# Kiwi Remix
# 3D Delta Printer
# Assembly Guide
# Kit Set A

# Table of Contents

# Overview

The Kiwi remix is a fast, accurate 3d printer capable of printing in both PLA and ABS. It is a RepRap Delta printer. Being a RepRap printer means the design is open source.

3d printing opens a whole new world of creativity, allowing you to make complex plastic parts and objects which are only limited by your imagination. There are several sources of pre-existing models available on the internet or you can design your own.

The Kiwi remix allows you to print either stand-alone or via USB connected to a computer.

The following is a list of websites which have models which you can print (it is not a comprehensive list just enough to get you started).
- **Thingiverse** http://www.thingiverse.com
- **Youmagine** https://www.youmagine.com/

You can use the following software to create your own designs, again this is not a comprehensive list just enough to get you started.
- **OpenSCAD** The Programmers Solid 3D CAD Modeller
  **http://www.openscad.org**
- **Blender** 3d Modelling studio http://www.blender.org/

The Kiwi remix was designed and built in New Zealand, all wooden components are made on a CNC machine, the Extruder is made on a Kiwi Remix 3d printer.

# Common Terms

| Term | Meaning |
|------|---------|
| Homing | Homing is a routine which is generally performed prior to each print, it enables the printer to know its absolute position. |
| STL | STL is a file type, for a 3d object it is an interchange format – which means it can be used across several platforms Apple, Windows, Linux etc. |
| G-Code | Numerical control programming language. |
| Preheating | Bring either the hot-end or the heated bed or both up to operation temperature in advance of running a print job. |
| Print bed | The glass surface used to print on. |
| Heated bed | The print bed is heated both to allow better adhesion and to stop distortion of ABS prints. It is thermostatically controlled to maintain a specific temperature during printing. |
| Hot-end | The hot end is inside the hot end cradle and contains the print nozzle. It is thermostatically controlled to maintain a specific |

| | |
|---|---|
| | temperature during printing. |
| Filament | The is the plastic which is consumed to create the print, it generally comes in a 1kg reel most commonly in PLA or ABS. |
| Carriage | There are three carriages, which run up and down each of the three smooth rod pillars. |
| Pillar | There are three pillars made up of two smooth rods and the GT2 belt. |
| Hot-end cradle | The cradle at the centre of the printer which houses the hot-end. |
| Extruder | The extruder controls the movement of filament, it is housed on the side at the top and connected at one end to the PTFE tube. |
| Nozzle | The print nozzle is a very tiny hole (0.4mm) at the end of the hot-end that the filament is extruded from. |
| End stop | At the top of each of the pillars is an end stop, there is also one on the z-probe, these are mechanical micro switches which are triggered when touched, they are used to let the printer know when it has reached the end of its movement. |

# Tools

File, PVA glue – with a suitable dispenser or brush.

# Preparation

The machined parts will require some filing to remove the holding tabs, which are used by the CNC to hold them in place while being machined.

Use a small file or sandpaper.
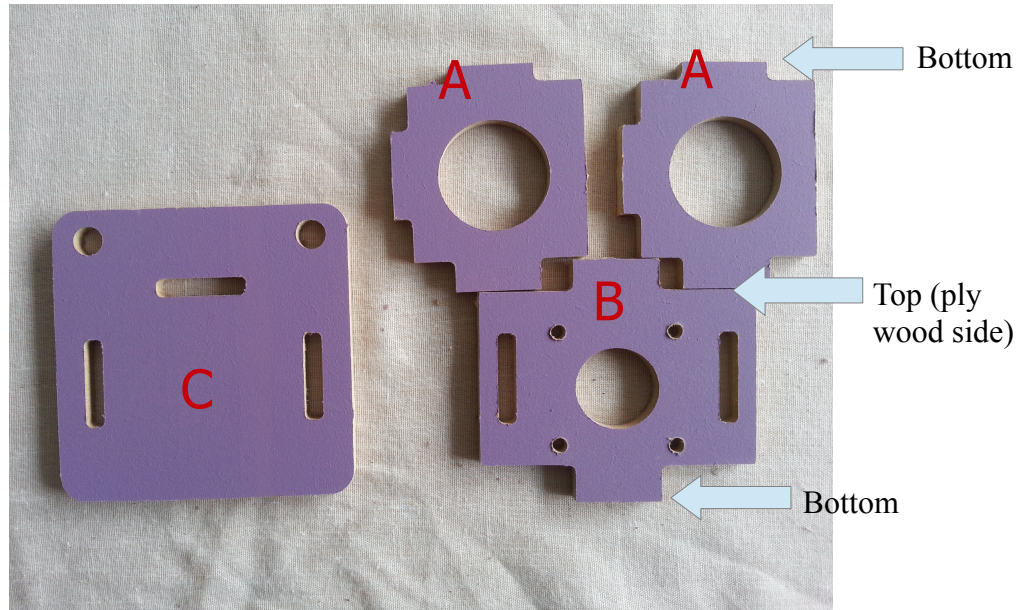
# Base

### 3x motor mount

Both Parts A and B have different length locator tabs at each end, and need to be assembled the correct way up. Parts A and B both have tabs which are the same length – these are the top tabs.

So the longer tab from B goes into C, and will protrude through the bottom once assembled
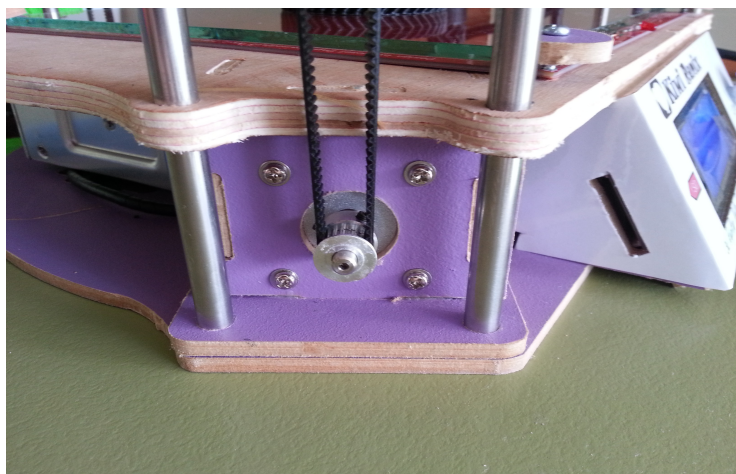
A – Sides

B - front

C - Base

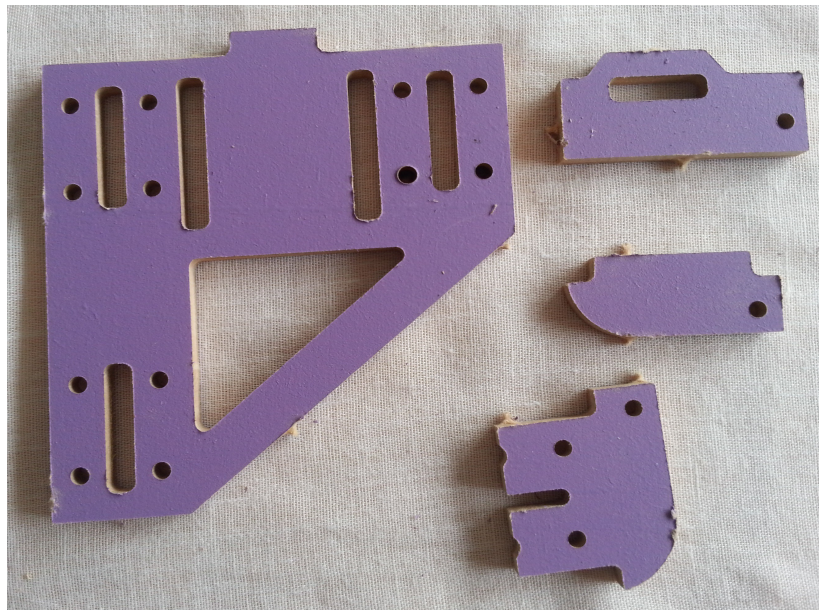Apply PVA glue to the edges which will be in contact and assemble.



Apply PVA glue to the contact areas and glue onto the ply wood build platform.

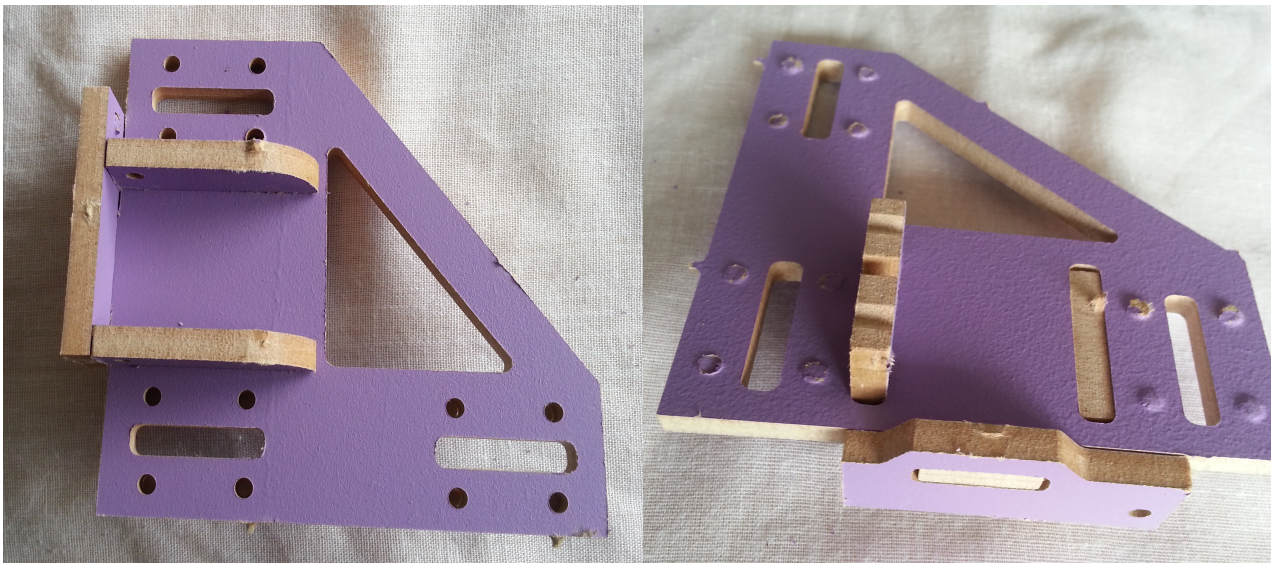Align the ply wood so the side with the nicest finish is away from the motor mount.
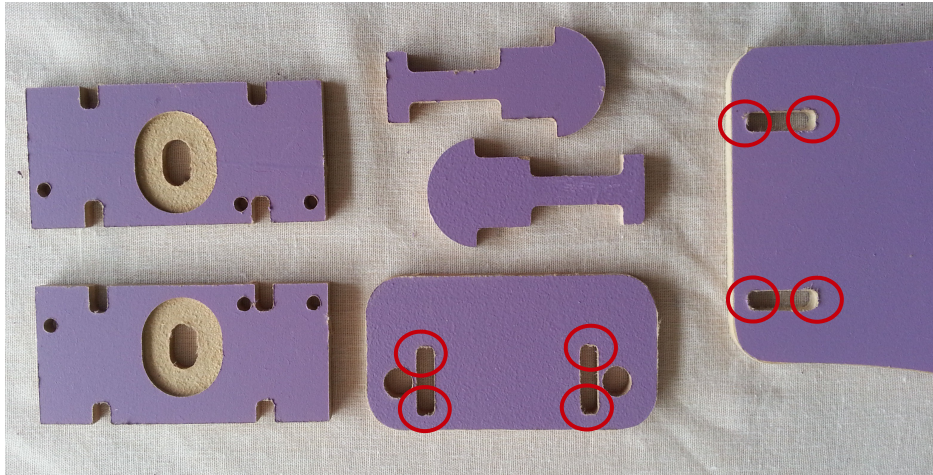
Repeat for all three motor mounts.



# Carriages

Apply PVA to the surfaces which will come into contact



Repeat for all three carriages

# Top

Preparation: with a square file, file the round in each of the marked corners to have square inside corners, be careful not to take to much off.

Apply PVA glue to the surfaces which will come in contact and push the retainers through from the top, these will require some force to push through as they are a tight fit.



Note do no glue the bearing retainers – the bolts will hold them fine.

**Align the end switch bolt holes so they are on the left**

For final assembly you will require:

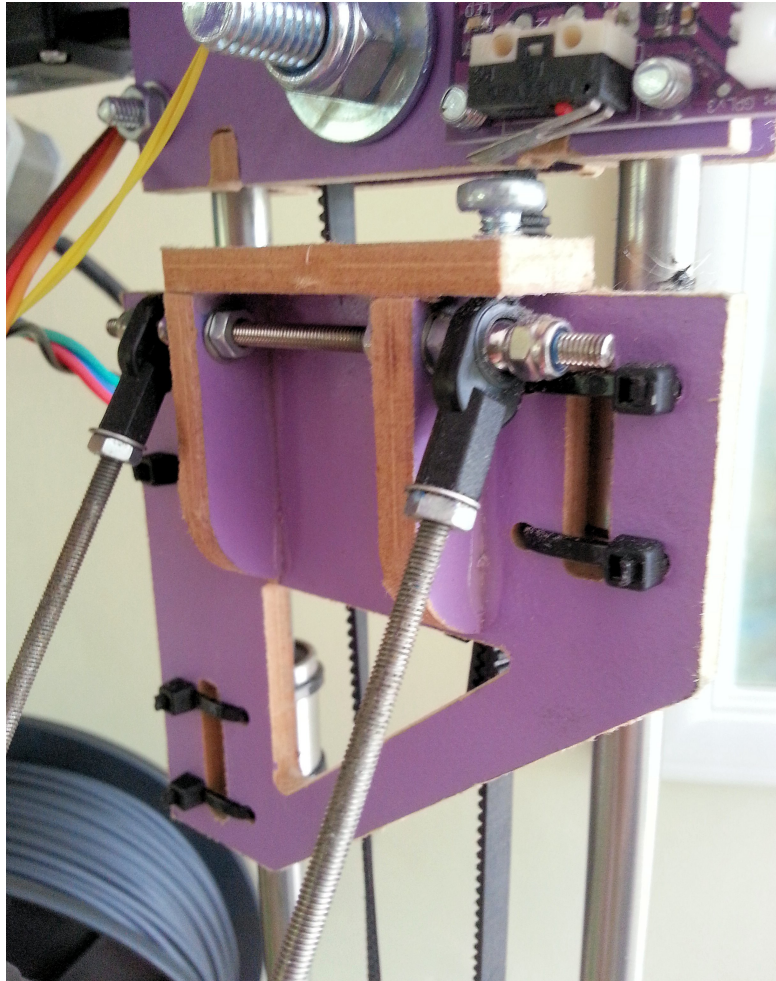3x  M8 x 40mm half thread bolt

12x M8 washer

3x nyloc nut

3x ZZ608 bearing (skate board bearing)

3x Mechanical endswitch

9x M4 x 24

3x M4 nut

3x M4 washer

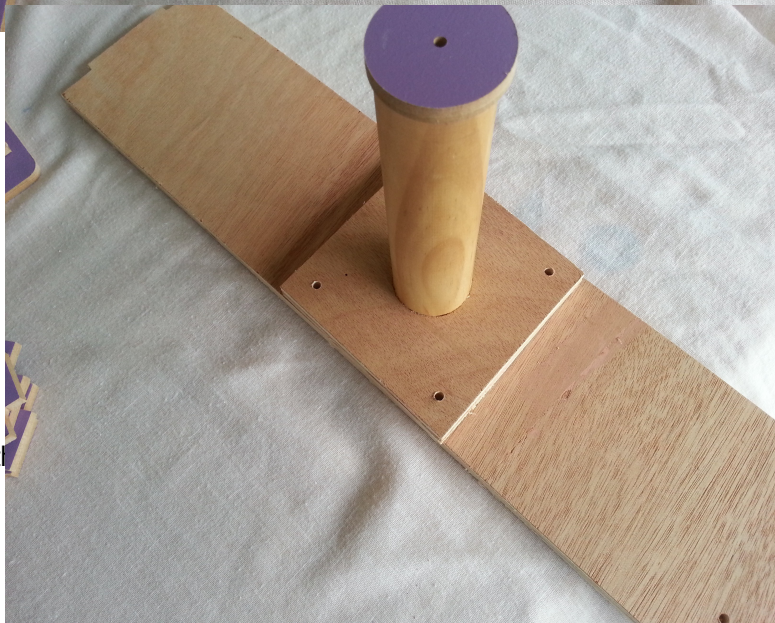## *z-probe cable mount*



Use PVA glue to attach to the top

## Side Support

Side support and reel holder

To complete this you will also require

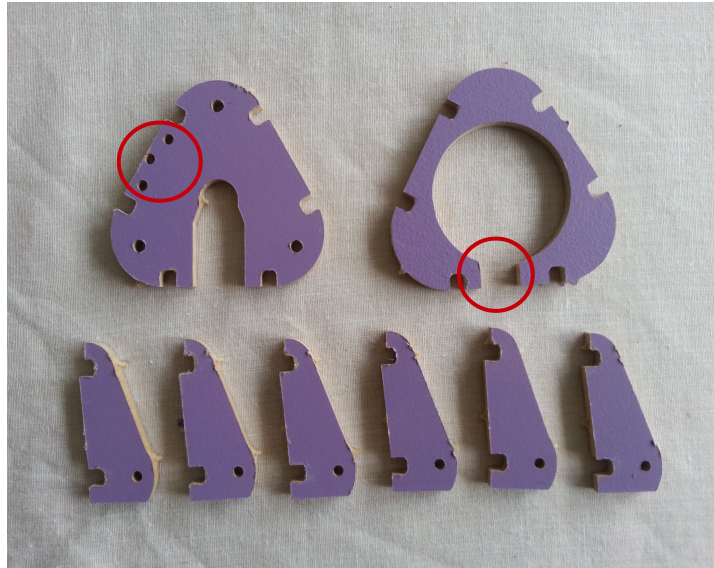4x M4 x 15

1x M4 self tapping screw

# Platform

Preparation: lightly file the round of the corner out with a square file, to square the corner of each of locator cutouts (do not increase the depth of the cutout).
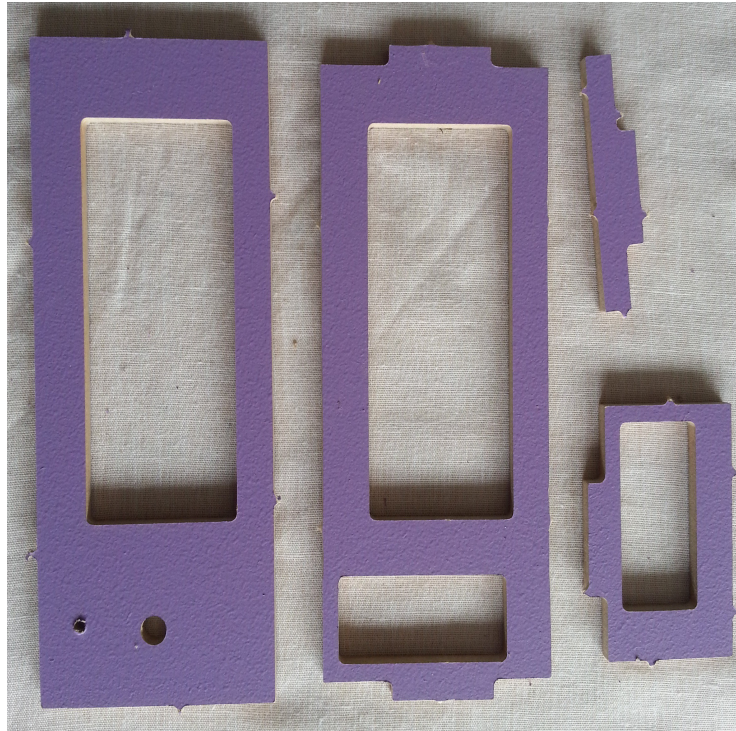


Using ample amounts of PVA glue on the contact edges assemble (if you are using a glue other than PVA please ensure that it can with stand high temperatures – most wood glues will soften at around 100 degrees – which is no good here, PVA works).

Ensure the 3 holes on the top align with the cut away at the bottom – for the z-probe
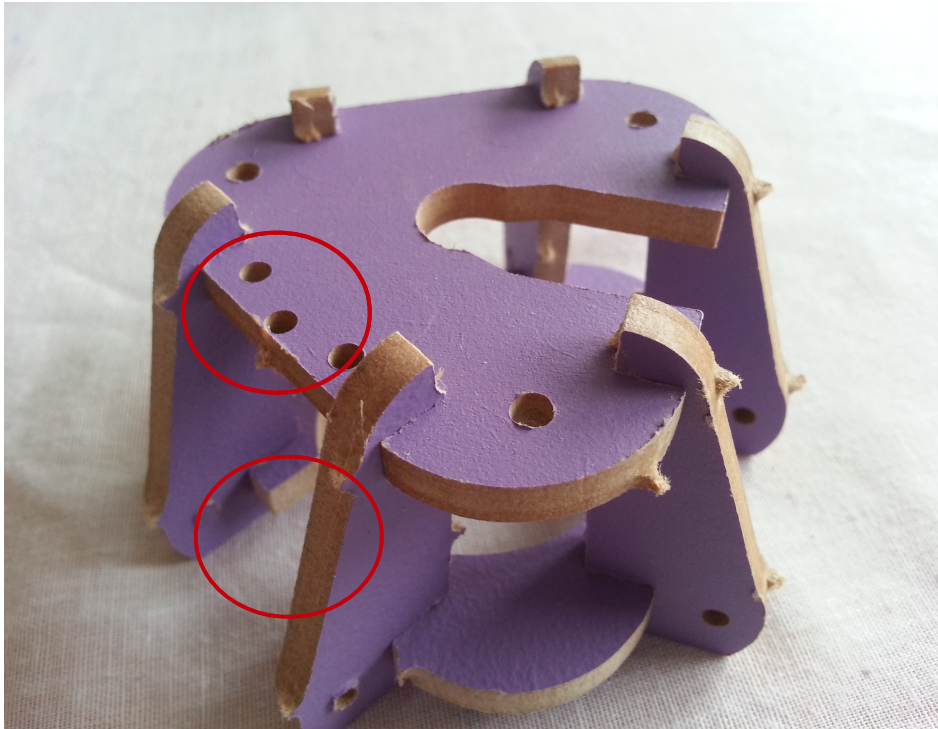
# **Panel**

Use PVA glue on the contact surfaces and carefully align, use a book or a clamp to apply pressure until the glue has set.

# **Appendix**