



USER GUIDE

print your own plane



**3D LabPrint Landing Gear conversion
for
Messerschmitt Bf 109T
ver 1.1 6/2016**



Contents

Table of contents	.....1-2
Introduction	.....2
Tech. spec.	.....3
Drawnings	.....4
Step by step PDF/VIDEO guide	.....5
Choose airplane	.....5
Select printer	.....5
Register and complete order	.....5
Slicer setting	.....5
Assembling printed parts	.....6
R/C equipment preparing	.....7
Instaling R/C equipment	.....7
Before flight check	.....7
Go Flying	.....7
Attention!!!	.....8
Parts wight list	.....9

Messerschmitt Bf 109 T Landing Gear conversion, part list:

You need print all this parts instead the standard version...
Please, always when you made any changes verify C of G position.

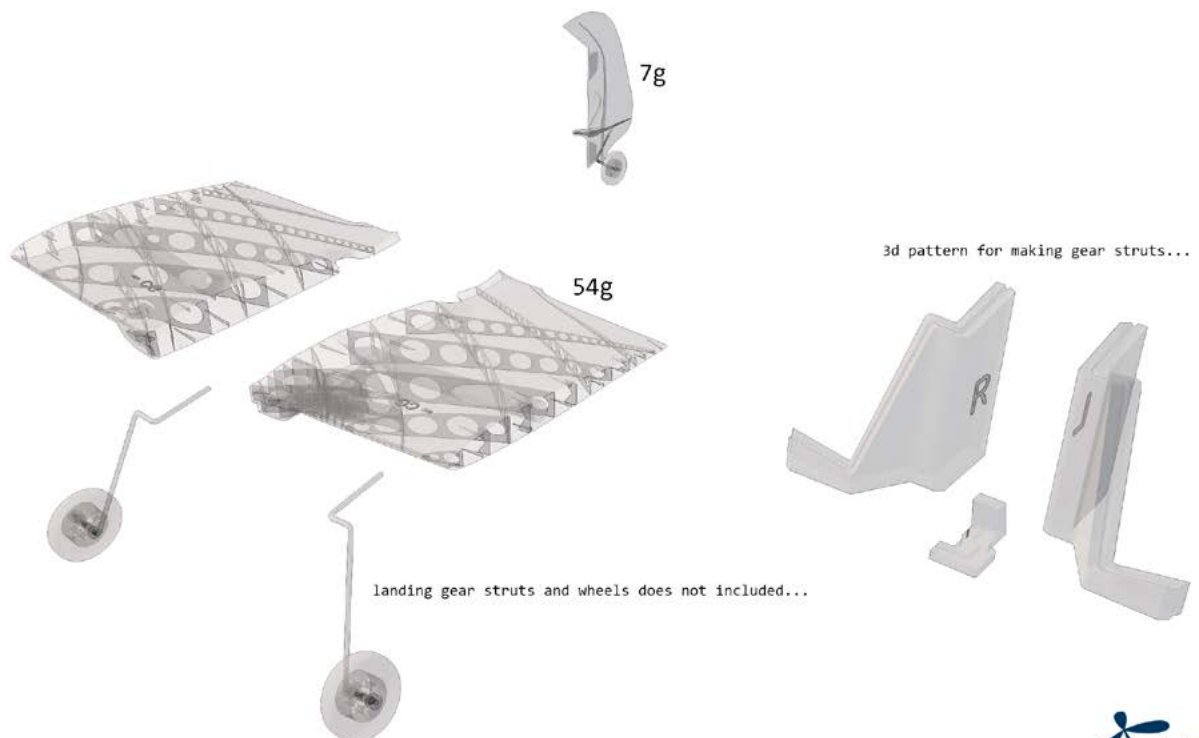
Note: this conversion include only conversion parts (you will need buy standard version to complete whole plane)

me109_T_wing_L1_con.stl
me109_T_wing_R1_con.stl
me109_T_rudder_con.stl

me109_T_patern_LG.stl
me109_T_patern_LG_tail.stl

[See video guide #12](#)

Landing Gear for Messerschmitt Bf 109 T - main parts weight list



General specifications

Lenght:	771mm, 30.35in
Wingspan:	978mm, 38.5in
Height:	270mm, 6.7in
Wing area:	16.1 dm ²
Wing loading:	54.0 g/dm ²
Airfoil:	aircombat modified
Print weight:	430g, 14.9oz
Takeoff weight (6s 1300 lipo):	840g, 31.5oz
Max takeoff weight:	960g, 33.8oz
Never exceed speed, VNE:	205km/h
Design maneuvering speed, VA:	165km/h
Stall speed, VS:	33km/h



Powerplant

Propeller:	aeronaut ELP 9/6 or APC 9/6 – 9/7.5
Motor:	AX-4008Q/620KV, 22pole brushless HE electric motor
ESC:	Castle Creations TALON 25
Battery:	Turnigy nanotech 1300 mAh/6s/22.2V, 206g, 25C

Performance measurment

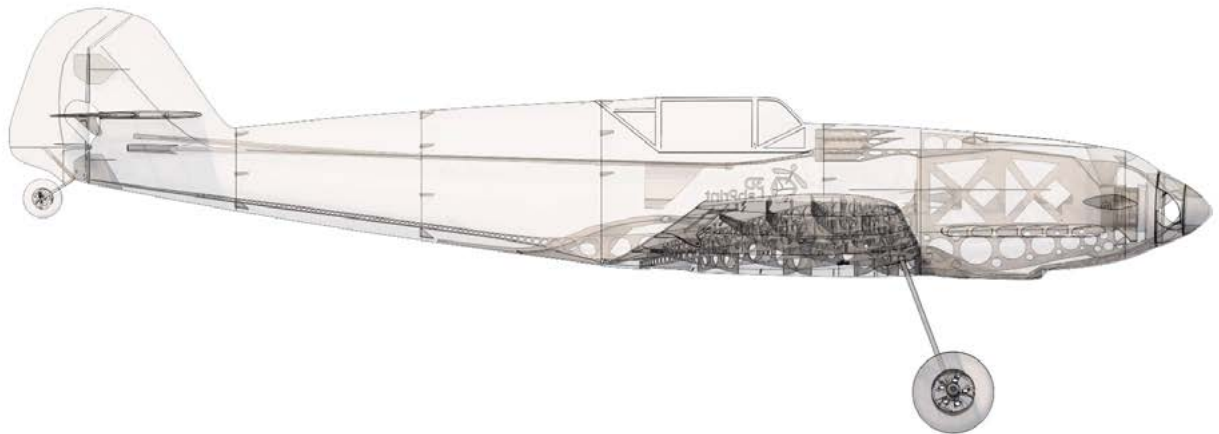
Max RPM and Amps (static):	12 000/min with APC 9/6, current 19A 11 550/min with APC 9/7.5, current 21A
Max RPM and Amps (level flight):	13 700/min with APC 9/6, current 12A 12 400/min with APC 9/7.5, current 13.5A
Max speed VH (level flight):	135 km/h – 67.5kn – 78 mph with APC 9/6 150 km/h – 73kn – 84 mph with APC 9/7.5
Rate of climb:	29 m/s (5 373 ft/min) with APC 9/6 32 m/s (5 728 ft/min) with APC 9/7.5
Flight time (6s 1300mAh/full):	7:40 with APC 9/6 5:30 with APC 9/7.5 7:40 with aeronaut ELP 9/6





978mm

270mm



771mm

Step by step PDF/VIDEO user guide:

1. Choose airplane at www.3Dlabprint.com **and please visit youtube!!!**

2. Select and proceed to check out.

The only thing your printer must have is a min build volume approx **195/195/150 (250/120/150)** or bigger and nozzle diameter **0.4mm**.

If you feel a little bit confused you can download wing test part from our sites or thingiverse, this is the biggest part...

You will get airplane STL files, PDF with scale marking, detailed PDF/VIDEO guide and some accessories.

The only mandatory thing is nozzle 0.4 and sufficient build volume of your printer....

3. Download and slice it - **use the conversion files instead standard...**

After checkout you will get a download link to your email, download it and unzip it. Later you can log in to your account at our site and download.

After unzipping you get several STL files divided into directories (and PDF/VIDEO guide + some accessories and so on...)

See videolinks below for proper slicer setting (very important) or use Factory S3D, CURA .ini , or MatterControl .slice , BUT adapt it for your printer!

Scaling the model will lead to unusable result!

Our STLs work with Simplify3D, CURA and MatterControl as we try...)

This package also include prepared Gcodes for PRUSA i3 ORIGINAL printer.

Setting for Simplify3D:

[See video guide #2 slicer setting](#)

[See video guide #2.1 about amount of filament fine-tune](#)

Simplify3D gives very good and strong airframe result, we recommend it.

Prepared startpoint Factory files included (adapt it for your printer)

[video about thin wall printing](#)

Setting for:

[See video guide #2CURA](#)

[See video guide #2MatterControl](#)

MatterControl and CURA are free :-)) and also gives very good result and airframe is still strong enough, slicer setting is very easy.

Please try **find right extrusion multiplier and temperature** for your printer and PLA filament, give a look to parts weight list for proper multiplier setting.

You can also use our **predefined** CURA or MC slicer setting file included in package (always adapt it for your printer, change build volume, filament diameter and so on... depends on your printer!!!):

CURA_wing_fuse.ini (wing and fuselage and so on... parts)

CURA_ailer_elev.ini (only ailerons and elevator parts)

CURA_thick.ini (only motor mount)

OR

MC_wing_fuse.slice (wing and fuselage and so on... parts)

MC_ailer_elev.slice (only ailerons and elevator parts)

MC_thick.slice (only motor mount)

4. Print it

Save generated Gcodes and insert SD card to your printer, prepare your printer and start printing the first gcode file and then next and so on... (we prefer to use SD than direct connection) Notice: ABS filament is not suitable for this...

[See video guide #3](#)

you will need: PLA filament - good quality PLA (we get the best result with PLA so far)
Strong hair spray (depends on your printer)
Razor blade

!!Note!!

Please Experiment with your **extrusion multiplier**...

Also HotEnd temperature is very important for strong result, please try increase temperature to find the best value (**200** up to **235** celsius)

We would like to repeat one IMPORTANT thing for your success prints.

Because we find that some printers could be a little bit “underextruded”

Usually **1.02** will be OK but if you increase this value we can increase strength and also layer bonding and good print result (but also weight) sometimes we need **1.12** and maybe more depends on **printer and filament diameter!!!**

Please follow our userguide where you can find the best weight for some parts and find the right extrusion **multiplier value**.

We recommended 1.5mm **retraction** for non-bowden extruders, for bowden 4-6mm is OK, **we need retraction for all spots** not only for outer perimeters!

If you find underextrusion at layer startpoints increase **extra restart distance** this value add some extra filament after retraction (if your slicer is able to) Also speed down print helps...

Good **first layer adhesion** is very important, you should see :-)

Turn OFF cooling fan for better layer adhesion (HE fan of course ON) we dont need it for our thin wall printing...

We try lot of filaments and so far **PLA** is still the best for our models (2016). You can try also PETG filament...

HEATED BED is very recommended, 60-70celsius (print without warping ends)

Looks like any standard quality PLA is OK for our planes, BUT it always depends on combination **PLA vs. Extruder vs. HotEnd**.

Sometimes you need to experiment with HE temperature.

We find that some color of filament has lower layer adhesion also.

Nowadays there is lot of 3dprinters on the market, very most of them is OK for printing our aircrafts (specific thinwall printing...) sufficient volume, heated bed, 0.4mm nozzle.

We use Prusa i3 ORIGINAL (the black orange one) and Makerfarm i3 10 (both works well)

5. Assembling printed parts and installing landing gear

5.1 Wing assembling

Glue wing parts with CA glue together, use activator and install ailerons...

[See video guide #13](#)

you will need: [CA Glue - medium](#) or similar medium viscosity CA glue
[Activator for CA Glue](#) or similar, but not-mechanical is better
Steel pushrod, diameter 1.2mm and 3mm
Pliers
Clamp
Hammer
Dremel or any hand tool
printed LG pattern
Firelighter
2x main Wheel (light foam wheel 50-75mm/20mm)
1x tail Wheel (light foam wheel 20-30mm/8mm)
[4xLanding Gear Wheel Stop 8x3.1mm](#)

9. Install your receiver, connect battery, setup servos and etc. with your transmitter, lock servo position, then install propeller...

!!!Make sure that the battery is placed properly and secured with wing battery holder, if battery moves during the flight it can shift the center of gravity backwards and aircraft will be uncontrollable!!!

!!!Never set ESC with installed propeller, this is very dangerous!!!

10. Before flight check: [center of gravity is very important](#) (move it forward for the first flights see CG markings and chapter 11 below), battery properly charged, ailerons and elevator deflection check, your own flying skills or RC simulator training...

Then go flying: set full throttle, put the elevator little upwards (1-2mm) and throw it energetically to the wind approx 10 degrees up, wait till plane gain speed, then fly it in your manner...

[See video guide #14](#)

...so, are you ready for flying popcorn, yeah!



11. Pilots Please Attention!!!

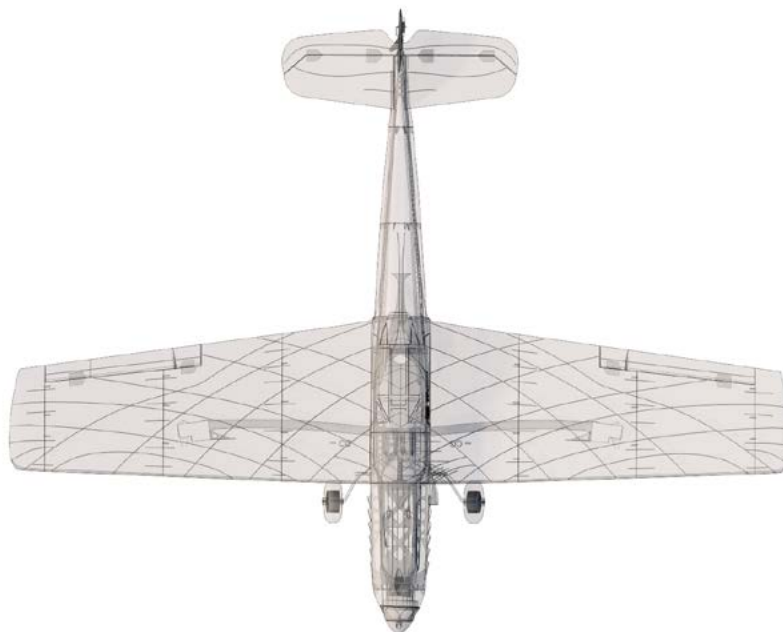
For the first flights we recommend setting the center of gravity of the airplane by about 5 mm forward of the CG tag (nose heavy, this increases the stability) is also good to increase the expo settings on your transmitter for elevator and ailerons to 80 % (this calms response from your stick inputs)

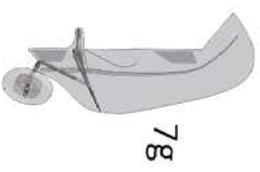
Also you can decrease elevator and maybe also ailerons deflection. **Make sure the battery is well fixed in proper position if it moves during flight it will cause move CoG aft and will lead to uncontrollable flight behavior...**

You can then return to the center of gravity (balance aircraft) the CoG points and expo set to 60 % as stated in the video/instructions... this gain back extra maneuverability when you will be sure with flying your airplane.

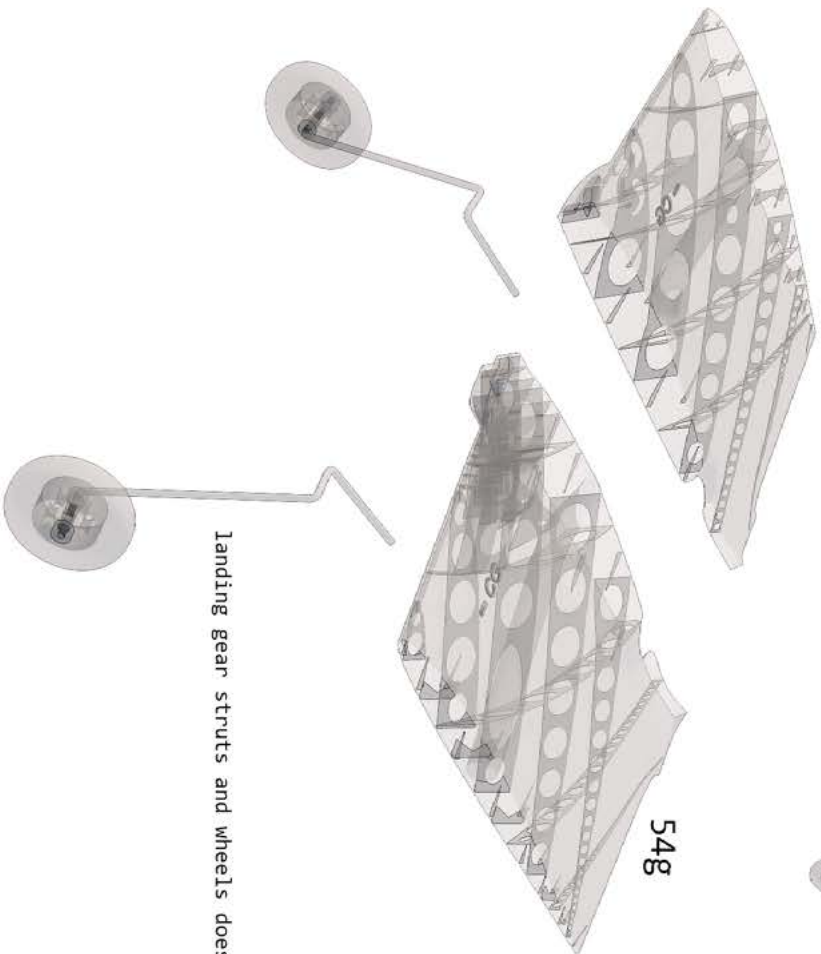
!!!Never fly aft positioned CoG!!!
thanks :-)

And Please use this files only for your own purpose, do not send further...





54g



Landing gear struts and wheels does not included...

3d pattern for making gear struts...

