

# LULZBOT MINI DEVELOPER'S GUIDE



**LulzBot Mini Developer's Guide**  
by Aleph Objects, Inc.  
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## Introduction

### Welcome Aboard

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**Audience**

This is a developer's guide to hacking on the LulzBot Mini 3D Printer. It is meant for developers, not users, of the printer.

**Open Source Hardware, Free Software**

Aleph Objects, Inc. is a Loveland, Colorado, USA company that manufactures Open Source Hardware using Free Software.

For more info, visit <http://www.alephobjects.com>.

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## LulzBot Mini Developer Overview

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**1.1 LulzBot Mini**

The LulzBot Mini is a 3D Printer currently under development. The abbreviated name is mini-dev.

The source files are available here:  
<http://devel.lulzbot.com/mini/>

**1.2 Versions**

Each new version of the mini-dev has a new name, with the next letter in the alphabet.

- Azalea - First Prototype
- Begonia - Second Prototype, being built now
- Camellia - Third Prototype
- Daffodil - First Production batch

**1.3 Begonia Photos**

Figure 1.1: Begonia Front Photo

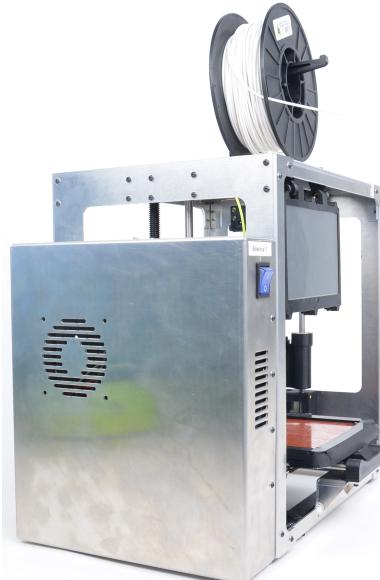


Figure 1.2: Begonia Left Photo

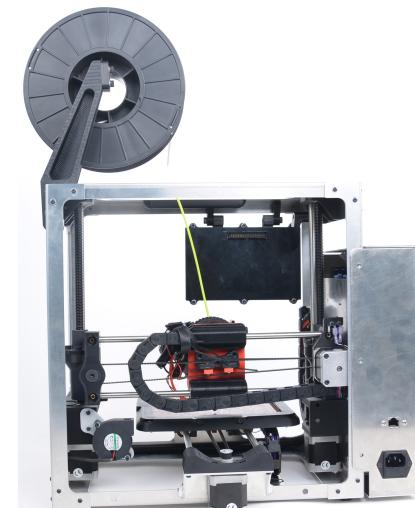


Figure 1.3: Begonia Back Photo



Figure 1.4: Begonia Right Photo

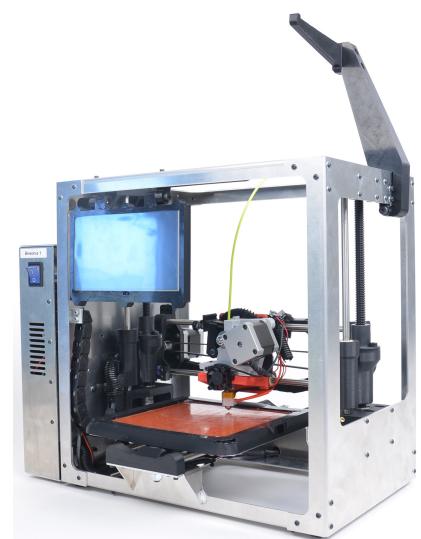


Figure 1.5: Begonia Spool Arm Up Photo



Figure 1.6: Begonia Spool Arm Down Photo



Figure 1.7: Begonia Green Color Scheme Photo



Figure 1.8: Begonia Black Green Color Scheme Photo

## Mechanical

### Cartesian Bot in X, Y, Z

## 2.1 Intro

Mechanical hardware specs and parts are in these subdirectories:  
<http://devel.lulzbot.com/mini/>

## 2.2 Daffodil Bill of Materials

Daffodil is the first production run of units for retail.

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Mechanica

### 2.3. BEGONIA RENDER

3

Mechanical

### 2.3. BEGONIA RENDERS

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Figure 2.3: Begonia ISO Render

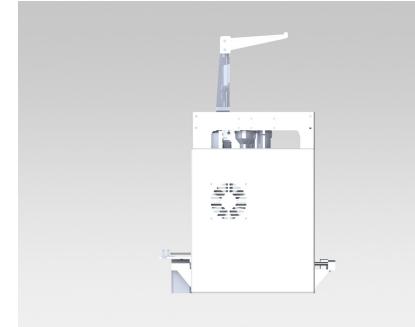


Figure 2.4: Begonia Left Rende

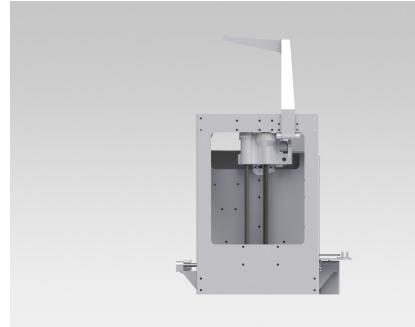


Figure 2.5: Begonia Right Render

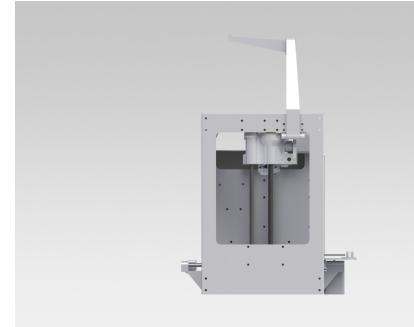


Figure 2.6: Begonia Right Render

### 2.3 Begonia Renders

### 2.3. BEGONIA RENDERS



Figure 2.2: Begonia Front Render

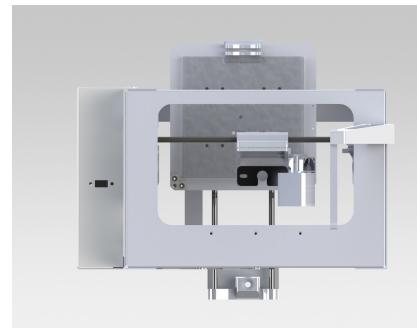


Figure 2.7: Begonia Top Render

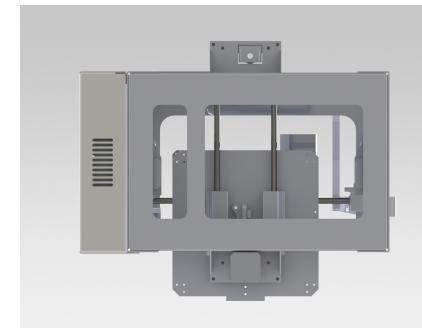


Figure 2.8: Begonia Bottom Render

## 2.4 Begonia 3D Printed Parts

## 2.5 Begonia Bed

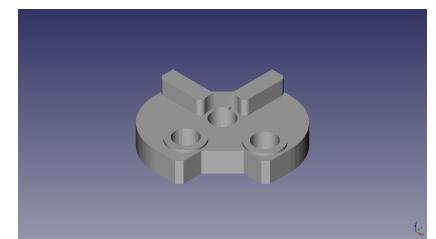


Figure 2.9: Begonia 3D Printed Bed Corner Render

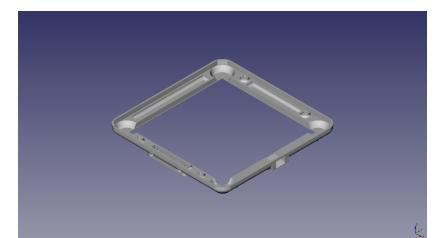


Figure 2.10: Begonia 3D Printed Bed Cover Render



Figure 2.11: Begonia 3D Printed Bed Fan Mount Render

## 2.6 Begonia Extruder

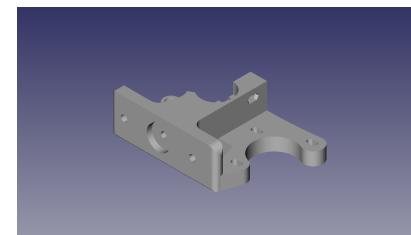


Figure 2.13: Begonia 3D Printed Extruder Body Hex Render

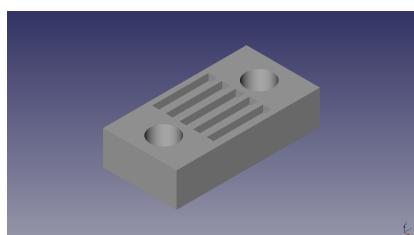


Figure 2.12: Begonia 3D Printed Belt Clamp Render



Figure 2.14: Begonia 3D Printed Extruder Mount Render

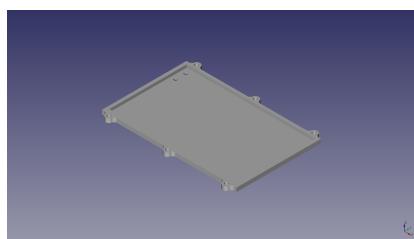


Figure 2.15: Begonia 3D Printed LCD Back Cover Render

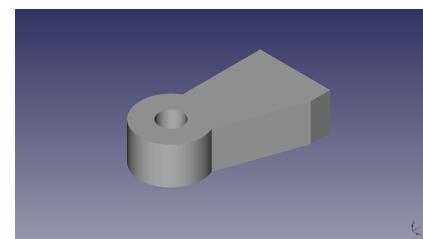


Figure 2.17: Begonia 3D Printed LCD Hinge Render

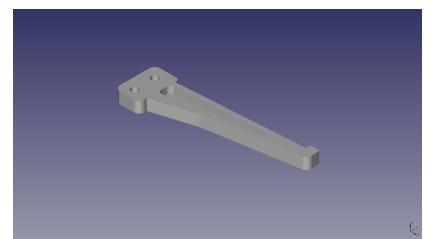


Figure 2.19: Begonia 3D Printed Spool Arm Render

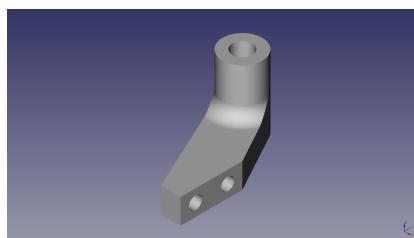


Figure 2.16: Begonia 3D Printed LCD Catch Render

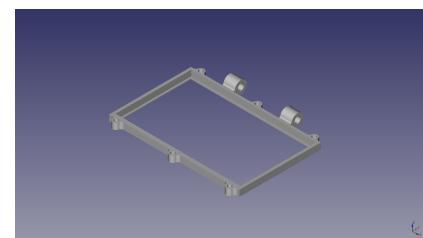


Figure 2.18: Begonia 3D Printed LCD Mount Render

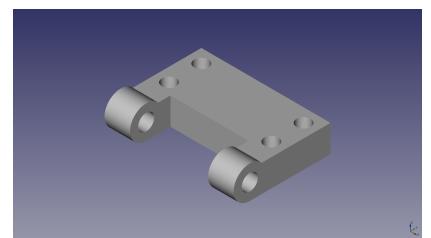


Figure 2.20: Begonia 3D Printed Spool Hinge Render

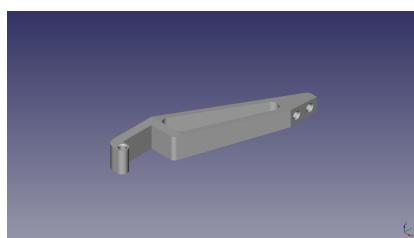


Figure 2.21: Begonia 3D Printed Spool Mount Render

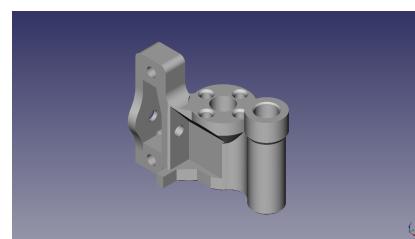


Figure 2.22: Begonia 3D Printed X End Idler Render

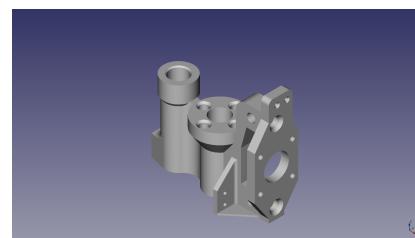


Figure 2.23: Begonia 3D Printed X End Motor Render

2.11 Begonia Z

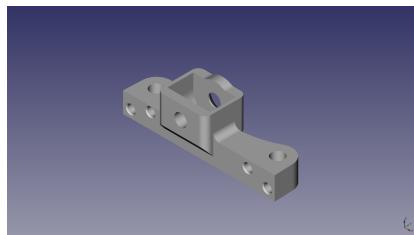


Figure 2.24: Begonia 3D Printed Y End Idler Render

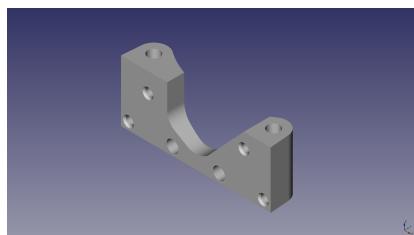


Figure 2.25: Begonia 3D Printed Y Rod Mount Render

2.12 Begonia Misc

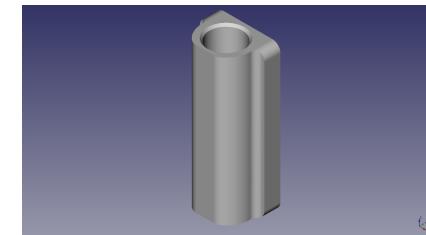


Figure 2.30: Begonia 3D Printed Double Bearing Holder Render

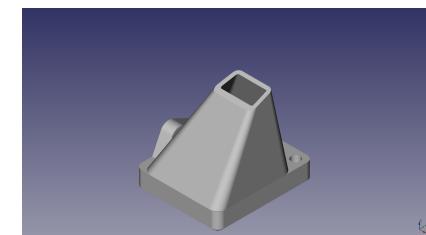


Figure 2.31: Begonia 3D Printed Fan Mount Render

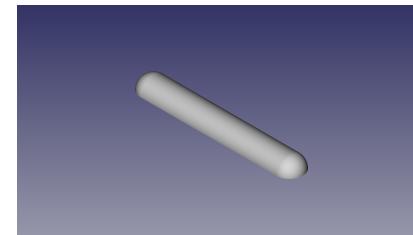


Figure 2.32: Begonia 3D Printed Handle Bar Render

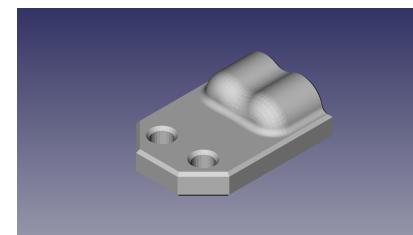


Figure 2.33: Begonia 3D Printed Cable Carrier Mount Render

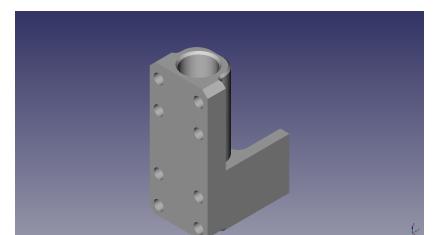


Figure 2.34: Begonia 3D Printed Extruder Mt Top Double Bearing Holder Render

- 2.13 Begonia Drawings  
2.14 Camillia Drawings

## 3.1 Electrical Layout

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**Electrical**  
**Power Supply, wiring**

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**3D Printer Controller**  
**Mini-RAMBo**

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## 4.1 Intro

The printer controller will be the RAMBo-Mini.

## 5.1 Intro

Pack it well.

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**Packing**  
**If It Shakes It Breaks**

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**PACKING LIST**

Page 1 of 1



Model: LulzBot Mini 1.0 3D Printer  
Part Number: \_\_\_\_\_  
Date Purchased: \_\_\_\_\_  
Configured by: \_\_\_\_\_

Items to include:

- Printer and Cables:  
 LulzBot Mini 1.0 3D printer  
 6ft 18AWG Power Cord Cable (5229) (if applicable)  
 6ft 18AWG Micro USB Cable (7081) (if applicable)  
 6ft 18AWG European Power Cord Cable (7032) (if applicable)  
 USB cable

Supplies:

- USB drive with one or more LulzBot 3D printer filament  
 Transfer bag(s) of LulzBot 3D printer filament  
 Duct tape  
 Brush  
 Cloth  
 5 screwdriver/wrench pads  
**Print Print:**  
 Rockcutter printed by this LulzBot Mini 3D Printer  
**Documentation:**  
 Quick Start Guide  
 Record Document  
 Recording Log document  
 Recording Log document

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**Contact**  
**Phone, Email, Web, Location**

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### 6.1 Support

Email: [support@alephobjects.com](mailto:support@alephobjects.com)  
Phone: +1-970-377-1111 x010  
LulzBot Forum  
<http://forum.lulzbot.com>

### 6.2 Sales

Email: [sales@alephobjects.com](mailto:sales@alephobjects.com)  
Phone: +1-970-377-1111 x600

### 6.3 Websites

Aleph Objects, Inc.  
<http://www.alephobjects.com>  
LulzBot 3D Printers  
<http://www.lulzbot.com>

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**Colophon**

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GNU/Linux  
 $\text{\LaTeX}$  Memoir

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