



2024

TECHNOLOGY CATALOGUE

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ALL PRICES
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TECHNOLOGY AND SOLAR KITS

| A USEFUL INTRODUCTION TO ELECTRONICS | | PRICE (EACH) | |
|---|---|--------------|---------|
| | | 1 - 49 | 50+ |
|  | <p>SOLDER PRACTICE KIT Code: SOLDPRAC</p> <p>The SOLDER PRACTICE KIT consists of a 88mm x 38mm Protoboard with 336 solder points and a selection of basic electronic components. It can be used by students to practice and hone their soldering and de-soldering skills – without the risk of damaging an expensive kit. Using the kit gives students the opportunity to learn component identification & values.</p> <p>*Legend: A, D, E, F</p> | \$4.74 | \$4.43 |
| | | | 1 - 19 |
|  | <p>ELECTRONIC DICE Code: ELDDICE</p> <p>The PICAXE ELECTRONIC DICE uses a Picaxe microcontroller. Using coding to program the Picaxe microcontroller you can randomly generate a LED Display to show one of six LED combinations simulating the display of a thrown dice.</p> <p>The dice works by switching Light Emitting Diodes (LEDs) on and off in the pattern of dots found on a traditional dice. The microcontroller is the 'brain' of the dice. It can be programmed to switch things on and off in any sequence. The microcontroller in the dice can switch the LEDs on and off to show numbers between one and six.</p> <p>As the 'diagonal' pairs on LEDs in the dice always light at the same time, they can be switched on and off by the same microcontroller output.</p> <p>Hours to construct: 2 - 5</p> <p>*Legend: A, D, E, F, G</p> | \$15.95 | \$15.35 |
| | <p>NOTE: A Jiffy case is available separately if required (JIFCASELD). <i>Dimensions: 83x54x31mm.</i></p> | \$3.75 | \$3.00 |
|  | <p>PROTOBOARD Code: PCB-PROTO</p> <p>The 336 hole PROTOBOARD is a small Circuit board that allows you to design your own simple circuits. Dimensions: 68mm x 38mm.</p> <p>*Legend: A, D, E, F</p> | \$1.39 | \$1.39 |
| | <p>NOTE: A Jiffy case is available separately (JIFCASELD) and is suitable to mount the PROTOBOARD onto, using SPACERS. <i>Dimensions: 83x54x31mm.</i></p> | | |
|  | <p>BREADBOARD Code: BRBRD170</p> <p>The solderless mini PROTOTYPE BREADBOARD has 170 tie points (17 holes x 10 rows). It has a self-adhesive back and is compatible with Arduino projects. Multiple breadboards can be connected together.</p> <p>*Legend: B, D, E, F</p> | \$5.56 | \$5.56 |
| | | | |
|  | <p>BREADBOARD - 400 TIE POINTS Code: BRBRD400</p> <p>400 hole solderless breadboard, 8.5cm x 5.5cm. A great solution for prototyping electronics. No soldering required - can be reused many times for many different projects, allowing for experimenting with circuit design. Has a standard double-strip in the middle and two power rails on both sides which can be pulled off easily to make the breadboard as thin as 3.5cm and stick it onto an Arduino Protoshield.</p> <p>Can be cut in half with a saw to create 2 tiny breadboards, or "snap" these breadboards together either way to make longer and/or wider breadboards.</p> <p>Standard 2.54mm spacings. All ICs, transistors, diodes, leds and passives can be used on this breadboard. Uses solid hook up wire for interconnections. Boards are keyed to enable easy expansion. 9.7mm thick, including sticky foam on the bottom.</p> | \$8.35 | \$8.35 |
| | | | |

LEGEND: * A=Solder B=No Solder C=Mechanical D=Electrical E=Electronic F=PCB G=Programmable H=Alternative Energy



INTRODUCING ELECTRONICS

Code: INTROELEC
Code: INTROELEC10

Kit includes components such as bulbs, battery holders, switches, resistors and lots more. It promotes experimentation, testing and recording observations. No soldering or tools required. Suitable for groups with 2-3 students.

Designed for use with "EASY ELECTRONICS" book by Charles Platt.

Class pack of 10, **INTROELEC10** available *includes* a copy of "**EASY ELECTRONICS**" book. Comes in handy plastic storage container.
*Legend: D, E

\$29.93
\$264.10

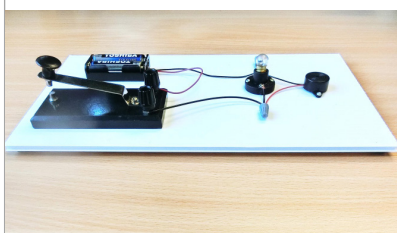
\$29.93
\$264.10

INTRODUCTION TO ELECTRIC CIRCUITS KITS

NO SOLDER REQUIRED. A great way for students to be introduced to a hands-on approach to electric circuits. Suitable for home schooling students.

1 - 49

50+



MORSE CODE KIT

Code: MORSE

Morse code is a form of binary on-off code that has been used for communication since 1844. The kit provides a basic Morse code set – a tapping key, a buzzer, an indicator light and a battery holder.

This kit is also an example of a simple circuit.

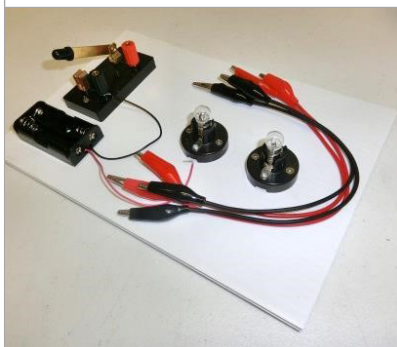
When you have two sets, by using longer lengths of hook up wire, you have the ability to "talk" (communicate) with a friend at another table or in another room.

Hours to create: 1 - 2

*Legend: D, E

\$16.31

\$15.80



INTRODUCING SIMPLE CIRCUITS

Code: SIMPCIRC

INTRODUCING SIMPLE CIRCUITS (CLASS PACK OF 10)

Code: SIMPCIRC10

The **SIMPLE CIRCUIT** kit allows you to introduce students to electricity. By using the supplied components students can experiment with basic circuits, simple circuits, as well as learning about series and parallel circuits.

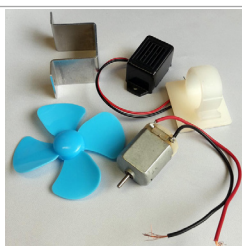
The kit can be expanded by adding the extension kits listed below or with the additional components, such as batteries & light globes to introduce students to Ohms Law. Class pack comes in handy plastic storage container.

*Legend: D, E

\$15.48

\$15.00

\$142.23



SIMPLE CIRCUITS EXTENSION KIT 1

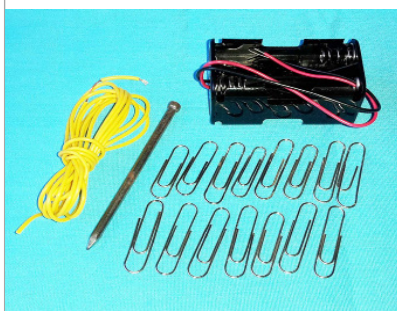
Code: SIMPCEXT1

Additional electrical components - fan, motor with wires and mini buzzer, - to connect to the components used in the **INTRODUCING SIMPLE CIRCUITS** kit to experiment further with basic electric circuits.

A metal clamp has been provided to raise the fan above the desk / platform to allow the fan to freely spin around.

\$9.75

\$9.75



SIMPLE CIRCUITS EXTENSION KIT 2 - EM

Code: SIMPCEXT2

Using some of the components from the **INTRODUCING SIMPLE CIRCUITS** kit, this extension kit allows you to build your own basic electromagnet.

This extension kits supplies the following items:

1 x 4AA Battery Holder, 1 x Nail, 1.5 metres hookup wire and 15 paper clips.

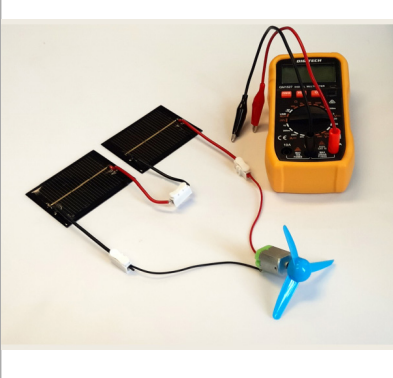
Together with the **INTRODUCING SIMPLE CIRCUITS** kit, this kit is perfect for both classroom and home-based schooling.

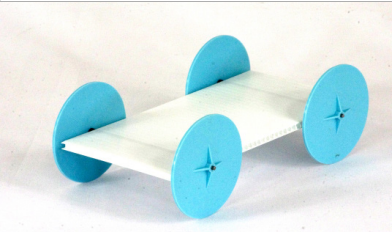
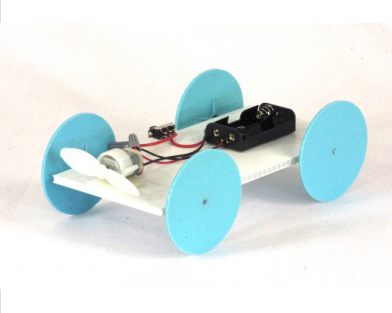
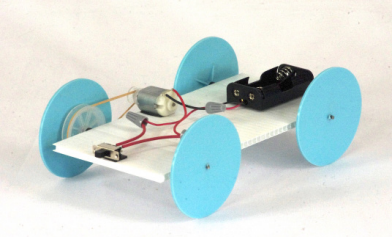
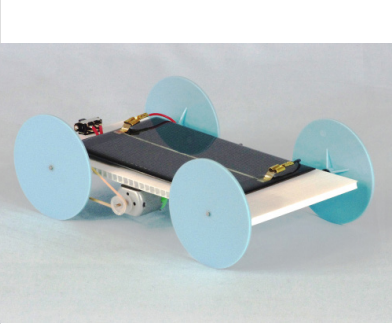
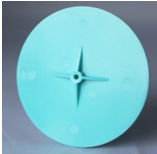
Batteries not included.

\$2.72

\$2.72

ALL PRICES
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| | | | |
|--|--|---------------------|---------------------|
| | <p>SPECIAL BUNDLE PRICE: Purchase <i>INTRODUCING SIMPLE CIRCUITS</i> kit (<i>SIMPCIRC</i>) + <i>SIMPLE CIRCUITS - EXTENSION KIT 1</i> (<i>SIMPCEXT1</i>) + <i>SIMPLE CIRCUITS - EXTENSION KIT 2 - EM</i> (<i>SIMPCEXT2</i>) in one order.</p> | \$24.68 | \$24.68 |
|  | <p>INTRODUCING SOLAR ENERGY Code: SOLARINTRO INTRODUCING SOLAR ENERGY (CLASS PACK OF 10) Code: SOLARINTRO10</p> <p>The INTRODUCING SOLAR ENERGY kit allows students to investigate the operation and properties of solar cells, and see how electricity is generated by them. By using the supplied components together with a multimeter, students can experiment with Series and Parallel circuits, and carry out simple experiments with sound and motion.</p> <p>Class pack of 10 supplied in handy storage container.</p> <p>NOTE: Multimeter not included – but is required for carrying out experiments with this kit. Propeller colour supplied may differ from illustration.</p> | \$22.25 \$210.00 | \$22.25 \$210.00 |

| PRIMARY STEM KITS | | PRICE (EACH) | |
|---|---|--------------|---------|
| | | 1 - 49 | 50+ |
| <p>THE BLUE BROTHERS – THE FAMILY OF 4 KIDS NO SOLDER REQUIRED A great way for primary school students to be introduced to a hands-on approach to technology & solar projects. All mechanical and electrical components, as well as the platform, are supplied. These kits have been designed so that the students not only assemble the vehicles, but also provide opportunities to investigate areas of science such as electric circuits, solar energy and velocity. (Most hand tools required are available to purchase separately from Scorpio Technology).</p> | | | |
|  | <p>BLUEY Code: BLUEY The youngest member of the Blue family who's not quite sure what it wants to be yet...so we're leaving it to you to make it more colourful! *Legend: B, C</p> | \$6.01 | \$5.81 |
|  | <p>BREEZY Code: BREEZY Every family has an airhead – Breezy wants to be a pilot, but he's not there yet...! A basic four-wheeled vehicle that uses a battery operated motor-driven propeller to make it move. This vehicle can also be used to experiment simple concepts of electric circuits in physics! *Legend: B, C, D</p> | \$11.50 | \$11.18 |
|  | <p>BLUEBIRD Code: BLUEBIRD The hoon in the Blue family – racing everywhere he goes! A four-wheeled powered vehicle at its simplest which can help introduce students to basic electric circuits. *Legend: B, C, D</p> | \$9.80 | \$9.50 |
|  | <p>BLUE SKY Code: BLUESKY This boy's the environmentalist in the family! A four-wheeled solar powered vehicle at its simplest. This vehicle illustrates a basic electric circuit where electricity is generated from a solar panel to power motor. These cars can be used to perform basic experiments relating to solar energy. *Legend: B, C, D</p> | \$23.38 | \$22.69 |
|  | <p>SOLAR WHEELS Code: SW70D Pack of 10 wheels if replacement wheels are required for the Blue Brothers kits or for students to design their own vehicle.</p> | \$18.95 | \$18.95 |

ALL PRICES INCLUDE GST



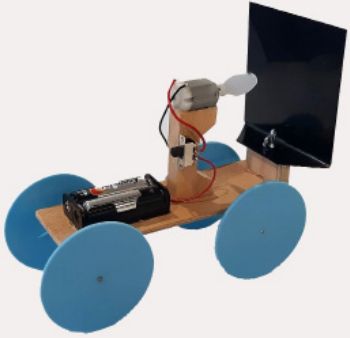
TECHNOLOGY KIT CONTENTS


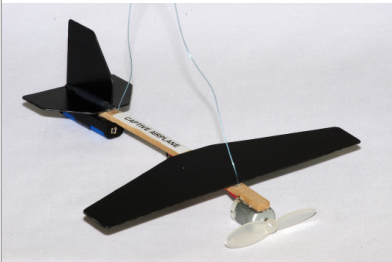
Our kits contain **all** the **electrical, electronic and mechanical components** needed to build the device (only). The teacher supplies readily available material for wiring, making body parts etc. – **NO BODY PARTS OR WIRES ARE INCLUDED** in the kits. Each order includes comprehensive instructions /Teaching Unit.

TECHNOLOGY KIT SELECTION

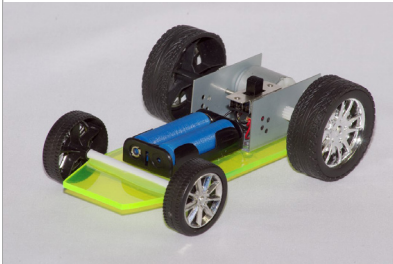
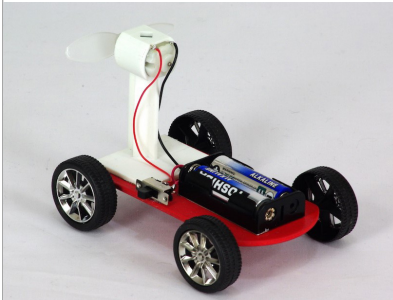


The legend (following each kit description) shows how we have graded the kits. These are a **guideline only** – construction times can vary considerably, depending upon the student's existing knowledge, skills and experience, and the amount of research and design input expected.

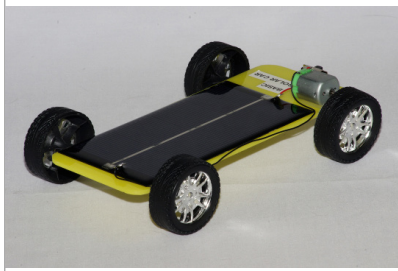
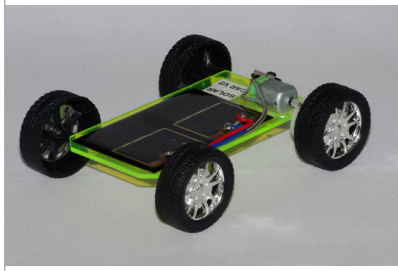
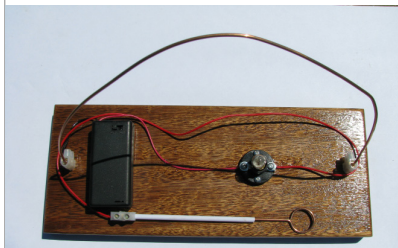
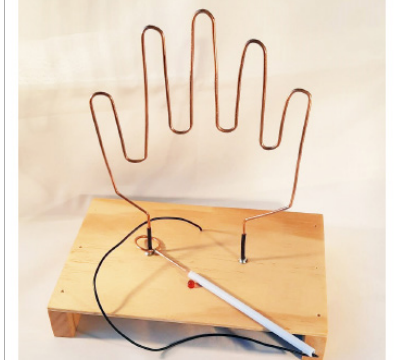

Overviews for all of our kits can be obtained from our website. Otherwise, you can phone or e-mail us, to send you a FREE copy of the teaching unit for any kits that you may be interested in.

| INTRODUCTORY KITS (NS - No solder variant) | | PRICE (EACH) | |
|---|--|--------------|---------|
| | | 1 - 49 | 50+ |
|  | <p>BALANCE PLANE Code: BALAN Code: BALAN-NS</p> <p>In this project a beam is used, with an electric motor and a propeller on one end and a battery holder on the other end. It is placed in a balanced state, on a vertical upright. This beam is designed to be rotated about its central point, in a horizontal plane, by the motor-driven propeller. NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 5 - 8 *Legend: A/B, C, D</p> | \$6.77 | \$6.58 |
| | | \$7.69 | \$7.48 |
|  | <p>BELT DRIVEN CAR Code: BELTCAR Code: BELTCAR-NS</p> <p>This is a four-wheeled vehicle at its simplest. Motive power is provided to the rear axle by an electric motor-driven belt (a rubber "O" ring). A number of these cars can be raced, and have the potential to be added to, to drive faster! (See our Website – Kits in Action). NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 6 - 8 *Legend: A/B, C, D</p> | \$7.46 | \$7.12 |
| | | \$8.22 | \$7.99 |
|  | <p>BLUE FIN FAN CART Code: BLUEFIN</p> <p>The BLUE FIN FAN CART is a simple four wheeled, propeller driven device with a sail that can be adjusted or removed to test the theory of Newton's 3rd Law of Motion. The propeller is driven by a small battery powered electric motor. Hours to construct: 2 - 4 *Legend: A, C, D</p> | \$14.46 | \$13.89 |

| INTRODUCTORY KITS | | PRICE (EACH) | |
|--|---|------------------|------------------|
| | | 1 - 49 | 50+ |
|  | BUBBLE BLOWER - NO SOLDER - G4 Code: BUBBLE-NS-G4 This device takes the “puff” out of bubble making! This device is designed to automatically blow bubbles! One motor, driving through a gearbox, constantly rotates 6 wire hoops, which continuously dip into a vessel holding the bubble mixture. The propeller (driven by a second electric motor) blows air into the hoops, producing a constant stream of bubbles. (See our Website – “Kits in Action” for a 3D printed example). NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 8 - 10 *Legend: A/B, C, D PLEASE NOTE: The original version of the Bubble Blower kit has been phased out and has been replaced by the v2 model containing an unassembled gearbox. It is now located in the Intermediate kits. Bubble Blower – No Solder – will continue with the GFOURSD gearbox and motor replacing the original – only while stocks last of that Gearbox assembly (please contact us for stock quantities of the No Solder version before placing your order). | \$12.15 | \$11.55 |
| | BUGGY 2WD ROBOT Code: BUGGY2WD <i>This kit is compatible with Arduino.</i> The ROBOT 2WD BUGGY has 2 independently driven wheels and a castor at the rear, It is a fun project that is aimed at expanding the students’ knowledge and experience of programming. Includes double ended screw driver. Requires 4 x AA batteries (not included). NOTE: Robot Buggy suitable for PICAXE is also available. See “ ROBOT BUGGY ” - Code: BUGGY . Hours to construct: 2 - 6 *Legend: A, C, D | \$22.57 | \$22.57 |
|  | CAPTIVE AEROPLANE Code: CAPTIVE Code: CAPTIVE-NS A small aeroplane is built from plastic or wood. It is driven by a propeller, which is powered by a small electric motor. The aeroplane is suspended from an overhead point and flies in a circle. The basic model is very simple to construct with a lot of scope for combining two different areas of study: technology and art (with a bit of woodwork thrown in). The components and ideas can be used to make other devices such as a witch on a broomstick or a flying pig (see if pigs can really fly?) NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 5 - 7 *Legend: A/B, C, D | \$6.17 \$7.11 | \$6.00 \$6.90 |
| | JUMPING BUG Code: JUMPBUG Make a fun novelty <i>JUMPING BUG</i> using a simple clockwork mechanism with an eccentric cam. This project also allows you to practice your soldering skills. Hours to construct: 1 - 3 *Legend: A, C, D | \$7.74 | \$7.51 |

ALL PRICES
INCLUDE GST

| INTRODUCTORY KITS | | PRICE (EACH) | |
|--|---|------------------|------------------|
| | | 1 - 49 | 50+ |
|  | <p>LO-RIDER Code: LORIDER</p> <p>This is a basic four wheeled vehicle, with both front and rear wheels on fixed axles. This vehicle:</p> <ul style="list-style-type: none"> • Is capable of forward and reverse motion (direction of travel being controlled by a two-way switch) • Pre-assembled gearbox with a choice of two gearbox ratios (at the construction stage). <p>Hours to construct: 2 - 4 *Legend: A, C, D</p> <p>NOTE: Limited stock available. Will be discontinued once sold out.</p> | \$10.95 | \$10.65 |
|  | <p>PROPELLED CAR Code: PROPC Code: PROPC-NS</p> <p>This vehicle is a simple four wheeled vehicle with a difference – motive power is a motor driven propeller. The propeller is driven by a small battery powered electric motor</p> <p>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires.</p> <p>Hours to construct: 5 - 7 *Legend: A/B, C, D</p> | \$7.11 \$8.06 | \$6.90 \$7.84 |
|  | <p>SINGLE LED TORCH Code: LEDTORSING</p> <p>This Project enables a single AA battery - that produces 1.5 volts - to power a LED that usually requires 3.2 volts to operate. This is a good example of frugal energy.</p> <p>The kit provides all the parts to make the circuit, and a key ring so that you can hang up the torch.</p> <p>Hours to construct: 2- 4 *Legend: A, C, D, E</p> | \$7.26 | \$7.03 |
|  | <p>SOCCER 'BOT Code: SOCCER Code: SOCCER-NS</p> <p>The SOCCER 'BOT is a simple electro-mechanical device that responds to a wired hand held controller, which is used to steer the device, using two push button switches to move forwards, left or right.</p> <p>SOCCER 'BOT can be used to play a game of soccer between two or more participants.</p> <p>The front of the SOCCER 'BOT has a “scoop” (a crescent shaped cut-out), that enables a tennis ball to be “captured” and pushed towards the goal. The scoop is shallow enough to allow a competitor to knock the tennis ball out of control, then capture the ball and try to score.</p> <p>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires</p> <p>Hours to construct: 7 *Legend: A/B, C,D</p> | \$8.01 \$8.63 | \$7.81 \$8.38 |

| | | | |
|--|---|---------------------------------------|---------------------------------------|
|  | <p>SOLAR CAR (BASIC) Code: SOLARB Code: SOLARB-NS</p> <p>The SOLAR CAR - BASIC is a simple four-wheeled vehicle, driven by an electric motor, powered by a solar panel. Power to the wheels is transferred from the motor by gears. This car will run on a smooth level surface from 25% sunlight upwards.</p> <p>The solar panel consists of one large section producing 2.0 Volts and 0.9 Amps of electricity, under a 100% sunlight condition.</p> <p>Suitable for introducing the concept of solar power to students.</p> <p><i>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires.</i></p> <p>Hours to construct: 10 - 15 *Legend: A/B, C, D, H</p> | <p>\$26.72 \$27.70</p> | <p>\$25.79 \$26.92</p> |
|  | <p>SOLAR CAR V2 Code: SOLARV2</p> <p>The SOLAR CAR V2 is a basic four-wheeled vehicle, driven by an electric motor, powered by a purpose-designed solar panel. Power to the wheels is transferred from the motor by gears. This car will run on a smooth level surface from 25% sunlight upwards.</p> <p>The Solar panel consists of two sections, each of 1.5 Volts and 0.35 Amps, which can be connected in series or parallel, to suit changing light conditions.</p> <p>Hours to construct: 10 - 15 Legend: A, C, D, H</p> | <p>\$20.80</p> | <p>\$20.22</p> |
|  | <p>STEADY HAND GAME - NO SOLDER Code: STEADY-NS</p> <p>The STEADY HAND GAME - NO SOLDER is a simple game for students to make and assemble that illustrates simple electric circuits.</p> <p>The aim of the game is for the student to avoid touching the wire with the hand held loop. Touching the wire with the loop will result in the globe lighting up.</p> <p>The game makes use of the fact that electricity will only flow around a complete circuit - it will stop flowing the moment the circuit is broken. The idea is to try not to complete a circuit, so that the globe does not light up.</p> <p>Hours to construct: 2 - 4 *Legend: B, D, E</p> | <p>\$9.46</p> | <p>\$9.17</p> |
|  | <p>STEADY HAND GAME Code: STEADYSEC</p> <p>The STEADY HAND GAME is a simple game for students to make and assemble that illustrates simple electric circuits.</p> <p>The aim of the game is for the student to avoid touching the wire with the hand held loop. Touching the wire with the loop will result in the buzzer sounding and the LED lighting up. The game makes use of the fact that electricity will only flow around a complete circuit - it will stop flowing the moment the circuit is broken. The idea is to try not to complete a circuit, so that a buzzer does not make a sound or an LED does not light up.</p> <p>Hours to construct: 2 - 4 *Legend: A, D, E</p> | <p>\$12.54</p> | <p>\$11.58</p> |
|  | <p>WHIRLY Code: WHIRL Code: WHIRL-NS</p> <p>This model consists of a single rotating beam that has an electric motor with a propeller, mounted at one end. A battery holder is on the other end of the beam and counter-balances them. The beam is mounted on an "axle" (shaft) at the beams' centre of gravity.</p> <p>When the WHIRLY is switched on, the motor spins the propeller, thus rotating the beam around its axle.</p> <p><i>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires.</i></p> <p>Hours to Construct: 5-7 *Legend: A/B, C,D</p> | <p>\$7.27 \$8.08</p> | <p>\$7.04 \$7.84</p> |

ALL PRICES INCLUDE GST


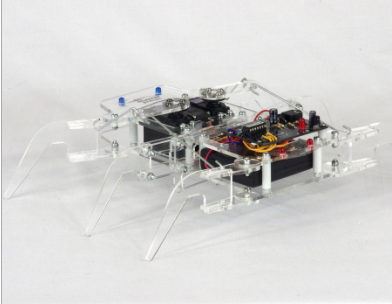

INTRODUCTION TO MICROCONTROLLERS

HOW DO YOU USE PAT'S PROJECTS?


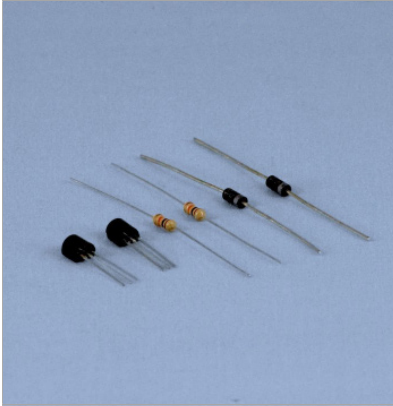
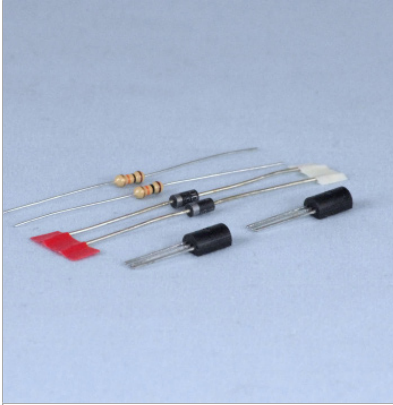
- The basic unit is a Microcontroller which has 10 LEDs and a piezo buzzer. This allows the students to make the microcontroller and program a "Lights and Sounds" display.
- Once the microcontroller has been made, the same microcontroller can then be used to run a number of different projects – these are all ADD-ONS that allow the student to remove the LEDs and reuse the microcontroller to run e.g. The Hexapod, the Animated Disc or the Robot Buggy. **The ADD-ONS will ONLY WORK with a microcontroller – not on their own.**
- All of the Add On projects will run by programming the Microcontroller using the Free (downloadable) Picaxe Editor.
- [Picaxe Download cable \(PICUCAB\)](#) IS REQUIRED to download programs from your computer.
- All of the kits can also be controlled using an Infra-Red remote - by getting the Infra-Red Add-On kit..

PAT'S MICROCONTROLLER PROJECTS (PROGRAMMABLE)

| | | PRICE (EACH) | | | |
|--|--|--------------|---------|--|--|
| | | 1 - 19 | 20+ | | |
|  | <p>PAT'S MICROCONTROLLER Code: PATSMICRO</p> <p>PAT'S 14M2 MICROCONTROLLER kit is an introductory PICAXE* 14 pin Microcontroller. It is aimed at introducing programming to younger students, however, it is also capable of performing complex tasks enabling the construction of sophisticated projects once its operation is understood. It is a complete unit on its own, with 10 LEDs and a Piezo sounder.</p> <p>PAT'S 14M2 MICROCONTROLLER has the added advantage that it can be used to control a variety of "add-on" projects, for example the Animated LED Disc and the Hexapod Robot.</p> <p>Hours to construct: 1 - 2 Hours to programme: 1 - 2 *Legend: A, C, E, F, G</p> | \$29.06 | \$27.17 | | |
| | <p>PAT'S MICROCONTROLLER - NO LEDs OR BUZZER Code: PATSMICRONLB</p> <p>PAT'S 14M2 MICROCONTROLLER without the 10 LEDs and Piezo sounder. Ideal for use with the ADD ON PROJECTS.</p> <p>Hours to construct: 1 - 2 Hours to programme: 1 - 2 *Legend: A, C, E, F, G</p> | \$23.38 | \$23.06 | | |
| <p>The following kits will ONLY operate with PAT'S MICROCONTROLLER (NOT on their own), but do NOT include a Microcontroller – these are ADD ON PROJECTS for using with PAT'S MICROCONTROLLER (choice between PATSMICRO and PATSMICRONLB).</p> | | | | | |
|  | <p>ANIMATED DISC Code: PATSDISC</p> <p>This project – the ANIMATED LED DISC is an Add-on project that is designed to be used with PAT'S 14M2 MICROCONTROLLER. It is aimed at expanding the students' knowledge and experience of programming that was introduced by building the microcontroller. This kit replaces the 10 LEDs supplied in the original kit, by making a mountable display that has 10 arms (6 LEDs per arm).</p> <p>The kit consists of an On-Off switch and 60 LEDs in 5 different colours, to be arranged in 10 rows. When the disc has been completed the Microcontroller can be programmed to have each row illuminate separately, flash through the rows in sequence or however the designer chooses to program it.</p> <p>Hours to construct: 4 - 10 Hours to programme: 1 - 2 *Legend: A, C, E, F, G</p> | \$9.49 | --- | | |

| | | | |
|--|---|--------------------|------------|
|  | <p>BASKETBALL COUNTER Code: PATSCOUNT</p> <p>This project – PAT'S BASKETBALL COUNTER is an Add-on project that is designed to be used with PAT'S 14M2 MICROCONTROLLER. It is aimed at expanding the students' knowledge and experience of programming that was introduced by building the microcontroller. This kit uses a 7 Segment display to indicate the number of points scored using a practice basketball game.</p> <p>This disc can be programmed for manual control, or can be controlled by use of PAT'S INFRA RED Add-on kit.</p> <p>This kit consists of an indoor Basketball set (Backboard Size 36 Lx26cm W; Hoop Diameter 19cm; Basketball Diameter 10cm), a 2.3" 7 segment display (counter), a microswitch (with a lever extension) and attaching parts. Every time you score, the display records the increasing goal tally. (The set may vary from the photo).</p> <p>Hours to construct: 4 - 10 Hours to programme: 1 *Legend: A, C, E, F, G</p> | \$27.80 | --- |
|  | <p>HEXAPOD ROBOT Code: HEXAPODBOT</p> <p>This provides all the parts needed to build a 6 legged walking robot, which can go forward, in reverse, left and right. The legs are driven by 3 servo motors.</p> <p>This project – the HEXAPOD ROBOT - is an Add-on project that is designed to be used with PAT'S 14M2 MICRO-CONTROLLER.</p> <p>It is a fun project that is aimed at expanding the students' knowledge and experience of programming that was introduced by building the original microcontroller. This kit replaces the 10 LEDs supplied in the original kit, by mounting the microcontroller onto a HEXAPOD ROBOT base.</p> <p>This kit is available in either clear acrylic or Plywood: PLYWOOD HEXAPOD –includes 3 servo motors, all linkages and fasteners etc. (Code: HEXAPODBOTPLY) ACRYLIC (CLEAR) HEXAPOD –includes 3 servo motors, all linkages and fasteners etc. (Code: HEXAPODBOTACR)</p> <p>Hours to construct: 4 - 10 Hours to programme: 1 *Legend: A, C, D, E, F, G</p> <p>Save an extra \$5.00 per kit if bundled with PATSMICRO or PATS MICROCRNLB. Offre applies to HEXAPODBOTPLY or HEXAPODBOTACR, when purchased in one order.</p> | \$54.02 \$59.69 | --- --- |
|  | <p>INFRA RED ADD ON Code: PATSIR</p> <p>This Infra Red Controller is an "Add-on" kit that is designed to be used with PAT'S 14M2 MICROCONTROLLER.</p> <p>This kit provides all the necessary components to convert the Microcontroller to be controlled remotely. It consists of an Infrared remote and the additional parts that need to be soldered to the Microcontroller.</p> <p>Hours to construct: 4 - 10 Hours to programme: 1 - 2 *Legend: A, E, F, G</p> | \$14.53 | \$13.91 |

ALL PRICES
INCLUDE GST

| | | PRICE (EACH) | |
|---|--|--------------|-----|
| | | 1 - 19 | 20+ |
|  | <p>ROBOT BUGGY Code: BUGGY</p> <p>This project – the ROBOT BUGGY is an Add-on project that is designed to be used with PAT'S 14M2 MICRO-CONTROLLER. The ROBOT BUGGY has 2 independently driven wheels and a castor at the rear, with LEDs at the front and rear. Includes the Motor driver components (LCMDRIVE) and a small secondary PCB that allows it to reverse as well as turning. It is a fun project that is aimed at expanding the students' knowledge and experience of programming that was introduced by building the original microcontroller.</p> <p>NOTE: This kit replaces the 10 LEDs supplied in the original kit, by mounting the microcontroller onto a buggy base.</p> <p>Hours to construct: 4 - 10 Hours to programme: *Legend: A, C, E, F, G</p> | \$24.64 | --- |
|  | <p>MOTOR DRIVERS (suit Collector current – up to 0.5A) Code: LCM DRIVE</p> <p>These parts are required if you plan to use the MICRO-CONTROLLER to drive small electric motors with a collector current less than 0.5 Amp.</p> <p>Hours to construct: 4 - 10 Hours to programme: *Legend: A, E</p> | \$1.58 | --- |
|  | <p>MOTOR DRIVERS (suit High Collector current – 1.2A) Code: HCMDRIVE</p> <p>These parts are required if you plan to use the MICRO-CONTROLLER to drive small electric motors with a collector current between 0.5 Amp and 1.2 Amps.</p> <p>Hours to construct: 4 - 10 Hours to programme: *Legend: A, E</p> | \$3.78 | --- |
| <p>...WITH MORE TO COME...</p> <p>A variety of project sheets will be available during the course of 2024 for use with Pat's Microcontroller...(keep checking our Website and Newsletters)</p> | | | |



PICAXE USB DOWNLOAD CABLE


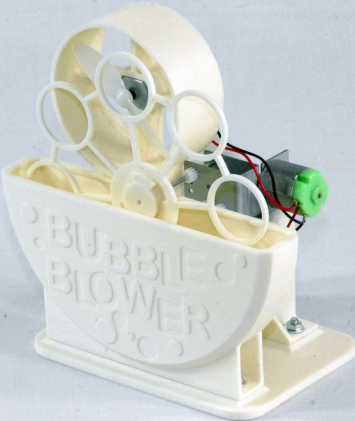
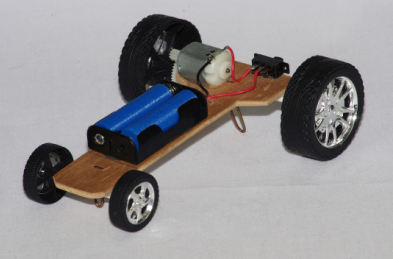
Code: PICUCAB

USB to 3.5mm Stereo socket.

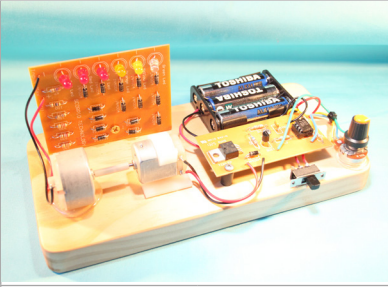
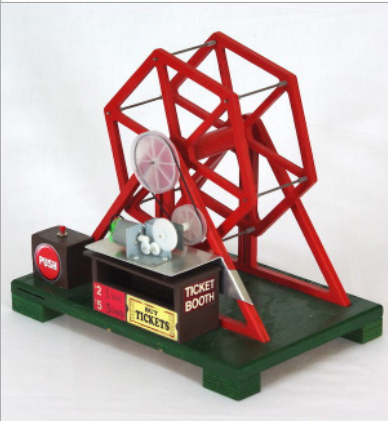
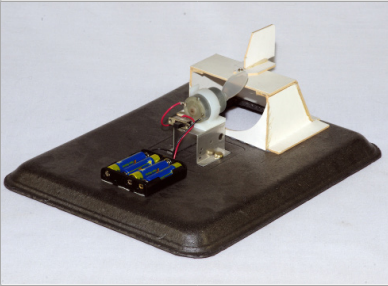

AXE027 - Picaxe USB Download Cable.

This is required to download programs from your computer for Pat's PICAXE Microcontroller kits.

\$35.00

| INTERMEDIATE KITS | | PRICE (EACH) | |
|---|--|--------------------|--------------------|
| | | 1 - 19 | 20+ |
|  | ADJUSTABLE POWER SUPPLY Code: POWADJ The ADJUSTABLE POWER SUPPLY kit consists of a Printed Circuit Board, a Digital Panel meter for measuring both Voltage and Current and a Voltage adjustment control. The voltage can be adjusted from 1.2 volts upwards. The ADJUSTABLE POWER SUPPLY kit can operate from either an AC or DC plug pack with a voltage range between 12 to 18 volts. It has a control switch that allows adjustment of the voltage to the required level, before connecting the ADJUSTABLE POWER SUPPLY to whatever you wish to power. Hours to construct: 6 - 7 *Legend: A, C, D, E, F | \$26.12 | \$25.36 |
| | <i>Also available in the following bundle packs:</i> | | |
| | Code: POWADJBUND1 Adjustable Power Supply Kit, 12V DC 1A Power Pack, Enclosed Metal Case (case illustrated in photo) | \$57.67 | --- |
| | Code: POWADJBUND2 Adjustable Power Supply Kit, 16VAC 1.25A Unregulated Power Supply Power Pack with Bare Ends, 2.1mm DC Power Line Connector Plug, Enclosed Metal Case (case illustrated in photo). | \$66.08 | --- |
|  | BUBBLE BLOWER Code: BUBBLEV2 Code: BUBBLEV2-NS This device takes the "puff" out of bubble making! This device is designed to automatically blow bubbles! One motor, driving through a gear-box, constantly rotates 6 wire hoops, which continuously dip into a vessel holding the bubble mixture. The propeller (driven by a second electric motor) blows air into the hoops, producing a constant stream of bubbles. (See our Website – "Kits in Action" for a 3D printed example). NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 8 - 10 *Legend: A/B, C, D | \$11.50 \$12.65 | \$11.10 \$12.05 |
| | PLEASE NOTE: The original version of the Bubble Blower kit has been phased out and has been replaced by the v2 model containing an unassembled gearbox. | | |
|  | DRAGSTER Code: DRAG Code: DRAG-NS The DRAGSTER is a simple motorised vehicle, for students to design and construct. It is powered by a small electric motor, and students are able to select the vehicle's gearing, dependent upon the speed and acceleration required. The vehicle has been designed to provide an easy introduction to electro-mechanical devices. A number of DRAGSTERS can be used to compete in a class environment. This puts the additional requirement on students to look into the effects of gearing on speed and acceleration, and to consider these factors in their vehicle design. NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires. Hours to construct: 10 - 14 *Legend: A/B, C, D NOTE: Available soon – Balsa sheets & squares | \$10.42 \$11.24 | \$10.12 \$10.92 |
| | | | |

ALL PRICES
INCLUDE GST

| INTERMEDIATE KITS | | PRICE (EACH) | |
|---|--|--------------------|--------------------|
| | | 1 - 19 | 20+ |
|  | <p>ELECTRICITY GENERATION DEMONSTRATION Code: ELGENDEM</p> <p>The ELECTRICITY GENERATION DEMONSTRATION kit is designed to show that: (1) a generator being turned at speed will generate electricity and (2) increasing the generators revs (rpm - revolutions per minute) increases the electrical output. This is easily demonstrated, as this kit lights up LEDs –as the motor’s rpm increases, lights up more LEDs: a good visual demonstration. Hours to construct: 6 - 7 *Legend: A, C, D, E, F</p> | \$17.50 | \$16.99 |
|  | <p>EXPLORER Code: EXPLORER</p> <p>The EXPLORER is a small autonomous vehicle that changes its direction of travel when it bumps into an object. Two independent motors drive the EXPLORER, each through its own gearbox. The front of the EXPLORER has a bumper bar, which is used to actuate either one or both of the pairs of the bumper bars’ microswitches. Each pair of microswitches control the rotation of the wheel on the opposite side. When one pair is triggered, the corresponding wheel drives backwards, to get the EXPLORER away from the object. The freely swinging trailing wheel introduces a random element to the direction it turns, as well as providing stability. A flashing lamp indicates the approach of the EXPLORER. Hours to construct: 22 - 24 *Legend: A, C, D, E, F</p> | \$19.41 | \$18.86 |
|  | <p>FERRIS WHEEL V3 Code: FERRISV3 Code: FERRISV3-NS</p> <p>The FERRIS WHEEL project allows the student to design and construct their own working version of the popular fairground ride. The project leaves plenty of opportunities for the student to use their imagination and display their design and construction skills. It is powered by a low speed motor gearbox powered by a 3 volt battery pack. It can be operated momentarily by a pushbutton switch. It also allows the student extra scope to add additional buildings (ticket box, etc) and lighting and sound to the project using additional circuitry. <i>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires.</i> Hours to construct: 12 - 15 *Legend: A/B, C, D, E</p> <p><i>PLEASE NOTE: These v3 versions of the Ferris Wheel kits with unassembled gearboxes are replacing the v2 models containing an assembled gearbox.</i></p> | \$11.10 \$11.85 | \$10.80 \$11.50 |
|  | <p>HOVERCRAFT Code: Hover</p> <p>One motor, driving a small propellor is enough to make this HOVERCRAFT glide along a smooth surface on a bed of air! The Kit Comes With Both Narrow And Wide Trays, Which Provides A Choice Of How Big To Make The Hovercraft. Hours to construct: 2 - 4 *Legend: A, C, D <i>NOTE: Spare foam trays 27.5cm x 22.5 cm now available (Code: FOAMTR11X9)</i></p> | \$10.82 | \$10.52 |
|  | <p>INTELLIGENT LINE TRACKING CAR Code: LINETRACKER</p> <p>The LINE TRACKER is an Intelligent Line Tracking Vehicle that can follow a dark track either drawn, printed or taped on a white background. Light produced by two LEDs is reflected onto two LDR’s. The LDR’s are the controlling circuits inputs. This information is used to control the operation of the LINE TRACKER to keep it following the along the track. Hours to construct: 3 - 5 *Legend: A, C, D, E, F</p> | \$23.47 | --- |


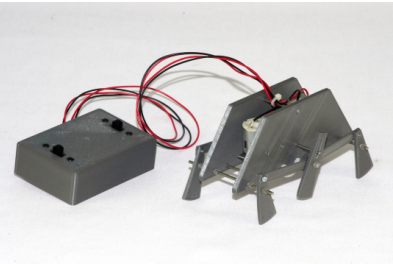


| | | PRICE (EACH) | |
|---|---|--------------|---------|
| | | 1 - 19 | 20+ |
|  | INTRO SOLAR CAR Code: SCRINT The INTRO SOLAR CAR is a four-wheeled vehicle, driven by Scorpio Technology's High Performance electric motor. The power source is two purpose-designed solar panels. Power to the wheels is transferred from the motor by gears. This car will run on a smooth level surface from 25% sunlight upwards. Each Solar panel produces 2.0 Volts and 0.9Amps, and they can be connected in series or parallel. By building and experimenting with this car students will gain a significant insight into renewable energy, and also the advantage of low friction wheels. Hours to construct: 3 - 5 *Legend: A, C, D, H | \$49.77 | \$48.76 |
| | INTRO SOLAR BOAT Code: SBTINT This kit contains all the components needed to construct a functional solar powered boat propulsion system. This unit includes instructions on how to assemble these components together with suggested ideas for hull construction in order to build a complete basic boat that works. By building and experimenting with this boat students will gain a significant insight into renewable energy in the form of electricity from solar, basic electricity, motors and energy conversion from solar power to motion of their boat. Hours to construct: 3 - 5 *Legend: A, C, D, H | \$36.37 | \$35.63 |
| JOUSTER with ASSEMBLED 6 BAND PCBs & ASSEMBLED GEARBOX^a Code: JOUST with PCBIR6-A | | \$26.11 | \$25.45 |
| With UNASSEMBLED 6 BAND PCBs & ASSEMBLED GEARBOX^b Code: JOUST with PCBIR6-UN | | \$23.46 | \$22.80 |
| With ASSEMBLED 6 BAND PCBs & UNASSEMBLED GEARBOX^c Code: JOUSTU with PCBIR6-A | | \$26.11 | \$25.45 |
| With UNASSEMBLED GEARBOX & UNASSEMBLED 6 BAND PCBs^d Code: JOUSTU with PCBIR6-UN | | \$23.46 | \$22.80 |
| NOTE 1: The Jouster kit includes the IRCU . The IRCU does NOT need to be purchased separately. NOTE 2: 6 BAND IR is available in both the ASSEMBLED and UNASSEMBLED variants. | | | |
|  | The JOUSTER is a small agile vehicle that is controlled and steered by infrared remote control. There is a Receiver PCB assembly mounted on the vehicle and a Transmitter in a hand held control box. The INFRA-RED CONTROL UNIT (IRCU) can transmit on 6 bands, which allows 6 JOUSTERS to be operated at the same time, by selecting one of the bands. The JOUSTER has two independent motor driven gearboxes, each driving one wheel. The remote control unit controls the vehicle through the use of push button switches – for each motor there are 2 push button switches, one to apply forward and the other to apply reverse motions. If both forward motion buttons are pushed simultaneously the vehicle travels forward in a straight line. However, if one forward push button switch and one reverse switch are pushed, the vehicle turns on the spot! The infrared controls are for indoor use only – it is not suitable for outdoor use. It requires line-of-sight and can operate up to a distance of approximately 20 metres. Hours to construct: 9 - 11 ^a Hours to construct: 11 - 13 ^b Hours to construct: 12 - 14 ^{c,d} *Legend: A, C, D, E, F | | |
| | | | |

ALL PRICES
INCLUDE GST

| INTERMEDIATE KITS | | PRICE (EACH) | |
|--|--|---------------------------|---------------------------|
| | | 1 - 19 | 20+ |
|  | <p>LED TORCH Code: LEDTOR</p> <p>The LED TORCH is an electronic flashlight kit which has 19 ultra-bright LEDs and 3 PCBs. This is an ideal project for anyone with a 3D printer, as you can design and print the end caps and the torch body. This flashlight kit can be used to teach students a variety of skills – component identification, soldering and assembly being the primary ones.</p> <p>NOTE: Care is required due to the small components that are soldered onto the PCBs. The use of a temperature controlled soldering station is recommended.</p> <p>NOTE: If a body is required (other than 3D printed): for the torch body a PVC pipe with an inner diameter of 40mm can be used.</p> <p>Hours to construct: 6 - 8 *Legend: A, C, D, E</p> | <p>\$20.35</p> | <p>\$19.71</p> |
|  | <p>LED TOUCH LAMP Code: LEDTLK</p> <p>The TOUCH SENSOR LAMP works by connecting the input to a metal plate or metal object. When the plate or object is touched the switch will operate and turn on a LED strip or LED array of your design. This means that a touch sensitive lamp can be designed. This circuit enables the student to explore the design and control of a wide range of lamp designs. Ideal for use across many areas – wood, plastics or metal.</p> <p>Hours to construct: 27 - 32 *Legend: A, C, D, E, F</p> | <p>\$35.57</p> | <p>\$34.48</p> |
|  | <p>LUMA LED DESK LAMP Code: LUMA</p> <p>The LUMA LED DESK LAMP is a hands-on STEM project that incorporates the concepts of sustainability and reuse of materials. The project is to design and make an LED desk lamp that can be used on a desk, table or bedside table. Students may use the included design incorporating a cantilever style and articulated joints or use it as a starting point for their own design. The project is suitable for different secondary year levels and abilities.</p> <p>Hours to construct: 12 - 18 *Legend: A, C, D, E, F</p> | <p>\$18.46</p> | <p>\$17.88</p> |
|  | <p>MARK'S MONSTER Code: MARK Code: MARK-NS</p> <p>MARK's MONSTER is a small agile vehicle that responds to a wired hand held controller, which is used to steer the vehicle, using two push buttons to move forwards, left or right.</p> <p>MARK's MONSTER has two independent motors and gear-drives, each controlled by its own push button switch. If both buttons are pushed simultaneously the vehicle travels forward in a straight line, but if only one push button switch is pushed the car turns in the desired direction.</p> <p>NOTE: The No-solder version has a motor and switch with wires pre-soldered to them, with twist-on connectors to join the wires.</p> <p>Hours to construct: 8 - 10 *Legend: A/B, C, D</p> | <p>\$9.82 \$10.60</p> | <p>\$9.53 \$10.30</p> |
|  | <p>MARK'S MONSTER PLYWOOD BODY Code: MMPLYBP</p> <p>Available for MARK's MONSTER is a pack of plywood parts, providing the pieces required for the body and the hand held controller.</p> | <p>\$6.17</p> | <p>\$6.17</p> |

| INTERMEDIATE KITS | | PRICE (EACH) | |
|--|--|--------------|---------|
| | | 1 - 19 | 20+ |
|  | <p>MR WALKER Code: MRWALK</p> <p>MR WALKER is a walking robot with waving arms and glowing eyes. The walking motion is achieved by cams and linkages and uses an easily constructed motor and gearbox assembly. Hours to construct: 14 - 18 *Legend: A, C, D</p> | \$8.78 | \$8.53 |
|  | <p>ROBOBUG Code: ROBOBUG</p> <p>The ROBOBUG is a small light-sensing robot that can be controlled (steered) by shining a small torch or your mobile phone (as the light source) on to its sensors. When light is shone onto one of the sensors, the motor controlled by that part of the circuit starts, causing the robot to change direction. If light is shone onto both sensors the robot will move forward in a straight line. Hours to construct: 10 - 14 *Legend: A, C, D, E, F</p> | \$18.40 | \$17.87 |
|  | <p>SCORPIO CONSTELLATION Code: SCOR</p> <p>Scorpio is an appealing member of the zodiac. It is one of the oldest constellations and was known as far back as the Sumerian civilizations, over 5,000 years ago. The constellation Scorpio contains the stars Antares, Graffias, Dschubba, Sargas, Shaula, Jabbah and Lesath. The SCORPIO CONSTELLATION PCB has an LED positioned on the location of each of the major stars in the Scorpio constellation. The LEDs flash in a set sequence. Hours to construct: 2 - 3 *Legend: A D, E, F</p> | \$11.03 | \$10.70 |
|  | <p>SEEKER V21 YELLOW Code: SEEKERV2YEL</p> <p>The SEEKER V2 YEL is a three wheeled vehicle. Depending on your design you can have the two drive wheels mounted at either the front or rear of the vehicle. Each wheel is driven by a separate gearbox/motor. The third wheel is a castor mounted wheel, allowing the vehicle to change its direction of travel easily. The SEEKER V2 YEL is controlled by two light dependent resistors (LDR's) mounted at the front of the vehicle. When the LDR's encounter a change in light level caused by an object or changed lighting, one or both LDR's will react and cause it to reverse and turn away from the object. The reverse time for each motor can be adjusted to your requirements. A PCB and a variety of electronic components are responsible for the control of the vehicle. Hours to construct: 16 - 22 *Legend: A, C,D, E, F</p> | \$45.62 | \$44.25 |
|  | <p>SIMPLE VEHICLE Code: SIMPLE</p> <p>This project requires the student to design and build a SIMPLE VEHICLE. This is the most basic vehicle possible, and is suitable to introduce students to Technology and Electrical components. After completion of the vehicle, it can be used for a variety of experiments (physics or otherwise) or even paired with another vehicle for racing and performance tests. This is a basic four wheeled vehicle, with both front and rear wheels on fixed axles. This vehicle is capable of forward and reverse motion (the direction of travel being controlled by a two-way switch) Has a choice of three gearbox ratios when assembling the gearbox. Hours to construct: 10 - 15 *Legend: A, C, D</p> | \$13.62 | \$13.24 |


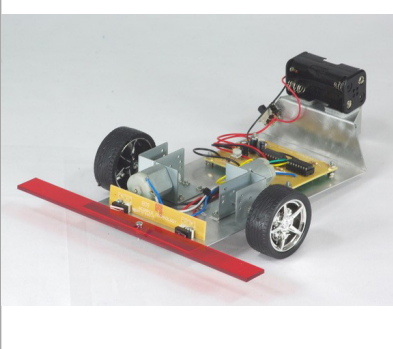
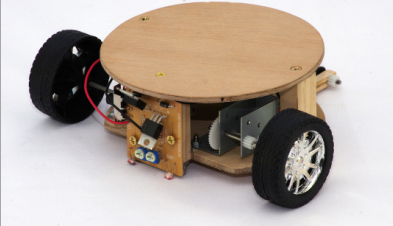
ALL PRICES
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|--|--|-----------------------|-----------------------|
|  | <p>SOLAR CAR (ADVANCED) Code: SOLDV</p> <p>The ADVANCED SOLAR CAR is a four-wheeled basic vehicle, driven by an electric motor and powered by a purpose designed solar panel. This vehicle has a 4 piece solar panel, and also has a SOLAR PANEL POWER CONTROLLER – LOW VOLTAGE (SPPC-LV), which helps your vehicle to achieve maximum performance, by the use of an electronic circuit (device).</p> <p>The 4 piece panel allows for a lot experimentation with series and parallel wiring and differing power outputs.</p> <p>Motion from the motor to the wheels is transferred by the use of gears.</p> <p>Hours to construct: 15 - 20 *Legend: A, C, D, E, F, H</p> | <p>\$33.49</p> | <p>\$32.49</p> |
|  | <p>STOMPER Code: STOMPER</p> <p>The STOMPER is a six legged device that is driven by two electric motors through a number of gears. It is controlled by two two-way switches, each controlling the legs on one side.</p> <p>This project requires the student to build a STOMPER – a simple robotic device. The student will learn and use a variety of skills – in marking out, cutting materials, drilling, assembling and soldering.</p> <p>There is a lot of scope in the design of the body, legs and size, as well as being able to use a variety of manufacturing techniques.</p> <p>Hours to construct: 16 - 22 *Legend: A, C, D</p> | <p>\$14.63</p> | <p>\$14.19</p> |
|  | <p>WIND GENERATOR Code: WINDGEN</p> <p>The WIND GENERATOR project allows the user to construct a model Wind Generator that can be used to demonstrate how wind energy is used to create electrical energy.</p> <p>By connecting the printed circuit board (with a graduated LED display) to the generator, it allows visual monitoring of the Wind Generator's electrical output.</p> <p>Hours to construct: 5 - 10 *Legend: A, C, D, E, F, H</p> | <p>\$10.30</p> | <p>\$10.05</p> |
|  | <p>WIND-UP TORCH Code: WINDT</p> <p>The WIND-UP TORCH provides light, using 3 super bright LEDs. The torch has a 3 stage gearbox connected to a small DC generator, which is turned by hand.</p> <p>The power provided by this generator is used to charge a small Lithium ion battery. The battery provides power for illumination, and a switch allows selection of low level lighting (a single LED) or a bright light (3 LEDs).</p> <p>When discharged, the battery is recharged by turning the handle for approximately one minute.</p> <p>The components provided for the WIND-UP TORCH include a Printed Circuit Board, the circuitry components, the generator, gears and other components to construct the gearbox. To complete the project, the student is required to design and make the torch's housing and handle.</p> <p>Hours to construct: 20 - 26 *Legend: A, C, D, E, F, H</p> <p>NOTE: A 130x67x38mm Jiffy Case (JIFCAS) that fits the Wind Up Torch perfectly is also available - purchased separately. See our on-line "Product Catalogue".</p> | <p>\$19.20</p> | <p>\$18.63</p> |
| | | <p>\$4.85</p> | <p>\$3.95</p> |

| ADVANCED KITS | | PRICE (EACH) | |
|--|---|--------------|---------|
| | | 1 - 19 | 20+ |
|  | <p>BEEPA Code: BEEPA</p> <p>The BEEPA project provides an introduction to microcontrollers, programming and electronics. BEEPA can be programmed to light three LEDs, produce sound from a piezo transducer, respond to pushbutton presses and respond to the light level.</p> <p>The kit allows a lot of experimentation, and the Teaching unit details a number of small programs that can be written to try out BEEPA's many functions.</p> <p>Hours to construct: 30 *Legend: A, C, D, E, F, G</p> | \$31.04 | \$30.10 |
|  | <p>BEETLE Code: BEETLE</p> <p>BEETLE is a six-legged user programmable device. When it hits an object, BEETLE backs away, turns around and continues in another direction, imitating the actions of a real beetle. BEETLE also changes direction when it doesn't bump into anything for some time.</p> <p>BEETLE has a lever arm microswitch at either end to detect an obstruction. It is driven by two motors, each with its own gearbox, and is controlled by a PICAXE-08M2 microcontroller.</p> <p>Hours to construct: 20 - 30 *Legend: A, C, D, E, F, G</p> | \$49.59 | \$48.11 |
|  | <p>DIZZY Code: DIZZY</p> <p>DIZZY is a two-wheeled user programmable vehicle. When it hits an object, DIZZY backs away, spins around quickly (hence its name) and continues in another direction. DIZZY also changes direction when it doesn't hit anything for some time.</p> <p>DIZZY has a lever arm microswitch at each end that detects an obstruction. It is driven by two electric motors, each with its own gearbox, and is controlled by a PICAXE-08M2 microcontroller. The prototype DIZZY was built using recycled CDs, but the concept has scope for individual variation, including the use of 3D printing.</p> <p>Hours to construct: 20 - 30 *Legend: A, C, D, E, F, G</p> | \$49.59 | \$48.11 |
|  | <p>FOLLOW WHITE LINE VEHICLE Code: FWLV</p> <p>The FOLLOW WHITE LINE VEHICLE follows a white line taped to a dark surface. Light Dependent Resistors determine the position of the vehicle relative to a white line, and steer it along that. The kit contains the PCB, two gearboxes and steering components, and is quite challenging.</p> <p>Hours to construct: 35 - 45 *Legend: A, C, D, E, F</p> | \$29.62 | \$28.75 |
|  | <p>FORKLIFT Code: FORKLIFT</p> <p>The FORKLIFT is a motorised vehicle that can drive, steer and lift a load. These motions are controlled by a tethered control box.</p> <p>This unit details the construction of our prototype FORKLIFT, which is 300mm long x 140mm wide x 250mm high. The design and size of the vehicle depends on the student's choices in design and construction. The major aspects of this project are planning, design, component identification, part manufacture, maximizing effective use of materials, assembly, testing and evaluation.</p> <p>Hours to construct: 35 - 45 *Legend: A, C, D, E, F</p> | \$50.53 | \$48.62 |

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| | | PRICE (EACH) | |
|--|--|---|---|
| | | 1 - 19 | 20+ |
|  | <p>RADIO CONTROLLED VEHICLE RADIO CONTROLLED VEHICLE with ASSEMBLED PCBs (incl. RCU)^a Code: RCV + PCBRCRT-A</p> <p>RADIO CONTROLLED VEHICLE with UNASSEMBLED PCBs (incl. RCU)^b Code: RCV + PCBRCRT-UN</p> <p>The RADIO CONTROLLED VEHICLE is a motorised vehicle, controlled and steered by remote control. There is a receiver PCB (Printed Circuit Board) mounted on the vehicle and a transmitter PCB in a hand held control box.</p> <p>This remote control unit controls the vehicle's forward and reverse motion, as well as the steering.</p> <p>The vehicle is driven by a gearbox/motor assembly, and steered by an electric motor through a steering rod and a steering link. The radio transmission distance is approximately 25 metres, and under favourable conditions can be greater.</p> <p>The RCV is controlled by a switchable 2 band Radio Control. This allows 2 cars to run at the same time. The RCV has forward and reverse motion, can be steered either left or right, and has a "Turbo" button (to increase the speed). It is driven through a multi-ratio gearbox – the student has to calculate the ratio and assemble the gearbox & motor.</p> <p>RCV includes the Radio Control PCBs and control unit and is available in 2 variants (See RCU) Specify which version is required – Assembled or Un-assembled PCBs.</p> <p>NOTE: If buying a class set of RCVs/RCUs, we recommend buying one set with assembled PCBs, for visual comparison and testing of PCBs if required.</p> <p>Hours to construct: 30 - 35^a Hours to construct: 33 - 38^b *Legend: A, C, D, E</p> | <p>\$29.98</p> <p>\$29.98</p> | <p>\$29.07</p> <p>\$29.07</p> |
|  | <p>ROBOT ARM KIT Code: ROBARM</p> <p>The ROBOT ARM is a five-axis pick-and-place manipulator. The axes provide the following functions: gripper, gripper rotation, wrist, forearm and arm. Each of the axes is driven by an electric motor. The ROBOT ARM is controlled by five two-way switches and is powered by four AA batteries.</p> <p>Hours to construct: 50 - 60 *Legend: A, C, D, E, F</p> | <p>\$46.93</p> | <p>\$45.51</p> |
|  | <p>ROBOT ARM CONTROLLER Code: ROBARMCONT</p> <p>This is a CONVERSION KIT for the ROBOT ARM.</p> <p>One use for the CONTROLLER is to enable the five motors in the ROBOT ARM to be controlled using position feedback. The Teaching unit details the use of the CONTROLLER with the ROBOT ARM.</p> <p>The central control element for the CONTROLLER is a Picaxe-40X micro-controller. The CONTROLLER may be incorporated into initial design of the ROBOT ARM or may be used to convert the ROBOT ARM at a later date.</p> <p>The CONTROLLER may also be used for mechanisms that require up to six axes of motor control with position feedback. Other devices may also be connected to the unused inputs and outputs.</p> <p>NOTE: This (conversion) option allows building the ROBOT ARM as a mechanical project, then converting and programming it as an Electronics project.</p> <p>Hours to construct: 30+ *Legend: A, C, D</p> | <p>\$50.11</p> | <p>\$48.44</p> |

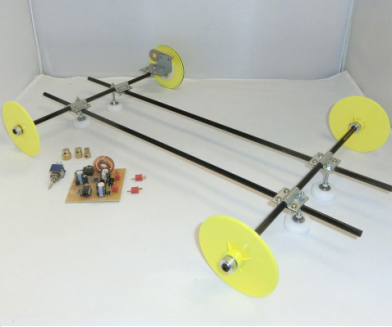

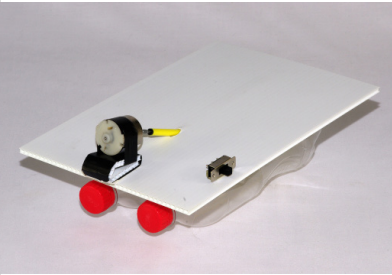
| | | PRICE (EACH) | |
|--|--|--------------|---------|
| | | 1 - 19 | 20+ |
|  | <p>ROBOT ARM WITH CONTROLLER Code: ROBARMWTC</p> <p>The ROBOT ARM WITH CONTROLLER is a five-axis pick-and-place manipulator controlled by a Picaxe microcontroller.</p> <p>The axes provide the following functions: gripper, gripper rotation, wrist, forearm and arm. Each of the axes is driven by an electric motor. The ROBOT ARM WITH CONTROLLER is powered by four AA batteries.</p> <p>The CONTROLLER enables the five motors in the ROBOT ARM to be controlled using position feedback. The central control element for the CONTROLLER is a Picaxe-40X microcontroller.</p> <p>Hours to construct: 60 - 80</p> <p>*Legend: A, C, D, E, F, G</p> | \$91.12 | \$88.38 |
|  | <p>SEEKER V2 - UNASSEMBLED GEARBOX Code: SEEKERV2</p> <p>The SEEKER is a three-wheeled vehicle. Each front wheel is driven by a separate gearbox/motor. At the rear is a swivel mounted trailing wheel, allowing the vehicle to change its direction of travel easily.</p> <p>The direction of travel of the vehicle is controlled by two LDRs (Light Dependent Resistors). When an object is approached or shade is encountered the SEEKER will reverse and change its direction of travel. A PCB and a significant number of electronic components control the vehicle.</p> <p>Hours to construct: 22 - 28</p> <p>*Legend: A, C, D, E, F</p> | \$33.27 | \$32.27 |
|  | <p>WANDERER v2 Code: WANDV2</p> <p>The WANDERER is a three wheeled vehicle. Each front wheel is driven by a separate gearbox/motor. The rear has a swivel mounted trailing wheel, allowing the vehicle to change its direction of travel easily.</p> <p>The WANDERER is controlled by micro switches mounted at the front of the vehicle, and activated by a bumper bar. When it encounters an object one or both microswitches will operate and cause it to reverse and turn away from the object. There is a PCB and a significant number of electronic components controlling the vehicle.</p> <p>Hours to construct: 23 - 29</p> <p>*Legend: A, C, D, E, F</p> | \$33.27 | \$32.27 |
|  | <p>WOMBAT Code: WOMBAT</p> <p>The WOMBAT is a line-following device. An electronic circuit senses the line and changes the speed of each wheel so that WOMBAT follows the line. Contains 2 gearboxes and the PCB.</p> <p>Hours to construct: 17 - 19</p> <p>*Legend: A, C, D, E, F</p> | \$26.25 | \$25.48 |

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SOLAR PROJECTS KITS

Useful kits to help introduce solar energy and renewable resources to your students. Projects suit small group work.

| | | |
|--|---|-----------------------|
|  | <p>SOLAR HOUSE KIT Code: SOLHOUSEK</p> <p>The SOLAR HOUSE kit is designed to introduce students to the concept of solar power and how solar power can be used to run electrical appliances and fittings in a house. The house is open on one side for easy viewing.</p> <p>This kit provides the:</p> <ul style="list-style-type: none"> • corflute panels, cloth tape and plan for making the house • solar and electrical components to simulate a solar panel running a ceiling fan and 2 downlights, and includes the wiring <p>*Legend: B, C, D, H</p> | <p>\$55.97</p> |
|  | <p>SOLAR HOUSE PROJECT – COMPONENTS KIT Code: SOLCOMP</p> <p>The SOLAR HOUSE PROJECT - COMPONENTS kit is designed to introduce students to the concept of solar power and how solar power can be used to run electrical appliances and fittings in a house.</p> <p>This kit provides the solar and electrical components to simulate a solar panel running a ceiling fan and 2 downlights:</p> <ul style="list-style-type: none"> • Solar panel with wires • Electric motor and propeller • 2 LEDs, a switch and wiring <p>These can be fitted to a model solar house of your own design.</p> <p>*Legend: B, C, D, H</p> | <p>\$29.93</p> |
|  | <p>SOLAR HOUSE PROJECT - CORFLUTE Code: SOLCORHOUSE</p> <p>This kit allows you to make a model solar house (open on one side for easy viewing) to use together with the SOLAR HOUSE PROJECT - COMPONENTS kit (which is used to simulate a solar panel running a ceiling fan and 2 downlights). Includes the corflute panels, cloth tape and plan for making the house.</p> <p>NOTE: Solar panel sold as part of SOLAR HOUSE PROJECT – COMPONENTS (SOLCOMP) or SOLAR HOUSE KIT (SOLHOUSEK). This is an illustration of a completed house using the corflute.</p> <p>*Legend: B, H</p> | <p>\$29.93</p> |
|  | <p>PROJECT BOARD KIT Code: SOLPROJBRD</p> <p>A corflute project board that allows students to observe electricity produced by a solar panel. For use with the components supplied in the SOLAR HOUSE PROJECT - COMPONENTS (SOLCOMP). This kit can be used as an alternative to the complete Solar House.</p> <p>*Legend: B, C, D, H</p> | <p>\$3.90</p> |

| SOLAR CHALLENGE KITS | | PRICE (EACH) | |
|--|---|--------------|---------|
| | | 1 - 19 | 20+ |
| <i>Kits designed to help students to make competitive boats & cars for participating in the Model Car & Boat Challenges.</i> | | | |
|  | <p>CHALLENGER SOLAR CARV2 Code: CHALLENGERV2</p> <p>Provides the mechanical and electronic parts to build the chassis for a Student Designed Car (Advanced). Includes carbon fibre tubes, axle bracket and Faulhaber mounting kits, wheels, guide rollers, brass pinion gears and PICAXE 08M2 SOLAR PANEL POWER CONTROLLER (PICSPPC08M2). It can be used to compete in the Model Solar Car Challenges held in various states around Australia. (Motor and solar panel are NOT included in this kit).</p> <p>Note: This kit assumes use of the FAULHABER 2232 electric motor which is seen as "the" motor to use for this competition).</p> <p>One DVD with instructions is supplied with each order. The DVD contains pdf instructions – Adobe Acrobat is required. Alternately a USB stick can be supplied or the files uploaded to the cloud. Hours to construct: 10 - 15 *Legend: A, C, D, E</p> | \$202.19 | --- |
| | <p>CHALLENGER SOLAR CAR KIT SM403 Code: CHALLENGERSM403</p> <p>This kit is the same as the CHALLENGERV2, except that this kit has the SM403 MOTOR MOUNTING KIT, to allow the competitors to use the SM403 motor. This provides a more economical way to enter the designed cars section and can later be upgraded to the higher performing Faulhaber motor, by swapping the motor mounting kit.</p> <p>One DVD with instructions is supplied with each order. The DVD contains pdf instructions – Adobe Acrobat is required. Alternately a USB stick can be supplied or the files uploaded to the cloud. Hours to construct: 10 - 15 *Legend: A, C, D, E</p> | \$202.19 | --- |
|  | <p>ADVANCED SOLAR BOAT Code: SBTADV</p> <p>This kit contains the hull material, electrical and mechanical parts to use as the basis for building a competitive Advanced level solar powered boat. NOTE: The motor and solar panel are NOT included in this kit. Hours to construct: 5 - 6 *Legend: A, C, D, H</p> | \$34.56 | \$33.54 |
|  | <p>JUNIOR SOLAR BOAT Code: SBTJUN</p> <p>This kit contains most of the components needed to construct a functional solar powered boat for participating in the Model Solar Boat Challenge – Junior Division. The kit provides a motor that complies to the regulations, low friction propeller shaft, 2 propellers (2 and 3 blade) to experiment with and the coreflute platform. This unit includes instructions on how to assemble these components together. By building and experimenting with this boat students will gain a significant insight into renewable energy. Hours to construct: 5 - 7 *Legend: A, C, D, H</p> | \$35.60 | \$34.83 |

FOR FURTHER TECHNICAL INFORMATION RELATING TO THESE SOLAR CHALLENGE KITS, REFER TO OUR "SOLAR & SOLAR CHALLENGE CATALOGUE".

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|  | <p>SHERIDAN CAR KIT Code: SHERIDAN</p> <p>This kit was developed as an introduction to the Victorian Model Solar Vehicle Challenge Car competitions. By constructing and racing this Kit Car students will gain the knowledge and expertise necessary to enable them to go on and design, build and race solar powered model cars of their own design.</p> <p>This kit contains all the components and material necessary to make the SHERIDAN car - except for a solar panel, and its wiring. The kit includes the plans, material for making the body & instructional DVD (USB or emailed version available on request when ordering).</p> <p>PLEASE NOTE: That to be eligible to compete in the event held at Scienceworks the car must be made using only the components supplied in the kit of parts in the year of the regulations.</p> <p>Hours to construct: 8 - 12 *Legend: B, C, D, H</p> | <p>\$83.75</p> | <p>---</p> |
|  | <p>ALUMINIUM TRAY KIT FOR SOLAR 26 Code: TRAY26</p> <p>Aluminium tray with banana plugs, banana panel mounts, hook-up wire and other components to mount the SOLAR PANEL NO. 26 (SOLAR26). Suitable for use when racing model solar cars in competition.</p> <p>NOTE: Solar Panel sold separately.</p> <p>Hours to construct: 2 - 3 *Legend: A, D</p> | <p>\$22.43</p> | <p>---</p> |
| | <p>ALUMINIUM TRAY (TO SUIT SOLAR26) Code: TRAYAL</p> <p>Aluminium Tray used in ALUMINIUM TRAY KIT FOR SOLAR 26 (TRAY26) also available to purchase separately.</p> | <p>\$12.85</p> | <p>---</p> |
| | | | |
|  | <p>AXLE BRACKET KIT Code: AXBTK</p> <p>The AXLE BRACKET KIT is used to clamp together 6.0mm diameter carbon fibre tubes. Using these allows a frame to be created – this kit provides enough parts for 4 pieces of carbon fibre to be clamped into a rectangle. This then forms the base of a Solar car.</p> <p>Hours to construct: 1 - 2 *Legend: B, C</p> | <p>\$8.16</p> | <p>---</p> |
|  | <p>AXLE FRAME KIT Code: AXFRK</p> <p>The AXLE FRAME KIT is used to make a simple rectangular frame, and consists of an AXLE BRACKET KIT and 2x 6.0mm diameter carbon fibre tubes</p> <p>Hours to construct: 1 - 2 *Legend: B, C</p> | <p>\$24.59</p> | <p>---</p> |
|  | <p>FAULHABER MOUNTING KIT Code: FAUMMK</p> <p>The FAULHABER MOUNTING KIT is used to attach the motor mounting bracket and the motor to one Carbon fibre tube. This kit provides the parts (brackets, screws, nuts and bolts) to assemble an adjustable mount for a FAULHABER 2232 MOTOR. This mounting system provides adjustment to allow a number of different pinion gears to be used for best performance, as sun levels change during the competition.</p> <p>Hours to construct: 1 *Legend: B, C</p> | <p>\$6.71</p> | <p>---</p> |

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|  | <p>FAULHABER MOTOR AND MOUNTING KIT Code: FAUMOTK</p> <p>The FAULHABER MOTOR AND MOUNTING KIT consists of:</p> <ul style="list-style-type: none"> - 1x FAULHABER MOUNTING KIT - 1x Faulhaber 2232 Electric motor <p>Hours to construct: 1 *Legend: B, D</p> | \$130.00 | --- |
|  | <p>SM403 MOTOR MOUNTING KIT Code: SM403MMK</p> <p>The SM403 MOUNTING KIT is used to attach the motor mounting bracket and the motor to one Carbon fibre tube. This kit provides the parts (brackets, screws, nuts and bolts) to assemble a SM403 motor to a chassis. Adjustment is by moving the motor up or down, allowing different gears to be used.</p> <p>Hours to construct: 0.5 *Legend: B, C</p> | \$6.98 | --- |
|  | <p>SM403 MOTOR AND MOUNTING KIT Code: SM403MOTK</p> <p>The SM403 MOTOR AND MOUNTING KIT consists of:</p> <ul style="list-style-type: none"> - 1 X SM403 MOTOR MOUNTING KIT - 1 X ST-403 T1 Electric Motor <p>Hours to construct: 0.5 *Legend: B, D</p> | \$15.70 | --- |
|  | <p>WIRING HARNESS KIT (for SOLAR26) Code: HARNESS26</p> <p>This kit provides all the parts required to assemble a wiring harness for wiring the No. 26 Solar Panel (SOLAR26) in series and parallel. This is wired up to either a Toggle switch or a large Slide switch – which have centre-off position. Thus, the switch is used to switch between S (Series)-Off-P (Parallel).</p> | \$9.07 | --- |
| <p>PVC SHEET – 610 X 420 X 0.25MM Code: PVCX420</p> | <p>Clear PVC sheet 610mm wide x 420mm long x 0.25mm thick size, as used in the SHERIDAN KIT CAR.</p> | \$2.14 | |

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SUBSYSTEM KITS

A subsystem is a kit that is not a complete project on its own but is used as part of a system.

PRICE (EACH)

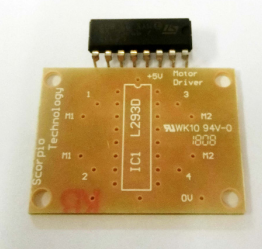
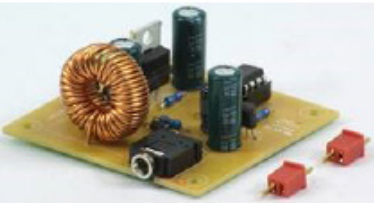
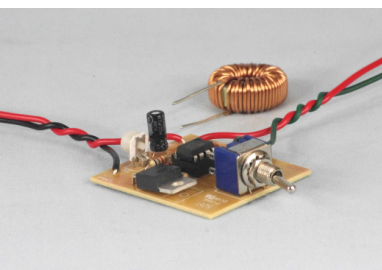
1 - 19

20+

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|  | <p>CONTROLLER Code: CONTROLLER</p> <p>The CONTROLLER is a general-purpose microcontroller, and may be used to control up to six small DC motors with simple position feedback. The central control element for the CONTROLLER is a Picaxe-40X microcontroller. Other devices may also be connected to the unused inputs and outputs.</p> <p>The CONTROLLER is suitable for many other applications, including the ROBOT ARM.</p> <p>Hours to construct: 30 *Legend: A, C, D, E, F, G</p> | <p>\$40.99</p> | <p>\$39.38</p> |
|  | <p>FRONT WHEEL & STEERING Code: FRONT</p> <p>The FRONT WHEEL AND STEERING LINKAGE kit provides the basic parts for a steering system. These are the same components used in both the RADIO CONTROLLED VEHICLE and the FOLLOW THE WHITE LINE VEHICLE.</p> <p>*Legend: C</p> | <p>\$4.61</p> | <p>\$4.47</p> |
|  | <p>GENERATOR OUTPUT MONITOR Code: GOM</p> <p>The GENERATOR OUTPUT MONITOR project allows the user to monitor the output of a turbine or generator. 6 graduated LEDs give an indication of the Turbine's output. The kit includes the generator.</p> <p>HINT: when paired with the MOTOR SPEED CONTROLLER this is ideal for demonstrating power generation.</p> <p>Hours to construct: 2 - 3 *Legend: A, D, E, F</p> | <p>\$8.39</p> | <p>\$8.13</p> |
| <p>INFRA-RED CONTROL UNIT – 6 BAND With ASSEMBLED PCBs Code: IRCU with PCBIR6-A With UNASSEMBLED PCBs Code: IRCU with PCBIR6-UN</p> | | <p>\$17.77</p> | <p>\$17.27</p> |
|  | <p>The INFRARED CONTROL UNIT (IRCUC) consists of the Transmitter and the Receiver PCBs (either the PCBs with all their electronic components soldered in place or all the parts in separate bags), and all other parts required to operate the unit. The IRCUC can transmit on six (6) bands, so that 6 different devices can be operated at the same time, by selecting different bands, using the band selection switch.</p> <p>On each band the Transmitter can send up to four signals, e.g. to control 2 motors to go forward and reverse. IRCUC consists of the Transmitter and Receiver PCBs, switches and battery holders. The Transmitter is used to transmit to the Receiver, which is mounted on a vehicle or whatever device you choose to make.</p> <p>The IRCUC is for indoor use only and will not operate outdoors. It can operate up to a distance of approximately 20 metres.</p> <p><u>Specify which version is required.</u></p> <p>Hours to construct: 1 - 2 *Legend: A, C, E, F, G</p> | <p>\$15.12</p> | <p>\$14.62</p> |
| <p>NOTE: If buying a class set of JOUSTER/IRCUC, we recommend buying one set with assembled PCBs, for visual comparison and testing purposes.</p> | | | |

| | | | |
|--|--|----------------|----------------|
|  | <p>MOTOR SPEED CONTROLLER Code: MSC The MOTOR SPEED CONTROLLER (MSC) controls the speed of DC motors or acts as a light dimmer. Powering an electric motor directly from a battery or power supply will only allow a motor to function at a constant speed. The speed of the motor is directly related to the voltage of the battery or power supply. The MSC circuit allows the user to adjust the speed of a motor from anywhere between a stopped state up to full speed. The same system can be used as a light dimmer for a 6Volt bulb. The circuit uses Pulse Width Modulation (PWM) to control the speed of a motor. The way Pulse Width Modulation is used to control motor speed is explained later in this Teaching Unit. This circuit will work with any motor sold by <i>Scorpio Technology</i>. This kit does not contain a motor nor a light bulb. Hours to construct: 1 - 2 *Legend: A, D, E, F</p> | <p>\$8.39</p> | <p>\$8.13</p> |
|  | <p>OLED MODULE Code: OLED Once you have seen an OLED display in use you will never want to use an LCD again! OLED has a much brighter display, much better viewing angle and lower current consumption than backlit LCDs means that OLEDs are set to become the new LCDs! The Serial OLED module allows PICAXE projects to display messages on a yellow on black OLED. <ul style="list-style-type: none"> • Uses a pre-programmed PICAXE 18M2 chip to provide control of the screen. • Interface via a single serial line Can be connected to PAT'S MICROCONTROLLER to extend the possible usages. *Legend: A, D, E, F,G</p> | <p>\$42.47</p> | <p>\$42.47</p> |
|  | <p>RADIO CONTROLLED UNIT With ASSEMBLED PCBs Code: RCU with PCBRCT-A^a With UNASSEMBLED PCBs Code: RCU with PCBRCT-UN^b The 27.145 MHz RADIO CONTROL UNIT (RCU) - consisting of the transmitter and the receiver PCBs (either the PCBs with all their electronic components soldered in place or all parts in separate bags), - enables you to control whatever device you are constructing. The transmitter PCB is used to transmit 3 commands to the receiver PCB, which is mounted on a vehicle or other device of your making. The radio transmission distance is up to 25 metres, and under favourable conditions it may be more. The RCU (2 BAND) can be used to control a variety of devices. It operates at 27MHZ with two switchable Bands to allow 2 units to be used at the same time. It transmits to a distance of 25+ metres. The RCU kits contain the Receiver & Transmitter PCBs, all the switches and the battery holders. RCU 2 BAND KIT is available in 2 variants – Specify which version is required: Assembled or Unassembled PCBs. Hours to Construct: 2-5^a / 5-10^b: *Legend: A, D, E, F</p> | <p>\$20.98</p> | <p>\$20.35</p> |
|  | <p>REVERSE PCB KIT Code: REVPCB This kit provides all the components needed to make and mount a reversing PCB to interface with PAT'S MICROCONTROLLER. It consists of the PCB, a L293 motor driver, a 16 pin IC socket, 2 PCB spacers and nuts and bolts. NOTE: The ROBOT BUGGY (Code: BUGGY) has this kit included. *Legend: A, E, F</p> | <p>\$6.43</p> | <p>\$6.43</p> |

ALL PRICES INCLUDE GST

| | | | |
|---|---|----------------------------|----------------------------|
|  | <p>PCB-REVERSE AND IC L293 SET Code: REVDRIVE</p> <p>These 2 components together (a small reversing PCB and the L293 motor driver) allow you to add a reversing function to PAT'S MICROCONTROLLER, for use with the BUGGY2WD.</p> <p>NOTE: The ROBOT BUGGY (Code: BUGGY) has the REVPCB kit included.</p> <p>*Legend: A, E, F</p> | <p>\$6.02</p> | <p>\$6.02</p> |
|  | <p>PICAXE 08M2 SOLAR PANEL POWER CONTROLLER (SPPC) Code: PICSPPC08M</p> <p>The PICAXE08M2 SOLAR PANEL POWER CONTROLLER controls a solar panel's output voltage to its maximum power point voltage irrespective of load. This results in the transfer of all the available solar panel power to the load.</p> <p>Depending on the load characteristics this circuit can provide a significant multiplication of the current available from the solar panel into the load.</p> <p>For a motor this means increasing its torque, especially useful when a car is accelerating from a standing start.</p> <p>This feature also allows a motor to start and operate at a much lower light intensity than is possible with the motor directly connected to the solar panel.</p> <p>The unit automatically sets the appropriate control voltage on start up. While it was specifically designed to operate with a Scorpio No. 26 Solar panel it will operate with any solar panel that has an open circuit voltage between 7.0 volts and 10.0 volts and a short circuit current between 0.1 amp and 1.0 amp</p> <p>Hours to Construct: 4 - 6</p> <p>*Legend: A, C, D, E, F, H</p> | <p>\$29.15</p> | <p>\$27.11</p> |
|  | <p>SOLAR PANEL POWER CONTROLLER Code: SPPCS Code: SPPCL</p> <p>The SOLAR PANEL POWER CONTROLLER multiplies the solar panel's starting current for motors.</p> <p>Normally, powering an electric motor directly from a solar panel can be quite inefficient, especially during start up and at low motor speeds. The SPPCS / SPPCL allow the motor to start and operate at a much lower light intensity than is possible with the motor directly connected to the solar panel.</p> <p>This SPPCS / SPPCL circuit holds the output of the solar panel at its maximum power voltage point. Thus it is able to substantially boost the starting current available to the motor.</p> <p>NOTE: This circuit regulates the input voltage rather than the output voltage. Energy consumption by the circuits is 0.04 W (approximately). The SPPCS's / SPPCL's weight is approximately 45 grams (including the inductor).</p> <p>The two SPPCS's will work with any solar panel or combination of solar panels whose Voltage Open Circuit (VOC) voltage is:</p> <ul style="list-style-type: none"> • For the SPPCS: between 13 and 23 volts • For the SPPCL: between 6.5 and 12 volts <p>NOTE: A rated 12V panel at VOC will be higher than 12V.</p> <p>Hours to Construct: 3 - 5</p> <p>*Legend: A, C, D, E, F, H</p> | <p>\$14.84 \$14.84</p> | <p>\$14.54 \$14.54</p> |

| GEARBOX KITS - OVERVIEW | | | | | | | |
|--|---|-------------------|----------------|------------|--------|-------|--------|
| KIT NAME | CODE | REQUIRES ASSEMBLY | MOTORS | GEAR RATIO | | | |
| | | | | FIRST | SECOND | THIRD | FOURTH |
| BASIC GEARBOX & MOTOR | GBASIC | YES | MOT17 | 50:12 | 21:12 | --- | --- |
| FOUR RATIO GEARBOX (Changeable) | GFOURA-1:12 GFOURB-1:32 GFOURC-1:84 GFOURD-1:236 | ASSEMBLED | 3.0V | 1:12 | 1:32 | 1:84 | 1:236 |
| FOUR RATIO GEARBOX - SINGLE SIDED (Changeable) | GFOURSA-1:12 GFOURSB-1:32 GFOURSC-1:84 GFOURSD-1:236 | ASSEMBLED | 3.0V | 1:12 | 1:32 | 1:84 | 1:236 |
| GEARBOX & MOTOR / GENERATOR KIT | GRED | YES | GENDC | --- | --- | --- | 60:1 |
| INTERMEDIATE GEARBOX KIT | GINTER | YES | MOT17 | 1:4 | 1:16 | 1:64 | 1:256 |
| MULTI-RATIO ADVANCED GEARBOX KIT | GADVAN | YES | MOT17 or MOT30 | 1:5 | 1:18 | 1:64 | 1:228 |
| MULTI-RATIO GEARBOX KIT | GMULTI | YES | MOT17 or MOT30 | 1:5 | 1:25 | 1:125 | 1:625 |
| SHALLOW GEARBOX KIT | GSHALL | YES | MOT17 | 1:30 | 1:125 | --- | --- |
| TWO RATIO GEARBOX KIT | GTWORKIT | YES | MOT17 | 1:5 | 1:25 | --- | --- |
| VERSATILE GEARBOX KIT – 6 SPEED* | GVERS6 | YES | MOT22 | 1:22 | 1:48 | 1:88 | 1:192 |

| | | PRICE (EACH) | |
|---|---|--------------|--------|
| | | 1 - 19 | 20+ |
|  | <p>BASIC GEARBOX & MOTOR Code: GBASIC</p> <p>A versatile and easy to assemble gear box. The unit is compact and comparatively strong, and useful in many applications – anywhere where rotary motion is required. E.g. It can be used in or drive a pulley and belt assembly; to drive a wheel or pulley through a single shaft, or even a double-sided wheel configuration. This provides two possible configurations of the gearbox, and these are specified.</p> | \$5.87 | \$5.69 |
|  | <p>FOUR RATIO GEARBOX (CHANGEABLE) Codes: GFOURA-1:12 GFOURB-1:32 GFOURC-1:84 GFOURD-1:236</p> <p>This pre-assembled Gearbox / Motor is available in 4 ratios. Its advantage is that later on any of the other ratios can be obtained by moving some of the gears. The axle shaft width is 150mm</p> <p>NOTE: Specify ratio required</p> <p><i>IMPORTANT:</i> Ratio can only be changed a limited number of times with care, but cannot be changed once lubricated. It is better to work out the desired ratio before starting the project, to avoid the need to change gears later on.</p> | \$8.10 | \$7.87 |
|  | <p>FOUR RATIO GEARBOX - SINGLE SIDED (CHANGEABLE) Code: GFOURSA-1:12 GFOURSB-1:32 GFOURSC-1:84 GFOURSD-1:236</p> <p>As per the above FOUR RATIO GEARBOXES (CHANGEABLE), but the shaft projects only 1 way. The end of the shaft is approximately 11cm from the gearbox.</p> <p>NOTE: Specify ratio required</p> <p><i>IMPORTANT:</i> As per the FOUR RATION GEARBOXES (CHANGEABLE)</p> | \$6.93 | \$6.70 |

| | | | |
|---|---|--------|--------|
|  | <p>GEARBOX AND MOTOR/GENERATOR KIT Code: GRED</p> <p>The GEARBOX & MOTOR/GENERATOR KIT provides electric power, through a 3 stage gearbox connected to a small DC generator. This can be turned by hand, connected to a water wheel, a windmill or whatever else the student decides upon. This gearbox is used in the WIND-UP TORCH.</p> | \$7.92 | \$7.68 |
|  | <p>INTERMEDIATE GEARBOX KIT Code: GINTER</p> <p>The INTERMEDIATE GEAR BOX kit provides a choice of 4 gear ratios. Before starting, the desired ratio must be determined, as this defines the parts to be used, and the assembly procedure. The gearbox can be used on its own, or as a “building block” for a motorised system or vehicle.</p> | \$7.63 | \$7.40 |
|  | <p>MULTI-RATIO ADVANCED GEARBOX KIT Code: GADVAN MULTI-RATIO GEARBOX KIT Code: GMULTI</p> <p>The MULTI-RATIO and the MULTI RATIO ADVANCED GEARBOX kits provide a choice of 4 gear ratios to choose from. There are also two motor options available (which must be selected before starting assembly & purchased separately). <i>This gearbox kit can be used with either the MOT17 or the high-performance MOT30 motors.</i> Before starting assembly, the desired motor option and the gear ratio must be selected, as this defines the parts to be used, the assembly side and the assembling procedure.</p> | \$6.56 | \$6.36 |
|  | <p style="text-align: right;">\$6.56</p> <p style="text-align: right;">\$6.36</p> | \$6.56 | \$6.36 |
|  | <p>SHALLOW GEARBOX KIT Code: GSHALL</p> <p>The SHALLOW GEAR BOX AND MOTOR kit is an easy to assemble gearbox, and provides a choice of 2 gear ratios. The unit is compact and allows the designer to utilise narrow spaces. It can be used in many applications where rotary motion is required. E.g. It can be used in isolation (to drive or steer a model vehicle), or as part of a system, (to drive a pulley and belt assembly). It can be used to drive one wheel or pulley through a single-sided shaft, or two wheels by using a longer shaft protruding through both.</p> | \$5.64 | \$5.47 |
|  | <p>TWO RATIO GEARBOX KIT Code: GTWORKIT</p> <p>This TWO-RATIO GEARBOX KIT provides a choice of 2 gear ratios. The choice of ratios available at the “Output” shaft are:</p> <ul style="list-style-type: none"> • Single reduction (shaft A) = 1:5 • Double reduction (shaft B) = 1:25 <p>This version is an unassembled kit that provides the parts to build one of the two options above. Minimum order quantity for this kit: 50 units.</p> | \$6.56 | \$6.36 |
|  | <p>VERSATILE GEARBOX KIT – 6 SPEED Code: GVERS6</p> <p>This VERSATILE GEARBOX KIT has a choice of one of six ratios, and provides a broad range of ratios (3 low range and 3 high range) – the 4 ratios listed above (“GEARBOX KITS – OVERVIEW”), as well as 1:242’ & 1:290’.</p> <p>NOTE: <i>The pre-assembled JOUSTER and BUBBLE gearboxes are 2 of the possible variants.</i></p> | \$6.56 | \$6.36 |
|  | <p>WIND UP CLOCK MECHANISM Code: BUGBOX</p> <p>A small wind up clockwork mechanism and key, with an eccentric cam. Great for making our JUMPING BUG project (project sheet available upon request).</p> <ul style="list-style-type: none"> • This project is a great fun end of year project or as an introduction to soldering. | \$3.43 | \$2.99 |

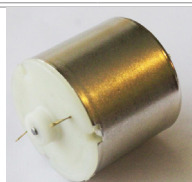
ELECTRIC MOTORS



| SPECIFICATIONS / CODE | | MOT12 | MOT12W | MOTJ2 | MOTJ2W | MOT17* | MOT22* | MOT22W* | MOT30* | GENDC |
|-------------------------------------|--------------|-------------|---------|-------------|---------|-----------|-------------|---------|-----------|------------|
| Operating range (Volts) | | 1.5 - 4.5 | | 1.5 - 6.0 | | 3.0 -12.0 | 1.5-4.5 | | 4.5 - 6.0 | 1.5 - 9.0 |
| No load current | RPM | 15,500 | | 6,700 | | 11,800 | 9,000 | | 13,600 | 2,600 |
| | Amps | 0.32 | | 0.12 | | 0.30 | 0.16 | | 0.28 | 0.025 |
| Under load at Max efficiency | RPM | 11,900 | | 4,450 | | 9,350 | 7,350 | | 11,350 | 2,100 |
| | Amps | 1.01 | | 0.27 | | 1.04 | 0.83 | | 1.38 | 0.089 |
| | Torque-g. cm | 10.0 | | 8.1 | | 17.5 | 13.6 | | 29.7 | 11.0 |
| Testing Voltage | | 3.0V | | 3.0V | | 3.0V | 3.0V | | 4.5V | 6.0V |
| DIMENSIONS | | | | | | | | | | |
| Body size (O.D.) / Across flat (mm) | | 20.0 / 15.0 | | 20.0 / 15.0 | | 23.8 | 24.0 / 18.3 | | 30.0 | 32.0 |
| Body length (mm) | | 25.0 | | 25 | | 26.9 | 26.9 | | 24.0 | 20.0 |
| Shaft dia. & length (mm) | | 2.0 / 7.7 | | 2.0 / 7.7 | | 2.0 / 6.9 | 2.0 / 6.3 | | 2.0 / 9.5 | 2.0 / 11.0 |
| Weight (grams) | | 17 | 20 | 17 | 20 | 28 | 28 | 31 | 41 | 43 |
| Wire lengths (mm) | | N/A | 120mm | N/A | 120mm | N/A | N/A | 120mm | N/A | N/A |
| Price per pack of 5 (no. of packs) | 1 - 4 | \$12.24 | \$13.08 | \$12.24 | \$13.08 | \$13.25 | \$13.08 | \$13.88 | \$20.24 | \$19.24 |
| | 5 - 10 | \$12.10 | \$12.94 | \$12.10 | \$12.94 | \$13.08 | \$12.94 | \$13.80 | \$18.89 | \$17.67 |
| | 11 - 20 | \$11.95 | \$12.78 | \$11.95 | \$12.80 | \$12.94 | \$12.80 | \$13.63 | \$17.67 | \$16.74 |
| | 21+ | \$11.88 | \$12.62 | \$11.80 | \$12.62 | \$12.78 | \$12.62 | \$13.47 | \$16.38 | \$16.07 |

*Two screws are supplied with these motors.
Colours of the motor ends may differ from photos above.
Photos not to scale.

Essential for both Model Solar Car & Model Solar Boat challenges. **



ST-403-T1



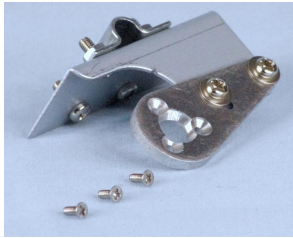
FAULHABER 2232

| MODEL | | ST-403-T1 | FAULHABER 2232 |
|----------------------------------|--------|-------------|----------------|
| CODE | | SM403 | SMFAU |
| DIMENSIONS & PERFORMANCE | | | |
| Efficiency | | 67% | 87% |
| Operating range (Volts) | | 6.0V | Nominal 6.0V |
| No load | RPM | 9,000 | 7,100 |
| | Amps | 0.17 | 1.83 |
| Under load at Maximum efficiency | RPM | 7,790 | 6,600 |
| | Amps | 1.1 | |
| | Torque | 51 g-cm | |
| Testing voltage | | 6.0V | 6.0V |
| Body O.D. / length (mm) | | 32.0 / 29.0 | 22.0 / 32.2 |
| Shaft diameter & length (mm) | | 2.0 / 8.5 | 2.0 / 6.0 |
| Weight (grams) | | 76.5 | 62 |
| Price | | \$9.50 | \$127.28 |

**Always check your State's current Solar Challenge Regulations to ensure you comply.

MOTOR MOUNT KITS & PLATES, SERVO & BUGGY MOTORS

FAULHABER MOTOR MOUNTING KITS



FAULHABER MOTOR MOUNTING KIT

Code: FAUMMK

The *FAULHABER MOUNTING KIT* is used to attach the motor mounting bracket and the motor to one Carbon fibre tube. This kit provides the parts (brackets, screws, nuts and bolts) to assemble an adjustable mount for a Faulhaber 2232 motor.

This mounting system provides adjustment to allow a number of different pinion gears to be used for best performance, as sun levels change during the competition.

\$6.71



FAULHABER & MOUNTING KIT

Code: FAUMOTK

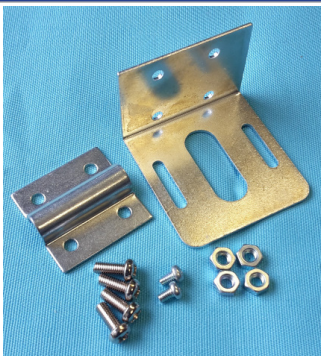
The *FAULHABER MOTOR AND MOUNTING KIT* consists of:

-1x *FAULHABER MOUNTING KIT* (FAUMMK)

-1x Faulhaber 2232 Electric motor (SMFAU)

\$130.00

SM403 MOTOR MOUNTING KITS



SM403 MOTOR MOUNTING KIT

Code: SM403MMK

The *SM403 MOUNTING KIT* is used to attach the motor mounting bracket and the motor to one Carbon fibre tube. This kit provides the parts (brackets, screws, nuts and bolts) to assemble a SM403 motor to a chassis. Adjustment is by moving the motor up or down, allowing different gears to be used.

\$6.98



SM403 MOTOR AND MOUNTING KIT

Code: SM403MOTK

The *SM403 MOTOR AND MOUNTING KIT* consists of:

- 1 X *SM403 MOTOR MOUNTING KIT*
- 1 X ST-403 T1 Electric Motor

\$15.70



MOTOR MOUNT - ADJUSTABLE - SM403

Code: MMPL403

Adjustable motor mount plate for solar motor SM403.

\$1.70

SERVO MOTORS



SERVO MOTOR MG995-180 DEGREES

Code: SERVO995-180

Operating Speed: 0.17sec/60 degrees (4.8V no load)

Operating Speed: 0.13sec/60 degrees (6.0V no load)

Stall Torque: 9kg-cm (180.5 oz.-in) at 4.8V

Stall Torque: 12kg-cm (208.3 oz.-in) at 6V

Operation Voltage: 4.8 – 7.2Volts

180 degrees operation

Dimension: 40mm x 19mm x 43mm

Weight: 55g

\$19.78

SERVO MOTOR SG90

Code: SERVOSG90

This 9g micro servo can rotate 180 degree (90 degrees in either direction).

Includes servo horns and mounting screws.

\$5.28



If you are interested in matching our motors to solar panels, contact us to find out which combinations we use in our kits.

MOTOR MOUNTING PLATE

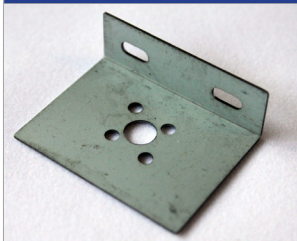


PLATE - MOTOR MOUNT

Code: MMPLHP

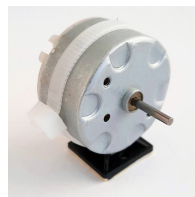
Motor mount plate ideal for motors: MOT17, MOT22 and MOT30.

Pack of 5.

\$3.75

ELECTRIC MOTOR MOUNT CLIP FOR GENERATOR (GENDC)

Code: EMCL-GEN



This consists of a clip with self-adhesive tape on the bottom, with a wide cable tie to clamp and hold the GENERATOR (GENDC) or other large items.

Pack of 5.

(GENDC sold separately. Colour of cable tie may vary).

\$2.75

ELECTRIC MOTOR MOUNTING CLIP

Code: EMCL

Self-adhesive clip.

Securely holds MOT12 to MOT30 motors.

Pack of 5.

\$8.55 (1 - 4 packs)

\$7.40 (5 - 19 packs)

\$7.25 (20+ packs)



FASTENERS SUITABLE FOR MOUNTING OR SECURING MOTORS: See **"MISCELLANEOUS COMPONENTS"**

MOTOR TO SUIT BUGGY 2WD ROBOT & ROBOT BUGGY

BUGGY MOTOR

Code: BUGMOT

Yellow motor with 2 flats shafts;

Operating voltage 3-12VDC;

Gear Ratio 1:48;

Load current 70mA;

L=65mm, W=37mm, H=22mm

\$5.34 (1 - 99)

\$4.34 (100+)



BUGGY WHEEL & MOTOR

Code: BUGWANDM

Yellow motor (BUGMOT) (specs. as left)

Yellow plastic wheel:

D=68mm, W=30mm

\$7.70 (1 - 99)

\$6.85 (100+)



BUGGY MOTOR MOUNT KIT (FOR TT MOTOR)

Code: BUGMOTMNT

This mounting bracket is specifically designed to hold the yellow buggy motors (TT Geared Motor) (code: BUGMOT). Each bracket comes with four bolts and two nuts for installation. 22.5 x 15.5 x 5mm.

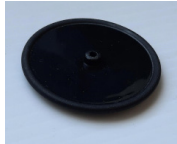
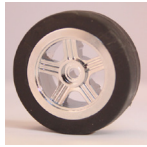
\$2.28



ALL PRICES
INCLUDE GST

MECHANICAL COMPONENTS

WHEELS



| CODE | WHEEL DIMENSIONS (MM) | | | TYRE MATERIAL | HUB COLOUR | QTY/ PKT | PRICE / PACK |
|---|-----------------------|-------|-----------|------------------|------------|----------|--------------|
| | DIAMETER | WIDTH | HOLE DIA. | | | | |
| WHEELS - WITH RUBBER TYRE | | | | | | | |
| W35W | 35 | 12 | 2.4 | Soft Rubber | White | 40 | \$15.90 |
| W35W2.9 | 35 | 12 | 2.9 | Soft Rubber | White | 40 | \$15.90 |
| W35C | 35 | 12 | 3.1 | Soft Rubber | Chrome | 40 | \$17.59 |
| WHEELS - WITH CHROME HUB | | | | | | | |
| W30C | 30 | 9 | 2.4 | Plastic | Chrome | 40 | \$10.65 |
| W38BH | 38 | 13 | 2.9 | Plastic | Chrome | 40 | \$12.90 |
| W38C | 38 | 13 | 2.4 | Plastic | Chrome | 40 | \$12.90 |
| W52C2 | 52 | 18 | 2.4 | Plastic | Chrome | 40 | \$16.38 |
| RUBBER TYRES | | | | | | | |
| TY54 | 54 | 18 | 49 | Rubber | N/A | 40 | \$14.16 |
| Will fit over the W52C2 wheel. | | | | | | | |
| RUBBER TYRE & WHEEL WITH CHROME HUB | | | | | | | |
| WT52/54* | 54 | 18 | 2.4 | Plastic & Rubber | Chrome | 40 | \$32.15 |
| *This consists of a 52mm wheel and a rubber tyre (will fit over the hard plastic tyre on the W52C wheel for improved traction). | | | | | | | |
| WHEELS - 50MM NARROW BLACK | | | | | | | |
| W50NB | | | | | | 10 | \$4.60 |
| Narrow plastic 50mm diameter wheels with 2.9mm diameter holes. Suitable for use with 3mm rods. | | | | | | | |

SWIVEL CASTOR WHEEL - 25MM DIA.

Code: WSWIVEL

High loading capacity and durability swivel castor wheels with plain bearings, suitable for projects similar to *BUGGY* kit, etc.

Full inject PP 25mm wheel with 25mm plate.

Load capacity: 10kg.

Load height: 35mm

Plate size: 38 x 33mm

Bolt holes: 4mm

Resistance to water, acids, bases, oils & salt.

\$3.06



TYRE MATERIAL

Code: TYRE

Rubber *TYRE* material is designed to suit the normal 70mm wheels and has to be glued to form the tyre.

Sold by the metre.

\$3.34



TYRE 71MM RUBBER EXTRUSION

Code: TY71

To suit 70mm solar wheels.

WARNING: Be careful when installing the tyres onto the solar wheels, as they are NOT rubber bands and have very little stretch in them – they can easily be broken at the join.

Pack of 5.

\$6.86



O-RINGS

O-RINGS USED AS A TYRE

O-RING 50 X 4.0MM

Code: ORING50

Inner Diameter: 50mm

Cross Section: 4.0mm

O-Rings are used as a tyre on the 50mm pulleys (PU50).

Pack of 10.

\$7.14



O-RINGS USED AS BELTS

BELT O-RING 45.5 X 1.5MM

Code: ORING

Inner Diameter: 45mm

Cross Section: 1.5mm

As used in the *BELT DRIVEN CAR* (BELTCAR & BELTCAR-NS)

Pack of 10.

\$5.39



BELT O-RING 55 X 1.5MM

Code: ORING55

Inner Diameter: 55mm

Cross Section: 1.5mm

This O-Ring is approximately 1.0mm diameter, to suit the groove in the solar wheels SW70A-GR & SW70E-GR, to increase traction.

Pack of 10.

\$5.39

O-RING 78.99 X 1.78MM

Code: ORING79

Inner Diameter: 79mm

Cross Section: 1.8mm

Pack of 10.

\$6.04

O-RING 5.28 X 1.78MM

Code: ORING5.3

Inner Diameter: 5.3mm

Cross Section: .8mm

Pack of 10.

\$3.23

PULLEYS



| CODE | ITEM NAME | HOLE DIAMETER | OUTER DIAMETER | NOTES | QTY / PACK | PRICE |
|--------|---------------------------|---------------|----------------|---|------------|---------|
| PU5.5 | PULLEY 5.5MM | 1.9 mm | 5.5 mm | Hole can be drilled to 2.4mm diameter to suit the 2.5mm rod. Colour: black. | 10 | \$14.65 |
| PU5.5W | PULLEY 5.5MM WHITE | 1.9 mm | 5.5 mm | Hole can be drilled to 2.4mm diameter to suit the 2.5mm rod. Colour: white. | 10 | \$14.65 |
| PU10x1 | PULLEY 10MM | 1.9 mm | 10 mm | Press fits onto 2mm motor shaft. Hole can be drilled to 2.4mm diameter to suit the 2.5mm rod. | 10 | \$15.80 |
| PU30 | PULLEY 30MM | 2.4 mm | 30 mm | Hole can be drilled to 2.9mm diameter to suit the 3.0mm rod. Colour: black. | 10 | \$17.95 |
| PU30W | PULLEY 30MM WHITE | 2.4 mm | 30 mm | Hole can be drilled to 2.9mm diameter to suit the 3.0mm rod. Colour: white. | 10 | \$17.95 |
| PU50 | PULLEY 50MM | 2.4 mm | 50 mm | Hole can be drilled to 2.9mm diameter to suit the 3.0mm rod. | 10 | \$21.80 |

ALL PRICES
INCLUDE GST



PROPELLER SHAFTS, AXLES, GUIDE TUBES AND COUPLING

| ITEM | AXLES / PROPELLER SHAFTS | | | | | | | |
|-----------------------------------|--------------------------|----------|------------|---------------|---------|---------------|---------|--|
| | CODE | ROD O.D. | ROD LENGTH | QTY. PER PACK | PRICE | QTY. PER PACK | PRICE | |
| STEEL ROD 2.5MM X 500MM | STR2.5 | 2.5 mm | 500 mm | 5 | \$4.05 | 20 | \$14.50 | |
| CARBON FIBRE ROD 2.5MM X 650MM | CFR | 2.5 mm | 650 mm | 5 | \$21.70 | --- | N/A | |
| FIBREGLASS ROD 500MM | FIBGRD500 | 3.0 mm | 500 mm | 5 | \$7.30 | 20 | \$24.45 | |
| CARBON FIBRE ROD 3.0MM X 650MM | CFR3 | 3.0 mm | 650 mm | 5 | \$25.50 | --- | N/A | |
| CARBON FIBRE TUBE (3.0 -3.5MM ID) | CFT | 6.0 mm | 650 mm | 5 | \$40.95 | --- | N/A | |




| ITEM | GUIDE TUBES FOR AXLES / PROPELLER SHAFTS | | | | | | |
|-------------------------|--|---|-----------|-------------|---------------|---------|--|
| | CODE | NOTES. | TUBE I.D. | TUBE LENGTH | QTY. PER PACK | PRICE | |
| GUIDE TUBE 500MM WHITE | GUIDW | Suit 2.5mm rods | 2.7 mm | 500 mm | 5 | \$7.30 | |
| GUIDE TUBE 500MM WHITE | GUIDW20 | | 2.7 mm | 500 mm | 20 | \$26.80 | |
| GUIDE TUBE 500MM GREY | GUIDG | Suit 3.0mm rods. | 3.2 mm | 500 mm | 5 | \$8.80 | |
| GUIDE TUBE 500MM GREY | GUIDG20 | | 3.2 mm | 500 mm | 20 | \$31.95 | |
| GUIDE TUBE 500MM YELLOW | GUIDY | Larger inner diameter so that drive line bearings can be used for the 2.5mm steel rods. | 4.5 mm | 500 mm | 5 | \$10.20 | |
| GUIDE TUBE 500MM YELLOW | GUIDY20 | | 4.5 mm | 500 mm | 20 | \$39.00 | |

| ITEM | CODE | NOTES. | ROD O.D. | ROD LENGTH | TUBE I.D. | TUBE LENGTH | PRICE |
|--------------------------------------|--------|--|----------|------------|-----------|-------------|---------|
| STEEL ROD & GUIDE TUBE WHITE | SRGTW | Pack consists of 5 Steel Rods & 5 White Guide Tubes. | 2.5 mm | 500 mm | 2.7 mm | 500 mm | \$10.35 |
| STEEL ROD & GUIDE TUBE YELLOW | SRGTY | Pack consists of 5 Steel Rods & 5 Yellow Guide Tubes. Larger inner diameter so that drive line bearings can be used for the steel rod. | 2.5 mm | 500 mm | 4.5 mm | 500 mm | \$13.10 |
| CARBON FIBRE ROD & GUIDE TUBE YELLOW | CFGTY | Pack consists of 5 Carbon Fibre Rods & 5 Yellow Guide Tubes. Larger inner diameter so that drive line bearings can be used for the steel rod. | 2.5 mm | 650 mm | 4.5 mm | 500 mm | \$29.90 |
| FIBREGLASS ROD & GUIDE TUBE GREY | FGRGTG | Pack consists of 5 3.0mm Fibreglass Rods & 5 Grey Guide Tubes. | 3.0 mm | 500 mm | 3.0 mm | 500 mm | \$15.00 |
| CARBON FIBRE ROD & GUIDE TUBE GREY | CF3GTG | Pack consists of 5 3.0mm Carbon Fibre Rods & 5 Grey Guide Tubes. | 3.0 mm | 650 mm | 3.2 mm | 500 mm | \$32.40 |

ALL PRICES
INCLUDE GST

| | | COUPLING | | | | | | |
|--|-------------------------|---------------------|--------------|---------------------|--------|--------|---|---------------------|
| | ITEM NAME | CODE | COLOUR | MATERIAL | I.D. | O.D. | NOTES | PRICE |
|  | COUPLING 1.3/3.3 | COUP1.3 | Trans parent | Silicon Rubber Tube | 1.3 mm | 3.3 mm | Will fit on a 2.0mm motor shaft (as used in ROBOBUG). | \$7.00 / mtr |
| | COUPLING 1.8/3.8 | COUP1.8 | Grey | Silicon Rubber Tube | 1.8 mm | 3.8 mm | 1mm wall thickness. For use with 2.0mm motor shafts – to join the 2.0mm motor shaft to the 2.5mm propeller shaft. | \$7.00 / mtr |
|  | COUPLING 1.8/2.8 | COUP 1.8/0.5 | Grey | Silicon Rubber Tube | 1.8 mm | 2.8 mm | 0.5mm wall thickness. For use as per COUP1.8 (this has a thinner wall thickness). | \$5.70 / mtr |
| | COUPLING 2.0/4.0 | COUP2Y | Yellow | Silicon Rubber Tube | 2.0 mm | 4.0 mm | For use with shafts 2.2mm and larger – to join two shafts together (e.g. 2.5mm & 3.0mm shafts). | \$7.85 / mtr |

PROPELLERS

| | CODE | ITEM NAME | USAGE | TYPE | DIAMETER | HOLE SIZE | QTY / PACK | PRICE |
|---|-----------|---------------------------------|-------|---------|----------|-----------|------------|----------------|
|  74mm Propeller | PROP74 | 74MM PROPELLER | Aero | 2 blade | 74 mm | 1.9 mm | 10 | \$12.17 |
| | PROP128 | 128MM PROPELLER | Aero | 2 blade | 128 mm | 1.9 mm | 10 | \$14.15 |
| | PROP147 | 147MM PROPELLER | Aero | 2 blade | 147 mm | 1.9 mm | 10 | \$15.85 |
|  128mm Propeller | PROP2 | 2 BLADE PROPELLER | Boat | 2 blade | 28 mm | 2.4 mm | 10 | \$16.45 |
| | PROP3 | 3 BLADE PROPELLER | Boat | 3 blade | 25 mm | 2.4 mm | 10 | \$16.45 |
| | PROP380BL | 3 BLADE PROPELLER BLUE | Aero | 3 blade | 80 mm | 1.9 mm | 5 | \$8.65 |
| | PROP380G | 3 BLADE PROPELLER GREEN | Aero | 3 blade | 80 mm | 1.9 mm | 5 | \$8.65 |
|  147mm Propeller | PROP380R | 3 BLADE PROPELLER RED | Aero | 3 blade | 80 mm | 1.9 mm | 5 | \$8.65 |
| | PROP380Y | 4 BLADE PROPELLER YELLOW | Aero | 4 blade | 60 mm | 1.9 mm | 5 | \$8.65 |

PHOTOS NOT TO SCALE



2-Blade Propeller



3-Blade Propeller



3-Blade 80mm Propeller - Red






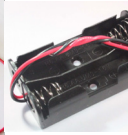




4-Blade 60mm Propeller - Yellow

BEARINGS

| | ITEM | CODE | DESCRIPTION | OUTER DIAMETER | FLANGE DIAMETER | BORE DIAMETER | WIDTH | QTY. / PKT | PRICE |
|--|-------------------------------------|------------------|--|----------------|-----------------|---------------|--------|------------|----------------|
|  | 7.0MM PLAIN BEARING | BEAR7 | Single row, unsealed ball races. | 7.0 mm | --- | 3.0 mm | 2.0 mm | 10 | \$39.30 |
| | 10.0MM PLAIN BEARING | BEAR10 | Single row, unsealed ball races. | 10.0 mm | --- | 3.0 mm | 4.0 mm | 10 | \$39.45 |
|  | 10.0MM FLANGED BEARING | BEAR10F | Single row, unsealed ball races. | 10.0 mm | 11.2 mm | 6.0 mm | 3.0 mm | 10 | \$41.30 |
| | 10.0 x 3.0MM FLANGED BEARING | BEAR10/3F | Suitable for use with the 3mm fibreglass (FIBGRD500) or 3mm Carbon fibre (CFR3) rods OR with BOLT3X40MM and the Guide Roller (GUIDEROLLER). | 10.0 mm | 11mm | 3.0 mm | 3.0 mm | 10 | \$38.60 |
|  | DRIVELINE BOAT BEARING | BEARBT | Driveline bearing. Used with yellow guide tube (GUIDY) to reduce friction & reduce power consumption. (See Appendix C: Solar Challenge for details). | 4.3 mm | 6.0 mm | 2.6 mm | 7.0 mm | 10 | \$7.80 |

BATTERY HOLDERS, CHARGERS & BATTERIES

BATTERY HOLDERS

| | | | | | | | | | |
|------------------------|---|---|---|---|--|---|---|---|--------|
| |  |  |  |  |  |  |  |  | |
| CODE | BCLIP | BH9VF | BH1AA | BH2AA | BH2AAF | BH3AA | BH3AAF | BH4AA | |
| FOR... | 1 X 9V | 1 X 9V | 1 X AA | 2 X AA | 2 X AA | 3 X AA | 3 X AA | 4 X AA | |
| WIRES | YES | YES | YES | YES | YES | YES | YES | YES | |
| COVER / ON-OFF SWITCH | NO | YES | NO | NO | YES | NO | YES | NO | |
| PRICE PER PACK OF 5 | 1 - 4 | \$4.02 | \$16.76 | \$6.46 | \$6.58 | \$15.93 | \$7.47 | \$17.84 | \$8.30 |
| | 1 - 9 | \$3.78 | \$15.78 | \$6.31 | \$6.47 | \$14.61 | \$7.24 | \$16.37 | \$8.08 |
| | 10 - 20 | \$3.54 | \$14.82 | \$6.10 | \$6.10 | \$13.37 | \$6.74 | \$14.99 | \$7.38 |
| | 21+ | \$3.37 | \$13.87 | \$5.74 | \$5.99 | \$12.27 | \$6.50 | \$13.74 | \$7.08 |

| | | | | | | | |
|------------------------|--|--|--|--|---|--|--|
| |  |  |  |  |  |  |  |
| CODE | BH4AAF | BH6AA | BH4AAA | BH2C | BHLIT | BH1D | BHSTKD |
| FOR... | 4 X AA | 6 X AA | 4 X AAA | 2 X C | 3.6V Lithium Ion | 1x D | 1 x D |
| WIRES | YES | YES | YES | YES | NO | YES | NO |
| COVER / ON-OFF SWITCH | YES | NO | NO | NO | NO | NO | STACKABLE |
| PRICE PER PACK OF 5 | 1 - 4 | \$17.84 | \$9.37 | \$7.85 | \$11.12 | \$12.77 | \$8.76 |
| | 1 - 9 | \$16.37 | \$8.68 | \$7.62 | \$10.47 | \$11.91 | \$8.41 |
| | 10 - 20 | \$14.99 | \$8.12 | \$7.03 | \$9.96 | \$11.28 | \$8.08 |
| | 21+ | \$13.74 | \$7.91 | \$6.75 | \$9.47 | \$11.13 | \$7.75 |
| | | | | | | | \$4.07 EACH |

BATTERY HOLDER FOR 4 X AA BATTERIES WITH SWITCH AND 2.1MM DC PLUG

Code: BH4AAUNO

4 x AA Switched Battery Case with 2.1mm DC Plug.

For Arduino compatible UNO modules.

\$6.65



BATTERY HOLDER FOR 6 X AA BATTERIES WITH SWITCH AND 2.1MM DC PLUG

Code: BH6AAUNO

6 x AA Switched Battery Case with 2.1mm DC Plug.

For Arduino compatible UNO modules.

\$7.74



LILYPAD CR2032 COIN CELL BATTERY HOLDER MOUNT MODULE

Code: BHCR2032LP

The LilyPad Coin Cell Battery Holder has a small slide switch installed on the board, in-line with the power so you can shut off your project and save batteries. This slide switch is the same as on the LilyPad Slide Switch Board, so it's not easy to accidentally turn off or on.

Holds a CR2032 coin cell battery and gives you four connection points (two positive and two negative) for sewing into your project.

Dimensions: 2.9x2.8x0.58mm.

\$3.48



BATTERY HOLDER FOR 2 X 18650 RECHARGEABLE BATTERIES

Code: BH2R18650

Fits 2 x 18950 batteries.

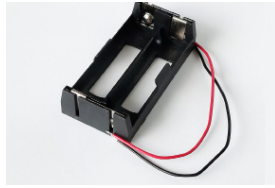
150mm leads.

Ideal for Arduino® projects or any on-board power storage applications.

Suitable for case mounting too.

Constructed of ABS Plastic.

\$5.95



CLIP-ON BATTERY CONNECTOR – 9V -2.1MM DC CABLE PLUG 0.3M

Code: BCLIPUNO

9V battery snap to centre positive 2.1mm DC connector lead.

Arduino compatible.

Plug type: 5.5 x 2.1mm DC

Cable length: 300mm.

\$5.95



BATTERY CHARGERS

BATTERY CHARGER FOR RECHARGEABLE LI-ION / NI-CH / NI-CD BATTERIES

Code: BATTCHGLI-NI

This PowerTech product is available as a single cell or twin cell charger. Just about any cylindrical lithium ion battery can be recharged by this unit thanks to the spring loaded terminals. Powered by USB, so no mains power is required. Automatic battery detection to determine if 500mA or 1000mA charge current is required. USB power cable included.

- 5VDC 1A Input Power
- 4.2VDC Charge Output
- Short Circuit and Reverse Polarity Protection

Length: 100 x 60 x 28mm - 0.06kg.

USB Input Current: 2.0V

Charger Output Current : 500mA, 1000mA

Connection Type : Contact Plate

Reverse Polarity Protection



The following batteries supported by this unit include:

10440, 14500, 16340, 17335, 17670, 18490, 18650, 22650, 26500, 26650 and RCR123A

Type of Batteries : Lithium Ion, Nickel Metal Hydride (Ni-MH), Nickel Cadmium (Ni-Cad) Cell Type(s) Charged : 10440, 14500, 16340, 18650, 20700, 22650, 26650, AA, AAA, C, Sub-C, 17335, 17670, 18490, 26500, A, AAAA

Downloadable Manual available

\$32.95

BATTERIES

| CODE | SIZE | TYPE | QTY. | PRICE |
|---------------|--------------------------|-----------------------------------|------|----------------|
| BATTAA | AA | Heavy Duty | 4 | \$3.90 |
| BATTALK | AA | Alkaline | 4 | \$4.90 |
| BATTALK40 | AA | Alkaline | 40 | \$29.64 |
| BATTA | AAA | Alkaline | 4 | \$4.90 |
| BATTA40 | AAA | Alkaline | 40 | \$29.64 |
| BATTN | "N" TYPE | Alkaline (Clearance item) | 2 | \$2.27 |
| BATTL3.6 | 3.6V LITHIUM ION BATTERY | Rechargeable Buttoncell 3.6V | 1 | \$5.90 |
| BATTNCR2032-5 | CR2032 | Buttoncell CR2032 Lithium Battery | 5 | \$10.85 |
| BATTD | D BATTERY | Heavy Duty Toshiba | 2 | \$3.60 |
| BATT9 | 9V | Heavy Duty | 1 | \$3.90 |

ALL PRICES
INCLUDE GST

CR2032 3V LITHIUM BUTTON CELL BATTERY - MAXELL (PACK OF 5)

Code: BATTTCR2032-5

Blister pack of 5 CR2032 lithium button cell batteries. These are commonly used in: watches, clocks, calculators, toys, cameras, and many other electronic devices. For use with the LilyPad Coin Cell Battery Holder CR2032 Battery Mount Module. Suitable for use with Paper Circuits.



Voltage: 3V
Nominal Capacity: 225 mAh
Diameter: 20mm
Height: 3.2mm
Lithium MnO₂.
\$10.85

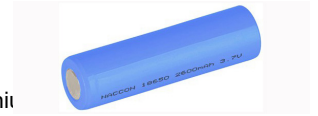
BATTERY 18650 RECHARGEABLE LI-ION 2600MAH 3.7V

Code: BATTR18650

18650 Li-Ion battery, commonly used in LED torches.

Specifications

DC Voltage : 3.7V
Dimensions: 65 x 18 mm
UN Number : 3480
Battery Chemical Composition : Lithium



NOTE: For shipment by road transport only.

NOTE: This is an unprotected rechargeable lithium battery (Li-Ion or LiFe-PO₄) which is only suitable for use in a compatible device/charger. Use of a unprotected cell where a protected cell is expected is very dangerous, please review your product's user manual before proceeding.
\$25.95

PLATFORM (for both cars & boats)

| ITEM NAME | CODE | NOTES | QTY. | PRICE |
|--|------------------|--|------|--------|
| CORFLUTE SHEET - DIMENSIONS: 100MM X 200MM X 5MM | CORF100/200/5 | Suitable as platforms or other uses, such as art (model making), building model houses (see our <i>SOLAR HOUSE KIT</i>), backboards for small signs, etc. | 1 | \$1.10 |
| CORFLUTE SHEET - DIMENSIONS: 300MM X 120MM X 5MM | CORF300/120/5 | | 1 | \$1.80 |
| CORFLUTE SHEET - DIMENSIONS: 200MM X 300MM X 5MM | CORF200/300/5 | | 1 | \$2.25 |
| FOAM TRAY - 11 X 9 INCH- SHALLOW | FOAMTR11X9 | Light weight foam tray suitable for boats | 1 | \$0.66 |
| FOAM TRAY - 11 X 5 INCH - SHALLOW | FOAMTR11X5 | Light weight foam tray suitable for boats | 1 | \$0.43 |
| FOAM TRAY - 14 X 11 INCH - DEEP | FOAMTR14X11 | Light weight foam tray suitable for boats. 35mm deep. | 1 | \$1.40 |
| STYROFOAM - DIMENSIONS: 600MM X 400MM X 25MM | STYRO600/400/25 | Large piece to cut out multiple platforms. Also suitable for other uses such as in art class, model making, building houses, etc. | 1 | 15.00 |
| STYROFOAM - DIMENSIONS: 300MM X 200MM X 25MM | STYRO300/200/25A | For monohull. Also suitable for other uses such as in art class, model making, building houses, etc. | 1 | 7.80 |
| STYROFOAM - DIMENSIONS: 300MM X 50MM X 25MM | STYRO300/50/25 | 2 pieces required to make a catamaran. Also suitable for other uses such as in art class, model making, etc. | 1 | 2.10 |



CORFLUTE



STYROFOAM



FOAM TRAY

CLEAR PVC

| NAME | CODE | DESCRIPTION | PRICE |
|--------------------------------------|------------|--|--------|
| PVC SHEET - 610 X 420 X 0.25MM | PVC610X420 | Clear PVC sheet 610mm wide x 420mm long x 0.25mm thick sizes, as used in the <i>SHERIDAN KIT CAR</i> . | \$2.14 |
| PVC SHEET - 610 X 0.25MM - PER METRE | PVC610M | Clear PVC sheets 610mm wide x 0.25mm thick. Sold in desired length in 1 metre increments. | \$5.00 |



GEARS

The GEARS have a number of different hole sizes to suit different usages:

- Spur gears have a second (smaller) gear. For clarity all spur gears have the number of teeth listed for both larger and smaller gears
- Only the brass pinion gears listed should be used with the Faulhaber motors (Code: SMFAU). Plastic pinion gears are press-fit and are not recommended to use Faulhaber motors due to the risk of damage to the motor.

GEARS - 1.9MM HOLE

The white gears with the 1.9 mm dia. hole are a press fit on to the 2.0mm diameter electric motor shaft.

| | ITEM NAME | CODE | GEAR TYPE | QTY / PACK | PRICE | QTY / PACK | PRICE |
|--|----------------|------------|-----------|------------|---------|------------|---------|
|  | WORM GEAR | GEARWORM | | 10 | | 50 | |
|  | GEAR 8T X 1.9 | GEAR8/1.9 | Pinion | 10 | \$10.09 | 50 | \$24.76 |
| | GEAR 9T X 1.9 | GEAR9/1.9 | Pinion | 10 | | 50 | |
| | GEAR 10T X 1.9 | GEAR10/1.9 | Pinion | 10 | | 50 | |
| | GEAR 12T X 1.9 | GEAR12/1.9 | Pinion | 10 | | 50 | |


GEARS - 2.4MM HOLE

- The white gears with the 2.4 mm dia. hole are a press fit on to the 2.5mm diameter steel rod.
- 12T / 2.4 mm hole Pinion gears are very useful to use as retainers on a 2.5mm rod.

| | ITEM NAME | CODE | GEAR TYPE | QTY / PACK | PRICE | QTY / PACK | PRICE |
|---|----------------------|---------------|-----------|------------|---------|------------|---------|
|  | GEAR 12T X 2.4 | GEAR12/2.4 | Pinion | 10 | \$10.09 | 50 | \$24.76 |
| | GEAR 18T X 2.4 | GEAR18/2.4 | Pinion | 10 | | 50 | |
|  <i>Pinion Gear</i>  <i>Spur Gear</i> | GEAR 22T X 10T X 2.4 | GEAR22/10/2.4 | Spur | 10 | \$10.18 | 50 | \$25.00 |
| | GEAR 30T X 10T X 2.4 | GEAR30/10/2.4 | Spur | 10 | | 50 | |
| | GEAR 30T X 12T X 2.4 | GEAR30/12/2.4 | Spur | 10 | | 50 | |
| | GEAR 40T X 10T X 2.4 | GEAR40/10/2.4 | Spur | 10 | | 50 | |
| | GEAR 40T X 12T X 2.4 | GEAR40/12/2.4 | Spur | 10 | | 50 | |
| | GEAR 50T X 10T X 2.4 | GEAR50/10/2.4 | Spur | 10 | | 50 | |
| | GEAR 50T X 12T X 2.4 | GEAR50/12/2.4 | Spur | 10 | | 50 | |
| | GEAR 60T X 10T X 2.4 | GEAR60/10/2.4 | Spur | 10 | | 50 | |
| GEAR 60T X 12T X 2.4 | GEAR60/12/2.4 | Spur | 10 | 50 | | | |

GEARS - 2.6MM HOLE

The yellow gears with the 2.6mm diameter hole are free spinning, on the 2.5mm diameter steel rod.

| | ITEM NAME | CODE | GEAR TYPE | QTY / PACK | PRICE | QTY / PACK | PRICE |
|--|-----------------------------|---------------|-----------|------------|---------|------------|---------|
|  | GEAR SPUR 50T X 10T X 2.6MM | GEAR50/10/2.6 | Spur | 10 | \$10.18 | 50 | \$25.00 |
| | GEAR SPUR 50T X 14T X 2.6MM | GEAR50/14/2.6 | Spur | 10 | | 50 | |

ALL PRICES
INCLUDE GST

GEARS - 2.9MM HOLE


The white gears with the 2.9mm diameter hole are a press fit on to the 3.0mm diameter steel rod.

| | ITEM NAME | CODE | GEAR TYPE | QTY / PACK | PRICE | QTY / PACK | PRICE |
|---|-------------------------------|--------------------------------|-----------|------------|---------|------------|---------|
|  <p>Spur Gear</p> | GEAR SPUR 24T X 12T X 2.9MM | GEAR24/12/2.9 | Spur | 10 | \$10.18 | 50 | \$25.00 |
| | GEAR SPUR 30T X 12T X 2.9MM | GEAR30/12/2.9 | Spur | 10 | | 50 | |
| | GEAR SPUR 36T X 12T X 2.9MM | GEAR36/12/2.9 | Spur | 10 | | 50 | |
| | GEAR SPUR 42T X 12T X 2.9MM | GEAR42/12/2.9 | Spur | 10 | | 50 | |
| | GEAR SPUR 48T X 12T X 2.9MM | GEAR48/12/2.9 | Spur | 10 | | 50 | |
|  <p>Spur Gear 0.5 module</p> | GEAR SPUR 54T X 12T X 2.9MM | GEAR54/12/2.9 | Spur | 10 | \$10.63 | 50 | \$25.50 |
| | GEAR SPUR 60T X 12T X 2.9MM | GEAR60/12/2.9 | Spur | 10 | | 50 | |
| | GEAR SPUR 64T X 12T X 2.9MM | GEAR64/12/2.9 | Spur | 10 | | 50 | |
| | 0.5 MODULE GEARS | | | | | | |
| | GEAR SPUR 72T X 0.5MM X 2.9MM | GEAR72/0.5/2.9 | Spur | 10 | \$10.63 | 50 | \$25.50 |
| | GEAR SPUR 76T X 0.5MM X 2.9MM | GEAR76/0.5/2.9 | Spur | 10 | | 50 | |
| | GEAR SPUR 80T X 0.5MM X 2.9MM | GEAR80/0.5/2.9 | Spur | 10 | | 50 | |


GEARS - 0.6 MODULE

These 0.6 Module gears are used in the *WIND-UP TORCH* (WINDT), *ROBOT ARM CONTROLLER* (ROBARMCONTR) & *ROBOT ARM WITH CONTROLLER* (ROBARMWTC).

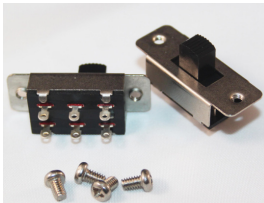



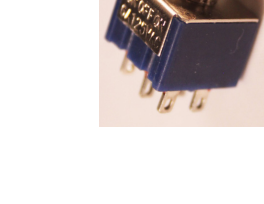
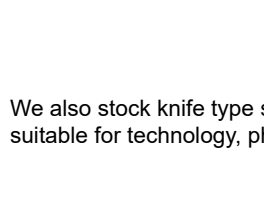
They are **not** compatible with the 0.5 Module gears.

| | ITEM NAME | CODE | GEAR TYPE | QTY / PACK | PRICE |
|--|---|-----------------------------|-----------|------------|--------|
|  <p>SPUR GEAR 0.6 MODULE BOSSSED HOLE</p> | GEAR PINION - 0.6 MODULE - 10T X 5L X 1.9MM DIA. HOLE | GEAR0.6M10T | Pinion | 5 | \$7.25 |
| | GEAR SPUR - 0.6 MODULE - 30T X 10T X 4L X 2.9MM DIA. HOLE | GEAR0.6M30T | Spur | 5 | \$8.35 |
| | GEAR SPUR - 0.6 MODULE - 40T X 10T X 4L X 2.9MM DIA. HOLE | GEAR0.6M40T | Spur | 5 | \$8.35 |
| | GEAR SPUR - 0.6 MODULE - 50T X 4L X 3.9MM DIA. HOLE BOSSSED | GEAR0.6M50T | Spur | 5 | \$9.45 |

| ITEM NAME | CODE | DESCRIPTION | PRICE |
|-----------|-------------------------|--|---------|
| GEAR MIX | GEAR130 | A pack of 130 gears containing a range of the general purpose gears listed in the table below. | \$44.20 |
| Gear Type | Worm | Pinion | Spur |
| Teeth | --- | 12 | 30-Oct |
| Diameter | 6 | 7 | 16 |
| Hole Size | 1.9 | 2.4 | 2.4 |
| Quantity | 10 | 60 | 10 |

| | ITEM NAME | CODE | DESCRIPTION | QTY / PACK | PRICE |
|---|-----------|--------------------------|--|------------|---------|
|  | | GEARRACK | This <i>GEAR RACK</i> meshes with the 0.5 Module gears listed. It is 100.6 mm long and two or more racks can be interlocked to make a longer rack. | 5 | \$16.20 |

SWITCHES

| ITEM NAME | CODE | Description | Wires | Qty./ Pack | PRICE PER PACK | | | |
|--|---------|---|-------|------------|----------------|-----------|-------------|-----------|
| | | | | | 1-4 Pkts. | 5-9 Pkts. | 10-19 Pkts. | 20+ Pkts. |
|  SLIDE SWITCH – SMALL | SSWS | DPDT. ON-OFF. | NO | 5 | \$6.25 | \$6.10 | \$5.90 | \$5.55 |
|  SLIDE SWITCH – LARGE | SSWL | DPDT. ON-OFF-ON. With centre “OFF” position. Can be used as a forward/off/reverse switch for solar panels. | NO | 5 | \$7.85 | \$7.65 | \$7.25 | \$6.95 |
|  SLIDE SWITCH – LARGE - BLACK | SSWL | As SSWL | NO | 5 | \$7.85 | \$7.65 | \$7.25 | \$6.95 |
|  SLIDE SWITCH – SMALL WITH WIRES | SSWS-W | DPDT. ON-OFF. With 100mm Wires. | YES | 5 | \$6.55 | \$6.30 | \$6.05 | \$5.95 |
| All the above switches are supplied with two screws per switch. | | | | | | | | |
|  PUSH SLIDE SWITCH – NON LOCK | PUSLSWN | DPDT push slide switch without locking position | NO | 5 | \$6.25 | \$6.05 | \$5.80 | \$5.50 |
|  PUSH BUTTON SWITCH | PUBUTM | Momentary “ON” switch with washer and nut. | NO | 5 | \$6.60 | \$6.15 | \$5.80 | \$5.35 |
|  PUSH BUTTON SWITCH WITH WIRES | PUBUTMW | Momentary “ON” switch with washer and nut. Approx. 125mm long wires. | YES | 5 | \$6.95 | \$6.50 | \$6.10 | \$5.70 |
|  ONE WAY SWITCH | SW1W | SPDT (Single Pole Double Throw). “ON-OFF” switch. 4 terminals” 2 “in” and 2 “out”. | NO | 5 | \$8.10 | \$7.85 | \$7.70 | \$7.55 |
| TWO WAY SWITCH | SW2W | DPDT (Double Pole Double Throw). “ON-OFF-ON” switch. 6 terminals: 2 “in” and 4 “out”. Can be used as a forward/off/reverse or series/off/parallel switch for solar panels. | NO | 5 | \$12.95 | \$12.65 | \$12.40 | \$12.15 |

We also stock knife type switches, rocker and single contact key switches, micro switches and leaf switches. Many of our switches are suitable for technology, physics experiments and general science applications. See our comprehensive on-line “Product Catalogue”.

MISCELLANEOUS COMPONENTS

THE FOLLOWING IS A SELECTION OF TECHNOLOGY AND ELECTRICAL COMPONENTS AVAILABLE FROM SCORPIO TECHNOLOGY. PLEASE SEE OUR ONLINE "PRODUCT CATALOGUE" FOR A COMPREHENSIVE LISTING.

ALLIGATOR CLIPS

Code: ALLICLIP

Pack contains 5 red and 5 black alligator clips.

Pack of 10.

\$6.40 (1 - 4 packs)

\$5.50 (5 - 19 packs)

\$5.05 (20+ packs)



ALLIGATOR CLIP – INSULATED SHANK

Code: ALLICLIPISB (Black)

Code: ALLICLIPISR (Red)

Alligator clips with screw. Overall length approx. 75mm.

Black or red (please specify colour).

Pack of 10.

\$10.50

ALLIGATOR CLIP - PLAIN SHANK

Code: ALLICLIPPS

Designed to take a 4mm banana plug into the shank or have a bare wire attach with screw mount.

Pack of 10.

\$8.00



ALLIGATOR CLIP TO PIN – JUMPER LEAD SET

Code: ALLIWIRESClip10

Jumper Cable Set – Arduino & RaspberryPi compatible

- Each cable consists of a Pin to insulated Alligator Clip
- Ideal use with Prototyping Breadboards
- Multi-coloured for easy identification
- 20cm Length

Set of 10.

\$10.95



ALLIGATOR CLIP & WIRE

Code: ALLIWIRE12

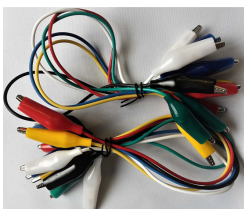
Alligator clips with 250mm wire – 6 colours (black, red, yellow, blue, green & white).

Pack of 12.

\$13.85 (1 - 4 packs)

\$13.30 (5 - 19 packs)

\$12.75 (20+ packs)



BANANA PLUGS – 4MM

Code: BAPLBK4A (Black)

Code: BAPLG4 (Green)

Code: BAPLR4A (Red)

Code: BAPLY4 (Yellow)

Side stacking – 4mm stem

(Banana Lead Connectors – Stackable)

Available in black / green / red / yellow

(specify colour & code when ordering).

Pack of 10.

\$10.05



BANANA PLUGS WITH WIRES (PAIR)

Code: BAPLW2

Set of red & black banana plugs with matching 40cm leads.

\$6.82



BANANA PLUGS - PIGGY BACK - 4MM

Code: BAPLPBBK4 (Black)

Code: BAPLPBR4 (Red)

Piggy Back Style - Another banana plug can be inserted into the back of the plug. 4mm terminals (dia).

Red or Black

(please specify when ordering).

\$2.75 (each)



BANANA SOCKET TO ALLIGATOR CLIP

Code: BASOCALLICLB (Black)

Code: BASOCALLICLR (Red)

Banana Socket to Alligator Clip – Black or Red (specify colour/code when ordering).

\$4.75



BANANA PLUG PANEL MOUNT SOCKET - 4MM

Code: BANSOCMTBK (Black)

Code: BANSOCMTR (Red)

4mm Panel Mount Sockets to suit Banana plugs.

4.0mm (I.D.)

11.3mm (O.D.)

16.5mm (length)



Available in black or red

(specify colour & code when ordering).

\$1.20

CABLE TIE 100 X 3.65MM BLACK

Code: CABTIE100A

Pack of 10.

\$0.51



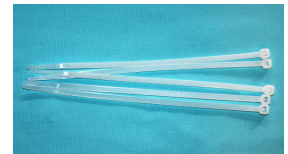
CABLE TIE 200MM X 3.65MM

Code: CABTIE200

Cable ties 200mm long x 3.65 mm wide. Suitable for attaching the motor to the chassis.

Pack of 10.

\$1.87



CABLE TIE 100 X 3.65MM WHITE

Code: CABTIE100AW

Pack of 10.

\$0.51

ELECTRIC MOTOR MOUNTING CLIP

Code: EMCL

Self-adhesive clip. Securely holds MOT12 to MOT30 motors.

Pack of 5.

\$8.55 (1 - 4 packs)

\$7.40 (5 - 19 packs)

\$7.25 (20+ packs)



FISHING LINE – REEL

Code: FLINE

Suitable for CAPTIVE AIRPLANE.

200m roll.

\$6.70



RUBBER BANDS#18

(As supplied in the Blue Bros - Blue Sky kit)

Code: RUBBANDS18

Pack of 10.

\$0.41



ALL PRICES
INCLUDE GST

ADHESIVE COPPER TAPE - 6MM X 50M

Code: TAPECOPAD

20 metre roll of 0.06mm thick adhesive copper tape. Suitable for Paper Circuits projects.

6mm wide.

Price per roll:
\$11.45 (1 - 9 rolls)
\$10.95 (10+ rolls)



GAFFER TAPE - BLACK

Code: TAPEGFBK

25 metre roll of black cloth-backed tape. Matte surface, no residue, strong adhesive.

50mm wide x 0.27mm thick.

Ideal for a variety of uses.

\$16.95



GAFFER TAPE - BLue

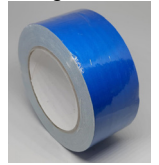
Code: TAPEGFBL

25 metre roll of blue cloth-backed tape. Matte surface, no residue, strong adhesive.

50mm wide x 0.27mm thick.

Ideal for a variety of uses.

\$16.95

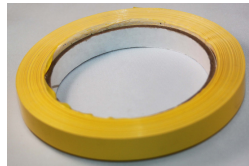


ADHESIVE SINGLE SIDED TAPE

Code: TAPESS

12mm x 66m Suitable for use to retain motors & guide tubes. 66 metre roll.

\$7.79



GAFFER TAPE - WHITE

Code: TAPEGFW

4.5 metre roll of white cloth-backed tape. Matte surface, no residue, strong adhesive. 50mm wide x 0.27mm thick. Ideal for a variety of uses.

\$2.50



TWIST ON CONNECTORS

Code: CONN-SC

3.8mm Twist on connector for joining 2-3 wires together without soldering (Grey). Pack of 10.

\$6.30



CLOTH DOUBLE SIDED TAPE

Code: TAPEDS

Approx. 12 or 18mm wide (depending on supplier availability). Suitable for use to retain motors & guide tubes.

25 mtr roll.

\$13.73



DOUBLE SIDED TAPE PIECES 20X15X-1MM

Code: TAPEDS20X15X1

Small double-sided tape rectangles.

Block of 16 (connected).

\$0.60



VELCRO HOOK 19MM WIDE

Code: VELHO

White self-adhesive 19mm Hook tape.

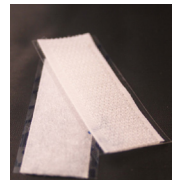
Per metre: \$4.02

VELCRO LOOP 19MM WIDE

Code: VELLO

White self-adhesive 19mm Loop tape.

Per metre: \$4.02



| FASTENER NAME | CODE | DESCRIPTION | QTY / PKT | PRICE |
|---|--------------|--|-----------|--------|
| M3 X 8MM BOLT | BOLT8 | --- | 100 | \$6.55 |
| M3 X 12MM BOLT | BOLT12 | --- | 100 | \$8.60 |
| M3 X 16MM BOLT | BOLT16 | --- | 100 | \$9.10 |
| M3 X 20MM BOLT | BOLT20 | --- | 100 | \$9.60 |
| M3 X 35MM BOLT | BOLT35A | --- | 10 | \$4.10 |
| M3 X 40MM BOLT | BOLT40 | --- | 10 | \$4.30 |
| BOLTS - M4 X 64MM | BOLTM4X65 | Clear zinc plated 65mm long bolts with M4 thread. Pan head and Phillips drive. | 10 | \$4.65 |
| BOLTS - M4 X 30MM | BOLTM4X30 | Clear zinc plated 30mm bolts with M4 thread. Pan head and Phillips drive. | 10 | \$3.90 |
| M3 HEXAGONAL NUT | NUTM3 | M3 nut is 5.0mm across flats. | 100 | \$3.10 |
| M3 NYLOC NUT | NUTNYL | Nyloc nut is 5.0mm across flats. | 100 | \$6.70 |
| SELF-TAPPING SCREWS - MOTOR MOUNT 2.6MMX4MM | STSC2.6X4MMP | --- | 100 | \$3.10 |
| SELF-TAPPING SCREWS - 3MM X 5MM | STSC3X5P | --- | 100 | \$3.10 |
| SPARE MOUNTING SCREWS FOR FAULHABER MOTORS | SCRFAU | 2 X 5mm countersunk Phillips head. | 10 | \$1.60 |
| M3 WASHER | WASHER | 3.0mm hole x 8.0mm (outer diameter) 0.5mm (thick) | 100 | \$1.90 |
| WASHER 3.9 X 15MM | WASH3.9/15 | Large washer 3.9mm hole x 15mm (outer diameter) | 10 | \$3.90 |
| WASHER BRASS M2 | WASHBRM2 | 2.0mm hole 5.0mm (outer diameter), 0.5mm (thick) | 100 | \$5.30 |
| M3 WASHER - BRASS | WASHBRM3A | ID.: 3.0mm OD.: 6.8mm: Thickness: 0.5mm. | 20 | \$1.95 |
| M4 WASHER | WASHM4.5 | Pack of 10 clear zinc plated M4 washers. | 10 | \$1.40 |
| WING NUT M4 | NUTWINGM4 | Clear zinc plated M4 Wing Nuts. | 10 | \$4.65 |

SOLAR PANELS

SOLAR PANELS - SMALL HOBBY PANELS



| CODE | SIZE | NO. OF PIECES | WATTS | VOLTS/AMPS (NOM) | WIRES (LENGTH) | PRICE |
|----------|-------------|---------------|-----------|------------------|----------------|---------|
| SOLAR1 | 86 x 57 mm | 1 | 0.485 | 0.5V / 0.97A | --- | \$6.62 |
| SOLAR2 | 86 x 133 mm | 1 | 1.2 | 1.5V/0.8A | --- | \$14.49 |
| SOLAR2L | 71 x 161 mm | 1 | 1.2 | 1.5V/0.8A | --- | \$14.49 |
| SOLAR 3 | 105 x 72 mm | 1 | 0.68 | 2.0V / 0.34A | --- | \$10.58 |
| SOLAR4 | 86 X 170 mm | 1 | 1.6 | 2.0V / 0.92A | --- | \$18.14 |
| SOLAR5 | 22 x 84 mm | 1 | 0.18 | 0.5V / 0.37A | 100 mm | \$4.17 |
| SOLAR7 | 78 x 179mm | 1 | 2.4 | 3.0V/0.8A | 120 mm | \$18.14 |
| SOLAR8 | 86 x 147 mm | 1 | 1.44 | 2.0V/0.72A | --- | \$13.05 |
| SOLAR9.5 | 51 x 58mm | 1 | 0.10 | 1.5V/0.07A | 100 mm | \$4.43 |
| SOLAR11 | 91 x 104 mm | 2 | 2 x 0.525 | 2x 1.5V/0.35A | --- | \$10.58 |
| SOLAR13 | 91 x 216 mm | 4 | 4 x 0.57 | 4 x 1.5V/0.38A | --- | \$19.15 |
| SOLAR14 | 60 x 78 mm | 1 | 0.45 | 1.5V/0.3A | 100 mm | \$6.62 |
| SOLAR17 | 85 x 65 mm | 1 | 0.48 | 4.0V / 0.12A | --- | \$6.62 |
| SOLAR23 | 86 x 188 mm | 2 | 2 x 0.85 | 2 x 1.0V/0.85A | --- | \$17.27 |

NOTE: When selecting a solar panel to drive an electric motor, please ensure that you select a panel with the appropriate voltage & current for the selected motor – or vice versa.

SOLAR PANELS - SOLAR CHALLENGE

Below is the part of our range of SOLAR PANELS that are most suitable for use in the Sheridan Challenge

| NUMBER | SOLAR26 | SOLAR4 | SOLAR10 |
|--------------------|---------------------|--------------|----------------|
| AREA | 350 cm ² | | |
| DIMENSIONS (MM) | 160mm x 252mm | 86mm x 170mm | 52mm c56mm |
| WATTS | 5.0 to 6.0 | 1.5 | 100% sun=100mA |
| VOLTS / AMPS (NOM) | 7.0V – 1.0A | 2.0V / 0.92A | 1.5V / 0.1A |
| WEIGHT | 50 grams | 70 grams | --- |
| PRICE | \$111.50 | \$18.14 | \$13.85 |

* The No. 10 panel is used to determine how intense / powerful the sun is at the time of testing. When connected to a digital multi-meter, this panel measures the sunlight intensity as a percentage. This panel has 100mm long wires. NOTE: 100% sun = 100mA

SOLDERING



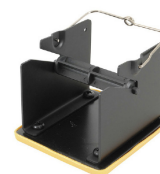
SOLDERING IRON
Code: SOLDIRN
40 Watt; 240Volt.
\$26.95 (1 - 25)
\$25.95 (26+)



SOLDERING STATION
Code: SOLDSTN
48 Watt Temperature controlled soldering station .
Temperature range: 150-450°C.
\$85.00 (1 -25)
\$78.00 (26+)



SOLDERING SPONGE
Code: SOLDSPG
\$3.95



SOLDER REEL HOLDER
Code: SOLDHOLD
It will hold our solder reels and the solder is fed through the guide. It has a handle, so it can easily be carried, and in can be wall mounted to be right there where you always need it. The base is super heavy, giving it stability, so even when the solder reel is nearly empty it will feed through well. Recommended for classroom situation or on any technician's workbench. Solder reel holder weight: 620g. Assembly required.
\$32.95



SOLDER SUCKER
Code: SOLSUC
High suction power de-soldering pump.
\$11.00



SOLDERING IRON STAND
Code: SOLDIRNSTD
Heavy duty soldering iron stand with hefty cast iron base with removable sponge tray and twin spiral iron holder. Ideal for heavier soldering irons. Its weight makes it more stable in a classroom situation. Packaged weight: 0.442kg.
\$19.82 (1-25)
\$19.02 (26+)



SOLDERING IRON TIP REPLACEMENT
Code: SOLDTIP
\$6.95



SOLDERING STATION TIP REPLACEMENT
Code: SOLDSTNTIP
Soldering Station Soldering Iron Tip Replacement for the **SOLDERING STATION** (SOLDSTN).
\$10.16

DESOLDER BRAID
Code: SOLBRAID
De-solder wick. High quality Goot brand Gootwick, made in Japan.- Contains wash-free RMA flux and conforms to MIL- F- 14256F.- Supplied in plastic reels.- 1.5 metres long.
Bulk Pricing (per reel):
\$8.95 (1-4)
\$8.00 (5+)



SOLDER FUME EXTRACTOR
Code: SOLDFFAN
Designed to remove solder fumes from the work area.
It incorporates a ball bearing high volume fan to maximise airflow which is directed upwards at the rear of the unit to aid in safe dispersion of fumes. ESD safe. 1.3m lead. One installed carbon filter & 2 spares are included.
Dimensions: 200 (w) x 250 (h) x 170 (d) mm
\$82.00



EXHAUST FAN / FUME EXTRACTOR - ADJUSTABLE
Code: SOLDFFANADJ
The practical solder fume extractor with different speed settings can not only be used as a table fan but also on a beam can be mounted. You have the choice, which positioning option you prefer. Piece of carbon filter is included.
Air flow-rate: -1.2 m³/min
Max. noise generation 45 dBa
Dim(L x W x H): 185 x 135 x 217 mm
Max. power: 23 W
Operating voltage: 230 V AC
Absorption capacity: 0.2 to 1m3 / minute.
\$60.00



EXTRACTOR FAN FILTERS
Code: SOLDFUMEXFIL
Filters to suit **SOLDER FUME EXTRACTOR (SOLDFFAN)** & **EXHAUST FAN (SOLDFFANADJ)**
Pack of 5.
\$11.90

PCB HOLDERS FOR SOLDERING

PCB HOLDER FOR SOLDERING

Code: PCBHOLD

Adjustable PCB holder for soldering, desoldering or rework.
2 adjustable grips – suits various board sizes.
PCB can be rotated 360 degrees & stay set in any position.
Rigid metal stand with rubber feet for stability.

Size: 300mm x 165mm x 125mm
Holds PCB size (max): 200mm x 140mm
\$20.20



PCB HOLDER WITH MAGNIFYING GLASS

Code: THIRDHAND

Printed Circuit Board holder with magnifier.
\$20.50

SOLDER, WIRES, TERMINATED WIRES & HEATSHRINK

SOLDER & SOLDERING RELATED WIRE



| NAME | CODE | DESCRIPTION | QTY. | PRICE |
|---|--------------------|--|-----------|---|
| SOLDER – ROLL – 500GM X 0.71MM | SOLD500 | 60/40 Resin Cored 0.71mm x 500gm | Roll | \$58.00 |
| SOLDER - ROLL - 200GM X 0.71MM - LEAD FREE | SOLD200-LF | Lead free resin cored 0.71mm x 200gm roll. 99.3% tin / 0.7% copper. | Roll | \$48.00 (1-5) \$45.00 (6+) |
| SOLDER - TUBE x 0.71MM | SOLDTUBE | 60/40 resin cored 0.71mm x 15g tube | Tube | \$4.50 |
| SOLDER - TUBE x 0.71MM LEAD FREE | SOLDTUBE-LF | Lead free resin cored 0.71mm x 15g tube. 99.3% tin / 0.7% copper. | Tube | \$5.95 |
| TINNED COPPER WIRE - 25 GRAM ROLL | TCW25 | 25 gram roll of 0.71mm (22 AWG) of tin plated copper wire. | Roll | \$11.95 |
| TINNED COPPER WIRE | TCW-1 | 0.71MM, 22 SWG. Ideal for solder practice and wire links. | Per metre | \$0.67 |

HOOK UP WIRE

| | CODE | SIZE | COLOUR | QTY | PRICE |
|--|-------------------|-----------|--------|------------|---------------|
|  | WIREHUR | 21 / 0.08 | Red | Per 10 mtr | \$3.50 |
| | WIREHUBK | 21 / 0.08 | Black | Per 10 mtr | \$3.50 |
| | WIREHUG | 21 / 0.08 | Green | Per 10 mtr | \$3.50 |
| | WIREHUBL | 21 / 0.08 | Blue | Per 10 mtr | \$3.50 |
| | WIREHUY | 21 / 0.08 | Yellow | Per 10 mtr | \$3.50 |
| | WIREHUW | 21 / 0.08 | White | Per 10 mtr | \$3.50 |
| | WIREHUBR | 21 / 0.08 | Brown | Per 10 mtr | \$3.50 |
| | WIREHUO | 21 / 0.08 | Orange | Per 10 mtr | \$3.50 |
| | WIREHUTBK5 | 24 / 0.2 | Black | Per 5 mtr | \$5.84 |
| | WIREHUTBL5 | 24 / 0.2 | Blue | Per 5 mtr | \$5.84 |
| | WIREHUTG5 | 24 / 0.2 | Green | Per 5 mtr | \$5.84 |
| | WIREHUTR5 | 24 / 0.2 | Red | Per 5 mtr | \$5.84 |

HOOK-UP WIRE

Code: WIREHU10

Size (approx.) 21 / 0.08.

Please specify colour & length when ordering. If no colour is specified, black (**WIREHUBK10**) will be delivered.

Code: WIREHUT5

Choice of black / blue / green / red
Suitable for making up Banana Plug leads & Alligator Plug leads. Size (approx.) 24 / 0.2.

Please specify colour & length when ordering. If no colour is specified, black (**WIREHUTBK5**) will be delivered.

MILD STEEL MIG WIRE
Code: WIREMIG
 0.9mm.
 Ideal for the "JUMPING BUG"
 project (See **WIND-UP CLOCK**
MECHANISM)
 Per metre: \$0.45



WIRE - COPPER BASE
Code: WIRECOP2/14
 2mm diameter
 14 SWG
 Suitable for steady hand tester.
 Price per metre.
\$4.67

FIGURE 8 SPEAKER WIRE – 30M
Code: WIREFIG8
 Colour: Light Grey, size 14 / 0.14
 30 metre roll.
\$20.45

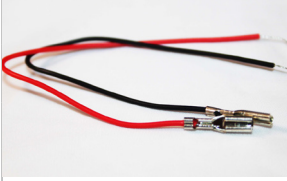



WIRE CABLE (PLASTIC COATED)
Code: CA2-10
 7 X 7 strand, stainless steel rope, 2mm
 diameter.
 10 metres.
\$3.75



Code: CA2-15
 7 X 7 strand, stainless steel rope, 2mm
 diameter.
 15 metres.
\$5.25

TERMINATED WIRES

| | CODE | SIZE | TYPE | QTY / PKT | PRICE |
|---|------------|-------|---|-----------|--------|
|  | WIRETB150 | 150mm | Terminated wire 150mm black (B150) or red (R150) with female spade at one end. Terminal at one end. Fits the terminals on SM403. | 10 | \$3.60 |
| | WIRETR150 | 150mm | | 10 | \$3.60 |
| | WIRETB75 | 75mm | Terminated wire 75mm black (B75) or red (R75) with female spade at one end. | 10 | \$3.60 |
| | WIRETR75 | 75mm | | 10 | \$3.60 |
|  | WIRET180PR | 180mm | Pair of 180mm terminated wires (1 x black + 1 x red) with 6.3mm terminal at one end. 24 strands / 0.2mm dia. Fit solar panel terminals. | 2 | \$0.95 |

HEAT SHRINK



| NAME | CODE | DESCRIPTION | QTY. | PRICE |
|-------------------------------------|------------|---|-----------|--------|
| HEATSHRINK 3MM BLACK | SHRINK3BLK | 3mm tubing - black - for insulating wires & terminals | per metre | \$2.35 |
| HEATSHRINK 3MM RED | SHRINK3BLK | 3mm tubing - red - for insulating wires & terminals | per metre | \$2.35 |
| HEATSHRINK 6MM BLACK | SHRINK6BLK | 6mm x 1.2mtr tubing - black - for insulating wires & terminals. Shrinks to 50% of its size. | per metre | \$3.45 |
| HEATSHRINK 6MM RED | SHRINK6BLK | 3mm x 1.2mtr tubing - red - for insulating wires & terminals. Shrinks to 50% of its size. | per metre | \$3.45 |
| Shrink with a heatgun or hairdryer. | | | | |

ALL PRICES
 INCLUDE GST

GENERAL EQUIPMENT

G-CLAMPS

Code: CLAMPG50

50mm (2 inch) working distance.

\$8.00



Code: CLAMPG100

100mm (4 inch) working distance.

\$13.50

PULLEY WITH UNIVERSAL CLAMP - LARGE

Code: PUCLAMP70

Large 70mm light alloy pulley with universal bench clamp.

Can be clamped onto edge of bench upto 3.75cm thick, or screwed to flat surface or on 13mm diameter support rod.

(Item supplied may differ slightly from illustration).

\$32.00



BOSSHEAD WITH METAL THUMB SCREW

Code: CH0663BK

Die-casted in black finish, accepts rods up to 16 mm dia, at right angle to each other.

\$5.95



ADJUSTABLE PULLEY CLAMP - METAL

Code: PH0297A

Sturdy, metal clamp pulley that can be used to demonstrate a wide variety of mechanics principles. The metal sheave is 5 cm in diameter and can be adjusted from flush with the tabletop to 13 cm above it. Pulley can be rotated to 360° to suit any experimental setup. Adjustable to 22.5cm height with 4.75cm maximum clamp opening.

\$32.00



BOSSHEAD - RIGHT ANGLE- HIGH TORSIONAL STRENGTH

Code: PRBH01

High grade zinc alloy composition, finished with non-toxic powder coating.

Two stainless steel thumb screws. Non-ferrous, rust free & long lasting. Holds rods orthogonally (90 degrees) to one another. Designed to carry heavy loads & prevent torque damage. Threaded metal, single piece clamping screws, able to hold rods up to 16mm (dia.).

\$11.33



BENCH CLAMP - UNIVERSAL - ALLOY (FOR 13MM MAX. RODS)

Code: LB0858-001

A useful device in the lab. Can fit to benches up to 40mm thick. When clamped can carry rods 5 to 13mm dia. both vertically and horizontally.

Can carry a pulley mounted on a rod (MF2600-001 or MF2600-020), which then converts either one to a bench mounted pulley.

Genuine IEC product. Instruction sheet included.

\$30.80



PULLEY - 50MM DIA. - ON OFFSET ALLOY ROD

Code: MF2600-020

Held in place by the Bench Clamp (LB0858-001) or by a retort stand and boss head.

This 50mm diameter nylon pulley is fixed to the end of an 20mm long x 8mm diameter anodised rod. The pulley can be brought down to a very low position for use with cords passing over the edge of benches.

The rod supporting the pulley is bent in one plane, but edgewise the rod is offset so that the pulley groove is in line with the rod.

\$20.35



DRILL BITS



| NAME | CODE | DESCRIPTION | QUANTITY | PRICE |
|-----------------|-------|-------------------------------------|----------|--------|
| DRILL BIT 1.0MM | DB1.0 | High Speed Steel Drill Bit - 1.0 mm | 5 | \$8.12 |
| DRILL BIT 1.9MM | DB1.9 | High Speed Steel Drill Bit - 1.9 mm | 5 | \$8.12 |
| DRILL BIT 2.3MM | DB2.3 | High Speed Steel Drill Bit - 2.3 mm | 5 | \$8.12 |
| DRILL BIT 2.6MM | DB2.6 | High Speed Steel Drill Bit - 2.6 mm | 5 | \$8.12 |
| DRILL BIT 2.9MM | DB2.9 | High Speed Steel Drill Bit - 2.9 mm | 5 | \$9.43 |
| DRILL BIT 3.5MM | DB3.5 | High Speed Steel Drill Bit - 3.5 mm | 5 | \$9.43 |
| DRILL BIT 3.9MM | DB3.9 | High Speed Steel Drill Bit - 3.9 mm | 5 | \$9.43 |



| NAME | CODE | QTY. | PRICE |
|---|-----------|------|---------|
| BALADONIA METRIC FORSTNER DRILL BIT 18MM | DBFORST18 | 1 | \$9.25 |
| BALADONIA METRIC FORSTNER DRILL BIT 28MM | DBFORST28 | 1 | \$12.50 |
| BALADONIA METRIC FORSTNER DRILL BIT 30MM | DBFORST30 | 1 | \$13.50 |
| BALADONIA IMPERIAL FORSTNER DRILL BIT 38.1MM (1 1/2") | DBFORST38 | 1 | \$15.90 |

These Forstner drill bits are used for drilling wood - guided by the rim and not a centre point, therefore not easily deflected by timber's natural differences, such as knots or strong grain patterns.

Main advantage is that it can be used to drill large, shallow holes (useful for the **LUMA LED DESK LAMP** kit) or very deep holes.

HAND TOOLS



ALLEN KEY

For the collar's grub screw

Code: HEX1.5

Pack of 1

\$2.60

Code: HEX1.5-5

(Pack of 5)

\$9.80



HAMMER - CLAW

Code: HAMMER

Fibreglass hammer with claw to remove nails. Ergonomic grip. Suitable for students to use (under teacher supervision) to create new projects.

\$8.68



HOT GLUE GUN - MINI

Code: GLUEGUNMIN

30W, 240V;

For use with **7MM HOT GLUE STICKS** (GLUESTK7).

Smaller glue gun suitable for primary level students.

\$14.71



BULL NOSE PLIERS

Code: PLIERBN

Insulated bull-nosed pliers

175mm long

\$25.96 (1 - 25)

\$24.50 (26+)



HAMMER - CROSS PEIN

Code: HAMMERC

100g cross pein hammer. Fibreglass shaft.

Soft grip handle

\$8.53



HOT GLUE STICKS - 7MM

For **HOT GLUE GUN MINI**

(GLUEGUNMIN).

7.4mm (dia) x 100mm

(l)

Code: GLUESTK7-5

Pack of 5

\$3.90

Code: GLUESTK7

Pack of 50

\$11.95



CRAFT KNIFE - 18MM SNAP BLADE

Code: CRKNF

Heavy duty locking knife.

18mm snap blade.

\$5.97



HOT GLUE GUN

Code: GLUEGUN

100W; 11mm.

For use with **Hot Glue Sticks**

(GLUESTK).

\$22.85



GLUE GUN MINI - LOW TEMPERATURE

Code: GLUEGUNMINLT

This 10W power Low Temperature Glue Gun is great for craft projects, quick repairs, at school or in a home education setting.

The Glue Gun has a protective nozzle cover and is suitable for paper, fabric, foam and even some plastics. Each pack contains 2 free low temperature sticks. Replacement glue sticks are also available in packs of 12

(Code: GLUESTKLT-12) or 24 (GLUESTKLT-24).

\$8.75



MINI CRIMPING TOOL

Code: CRIMPT

Crimping tool for non-insulated lugs.

Suits **LARGE TERMINALS** (TERML) &

SMALL TERMINALS (TERMS).

\$18.50



HOT GLUE STICKS

Code: GLUESTK

For **HOT GLUE GUN** (GLUEGUN)

300mm x 11mm (length x diameter);

Pack of 5.

\$6.12

ALL PRICES
INCLUDE GST



**GLUE STICKS –
LOW TEMPERATURE 7 X 100MM**

Pack of 12 low temperature glue sticks for use with Glue Gun Mini - Low Temperature (GLUEGUNMINLT). 7mm (dia.) x 100mm (l.). Bonds to paper, wood, plastic and more.

Suitable in a primary school or home education setting (under adult supervision). Ages 5+.

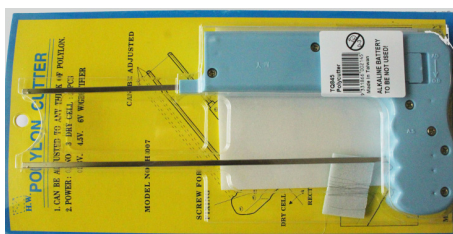
Pack of 12
Code: **GLUESTKLT-12**
\$3.00

Pack of 24
Code: **GLUESTKLT-24**
\$4.30



5.5MM HEX NUT HAND DRIVER
Code: **HEXDR5.5**

5.5mm Hexagonal Nut (Wrench) Hand Driver/Tool
\$5.64



HOT WIRE CUTTER
Code: **HOTWIRE**

Useful for cutting or sculpting Styrofoam and polystyrene.
\$29.60



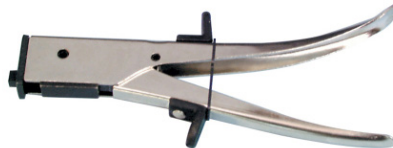
REPLACEMENT HOT WIRE

Code: **REPLHOTWIRE**
Replacement Hot Wire for **HOT WIRE CUTTER**.
5 metre roll.
\$10.15



**LONG NOSE PLIERS –
INSULATED**

Code: **PLIERLN**
165mm long pointy nose pliers
\$25.96 (1 - 25)
\$24.50 (26+)



NIBBLING TOOL
Code: **NIBBLER**

Will cut any shape out of aluminium, plastic, copper and other unhardened metals up to 18 gauge.

Tool is designed to fit into the palm of your hand for easy use, simply drill a 1/4 hole to start.

\$14.95

SCREWDRIVER FLAT HEAD 3.0mm x 100mm

Code: **SCREWDRFL3/100**

This flat head, single driver, trade quality insulated screwdrivers is one of the most comfortable screwdrivers. The ergonomic handles have a soft rubber coating for a secure, comfortable grip that you can use for hours on end.

TUV and GS approved and rated up to 1kV.

A size for any application:

Flat Blade 3.0 x 100mm.

\$9.95



SCREWDRIVER PHILIPS #1 X 80MM

Code: **SCREWPH1/80**
\$9.95

SCREWDRIVER PHILLIPS #0 X 60MM

Code: **SCREWPH0/60**
\$9.95

Trade quality insulated screwdrivers which are some of the most comfortable screwdrivers. The ergonomic handles have a soft rubber coating for a secure, comfortable grip that can be used for hours on end. All are TUV and GS approved and rated up to 1kV.

SCREWDRIVER CUSHION GRIP PHILIPS #2 X 100MM

Code: **SCREWDRPH2/100**

Stanley screwdriver with cushion grip handles for comfort and ease of use. Blades are chrome vanadium with precision profile magnetised tips for lasting efficiency. 100mm with #1 point.

\$11.95

PRECISION SCREWDRIVER SET - 6 PIECE

Code: **SCREWDRPREC**

6 piece jeweller's screwdriver set.
\$11.95



NOTE: Item supplied may vary slightly from illustration.



PRECISION SCREWDRIVER SET - INSULATED - 6 PIECE

Code: **SCREWDRINS6**

Ergonomic fully insulated 6-piece screwdriver set for precision work. Suitable for working with electrical components.

- Slotted sizes 2mm, 2.5mm, and 3mm

- Phillips sizes #00, #0, and #1

- 1kV insulation rating

\$34.95

**ALL PRICES
INCLUDE GST**

NOTE: Item supplied may vary slightly from item illustrated.



SIDE CUTTERS - INSULATED

Code: SIDECUT
 150mm long side cutter
 \$25.96 (1 - 25)
 \$24.50 (26+)



WIRE STRIPPER

Code: WIRESTR
 TRex design – Automatically adjusts to insulation diameter, and is one handed operation
 \$22.95



TOOL KIT WITH CASE - 30 PIECES

Code: TD2196
 Minor repairs in the lab or workshop are made simple with this 30 piece mini tool kit. The tools are held securely in a convenient zip-up case.
 \$32.95

MINI SIDE CUTTERS

Code: SIDECUTM
 Mini Side Cutters.
 120mm long.
 \$6.60



MULTI-USE TOOL / SPANNER

Code: MULTITOO
 Can be used as a Gear pusher or as a Spanner for M3 nuts.
 5.6mm opening.
 Pack of 10.
 \$5.00

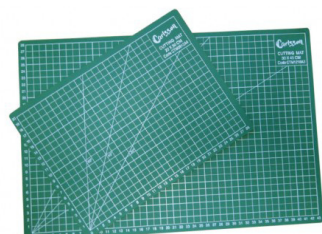
WIRE STRIPPER 3

Code: WIRESTR3
 Adjustable wire stripper.
 Return spring.
 Cushion grip 12.5cm (approx.) long.
 \$11.60



PRO TOOL KIT WITH 30W SOLDERING IRON

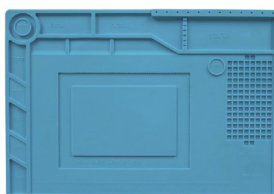
Code: SOLDTLKIT
 The Pro tool kit contains: 30W soldering iron with fine tip
 • 2mm chisel tip for the soldering iron
 • Soldering iron stand
 • Solder sucker
 • Tube of lead free solder
 • Multimeter with test leads with probes (batteries not included – uses 2 x AA batteries)
 • Jewellers screwdriver set
 • 120mm sidecutters
 • Tweezers.
 \$57.00



SELF HEALING CUTTING MAT - A3

Code: CUTMATA3
 Suitable when using either a utility knife, scalpel or a rotary cutter. Protects the work surface from damage, and prevents your blade from dulling quickly. Constructed from a durable 3mm laminated surface. Cutting blades create tiny scratches in the mat surface that reclose afterward; thus the description “self-healing.”

Mat is numbered up the left side and across the bottom and has clear metric grid markings
 \$24.44



SILICONE BENCHTOP WORK MAT

Code: HM8102
 The ultimate working mat for the advanced hobbyist or technician. The mat measures 389 x 269mm and is made from heat resistant silicone - suitable for soldering applications. It has multiple indentations to hold screws, parts, and components, and various magnetic areas to hold metal parts securely in place. It has a 28cm ruler and an area to hold up to 12 jeweller type screwdrivers. Ideal if you perform delicate work with tiny screws and parts to ensure you don't lose them while you're working.
 \$23.50

GLUE MAT - SILICONE

Code: GLUEMAT
 Gloo Silicone Mat makes an excellent glue-up and finishing mat. It can protect larger surface of your work area. Resists most types of glue with heat resistant.
 Size: 194 x 270 x 0.75 mm.

Ideal for school and home education environment or for your hobby needs.
 \$8.00



MAGNETIC WORK MAT & WHITE BOARD

Code: MAGWBTH1867
 This is a fully magnetic rectangular project mat that will stop small screws with a will of its own from jumping away from your disassembled device. This 254 x 203mm (8 x 10 inch) mat is great for keeping nuts and bolts in place when disassembling all kinds of gadgets and phones.

NOTE: The magnetic side of the mat is the “White-board” side which allows you to write references or notes next to the nuts and bolts.
 \$14.95 ea (1-5)
 \$13.34 ea (6+)

WORK & BENCH MATS



COMPONENT TOOLS

COMPONENT LEAD FORMING TOOL

Code: **COMPLFT**

This forming tool provides uniform hole spacing from 10 to 38mm (0.4" to 1.5") for resistors and diodes to fit into PCBs.



The tool is double sided: one side for use with DO47

outline diodes (eg 1N914) and 1W zener diodes; the other side for 1/5W resistors, DO41 outline diodes (eg 1N4004).

\$10.95



IC EXTRACTOR

Code: **ICEXTRACT**

IC Extractor for 8-40 Pin Integrated circuit chips.

Designed to reduce the risk of bending the IC's legs when pulling the IC out of a socket or PCB.

\$5.95



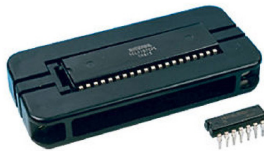
IC INSERTER

Code: **ICINSERT**

IC Inserter for 14/16-Pin Integrated circuit chips.

Designed to reduce the risk of bending the IC's legs when inserting them into an IC socket or PCB.

\$11.61



IC STRAIGHTENER

Code: **ICSTRAIT**

Straightens pins on integrated circuits.

\$22.90



TWEEZERS - ANTI-MAGNETIC

Code: **TWANTIMAG**

High quality 110mm long tweezers made from anti magnetic, anti acid steel. Perfect for handling SMD components or general electronic components. Supplied with protective nylon cap.

\$5.90

TWEEZERS - PLASTIC (PAIR)

Code: **TWPL11**

Pair of plastic

Forcep Tweezers

- 1 x 107mm & 1 x 123mm)

Polypropylene

Pack of 2 (Colours may vary)

LIMITED STOCK

\$0.60



TWEEZERS - NON CONDUCTIVE (4 PIECE)

Code: **TWST83**

Set of 4 non-conductive tweezers.

Ideal for SMT & small parts.

Suitable for any static-sensitive devices.

Overall length 11.25cm (approx.)

\$18.22

MEASURING TOOLS

METER RULER - WOODEN

Code: **MRPH0062**

One metre, graduated on both edges in centimetres & millimetres. One edge reads 0 – 100 left to right, the other in reverse.

\$12.00

METER RULER - PLASTIC

Code: **MREX100**

One metre, graduated on one side in 0.5cm & numbered in centimetres. Reverse side graduated in millimetres & from 0 -100 in centimetres.

\$15.00



CRAFTRIGHT 3M / 10FT TAPE MEASURE

Code: **TAPEM30ENC**

3 metre / 10ft Craftright tape measure! Ideal with durable rubberised case for non-slip grip and ease of use.

Features both Metric and fractional measurements and an easy read 13mm wide blade.

Belt clip for easy access.

\$4.05



TROJAN OPEN REEL 30M TAPE MEASURE

Code: **TAPEM30D**

30m fibreglass open reel. High impact case with handle. Model TJ14075.

\$35.00



ARCHITECT SCALE TRIANGULAR RULER - 30CM

Code: RULEM30TECH

Durable, sturdy aluminium alloy construction. Easy to read triangular Crafright 300mm ruler. Scales: 1:20, 1:25, 1:50, 1:75, 1:100, 1:125.

\$10.95



MEASURING SQUARE 100

Code: SQUARE100

Measuring Square Type: Engineer
100mm blade.

Solid Steel.

Ideal for workshop and inspection applications.

\$8.10



OPEN REEL 30M TAPE MEASURE

Code: TAPEM30E

30m / 100ft fibreglass open reel tape measure. Metric and imperial. Heavy duty ABS housing with handle. Lightweight. Crank handle folds in.

\$21.35



SPORTS TIMER

Code: STOP

Basic quartz sports timer
1/100th second stopwatch

Split / lap time

Hours, minutes, seconds

Day, date, month

Variety of colours to choose from (please specify): red, yellow, white, orange, blue, black or green.

\$1.85 each



TEST EQUIPMENT

TEST & TROUBLESHOOTING KIT



TEST KIT

Code: TESTKIT

Contains a Digital Multimeter, Transistor Tester, LED Penlight, Mini LED Tester and a bundle of 6 alligator clips with wires.

Includes a carry pouch for easy storage.

\$42.00

DIGITAL MULTIMETER

Code: MULTIM

3.5 digits LCD display,
8 functions,
19 ranges

DC Voltage Range:

200mV/2V/20V/200V/500V

AC Voltage Range: 200V/500V

DC Current Range: 2mA/20mA/200mA

Resistance: 200Ω/2kΩ/20kΩ/200kΩ/2MΩ

Battery Test: 1.5V/9V

Dimensions: 132mm x 70mm x 25mm.

\$16.95



DIGITAL MULTIMETER WITH NON CONTACT VOLTAGE SENSOR

Code: MULTIM1527

Economical multimeter with all the features expected, suitable for basic testing of electrical systems.

LCD display.

• Measure AC and DC voltage, DC current, and Resistance

• Continuity test with audio alert

• Non-contact voltage sensing

Black and red banana plug test leads included.

Dimensions: 65mm (w) x 145mm (h) x 35mm (d).

9V battery included.

\$32.95 ea (1-19)

\$29.95 ea (20+)



DIGITAL MULTIMETER 1527 SET

Code: MULTIM1527SET

MULTIM1527SET consists of the Multimeter 1527, a soft, foam lined zip up case, a pair of leads with banana plugs at both ends, and both insulated and plain shank alligator clips to add onto the banana plugs for greater versatility.
\$42.50



USB ADAPTOR

Code: USBPL

Accepts All USB Charge Cables.
Charge quickly and efficiently.
Smart Fuse Circuit-Breaker Protection. Input Voltage AC 90 ~ 264V 50/60 HZ Output Voltage 5 Vdc
Total Output Current DC 3 A Application Mobile Phone, iPad, iPod, etc.
Working Environment 0°C to 40°C Storage Environment -20°C to 85°C
\$9.50



DIGITAL MULTIMETER KIT

Code: KG9250

Build your own multimeter.

Learn everything there is to know about component recognition and basic electronics with this comprehensive kit. From test leads to solder, everything you need for the construction of this meter is included together. With test questions and schematic supplied in the manual, the kit can be geared to an individual or class learning environment. Kit includes DMM case, LCD, solder, battery, test leads, PCB and electronic components.
Comprehensive 18 page learning manual included.

Soldering iron required (not supplied).

\$38.95 (1 - 4)

\$35.95 (5+)

MULTI-FUNCTION ENVIRONMENTAL METER WITH DIGITAL MULTIMETER

Code: QM1594

A multi-function environment meter that combines the functions of a sound level meter, light meter, humidity meter and temperature meter. Typical sound applications include checking acoustics of recording studios, auditoriums and professional hi-fi installations. The light and humidity meters are ideal for video photographers, greenhouse and hydroponic setups, etc. Others who should find this meter essential include interior designers, factory and office managers, record and archive keepers, schools, hospitals, laboratories and, of course, universities.

Features:

- Sound level meter
- Light level meter
- Indoor temperature and humidity measurement
- Non-contact voltage
- Display: 4000 count

- Safety Category: Cat IV 600V
 - Basic DCV accuracy: 1%
 - Temperature: -20°C to 750°C (±1.2%)
 - Ave/RMS: Ave
 - Input impedance: 10M
 - Special features: Lux, SPL, Humidity
- Requires 9V battery (included).
\$175.00



SALE
Analogue bench meters currently on sale until 30th April or while stocks last.



ANALOGUE BENCH METERS

| ITEM | CODE | SPECIFICATION / DESCRIPTION | PRICE |
|--------------|---------|---------------------------------------|----------------|
| AMMETER | PA-6 | 0 – 1A / 0 – 5A in 20mA/100mA DC | \$23.65 |
| AMMETER | PA-10 | Range 0 – 10A in 200mA | |
| VOLTMETER | PA-111 | Range 0 – 3V/15V/30V DC in 0.1V/1V/1V | \$22.47 |
| GALVANOMETER | PA-14-1 | 500 – 0-500uA in ± 20uA | |

(Items supplied may vary from illustration)

Digital Bench Meters are also available. See our online "Tools" section.

POWER SUPPLIES

POWER PACK 12V

Code: POWPK2

AC 100-240V-Converter-Adapter

DC-12V-500mA-1.0A.

5.5mm-x-2.1mm.

\$24.80



POWER PACK 16VAC 1.25A UNREGULATED WITH BARE ENDS

Code: POWPK16AC

Power Pack supplied with 1.8 metre cable stripped & terminated bare ends.

Size: 55(W) x 90(H) x 60(D)mm..

For use with **PLUGDC2.1**.

AC Current Rating: 1.25 A

AC Current Tolerance: 5%

AC Voltage Rating: 16 V

Frequency: 50.0 Hz

Efficiency: 81%

\$33.95



POWER SUPPLY GENERAL PURPOSE 2 -12V AC/DC 5A

Code: LB2633-001

A compact, general purpose power supply from IEC to provide switched AC and DC voltages at 2, 4, 6, 8, 10 and 12V.AC and DC at about 5 to 6A. The DC output is full wave rectified but not filtered.

The illuminated mains switch is on the front panel. Removable mains cable. Overload protection is by an automatically resetting overload that provides an audible 'click' when tripped and reset. Housing has carry handles and rubber feet.

Price per unit:

\$230.00 (1-4)

\$220.00 (5-9)

\$215.00 (10+)



PLUG – 2.1MM DC POWER LINE CONNECTOR

Code: PLUGDC2.1

2.1mm 2 pole power cable terminal. Suitable for DC power supplies.

Suitable for use with **POWPK16AC**.

\$2.45



USB TO DC POWER CABLE

Code: USBCAB

USB to DC 5.5 x 2.1mm 5V

Jack Barrel Male.1 metre Power Cable.

\$3.95



FOR A COMPREHENSIVE LISTING OF OUR POWER SUPPLIES & TRANSFORMERS SEE OUR WEBSITE OR ONLINE POWER SUPPLIES SECTION.

RESOURCES

| | | | |
|--|---|----------------|----------------|
| | <p>EASY ELECTRONICS (by Charles Platt) Code: BOOKEASYELEC Paperback Perfect accompaniment to our INTRODUCING ELECTRONICS Kit. Kit available as a Pack of 1 or Pack of 10.</p> | <p>\$18.48</p> | <p>\$18.48</p> |
| | <p>MAKE: ELECTRONICS: LEARNING BY DISCOVERY (by Charles Platt) Code: BOOKMAKEELEC 2nd Edition; Paperback</p> | <p>\$51.25</p> | <p>\$51.25</p> |

SAFETY EQUIPMENT



SAFETY GLASSES

Code: **LWSN150**

Polycarbonate. Unisafe. Snug fit. One-piece wraparound design.

Australian Standards.
\$6.60



SAFETY GOGGLES

Code: **LW457701**

Polycarbonate Lenses.
\$6.60

GLOVES – ULTRA FEEL NITRILE BIODEGRADABLE POWDER FREE

Box of 100 Nitrile Latex free green disposable examination gloves.

Suitable for a variety of applications including educational and lab settings.

HACCP Certified.

Powder-free nitrile examination gloves.

Full textured fingertips enhance wet and dry grip.

Protection against unwanted and dangerous substances.

Optimal industrial strength with excellent puncture resistance.

Available in various sizes for better fitting and dexterity.

Smooth inner surface for easy donning and beaded cuff helps to prevent roll back.

Ambidextrous.



Variety of sizes – better fitting & dexterity: S (**468494S**); M (**468494M**); L (**468494L**) & XL (**468494XL**)
\$17.60 per box

GLOVES – ULTRA TOUCH NITRILE BLUE POWDER FREE

Box of 100 Nitrile Latex free, powder free blue disposable examination gloves.

Suitable for a variety of applications including educational and lab settings.

Certified to HACCP and ARTG listed.

Chemo rated.

Excellent puncture resistance for heavy duty work.

Ambidextrous design.

Beaded cuff.

Odour free.

Textured fingers for extra touch.



Variety of sizes: XS (**468417XS**); S (**468417S**); M (**468417M**); L (**468417L**) & XL (**468417XL**)
\$16.50 per box

GLOVES – ULTRA FRESH POWDER FREE LATEX

Box of 100 powder free clear latex examination gloves.

HACCP certified.

Variety of uses.

Contains natural rubber latex for enhanced basic barrier protection against unwanted or dangerous substances.

Good puncture resistance.

Ambidextrous.

Smooth inner surface for easy donning and beaded cuff helps to prevent roll back.



Variety of sizes - better fitting and dexterity: XS (**468405XS**); S (**468405S**); M (**468405M**); L (**468405L**) & XL (**468405XL**)
\$15.40 per box

GLOVES – ULTRA FRESH VINYL POWDER FREE

Box of 100 clear vinyl powder free & latex free disposable gloves.

HACCP certified.

Available for a variety of purposes.

Cost effective & basic barrier protection.

Double layers of PVC/PU film to provide extra safety.

Smooth inner surface for easy donning & beaded cuff helps prevent roll back.

Ambidextrous.



Variety of sizes - better fitting and dexterity: S (**468402S**); M (**468402M**); L (**468402L**) & XL (**468402XL**)
\$9.90 per box

ULTRASAFE ECONOMICAL EARMUFFS – BLUE

Code: **EARM500021**

Ultrasafe Economical Earmuff with a light-weight adjustable headband that provides an effective solution for everyday use.

SLC80:29 dB, Class 5.

Features:

- Thick blue ABS cup shell with earmuff cup size 7.5 x 10cm

- Sound block solid cup for optimal noise protection

- Cushioned pads with memory foam that create an excellent seal

- Certified to AS/NZS 1270 Standard

\$15.95





MASKS – TITAN P2 VALVED DISPOSABLE RESPIRATOR

Code: 600622

Pack of 10 single use latex free disposable masks.

N95 Certified to NIOSH & Australian Standard.

Polypropylene inner & outer layers provide comfortable feel.

Sealed soft edges for minimised leakage.

Heavy duty head straps with soft foam nose insert for added protection.

Moulded nose piece and low breathing resistance for increased comfort.

\$20.50

BULK PRICING:

Carton contains 12 boxes of masks: each carton with 120 masks (= \$19 per box).

Code: 600622C

\$228.00



MASKS – TITAN P2 DISPOSABLE RESPIRATOR

Code: 606020

Pack of 20 single use flat fold preformed design disposable masks.

N95 Certified to NIOSH & Australian Standard.

Latex free, polypropylene inner & outer layers provide comfortable feel.

Sealed soft edges for minimised leakage.

Helps to prevent inhalation of dust & particles.

Carbon layer added to reduce odours & ozone.

Heavy duty head straps with soft foam nose insert for added protection.

Adjustable nose piece & low breathing resistance for added comfort.

\$30.00

BULK PRICING:

Carton contains 20 boxes of masks: each carton with 400 masks (= \$27.50 per box)

Code: 606020C

\$550.00

ORDER FORM & POSTAGE RATES

SCORPIO TECHNOLOGY VICTORIA PTY. LTD. (A.B.N. 34 056 661 422)

Tel: (03) 9802 9913 / Fax: (03) 9887 8158

Post to: 1/31 Dalgety Street, Oakleigh, Vic. 3166

E-mail: sales@scorpiotechnology.com.au

PLEASE NOTE: If you are a school or business, email, post or fax a copy of your **OFFICIAL ORDER FORM** to us. Please include the teacher's / contacts name and contact information (preferably an e-mail address).

| | |
|------------------------------------|-----------|
| Name: : | |
| Address | |
| | |
| State / Territory: | Postcode: |
| Email address: | |
| Telephone: | Fax: |
| Purchase Order no. (if applicable) | |

Schools *WITHOUT official order forms* can use this form, and are required to send an emailed order that displays school details. The teacher's name and contact details must be supplied.

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|------------------------|------|
| School / Business name | |
| Teacher's name: | |
| Teacher's email: | |
| School email: | |
| School's Telephone: | Fax: |

| CODE | DESCRIPTION | Price per | Qty | Cost (Price x Qty) |
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| TOTAL | | | | \$ |
| APPROVED - | | | | |
| SIGNATURE | | | | |

POSTAGE Refer to the Postage Rates chart

POSTAGE RATES

| Weight | Under 0.5 kg | 0.5 - 2.0 kg | 2 - 5 kg | 5 – 10 kg | 10 - 25 kg | 25+ kg |
|-----------------------|--------------|--------------|----------|-----------|------------|----------------|
| Victoria | \$11.40 | \$14.76 | \$16.75 | \$20.13 | \$26.85 | Please enquire |
| NSW / SA / TAS | \$11.40 | \$19.13 | \$21.47 | \$24.15 | \$33.56 | |
| Brisbane, Perth | \$11.40 | \$21.47 | \$24.15 | \$30.19 | \$40.24 | |
| QLD / WA / NT (Rural) | \$11.40 | \$23.48 | \$26.85 | \$33.56 | \$46.96 | |

- ✓ E-mail, post or fax your official school order to us, including the teacher's name to speed delivery.
- ✓ An invoice will be included with the goods. Note: you do not need to open an account with us.
- ✓ Private customers welcome, too. Order will be dispatched once payment is received.
- ✓ Orders are dispatched quickly and are sent using Australia Post.
- ✓ Prices and stock availability are subject to change without notice.
- ✓ Payment is by cheque, EFT or credit card. Please note there will be a 1.5% surcharge on all credit card payments over \$250.
- ✓ Bulky items (eg. dynamic ramps & trolleys), very large or heavy orders & special order items that cannot be sent via our regular Australia Post service will incur an additional postage fee.

We also have catalogues for **Primary STEM, Tools, Solar & Solar Challenge, Clocks & Pens** and a **comprehensive Product Catalogue**, which can be downloaded from our website.

We are progressively adding more items to our online catalogues and information. Please have a look - we would appreciate feedback on what else you would like to see. Thank you for your continuing support.