

Large 5 Sail Duplex Wind Spinner

N Nikdfish

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Summary

A large wind spinner with contra-rotating fans. Individual sails are 300x100x3mm. Assembled size is about 650mm.

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Tags: [spinner](#) [wind](#)

This is a large, two fan, wind spinner. The fans are contra rotating. Each fan consists of 5 sails, individual sails are 100x300mm ovals, 3mm thick. Hubs are 120mm wide, 15mm thick and each consists of two halves. The axle shaft is asymmetrical to the supporting pivot point to encourage weather cocking. It has not yet been long term tested outdoors, so no info on high wind durability.

UPDATE: It withstood a series of severe thunderstorms & high wind gusts last night (1/9/2024) without damage.

Type 608 bearings are used in the hubs and support pivot, 4 in total. The spinner consists of two fan assemblies, A & B. Hub, cap and sail components have been labeled with "A" and "B" markings. Use like marked components for each assembly.

Parts Orientation

Please adjust placement/orientation of .STL files as needed. Proper orientation of components on the print bed should be obvious. Sails print flat with the short rib side uppermost. Hubs print with the bearing recess uppermost. HighAxleMain prints flat side down, dome up. HAbase prints upright (shallow recess on top). HAbaseCap prints upside down to avoid support use. Support settings should adjusted to have enough X/Y clearance for easy removal from screw holes & tubular structures.

Printing

I printed in ASA for durability in outdoor placement, on a Qidi X-Max 3, using a 0.6mm nozzle with 0.24mm layers , 2 perimeters and 4 top/3 bottom layers. 10% infill on caps, 15% on other parts. Adjust settings consistent with your machine configuration.

Hardware

- M3x12 - 10 total
- M3x20 - 6 total
- M8x25 - 2 total
- M8x60 - 1 total
- 608RS bearing - 4 total
- 1/2" EMT conduit - 1 length

Components are assembled with M3 cap head screws. Fans are attached to the axle hub with M8x25mm bolts. A flat head M8x60 screw is used for mounting the bearings on the mount. The mount is sized to fit on 1/2" EMT conduit.

Assembly Sequence

For each hub, a 608 bearing is first inserted in the recess before assembling the two halves. Sails are inserted one at a time. A 2x2mm rib on the sail fits into the corresponding recess in the cap side hub. An M3 screw joins the two halves and sail. 5 M3x12 screws are used for each fan assembly. Attach the fan assembly to the HighAxle with a M8x25 bolt. The cap can then be attached to the fan assembly with three M3x20 screws. You may find the final cap assembly to be easier if pre-assembled on the corresponding hub as a test & then disassembled before finally attaching the hub assembly to the HighAxleMain.

A flat head M8x60mm screw is used for the pivot base assembly as the axle for the two 608 bearings. Insert the screw in the HAbaseCap & CA glue that to the recess in the HAbase. Slide the HAbaseSpacer2 onto the screw, followed by a 608 bearing, then HAbaseSpacer1, finishing with another 608 bearing.

The base structure is sized to fit on 1/2" EMT conduit.

Fusion 360 source and .STEP files are included.

A 6 sail version can be found here:

<https://www.printables.com/model/716842-large-6sail-duplex-wind-spinner>

Model files



osv2-screw-side-hub-a.stl



osv2-sail-a1.stl



osv2-cap-side-hub-a.stl



osv2-cap-a.stl



osv2-screw-side-hub-b.stl



osv2-sail-b1.stl



osv2-cap-side-hub-b.stl



osv2-cap-b.stl



highaxlemain.stl



habase.stl



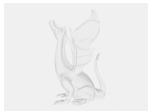
habasecap.stl



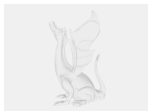
habasespacer1.stl



habasespacer2.stl



5-oval-sail-v2.f3d



5-oval-sail-v2.step

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