

## MINI MOTOR 1

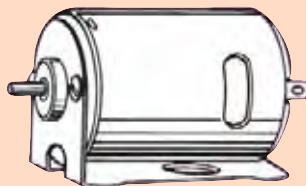
A low cost miniature Motor offering a high stall torque. 1-1/2" (38mm) length, 7/8" (22mm) O.D. with a shaft diameter of 5/64" (2.0mm). 1.5 to 6 Volts, 2 to 5,000 RPM.

**CODE:** MOT-1

## MINI MOTOR 2

A slightly larger Motor offering a high stall torque. 1-3/4" (44mm) length, 1" (25mm) O.D. with a shaft diameter of 5/64" (2.0mm). 1.5 to 6 Volts, 2 to 7,000 RPM.

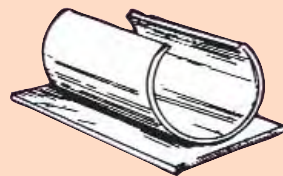
**CODE:** MOT-2



## HEAVY DUTY MOTOR

Heavy Duty Motor for larger projects and when higher torque is required. 2-1/2" (63mm) Length, 1-1/2" (38mm) O.D. with a shaft diameter of 1/8" (3.2mm). 6 to 12 Volts, 7 to 14,000 RPM.

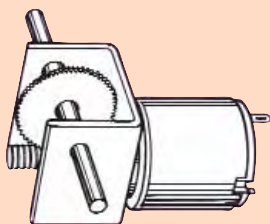
**CODE:** MOT-10



## MOTOR MOUNT

Motor Mount for small motors from 3/4" (19mm) O.D. to 1" (25mm) O.D. Plastic, expandable bracket with self-adhesive pad 1" (25mm) x 1" (25mm) provides fast and easy mounting.

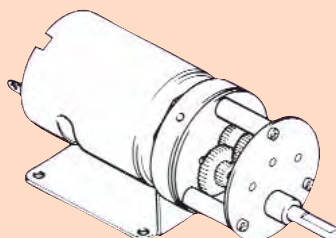
**CODE:** MNT-1



## MOTOR REDUCTION UNIT

Motor Reduction Unit includes a small, powerful 1.5-6V motor, worm gear assembly with shaft bracket and screws. Power available at both ends of a 4mm shaft. Provides a 50:1 reduction. Minor assembly required.

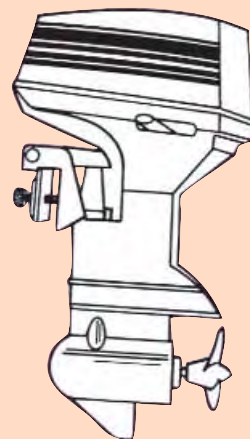
**CODE:** MOTRED-1



## MOTOR REDUCTION UNIT

Heavy Duty Motor Reduction Unit includes a more powerful 1-15V motor with a single ratio metal gearbox. Metal gears with bronze bearings ensure very high torque and quiet operation. 4-1/2" (113mm) length with 15/64" (6.0mm) shaft. Provides a 150:1 reduction. Minor assembly required.

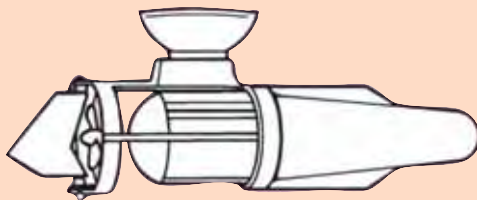
**CODE:** MOTRED-2



## OUTBOARD MOTOR

Safe water operation using two AA batteries (not included). High speed propulsion with bolt-on convenience. 5" (125mm) high, 2-1/2" (63mm) long.

**CODE:** MOT-45



## SUBMARINE MOTOR

Safe underwater operation with one AA battery (not included). Suction cup allows easy installation to any water vessel. 4-3/4" (120mm) long, 1" (25mm) O.D.

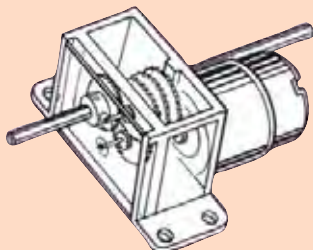
**CODE:** MOT-40



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## MINIATURE GEAR BOXES



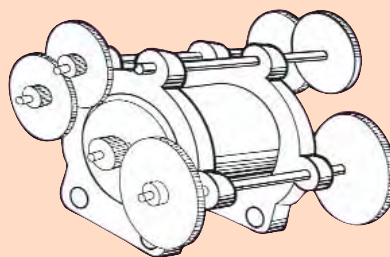
### CLEARBOX GEAR BOX

Multi-ratio gearing system in a clear Polycarbonate frame provides adjustable power for unlimited uses. Simple press-fit motor allows motor exchange without fuss. The gear box is a multi-stage spur gear type. Changing gears is almost as simple as changing the motor.

Gear Box consists of:

- 1 1.5 -6 Volt, 6000 RPM Motor with pinion gear
- 1 ClearBox gear box
- 3 Nylon spacers/position rings
- 6 30/10 Tooth gears with pinions
- 1 32 Tooth gear
- 1 5/32" (4.0mm) O.D. x 4-1/8" (105mm) axle
- 2 3/32" (2.4mm) O.D. x 3/4" (19mm) axles

**CODE:** GEARBX-2



### GEAR BOX KIT

A unique gear box system constructed around a motor. The gear box is easily assembled and can create a range of gear ratios from 4:1 to 256:1. Simultaneous drives can be achieved from each end of the gear box - each with a different ratio if wanted.

Gear Box Kit consists of:

- 1 3-6 Volt, 9600 RPM motor
- 2 Shrink to fit gear box rings
- 1 Spacer/axle cap tubing
- 4 42/10 Tooth gears, 7/8" (22.2mm) O.D.
- 2 60 Tooth gears, 1-1/4" (31.8mm) O.D.
- 1 16 Tooth pinion, 11/32" (8.7mm) O.D.
- 5 5/64" (2.0mm) O.D. x 3" (75mm) long axles

Gears are .060 (1.5mm) wide. All shaft holes are .080 (2.0mm) to fit the furnished axles as well as the furnished motor. Assembly only requires warm water.

**CODE:** GEARBX-1



## AXLES & AXLE BRACKETS

A selection of Axles/Shafts in steel, brass and Polyester reinforced with fibreglass. While all materials should be cut with a hacksaw or equivalent, the Poly/fibreglass material is easiest. The Poly/fibreglass material may be glued with epoxy cement and is quite strong, lightweight and ideal for young students.

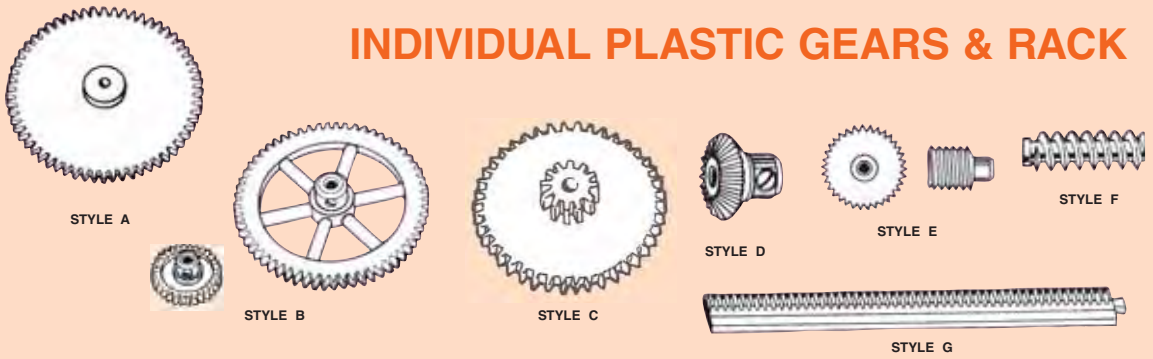
| CODE       | ACTUAL SIZE |       |        |       | MATERIAL        |
|------------|-------------|-------|--------|-------|-----------------|
|            | O.D.        |       | LENGTH |       |                 |
| AXLE-275   | 5/64"       | 2.0mm | 3"     | 75mm  | Steel           |
| AXLE-2910  | 5/64"       | 2.0mm | 18"    | 450mm | Poly/Fibreglass |
| AXLE-3150  | 1/8"        | 3.2mm | 6"     | 150mm | Steel           |
| AXLE-3300  | 1/8"        | 3.2mm | 12"    | 300mm | Steel           |
| AXLE-3910  | 1/8"        | 3.2mm | 18"    | 450mm | Poly/Fibreglass |
| AXLE-4500  | 5/32"       | 4.0mm | 20"    | 500mm | Steel           |
| AXLE-4910  | 5/32"       | 4.0mm | 18"    | 450mm | Poly/Fibreglass |
| AXLE-6910  | 1/4"        | 6.4mm | 18"    | 450mm | Poly/Fibreglass |
| AXLE-24300 | 3/32"       | 2.4mm | 12"    | 300mm | Steel           |
| AXLE-24301 | 3/32"       | 2.4mm | 12"    | 300mm | Brass           |
| AXLE-64450 | 1/4"        | 6.4mm | 18"    | 450mm | Steel           |

An easy method for mounting axles to almost anything. May be screwed or glued. Strong plastic may also be drilled to accept other diameter Axles. Sold in bags of 10 pieces only.

| CODE    | TO FIT    |       |
|---------|-----------|-------|
|         | AXLE O.D. |       |
| AXBKT-2 | 5/64"     | 2.0mm |
| AXBKT-4 | 5/32"     | 4.0mm |



## INDIVIDUAL PLASTIC GEARS & RACK



A selection of Plastic Gears, available individually, for designing any number of working mechanisms, from vehicles to power generators to conveyor systems. These gears are all high quality, Precision Injection Molded in the listed Plastic. Style B Gears have Brass hubs, with set screws, to ensure a positive fit. All others are designed for a tight press fit.

| CODE      | STYLE | DESCRIPTION          | TEETH | ACTUAL SIZE |        |       |        | FITS  |       | MAT'L |
|-----------|-------|----------------------|-------|-------------|--------|-------|--------|-------|-------|-------|
|           |       |                      |       | O.D.        |        | 'T'   |        | SHAFT |       |       |
| GEAR-90   | F     | Worm Gear            | -     | 3/8"        | 9.5mm  | 1"    | 25.4mm | .070  | 1.8mm | 1     |
| GEAR-116  | A     | Single Gear          | 16    | 11/32"      | 8.7mm  | 3/16" | 4.8mm  | .070  | 1.8mm | 2     |
| GEAR-130  | A     | Single Gear          | 30    | 5/8"        | 15.9mm | 3/16" | 4.8mm  | .070  | 1.8mm | 2     |
| GEAR-142  | A     | Single Gear          | 42    | 7/8"        | 22.2mm | 3/16" | 4.8mm  | .070  | 1.8mm | 2     |
| GEAR-160  | A     | Single Gear          | 60    | 1-1/4"      | 31.8mm | 3/16" | 4.8mm  | .070  | 1.8mm | 2     |
| GEAR-190  | F     | Worm Gear            | -     | 1/4"        | 6.4mm  | 3/8"  | 9.5mm  | .070  | 1.8mm | 2     |
| GEAR-210  | B     | Hub With Set Screw   | 10    | 3/8"        | 9.5mm  | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-220  | B     | Hub With Set Screw   | 20    | 9/16"       | 14.3mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-230  | B     | Hub With Set Screw   | 30    | 13/16"      | 20.6mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-240  | B     | Hub With Set Screw   | 40    | 1"          | 25.4mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-245  | D     | 45° Bevel Gear       | 22    | 1/2"        | 12.7mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-250  | B     | Hub With Set Screw   | 50    | 1-1/4"      | 31.8mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-260  | B     | Hub With Set Screw   | 60    | 1-1/2"      | 38.1mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-280  | E     | 34:1 Worm Set        | 34    | 3/4"        | 19.1mm | 3/8"  | 9.5mm  | .100  | 2.5mm | 3     |
| GEAR-315  | B     | Hub With Set Screw   | 15    | 45/64"      | 18.0mm | 3/16" | 4.8mm  | .156  | 4.0mm | 3     |
| GEAR-325  | D     | 45° Bevel Gear       | 25    | 1"          | 25.4mm | 3/16" | 4.8mm  | .156  | 4.0mm | 3     |
| GEAR-330  | B     | Hub With Set Screw   | 30    | 1-11/64"    | 30.0mm | 3/16" | 4.8mm  | .156  | 4.0mm | 3     |
| GEAR-345  | B     | Hub With Set Screw   | 45    | 1-3/4"      | 45.0mm | 3/16" | 4.8mm  | .156  | 4.0mm | 3     |
| GEAR-390  | F     | Worm Gear            | -     | 15/32"      | 12.0mm | 1"    | 25.4mm | .156  | 4.0mm | 1     |
| GEAR-1301 | C     | Double Gear          | 30/10 | 5/8"        | 15.9mm | 1/4"  | 6.4mm  | .070  | 1.8mm | 2     |
| GEAR-1421 | C     | Double Gear          | 42/10 | 7/8"        | 22.2mm | 1/4"  | 6.4mm  | .070  | 1.8mm | 2     |
| GRACK-200 | G     | 200 Series Gear Rack | -     | N/A         | N/A    | N/A   | N/A    | N/A   | N/A   | 2     |
| GRACK-300 | G     | 300 Series Gear Rack | -     | N/A         | N/A    | N/A   | N/A    | N/A   | N/A   | 2     |

MATERIAL GUIDE: Material 1 = Hi-Impact Polyethylene; Material 2 = Nylon; Material 3 = Nylon With Brass Hub



Photo courtesy of Fred Schwartz, Owings Mills, MD

## PLASTIC GEAR SETS

### DELUXE GEAR SET

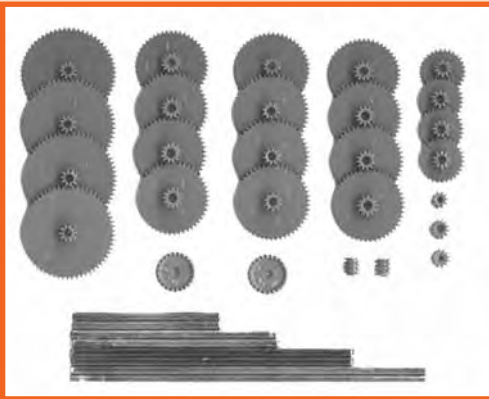
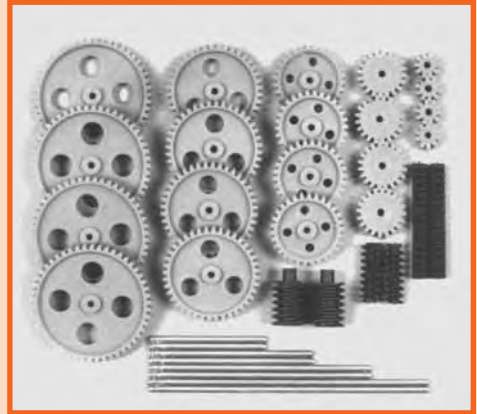
A complete package of gears and accessories Precision Injection Molded in Nylon plastic. This hard plastic provides excellent power transmission.

Gear Set consists of:

- |  |                                     |
|--|-------------------------------------|
| 4 10 Tooth gears, 1/2" (12.7mm) O.D.   | 2 each of the following:            |
| 4 20 Tooth gears, 7/8" (22.2mm) O.D.   | 1/8" (3.2mm) x 2" (50mm) axles      |
| 4 30 Tooth gears, 1-1/4" (31.8mm) O.D. | 1/8" (3.2mm) x 2-3/4" (70mm) axles  |
| 4 40 Tooth gears, 1-5/8" (41.3mm) O.D. | 1/8" (3.2mm) x 3-3/4" (95mm) axles  |
| 4 50 Tooth gears, 2" (50.8mm) O.D.     | 1/8" (3.2mm) x 4-3/4" (120mm) axles |
| 2 Worm gears, 11/32" (8.7mm) O.D.      | 7/32" (5.6mm)W x 2" (50mm)L racks   |
| 2 Worm gears, 9/16" (14.3mm) O.D.      |                                     |

Gears are 1/4" (6.4mm) wide, allowing for easy alignment, with a .110 (2.8mm) shaft hole to fit our 1/8" (3.2mm) O.D. axles. Worm gears have a .070 (1.8mm) shaft hole to snugly fit our MOT-1 and MOT-2 Motors.

**CODE:** GEARS-34



### DOUBLE GEAR SET

A complete package of gears and accessories Precision Injection Molded in Nylon Plastic for high quality at reasonable prices. This hard plastic provides excellent power transmission.

Gear Set consists of:

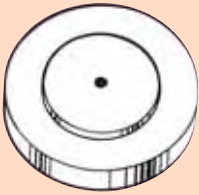
- 4 30/10 Tooth gears, 5/8" (15.9mm) O.D.
- 4 48/12 Tooth gears, 1" (25.4mm) O.D.
- 4 50/10 Tooth gears, 1" (25.4mm) O.D.
- 4 62/10 Tooth gears, 1-1/4" (31.8mm) O.D.
- 4 48/12 Tooth gears, 1" (25.4mm) O.D. (.120 (3.0mm) shaft hole-free spin)
- 2 Worm gears, 15/64" (6.0mm) O.D. (.070 (1.8mm) shaft hole)
- 2 Crown wheels, 17/32" (13.5mm) O.D.
- 1 10 Tooth pinion, 15/64" (6.0mm) O.D. (.070 (1.8mm) shaft hole)
- 1 12 Tooth pinion, 1/4" (6.4mm) O.D. (.070 (1.8mm) shaft hole)
- 1 12 Tooth pinion, 1/4" (6.4mm) O.D. (.110 (2.8mm) shaft hole)
- 2 1/8" (3.2mm) x 2" (50mm) axles
- 2 1/8" (3.2mm) x 2-3/4" (70mm) axles
- 2 1/8" (3.2mm) x 3-3/4" (95mm) axles
- 2 1/8" (3.2mm) x 4-3/4" (120mm) axles

Gears are .070 (1.8mm) wide. All shaft holes are .110 (2.8mm) (unless noted otherwise) to fit our 1/8" (3.2mm) O.D. axles. Those with a .070 (1.8mm) shaft hole are designed to snugly fit our MOT-1 and MOT-2 Motors.

**CODE:** GEARS-35



Photo courtesy of John Wilkes, Winterhaven, FL



## WHEELS & TIRES

### VARIABLE AXLE WHEEL SETS

Five sets of four 1-3/16" (30.2mm) O.D. wheels with axle Reducers. Injection molded in High Impact Polyethylene for long life and quiet operation. 1/4" (6.4mm) thickness allows easy handling for students of all ages.

All Wheels have a .156 (4.0mm) shaft hole to fit our 5/32" (4.0mm) O.D. axles. Axle reducers allow simple conversion to .110 (2.8mm) shaft hole for our 1/8" (3.2mm) axles.

Design allows multiples to be snapped together as rollers.

Sold In bags of 5 sets only.

**CODE:** WHLS-40

### HEAVY DUTY WHEELS WITH TIRES

Heavy duty plastic wheels with black PVC tires provide the strength to support carts, dollies and other heavy weight items. Designed for use with 1/4" (6.4mm) axles.



| CODE    | STYLE | DESCRIPTION    | ACTUAL SIZE |       |           |        |
|---------|-------|----------------|-------------|-------|-----------|--------|
|         |       |                | O.D.        |       | THICKNESS |        |
| WHL-75  | A     | Standard Wheel | 3"          | 75mm  | 5/8"      | 15.9mm |
| WHL-100 | A     | Standard Wheel | 4"          | 100mm | 5/8"      | 15.9mm |
| WHL-101 | B     | Spoke Wheel    | 4"          | 100mm | 5/8"      | 15.9mm |
| WHL-102 | C     | Tractor Wheel  | 4"          | 100mm | 1-1/8"    | 28.6mm |



### WOODEN WHEELS

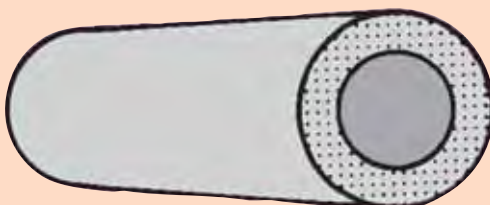
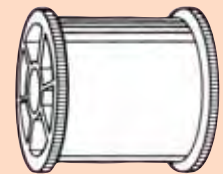
Heavy duty wooden wheels provide the strength to support medium weight items. Designed for use with 1/8" (3.2mm) axles. Made from Birch wood.

| CODE    | ACTUAL SIZE |      |           |        |
|---------|-------------|------|-----------|--------|
|         | O.D.        |      | THICKNESS |        |
| WHL-125 | 1"          | 25mm | 11/32"    | 8.7mm  |
| WHL-138 | 1-1/2"      | 38mm | 7/16"     | 11.1mm |
| WHL-150 | 2"          | 50mm | 1/2"      | 12.7mm |
| WHL-162 | 2-1/2"      | 62mm | 11/16"    | 17.5mm |

### PLASTIC SPOOL WHEELS

Plastic thread spools, a unique and economical method for wheels. Use our TBL-10 Colored Tubing for axles. When used with Tire-48 (below), they make perfect wheels and tires for cars and other motorized vehicles. Sold in bags of 10 pieces only.

**CODE:** REEL-40



### RUBBER TIRE MATERIAL

Black rubber pipe insulation ideal for making tires when used with our REEL-40 Plastic Wheels (above). 1-1/2" (38mm) O.D., 7/8" (22mm) I.D., and 24" (600mm) long.

**CODE:** TIRE-48

## PLASTIC CAMS, PULLEYS & PROPELLERS

### ECONOMICAL CAM SETS

Five sets of four different Cams. Injection molded in High Impact Polyethylene for long life and quiet operation. 13/64" (5.2mm) thickness allows for easy handling by students of all ages.

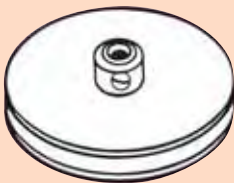
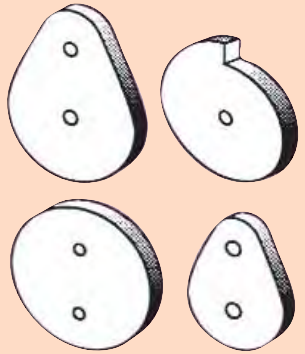
Each set consists of:

- 1 1" (25.4mm) O.D. - Round
- 1 1" (25.4mm) O.D. - Snail shape
- 1 1" (25.4mm) O.D. - Pear shape
- 1 1-5/8" (41.3mm) O.D. - Pear shape

All shaft holes are .110 (2.8mm) to fit our 1/8" (3.2mm) axles. Use of both holes converts cam into crank.

Sold In bags of 5 sets only.

**CODE:** CAMS-20



### PULLEYS WITH SET SCREWS

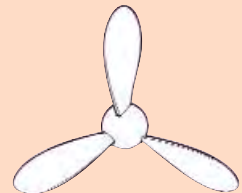
Professional quality Nylon Pulleys with Brass Set Screw Hubs for secure installations. Designed for use with 3/32" (2.4mm) axles, however, the Brass Hubs may be drilled out to fit larger axles.

| CODE     | ACTUAL O.D. |        |
|----------|-------------|--------|
| PULY-210 | 3/8"        | 9.5mm  |
| PULY-213 | 1/2"        | 12.7mm |
| PULY-219 | 3/4"        | 19.1mm |
| PULY-225 | 1"          | 25.4mm |
| PULY-232 | 1-1/4"      | 31.8mm |

### 3 BLADE PROPELLER

This 5" (125mm) Dia. plastic propeller can be easily adapted to fit on our MOT-1 and MOT-2 Motors for use as a fan, or can be fitted on many other driving devices for air or water projects.

**CODE:** PROP-3



### PROPELLER WITH DRIVE SHAFT

1" O.D. (25mm) Plastic propeller attached to a 5/64" (2.0mm) x 7-1/2" (190mm) long shaft inside a 6" (150mm) long Brass tube housing. Use our HOSE-1 Flex Tubing as a universal joint for coupling to a drive source.

**CODE:** PROP-1



Photo Courtesy of Steve Faxon, Dallas, OR

## HARDWARE & MISCELLANEOUS



### COLLARS WITH SET SCREWS

A simple and effective method for securing gears, pulleys, wheels, etc.

Sold In bags of 10 pieces only.

| CODE    | TO FIT    |       |
|---------|-----------|-------|
|         | AXLE O.D. |       |
| COLAR-2 | 5/64"     | 2.0mm |
| COLAR-3 | 1/8"      | 3.2mm |
| COLAR-4 | 5/32"     | 4.0mm |

### AXLE HUB CAPS

Spring steel Hub Caps designed for metal axles. Push fit allows easy and fast installation or removal.

Sold in bags of 20 pieces only.



| CODE  | TO FIT    |       |
|-------|-----------|-------|
|       | AXLE O.D. |       |
| HUB-3 | 1/8"      | 3.2mm |
| HUB-4 | 5/32"     | 4.0mm |
| HUB-6 | 1/4"      | 6.4mm |

### AXLE REDUCER



Allows axle reduction from 5/32" (4.0mm) to 3/32" (2.4mm). Simple push-fit sleeve gives you the option of incorporating different gearing systems onto one common size of axle.

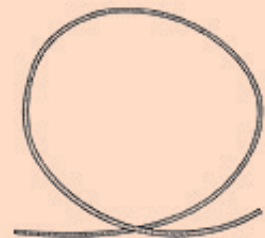
Sold in bags of 20 pieces only.

**CODE:** RED-42

### FLEX SPRING DRIVE BELT

12" (300mm) long flexible steel spring driving belt. To assemble, screw ends together. Two or more may be coupled together where longer lengths are needed.

**CODE:** BELT-300



### SPRING ASSORTMENT

Approximately 100 assorted Springs in several lengths, diameters, tensions and styles.

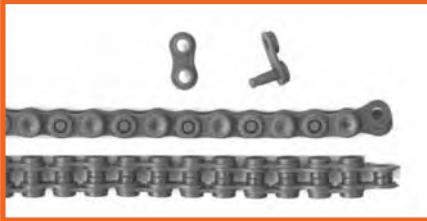
**CODE:** SPRG-100

## HARDWARE & MISCELLANEOUS

### SPROCKET CHAIN

1/4" (6.4mm) wide, 36" (914mm) long, 4 links per inch (25.4mm). Use with assorted gears as a drive mechanism. May also be used as a gear rack by pinning down on a flat surface.

CODE: CHAIN-5



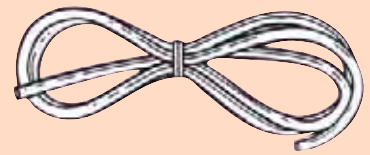
### PLASTIC SPROCKET CHAIN & GEARS

1/8" (3.2mm) I.D., 26-3/8" (670mm) long, 3 links per inch (25.4mm), assemble your own plastic chain with 3 plastic sprocket gears. Easy snap together assembly add fun to the project and takes only a few minutes to complete. Gears have a 5/32" (4.0mm) shaft hole, and are a 10 tooth (27/32" (21mm) O.D.), 20 tooth (1-27/32" (47mm) O.D.), and 30 tooth (2-27/32" (72mm) O.D.). Use with furnished gears as a drive mechanism. May also be used as a gear rack by pinning down on a flat surface.

CODE: CHAIN-10

### CLEAR FLEXIBLE TUBING

Silicone clear flexible tubing in 3' (1m) lengths. Ideal for water or air. **Not recommended for viscous liquids.**



| CODE   | ACTUAL SIZE |       |       |       |
|--------|-------------|-------|-------|-------|
|        | O.D.        |       | I.D.  |       |
| HOSE-1 | 1/8"        | 3.2mm | 1/16" | 1.6mm |
| HOSE-2 | 7/32"       | 5.6mm | 3/32" | 2.4mm |
| HOSE-3 | 1/4"        | 6.4mm | 1/8"  | 3.2mm |



### PVC TEE

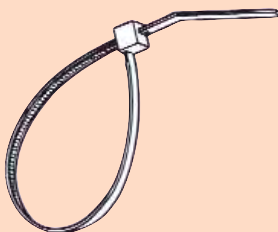
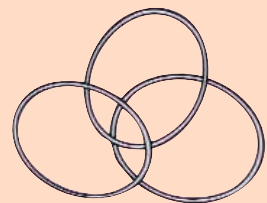
Plastic 3-way Tees to fit HOSE-3 (Clear Flexible Tubing).

CODE: TEE-13

### RUBBER BANDS

1lb. (.45 kg.) box of size No.16 rubber bands for use as drive belts. Can be used with or without Pulleys.

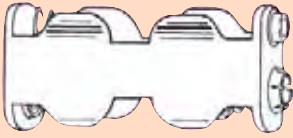
CODE: BAND-16



### CABLE TIES

White nylon Cable Ties for binding wires or components. Ideal for securing Motors in place. Sold in bags of 10 pieces only.

CODE: CT-6



## ELECTRICAL COMPONENTS

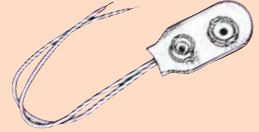
### AA BATTERY HOLDERS

Simple, convenient power source for low voltage requirements. BATH-1 has its own wiring. Multiple battery holders require a BATC-1 to transfer the power from the holder to wiring.

| CODE   | AA BATTERY CAPACITY |
|--------|---------------------|
| BATH-1 | 1                   |
| BATH-2 | 2                   |
| BATH-4 | 4                   |
| BATH-6 | 6                   |
| BATH-8 | 8                   |

### 9V BATTERY CLIP

Snap-on clip for 9 Volt Batteries, and to connect multiple AA battery holders, to wiring.



CODE: BATC-1

### LED'S & MINI LIGHT BULBS

Quality miniature light bulbs in several colors to answer most educational needs. Use SCKT-10 Bulb socket for the Round Bulbs, and SCKT-5 for the LED Bulbs.



STYLE A



STYLE C



STYLE B

| CODE     | STYLE | DESCRIPTION    | BULB COLOR | VOLTS    |
|----------|-------|----------------|------------|----------|
| BULB-10  | A     | Standard Round | Clear      | 3.5      |
| BULB-20  | A     | Flashing Round | Clear      | 3        |
| BULB-30  | A     | Flashing Round | Clear      | 1.5      |
| BULB-40  | A     | Flashing Round | Clear      | 6        |
| BULB-115 | B     | Standard LED   | Red        | 3        |
| BULB-125 | B     | Standard LED   | Green      | 3        |
| BULB-135 | B     | Standard LED   | Yellow     | 3        |
| BULB-215 | B     | Flashing LED   | Red        | 4.7 - 12 |
| BULB-225 | B     | Flashing LED   | Green      | 4.7 - 12 |
| BULB-235 | B     | Flashing LED   | Yellow     | 4.7 - 12 |
| BULB-300 | C     | Grain of Wheat | Clear      | 12       |
| BULB-315 | C     | Grain of Wheat | Red        | 12       |
| BULB-325 | C     | Grain of Wheat | Green      | 12       |
| BULB-335 | C     | Grain of Wheat | Amber      | 12       |

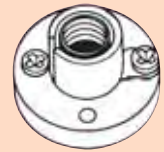
### BULB SOCKET & LED HOLDER

Plastic bulb socket for use with our standard round and flashing round light bulbs. 1-3/16" (30.2mm) O.D. Also, a handy bezel clip for holding LED bulbs.

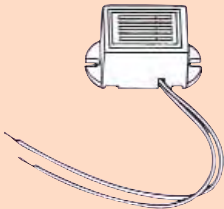
| CODE    | BULB TYPE      |
|---------|----------------|
| SCKT-5  | LED            |
| SCKT-10 | Standard Round |



SCKT-5



SCKT-10



### BUZZER

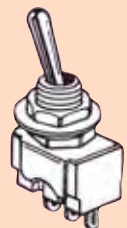
Miniature Buzzer designed to operate on 9V D.C. current. Maximum output 83dB, with a frequency of approximately 420 Hz. Dimensions approximately 1" (25.4mm) x 3/4" (19.1mm) x 3/4" (19.1mm).

CODE: BUZZ-9

### SINGLE & DOUBLE POLE TOGGLES

Single pole, 2 lug on/off for 1 amp current, and double pole, 6 lug switch for reversing polarity on low voltage DC motors, toggle switches.

| CODE   | DESCRIPTION |
|--------|-------------|
| TOGL-1 | Single Pole |
| TOGL-2 | Double Pole |



## CORRIFLUTE

### CORRI-FLUTE SHEET

Corri-Flute is a sturdy, light-weight, rigid Polypropylene sheet manufactured in the same method as corrugated cardboard. It is easy to cut using scissors or a knife. It can be shaped into tubes, conveyor belts or you can create hinges by lightly scoring one side of the sheet. Colorful and sturdy, it makes an ideal substitution where cardboard might be used. Resistant to most chemicals as well as water. Sheet size is 5/32" (4.0mm) thick x 12" (300mm) x 36" (900mm).



| CODE     | COLOR      |
|----------|------------|
| CORR-201 | White      |
| CORR-202 | Red        |
| CORR-203 | Blue       |
| CORR-204 | Yellow     |
| CORR-205 | Black      |
| CORR-206 | Semi-Clear |
| CORR-207 | Green      |
| CORR-208 | Orange     |



### CORRI-FLUTE JOINTS

A simple yet effective method for joining Corri-Flute sheet. Joints fit firmly into the fluted plastic yet can be removed and used again. Set consists of one round, one flexible, two 'U', three straight and three right angle joints. Sold in bags of 5 sets only.

**CODE:** CORA-50

### CORRI-FLUTE RIVETS

A fast, easy method for attaching two Corri-Flute Sheets together. Use a standard paper hole punch to make hole. Two pieces, reversed, make a match fit. Sold in bags of 10 pieces only.



**CODE:** CORA-100



### CORRI-FLUTE OCTA-CLIPS

A simple, reusable method to connect sheets of Corri-Flute or cardboard. Octa-Clips slip over either, gripping it with its nonhazardous teeth. Multi-colored snap-together clips allow assembly at 45° increments. A special clip has a round pin to allow full rotation. Great in school or home projects for younger students. Sold in bags of 50 clips only.

**CODE:** CORA-200

### CORRI-FLUTE HANDLES

Injection molded plastic handles with pivots allow the fabrication of briefcases lunch boxes, carrying cases, etc. using Corri-Flute Sheet. Great for younger students. Sold in bags of 10 pieces only.

**CODE:** CORA-75



### CORRI-FLUTE LATCHES

Injection molded three piece plastic twist latch for locking your Corri-Flute carrying cases. Sold in bags of 10 pieces only.

**CODE:** CORA-25



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## ENGINEERING & ARCHITECTURAL BOOKS & KITS



### DESIGN MODEL TRAINING MANUAL

Written for upper level education, this book explains the uses and limitations of models as an engineering tool. The goals include becoming familiar with the uses of models, thinking in three dimensions, broadening the students piping background as well as step-by-step instructions to constructing the Kit at right. During the model construction, students learn machinery use and safety, blueprint reading, modeling procedures and piping design. Written by ENGINEERING MODEL ASSOCIATES, INC. 136 pages.



A step-by-step companion to MAN-2, above. Includes all the components necessary to construct an exact prototype of a professional piping design model.

Scale: 3/8" = 1'-0" (1:32)

**CODE:** KIT-5002

**CODE:** MAN-2



### INTRODUCTION TO DESIGN MODELING

Written for high school, community college or vocational level schools. Developed in a format to give hands-on learning of design modeling. The course is similar in content to our MAN-2, except in a simpler form. Includes step-by-step instructions to construct the Kit at right. A course outlined teachers guide is available upon request. Written by ENGINEERING MODEL ASSOCIATES, INC. 56 pages.



A step-by-step companion to MAN-5, above. Includes all the components necessary to construct an exact prototype of a simple professional piping design model.

Scale: 3/8" = 1'-0" (1:32)

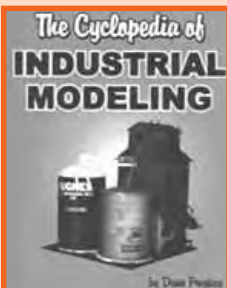
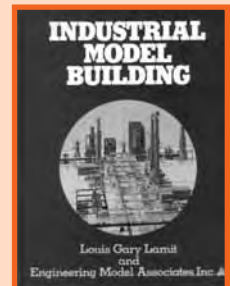
**CODE:** KIT-5005

**CODE:** MAN-5

### INDUSTRIAL MODEL BUILDING

Incorporates all published information on industrial modeling, in a comprehensive, basic-to-advanced textbook for model technicians. This book covers all aspects of industrial model building, from setting up a model shop to construction of design models. Also included is a complete overview of the history of models and an introduction to the background of modeling. Over 400 photographs, charts, drawings and illustrations. 380 pages.

**CODE:** MAN-20



### THE CYCLOPEDIA OF INDUSTRIAL MODELING

Author Dean Freytag is widely known for his vast knowledge in the field of industrial models, steel mills and general scratchbuilding. This book is a must for all scratch model builders. It's a 90 page 'step-by step' book with color pictures featuring numerous industrial model projects.

**CODE:** BOOK-115

### BASIC DESIGN MINI-KITS

Four contiguous Kits developed as an introductory process model training program. Each Kit may be used as a stand-alone section or combined sequentially with one another. Ideal for high school level education. Each Kit includes instructions and necessary materials. Scale: 3/8" = 1'-0" (1:32)



**CODE:** KIT-5007A



**CODE:** KIT-5007B



**CODE:** KIT-5007C



**CODE:** KIT-5007D

## SPACE FRAME KITS

### MICROFRAME SPACE FRAME KIT

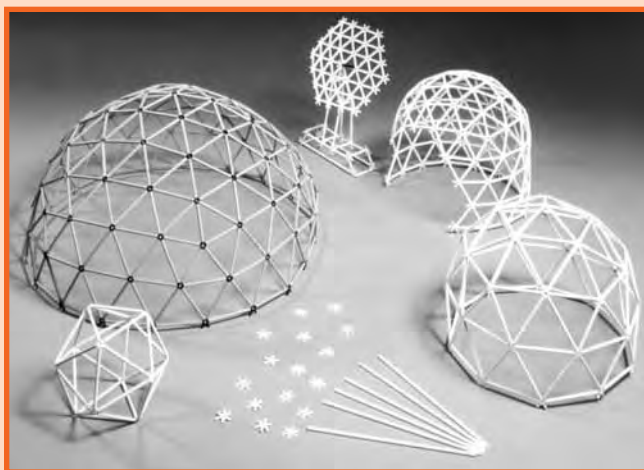
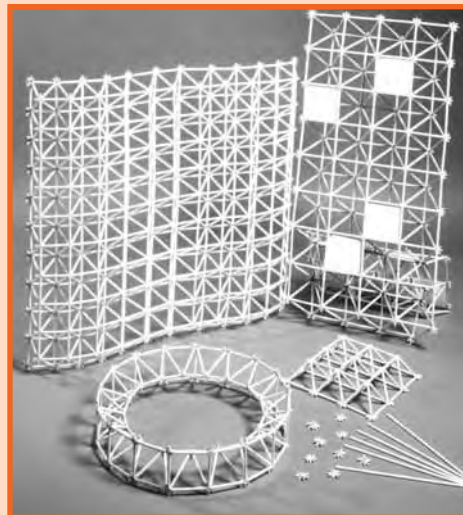
Unique, simple construction of triangulated structures. Connectors are made of strong, flexible White Polypropylene Plastic, allowing repetitive use. White PVC Plastic tubing is easily cut with a hobby knife or saw. Assembly does not require gluing.

Kit includes 150 8" (200mm) tubes and 150 eight spoke flexible connectors, enough materials to construct one of the pictured structures. Instructions included.

**CODE:** KIT-5201

#### COMPONENT PARTS AVAILABLE SEPARATELY

8-Way Spoke Connector      **CODE:** PFJ-8  
 White PVC Tubing            **CODE:** PFT-5



### ISODOME SPACE FRAME KIT

Unique, simple construction of domes and polyhedrons. Connectors are made of strong, flexible White Polypropylene Plastic, allowing repetitive use. White PVC Plastic tubing is easily cut with a hobby knife or saw. Assembly does not require gluing.

Kit includes 150 8" (200mm) tubes, 100 six spoke flexible connectors and 30 five spoke flexible connectors. Enough materials to construct one of the pictured structures. Instructions included.

**CODE:** KIT-5202

#### COMPONENT PARTS AVAILABLE SEPARATELY

5-Way Spoke Connector      **CODE:** PFJ-5  
 6-Way Spoke Connector      **CODE:** PFJ-6  
 White PVC Tubing            **CODE:** PFT-5

### PINCO SPACE FRAME KIT

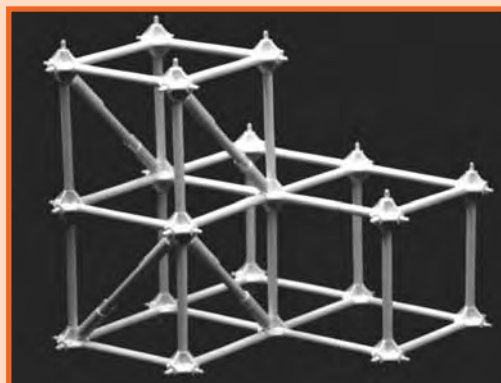
Originally developed for interior display design, this fast and simple system allows construction of the pictured structure without tools or cements; snap together assembly.

Kit consists of 20 White Butyrate Plastic six way connectors, ten White Butyrate Plastic diagonal connectors, 40 2" (50mm) White Butyrate Plastic tubes and five 1-5/8" (40mm) White Butyrate Plastic tubes. Color may be added by using our 3/16" (4.8mm) O.D. colored tubing (Code TBL-6).

**CODE:** KIT-5211

#### COMPONENT PARTS AVAILABLE SEPARATELY

6-Way Connector              **CODE:** PIJ-6  
 Diagonal Connector        **CODE:** PID-2  
 1-5/8" (40mm) Tubing      **CODE:** PIT-2  
 2" (50mm) Tubing          **CODE:** PIT-3



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## DESIGN TECHNOLOGY STARTER PACKS



### COLORED TUBING & CONNECTORS

Plastic Colored Round Tubing and Coated Wire in several sizes and multiple colors along with various connectors. All components are designed to work together. Provides a quick and easy way for educators to order a basic supply of model materials. Not developed to create specific items, but to provide a useful range of products for general model making and prototype design. Working tips and material properties are included within the Pack. Contains enough materials for a classroom of approximately 20 students. Over 180 products. Contents include:

- Plastic Colored Tubing in 5 Diameters
- Plastic Colored Coated Wire
- Plastic Elbows
- Plastic Snap-On Tees
- Plastic End Caps

**CODE:** PACK-101



### SQUARE & RECTANGULAR TUBING

Plastic Square and Rectangular Tubing in several sizes. All components are manufactured in sturdy ABS plastic, allowing extremely strong construction. Great for general structural construction. Many sizes of square tubing telescope, which is especially useful in robotics. Provides a quick and easy way for educators to order a basic supply of model materials. Not developed to create specific items, but to provide a useful range of products for general model making and prototype design. Working tips and material properties are included within the Pack. Contains enough materials for a classroom of approximately 20 students. Over 35 products. Contents include:

- Plastic Square Tubing
- Plastic Rectangular Tubing
- Plastic Strip Material
- Plastic Tubing Assembly Components

**CODE:** PACK-102



### CLEAR ACRYLIC SHAPES

A general assortment of clear and fluorescent colored acrylic rod and shapes for jewelry, decoration and furniture projects. Great for craft and scientific light transmission projects. Provides a quick and easy way for educators to order a basic supply of model materials. Not developed to create specific items, but to provide a useful range of products for general model making and prototype design. Working tips and material properties are included within the Pack. Over 130 products. Contents include:

- Clear Round, 1/2 Round and Square Rod
- Clear Balls and Cubes
- Clear Hemispheres
- Fluorescent Round Rod

**CODE:** PACK-103



### TOOLS & CEMENTS

Basic Hand Tools and Cements for plastic model parts construction. PLASTRUCT Plastic Weld Cement, CYA glue and 15 minute Epoxy cement should answer all bonding needs. Safe-to-use cutting tools and cement applicators also included. Provides a quick and easy way for educators to order a basic supply of model construction tools. Contains two each of the hand tools, and enough cements for a classroom of approximately 20 students to share. Over 35 products. Contents include:

- PLASTRUCT Plastic Weld Cement
- Solvent Cement Applicators
- CYC and Epoxy Glues
- Electricians Tape
- ZONA Hand Saws & Rep. Blades
- Hobby Model Knives
- Hobby Mitre Boxes

**CODE:** PACK-104



## DESIGN TECHNOLOGY STARTER PACKS



### POWER CENTER

A general assortment of motors and related gears, axles, battery holders and clips, etc. to fabricate working models. Also includes some tubing and other assorted components. Ideal as a companion Pack for all other Starter Packs. Provides a quick and easy way for educators to order a basic supply of accessory products. Not developed to create specific items, but to provide a useful range of products for general model making and prototype design. Working tips are included within the Pack. Contains enough materials for a classroom of approximately 20 students.

Over 400 products. Contents include:

- Small Electric Motors
- Plastic Gears and Wheels
- Steel Axles
- Battery Holders and Clips
- Plastic Tubing and Profiles
- Plastic Tubing Components

**CODE:** PACK-105



### CORRI-FLUTE SHEET & CONNECTORS

Unique Corrugated Polypropylene Plastic Sheet allows fast, lightweight construction where solid surfaces are needed. Simple, effective joining with Corri-Flute Joints and Rivets enable even primary students to use this versatile construction system. Ideal as a companion Pack for all other Starter Packs. Provides a quick and easy way for educators to order a basic supply of accessory products. Not developed to create specific items, but to provide a useful range of products for general model making and prototype design. Working tips are included within the Pack. Contains enough materials for a classroom of approximately 20 students. Over 80 products. Contents include:

- Corri-Flute Sheet
- Corri-Flute Joints
- Corri-Flute Rivets

**CODE:** PACK-106

## EV MEDIA ELECTRIC VEHICLE PROJECT PACK

The Electric Vehicle Project Pack provides a comprehensive, hands-on curriculum devoted to electrical power as a source of fuel for personal transportation. However, it is not just limited to electric cars, the course study also covers environmental pollution, electricity and magnetism, measuring force of a moving object, constructing a rechargeable battery and more. This modern day topic will both enlighten the student and stimulate their interest. Contains 8 individual car kits along with additional parts for modification and experimentation. Each car kit ideal for a 2 student team. Ideal for grades 8 and above.

All parts are reusable. Over 500 products.

Contents include:

- 8 Individual Electric Car Kits
- 35 Electric Vehicle Student Booklets
- 8 Assembly Instruction Booklets
- 1 120 Page Teacher's Guide
- 1 Teachers Pack of Spare Parts

**CODE:** PACK-210



### INDIVIDUAL EV CAR KIT

Individual EV Car Kits are also available separately. Includes all the necessary components to construct 1 EV Car with an Assembly Instruction Booklet and Electric Vehicle Student Booklet..

**CODE:** PACK-211

### RECHARGING BATTERY PACK

8 AA Rechargeable Batteries with 2 AA Battery Chargers.

**CODE:** PACK-212



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## DESIGN TECHNOLOGY PROJECT PACKS



### RACERS PROJECT PACK

The Racers Project Pack is designed as an easy to use system for the design and construction of battery powered vehicles. Because assembly is so easy, the main emphasis of instruction can be on investigation and design. The end result is a product economical enough to be consumable, or capable of being dismantled and the components reused. Most parts simply snap together. Construction ideas and details are included on an illustrated sheet within the Pack. Contains enough materials for a classroom of approximately 20 students. Over 150 products.

Contents include:

- Plastic Colored Tubing and Connectors
- Plastic Wheels
- Rubber Tire Material
- Small Electric Motors
- Battery Holders and Wiring Clips

**CODE:** PACK-201



### STORAGE CONTAINERS PROJECT PACK

The Storage Containers Project Pack contains a wide range of products suitable for designing and constructing an extensive variety of small containers. The objective is to produce imaginative and creative solutions to storage problems, not to produce a quantity of identical units. The geometric nature of the containers make such products an excellent vehicle for sketching and rendering techniques in addition to evaluative modeling in waste materials. These materials can be worked with common hand and machine tools. Construction ideas and details are included on an illustrated sheet within the Pack. Contains enough materials for a classroom of approximately 20 students. Over 90 products.

Contents include:

- Plastic Round Colored Tubing
- Tubing End Caps
- Plastic Profiles
- Square and Rectangular Tubing

**CODE:** PACK-202



### PEN RESTYLE PROJECT PACK

The Ball Point Pen Restyle Project Pack provides limitless opportunities for expression of individual tastes in prototype and packaging design. Suitable for students of various age groups, and differing abilities, this project offers simple constructability and an end product the student can use daily with pride. Required tools can be as simple as small handsaws and pinvises, or computer controlled lathes for those schools with high-tech equipment. Complete outline of all facets of construction, packaging and project summarization are included in a 7 page instruction packet within the Pack. Contains enough materials for a classroom of 20-40 students. Over 300 products.

Contents include:

- Plastic Round Colored Tubing
- Tubing Connectors and End Caps
- Plastic Square Tubing
- Plastic Strip Material
- Pen Refills and Pocket Clips

**CODE:** PACK-203



### TRUSS BRIDGE PROJECT PACK

The Truss Bridge Project Pack was originally developed for the more advanced hobby modeler but fits nicely in the engineering module of a Design & Technology program. Students construct a typical single span truss bridge using miniature plastic representations of structural members in 1:48 scale. These Steel Gray, professional scale model materials can be worked with common hand and machine tools. Drawing blueprints and details are included with step-by-step instructions within the Pack. Contains enough materials to construct five 5"(125mm) W x 30"(750mm) L bridges. Nearly 200 products.

Contents include:

- Plastic H Columns
- Plastic I Beams
- Plastic Channels
- Plastic Tees
- Plastic Strip Material

**CODE:** PACK-204



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VISA/MasterCard. (800) 666-7015 8:00 am-2:00 pm Pacific Time.