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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 EZX® 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 information booklet to get you out and flying in no time. You'll need four 'AA' alkaline batteries and perhaps glue, depending on which set you select.

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.

EZX® ROCKET KITS: No paint or special tools needed. EZX® kits contain parts that are colored and easy to assemble. Simply glue the parts together as per the instructions, apply 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 rub-down decals. 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 and parts, unfinished body tubes, basic designs and plastic nose cones. Assembly 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 may take a couple of days.

SKILL LEVEL 4 ROCKET KITS: The most advanced kit level. Requires high degree of model rocket construction and finishing skills. Features multiple die-cut balsa parts, vacuum formed plastic detailing, unfinished body tubes and water soluble decals. Assembly can take several days depending on detail required.

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 45 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 travels. At the rocket's peak attitude (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 ephoned for another flight.

WHERE DO I FLY ESTES MODEL ROCKETS?

The chart on the next page tells you what size field to use for each 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 29-31) of this catalog for more information.
HOW DID IT ALL GET STARTED:

In the mid-1950's when the space age began, flying rockets became very popular. However, there were no safe propellants readily available to launch rockets. In 1958, Vernon Estes developed the first safe mass-produced model rocket engine. The Estes rocket engine was destined to make model rocketry one of the most popular outdoor activities enjoyed today. Estes products have changed with the times and you can see all the exciting rockets, planes and specialty items in this catalog or on the web @ www.estesrockets.com.

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 sort 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!

PARTS OF A MODEL ROCKET

[Diagram showing parts of a model rocket]

Model rocket kits are constructed of lightweight materials such as paper, balsa and plastic. This diagram shows how parts fit together. Nearly all Estes parts that have the same series description number fit together. For example, a BT-50 body tube will fit a NC-20 nose cone. An M-50 centering ring will center a BT-20 into a BT-50.

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 kit containing any defect or causing any damage may void the Estes warranty.

ESTES WARRANTY

Your Estes product is warranted against defects in materials or workmanship for a period from the date of original purchase. Any Estes product, which, because of a manufacturing mistake, malfunction or proves to be defective within the period noted in the warranty provided with the product will be repaired or replaced, at Estes’ option and at no charge to you, provided it is returned to Estes with proof of purchase.

This warranty does not cover incidental or consequential damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted product. Some states do not allow the 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.

N.A.R.* MODEL ROCKET SAFETY CODE

Effective February 10, 2001

1. MATERIALS. I will use only lightweight, non-metal 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 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 launcher's 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 before launch, 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 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 launchers 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 4.4 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 (113 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 risk of grass fires.

LAUNCH SITE DIMENSIONS

<table>
<thead>
<tr>
<th>Installed Total Impulse</th>
<th>Equivalent Motor Type</th>
<th>Minimum Size Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>80-125</td>
<td>1/4A, 1/2A</td>
<td>50 x 5</td>
</tr>
<tr>
<td>1.25-3.50</td>
<td>A</td>
<td>100 x 10</td>
</tr>
<tr>
<td>2.50-5.50</td>
<td>B</td>
<td>200 x 20</td>
</tr>
<tr>
<td>5.50-10.00</td>
<td>C</td>
<td>400 x 40</td>
</tr>
<tr>
<td>10.00-20.00</td>
<td>D</td>
<td>500 x 50</td>
</tr>
<tr>
<td>20.00-40.00</td>
<td>E</td>
<td>1,000 x 100</td>
</tr>
<tr>
<td>40.00-80.00</td>
<td>F</td>
<td>2,000 x 200</td>
</tr>
<tr>
<td>80.00-160.00</td>
<td>G</td>
<td>4,000 x 400</td>
</tr>
<tr>
<td>160.00-320.00</td>
<td>Two 6's</td>
<td>8,000 x 800</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) including propellant or rockets containing more than 4 oz. (113 g) but not more than 4.4 oz. (125 g) of propellant (net weight), you must notify and perhaps 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
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.
- Includes free Kodak 110 Color Film!

**New!**

**U.S. Army**

**New!**

**N.S.A. Starship™**
- The N.S.A. Starship is a classic scale-like model rocket that is built ready-to-fly and looks like the genuine surface-air defense missile used by the U.S. Army.
- Includes free Kodak 110 Color Film!

**Patriot**
- The Patriot dominates the skies. This classic scale-like model rocket is built ready-to-fly and looks like the genuine surface-air defense missile used by the U.S. Army.
- Includes free Kodak 110 Color Film!

**SNAPSHOT™**
- Take fantastic photos from 500 feet high! The Snapshot™ camera rocket is factory assembled and ready to launch. Includes a FREE roll of Kodak 110 color film. Film developing available locally.
- Includes free Kodak 110 Color Film!

**Every Starter Set Includes Launch Equipment & Flight Supplies!**

*Estes model rocketry is recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age. Must be 14 to purchase in California or New Jersey.*
**E2X® STARTER SETS**

**1406 ALPHA III**
- Features a bright molded one piece fin unit and nose cone and engine for two fantastic parachute recovered flights.
- **SPEC**: Length: 12.25 in. (31.1 cm);
- **Dia.**: 0.98 in. (24.9 mm);
- **Wt.**: 1.2 oz. (34 g);
- **Recovery**: 12 in. (30 cm) Parachute;
- **Fins**: One piece plastic molded;
- **Max. Altitude**: 1100 ft. (335 m);
- **Recommended Engines**: 1/2A-6-2, A8-3, A8-5, B4-4, B6-4, C6-6, C6-7 (includes two engines)

**1407 STARS & STRIPES**
- Includes a Red, White and Blue model rocket and a choice between 2 self-adhesive patriotic decals. A special edition, 4 in. x 6 in. Freedom Flag decal is also included to proudly display.
- **SPEC**: Length: 17.5 in. (44.5 cm);
- **Dia.**: 1.0 in. (25.4 mm);
- **Wt.**: 2.3 oz. (65 g);
- **Recovery**: American Flag Streamer;
- **Fins**: Two piece plastic molded;
- **Max. Altitude**: 600 ft. (183 m);
- **Recommended Engines**: A8-3, B4-4, B6-4, C6-5, C6-7 (includes two engines)

**1431 MINI SUPER SHOT**
- Features two mini-engine powered rockets that can be ready to fly in an hour. Also includes special mini-rocket launch pad.
- **SPEC**: Length: Space Bus™ - 5.25 in. (13.3 cm);
- Space Hauler™ - 3.38 in. (8.6 cm);
- **Dia.**: Space Bus™ - 1.0 in. (25.4 mm); Space Hauler™ - 0.75 in. (19.1 mm);
- **Wt.**: Space Bus™ - 0.74 oz. (21.2 g);
- Space Hauler™ - 0.67 oz. (19 g);
- **Recovery**: Streamer;
- **Fins**: Plastic molded;
- **Max. Altitude**: Space Bus - 700 ft. (213 m); Space Hauler - 460 ft. (140 m);
- **Recommended Engines**: 1/4A3-3T, 1/2A3-4T, A3-4T, A10-3T (includes two engines)

**1474 MEGA MAXX**
- The Mega Maxx™ combines the power of the over-two-foot tall Gold™ with the speed of the Spitfire™. The easy to assemble Gold™ flies to 500 feet while the simple to build Spitfire™ screams to 900 feet! (includes two engines)
- **COLLAPSY™**
- **SPEC**: Length: 28 in. (71.1 cm);
- **Dia.**: 1.34 in. (34 mm);
- **Wt.**: 3 oz. (85 g);
- **Recovery**: 18 in. (46 cm) Parachute;
- **Fins**: Plastic molded;
- **Max. Altitude**: 900 ft. (274 m);
- **Recommended Engines**: B4-2, B4-4, B6-4, B6-6, C6-3, C6-5
- **SPITFIRE SSS™**
- **SPEC**: Length: 16.25 in. (41.3 cm);
- **Dia.**: 0.98 in. (24.9 mm);
- **Wt.**: 1.7 oz. (48 g);
- **Recovery**: 12 in. (30 cm) Parachute;
- **Fins**: Die cut balsa;
- **Max. Altitude**: 900 ft. (274 m);
- **Recommended Engines**: 1/2A6-2, A8-3, B4-4, B6-4, B6-6, C6-5, C6-7 (includes two engines)

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Estes model rockets are recommended for ages 10 years and up. Adult supervision is recommended for those under 12 years of age. Must be 14 to purchase in California or New Jersey.

Colors may vary.

www.estesrockets.com
READY TO FLY (RTF) ROCKETS

SNATCH™
- Great First Rocket
- No Painting
- No Assembly Required
- Engines and Launch Equipment Sold Separately

Cruise Missile™
- All New! Snaps Together!
- No Assembly
- Self-adhesive decals
- Engines and Launch Equipment Sold Separately

E2X™ ROCKET KITS
- Easy to Assemble
- No Painting
- Self-adhesive decals
- Engines and Launch Equipment Sold Separately

HIGH FLYING 3 FIN DESIGN

NEW! E2X™ ROCKET KITS

HIGH PERFORMANCE 4 FIN DESIGN

ALL NEW! SNAPS TOGETHER!

Colors may vary.

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**

**MINI MEANIE**
- Get out of the way... the Mini Meanie™ is tearing up the sky. It soars up to 700 ft. (213 m). The Mini Meanie™ comes with a colored nose cone and body halves, so no painting is required.
- **SPECs:**
  - Length: 5.25 in. (13.3 cm)
  - Dia.: 1.10 in. (27.9 mm)
  - Wt.: 0.74 oz. (21.2 g)
  - Recovery: Streamer
  - Fins: Plastic molded
  - Max. Altitude: 700 ft. (213 m)
  - Recommended Engines: 1/A4-3T, 1/A2A-3T, A3-4T, A10-3T

**FREAKY FLYER**
- 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: 5.38 in. (13.7 cm)
  - Dia.: 0.75 in. (19.1 mm)
  - Wt.: 0.67 oz. (18.9 g)
  - Recovery: Streamer
  - Fins: Plastic molded
  - Max. Altitude: 750 ft. (228 m)
  - Recommended Engines: 1/A4-3T, 1/A2A-3T, A3-4T, A10-3T

**ALPHA III**
- The very first Estes E2X® rocket! One-piece fin unit for easy construction. Millions have started with this classic design.
- **SPECs:**
  - Length: 12.3 in. (31.1 cm)
  - Dia.: 0.98 in. (24.8 mm)
  - Wt.: 1.1 oz. (34 g)
  - Recovery: 12 in. (30 cm) Parachute
  - Fins: One-piece plastic molded
  - Max. Altitude: 1100 ft. (335 m)
  - Recommended Engines: A1/2A-6-2, A8-3, A8-5, B4-4, B6-4, C6-3, C6-7

**NO. 2 ESTES SKY WRITER**
- This fun rocket looks like a wooden pencil. It "sky writes" up to 1000 ft. (336 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: 26 in. (66 cm)
  - Dia.: 0.98 in. (24.8 mm)
  - Wt.: 1.5 oz. (41.3 g)
  - Recovery: 12 in. (30 cm) Parachute
  - Fins: One-piece plastic molded
  - Max. Altitude: 1100 ft. (335 m)
  - Recommended Engines: A8-3, B4-4, B6-4, C6-5

**COSMIC COBRA**
- 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 - Helicopters
  - Fins: Two-piece plastic molded
  - Max. Altitude: 550 ft. (167 m)
  - Recommended Engines: B4-2, B6-2, B6-4, C6-3, C6-5

**BLUE NINJA**
- The Blue Ninja™ is the biggest rocket in the E2X® line! It stands over 30 in. (76.2 cm) tall and is 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
  - Fins: Plastic molded
  - Max. Altitude: 760 ft. (230 m)
  - Recommended Engines: C11, D12-3
  - Requires 3/4" (5 mm) Max™ launch rod (30224) - sold separately.
**SKILL LEVEL 1 ROCKET KITS**

**LEVEL 1**
- Quick and easy to build kits with sanding, cutting and painting required
- Some kits feature a Through-The-Tube Fin System
- Engines and launch equipment sold separately

---

**NEW! GO BALLISTIC!**

**QUARK** 0802
- Mini-engine powered mighty mite. With incredibly simple construction (only seven parts), a little spray paint and decals, and whoosh - out-of-sight flights to 700 ft. (213 m).
- Quick featherweight recovery for this micro rocket.
- **SPECS:** Length: 5.2 in. (13.2 cm); Dia: 0.34 in. (8.7 mm); Wt: 0.1 oz. (3 g)
- **Recovery:** Featherweight
- **Fin:** Die cut balsa
- **Max. Altitude:** 700 ft. (213 m)
- **Recommended Engines:** 1/4A3-3T, 1/2A3-4T, A3-4T, A10-3T

---

**220 SWIFT** 0810
- This fun and easy to build "sty-bity" rocket really soars through the sky. The 220 Swift is sleek and launches on mini-engines then tumbles back to earth.
- **SPECS:** Length: 9.5 in. (24.1 cm); Dia: 0.34 in. (8.7 mm); Wt: 0.094 oz. (2.7 g)
- **Recovery:** Featherweight
- **Fin:** Die cut balsa
- **Max. Altitude:** 750 ft. (230 m)
- **Recommended Engines:** 1/4A3-3T, 1/2A3-4T, A3-4T, A10-3T

---

**ALPHA** 1225
- 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!
- **SPECS:** Length: 12.3 in. (31.3 cm); Dia: 0.98 in. (24.9 mm); Wt: 0.8 oz. (23 g)
- **Recovery:** 12 in. (30 cm) Parachute
- **Fin:** Die cut balsa
- **Max. Altitude:** 1000 ft. (305 m)
- **Recommended Engines:** 1/2A6-2, A8-3, A8-5, B4-4, B4-4, B6-4, C6-5, C6-7

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**BABY BERtha** 1261
- 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)
- **SPECS:** Length: 12.75 in. (32.4 cm); Dia: 1.64 in. (41.6 mm); Wt: 1.6 oz. (45.3 g)
- **Recovery:** 12 in. (30 cm) Parachute
- **Fin:** Die cut balsa
- **Max. Altitude:** 575 ft. (175 m)
- **Recommended Engines:** A8-3, B4-4, B6-4, C6-5

---

**WIZARD** 1292
- No tricks here - the Wizard is an easy to build high-performance kit. A great first or second kit that promotes real excitement and fun.
- **SPECS:** Length: 12 in. (30.5 cm); Dia: 0.74 in. (18.8 mm); Wt: 0.4 oz. (12 g)
- **Recovery:** Streamer
- **Fin:** Die cut balsa
- **Max. Altitude:** 1500 ft. (457 m)
- **Recommended Engines:** 1/2A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

---

**STORMCASTER** 1301
- Go big on a small budget! Powered by the "C11" 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)
- **SPECS:** Length: 30.25 in. (76.8 cm); Dia: 1.64 in. (41.6 mm); Wt: 2.7 oz. (76.8 g)
- **Recovery:** 18 in. (46 cm) Parachute
- **Fin:** Die cut balsa
- **Max. Altitude:** 930 ft. (283 m)
- **Recommended Engines:** C11-3, C11-5, D12-5

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

www.estesrockets.com
# ESTES 2004 RETAIL PRICE LIST

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## ESTES AIR™ ROCKET SETS

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## ROCKET POWERED RACE SETS

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## MODEL ROCKET STARTER SETS

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## MINI-ENGINE MODEL ROCKET KITS

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<td>Finshawk™</td>
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## D AND E ENGINE MODEL ROCKET KITS

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## D AND E ENGINE MODEL ROCKET KITS

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## MODEL ROCKET MINI-ENGINES

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## MODEL ROCKET STANDARD AND D ENGINES

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<td>300274</td>
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### TECHNICAL SPECIFICATIONS

- **Length**: 11 in. (27.9 cm)
- **DIA**: 0.74 in. (18.8 mm)
- **WT**: 0.4 oz. (12 g)
- **RECOVERY**: Streamer
- **FINS**: Die cut baffles
- **MAX ALTITUDE**: 1400 ft. (427 m)
- **RECOMMENDED ENGINES**: 1/2A6-2, A8-3, B8-5, B4-4, B6-4, B6-6, C6-5, C6-7

### PRODUCT LIST

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<td>1764</td>
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### EDUCATOR BULK PACKS

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### PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

**QUANTITIES OF SOME PRODUCTS ARE LIMITED.**

(*) Sold as the 9114 Assortment

(**) Sold as the 9115 Assortment

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

Estes-Cox Corp. is an equal opportunity employer.
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**

**BIG DADDY**
Backed by the power of the mighty Estes "D" engine, this rocket is KIT6172.
- **SPCS**: Length: 19 in. (48.3 cm)
- Diameter: 3.0 in. (76.2 mm)
- Weight: 53 oz. (150 g)
- Recovery: 24 in. (61 cm) Parachute
- Fins: Die-cut balsa
- Max. Altitude: 350 ft. (107 m)
- Recommended Engines: C11, D12-3, D12-5
- Requires 3/16 in. (5 mm) Max!™ launch rod (302244) - sold separately.

**MERCURY REDSTONE**
Perfect for beginners in scale model rocket building. Includes Liberty Bell 7 decals commemorating the return of Gus Grissom's capsule that was lost at sea for 38 years.
- **SPCS**: Length: 33.5 in. (85.1 cm)
- Diameter: 1.6 in. (40.6 mm)
- Weight: 3.0 oz. (84 g)
- Recovery: 12 in. (30 cm) and 18 in. (46 cm) Parachutes
- Fins: Plastic molded
- Max. Altitude: 500 ft. (152 m)
- Recommended Engines: B6-4, C6-3, C6-5

**NEMESIS**
One of the most feared spaceships in the galaxy and a high-flying hit!
- **SPCS**: Length: 16.25 in. (41.3 cm)
- Diameter: 0.98 in. (25.4 mm)
- Weight: 1.8 oz. (50 g)
- Recovery: 12 in. (30 cm) Parachutes
- Fins: Die-cut balsa
- Max. Altitude: 1275 ft. (383 m)
- Recommended Engines: A8-3, B4-4, B6-4, C6-5

**DURANDON**
The Guardian™ rocket simulates a ground-to-air missile. The multi-finned guardian of the sky soars over 200 ft. (61 m).
- **SPCS**: Length: 19.13 in. (48.6 cm)
- Diameter: 1.33 in. (33.8 mm)
- Weight: 2.4 oz. (68.6 g)
- Recovery: 12 in. (30 cm) Parachutes
- Fins: Die-cut balsa
- Max. Altitude: 723 ft. (220 m)
- Recommended Engines: A8-3, B4-4, B6-4, B6-6, C6-5

**METEOR Masher**
The Meteor Masher™ soars into the sky carrying 3 deep space cluster bombs.
- **SPCS**: Length: 27 in. (68.6 cm)
- Diameter: 1.33 in. (33.8 mm)
- Weight: 4.0 oz. (113 g)
- Recovery: 12 in. (30 cm) Parachutes
- Fins: Die-cut balsa
- Max. Altitude: 490 ft. (149 m)
- Recommended Engines: B4-2, B4-4, B6-2, B6-4, C6-3, C6-5

**SCREAMIN’ MINI**
Launch and listen to this amazing, screaming rocket. The Screamin’ Mini™ rocket whistles while flying. It is powered by Estes C11 and D engines.
- **SPCS**: Length: 25.5 in. (65.8 cm)
- Diameter: 1.64 in. (41.7 mm)
- Weight: 3.5 oz. (100 g)
- Recovery: 12 in. (30 cm) Parachute
- Fins: Die-cut balsa
- Max. Altitude: 752 ft. (229 m)
- Recommended Engines: C11-3, D12-3, D12-5
- Requires 3/16 in. (5 mm) Max!™ launch rod (302244) - sold separately.

**BULL PUP 120™**
Sport scale versions of the USAF AGM-12D Bull Pup. Plastic tail cone and authentic color decals! Great first scale model.
- **SPCS**: Length: 15.6 in. (39.6 cm)
- Diameter: 1.33 in. (33.8 mm)
- Weight: 1.8 oz. (51 g)
- Recovery: 12 in. (30 cm) Parachute
- Fins: Die-cut balsa
- Max. Altitude: 625 ft. (190 m)
- Recommended Engines: A8-3, B4-4, B6-4, C6-5

www.estesrockets.com
SKILL LEVEL 3 ROCKET KITS

**Phoenix**
- 1/9th semi-scale model of the AIM-94 air-to-air Phoenix missile.
- "D" engine powered.
- Specifications: Length: 30 in. (76.2 cm);
  Diameter: 2.6 in. (66 mm);
  Weight: 6.6 oz. (187 g);
- Recovery: 18 in. (46 cm) parachute;
- Fins: Die-cut balsa;
- Max Altitude: 350 ft. (107 m);
- Recommended Engines: D12-1 OR ONLY. Requires 3/16 in. (5 mm) Maxi™ launch rod (302244) - sold separately.

**Comanche-3**
- "D" engine powered booster stage rocket that roars to ultra high altitudes - over half a mile (805 m) high.
- Specifications: Length: 41 in. (104.1 cm);
  Diameter: 0.78 in. (19.9 mm);
  Weight: 21 oz. (59 g);
- Recovery: Booster-Jumbler, Main Stage-2 Streamers;
- Fins: Die-cut balsa;
- Max Altitude: 2600 ft. (813 m);
- Recommended Engines: Single Stage Flights - A8-3, B4-4, B6-4, C6-5; Three Stage Flights - Booster: C10-0, D12-0, Second Stage: B6-0, C6-0; Third Stage: B6-6, C6-7. Requires 3/16 in. (5 mm) Maxi™ launch rod (302244) - sold separately.

**SR-71 Blackbird**
- Build and fly the world's fastest jet! This SR-71 Blackbird™ is a scale model and includes authentic looking "Blackbird Skin" plastic components and decals.
- Specifications: Length: 19.0 in. (48.3 cm);
  Diameter: 0.75 in. (19.0 mm);
  Weight: 3.2 oz. (90.7 g);
- Recovery: 18 in. (46 cm) parachute;
- Fins: Die-cut balsa;
- Max Altitude: 600 ft. (183 m);
- Recommended Engines: B4-2, B6-2, B6-4, C6-5.

**Renegade**
- Going staged is awesome! Witness a magnificent lift-off with the Renegade™. It's over two feet tall and can be launched as a single stage or two-stage rocket.
- Specifications: Length: 36.6 in. (93.0 cm);
  Diameter: 1.637 in. (41.6 mm);
  Weight: 4.3 oz. (120.9 g);
- Recovery: 12 in. (30 cm) parachute;
- Fins: Die-cut balsa;
- Max Altitude: 850 ft. (260 m);
- Recommended Engines: Single Stage - A8-3, B4-4, B6-4, C6-5; Two Stages: Booster - B6-0, C6-0; 2nd Stage: A8-5, B6-4, B6-6, C6-5, C6-7.

**Outlander™**
- Get ready to explore the outer rim of the galaxy with the Outlander™. It's space-look design and decals complement the unique "Chute & Lander" recovery system.
- Specifications: Length: 12.5 in. (31.8 cm);
  Diameter: 1.375 in. (34.8 mm);
  Weight: 4.2 oz. (120.2 g);
- Recovery: 18 in. (46 cm) parachute;
- Fins: Die-cut balsa;
- Max Altitude: 200 ft. (61 m);
- Recommended Engines: B4-2, B6-2, C6-3.
"E" ENGINE POWERED KITS

- Estes "E" engines - sold separately.
- For ages 10 and up. Adult supervision required for ages under 18.
- Requires Estes Porta-Pad® E Launch Pad (2238) and "E" Launch Controller (2239) for use - sold separately.
- Can also be flown on Estes "D" engines.

ELIMINATOR™ 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.

SPECs: Skill Level: 2 Length: 30.8 in. (78.2 cm)
Dia.: 1.35 in. (34.3 mm) Wt.: 4.6 oz. (130 g)
 Recovery: 22 in. (56 cm) Parachute
Fins: One piece plastic molded
Max. Altitude: 1420 ft. (438 m)
Recommended Engines: C1-3, D12-5, D12-7, E9-6, E9-8

EXECUTIONER™ 1951
Huge rocket stands over 3 ft. (0.9 m) tall. The Executioner™ comes with laser cut fins and a molded body tube for precise fin alignment.

SPECs: Skill Level: 3 Length: 38.5 in. (97.9 cm)
Dia.: 2.6 in. (66.0 mm) Wt.: 8.1 oz. (230 g)
 Recovery: 24 in. (61 cm) Parachute
Fins: Laser cut wood
Max. Altitude: 590 ft. (180 m)
Recommended Engines: D12-3, E9-4, E9-6

V-2 1552
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.

SPECs: Skill Level: 6 Length: 35.5 in. (89.1 cm)
Dia.: 3.94 in. (100 mm) Wt.: 12.05 oz. (345 g)
 Recovery: Two 24 in. (61 cm) Parachutes
Fins: Vacuum formed plastic
Max. Altitude: 300 ft. (91 m)
Recommended Engines: D12-3, E9-4

T-25 CENTURII™ 2201
Experience the thrill of combining boost glider technology with R/C aerobatics. The T-25 Centurian™ is a twin tail sailplane that rocket to maximum soaring heights of close to 600 ft. (181 m). The T-25 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.

SPECs: Wingspan: 34.5 in. (87.6 cm)
Recommended Engines: D11-1, E9-P

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

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 300,000,000 launches.

- The concept of a factory-assembled model rocket engine is the foundation of this scientific and educational activity!
- 2% of all Estes engines are stabilized 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.

HOW DOES A MODEL ROCKET ENGINE WORK?
1. When engine is ignited, it produces thrust and boosts 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.

WHAT SIZES ARE AVAILABLE?
Estes engines are available in a wide variety of sizes and power levels:

<table>
<thead>
<tr>
<th>TYPE TOTAL</th>
<th>IMPULSE</th>
<th>ENGINE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4A</td>
<td>0.39 - 0.625</td>
<td>Min.</td>
</tr>
<tr>
<td>1/2A</td>
<td>0.626 - 1.25</td>
<td>Standard, Min.</td>
</tr>
<tr>
<td>A</td>
<td>1.26 - 2.50</td>
<td>Standard, Mini</td>
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<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>Standard</td>
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<td>5.01 - 10.00</td>
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<tr>
<td>D</td>
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<tr>
<td>E</td>
<td>20.01 - 30.00</td>
<td>&quot;E&quot; Size</td>
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WHAT DO THE DIFFERENT COLOR ENGINES MEAN?
Each type of engine is printed in a different color:
- Single Stage - Green
- Upper Stage - Purple (Upper stage engines can be used as single stage engines in light weight 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

B = TOTAL IMPULSE
This letter is the total power (in Newtons/seconds) produced by the engine. Each succeeding letter has up to twice the total power as the previous letter. (Example: B engines have up to twice the power of A engines, which results in approximately twice the altitude the rocket will reach.)

E = AVERAGE THRUST
This number shows 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.)

4 = TIME DELAY
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 "D" have no time delay or ejection and are used for booster stages and special purposes only.
**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. 5,490,966 and 5,509,364). 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.

<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>
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**UPPER STAGE ENGINES (PURPLE LABEL)**

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<th>Time Delay</th>
<th>Max. Lift. Wt.</th>
<th>Max. Thrust</th>
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**BOOSTER STAGE ENGINES (RED LABEL)**

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<th>Max. Thrust</th>
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<th>Propellant Weight</th>
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<td>0.98</td>
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<td>7.4</td>
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**PLUGGED ENGINES (FOR USE WITH HOCKET POWERPACK/PISTOL GRIP POCKET GUIDES) (BLUE LABEL)**

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<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>
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<th>Propellant Weight</th>
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<td>A10-PT</td>
<td>2.50</td>
<td>None</td>
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<td>1669</td>
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<td>425</td>
<td>5.6</td>
<td>2.0</td>
<td>56.0</td>
</tr>
</tbody>
</table>

The data listed above is from randomly chosen production samples.

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

**RECOVERY CORDS AND MOUNTS**: 302270
Contains 108' of 1/8" carabiner cord, one 1/4" x 60" line, and two 16" carabiners.

**SHOCK CORDS & MOUNT PACK**: 302280
Contains 2 shock cords (18' and 30') and 2 carabiners.

**MODEL ROCKET IGNITERS**: 302300
Contains 24 loose igniters and 36 igniter sleeves.

**LAUNCH LUG PACK**: 302320
Includes 4 launching lugs and 4 rubber bands.

**BT-5 BODY TUBE**: 302364
Includes four 18" (45.7 cm) BT-5 body tubes.

**BT-6 BODY TUBE**: 302365
Includes four 18" (45.7 cm) BT-6 body tubes.

**BT-5 BODY TUBE**: 302366
Includes four 18" (45.7 cm) BT-5 body tubes.

**BT-55 BODY TUBE**: 302367
Includes three 18" (45.7 cm) BT-55 body tubes.

**BT-66 BODY TUBE**: 302368
Includes three 18" (45.7 cm) BT-66 body tubes.

**ENGINE HOOD ACCESSORY**: 302343
Includes 2 large engine hoods and 2 small engine hoods.

**REGULAR ENGINE MOUNT KIT**: 302358
Fits BT-5, 55, 60 & 60 tubes. Kit includes 2 launch lugs and 2 nose cones.

**D AND E ENGINE MOUNT KIT**: 302359
Heavy duty engine mounts for "D" and "E" engines. Fits BT-5, 55, 60 and 60 tubes.

**ENGINE CAGE ASSORTMENT**: 302360
Contains shock cord mounts, engine cage, and engine mount.

**BLAST DEFLECTOR PLATE**: 302324
Replaces the原有 blast deflector.

**BODY TUBES**: 302371
High quality spiral wound paper tubes. Use tube connectors to connect tubes of the same diameter.

**NOSE CONE ASSORTMENTS**: 302381
Each package of nose cones contains a variety of shapes. All have eyelets for shock cord and strut attachment.

**ESTES AIR® ROCKET CLASS PACK**: 1778
Includes everything needed to build and launch 10 rockets.

**EZX SERIES**:
- **Gnome® Bulk Pack**
- **Alpha® Bulk Pack**
- **Generic EZX® Bulk Pack**

**SKILL LEVEL 1**
- **Wizard® Bulk Pack**
- **Viking® Bulk Pack**

**SKILL LEVEL 2**
- **Polaris® Bulk Pack**

**MODEL ROCKET ENGINE BULK PACKS**
Includes 24 engines and starter plugs, 30 igniters and a package of recovery wadding - 75 sheets.

**CURRICULA**:
- **Imagination Curriculum Guide**
- **Handson Projects and Activities**

For more details and information on our model rocket educational supplies, see the Estes Educator® Catalog or visit us at: www.esteseducator.com
ESTES SPECIALTY PRODUCTS

SKY RANGERS®
Electric Radio Controlled Model Planes

FLIGHT MASTER®
Rubber Band Powered Free Flight Model Planes

ESTES AIR® GL-X200™
Air Rocket System

ESTES AIR® HL-X150™
Hand Launch Rocket System

FLIGHT MASTER® RAVEN™
FLIGHT MASTER® CONDOR™

ESTES AIR® JET STIX™

HYDROGEN FUEL ROCKET™

ESTES AIR® HL-X150™ PEE WEE FLYER

KICK DIS® POWER PUCK

Colors may vary.

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SHRED SOME TREAD! Rocket Powered Race Cars!

The excitement of Rocketry in a Car!

Super Sonic Dragsters

Wicked Street Machines

Race Alone or Side-By-Side with Friends!

Complete Race Track & Starter Set

Get a Rocket Powered Racer and Race at the Speed of Sound Today!

DRAGSTERS
Asst. #914
Red Menace #2040
Blue Storm #2041
Green Mantis #2042

SPECs: Length: 12.5 in. (31.8 cm);
Wheelbase: 3.4 in. (8.6 cm)

TUNERS
Asst. #9115
Drag 'On #2046
Gear'zilla #2047
Slammur#2048

SPECs: Length: 8.25 in. (21 cm);
Wheelbase: 3.3 in. (8.4 cm)

A10-PT Race Engines - sold separately
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Estes Industries
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