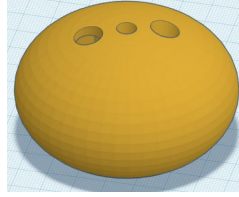


Art Applewhite Rockets

from deep in the heart of Texas

3D Printed 13mm Doorknob



Please email me at rocket877@aol.com if you have any corrections or suggestions. This is a new design made possible by 3D printing technology.

Recommended motor: A10-PT, A10-0T, A10-3T, A3-4T, 1/2A3-4T

Construction

1. Your results may vary depending on a large number of variables and settings. I hope I have provided enough detail to make your first try a success.
2. The STL file was made using TinkerCAD, available for free at tinkercad.com
3. The gcode file was made using the Ultimaker Cura slicer, available for free at ultimaker.com.

Here are some of the Cura settings I used to make the gcode file:

Printer: Creality Ender 3

Filament: PLA

Layer thickness: 0.2mm (Standard Quality)

Infill: 10% Gyroid

Support: None

Build Plate Adhesion: Skirt

All other setting are the default or recommended values.

Flight Preparations

Insert the motors into the motor mounts. Due to variations in 3D printer calibrations, the motors may fit either too tightly or too loosely.

(a) If they're too tight you can either re-print the rocket using a scaling factor >100% or sand the inside of the motor mounts a little until the motors fit snugly enough not to fall out.

(b) If they're too loose, either re-print the rocket with a scaling factor <100% or neatly wrap, one or more, layers of masking tape around the motors so that they won't fall out when the rocket is held upright. Once the rocket is flown a few times the motor mounts may loosen up due to the warm motor casings heating up and slightly deforming the plastic.

The rocket uses clustered motors so use a launch controller that will provide enough current to start both motors at the same time.

If possible, use a short (<18 inches) $\frac{1}{4}$ inch launch rod so that energy isn't wasted in friction on the launch rod and it won't wipe around violently if only one motor starts.