

Selecting

Building

Commissioning

Kelvin Cording  
March 2016

# ***Introduction***

See *Previous talk at*

<http://www.melpc.org/Downloads/Talks/3d%20printing3a.pdf>

# Selection

*Many REPRAP models*

- Originals / Copies / Build Your Own
  - Service - Quality - Prices
    - Fully Assembled / Kits / Parts
      - Spares – Accessories
        - Online support



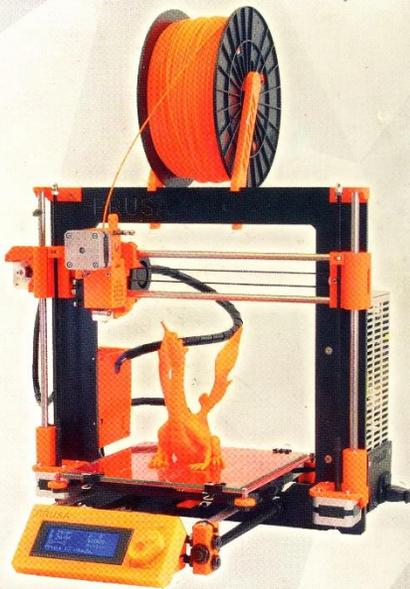
*Selection*

Original Prusa i3 Kit

# Building

## ASSEMBLY INSTRUCTIONS

ORIGINAL PRUSA i3 KIT 1.75MM

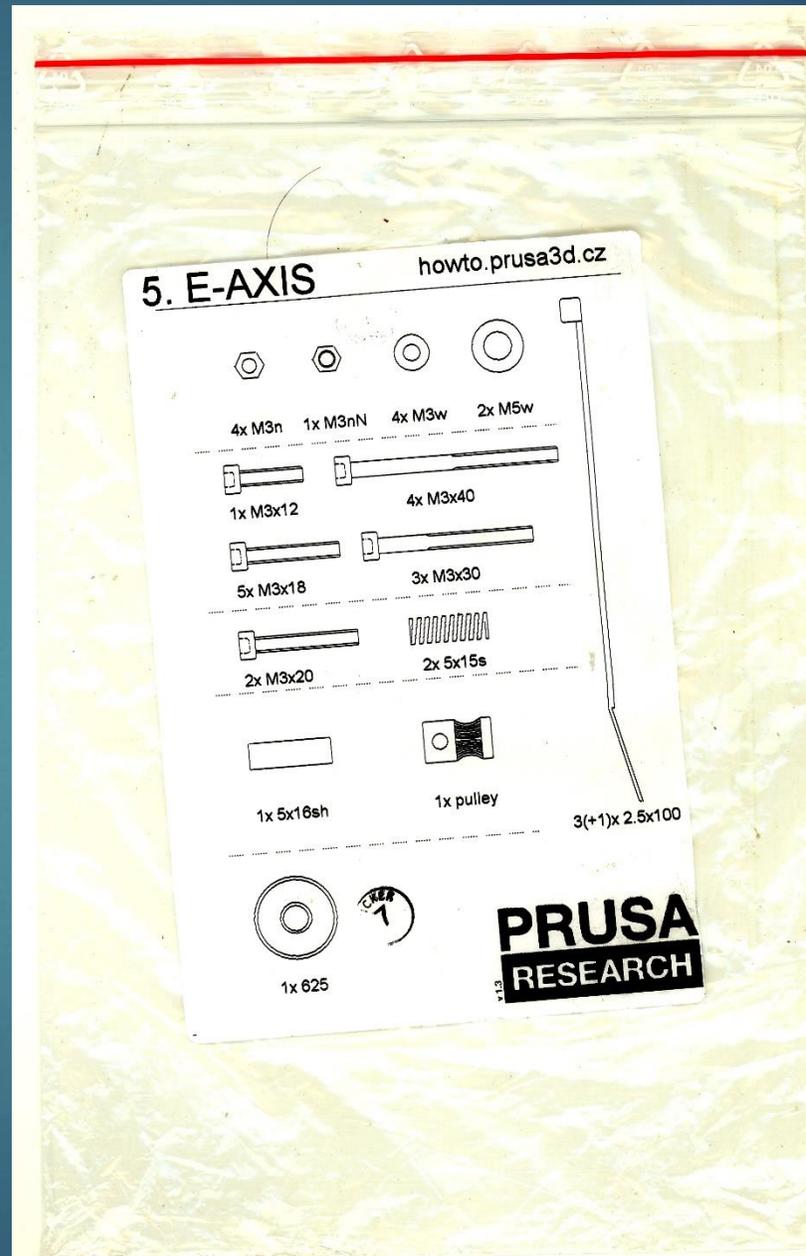


**PRUSA  
RESEARCH**

PRUSA RESEARCH S.R.O.  
Pivního Píku 621/8a  
19600 Praha  
www.prusa3d.cz  
info@prusa3d.cz

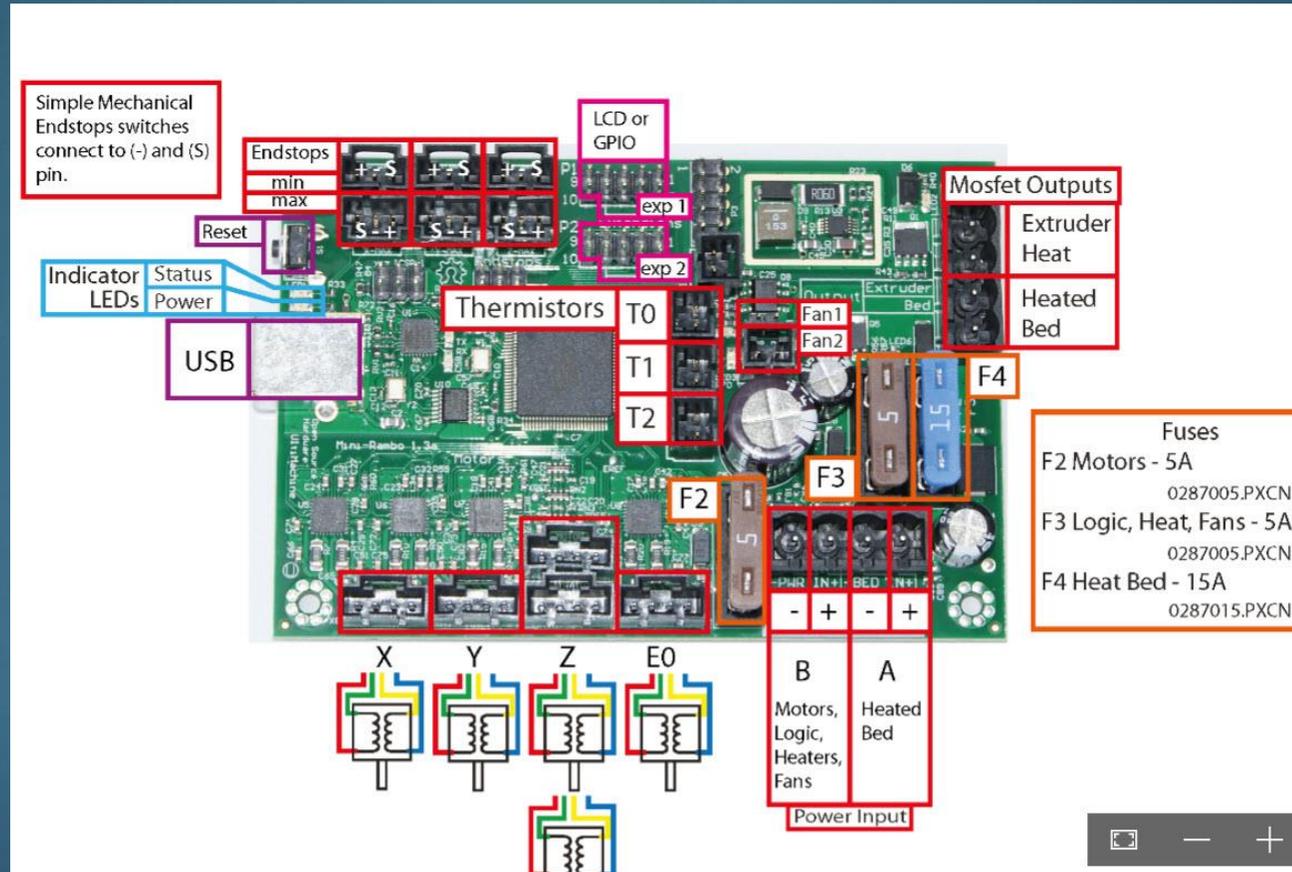


Parts well identified

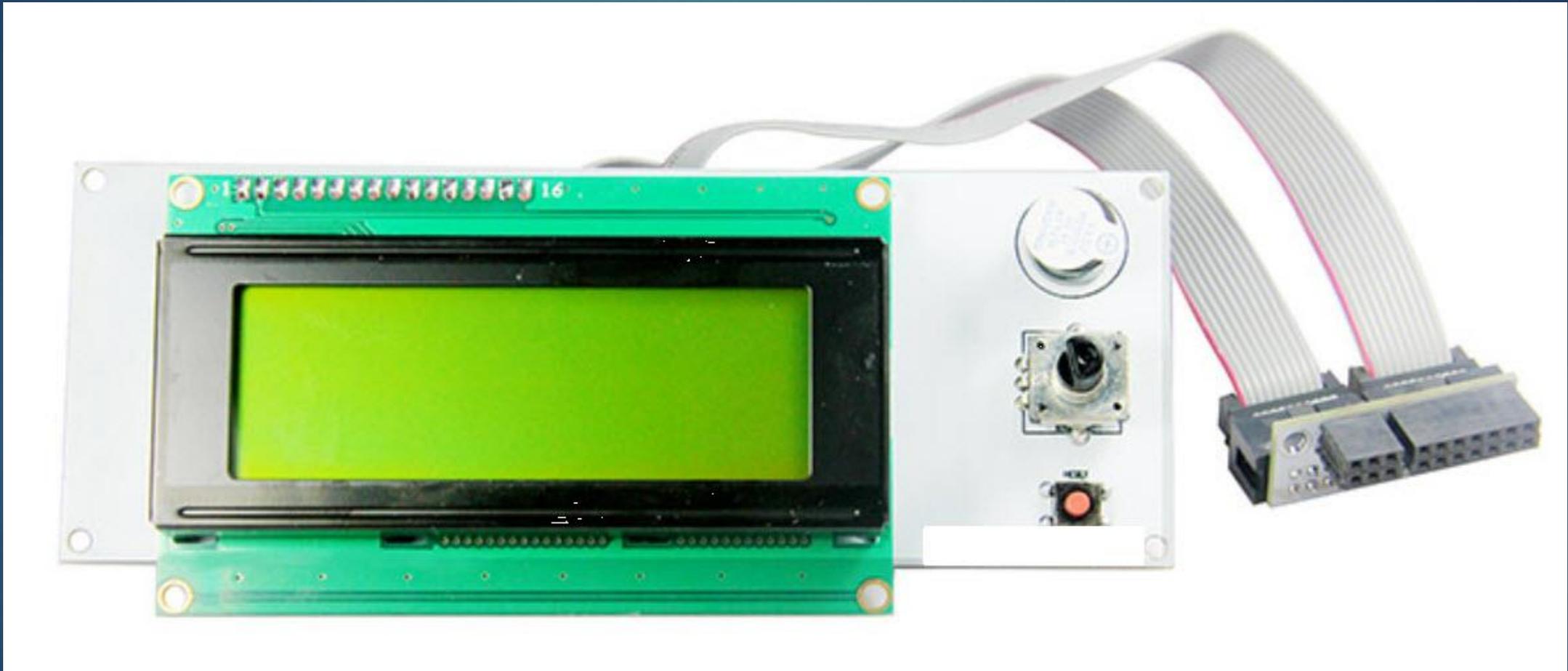


# Rambo Mini Board

(R)epRap (A)rduino-(M)ega-compatible (M)other(Bo)ard

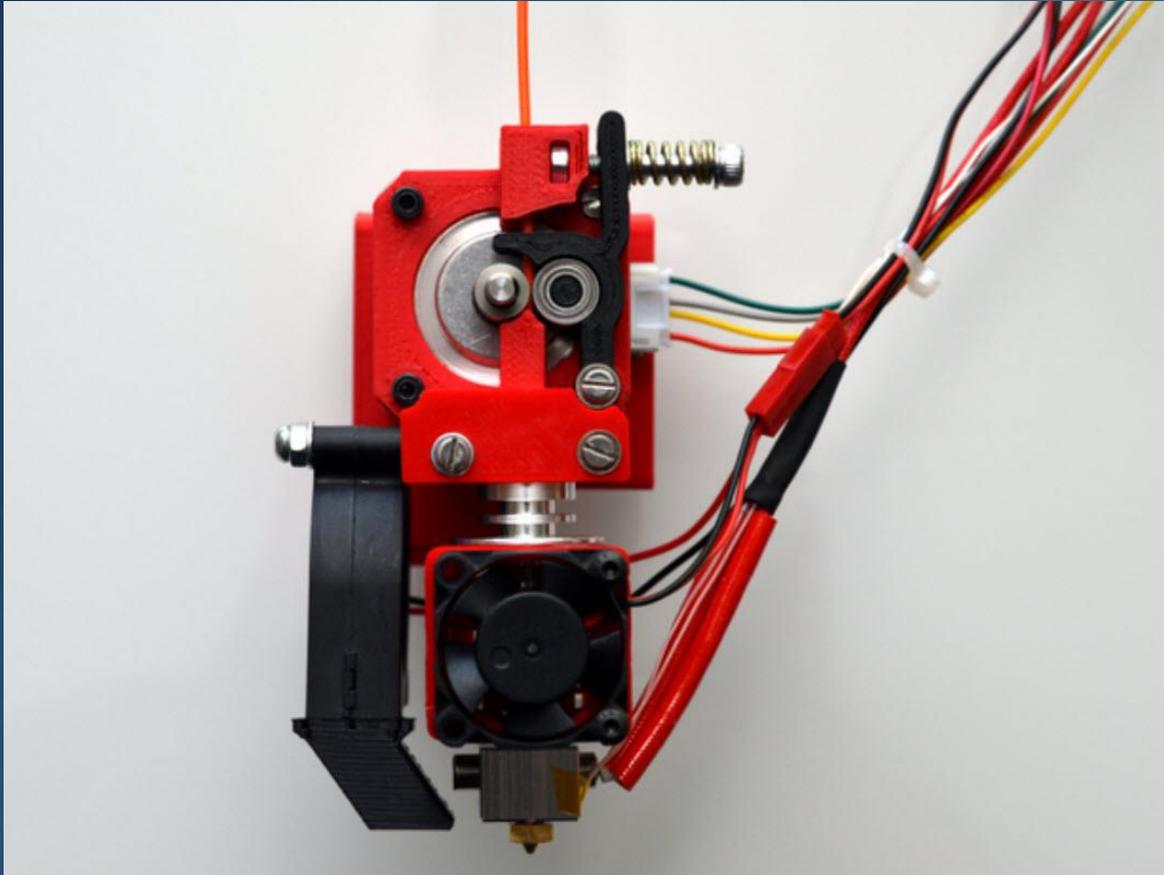


# LCD control Panel



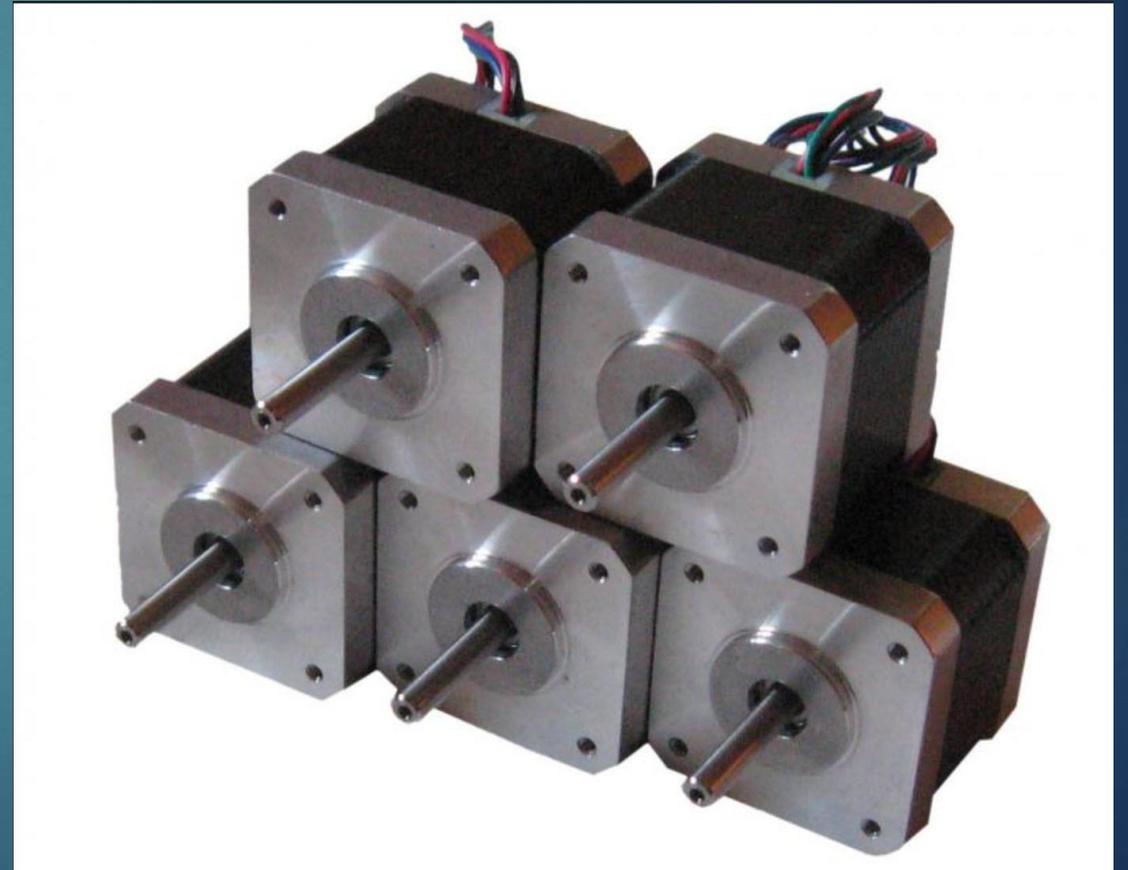
# Hotbed





Extruder

## Servo Motors

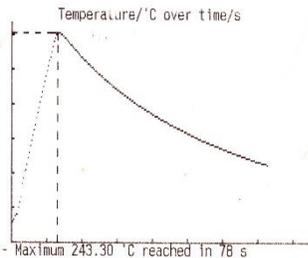


# PRUSA RESEARCH

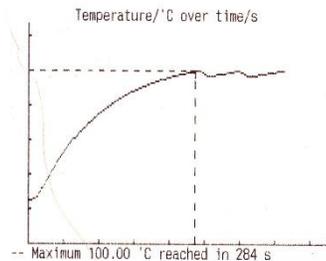
TESTING PROTOCOL 19.02. 2016

Firmware flash	[ OK ]
Printer Communication	[ OK ]
SD Card init	[ OK ]
FAN0 init state	[ OK ]
FAN1 init state	[ OK ]
X axis movement	[ OK ]
Y axis movement	[ OK ]
Z axis movement	[ OK ]
SD card	[ OK ]
Hotend @50 °C in 25s	[ OK ]
FAN0 trigger @50 °C	[ OK ]
FAN1 trigger M105	[ OK ]
Hotend @240 °C in 2min	[ OK ]
Heatbed @97 °C in 8min	[ OK ]
LCD panel	[ OK ]

Hotend heating graph



Heatbed heating graph



16-65756

## Electronics and heatbed test prior to delivery

### Original Prusa i3 kit

1.75 mm version

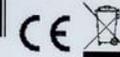
prusa3d.com  
90-135 VAC, 2 A  
180-264 VAC, 1 A  
Proudly made in Prague

**PRUSA  
RESEARCH**

Prusa Research s.r.o.  
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186 00 Prague



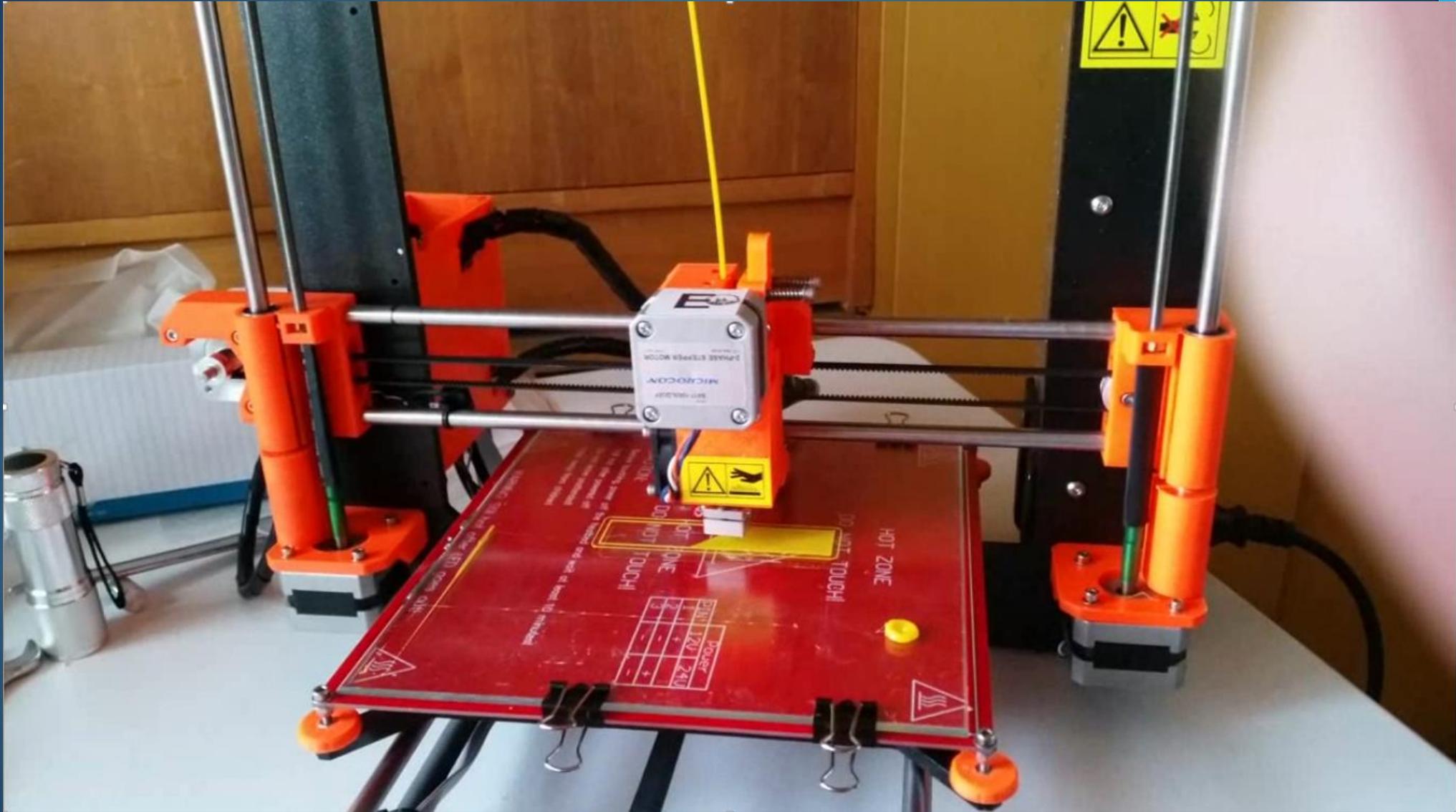
16CK65756





My Kit

Fully assembled



Power	
PRINT	24V
+	24V
-	24V
+	24V
-	24V

# Commissioning

- ▶ Glass Preparation
- ▶ Calibration
- ▶ Software

## Glass Preparation

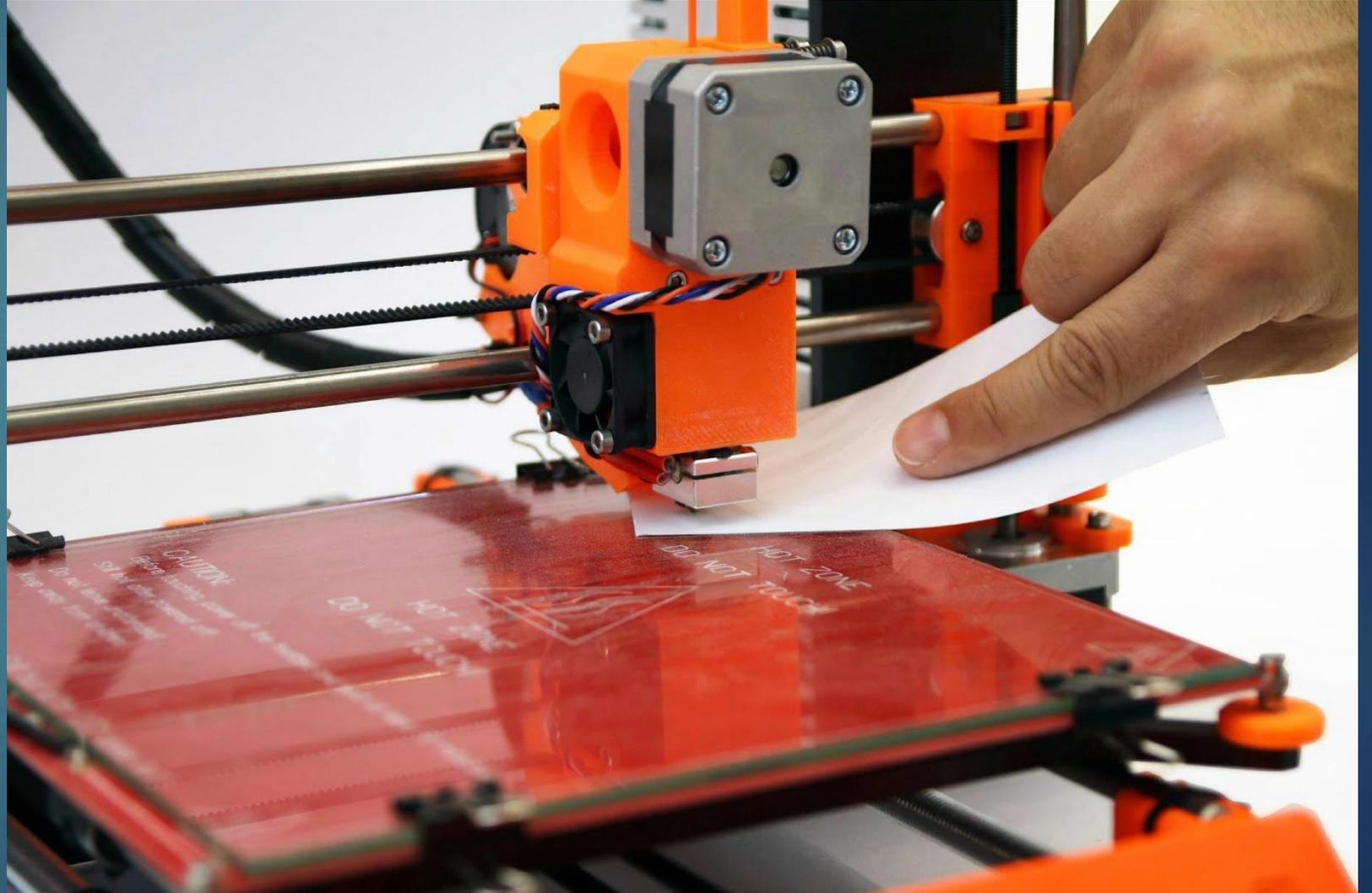
*To allow model to stick to glass when being printed*

- Apply one coat of glue to glass when cold (once only.)
- If glass is cleaned in warm water, a new glue layer needs to be applied
- Spray glass with “ABS Juice” before each new model is printed
- ABC Juice is made up from ABS filament dissolved in acetone.  
(30ml to 34cm ABS (1.75mm))

# Calibration

Involves ensuring the hotbed with glass on top is heated to the correct temperature and the extruder nozzle is the correct height above the glass bed on all four corners.

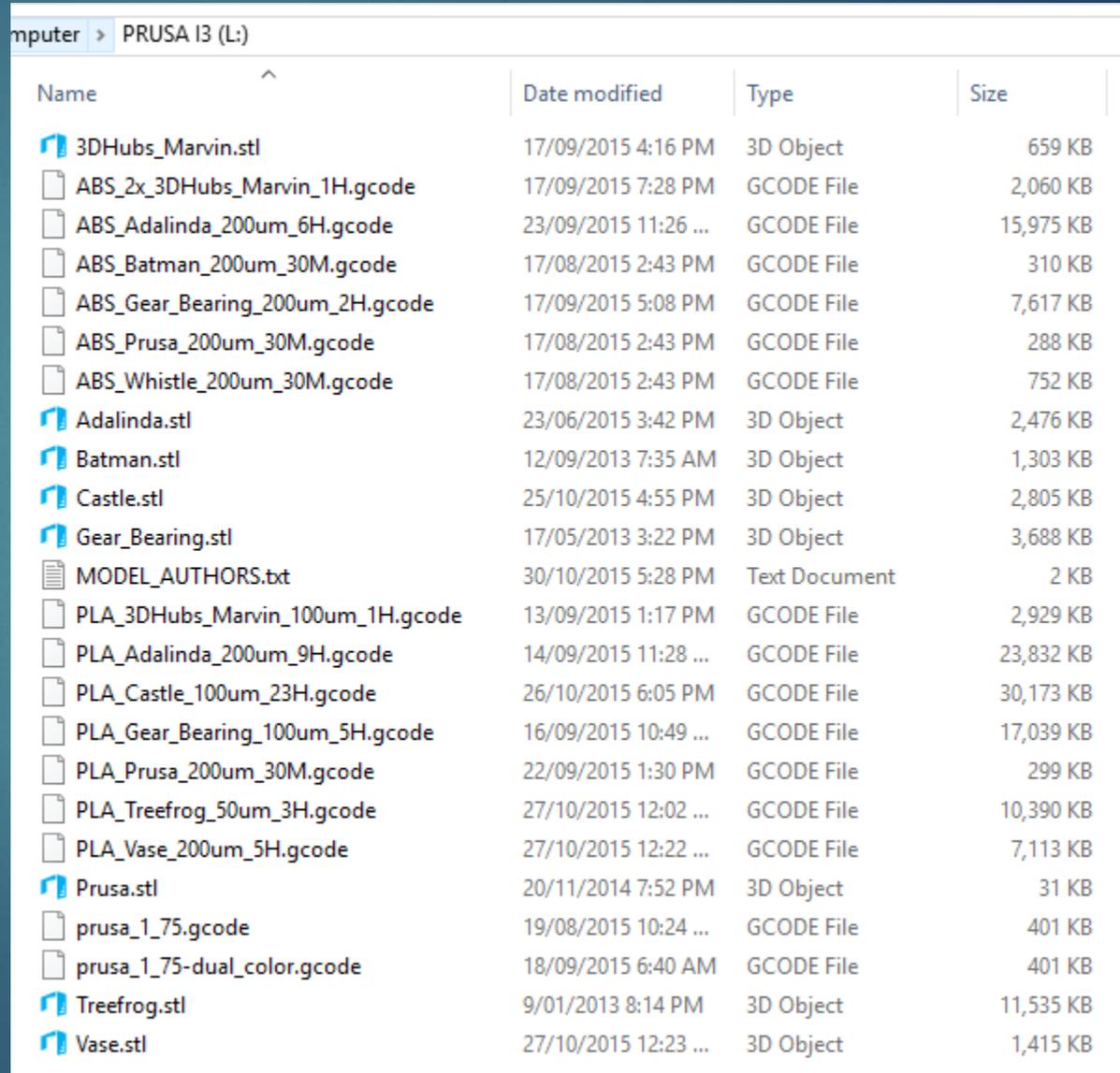
Correct height is about the thickness of a business card



# Software

Printer can be driven from “g-code” files on SD card in printer LCD unit or from PC connected via USB cable.

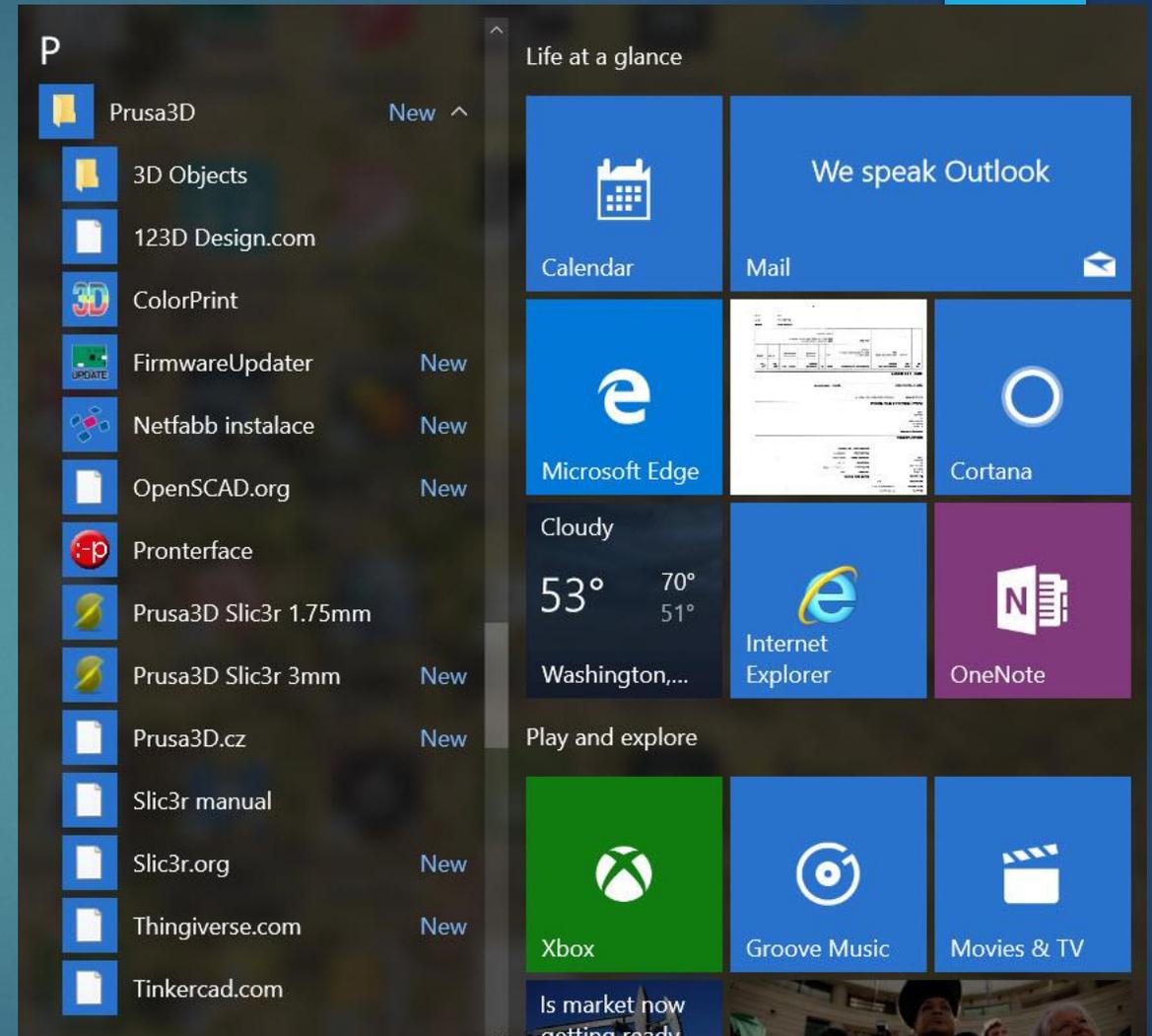
## Content of Supplied SD card



Name	Date modified	Type	Size
3DHubs_Marvin.stl	17/09/2015 4:16 PM	3D Object	659 KB
ABS_2x_3DHubs_Marvin_1H.gcode	17/09/2015 7:28 PM	GCODE File	2,060 KB
ABS_Adalinda_200um_6H.gcode	23/09/2015 11:26 ...	GCODE File	15,975 KB
ABS_Batman_200um_30M.gcode	17/08/2015 2:43 PM	GCODE File	310 KB
ABS_Gear_Bearing_200um_2H.gcode	17/09/2015 5:08 PM	GCODE File	7,617 KB
ABS_Prusa_200um_30M.gcode	17/08/2015 2:43 PM	GCODE File	288 KB
ABS_Whistle_200um_30M.gcode	17/08/2015 2:43 PM	GCODE File	752 KB
Adalinda.stl	23/06/2015 3:42 PM	3D Object	2,476 KB
Batman.stl	12/09/2013 7:35 AM	3D Object	1,303 KB
Castle.stl	25/10/2015 4:55 PM	3D Object	2,805 KB
Gear_Bearing.stl	17/05/2013 3:22 PM	3D Object	3,688 KB
MODEL_AUTHORS.txt	30/10/2015 5:28 PM	Text Document	2 KB
PLA_3DHubs_Marvin_100um_1H.gcode	13/09/2015 1:17 PM	GCODE File	2,929 KB
PLA_Adalinda_200um_9H.gcode	14/09/2015 11:28 ...	GCODE File	23,832 KB
PLA_Castle_100um_23H.gcode	26/10/2015 6:05 PM	GCODE File	30,173 KB
PLA_Gear_Bearing_100um_5H.gcode	16/09/2015 10:49 ...	GCODE File	17,039 KB
PLA_Prusa_200um_30M.gcode	22/09/2015 1:30 PM	GCODE File	299 KB
PLA_Treefrog_50um_3H.gcode	27/10/2015 12:02 ...	GCODE File	10,390 KB
PLA_Vase_200um_5H.gcode	27/10/2015 12:22 ...	GCODE File	7,113 KB
Prusa.stl	20/11/2014 7:52 PM	3D Object	31 KB
prusa_1_75.gcode	19/08/2015 10:24 ...	GCODE File	401 KB
prusa_1_75-dual_color.gcode	18/09/2015 6:40 AM	GCODE File	401 KB
Treefrog.stl	9/01/2013 8:14 PM	3D Object	11,535 KB
Vase.stl	27/10/2015 12:23 ...	3D Object	1,415 KB

# Software

3d Modelling and other printer software for use on a PC to drive the 3D printer supplied as a single executable.



# Whoopee... It all works !!!



# Next Session

## Software

- Obtaining 3D models to print
- Creating you own models
- Creating Files to drive your printer
- Controlling your printer from PC

**Filaments used from printing 3D models**



*Questions*

*Discussion*

*Demonstration*