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Apogee SkyMetra

Apogee SkyMetra Model Rocket Instruction Manual

Model: SkyMetra | Brand: Apogee

INTRODUCTION

The Apogee SkyMetra model rocket is designed for enthusiasts seeking an accessible entry into two-stage rocketry. This kit is engineered for straightforward assembly and preparation for flight, making it suitable for both beginners and those undertaking science fair projects. Its design accommodates various payloads, such as altimeters or small action figures, within its clear payload bay.

This manual provides comprehensive instructions for the assembly, operation, maintenance, and troubleshooting of your SkyMetra model rocket, ensuring a safe and successful experience.

PRODUCT OVERVIEW

The SkyMetra is a two-stage model rocket kit featuring a slotted body tube for precise fin alignment and lightweight wooden fins for optimal performance. It is compatible with standard 18mm diameter rocket engines (A through C-size).

- Two-stage model rocket kit.
- Capable of flights exceeding 1750 feet (533.4m).
- Utilizes A through C-size rocket engines.
- Features a clear payload bay for experimental payloads.



Figure 1: Fully assembled Apogee SkyMetra model rocket, showcasing its two-stage design and clear payload section.



Figure 2: An adult holding the Apogee SkyMetra model rocket, illustrating its size and design.

SETUP AND ASSEMBLY

The SkyMetra kit is designed for ease of assembly. Follow the detailed instructions provided with your kit for best results. Key features include a slotted body tube and laser-cut fins for precise alignment.

Kit Contents



Figure 3: Overview of the Apogee SkyMetra model rocket kit contents, including body tubes, fins, nose cone, and instructions.



Figure 4: Different body tube components and the clear payload section, ready for assembly.

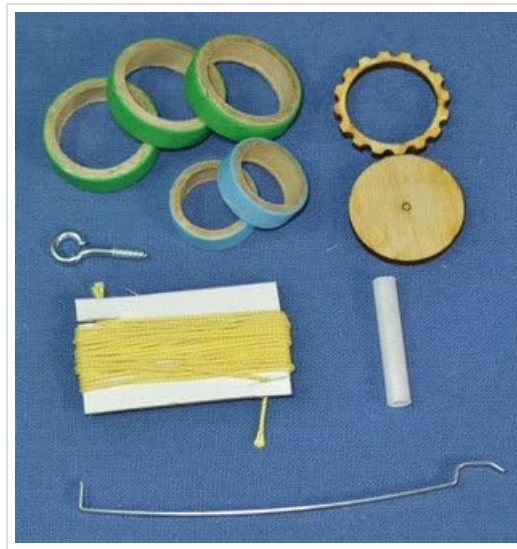


Figure 5: Essential small components for assembly, such as masking tape, an eye hook, and various wooden parts.



Figure 6: Additional kit components including Apogee Components packaging, recovery wadding, and shock cord.

Fin Attachment

The kit includes lightweight wooden fins that are designed to be airfoiled for reduced drag. The slotted body tube ensures that the laser-cut fins mount perfectly straight, contributing to stable flight.



Figure 7: Illustration of different fin configurations, including the in-line fin setup used for the SkyMetra's two-stage design, which enhances stability.

Two-Stage Configuration

The SkyMetra features a classic two-stage configuration where the fins of the bottom stage nest against the back edge of the top stage's fins, aligning them. This design minimizes frontal area and enhances stability for straight flights.

OPERATING INSTRUCTIONS

Engine Selection and Installation

The SkyMetra rocket uses standard 18mm diameter rocket engines, ranging from A to C-size. Select an engine appropriate for your desired flight performance and launch area. Ensure the engine is securely installed according to the engine manufacturer's instructions and the rocket kit's guidelines.

Pre-Launch Checklist

- Verify all components are securely attached.
- Ensure recovery system (parachute/streamer) is properly packed.
- Check igniter installation and continuity.
- Confirm launch site is clear and safe for flight.
- Ensure proper staging mechanism is set for two-stage flight.

Launch Procedure

Place the rocket on a stable launch pad. Connect the igniter to the launch controller. Ensure all spectators are at a safe distance. Initiate launch sequence. The bottom stage will ignite and propel the rocket approximately 50 feet into the air before separating. The top stage will then ignite, continuing the ascent. This "pop-and-go" staging provides significant acceleration and altitude.



Figure 8: The SkyMetra rocket positioned on a launch pad, illustrating its readiness for flight.



Figure 9: The SkyMetra rocket during launch, showing the initial thrust from the engine.

MAINTENANCE

After each flight, inspect your SkyMetra rocket for any damage. Check fin attachments, body tube integrity, and nose cone fit. Ensure the recovery system is free of tears or tangles. Clean any residue from the engine mount area. Store the rocket in a dry, cool place to prevent material degradation.

TROUBLESHOOTING

- **Rocket does not launch:** Check igniter connection, ensure launch controller battery is charged, and verify engine is properly seated.
- **Unstable flight:** Re-check fin alignment and attachment. Ensure nose cone is securely attached. Verify correct engine selection for the rocket's weight.
- **Recovery system failure:** Ensure recovery wadding is properly inserted to protect the parachute/streamer from ejection charge. Check elastic shock cord for damage.
- **Staging failure:** Ensure the upper stage engine igniter is correctly positioned and the staging mechanism is free of obstructions.

SPECIFICATIONS

Brand	Apogee
Model	SkyMetra
Type	Two-Stage Model Rocket Kit
Maximum Altitude	Over 1750 feet (533.4m)
Engine Compatibility	Standard 18mm diameter (A, B, C-size)

Material	Plastic (nose cone, clear payload), Wood (fins), Paper (body tubes)
Payload Bay	Clear, see-through
Recommended Age	12 years and up
UPC	656779050212
ASIN	B078KGCB2G




WARRANTY INFORMATION




Specific warranty details for the Apogee SkyMetra model rocket kit are not provided in the product information. Please refer to the manufacturer's official website, Apogee Components, or contact their customer support for any warranty-related inquiries.

SUPPORT AND CONTACT

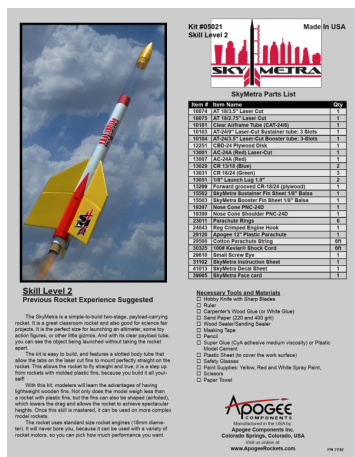
For further assistance, technical support, or inquiries regarding your Apogee SkyMetra model rocket, please visit the official Apogee Components website or contact their customer service department. Contact information is typically included in the product packaging or on the manufacturer's website.
Manufacturer: Apogee Components

Related Documents - SkyMetra

	<p>Apogee Symphony I/O Troubleshooting: No Power On Issues</p> <p>A technical bulletin from Apogee Electronics providing troubleshooting steps for resolving 'no power on' issues with the Symphony I/O audio interface. Covers common symptoms and guides users through checking firmware, cables, power supply, and circuit boards.</p>
	<p>Apogee Clearmountain's Dance User's Guide: Delay Plugin Features and Setup</p> <p>Comprehensive user guide for Apogee's Clearmountain's Dance delay plugin. Learn about its analog tape emulation, ping pong delay, installation, signal routing, and troubleshooting.</p>
	<p>Apogee AFI-118 Subwoofer System: High-Performance 18-inch Professional Audio Subwoofer</p> <p>Detailed specifications and features of the Apogee AFI-118 Subwoofer System, an 18-inch (460mm) high-power subwoofer designed for professional audio applications, including live sound, clubs, and theaters. Learn about its driver, engineering data, and compatibility.</p>

	<p>Apogee Symphony Studio User's Guide: High-Resolution Audio Interface</p> <p>Comprehensive user guide for the Apogee Symphony Studio Series audio interface, covering setup, operation, software control, monitor workflows, and technical specifications for professional audio production.</p>
	<p>Apogee Symphony I/O MKII Price List Update</p> <p>A comprehensive price list for Apogee Symphony I/O MKII audio interfaces and accessories, detailing product codes, descriptions, and updated pricing effective December 21, 2020.</p>
	<p>Apogee SkyMetra Model Rocket Kit #05021 Assembly Instructions</p> <p>Detailed assembly instructions for the Apogee SkyMetra two-stage model rocket kit (#05021). Learn how to build, prepare, and launch your rocket with step-by-step guidance, parts list, and safety procedures.</p>

Documents - Apogee – SkyMetra



[Apogee SkyMetra Model Rocket Kit #05021 Assembly Instructions](#)

Detailed assembly instructions for the Apogee SkyMetra two-stage model rocket kit (#05021). Learn how to build, prepare, and launch your rocket with step-by-step guidance, parts list, and safety procedures.

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7 Common Mistakes People Make When Attempting A Level 1 Continued on page 3 I would wager that we here at Apogee have helped more people to achieve their high power certifications than anyone else in America Newsletter446 apogeerockets education |||

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How to Make An Ultra Lightweight Carbon Fiber Glider Boom tapered carbon fiber tube which can be used for light weight competition style gliders The advantage of these glider booms is they are

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