

I G N I T E I M A G I N A T I O N

2024

INSPURING THE NEHT DEDERRING SINCE 1959

TABLE OF CONTENTS

Introduction 3	Scale Model Rockets 44
Skill Key 5	Pro Series II 56
Model Rocket Basics 6	Education Introduction 64
Engine Basics 8	Educator Beginner Bulk Packs 68
STEM Sets 10	Educator Intermediate Bulk Packs . 70
Starter Sets	Educator Engine Bulk Packs 72
Launch Sets 16	Accessories 76
Beginner Rockets 22	Engines 88
Intermediate Rockets 28	Engine Time/Thrust Curves Chart 89
Advanced Rockets	NAR Safety Code 92
Expert Rockets	Index 94
Designer Signature Series 42	Warranty Information 95

From the children of the Space Race to the children of today, Estes has been igniting the imagination of kids for more than 66 years. But Estes can't do it alone – it relies on teachers, mentors, parents, and grandparents to share the joy of flight with the children in their lives. Estes's theme for the year is "Inspiring The Next Generation" and our goal is to launch new products that will excite rocketeers of all ages and skill levels. For the experienced builder, we have some awesome scale kits in the works. For those looking to introduce rockets to the kids in their life, we have developed exciting STEM starter sets complete with the ability to conduct experiments just like real engineers and scientists to bring important educational concepts to life.

It has been a pleasure over the past few years introducing Estes to my own son, Jack (4). He and his Papa have spent hours in the workshop test building Estes kits and preparing them for launch at our local NAR club. His first launch was a Der Big Red Max, which was almost as tall as he was at that time. Watching that spark of wonder as the rocket lifted off the pad on an F15-4 is something that, as a parent, I will never forget.

I invite each of you to embrace this year's theme and get involved in bringing rocketry to someone new in each of your lives, and I look forward to your feedback over the coming year.





DUR VISION:

To ignite the imagination of every generation by being the most trusted source for model rocketry.

DUR MISSION:

To create safe, successful rocketry experiences for customers everywhere, from their backyards and school yards to worlds beyond.

THE FOUNDATIONS OF ROCKETRY

Estes was established by Vern and Gleda Estes 66 years ago, and it has carried a proud tradition of safe, exciting, and reliable launches. They established the best practices for motor manufacturing, model rocket design, and safe rocket flight. We use those same principles today and they have led model rocketry to an outstanding safety record. Millions remember the moment they first pressed launch and we're proud to be a part of your journey.



NAVIGATE DUR CATALOG WITH EASE!

The information found on this page will assist you on your journey through Estes 2024 Catalog! Here you will find how the product information is presented, what it means, as well as the skill level and product number. We hope a quick understanding will help you make an informed decision to find the right product for you. Let's launch right in!

For pricing & purchase please visit EstesRockets.com

Rocket Name

Rocket Specs

Recovery Type — Projected Altitude

Recommended Engines

Product Numbe

This is our example rocket. It is also featured on page 34.

Mini Arcas™

Length: 14.5 in. (36.8 cm)
Diameter: 0.74 in. (19 mm)
Recovery: Streamer
Projected Altitude: 550 ft. (167 m)
Recommended Engines:
1/2 A3-2T, A3-4T, A3-6T, A10-3T

#00244



SKILL KEY



BEGINNER

Perfect for the first time flyer or quick weekend fun. Little to no build experience required. Some kits have snap together, pre-colored parts and easy to apply decals. Some glue may be required. Build Time: Under 1 hour



INTERMEDIATE

Here's is your first model rocketry challenge. Kits may include laser cut balsa or card stock fins and/or parts. Some sanding and gluing is required as well as finishing of your rocket with primer/paint and applying the rockets decals. Build Time: 1-4 hours



ADVANCED

You have knowledge of intermediate builds under your belt and are ready for the next step!
Builds are usually more involved with multiple parts. Finishing is more complex and may
require multiple paints and/or masking. Build Time: 4-8 hours



FYPFRT

You're a pro and ready for more! Kits in this catagory may require lengthy or complex building steps. These kits will test your skills and require an advanced knowledge of rocket building. Advanced finishing knowledge required. Build Time: 6+ hours



MASTER

You are ready for the ultimate challenge! You have expert knowledge with complex kit builds as well as working with multiple materials. A keen eye for detail and precision will be required as these kits test all of your skills! Build Time: 8+ hours

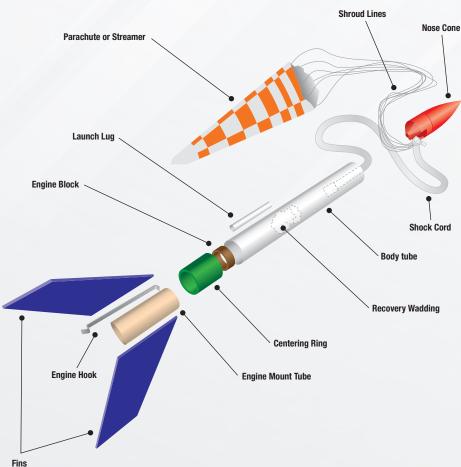
MODEL ROCKET BASICS

What is a Flying Model Rocket?

Estes flying model rockets are safe activity kits made of lightweight materials such as paper tubing, balsa wood, and plastic. Fins attached to the body tube help provide guidance and stability. An engine mount assembly holds the engine in place during rocket flight in most models.

How Does a Model Rocket Work?

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



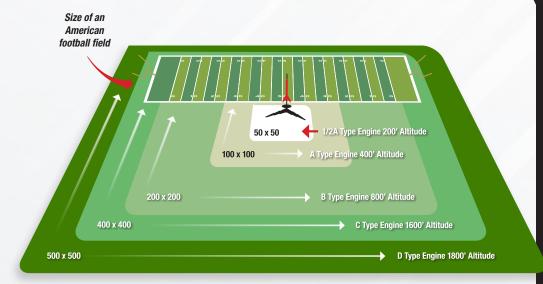
This diagram shows the basic components found in most model rocket kits. Model rocketry is recommended for ages 10 to adult. Adult supervision is suggested for those under 12 years of age.

LAUNCH SITE BASICS

Where to Safely Launch Model Rockets

The chart below tells you what size field to use for each size engine. For launch information, look at the "NAR Model Rocket Safety Code" (Pg. 92). You should always check with your local city government for any special regulations that may apply to your area. Generally speaking, you can fly most Estes model rockets in a clear area the size of a football field or soccer field. Launch in little or no wind, and make sure there is no dry grass close to the launch pad or in the flying field. Each engine size is designated by a letter and is up to twice as powerful as the letter before it. See the engine section (Pgs. 84-87) of this catalog for more information.

LAUNCH SITE DIMENSIONS		
Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00 - 1.25	1/4 A, 1/2 A	50 X 50
1.26 - 2.50	Α	100 X 100
2.51 - 5.00	В	200 X 200
5.01 - 10.00	С	400 X 400
10.01 - 20.00	D	500 X 500
20.01 - 40.00	E	1000 X 1000
40.01 - 80.00	F	1000 X 1000



Recommended Launch Site Area

Minimum launch site dimension for circular area is diameter in feet, and for rectangular area is shortest side in feet. Choose a large field away from power lines, buildings, tall trees and low flying aircraft. The larger the launch area, the better your chance of recovering your rocket. Make sure the launch area is free of obstructions, dry weeds, brown grass or highly flammable materials. Football fields, parks and playgrounds are great. Launch only during calm weather with little or no wind and good visibility. The diagram above shows the smallest recommended launch areas.

6 EstesRockets.com

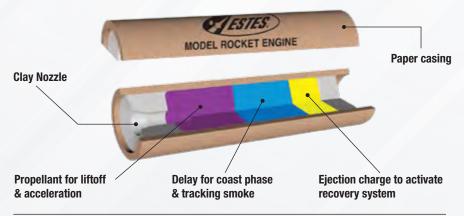
ENGINE BASICS

What is a Model Rocket Engine?

Estes model rocket engines are used to safely launch a model rocket into the air. They are factory-assembled and comply with the safety requirements of the National Association of Rocketry. They are single use and range in power from A to F sizes. The engine is started using an electrical launch system that is powered by alkaline batteries.

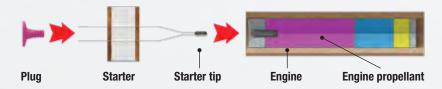


Components of a Model Rocket Engine

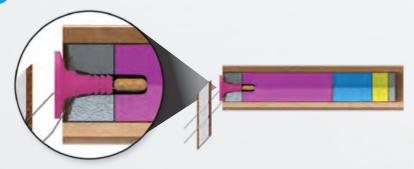


How to Prepare Your Rocket Engine for a Safe Launch

Use the plug to secure the starter into the engine nozzle of your rocket engine.



Make sure the starter is inserted into the engine nozzle and touches the propellant, then insert the plug.

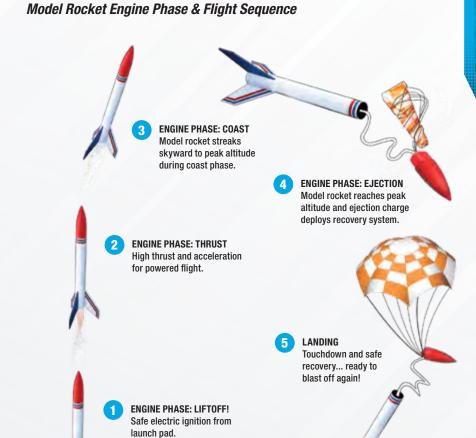


How Does a Model Rocket Engine Work?

- When the engine is started, it produces thrust and boosts the rocket into the sky.
- After the propellant is used up, the delay is activated, producing tracking smoke and allowing the rocket to coast.
- 3 After the delay is used, the ejection charge is activated, which deploys the recovery system, such as a parachute or streamer.







Thanks to the recovery system, you can enjoy the thrill of launching Estes rockets over and over! Every launch, however, requires a new engine as engines can only be used once.

8 EstesRockets.com

INTRODUCING



Products designed to IGNITE the thrill of learning!

At Estes, we believe in the power of knowledge and using our products to inspire generations to follow their dreams into the industries of science, aerospace technology, engineering, and mathematics. In our current day and age, youth are consumed with time on screens – computers, phones, and video games - and are spending much less time exploring and learning with hands on activities.

With this in mind, the Estes Product Development and Education teams set out to develop a unique spin on our regular starter sets to incorporate more exciting STEM activities. These STEM kits include booklets that outline mission challenges and tasks to get kids engaged in learning science principles while having fun and getting hands on with flying model rockets!



- Everything You Need to Launch INCLUDED!*
- Includes Booklet with 5 Unique STEM Activities
 - Launch Again & Again for Hours of Fun! • Quick & Easy to Build
 - * Controllers Require 4 AA Batteries (Not Included). Purchase of additional engines required to launch after the included engines have been used available at EstesRockets.com



Roto Rocket™

Height: 24.9 in. (63 cm)
Diameter: 0.98 in. (24 mm)
Recovery: Parachute (Body tube)
Heli-Blades (Nose Cone)
Projected Altitude: 500 ft. (152 m)
Recommended Engines:
C5-3, C6-3

STEM Kit Rock

Rocket Only



INCLUDES 2 SETS OF BLADES!



Tri-Flyer[™] \$32.99

Height: 26.1 in. (66 cm) Diameter: 0.98 in. (24 mm) Recovery: Parachute Projected Altitude: 400 ft. (122 m) Recommended Engines: B4-4, B6-2, B6-4, C5-3, C6-3

STEM Kit #000647

Rocket Only #001323

3 FIN STYLES INCLUDED!











NARAM-65

August 3 - 9 2024 Hudson Ranch Pueblo, CO nar.org/contest-flying/ contest-events



















FAMILY DAY! AUG. 3RD 10am-2pm

Tons of FUN ACTIVITIES & GIVEAWAYS for the whole family!





The National Association of
Rocketry (NAR), the world's oldest
and largest sport rocketry association,
in association with the Southern Colorado
Rocketeers and other Colorado rocket clubs,
will be hosting the 2024 NAR Championships.

Estes founders Vern and Gleda
Estes will be in attendance for their
60th National Rocketry Championships.
Vern and Gleda will be recognized for
their support and contributions to the model
rocketry community.

STARTER SETS!



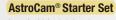
Scan to Shop Now!

Start Your Estes Experience Here!

\$49.99

Here's what's in the box:

One or two Estes model rockets (either in a parts kit or almost ready to fly), model rocket engines, one launch pad, one launch controller, and required flight supplies. For any additional launches, you will need to purchase additional Estes Engines and flight supplies.



Length: 20 in. (50.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 900 ft. (274 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5

#005325



SNAP TOGETHER NO GLUE REQUIRED





Everything You Need to Launch Included!*

*Launch Controller requires 4-AA alkaline batteries sold separately.

Starter Sets include everything you need to launch!





Athena X™ Starter Set



Xtreme™

Length: 16.8 in. (42.7 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 1600 ft. (488 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-6, C6-5, C6-7

Athena™

Length: 17 in. (43.2 cm)
Diameter: 0.98 in. (25 mm)
Recovery: Parachute
Projected Altitude: 1125 ft. (343 m)
Recommended Engines:
A8-3, B4-4, B6-4, C6-5

#005304



\$29.15

Includes 2 Engines!



Rocket Science™ Starter Set*

Length: 12.6 in. (32 cm)
Diameter: 0.98 in. (25 mm)
Recovery: Parachute
Projected Altitude: 1100 ft. (335 m)
Recommended Engines:
1/2 A6-2, A8-3, B4-4, B6-4,
B6-6, C6-5, C6-7

#005302



\$29.15

Includes **3** Engines and an Altitude Tracker!



LAUNCH SETS!



Scan to Shop Now!

Almost Ready-To-Fly Kits for Easy Weekend Fun for the Entire Family!

Here's what's in the box:

One or two Estes model rockets (either in a parts kit or almost ready to fly), (1) Estes Electron Beam® Launch Controller, (1) Estes Porta-Pad® II Launch Pad*, recovery system, and instructions for assembly and use.

*New Mini Launch Sets use the (2244) Mini Launch Pad & Controller.

Here's what's not in the box:

Recommended model rocket engines, plugs, starters, recovery wadding, tools, construction and finishing supplies for the rockets, and 4 new AA 1.5V alkaline batteries for the launch controller.



Includes everything you see here!

Launch Sets include everything you need to launch except the engines!

NEW MINI LAUNCH SETS!

Start your rocketry experience with one of our new mini launch sets, available just in time for the beautiful weather of spring and summer 2024! We've reinvented some of our most popular rockets into easy-to-assemble mini versions, complete with a launch pad and controller, for an easy trip to the launch pad. Ideal for smaller launch areas such as parks and school yards and a perfect way to introduce kids and new flyers to this exciting hobby!





Mini Alpha™ Launch Set

Length: 9.2 in. (23.5 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 690 ft. (210 m) Recommended Engines: 1/2 A3-2T, A3-4T, A10-3T

#002458

\$17.95







Mini Bertha™ Launch Set

Length: 9.9 in. (25.3 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 650 ft. (198 m) Recommended Engines: 1/2 A3-2T, A3-4T, A10-3T

#002469



\$17.95



NEW MINI LAUNCH SETS!









Get flying!

Ignite your rocketry journey with an Estes Launch Set. These sets are designed to get you flying as quickly as possible, while allowing you to choose the motors that will work best for your flying field size. All the essentials are included in one easy purchase: a stunning, high-quality model rocket, launch pad and controller, and a clear visual set of instructions to get you flying. Everything in the box is reusable, so you can take to the skies again and again!





Taser™ Launch Set

Length: 17 in. (43.2 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, B6-6, C6-5, C6-7

#001491

\$19.79







18 EstesRockets.com



Space Corps Centurion™ **Launch Set**

Length: 11.1 in. (28.2 cm) Wingspan: 7.5 in. (19.1 cm) Recovery: Parachute Projected Altitude: 700 ft. (213 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5

#005324

\$25.80



SNAP TOGETHER NO GLUE REQUIRED

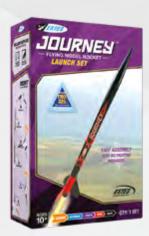
Flash® Launch Set

Length: 16.2 in. (41.1 cm) Diameter: 1.1 in. (28 mm) Recovery: Parachute Projected Altitude: 925 ft. (282 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#001478



\$19.79



Journey[™] Launch Set

Length: 19.3 in. (49 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#001441



\$19.79

NO ASSEMBLY REQUIRED!



Rascal™ & HiJinks™ Launch Set



Rascal™

Length: 14.5 in. (36.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

HiJinks™

Length: 14.5 in. (36.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

#001499



\$21.99

Tandem-X™ Launch Set



Amazon™

Length: 29.4 in. (74.7 cm) Diameter: 1.35 in. (34 mm) Recovery: Parachute Projected Altitude: 600 ft. (183 m) Recommended Engines: B4-2. B4-4. B6-2. B6-4. C5-3, C6-3, C6-5

Crossfire™ ISX

Length: 15.6 in. (39.6 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1150 ft. (351 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#001469







BEGINNER ROCKET KITS

Our Easiest Rockets to Build & Fly!

Alpha III®

Length: 12.1 in. (30.7 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1150 ft. (351 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

#001256

ALSO AVAILABLE IN A BULK PACK See Pq. 68

\$13.19

NO ASSEMBLY REOUIRED!

Athena™

Length: 17 in. (43.2 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1125 ft. (343 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5

#002452



\$8.24

Generic E2X®

Length: 13.5 in. (34.3 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1325 ft. (404 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

#002008



ALSO AVAILABLE IN A BULK PACK See Pg. 68

\$7.69

Firehawk™

Length: 11.2 in. (28.4 cm) Diameter: 0.74 in. (19 mm) Recovery: Parachute Projected Altitude: 550 ft. (168 m) Recommended Engines: 1/4 A3-3T, 1/2 A3-2T, A3-2T, A3-4T, A3-6T, A10-3T

#000804



\$6.59

Starship Octavius™

Length: 20 in. (50.8 cm)

Recommended Engines:

A8-3, B4-4, B6-4, C6-5, C6-7

Recovery: Parachute

#007284

\$10.44

Diameter: 0.98 in. (25 mm)

Projected Altitude: 1100 ft. (335 m)

SNAP TOGETHER NO GLUE REQUIRED

Illusion™

Length: 19.5 in. (49.5 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1125 ft. (343 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#007299

\$12.09



Star Hopper™

The Star Hopper is based on a rumored 1950s secret project to counter the "flying saucer threat." The Estes Star Hopper is a no-glue, no-paint, beginner level kit that you can build and launch up to 400 feet all in the same day. The rocket features detail-molded plastic parts, atomic-age styling, and a 18-inch streamer for recovery.

> Length: 7.4 in. (18.8 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 400 ft. (122 m) Recommended Engines: 1/2 A3-2T, A3-2T, A3-4T, A10-3T

SNAP TOGETHER NO GLUE REQUIRED

ALSO AVAILABLE IN A BULK PACK See Pq. 69

#007303



\$8.24

Cadet™

Length: 17.5 in. (44.5 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-7

#002021







Launch Spaces!

Length: 10.8 - 11.1 in. (27.4 - 28.2 cm)

Diameter: 0.74 in. (19 mm) Recovery: Parachute Projected Altitude: 550 ft. (168 m) Recommended Engines: 1/2 A3-4T, A3-2T, A3-4T, A3-6T, A10-3T

ROCKET

#002435

3 Bandits™



\$14.29

Power Patrol™

Length: 20.5 in. (25.3 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#002481







Mini Alpha™

Length: 9.2 in. (23.4 cm)

Recommended Engines:

1/2 A3-2T, A3-4T, A10-3T

Recovery: Streamer

#002098

Diameter: 0.74 in. (19 mm)

Projected Altitude: 690 ft. (210 m)

N/A

Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 650 ft. (198 m) Recommended Engines:

#002099









Length: 9.9 in. (25.3 cm) 1/2 A3-2T, A3-4T, A10-3T

N/A







Height: 7.7 in. (19.6 cm) Diameter: 0.54 in. (14 mm) Diameter w/ Legs: 23.4 in. (59.4 cm) Recovery: Featherweight/Tumble Projected Altitude: 75 ft. (23 m) Recommended Engines: A10-0T. A10-PT

#007297 N/A







COME ALONG FOR THE RIDE!

- HD Video Camera
- 16GB Memory Card
- USB Connection

Long Ranger™

Length: 25.9 in. (65.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#000814

N/A



AstroCam®

Length: 20 in. (50.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 900 ft. (274 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5

#007308



\$30.24



Dragonite™

Length: 16 in. (40.6 cm) Diameter: 1.1 in. (28 mm) Recovery: Parachute Projected Altitude: 925 ft. (282 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#002169



\$10.44



INTERMEDIATE ROCKET KITS

Take the Next Step in Model Rocketry with Rockets That Are Fun and Easy to Build!



Hi-Flier®

Length: 12 in. (30.5 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 1500 ft. (457 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

\$7.14



Crossfire ISX™

Length: 15.6 in. (39.6 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1150 ft. (351 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5, C6-7

#007220



\$8.24



Length: 3.6 in. (9.1 cm) Diameter: 0.54 in. (14 mm) Recovery: Featherweight Projected Altitude: 800 ft. (244 m) Recommended Engines: 1/4 A3-3T, 1/2 A3-2T, 1/2 A3-4T, A3-2T, A3-4T, A3-6T, A10-3T

#000816

\$4.39

FLY YOUR FAVORITE EGG IN THE ROCKET PAYLOAD!

Green Eggs™

Length: 23.6 in. (59.9 cm) Diameter: 1.8 in. (46 mm) Recovery: Parachute Projected Altitude w/ Egg: 825 ft. (251 m) Projected Altitude w/o Egg: 1050 ft. (320 m) Recommended Engines: w/ Egg: C11-3, D12-3 w/o Egg: C11-5, D12-5

#007301



ALSO AVAILABLE IN A BULK PACK See Pg. 71

\$13.19

A true Estes icon and one of the best selling model rockets of all time. the Alpha is perfect for the beginner looking to take the next step in model rocketry. Easy to build, this high flyer will have you out at the launch pad in no time!

Alpha®

Length: 12.3 in. (31.2 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1000 ft. (305 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

#001225



ALSO AVAILABLE IN A BULK PACK See Pg. 71

\$11.54

31



Wizard™

Length: 12 in. (30.5 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 1600 ft. (488 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

#001292

ALSO AVAILABLE IN A BULK PACK See Pg. 70

\$8.24

*COSST

Corvette Class™

Lenath: 25 in. (63.5 cm) Diameter: 1.33 in. (34 mm) Recovery: Parachute Projected Altitude: 650 ft. (198 m) Recommended Engines: B4-4, B6-4, C5-3, C6-3, C6-5

#007281



Mosquito™

Length: 3.8 in. (9.7 cm) Diameter: 0.54 in. (14 mm) Recovery: Featherweight Projected Altitude: 800 ft. (244 m) Recommended Engines: 1/4 A3-3T, 1/2 A3-2T, 1/2 A3-4T, A3-2T, A3-4T, A3-6T, A10-3T

#001345

N/A





Lunar Scout™

Height: 4 in. (10 cm) Diameter: 0.74 in. (19 mm) Recovery: Featherweight Projected Altitude: 200 ft. (61 m) Recommended Engines: 1/2 A3-2T, A3-2T, A3-4T, A10-0T, A10-3T

#007290



\$6.59

48 Fin Variations to Choose From!



Viking[™]

Length: 12.1 in. (30.7 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 1600 ft. (488 m) Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

#001949 \$8.24







Fig Bertha

Length: 24 in. (61 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 500 ft. (152 m) Recommended Engines: B4-2, B4-4, B6-2, B6-4, C6-5

#001948 \$16.49



One of Estes' best selling and iconic rockets of all time a true classic!

The Mongoose is a two-stage rocket that is a perfect option for the novice looking to gain experience with two-stage rockets. It can be flow as a two-stage or single-stage rocket!

Mongoose™

Length: 27 in. (68.6 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute. Tumble Projected Altitude: 1600 ft. (488 m) Recommended Engines: Rocket Only: A8-3, B4-4, B6-4, C6-5 Two Stages: Rocket: A8-5. B6-6. C6-7 Booster: B6-0. C6-0

#002092 \$10.44





It's so tall, we had to split it in half for easy transport and storage!

Length: 79 in. (200.7 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 700 ft. (213 m) Recommended Engines: D12-3, D12-5, E12-4, E12-6 \$19.79

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#001295



Note: Advanced Skill Build The Mean Machine is an Advanced Skill Kit but shown here for comparison purposes.

Mini Mean Machine™

Length: 39 in. (99.1 cm) Diameter: 0.74 in. (19 mm) Recovery: Parachute Projected Altitude: 225 ft. (69 m) Recommended Engines: A3-2T, A3-4T, A10-3T

#000865

\$9.34

Note: Not to Scale Shown for display purposes only. Mini Mean Machine is half the size of regular Mean Machine.



MEAN MACHINE US. MINI MEAN MACHINE

The Mean Machine stands at over 6 1/2 feet tall and disassembles in the middle for easy transportation and storage!



Twist the 2 halves of the Mean Machine body tube in opposite directions and then pull apart.



ADVANCED ROCKET KITS

Take Your Skills to the Next Level with These Exciting & Challenging Builds!





ARCAS (All-Purpose Rocket for Collecting Atmospheric Soundings) was developed in 1957 by the Atlantic Research Corporation in partnership with the U.S. Office of Naval Research and the Air Force Research Center with the purpose of measuring high-altitude winds. By 1960 more than 400 ARCAS rockets were launched. This 1:6 scale-like model of the original boasts a max altitude of 550 ft. on Estes A engines.

Mini ARCAS™

Length: 14.5 in. (36.8 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Projected Altitude: 550 ft. (167 m) Recommended Engines: 1/2A3-2T. A3-4T. A3-6T. A10-3T

N/A

#002441





Vesta Intruder™

Length: 25.2 in. (64 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 650 ft. (198 m) Recommended Engines: C11-3, D12-5

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#007312



\$20.89





With its impressive size and power, the Big Daddy rocket has been a hit with model rocket enthusiasts! This Daddy flies well on Estes C & D engines for those who prefer suborbital flights or is ready to pierce the sky on Estes E engines!

Big Daddy™

Length: 19 in. (48.3 cm) Diameter: 3 in. (76 mm) Recovery: Parachute Projected Altitude: 900 ft. (274 m) Recommended Engines: C11-3, D12-3, D12-5, E12-4, E12-6

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#002162



\$20.89

Vapor™

Length: 45.2 in. (114.8 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 900 ft. (274 m) Recommended Engines: D12-5, E12-6

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#007294



\$16.49



ARCAS



EXPERT ROCKET KITS

Scan to Shop Now!

Put Your Skills to the Ultimate Test and Enjoy the Satisfaction of a Build Done Well!

The Orbital Transport is an Estes classic, flown and treasured by rocketeers since the early days of rocketry. It was originally designed by Wayne Kellner and introduced to the nation in the late '60s, proving to be one of Estes' most popular models. After it was taken out of production, rocketeers quickly bought out the remaining kits, and they've been begging for its return ever since. Scaled up from the original, it's bigger and better than ever - this is the *Super* Orbital Transport!

This "upscaled" version of the original "K-20" released in 1965 stands 29 inches tall and flies on C11 and D12 engines. Thoughtfully redesigned to include all plastic cones and transitions, this unique spacecraft is still a challenging build. It is a faithful replica of the model that was featured on Estes first full color catalog in 1966. Every collector should have this "Super Snooper"!

Super Mars Snooper[™]

Length: 29 in. (73.7 cm) Diameter: 1.33 in. (34 mm) Recovery: Parachute Projected Altitude: 800 ft. (244 m) Recommended Engines: C11-3. D12-5

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#007309



\$20.89

Interceptor™

Length: 26 in. (66 cm)
Diameter: 1.33 in. (34 mm)
Recovery: Parachute
Projected Altitude: 525 ft. (160 m)
Recommended Engines:
B4-2, B6-2, B6-4, C6-5

#001250



FORCE

\$18.14





Super Orbital Transport™

Length: 31.3 in. (80 cm)
Diameter: 1.33 in. (34 mm)
Recovery: Parachute, Glider
Projected Altitude: 800 ft. (244 m)
Recommended Engines:
C11-3, D12-5

Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

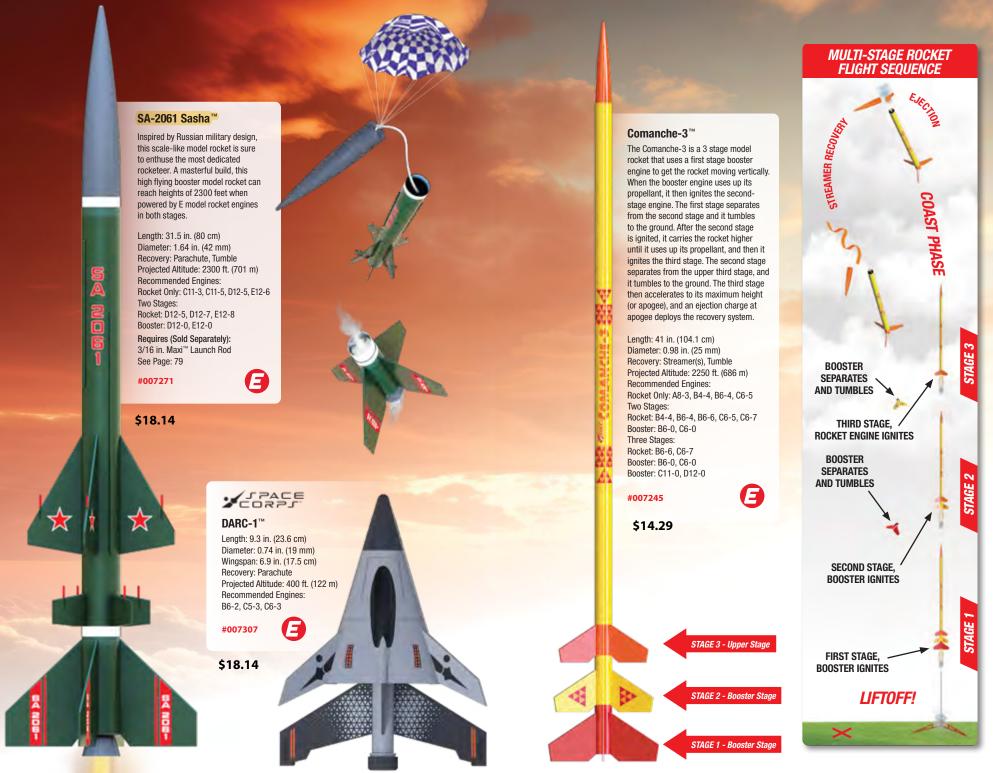
#007314



\$27.49



41



40 EstesRockets.com

The Designer Signature Series is a series of kits designed by some of the most famous pioneers of model rocketry. Some are re-introductions of lesser-known classics and others are never-before-seen designs that never made it out of the R&D room. Every serious model rocket collector will want the complete series for their own museum!



Bill Simon was a creative writer and lead designer for Estes in the '60s and early '70s, and he presided over a golden age of rocketry. His designs, such as the Drifter, Farside, and Cobra, have gone on to become the cornerstones of treasured collections, and his work has taught a generation of rocketeers.

The Belt Object Survey Ship (B.O.S.S.) was designed nearly 40 years ago, but the prototype never made its way to release. Bill Simon created this in partnership with Estes after his departure from the company. It was designed at a time where people were hungry for spaceflight innovations, and nuclear propulsion and solar power felt like the best way forward.

This B.O.S.S. rocket uses one tail fin, two engine pod assemblies, and a large circular plate to stabilize the rocket - a rare asymmetrical structure and a challenging build. We've matched the artistry of this design with high-quality components to bring you the latest in the Estes Designer Series.



(Belt Object Survey Ship)

Length: 27.8 in. (70.6 cm) Diameter: 1.33 in. (34 mm) Recovery: Parachute Projected Altitude: 600 ft. (183 m) Recommended Engines: B4-4, B6-4, C6-5

#007316



\$19.79



In 1960, Vern Estes, founder of Estes Industries, designed the Astron Scout[™], which was the first Estes model rocket packaged for sale as a complete kit. During a span of more than 20 years. Estes sold tens of thousands of Astron Scout kits, inspiring countless young people to pursue technical careers.

Orange Bullet™

Length: 5.9 in. (15 cm) Diameter: 0.74 in. (19 mm) Recovery: Featherweight Projected Altitude: 500 ft. (152 m) Recommended Engines: 1/2 A6-2, A8-3

#007295



The Orange Bullet was the prototype for the famous Astron Scout. The original design included metal weights glued to the end of the fins to shift the center of gravity after the engine ejected for a tumbling recovery system. While that approach worked, Vern achieved the same effect by using the weight of the rocket engine itself!



G. Harry Stine (NAR #02) is known as the "Father of Model Rocketry" and founder of the National Association of Rocketry (NAR). He was one of the original pioneers that founded the hobby right alongside Vern Estes.

Antar™ \$18,14

Length: 23.2 in. (58.9 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 450 ft. (137 m) Recommended Engines: B6-2, B6-4, C6-5

#007310



G. Harry Stine was also a talented writer and visionary who believed that mankind would soon travel to and live in space. He wrote several fiction books in the early 1950's including best sellers Starship Through Space and Contraband Rocket. Many of the characters in his books were based on real people he met while working at White Sands. His stories also needed spaceships that didn't exist yet so he created them. Athena, Fafnir, Vittoria, Absyritis were all designed with incredible detail by a fictional company Hueco Spacecraft Inc.



This category features detailed, miniature replicas of full-scale military, commercial, and space agency rockets, which come in a variety of scale sizes and model rocket engine requirements.

Scale model rockets come in a variety of skill ranges that vary from ready to fly Beginner rockets to Master level build kits. RTF (ready to fly) rockets are great for home or office display and are also easily prepared for flight. Intermediate level builds are for those who want to get hands on with a scale model that requires building, painting, and applying decals as they grow their rocketry building knowledge in preparation for more complex kits.

Advanced, Expert, and Master level kits require an advanced knowledge of model rocket building as hobbyist work with handcrafted or molded detailed parts. These rockets often require rocketeers to have mastered a variety of skills in assembly, painting and launching techniques in order to successfully complete these exciting rockets.



SHUTAL

11:200 SCALE FLYING MODEL ROCKE

Bring a piece of American spaceflight history home

The Space Shuttle was the workhorse of the American space program from its introduction in 1981 until its retirement in 2011. Operating for over thirty years, Space Shuttles Columbia, Challenger, Discovery. Atlantis and Endeavor flew 135 missions carrying 355 individual astronauts from 16 nations into space. Shuttle missions launched numerous satellites, interplanetary probes, and the Hubble Space Telescope, conducted science experiments in orbit, participated in the Shuttle-Mir program with Russia, and constructed and serviced the International Space Station (ISS). The Space Shuttle fleet's total mission time was 1,330 days.





\$43.99

Space Shuttle

Length: 10.9 in. (27.7 cm)
Diameter: 1.64 in. (42 mm)
Recovery: Parachute & Glider
Projected Altitude: 600 ft. (183 m)
Recommended Engines:
C5-3, C6-3

#009991



SANCE SHUTTLE

Learn More



BLUEORIGIN

ESTES, BLUE ORIGIN, AND CLUB FOR THE FUTURE

We are providing a piece of history that inspires kids to dream of a future filled with the wonders of space exploration; that's why a portion of every dollar from the Estes New Shepard will go to support Club for the Future, Blue Origin's foundation that inspires future generations to pursue careers in STEM, and why Estes is proud to partner with them.

THE NEW SHEPARD

In 1961, Alan Shepard made history as the first American in space. A decade later, he walked on the moon and pushed the boundaries of space exploration so that we can reach for the planets beyond. From this legacy, Blue Origin furthers our dreams of reaching new frontiers with the New Shepard rocket.

Builder Kit

- . Launches Up to 700 ft.
- Larger Fins for Added Stability!
 - Fun to Build!

Ready to Fly

- 1/66th Scale Model
- Payload Capable
- Custom Display Stand





\$38.49

\$19.79

Length: 11.8 in. (30 cm)
Diameter: 1.64 in. (42 mm)
Recovery: Parachute
Projected Altitude: 700 ft. (213 m)
Recommended Engines:
B4-4, B6-4, C6-5

#007315



Length: 10.3 in. (26.3 cm)
Diameter: 1.78 in. (45 mm)
Recovery: Parachute
Projected Altitude: 400 ft. (122 m)
Recommended Engines:
C5-3. C6-3

#002198



SPACEX

FALCON 9

A BEAUTIFUL ADDITION TO ANY COLLECTION



Estes is pleased to present this licensed, flying reproduction of the Falcon 9 rocket and Crew Dragon Spacecraft. Fully assembled and ready to fly or display straight from the box, you will enjoy the accuracy of this 1:100 scale model of the groundbreaking launch vehicle. The rocket includes clear plastic fins for stability, and looks great both in flight and on its custom display stand.

- Highly Detailed 1:100 Scale
 Falcon 9 & Crew Dragon Spacecraft
- Collectors Edition High End
 Custom Packaging
- Estimated Max Altitude: 300 ft.

#002161

N/A

Learn More



48 EstesRockets.com

The Estes 1:200 scale replica of this rocket portrays the Project Artemis Block 1 configuration, the first in the proposed series of heavy lift launch vehicles. Pre-assembled, pre-finished, and ready to launch, this highly detailed model realistically reproduces the features and markings of America's next generation rocket for deep space missions.

The NASA SLS **Comes Almost** Ready-to-Fly Out of the Box!





Model features clear plastic fins to stabilize flights and can be used for display!

tall and comes fully assembled with many scale details and markings carefully reproduced for exceptional realism. This historical model of the Saturn V is suitable for display or launch.

The Estes commemorative 1:200 scale Apollo 11 Saturn V model is almost 2 feet

The Saturn V **Comes Almost** Ready-to-Fly Out of the Box!





Model features a clear plastic fin unit to stabilize flights and a custom display stand!

50th Anniversary Saturn V

Length: 21.8 in. (55.4 cm) Diameter: 1.98 in. (50 mm)
Recovery: Parachute
Projected Altitude: 200 ft. (61 m) Recommended Engines: C5-3, C6-3



\$42.34

NASA SLS

Length: 19.4 in. (49.3 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute
Projected Altitude: 350 ft. (107 m)
Recommended Engines: C5-3, C6-3



\$42.34

Mercury-Redstone 4 was the second U.S. human spaceflight, on July 21, 1961. The suborbital Project Mercury flight was launched with a Mercury-Redstone Launch Vehicle, MRLV-8. The spacecraft, Mercury capsule #11, was nicknamed Liberty Bell 7. It was piloted by astronaut Virgil "Gus" Grissom.

Mercury Redstone 4 Liberty Bell 7

1:34 Scale

Length: 28.6 in. (72.6 cm) Diameter: 2.05 in. (52 mm) Recovery: Parachute Projected Altitude: 200 ft. (61 m) Recommended Engines: C5-3, C6-3

#001921



\$16.49



The Estes Saturn 1B is a stunning 1:100 recreation of this rocket of the Apollo era. Designed to test Apollo hardware, it later served as crew launch vehicle for Skylab and the Apollo Soyuz Test Project. Build and launch this Master-Level kit for spectacular lift-offs and dazzling dual parachute recoveries.

Saturn 1B

1:100 Scale

Length: 26.8 in. (68.1 cm) Diameter: 2.62 in. (67 mm) Recovery: Parachute x2 15 in., 18 in. Projected Altitude: 1000 ft. (305 m) Recommended Engines:

C11-3, D12-3, E12-4, E12-6

#007251

\$42.34

Z-THO STATES

The Saturn V permitted weights of up to 280,000 pounds to be placed in Earth Orbit. The Saturn V launched the nearly 100,000 pound Apollo 11 spacecraft into lunar trajectory which resulted in the first manned lunar landing in July 1969. The Apollo-Saturn V was 363 feet tall and weighed 6,000,000 pounds when fully fueled.

Saturn V

1:100 Scale

Length: 43.25 in. (110 cm) Diameter: 3.94 in. (100 mm) Recovery: Parachute x 3 Projected Altitude: 350 ft. (107 m) **Recommended Engines:** E16-4, F15-4

Requires (Sold Separately): 1/4 in. Launch Rod See Porta-Pad®E pg. 79 or PS II Launch Base pg. 63

#001969





N/A

In 1973, the last Saturn V was launched with a special payload - Skylab, America's first space station. Build and fly a 1/100 scale replica of that historic mission. Exciting launches up to 350 feet on an Estes F15-4 engine, and spectacular threeparachute recoveries.

Saturn Skylab

1:100 Scale

Length: 41.25 in. (104.8 cm) Diameter: 3.94 in. (100 mm) Recovery: Parachute x3 (18 in. x 1, 24 in. x 2) Projected Altitude: 400 ft. (122 m) Recommended Engines: E16-4, F15-4

Requires (Sold Separately): 1/4 in. Launch Rod See Porta-Pad®E pg. 79 or PS II Launch Base pg. 63

#001973



\$60.49



The MIM-104 Patriot is a surface-to-air missile (SAM) system, the primary of its kind used by the United States Army and several allied states. The AN/MPQ-53 at the heart of the system is known as the "Phased Array Tracking Radar to Intercept on Target" which is a backronym for PATRIOT.

U.S. Army Patriot M-104

1:10 Scale

Length: 21.3 in. (54.1 cm) Diameter: 1.64 in. (42 mm) Recovery: Parachute Projected Altitude: 600 ft. (183 m) Recommended Engines: B4-4, B6-4, B6-6, C6-5

#002056

\$11.54



Check out this mini-engine powered version of the U.S. Army's Honest John. The Estes Mini Honest John is a sport scale model, featuring a molded plastic nose cone and balsa fins that's quick to build and fun to fly!

Mini Honest John

1:24 Scale

Length: 11.75 in. (29.8 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 325 ft. (99 m) Recommended Engines: 1/2 A3-2T, A3-4T, A10-3T

#002446



\$17.95



An iconic weapon of the Cold War, the MGR-1 Honest John battlefield rocket could carry nuclear or conventional warheads.



\$14.29

The Canadian Black Brant line of sounding rockets is one of the most successful launch vehicles ever flown. Since the late 1950s, several hundred Black Brant rockets have completed research missions for Canada and NASA.

Black Brant II

1:13 Scale

Length: 24.9 in. (63.2 cm) Diameter: 1.33 in. (34 mm) Recovery: Parachute Projected Altitude: 1300 ft. (396 m) Recommended Engines: C11-3, D12-5, D12-7 Requires (Sold Separately): 3/16 in. Maxi™ Launch Rod See Page: 79

#007243





The Estes Bull Pup 12D is based off of the AGM-12 Bullpup, which is a short-range air-to-ground missile developed by Martin Marietta for the U.S. Navy in 1959. It was among the earliest precision guided air-to-ground weapons and the first to be mass produced for the U.S. Navy and U.S. Airforce.

Bull Pup 12D

\$12.64

1:9 Scale

Length: 15.6 in. (39.6 cm) Diameter: 1.33 in. (34 mm) Recovery: Parachute Projected Altitude: 675 ft. (206 m) Recommended Engines: A8-3, B4-4, B6-4, C6-5

#007000



U.S. ARMY

U.S. AIR FORCE



PROSERIES II

Estes Pro Series II products are bigger and better than ever, giving you all the power you need to reach towering heights! Experience the awesome power of rockets that fly on our 29 mm engines!

IMPORTANT INFORMATION

Estes Pro Series II can be enjoyed by adult flyers of all skill levels. Kits in this catagory range from Beginner to Expert. Beginner & Intermediate kits may still require some building knowledge with plastic molded parts and the use of epoxy glues. Advanced and Expert kits should only be attempted by hobbyist with the acquired skills for kits of this type.

LAUNCH INFORMATION

In order to launch your Pro Series II rocket, you will need a launch controller with 30 feet of wire, such as our 2240 Pro Series II Launch Controller. In addition to the launch controller, you will need a sturdy launch pad with a 1/4" (6.4 mm) launch rod, or you can purchase our 3552 Estes Pro Series II Launch Pad. See Page 63

AGES

Estes Pro Series II rocket kits are for adult rocketeers. Anyone under the age of 18 using these products should be supervised by an adult at all times.

\$21.99

PROSERIESIL

So Long™

Length: 46.2 in. (118 cm) Diameter: 1.21 in. (31 mm) Recovery: Streamer Projected Altitude: 3600 ft. (1097 m) Recommended Engines: Rocket Only: E-16-6, E16-8, F15-6, F15-8 Two Stages: Rocket: E16-8, F15-8

#009722

Booster: E16-0. F15-0



The So Long is the highest flying two-stage rocket that we have ever produced!

PROSERIES II

The Black Brant XII is a four-stage, solid propellant sounding rocket consisting of a Talos 1st stage, Taurus 2nd stage, Black Brant 3rd stage, and Nihka 4th stage. The actual vehicle is capable of lifting 1000 lbs to a 500 km altitude or 250 lbs to approximately 1400 km. Originally Built by Bristol Aerospace, the Black Brant family continues to be one of the most popular sounding rockets of all time.

PROSERIESIL

\$49.49

Black Brant XII

1:14 Scale

Length: 54.6 in. (139 cm) Diameter: 2.22 in. (56 mm) Recovery: Nylon Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: E16-6, F15-6

#009723









Zuri Anderson-Hanev takes to the sky with her impressive build of the Estes Black Brant XII at the FAI Championships this past summer in Austin TX. Photo Credit: .lim Wilkerson



POWERED BY OUR LARGEST ENGINES!

PROSERIES II

PROSERIESII

\$14.84

Star Orbiter™

Length: 45.2 in. (114.8 cm)
Diameter: 1.64 in. (42 mm)
Recovery: Parachute
Projected Altitude: 1800 ft. (549 m)
Recommended Engines:
E16-6, F15-8
Sold Separately:
D12-3, E12-4 w/ Engine Adapter

#009716





PROSERIESII

Great Goblin™

Length: 33.5 in. (85 cm) Diameter: 3 in. (76 mm) Recovery: Nylon Parachute Projected Altitude: 880 ft. (268 m) Recommended Engines: E15-4, F15-6

ofestes

#009724

\$35.74







PROSERIESI Maiestic™

\$29.69

Length: 35.3 in. (89.7 cm) Diameter: 2 in. (51 mm) Recovery: Nylon Parachute Projected Altitude: 1300 ft. (610 m) Recommended Engines: E16-6, F15-6, F15-8 Sold Separately: D12-3, E12-4 w/ Engine Adapter

The Majestic can

be flown as a

two stage using

the E2X Booster

accessory!

See pg. 62

#009707



H

PROSERIEST

Der Big Red Max™

Length: 29.9 in. (75.9 cm) Diameter: 3 in. (76 mm) Recovery: Skull & Bones Parachute Projected Altitude: 1100 ft. (335 m) Recommended Engines: E16-4, F15-4

#009721



\$30.24

N/A



F15-4 Bulk Pack

Includes:

(8) F15-4 Engines (10) Starters (8) Large Engine Plugs

Available Only at EstesRockets.com

PROSERIES II

EXCITING NEW ADDITIONS TO THE PRO SERIES II FAMILY!

NEW

PRO SERIESTA

N/A

LAUNCH RAIL

Estes' all new, lightweight, and easy to transport Pro Series II Launch Rail is the perfect choice for rocket enthusiasts looking for affordable solutions to launch mid to high powered rockets!

- Compatible with all 1010 rail buttons and rail guides
- Sturdy enough to launch our biggest rockets!
- Six foot long aluminum adjustable rail
- · Rail pivots for easy rocket loading

#002311

Available Only at EstesRockets.com





PROSERIESII **Aramid Cord**

N/A

Heavy duty flame resistant cord for large rocket recovery systems.

100 lb. 200 lb. 300 lb.

#003140 #003141 #003142

Available Only at EstesRockets.com



PROSERIES II

PROSERIES II



Pro Series Parts Assortment

- (1) BT70 Plastic Blow Mold Nose Cone
- (1) BT80 Plastic Blow Mold Nose Cone
- (2) BT70 24" Body Tube
- (2) BT80 24" Body Tube
- (2) BT70 3" Tube Coupler
- (2) BT80 3" Tube Coupler
- (1) BT70 to BT80 Plastic Blow Mold Adaptor
- (2) 24mm 3.5" Engine Mount Tubes
- (2) 24mm Engine Retainer Set
- (2) 29mm Engine Retainer Set
- (1) 24mm to 29mm Engine Adaptor Set
- (1) BT70 24mm Centering Rings
- (1) BT80 24mm Centering Rings
- (1) BT70 29mm Centering Rings
- (1) BT80 29mm Centering Rings (2) BT70 - Plywood Bulk Head
- (2) BT80 Plywood Bulk Head
- (2) Bulk Head Screw Eye
- (4) 12"x4"x1/8" Balsa Sheets
- (1) 18" Red Nylon Parachute
- (1) 15" Red Nylon Parachute
- (1) BT-70 Fin Marking Template (1) BT-80 Fin Marking Template
- (2) 29mm 8" Engine Mount Tubes
- (2) Shockcord Mounts
- (2) Shock Cords
- (4) Rail Guides

#009987

Available Only at EstesRockets.com



Engine Adapter Set (24mm - 29mm)

#009753



Shock Cord Accessory Pack

3 heavy-duty elastic shock cords; 1/2 in. (13 mm) x 96 in. (243.8 cm)

#003172



E2X® Booster

For use with the Majestic (9707) Recommended Engine: F15-0

#009752

PS II Recovery Wadding

Approximately 216 sheets for larger rockets. Can also be used in any Estes rocket.

#003556



• Requires 6 1.5V "C" size alkaline batteries (sold separately)

• Includes 4 wire leads with micro clips for multi-engine clusters

• Includes JST style plug for alternate battery use (8-10 cell 1000mAh NimH or 3 cell LiPo (11.1V) battery

not launch without both buttons pressed)

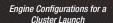
#002240

PRO SERIESTI

Launch Base

- Stands 18 inches off the ground!
- · Sturdy enough to launch our biggest Pro Series rockets
- Two-piece 1/4 in. (6 mm), 5' (152.4 cm) Launch Rod

#003552



Config. 1 - Single Engine



Config. 2 - Two Engine



Config. 3 - Three Engine

Config. 4 - Four Engine





The NAR Safety Code requires all rockets that launch with motors larger than a "D" to be launched from thirty (30) feet. We suggest using the 2240 Pro Series II launch controller. It is also capable of launching cluster engine configurations (see Config. 1-4 above).



Choose Estes Lesson Plans to Engage Your Students in STEM!

Develop 21st century skills with your students through lesson plans that promote communication, creativity, collaboration, and critical thinking.

Use our free resources to gain confidence and effectively teach STEM topics while promoting real world learning.

Create lifelong memories in your classroom with hands on learning that inspires and ignites creativity. Aerospace careers start with Estes.

Our Free Lesson Plans Include:

- A range of topics including STEM, ELA & History
- Assessments
- NGSS and Common Core Standards
- Slide Presentations

Student Portfolios



Model Rocketry is an excellent STEM activity that gets students out of the classroom and into the sky! Students use all the elements of STEM to collect, analyze and communicate data. I've been teaching rocketry for over six years and it's the best activity every year!

Find all of our resources at edu.estesrockets.com

64 edu.estesrockets.com 65

Get Started

These are the items you need to teach rocketry in your classroom:

- Rocket Bulk Packs
- Engine Bulk Packs
- Lifetime Launch **System**



- PREPARE Build a rocket and launch it ahead of time! It's helpful to have that experience before you launch with your students.
- **ORGANIZE** Get your supplies together and encourage students to keep track of all their rocket parts. Sometimes, there can be many pieces and organization is key!
- BE FLEXIBLE Sometimes lessons don't go according to plan. Have backup activities ready in case things change.
- CONNECT STEM and rocketry go hand in hand. Use every opportunity to connect rockets to the science or math concepts you are teaching.
- **ENCOURAGE** The more excited you are, the more your students will be. Launching rockets is fun and creates memories your students will carry with them forever.

How to choose the right experience for your students:

Age

Younger students (Grades 4-6) need beginner rockets that are simple to assemble. They're not quite ready for the challenge of gluing on individual fins yet, so choose one of our beginner bulk packs. Grades 7-12 are ready for the intermediate rockets!

Time

Consider the amount of time needed to build a rocket, for glue to dry, and how long it will take to prep the rockets before launch. Our snap together rockets are ready to fly in minutes! Our intermediate rockets require a longer glue drying time.

Flying Field Size

The available field size will determine which rocket(s) and engine(s) will be best for your launch. Smaller fields will require smaller engines such as 1/2 A or A. Bigger fields = bigger engines!



Educator Bulk Packs BEGINNER

Generic E2X® **Bulk Pack**

Length: 13.5 in. (34.3 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute **Recommended Engines:** 1/2 A6-2, A8-3, A8-5, B4-4, B6-6, C6-5, C6-7

Pack of 12

#001764





ONE PIECE MOLDED FIN UNIT

N/A





Alpha III® **Bulk Pack**

Length: 12.1 in. (30.7 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Recommended Engines: 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

Pack of 12

#001751

ONE PIECE MOLDED FIN UNIT



Cosmic Ray® **Bulk Pack**

Length: 13.3 in. (33.7 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Recommended Engines: A8-3, A8-5, B4-4, B6-6, C6-5, C6-7

Pack of 12

#001112

Create your own custom deco design!

N/A



PLASTIC SNAP IN FINS: **NO GLUING!**

N/A



Only available at EstesRockets.com



Cosmic Cargo® Bulk Pack

Length: 16.7 in. (42.4 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Recommended Engines: A8-3, A8-5, B4-4, B6-6, C6-5, C6-7

Pack of 12

#001752

Create your own custom deco design! Includes added payload section!



PLASTIC SNAP IN FINS: NO GLUING!



Only available at EstesRockets.com



Star Hopper[™] **Bulk Pack**

Length: 7.4 in. (18.8 cm) Diameter: 0.74 in. (19 mm) Recovery: Streamer Recommended Engines: 1/2 A3-2T, A3-2T, A3-4T, A10-3T

Pack of 12

#001721





PLASTIC SNAP IN FINS:

Educator Bulk Packs



N/A

AVG Bulk Pack

Includes 4 of each - Alpha, Viking, and Generic E2X rockets. **Recommended Engines:** 1/2 A6-2, A8-3, A8-5, B4-4,

Pack of 12

B6-4, B6-6, C6-5, C6-7

#001753



Lenath: 12 in. (30.5 cm) Diameter: 0.74 in. (19 mm) **Recommended Engines:** 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately:



INDIVIDUAL FINS THAT GLUE **ONTO THE BODY TUBE**



N/A





Viking[™] Bulk Pack

Length: 12.1 in. (30.7 cm) Diameter: 0.74 in. (19 mm) **Recommended Engines:** 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

> Pack of 12 #001755

INDIVIDUAL FINS THAT GLUE **ONTO THE BODY TUBE**



Alpha® Bulk Pack

Length: 12.3 in. (31.2 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute **Recommended Engines:** 1/2 A6-2, A8-3, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7 Sold Separately: A10-3T w/ Engine Adapter

Pack of 12 #001756

N/A





INDIVIDUAL FINS THAT GLUE **ONTO THE BODY TUBE**

N/A

Green Eggs™ Bulk Pack

An egg lofting rocket designed for the unique needs of teachers. Uses our "mighty" C11 rocket engines to safety lift the extra weight of an egg and keep it well within an average school yard for safe recovery.

> Length: 23.6 in. (59.9 cm) Diameter: 1.8 in. (46 mm) Recovery: Parachute Recommended Engines: w/egg: C11-3, D12-3 w/o egg: C11-5, D12-5

> > Pack of 12 #001718

INDIVIDUAL FINS THAT GLUE ONTO THE BODY TUBE



Orbis 3D™ Bulk Pack

This kit comes with body tubes, parachutes and parts you need to build an engine mount. Download .stl files from the Estes website to print your 3D plastic parts to complete your rocket. Nine different design options.

N/A

3D printer and filament NOT included

Length: 10 - 12 in. (25.4 - 30.5 cm) Recovery: Parachute Recommended Engines: A8-3, B4-4, B6-4, C6-5

#001706

Students 3D print these parts!



Engine Bulk Packs

Every launch requires engines, recovery wadding, starters, and plugs. These convenient engine bulk packs include enough of each for multiple launches. Choose from a variety of engine sizes. We advise using the smallest recommended engines for the first launches. Learn more about how to find the perfect engine on pg. 89.



#001788 1/2A3-4T Engines (24); 30 starters; 24 plugs; 72 sheets wadding N/A **#001781** A8-3 Engines (24); 30 starters; 24 plugs; 72 sheets wadding **#001783 B6-4 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding #001784 B6-0 & B6-6 Engines (12 each); 30 starters, 24 plugs; 72 sheets wadding **#001789 C6-5 Engines** (24); 30 starters; 24 plugs; 72 sheets wadding **#001726** C11-3 Engines (12); 20 starters; 16 plugs; 144 sheets wadding **#001786** D12-5 Engines (12); 20 starters; 16 plugs; 144 sheets wadding #001672 Blast-Off® Flight Pack A8-3, B6-4, C6-3, C6-5 Engines (6 each); 30 starters; 28 plugs; 72 sheets wadding

Accessories **Lifetime Launch System** N/A Designed for teachers and students to withstand the rigors of multiple launches. Stands 18 inches off the ground for easy launch preparation.

- · Tiltable launch rod.
- Includes both 1/8 in. & 3/16 in. launch rods
- · Two-hand safety feature in the launch controller.
- · Includes a Pro Series II controller, 30 feet of cable and two different size launch rods

#002310

The Lifetime Launch System comes with a lifetime warranty available to read at: www.estesrockets.com/lifetime-launch-system-warranty



Phantom[®]

The Phantom is a STEM education tool and is used in classrooms nationwide!

It demonstrates the various parts of a model rocket to your students!

> Length: 12.1 in. (30.7 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute (for demo) Projected Altitude: Non-Flying Model **Recommended Engines:** Included cutaway engine only.

> > #001207

Altimeter

The Estes Altimeter records heights in onefoot increments up to 10,000 feet (+/- 3 feet). It weighs about 1/2 oz. with a 0.625 diameter. It easily hooks onto the nose cone of your rocket and inserts into the body tube right above the parachute.

#002246

\$24.19



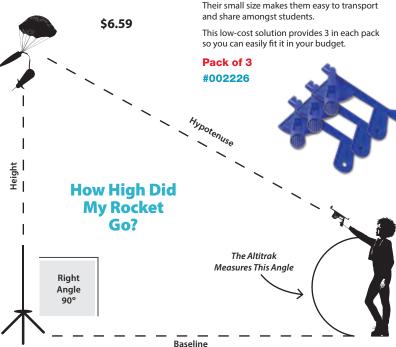
- Store up to 10 flights
- · Battery included.

How High Did It Fly?

Part of the fun in launching a model rocket is knowing how high it goes. The Estes AltiTrak is a favorite, easy-touse rocketry tool that provides fairly accurate measurements of flight altitudes.

The AltiTrak works like a protractor, providing the angle between the baseline and the triangle's hypotenuse (a big math word for the straight line between the person using the AltiTrak and the rocket when it's at peak altitude).

If you measure the baseline as given in the instructions, the AltiTrak also provides your rocket's altitude. The AltiTrak is great for students' science experiments and for teachers' math lessons!



AltiTrak™

Measure altitude with this easy-to-use device. Follow the rocket in the sight to apogee, and release the trigger to lock the reading.

#002232



Mini AltiTrak[™]

The mini AltiTrak provides a technology solution for students to track, graph and analyze data.

Their small size makes them easy to transport

Promote Engineering Thinking & Design

The (5326) Rocket Science Starter Set was chosen for the 2019 Purdue University Engineering Gift Guide. Build the rocket and launch it with one of two included engine options. Observe as a reaction occurs to make the rocket soar! Launch again with the second engine, and measure the difference in altitude with the included altitude tracker.



Rocket Science Starter Set

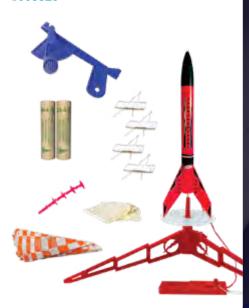
Length: 12.6 in. (32 cm) Diameter: 0.98 in. (25 mm) Recovery: Parachute Projected Altitude: 1100 ft. (335 m) **Recommended Engines:** 1/2 A6-2, A8-3, B4-4, B6-4, B6-6, C6-5, C6-7

#005326

\$29.15

Set Includes:

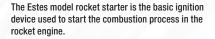
- 1 Rocket
- 1 Porta-Pad II Launch Pad
- 1 Electron Beam Launch Controller
- 1 Parachute
- 1ea. B6-4, C6-5 Engine
- 4 Starters
- 4 Pluas
- 12 Sheets of Recovery Wadding
- 1 Mini AltiTrak Altitude Tracker



PCCESSORIES

Take Your Rocketry Hobby to the Next Level with Unique Tools, Launch Equipment, and Accessories to Help You Build and Fly.

Building a model rocket can be as easy as following the instructions - but sometimes you need clean edges, precision alignment, and a flawless finish. For the perfectionist in you, we provide useful jigs, building fixtures, and templates for accurate fin alignment and precision assembly of an Estes model rocket. These tools are made for an expert finish. They make showroom and high-performance modeling look easy.







StarTech™ Model Rocket Starters

The StarTech starters stay true to the design of the original, with one key addition. The small nichrome wire, the one that heats the propellant at launch, has been dipped in a specially-crafted chemical compound that reacts with the heat of the wire to create a large burst of heat and pressure that ensures ignition.

Never misfire again! Includes 6 starters.

#002303

\$3.84

Shock cords hold the body tube and nose cone of a model rocket together once they separate during the ejection phase. The shock cord is made of an elastic material to help absorb the shock placed upon the rocket when the recovery system ejects, then opens — creating drag during the recovery phase.



Shock Cords & Mount Pack

Includes three 1/8 in. x 36 in. (3 mm x 91.4 mm) and one 1/4 in. x 36 in. (6 mm x 91.4 mm) rubber shock cords (enough for four shock cords). Includes shock cord mounts and instructions.

#002278

\$3.84

Estes starter plugs are used to safely secure your model rocket starters to your Estes engines during ignition. Different colored starter plugs are designed to accommodate different sized engines. They are a convenient way to ensure the success of your rocket launches; they are reusable.

Mini Engine Plugs

1/4A3, 1/2A3, A3, and A10 (20 pack)

#002250

\$3.84



Standard Engine Plugs

1/2A6, A8, B4, B6, and C6 (20 pack)

#002251

\$3.84



Large Engine Plugs

C11, D12, E9, E12, E16 and F15 (20 pack)

#002252

\$3.84



Model rocket recovery wadding is placed inside the rockets body tube to protect the recovery system from intense heat and gases during the rocket engine's ejection stage. All Estes recovery wadding is flame resistant, ensuring the safety of your rocket's flight.



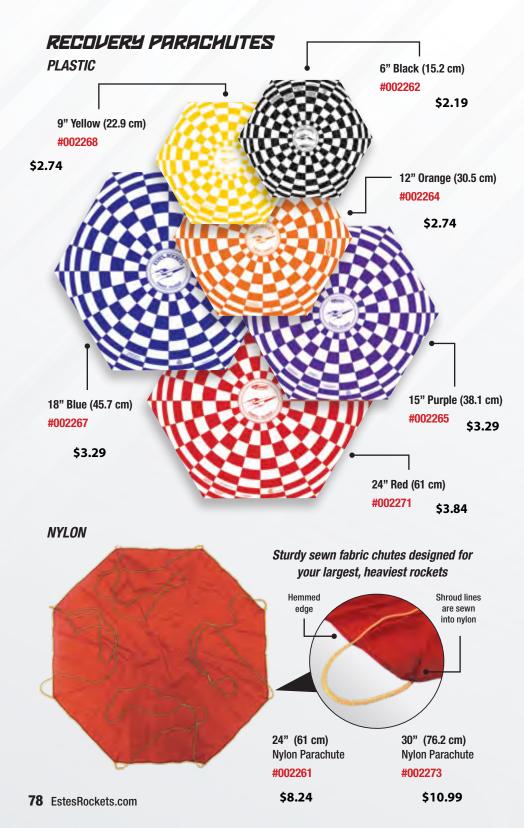
Recovery Wadding

Required in most Estes rockets. Contains approximately 72 squares – enough for about 18-25 flights!

#002274

\$3.29





LAUNCH EQUIPMENT

In order to safely and successfully launch your rocket time after time, you'll need the essentials which are a launch base, launch rod, blast plate, and launch controller. Different sized launch bases and launch rods are used to accommodate different sized rockets.

Porta-Pad® II & Electron Beam® Launch Controller

Quick assembly - no glue or tools required! Launch rod angle is adjustable. Comes complete with blast deflector, standoff, two-piece 1/8 in. (3 mm) launch rod, and safety cap. Pad can accommodate a 3/16 in. (5 mm) Maxi™ launch rod - not included. Launch controller comes assembled with safety key and 15 ft. (4.6 m) of cable. Requires 4 new 1.5V AA alkaline batteries - not included.

#002222

\$21.99

(Sold Separately)

Porta-Pad® II Launch Pad

#002215

\$13.74

(Sold Separately)

Electron Beam® Launch Controller

#002220

\$16.49

E Launch Controller

Perfect for

beginners and

smaller rockets!

Comes assembled with safety key and 30 ft. (9.7 m) of cable. Requires 4 new 1.5V AA alkaline batteries - not included.

#002230

\$19.79

Porta-Pad® E Launch Pad

Quick assembly - no glue or tools required. Launch rod angle is adjustable. Includes a three-piece 1/4 in. (6 mm) launch rod, but can accommodate a 3/16 in. (5 mm) MaxiTM launch rod - not included.

#002238

\$18.69

Designed for launching larger rockets!

Blast Deflector Plate

Replaces that worn-out deflector. For use with 2215 Porta-Pad® II.

#002241

\$4.39

Two Piece Launch Rod 1/8 in. (3 mm)

Replacement rod ideal for most rockets.

#002243

\$4.94

Two Piece Maxi™ Launch Rod 3/16 in. (5 mm)

Launch rod with extra strength and length for larger rockets.

#002244

\$8.24

Mini Launch Pad & Controller

Just the right size Launch Pad for launching mini engine powered rockets. Requires 4 new 1.5V AA alkaline batteries - not included

#002244

N/A

BUILDING TOOLS

Now you can make exact, easy measurements when attending to your fleet of Estes model rockets. Tube marking guides and fin alignment tools help make your hobby rocket endeavors fast, efficient, and fun! These are must-have items for the advanced model rocket enthusiast.



The Tube Marking Guide Allows for Accurate and Consistent Fin Placement When Building Your Rocket.

Ultimate[™] Tube Marking Guide

Accurately mark your body tubes for a variety of rocket-assembly purposes!

\$7.14

The Ultimate Tube Marking Guide Helps Mark Body Tubes of All Different Sizes.

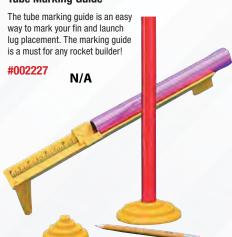
Tube Cutting Guides

Assorted sizes: BT-5, BT-20, BT-50, BT-55, and BT-60 (hobby knife not included).

#002315

\$7.69

Tube Marking Guide





Never misalign rocket fins again!



ROCKET DISPLAYS



ROCKET PARTS

Model rockets are constructed using various essential parts. Nose cones streamline a rocket's ascent. Nose cone weights help stabilize a rocket's trajectory. Payload sections allow the rocketeer to view their cargo.



Nose Cone Assortment

Each package of nose cones may contain a variety of shapes. Some are one piece, others two piece. All have eyelets for shock cord and shroud line attachments. (3173 shown)

NC-5	Assortment	(5)Pack	#003160
NC-20	Assortment	(4)Pack	#003161
NC-50	Assortment	(5)Pack	#003162
NC-55	Assortment	(4)Pack	#003163
NC-56	Assortment	(4)Pack	#003164
NC-60A	Assortment	(3)Pack	#003165
NC-80B	Assortment	(1)Pack	#003168
Sci-Fi	Accortment	(5)Pack	#003173



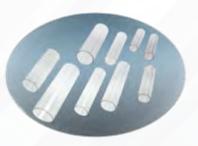




Body Tube Packs

High quality spiral wound paper tubes. Use tube couplers to connect tubes of the same diameter. Outer diameters listed. (not all body tube sizes shown)

BT-5	0.54 in./14 mm diameter	•	18 in./45.7 cm long	(4)Pack	#003084
BT-20	0.74 in./19 mm diameter	•	18 in./45.7 cm long	(4)Pack	#003085
BT-50	0.98 in./25 mm diameter	•	18 in./45.7 cm long	(3)Pack	#003086
BT-55	1.33 in./34 mm diameter	•	18 in./45.7 cm long	(3)Pack	#003087
BT-60	1.64 in./42 mm diameter	•	18 in./45.7 cm long	(3)Pack	#003089
BT-80	2.60 in./66 mm diameter	•	14 in./36.1 cm long	(2)Pack	#003090



Payload Section Assortment (Clear - BT-20, BT-50, BT-60)

#003171

\$10.99



Clay Nose Cone Weights

#003180

\$3.84



Centering Ring Assortment (BT-5 through BT-50)

#003175

\$4.39



ROCKET PARTS

Engine Hook Accessory Pack

and E12 engines (x2). #003143

Hooks fit mini engines (x2), regular and D engines (x3),

\$3.29

ROCKET PARTS



29 mm Pro Series II **Engine Retainer Set (2 sets)**

#009750

\$5.49



24 mm Engine Retainer Set (2 sets)

#009751 \$4.94



18 mm Engine Retainer Set (3 sets)

#003187

\$4.39



Mini (13mm) to Standard (24 mm) **Engine Adapters**

Two simple steps transform a mini-engine into a standard size. Insert a mini-engine into the adapter, and insert the adapter into a rocket. 3 adapters per pack. Reusable. (Engines not included).

#002316

\$3.84

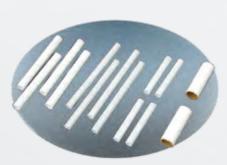


Standard (18 mm) to Large (24 mm) **Engine Adapters**

Two simple steps transform a standard engine into a 24 mm size. Insert a standard engine into the adapter, and insert the adapter into a rocket. 3 adapters per pack. Reusable. (Engines not included).

#002317

\$3.84



Launch Lug Pack

Contains 4 each: 1/8 in. x 2 3/8 in. (3 mm x 60 mm), 1/8 in. x 1 1/4 in. (3 mm x 32 mm), 3/16 in. x 2 in. (5 x 51 mm) and 1/4 in. x 1 in. (6 mm x 25 mm) launch lugs.

#002320

\$3.84



Waterslide Decal Set

#003170

\$7.69

ROCKET PARTS



Tube Couplers (2 ea.) (BT-5, BT-20, BT-50)

#003176

\$2.74



Tube Couplers (2 ea.) (BT-55, BT-60)

#003177

\$3.29



\$4.39



Standard Engine Mount Kit

Fits BT-50, BT-55, and BT-60 tubes. Can also be used to make a conversion mount for lightweight D powered rockets.

#003158

\$4.39



Tube Couplers (2 ea.) (BT-80)

#003178

\$2.74





Records HD Video & Audio on a 16GB Memory Card

Easily Download Video to Your Computer Via USB 2.0

Up to 90 Minutes of Recording Time

Includes Camera, Holder & Reusable Strap That Easily Attaches to Your Rocket

#002208

86 EstesRockets.com

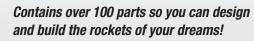
#002319

DESIGNER'S SPECIAL

Challenge your imagination & take your skills to the next level!



\$52.79



Experiment with your own designs. Includes enough parts to build at least 8 complete rockets. Just add some glue and your imagination!

Designer's Special™ #001980







ENGINES

Our world famous model rocket engines have made model rocketry safe since 1958!

Estes model rocket engines have been proven safe, consistent, and reliable in more than 500 million launches. Thousands of Estes engines are static-tested at the factory for reliability and adherence to performance specifications. All engines comply with the code requirements of the National Fire Protection Association, California Fire Marshal, and are certified by the National Association of Rocketry.

ENGINE CODES

LETTER = TOTAL IMPULSE

This letter is the total power (in Newton-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.)

FIRST NUMBER = AVERAGE THRUST

This number shows the engine's average thrust 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 = 1lb.).

SECOND NUMBER = TIME DELAY

This number gives you the time delay in seconds between the end of the thrust phase and the ignition of the ejection charge. Engine types ending in '0' have no time delay or ejection and are used for booster stages and special purposes only. Engines ending in 'P' have no time delay or ejection charge and the forward end is plugged.



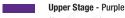


Each Engine Type is Color Coded



Booster - Red Booster engines

Booster engines contain no delay or ejection charge.



Plugged - Blue

Upper stage engines can be used as single stage engines in lightweight rockets.

Plugged engines are used for rocketpowered racers and contain no delay or ejection charge.

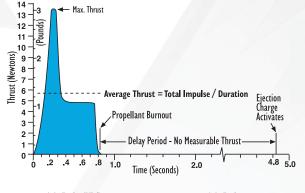


ENGINE TYPES - PERFORMANCE CHART

OLD Prod. No.	NEW** Prod. No.	Engine Type	Total Impulse	Time Delay*	Est Lift		Max Th	ırust	Thrust Duration	Initial	Weight	Prope Wei		Diameter	QTY Per Pack
			N-sec	Sec	0Z	g	Newtons	Lbs	Sec	0Z	g	oz	g	mm	
						SING	LE STAG	E ENGI	NES						
1502	10010	1/4A3-3T	0.625	3	1.0	28	4.90	1.1	0.25	0.21	5.9	0.05	1.3	13	4
1503	10011	1/2A3-2T	1.25	2	2.0	57	8.30	1.9	0.30	0.23	6.4	0.07	1.9	13	4
1506	10012	A3-2T	2.50	2	2.0	57	6.80	1.5	0.60	0.25	7.1	0.12	3.3	13	4
1507	10013	A3-4T	2.50	4	2.0	57	6.80	1.5	0.60	0.26	7.4	0.12	3.3	13	4
1508	10014	A3-6T	2.50	6	2.0	57	6.80	1.5	0.60	0.27	7.7	0.12	3.3	13	4
1511	10015	A10-3T	2.50	3	3.0	85	13.00	2.9	0.80	0.29	8.1	0.12	3.5	13	4
1593	10016	1/2A6-2	1.25	2	2.0	57	8.90	2.0	0.30	0.48	13.6	0.10	2.7	18	3
1598	10017	A8-3	2.50	3	3.0	85	10.70	2.4	0.50	0.55	15.5	0.14	4.1	18	3
1601	10018	B4-2	5.00	2	4.0	113	13.20	3.0	1.10	0.66	18.6	0.27	7.6	18	3
1602	10019	B4-4	5.00	4	3.5	99	13.20	3.0	1.10	0.68	19.2	0.27	7.6	18	3
1605	10020	B6-2	5.00	2	4.5	127	12.10	2.7	0.80	0.61	17.3	0.23	6.5	18	3
1606	10021	B6-4	5.00	4	4.0	113	12.10	2.7	0.80	0.63	17.8	0.23	6.5	18	3
1617	10022	C5-3	10.00	3	8.0	227	20.40	4.6	1.85	0.83	23.6	0.39	11	18	3
1613	10023	C6-3	10.00	3	4.0	113	15.30	3.4	1.60	0.83	23.4	0.43	12.2	18	3
1614	10024	C6-5	10.00	5	4.0	113	15.30	3.4	1.60	0.85	24.0	0.43	12.2	18	3
1522	10025	C11-3	10.00	3	6.0	170	22.10	4.9	0.80	1.13	32.1	0.44	12.4	24	2
1523	10026	C11-5	10.00	5	5.0	142	22.10	4.9	0.80	1.18	33.4	0.44	12.4	24	2
1566	10027	D12-3	20.00	3	14.0	396	32.90	7.4	1.60	1.57	44.5	0.85	24.2	24	2
1567	10028	D12-5	20.00	5	10.0	283	32.90	7.4	1.60	1.61	45.7	0.85	24.2	24	2
1692	10029	E12-4	30.00	4	17.0	482	30.60	6.9	2.70	2.16	61.2	1.30	36.9	24	3
1693	10030	E12-6	29.50	6	14.0	397	29.60	6.7	2.70	2.23	63.2	1.30	36.9	29	3
1651	10031	F15-4	49.61	4	21.0	595	25.26	5.7	3.45	3.59	101.5	2.12	60	29	2
1652	10032	F15-6	49.61	6	17.0	482	25.26	5.7	3.45	3.66	103.7	2.21	60	29	2
1696	10033	E16-4	33.68	4	20.0	566	26.44	5.9	2.09	2.86	81.0	1.41	40	29	2
1697	10034	E16-6	33.68	6	16.0	453	26.44	5.9	2.09	2.92	82.7	1.41	40	29	2
						UPPI	ER STAGE	ENGI	NES						
1504	10035	1/2A3-4T	1.25	4	1.0	28	8.30	1.9	0.30	0.23	6.6	0.07	1.9	13	4
1599	10036	A8-5	2.50	5	2.0	57	13.30	3.0	0.50	0.55	15.7	0.14	4.1	18	3
1607	10037	B6-6	5.00	6	2.5	71	12.10	2.7	0.80	0.64	18.2	0.23	6.5	18	3
1615	10038	C6-7	10.00	7	2.5	71	15.30	3.4	1.60	0.85	24.3	0.43	12.2	18	3
1524	10039	C11-7	10.00	7	4.0	113	22.10	4.9	0.80	1.19	33.8	0.44	12.4	24	2
1568	10040	D12-7	20.00	7	8.0	226	32.90	7.4	1.60	1.62	46.0	0.85	24.2	24	2
1694	10041	E12-8	29.80	8	12.0	340	31.80	7.1	2.70	2.24	63.5	1.30	36.9	24	3
1653	10042	F15-8	49.61	8	15.0	425	25.26	5.7	3.45	3.69	104.4	2.12	60	29	2
1698	10043	E16-8	33.68	8	14.0	396	26.44	5.9	2.09	2.99	84.7	1.41	40	29	2
						BOOS	TER STAC	GE ENG	INES						
1510	10044	A10-0T	2.50	NONE	4.0	113	13.00	2.9	0.80	0.24	6.8	0.12	3.5	13	4
1600	10045	A8-0	2.50	NONE	3.0	85	13.30	3.0	0.30	0.47	13.5	0.14	4.1	18	3
1608	10046	B6-0	5.00	NONE	4.0	113	12.10	2.7	0.80	0.55	15.7	0.23	6.5	18	3
1616	10047	C6-0	10.00	NONE	4.0	113	15.30	3.4	1.60	0.76	21.4	0.43	12.2	18	3
1521	10048	C11-0	10.00	NONE	6.0	170	22.10	4.9	0.80	1.03	29.2	0.44	12.4	24	2
1565	10049	D12-0	20.00	NONE	14.0	396	32.90	7.4	1.60	1.43	40.4	0.84	23.8	24	2
1691	10050	E12-0	28.80	NONE	16.0	454	31.30	7.0	2.60	2.05	58.1	1.30	36.9	24	3
1650	10051	F15-0	49.61	NONE	19.0	539	25.26	5.7	3.45	3.32	94.0	2.12	60	29	2
1695	10052	E16-0	33.68	NONE	18.0	509	26.44	5.9	2.09	2.58	73.2	1.41	40	29	2
			PL	UGGED E	NGINES	S - FOR	USE WIT	TH ROC	KET-POW	ERED R	ACERS				
1505	10053	A10-PT	2.50	NONE	3.0	85	13.00	2.9	0.80	0.26	6.83	0.13	3.5	13	4

^{**}Estes is changing our engine packaging to a new re-sealable flexi bag. This change will rollout in 2024 at different times of the year based on inventory levels of current engine stock. During this change, the old product numbers will be updated to correspond with the new bag packaging for that engine type. Customers will still be able to search by the old PN or new PN on EstesRockets.com until further notice.

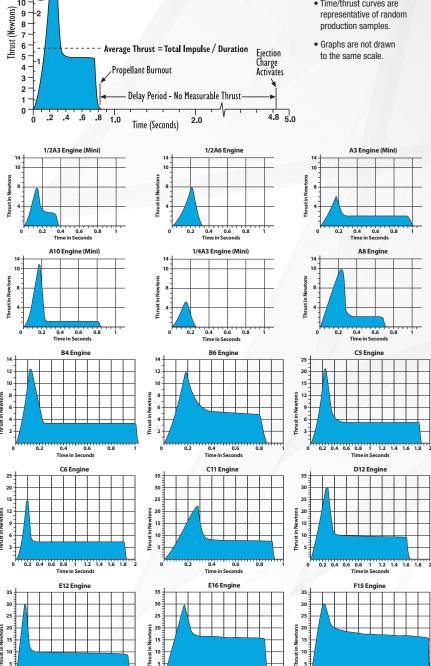
ENGINE TIME / TURUST CURVES



1.0 1.5 Time in Seconds

2.0

• Time/thrust curves are



1.0 1.5 Time in Seconds

2.0

1.0 1.5 Time in Seconds

^{*}Delays have a tolerance of 1.5 seconds or 20%, whichever is greater. The data listed above is from randomly chosen production samples. There are four mini-engines per package. All other engines are two or three per package. NOTE: The 'T' designates a mini-engine. All Estes engines come complete with starters and starter plugs. The Estes starter plug makes engine ignition extremely reliable.



Estes encourages membership in the

NATIONAL ASSOCIATION OF ROCKETRY

https://www.nar.org

MODEL ROCKET SAFETY CODE

(Basic Version - Effective August 2012)

- 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 away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket. I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance. When conducting a simultaneous launch of more than ten rockets I will observe a safe distance of 1.5 times the maximum expected altitude of any launched rocket.
- 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 1500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse.
- 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. 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

Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00-1.25	1/4A, 1/2A	50
1.26-2.50	Α	100
2.51-5.00	В	200
5.01-10.00	C	400
10.01-20.00	D	500
20.01-40.00	E	1000
40.01-80.00	F	1000
80.01-160.00	G	1000
160.01-320.00	Two Gs	1500

- 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.



ESTES IS A PROUD EDUCATIONAL PARTNER OF THE AMERICAN ROCKETRY CHALLENGE

The American Rocketry Challenge is the world's largest rocket contest with nearly 5,000 students nationwide competing each year. The contest gives middle and high school students the opportunity to design, build and launch model rockets and hands-on experience solving engineering problems.

Visit **rocketcontest.org** for more information.

GET INVOLVED TODAY!

These organizations and institutions support the development of young people. Like Estes, many of these groups provide unique and valuable learning experiences for students, youth leaders, and education professionals. Together we can inspire and engage students to create lasting memories.



aiaa.org





bgca.org

aia-aerospace.org









challenger.org







spacecamp.com

gocivilairpatrol.com

girlscouts.org

scouting.org





Accessories

Altimeter 2246	73	Lifetime Launch System 2310	73	PS II Shock Cord Pack 3172	62
Altitrak 2232	74	Mini AltiTrak 2226	74	Recovery Parachutes	78
Blast Deflector Plate 2241	79	Mini Engine Adapters 2316	84	Recovery Wadding 2274	77
Body Tube Packs	82	Mini Launch Pad & Controller 2244	79	Shock Cords & Mounts Pack 2278	77
Centering Ring, Shroud Template 3179	83	Model Rocket Cradle 2293	81	Standard Engine Mount Kit 3158	85
Centering Ring Assortment 3175	82	Model Rocket Display Stands	81	Standard Engine Adapters 2317	84
Clay Nose Cone Weights 3180	82	Model Rocket Starters 2303	77	Tube Coupler Assortment Pack 3196	85
Clear Payload Assortment 3171	82	Nose Cone Assortments	82	Tube Couplers (BT-5, -20, -50) 3176	85
D and E12 Engine Mount Kit 3159	83	Porta-Pad II Launch Pad 2215	79	Tube Couplers (BT-55, -60) 3177	85
Designer's Special 1980	87	Porta-Pad E Launch Pad 2238	79	Tube Couplers (BT-80) 3178	85
E Launch Controller 2230	79	PS II Aramid Cord 3140, 3141, 3142	61	Tube Cutting Guides 2315	80
Electron Beam Launch Controller 2220	79	PS II E2X Booster 9752	62	Tube Marking Guide 2227	80
Engine Hook Accessory Pack 3143	83	PS II Engine Retainer Set 9750	84	Two-Piece 1/8 in. Launch Rod 2243	79
Engine Mount Parts Assortment 3181	83	PS II Engine Adapter Set 9753	62	Two-Piece 3/16 in. Maxi Launch Rod 2244	79
Engine Plugs 2250, 2251, 2252	77	PS II Launch Base 3552	63	Ultimate Sanding Bar 2318	86
Engine Retainer Set 18mm 3187	84	PS II Launch Controller 2240	63	Sandpaper Packs	86
Engine Retainer Set 24mm 9751	84	PS II Launch Rail 2311	61	Ultimate Tube Marking Guide 2228	80
Fin Alignment Guide 2231	80	PS II Parts Assortment 9987	62	Universal Astrocam 2208	86
Launch Lug Pack 2320	84	PS II Recovery Wadding 3556	62	Waterslide Decal Set 3170	84

Engines

All Engines Packs (See Chart)	90	Engine Codes	89	Engine Thrust Curves	91
-------------------------------	----	--------------	----	----------------------	----

Engine Bulk Packs

1/2 A3-4T Engines 1788	72	B6-4 Engines 1783	72	C6-5 Engines 1789	72
A8-3 Engines 1781	72	Blast-Off Flight Pack 1672	72	D12-5 Engines 1786	72
B6-0 & B6-6 Engines 1784	72	C11-3 Engines 1726	72	F15-4 Engines 1787	60

Launch Sets

Alpha III 1427	19	Mini Bertha 2469	17	Space Corps Centurion 5324	20
Flash 1478	20	Mini Max 2445	18	Star Hopper 2427	18
Journey 1441	20	Rascal & HiJinks 1499	21	Tandem-X 1469	21
Mini Alpha 2458	17	Riptide 1403	16	Taser 1491	19

Rocket Education Bulk Packs

Alpha Bulk Pack 1756	71	Cosmic Cargo Bulk Pack 1752	69	Star Hopper Bulk Pack 1721	69
Alpha III Bulk Pack 1751	68	Cosmic Ray Bulk Pack 1112	69	Viking Bulk Pack 1755	70
AVG Bulk Pack 1753	70	Green Eggs Bulk Pack 1718	71	Wizard Bulk Pack 1754	70
Generic E2X Bulk Pack 1764	68	Orbis 3D Bulk Pack 1706	71		

Rockets

3 Bandits 2435	25	Generic E2X 2008	22	SA-2061 Sasha 7271	40
Alpha 1225	29	Ghost Chaser 7300	26	Saturn V Anniversary Edition 2160	51
Alpha III 1256	22	Great Goblin Pro Series II 9724	59	Saturn V 1:100 1969	53
Antar 7310	43	Green Eggs 7301	29	Saturn 1B 7251	52
AstroCam 7308	27	Hi-Flier 2178	28	Saturn Skylab 1973	53
Athena 2452	22	Hi-Flier XL 3226	36	So Long Pro Series II 9722	56
Baby Bertha 1261	30	Illusion 7299	23	SpaceX Falcon 9 2161	49
Big Bertha 1948	32	Interceptor 1250	39	Space Corps Centurion 7291	26
Big Daddy 2162	35	Long Ranger 0814	27	Space Corps Corvette Class 7281	31
Black Brant II 7243	55	Luna Bug 0816	28	Space Corps DARC-1 7307	40
Black Brant XII Pro Series II 9723	57	Majestic Pro Series II 9707	60	Space Corps Lunar Scout 7290	31
Blue Origin New Shepard 2198	48	Mean Machine 1295	33	Space Corps Vesta Intruder 7312	34
Blue Origin New Shepard BK 7315	48	Mercury Redstone 4 1921	52	Space Shuttle 9991	46
BOSS - Bill Simon Rocket 7316	42	Mini Alpha 2098	24	Star Hopper 7303	24
Boosted Bertha 1946	37	Mini Arcas 2441	34	Star Orbiter Pro Series II 9716	59
Bull Pup 12D 7000	55	Mini Bertha 2099	24	Starship Octavius 7284	23
Cadet 2021	24	Mini Honest John 2446	54	Super Big Bertha Pro Series II 9719	58
Comanche-3 7245	41	Mini Max 2100	30	Super Orbital Transport 7314	38
Crossfire ISX 7220	28	Mini Mean Machine 0865	33	Super Mars Snooper 7309	39
Der Red Max 0651	30	Mongoose 2092	32	Tazz 7282	36
Der Big Red Max Pro Series II 9721	60	Mosquito 1345	31	U.S. Army Patriot M-104 2056	54
Destination Mars MAV 7283	26	NASA SLS 2206	50	Vapor 7294	35
Destination Mars Leaper 7297	25	Nike-X 7259	37	Viking 1949	32
Doorknob Pro Series II 9720	58	Orange Bullet 7295	43	Wizard 1292	31
Dragonite 2169	27	Phantom 1207	73		
Firehawk 0804	23	Power Patrol 2481	25		

STEM & Starter Sets

AstroCam 5325	14	Olympus MEGA STEM Kit 0642	12	Roto Rocket STEM Kit 0648	11
Athena X 5304	15	Rocket Science 5302 (Hobby Shop Exclusive)	15	Tri-Flyer STEM Kit 0647	11
Green Eggs STEM Kit 9990	12	Rocket Science 5326 (Education)	75		

ESTES WARRANTY STATEMENT

Estes model rocket products are warranteed against defects in materials or workmanship for one year from the date of the original purchase. If the Estes product, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period, it will be repaired or replaced, at Estes' option and at no charge to you.

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 products. 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 contact us at EstesRockets.com or by mail at Estes Industries, LLC, Customer Service Department, 1295 H Street, Penrose, Colorado 81240-9698. For customer service, call (719) 372-5214.



All Estes model rocket engine packaging carries this warning.

WARNING: Drilling, sawing, sanding or machining wood products can expose you to wood dust, a substance known to the state of California to cause cancer. Avoid inhaling wood dust or use a dust mask or other safeguards for personal pretection. For more information go to www.P65Warnings.ca.gov/wood.

Availability may be subject to change without notice. Color of products may vary.

© 2024 Estes Industries, LLC 1295 H Street, Penrose, CO 81240-9698 All rights reserved. Printed in USA. PN-2928 (1-24)

Estes Rockets that contain wood parts/components carry this warning.

LEARNING



FLYING MODEL ROCHET HITS



