

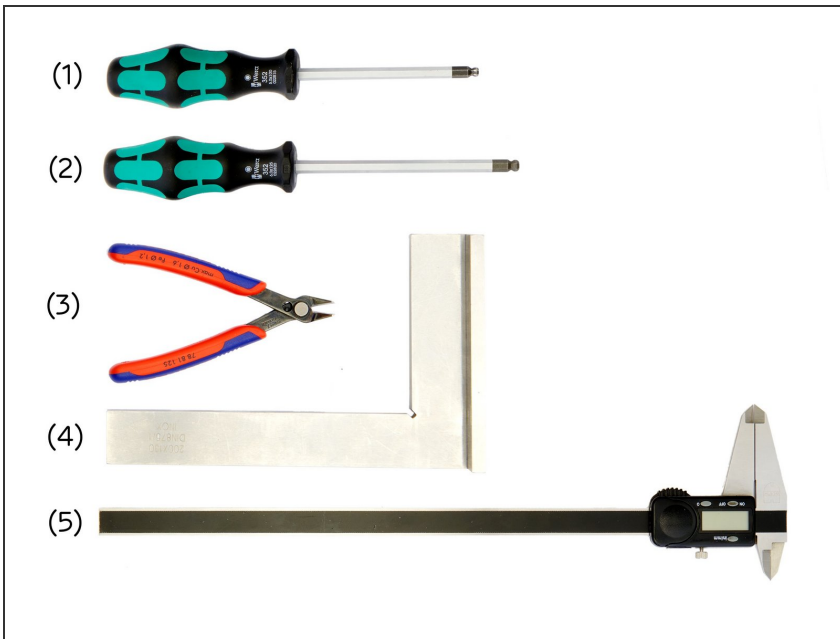
caribou3d

01.2. Assembly of the xy-Frame for PanelDue Top

Written By: Caribou3d

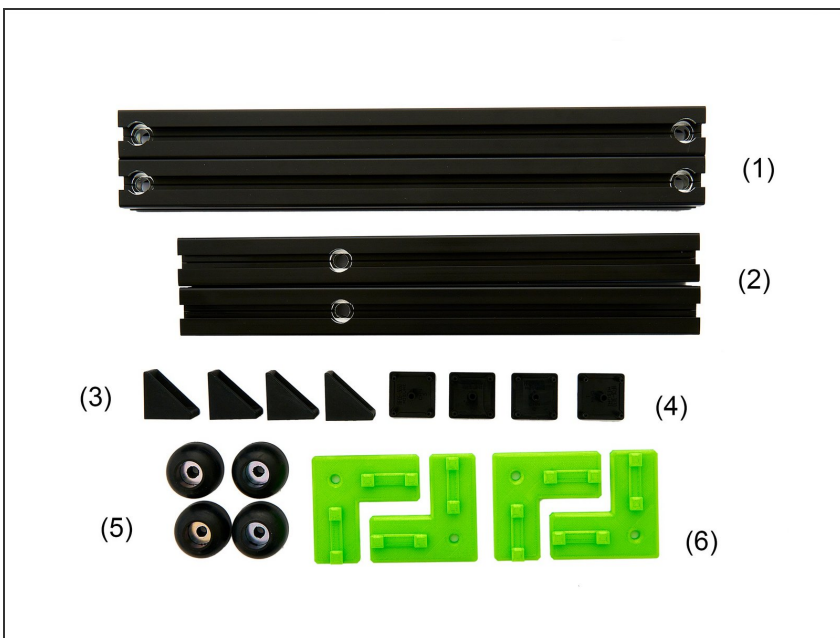


Step 1 — Required Tools and Aids



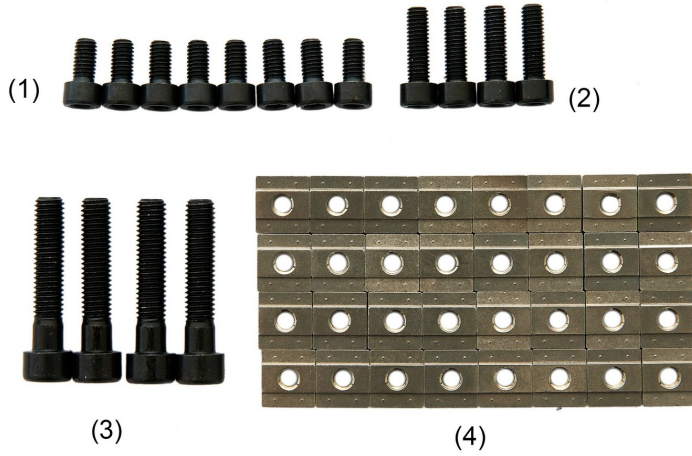
- (1) [5.0x100mm Hexagon Ballpoint Screwdriver](#)
- (2) [6.0x100mm Hexagon Ballpoint Screwdriver](#)
- (3) [Electronic Super Knips](#)
- (4) Try Square
- (5) Caliper 300mm

Step 2 — Assembling the Frame Components



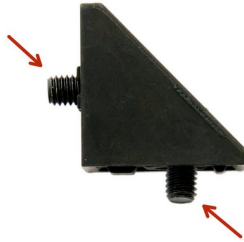
- (1) 2x [x-Extrusions](#)
- (2) 2x [y-Extrusions](#)
- (3) 4x [Corner Brackets](#)
- (4) 4x [End Caps](#)
- (5) 4x [Rubber Feet](#)
- (6) 4x L-Brackets

Step 3 — Required Screws



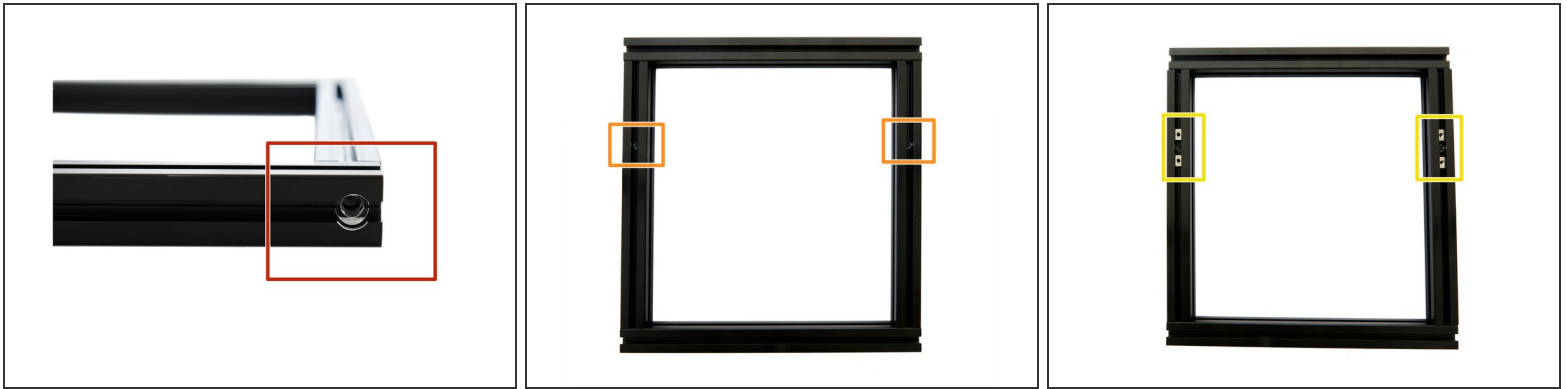
- (1) **8x** [M6x12mm Hexagon Socket Head Cap Screws](#)
- (2) **4x** [M6x20mm Hexagon Socket Head Cap Screws](#)
- (3) **4x** [M8x40mm Hexagon Socket Head Cap Screws](#)
- (4) **32x** [T-Nuts](#)

Step 4 — Preparing the Corner Brackets



- Insert **2x M6x12mm Hexagon Socket Head Cap Screw** into a corner bracket.
- Screw them loosely to the corner bracket with **2x T-Nuts**.
- ⚠ Pay attention to the alignment of the T-Nuts (see figure 3)
- Repeat this step for the other three corner brackets.

Step 5 — Positioning the Extrusions



⚠ Make sure that the surface, on which you are working, is perfectly flat.

- Lay out the extrusions as follows:
 - The x-extrusion lies horizontally (viewed from above) and has to be aligned so that the large holes point outward.
 - The y-extrusion lies vertically (as seen from above) and has to be aligned so that the small holes are pointing upwards.
- Place **2x T-Nuts** in each of the upper slots of the y-extrusions.


Step 6 — Installing the Corner Brackets



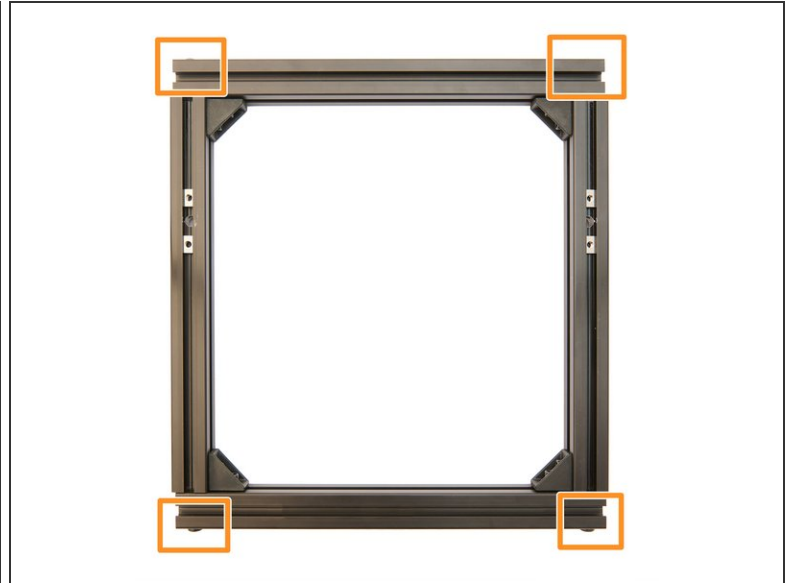
- Insert one corner bracket into each of the y-extrusions.
- Now, insert the front x-extrusions into the corner brackets.
- Repeat the last two steps with the rear x-extrusions at the back of the frame.

Step 7 — Frame Alignment (1 / 3)



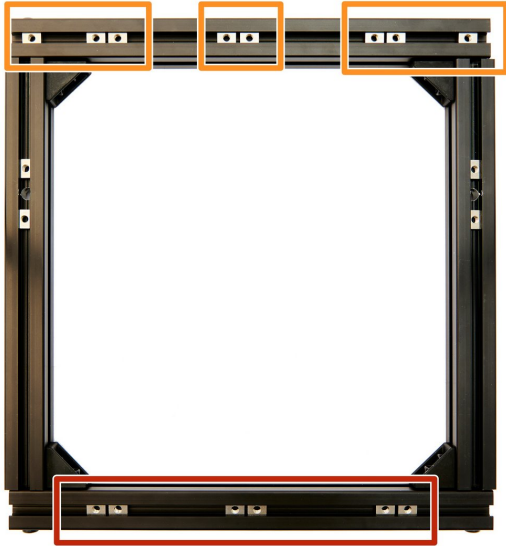
- **2x T-Nuts** must be inserted into the front slot of the x-extrusions in order to be able to attach the display later.
 - Now insert **2x M8x40mm Hexagon Socket Head Cap Screws** into each front and rear x-extrusion. Tighten the screw slightly.
 - Align two extrusions at a 90° angle using a Try square. While doing so, tighten the **M8x40mm Hexagon Socket Head Cap Screws**.
 - Repeat this last step for the other three corners of the frame.
-  The frame should now be flat and it should not wobble at any of its sides.

Step 8 — Frame Alignment (2 / 3)



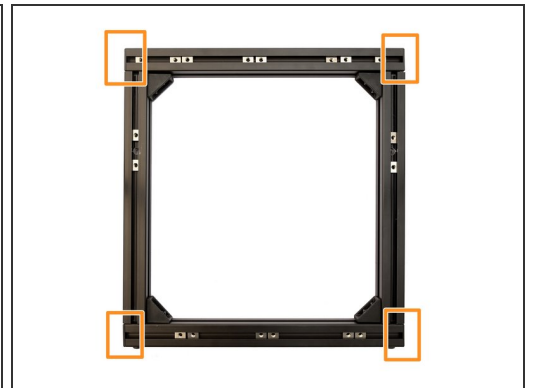
- Press the corner brackets into the corners and fasten the **4x M6x12mm Hexagon Socket Head Cap Screws** to the y-extrusions.
- ⓘ The **4x M6x12mm Hexagon Socket Head Cap Screws** in the corner brackets at the x-extrusions remain loose.
- Now loosen the **4x M8x40mm Hexagon Socket Head Cap Screws** by approx. 2-3mm.
- ⓘ Each corner bracket should now be flush with the end of the corresponding y-extrusion.

Step 9 — Inserting the T-Nuts



- Insert **6x T-Nuts** into the upper slot of the front x-extrusion.
- Insert **8x T-Nuts** into the upper slot of the rear x-extrusion.

Step 10 — Attaching the End Caps



- Prepare the 4x end caps by shortening the center part by half (e.g. using a side cutter).
 ⚠ Be careful not to shorten the end caps too much, otherwise the end caps will not hold on the extrusions.
- Now attach the 4x end caps to the ends of the x-extrusions.

Step 11 — Frame Alignment (3 / 3)

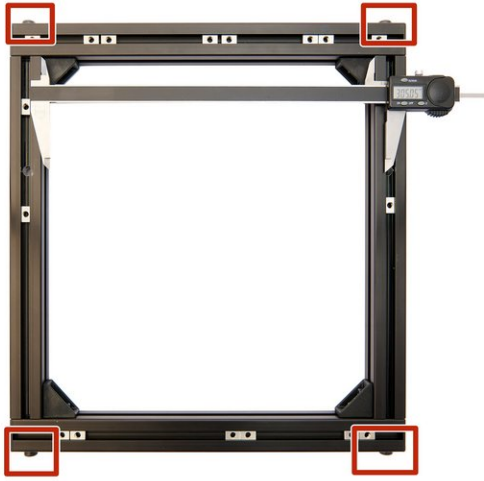


- Use a try square to ensure that in one of the four corners the two extrusions are at a 90° angle to each other.
- Now place the try square on the extrusions and tighten the **M6x12mm Hexagon Socket Head Cap Screws** on the x-extrusions in the corner bracket.

⚠ Make sure that the frame does not twist when you tighten the screws.

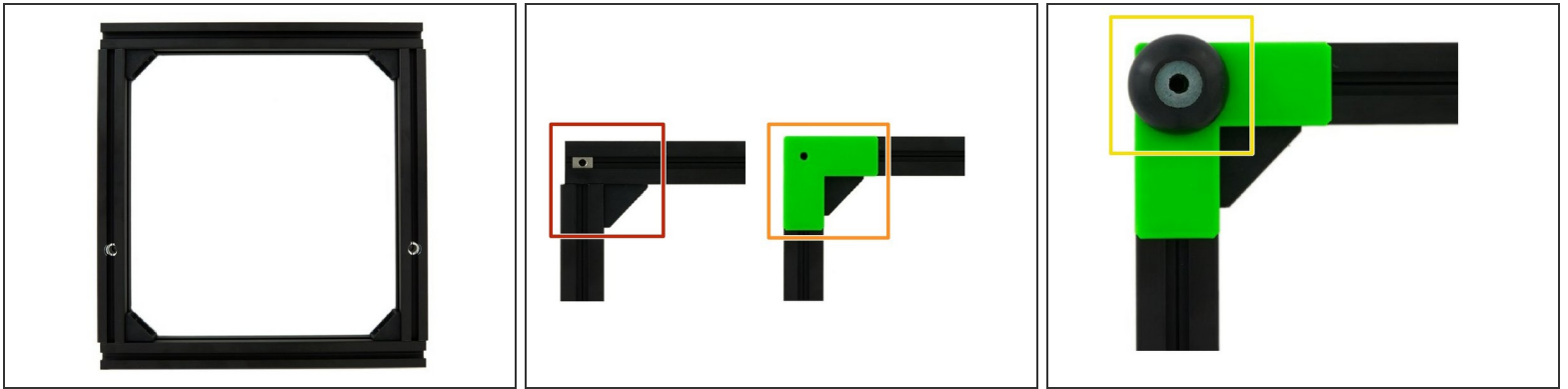
- After repeating this step on the other three corners, check again that all the extrusions are at a 90° angle to each other.
- ① If this is not the case, you will have to align the extrusions again.

Step 12 — Measuring the Frame



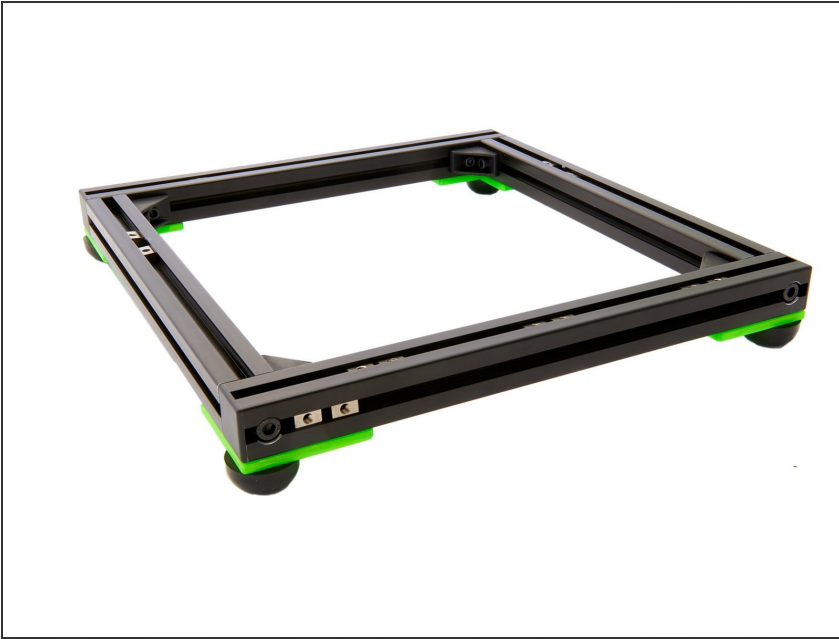
- After you have successfully aligned your frame, measure the distance between the two y-profiles with a caliper.
- To do this, place the calipers at the inner corners of the frame.
- ⓘ The distance between the two y-extrusions must be between $305.00 - 305.50\text{mm}$.
- ⓘ The measured values of the front and rear part of the frame must not have a greater difference than 0.05mm .
- ⚠ If the difference in their values is $> 0.05\text{mm}$, you must realign the frame (see Step 10).
- If the difference in their values is $< 0.05\text{mm}$, tighten the **4x M8x40mm Hexagon Socket Head Cap Screws** in the x-extrusions.
- ⓘ If necessary, tighten these four screws with a torque wrench (set to 2.5Nm).
- To check this, measure the distance between the front and rear y-extrusions again. If these values are $< 0.05\text{mm}$, note the measured values for later and continue with Step 12. If not you have to loosen the **4x M8x40mm Hexagon Socket Head Cap Screws** again and align the frame again (see Step 10).

Step 13 — Installing the Rubber Feet



- Turn the frame over.
- Position one of the already inserted **T-Nuts** in one of the corners of the frame.
- Place an L-bracket on the corner (see Fig. 2).
- Place a rubber foot on the L-bracket and screw it in place using an **M6x20mm Hexagon Socket Head Cap Screws**.
- Repeat these steps on the three remaining corners of the frame.
- Finally, turn the frame over again.

Step 14



- i** The frame is now completely assembled.
- i** Continue with manual [02 Assembly of the y-Axis](#).