

# HOLP



# History of LulzBot Printers

**History of LulzBot Printers**

**by Aleph Objects, Inc.**

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20150627

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## **Introduction**

### **HOLP**

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# Free Software, Libre Innovation, Open Source Hardware

Aleph Objects, Inc. is a Free Software, Libre Innovation, and Open Source Hardware company based in Loveland, Colorado, USA. Aleph Objects manufactures the LulzBot line of 3D printers, sold worldwide.

This document outlines the History of LulzBot Printers (HOLP). HOPE and HELP. HOLP.

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**LulzBot Clonedel**

**Repstrap**

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Figure 1.1: LulzBot Clonedels

LulzBot Clonedels were made from silicon molds purchased (PO00077) from Metrix Createspace on February 23, 2011. Eleven or more units were made, starting with “Mars P4”. The Clonedels printed the subsequent LulzBot Prusas. Units through “P64” had some Clonedel parts.

## 1.1 LulzBot Clonedel Molds

The LulzBot Clonedel parts themselves were primarily poured from silicon molds.

## 1.2 LulzBot Clonedel Mars P4

LulzBot Clonedel Mars P4.

## 1.3 LulzBot Clonedel Mars P5

LulzBot Clonedel Mars P5.

### 1.3. LULZBOT CLONEDEL MARS P5



Figure 1.2: LulzBot Clonedel production ping pong table



Figure 1.3: LulzBot Clonedel gears in the silicon mold

LulzBot Clonedel



Figure 1.4: LulzBot Clonedel molded parts



Figure 1.5: LulzBot Clonedel molded gears

### 1.3. LULZBOT CLONEDEL MARS P5

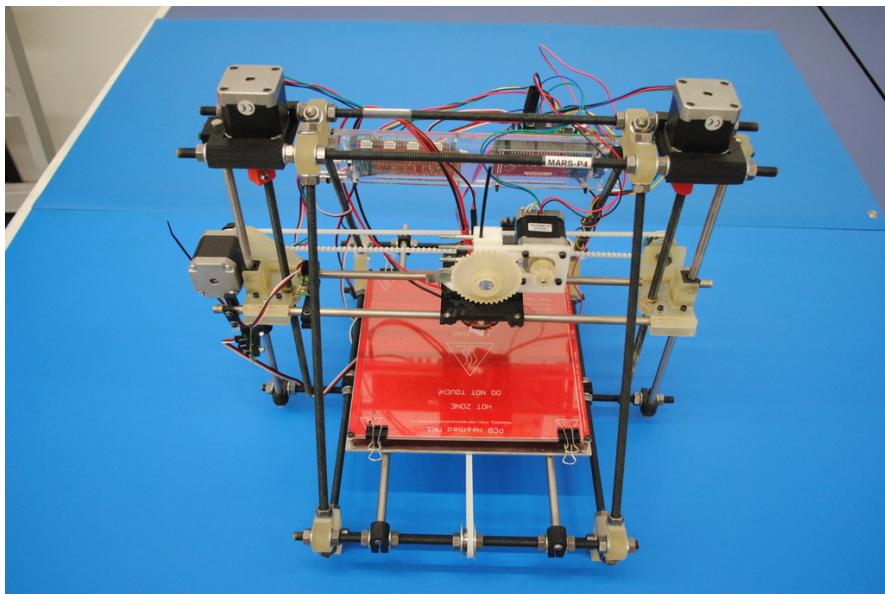


Figure 1.6: LulzBot Clonedel Mars P4 Front

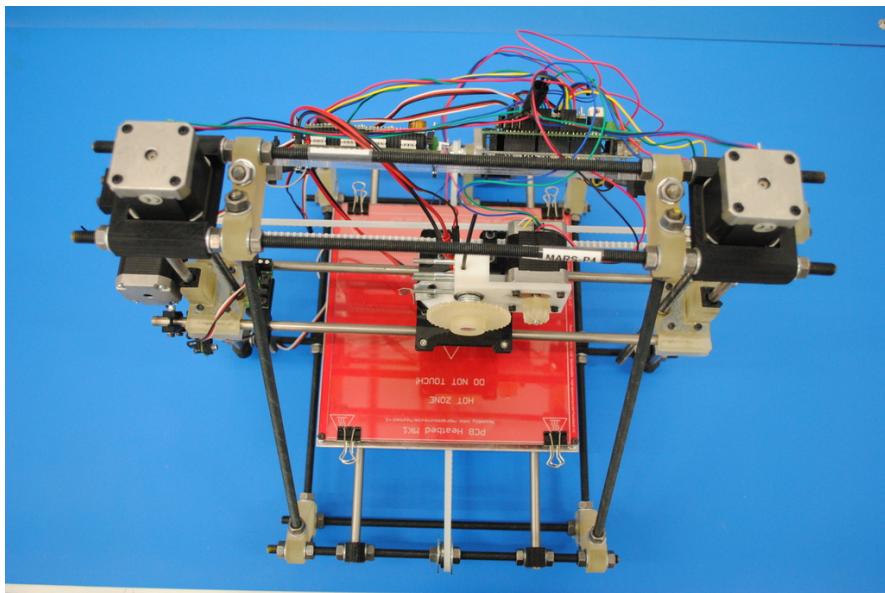


Figure 1.7: LulzBot Clonedel Mars P4 Top

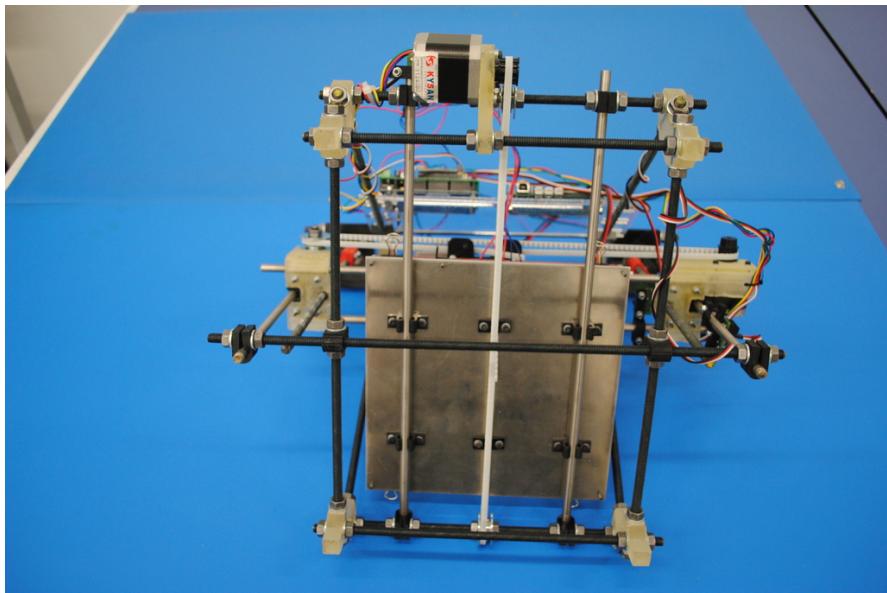


Figure 1.8: LulzBot Clonedel Mars P4 Bottom

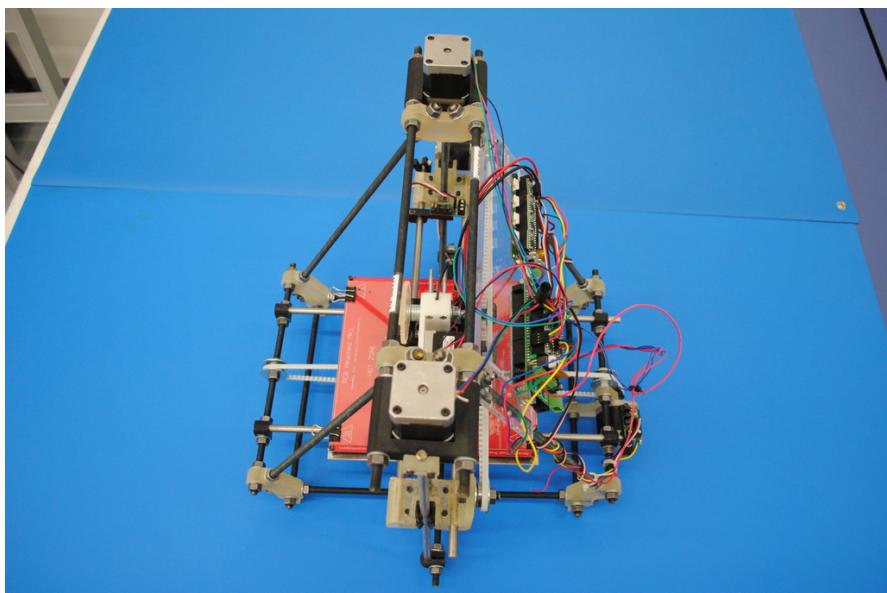


Figure 1.9: LulzBot Clonedel Mars P4 Top Right

### 1.3. LULZBOT CLONEDEL MARS P5

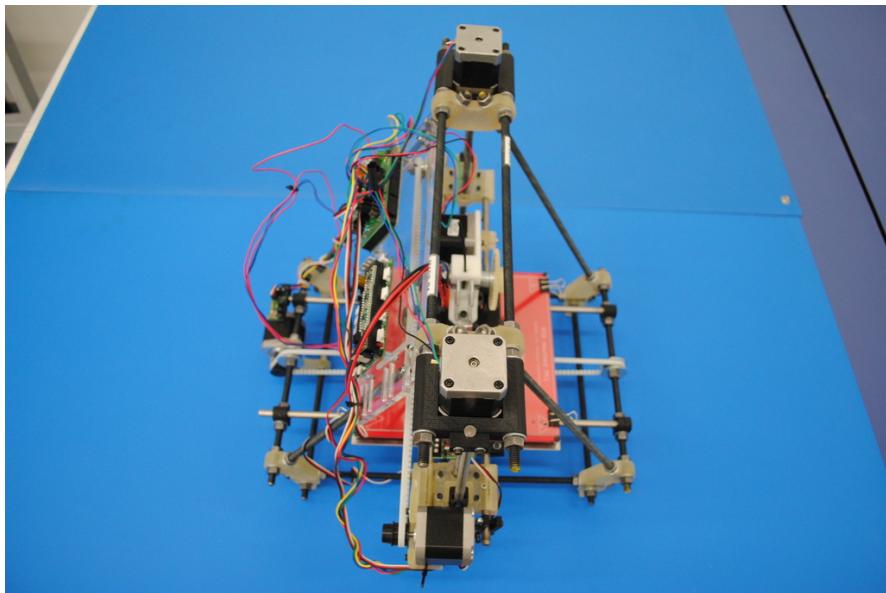


Figure 1.10: LulzBot Clonedel Mars P4 Top Left

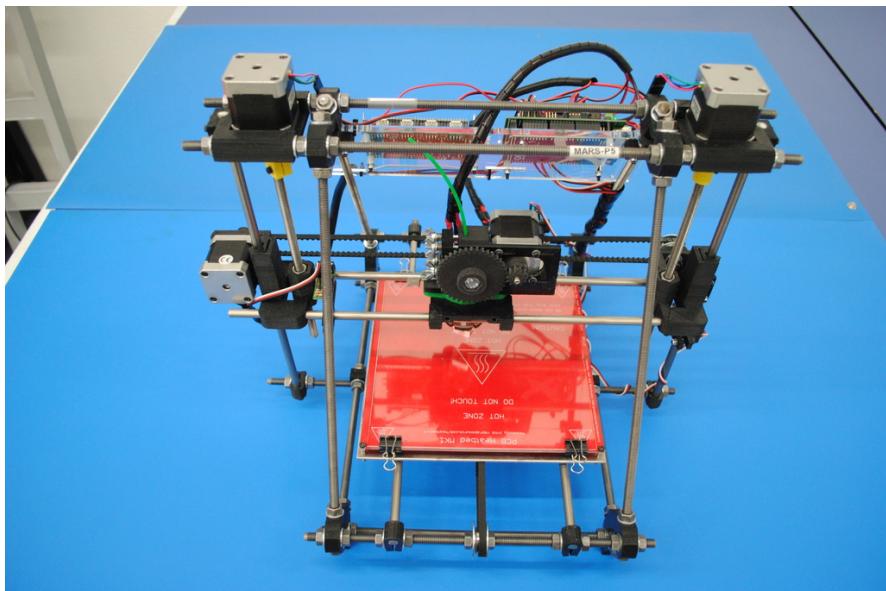


Figure 1.11: LulzBot Clonedel Mars P5 Front

## 1.4 LulzBot Clonedel Mars P6

LulzBot Clonedel Mars P6.

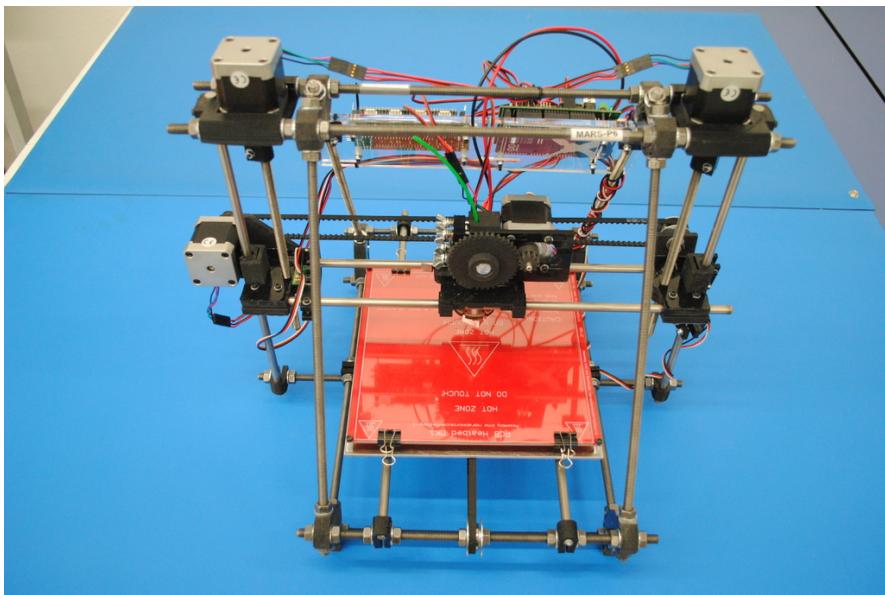


Figure 1.12: LulzBot Clonedel Mars P6 Front

## 1.5 LulzBot Clonedel Mars P7

LulzBot Clonedel Mars P7.

## 1.6 LulzBot Clonedel Mars P8

LulzBot Clonedel Mars P8.

## 1.7 LulzBot Clonedel Mars P9

LulzBot Clonedel Mars P9.

## 1.7. LULZBOT CLONEDEL MARS P9

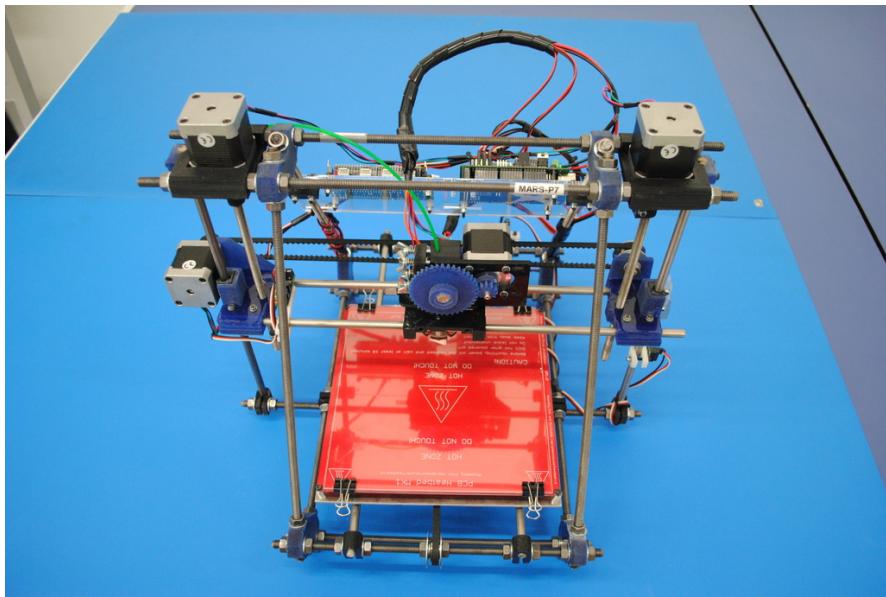


Figure 1.13: LulzBot Clonedel Mars P7 Front

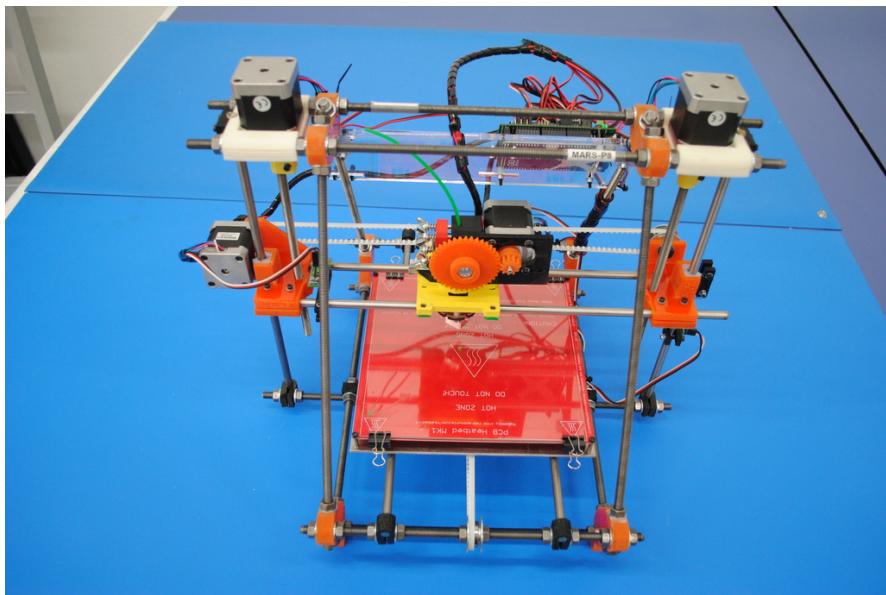


Figure 1.14: LulzBot Clonedel Mars P8 Front

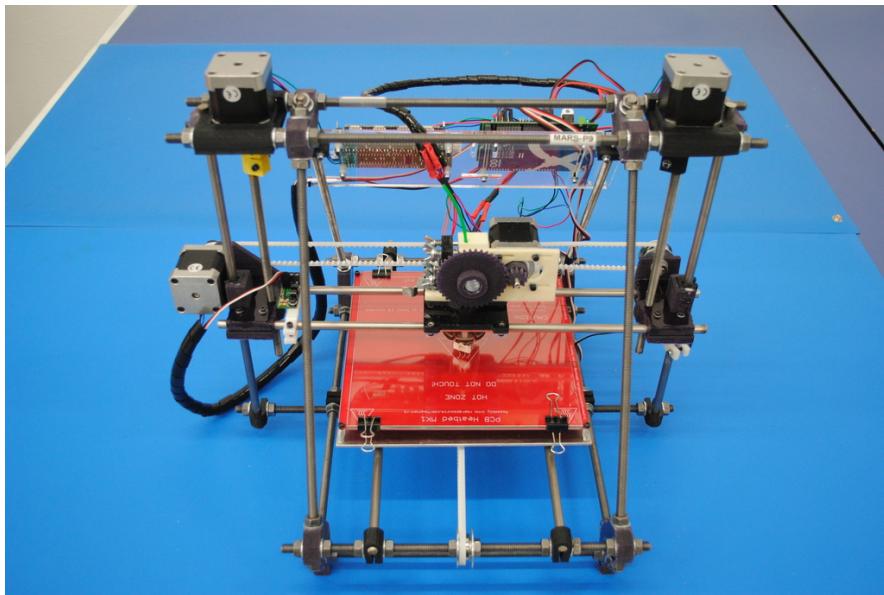


Figure 1.15: LulzBot Clonedel Mars P9 Front

## 1.8 LulzBot Clonedel Mars P10

LulzBot Clonedel Mars P10.

## 1.9 LulzBot Clonedel Mars P11

LulzBot Clonedel Mars P11.

## 1.10 LulzBot Clonedel Mars P12

LulzBot Clonedel Mars P12.

## 1.11 LulzBot Clonedel Mars P13

LulzBot Clonedel Mars P13.

## 1.11. LULZBOT CLONEDEL MARS P13

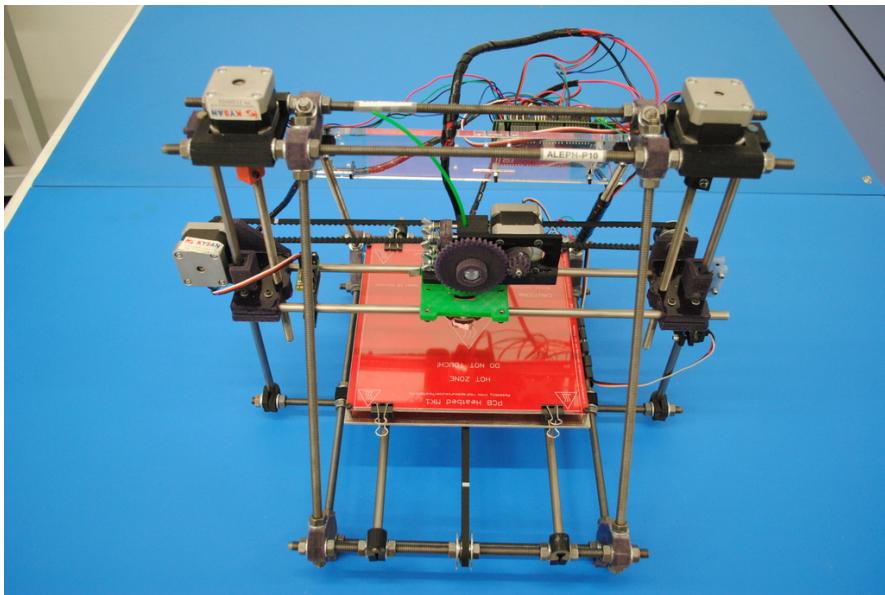


Figure 1.16: LulzBot Clonedel Mars P10 Front

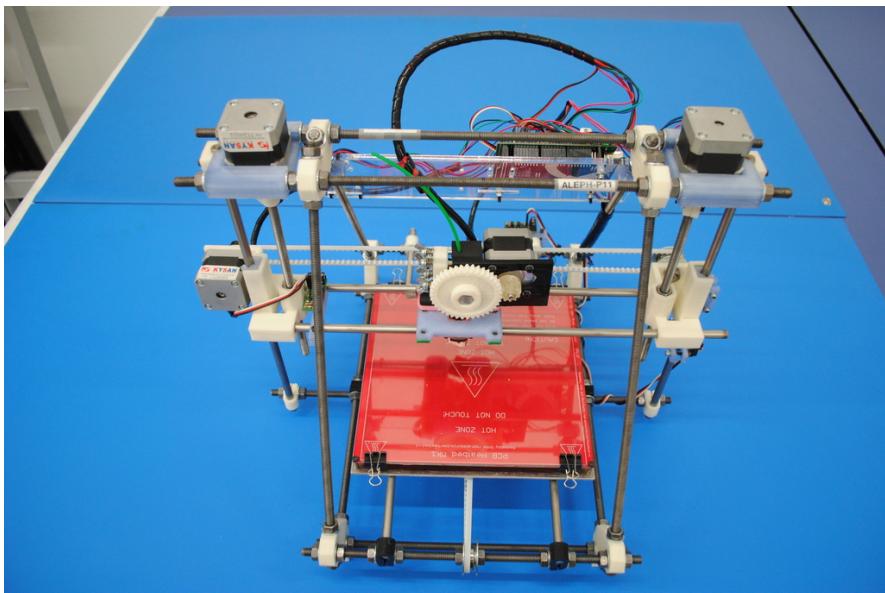


Figure 1.17: LulzBot Clonedel Mars P11 Front

## LulzBot Clonedel

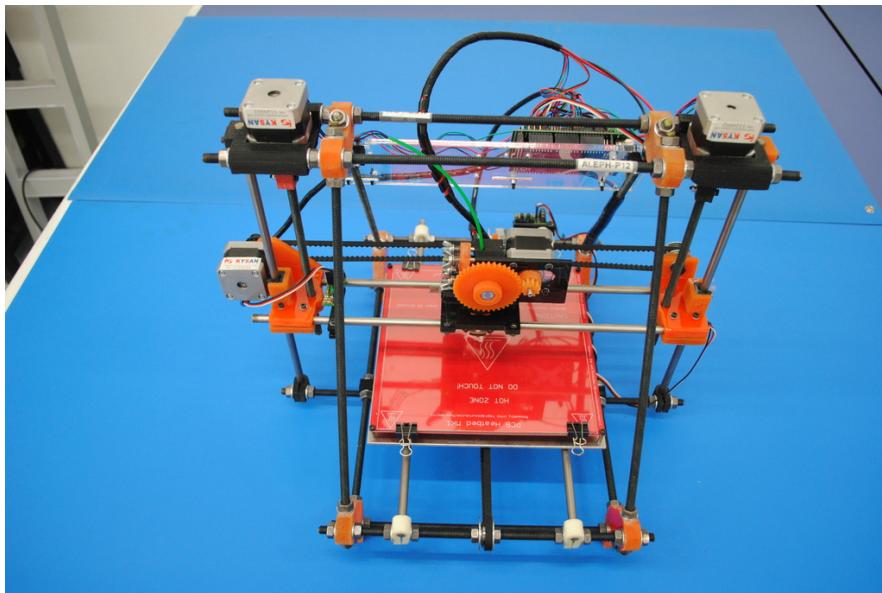


Figure 1.18: LulzBot Clonedel Mars P12 Front

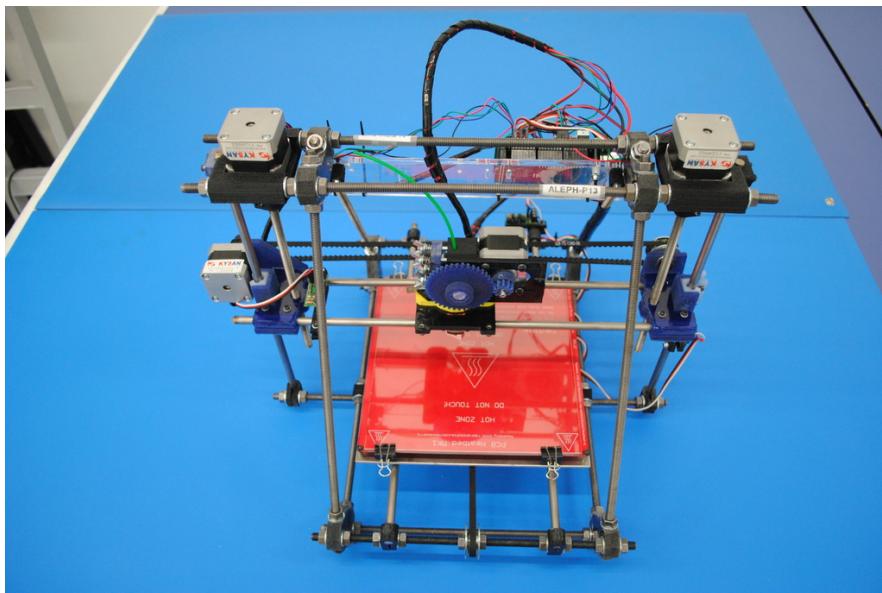


Figure 1.19: LulzBot Clonedel Mars P13 Front

## 1.12 LulzBot Clonedel Mars P14

LulzBot Clonedel Mars P14.

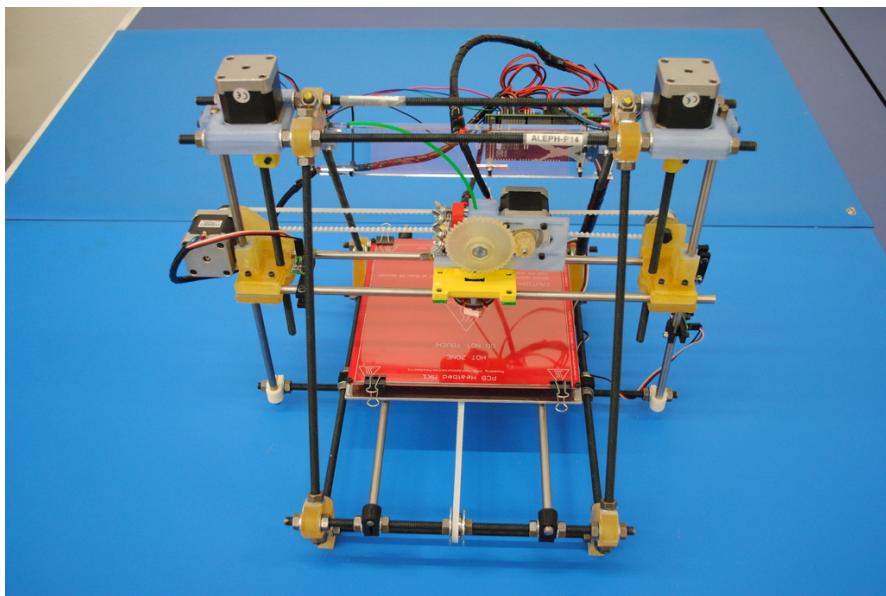


Figure 1.20: LulzBot Clonedel Mars P14 Front



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**LulzBot Prusa 1.0, 2.0**

**Mustaches, Monocles, & Other**

**Sundry Items**

---

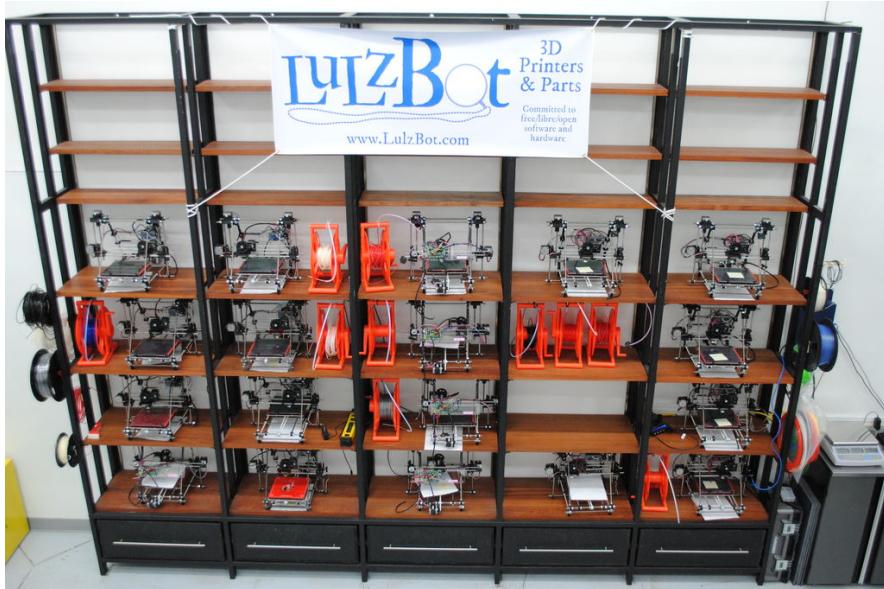


Figure 2.1: LulzBot Prusas

The LulzBot Prusas were based on the Prusa Mendel design. The Prusas printed more Prusas and they printed the LulzBot AO-100s. Approximately 128 Prusas were built. Prusa Version 1.0 production started in the first quarter of 2011. Version 2.0 production started in the second quarter of 2011.

## 2.1 LulzBot Prusa 1.0

LulzBot Prusa 1.0.

## 2.2 LulzBot Prusa 2.0

LulzBot Prusa 2.0.

## 2.2. LULZBOT PRUSA 2.0

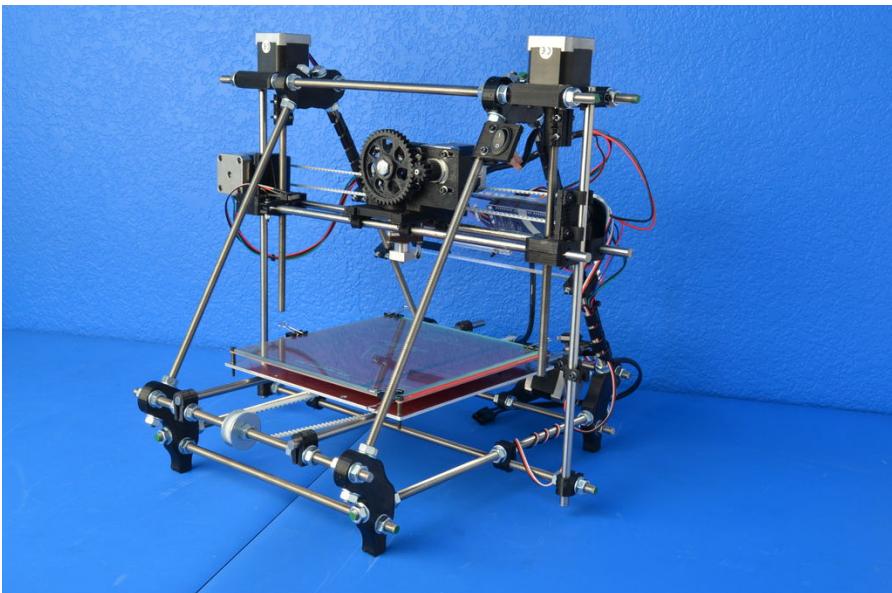


Figure 2.2: LulzBot Prusa 1.0 Front

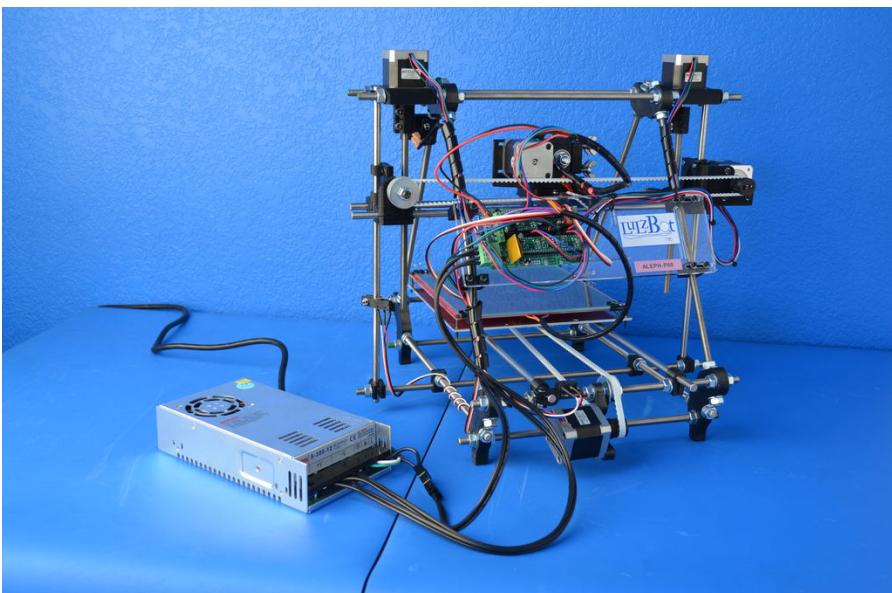


Figure 2.3: LulzBot Prusa 1.0 Back

## LulzBot Prusa 1.0, 2.0

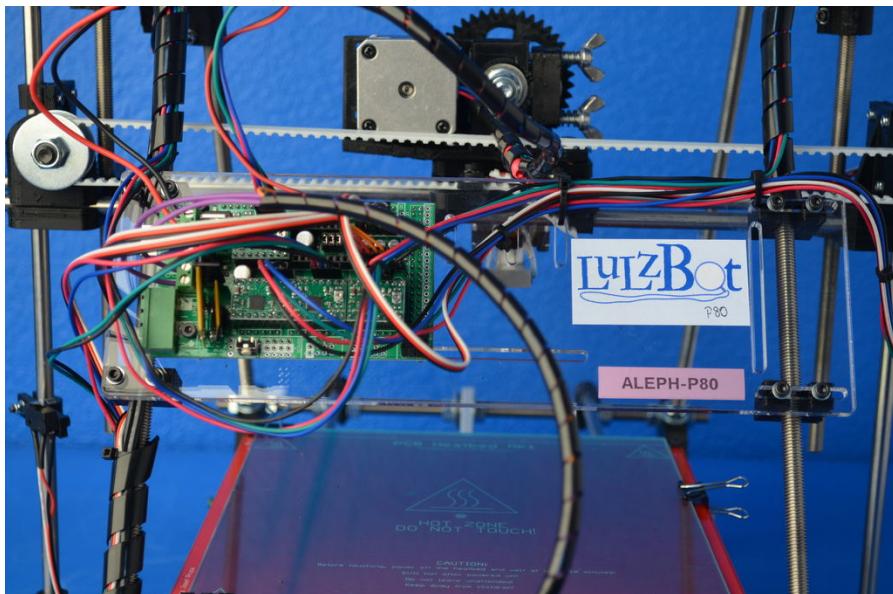


Figure 2.4: LulzBot Prusa 1.0 Electronics

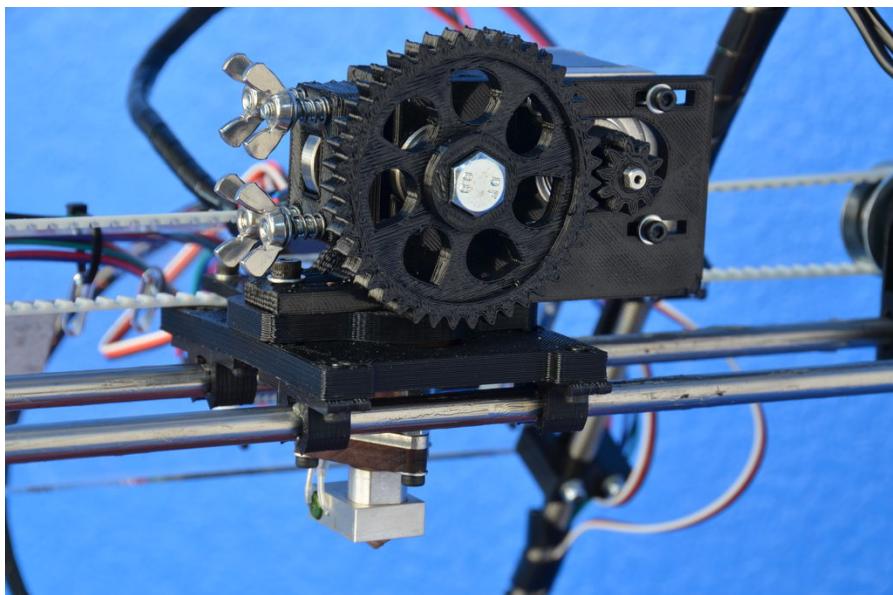


Figure 2.5: LulzBot Prusa 1.0 Extruder

## 2.2. LULZBOT PRUSA 2.0

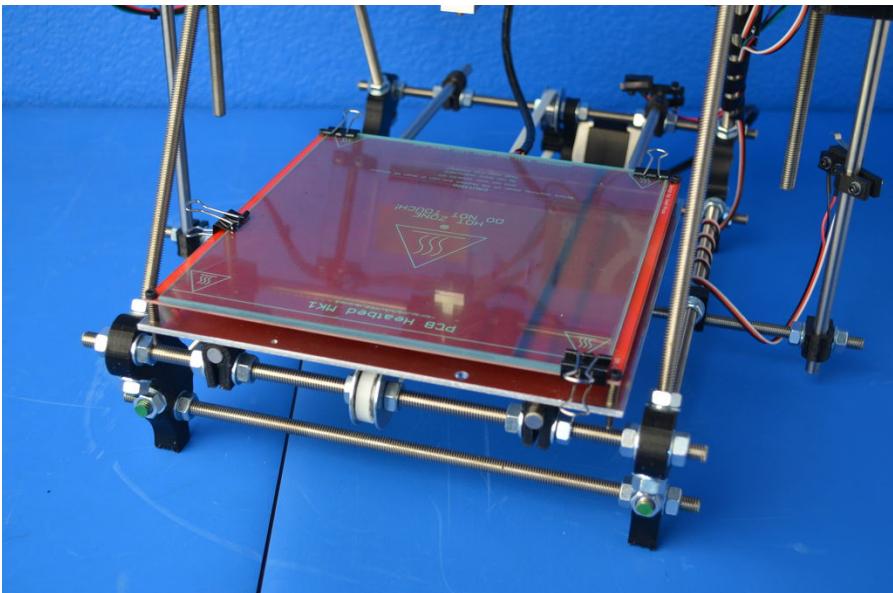


Figure 2.6: LulzBot Prusa 1.0 Heatbed

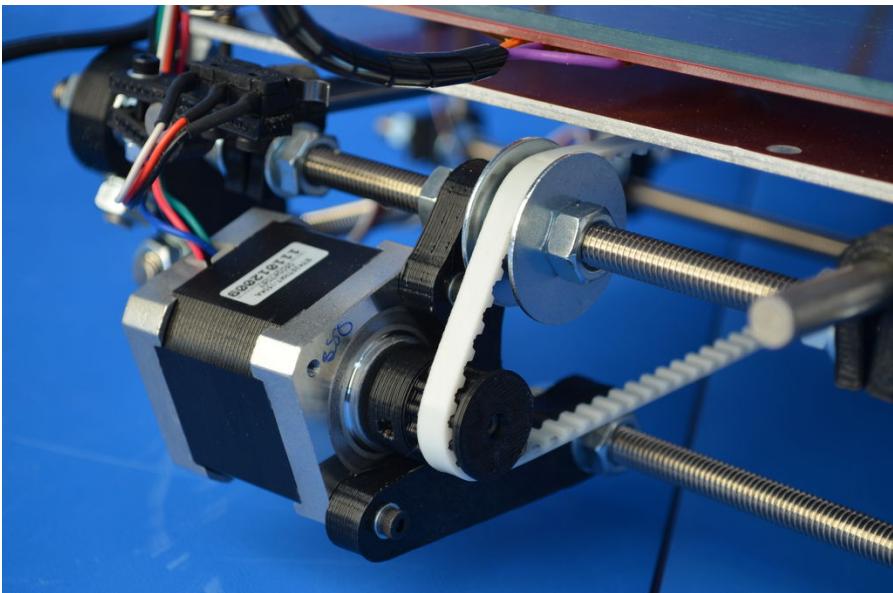


Figure 2.7: LulzBot Prusa 1.0 Y Belt

LulzBot Prusa 1.0, 2.0

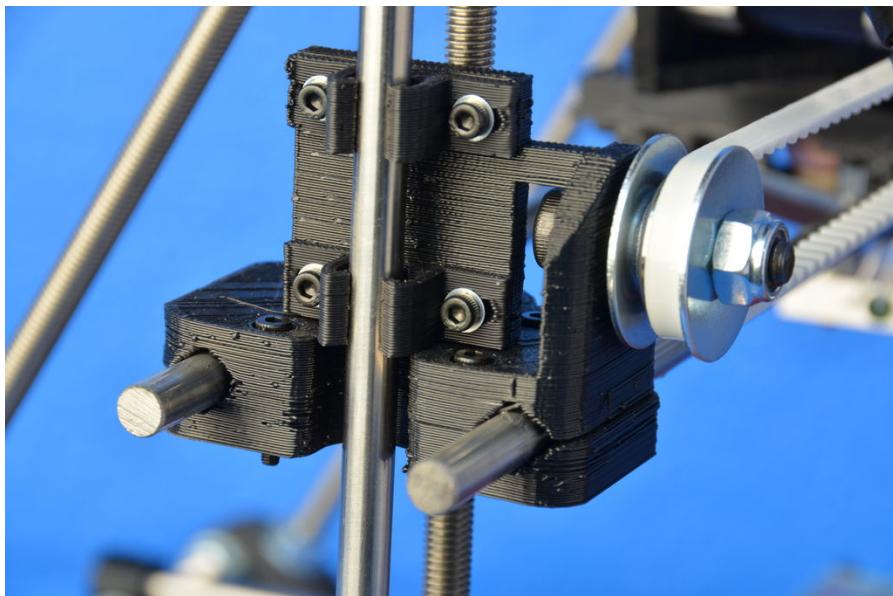


Figure 2.8: LulzBot Prusa 1.0 X End

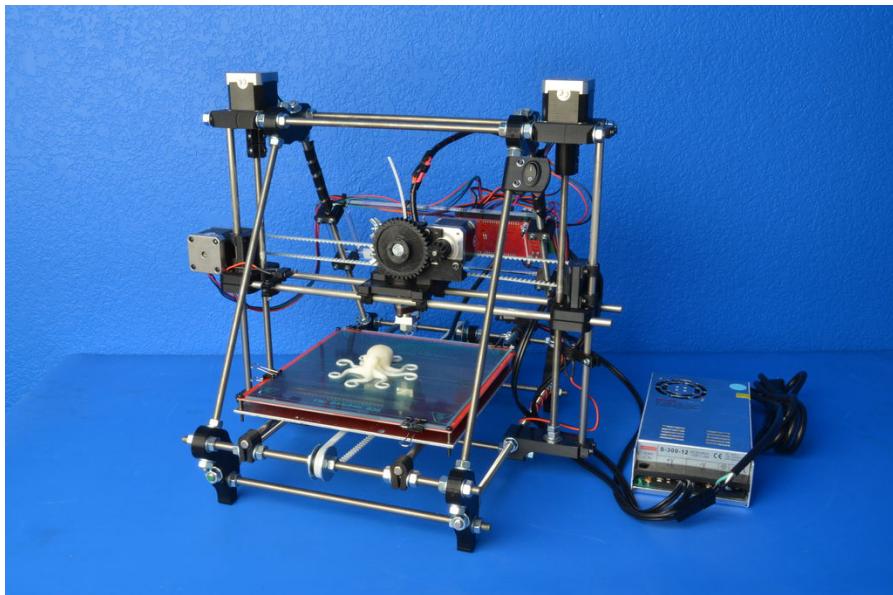


Figure 2.9: LulzBot Prusa 2.0 Front with Octopus

## 2.2. LULZBOT PRUSA 2.0

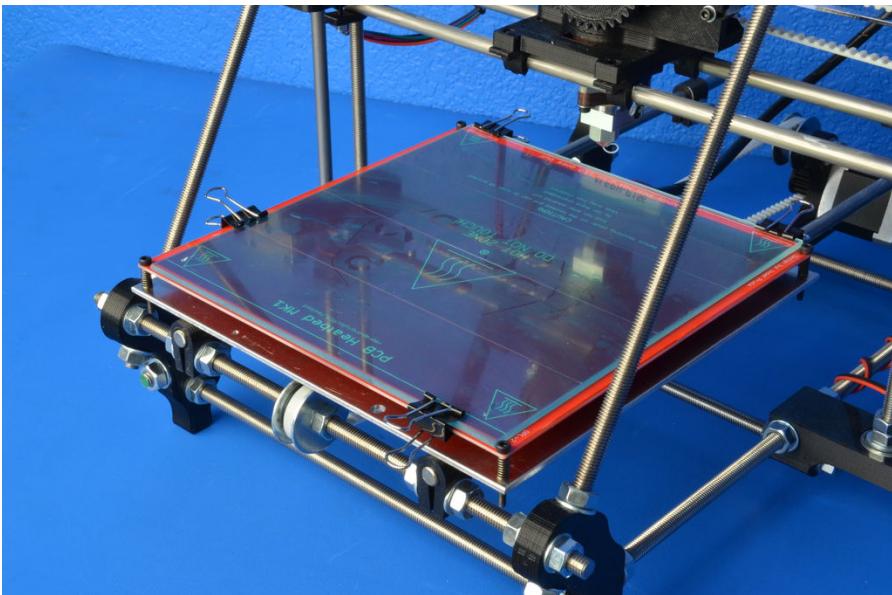


Figure 2.10: LulzBot Prusa 2.0 Bed

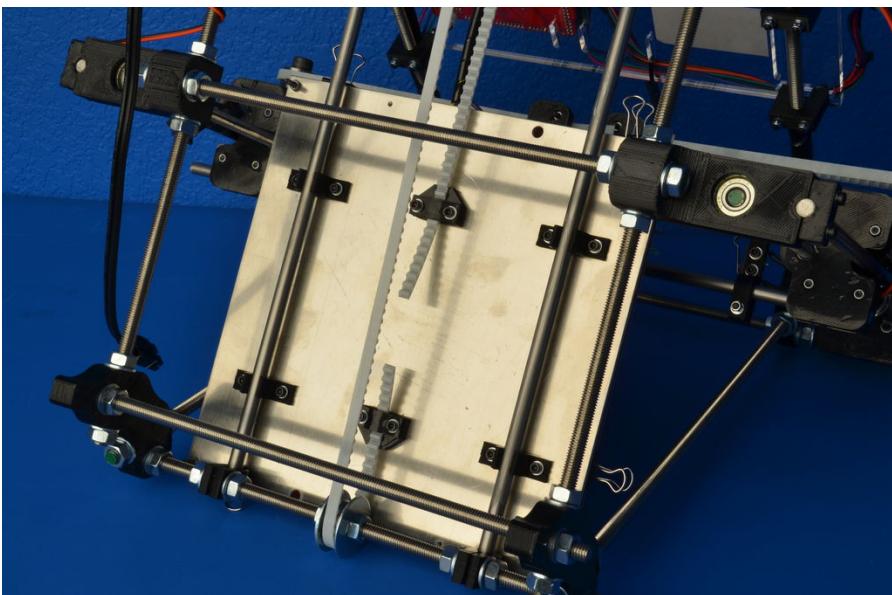


Figure 2.11: LulzBot Prusa 2.0 Bottom

## LulzBot Prusa 1.0, 2.0

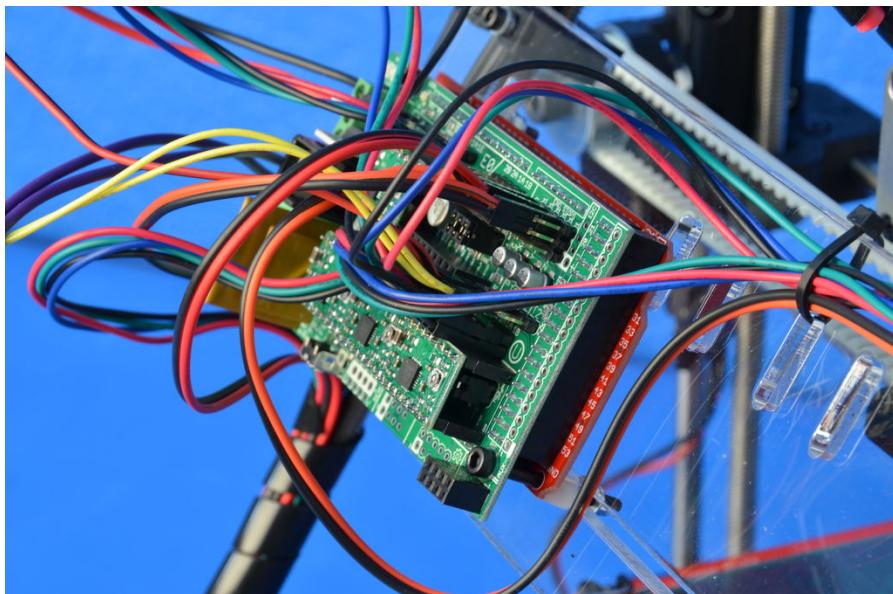


Figure 2.12: LulzBot Prusa 2.0 Electronics

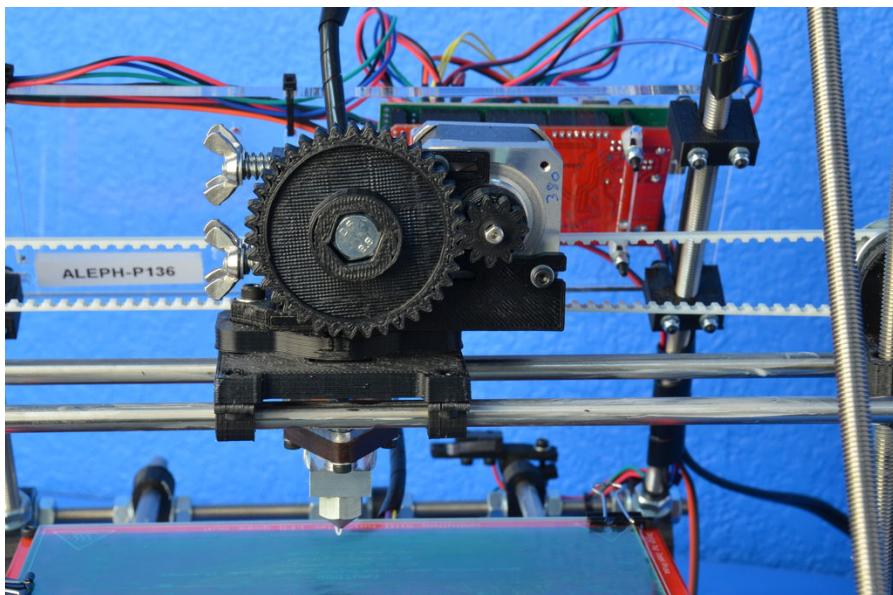


Figure 2.13: LulzBot Prusa 2.0 Extruder

## 2.2. LULZBOT PRUSA 2.0

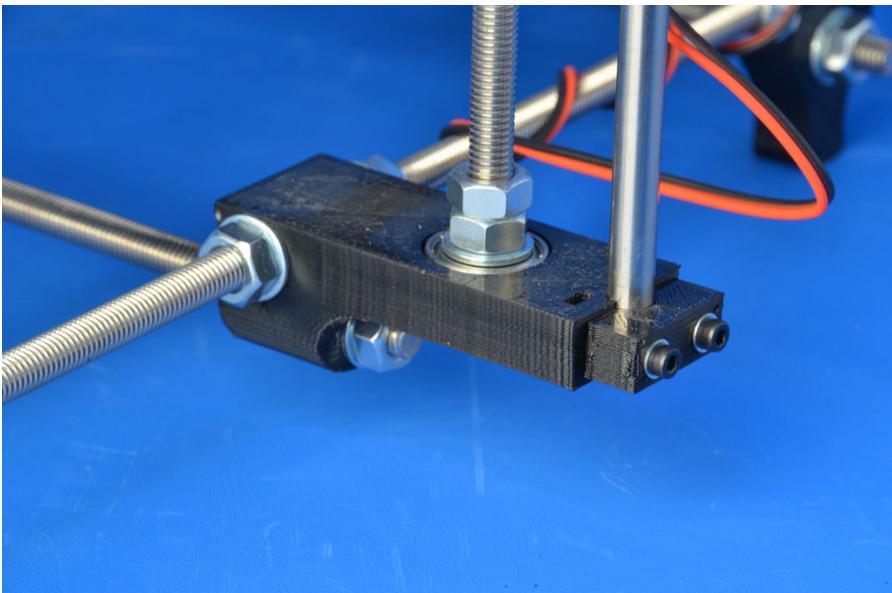


Figure 2.14: LulzBot Prusa 2.0 Mount

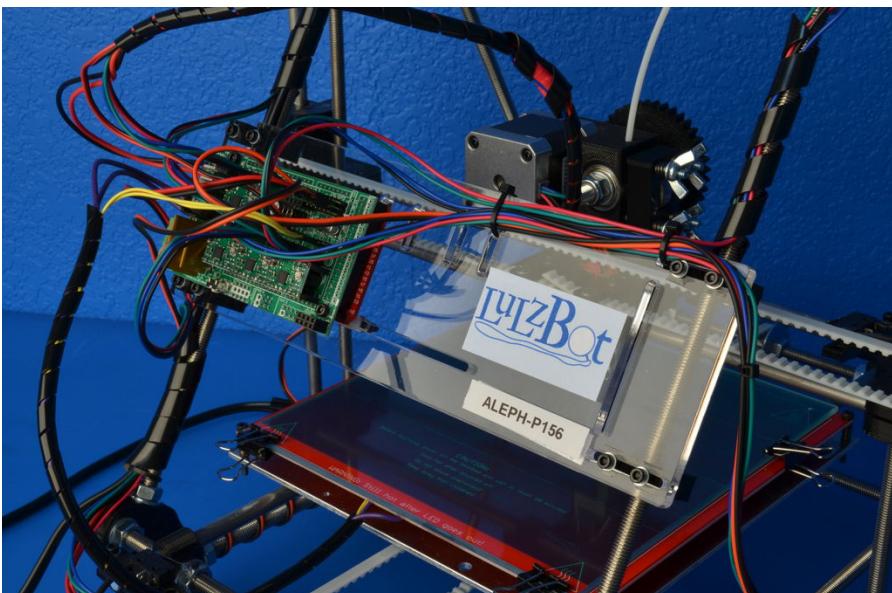


Figure 2.15: LulzBot Prusa 2.0 Panel



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**LulzBot AO-100, AO-101**

**Print More**

---

The LulzBot AO-100 and AO-101s were based on the MendelMax design. The AOs printed more AOs and they printed the LulzBot TAZ. Approximately 750 AOs were built. The AO-100 production started in the first quarter of 2012.

### 3.1 LulzBot AO-100

LulzBot AO-100.

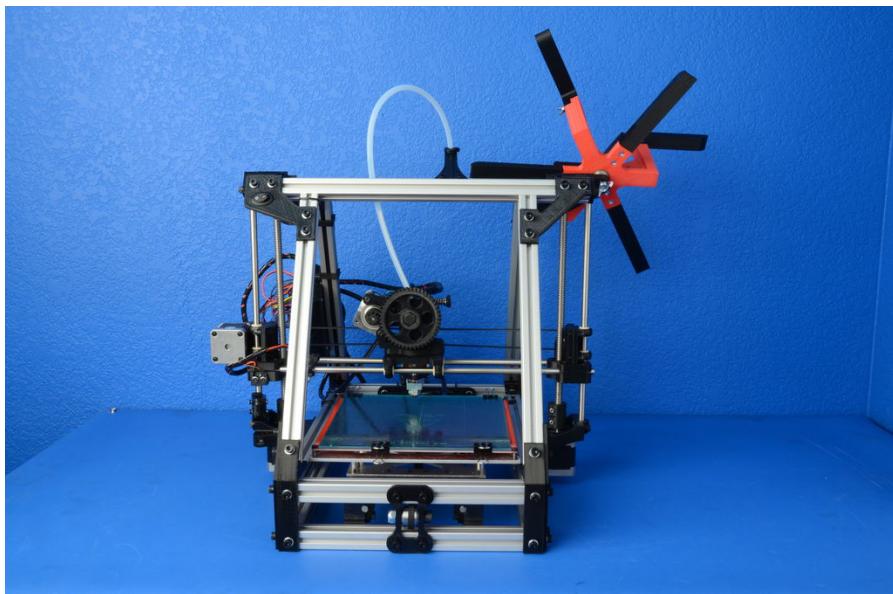


Figure 3.1: LulzBot AO-100 Front

### 3.2 LulzBot AO-101

LulzBot AO-101.

### 3.2. LULZBOT AO-101

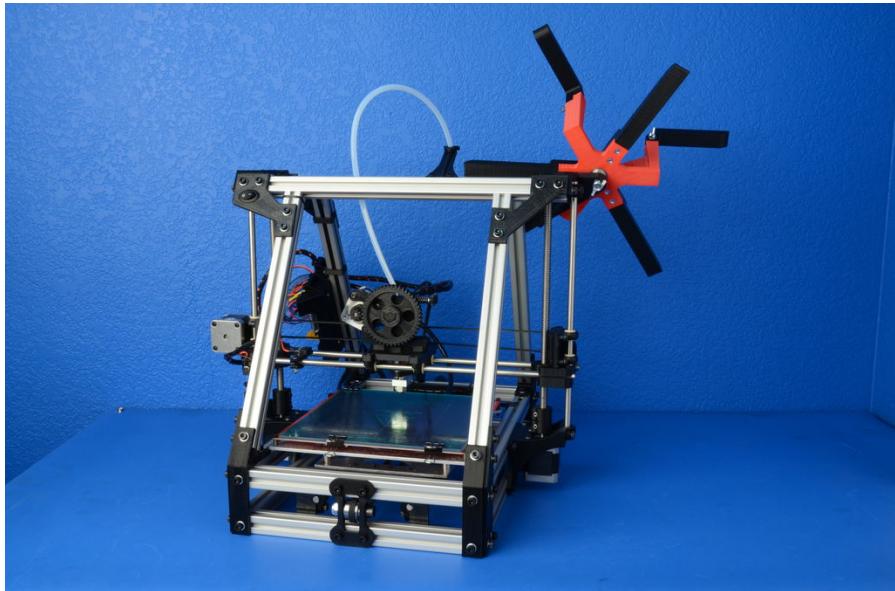


Figure 3.2: LulzBot AO-100 Front Left

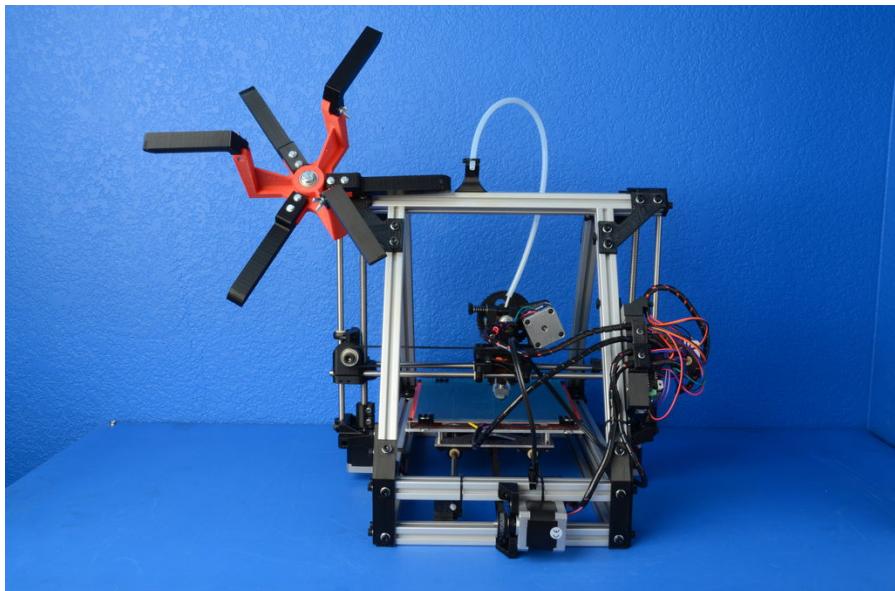


Figure 3.3: LulzBot AO-100 Back

LulzBot AO-100, AO-101

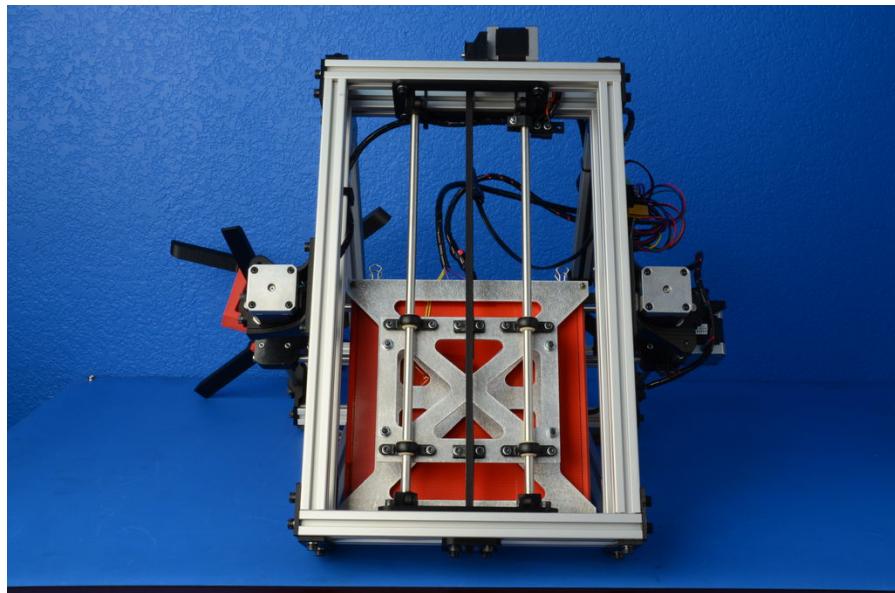


Figure 3.4: LulzBot AO-100 Bottom

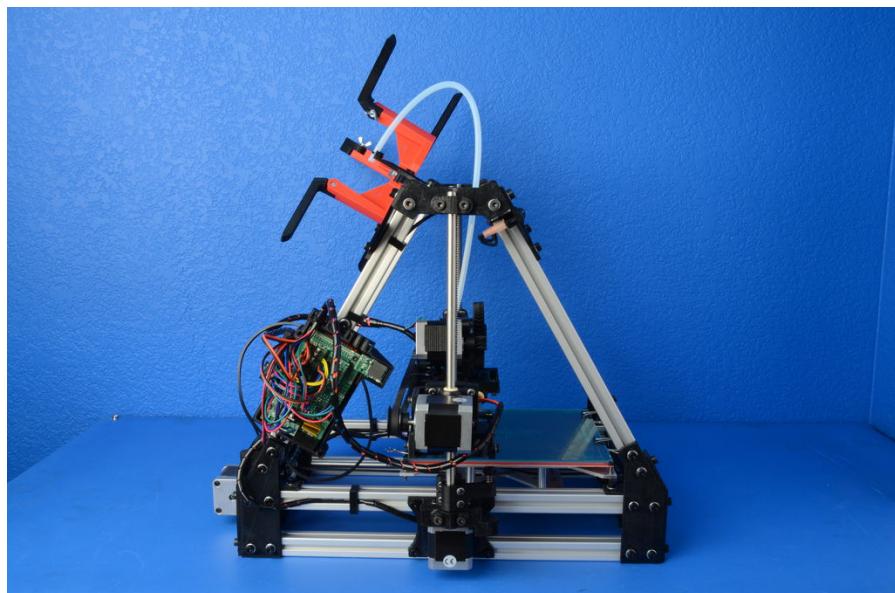


Figure 3.5: LulzBot AO-100 Front Left

### 3.2. LULZBOT AO-101

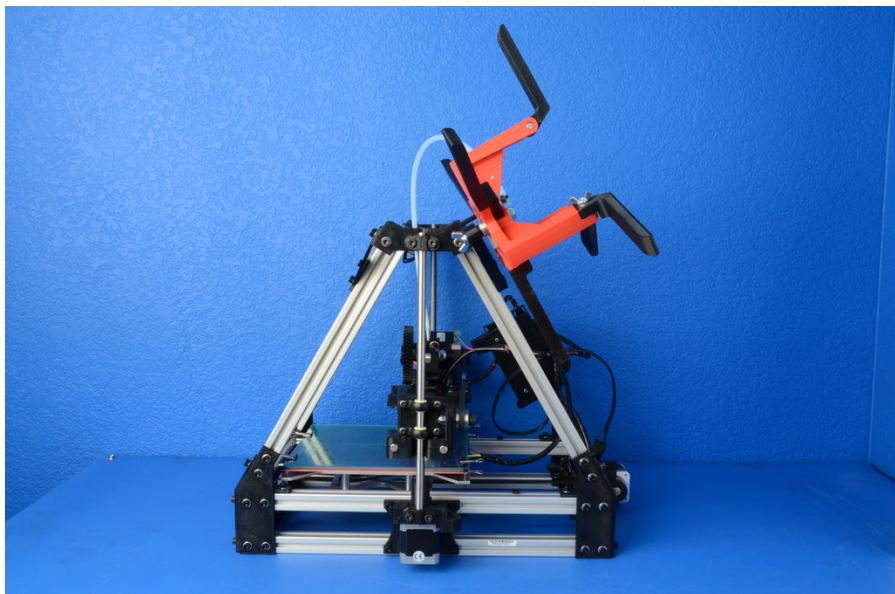


Figure 3.6: LulzBot AO-100 Front Right

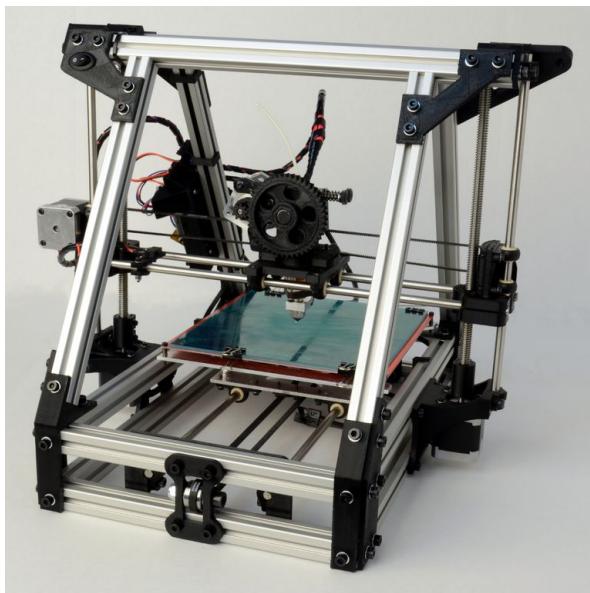


Figure 3.7: LulzBot AO-100

LulzBot AO-100, AO-101

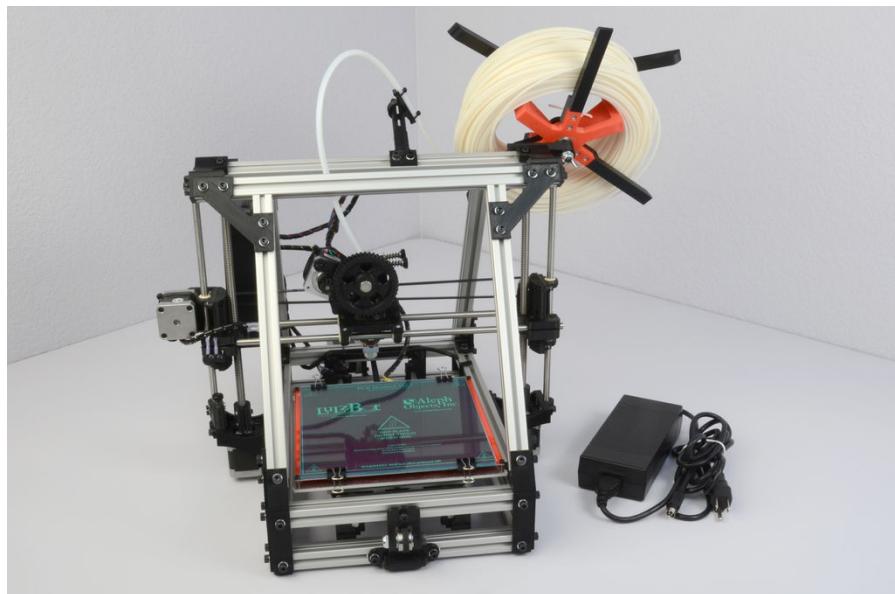


Figure 3.8: LulzBot AO-101

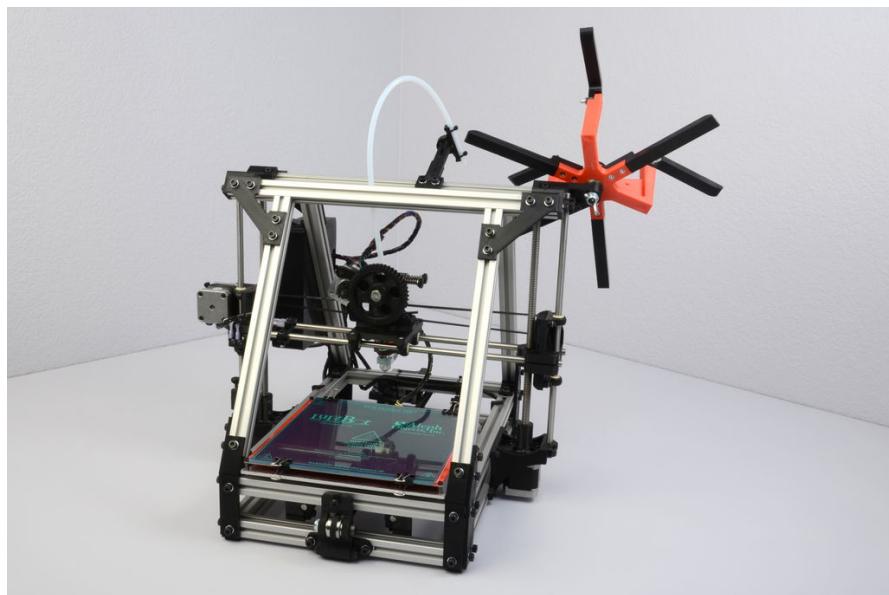


Figure 3.9: LulzBot AO-101 Front

### 3.2. LULZBOT AO-101

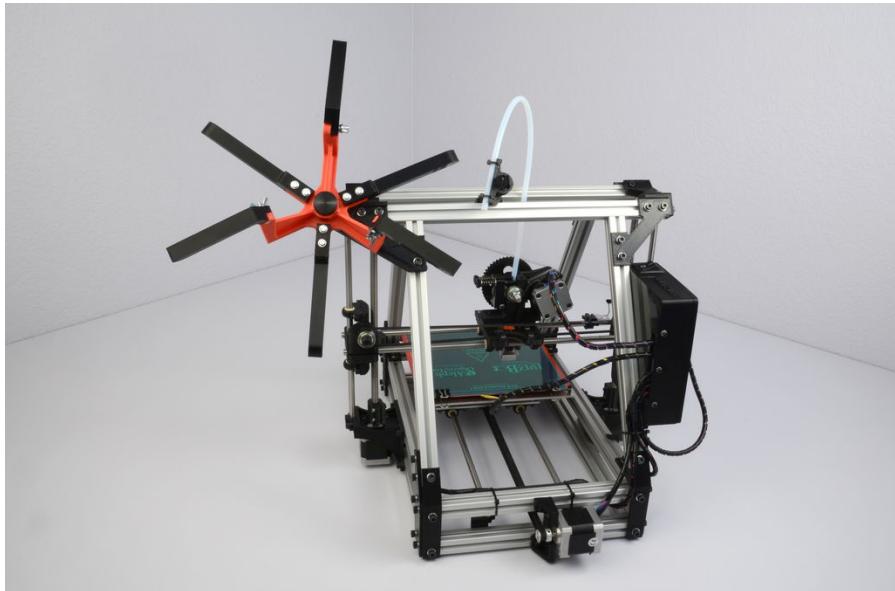


Figure 3.10: LulzBot AO-101 Back

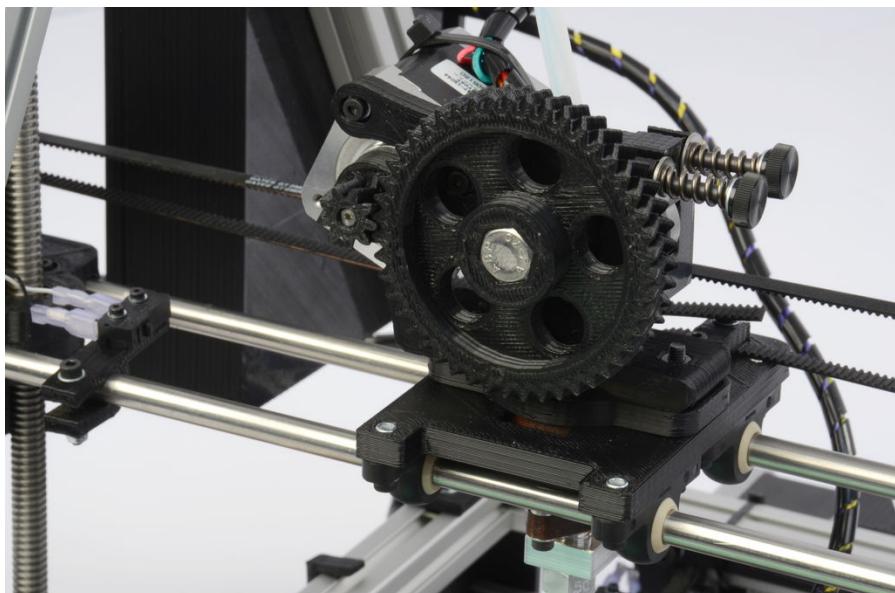


Figure 3.11: LulzBot AO-101 Extruder

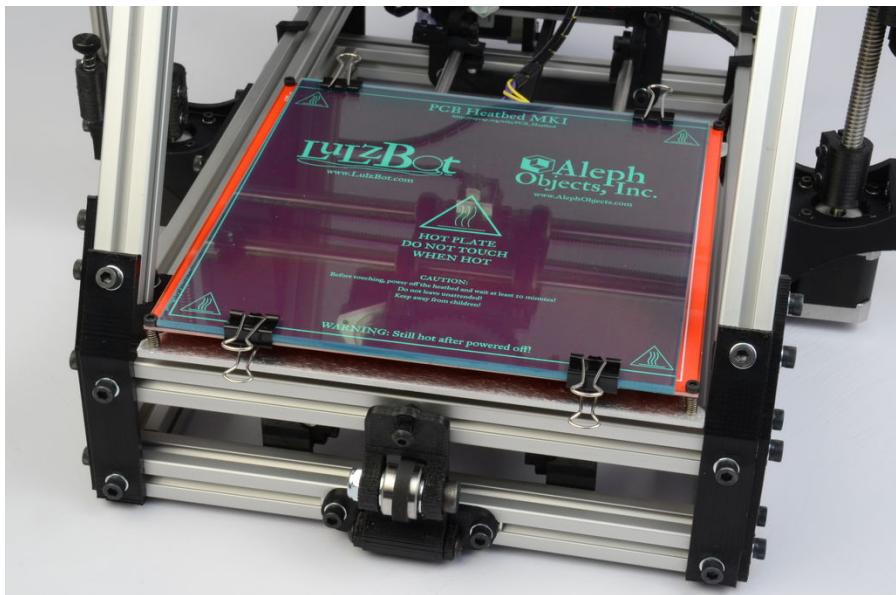


Figure 3.12: LulzBot AO-101 Heatbed

---

**LulzBot TAZ 1, 2, 3, 4, 5**

**100+ Node Cluster Printing Itself**

---

## LulzBot TAZ 1, 2, 3, 4, 5

The LulzBot TAZ brought a new platform, and greatly increased print size. TAZ production started in quarter two of 2013.

### 4.1 LulzBot TAZ-1

LulzBot TAZ-1.



Figure 4.1: LulzBot TAZ-1

#### 4.1. LULZBOT TAZ-1

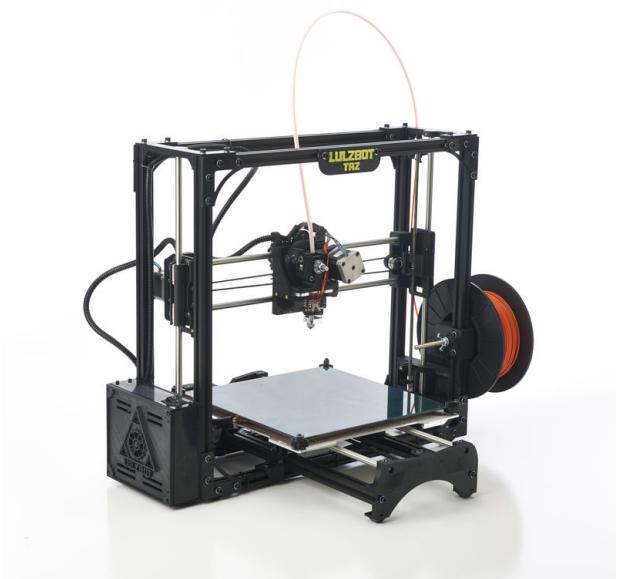


Figure 4.2: LulzBot TAZ-1 Front Left



Figure 4.3: LulzBot TAZ-1 with Vase

LulzBot TAZ 1, 2, 3, 4, 5



Figure 4.4: LulzBot TAZ-1 with Octopus



Figure 4.5: LulzBot TAZ-1 Max Build Volume

---

**LulzBot Mini**

**Moar**

---

## LulzBot Mini

The LulzBot Mini greatly increased ease of use, particularly with auto-bed leveling. Mini production started in quarter one of 2015.

### 5.1 LulzBot Mini-1

LulzBot Mini.

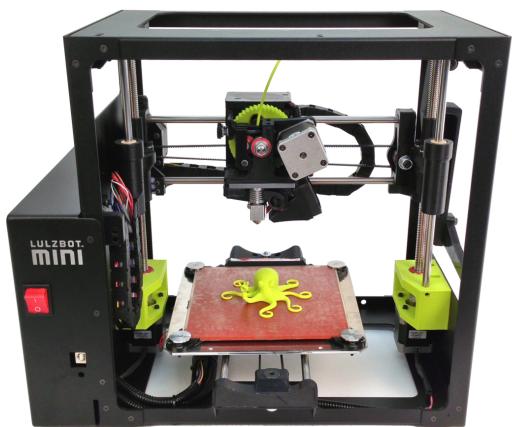


Figure 5.1: LulzBot Mini-1

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**3D Printer Cluster**

**Moar Makes Moar**

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## 6.1 LulzBot 3D Printer Cluster

This is the evolution of the LulzBot 3D Printer Cluster.

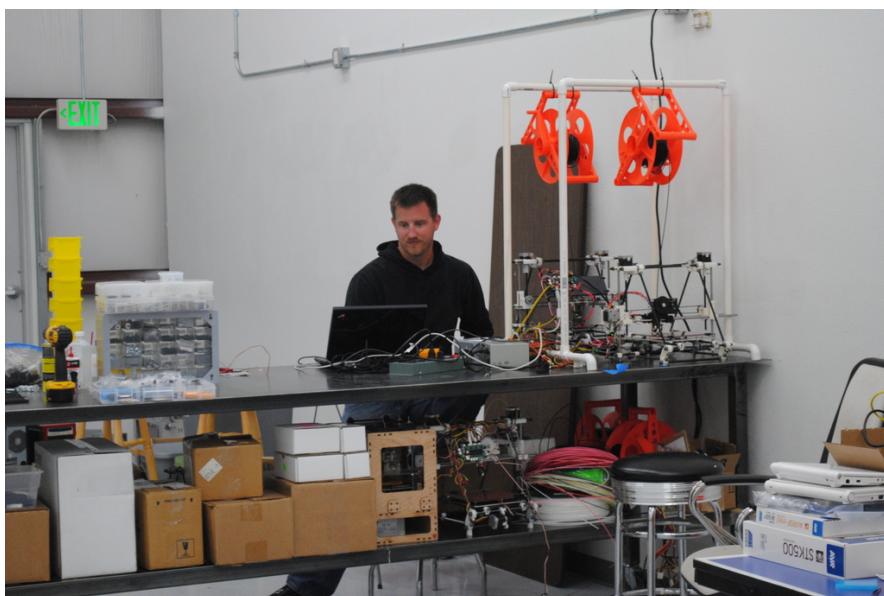


Figure 6.1: LulzBot 3D Printer Cluster of 2 Clonedels, June, 2011

## 6.1. LULZBOT 3D PRINTER CLUSTER

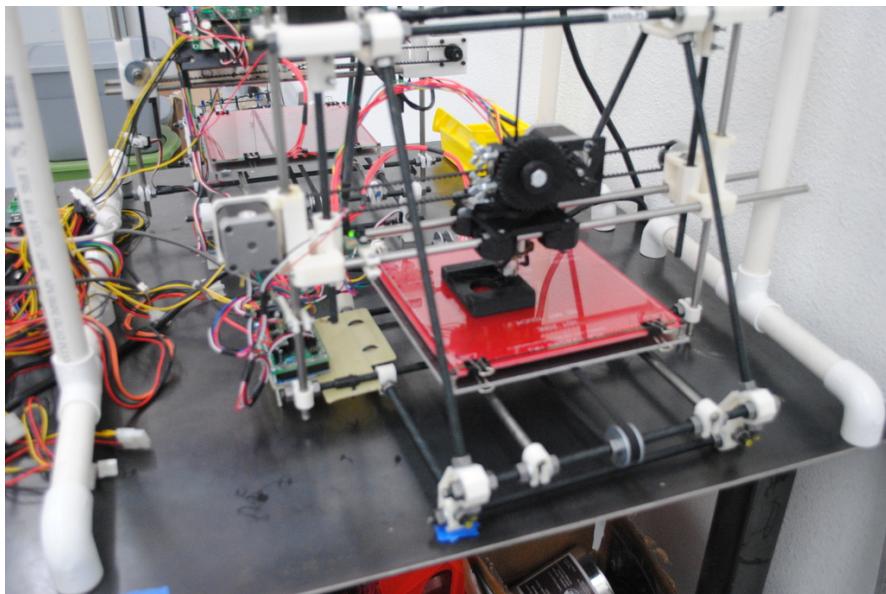


Figure 6.2: LulzBot 3D Printer Cluster of 2 Clonedels Closeup

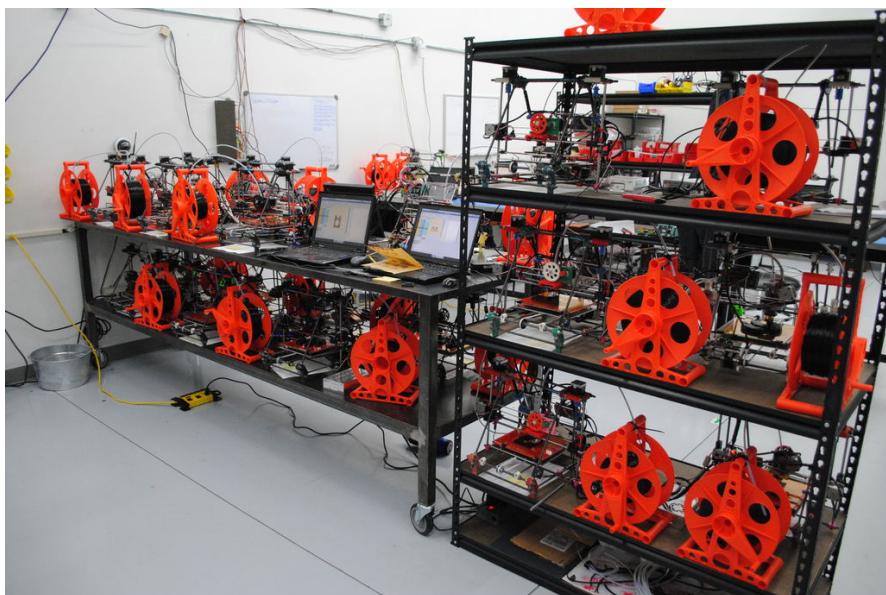


Figure 6.3: LulzBot 3D Printer Cluster of 19 Clonedels, October, 2011

### 3D Printer Cluster

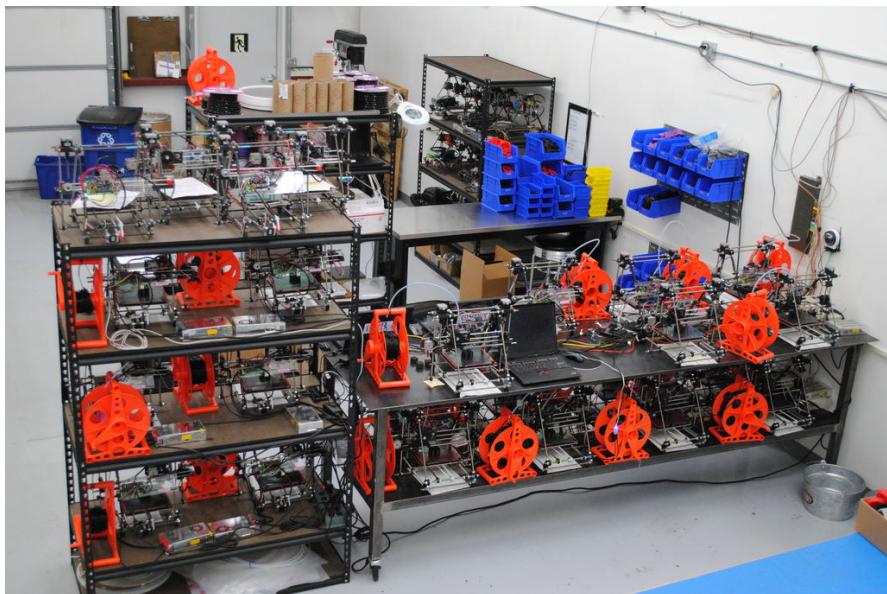


Figure 6.4: LulzBot 3D Printer Cluster of 19 Prusas, December, 2011

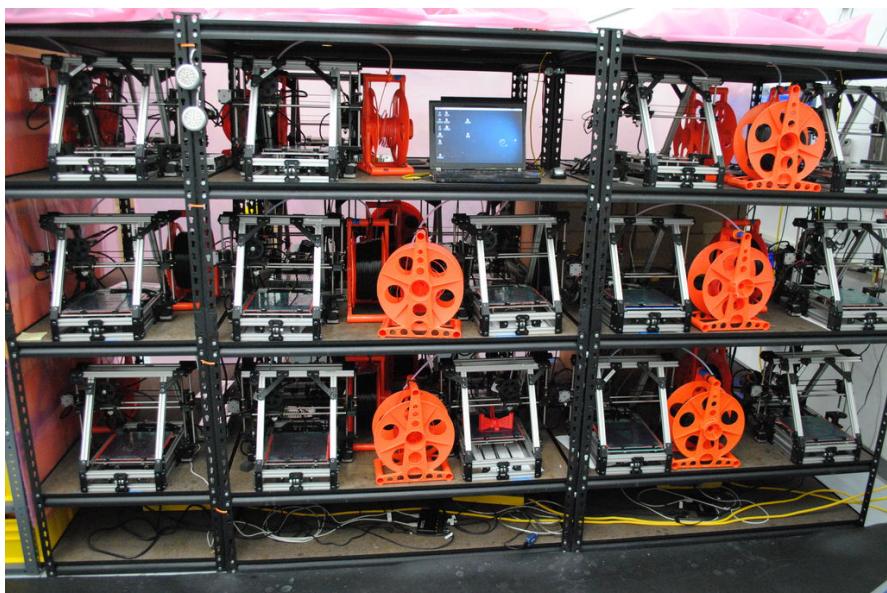


Figure 6.5: LulzBot 3D Printer Cluster of 28 AO-100s, July, 2012

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## Contact

### Phone, Email, Web, Location

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## 7.1 Support

Email: [support@alephobjects.com](mailto:support@alephobjects.com)

Phone: +1-970-377-1111 x610

## 7.2 Sales

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## 7.3 Website

Aleph Objects, Inc.

[www.alephobjects.com](http://www.alephobjects.com)



# Colophon

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LATEX Memoir

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