

3D Printable Game Object – Overview and Instructions



Overview

VEX Robotics is excited to provide STL files of the VEX Robotics Competition Tower Takeover Cube. Many 3D printers and 3D printing services can interpret STL files into printable objects.

Please note: these files have been modified from the official VEX Robotics Competition Tower Takeover Cube to improve 3D printing. The 3D printed version is intended to be a functional equivalent for practice and design purposes; 3D printed Cubes are not legal for use in official VRC Tower Takeover Matches.

FFF (Fused Filament Fabrication) or FDM (Fused Deposition Modeling) printers work by extruding a thin layer of material and building the part layer by layer from the bottom up. When one layer extends beyond the layer below, this creates an overhang that may droop, sag, or fall away while printing. Many 3D printer slicer programs can add additional material that is removed during post-processing to support overhangs, but in some cases this support material may not be necessary. It is up to the user to understand what their individual 3D printer is capable of printing and adjusting printer settings appropriately.

To account for the variety of printers available on the market, we have made the cube available in two formats: solid body & panel assembly. Solid body is recommended for users who can fit the whole cube while panel assembly is intended for users with printers with limited print volume.

There are 4 versions of the cube files to choose from, listed below; choose the best for your printers' capabilities:

Part Number	Max Overhang (deg)	Max Dimensions (mm)	Additional Assembly Required?
276-6089-100-TV	56°	139.7 x 139.7 x 139.7	No
276-6089-100-TV-45	45°	139.7 x 139.7 x 139.7	No
276-6089-001-TV + 276-6089-002-TV	56°	139.7 x 139.7 x 13.2	Yes; see next page
276-6089-001-TV-45 + 276-6089-002-TV-45	45°	139.7 x 139.7 x 19.0	Yes; see next page

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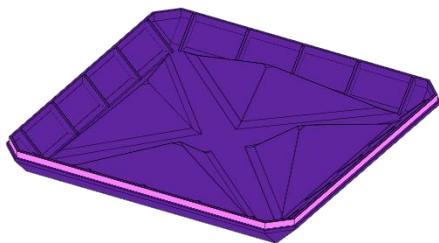
Multi-part Cube – Print & Assembly Instructions

Note: You will require use of an adhesive to build a cube. Hot melt glue, 'super' glue, etc. can all be used; take special care to ensure your adhesive does not react negatively with your filament material. Some adhesives may chemical alter and weaken your printed object when glued.

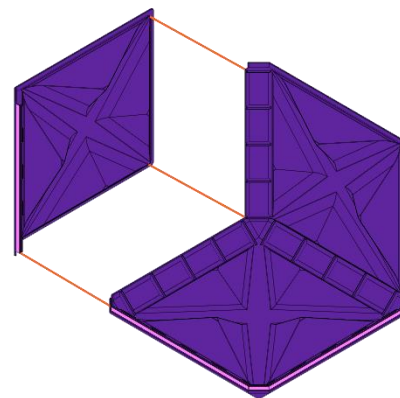
Print List: (per cube)

- **QTY 2** – 276-6089-001-TV or 276-6089-001-TV-45
- **QTY 4** – 276-6089-002-TV or 276-6089-002-TV-45

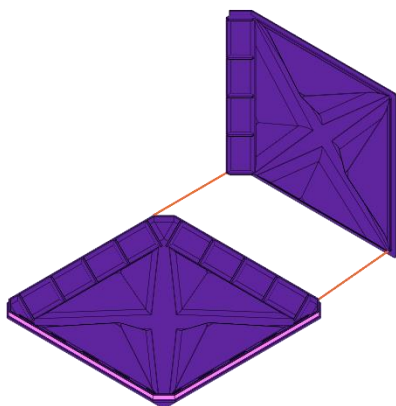
Assembly Instructions



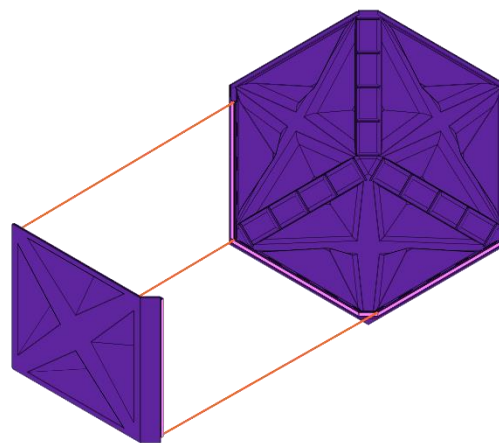
Apply adhesive to one of the highlighted lip edges of one 276-6089-**001**-TV panel.



Apply adhesive to the adjacent lower lip of **-001** and exposed vertical corner lip of **-002**. Carefully place next **-002** panel & hold until adhesive begins to set.

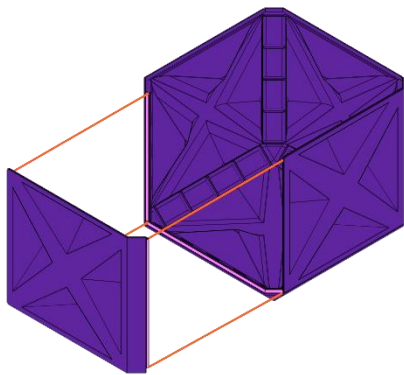


Carefully place panel 276-6089-**002**-TV along adhesive applied edge & hold until it begins to set.

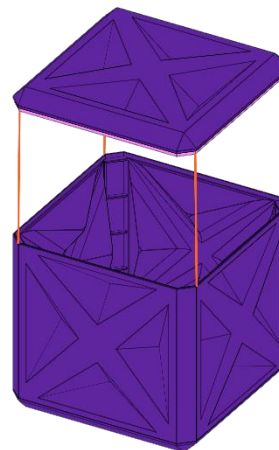


Repeat applying adhesive & placing remaining **-002** panels.

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Repeat applying adhesive & placing remaining **-002** panels.



Apply adhesive along inner lip formed by the 4 vertical **-002** panels. Carefully place remaining **-001** panel into position and hold until glue sets.

Note: See your specific adhesive instructions for recommended set time before interacting with your object.