

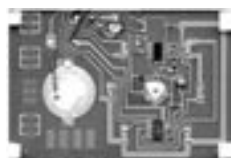
RSR COMPLETE SOLDER STARTER KIT

Perfect for beginning solder class. Individually packaged. Includes solder, soldering iron, solder stand and sponge, diagonal cutter, plus two solder project kits.

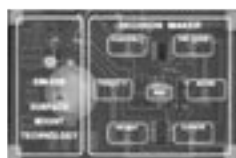


Part No.	1-9	10+
32RSRSTART	\$18.95	\$17.95

SURFACE MOUNT SOLDERING PRACTICE KIT



PC board showing practice areas & mounted components



SM-200K in its final assembly as a decision maker

This kit / course provides all parts and instructions to give you experience on working with surface mount components. The finished project is a decision maker with 6 flashing LEDs.

Part No. 3200SM200K • Price: \$16.50

RSR FUN LIGHTS

ALSO AVAILABLE IN SURFACE MOUNT VERSION

Lights move left to right one at a time or in groups. Insert 9V battery to turn Fun Lights on. Movement speed can also be easily controlled. (Battery not included)



Part No.	Description	Price
3200FUN LIGHT	Regular Kit	\$4.95
3200SMTFUN	Surface Mount Version	5.95

RSR SOLDER PRACTICE KIT

Learn all about soldering techniques while building this project. Uses a 9V battery (not included).



Part No. 3200SPB2 • Price: \$3.95

SOLDERING PROJECT KIT

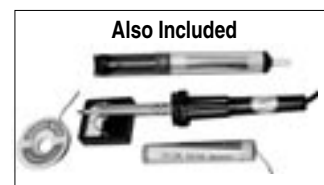
Good soldering requires practice and an understanding of soldering principles. This kit will help you achieve good soldering techniques, make you familiar with various electronic components and provide you with dynamic results. Requires one 9V battery (not included).



Part No. 3200SP1A • Price: \$7.50

DE-SOLDERING / SOLDERING "REWORK" TRAINING KIT

ECONOMICAL, FLEXIBLE TRAINING CONCEPT



Unique, inexpensive method of teaching de-soldering **and** soldering. Kit is designed around an assembled, power controller interface circuit board that is fully populated with components like Hitachi quad comparators and quad op amps. Approximately 50 components and hardware items, all being DIP (through hole) style. Other semis include, but are not limited to an 8-bit PIC Micro-C and some IRLZ34 N-channel Enhancement Mode Logic Level TrenchMOS transistors. In addition, there are resistors, caps, some unique style red, green and even bi-polar LED's, switches, a buzzer, connectors, heatsink and more. Kit includes circuit board with case, instruction manual, de-soldering pump, 5 ft. desolder braid, soldering iron, 10 gm. solder, iron stand and sponge. After removing parts, "Re-Work" the board by soldering them back! Instruction manual includes technical tips on both de-soldering and soldering.

- Cost-effective method of teaching both de-soldering **and** soldering
- Work with an actual finished product (not a hobby) circuit board
- Beginner students can de-solder (and re-work) one section of the board at a time
- Tutorial manual with de-soldering and soldering tips
- Approximately 50 components/hardware on board, additional boards available
- Inherent components parts value
- Contains circuit board, de-solder pump, de-solder braid, soldering iron, solder stand and sponge and solder (10gm), tutorial manual
- Additional boards available

Part No.	Description	Price
32REWORK	Desolder/Solder Training Kit	\$12.95

ACCESSORIES

32STTH757	Extra Board for REWORK Kit	5.10
060821	Extra Tip for De-Solder Pump	0.85
060370	Optional Safety Goggles	1.90
060800	Extra 5' Desolder Braid	0.95
060848	Electric Desoldering Tool	28.50
060702	1 lb. Solder Roll	15.90
060830	4 Piece solder Aid Kit	2.95
060836	Helping Hand and Magnifier Set	3.95

EDUCATIONAL KITS / ROBOTICS

OWIKIT™ SOLAR BULLET TRAIN

All Aboard the fastest train under the sun! OWI is proud to introduce their Solar Bullet Train mini solar kit. This kit entices students and train enthusiasts alike to learn about the environmental benefits of renewable energy. Two interlocking cars attach to the engine, allowing young builders to focus on self-motivation, perseverance and manipulation. The Solar Bullet Train is an excellent beginner building kit designed to teach how solar power is used to drive a small motor. Its 18 parts snap together and are secured with only four screws. Train enthusiasts of all ages will enjoy building this amazingly fast eco-friendly train and watch it travel without rails.



Part No. 32OWIMSK680 • Price: \$12.50

OWIKIT™ SOLAR SYSTEM



Young astronomers will delight in OWI's newest Mini Solar Kit – as they build, paint and watch their very own Solar System come to life with real solar energy. Planets orbit around the solar-paneled “sun” that drives a motor so the planets actually move. This excellent educational solar kit provides a hands-on lesson about how solar power drives a motor. The kit comes with 6 colors of opaque acrylic paint, plus brush—which makes for the perfect exercise in science and creativity.

Part No. 32OWIMSK679 • Price: \$18.90

OWIKIT™ ALUMINUM BUG KITS



Mega Mantis

Samurai Scorpion

Rhino Beetle



Almost lifelike, these aluminum building kits feature interesting bugs that you assemble from metal and bendable aluminum parts. Each kit contains approximately 25 hard and soft pre-punched aluminum parts, a few screws, nuts, springs and assembly tools. Easy to follow instructions with detailed graphic illustrations. For ages 10 and up.

Part No.	Description	Price
32OWI351	Mega Mantis	\$9.95
32OWI352	Samurai Scorpion	9.95
32OWI353	Rhino Beetle	9.95

OWIKIT™

6-IN-1 EDUCATIONAL SOLAR KIT

Mini Solar building kits teach children the benefits of solar energy while they create a toy that is both fun to play with and requires no batteries. Newest member of this popular line is the 6 in 1 Educational Solar Kit, an excellent beginner building kit designed to teach how solar power is used to drive a small motor. Children use the 21 snap together parts (no tools required) to build six different working models including an airboat, windmill, puppy, and two different planes.

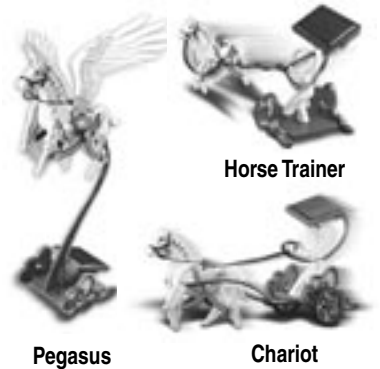


Part No. 32OWIMSK610 • Price: \$18.95

OWIKIT™

3-IN-1 SOLAR STALLION

Triple your fun in the sun with 3- in-1 Solar Stallion. This solar-powered kit helps kids understand the benefits of renewable energy while creating their own fun, battery-free toy. It's exciting to watch solar energy make the product come to life, and this hands-on approach to science and building creates a tangible lesson in solar energy for girls and boys alike. Young horse lovers will especially enjoy assembling and re-assembling these easy-to-build equine choices: 'Horse Trainer', 'Pegasus', or 'Chariot'.



Pegasus

Chariot

Part No. 32OWIMSK613 • Price: \$18.95

OWIKIT™ T3 TRANSFORMING SOLAR ROBOT

Late nights and too much coffee have inspired OWI's geek squad (designers) to unleash their cranial creativity in the form of a multifunctional transforming solar robot kit. "T3" is an intelligent mobile kit that requires no fossil fuel - no batteries. Its animated movements are activated by nature's gift of sunshine.

"T3" easily transforms into three intergalactic designs: Tank, Robot, and Scorpion. Easy instructions and basic building skills are that's needed for young science fiction buffs to see the benefits of solar energy before their very eyes.

Eco-friendly and transforming friendly...Oh yeah...."T3"!



Part No. 32OWIMSK614 • Price: \$18.95

ELECTRONIC ROBOT KITS

OWIKIT™ ROBOTIC ARM EDGE

NO SOLDERING REQUIRED

Riding the wings of the award winning Robotic Arm Trainer, OWI has made robotic arm technology more affordable without compromising quality. With Robotic Arm Edge, command the gripper to open and close, wrist motion of 120 degrees, an extensive elbow range of 300 degrees, base rotation of 270 degrees, base motion of 180 degrees, vertical reach of 380mm, horizontal reach of 320 mm, and lifting capacity of 100g. WOW! Some of the added features include a search light design on the gripper and a safety gear audible indicator is included on all five gear boxes to prevent any potential injury or gear breakage during operation. How does this equate to fun? Total command and visual manipulation using the 5s: five switch wired controller, five motors, and five joints. Night time play is possible and extended life on the gearbox to prolong your control and predictions of the robot's behavior. **Specifications:** Battery: 'D' size battery x 4; Dimension: 9" L x 6.3" W x 15" H; Weight: 658g



Part No. 32OWI535 • Price: \$49.95

MATRIX INDUSTRIAL ELECTRONIC CONTROLLER

MODEL MIAC-01

This can be used to control a wide range of electronic systems. Operates off 12V or 24V. It has 8 analog or digital inputs, 4 high current relay outputs and 4 motor outputs. 4 line LCD display and control keys.

- Programmable from PC using USB port
- Easy to program with flow charts, C or Assembly code
- Free copy of Flowcode (for flow charts)
- LabView and Visual Basic compatible



Part No. 01MIAC01 • Price: \$209.40

OWIKIT™ SONIC F1

The perfect balance of aerodynamics, transmission, speed, and stylish design has made Sonic F1 the top prospect in the racing community. When equipped with the most power engine, the sun, Sonic F1 races at amazing speeds. No batteries required and 8 plastic parts to assemble.



SPECIFICATIONS:

Solar Panel Output: 1.1V x 50mA

Assembled Size: 110mm x 45mm x 30mm

Tool needed: Diagonal Cutter

Part No. 32OWIMSK674 • Price: \$11.95

OWIKIT™ ATTACKING INCH WORM

The sun's rays power this mini solar kit to slither along to safety. The mechanical movements simulate the movements of its soft-bodied derivative. No batteries required and forty-eight parts to assemble.



SPECIFICATIONS:

Solar Panel Output: 1.1V x 75mA

Assembled Size: 165mm x 44.4mm x 49mm;

Tool Needed: screw driver [(+) size m2-3]

Part No. 32OWIMSK673 • Price: \$10.50

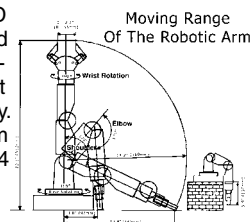
OWIKIT™ ROBOTIC ARM TRAINER

5 AXIS CONTROL



The Robotic Arm Trainer teaches the basic robotic sensing and locomotion principles while testing your motor skill as you build and control the arm.

You can command this unit with its five switch, wired controller with corresponding LED lights to grab, release, lift, lower, rotate wrist, and pivot sideways 350°. After assembly, observe the dynamics of gear mechanisms through the transparent arm. Five motors and five joints allow for flexibility. Educators will find the robotics technology curriculum and computer interface useful tools. Power Source: 4 "D" batteries. (Not included)



PC INTERFACE OPTION

Includes software (two 3.5" diskettes), external interface card, cable and instructions. Enables students, hobbyists and professionals to realistically simulate industrial type applications. Features programming, saving, editing and downloading capabilities utilizing USB port. IBM/PC compatible. The PC Interface Option is available either assembled and tested, or in kit version. Kit version requires soldering.

SPEECH INTERFACE KIT OPTION

Available in kit version (*soldering required for this option*), the speech interface kit works in conjunction with the speech recognition kit (**Order No. 32SR07**), which is also a soldering project. Both kits are needed if you wish to have speech recognition capabilities with the Robotic Arm. Using these kits with the Arm permits experimentation with speech recognition and control technology. Train the speech recognition circuit with words you want to use to control the Robotic Arm. While the Speech Recognition kit can function as a stand alone unit, if you wish to have speech recognition capabilities with the Robotic Arm, both the speech recognition kit and the speech interface kit are necessary.

Part No.	Description	Price
32OWI007	Robotic Arm – No Soldering Required	\$89.00
32OWI0762-USB	PC Interface – USB (Assembled)	84.00
32007RTC	Arm Curriculum	39.00
32RAI007	PC Interface (Kit Version, Requires Soldering)	69.95
32SRI01	Speech Interface Kit (Requires Soldering and the Speech Recognition Kit #32SR07)	75.00
32SR07	Speech Recognition Kit (Requires Soldering and the Speech Interface Kit #32SRI01)	95.00

SPEECH RECOGNITION KIT

Soldering project, complete with all components parts, circuit boards, keypad, headphones and mike. User "trains" the circuit with words or vocal utterances intended for the circuit to recognize. Allows experimentation with many facets of speech recognition technology. Self contained, stand alone unit. User programmable vocabulary (20 to 40 word), multilingual, non volatile memory back up. May be interfaced to control external circuits and appliances (**See Robotic Arm Trainer, Order No. 32OWIPCINTARM**)



OPTIONAL INTERFACE KITS (**Requires Soldering**)

Model SRI-02 – Ten relays switched corresponding to first ten recognized words by the Speech Recognition Circuit. Enables Speech Recognition Circuit to activate or deactivate 10 electrical circuits or devices.

Model SRI-03 – For more advanced user. Ten logic outputs corresponding to first ten recognized words. Each output provides a +5V signal when word is recognized. Activates or deactivates 10 circuits or devices using TTL logic.

Part No.	Description	Price
32SR07	Speech Recognition Kit	\$79.00
32SRI02	Opt. Relay Interface Kit	115.00
32SRI03	Optional Interface Kit	79.00

EDUCATIONAL KITS / ROBOTICS

PARALLAX SumoBot ROBOT – 27400

The SumoBot robot is a competition-ready robot designed within the Northwest Robot Mini-Sumo Tournament rules. This little pusher will locate and knock its opponent right out of the ring while detecting the outside circle should an escape move be necessary.

The electronics consists of a surface-mounted BASIC Stamp 2 module and infrared sensors to detect your opponent and the edge of the Sumo Ring. The hardware package includes the black anodized aluminum chassis and scoop, servo motors, wheels, 4AA power pack (*batteries not included*) mounting standoffs and screws. The documentation takes you from basic moves to one-on-one combat. The general topics introduced in the SumoBot Manual are as follows:

- Basic SumoBot locomotion under program control
- Edge avoidance and opponent detection based on a variety of sensor inputs
- Navigation opponent seeking using programmed artificial intelligence



SumoBot ROBOT COMPETITION KIT – 27402

Build and program **two high-quality robots kits** designed to wrestle in the mini-sumo competition ring (*included in kit*). Besides components and boards to build two SumoBot robots, it includes SumoBot manual, *Applied Robotics with SumoBot Stamps in Class* text, serial programming cable, competition ring poster, screwdriver, 8 AA batteries required (*not included*). For programming, it requires a PC running Windows 98/2000/XP with available serial port or USB port with USB-to-serial adapter.

Part No.	Description	Price
32PX27400	SumoBot Robot Kit w/Manual – Serial	\$158.90
32PX27402	SumoBot Robot Competition Kit W/Two Robots , Applied Robotic Text, Competition Poster – Serial	218.95
32PX27403	Applied Robotics, Stamp in Class Curr. Text Only	28.50
32PX27404	Competition Ring Poster	14.50
32PX555-27400	SumoBot PCB with BASIC Stamp 2 Module	98.50
32PX122-27400	SumoBot Manual	24.90

PEPPY ORANGUTAN



Amaze and surprise your friends with its animal-like animation. No batteries required and 15 plastic parts to assemble. Clear easy to follow instructions. Peppy Orangutan can motivate students to learn about micro-robotics and solar energy.



SPECIFICATIONS:

Solar Panel Output: 1.1V x 75mA

Assembled Size: 80mm x 55mm x 40mm

Tools needed: Screwdriver, Diagonal Cutter

Part No. 32OWIMSK675 • Price: \$11.95

SOLAR RACER KIT

MODEL AK-590

Learn all about solar energy and how to convert it to useful applications. You will build this exciting sleek solar car that runs on a high efficiency solar cell. Have your friends build one too and have fun racing them. No soldering required. The solar car comes in clear plastic. The car can be painted any color scheme. (*Paint is not supplied*).



Part No. 3200AK590 • Price: \$26.95

ROBOT ACCESSORIES



Fig. A



Fig. B



Fig. C



Fig. D



Fig. E



Fig. F



Fig. G

Part No.	Description	Fig.	Price
23WH38	Wheel / 38mm Dia	A	\$0.95
23WH36	Wheel / 36mm Dia.	B	0.95
23WH120	Wheel / 120mm Dia	C	9.95
23OMW1	Omni Wheel	D	3.95
23OMW3	Omni Wheel	E	4.95
23SCB1	Steel Caster Ball Mounting Holes 2 1/4"	F	1.95
23SCB2	Steel Caster Ball Mounting Holes 1 1/2"	G	2.75

ROBOT – MR. TIDY

Advanced robot kit, uses an Atmega 1280 processor and Arduino compatible. This small robot is capable of locating and picking up cans, cups or bottles and sorting them by size, weight.

here are four of my IR obstacle detectors, one on each corner that will be angled downward to detect cliffs as well as walls. The IR sensors share a common analog input so switching the IR LEDs one at a time is required to read individual corners. These outputs also drive 4 normal LEDs for visible detection of operation. When the outputs change to inputs, 4 micro switches used for monitoring the arm / gripper position can be read. These switches will only monitor the limits of travel for the arm / gripper. The gripper is fitted with an RGB LED and an LDR to form a colour sensing "Amender LDR". By reading the LDR when different colours are lit the robot can determine the colour of the object being picked up. This sensor will be angled downward to read the colour of the floor as well. A conductive foam pressure sensor is used to determine how hard the robot is gripping an object.

Recharging will occur when the robot reaches a docking station.



Part No. 3200MRTIDY • Price: \$180.00

ROBOT CHASSIS

MAGICIAN

This kit comes with 2 geared motors, 2 wheels, 1 omni wheel, 1 battery holder and several screws and spacers. Both motors will work on voltage from 3V-6V with a maximum stall current of about 1A depending on voltage and internal resistance of the motor driver circuit. The wheel is a standard RC car wheel with a good quality rubber tire.



Part No. 3200MOTCHS • Price: \$24.95

ROBOT KIT ASURO

ASURO is a tiny mobile robot developed for educational purposes by DLR, the german aerospace centre.

It is very flexible and completely programmable in C. Assembly is easy for experienced electronic technicians and feasible for a novice.

Except for the printed circuit boards (PCB) only standard parts are utilized and freeware tools can be used for programming. Therefore ASURO is exceptionally suitable as an introduction into processor-controlled hobby electronics, for projects in schools and universities, for studies and adult education centers.

ASURO is equipped with an Atmel AVR RISC-processor and two independently controlled motors, an optical linetracer, six collision-detector switches, two odometer-sensors, three indicator LEDs and an IR-Interface for programming and remote controlling by a PC.

Part No. 3200ASURO • Price: \$42.95



ROBOT KIT – MR. GENERAL

- Mr. General is a general purpose robot platform designed to allow students to easily build their first robot. The bread board provides a solder free method of connecting almost any processor to Mr. General's sensors and servos.



- Using 2 servos modified for continuous rotation, speed and direction of both wheels can be controlled using only 2 digital outputs.

The 4 infrared sensors on the base can be used as analog or digital inputs for either edge detection or obstacle avoidance.

- Four indicator LEDs are wired in parallel with the IR LEDs and can be individually controlled.

The pan / tilt universal sensor bracket is driven by two miniature servos allowing additional sensors / devices to be aimed by the processor using only 2 digital outputs.

The infrared compound eye can be mounted on the pan/tilt assembly allowing the robot to track moving objects or detect obstacles up to 200mm away.

Voltage rails can be isolated and connected to different voltages allowing the use of 3.3V and 5V devices together

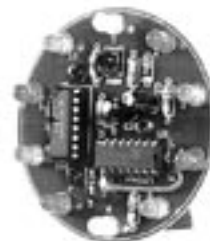
- With the IR LEDs and sensors, two or more Mr. General can talk to each other, which will allow us to organize a robot football match.

Part No.	Description	Price
3200MRGEN	Complete Robot Kit	\$58.95
3200IRKIT	Infrared Compound Eye	7.95

velleman-kit HIGH-Q

WHEEL OF FORTUNE

10 LED's (red, yellow and green). Push the button to start spinning action. Spinning action gradually decreases. Finally, it stops and one LED remains lit. Auto power-off. Requires 9V battery.



Part No. 32VMK152 • Price \$6.75

ROBOT – BABY

No need to solder. It comes assembled and pre-loaded with Arduino boot loader and demo software. It can be programmed via USB cable (*sold separately*). Needs 4 NiCd or NiMh batteries (*not included*) and they can be trickle charged with built-in circuit.



Part No. 3200RBABY • Price: \$59.95

ROBOT – BASIC

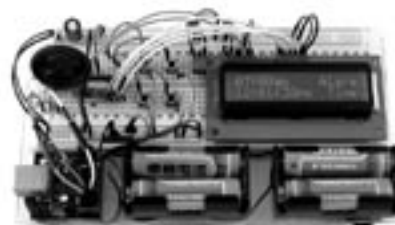
This is a basic 4WD chasis ideal for small robots. It has an aluminium base, 2 motors/gearboxes and AA x 3 battery holder.

The prototype PCB on top is double-sided with plated through holes.



Part No. 3200RBASIC • Price: \$28.95

LCD TRAINER KIT

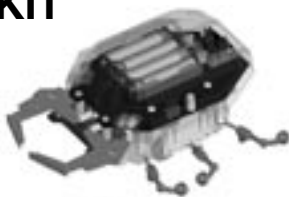


Liquid crystal displays are used in everything from mobile phones and TV's to robots. This trainer kit gives students hands on experience. A high quality instruction manual with step by step colour photos teaches students how to connect a common LCD to a processor and program it using free software from the internet. The basic kit comes with everything required for students to display messages, detect objects and build a working alarm clock.

Part No. 3200LCDTKIT • Price: \$58.95

SCARAB ROBOT KIT

Scarab is a robot that makes use of two touch sensors to detect obstacles. When its antennae (touch sensor) detect an object in its path, Scarab will go backward first and automatically follow a two-step maneuver to help it overcome the obstacle, which can be a combination of "Left Turn", "Right Turn", "Reverse", "Stop". The Scarab Robot can be configured with different sets of movements. The kit comes complete with 2 sets of differently designed legs, which provide endless fun and excitement with its different sets of movements. **Power Source:** Four 1.5V "AAA" Batteries (*not included*).



Part No. 3221884 • Price \$19.90

ESCAPE ROBOT KIT

The Escape Robot Kit works just like an A.I. robot. It never fails to find its way out of a maze. The Escape Robot makes use of three infrared emitting diodes and one infrared receiving module to send and receive signals and detect obstacles. Escape Robot has a built-in microprocessor which enables it to "think" on its own, as it processes information about its environment and maneuvers itself around obstacles. Escape Robot moves on six legs. The kit comes complete with 2 sets of differently designed legs, which provides endless fun and excitement with different sets of movements. **Power Source:** Four 1.5V "AAA" batteries (*not included*).



Part No. 3221886 • Price: \$19.90

LADYBUG ROBOT KIT

The Ladybug Robot moves with six legs and makes use of infrared emitting diodes as its "eyes" to avoid obstacles along its path. Ladybug automatically makes a left turn the moment it detects an object in its path. It continues to move forward after that if there is no shadow in front of the sensor. The design of the Ladybug, which is based on two sets of legs, enables it to perform different sets of movements. **Power Source:** Four 1.5V "AAA" batteries (*not included*).



Part No. 3221885 • Price: \$17.90

AmeriKit™ R/C CAR KIT

WITH TRAINING COURSE

MODEL FUN-875 (KIT – NO SOLDERING)
MODEL RCC7K (REQUIRES SOLDERING)

Learn all about remote control cars from the ground up. Solderless kit covers instruction on gears, motors, RF frequency and more. Extensive assembly and training manual. Uses 4 "AA" and 1 "9V" battery (*not included*). Turbo King features 7 remote functions, a flashing top light, single channel, 8 1/2" length. Includes remote control.



Part No.	Description	Price
32FUN875	No Soldering Version	\$27.95
32RCC7K	Requires Soldering	28.90

FORMULA-1

NO SOLDERING REQUIRED!

A simple kit consisting of DC motor, wheels and all necessary parts to assemble this racing car. Powered by two "AA" batteries (*not included*). No soldering required.



Part No. 32FOR1 • Price: \$7.50

MR. CIRCUIT ROBOTICS

Utilizes the same principles and teaching techniques found in the earlier versions of the popular Mr. Circuit series of electronics training courses. Highly user-friendly for both teachers and students. Easily begin your first robotics class even without prior robotics experience. Includes a book, solderless breadboard and re-usable components. The curriculum teaches how robots actually move, turn, stop, etc. Includes infrared and sound sensors, IC's and other components commonly used to build robots. Offers a step-by-step teaching process. Hands-on, easy to teach, affordable and reusable from year to year. The advantage of this product is that it not only has the student building, but teaches how robots actually work. Package comes complete as illustrated.



Part No. 32EKIMROBOTICS • Price: \$85.00

TURNING FROG

SOLDERING

When this robot detects sound, it will move, and repeat following turns in sequence: forward, stop, left turn, stop, right turn, stop. Includes 2 sets (unassembled) gear motors. 2 x AA and a 9V battery (*not included*).



Part No. 3221882 • Price: \$14.50

LINE TRACKING MOUSE

SOLDERING

Smart mouse robot that tracks a black line (use black tape against white background). Create twists and turns for mouse to find its target. Three photo-interrupters helps it find its way. Sound activated, programmed IC, two sets (unassembled) gear motors. 4 x AA batteries (*not included*).



Part No. 3221880 • Price: \$19.50

SOLAR POWER RACER

- No soldering required
- Includes all parts / instructions
- Solar operation



Part No.	1-9	10+
32CISOLARACE	\$10.95	\$9.95

SOUND SENSOR CAR

SOLDERING

Robot car uses condensor microphone as sensor, and reverses direction whenever it detects noise (hands clapping), or touches an obstacle. 2 x AA batteries (*not included*).



Part No. 3221881 • Price: \$21.90

SOLAR FORMULA I

- No soldering required
- Includes all parts / instructions
- Solar or battery operation
- For battery operation needs (1) AAA battery (*not included*)



Part No.	1-9	10+
32CIF1	\$11.90	\$10.90

2-IN-1 GEARBOX KIT

Includes motor, 2 sets gears, metal shafts, gearbox and additional accessories to create different gear ratios, RPM and speed.



Part No. 3221130 • Price: \$5.25

SOLAR ROBOT

- No soldering required
- Includes all parts / instructions
- Solar or battery operation
- For battery operation needs (1) AA battery (*not included*)



Part No.	1-9	10+
32CISOLAROB	\$13.00	\$12.00

FOOTBALL (BOTBALL) ROBOT KIT

NON-SOLDER VERSION

The Botball Robot Football Kit is a remote controlled infrared wireless robot. Its microprocessor technology provided 4 different channels to have up to 4 Football Robots play together in your own arena. There are three motors, two for forward, backward, right left movement and one to kick the ball. Football Robot runs smoothly on 2 wheels.



- Clear illustrated directions
- No soldering required
- Tools needed: Long nose pliers, diagonal cutter, screwdriver
- Batteries not included

Part No. 3221533N • Price: \$24.95

ELECTRIC MOTOR AND GENERATOR KIT

- Safe, solderless, educational
- Easy to read, lab style manual
- Build your own motor / generator



Part No. 32MX902T • Price: \$21.95

EDUCATIONAL KITS

OWIKIT™ FLAPPING SEAGULL



OWI's Flapping Sea Gull mini solar kit creates a kit that looks similar to a sea gull with a life like creation of a



three dimensional wing flapping. Requires the warmth of the sun in order to flap it wings. No batteries required and 12 plastic parts to assemble.

SPECIFICATIONS:

Solar Panel Output: 1.1V x 75mA

Assembled Size: 170mm x 80mm x 19mm

Tools Needed: Diagonal Cutter & Scissors

Part No. 32OWIMSK677 • Price: \$10.95

OWIKIT™ AERIAL CABLE CAR



The Aerial Cable Car power grid system is simple: bright sun – “power on”, little or

no sun – “power off”. The unit is quiet and stealth. No batteries required and 30 plastic parts to assemble.



SPECIFICATIONS:

Solar Panel Output: 1.1V x 75mA

Tools needed: Screwdriver, Diagonal Cutter, Scissors.

Part No. 32OWIMSK676 • Price: \$13.90

OWIKIT™ AMPHIBIOUS SOLAR VEHICLE

NO SOLDERING REQUIRED!

Great beginner robotic kit. Teaches solar power fundamentals through hands-on experiments. Sun or any intense light can power solar battery and multiple function switch (solar or battery) allows energization day or night... indoors or outdoors. Catamaran design reduces water resistance and chance of capsizing.

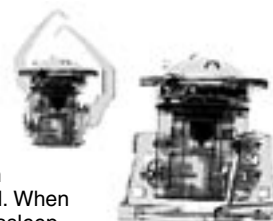


Part No. 32OWIASV • Price: \$42.95

OWIKIT™ JUNGLE ROBOT



No Soldering Required. A condenser microphone and printed circuit board controls your multi-function (walking or climbing) friend. When you think Jungle Robot is asleep, just cry “Wake UP!” Your robot will



immediately start climbing or walking for a pre-set time and reset itself waiting for another command. Excellent Beginner series robot. Can teach the basic principles of robotic sensing and locomotion. Features a pre-assembled printed circuit board, hardware, and mechanical drive system that can be handled by almost anyone from age 10 and up. Only basic hand tools are required for assembly.

Part No. 32OWI9870 • Price: \$29.95

OWIKIT™ SUMO ROBOT

Bring the Sumo tradition to your home. This super warrior, SUMO ROBOT can be controlled to assail and overpower its opponent or retreat to prepare for battle. An infrared sensor beam is emitted when detecting an opponent. Upon detection, it instructs the brain of SUMO to “charge”, thereby creating a bonafide wrestling match! You be the referee (gyoji) and decide who the grand champion (yokozuna) will be. Get two and let the SUMO ROBOT wrestling match begin. No soldering required.



Part No. 32OWI9647 • Price: \$49.95

OWIKIT™ VALIANT VIKING SHIP



Valiant Viking Ship uses alternative energy principle, solar, to power its way through water. The Valiant Viking Ship can be moored on its docking station (included). No batteries required and 33 plastic parts to assemble.



SPECIFICATIONS:

Solar Panel Output: 1.1V x 50mA

Assembled Size: 170mm x 200mm x 105mm

Tools Needed: Screwdriver & Diagonal Cutter

Part No. 32OWIMSK678 • Price: \$13.90

OWIKIT™ ELECTRONIC ROBOT KITS

HYPER PEPPY OWL KIT

Pre-soldered PCB

Explore the fundamentals of robotics with this informative and entertaining robot kit. Appropriate for ages 10 and up, Hyper Peppy is an intelligent robot with a touch/sound sensor. If it comes in contact with an object or hears a loud noise (such as hands clapping), Hyper Peppy automatically reverses, then turns left before embarking on a new course.

- Requiring only basic hand tools,
- Complete step-by-step instructions,
- Pre-assembled printed circuit board,
- Condenser microphone
- Easy-to-assemble mechanical drive system.



Part No. 32OWI969 • Price \$27.95

OWIKIT™ TRIPLE ACTION SOLAR CAR



Features an aerodynamic sports car shell design with a transparent car body that can be painted or left clear to view the inner mechanics, 4 wheel chassis, powerful 1.4 volt – 350 milliamper solar cell, and a multispeed transmission. Parts are removable to



create other projects. Two way battery source for solar or battery power.

- Solar battery
- Power Source: 1 "AA" battery (*not included*)

Part No. 32OWI685 • Price \$46.95

OWIKIT™ WEASEL A TOUCHING AND SEEING ROBOT KIT



WEASEL is a tenacious little robot warrior that embodies two sensors that allow it to "see" a line or "feel" its way along walls and around corners. Two motors and a contact sensor activate the wall sensing micro switch. Classic robot design uses the "Left Hand Rule" to escape mazes. Also includes a **sonic tracking system**.



Photo detectors underneath the WEASEL enable it to detect and follow a black line. Three-speed gearbox. Beginner robot kit great for entry level robotic competitions, workshops, after school programs, or science class. *No soldering required.*

Part No.	Description	Price
32OWI991K	Kit	27.95

OWIKIT™ BINARY PLAYER ROBOT



Binary Player Robot is controlled by black and white patterns on a disk, which are read by an infrared sensor. Particular patterns activate either of two wheels to turn left, right, forward, or pause. These on/off commands illustrate the basic principles of



binary coding. To change a movement program, the operator simply creates a new disk pattern. Set your course and explore the fascinating world of Binary Player Robot! Dr. OWIKIT says this is an excellent Beginner Series robot. This battery-controlled kit can teach the basic principles of robotic sensing and locomotion. It features a pre-assembled printed circuit board, hardware, and mechanical drive system that can be handled by almost anyone from age 10 and up. Only basic hand tools are required for assembly. An infrared sensor and printed circuit board controls your programmable friend. Binary Player Robot is more than just fun. Assembling, building, and following instructions help develop fine motor skills and hand-eye coordination

Part No. 32OWI9875 • Price: \$38.95

MOON WALKER II LIGHT AND SOUND SENSOR



This is a more advanced kit which requires soldering assembly of the PC board. When assembled, this robot uses a phototransistor to sense changes in light (such as turning on a lamp) and a condenser microphone to sense changes in sound (such as clapping). It converts those stimuli into electronic signals to power a motor, and the robot walks forward for a preset time. When it stops, affecting another change in area light or sound may activate it again. The sensors may be adjusted for different sensitivity levels. Uses 1 "AA" batteries. (*Not included.*)



Part No.	Description	Price
32MV979	PCB Presoldered	44.50

HYPER LINE TRACKER – LIGHT SENSOR



Advanced version which requires soldering Hyper Line Tracker follows a designed course. By using a light emitter, light sensor circuitry, and tracking memory, it demonstrates how robots "see" a pathway. Make a path with a black felt marker or black tape and watch how light sensors enable the robot's motors to make course corrections. Uses one 9V batteries. (*Not included.*)



Part No.	Description	Price
32OWI973K	Advanced version – requires soldering	59.95

EDUCATIONAL KITS / ROBOTICS

RELAY BOARD - REMOTE RF 2 CHANNEL W/TRANSMITTER

- Two channel RF Remote Control Relay Board
- 2 relays (channels), individually jumper selectable
- Range is over 250 ft
- Receiver power 12 DC (power supply not included)
- Each relay is jumper selectable, latching or momentary
- Relay contact rating 24 VDC @ 10A; 250 VAC @ 10A
- Fully assembled and tested board



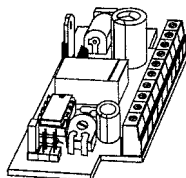
Part No. 32HD2COMBO • Price: \$29.50

PIC RELAY CONTROLLER

Good Companion For Any Kit That Needs Additional Amperage or A Micro-Controlled Relay Function

Relay functions listed below are preset

- ON/OFF toggle mode
- ON/RESET mode
- Fixed delay .5 second pulse stretch
- Fixed delay 10 second pulse stretch
- Variable time 1.5 to 14 sec.
- Variable time 11 to 24 sec.
- 3 Amp. total output
- Input and reset signal can be Active HI or LOW
- Wall transformer included



Voltage Requirements: 7.5 to 15VDC

Part No.	Description	Price
32ERPRC1	PIC Relay Controller	\$24.75
32ERPRCC	Optional Case	12.75

SERVOMOTOR CONTROLLERS KITS AND ASSEMBLED VERSIONS

MODEL SMC04 – Four Servomotor Controller

MODEL SMC05 – Five Servomotor Controller

MODEL SMC08 – Eight Servomotor Controller

- Allows control of hobby servomotors (Hitec/Futaba).
- Servomotors may be controlled manually via on-board switches (**Models SMC04 and SMC05**), or by a Windows program (CD included, updates available for download)
- PC Control: adjustable servomotor speed control. Each servo controlled by an individual slider.
- Manual control: each servomotor controlled using a three-position switch on the board. **Models SMC04 and SMC05** offer both manual and PC control. **Model SMC08** features PC Control only.



SMC08



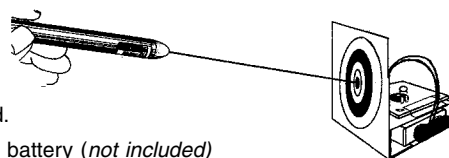
Operates on 9V battery or with AC adapter (*not included*)

Part No.	Description	Price
32SERVO4K	Kit version – 4 servomotor controller	\$69.00
32SERVO4A	Assembled version – 4 servomotor controller	115.00
32SERVO5K	Kit version – 5 servomotor controller	79.00
32SERVO5A	Assembled version – 4 servomotor controller	130.00
32SERVO8K	Kit version – 8 servomotor controller	56.00
32SERVO8A	Assembled version – 8 servomotor controller	95.00
16SMC9V	AC adapter for servomotor controllers	12.00

LASER CHALLENGE

GREAT GAME FOR THE LASER POINTER

Set your target across the room. You can set it anywhere up to 25 yards. Hit the bulls-eye and the alarm will sound.

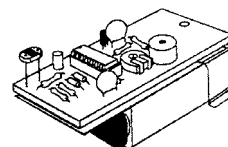


Power Requirement: 9v battery (*not included*)
TWO TARGETS SUPPLIED

Part No. 32ERLAS1 • Price: \$14.75

NIGHT CRICKET

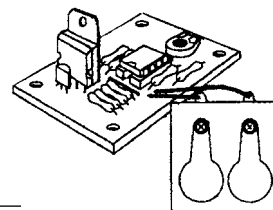
Makes a sound like a cricket. Small enough to hide almost anywhere. PCB Size: 2.75" x 1.2"



Part No. 32ERNC1 • Price: \$14.75

WATER ALARM

Liquid level sensor. When fluid reaches sensor, 100mA output can trigger a relay (*not included*) which in turn can activate (or turn off) a sump pump.



Wall transformer included

Part No. 32ERWA2 • Price: \$17.75

GAME TIMER

GOOD EXAMPLE OF HOW A MICROPROCESSOR WORKS

- 10 minute count down
- Three 7-Segment LED displays
- Counts down by seconds
- In the last minute it sounds a short beep every 10 seconds
- The last 10 seconds it will sound a beep every second
- One long beep will sound when time is up



Part No.	Description	Price
32ERGT10	Game Timer	\$49.75
32ERGTC	Optional Case	12.75