of the box: 43cm x 31cm x 7cm
- Great school resource
- Suitable for **Key Stages 3 & 4** (ages 11 to 16)
- Supplied as **a pack of 20 kits**

*Each kit requires 1x AA battery (not included).*

**Classpack of 20 kits**
Order code **13-0100**
Only
**£50.14**

# 555 Timer Project Classpack

Your chance to buy a **classpack of 20** Timer Project kits offering a substantial saving. Linked to the National Curriculum and supplied in a handy storage tray, complete with lid.

- Great school resource
- Suitable for **Key Stage 3** (ages 11 to 14)
- Supplied as **a pack of 20 kits**

*Each kit requires 1x PP3 battery (not included).*

*Each student will also require: 4 x M3 6mm pan head slotted screws (available as Rapid part **33-1500**),*
*4 x M3 12mm pan head slotted screws (**33-1510**), 4 x M3 spacer 4mm (**33-3632**)*
*and 4 x 18mm threaded spacers (**33-3535**).*

**Classpack of 20 kits**
Order code **13-0104**
Only
**£33.11**

# Moisture Tester Project Classpack

A **classpack of 20** kits of components to build a functional **Moisture Tester** that can tell if pot plants require water. The classpack contains all the electronic components required, including ready-made PCBs, in a Gratnell's Tray with lid. It offers a substantial saving compared to parts bought separately.

Students will love this Moisture Tester Project, which is linked to the National Curriculum, as it is simple to assemble and is ideal as an introduction to electronics.

- Dimensions of the box: 43cm x 31cm x 7cm
- Great school resource
- Suitable for **Key Stages 2 & 3** (ages 7 to 14)
- Supplied as **a pack of 20 kits**

*Each kit requires 1x PP3 battery (not included).*

**Classpack of 20 kits**
Order code **13-0102**
Only
**£18.75**

# Audio Amplifier Project Classpack

Aimed at **Key Stage 3**, the audio amplifier project provides teachers with a stimulating and inexpensive project through which to study the subject of amplification.

This schools projects package contains a comprehensive selection of components for schools working on audio related projects linked to the National Curriculum, this **classpack of 20** projects offers a worthwhile saving on parts bought separately which is ideal for schools working to tight budgets.

Teaching material available for free download at **www.rapidonline.com**.

*Each kit requires 1x PP3 battery (not included).*

**Classpack of 20 kits**
Order code **13-0106**
Only
**£45.28**

# Mini-light Project Classpack

This simple but interesting project has been designed by Rapid's technical team for Key Stages 1, 2 & 3 students. It will help them to make a fully working Red LED mini-light from the parts supplied in this great kit. The classpack is supplied in a handy storage tray with lid, containing sufficient components for 20 mini-lights.
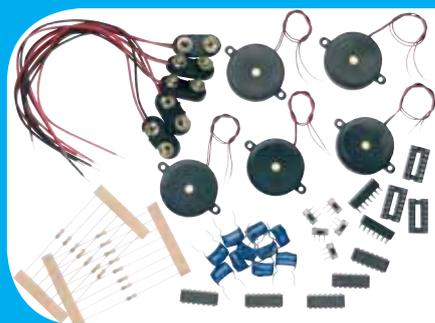
- Batteries and LEDs
- Plastazote foam core
- High impact polystyrene outer layers
- Standard Mini-light is a keyring torch kit using a red LED
- Suitable for Key Stages 1, 2 & 3 (ages 5 to 14)
- Supplied in **classpacks of 20**

*More Mini-light Kits are available – visit www.rapidonline.com for details*

**Classpack of 20 kits**
Order code **13-0138**
Only
**£12.90**

# Logic Alarm Project Kit

This project is designed to cover key topics in electronic based exam courses at GCSE level.

- Each unit of work will offer students an opportunity to build a fundamental circuit and incorporate this with their own design
- The component kits are supplied in **multiples of five** and include:
- ICs and switches
- Resistors and capacitors
- Piezo sounders and battery clips
- Pre-drilled PCBs are available separately in **packs of 5**, order code **70-0085**
- Suitable for **Key Stages 3 & 4** (ages 11 to 16)

*Requires 1x PP3 battery (not included).*

*PCB packs of 5 Order code 70-0085 £3.31*

**Pack of 5 kits**
Order code **70-0075**
Only
**£5.94**

For full details on these and many more Classpacks and Project Kits visit **www.rapidonline.com**

**Tel: 01206 751166  Fax: 01206 751188**

# BRINGING OUR KITS TO LIFE

Have you seen our new how-to-make videos?
We guide you step by step through making a selection
of our electronic project kits, including the contents
of each kit, the tools you will need, how and where
to solder each component, and how they work.
Each video contains a link to extensive Teacher Notes
and lesson plans. The videos are all in a handy playlist
on our YouTube channel!

Radio Project

555 Timer Project

Moisture Tester Project

Audio Amplifier Project

Mini-Light Project

Logic Alarm Project

You Tube **/rapidonline**

## Join in the conversation on social media

**@Rapid_Edu**

**/rapidonline**

**/rapidelectronics**

# RAPID LED CHRISTMAS TREE PROJECT KIT

A kit of parts for a simple to build festive project. Supplied with comprehensive instructions. Ideal as a one lesson end of term project.

- Size of finished tree: height 105mm, width (max.) 65mm

- Available individually and as a money-saving classpack of 30 kits supplied in a Gratnells tray

- Suitable for Key Stage 3 (ages 11 to 14)

- Video tutorial available on our YouTube channel

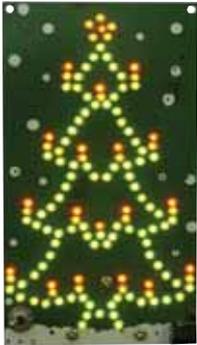*Each kit requires 1x PP3 battery (not included).*

| SINGLE | CLASSPACK OF 30 |
|--------|-----------------|
| **£3.49** | **£71.22** |
| Order code 70-1000 | Order code 70-1005 |

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**velleman**

**Deluxe Christmas Tree Kit**
- Dimensions 143 x 81mm
- Requires 1x 9V battery (not supplied)

**£9.31**
Order code 70-4384

**velleman**

**USB SMD Christmas Tree Kit**
- Dimensions 63 x 57mm
- Requires CR2032 battery (not supplied)

**£5.15**
Order code 70-4436

**velleman**

**16 LED Christmas Tree Kit**
- Dimensions 60 x 100 x 25mm
- Requires 1x 9V battery (not supplied)

**£3.63**
Order code 70-4382

SEE PAGE 30 FOR BATTERIES

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**Rapid** education

**Orderline: 01206 751166   Fax: 01206 751188**
**Email : education@rapidonline.com**
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