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HOW DO I START MY OWN ESTES® ROCKET FLEET?
The best way to begin model rocketry is with an Estes® flying model rocket starter set. You can either start with a Ready To Fly Starter Set that has a fully constructed model rocket or an E2X® Starter Set that requires assembly prior to launching. Both types of sets come complete with an electrical launch controller, adjustable launch pad, engines, flight supplies and an instruction book to get you out and flying in no time. You'll need four "AA" alkaline batteries and perhaps glue, depending on what you choose.

HOW EASY AND HOW MUCH TIME DOES IT TAKE TO BUILD MY ROCKETS?
Estes® model rocket kits range from ready to fly in just minutes to those that provide many enjoyable hours of building fun. Estes® kits are classified into six categories.

READY TO FLY (RTF): No paint, glue or modeling skills required. Rocket comes assembled and is ready for lift-off in just minutes.

E2X® ROCKETS: Some paint, glue or special tools needed. E2X® kits contain parts that are colored and easy to assemble. Simply paint the parts together as per the instructions, attach the self-adhesive decals, attach the recovery system and you are ready to blast off. Assembly takes as little as 1 hour.

SKILL LEVEL 1 ROCKET KITS: Requires some painting, gluing and sanding. Features die-cut balsa fins, slotted body tubes, plastic nose cones and rubber bands. Step by step instructions make building very easy. Assembly takes at least an afternoon.

SKILL LEVEL 2 ROCKET KITS: First tier of more advanced kits. Requires beginner skills in model rocket construction and finishing. Features die-cut balsa fins, plastic fins, plastic nose cones and unfinished body tubes. Assembly time may take a complete day.

SKILL LEVEL 3 ROCKET KITS: Second tier of more advanced kits. Requires moderate skills in model rocket construction and finishing. Features multiple die-cut balsa fins and parts, unfinished body tubes, complex designs and plastic nose cones. Assembly time may take a couple of days.

FLIGHT SEQUENCE

1. ACCELERATION
2. ELECTRICAL IGNITION & LIFT-OFF
3. COAST & TRACKING
4. PEAK ALTITUDE & EJECTION
5. RECOVERY SYSTEM DEPLOYED
6. TOUCHDOWN

HOW DO ESTES® MODEL ROCKETS WORK?
Estes® model rockets are activity kits designed of lightweight materials such as paper tubing, balsa wood and plastic. Balsa or plastic fins are glued to the body tube for guidance and stability. A model rocket engine holder is also part of the rocket to keep the engine in place during thrust.

Estes® was the first to develop a mass produced model rocket engine and has produced the engines for over 10 years.

The Estes® model rocket is propelled into the air by an electrically ignited model rocket engine. After its acceleration, the rocket continues upward emitting tracking smoke as it coasts. At the rocket's peak altitude (also called apogee), a recovery device such as a plastic parachute or streamer, is deployed to return the rocket gently to earth. The rocket can then be prepared for another flight.

ESTES® WARRANTY
Your Estes® product is warranted against defects in materials or workmanship for a period from the date of original purchase. This warranty does not cover any damage caused by abusive use, misuse, failure to comply with operating instructions or improper storage of the warranted product. Some states do not allow exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For repair or replacement under this warranty, please return the defective part of your Estes® product with proof of purchase to: Estes Industries, Customer Service Department, 1295 H Street, Penrose, Colorado 81240.
WHERE DO I FLY ESTES® MODEL ROCKETS!

The chart on the next page tells you what size field to use for what size engine. Each engine size is designated by a letter and is up to twice as powerful as the letter before it. See the engine section (pages 25-27) of this catalog for more information.

WHAT DO I NEED TO KNOW!

In this catalog, each description lists important INFORMATION:

• Something fun about the rocket.
• Specifications - how tall, wide and heavy.
• What engines we recommend.
• How high, on the largest engine recommended, the rocket flies (in feet and in meters). Maximum altitudes are projections only, your rocket's actual performance may vary.
• The type of recovery system that brings the rocket back - parachute, streamer or other.
• The type of fin material - plastic, balsa or fiber.

Remember - Estes® model rocket kits offer you a wide spectrum of building and flying. Best of all, they are all fun!

ROCKET TIP:

In most cases, baseball, soccer or football fields are great launch areas.

PARTS OF A MODEL ROCKET

PLEASE READ: IMPORTANT STUFF!

Estes® model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age. Unless otherwise specified all models require assembly. Engines, launch system, glue and finishing supplies are not included with model rocket kits unless specified otherwise.

USE ONLY WITH ESTES® PRODUCTS

Caution: Use of any Estes® product with any other brand-name rocket product containing any defect or causing any damage may void the Estes® warranty.

M.A.R.* MODEL ROCKET SAFETY CODE

Effective February 10, 2001

1. MATERIALS. I will use only lightweight, nonmetal parts for the nose, body, and fins of my rocket.

2. MOTORS. I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.

3. IGNITION SYSTEM. I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and I will use a launch switch that returns to the "off" position when released.

4. MISFIREs. If my rocket does not launch when I press the button of my electrical launch system, I will remove the launch or safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.

5. LAUNCH SAFETY. I will use a countdown timer, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet (4.6 m) away when I launch rockets with D motors or smaller, and 30 feet (9 m) when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance.

6. LAUNCHER. I will launch my rocket from a launch rod, tower or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place my hands so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.

7. SIZE. My model rocket will not weigh more than 53 ounces (1500 grams) at liftoff and will not contain more than 44 ounces (125 grams) of propellant or 71.9 pound-seconds (320 N·sec) of total impulse. If my model rocket weighs more than one pound (453 grams) at liftoff or has more than 4 ounces (115 grams) of propellant, I will check and comply with Federal Aviation Administration regulations before flying.

8. FLIGHT SAFETY. I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.

9. LAUNCH SITE. I will launch my rocket outdoors, in an open area at least as large as shown in the accompanying table, and in safe weather conditions with wind speeds no greater than 20 miles per hour (32 km/h). I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present a risk of grass fires.

LAUNCH SITE DIMENSIONS

<table>
<thead>
<tr>
<th>Installed Total Impulse</th>
<th>Equivalent Motor Type</th>
<th>Minimum Site Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.95 - 1.25</td>
<td>A</td>
<td>75 feet x 15 feet</td>
</tr>
<tr>
<td>1.26 - 1.50</td>
<td>B</td>
<td>100 feet x 30 feet</td>
</tr>
<tr>
<td>2.50 - 5.00</td>
<td>C</td>
<td>200 feet x 60 feet</td>
</tr>
<tr>
<td>5.00 - 10.00</td>
<td>D</td>
<td>300 feet x 100 feet</td>
</tr>
<tr>
<td>10.00 - 30.00</td>
<td>E</td>
<td>500 feet x 200 feet</td>
</tr>
<tr>
<td>30.00 - 60.00</td>
<td>F</td>
<td>1,000 feet x 300 feet</td>
</tr>
<tr>
<td>60.00 - 120.00</td>
<td>G</td>
<td>3,000 feet x 600 feet</td>
</tr>
<tr>
<td>120.00 - 300.00</td>
<td>H</td>
<td>5,000 feet x 1,200 feet</td>
</tr>
</tbody>
</table>

10. RECOVERY SYSTEM. I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.

11. RECOVERY SAFETY. I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

As a member of the Estes® Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.

Signature ________________________________

Important Note: "G" engines must be sold to and used by adults (18 and up) only. To launch large model rockets weighing more than one lb. (453 g) and containing more than 4.4 oz. (125 g) of propellant (net weight), you must notify and possibly obtain authorization from the Federal Aviation Administration (FAA). Check your telephone directory for the office nearest you or contact Estes® Industries for further information.

*National Association of Rocketry

www.nar.org
READY TO FLY STARTER SETS

MAX TRAX™
Track how high this rocket flies. The Max Trax™ features an electronic altitude-tracking capsule that automatically calculates and displays how high the rocket traveled in feet and meters.

SPECs:
- Length: 17 in. (43.2 cm)
- Dia: 1.35 in. (34.3 mm)
- Wt.: 2.6 oz. (73.9 g)
- Recovery: 12 in. (30 cm)

Parachute: Capsule - Streamer, Fins: Plastic molded, Max. Altitude: 600 ft. (183 m)

Recommended Engines: B-6, B-6-2, B-6-4, C-6-3, C-6-5

(Two engines)

TIDAL WAVE™
Make a splash! The Tidal Wave™ features a holographic body tube that catches your eye. Ready for launch in minutes.

SPECs:
- Length: 18 in. (45.7 cm)
- Dia: 1.35 in. (34.3 mm)
- Wt.: 2.7 oz. (76 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 600 ft. (183 m)

Recommended Engines: A-8, B-4, B-6-4, C-6-5

(Two engines)

IONIZER™
Start flying minutes after opening the package. This hot RTF rocket comes with a holographic body tube for visual effects.

SPECs:
- Length: 18 in. (45.7 cm)
- Dia: 1.35 in. (34.3 mm)
- Wt.: 2.7 oz. (76 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 600 ft. (183 m)

Recommended Engines: A-8, B-4, B-6-4, C-6-5

(Two engines)

ASTROCAM® RTF
The AstroCam® RTF Starter Set features a real camera that allows you to take photographs of your launch area from 500 feet up! Uses 110 film - not included. Film and developing are available locally.

SPECs:
- Length: 18.88 in. (47.7 cm)
- Dia: 1.34 in. (34.0 cm)
- Wt.: 2.7 oz. (76 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 597 ft. (182 m)

Recommended Engines: C-6-7 ONLY

(Two engines)

RECON™ - SEE IT ON THE WEB
Futuristic vehicle that deploys satellite at peak altitude.

SPECs:
- Length: 17.5 in. (44.5 cm)
- Dia: 1.30 in. (34.3 mm)
- Wt.: 3.0 oz. (85 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 557 ft. (170 m)

Recommended Engines: B-6-2, B-6-4, C-6-3, C-6-5

(Two engines)

FREE FALL™ - SEE IT ON THE WEB
Booster rocket ejects a skidiver with parachute at peak altitude.

SPECs:
- Length: 18 in. (45.7 cm)
- Dia: 1.64 in. (41.6 mm)
- Wt.: 3.0 oz. (85 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 500 ft. (152 m)

Recommended Engines: B-6-2, B-6-4, C-6-3, C-6-5

(Two engines)

MISSILE COMMAND™
The Missile Command™ RTF Starter Set features an "Army" surface-to-surface missile and a "Navy" ship-to-air missile.

SPECs:
- Army: Length - 16.6 in. (42.1 cm)
- Navy: Length - 16 in. (40.6 cm)
- Dia: Army - 1.0 in. (25.4 mm)
- Navy - 1.0 in. (25.4 mm)
- Wt.: Army - 1.6 oz. (46 g)
- Navy - 1.7 oz. (48 g)
- Recovery: Two 12 in. (30 cm) Parachutes, Fins: Plastic molded

Max. Altitude: Army - 1100 ft. (335 m)
- Navy - 1000 ft. (305 m)

Recommended Engines: 1/3A-6-2, A-8, B-4-4, B-6-4, B-6-5, C-6-3, C-6-5

(Two engines)

CODE RED™
A great rocket from Estes®. The Code Red™ comes with a wrapped holographic body tube. It's ready to fly in minutes.

SPECs:
- Length: 18 in. (45.7 cm)
- Dia: 1.35 in. (34.3 mm)
- Wt.: 2.7 oz. (75 g)
- Recovery: 12 in. (30 cm)

Fins: Plastic molded, Max. Altitude: 600 ft. (183 m)

Recommended Engines: A-8, B-4-4, B-6-4, C-6-5

(Two engines)
E2X® ROCKETS KITS

- Great First Rocket
- No Painting Required
- Assemble in about an hour
- Engines and launch equipment sold separately.

READY TO FLY (RTF) ROCKETS

SNIFF™ - SEE IT ON THE WEB
EST 1807
Travel out of this world with this hot, neon colored flying saucer. This RTF alien space ship comes fully assembled and decorated. SPECs: Dia: 2.75 in. (29.7 cm); Wt: 2.1 oz. (59 g);
Recovery: Spring action; Max. Altitude: 120 ft. (37 m);
Recommended Engines: B6-0, C6-0

CRUISE MISSILE™ - SEE IT ON THE WEB
EST 1847
Imagine the thrill of launching this realistic model of America’s most potent strategic weapon. Ready to fly in just minutes.
SPECs: Length: 9.0 in. (22.9 cm); Dia: 1.0 in. (25.4 mm);
Wt: 1.4 oz. (40 g); Recovery: 12 in. (30 cm) Parachute; Finns: Plastic molded; Max. Altitude: 200 ft. (61 m);
Recommended Engines: A3-3T, A10-3T

E2X® ROCKETS KITS

X-RAY™
EST 0834
Carry cargo through the air with the X-RAY™. The X-Ray features a clear payload tube that allows you to launch cargo into the air and return it back to earth. Perfect for science experiments. Colored, one-piece fin unit for a quick assembly.
SPECs: Length: 14.0 in. (36.0 cm); Dia: 0.74 in. (18.8 mm);
Wt: 0.6 oz. (17 g); Recovery: Streamer; Finns: One piece plastic molded; Max. Altitude: 500 ft. (152 m);
Recommended Engines: 1/2A3-2T, A3-4T, A10-3T

Gnome™
EST 0886
Eye-dazzling, chrome rocket soars to heights of 600 ft. (244 m). The Gnome™ comes with a colored one-piece fin unit for quick assembly. Be ready to launch in less than an hour.
SPECs: Length: 10.3 in. (26.0 cm); Dia: 0.54 in. (13.8 mm);
Wt: 0.2 oz. (5.6 g); Recovery: Streamer; Finns: One piece plastic molded; Max. Altitude: 500 ft. (244 m);
Recommended Engines: 1/2A3-2T, 1/2A3-4T, A3-4T, A10-3T

Mini Meanie™
EST 1202
Get out of the way… the Mini Meanie™ is tearing up the sky. It soars up to 200 ft. (21 m). The Mini Meanie™ comes with a colored nose cone and body halves, no painting is required.
SPECs: Length: 5.25 in. (13.3 cm); Dia: 1.0 in. (25.4 mm);
Wt: 0.24 oz. (7.3 g); Recovery: Streamer; Finns: Plastic molded; Max. Altitude: 500 ft. (215 m);
Recommended Engines: 1/4A3-2T, 1/2A3-4T, A3-4T, A5-3T

Freaky Flyer™
EST 1203
This “Freaky” mini-engine rocket has an eye-catching look to it. It blasts to 750 ft. (228 m). The Freaky Flyer™ comes with a colored nose cone and body halves, so it can be ready in under an hour.
SPECs: Length: 5.18 in. (13.1 cm); Dia: 0.75 in. (19.1 mm);
Wt: 0.67 oz. (19.9 g); Recovery: Streamer; Finns: Plastic molded; Max. Altitude: 750 ft. (228 m);
Recommended Engines: 1/4A3-3T, 1/2A3-4T, A3-4T, A10-3T

Alpha III®
EST 1256
The very first Estes® E2X® rocket! One piece fin unit for easy construction. Millions have started with this classic design.
SPECs: Length: 12.0 in. (30.5 cm); Dia: 0.98 in. (25.0 mm);
Wt: 1.2 oz. (34 g); Recovery: 12 in. (30 cm) Parachute; Finns: One piece plastic molded; Max. Altitude: 1000 ft. (305 m);
Recommended Engines: 1/2A2-2, A3-3, A8-5, B4-4, B6-4, B6-6, C6-5

No. 2 ESTES SKY WRITER™
EST 1260
This fun rocket looks like a wooden pencil. It “sky writes” up to 1000 ft. (305 m) in the air. The No. 2 ESTES Sky Writer™ comes with colored body tubes, fins and nose cone, so assembly is quick and easy.
SPECs: Length: 36 in. (91 cm); Dia: 0.98 in. (25.0 mm);
Wt: 1.3 oz. (37 g); Recovery: 12 in. (30 cm) Parachute; Finns: One piece plastic molded; Max. Altitude: 1000 ft. (305 m);
Recommended Engines: A8-3, B4-4, B6-4, C6-5

Estes® model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.
E2X® ROCKET KITS

Cosmic Cobra™

- **EST 1262**
- The Cosmic Cobra™ features a two-way recovery system.
- The booster returns to earth using a 12 in. (30 cm) parachute, while the nose cone helicopters down gently using rotor blades.
- **SPECS:**
  - Length: 19.5 in. (49.5 cm)
  - Dia.: 1.35 in. (34.3 mm)
  - Wt.: 3.1 oz. (88 g)
  - Recovery: Booster - 12 in. (30 cm) parachute, Nose Cone - Helicopter
  - Max. Altitude: 590 ft. (180 m)
  - Recommended Engines: B-2, B-4, B-6-4, C-6, C-6-5

Blue Ninja™

- **EST 1300**
- The Blue Ninja™ is the biggest rocket in the E2X® class. It is 30 in. (76.2 cm) tall and powered by a "C11" or "D" engine.
- The Blue Ninja™ comes with shiny blue prismatic body tubes and colored fins and nose cone.
- **SPECS:**
  - Length: 31.3 in. (79.5 cm)
  - Dia.: 1.64 in. (41.6 mm)
  - Wt.: 5.1 oz. (145.4 g)
  - Recovery: 18 in. (46 cm) parachute
  - Max. Altitude: 700 ft. (213 m)
  - Recommended Engines: C-11-3, D-12-3

Bandit™

- **EST 2060**
- Rugged, sleek and merciless performance every time - escapes to over 1000 ft. (305 m) and every flight recovers with a parachute.
- **SPECS:**
  - Length: 16.6 in. (42.2 cm)
  - Dia.: 1.0 in. (25.4 mm)
  - Wt.: 1.6 oz. (45 g)
  - Recovery: 12 in. (30 cm) parachute
  - Max. Altitude: 1000 ft. (305 m)
  - Recommended Engines: A-8-3, B-4, B-6-4, B-6-6, C-6-5, C-6-7

Flash®

- **EST 2137**
- A stellar performer with a long, prismatic payload section. The huge Flash® will be noticed anywhere - on the ground or in the air.
- **SPECS:**
  - Length: 28.3 in. (71.9 cm)
  - Dia.: 1.0 in. (25.4 mm)
  - Wt.: 2.0 oz. (57 g)
  - Recovery: 12 in. (30 cm) parachute
  - Max. Altitude: 1000 ft. (305 m)
  - Recommended Engines: A-8-3, B-4, B-6-4, B-6-6, C-6-5, C-6-7

Agm-57X Heatseeker™

- **EST 2158**
- Defend your neighborhood with this air-to-air missile. No painting required. The AGM-57X Heatseeker™ can be ready to fly in under an hour.
- **SPECS:**
  - Length: 18.6 in. (47.2 cm)
  - Dia.: 1.0 in. (25.4 mm)
  - Wt.: 1.9 oz. (53 g)
  - Recovery: 12 in. (30 cm) parachute
  - Max. Altitude: 800 ft. (244 m)
  - Recommended Engines: A-8-3, B-4, B-6-4, B-6-6, C-6-5, C-6-7

Fireflash™

- **EST 2159**
- This long sounding rocket will dominate the sky with its sleek appearance. Colored body tubes and one piece fin unit make for an easy to build rocket.
- **SPECS:**
  - Length: 41.6 in. (105.7 cm)
  - Wt.: 0.98 in. (24.9 mm)
  - Recovery: 12 in. (30 cm)
  - Max. Altitude: 800 ft. (244 m)
  - Recommended Engines: A-8-3, B-4, B-6-4, C-6-5, C-6-7

Estes model rockets are recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.
E2X® ROCKET KITS

CHROME DOMES™ - SILVER SERIES

Look at this rocket shine! Chrome Domes™ - Silver Series rockets feature silver chrome plated fins and nose cone. The body tube comes in a variety of prismatic colors (each color sold separately).

SPECS:
- Length: 18 in. (45.7 cm)
- Dia.: 1.35 in. (34.3 mm)
- Wt.: 2.7 oz. (73 g)
- Recovery: 12 in. (30 cm) Parachute
- Fins: Two piece plastic molded
- Max. Altitude: 600 ft. (183 m)
- Recommended Engines: A8-3, B4-4, B6-4, C6-5

CHROME DOMES™ - GOLD SERIES

Catch some attention! Chrome Domes™ - Gold Series rockets feature gold chrome plated fins and nose cone. The body tube comes in a variety of prismatic colors (each color sold separately).

SPECS:
- Length: 18 in. (45.7 cm)
- Dia.: 1.35 in. (34.3 mm)
- Wt.: 2.7 oz. (73 g)
- Recovery: 12 in. (30 cm) Parachute
- Fins: Two piece plastic molded
- Max. Altitude: 600 ft. (183 m)
- Recommended Engines: A8-3, B4-4, B6-4, C6-5

WACKY WIGGLER™

Wacky Wiggle™ launches like a standard rocket, but comes down in a whole new way. The prismatic body sections separate and the entire rocket "wiggles" its way back to earth. This wacky recovery rocket can fly over 1000 ft. (305 m).

SPECS:
- Length: 17.75 in. (45.1 cm)
- Dia.: 1.1 in. (22.9 mm)
- Wt.: 2.0 oz. (56.5 g)
- Recovery: Break-apart
- Fins: Plastic molded
- Max. Altitude: 1040 ft. (317 m)
- Recommended Engines: 1/2A8-2, A9-3, A8-3, B4-4, B6-4, C6-3, C6-5

SHUTTLE XPRESS™

New wave of fighter technology. The Shuttle Xpress™ carries two fighter shuttles to battle. At apogee, it releases the two fighter shuttles that glide back to earth. The booster is recovered by a 12 in. (30 cm) Parachute.

SPECS:
- Length: 17.69 in. (44.9 cm)
- Dia.: 1.35 in. (34.3 mm)
- Wt.: 3.2 oz. (91.7 g)
- Recovery: Booster - 12 in. (30 cm) Parachute; Shuttles - Glider
- Fins: Plastic molded
- Max. Altitude: 966 ft. (295 m)
- Recommended Engines: B4-2, B4-4, B6-2, B6-4, C6-3, C6-5

Estes® model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.
ESTES
www.estesrocks.com

Estes-Cox Corporation

ESTES® 2003 RETAIL PRICE LIST
EFFECTIVE
01-01-03

Estes® model rockets are recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.
## ESTES® 2003 RETAIL PRICE LIST

### SPECIALTY
- **6300** Kick Drs™ Power Puck: $49.99
- **9117** Spisty Wings™ Electric Plane Asst.: $17.99
- **4014** Flight Master® Raven™ New: $7.99
- **4016** Flight Master® Condor™ New: $7.99
- **4100** Sky Rangers™ Flight School New: $59.99
- **4102** Sky Rangers™ Fighter School New: $59.99

### ESTES AIR™ ROCKET SETS
- **1877** HLX150™: $39.99
- **1980** GL-2000™: $43.99

### MODEL ROCKET STARTER SETS
- **1406** I-M6 Alpha III™: $19.99
- **1407** Stars & Stripes™: $29.99
- **1431** Mini Super Shot™: $17.99
- **1432** Military Super Shot™: $36.99
- **1433** Deluxe Super Shot™: $39.99
- **1434** MixTrax™ New: $39.99
- **1449** Super Shot™: $41.99
- **1474** Mega Maxx™: $36.99
- **1811** Triad Wave™: $34.99
- **1812** Ionizer™: $34.99
- **1813** AstroCam® RTF: $45.99
- **1814** Recon™: $43.99
- **1816** Free Fall™: $43.99
- **1818** Missile Command™: $44.99
- **1824** Code Red™: $34.99

### MINI-ENGINE MODEL ROCKET KITS
- **0602** Quark™: $4.49
- **0634** X-Hay™: $7.29
- **0636** Gnome™: $7.29
- **1202** Mini Meanie™: $3.79
- **1203** Freaky Flyer™: $3.79
- **1847** Cruise Missle™: $11.99

### STANDARD AND D ENGINE MODEL ROCKET KITS
- **1225** Alpha III®: $10.49
- **1256** Alpha III®: $13.49
- **1260** No. 2 Estes Sky Writer™: $7.29
- **1261** Baby Bertha™: $6.29
- **1262** Cosmic Cobra™: $8.49

- **1292** Wizard™: $7.29
- **1295** Mean Machine™: $24.99
- **1300** Blue Ninja™: $13.49
- **1301** StormMaster™: $11.99
- **1302** CC Express™: $12.49
- **1380** Phoenix™: $25.99
- **1381** Yankee™: $7.20
- **1392** Comanche-3™: $17.79
- **1607** Snitch™: $11.99
- **1948** Big Bertha®: $15.49
- **1949** Viking™: $6.79
- **1958** Black Brant I™: $19.99
- **1960** Nova Payload™: $15.99
- **2060** Bandit™: $14.29
- **2075** A.R.V. Condor™: $17.99
- **2092** Mongoos™: $13.49
- **2136** Gemini DC™: $15.99
- **2137** Flash®: $14.29
- **2138** Fat Boy™: $15.99
- **2169** AGM-57X Hostile™: $12.99
- **2189** FireFlash™: $16.99
- **2162** Big Daddy™: $24.99
- **2167** Mercury Redstone: $28.99
- **2170** Star Dart™: $9.99
- **2171** Sizzler™: $9.99
- **2172** Monarch™: $13.49
- **2175** Nemesis™: $14.49
- **2176** EchoStar™: $21.99
- **2177** Night Wing™: $21.99
- **2178** Hi-Flie™: $4.99
- **2179** Guardian™: $9.99
- **2180** Chrome Domes™ Silver Series: $9.99
- **2181** Chrome Domes™ Gold Series: $9.99
- **2182** Wacky Wiggler™: $11.99
- **2183** Shuttle Xpress™: $12.99
- **2184** Meteor Master™: $12.99
- **2185** Screamin’ Mini™: $12.99
- **2199** The Duke™ Rocket Set: $41.99

### MODEL ROCKET ACCESSORIES/PARTS
- **1485** Designer’s Special™: $54.99
- **2230** EM Launch Controller: $29.99
- **2234** Command Control™ Launch Controller: $54.99
- **2238** Porta-Pad™ E Launch Pad: $29.99
- **32015** Porta-Pad II Launch Pad: $29.99
- **32220** Electron Beam Launch Controller: $25.99
- **32227** Tube Marking Guide: $8.49
- **32292** AltTrek™ Altitude Tracker: $23.99
- **32223** Emergency Repair Kit: $10.99
- **32241** Blast Defector Plate: $4.99
- **32243** 1/8" Two-Piece Launch Rod: $10.29
- **32244** 3/16" Two-Piece Maxi™ Rod: $12.29
- **32264** 12" Parachute: $4.99
- **32267** 18" Parachute: $5.79
- **32271** 24" Parachute: $5.99
- **32274** Recovery Wadding: $4.29
- **32278** Shock Cords & Mount Pack: $3.09
- **32301** Model Rocket Igniters: (8 pk): $4.29
- **33320** Launch Lug Pack: (14 Ass.) $5.29
- **33304** BT-5 Body Tube: (4 pk): $4.99
- **33305** BT-20 Body Tube: (4 pk): $6.29
- **33306** BT-50 Body Tube: (3 pk): $6.29
- **33307** BT-55 Body Tube: (3 pk): $6.99
- **33309** BT-60 Body Tube: (3 pk): $7.79
- **33300** BT-80 Body Tube: (2 pk): $7.99
- **33514** Engine Hook Accessory Pack: (5 Ass): $4.49
- **33358** Regular Engine Mount Kit: $6.99
- **33359** D & E Engine Mount Kit: $8.79
- **33516** NC-6 Nose Cone: (5 pk): $7.79
- **33519** NC-20 Nose Cone: (4 pk): $7.79
- **33522** NC-50 Nose Cone: (5 pk): $7.79
- **33523** NC-55 Nose Cone: (4 pk): $9.49
- **33514** NC-56 Nose Cone: (4 pk): $7.79
- **33515** NC-60 Nose Cone: (2 pk): $7.79
- **33518** NC-80 Nose Cone: (1 pk): $5.49
- **33519** Large Tube Coupler Pack: (7 Ass): $7.79

### EDUCATOR BULK PACKS
- **1750** Gnome™: (12 pk): $50.29
### Skill Level 1 Rocket Kits

#### Quark™
- Engine: 64 engine
- Wing span: 0.52 in (13.2 cm)
- Diameter: 0.54 in (13.7 cm)
- Weight: 0.1 oz (3 g)
- Recovery: Featherweight
- Max. Altitude: 700 ft (213 m)
- Recommended Engines: 1/1A3-3T, 1/1A3-4T, A1-10T

#### Alpha®
- For over 36 years, the Alpha® has been the first choice for millions of rocket modelers. Easy to build, rugged high performance, parachute recovery - the perfect rocket to get you started!
- Length: 12.3 in (31.2 cm)
- Diameter: 0.99 in (24.9 mm)
- Weight: 0.8 oz (23 g)
- Recovery: 12 in (30 cm) Parachute
- Recommended Engines: A8-3, B4-4, B6-4, B6-6, C6-5

#### Baby Bertha™
- A miniature version of one of the most popular kits of all time, the Big Bertha®. The Baby Bertha® soars to 575 ft (175 m).
- Length: 12.75 in (32.4 cm)
- Diameter: 1.64 in (41.6 mm)
- Weight: 1.6 oz (45.3 g)
- Recovery: 12 in (30 cm) Parachute
- Recommended Engines: A8-3, B4-4, B6-5

#### Wizard™
- No tricks here - the Wizard™ is an easy to build high-performance kit. A great first or second kit that promises real excitement and fun.
- Length: 12 in (30.5 cm)
- Diameter: 0.74 in (18.9 cm)
- Weight: 0.4 oz (12 g)
- Recovery: Streamer
- Recommended Engines: A8-3, A8-5, B4-4, B6-4, B6-6, C6-5

#### Stormcaster™
- Go big on a small budget! Powered by the "C14" engine, this big rocket can also be used with a "D" engine. The Stormcaster™ is over 30 in (76.2 cm) tall. It flies up to 930 ft (283 m).
- Length: 30.25 in (76.8 cm)
- Diameter: 1.64 in (41.6 mm)
- Weight: 2.7 oz (80.8 g)
- Recovery: 18 in (46 cm) Parachute
- Recommended Engines: C13-1, C13-5, D12-5

#### Yankee™
- A rocket with All-American performance - screams to 1400 ft (427 m) altitude. Comes with cool self-adhesive decals, for that red, white and blue look.
- Length: 11 in (27.9 cm)
- Diameter: 0.74 in (18.8 mm)
- Weight: 0.4 oz (12 g)
- Recovery: Streamer
- Recommended Engines: C13-1, C13-5, D12-5

#### Big Bertha®
- Bary, big and beautiful! Over the decades this is the first big (two feet tall) rocket for many modelers. Slow, realistic liftoffs from this true classic.
- Length: 24 in (61 cm)
- Diameter: 1.64 in (41.6 mm)
- Weight: 2.2 oz (62 g)
- Recovery: 18 in (46 cm)
- Recommended Engines: B4-2, B4-4, B6-2, B6-4, C6-5

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**Prices Subject to Change Without Notice.**

**Quantities of some products are limited.**

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30 = Product has English, French and German packaging and instructions.

Estes-Cox Corp. is an equal opportunity employer.
SKILL LEVEL 1 ROCKET KITS

VIKING™
- Fantastic rocket with 46 possible fin configurations.
- Features die cut card fins, decals and streamer recovery. Super high fliers.
- SPECS: Length: 12.1 in. (30.7 cm); Dia.: 0.74 in. (18.8 mm);
- Wt.: 0.6 oz. (17 g); Recovery: Streamer; Fins: Die cut card;
- Max. Altitude: 1420 ft. (434 m);
- Recommended Engines: 1/2A6-2, A8-3, A8-5, B4-6, B6-6, C6-5, C6-7

NOVA PAYLOADER™
- Clear payload capsule, lightweight design with balsa fins and high altitude performance combine to make this a great cargo carrying rocket.
- SPECS: Length: 21.1 in. (53.5 cm); Dia.: 0.98 in. (24.8 mm);
- Wt.: 2.3 oz. (65 g); Recovery: 12 in. (30 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 1000 ft. (305 m);
- Recommended Engines: A8-3, B4-6, C6-4, C6-5

MONGOOSE™
- EDMOS®
- Perfect first two-stage rocket! Super quick to build with high altitude performance - over 1600 ft. (488 m)
- SPECS: Length: 26.3 in. (67.3 cm); Dia.: 0.98 in. (25.4 mm);
- Wt.: 2.3 oz. (65 g); Recovery: 12 in. (30 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 1600 ft. (488 m);
- Recommended Engines: Single Stage - A8-3, B4-6, B6-6, C6-5; Two Stage: Booster - B6-6, C6-5; 2nd Stage - A8-3, B4-6, C6-5

FAT BOY™
- Fat Boy™...and proud of it! Bullets its way to over 300 ft. (91 m) in altitude and recovers with a parachute.
- SPECS: Length: 18.7 in. (47.5 cm); Dia.: 2.5 in. (64 mm);
- Wt.: 3.0 oz. (85 g); Recovery: 18 in. (46 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 225 ft. (69 m);
- Recommended Engines: B4-2, B6-2, C6-3

STAR DART™
- This rocket soars through the air with amazing speed! It can hit altitudes over 2000 ft. (607 m).
- SPECS: Length: 16.25 in. (41.3 cm); Dia.: 0.74 in. (18.8 mm);
- Wt.: 1.0 oz. (28.2 g); Recovery: 12 in. (30 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 2010 ft. (613 m);
- Recommended Engines: 1/2A6-2, A8-3, B4-6, B6-6, C6-5, C6-7

SIZZLER®
- Burn up the sky with the Sizzler®! This rocket soars through the atmosphere with flights over 2000 ft. (607 m).
- SPECS: Length: 11.75 in. (29.8 cm); Dia.: 0.74 in. (18.8 mm);
- Wt.: 0.8 oz. (23.1 g); Recovery: 12 in. (30 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 2040 ft. (622 m);
- Recommended Engines: 1/2A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

MONARCH™
- The Monarch™ has a unique fin configuration that gives extra stability during flight. This regal rocket flies over 1000 ft. (305 m).
- SPECS: Length: 12.25 in. (30.6 cm); Dia.: 0.98 in. (24.8 mm);
- Wt.: 1.8 oz. (49.6 g); Recovery: 12 in. (30 cm) Parachute;
- Fins: Die cut balsa; Max. Altitude: 1225 ft. (373 m);
- Recommended Engines: A8-3, B4-4, B6-4, C6-5

HI-FLIER™
- Keep an eye on this one! The Hi-Flie™ rocket is a high altitude rocket. It soars over 1600 ft. (488 m), and is recovered by a bright orange streamer.
- SPECS: Length: 12 in. (30.5 cm); Dia.: 0.74 in. (18.8 mm);
- Wt.: 0.82 oz. (23.2 g); Recovery: Streamer; Fins: Die cut balsa;
- Max. Altitude: 1600 ft. (488 m);
- Recommended Engines: 1/2A6-2, A8-3, A8-5, B4-4, B6-4, C6-5, C6-7
SKILL LEVEL 2 ROCKET KITS

- Requires more skill in building and painting.
- Assembly time may take a complete day.
- Engines sold separately.

SAND'S II
DROGNET AT APOGEE!

GEMINI DC™

SLOW MACHIN™

OVER 6 FT.
LONG! (20 M)

A.R.Y. CONDOR™

CC EXPRESS™

BLACK BRANT II™

GREAT FOR 1ST TIME BUILDERS!

UNITED STATES

MEAN MACHINE™

BIG DADDY™

MERCURY REDSTONE

ESTES® model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.
SKILL LEVEL 2 ROCKET KITS

**GUARDIAN™**

- **Overview:** The Guardian™ rocket simulates a ground-to-air missile. It is a multi-finned ground-to-air missile that soars over 200 ft.
- **Specifications:** Length: 11.13 in. (28.2 cm); Dia.: 1.3 in. (33.5 mm); Wt.: 7.2 oz. (205 g); Recovery: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C4-2

**METER Masher™**

- **Overview:** The Meter Masher™ soars into the sky carrying 3 deep space cluster bombs. It is a multi-finned space cluster bomb rocket that soars over 200 ft.
- **Specifications:** Length: 27 in. (68.6 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**SCREAMIN' MIMI™**

- **Overview:** This rocket is designed to simulate a screaming, winged, flying bomb. It is a multi-finned space cluster bomb rocket that soars over 200 ft.
- **Specifications:** Length: 27 in. (68.6 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**THE DUDE™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 27 in. (68.6 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**BULL PUP 120™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 27 in. (68.6 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**SKILL LEVEL 3 ROCKET KITS

**PHOENIX™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 39 in. (99.1 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**COMANCHE-3™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 39 in. (99.1 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**ECHOSTAR™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 39 in. (99.1 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

**NIGHT WING™**

- **Overview:** This rocket is a multi-finned space cluster bomb rocket that soars over 200 ft. It is designed to simulate a screaming, winged, flying bomb.
- **Specifications:** Length: 39 in. (99.1 cm); Dia.: 1.33 in. (33.8 mm); Wt.: 6.0 oz. (170 g); Recovery: Jet: Max. Altitude: 12 in. (30 cm)
- **Engine Options:** Recommended Engines: A4-4, B4-4, C6-5

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*Estes® rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.*
\textbf{“E” ENGINE POWERED KITS}

- Estes® “E” engines - sold separately.
- For ages 8 and up. Adult supervision required for ages under 12.
- Requires Estes® Porta-Plan® E Launch Pad (EST-2325) and 8" Launch Controller (EST-2330) for use - sold separately.
- Can also be flown on Estes® “D” engines.

\textbf{ELIMINATOR™}

EST 1950

Reach new heights with this quick-build, high-flying sport rocket. The Eliminator™ comes with colored body tubes, nose cone and fin unit, so no painting is required.

\textbf{SPECs:}
- Skill Level: 1
- Length: 30.8 in. (78.2 cm)
- Diameter: 1.35 in. (34.3 mm)
- Weight: 4.6 oz. (130 g)
- Recovery: 12 in. (30 cm)
- PARACHUTE:
  - Finned: One piece plastic molded, Max. Altitude: 400 ft. (122 m)
  - Recommended Engines: C-11-5, D-12-5, D-12-7, E-9-6, E-9-8

\textbf{EXECUTIONER™}

EST 1951

Huge rocks stands over 3 ft. (0.9 m) tall! The Executioner™ comes with laser cut fins and a slotted body tube for precise fin alignment.

\textbf{SPECs:}
- Skill Level: 2
- Length: 38.5 in. (97.8 cm)
- Diameter: 2.6 in. (66.0 cm)
- Weight: 8.1 oz. (230 g)
- Recovery: 24 in. (61 cm)
- PARACHUTE:
  - Finned: Max. Altitude: 390 ft. (119 m)
  - Recommended Engines: D-12-3, E-9-4, E-9-6

\textbf{V-2}

EST 1952

Beautiful 1/19th scale model of a German ground-to-ground ballistic missile. Comes with blow molded nose cone and tail cone and vacuum formed fins.

\textbf{SPECs:}
- Skill Level: 4
- Length: 33.5 in. (85.1 cm)
- Diameter: 3.94 in. (100 mm)
- Weight: 12.05 oz. (345 g)
- Recovery: 24 in. (61 cm)
- PARACHUTE:
  - Finned: Vacuum formed plastic, Max. Altitude: 300 ft. (91 m)
  - Recommended Engines: D-12-3, E-9-4

\textbf{T25 CENTURIAN™}

EST 2021

Experience the thrill of combining boost glider technology with R/C aerobatics. The T25 Centurian™ is a twin tail sailplane that rockets to maximum soaring heights of close to 600 ft. (183 m). The T25 Centurian™ comes almost ready to fly with factory built and covered wings, tail and fuselage, with linkage installed. Requires 2-channel R/C system - sold separately.

\textbf{SPECs:}
- Wingspan: 34.5 in. (87.6 cm)
- Recommended Engines: D-12-3, E-9-4

Estes® model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

\textbf{ESTES® MODEL ROCKET ENGINES}

The famous model rocket engines that made model rocketry the great activity it is today. Estes® model rocket engines have been proven consistent and reliable in more than 500,000 launches.

- The concept of a factory assembled model rocket engine is the foundation of this scientific and educational activity!
- 3% of all Estes® engines are statically tested at the factory for reliability and adherence to performance specifications.
- All engines comply with the codes of the National Fire Protection Association and are certified by the National Association of Rocketry.

\textbf{HOW DOES A MODEL ROCKET ENGINE WORK?}

1. When engine is ignited, it produces thrust and propels rocket into sky.
2. After propellant is used up, delay is activated, producing tracking smoke and allowing rocket to coast.
3. After delay, ejection charge is activated, deploying recovery system.

\textbf{WHAT SIZES ARE AVAILABLE?}

Estes® engines are available in a wide variety of sizes and power levels:

<table>
<thead>
<tr>
<th>TYPE</th>
<th>TOTAL IMPULSE</th>
<th>ENGINE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4A</td>
<td>0.373 - 0.625</td>
<td>Mini, Mini</td>
</tr>
<tr>
<td>1/2A</td>
<td>0.626 - 1.25</td>
<td>Standard, Mini</td>
</tr>
<tr>
<td>A</td>
<td>1.26 - 2.50</td>
<td>Standard, Mini</td>
</tr>
<tr>
<td>B</td>
<td>2.51 - 5.00</td>
<td>Standard</td>
</tr>
<tr>
<td>C6</td>
<td>5.01 - 10.00</td>
<td>&quot;D&quot; Size</td>
</tr>
<tr>
<td>C7</td>
<td>5.01 - 10.00</td>
<td>&quot;D&quot; Size</td>
</tr>
<tr>
<td>D</td>
<td>10.01 - 20.00</td>
<td>&quot;E&quot; Size</td>
</tr>
<tr>
<td>E</td>
<td>20.01 - 30.00</td>
<td>&quot;E&quot; Size</td>
</tr>
</tbody>
</table>

\textbf{WHAT DO THE DIFFERENT COLOR ENGINES MEAN?}

- Single Stage - Green
- Upper Stage - Purple (Upper stage engines can be used as single stage engines in lightweight rockets)
- Booster - Red (Booster engines contain no delay or ejection charge)
- Plugged - Blue (Plugged engines are used for R/C gliders and contain no delay or ejection charge)

Each engine has a letter-number-number code. (e.g., B6-4)
- Letter B
- Number 6
- Number 4

<table>
<thead>
<tr>
<th>B = TOTAL IMPULSE</th>
<th>4 = TIME DELAY</th>
</tr>
</thead>
<tbody>
<tr>
<td>This letter is the total power (in Newton-seconds) produced by the engine. Each succeeding letter has up to twice the power of the previous letter. (Example: &quot;B&quot; engines have up to twice the power of &quot;A&quot; engines, which results in approximately twice the altitude the rocket will reach.)</td>
<td></td>
</tr>
<tr>
<td>This number gives you the time delay in seconds between the end of the thrust phase and ignition of the ejection charge. Engine types ending in &quot;D&quot; have no time delay or ejection charge, and are used for booster stages and special purposes only.</td>
<td></td>
</tr>
<tr>
<td>6 = AVERAGE THRUST</td>
<td>4 = TIME DELAY</td>
</tr>
<tr>
<td>This letter is the engine's average push or how fast the engine powers the rocket to go. The higher the number, the faster the speed. It is measured in Newtons (4.45 Newtons = 1 lb.).</td>
<td></td>
</tr>
</tbody>
</table>
### ESTES® ENGINE CHART

* Delays have a tolerance of plus or minus 10% or 1 second, whichever is greater.
* All Estes® engines come complete with igniters and patented Igniter plugs (Pat. No. 5,410,966 and 5,509,354). The Estes® Igniter Plug makes engine ignition extremely reliable.
* Do not fly a rocket/engine combination whose lift-off weight exceeds the recommended maximum lift-off weight.

#### SINGLE STAGE ENGINES (GREEN LABEL)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total impulse</th>
<th>Time Delay</th>
<th>Max. Lift Wt.</th>
<th>Max. Thrust</th>
<th>Thrust Duration</th>
<th>Initial Weight</th>
<th>Propellant Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1502</td>
<td>1/4A3-3T</td>
<td>0.625</td>
<td>3</td>
<td>1.0</td>
<td>28</td>
<td>4.9</td>
<td>1.1</td>
<td>0.25</td>
</tr>
<tr>
<td>1503</td>
<td>1/2A3-2T</td>
<td>1.25</td>
<td>2</td>
<td>2.0</td>
<td>57</td>
<td>8.3</td>
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#### UPPER STAGE ENGINES (PURPLE LABEL)

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<th>Total impulse</th>
<th>Time Delay</th>
<th>Max. Lift Wt.</th>
<th>Max. Thrust</th>
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<th>Propellant Weight</th>
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#### BOOSTER STAGE ENGINES (RED LABEL)

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<th>Total impulse</th>
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<th>Thrust Duration</th>
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#### PLUGGED ENGINES - FOR USE WITH R/C ROCKET GLIDERS (BLUE LABEL)

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<th>Propellant Weight</th>
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---

The data listed above is from randomly chosen production samples.

**NOTE:** The "*" designates a mini-engine.
ESTES® MODEL ROCKET ACCESSORIES

DESIGNER'S SPECIAL ........................ EST H63
Contains parts to design and build 7 of your own rockets.

BLAST-OFF® FLIGHT PACK .................. EST 1672
Includes 6 each of AB-3, B-4, C-3, C-5 engines, 30 igniters and 75 sheets of recovery wadding.

E™ LAUNCH CONTROLLER .................. EST 2330
Comes complete with safety key and 30 ft. (9 m) of cable. Requires 4 "AA" alkaline batteries - not included. Adult supervision is required for anyone under 16 when launching "E" engine powered rockets.

COMMAND CONTROL™ LAUNCH CONTROLLER .. EST 2334
The ultimate launch controller for model rockets. Comes with 30 ft. (9 m) of heavy duty cable. LED launch indicators and audible alerts. Power from one or two 12 volt NiCd battery packs (NICDs not included). Includes igniter and igniter plug storage compartment.

PORTA-PAD® LAUNCH PAD .................. EST 2238
Quick assembly - no glue or tools required. Includes 2 1/4 in. (6) mm launch rods, but can accommodate a 3/16 in. (5 mm) Max² launch rod - not included. Adult supervision required for anyone under 18 when launching "E" engine powered rockets.

PORTA-PAD® II LAUNCH PAD .............. EST 302215
Quick assembly - no glue or tools required! Comes complete with blast deflector and standoff, two-piece 1-1/8 in. (3 mm) launch rod, safety cap and key. PORTA-PAD II can accommodate a 3/16 in. (5 mm) Max² launch rod - not included.

ELECTRON BEAM™ LAUNCH CONTROLLER .. EST 302270
Launch controller comes complete with safety key and 17 ft. (5.2 m) of cable. Requires four "AA" alkaline batteries - not included.

TUBE MARKING GUIDE ....................... EST 302277
Easy way to mark for and launch lug placement. Also includes a tin gluing jig.

ALTITRAK™ ................................ EST 302282
Measure altitude with this easy-to-use device. Follow the rocket in the skies to apogee, release the trigger to lock the reading.

EMERGENCY REPAIR KIT .................... EST 302283
Contains shock cord mounts, tape, rings, safety key, recovery wadding. 12 in. (30 cm) assembled parachute, shroud line, launch lug, shock cord and launch rod safety cap.

BLAST DEFLECTOR PLATE ................... EST 303241
Replacement that won't dent out. Available in 1 in. (3 mm), 3/8 in. (10 mm), and 1/2 in. (12.5 mm) diameters.

1/8 in. (3 mm) TWO-PIECE LAUNCH ROD ... EST 302243
Replacement rod ideal for most rockets.

3/16 in. (5 mm) TWO-PIECE MAX™ LAUNCH ROD .. EST 302244
Launch rod with extra strength and flexibility for larger rockets.

12 in. (30 cm) PARACHUTE (Assembled) .. EST 302264

18 in. (46 cm) PARACHUTE (Assembled) .. EST 302267

24 in. (61 cm) PARACHUTE (Assembled) .. EST 302271

RECOVERY WADDI NG ........................ EST 302274
Flame resistant wadding protects recovery system. Required for most Estes rockets. Contains 35 sheets - enough for about 18-25 flights!

SHOCK CORDS & MOUNT PACK ............. EST 302278
Contains 2-1/4 in. x 18 in. (3 mm x 450 mm), and one 1/4 in. x 36 in. (6 mm x 910 mm) elastic shock cord (enough for four shock cords). Includes mounts and instructions.

MODEL ROCKET IGNITERS ................... EST 302301
Dispensable, easy-to-use Estes® Igniters in a convenient 6 pack. It is always a good idea to have a few spares.

LAUNCH LUG PACK .......................... EST 303320
Contains eight 1/8 in. (3 mm), four 3/16 in. (5 mm) and two 1/4 in. (6 mm) launch lugs.

BT-5 BODY TUBE ............................ EST 303304
Includes four 18 in. (45.7 cm) BT-5 body tubes.

BT-20 BODY TUBE ........................... EST 303305
Includes four 18 in. (45.7 cm) BT-20 body tubes.

BT-50 BODY TUBE ........................... EST 303106
Includes three 18 in. (45.7 cm) BT-50 body tubes.

BT-55 BODY TUBE ........................... EST 303107
Includes three 18 in. (45.7 cm) BT-55 body tubes.

BT-60 BODY TUBE ........................... EST 303108
Includes three 18 in. (45.7 cm) BT-60 body tubes.

BT-80 BODY TUBE ........................... EST 303109
Includes two 14 in. (36.1 cm) BT-80 body tubes.

ENGINE HOOP ACCESSORY PACK ............ EST 303143
Includes eyelets for "E" engine hoop installation.

REGULAR ENGINE MOUNT KIT ............. EST 303158
Fits BT-50, 55, 56 & 60 tubes. Plus can be used to make a conversion mount for lightweight D powered rockets.

D AND E ENGINE MOUNT KIT ............. EST 303159
Heavy duty engine mounts for "D" and "E" engines. Fits BT-55, 60 and 90 tubes.

NC-5 NOSE CONE ASSORTMENT (5 pack) .... EST 303160

NC-70 NOSE CONE ASSORTMENT (4 pack) ... EST 303161

NC-50 NOSE CONE ASSORTMENT (5 pack) ... EST 303162

NC-55 NOSE CONE ASSORTMENT (4 pack) ... EST 303163

NC-56 NOSE CONE ASSORTMENT (4 pack) ... EST 303164

NC-64A NOSE CONE ASSORTMENT (2 pack) ... EST 303165

NC-88 NOSE CONE (1 pack) .................. EST 303168

LARGE TUBE COUPLER PACK ............... EST 303196
Includes two couplers for BT-55, BT-56, and BT-60; One for BT-80.

ESTES® ROCKETRY AND EDUCATION
FOR MORE DETAILS AND INFORMATION ON OUR MODEL ROCKET EDUCATIONAL SUPPLIES, SEE THE ESTES EDUCATOR™ CATALOG OR VISIT US AT: www.esteseducator.com

ESTES AIR™ ROCKET CLASS PACK™ NEW! EST 1778
(Pictured at right) Rocketry for Primary Grades
- Rockets COMPLETELY POWERED BY AIR!
- Includes Teacher's Hands-On Activity Guide
- Fulfills Many National Education Standards

CLASS PACK INCLUDES:
1 - ESTES AIR™ Pump & Launcher
1 - "Awesome Estes Air™ Rocket Activities" - Teacher's Guide
30 - ESTES AIR™ Rocket Kits
90 - Colorful Decal Sheets

MODEL ROCKET BULK PACKS
12 rockets per pack, complete with 12 sets of instructions and extra parts.

EX2D SERIES

Gnome® Bulb Pack (See page 10 for rocket description)

Alpha 110B Bulb Pack (See page 10 for rocket description)

Generic EX2® Bulb Pack (Pictured at right)

X-Ray® Bulb Pack (See page 10 for rocket description)

SKILL LEVEL 1

Wizard™ Bulb Pack (See page 16 for rocket description)

Viking™ Bulb Pack (See page 16 for rocket description)

SKILL LEVEL 2

Loadstar™ Bulb Pack (See on the web)

Polaris™ Bulb Pack (Pictured at right)

MODEL ROCKET ENGINE BULK PACKS
Includes 24 engines and ignitor plugs, 30 igniters and a package of recovery wadding - 75 sheets. (Pictured at right)

1/2A3-21 Bulk Pack

1/2A3-41 Bulk Pack

AB-3 Bulk Pack

AB-4 Bulk Pack

B-60/66-6 Bulk Pack (12 each)

C-65 Bulk Pack

Blas-O-Flio® Flight Pack

Includes 6 each: AB-3, B-64, C-63, C-65

CURRICULA

Industrial Technology & Model Rockets™

Aviation and Light Gliders™

Ignite the Imagination Curriculum Guide

For grades 4-12

For grades 2-4

(Pictured at right)

Video

Includes lessons in the Ignite the Imagination™ Curriculum Guide.

Total running time: 23 minutes.
**FLIGHT MASTER™**

FLIGHT MASTER® RAVEN™
FLIGHT MASTER® CONDOR™

Wind 'em up...toss 'em into the wind...and let the flying adventures begin. The Flight Master® Raven and Condor are easy-to-build, scale-looking, rubber band powered airplanes that soar through the sky. Perfect for flying at parks or playgrounds.

**SPECS:**
- Wingspan: 15 in. (38.1 cm)
- Length: 18 in. (46 cm)

**SKY RANGERS™**

Take the fear out of learning to fly R/C. Sky Rangers™ are easily assembled in minutes and recharge in 60-75 seconds so you can fly over and over. Each set includes a plane, single-channel radio, pocket-size quick charger, batteries for the plane and instructions. You'll also get access to Pappy's Online Flight Simulator to practice flying right at home! Recommended for ages 8 and up with adult supervision for those under 10.

**PAPPY'S FLIGHT SCHOOL**

Pappy's Flight School has excellent high-wing stability for the novice R/C pilot. Practice on Pappy's Online Flight Simulator and you'll be dipping through the skies with confidence.

**SPECS:**
- Wingspan: 21.5 in. (54.6 cm)
- Length: 16 in. (40.6 cm)
- Radio: Single Channel, 27.045 MHz
- Radio Range: 150 ft (46 m)

Includes 4 "C" and 6 "AAA" batteries - not included.

**PAPPY'S FIGHTER SCHOOL**

The Fighter School trainer is an outstanding low-wing performance R/C plane. With a little practice on Pappy's Online Flight Simulator, you'll be screaming through the skies in no time.

**SPECS:**
- Wingspan: 17 in. (43.2 cm)
- Length: 17 in. (43.2 cm)
- Radio: Single Channel, 26.995 MHz
- Radio Range: 150 ft (46 m)

Includes 6 "C" and 6 "AAA" batteries - not included.

**SPICY WINGS®**

**SPICY WINGS® ELECTRIC PLANES**

These hot little planes can circle the sky for more than a minute on a single charge of just 45 seconds! Great for parks, playgrounds or athletic fields. Available in three sporty styles, each ready to fly, including a pocket-size charger that restores power in just seconds. (Requires 2 "AA" alkaline batteries - sold separately). Recommended for ages 7 and up.

**SPECS:**
- Length: 11.38 in. (28.0 cm)
- Wingspan: 13 in. (33 cm)

**KICK DIS™ POWER PUCK**

Hit it with a stick, play soccer or hockey with it, even use it to bowl. The Kick Dis™ Power Puck floats on a cushion of air and is surrounded by a tough rubber bumper, so it can be played with indoors or out. Includes rechargeable NiCd battery and a wall mount charger.

**SPECS:**
- Diameter: 7.5 in. (19.1 cm)
ESTES AIR™ GL-X200™ AIR ROCKET SYSTEM
EST 1880
The Estes Air™ GL-X200™ sends a rocket to awesome heights with a few pumps of air. Quick to set up and easy to operate. The Estes Air™ GL-X200™ comes with two RTF rockets, pump and launcher.
SPECs: Rocket Length: 10.5 in. (26.7 cm); Max. Altitude: 250 ft. (76 m); Recovery: Bounce
Recommended for ages 10 and up. Adult supervision for those under 10.

ESTES AIR™ HL-X150™ HAND LAUNCH ROCKET SYSTEM
EST 1877
For the first time ever, kids can launch real rockets right out of their hand. The Estes Air™ HL-X150™ is a hand launch system that blasts miniature air rockets up to 150 ft. (46 m) using the power of air. It comes with a pistol grip pump/launcher and 2 RTF miniature rockets.
SPECs: Rocket Length: 7 in. (17.8 cm); Max. Altitude: 150 ft. (46 m); Recovery: Bounce
Recommended for ages 10 and up. Adult supervision for those under 10.

www.estesrockets.com

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