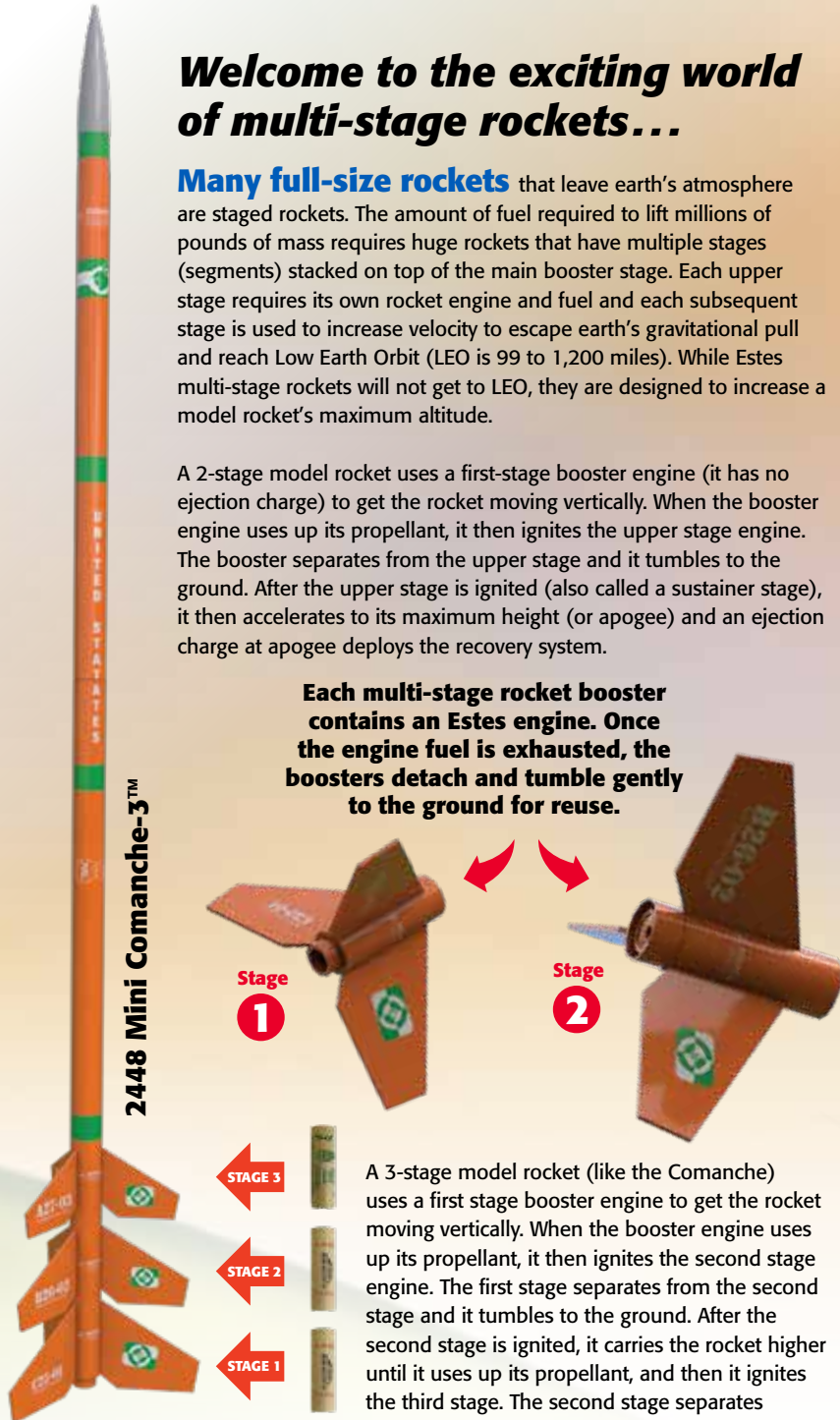


## Welcome to the exciting world of multi-stage rockets...

**Many full-size rockets** that leave earth's atmosphere are staged rockets. The amount of fuel required to lift millions of pounds of mass requires huge rockets that have multiple stages (segments) stacked on top of the main booster stage. Each upper stage requires its own rocket engine and fuel and each subsequent stage is used to increase velocity to escape earth's gravitational pull and reach Low Earth Orbit (LEO is 99 to 1,200 miles). While Estes multi-stage rockets will not get to LEO, they are designed to increase a model rocket's maximum altitude.

A 2-stage model rocket uses a first-stage booster engine (it has no ejection charge) to get the rocket moving vertically. When the booster engine uses up its propellant, it then ignites the upper stage engine. The booster separates from the upper stage and it tumbles to the ground. After the upper stage is ignited (also called a sustainer stage), it then accelerates to its maximum height (or apogee) and an ejection charge at apogee deploys the recovery system.

**Each multi-stage rocket booster contains an Estes engine. Once the engine fuel is exhausted, the boosters detach and tumble gently to the ground for reuse.**

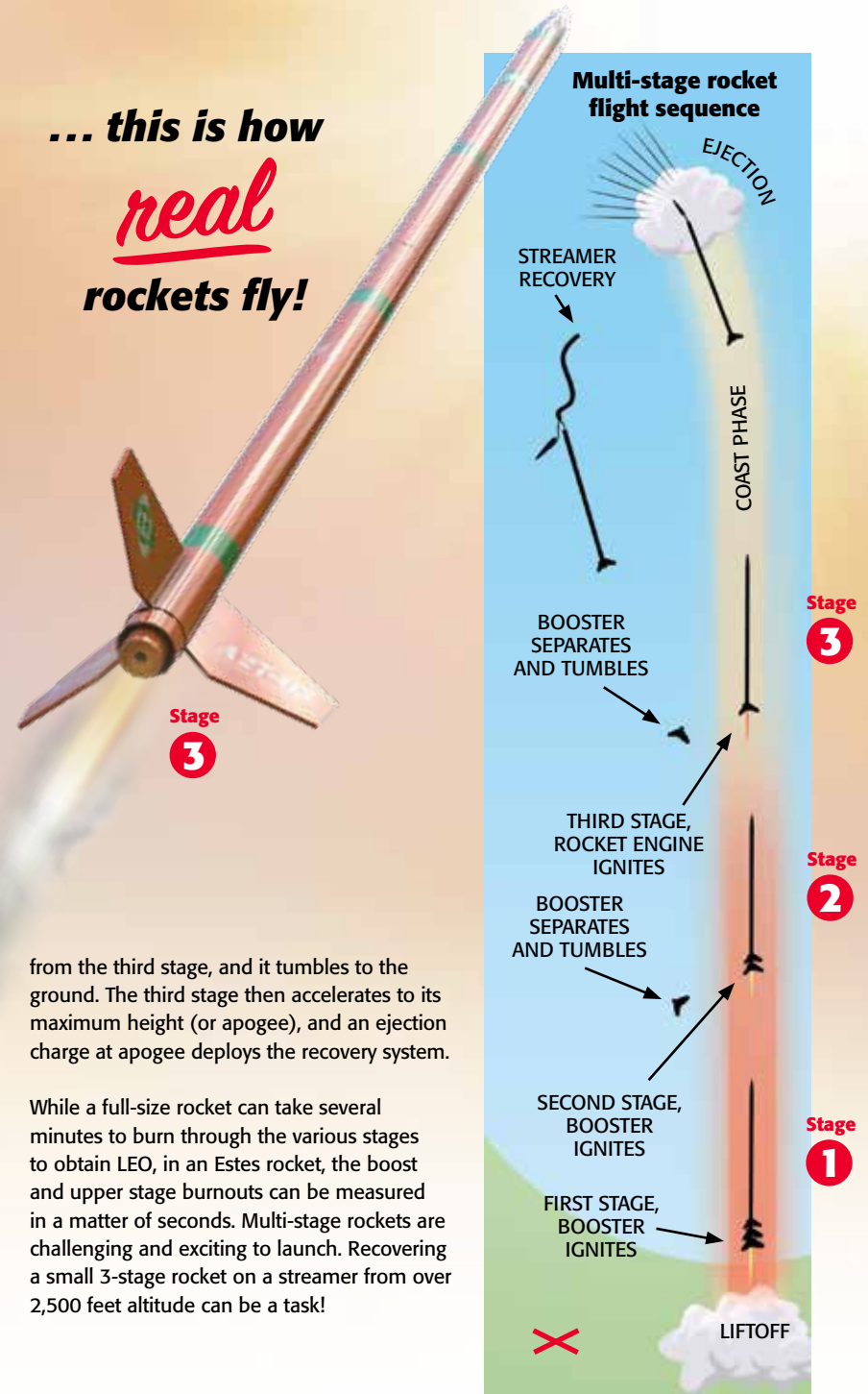


2448 Mini Comanche-3™



A 3-stage model rocket (like the Comanche) uses a first stage booster engine to get the rocket moving vertically. When the booster engine uses up its propellant, it then ignites the second stage engine. The first stage separates from the second stage and it tumbles to the ground. After the second stage is ignited, it carries the rocket higher until it uses up its propellant, and then it ignites the third stage. The second stage separates

... this is how *real* rockets fly!



from the third stage, and it tumbles to the ground. The third stage then accelerates to its maximum height (or apogee), and an ejection charge at apogee deploys the recovery system.

While a full-size rocket can take several minutes to burn through the various stages to obtain LEO, in an Estes rocket, the boost and upper stage burnouts can be measured in a matter of seconds. Multi-stage rockets are challenging and exciting to launch. Recovering a small 3-stage rocket on a streamer from over 2,500 feet altitude can be a task!

### 1329 Multi-Roc™

Length: 25 in. (63.5 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 2.6 oz. (73.7 g)  
 Fins: Laser cut wood  
 Recovery: 12 in. (30.5 cm) Parachute;  
 Glide; Tumble  
 Projected Altitude: 1200 ft. (366 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 B6-4 for first launch; B6-6, C6-5, C6-7  
 Two Stage rocket with booster:  
 Booster Stage:  
 B6-0 for first launch; C6-0  
 Second Stage Rocket:  
 B6-4 for first launch; B6-6, C6-5, C6-7

**\$22.99**



### 7250 Twin Factor™

Length: 6 in. (15.2 cm)  
 Diameter: 4.3 in. (10.9 cm)  
 Estimated Weight: 0.8 oz. (22.7 g)  
 Fins: Laser cut cardstock  
 Recovery: Tumble  
 Projected Altitude: 150 ft. (46 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 A3-4T for first launch; A10-3T, A10-PT  
 Two Stage rocket with single booster:  
 Booster Stage: A10-0T  
 Second Stage Rocket:  
 A3-4T for first launch; 1/4A3-3T, 1/2A3-2T,  
 1/2A3-4T, A10-3

**\$13.99**



### 2092 Mongoose™

ALL PRE-COLORED PARTS!  
 Length: 27 in. (68.6 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 2.3 oz. (65 g)  
 Fins: Plastic  
 Recovery:  
 12 in. (30.5 cm) Parachute; Tumble  
 Projected Altitude: 1600 ft. (488 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 A8-3 for first launch; B4-4, B6-4, C6-5.  
 Two Stage rocket with booster:  
 Booster Stage: B6-0 for first Flight; C6-0  
 Second Stage Rocket:  
 A8-5 for first launch; B6-6, C6-7

**\$16.99**



### 7276 Checkmate™

Length: 17 in. (43.2 cm)  
 Diameter: 0.74 in. (19 mm)  
 Estimated Weight:  
 1 oz. (28.3 g)  
 Fins: Laser cut wood  
 Recovery:  
 18 in. (45.7 cm) Streamer; Tumble  
 Projected Altitude: 900 ft. (274 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 A3-4T for first launch; A10-3T  
 Two Stage rocket with booster:  
 Booster Stage A10-0.  
 Second Stage Rocket:  
 A3-4T for first launch; A10-3T

**\$12.99**



### 7275 Sterling Silver™

Length: 22 in. (55.9 cm)  
 Diameter: 0.74 in. (19 mm)  
 Estimated Weight:  
 1.1 oz. (31.2 g)  
 Fins: Laser cut wood  
 Recovery:  
 30 in. (76.2 cm) Streamer; Tumble  
 Projected Altitude:  
 2600 ft. (792 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 A8-5 for first launch; B6-6, C6-7.  
 Two Stage rocket with booster:  
 Booster Stage: A8-0 for first launch;  
 B6-0, C6-0  
 Second Stage Rocket: A8-5 for first  
 launch; B6-6, C6-7

**\$14.99**



**NEW!**  
6 ways to launch!

**NEW!**

### 7217 Hyper Bat™

Length: 21.9 in. (55.6 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 1.8 oz. (51 g)  
 Fins: Laser cut wood  
 Recovery:  
 12 in. (30.5 cm) Parachute; Tumble  
 Projected Altitude: 2125 ft. (648 m)  
 Recommended Engines:  
 Rocket Only: B6-4 for first launch;  
 B6-6, C6-5, C6-7  
 Two Stage: Booster: B6-0 for first  
 launch; A8-0, C6-0  
 Upper Stage: B6-6 for first launch;  
 A8-5, C6-5, C6-7

**\$17.99**



### 1946 Boosted Bertha™

Length: 21.9 in. (55.6 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 4 oz. (113.4 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7) Parachute; Tumble  
 Projected Altitude: 1000 ft. (305 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 B6-4 for first launch; B6-6, C6-5 and C6-7.  
 Two Stage rocket with booster:  
 Booster Stage: B6-0 for first launch; A8-0, C6-0  
 Second Stage Rocket: B6-6 for first launch; A8-5,  
 B6-4, C6-5, C6-7

**\$29.99**





### 2448 Mini Comanche-3™

Length: 31.1 in. (79 cm)  
 Diameter: 0.74 in. (19 mm)  
 Estimated Weight: 1.5 oz. (42.5 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Streamer; Tumble  
 Projected Altitude: 900 ft. (274 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 1/4A3-3T for first launch; 1/2A3-2T,  
 A3-4T, A10-3  
 Two Stage rocket with single booster:  
 Booster Stage: A10-0T  
 Second Stage Rocket:  
 A3-4T for first launch; A10-3T  
 Three Stage rocket with two boosters:  
 First Stage booster: A10-0T  
 Second Stage booster: A10-0T  
 Third Stage Rocket: A3-4T for first  
 launch; or A10-3T

**\$14.99**



### 7245 Comanche-3™

Length: 41 in. (104.1 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 2.5 oz. (70.9 g)  
 Fins: Laser cut wood  
 Recovery: 36 in. (91.4 cm) Dual  
 Streamer; Tumble  
 Projected Altitude: 2250 ft. (686 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 A8-3 for first launch; B4-4, B6-4, C6-5  
 Two Stage rocket with single booster:  
 Booster Stage: C6-0  
 Second Stage Rocket: B4-4, B6-6, C6-7  
 Three Stage rocket with two boosters:  
 First Stage booster: C11-0 or D12-0  
 Second Stage booster: B6-0 or C6-0  
 Third Stage Rocket: B6-6 or C6-7

**\$23.99**



**The Comanche  
 models are  
 3-stage rockets  
 with 2 boosters  
 that can attain  
 extremely high  
 altitudes!**



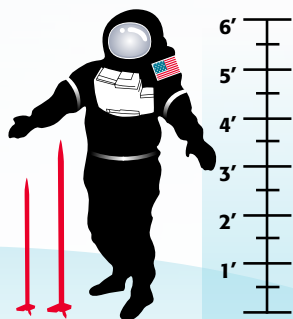
### 2437 Savage™

Length: 31.8 in. (80.8 cm)  
 Diameter: 1.33 in. (34 mm)  
 Estimated Weight:  
 4.7 oz (133.2 g)  
 Fins: Plastic  
 Recovery:  
 15 in. (38.1 cm) Parachute; Tumble  
 Projected Altitude:  
 1600 ft. (488 m)  
 2437 Savage  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 B6-4 for first launch; B4-2, B6-2, C6-5  
 Two Stage rocket with booster:  
 Booster Stage: D12-0  
 Second Stage Rocket: B6-4 for first  
 launch; A8-5, B6-6, C6-5, C6-7

**\$25.99**



### Comanche Series Sizes



Mini-Comanche-3  
& Comanche-3

**With the  
 Loadstar II  
 nose cone  
 payload,  
 you can blast  
 bugs up to  
 1000 ft. in  
 the air!**



### 3227 Loadstar™ II

Length: 23.3 in. (59.2 cm)  
 Diameter: 1.33 in. (34 mm)  
 Payload Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 2.8 oz. (79.4 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Parachute; Tumble  
 Projected Altitude: 1000 ft. (305 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 B4-4 for first launch; B6-4, C6-5  
 Two Stage rocket with booster:  
 Booster Stage: B6-0 for first launch; C6-0  
 Second Stage Rocket:  
 A8-5 for first launch; B6-4, B6-6 and C6-7

**\$22.99**



**Recruit your  
 own fleet of  
 insectronauts!**

### 7248 Supernova™

Length: 27.5 in. (69.9 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 2 oz. (56.7 g)  
 Fins: Laser cut wood  
 Recovery:  
 9 in. (22.9 cm) Parachute; Tumble  
 Projected Altitude:  
 1550 ft. (472 m)  
 Recommended Engines:  
 Single Stage rocket only – no booster:  
 B4-4 for first launch; A8-5, B6-4, C6-5  
 Two Stage rocket with booster:  
 Booster Stage:  
 B6-0 for first launch; C6-0  
 Second Stage Rocket: A8-5 for first  
 launch; B6-6, C6-7

**\$22.99**



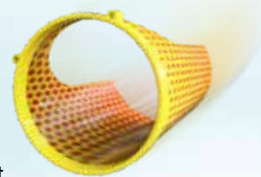
The Double Ringer has unique cylindrical gliders that detach and circle back to earth.

**What goes up...**

**... must come down in fun fashion!**

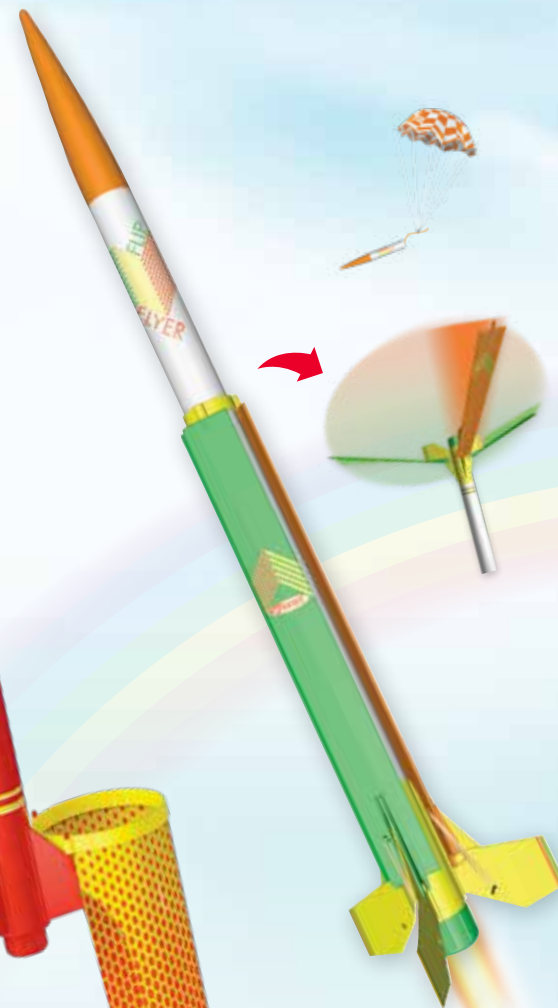
### Fun Recovery Systems

Watching your model rocket liftoff is only part of the fun — seeing the whoosh — pop of the parachute when the rocket reaches apogee is equally thrilling! Estes model rocketry recovery systems vary depending upon each rocket's specifications and engineering design. Most model rockets rely on traditional parachute or streamer recovery. Factors such as rocket size, engine power, and launch site dimension, are used to determine the size or number of parachutes to be used or if a streamer should be used to keep a high-performance rocket from drifting too far from the launch site and getting lost. A few model rockets are so light that they either simply tumble or flutter gently back to earth; in essence, their lightweight construction is the recovery system. And then there are combinations of recovery systems and other unique methods of recovery. These include spin and glide recovery. Spin recovery is created by the rocket's spinning (usually with helicopter blades), creating drag. Glide recovery utilizes lift created by varying wing shapes and designs, requiring careful trimming for optimum performance. Every Estes model rocket includes a recovery system so that you can launch it over and over again!



**NEW!**

**7279 Double Ringer™**  
 Length: 25.3 in. (64.3)  
 Diameter: 1.33 in. (34 mm)  
 Estimated Weight: 3.8 oz. (107.8 g)  
 Fins: Plastic  
 Recovery:  
 15 in. (38.1 cm) Parachute; Glide  
 Projected Altitude: 500 ft. (152 m)  
 Recommended Engines:  
 B6-2 for first launch; C6-3  
**\$19.99**



**2416 Flip Flyer™**  
 Length: 19.2 in. (48.8 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 3.2 oz. (90.7 g)  
 Fins: Plastic  
 Recovery:  
 9 in. (22.9 cm) Parachute; Spin  
 Projected Altitude: 900 ft. (274 m)  
 Recommended Engines:  
 B6-4 for first launch; C6-5  
**\$20.99**





**2183 Shuttle Xpress™**

Length: 17.7 in. (45 cm)  
Diameter: 1.35 in. (34 mm)  
Estimated Weight: 3.2 oz. (90.7 g)  
Fins: Plastic  
Recovery: 12 in. (30.5 cm) Parachute; Glide  
Projected Altitude: 600 ft. (183 m)  
Recommended Engines: B4-2 for first launch; B4-4, B6-2, B6-4, C6-3, C6-5

**\$20.99**



**A perfect competition rocket featuring helicopter blades!**



**The Shuttle Express model rocket is equipped with two gliders that detach and glide back to earth during recovery!**



**7272 Mini "A" Heli**

Length: 17 in. (43.2 cm)  
Diameter: 0.54 in. (14 mm)  
Rotor Diameter: 24.2 in. (61.5 cm)  
Estimated Weight: 0.76 oz. (21.5 g)  
Fins: Laser cut wood  
Recovery: Spin  
Projected Altitude: 400 ft. (122 m)  
Recommended Engines: A10-3T

**\$14.99**



**The Quinstar rocket has a unique design that allows it to spin rapidly as it lifts into the sky and as it returns to the ground.**

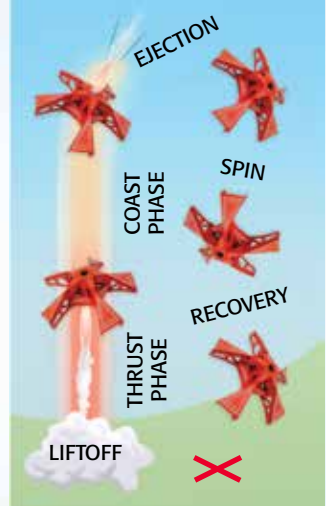
**7241 Quinstar™**

Height: 3 in. (7.6 cm)  
Diameter: 8 in. (20.3 cm)  
Estimated Weight: 0.8 oz. (22.7 g)  
Fins: Laser cut wood  
Recovery: Spin  
Projected Altitude: 150 ft. (46 m)  
Recommended Engines: B6-0 for first launch; C6-0

**\$21.99**



**Quinstar flight sequence**



**The Quinstar is a lightweight rocket which allows for a spin recovery that requires no parachute.**



*Imagine  
new worlds!*

**What's your story  
for these unique rockets?**

**7260 Protostar™**

Length: 24 in. (61 cm)  
Diameter: 1.64 in. (42 mm)  
Estimated Weight: 5 oz. (141.7 g)  
Fins: Laser cut wood  
Recovery:  
18 in. (45.7 cm) Parachute  
Projected Altitude:  
1350 ft. (411 m)  
Recommended Engines: C11-3 for  
first launch; D12-5, E12-6  
Requires 3/16 in. (5 mm) Maxi™  
Launch Rod PN 2244; sold separately

**\$30.99**



**7249 Expedition™**

Length: 25.6 in. (65.1 cm)  
Diameter: 2.22 in. (56 mm)  
Estimated Weight: 5 oz. (141.8 g)  
Fins: Laser cut wood  
Recovery:  
18 in. (45.7 cm) Parachute  
Projected Altitude: 1100 ft. (305 m)  
Recommended Engines:  
C11-3 for first launch; D12-5, E12-4  
Requires 3/16 in. (5 mm) Maxi™ Launch  
Rod PN 2244; sold separately

**\$27.99**



**7262 Starship Nova™**

Length: 20 in. (50.8 cm)  
Diameter: 0.98 in. (25 mm)  
Estimated Weight: 2.1 oz. (59.5 g)  
Fins: Laser cut wood  
Recovery: 15 in. (38.1 cm) Parachute  
Projected Altitude: 500 ft. (152 m)  
Recommended Engines: B4-2 for first launch;  
B6-2, C6-3, C6-5

**\$24.99**



**7264 Astron Explorer™**

Length: 42.2 in. (107.2 cm)  
Diameter: 1.33 in. (34 mm)  
Estimated Weight: 6 oz. (170.1 g)  
Fins: Laser cut wood  
Recovery:  
18 in. (45.7 cm) Parachute  
Projected Altitude: 1200 ft. (366 m)  
Recommended Engines:  
D12-3 for first launch; E12-4  
Requires 3/16 in. (5 mm) Maxi™  
Launch Rod PN 2244; sold  
separately

**\$27.99**



**7230 Conquest™**

The Estes Conquest™ is a scale-like  
model of the next-generation pilotless  
supersonic interceptor. A real builder's  
challenge, this well-crafted kit will stand  
out as the pride of your fleet!  
Length: 28.6 in. (72.6 cm)  
Diameter: 1.64 in. (42 mm)  
Wingspan: 12.8 in. (32.5 cm)  
Estimated Weight: 5.5 oz. (155.9 g)  
Fins: Laser cut wood  
Recovery: 18 in. (45.7 cm) Parachute  
Projected Altitude: 1100 ft. (335 m)  
Recommended Engines:  
D12-3 for first launch; E12-4  
Requires 3/16 in. (5 mm) Maxi™ Launch  
Rod PN 2244; sold separately.

**\$34.99**



**7233 Lynx™**

Length: 13 in. (33 cm)  
Diameter: 0.74 in. (19 cm)  
Estimated Weight: 1.2 oz. (34 g)  
Fins: Laser cut wood  
Recovery: 12 in. (30.5 cm) Parachute  
Projected Altitude: 400 ft. (122 m)  
Recommended Engines:  
A3-4T for first launch; A10-3T

**\$14.99**





### 1250 Interceptor™

Standing over 2 ft. tall, this model rocket features laser cut precision balsa parts, a slotted body tube for extra secure wing and fin mounting, a detailed blow molded nose cone and three 5-color decal sheets that will finish this model with eye-popping décor!

Length: 26 in. (66 cm)  
Diameter: 1.33 in. (34 mm)  
Estimated Weight: 3.9 oz. (110.6 g)  
Fins: Laser cut wood  
Recovery: 18 in. (45.7 cm) Parachute  
Projected Altitude: 525 ft. (160 m)  
Recommended Engines: B4-2 for first launch;  
B6-4, C6-5

**\$29.99**



### 7235 Odyssey™

Length: 22.7 in. (57.7 cm)  
Diameter: 1.33 in. (34 mm)  
Wingspan: 11 in. (27.9 cm)  
Estimated Weight: 5 oz. (141.8 g)  
Fins: Laser cut wood  
Recovery: 18 in. (45.7 cm) Parachute  
Projected Altitude: 950 ft. (290 m)  
Recommended Engines:  
C11-3 for first launch; D12-5  
Requires 3/16 in. (5 mm) Maxi™  
Launch Rod PN 2244; sold separately.

**\$29.99**



### 7256 Puma™

The Puma is a mini-engine powered and a must have to add to your collection! It will challenge your building skills just a bit, but when you are finished, the PUMA is a rocket you will be proud of! It's quick off the pad, so keep your eyes open!

Length: 12.3 in. (31.2 cm)  
Diameter: 0.74 in. (18 mm)  
Estimated Weight: .8 oz. (22.7 g)  
Fins: Laser cut wood  
Recovery: 9 in. (22.9 cm) Parachute  
Projected Altitude: 400 ft. (122 m)  
Recommended Engines: A3-4T for first launch; A10-3T

**\$14.99**



### 7253 Explorer Aquarius™

A scale-like model of the future, the interstellar voyager Explorer Aquarius. Stretch your skills with this unique and challenging kit. A great looker on the pad and in the air!

Length: 21.8 in. (55.4 cm)  
Diameter: 2.75 in. (70 mm)  
Estimated Weight: 4.2 oz. (119.1 g)  
Fins: Laser cut wood  
Recovery: 18 in. (45.7 cm) Parachute  
Projected Altitude: 750 ft. (229 m)  
Recommended Engines: D12-3 for first launch; D12-5,  
E12-4, E12-6  
Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244;  
sold separately.

**\$38.99**





 **ESTES** is a  
scale modeler's *dream!*

For more than 60 years, Estes has produced the finest scale replicas of rockets and missiles. Here's some of our past, present, and maybe future kits.





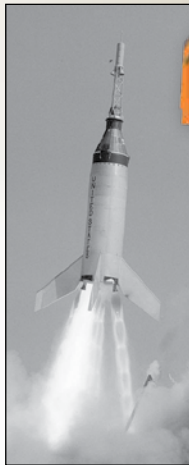
# Scale model rockets make history and your hobbies come...



...to *Life!*

## Scale model rockets

in this category are detailed, miniature replicas of full-scale military, commercial, or space agency rockets, which come in a variety of scale sizes and model rocket engine requirements. Rockets in this class usually require advanced-level building skills using many handcrafted or molded detail parts. These rockets often require that rocketeers attempting to build these models have mastered a variety of skills in assembly, painting, and launching techniques.



The Little Joe I booster was the first rocket designed solely for manned spacecraft qualifications and to measure critical parameters in flight.



**7255 Little Joe I 1:34 Scale**  
 Length: 17.62 in. (44.75 cm)  
 Diameter: 2.34 in. (59.43 mm)  
 Estimated Weight: 3.2 oz. (90.7 g)  
 Fins: Laser cut wood  
 Recovery:  
 15 in. (38.1 cm) Parachute  
 Projected Altitude: 400 ft. (122 m)  
 Recommended Engines: B6-4 for first launch; C6-5  
**\$32.99**

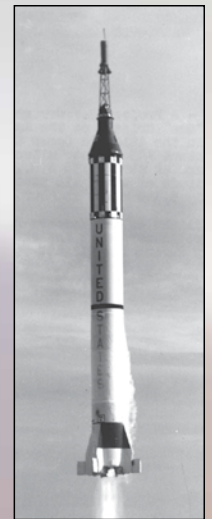


Little Joe II was used from 1963–1966 for five unmanned tests of the Apollo spacecraft launch escape system.

**7227 Apollo Little Joe II 1:45 Scale**  
 Length: 23.3 in. (59.18 cm)  
 Diameter: 3.42 in. (86.9 mm)  
 Estimated Weight: 8.3 oz. (235.3 g)  
 Fins: Plastic  
 Recovery: 24 in. (61 cm) Parachute  
 Projected Altitude: 800 ft. (244 m)  
 Recommended Engines:  
 Composite E30-4  
 Requires 3/16 in (5 mm) Maxi™ launch rod (2244), sold separately.  
**\$53.99**



**1921 Liberty Bell 7 Mercury Redstone 1:34 Scale**  
 Length: 28.6 in. (72.6 cm)  
 Diameter: 2.05 in. (53 mm)  
 Estimated Weight: 3.07 oz. (104.9 g)  
 Fins: Laser cut wood  
 Recovery:  
 15 in. (38.1 cm) Parachute  
 Projected Altitude: 200 ft. (61 m)  
 Recommended Engines: C6-3  
**\$26.99**



The Mercury-Redstone 4 was the second United States human spaceflight. Piloted by astronaut Virgil "Gus" Grissom, it launched on July 21, 1961.

**2446 Mini Honest John 1:24 Scale**

Check out this mini-engine powered version of the U.S. Army 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!

Length: 11.75 in. (29.8 cm)  
Diameter: 0.98 in. (25 mm)  
Estimated Weight: 1.2 oz. (34 g)  
Fins: Laser cut wood  
Recovery: 12 in. (30.5 cm) Parachute  
Projected Altitude: 325 ft. (99 m)  
Recommended Engines: 1/2A3-2T for first launch; A3-4T, A10-3T

**\$12.99**



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



**7240 Honest John 1:14 Scale**

Length: 23 in. (58.4 cm)  
Diameter: 1.64 in. (42 mm)  
Estimated Weight: 4.4 oz. (124.7 g)  
Fins: Laser cut wood  
Recovery: 15 in. (38.1 cm) Parachute  
Projected Altitude: 1400 ft. (427 m)  
Recommended Engines: D12-5 for first launch; C11-3, E12-6  
Requires 3/16 in. (5 mm) Maxi™ Launch Rod (2244), sold separately.

**\$28.99**



Made to be a fin-stabilized, unguided artillery rocket, the Honest John was mounted on the back of military trucks. It had a range of 15.4 miles with a 20 kiloton nuclear warhead or a 1500 pound conventional warhead.

**2056 U.S. Army Patriot M-104 1:10 Scale**

Length: 21.3 in. (54.1 cm)  
Diameter: 1.64 in. (42 mm)  
Estimated Weight: 2 oz. (56.7 g)  
Fins: Laser cut wood  
Recovery: 12 in. (30.5 cm) Parachute  
Projected Altitude: 600 ft. (183 m)  
Recommended Engines: B4-4 for first launch; B6-4, B6-6, C6-5

**\$18.99**



The MIM-104 Patriot is a surface-to-air missile system used by the United States Army and several allied nations.



After capture by American forces at the end of WWII, dozens of German V2 ballistic missiles were brought to White Sands, New Mexico for testing, and formed the basis for the U.S. space program.



**3228 V2 1:25 Scale**

Now you can build and fly your own scale model of the rocket that ushered in the space age! Standing at nearly 23 in., this impressive model flies up to 725 ft. on the recommended Estes E12 engines (not included)

Length: 22.4 in. (56.9 cm)  
Diameter: 2.6 in. (66 mm)  
Estimated Weight: 6.3 oz. (178.6 g)  
Fins: Laser cut wood  
Recovery: 18 in. (45.7 cm) Parachute  
Projected Altitude: 725 ft. (221 m)  
Recommended Engines: C11-3 for first launch; D12-3, E12-4, E12-6  
Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244; sold separately.

**\$26.99**







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.



**7243 Black Brant II 1:13 Scale**

The Estes Black Brant II is a 1:13 scale replica of one of the earliest of the Black Brant sounding rockets. Loaded with scale details, this rocket really moves using the recommended Estes D-12 engines (not included)  
 Length: 24.9 in. (63.2 cm)  
 Diameter: 1.33 in. (34 mm)  
 Estimated Weight: 3 oz. (85 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Parachute  
 Projected Altitude: 1300 ft. (396 m)  
 Recommended Engines: D12-5 for first launch; D12-7

**\$23.99**



**1293 Black Brant III 1:10 Scale**

This detailed, 1:10 scale model rocket is straightforward to build and an excellent kit for the first-time scale modeler.  
 Length: 20.4 in. (51.8 cm)  
 Diameter: 0.98 in. (25 mm)  
 Estimated Weight: 1.2 oz. (34 g)  
 Fins: Laser cut wood  
 Recovery: 12 in. (30.5 cm) Parachute  
 Projected Altitude: 1300 ft. (396 m)  
 Recommended Engines: A8-3 for first launch; 1/2A6-2, A8-5, B4-4, B6-4, B6-6, C6-5, C6-7

**\$14.99**



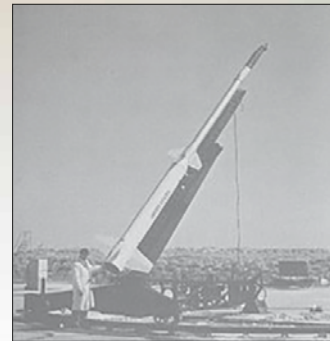
In service for nearly 22 years, the Black Brant III was a reliable sounding rocket for the Canadian Space Agency and NASA.



**7254 Nike Apache 1:12 Scale**

The Estes 1:12 model of this popular sounding rocket makes for a great introductory scale kit.  
 Length: 23 in. (58.4 cm)  
 Diameter: 1.33 in. (34 mm)  
 Estimated Weight: 1.8 oz. (51 g)  
 Fins: Laser cut wood  
 Recovery: 12 in. (30.5 cm) Parachute  
 Projected Altitude: 925 ft. (282 m)  
 Recommended Engines: A8-3 for first launch; B4-4, B6-4, C6-5, C6-7

**\$17.99**



The Nike Apache carried hundreds of NASA research projects aloft during its operational life.



The Nike Smoke was a sounding rocket, part of a research project on the behavior of the horizontal winds in the upper atmosphere it was developed by NASA in the 1960s and was based on the Nike booster.



**7247 Nike Smoke 1:10 Scale**

Now you can build your own 1:10 scale replica of the NASA Nike Smoke sounding rocket! This large, scale model rocket is made from quality Estes parts and looks as great as it flies!  
 Length: 22.9 in. (58.2 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 2.4 oz. (68 g)  
 Fins: Laser cut wood  
 Recovery: 15 in. (38.1 cm) Parachute  
 Projected Altitude: 650 ft. (198 m)  
 Recommended Engines: B6-4 for first launch; C6-5

**\$24.99**



**NEW EASIER TO ASSEMBLE ESCAPE TOWER**

**NEW!**

**DETAILED BLOW MOLDED TRANSITION**

**ACCURATE APOLLO II BODY WRAPS**

**Includes 1:100 Lunar Module to build and display right alongside your Saturn V.**

**#1969 Anniversary Saturn V Flying Model Rocket Kit 1:100 Scale**

Length: 43.25 in. (110 cm)  
 Diameter: 3.94 in. (100 mm)  
 Estimated Weight: 11 oz. (311.8 g)  
 Fins: Plastic  
 Recovery: 2x 24 in. (61 cm) 1x 18 in. (46 cm) Parachutes  
 Projected Altitude: 350 ft. (107 m)  
 Recommended Engines: E12-4 for first launch; E30-4  
**\$89.99**



**INJECTION MOLDED FINS**

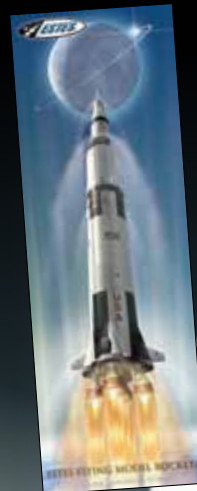
**HIGHLY DETAILED REMOVABLE DISPLAY NOZZLES**

**1969 Saturn V 1:100 Scale**

First introduced in 1970, the original Estes Saturn V has been built and launched by thousands of space adventurers, and with this 50th anniversary release, Estes has endeavored to create a more accurate reproduction of this historic model by retooling all the plastic detail parts, including the Apollo 11 capsule, Command/Service Module (now a detailed blow molded part), fins, engines and body wraps. Additionally, Estes partnered with Revell Models and is including a 1:100 plastic scale model of the "Apollo II Lunar Excursion Module" used by Neil Armstrong and Buzz Aldrin for that first "giant leap for mankind". This highly detailed LEM model will provide the consumer/collector with an exceptionally complete scale model celebrating "the single most important event" in recorded history.



**Bonus!**



**NEW!**

**Comes with an offer for this limited edition poster!**

**#2160 Anniversary Saturn V Almost Ready to Fly Model Rocket 1:200 Scale**

Length: 21.8 in. (51.8 cm)  
 Diameter: 1.98 in. (50 mm)  
 Estimated Weight: 5 oz. (141.7 g)  
 Fins: Plastic  
 Recovery: 18 in. (45.7 cm) Parachute  
 Projected Altitude: 200 ft. (61 m)  
 Recommended Engines: C6-3  
**\$69.99**



**2160 Saturn V 1:200 Scale**

The Estes limited production and commemorative 1:200 scale Apollo II Saturn V model is almost 2 feet 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 can be launched next July 16th 2019 to celebrate the historic 50th anniversary of landing the first man on the moon.

**The 2160 Saturn V rocket comes almost ready to fly out of the box.**



**CLEAR PLASTIC FIN UNIT FOR FLIGHT**

**DISPLAY STAND INCLUDED**



# Fly big!

Attain great heights with these challenging builds and flights.

**2162 Big Daddy™**  
 Length: 19 in. (48.3 cm)  
 Diameter: 3 in. (76 mm)  
 Estimated Weight: 5.3 oz. (150.3 g)  
 Fins: Laser cut wood  
 Recovery: 24 in. (61 cm) Parachute  
 Projected Altitude: 900 ft. (274 m)  
 Recommended Engines: C11-3 for first launch; D12-3, D12-5, E12-4, E12-6  
 Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244; sold separately.

**\$34.99**



**NEW MULTI-STAGE ROCKET!**

**7271 SA-2061 Sasha™**  
 Length: 31.5 in. (80 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 6.1 oz. (172.9 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Parachute  
 Projected Altitude: 2300 ft. (701 m)  
 Recommended Engines:  
 Upper Stage: D12-5 for first launch; E12-6  
 With booster: D12-7 for first launch; D12-0, E12-0, E12-8  
 Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244; sold separately.

**\$29.99**



**2440 Magician™**  
 Length: 34 in. (86.4 cm)  
 Diameter: 1.33 in. (34 mm)  
 Estimated Weight: 3.5 oz. (100 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Parachute  
 Projected Altitude: 1600 ft. (488 m)  
 Recommended Engines: D12-5 for first launch; E12-6  
 Requires 3/16 in. (5 mm) Maxi™ launch rod PN 2244; sold separately.

**\$23.99**



**3226 Hi-Flier® XL**  
 Length: 31 in. (78.7 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 3.5 oz. (99.2 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Parachute  
 Projected Altitude: 1325 ft. (404 m)  
 Recommended Engines: C11-3 for first launch; D12-5, D12-7, E12-6, E12-8  
 Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244; sold separately.

**\$21.99**



**1951 Executioner**  
 Length: 38.5 in. (97.8 cm)  
 Diameter: 2.6 in. (66 mm)  
 Estimated Weight: 8.1 oz. (229.9 g)  
 Fins: Laser cut wood  
 Recovery: 24 in. (61 cm) Parachute  
 Projected Altitude: 600 ft. (183 m)  
 Recommended Engines: D12-3 for first launch; D12-5, E12-4, E12-6

**\$34.99**



**7225 Extreme 12™**  
 Length: 46.4 in. (117.8 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 7.1 oz. (201.3 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (35.7 cm) Parachute  
 Projected Altitude: 1900 ft. (579 m)  
 Recommended Engines:  
 Single Stage: D12-3, D12-5 for first launch; E12-4, E12-6  
 With Booster:  
 D12-5 for first launch; D12-0, E12-0, D12-7, E12-6, E12-8  
 Requires 3/16 in. (5 mm) Maxi™ Launch Rod PN 2244; sold separately.

**\$32.99**



## Pro Series II:

- Our biggest rockets!
- Fly with our biggest engines!
- The biggest thrills you can experience with Estes!
- This is where your journey from your first Alpha rocket launch takes you!

**Sturdy pre-slotted body tube for fin alignment & strength**

**5:1 ogive for speed**

**Flies up to 2,000 ft!**

**Pre-assembled fabric parachute**

**29 mm engine mount**

**Centering rings hold fins in place**

**Pre-assembled air-foiled fins**

**Screw-on engine retainer**

### 9716 Star Orbiter™

Length: 45.2 in. (114.8 cm)  
 Diameter: 1.64 in. (42 mm)  
 Estimated Weight: 5.9 oz. (167.2 g)  
 Fins: Laser cut wood  
 Recovery: 18 in. (45.7 cm) Nylon Parachute  
 Projected Altitude: 1800 ft. (549 m)  
 Recommended Engines:  
 E16-6 for first launch; F15-8  
**\$24.99**

### 9707 Majestic™

Length: 35.3 in. (89.7 cm)  
 Diameter: 2 in. (5.1 cm)  
 Estimated Weight: 9.6 oz (272.2 g)  
 Fins: Plastic  
 Recovery: 18 in. (45.7 cm) Nylon Parachute  
 Projected Altitude: 2000 ft. (610 m)  
 Recommended Engines: E16-6, F15-6 for first launch; F15-8  
**\$48.99**





**Ascender with booster flown on two F-15s, 99 N-SEC total impulse 7 second burn time.**

**9706 Ascender™**  
 Length: 42.1 in. (106.9 cm)  
 Diameter: 2 in. (5.1 cm)  
 Estimated Weight: 11 oz (311.8 g)  
 Fins: Plastic.  
 Recovery: 18" Nylon Parachute  
 Projected Altitude: 2000 ft. (610 m)  
 Recommended Engines: E16-6, F15-6 for first launch; F15-8  
**\$44.99**



**2240 PS II™ Launch Controller**

- 2240 Pro Series II Launch Controller
- 30 feet launch cable
- Required set back distance for rocket engines with more than 30 g propellant
- Audible Continuity
- Easily hear if the starter is connected correctly
- Two hands required for launch
- Even with the Safety Key left in, the rocket will not launch without both buttons pressed
- Requires 4 "C" size alkaline batteries  
**\$39.99**



**9752 PS II™ Booster**  
 For use with rockets 9706 Ascender™, and 9707 Majestic™  
 Recommended Engine: F15-0  
**\$9.99**



**9753 PS II™ 24 mm to 29 mm Engine Adapter Set**  
**\$5.99**



**3172 PS II™ Shock Cord Accessory Pack**  
 3 heavy-duty elastic shock cords;  
 1/2 in. (13 mm) x 96 in. (243.8 cm)  
**\$10.99**



**3556 PS II™ Recovery Wadding**  
 Approximately 225 sheets for larger rockets. Can be used in any Estes rocket.  
**\$9.99**



**3552 PS II™ Launch Base**

- It stands 18 inches off the ground!
- Sturdy enough to launch our biggest Pro Series rockets
- Tiltable
- Make adjustments to the launch angle
- Two-piece 3/16 inch Rod
- Easily stores inside a pad leg  
**\$39.99**

## MODEL ROCKET ENGINE PERFORMANCE CHART

- Delays have a tolerance of plus or minus 10% or one second, whichever is greater.
- All Estes engines come complete with starters and starter plugs.
- The Estes starter plug makes engine ignition extremely reliable.

Prod. No.	Engine Type	Total Impulse	Time Delay	Est. Max. Lift Wt.	Max Thrust		Thrust Duration	Initial Weight		Propellant Weight	Quantity per Pack	Retail Price per Pack		
					oz	g		oz	g					
<b>SINGLE STAGE ENGINES</b>														
1502	1/4A3-3T	0.625	3	1.0	28	4.90	1.1	0.25	0.21	5.9	0.05	1.3	4	\$10.29
1503	1/2A3-2T	1.25	2	2.0	57	8.30	1.9	0.30	0.23	6.4	0.07	1.9	4	\$10.29
1507	A3-4T	2.50	4	2.0	57	6.80	1.5	0.60	0.28	8.0	0.12	3.3	4	\$10.29
1511	A10-3T	2.50	3	3.0	85	13.00	2.9	0.80	0.29	8.1	0.12	3.5	4	\$10.29
1593	1/2A6-2	1.25	2	2.0	57	8.90	2.0	0.30	0.48	13.6	0.10	2.7	3	\$10.29
1598	A8-3	2.50	3	3.0	85	10.70	2.4	0.50	0.55	15.5	0.14	4.1	3	\$10.29
1601	B4-2	5.00	2	4.0	113	13.20	3.0	1.10	0.68	18.6	0.27	7.6	3	\$10.79
1602	B4-4	5.00	4	3.5	99	13.20	3.0	1.10	0.68	19.2	0.27	7.6	3	\$10.79
1605	B6-2	5.00	2	4.5	127	12.10	2.7	0.80	0.61	17.3	0.23	6.5	3	\$10.79
1606	B6-4	5.00	4	4.0	113	12.10	2.7	0.80	0.63	17.8	0.23	6.5	3	\$10.79
1613	C6-3	10.00	3	4.0	113	15.30	3.4	1.60	0.83	23.4	0.43	12.2	3	\$11.79
1614	C6-5	10.00	5	4.0	113	15.30	3.4	1.60	0.85	24.0	0.43	12.2	3	\$11.79
1522	C11-3	10.00	3	6.0	170	22.10	4.9	0.80	1.13	32.1	0.44	12.4	2	\$7.99
1523	C11-5	10.00	5	5.0	142	22.10	4.9	0.80	1.18	33.4	0.44	12.4	2	\$7.99
1566	D12-3	20.00	3	14.0	396	32.90	7.4	1.60	1.57	44.5	0.85	24.2	2	\$11.99
1567	D12-5	20.00	5	10.0	283	32.90	7.4	1.60	1.61	45.7	0.85	24.2	2	\$11.99
1692	E12-4	30.00	4	17.0	482	30.60	6.9	2.70	2.16	61.2	1.3	36.9	3	\$23.99
1693	E12-6	29.50	6	14.0	397	29.60	6.7	2.70	2.23	63.2	1.3	36.9	3	\$23.99
1651	F15-4	49.61	4	21.0	595	25.26	5.7	3.45	3.59	101.5	2.12	60	2	\$26.99
1692	F15-6	49.61	6	17.0	482	25.26	5.7	3.45	3.66	103.7	2.12	60	2	\$26.99
1696	E16-4	33.68	4	20.0	566	26.44	5.9	2.09	2.86	81.0	1.41	40	2	\$22.99
1697	E16-6	33.68	6	16.0	453	26.44	5.9	2.09	2.92	82.7	1.41	40	2	\$22.99

## MODEL ROCKET ENGINE PERFORMANCE CHART CONTINUED

Prod. No.	Engine Type	Total Impulse	Time Delay	Est. Max. Lift Wt.	Max Thrust		Thrust Duration	Initial Weight		Propellant Weight	Quantity per Pack	Retail Price per Pack		
					oz	g		oz	g					
<b>UPPER STAGE ENGINES</b>														
1504	1/2A3-4T	1.25	4	1.0	28	8.30	1.9	0.30	0.23	6.6	0.07	1.9	4	\$10.29
1599	A8-5	2.50	5	2.0	57	13.30	3.0	0.50	0.55	15.7	0.14	4.1	3	\$10.29
1607	B6-6	5.00	6	2.5	71	12.10	2.7	0.80	0.64	18.2	0.23	6.5	3	\$10.79
1615	C6-7	10.00	7	2.5	71	15.30	3.4	1.60	0.85	24.3	0.43	12.2	3	\$11.79
1524	C11-7	10.00	7	4.0	113	22.10	4.9	0.80	1.19	33.8	0.44	12.4	2	\$7.99
1568	D12-7	20.00	7	8.0	226	32.90	7.4	1.60	1.62	46.0	0.85	24.2	2	\$11.99
1694	E12-8	29.80	8	12.0	340	31.80	7.1	2.70	2.24	63.5	1.3	36.9	3	\$23.99
1653	F15-8	49.61	8	15.0	425	25.26	5.7	3.45	3.69	104.4	2.12	60	2	\$26.99
1698	E16-8	33.68	8	14.0	396	26.44	5.9	2.09	2.99	84.7	1.41	40	2	\$22.99
<b>BOOSTER STAGE ENGINES</b>														
1510	A10-0T	2.50	NONE	4.0	113	13.00	2.9	0.80	0.24	6.8	0.12	3.5	4	\$10.29
1600	A8-0	2.50	NONE	3.0	85	13.30	3.0	0.30	0.47	13.5	0.14	4.1	3	\$10.29
1608	B6-0	5.00	NONE	4.0	113	12.10	2.7	0.80	0.55	15.7	0.23	6.5	3	\$10.79
1616	C6-0	10.00	NONE	4.0	113	15.30	3.4	1.60	0.76	21.4	0.43	12.2	3	\$11.79
1521	C11-0	10.00	NONE	6.0	170	22.10	4.9	0.80	1.03	29.2	0.44	12.4	2	\$7.99
1565	D12-0	20.00	NONE	14.0	396	32.90	7.4	1.60	1.43	40.4	0.84	23.8	2	\$11.99
1691	E12-0	28.80	NONE	16.0	454	31.30	7.0	2.60	2.05	58.1	1.3	36.9	3	\$23.99
1650	F15-0	49.61	NONE	19.0	539	25.26	5.7	3.45	3.32	94.0	2.12	60	2	\$26.99
1695	E16-0	33.68	NONE	18.0	509	26.44	5.9	2.09	2.58	73.2	1.41	40	2	\$22.99
<b>PLUGGED ENGINES--FOR USE WITH ROCKET-POWERED RACERS &amp; RC ROCKET GLIDERS</b>														
1505	A10-PT	2.50	NONE	3.0	85	13.00	2.9	0.80	0.26	6.83	0.13	3.5	4	\$10.29

The data listed above is from randomly chosen production samples.  
NOTE: The "T" designates a mini-engine.



**WARNING:**  
This product can expose you to silica, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

This warning is on all Estes engine packaging.

