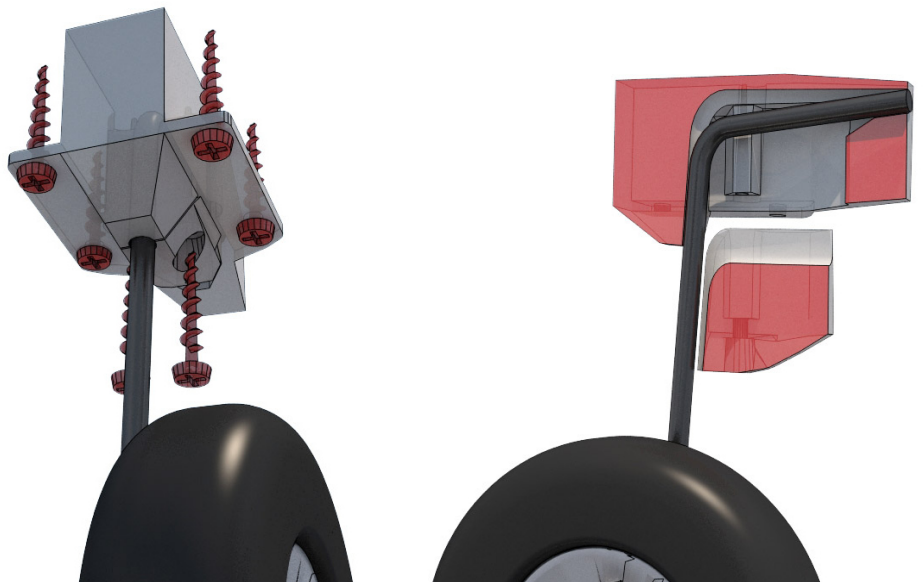


# User Guide

rev. 2021/5



Fully 3d printable

## Fixed LG & Wheel add-on

Fixed LG & printable Main Wheel

**NOTE:** this package is just add-on for our [Messerschmitt Bf 109F-3](#)

Includes only : Fixed Landing Gear Solution

Printable main Whells (Disc and Tire)

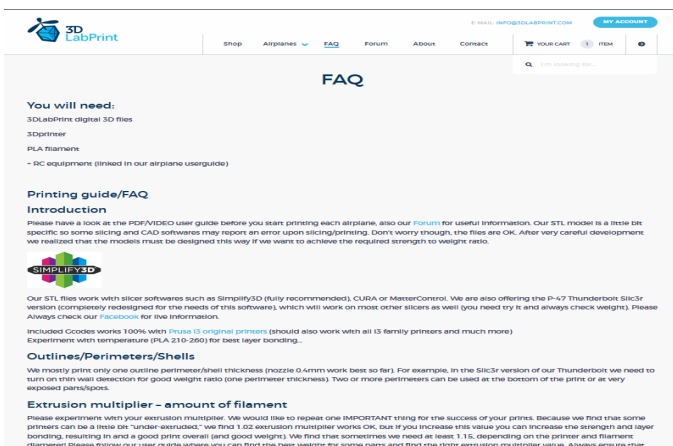
## Basic Tips and Advice (general)

Please experiment with your extrusion multiplier to achieve the similar weights as in the list. **HotEnd temperature is very important** for a strong result. The reason is, the plastic leaving the nozzle has to melt the previous layer to create solid joint. Please print the thinwall temperature tower to find the best hotend temperature value (215° up to 260° Celsius) to achieve strong strong layer bonding without underextrusion on layer starts.. **Turn OFF cooling fan** (Heatbreak fan of course has to be left ON). Thin walls easily cools down on its own and the cooling fan worsens the layer bonding. You can use cooling fan for thick or very small parts if needed...

Heated bed is very recommended, use 50-56° Celsius to print without warping ends. Any standard quality PLA is suitable to print our planes, but the result depends on combination of PLA vs. Extruder vs. HotEnd.

Some colors and brands of filament has lower layer adhesion, please do experiment with it. There are a lot of 3dprinters on the market, most of them are OK for printing our aircraft (specific thin wall printing...) with sufficient volume, heated bed, 0.4 mm nozzle.

## Please check the [FAQ](#) and our [Forum](#) for more information:



**3D LabPrint** | Shop | Airplanes | **FAQ** | Forum | About | Contact | [MY ACCOUNT](#)

### FAQ

You will need:  
3D LabPrint digital 3D files  
3D printer  
PLA filament  
- 3D equipment (linked in our airplane userguide)

#### Printing guide/FAQ Introduction

Please have a look at the PDF/VIDEO user guide before you start printing each airplane, also our [forum](#) for useful information. Our STL model is a free file specific to some slicing and CAD software may report an error upon slicing/printing. Don't worry enough, the files are OK. After very careful development we realized that the models must be designed this way if we want to achieve the required strength to weight ratio.

**SIMPLY 3D**

Our STL files work with slicer softwares such as Simplify3D (fully recommended), CURA or MatterControl. We are also offering the P-47 Thunderbolt SLIC3r version (completely redesigned for the needs of this software), which will work on most other slicers as well (you need try it and always check weight). Please Always check our [Facebook](#) for the information.

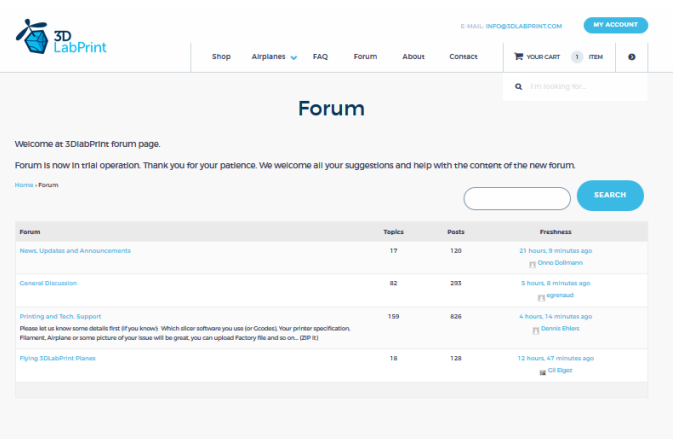
Included Codes work 100% with **Thrive 3D original printers** (should also work with all 3D family printers and much more)  
Experiment with temperature (PLA 210-260) for best layer bonding.

#### Outlines/Perimeters/Shell

We mostly print only one outline perimeter/shell thickness (nozzle 0.4mm work best so far). For example, in the SLIC3r version of our Thunderbolt we need to turn on thin wall detection for good weight ratio (one perimeter thickness). Two or more perimeters can be used at the bottom of the print or at very exposed parts/spots.

#### Extrusion multiplier - amount of filament

Please experiment with your extrusion multiplier. We would like to repeat one important thing for the success of your prints. Because we find that some printer can be a little bit "under-estimated" we find 1.02 extrusion multiplier works OK, but if you increase this value you can increase the strength and layer bonding, resulting in a good print overall (and good weight). We find that sometimes we need at least 1.15, depending on the printer and filament diameter! Please follow our user guide where you can find the best weight for some parts and find the right extrusion multiplier value. Always ensure that



**3D LabPrint** | Shop | Airplanes | **FAQ** | **Forum** | About | Contact | [MY ACCOUNT](#)

### Forum

Welcome at 3D LabPrint forum page.  
Forum is now in trial operation. Thank you for your patience. We welcome all your suggestions and help with the content of the new forum.

[Home](#) | [Forum](#)

Forum	Topics	Posts	Freshness
<a href="#">News, Updates and Announcements</a>	17	120	21 hours, 9 minutes ago by Denis Dalkmann
<a href="#">General Discussion</a>	82	285	5 hours, 8 minutes ago by "Ignorant"
<a href="#">Printing and Tech. Support</a>	159	826	4 hours, 14 minutes ago by Denis Dalkmann
<a href="#">Flying 3D LabPrint Planes</a>	18	128	12 hours, 47 minutes ago by Gil Elger



Some advice for rubberlike filament printing (printable tyre): it is a good IDEA to use some adhesive tape or foil... first layer bonding could be too strong or on the other hand too weak depends what filament is used... (picture: RubberJet - TPE32 245/30 print temperature)

After printed, heat up bed to 80 Celsius and remove tape along with printed tyre, clear the bed with isopropylalcohol...

## Landing gear (fixed)

You can also use just fixed landing gear and save some receiver channels, but of course flight characteristic will suffer from aerodynamic drag (will be not so smooth and stable)

[See video guide](#)

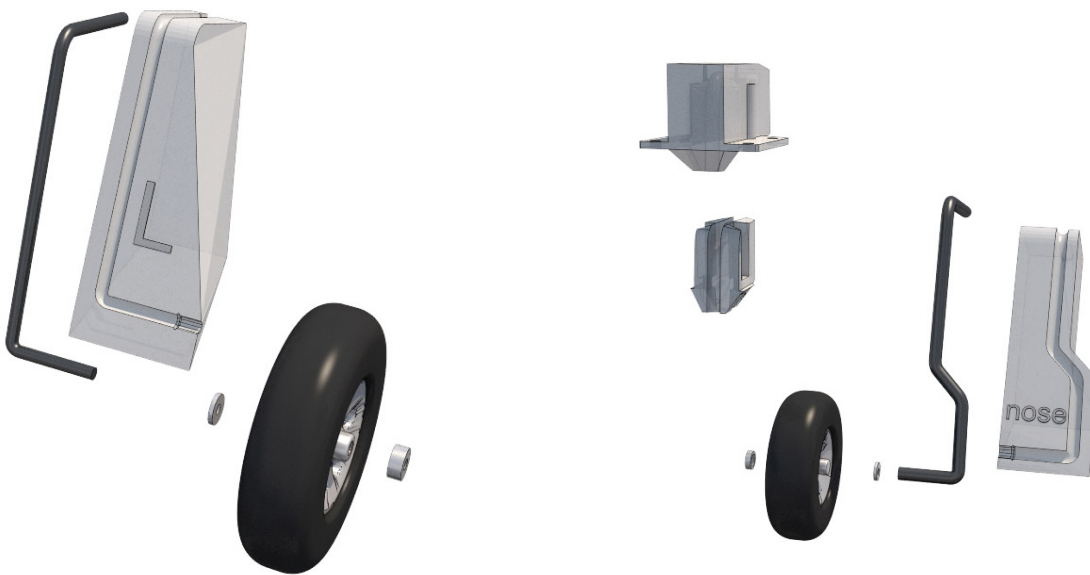
You will need:

- 5 mm wire/rod for LG leg
- 12x 3.5-4/30mm self-tapping screw
- Dremel or any steel handsaw
- Table Vice and Hammer, Yeah!
- Torch or lighter

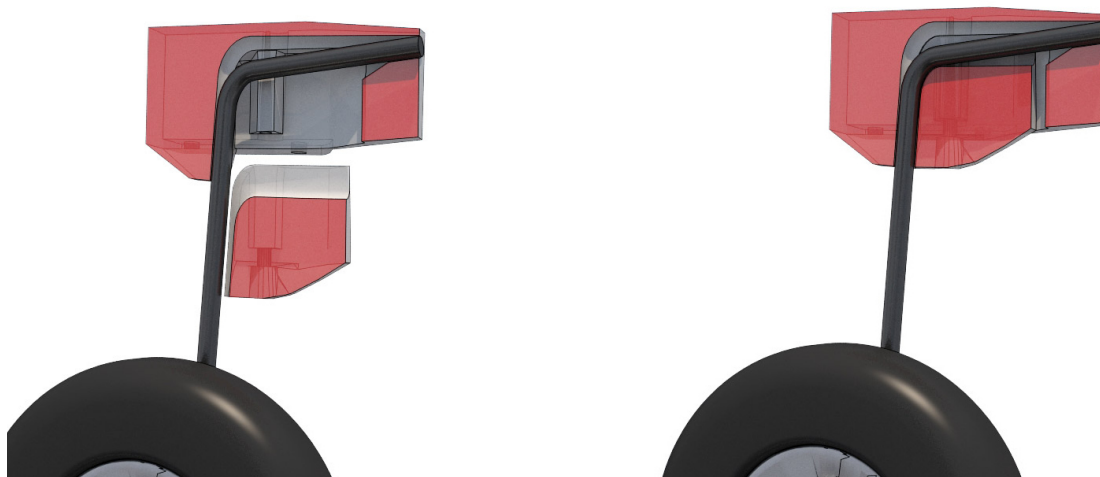


Insert 3d printed LG unit socket into the engine gondola then use any hot wire (roceed the same way as with retractable LG) and make hole for four self-tapping screws. Secure the retract unit using all four self-tapping screws.

Shape the 5mm steel rod using vice, (you can add fire) and hammer according to the 3D printed template (for L, R main LG and nose LG), cut the ends, slide in main wheel and secure it with Wheel Stop Set Colar and threadlocker (Loctite):



This section/pictures shows the way that fixed LG gear works (we have some room for damping hard landings):



Insert the completed LG units into the slots and secure with self-tapping screws: For wider angle between main legs you can print the wedges from flexible material. Make sure the Landing gear is fully retracted and not pushing against the wing.

