

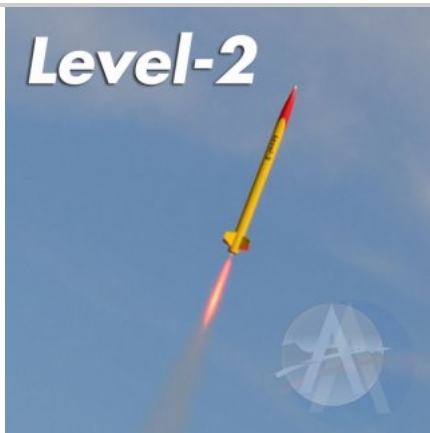
Currency : https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2 [Create Account or Log In \(https://www.apogeerockets.com/index.php?](#)[2?CURRENCY=USD&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?CURRENCY=USD&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0)) EUR [main_page=login&zenid=t69jehl9v0au9n3d0akrfq6rh0](#))https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?CURRENCY=EUR&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0) GBPhttps://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?CURRENCY=GBP&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0) CADhttps://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?CURRENCY=CAD&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0) AUDhttps://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?CURRENCY=AUD&ZENID=T69JEHL9V0AU9N3D0AKRFQ6RH0)

Model Rocketry Resources and Components: *Your Success is Our Mission!*

[Apogee Home](#)[Shop ▾](#)[How-To & Guides ▾](#)[My Account ▾](#)[My Cart](#) \$0.00 (https://www.apogeerockets.com/index.php?main_page=shopping_cart)[Home \(https://www.apogeerockets.com/\)](https://www.apogeerockets.com/) [Rocket Kits \(https://www.apogeerockets.com/Rocket-Kits?zenid=t69jehl9v0au9n3d0akrfq6rh0\)](https://www.apogeerockets.com/Rocket-Kits?zenid=t69jehl9v0au9n3d0akrfq6rh0)[Skill Level 4 Model Rocket Kits \(https://www.apogeerockets.com/Rocket-Kits/Skill-Level-4-Model-Rocket-Kits?zenid=t69jehl9v0au9n3d0akrfq6rh0\)](https://www.apogeerockets.com/Rocket-Kits/Skill-Level-4-Model-Rocket-Kits?zenid=t69jehl9v0au9n3d0akrfq6rh0) Level-2

Level 2 Certification Comes Easy With This Durable Rocket Kit

LEVEL-2



- Model:** 07230
- Skill Level 4:** Slightly Challenging
- Length:** 70.400" (178.82 cm)
- Weight:** 126.000 oz (3572.04 g)
- Diameter (Max):** 4.000" (10.16 cm)
- Fin Span:** 14.270" (36.25 cm)
- Fin Count:** 4
- Motor Size:** 54mm
- Recovery System:** 48" Nylon Cloth Parachute, 18" Drogue Chute
- Launch Pad Type:** High Power
- Manufactured by:** Madcow Rocketry

\$259.95

(bmz_cache/8/8e32164628da7a497575f8f38a6123a1.image.614x614.jpg)

Sold Out



(bmz_cache/0/008cd0c1cbeaf0 (bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(bmz_cache/9/9c64ee

(https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Write_a_Review?zenid=t69jehl9v0au9n3d0akrfq6rh0)

Want a L2 certification on the first flight? This kit is made entirely from super-strong fiberglass-composite materials. Not only will it help you achieve your Level-2 certification, but it can take a lot of abuse, and will easily become the workhorse of your fleet. Includes an electronics-bay and two parachutes, so it is also ready for dual-deployment recovery. With a 54mm engine mount, this is ready for "I", "J" and "K" size motors!

ABOUT ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#DESCRIPTION](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#DESCRIPTION))

RECC. MOTORS ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#MOTORS](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#MOTORS))

ROCKSIM FILE ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#ROCKSIM](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#ROCKSIM))

TOOLS ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#TOOLS](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#TOOLS))

FAQS ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#FAQS](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#FAQS))

REVIEWS ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#REVIEWS](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#REVIEWS))

RELATED PRODUCTS ([HTTPS://WWW.APOGEEROCKETS.COM/ROCKET_KITS/SKILL_LEVEL_4_KITS/LEVEL-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#RELATED](https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?ZENID=T69Jehl9v0au9n3d0akrfq6rh0#RELATED))

Related Documentation

Download the 4" Diameter Tube Marking Guide (<downloads/PDFs/4-inch-tube-marking-guide.pdf>)

Super-Strong, All-Fiberglass Kit For Your Level-2 Certification Attempt



Are you thinking about going for your L-2 high-power certification? Did you want a kit that included dual-deployment to make retrieval easier? Did you want it to be of all-fiberglass construction so that it was exceptionally durable? Then the Level-2 kit is exactly what your looking for.

The "Level-2" rocket has an easy to remember name, doesn't it? Level-2 tells you exactly what we think of it too. We have talked with hundreds of modelers that went through the high-power certification process, and this kit is culmination of what they desire:

- **It's gotta be big** - Why? To make it easy to see in the air. It is going to go high, after all.
- **Made from fiberglass** - Fiberglass has superb strength. If something goes wrong, you want the rocket to survive so that another L-2 flight attempt can be put up into the air.
- **Has a 54mm Engine Mount** - The larger the diameter of the motor, the longer the motor burns. This means the average thrust goes down, and the rocket flies SLOWER. Why do you want the rocket to fly slower? Because it puts lower stresses on the rocket during the flight, adding extra assurance that the whole thing will survive the launch. It also makes for a more impressive launch that is slow and loud.
- **Straight-Taper Fins** - Why does this matter? Because they are less likely to break on landing. If the fin breaks on landing, you won't get your L2 certification. Here's the deal... fins with swept planform (meaning they hang down lower than the base of the rocket) are the first thing that hits the ground when the rocket lands. By sweeping the rear edge of the fin forward, so it doesn't extend past the base of the rocket, means the STRONG tube lands first and takes the load of the rocket. Tubes are always stronger than fins, so you want them to hit the ground first, especially if you have a lot riding on the flight.
- **Dual-Deployment Capability** - A "J"-size" rocket engine is going to fly high. The higher they fly, the further away they typically land. Dual-deployment is the technique used to bring the rocket down quicker, so you don't have to walk for hours looking for your rocket. Of course, you can fly this rocket without dual-deployment too. This gives you the best of both worlds

The Level-2 rocket kit, made for us by MadCow Rocketry has all these features that you'd expect in a high power rocket that is designed to help you get your own L2 certification.



(<https://www.apogeerockets.com/Ne w-to-Model-Rocketry?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
How rockets work and what should you fly.

I'm on or mentoring a TARC Team



(<https://www.apogeerockets.com/Team-America-Rocketry-Challenge?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Team America Rocketry Challenge deals and supplies.

I need info on Rocket Motors.



(<https://www.apogeerockets.com/Rocket-Motor-Basics-Quick-Start-Guide?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Differences in motor types and brands.

I want to fly bigger rockets!



(<https://www.apogeerockets.com/Intro-to-Mid-Power-Rocketry?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Setting up to fly rockets on E, F or G motors.

I'm looking to get High Power Certified.



(<https://www.apogeerockets.com/High-Power-Rocketry-Certification?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Find out the process and our recommended kits.

I want to get into Dual Deployment.



(<https://www.apogeerockets.com/Intro-to-Dual-Deployment?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
See what it is, how it works and what you need.

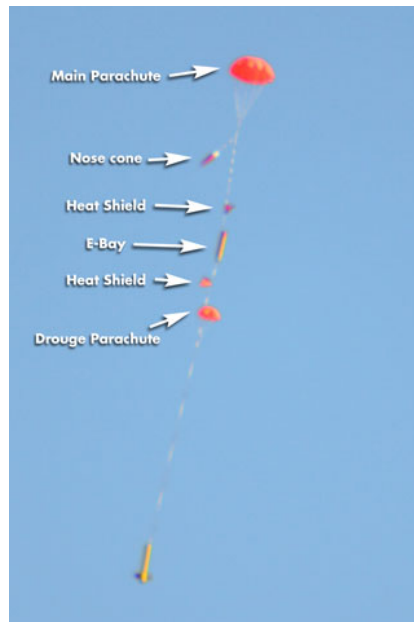
I want more info on RockSim Software!



(<https://www.apogeerockets.com/RockSim-Quick-Start-Guide?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Trial version and tutorials for our simulation software.

Here is a video of the Level-2 rocket in action (turn up the sound!):

Level-2 Fiberglass Rocket Kit - Launch



Why is this a Skill Level 4 Rocket Kit?



these up prior to building the rocket.

We rank this particular kit as a Skill Level 4 rocket on the Apogee Components complexity scale. (/PeakOfFlight/Newsletter31)

This Level-2 is a huge rocket that uses materials that could cause a substantial amount of damage if launched carelessly. While the fiberglass tubes don't make the rocket any harder to assemble, the finished rocket does require extra safety precautions when flown. This is a massive rocket for its size, weighing in at well over eight pounds even without the motor. The amount of kinetic energy this rocket packs is phenomenal. Patience and acquired flying skills to know when NOT to fly are just as important as quality construction techniques.

This is an all-fiberglass kit. It requires some machine tools, like a drill and a dremel to put it together. You will be drilling several holes in the parts to make it assemble correctly. Since it is fiberglass, you need to take health and safety precautions to prevent the fibers of glass from getting into your lungs. A partial mask and disposable gloves are a minimum precaution to take when building the rocket.

As you see from the list of materials required to build this kit (see below), it is quite extensive. This adds a little more complexity, as you'll need to gather

I'm a student or educator!



(<https://www.apogeerockets.com/Rocketry-For-Educators-Quick-Start-Guide?pg=quickside&zenid=t69jehl9v0au9n3d0akrfq6rh0>)
Teaching resources.

TESTIMONIALS

thanks apogee
(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=425&zenid=t69jehl9v0au9n3d0akrfq6rh0)

thanks apogee not only do you stock a wide range of product you also provide great information that makes it easier to by a successful modeler, and...

[Read More](#)

(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=425&zenid=t69jehl9v0au9n3d0akrfq6rh0)

rocket purchase
(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=874&zenid=t69jehl9v0au9n3d0akrfq6rh0)

My first actual order but I've browsed the website so often I feel as though I'm a repeat buyer. Order was shipped quickly and packed very well. I'm...

[Read More](#)

(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=874&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Apogee Components
(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=768&zenid=t69jehl9v0au9n3d0akrfq6rh0)

My multiple purchases from Apogee Components have always been rewarding. They have superb customer service, technical support and rocket fast...

[Read More](#)

(https://www.apogeerockets.com/index.php?main_page=testimonials_manager&testimonials_id=768&zenid=t69jehl9v0au9n3d0akrfq6rh0)

[View All Testimonials](#)
(<https://www.apogeerockets.com/Testimonials>)

One factor that offsets these ease of finishing quirks is the surface of the body tubes. The smooth tube, nose cone and fins are best surfaces I have ever seen. They were a matte texture, and all they required for prep was to wipe the dust off, and they were ready to prime.

You'll need to download the Rocksim file for this kit and use it. No nose cone weight comes with the kit, but you must add nose weight for some of the K-motor options. You need to determine the correct nose weight for the heaviest motor you intend to fly, and mark the center of pressure on the rocket so you'll never try to fly a motor that makes the rocket unstable. Ever see an K or L powered skywriter? It's not pretty.



Video Instructions - NOT printed Instructions

The overwhelming opinion of customers wanting to get their Level 2 certification, was that they wanted to make sure they did things right the first time. They wanted to see how to do it. The only way to do this is with video.

The kit comes with two DVD's, with 3 hours of video. You will see EVERYTHING. You'll go from taking the parts out of the bag, to launching it. That includes how to mount the electronics in the rocket, and setting it up for dual deployment. It is like having an expert looking over your shoulder at all times, making sure you do it right.

What is more, in the videos, you'll find out "why" a step is necessary. Because, don't you hate it when someone tells you to do something, but doesn't explain why it is necessary? When you know the "why," it allows you to tweak the process to fit your preferences. As long as you know what the outcome should be, you can deviate and still reach the same destination. Isn't that worth it?

Note: If you want a printed manual, the closest kit we have is the MadCow Black Brant. It's instructions (downloads/PDFs/bb240.pdf) could be used if you

needed something in writing.

Why is this a Skill Level 4 Rocket Kit?



We are also releasing the videos as part of our Advanced Rocketry Workshop. Here are the public videos release for non-purchasers of the kit.

Part 1 - Centering Ring Eyebolt Installation
(/Advanced_Construction_videos/Rocketry_Video_101)

Part 2 - Centering Ring Fit Check
(/Advanced_Construction_videos/Rocketry_Video_102)

Part 3 - Install the rail buttons
(/Advanced_Construction_videos/Rocketry_Video_103)

Part 4 - Positioning the centering rings to account for the engine retainer
(/Advanced_Construction_videos/Rocketry_Video_104)

Part 5 - Epoxy the centering rings to the engine mount tube and install the fins on the rocket (/Advanced_Construction_videos/Rocketry_Video_105)

Part 6 - Adding the fix-it epoxy clay to the fin fillets, the centering rings and rail button screws (/Advanced_Construction_videos/Rocketry_Video_106)

Part 7 - Smoothing out the fin fillets
(/Advanced_Construction_videos/Rocketry_Video_107)

Part 8 - Assemble the e-bay canister

(/Advanced_Construction_videos/Rocketry_Video_108)

Part 9 - Drill the bulkhead holes in the e-bay canister (/Advanced_Construction_videos/Rocketry_Video_109)

Part 10 - Install the nose cone bulkheads and finish the e-bay constructions
(/Advanced_Construction_videos/Rocketry_Video_110)

Part 11 - Attach the altimeter to the ebay sled (/Advanced_Construction_videos/Rocketry_Video_111)

Part 12 - Install the shear pins (/Advanced_Construction_videos/Rocketry_Video_112)

Part 13 - Mount the ejection canisters and the terminal blocks to the e-bay bulkheads
(/Advanced_Construction_videos/Rocketry_Video_113)

Part 14 - Wiring up the altimeters to the ejection charge canisters (/Advanced_Construction_videos/Rocketry_Video_114)

Part 15 - Adjusting the position of the altimeter in the e-bay. (/Advanced_Construction_videos/Rocketry_Video_115)

Part 16 - Putting primer paint on the rocket (/Advanced_Construction_videos/Rocketry_Video_116)

Part 17 - Masking off the color pattern (/Advanced_Construction_videos/Rocketry_Video_117)

Part 18 - Applying the final paint color and installing the engine retainer (/Advanced_Construction_videos/Rocketry_Video_118)

Part 19 - Attach the shock cords and the parachutes (/Advanced_Construction_videos/Rocketry_Video_119)

Part 20 - Prepping the rocket Cesaroni motor for flight and setting up the electronics in the e-bay.
(/Advanced_Construction_videos/Rocketry_Video_120)

timonials?

zenid=t69jehl9v0au9n3d0akrfq6rh0)

➕ Add A Testimonial

(https://www.apogeerockets.com/Wrote-Testimonial?

zenid=t69jehl9v0au9n3d0akrfq6rh0)

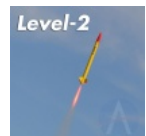
REVIEWS

(https://www.apogeerockets.com/index.php?

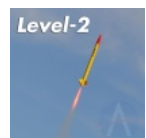
main_page=reviews&zenid=t69jehl9v0au9n3d0akrfq6rh0)



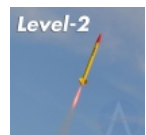
This is a *fabulous* rocket kit. It's very tough (I've...
(https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Review?
reviews_id=456&zenid=t69jehl9v0au9n3d0akrfq6rh0)



This was my first year to get back to rocketry. I used to...
(https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Review?
reviews_id=522&zenid=t69jehl9v0au9n3d0akrfq6rh0)



Just like advertised, this rocket kit helped me get my...
(https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Review?
reviews_id=254&zenid=t69jehl9v0au9n3d0akrfq6rh0)



This is a superb rocket; I feel very fortunate to have...
(https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Review?
reviews_id=455&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Part 21 - Installing the ejection charges and igniters for dual deployment (/Advanced_Construction_videos/Rocketry_Video_121)

Part 22 - Launch and post-flight analysis (/Advanced_Construction_videos/Rocketry_Video_122)

Part 23 - Removing the Shear Pins after the flight (<https://youtu.be/pdVvg8dvp30>)



Fly This Rocket With Just A Single Parachute Deployment

Changing your rocket from dual deployment to single deployment



WE ALSO SELL



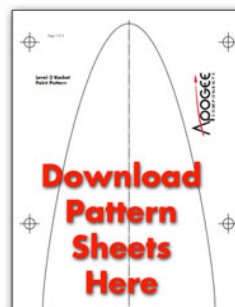
(/index.php?main_page=manufacturers_all&m=catalog)

Madcow Rocketry

Level-2 Pattern Sheets

([downloads/PDFs/Level-2_Kit_Pattern_Sheets.pdf](#)) To help you with the paint color scheme, we've created a pattern sheet that you can download. It also includes the marking guide to tri-sect the tube into three sectors.

Download Pattern Sheet Now ([downloads/PDFs/Level-2_Kit_Pattern_Sheets.pdf](#))



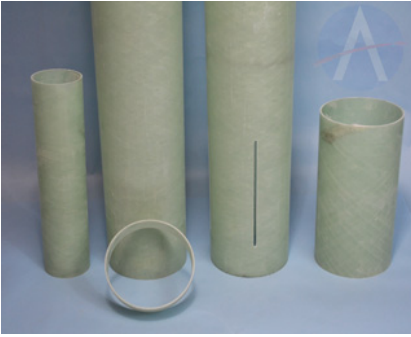
Features of the Level-2



This is a big bag of parts. Everything is big and sturdy. If you're experienced in building high power rockets, daring and creative, you can put the rocket together now!

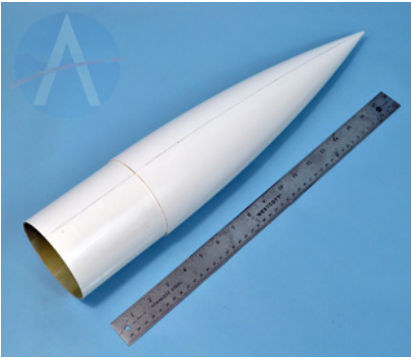
Not included (You'll need to buy these items separately):

- Dual Deployment Altimeter (/Electronics_Payloads/Dual-Deployment)
- Electronics Mounting Hardware (/Electronics_Payloads/Electronics_Accessories/Electronics_Mounting_Kit)
- Shear Pins (/Building_Supplies/Misc_Hardware/Nylon_Shear_Pins_20_pack)
- Building Supplies needed to assemble and launch this rocket.

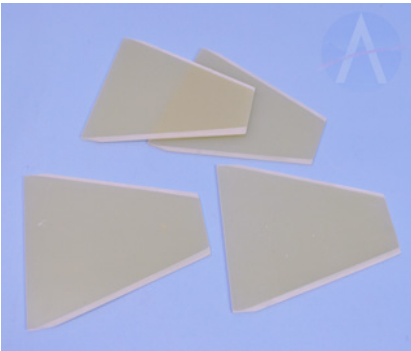


Quality Body Tubes – The 4 inch diameter fiberglass body tube is pre-slotted at the factory, so the build is very fast and straight-forward. Tabs on the base of the fins are slipped through slots in the body tube and mount directly to the engine mount tube. This makes the fins extra strong.

54mm Engine Mount Tubes – This rocket is designed to handle 54mm high-power size engines.



Super Strong Fiberglass Nose Cone – 20 inches long from the tip to the base. Made entirely from fiberglass, this heavy-wall nose cone can stand up to almost any amount of abuse you might give it, and it's a lot stronger overall than plastic or wood. AND, unlike the plastic ones, paint actually sticks to the fiberglass – so you won't have chunks falling off on every landing.



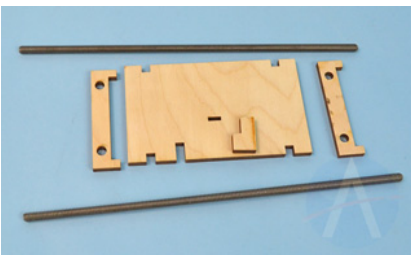
G10 Fiberglass fins – These are the fins you have been waiting for. You'll never break these babies, and you won't have to worry about fin flutter on high-speed flights. Plus, they are precision cut. This makes them perfectly uniform, and saves you the time of doing the stack-sanding yourself. **Note:** These fins are no longer beveled due to manufacturing changes.



Nylon® cloth parachutes – You'll receive an 18" drogue chute and a 48" main chute built for high power size rockets.

Tubular Nylon® Shock Cord – The extra long 9/16" wide shock cords are designed for high power rockets like this one. You'll attach the shorter 10ft piece to the nose cone and front payload bulkhead, and the longer 15ft piece to the screw eye on the forward engine mount centering ring. **You may need to cut this from one 25ft piece into two pieces.**

12" Nomex® Chute Protectors: This is a fire-resistant cloth that takes the place of wadding in the rocket. It is attached to the shock cord and is reused for each flight. It gets a bit sooty after a bunch of launches, but can be cleaned off and used again and again.



Electronics Payload Bay – To put your electronic in. Includes threaded rods and removable wooden sled.



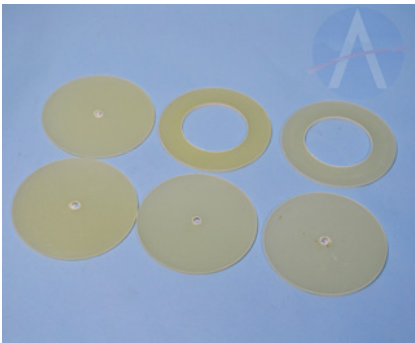
Assembly Hardware - Lots of eye-bolts and washers and screws needed to put this big beast together.



Removable Plastic Rivets - These rivets allow you to put the rocket together for flight, but still dissassemble it after the launch to get at the electronics.



Rail Buttons - These are used in place of launch lugs, so that you can install your big Level-2 rocket on a standard 1" launch rail for launch.



Fiberglass Centering Rings and Bulkhead Disks - Like the fins, the fiberglass used on the rings makes them extra strong. The rear centering ring epoxies to the fin tabs, which results in an incredibly strong fin can.

Recommended 54mm Engines for the Level-2

Use the chart below to help determine which motor to use for this kit.

Estimated Altitude Predictions generated using RockSim

Select Comparison Columns

Motor	

All	All
<p>I218 (#71414)</p>	1-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-1G_White_Thunder_I218?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J240 (#71426)</p>	2-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-2G_Red_Lightning_J240?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J295 (#71431)</p>	3-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-3G_Classic_J295?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>K445 (#71441)</p>	4-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-4G_Classic_K445?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>K570 (#71451)</p>	5-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-5G_Classic_K570?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>K660 (#71461)</p>	6-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-6G_Classic_K660?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J293 (#71423)</p>	2-Grain (https://www.apogeerockets.com/Rocket_Motors/Cesaroni_P54-2G_Blue_Streak_J293?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>I229T-M (#81414)</p>	54/426 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Motors/54mm-Propellant-Kits/54-426-Kits/Aerotech-54mm-Propellant-Kit-I229T-M?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J180T-14 (#81422)</p>	54/852 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Motors/54mm-Propellant-Kits/54-852-Kits/Aerotech-54mm-Propellant-Kit-J180T-L?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J315R-L (#81425)</p>	54/852 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Motors/54mm-Propellant-Kits/54-852-Kits/Aerotech-54mm-Propellant-Kit-J315R-L?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J401FJ-14 (#81432)</p>	54/1280 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Motors/54mm-Propellant-Kits/54-1280-Kits/Aerotech-54mm-Propellant-Kit-J401FJ-L?zenid=t69jehl9v0au9n3d0akrfq6rh0)
<p>J460T-14 (#81426)</p>	54/852 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Motors/54mm-Propellant-Kits/54-852-Kits/Aerotech-54mm-Propellant-Kit-J460T-L?zenid=t69jehl9v0au9n3d0akrfq6rh0)

J540R-L (#81434)	54/1280 (https://www.apogeerockets.com/Rocket_Motors/Rouse-Tech_Casings)
K270W-P (#81450)	54/2560 (https://www.apogeerockets.com/Rocket-Motors/AeroTech-Casings/)
K695R-L (#81445)	54/1706 (https://www.apogeerockets.com/Rocket_Motors/Rouse-Te)
I65W-P (#81491)	
J450DM-14A (#81492)	
I170G-14A (#81412)	54/426 (https://www.apogeerockets.com/Rocket_Motors/Rouse-Te)

Set delays using the Aerotech Delay Drilling Tool (https://www.apogeerockets.com/Rocket_Motors/AeroTech_Accessories/RMS_Delay_Drilling_Tool?zenid=t69jehl9v0au9n3d0akrfq6rh0)

Note: These motors (HAZ) are shipped with a HAZMAT fee of \$32 on top of the standard UPS/FedEx ground shipping costs. (Learn More)

If you are purchasing an age- or certification-restricted motor, please email or fax us a copy of your ID, or NAR or TRA membership card as soon as possible so we can get you details on membership and |

YOU MUST BE AT LEAST 18 YEARS OLD
18* - You must be at least 18yrs

L1 - This motor is classified as "High Power" and requires a Level 1 certification

L2 - This motor is classified as "High Power" and, due to the amount of propellant, requires a Level 2 certification

Rocket motors are sold separately from the kit. For more help in selecting rocket motors, see our video tutorial. ([Advanced_Construction_videos/](#))

For other motors that are not tested or not listed here, download the Level-2 RockSim file ([downloads/rocksim_files/Level-2.zip](#)) and load it to see if it will work in this rocket | [chart](#)

Recommended 38mm Engines for the Level-2



([https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0)

[use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0))

Motor Adapters double the motor sizes you can use! With the AeroPack 38/54mm Motor Adapter

([https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0)

[use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0)), fit a 38mm motor in a 54mm casing

The AeroPack 38/54mm Motor Adapter allows you to change motor size in an instant! Just drop the adapter into your kit, and double the number of motors you can use.

Use the chart below to help determine which motor to use for this kit.

Estimated Altitude Predictions generated using RockSim

Select Comparison Columns

Motor	
All	All
#71361 J330	6-Grain (https://w)
#71341 I285	4-Grain (https://w)
#71334 I345	3-Grain (https://w)
#81343 I285R-14A	38/480 (https:)
#81352 I305FJ-14A	38/600 (https:)
#81363 J350W-14	38/720 (https:)
#81370 J570W-14	38/1080 (https:)
Delay* given is recommended for calm wind conditions. Set delays using the Aerotech Delay Drilling Tool (https://www.apogeerockets.com/Rocket_Motors/AeroTech_Accessories/RMS_Delay_Drilling_Tool?zenid=t69jel) Note: These motors (HAZ) are shipped with a HAZMAT fee of \$32 on top of the standard UPS/FedEx ground shipping If you are purchasing an age- or certification-restricted motor, please email or fax us a copy of your ID, or NAR or TRA membership card as soon as possible so we can get you YOU MUST BE 18+ - You must be 18 years of age or older to purchase this motor. L1 - This motor is classified as "High Power" and L2 - This motor is classified as "High Power" and, due to the amount of power, it is classified as a "High Power" motor. Rocket motors are sold separately from the kit. For more help in selecting rocket motors, see our video tutorial. (Advanced_101) For other motors that are not tested or not listed here, download the Level-2 RockSim file (downloads/rocksim_files/Level-2.zip) and load it to see if it will work.	

RockSim File for the Level-2 Rocket Kit



What is a RockSim Design file?

(downloads/rocksim_files/Level-2.zip)
To see how the Level-2 looks and performs with each motor configuration, download the FREE RockSim design file (downloads/rocksim_files/Level-2.zip).
This file can be opened with the FREE demo version of RockSim (Rocksim/Rocksim_Trial). Both Windows and Macintosh versions are available.

The RockSim software gives you a lot of information about the flight characteristics of this rocket: how high, how fast, where it will land, how will it react to wind, etc. The "design file" is intended to save you time. All the parameters (size, shape, weight, fin design, etc.) of this rocket have already been entered into the RockSim program, and saved as an electronic database file. You can just open it up in your copy of RockSim and start loading different rocket motors to run launch simulations. It's fun and educational to see the rocket zoom skyward, even before you built it. For more information about RockSim and to download a FREE 30-day demo version, click here ([RockSim/RockSim_Information](#)).

Tools needed to assemble the Level-2

Basic Construction/Usage Tools:

- Pencil
- Ruler
- Scissors
- Masking Tape
- Hobby Knife - X-Acto with #11 Blade ([Building_Supplies/Tools/XACTO_Knife_1_with_Blade](#))
- Fix-It Epoxy Clay ([Building_Supplies/Epoxy_Clay/FIXIT_Epoxy_Clay](#)) (for fillets)
- Adhesives - 5 minute epoxy
- Adhesives - Wood Glue
- Long Dowel To Spread Glue Inside The Body Tube
- 1/2" Diameter dowel, wrapped with sand paper
- 2-56 Tap and Drill Set ([Building_Supplies/Tools/2-56_Tap_and_Drill_Set](#)) for shear pin installation
- Acetone (nail polish remover) to clean up drips of epoxy
- Bucket of soapy water and a sponge & paper towels
- Disposable rubber or vinyl gloves
- Drill with 1/16", 1/8", 3/16", 5/32" & 1/4" drill bits
- Particle mask for sanding fiberglass
- Philips screwdriver, Flat-head screwdriver; Small screwdrivers for installing the dual-deployment altimeter
- Wire cutters, strippers & pliers
- Finishing Supplies like sanding sealer, paint and sandpaper (200 and 400 grit).
- Motor Retention - Suggested: 54P Aeropack Retainer ([Building_Supplies/Motor_Retainers_Hooks/Screw-On_Retainers/54mm_AeroPack_Retainer_P](#)) or 54mm Aeropack Flanged Retainer ([Building_Supplies/Motor_Retainers_Hooks/Screw-On_Retainers/54mm_AeroPack_Retainer_Flanged](#))

To Launch This, You'll Also Need

- Launch Pad & Controller - See FAQs tab for recommended choices.
- Rocket Motors - See the motor selection tab.
- Black Powder for the dual-deployment ejection charges. This can be purchased at a gun store.
- Igniters ([/Rocket_Motors/Quest_Accessories/Quest_Q2G2_Igniter_6](#)) for deployment charges

Optional Tools for Easier Assembly or Flight:

- Aluminum angle for drawing lines on the body tube, or the Estes Ultimate Tube Marking Guide (http://www.apogeerockets.com/Building_Supplies/Tools/Ulimate_Tube_Marking_Guide)
- 1/8" wide and 1/4" wide Automotive masking tape
- Dual-Deployment Altimeter ([/Electronics_Payloads/Dual-Deployment](#)) and mounting hardware ([/Electronics_Payloads/Electronics_Accessories/Electronics_Mounting_Kit](#))
- Plastic drop cloth to protect the work surface
- Rotary Tool (like a Dremel) - with sanding drum to speed the scuffing of the parts prior to epoxying them together.
- Small clamps - to hold parts together while epoxy cures
- Spray adhesive
- Vice - to hold parts while drilling holes in them

Frequently Asked Questions about the Level-2

Q: (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?zenid=t69jehl9v0au9n3d0akrfq6rh0#launch_padi_high)

What launch pad should I use to launch this rocket kit?

A:

([/Launch_Accessories/Launch_Pads/Gun_Turret_Pad](#)) Since this is a big rocket that uses the rail guiding system, you'll need the Gun Turret launch pad ([/Launch_Accessories/Launch_Pads/Gun_Turret_Pad](#)). With its all-steel construction and tilting head, this pad was developed specifically for people that want something that makes it easy to load and launch those large rockets.



Q: (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?zenid=t69jehl9v0au9n3d0akrfq6rh0#dual-deployment-igniter)

What igniters/starters can I use for dual deployment?

A:

Here is what is available for Dual Deployment:

- **Ematches** (<http://www.apogeerockets.com/Rocket-Motors/Motor-Starters/Starter-Chipboard-6-pack>) - While these are regulated by the government and require a Low Explosives User Permit (LEUP) to purchase, you can make your own from a kit without a permit. Order the Starter Chipboards (<https://www.apogeerockets.com/Rocket-Motors/Motor-Starters/Starter-Chipboard-6-pack>) and some special igniter dip (<https://www.apogeerockets.com/Rocket-Motors/Motor-Starters/H3-Igniter-Dip>) designed for low-current igniters.
- **Pratt Ejection Canisters** (https://www.apogeerockets.com/Ejection_Systems/Ejection_Canisters) - These are a great,

easy to use canister. They are one time use only, however, so you need to replace them each time. They are also hard to keep in stock.

- **Make your own** - you can make your own dual deployment igniters using the old style Christmas tree lightbulbs (non-LED). PerfectFlite has a couple of make-your-own information sheets for different types of igniters:
 - Ematch substitute (<http://www.perfectflite.com/Downloads/Making%20ematches.pdf>)
 - Christmas Tree Light Bulb Method (<http://www.perfectflite.com/Downloads/Ejection.pdf>) (old, so parts may not be available)

Note: READ YOUR ALTIMETER MANUAL! Your altimeter manual will list the appropriate and inappropriate igniters for your model. Igniters/Starters from Estes or Aerotech will NOT work for dual deployment. They do not ignite properly, and will likely result in your parachute not deploying. This applies to using the altimeters for single deployment as well.

Q: My shock cord came in one piece, but the video shows two. Do I cut it, and where do they go?

A: You need to cut it into two pieces, approximately 2/3 and 1/3 of the length. Put the longer piece with the drogue parachute. This one comes out when the rocket is going fastest, so you want the extra length to give the rocket a chance to slow down as much as possible.

Q: (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?zenid=t69jehl9v0au9n3d0akrfq6rh0#launch_controller_midhi)

What launch controller can I use to ignite the motors?

A:
 (/Launch_Controllers/Aerotech_Interlock_Launch_Controller)
 (/Launch_Accessories/Launch_Controllers/Go_Box_Launch_Controller)We offer two different controllers that can be used for mid and high-power size rockets. The Aerotech Interlock (Launch_Controllers/Aerotech_Interlock_Launch_Controller) and the Pratt Hobbies GO-BOX Controller. (Launch_Accessories/Launch_Controllers/Go_Box_Launch_Controller)



Q: (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2?zenid=t69jehl9v0au9n3d0akrfq6rh0#motor_selection)

I need help selecting motors. What should I do? Can you teach me how to select them myself?

A:
 (/Advanced_Construction_Videos/Rocketry_Video_32)Watch this YouTube video - How to Select Model Rocket Engines (Advanced_Construction_Videos/Rocketry_Video_32)

We encourage you to learn the proper motor selection technique. Please watch our YouTube video that will walk you step-by-step through the process



Reviews for the Level-2

Current Reviews: 64 Random reviews shown below

Write Review (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Write_a_Review?zenid=t69jehl9v0au9n3d0akrfq6rh0)

See All Reviews (https://www.apogeerockets.com/Rocket_Kits/Skill_Level_4_Kits/Level-2/Reviews?zenid=t69jehl9v0au9n3d0akrfq6rh0)

Random Selected Reviews:

★★★★★ John Sahr -- 07/13/2015

This is a *fabulous* rocket kit. It's very tough (I've flown it 5 times) with no damage other than a scuffed paint job. As advertised, I achieved my NAR L2 on my first flight (with a J engine). I've also flown it with big K engines (CTI K1440).

The video instructions alone are worth the price of this kit. If you're relatively new to HPR, following Tim's demos as you assemble the L2 will not only help you build the rocket, you'll learn skills and techniques that will help you to assemble many more big rockets.

★★★★★ Mike Baker -- 06/16/2014

Just like advertised, this rocket kit helped me get my level 2 certification with flying colors. This was my first attempt at a fiberglass rocket, as well as my first attempt at dual deployment, so there were several factors causing me to be nervous. I followed the DVD instructions and everything went without a hitch. The only thing I would advise about this (which might have been addressed in the Video and I just forgot) is IF you want to use a 6XL motor (Cessaroni) than you need to back the motor mount out a few inches (use the tapered engine retainer). I did not know this and used the regular retainer, flush mounted to the back of the body, and my buddy knew about this and backed his out and was able to launch an "L" motor, putting my launch to shame.

★★★★★ John Sahr -- 07/12/2015

This is a superb rocket; I feel very fortunate to have built it.

It's a fair amount of work to put together, but the result is outstanding. I've flown it 5 times now, on J & K engines (CTI), including 38mm with an adapter. Also including a K1440 which took it to 8500' and Mach1.3 at BlackRock. Fun! And yes, I'm NAR L2 as a result! If you don't CF the fins (see below) yours will go even higher.

By the way, the orange main 'chute is very easy to see against a blue sky, greatly appreciated by those on the ground helping spot the rocket.

The video instructions are quite good --- not necessarily perfect, but vastly better than some marvelously cryptic written instructions I've seen for other kits. In fact, if you're new to building big rockets, this kit is worth it *precisely* because of the video instructions --- you'll be able to take the skills and techniques you learn on this rocket and apply it to other rockets in the future. It's worth repeating: this kit is worth building simply because of the video instructions. Tim van M is amiably fun to watch, and he graciously included analysis of a mistake that he made that showed up in his flight. The fact that the rocket withstood this error is a testimony to its toughness.

I made several small modifications/departures from the instructions:

- (a) I installed the nose cone bulkhead further forward in the nose cone to make it possible to extract the sheer pins.
- (b) I epoxied CF cloth over the fins; with a CTI K1440 this rocket can clear 9000' and Mach 1.4. I also flew a CTI 1092J1520-17A, a 3 grain 54 mm motor, which left the pad at 35 G or so. Fins totally fine.
- (c) I installed redundant flight computers and redundant ejection charges; there's plenty of room on the e-bay for this.
- (d) I used four cable ties for the batteries

While I don't "need" to fly this rocket any more, it has proven to be extremely tough and reliable, and I'll use it as a technology testbed for student projects here at the UW.

This is a great kit. Highly recommended.



Timothy Johnson -- 11/15/2015

This was my first year to get back to rocketry. I used to fly model rockets with my boys, but now I'm approaching the hobby as a "grown up". One of my boys still enjoys being a spectator. The Level 2 was a challenging build for me. I did it on my dining room table with the sanding being done with a dremel tool on the back porch of my little townhouse. I took the finished rocket to an autobody shop to get it painted. The most difficult parts of the build were getting the aeronautics bay to fit properly, and getting the sheer pins in place - especially on subsequent flights. The Level 2 flew PERFECTLY for my Level 2 certification. I'm proud of what I accomplished and thank Tim for the SUPER video instructions. Without the videos, I don't think I could have reached my goal. Thanks to Apogee I reached my dream of getting Level 2 certified.

Highly Recommended Additions



Aero Pack 54mm Retainer - P

\$31.03

(https://www.apogeerockets.com/Building_Supplies/Motor_Retainers_Hooks/Screw-on_Retainers_54mm/54mm_AeroPack_Retainer_P?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Buy Now

(https://www.apogeerockets.com/index.php?main_page=product_info&cpath=&products_id=136&zenid=t69jehl9v0au9n3d0akrfq6rh0) Retainer Set - Fits 54mm tubes with an 2.278 OD: PML and Giant Leap phenolic, Madcow fiberglass, Performance Rocketry and Hawk Mountain fiberglass

These items Are Also Recommended For Use With This Product



FIXIT® Epoxy Clay

\$12.55

(https://www.apogeerockets.com/Building_Supplies/Epoxy_Clay/FIXIT_Epoxy_Clay?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Buy Now

The most versatile epoxy we've every found. With it: make perfect fin fillets, fill spirals in tubes, thread locker, fix imperfections and gaps...

(https://www.apogeerockets.com/index.php?main_page=product_info&cpath=&products_id=1041&zenid=t69jehl9v0au9n3d0akrfq6rh0)



AeroPack 38/54mm Motor Adapter

\$28.89

(https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Buy Now

(https://www.apogeerockets.com/index.php?main_page=product_info&cpath=&products_id=950&zenid=t69jehl9v0au9n3d0akrfq6rh0) Screws for 38mm Adapter - to-use Motor Adapter. Requires 54mm screw-on retainer



Ultimate Tube Marking Guide (<https://www.apogeerockets.com/Building-Supplies/Tools/Ultimate-Tube-Marking-Guide?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0>)

\$12.83

Buy Now

The Estes Ultimate Tube Marking Guide for model rockets allows you to draw laser-straight lines down the length of your body tubes. It works for any...

(https://www.apogeerockets.com/index.php?main_page=product_info&cpath=&products_id=1280&zenid=t69jehl9v0au9n3d0akrfq6rh0)



Entacore AIM 3 Altimeter (<https://www.apogeerockets.com/Electronics-Payloads/Altimeters/Entacore-AIM-3-Altimeter?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0>)

\$115.00

Buy Now

This is a dual-deployment altimeter and it also records altitude & velocity. Flight data is downloadable to your computer, so you can see the...

(https://www.apogeerockets.com/index.php?main_page=product_info&cpath=&products_id=573&zenid=t69jehl9v0au9n3d0akrfq6rh0)




54mm Plywood Display Stand (https://www.apogeerockets.com/Display-Stands/54mm-Plywood-Display-Stand?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

This simple cardstock display stand allows you to stand your rockets upright for storage and to show off the great craftsmanship of your models. Fits...

\$13.50

Buy Now




Nylon Shear Pins - 20 pack (https://www.apogeerockets.com/Building-Supplies/Misc-Hardware/Nylon-Shear-Pins-20-pack?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Shear pins are used to prevent premature separation of the nose cone from the rocket prior to ejection. These threaded nylon screws are easy to...

\$3.10

Buy Now

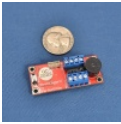


Electronics Mounting Kit (https://www.apogeerockets.com/Electronics-Payloads/Electronics-Accessories/Electronics-Mounting-Kit?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Are you in a hurry to get your new electronics mounted into the payload-bay of your new rocket? You say you don't have time to find all the items...

\$42.00

Buy Now




PerfectFlite StratoLogger Altimeter CF (https://www.apogeerockets.com/Electronics-Payloads/Altimeters/PerfectFlite-StratoLogger-Altimeter-CF?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Note: This is the updated CF version. This data-recording (up to 16 flights) altimeter is used to deploy parachutes out of the rocket. One at...

\$58.80

Sold Out




Ascent Rocket Earrings (Red) (https://www.apogeerockets.com/Jewelry/Earrings/Ascent_Rocket_Earrings_Red?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

The Ascent Rocket earring is a non-showy and tasteful way to display your liking of rocketry. Colored silver and red, with tiny silver stars.

\$12.60

Buy Now




XACTO Knife - #1 with Blade (https://www.apogeerockets.com/Building_Supplies/Tools/XACTO_Knife_1_with_Blade?cpath=&zenid=t69jehl9v0au9n3d0akrfq6rh0)

Use the precision of an X-ACTO knife to help with constructing your model rocket. From cutting out balsa fins and wraps to shortening your body...

\$4.27

Buy Now

Customers who bought this item also purchased...




Electronics Mounting Kit (https://www.apogeerockets.com/Electronics-Payloads/Electronics-Accessories/Electronics-Mounting-Kit?zenid=t69jehl9v0au9n3d0akrfq6rh0)

Are you in a hurry to get your new electronics mounted into the payload-bay of your new rocket? You say you don't have time to find all the items...

\$42.00

Buy Now



FIXIT® Epoxy Clay (https://www.apogeerockets.com/Building_Supplies/Epoxy_Clay/FIXIT_Epoxy_Clay?zenid=t69jehl9v0au9n3d0akrfq6rh0)

The most versatile epoxy we've every found. With it: make perfect fin fillets, fill spirals in tubes, thread locker, fix imperfections and gaps...

\$12.55

Buy Now

zenid=t69jehl9v0au9n3d0akrfq6rh0)



Nylon Shear Pins – 20 pack ([https://www.apogeerockets.com/Building-Supplies/Misc-Hardware/Nylon-Shear-Pins-20-pack?](https://www.apogeerockets.com/Building-Supplies/Misc-Hardware/Nylon-Shear-Pins-20-pack?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)
Shear pins are used to prevent premature separation of the nose cone from the rocket prior to ejection. These threaded nylon screws are easy to...

\$3.10
[Buy Now](#)

([https://www.apogeerockets.com/Building-Supplies/Misc-Hardware/Nylon-Shear-Pins-20-pack?](https://www.apogeerockets.com/Building-Supplies/Misc-Hardware/Nylon-Shear-Pins-20-pack?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)



Aero Pack 54mm Retainer – P
([https://www.apogeerockets.com/Building_Supplies/Motor_Retainers_Hooks/Screw-on_Retainers_54mm/54mm_AeroPack_Retainer_P?](https://www.apogeerockets.com/Building_Supplies/Motor_Retainers_Hooks/Screw-on_Retainers_54mm/54mm_AeroPack_Retainer_P?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)
Retainer Set – Fits 54mm tubes with an 2.278 OD: PML and Giant Leap phenolic, Madcow fiberglass, Performance Rocketry and Hawk Mountain fiberglass

\$31.03
[Buy Now](#)

([https://www.apogeerockets.com/Building_Supplies/Motor_Retainers_Hooks/Screw-on_Retainers_54mm/54mm_AeroPack_Retainer_P?](https://www.apogeerockets.com/Building_Supplies/Motor_Retainers_Hooks/Screw-on_Retainers_54mm/54mm_AeroPack_Retainer_P?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)



2-56 Tap and Drill Set
(https://www.apogeerockets.com/Building_Supplies/Tools/2-56_Tap_and_Drill_Set?zenid=t69jehl9v0au9n3d0akrfq6rh0)
The 2-56 Tap and Drill set allows you to create a threaded hole for the small nylon shear pins. The diameter is: .067".

\$8.76
[Buy Now](#)

([https://www.apogeerockets.com/Building_Supplies/Tools/2-56_Tap_and_Drill_Set?](https://www.apogeerockets.com/Building_Supplies/Tools/2-56_Tap_and_Drill_Set?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)



AeroPack 38/54mm Motor Adapter
([https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)

\$28.89
[Buy Now](#)

([https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?](https://www.apogeerockets.com/Building_Supplies/Motor_Mount_Kits_Adapters/Ready-to-use_Motor_Adapters/AeroPack_38_54mm_Motor_Adapter?zenid=t69jehl9v0au9n3d0akrfq6rh0)
zenid=t69jehl9v0au9n3d0akrfq6rh0)
AeroPack 38/54mm Motor Adapter Kit Ready-to-use on retainer (purchased separately).

Let us notify you when this product is back in stock!

Simply enter your details below and we will send you an e-mail when “Level-2” is back in stock!
We will not send you any other e-mails or add you to our newsletter, you will only be e-mailed about this product!

Name:
E-mail Address:
Confirm E-mail:





[Notify Me](#)

SUBSCRIBE TO OUR NEWSLETTER

Receive our weekly Model Rocketry newsletter and video tips!

<input type="text"/>	<input type="text"/>
----------------------	----------------------

[Sign me up!](#)

ABOUT US		INFORMATION		ACCOUNT		CONTACT US	
<p>Our Mission Statement: To provide a rewarding experience to any person wanting to further their growth in rocketry, by providing exciting products that teach, as well as showing how fun and safe the hobby can be. We also provide in-depth information about rockets, so that customers can make informed decisions about rocketry so they save money.</p> <p>Read More... (https://www.apogeerockets.com/index.php?main_page=about_us&pg=about_us&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <div><div></div><div>Fillmore Ridge Heights Colorado Springs, CO 80907</div></div>		<p>Shipping Info (https://www.apogeerockets.com/index.php?main_page=shippinginfo&pg=information&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Privacy Policy (https://www.apogeerockets.com/index.php?main_page=privacy&pg=information&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Terms of Service (https://www.apogeerockets.com/index.php?main_page=conditions&pg=information&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Site Map (https://www.apogeerockets.com/index.php?main_page=site_map&pg=information&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Gift Certificate FAQ (https://www.apogeerockets.com/index.php?main_page=gv_faq&pg=information&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p>		<p>Order History (https://www.apogeerockets.com/index.php?main_page=order_history&pg=account&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Address Book (https://www.apogeerockets.com/index.php?main_page=address_book&pg=account&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>My Account (https://www.apogeerockets.com/index.php?main_page=my_account&pg=account&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Change Password (https://www.apogeerockets.com/index.php?main_page=change_password&pg=account&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p> <p>Create Account (https://www.apogeerockets.com/index.php?main_page=create_account&pg=account&zenid=t69jehl9v0au9n3d0akrfq6rh0)</p>		<div><div></div><div>Call and talk to a real person! 719-535-9335</div></div> <div><div></div><div>Fax Us: 719-534-9050</div></div> <div><div></div><div>Email Us: Contact Form (https://www.apogeerockets.com/index.php?main_page=contact_form&pg=contact&zenid=t69jehl9v0au9n3d0akrfq6rh0)</div></div>	

CONNECT WITH US









(http://www.apogeerockets.com/)

PAYMENT OPTIONS

