



Fully 3d printable

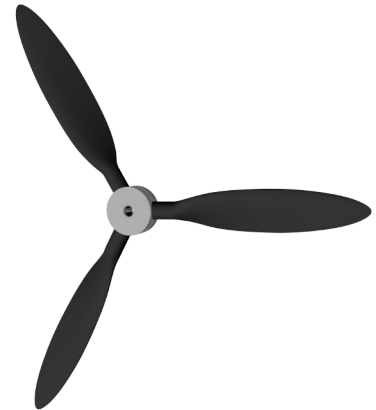
Scale Propeller for Messerschmitt Bf109

by Philip Simmes

In look and performance, the airplanes from 3D LabPrint are some of the best airplane models you can get. For everyone who just like me thinks, that a beautiful plane needs a fitting airscrew, I have created this set. This propeller is the completion for the perfect Warbird look of your Messerschmitt. It is fully 3D printable and the innovative plug system allows you to replace a single blade if one should get damaged.

1. Included

- .stl files
- .3mf files for PrusaSlicer
- Gcodes, optimized for the original PrusaI3
- PDF and [video](#) userguide



2. Parameters

- Blade count: 3
- Diameter 15 inch
- Pitch 8 inch

3. Materials

- 3D LabPrint Polyair (recommended)
- Standard PLA

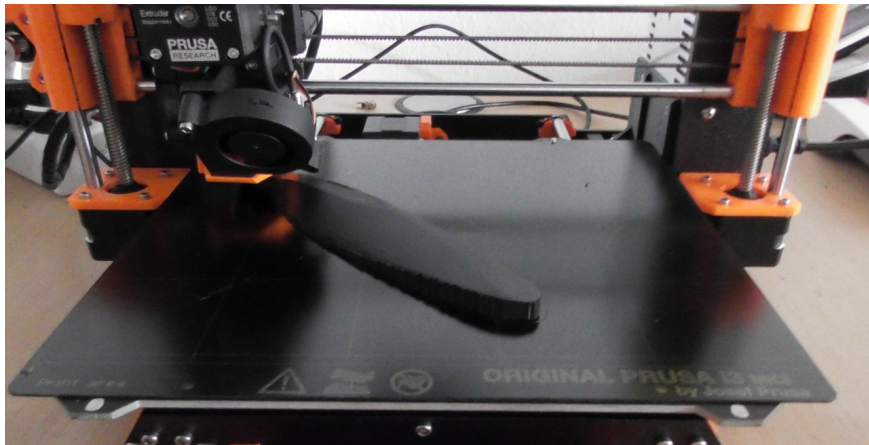
4. Printing

Layer height:

For the blades you can choose between a 0.05mm and a 0.1mm variant for the layer height. I recommend the 0.05mm variant, it may take longer to print but it saves you time for the following rework.

Alignment:

For the maximum strength of the blades, place them as flatly as possible on the printing surface. The .STL-models are already aligned in the right position.



Printing speed:

The printing speed of the set ups should work for most printers. If you want you can try to increase the speed, but beware to not lose printing quality in favor of a lower printing time.

To guard warping, use hairspray or adhesive. Any warping makes the prints unusable.

5. Rework and Assembly instructions

For the best aerodynamic performance, a smooth surface of the blades is necessary. Therefore, a rework is highly recommended. The advice for the best result, is an even sanding with sandpaper and a finish with fine steel wool and polish if you want.

After the rework scale each blade. The weight has to be nearly the same, otherwise the propeller runs roughly.



Assembling is pretty easy. Just plug all the blades in one hub part and close the hub with the other half.



Mount the finished propeller on the motor. I recommend to secure the nut with bolt adhesive or use a self securing nut. Tighten the propeller and make sure that no blade can move inside the hub. As a propeller is exposed to high dynamic radial forces, always work in high quality.

6. Preparing for flight

Before each flight you should always do two tests on the ground:

The RPM test, in which you test the hub for the maximum radial forces by increasing the thrust slowly to full speed.

The acceleration test, in which you test all parts for the dynamic forces while maximum acceleration. Directly increase the power to the maximum.

ALWAYS STAY BEHIND THE PLANE WHILE TESTING and make sure that no other person is in the line of rotation or in front of the airplane to prevent any injury!

Now check the CoG. If everything is alright you are ready to fly.



Have Fun!