Modification for ANYCUBIC Kossel Plus 3D Printer

To print large size object (such as φ230×200), the printer needs modifications.

1. Assembling

As page 4 in the manual, add copper spacers (C19, new part) between effector and CFT-JBs, as the following figure shows, and fix them with HSHCS M3×20 (C02).
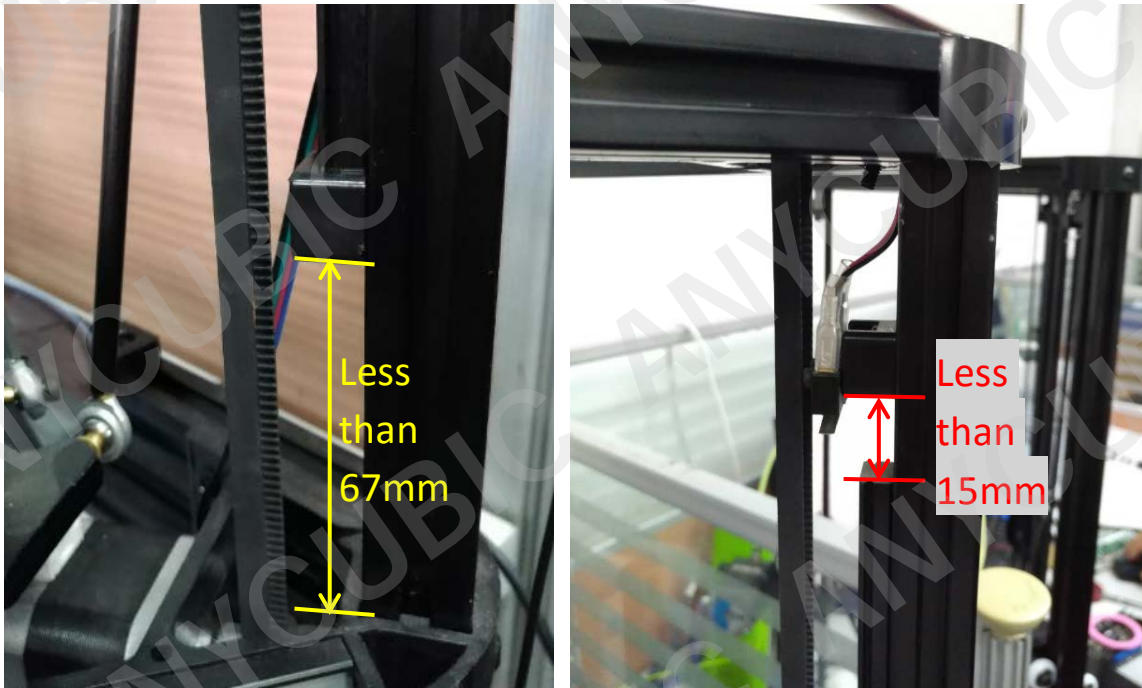

As page 5 in the manual, add copper spacers (C19) between belt tensioners and CFT-JBs, as the following figure shows, and fix them with HSHCS M3×25 (C20, new part) instead of HSHCS M3×20 (C02).

Please make sure C19 are in right directions.

Assemble the linear rails (D06) as the following figures show.

2. Firmware

Change the parameters in firmware as the following figure shows or download the latest firmware from Google Drive (https://drive.google.com/open?id=0B8VIB533cgdMSVMxNm43aG1OQ0U).

DELTA_DIAGONAL_ROD change 267 to 271.5 or the number you debug (Page 19 in the manual);

DELTA_SMOOTH_ROD_OFFSET change 188 to 187 or the number you debug;

DELTA_PRINTABLE_RADIUS change 115 to 116 ;

For the limit switches have been moved down, the height need to be adjusted (Page 18), and you also need level the platform.

```
// Make delta curves from many straight lines (linear interpolation).
// This is a trade-off between visible corners (not enough segments)
// and processor overload (too many expensive sqrt calls).
#define DELTA_SEGMENTS_PER_SECOND 160

// Center-to-center distance of the holes in the diagonal push rods.
#define DELTA_DIAGONAL_ROD 271.5 // mm

// Horizontal offset from middle of printer to smooth rod center.
#define DELTA_SMOOTH_ROD_OFFSET 187 // mm

// Horizontal offset of the universal joints on the end effector.
#define DELTA_EFFECTOR_OFFSET 31 // mm

// Horizontal offset of the universal joints on the carriages.
#define DELTA_CARRIAGE_OFFSET 20.6 // mm

// Horizontal distance bridged by diagonal push rods when effector is centered.
#define DELTA_RADIUS (DELTA_SMOOTH_ROD_OFFSET-DELTA_EFFECTOR_OFFSET-DELTA_CARRIAGE_OFFSET)

// Print surface diameter/2 minus unreachable space (avoid collisions with vertical towers).
#define DELTA_PRINTABLE_RADIUS 116
```
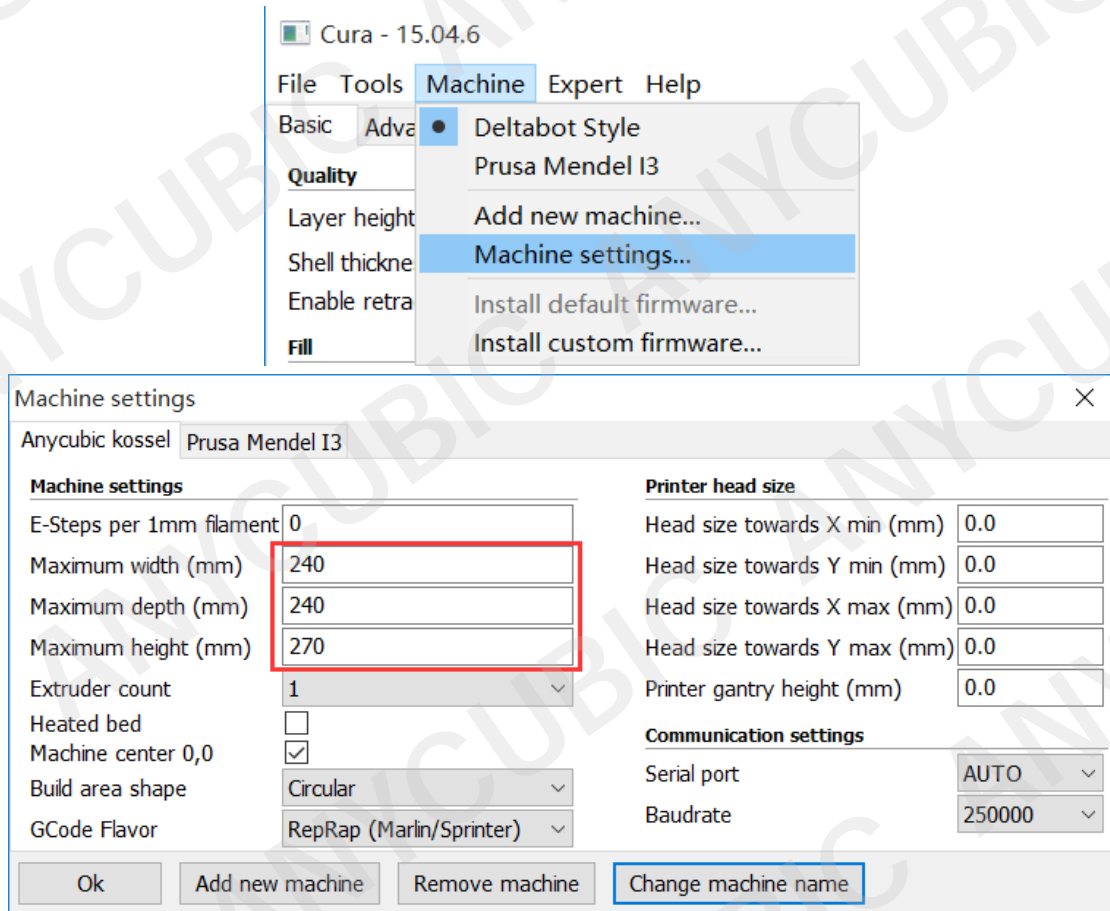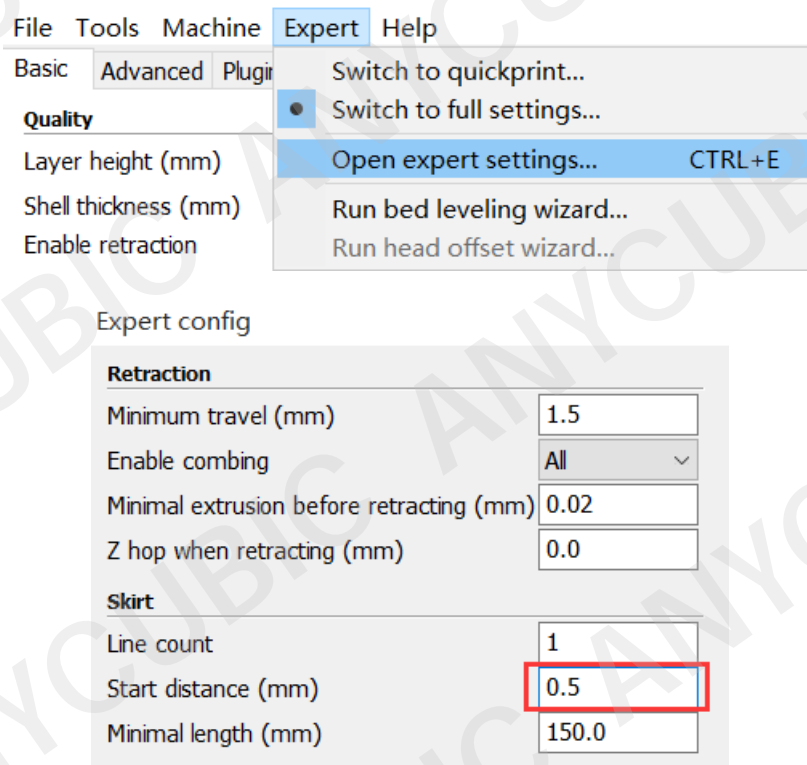
3. Cura

Change the width and depth to a number bigger than 230 such as 240

Cura - 15.04.6

File Tools Machine Expert Help

Basic   Adva   ● Deltabot Style
                      Prusa Mendel I3
Quality
Layer height   Add new machine...
Shell thickne   Machine settings...
Enable retra   Install default firmware...
Fill   Install custom firmware...

Machine settings   ✕

Anycubic kossel Prusa Mendel I3

Machine settings   **Printer head size**

E-Steps per 1mm filament 0   Head size towards X min (mm) 0.0
Maximum width (mm)   240   Head size towards Y min (mm) 0.0
Maximum depth (mm)   240   Head size towards X max (mm) 0.0
Maximum height (mm)   270   Head size towards Y max (mm) 0.0
Extruder count   1   Printer gantry height (mm)   0.0
Heated bed   ☐   **Communication settings**
Machine center 0,0   ☑
Build area shape   Circular   Serial port   AUTO
GCode Flavor   RepRap (Marlin/Sprinter)   Baudrate   250000

[Ok] [Add new machine] [Remove machine] [Change machine name]

Change the start distance to 0.5 (3 for default) in expert config.

File Tools Machine Expert Help

Basic   Advanced Plugir   Switch to quickprint...
Quality   ● Switch to full settings...
Layer height (mm)   Open expert settings...   CTRL+E
Shell thickness (mm)   Run bed leveling wizard...
Enable retraction   Run head offset wizard...

Expert config

Retraction
Minimum travel (mm)   1.5
Enable combing   All
Minimal extrusion before retracting (mm)   0.02
Z hop when retracting (mm)   0.0

Skirt
Line count   1
Start distance (mm)   0.5
Minimal length (mm)   150.0

To print small parts, it is suggested to change the start distance back to 3.