

## Estes 2098

# Estes Mini Alpha Model Rocket Instruction Manual

Brand: Estes | Model: 2098

## INTRODUCTION

The Estes Mini Alpha Model Rocket Kit provides an engaging, hands-on opportunity to explore aerospace principles through STEM education. Designed for beginner builders, this model rocket simplifies the concepts of aerodynamics, propulsion, and flight recovery through practical experimentation. The Mini Alpha features a classic design for straightforward assembly, quick launches, and consistent flights.

Standing approximately 9.24 inches (23.5 cm) tall, the Mini Alpha can achieve altitudes of up to 690 feet (210 meters) when powered by recommended Estes A10-3T mini engines (sold separately). Its durable body, molded fins, and streamer recovery system ensure stability, reliability, and suitability for multiple launches. Builders can personalize their rocket using the included self-stick decals, combining creativity with scientific learning.

To build and launch this rocket, you will need an Estes Mini Launch Pad and Controller, compatible Estes model rocket engines, Starters, Recovery Wadding, and 4 AA batteries (all sold separately). Always adhere to the National Association of Rocketry (NAR) model rocket safety code during operation.

## SETUP AND ASSEMBLY

The Estes Mini Alpha is designed for snap-together assembly, making it ideal for beginners. Follow these general steps for preparation:

- Unpack Components:** Carefully remove all parts from the kit. Verify that all components listed in your kit's packaging are present.
- Fin Assembly:** Attach the molded fins to the rocket body. Ensure they are securely fastened according to the kit's specific instructions. The snap-together design simplifies this process.
- Nose Cone and Recovery System:** Secure the nose cone to the top of the rocket. Prepare the recovery streamer and attach it to the nose cone and the rocket body using the provided shock cord. Ensure the streamer is packed loosely to deploy effectively.
- Decal Application:** Apply the self-stick decals to customize your rocket's appearance.

5. **Engine Preparation (Sold Separately):** Insert the appropriate Estes mini engine (e.g., A10-3T) into the engine mount at the base of the rocket. Secure it with the engine retainer. Insert a starter into the engine nozzle and secure it with a starter plug.
6. **Recovery Wadding (Sold Separately):** Place recovery wadding into the rocket body tube above the engine. This protects the recovery streamer from hot ejection gases.



The advertisement features a central image of the Mini Alpha rocket kit components against a dark, starry background. The rocket body is silver with red and blue accents and the text 'MINI ALPHA' and 'ESTES'. A red nose cone is attached to the top, and a blue fin is visible at the bottom. A white streamer is attached to the top of the rocket. The Estes logo is in the top left corner. The text 'WHAT'S INCLUDED' is prominently displayed in the middle left. A list of specifications is on the right, each with a corresponding icon: a ruler for length, a dashed circle for diameter, and a scale for weight. The text '10-minute preparation time' is at the bottom right.

**ESTES**

# WHAT'S INCLUDED

★ Mini Alpha rocket kit

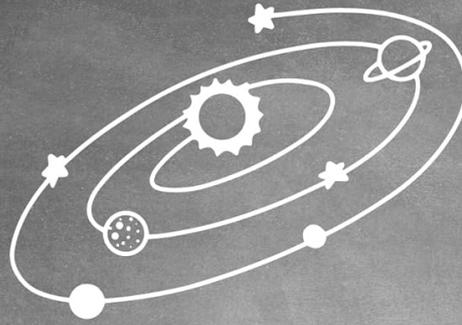
**Length**  
9.24" (23.5 cm)

**Diameter**  
0.74" (19 mm)

**Weight**  
0.61 oz. (17.3 g)

10-minute preparation time

Image: Estes Mini Alpha rocket kit components, showing the rocket's length of 9.24 inches (23.5 cm) and diameter of 0.74 inches (19 mm), with a weight of 0.61 oz (17.3 g).



## TO BUILD

- ★ Snap-together assembly

## TO LAUNCH

- ★ Mini Launch Pad and Controller
- ★ Estes engines
- ★ Starters and Recovery Wadding
- ★ 4 AA batteries



Image: Estes Mini Alpha assembly and launch requirements, including snap-together assembly, and the need for a Mini Launch Pad and Controller, Estes engines, starters, recovery wadding, and 4 AA batteries.

## OPERATING INSTRUCTIONS (LAUNCH)

Before launching, ensure you have all necessary equipment and are in a suitable, open launch area, free from dry weeds or brown grass. Always follow the National Association of Rocketry (NAR) safety code.

- 1. Set Up Launch Pad:** Assemble the Estes Mini Launch Pad (sold separately) on a flat, stable surface. Insert the launch rod into the pad.
- 2. Place Rocket on Pad:** Slide the Mini Alpha rocket onto the launch rod, ensuring it moves freely.
- 3. Connect Controller:** Connect the launch controller (e.g., Electron Beam® Launch Controller, sold separately) to the starter wires on the rocket engine. Ensure a secure connection.
- 4. Safety Check:** Perform a pre-launch safety check. Ensure all spectators are at a safe distance, and the launch area is clear.
- 5. Launch:** With the launch rod safety cap removed, activate the launch controller. The rocket will ignite and ascend rapidly.
- 6. Recovery:** After reaching its peak altitude, the engine's ejection charge will deploy the recovery

streamer, allowing the rocket to descend safely. Retrieve your rocket for future launches.

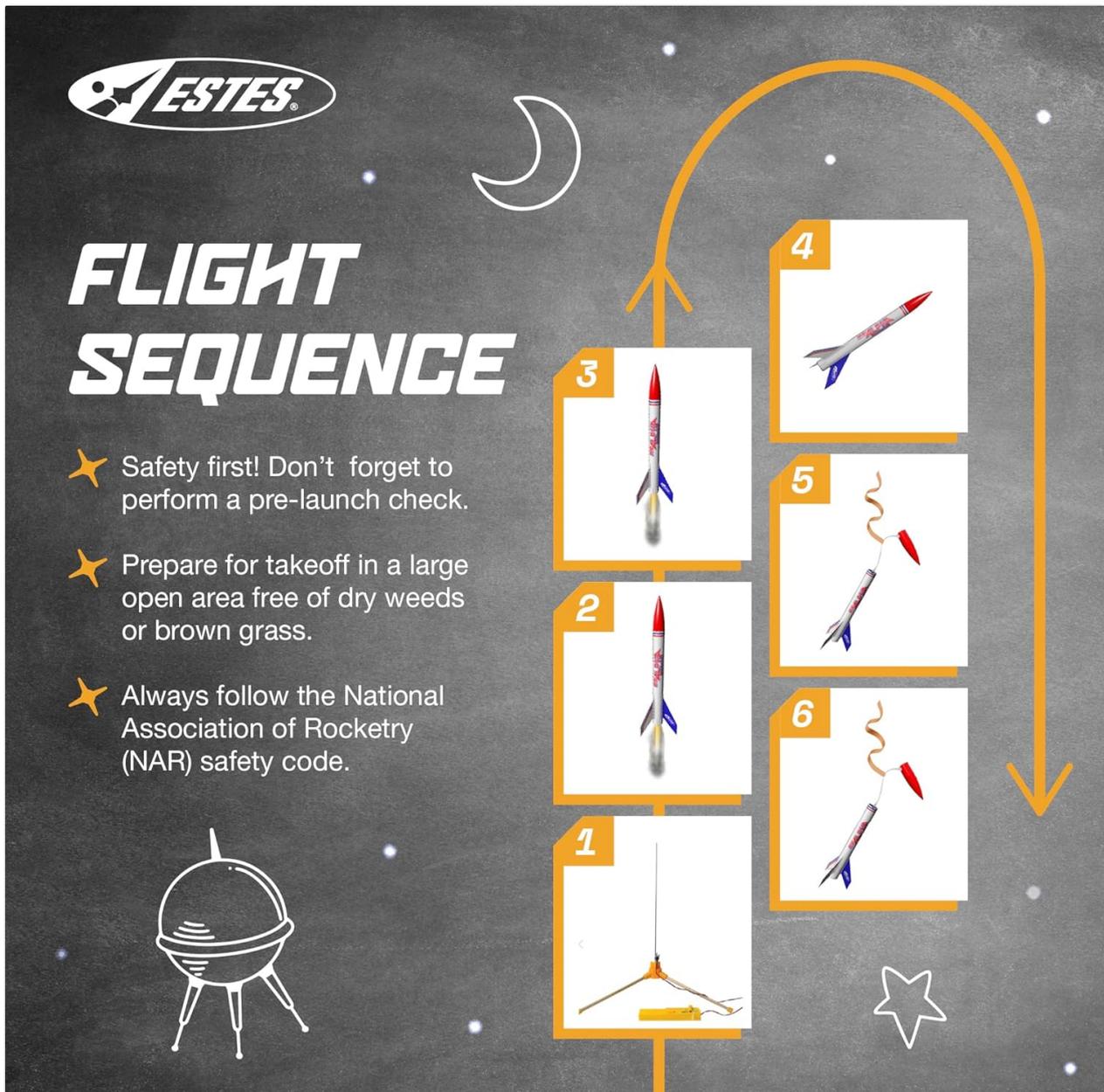


Image: Estes Mini Alpha flight sequence diagram, illustrating pre-launch checks, preparation in an open area, adherence to NAR safety code, and the stages of launch and recovery.

Video: An official demonstration of the Estes Mini Alpha model rocket launch, showcasing its ascent and recovery. This video is provided by ESTES ROCKETS.

## MAINTENANCE

Proper maintenance ensures the longevity and safe operation of your Estes Mini Alpha model rocket:

- **Post-Flight Inspection:** After each flight, inspect the rocket for any damage, such as cracked fins, body tube dents, or a damaged nose cone. Replace any damaged parts before the next launch.
- **Recovery System Check:** Ensure the recovery streamer is free of tears or tangles. Repack it loosely and correctly before each flight.
- **Engine Mount:** Check the engine mount for any residue or damage. Clean as necessary.
- **Storage:** Store your rocket and components in a cool, dry place away from direct sunlight and extreme temperatures.

## TROUBLESHOOTING

If you encounter issues with your Mini Alpha, consider the following:

- **Rocket Fails to Launch:** Check the launch controller batteries (4 AA batteries required, sold separately). Ensure the starter is properly inserted into the engine and securely connected to the launch controller clips. Verify the engine is correctly seated.
- **Erratic Flight Path:** Ensure fins are securely attached and not bent or damaged. Verify the rocket is properly aligned on the launch rod. Ensure the nose cone is firmly attached.
- **Recovery System Failure:** Check that the recovery wadding was properly inserted to protect the streamer. Ensure the streamer is not tangled and was packed loosely enough to deploy.
- **Rocket Does Not Reach Expected Altitude:** Confirm you are using the recommended engine type (e.g., A10-3T) and that it is fresh. Ensure the rocket is not excessively heavy due to modifications.

## SPECIFICATIONS

Feature	Detail
Brand	Estes
Model Name	Mini Alpha
Model Number	2098
Length	9.24 inches (23.5 cm)
Diameter	0.74 inches (19 mm)
Weight	0.61 ounces (17.3 grams)
Fin Material	Molded Plastic
Recovery System	Streamer
Projected Max Altitude	690 ft (210 m) with A10-3T engine
Recommended Engines	1/2A3-2T, A3-4T, A10-3T
Launch System Required	Estes Mini Launch Pad and Controller (sold separately)
Launch Rod Size	1/8" (3.18 mm)



## TECHNICAL SPECS



### Recommended Engines

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



### Projected Max Altitude

690 ft. (210 m)



### Launch System

Mini Launch Pad and Controller



### Recovery System

Streamer



### Launch Rod Size

1/8" (3.18 mm)



### Fin Material

Molded Plastic

Image: Estes Mini Alpha technical specifications, detailing recommended engines, projected max altitude, launch system, launch rod size, recovery system, and fin material.

## WARRANTY INFORMATION

The Estes Mini Alpha Model Rocket Kit comes with a **4-Year Warranty Against Manufacturer Defects**. This warranty covers defects in materials and workmanship under normal use. For warranty claims or further details, please contact Estes customer support.

## SUPPORT AND CONTACT

For additional assistance, questions, or to purchase replacement parts and accessories, please visit the official Estes website or contact their customer service department.

**Estes Website:** [www.estesrockets.com](http://www.estesrockets.com)

Always refer to the latest safety guidelines and instructions provided by Estes and the National Association of Rocketry (NAR) for safe and enjoyable rocketry experiences.

