

Inverted Pursuits Lab

FIRE Drake

Parts:

3D Printed

- Nose Cone (IP100801)
- Fin Can Body (IP100802)
- Mid Section (IP100803)
- Motor Retention (IP100804)

Standard Parts

- 200lb Spectra Cord 60 inches
- 12" Plastic Parachute
- 3.5 inch Estes BT-50 Tube

Additionally Needed

- Estes Porta-Pad E (002238)
- Estes Launch Controller (002220)
- Super Glue / CA Glue
- Motor and Igniter of choice

Anticipated Altitudes

- Estes E12-6 - 900 ft
- Economax F44-4 - 1500 ft

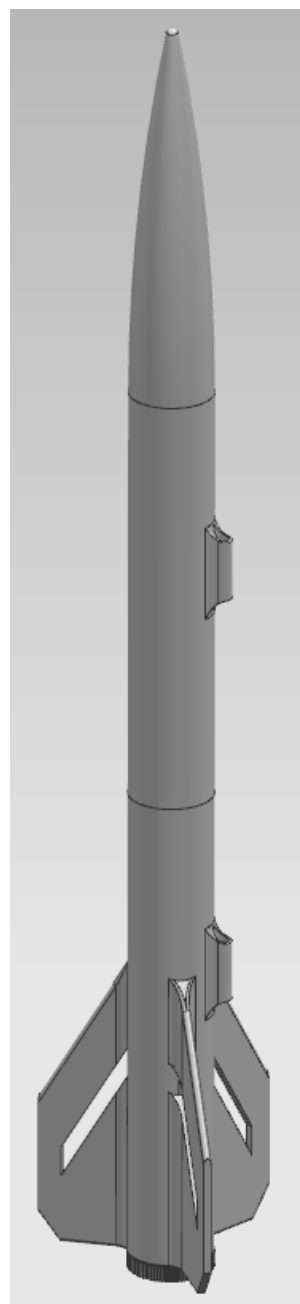


FIGURE 1: FIRE Drake Rocket

Assembly Instructions

1. An assembly video is available on YouTube at Inverted Pursuits Laboratory. Simply search the rocket name on the channel.
2. Be sure to test fit and sand all components as needed prior to proceeding.
3. Slide the BT-50 segment into the bottom of the Fin Can Body to test fit and then glue in place with super glue. Glue is not required but recommended.

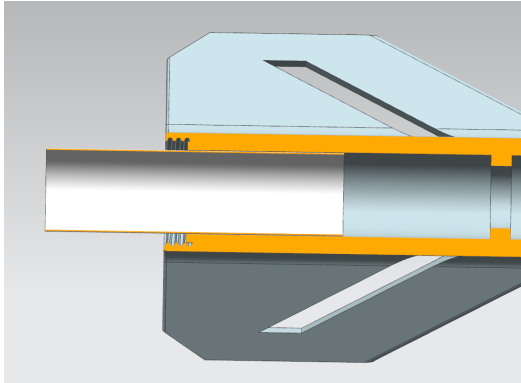


Figure 3: BT-50 slides into FCB

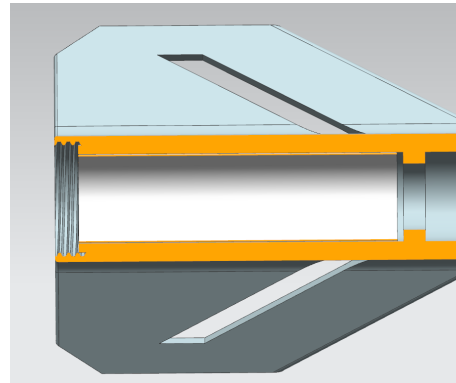


Figure 4: BT-50 Final Position

4. Glue the Fin Can Body and Mid Section. Note that the 2 parts are keyed in order to ensure the launch lugs align.

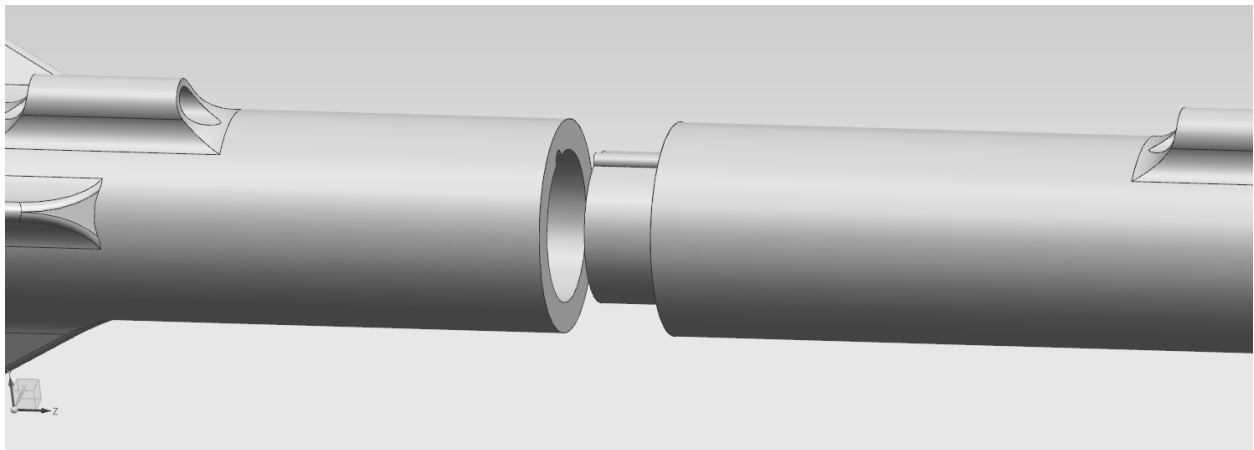


Figure 5: Body Section Keying

5. Use a slip knot or 2 half hitches to tie the Shock Cord (RED) around the internal shock mount as shown in Figure 6. It is recommended to use a nut tied to the end of the shock cord to aid in feeding through the rocket.
6. Attach the other end of the shock cord (RED) to the Nose Cone. Tie a loop for the Parachute (BLUE) in the shock cord just below the nose cone.

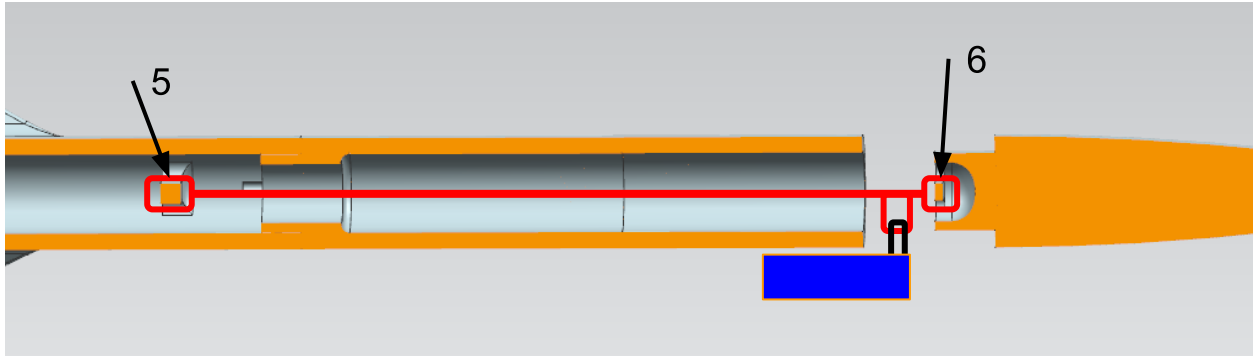


Figure 6: Shock Cord Attachment Nose Cone Cross Section

7. Attach the parachute to the recently created loop in the Shock Cord.
8. The motor is retained by screwing the Motor Retention into the bottom of the rocket.

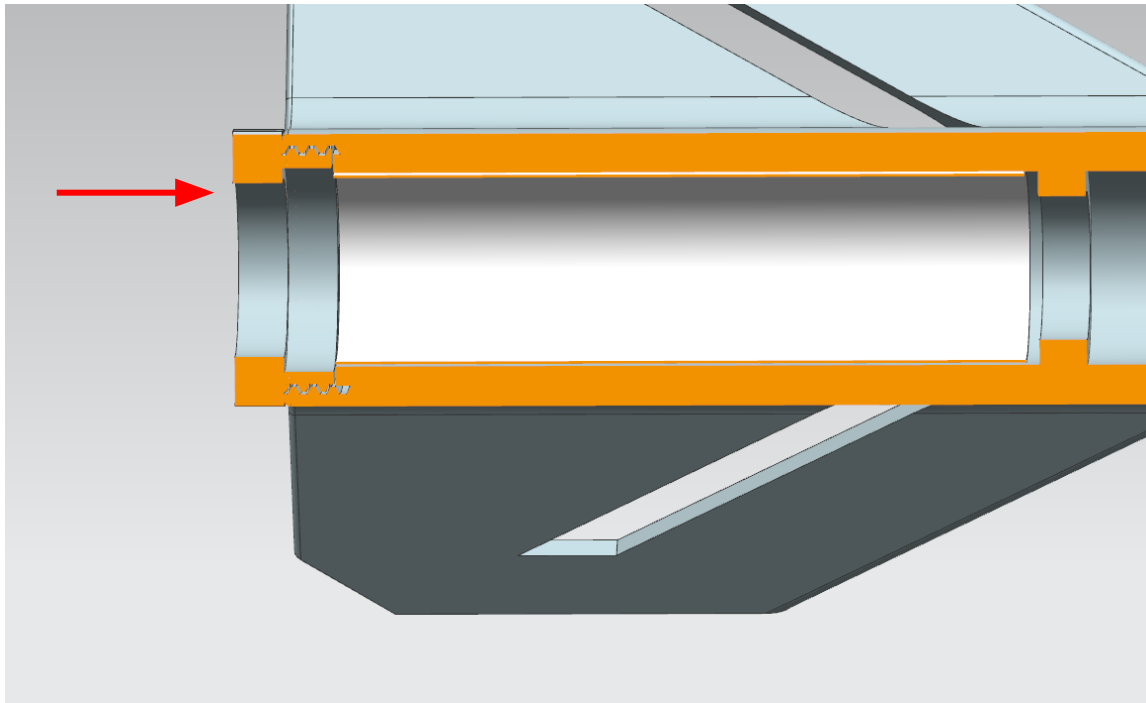


Figure 7: Motor Retention

9. Flight Characteristics can be verified through the provided OpenRocket file at www.jboyson.com.
10. Remember to add wadding or some of the provided dog barf to keep the ejection charge from burning / melting the parachute. Additionally be sure to add a small amount of the dog barf in the space between the motor and the shock cord mount as it improves longevity of the rocket.
11. Once the motor is installed, go out to the launch pad and enjoy.
12. Remember to keep it Pointy End Up!

