WELCOME TO ESTES MODEL ROCKETRY!

In 1955, Estes Industries ignited the model rocketry world. In 1995 Estes has blasted model rocketry to new heights with the introduction of the Space Shuttle™ Starter Set and, the ultimate in model rocket construction material, TufFlite®.

TufFlite® - Estes new, innovative, strong, lightweight material is revolutionizing model rocket technology. It brings new dimensions, new ideas, and previously complex models to almost-ready-to-fly realities! This super material allows Estes to create rockets, planes and gliders with unique shapes, in large sizes, and with considerable detail. It is easy to repair with white glue and is extremely durable. The new Estes gliding Space Shuttle™ is just a small glimpse of the imaginative future world with Estes TufFlite™ modeling.

1995 also has Estes exploring other realms of model aviation. With the introduction of Estes Light Gliders™, Estes flies into the world of free flight model airplanes, with a barrage of easy-to-build, high performance gliders, both towline and rubber band powered. These model planes are beyond the ordinary tissue and stick gliders!

This year there is new excitement in the Beta level, with a whole array of interactive rocketry from the Fire Streak™ to the spinnin', spiralin' Corkscrew™ to the fantastic performing Trans Wing Super Glider™. For those who enjoy a bit more building, Estes is pleased to serve up the incredible gliding SR-X™ (inspired by the USAF hyper-secret Project Aurora) and the never-before scale modeled Mercury Atlas. The Sweet Vee™ will give the R/C soaring enthusiasts a thermal head rush!

Go for it! Model rocketry is Estes rocketry!

LAUNCH AREA:
Choose a large field away from power lines, tall trees, and low-flying aircraft. This chart shows the smallest recommended launch areas.

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<tr>
<th>ENGINE TYPE</th>
<th>LAUNCH ALTITUDE</th>
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<td>1,600</td>
<td>489</td>
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<tr>
<td>E</td>
<td>2,000</td>
<td>610</td>
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</tbody>
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* Minimum circular area = Diameter in feet or meters
Minimum rectangular area = Shortest side in feet or meters
Launch site must be free of obstructions and highly flammable materials.

HOW TO USE YOUR ESTES CATALOG
To get the most out of your catalog, please read this section. It will help determine what kit fits your needs and what the specifications are of that kit. This catalog is divided into kit series. Each series has a skill level: Estes® Series (almost ready to fly); Beta™ Series (skill level 1); Explorer® Series (skill level 2); Challenge™ Series (skill level 3); and Master™ Series (skill level 4). Estes® Series and Estes® R/C are separate product lines. Kits in those series can range from easy to difficult. In this catalog each series contains an introduction that gives you the characteristics of that skill level. Each kit listing gives you the kit name, its product number and price. In addition, you will find a kit description that gives you features, length, diameter and weight. You will also find the engines, from local to most powerful, that we recommend for that rocket. We will sometimes list an engine that we recommend in breezy conditions. "First Flight" indicates which engine should be used to become familiar with your rocket's flight profile.

One of the more important features is the Kit Feature Symbol. These symbols give the size and type of recovery system: type of fin, nose cone, decal and other features. Below is the symbol key. All nose cones are plug-in.

RECOVERY SYSTEM:
- Plastic parachute with diameter in inches
- Nylon parachute with diameter in inches
- Streamers

NOSE CONE:
- Plastic

ENGINE HOOK:
- Quick release

DECALS:
- Pressure sensitive
- Water transferable

MAXIMUM ALTITUDE:
- In meters with most powerful engine recommended

FIN TYPE:
- Die-cut balsa
- Die-cut plastic
- Die-cut fiber
- Balsa stock
- Plastic fin unit

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Model Rocketry is recommended for those ages 10 years and up. Adult supervision is recommended for those under 12 years of age.

Use only Estes products with Estes model rockets. Unless specified, all models require assembly. Engines, launch system, glue and finishing supplies are not included with kits unless specified.

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Starter sets are the best introduction to the wonderful world of model rocketry. Each starter set includes the versatile Porta-Pack II launch pad and the highly reliable Electron Beam® launch controller. Starter sets include launch supplies for the first few flights so that each rocket can be flown over and over again. In 1995, Estes introduces two radically new interactive starter sets: the amazing, technologically revolutionary, almost ready to fly and glide Space Shuttle™ Starter Set and the huge rip roaring HellCat™ Starter Set. The rockets that come with all Estes Starter Sets are incredibly easy to assemble, require no painting and in about an hour or less you'll be ready to launch! Our new starter sets feature even more fun in the sky than ever before.

Space Shuttle™ Starter Set

MISSION: Planet Earth. Your giant Estes Space Shuttle (almost 15 inches long, 10 inches wide) perched, ready to command the sky. All systems are go! A push of the ignition button, a powerful 'C' engine ignites, the shuttle leaps from the launch complex into the air. At peak altitude action happens: the power pod ejects, descending on a parachute. The rocket-powered shuttle swoops out of the sky; realistically gliding, circling back, touching down for its near exciting mission.

What makes this possible? Estes new, revolutionary, strong, lightweight material called Tuff lite. Tuff lite makes the new gliding Space Shuttle super-simple to build (in minutes), needing no painting. The Shuttle features realistic set-stick decals and a pre-assembled power pod. It is foolproof to build and balance—guaranteed to fly 'n' glide!

Included are two mighty 'C' size engines. You'll find everything you need (except glue and four AA batteries) to create your own space program— including the launch pad with electrical launch system. Start your countdown now!

Specifications:

- Length: 31.8 cm (14.75")
- Wing span: 25.4 cm (10.0")
- Wt.: 199 gm (7.0 oz.)
- Engines: C6-3

Each starter set requires four AA-type alkaline batteries and adhesive—not included. Avg. Ship Wt. 1.4 Kg (3 lbs.)
New! StarterSets

HELICAT™
EST 1465

HELICAT™
The huge, rip-roaring HELICAT dominates the starter set scene with nearly 3 feet of rocket. This "Cat is a cinch to build, and famous for its speed! No painting, plastic pre-colored fins and nose cone, and pre-colored yellow body tube. The finishing touch? Non-stop at launch — the HELICAT reaches maximum altitude (around 600 feet) and then the helicopter nose cone ejects, popping out three neon-colored biplanes. The nose cone returns under parachute power, the rocket body returns with a colorful parachute. Includes 3 Cobra® Engines.

Specifications:
- Length: 84.1 cm (33.5"")
- Dia: 34.2 mm (1.35"")
- WT: 170 g (0.37 oz)
- Engines: B4-2, B5-2 (First Flight), C6-3, C6-5

AIRWALKER™
EST 1410

AIRWALKER™
Sleek sounding rocking styling and a clear carry bag highlight this sharp performer. Unique chrome-colored body tube, bright red fins and nose cone give this 50.8 cm (20") tall rocket a clean, professional appearance. Includes Cobra® engines and supplies for your first three flights.

Specifications:
- Length: 80.6 cm (31.7"")
- Dia: 27.7 mm (1.1")
- WT: 53 g (1.9 oz)
- Engines: A8-3 (First Flight), B4-4, B5-6, B6-5, C5-3, C6-3, C6-5

Each starter set requires 4 AA-type alkaline batteries and adhesive. Not included. Avg. Ship Wt: 1.4 Kg (3 lbs.)

SUPER SHOT™
EST 1449

SUPER SHOT™
Two-rocket combo starter set delivers super value and super performance! The EZO99 Series Super Shot! rocket is the first step and features super quick assembly, pre-colored parts and hot decals. 42 cm (16.1/2") tall, tough and durable, it can be launched again and again up to 800 feet high and returns by parachute. The Twister™ is an Explorer™ rocket and includes a crazy mind-twisting decal. Instead of a parachute, the 24 cm (9"") Tall Twister™ separates into two pieces and spins down helicopter style from up to 1000 foot altitudes! The ideal second rocket, includes Cobra® engines and supplies for your first three super flights.

Specifications:
- Length: 31.1 cm (12.25")
- Dia: 34.8 mm (1.37")
- WT: 34g (1.2 oz)
- Engines: A8-3 (First Flight), B4-4, B5-6, B6-4, B6-6, B8-6, C5-3, C6-5

ALPHA III
EST 1406

ALPHA III
This set features the tried-and-true ALPHA III with bright orange and black decor. Assembly is easy with a one-piece plastic swivel fin unit. Great performance with parachute recovery for safe landings. Includes Cobra® engines and supplies for your first three flights.

Specifications:
- Length: 31.1 cm (12.25")
- Dia: 34.8 mm (1.37")
- WT: 34g (1.2 oz)
- Engines: A8-3 (First Flight), B4-4, B5-6, B6-4, B6-6, B8-6, C5-3, C6-5
E2X® SERIES
ALMOST READY TO FLY

There is no modeling or building experience required in this series. These rockets are so easy to assemble that:

- They require very little cutting or sanding
- The instructions are clear and simple to follow
- There is no finishing or painting
- The kits assemble in less than one hour

These precision engineered kits, with exacting plastic parts and pre-colored body tubes, let the novice assemble a rocket with a craftsmanship result. These kits span the spectrum of interactive rocketry: the Manta™ with a piggy back glider, the helicopter-recovered Skywinder™, the egg-carrying Omloid™ and the Hijax™ with its clear cargo section. The E2X® line of kits has features that everyone from the new rocket enthusiast to the most experienced rocket modeler will enjoy.

Unless otherwise specified, all models in this catalog require assembly.

HIJAX™
EST 2105

MANTA™
EST 2097

HIJAX™
The Hijax™ features a large, clear payload bay, parachute recovery and an eye-popping dayglow decor. This is a super-quick-building rocket. The plastic fins, nose cone and body tube are pre-colored (no painting required). The payload bay is big enough for bugs, small toy figures, glow sticks—almost anything you can imagine.

Specifications:
- Length: 50.8 cm (20")
- Dia.: 25.7 mm (1.0")
- Wt.: 57 g (2.0 oz.)
- Engines: A8-3, (1st Flight) B4-4, B6-6, C5-3, C6-3, C6-5

MANTA™
The Manta™ is the perfect first glider kit! A futuristic foam glider rides piggyback on the booster. As it reaches its apogee, the glider detaches and circles home. The booster is recovered via a streamer. The Manta™ is easy to build—no painting required!

Specifications:
- Length: 41.9 cm (16.5")
- Dia.: 36.8 mm (1.45")
- Wt.: 51 g (1.8 oz.)
- Engines: A8-3 (1st Flight), B4-4, B6-6
**OMLOID™**

With a huge 51 mm (2") diameter twist-together cargo capsule, you can fly an egg or any kind of scientific payloads! The multi-purpose launch vehicle, pre-colored and assembled in minutes, is 65 cm (25.6") tall, and the行事 eventure. It's perfect for school and science fair projects or just plain fun!

**Specifications:**
- Length: 67.8 cm (26.7")
- Dia.: 34.2 mm (1.346")
- Wt.: (without egg) 70.8 g (2.5 oz)
- Engines: C5-3, C6-3, without egg - B4-2 (First Flight), B6-2, C6-5

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**BAIL-OUT™**

Explore interactive rocketry with this model! Can eject your favorite 95 mm (3-3/4") action figure with parachute. (Story figure is not included, but two chutes for your figure are!)

**Specifications:**
- Length: 62 cm (24.5")
- Dia.: 42 mm (1.64")
- Wt.: without figure 87 g (3.07 oz)
- Engines: B4-2 (First Flight), B6-4 (with wind) C5-3, C6-5

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**CATO™**

The supreme "gag" rocket, this rocket breaks apart into pieces after a short flight, is safely recovered in a small area, and re-assembles in minutes for flight after flight. Internal release system shows how the ejection charge works in different ways. The Cato™ features multiple recovery systems - parachute, streamer and tumble! The Cato™ is easy to build and to fly!

**Specifications:**
- Length: 63 cm (24.7")
- Dia.: 42 mm (1.64")
- Wt.: 126 g (4.4 oz)
- Engines: B6-0 (First Flight), C6-0

**Launch an Egg!**
**Bandit™, Rampage™**, and **Dagger™** Kits

**Feature:**
- Pre-Colored Body Tubes
- Plastic Nose Cone and Fins
- Pre-Slotted Body Tubes
- Stick-On Decals
- No Painting

**Bandit™**
- EST 2060
- Specifications:
  - Length: 42 cm (16.5 in)
  - Dia: 25.4 mm
  - Wt: 45.5 g (1.6 oz)
  - Engines: A8-3 (First Flight)
  - B4-4, B6-4, B6-6, C6-3, C6-5

**Rampage™**
- EST 2061
- Specifications:
  - Length: 36 cm (14.2 in)
  - Dia: 25.4 mm
  - Wt: 50.2 g (1.8 oz)
  - Engines: A8-3 (First Flight)
  - B4-4, B6-4, B6-5, C5-5, C6-3, C6-5

**Dagger™**
- EST 2062
- Specifications:
  - Length: 57 cm (22.5 in)
  - Dia: 25.4 mm
  - Wt: 53.5 g (1.9 oz)
  - Engines: A8-3 (First Flight)
  - B4-4, B6-4, B6-5, C5-5, C6-3, C6-5

**Gnome™**
- EST 0886
- Specifications:
  - Length: 20.04 cm (8 in)
  - Dia: 13.6 mm (0.535 in)
  - Wt: 12 g
  - Engines: A2A-2T (Flat Flight)
  - 1/2A3-4T, A3-4T, A10-3T

**Alpha™ III**
- EST 1256
- Specifications:
  - Length: 31.1 cm (12.25 in)
  - Dia: 24.6 mm (0.968 in)
  - Wt: 34 g (1.2 oz)
  - Engines: A8-3 (First Flight)
  - 1/2A6-2, A8-5, B4-6, B6-6, B8-5, C6-5, C6-7

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Engines, launch system, glue, and finishing supplies not included.
Avg. Ship Wt: 3 Kg (12 oz.)
ATHENA™  
EST 2026

Glorious and fast, rugged and beautiful, this model can smoke. With white and chrome plastic, the Athena™ will become one of your favorites. Perfected on a wide selection of engines.

Specifications:
Length: 38.1 cm (15.0")  Dia.: 24.8 mm (0.975")  Wt.: 36 g (1.27 oz)  Engines: A8-3 (First Flight), 1/2A4-2, A8-5, B4-4, B6-6, B8-5, C5-5, C6-7

PEGASUS™  
EST 2076

The Pegasus™ is ready to become the fast in your stable of rockets. This great looking, sleek rocket is quick to build and quick to fly. Features durable and rugged construction and there is no painting required.

Specifications:
Length: 38.1 cm (15.0")  Dia.: 24.0 mm (0.945")  Wt.: 36 g (1.27 oz)  Engines: A8-3 (First Flight), 1/2A4-2, A8-5, B4-4, B6-6, B8-5, C5-5, C6-7

TURBO COPTER™  
EST 2096

Hot stuff! The Turbo Copter™ flies to over 1000 feet and is super easy to build. This rocket has a wild helicopter-style recovered nose cone, a streamer-recovered main body, fluorescent colors, and hot, trendy graphics.

Specifications:
Length: 35.24 cm (13.875")  Dia.: 18.7 mm (0.736")  Wt.: 28.8 g (1.02 oz)  Engines: 1/2A4-2 (First Flight), A8-3, A8-5, B4-4, B6-6, B8-5, C5-5, C6-7

SKYWINDER™  
EST 2077

Copters Back To Earth!

This amazing model assembles fast and launches like any "regular" model rocket, but at the peak of its flight, it transforms! Three helicopter blades with brightly colored decals unfold from the body and start spinning faster and faster, creating a kinetic color display and lowering the Skywinder™ gently to the ground. It has one-piece recovery and props for flight in seconds—no wadding, parachute or streamer.

Specifications:
Length: 50.3 cm (20")  Dia.: 34.2 mm (1.345")  Rotor Span: 50.8 cm (20")  Wt.: 70.9 g (2.51 oz)  Engines: B4-2 (First Flight), B6-2, C6-3

Engines, launch systems, glue, and finishing supplies not included.
Avg. Ship Wt.: .3 Kg (12 oz.)
**ROCKET BUILDER’S SET**
An Introduction to Estes Rocket Building

- Includes Estes Marking Guide which marks tube easily
- Easy-to-Use Technical Manual
- Custom Decals

Two of many designs you can build

**BETA™ SERIES**

**SKILL LEVEL 1**

Interactive rocketry for the builder! These dramatic, high action kits will fill many modelers’ needs, from the inexpensive Mosquito™ to the high performance, gliding Transwing™ to the crazy flying Corkscrew™.

The kits in this series have simple construction and although some modeling experience can be helpful (sanding, cutting, measuring and gluing), the rockets in this series will help you polish those skills.

**The Beta™ Series features:**
- Die cut fins. Some kits require fin alignment, others have slotted body tubes for easier fin attachment.
- Simple painting
- Bright and exciting pressure sensitive or water transferable decals
- Up through “C” engine power.

Unless otherwise specified, all modes in this catalog require assembly.
CORKSCREW™ EST 2114

With a centered fin and a centered engine, the Corkscrew™ goes wild upon engine ignition. Spinning and spiraling upward, it creates a zany smoke trail. This Corkscrew™ features thru-the-body tube in construction for a super durable rocket.

Specifications:
- Length: 54 cm (21.25''), Dia.: 26 mm (1.1'')
- Wt.: 53 g (1.9 oz)
- Engines: B4-3, (First flight)
- B4-2, B4-4, B4-5, C6-4, C6-5

FIRESTREAK™ EST 2107

Two long metallic looking gold and red streamers are the hot feature on the Firestreak. This rocket is an incredibly easy build (looks like a knock through stuffed body tubes for super strong attachment and positive alignment.) The “flame” decor makes this one radical looking rocket.

Specifications:
- Length: 37.2 cm (14.7''), Dia.: 26 mm (1.1'')
- Wt.: 33.5 g (1.2 oz)
- Engines: 1/2A6-2, A5-0 (First flight), A5-5, B4-4, B4-2, B6-4, B6-5, C6-5, C6-3, C6-6

TRANSWING™ SUPER GLIDER EST 2112

Staying off the pod, this rocket begins its transformation of opalescent—-the Power Pod ejects and a set of wing panels lifts out, changing the Transwing™ into a high-performance, long-duration super glider. The folded wings allow the Transwing™ to boost higher and in the extended position, glide longer. The Power Pod returns with a streamer. The Transwing™ features plastic parts for simplified construction - it's easy to build.

Specifications:
- Length: 56.0 cm (22.0''), Dia.: 24.8 mm (0.98'')
- Wt.: 58 g (2 oz)
- Glider: 81 cm (32'')
- Engines: B4-2, B6-2 (First flight), C6-3
**VIKING**
EST 1949

This high flyer can be built with three, four or five fins in various arrangements, making it ideal for aerodynamic experiments and competitions. Easy to build.

**Specifications**
- Length: 31.8 cm (12.5")
- Dia.: 18.7 mm (0.75")
- Wt.: 20.1 g (0.71 oz.)
- Engines: A8-3 (First Flight), A8-4, B4-4, B6-5, C6-5, C6-7

**YELLOW JACKET**
EST 2008

All around good performance is the hallmark of this folk sport rocket. Easy to build, it features parachute recovery and water transferable decals.

**Specifications**
- Length: 42.7 cm (16.8")
- Dia.: 24.8 mm (0.97")
- Wt.: 30.6 g (1.08 oz.)
- Engines: A8-6 (First Flight), A8-6, B4-4, B6-4, B8-6, C6-6, C6-7

**ALPHA**
EST 1225

A killer over three decades, it is still the perfect first or second rocket. Millions have been made and flown - a very reliable performer that can use a wide variety of engines! There is only one Alpha.

**Specifications**
- Length: 31 cm (12.2")
- Dia.: 24.5 mm (0.95")
- Wt.: 22.6 g (0.8 oz.)
- Engines: A8-3 (First Flight), A8-3, B4-4, B4-4, B6-6, C6-6, C6-7

**ASTROCAM® 110**
with Launch Vehicle
EST 1327

**HELIO COPTER™**
EST 1990

**Helio Copter™**

With clean lines and easy speech, the rocket soars high on C engines. Then watch eyes open when the nose cone separates and deploys three spring-loaded helicopter blades and begins its slow spiraling descent to the ground.

**Specifications**
- Length: 66.6 cm (26.2")
- Dia.: 34 mm (1.34")
- Wt.: 106 g (3.75 oz.)
- Engines: B4-2, B6-5, C6-3 (First Flight), C6-5

**BIG BERTHA™**
EST 1948

**Uses ASA 200 Film**
**Easy to Build**

Engines, launch system, glue, and finishing supplies not included. Avg. Ship Wt.: 4 Kg (14 oz.)
**ZINGER™**
EST 1917

Efficient aerodynamic design makes this our best performing single-stage rocket. Easily reaches 8,000+ feet! Features include a tail fin, nose cone, and meshed body. Available in both white and red color options.

**SPACE RACER™**
EST 2039

This sleek rocket has a smooth surface and is easy to build and fly. Features include a tail fin, nose cone, and meshed body. Available in both white and red color options.

**SPARROW™**
EST 0872

A mini model with big missile looks. This rocket is so lightweight that it only requires breakaway recovery for safe landing! Features include a tail fin, nose cone, and meshed body. Available in both white and red color options.

**MINI-PATRIOT™**
EST 0896

Available as a two-stage or single-stage rocket, this model is perfect for beginners. Features include a tail fin and nose cone. Available in both white and red color options.

**NOVA PAYLOADER™**
EST 1960

Available as a two-stage or single-stage rocket, this model is perfect for beginners. Features include a tail fin and nose cone. Available in both white and red color options.

**RELIANT™**
EST 1986

Available as a two-stage or single-stage rocket, this model is perfect for beginners. Features include a tail fin and nose cone. Available in both white and red color options.
MONGOOSE™
EST 2092

The perfect first two-stage rocket! The Mongoose™ has two one-piece fin units, colored body tubes, and flies to over 1600 feet. This rocket builds very quickly and doesn't need paint. Can also be flown single stage.

Specifications:
Length: 21.5 cm (8.5")
Diameter: 2.5 cm (0.98")
Wt.: 65 g (2.3 oz.)
Engines:
Single Stage: A-8 (1st Flight), B-8, B-4, B-6, C-6
Two Stage: First Stage - B-6
Second Stage - C-6, C-8 (1st Flight), B-8, B-6, C-6

NINJA™
EST 0882

Dark and mysterious, this fast performer flies on mini engines, builds quickly and makes an excellent first rocket.

Specifications:
Length: 26.8 cm (10.6")
Diameter: 18.7 mm (0.74")
Wt.: 16.9 g (0.59 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

THUNDERHAWK™
EST 2002

Long, lean sport flyer featuring a stable fin construction, simple to construct and finish, and delivers impressive performance.

Specifications:
Length: 65 cm (26")
Diameter: 2.5 cm (0.98")
Wt.: 36 g (1.28 oz.)
Engines:
A-6-3 (1st Flight), B-4-6, B-6-6, C-6-7

MOSQUITO™
EST 0801

Don't let its size fool you - the smallest rocket in our fleet moves out fast and flies almost out-of-sight every time. Ultra lightweight construction and fantastic performance.

Specifications:
Length: 21.5 cm (8.5")
Diameter: 18.7 mm (0.74")
Wt.: 11.9 g (0.42 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

MONGOOSE™

EST 2092

The perfect first two-stage rocket! The Mongoose™ has two one-piece fin units, colored body tubes, and flies to over 1600 feet. This rocket builds very quickly and doesn't need paint. Can also be flown single stage.

Specifications:
Length: 21.5 cm (8.5")
Diameter: 2.5 cm (0.98")
Wt.: 65 g (2.3 oz.)
Engines:
Single Stage: A-8 (1st Flight), B-8, B-4, B-6, C-6
Two Stage: First Stage - B-6
Second Stage - C-6, C-8 (1st Flight), B-8, B-6, C-6

NINJA™
EST 0882

Dark and mysterious, this fast performer flies on mini engines, builds quickly and makes an excellent first rocket.

Specifications:
Length: 26.8 cm (10.6")
Diameter: 18.7 mm (0.74")
Wt.: 16.9 g (0.59 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

YANKEE™
EST 1381

Yankee™ has the performance worthy of an A1 American - capable of out-of-sight flights! This model has self-stick adhesive decals, streamer recovery and can use a wide selection of engines.

Specifications:
Length: 27.9 cm (11.0")
Diameter: 18.7 mm (0.74")
Wt.: 11.9 g (0.42 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

WIZARD™
EST 1292

WIZARD™ has the performance worthy of an A1 American - capable of out-of-sight flights! This model has self-stick adhesive decals, streamer recovery and can use a wide selection of engines.

Specifications:
Length: 30.5 cm (12.0")
Diameter: 18.7 mm (0.74")
Wt.: 11.9 g (0.42 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

MOSQUITO™
EST 0801

Don't let its size fool you - the smallest rocket in our fleet moves out fast and flies almost out-of-sight every time. Ultra lightweight construction and fantastic performance.

Specifications:
Length: 21.5 cm (8.5")
Diameter: 18.7 mm (0.74")
Wt.: 2.8 g (0.1 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

YANKEE™

EST 1381

Yankee™ has the performance worthy of an A1 American - capable of out-of-sight flights! This model has self-stick adhesive decals, streamer recovery and can use a wide selection of engines.

Specifications:
Length: 27.9 cm (11.0")
Diameter: 18.7 mm (0.74")
Wt.: 11.9 g (0.42 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

WIZARD™

EST 1292

WIZARD™ has the performance worthy of an A1 American - capable of out-of-sight flights! This model has self-stick adhesive decals, streamer recovery and can use a wide selection of engines.

Specifications:
Length: 30.5 cm (12.0")
Diameter: 18.7 mm (0.74")
Wt.: 11.9 g (0.42 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1

MOSQUITO™

EST 0801

Don't let its size fool you - the smallest rocket in our fleet moves out fast and flies almost out-of-sight every time. Ultra lightweight construction and fantastic performance.

Specifications:
Length: 21.5 cm (8.5")
Diameter: 18.7 mm (0.74")
Wt.: 2.8 g (0.1 oz)
Engines:
124-3 (1st Flight), A-8-1, A-10-1
EXPLORER™ SERIES

SKILL LEVEL 2

Enjoy building model rockets and also want flying excitement? Looking for something different? The Explorer™ Series offers rockets with fascinating design and flight possibilities. In this series there are scale models like the Black Brant II™ and out of sight flying two stages like the Hercules™ and Delta Clipper™. Explorer™ Series also offers the fans of glider recovery the dual parasite glider, ARV Condor™ and sinister looking boost glider, the SR-X™ — Estes' version of the USAF rumored, hyper-sonic Project Aurora plane. In this series, you will find:

- A Variety of construction materials, aeroform, plastic, balsa, and paper.
- Painting and building skills required.
- Engine power ranges from "A" through "D".

New!

BULL PUP 12D™
EST 1972

SR-X™
EST 2115

SR-X™
(Inspired by Project Aurora)
Mysterious, sleek, clear — that’s how Estes’ version of the U.S. Air Force Project Aurora’s hypersonic aircraft is classified. The SR-X™ (Strategic Reconnaissance - Experimental) is a boost glider featuring extraordinary capabilities. Easy to build and paint, the SR-X™ features a two-chaise aeroform foam shell. In flight, at apogee, the ejection charge kicks out the Power Pod (recovered via parachute), activating the elevators and SR-X cruises back for its next not-so-secret mission.

Specifications:
- Length: 39.7 cm (15.625”)
- Dia.: 33.7 mm (1.325”) Wing Span: 26.2 cm (10.35”)
- Wt.: 114.6 g (5.0 oz)
- Engines: B4-2 (First Flight), B6-2, C6-3, C6-5

BULL PUP 12D™
This is our sport scale version of the U.S. Air Force SRX-12D Bull Pup. The Bull Pup 12D™ is the perfect first scale model. Its unique appearance will make it stand out on the launch field or on display.

Specifications:
- Length: 39.7 cm (15.625”)
- Dia.: 33.7 mm (1.325”) Wt.: 30.9 g (1.1 oz)
- Engines: A6-3 (First Flight), B4-4, B6-4, B8-5, C5-6

Unless otherwise specified, all models in this catalog require assembly.
**EXPLORE SERIES**

**SOLAR WARRIOR™**
EST 0895

The colorful mini-engine-powered IIT features futuristic styling. Modeled with an engine that helps stabilize it for atmospheric flight. Great looks and great performance.

**Specifications:**
- Length: 32.7 cm (12.6")
- Dia.: 18.7 mm (0.736")
- Wt.: 19 g (0.67 oz.)
- Engines: A3-4T (First Stage), A10-3T

**TORNADO™**
EST 2004

The rocket features recovery with a different tail. When the engine's ejection charge is activated, the Tornado™ separates into two sections. Each section then spins to the ground in a helicopter-style recovery.

**Specifications:**
- Length: 43.1 cm (16.95")
- Dia.: 18.7 mm (0.736")
- Wt.: 13.9 g (0.49 oz.)
- Engines: 2G-4T (First Stage), A6-3, A6-4, B6-4, C6-6, E6-6

**HERCULES™**
EST 1377

Reach the sky with two-stage flights of almost 1/2 mile high! Featuring a unique payload section, this model is loaded for high-altitude payload launching.

**Specifications:**
- Length: 54.9 cm (21.6")
- Dia.: 24.8 mm (0.976")
- Wt.: 52.1 g (1.84 oz.)
- Engines: Single Stage - A4-2 (First Flight), B4-4, B6-4, E6-6

**DEEP SPACE TRANSPORT™**
EST 2034

Futuristic model of an interplanetary passenger/cargo vehicle. This rocket features a unique nose cone, tail body design and a large three-color decal.

**Specifications:**
- Length: 67.3 cm (26.5")
- Dia.: 33.7 mm (1.325")
- Wt.: 106.1 g (3.75 oz.)
- Engines: B4-2 (First Flight), B6-6, C6-6

**HAWKEYE™**
EST 0873

Military surface-to-air missile styling and out-of-sight flights are the trademarks of this fun flyer. Features patriotic red, white and blue decor plus great performance.

**Specifications:**
- Length: 21.8 cm (8.55")
- Dia.: 13.8 mm (0.54")
- Wt.: 11.1 g (0.42 oz.)
- Engines: 1/2A4T-2T (First Flight), A3-4T, A10-3T

**MEAN MACHINE™**
EST 1295

Stand back on this one! Over six feet of body tube with a kick-in-the-pants "D" engine to boot. This tall, lean rocket is the perfect fast "D" engine model and a spectacular flyer! (Requires 5mm (1/16") diameter) Max-Rod™ (EST 2244) to launch.

**Specifications:**
- Length: 200 cm (78.75")
- Dia.: 41.6 mm (1.637")
- Wt.: 364 g (12.8 oz.)
- Engines: D12-5
CHALLENGE™ SERIES
SKILL LEVEL 3

Power, size, features - you will find these hallmarks in our Challenge™ Series of rockets. Here is where you will find models that demand the use of the Estes E engine for full flight satisfaction. There is the easy-to-build, highly-affordable Maniac™ that will have you punching the sky in less than an hour (on E's, D's, even C engines). In this series you will find the beautifully detailed model of the SR-71 Blackbird™. Fans of glider rocketry will relish the building and flying of the fearsome Tomcat™ Swing-Wing Fighter.

Challenge™ Series requires more time and skill for assembly (except for the Maniac™). The rockets demand the use of adhesives such as epoxy or more advanced finishing and painting techniques. When the construction is done, the rocket is ready to put fire in the sky, you'll be proud of your accomplishment.
**COMANCHE-3™**

If two stages are not enough, there's three. And to really get the snow moving fast, there's a .13 engine in the first stage. This rocket can fly over 1/2 mile in altitude and is recovered with a streamer. Can also be flown in a single or two stage configuration. A 6 mm (.24") Max-Rod™ (EST 2244) is required for launch.

**Specifications:**
- Length: 104.1 cm (41.0")
- Dia.: 24.8 mm (1.0")
- Wt.: 88.9 g (3.1 oz.)
- Engines: Single Stage AR-3 (First Flight), AR-4, AR-5, C6-5, OR Multi-Stage: First Stage D-24, Second Stage: B6-4 (First Flight), C6-0, Third Stage: A6-5 (First Flight), B6-4, B6-6, C6-7

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**SR-71 BLACKBIRD™**

Jet black, lean, and mean, the SR-71 smashed numerous speed and altitude records as far back as 1966. Some still stand after more than 25 years. After three decades of service, the SR-71 is now used by NASA for testing propulsion systems and materials for use in the X-30 program.

**Specifications:**
- Length: 48.3 cm (19.0")
- Dia.: 24.9 mm (1.0")
- Wt.: 90.3 g (3.2 oz.)
- Engines: B4-2, B6-2, B6-4, B6-5, C6-5

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**TOMCAT™ Swing-Wing Rocket Glider**

Out of the Estes' vault comes the Tomcat™ rocket glider! Or do it yourself with the wings swapp'ed back, then the engine's ejection charge activates the release mechanism, and the wings sweep forward into glide mode. The Tomcat™ soars down into a graceful, cooling glide path. Replace the engine, swing the wings back, reset the release mechanism, and you're ready to go ballistic again.

**Specifications:**
- Length: 53.7 cm (21.2")
- Wingspan: Swept: 28.0 cm (10.2")
- Extended: 47.3 cm (18.6")
- Wt.: 115 g (4.1 oz.)
- Engines: C6-3 (First Flight), C5-3

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**BROADSWORD™**

Powered by "E" engines (but can fly on "D"s too), this rocket boasts a distance of almost 1,000 feet! The Broadword™ is a three feet tall, 2.8 inches in diameter, decorated by a huge self-adhesive decal and features slow, realistic liftoffs. The Broadword makes a bold statement! Requires a .25 mm (3/16") Max-Rod (EST 2244) or 6 mm (.24") rod to launch.

**Specifications:**
- Length: 92.7 cm (36.5")
- Dia.: 66 mm (2.6")
- Wt.: 171 g (6 oz.)
- Engines: D12-3 (First Flight), D12-6, E15-6, E16-6
This is the goal of every rocket builder. These are highly-detailed flying rockets for the serious rocket modeler—the modeler who is proud of their construction skills. The Mercury Atlas™ is the flagship of this series. With extensive plastic molded parts and body wraps that simulate stainless steel, this scale model is an impressive model whether on the pad or on display. The accurately-detailed, fully-stacked Space Shuttle™ features an actual gliding shuttle. Highly detailed Estes Commemorative Series models from the Star Trek® world also grace this level—the USS Enterprise™ and the infamous Klingon Battle Cruiser™.

Master™ Series instills patience, quality, and skill along with construction satisfaction and flying fun.

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SPACE SHUTTLE™
Accurately detailed 1:162 scale model of America's most famous space vehicle. Like the real one, the orbiter glides back to Earth, while the external tank and boosters return under a 46 cm (18") parachute. Removable stabilizer fins plug in for flight. A great display and demonstration model.

Specifications:
- Total Length: 34.5 cm (13.6")
- Orbiter Length: 22.9 cm (9")
- Orbiter Diameter: 18 cm (7.1")
- Weight: 1.2 kg (4.3 lb)
- Engines: CS3-5 (First Stage)

MERCURY ATLAS SCALE MODEL™
This Mercury Atlas, a never-before-produced flying scale model. This 33 inch tall scale model features a wealth of intricate detail created in injection and vacuum-formed plastic. The Atlas also features simulated chrome-colored stainless-steel body wraps and comes with decals for all four manned Atlas missions. The Mercury Atlas is a beautiful model requiring only a minimal amount of painting. This model requires the addition of special stabilizer fins for flight. These are easily removed when deploying the Mercury Atlas. Requires 5mm (3/16") Model Rod (EST 2244) (not included)

Specifications:
- Length: 83.8 cm (33.0")
- Diameter: 86.1 mm (3.39")
- Weight: 220 g (7.8 oz)
- Scale: 1/35
- Engines: D12-3 (First Stage), E15-4
**Star Trek**

**Klingon Battle Cruiser**

SKILL LEVEL 4

In the 23rd century, the Klingon Empire was the primary enemy of the Federation. The Battle Cruiser, with its fierce weaponry and powerful cannons, was the mainstay weapon platform of the Klingons. Our Klingon™ replica features vacuum-formed plastic parts, water-transferable and special chrome-colored self-adhesive decals.

Specifications:
- Length: 39.4 cm (15.5 in)
- Wingspan: 24.9 cm (9.8 in)
- Weight: 70 g (2.5 oz)
- Engines: B6-2 (First Flight), G6-3

**Starship Enterprise®**

SKILL LEVEL 4

This "Constellation"-class starship was the flagship of the Federation. Its mission was to explore the galaxy, attend to the Federation's most important objectives, and strive to keep the peace. Our kit features high-quality vacuum-formed plastic parts, water-transferable and special chrome-colored self-adhesive decals.

Specifications:
- Length: 45.6 cm (18 in)
- Recovery Probe Length: 77.2 cm (30 in)
- Diameter: 19 cm (7.5 in)
- Weight: 110 g (3.8 oz)
- Engines: B6-2 (First Flight), C6-3

**X-Wing Fighter™**

**SKILL LEVEL 2**

The X-Wing is a starfighter used primarily by the Rebel Alliance and the Imperial Forces during the Galactic Civil War. It is a fast, agile, and highly maneuverable fighter. The Estes kit features a finely detailed plastic cockpit, canopy, and vacuum-formed plastic parts. The kit includes decals and is designed for a lightweight plastic fuselage. For added realism, the model can be painted in a variety of colors, including a white and blue scheme.

Specifications:
- Length: 22.8 cm (9"
- Wingspan: 31.5 cm (12.4"
- Weight: 145 g (5.1 oz)
- Engines: B6-2 (First Flight), C6-3

**R2-D2™**

**SKILL LEVEL 2**

Now you can own these artifacts from a long time ago in a galaxy far, far away! Estes presents the Imperial Forces R2-D2 model, a 1:6 scale model of the beloved astromech droid. The kit features a finely detailed plastic cockpit, canopy, and vacuum-formed plastic parts. The model can be painted in a variety of colors, including a white and blue scheme. For added realism, the model can be equipped with a special stabilizing recovery device for flight, which easily removes for display.

Specifications:
- Length: 12.7 cm (5"
- Wingspan: 23.2 cm (9.1"
- Weight: 107.4 g (3.8 oz)
- Engines: C6-3

**TIE Fighter™**

**SKILL LEVEL 3**

For every good guy there's a bad guy. Estes presents the Imperial Forces TIE fighter. The kit features include a highly detailed plastic cockpit, canopy, and vacuum-formed plastic parts. The model can be painted in a variety of colors, including a white and blue scheme. For added realism, the model can be equipped with a special stabilizing recovery device for flight, which easily removes for display.

Specifications:
- Length: 13.7 cm (5.4"
- Wingspan: 31.2 cm (12"
- Weight: 107.4 g (3.8 oz)
- Engines: C6-3
PRO™ SERIES

Estes high-powered product line can be found in the Pro™ Series. These are large models using, at the very least, single or clustered "D" engines. All models also use the more powerful "E" engine. Engineered for performance and safety, we only recommend these rockets for modelers 16 years of age or older.

Rockets in this line feature rugged, yet simple construction designed to withstand the stresses of higher-powered flight. What do you get when you combine heavy-duty body tubes, through-the-wall fin mounting, plywood centering rings and rip-stop nylon parachutes? Models that are tough, but surprisingly lightweight.

Plus, we have the right accessories to go with these impressive models - The Command Control™ launch controller and the PowerPlex™ launch pad. These are the ultimate in ruggedness, versatility and safety.
r/c gliders

New!

Great slope soarer too!!

These radio-controlled aircraft are for the model aviation enthusiast who is looking for something unique. Rocket-powered model aircraft require R/C experience and R/C gear (servos, receivers, transmitters, etc. not included).

SWEET VEE™

The R/C front engine rocket powered Sweet Vee is a high performance, long duration soaring glider. Wings build up with pre-cut foam cores and pre-cut Obeche wood covering. The fuselage is blow molded plastic and features a precut fiberglass boom. It comes complete with a spark plug, mechanical interlock and linkage eliminating the need for a complex computer radio or electronic mixer. The Sweet Vee needs at least a simple two channel radio with mini, micro, or mid sized servos not included. This aircraft requires an easy to build special launch platform plans included.

Specifications:
Wing Span: 139.7 cm (55")
Length: 96.4 cm (34")
Wing Area: 22 sq. m (340 sq. ft)
Weight: 453.567 g (16-20 oz.)
Engines: D11-P, E15-P

Engine, launch system, glue, and finishing supplies not included.
Avg. Ship Wt: 6 Kg (20 oz.)
r/c gliders

Converte to .049 Glow Power in Seconds!

STRATO BLASTER™
EST 2090

Go ballistic with our rocket-powered R/C glider! The Strato Blaster™ features a blow-molded fuselage, covered foam wings and die-cut balsa parts. The Strato Blaster™ flies on E15-Ps (about 600 feet) or D11-Ps. It can be converted to fly R/C with an .49R glow engine, and is an excellent slope glider! The Strato Blaster™ requires R/C experience to fly; two-channel (minimum) mini or micro gear (R/C gear not included) and a 5 mm (3/16") Maxx™ rod (EST 2244) or a 6 mm (1/4") launch rod to launch (The Estes Power Pack™ Launch Pod [EST 2232] is recommended).

Specifications:
Wingspan: 87.6 cm (34.5"); Length: 81.3 cm (32"); Wing Area: 14.1 sq. dm. (219 sq. in.); Wt. (typical): 369-454 g (13-16 oz.); Wing Loading (typical): 28.1 g/sq. dm. (5.2 oz./sq. ft.); Power: D11-P, E15-P, .49R glow engine.

ASTRO BLASTER™
EST 2073

A new dimension in entertainment for rocket enthusiasts and R/C modelers alike. Combining rocket boost glider technology with R/C aerodynamic capability, provides a model that delivers maximum flying fun! Includes quick-change adapter for .49R glow engine power. In seconds, the Astro Blaster™ transforms into an aerobatic power ship, R/C rocket glider, slope soarer, .49R-powered sport flyer, 3-in-1 versatility! Features conventional quality model aircraft construction and requires two channel radio equipment with mini or micro flight pack (not included). Requires 5 mm (3/16") Maxx™ rod (EST 2244) or a 6 mm (1/4") launch rod to launch.

Specifications:
Wingspan: 91.4 cm (36"); Wt. (typical): 397 g (14 oz.); Wing Loading (typical): .226 g/sq. cm (8.6 oz./sq. ft.); Power: D11-P, E15-P, .49R glow engine.
ENGINES OVER 35 SAFE YEARS

Safe, intelligent design, precise manufacture and strict engineering tolerances have made Estes model rocket engines the standard in the industry. They have been proven consistent and reliable in more than 300,000 launches.

Some important features are:
- Lightweight non-metallic casings made from specially formulated paper with cryo nozzles
- Pre-loaded with propellant; the modeler does not handle any hazardous material
- Estes engines comply with the codes of the National Fire Protection Association and are certified by the National Association of Rocketry
- 3% of all Estes engine models are static-tested at the factory for reliability and adherence to performance specifications. If our standards aren't met, the engines are rejected and don't make it to you.
- The concept of the pre-assembled model rocket engine is the foundation of the safe, scientific, and educational activity.

TOTAL IMPULSE
Unit = Newton-seconds

This letter indicates the total impulse range of the engines. Total impulse is the total power the engine produces, which is basically the amount of propellant it contains. Total impulse is measured in Newton-seconds. One Newton-second is the amount of total impulse produced by one Newton of thrust for a duration of one second. A five Newton-second engine ("B" type) could produce five Newtons of thrust for one second; ten Newtons for 1/2 second; or any combination that equals five Newton-seconds when multiplied. The chart below shows the possible values for each engine type.

AVERAGE THRUST
Unit = Newton

This number tells you the average thrust the motor delivers during the thrust phase. The actual thrust value, and is shown on the thrust curve (see example below) for a particular engine size. Let's say a "B"; the propellant may be burned quickly, giving high thrust for a short time, or slowly, giving lower thrust for a longer time. A higher average thrust engine (B6) is best for larger models, while a lower average thrust, longer burn engine (G4) is more efficient in smaller, lighter models.

TIME DELAY
Unit = seconds

The number of seconds between the end of the thrust phase (propellant burned) and the activation of the ejection charge. This time delay allows the model to coast to its peak altitude before the recovery system is deployed. The kit instructions will guide you through this critical engine choice for your model.

COLOR CODING:
Estes model rocket engines have color-coded labels that indicate their applications:
- Green Label - Single stage models
- Purple - Upper stage or single stage, if used in very light models
- Red Label - "O" delay engines, for use in booster stage and special projects only. Contain no delay or ejection charge.
- Black Label - Special plugged engines are for third stage models, they contain no delay or ejection charge.

REGULAR ENGINES (3 per package with igniters & plugs)

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse</th>
<th>Time Delay (x10%)</th>
<th>Max. Lift Weight</th>
<th>Max. Thrust (lbs.)</th>
<th>Thrust Duration</th>
<th>Initial Weight</th>
<th>Propellant Weight</th>
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<tbody>
<tr>
<td>1693</td>
<td>1/2A-2*</td>
<td>0.28-1.25</td>
<td>2 sec</td>
<td>2.5/7.08</td>
<td>0.28/12.8</td>
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<td>A3-3</td>
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<td>0.32/13.3</td>
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<td>0.011/3.12</td>
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<td>B3-3</td>
<td>1.12-5.00</td>
<td>4 sec</td>
<td>4.5/12.74</td>
<td>0.6/10.3</td>
<td>0.6/10.3</td>
<td>0.71/0.22</td>
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<td>0.024/8.33</td>
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<td>4.5/12.74</td>
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<td>0.6/10.3</td>
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<td>0.024/8.33</td>
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<td>0.024/8.33</td>
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<td>1.0/20.0</td>
<td>1.0/20.0</td>
<td>0.89/25.5</td>
<td>0.040/12.70</td>
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</tbody>
</table>

OTHER STAGE ENGINES

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<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse</th>
<th>Time Delay (x10%)</th>
<th>Max. Lift Weight</th>
<th>Max. Thrust (lbs.)</th>
<th>Thrust Duration</th>
<th>Initial Weight</th>
<th>Propellant Weight</th>
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<tr>
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<td>A8-5</td>
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<td>B4-6</td>
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<td>6 sec</td>
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<td>0.5/13.3</td>
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<td>6 sec</td>
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<td>0.5/13.3</td>
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<td>2.2/25.5</td>
<td>0.024/8.33</td>
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<td>2.25-10.00</td>
<td>7 sec</td>
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<td>0.89/25.5</td>
<td>0.040/12.70</td>
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BOOSTER ENGINES

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<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse</th>
<th>Time Delay (x10%)</th>
<th>Max. Lift Weight</th>
<th>Max. Thrust (lbs.)</th>
<th>Thrust Duration</th>
<th>Initial Weight</th>
<th>Propellant Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1608</td>
<td>B6-6</td>
<td>1.12-5.00</td>
<td>6 sec</td>
<td>4.0/11.32</td>
<td>0.60/13.3</td>
<td>0.58/13.3</td>
<td>16.4</td>
<td>0.22/6.24</td>
</tr>
<tr>
<td>1614</td>
<td>C6-6</td>
<td>2.25-10.00</td>
<td>5 sec</td>
<td>8.0/22.64</td>
<td>1.0/20.0</td>
<td>1.0/20.0</td>
<td>0.89/25.5</td>
<td>0.040/12.70</td>
</tr>
</tbody>
</table>

Regular engines are 7 cm (2.75 in) long and 1.8 cm (0.71 in) in diameter. This will of each package of engines is approximated. (KG 64a)

"Series 8 engines have some common burning time with large propellant burning area for higher thrust with short thrust duration."
### MINI ENGINES (4 per package with igniters & plugs)

**SINGLE STAGE ENGINES (GREEN LABEL)**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse lb-sec.</th>
<th>Time Delay (at 18%) sec</th>
<th>Max. Lift Wt. oz/g</th>
<th>Max. Thrust lb./in.</th>
<th>Thrust Duration sec</th>
<th>Initial Weighet oz</th>
<th>Propellant Weight oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1503</td>
<td>1/2A3-2T</td>
<td>0.28</td>
<td>2.25</td>
<td>2/56.6</td>
<td>1.75/7.8</td>
<td>0.36 sec</td>
<td>0.198</td>
<td>5.6</td>
</tr>
<tr>
<td>1507</td>
<td>A3-4T</td>
<td>0.56</td>
<td>2.50</td>
<td>2/56.6</td>
<td>1.75/7.8</td>
<td>0.80 sec</td>
<td>0.260</td>
<td>7.6</td>
</tr>
<tr>
<td>1511</td>
<td>A10-3T</td>
<td>0.56</td>
<td>2.50</td>
<td>5/141.5</td>
<td>3.00/13.3</td>
<td>0.26 sec</td>
<td>0.277</td>
<td>7.9</td>
</tr>
<tr>
<td><strong>UPPER STAGE ENGINES (PURPLE LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1504</td>
<td>1/2A3-4T</td>
<td>0.56</td>
<td>2.50</td>
<td>1/25.3</td>
<td>1.75/7.8</td>
<td>0.303 sec</td>
<td>0.212</td>
<td>6.0</td>
</tr>
<tr>
<td><strong>BOOSTER ENGINES (RED LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1510</td>
<td>A10-8T</td>
<td>0.56</td>
<td>none</td>
<td>5/141.5</td>
<td>3.00/13.3</td>
<td>0.26 sec</td>
<td>0.235</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Mini-engines are 4.4 cm (1.75 in.) long and 9.7 mm (0.38 in.) in diameter. Ship Wt. of each package of mini-engines is approximately 1 Kg (2.2 lbs).

### 'D' ENGINES (3 per package with igniters & plugs)

**SINGLE STAGE ENGINES (GREEN LABEL)**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse lb-sec.</th>
<th>Time Delay (at 18%) sec</th>
<th>Max. Lift Wt. oz/g</th>
<th>Max. Thrust lb./in.</th>
<th>Thrust Duration sec</th>
<th>Initial Weight oz</th>
<th>Propellant Weight oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1666</td>
<td>D12-3</td>
<td>4.48</td>
<td>20.00</td>
<td>3/56.2</td>
<td>6.4/28.5</td>
<td>1.70 sec</td>
<td>1.29</td>
<td>42.2</td>
</tr>
<tr>
<td>1667</td>
<td>D12-4</td>
<td>4.48</td>
<td>20.00</td>
<td>10/283.0</td>
<td>6.4/28.5</td>
<td>1.70 sec</td>
<td>1.52</td>
<td>43.1</td>
</tr>
<tr>
<td><strong>UPPER STAGE ENGINES (PURPLE LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1668</td>
<td>D12-7</td>
<td>4.48</td>
<td>20.00</td>
<td>8/226.4</td>
<td>6.4/28.5</td>
<td>1.70 sec</td>
<td>1.55</td>
<td>44.0</td>
</tr>
<tr>
<td><strong>BOOSTER ENGINES (RED LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1665</td>
<td>D12-0</td>
<td>4.48</td>
<td>none</td>
<td>14/396.2</td>
<td>6.4/28.5</td>
<td>1.70 sec</td>
<td>1.44</td>
<td>40.9</td>
</tr>
<tr>
<td><strong>PLUGGED ENGINES for use with R/C rocket gliders (BLACK LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1669</td>
<td>D11-P</td>
<td>4.48</td>
<td>20.00</td>
<td>16/453.1</td>
<td>6.2/27.6</td>
<td>1.82 sec</td>
<td>1.55</td>
<td>44.0</td>
</tr>
</tbody>
</table>

'D' engines are 7 cm (2.75 in.) long and 26.6 mm (.64 in.) in diameter. Ship Wt. of each package of 'D' engines is approximately 2 Kg (4.4 lbs).

### 'E' ENGINES (2 per package with igniters & plugs)

**SINGLE STAGE ENGINES (GREEN LABEL)**

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Engine Type</th>
<th>Total Impulse lb-sec.</th>
<th>Time Delay (at 18%) sec</th>
<th>Max. Lift Wt. oz/g</th>
<th>Max. Thrust lb./in.</th>
<th>Thrust Duration sec</th>
<th>Initial Weight oz</th>
<th>Propellant Weight oz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1690</td>
<td>E15-4</td>
<td>7.14</td>
<td>32.00</td>
<td>4/157</td>
<td>4.5/20.5</td>
<td>2.60 sec</td>
<td>2.00</td>
<td>56.6</td>
</tr>
<tr>
<td>1692</td>
<td>E15-6</td>
<td>7.14</td>
<td>32.00</td>
<td>11/312</td>
<td>4.5/20.5</td>
<td>2.60 sec</td>
<td>2.02</td>
<td>57.3</td>
</tr>
<tr>
<td>1694</td>
<td>E15-8</td>
<td>7.14</td>
<td>32.00</td>
<td>9/266</td>
<td>4.5/20.5</td>
<td>2.60 sec</td>
<td>2.05</td>
<td>58.0</td>
</tr>
<tr>
<td><strong>PLUGGED ENGINES for use with R/C rocket gliders (BLACK LABEL)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1696</td>
<td>E15-P</td>
<td>7.14</td>
<td>none</td>
<td>16/425</td>
<td>4.5/20.5</td>
<td>2.60 sec</td>
<td>2.12</td>
<td>60.0</td>
</tr>
</tbody>
</table>

'E' engines are 9.9 cm (3.9 in.) long and 26.6 mm (.64 in.) in diameter. Ship Wt. of each package of 'E' engines is approximately 2 Kg (4.4 lbs).

---

**ACCESSORIES**

**BLAST-OFF** FLIGHT PACK

EST 1672

This great assortment of engines features 24 of our most popular engines included in this flight pack are 10 igniters plus a package of recovery wadding - an outstanding deal! The engines include six each of the A3-1, B4-4, C6-5 and C9-7 (Upper stage engines, but also ideal for lightweight single stage rockets) engines. Includes 24 igniter plugs too!

Ship Wt.: 7 Kg (15.4 lbs).

**IGNITERS**

**EST 2301**

IGNITERS

Dependable, easy-to-use Estes igniters in a convenient 6-igniter pack... always a good idea to keep a few spares around! Used with our new igniter plugs, the safest and most reliable ignition system available.

Ship Wt.: 36 g (1 oz).

**RECOVERY WADDING**

Flame resistant recovery wadding protects your recovery system from hot gases at ejection to ensure reliable deployment. Handy package contains 75 squares - enough for about 25 flights. Instructions for use are printed on the package.

Ship Wt.: 2 Kg (6 oz).

---

**ESTES MODEL ROCKET ENGINES**

HAVE BEEN PROVEN CONSISTENT AND RELIABLE IN MORE THAN 300,000,000 LAUNCHES!
POWER PLEX™ LAUNCH PAD
Designed for our big Pro™ Series models, this versatile and rugged pad can handle any size model rocket since it accepts 3 mm (1/8”), 5 mm (3/16”) and 8 mm (5/32”) rocket motors. With a 102 cm (30”) footprint plus feet that may be staked down, ensure positive stability, easy trajectory adjustment up to 30° from vertical in any direction. Ideal for convenient transport and storage, 6 mm (1/4”) x 122 cm (48”) two-piece launch rod, galvanized steel bolt and reflector, and standoff included. Ship Wt. 1.8 Kg (4 lbs.)

POWER PLEX™ LAUNCH PAD
EST 2235

COMMAND CONTROL™ LAUNCH CONTROLLER
EST 2234

A New Level of Safety

E2 LAUNCH CONTROLLER
A two-signed approach to launch rockets. Once the safety key is inserted, you get a red flashing visual and a beeping audio confirmation of continuity. The left button allows you to start or arm the 50° and then, keeping the left button pressed, the right button initiates the launch – the high-tech yet simple approach to maximum launch safety. This E2™ provides plenty of power for many launches with four "C" cells or one 9 volt 8/C car-type battery (batteries not included). There is also built-in storage for the five meter (15 feet) igniter leads. Do not use for clustering - use the Command Control™ (EST 2234). Ship Wt. 9 Kg (20 lbs.)

E2 LAUNCH CONTROLLER
EST 2236

TRANSROC II™ ROCKET LOCATOR
EST 2237

- Now You Can Find Your Rocket or Other Items Easily!

TRANSROC II™ ROCKET LOCATOR
Recovery is easy with this compact, lightweight sonic tracking and locating system for model rockets. The on-board unit fits in any 6” 20 or larger size rocket and emits a strong locator tone. The direction and frequency sensitive hand-held receiver will pinpoint the sending unit of up to 153 meters (500 feet) range. Includes headband and magnetic compass. Requires one 9 volt and one 6 volt (type 2CR1/300 battery - not included. Ship Wt. 9 Kg (20 lbs.)

COMMAND CONTROL™
This is the ultimate launch controller! Take command of your next launch. With NiCad batteries and heavy-duty launch cable, the Command Control™ can pour out enough current to ignite three or four engines clusters as fast as you can push the button. Loaded with safety features and built to last. Ship Wt. 9 Kg (20 lbs.)
ELECTRON BEAM® LAUNCH CONTROLLER
The nerve center of any model rocket launch is found in a safe, electrical甘
controller. You just plug and play. When you're done, the rocket rolls out of
the box in one piece. No messy wiring or electrical connections. Just plug the
controller into the rocket and you're ready to fire. The controller features
a 6 V battery pack, a safety disconnect switch, and a start/stop button.

Makes Rocket Building Easy!

PORTA-PAD® II LAUNCH PAD
This is the perfect launch pad for small to medium-sized rockets (models
that weigh 500 g (1 lb) or less). The portability and ease of use make this
the perfect launch pad for any model rocket enthusiast. It features:

- A steel blast deflector plate with sturdy standoff attachment
- A two-piece, 3 mm (1/8") dia. x 1" (32") long launch rod

Launch Rod Safety Cap with Safety Key
(available for all launch pads)

Electron Beam®/Porta-Pad II Combo
Available in 5 mm and 3 mm launch pads.

Extra Value!!

ROCKET BUILDER'S MARKING GUIDE
This is a must-have tool for any model rocket enthusiast. It features:

- A flexible, adjustable launch rod
- A safety disconnect switch
- A start/stop button

Includes:
- Two launch rods (5 mm and 3 mm)
- Two blast deflectors
- Two safety caps

DECAL PACKS
Available in 5 mm and 3 mm launch pads.

5 mm (3/16") Dia. Two-Piece Maxi™ Rod
Ship Wt.: 3 Kg (12 oz.)

3 mm (1/8") Dia. Two-Piece Launch Rod
Ship Wt.: 2 Kg (6 oz.)

Launch Rod Safety Cap with Safety Key
(available for all launch pads)

Electron Beam®/Porta-Pad II Combo
Available in 5 mm and 3 mm launch pads.

5 mm (3/16") Dia. Two-Piece Maxi™ Rod
Ship Wt.: 3 Kg (12 oz.)

3 mm (1/8") Dia. Two-Piece Launch Rod
Ship Wt.: 2 Kg (6 oz.)

Launch Rod Safety Cap with Safety Key
(available for all launch pads)

Electronic Power Prime™
Ship Wt.: 2 Kg (6 oz.)

Blast Deflector Plate with Standoff
Ship Wt.: 1 Kg (3 oz.)

Extra Value!!

ROCKET BUILDER'S MARKING GUIDE
This is a must-have tool for any model rocket enthusiast. It features:

- A flexible, adjustable launch rod
- A safety disconnect switch
- A start/stop button

Includes:
- Two launch rods (5 mm and 3 mm)
- Two blast deflectors
- Two safety caps

DECAL PACKS
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Ship Wt.: 2 Kg (6 oz.)

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(available for all launch pads)

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Available in 5 mm and 3 mm launch pads.

5 mm (3/16") Dia. Two-Piece Maxi™ Rod
Ship Wt.: 3 Kg (12 oz.)

3 mm (1/8") Dia. Two-Piece Launch Rod
Ship Wt.: 2 Kg (6 oz.)

Launch Rod Safety Cap with Safety Key
(available for all launch pads)

Electron Beam®/Porta-Pad II Combo
Available in 5 mm and 3 mm launch pads.

5 mm (3/16") Dia. Two-Piece Maxi™ Rod
Ship Wt.: 3 Kg (12 oz.)

3 mm (1/8") Dia. Two-Piece Launch Rod
Ship Wt.: 2 Kg (6 oz.)

Launch Rod Safety Cap with Safety Key
(available for all launch pads)

Electron Beam®/Porta-Pad II Combo
Available in 5 mm and 3 mm launch pads.

5 mm (3/16") Dia. Two-Piece Maxi™ Rod
Ship Wt.: 3 Kg (12 oz.)

3 mm (1/8") Dia. Two-Piece Launch Rod
Ship Wt.: 2 Kg (6 oz.)

Launch Rod Safety Cap with Safety Key
(available for all launch pads)
### Designer's Special™

**Est. 1463**

Turn your imagination into reality! This comprehensive parts assortment contains everything you need to build as many as eight rockets of your own design. Over 70 pieces at excellent savings!

Shipped: 9 kg (20 lbs)

The Designer’s Special™ Contains:
- Body Tubes: 2 BT-5, 2 BT-20, 2 BT-50, 1 BT-55, 1 BT-60
- Nose Cones: 2 NC-5, 2 NC-20, 2 NC-50, 1 NC-55, 1 NC-60
- Parachute kits: PK-12, PK-18, PK-24

### Emergency Repair Kit

**Est. 2233**

Tuck this away in your range box and you'll have many of the things you need to field-repair your model rockets. The replaceable pouch contains these items:
- Sandpaper
- Screw Eyes
- White Glue
- Shock Cord Mounts
- Tape Rings
- Launch Lugs
- Launch Red Safety Cap
- Micro-Clips
- Ship Weight: 2 kg (8 oz)

### Parts

#### Nose Cones:

Each package of nose cones contains a variety of shapes. Some are one piece, others are two-piece. All have eyelets for shock cord and shroud line attachments.

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
<th>Inside Dimension (mm/in)</th>
<th>Outside Dimension (mm/in)</th>
<th>Length (cm/in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3160</td>
<td>NC-5</td>
<td>13.8 / 0.544</td>
<td>19.7 / 0.776</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3161</td>
<td>NC-20</td>
<td>20.7 / 0.811</td>
<td>25.8 / 1.011</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3162</td>
<td>NC-50</td>
<td>33.7 / 1.325</td>
<td>41.6 / 1.636</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3163</td>
<td>NC-55</td>
<td>45.7 / 1.800</td>
<td>53.1 / 2.080</td>
<td>45.7 / 18.0</td>
</tr>
</tbody>
</table>

### Emergency Repair Kit

**Est. 2233**

Fits Body Tube of same number
Quantity per package

### Alignment Guide

- Fits BT-5
- Fits BT-20
- Fits BT-50
- Fits BT-55
- Fits BT-60

Shipped Weight: 1.4 kg (3 lbs)

### Three Per Package

<table>
<thead>
<tr>
<th>Prod. No.</th>
<th>Size</th>
<th>Inside Dimension (mm/in)</th>
<th>Outside Dimension (mm/in)</th>
<th>Length (cm/in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3004</td>
<td>BT-5</td>
<td>13.2 / 0.518</td>
<td>13.8 / 0.544</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3005</td>
<td>BT-20</td>
<td>18.0 / 0.710</td>
<td>18.7 / 0.736</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3006</td>
<td>BT-50</td>
<td>24.1 / 0.950</td>
<td>25.8 / 0.976</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3007</td>
<td>BT-55</td>
<td>33.2 / 1.283</td>
<td>33.7 / 1.325</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3008</td>
<td>BT-60</td>
<td>33.1 / 1.304</td>
<td>34.2 / 1.346</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3009</td>
<td>BT-60</td>
<td>45.7 / 1.800</td>
<td>41.6 / 1.636</td>
<td>45.7 / 18.0</td>
</tr>
<tr>
<td>3010</td>
<td>BT-60</td>
<td>65.7 / 2.588</td>
<td>65.7 / 2.60</td>
<td>36.1 / 14.2</td>
</tr>
</tbody>
</table>
RECOVERY SYSTEM KITS

PLASTIC PARACHUTE KITS:
These two cap parachutes come complete with chutes, material, tape rings, bridle kits, and a snap swivel for quick changes, plus instructions. The parachute material is a silver coated plastic with red and black markings — great for high visibility. Each weighs less than 3.5 oz (124 cc).

NYLON PARACHUTES:
These highly visible red parachutes are made of durable 100% nylon. They are pre-assembled complete with bridle lines and are ready to use. These replacement chutes for our Pro Series rocket's will fit in any rocket with a 3/4” dia. (12 mm or 1.2 inches in diameter) body tube.

STREAMER MATERIAL:
The kit contains two different types of streamer materials. One is 3.66 m (20 in.) by 228 cm (90 in.) red crepe paper, and the other is 2 meter (164 in.) plastic strips (2 colors: red and white) and 15 mm (1/2”) dia. and 97 cm (38”) long. Included are snap rivets for swapping out streamers.

ENGINE MOUNT KITS:
These versatile engine mount kits are great for conversions and your original designs. Easy to assemble, each kit has enough parts for two complete mounts and includes detailed, easy-to-follow instructions.

The Mini Engine Mount Kit (3157) has parts and instructions for making a quick change conversion for flying mini engines in lightweight, regular engine powered engines.

The Regular Engine Mount Kit (3158) has parts and instructions for making a regular engine conversion for lightweight D powered rockets.

The D and E Engine Mount Kit (3159) has heavy-duty conversion for our D and E engines and includes the longer E engine hook plus the D engine conversion spacer.

PAYLOAD SECTION KITS:
PS-50 / PS-55 — Payload Section Kits for BT-20 and BT-50 tubes. Kit has a BT-20 clear tube (16 mm in diameter) and a BT-50 clear tube (24 mm in diameter). Also includes a transition that fits a BT-55 to a PS-50 tube. Includes plastic bulkheads, nose cones and complete instructions.

DOWEL, FIN STOCK & PATTERNS PACK:
Includes three different sheets of balsa measuring 2-76 x 305 mm (2/6 x 12 inches), 3-75 x 305 mm (1/4 x 12 inches), and 3-75 x 305 mm (3/16 x 12 inches). Also includes 2-300 mm (1/2 x 12”) and 3-300 mm (1/4 x 12”) dowels plus patterns for many favorite fin shapes.

HEAVY DUTY CENTERING RING PACK:
These rings will center a BT-50 tube in a BT-20 (6 ea), a BT-50 tube into a BT-50 (12 ea) and a BT-50 in a BT-60 (6 ea). Ideal for making custom engine mounts.

FLAT CENTERING RING PACK:
Kit includes six flat rings that can be used to make engine mounts or center tubes into other tubes. Includes instructions and pattern sheets to make shroud plates for transitions and overall tubes. Kit includes rings to center a BT-20 into a BT-60, BT-60, BT-55 and BT-50 and rings to center a BT-50 into BT-60, BT-60, and BT-50. Plus three universal shrouds.

ENGINE HOOK ACCESSORY PACK:
Pack contains engine hooks for mini engines (1), regular size engines (3) and E size engines (2). A total of 6 hooks in all. Also includes the E-10 conversion spacer.

SHOCK CORDS & MOUNT PACK:
Contains two 3 x 450 mm (1/2 x 18”) shock cords. Enough for 4 shock cords. Also includes shock cord mount and complete instructions.

TRANSITION ADAPTERS (LIMITED QUANTITIES)
Small Transitions Pack
Contains balsa transitions from a BT-20 to the following tubes: BT-5, BT-60, BT-55 and BT-50 plus a transition from a BT-5 to BT-60. Five transitions in all.

Large Transitions Pack
Contains balsa transitions from a BT-50 to a BT-20. (10 tubes total), BT-55 and BT-60, and also includes a transition from BT-55 to BT-60. Four transitions in all.

LAUNCH LUG PACK:
Contains eight 3 mm (1/8”), four 6 mm (3/16”) and two 6 mm (1/4”) launch lugs. Also includes helpful launch lug construction notes.

TUBE COUPLERS:
Small Tube Coupler Pack
Two couplers each for BT-5, BT-20 and BT-50 body tubes. Perfect for multistage rockets and for joining tubes. Detailed hint sheet included.

Large Tube Coupler Pack
Two couplers each for BT-55, BT-60, BT-50 body tubes plus one for a BT-60. Perfect for multistage rockets and for joining tubes. Detailed hint sheet included.

We reserve the right to change packaging contents and quantities.
**Student Materials**

**BULK PACKS**

**ESTES EDUCATOR**

Save with the purchase of economical bulk packs for your group! No fancy packaging! Each rocket pack contains 12 rockets plus extra small parts, just in case!

**Explorer™ Series Rockets - 12 per bulk pack**
- Scrambler™ Bulk Pack - See page 31 for description
- Tornado™ Bulk Pack - See page 28 for description
- Loadstar™ Bulk Pack - See picture and symbols below
  - Advanced stage: payload
  - Huge payload: payload
  - Maximum altitude using C6-0 and C6-7 engines: 305 Meters
- Specifications:
  - Length: 62.5 cm (2.45")
  - Diameter: 35 mm (1.4")
  - Weight: 0.2 kg (0.44 lbs)
  - Engines: Single-stage: A8-3, B4-4
  - Maximum altitude: 305 Meters

**Model Rocket Engine Bulk Packs**
- Includes: 24 rocket engines, 30 model rocket igniters, 24 reusable igniter plugs

**Flight Data Sheets**
- Events Score Sheets
- Reproduction Masters

**BULK PACKS**

**Beta™ Series Rockets - 12 per bulk pack**
- Performance Bulk Pack - See picture and symbols below
- Self-contained experiment in drops: 1.5 g
- Safety provided by educators
- Includes 2 altitude markers for personal use
- Includes a variety of designs, allowing students to customize their rockets
- Specifications:
  - Diameter: 24.6 mm (0.97")
  - Length: varying with chosen design
  - Engines: A8-3 (First Right), B4-4, B6-6, C6-6

**ESTES TEACHER’S STARTER SET**

Demonstrate to yourself and your students the power of educational model rocketry! (Ship wt: 1.8 Kg (4 lbs))
- Designed specifically for the educator: just beginning model rocketry studies
- Become familiar with Estes model rocket technology
- Then use the enclosed materials to introduce your students to the excitement of hands-on learning

**Skill Level 1**
- **Set Contains:**
  - Two Estes rocket engines, 24 model rocket igniters, 24 reusable igniter plugs
  - parachute recovery
  - Glue, sandpaper, and razor blade to build the Big Bertha
  - Electric B equiv control system
  - Two Estes rocket engines, ignition plugs
- **Included:**
  - Three Estes Rocket models: J-26, J-28, J-32
  - Three Estes Rocket engines: A8-3, B4-4, B6-6
  - Three Estes Rocket igniters: C6-0, C6-6, C6-7

**Other Related Items**
- **Big Bertha Rocket:**
  - Two-stage solid rocket engine demo rocket
  - Approximately 20 launches

**Presented by:**
- Estes Eng. Corp

**Estes Catalog**
- EST 1456

**NOT DISPLAY PACKAGED**
- **Big Bertha Rocket:**
  - Subject to change
  - Quantity not included

**Electronics Kit:**
- The Estes Electronic Kit and the Estes Peiko Kit can be used to launch many rockets shown in this catalog except the High Sierra and the High Sierra Kit.

**AA alkaline batteries required not included**
NAR SAFETY CODE
(Effective 10-91)

1. Materials—My model rocket will be made of lightweight materials such as paper, wood, rubber, and plastic instead of the power used and the performance of my model rocket. I will not use any metal for the nose cone, body, or fire of a model rocket.

2. Engines—You will use only commercially-made NAR-certified model rocket engines in the manner recommended by the manufacturer. I will not alter the model rocket engine. Its parts, or its ingredients in any way.

3. Recovery—You will always use a recovery system in my model rocket that will return safety to the ground so it may be flown again. Use only safe, flame-resistant recovery wadding if required.

4. Weight and Power Limits—My model rocket will weigh no more than 1803 grams (63 oz) on the ground and its rocket engines will produce no more than 480 Newton seconds (110 Newtons at 1.0 pound) of total impulse. My model rocket will weigh no more than the engine manufacturer's recommended maximum lift-off weight for the engines used and will use engines recommended by the manufacturer for my model rocket.

5. Stability—You will check the stability of my model rocket before its first flight, except when launching a model rocket of already proven stability.

6. Payloads—Except for insects, my model rocket will not carry live animals or a payload that is intended to be flammable, explosive, or harmful.

7. Launch Site—You will launch your model rocket outdoors in a cleared area, far from trees, power lines, buildings, and dry brush and grass. Your launch site will be at least 100 feet as recommended in the following table.

<table>
<thead>
<tr>
<th>LAUNCH SITE DIMENSIONS</th>
<th>Minimum</th>
<th>Total Impulse (Newton seconds)</th>
<th>Equivalent</th>
<th>Minimum</th>
<th>Total Impulse (Newton seconds)</th>
<th>Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00 - 1.25</td>
<td>1/4A &amp; 1/8A</td>
<td>A</td>
<td>30</td>
<td>1.26 - 2.60</td>
<td>1/2A &amp; 1/8A</td>
<td>B</td>
</tr>
<tr>
<td>2.61 - 5.00</td>
<td>1/2A &amp; 1/8A</td>
<td>B</td>
<td>30</td>
<td>5.01 - 10.00</td>
<td>1/2A &amp; 1/4A</td>
<td>C</td>
</tr>
<tr>
<td>10.01 - 20.00</td>
<td>1/2A &amp; 1/4A</td>
<td>C</td>
<td>60</td>
<td>20.01 - 40.00</td>
<td>1/4A &amp; 1/16A</td>
<td>D</td>
</tr>
<tr>
<td>40.01 - 60.00</td>
<td>1/4A &amp; 1/16A</td>
<td>D</td>
<td>100</td>
<td>60.01 - 100.00</td>
<td>1/16A &amp; 1/32A</td>
<td>E</td>
</tr>
<tr>
<td>100.01 - 200.00</td>
<td>1/16A &amp; 1/32A</td>
<td>E</td>
<td>150</td>
<td>Over 200.00</td>
<td>1/32A &amp; 1/128A</td>
<td>F</td>
</tr>
</tbody>
</table>

8. Launchers—You will launch your model rocket from a static-leaving device that provides rapid guidance until the model rocket has reached a speed adequate to clear the recovery system.

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

Signature

"This is the official Model Rocketry Safety Code of the National Association of Rocketry and the Model Rocket Manufacturers Association. Estes rocket kit is the largest "model" rocket engine as defined by C51CC (1". 75 NS). To launch rockets weighing over one pound including options or rockets containing more than 4 oz of propel (fuel weight), you may need to obtain a waiver from the FAA. Check your telephone directory for the FAA office nearest you. Or contact Estes for FAA notification and waiver information."
Estes Light Gliders

- Totally new line of flying model airplane kits
- High performance capabilities
- Ultra-light weight design
- Very easy-to-build free-flight gliders
- No special tools for building or flying

HI-LITE™ EST 4000
Bright colored pre-cut foam wing and plastic parts make this hot performer very easy to build. The Hi-Lite requires no special tools and is a very efficient rubber-band powered, free-flight model. You can even change the flight path with its adjustable control surfaces. Comes complete with pre-assembled plastic power propeller and landing gear. Wing span: 33 cm (13”)

PHANTOM™ EST 4001
This rugged tow-line glider boasts a wing span of 60 cm (23.5”). Tow it high in the sky like a kite and then release it for thermal hunting! Or you can simply fly it as a chuck glider. Features molded plastic wing ribs, nose piece and connecting pieces. The bamboo pieces for the wing & tail assemblies are pre-shaped. Easy-to-use Flex-Cote covering material has a wild "flame" decor. Wing span: 60 cm (23.5”)

MIRAGE™ EST 4002
This large, efficiently rubber-band powered, propeller driven glider is great looking and has fantastic performance. Features plastic molded ribs, landing gear, propeller, wing and tail assemblies. Pre-shaped bamboo for the wings, stab and rudder frames and easy-to-use Flex-Cote covering material make this model a cinch to build. Wing span: 50 cm (19.5”)

FLIGHT MASTER™ EST 4003
The giant of the rubber-band powered, propeller driven model airplanes, the Flight Master features a huge 60 cm (23.5”) wing span. This glider comes complete with pre-built landing gear and propeler. Colorful Flex-Cote covers the preshaped bamboo wing, stab and rudder frames. The plastic ribs, wing and tail assemblies makes this kit easy to build. Wing span: 60 cm (23.5”)

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