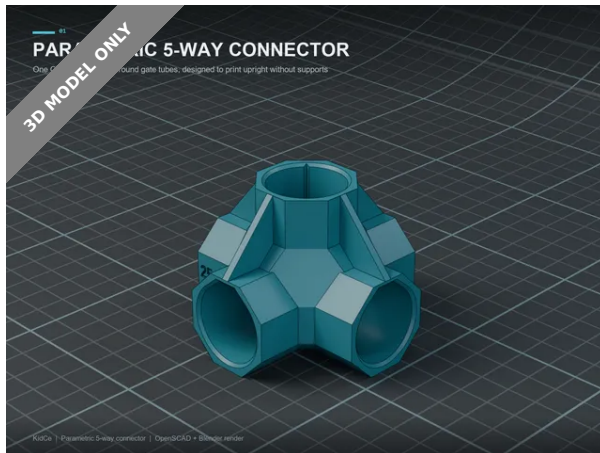




Parametric 5-Way Whoop Gate Connector

[VIEW IN BROWSER](#)

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Summary

Customizable 5-way connector for round FPV gate tubes. OpenSCAD source + 16, 20, 25 and 32 mm STLs.

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Tags: [fpv](#) [tinywhoop](#) [gate](#)

A parametric five-way connector for modular Tiny Whoop / FPV race gates, turning poles and compact RaceGOW tracks. Four sockets lie in one plane, with a fifth socket perpendicular to them.

This is the configurable successor to my original fixed-size V25 connector. Adjust the tube diameter and fit in the included OpenSCAD source instead of scaling an STL.

Customize the connector

Set `tube_od` to the measured outside diameter of your tube and adjust `fit_clearance` for your printer. The default 25 mm version has a 25.15 mm nominal bore, 20 mm insertion depth in all sockets and a 2.75 mm wall.

Additional options include separate horizontal and top insertion depths, straight / curved / no ribs, retaining screw holes, the bottom opening, junction shape and the top-socket seam groove. Carbon, aluminium, PVC

tubes and wooden dowels are shown as assembly examples; check actual fit before making a full set.

Ready-to-print STL variants are included for 16, 20, 25 and 32 mm tubes. For other sizes, open the SCAD file in OpenSCAD and use its Customizer. A recent OpenSCAD snapshot with the Manifold backend is recommended for faster rendering.

The actual bore diameter ($\text{tube_od} + \text{fit_clearance}$, for example 25.15) is debossed on two arms for easy identification.

The Customizer group **Diameter label** includes label (on/off), label_height, label_depth and label_text. Leave label_text empty to use the bore diameter automatically.

Designed to print without supports

Print upright on the flat base, with the fifth socket facing up. The horizontal sockets have a teardrop roof with a short bridge, with 0.75 mm clearance above the nominal bore for bridge sag. The flat and angled geometry is intentional and designed for support-free printing.

- Material: PETG or tougher for repeated assembly and transport.
- Layer height: 0.20 mm.
- Perimeters: 4–5 walls.
- Infill: 35% Cubic recommended.
- Supports: OFF.
- Seam: Aligned or Nearest; check in the slicer preview that the top-socket seam lands in the groove.

These are recommended starting settings. This parametric version has not yet been physically tested.

Tubing and assembly

The original 25 mm V25 design was made around [vidaXL 25 mm PVC installation tubes](#). The parametric version allows the socket dimensions to be adjusted for other round tubes. Tubes are not included in the model files.

In FPV racing, a flag is a vertical pole to fly around. The gate renders show example assemblies in different sizes.

Example RaceGOW Track Flythrough

<https://www.youtube.com/watch?v=JR-QmQ2Aael>

AI assistance: Claude OPUS 5.5 performed the complete end-to-end parametric OpenSCAD rework of my original design and concepts, based on an STL exported from Fusion, including creation of the renders in this post.

Model files



whoop_gate_5way_connector.scad



whoop_gate_5-way_connector_tube_od_32mm_actual_bore... .stl



whoop_gate_5-way_connector_tube_od_25mm_actual_bore... .stl



whoop_gate_5-way_connector_tube_od_20mm_actual_bore... .stl



whoop_gate_5-way_connector_tube_od_16mm_actual_bore... .stl

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