

UPGRADE KIT: MK4 DIRECT DRIVE



This is a conversion/upgrade kit to convert my MK4-Carriage from Bowden to direct extruder with e3d v6 hotend in BMG Dual Drive Style. The modification is based on the MK4: Due to the interchangeable system of the Carriage-System only the front assembly is replaced.

This version is to be regarded as experimental, I have designed and tested it on the multiple request of some users but I do not give any guarantee for an improvement in the print result!

The extruder used is 3D-printed but is almost identical to the BMG Dual Drive extruder, therefore a BMG/BMG clone is needed for the gears etc..

If you enjoyed this project please share your Make, leave a Like and Collect for the community. To show your acknowledgment and support for my large Effort on this you can donate via PayPal

Design-Features:

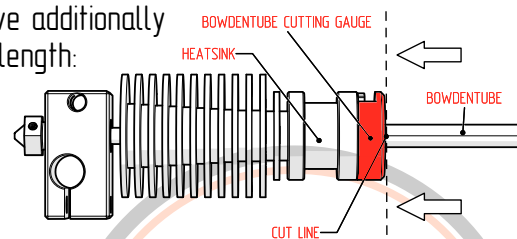
- Build volume reduction: X-Direction: **None** || Y-Direction: **None** || Z-Direction: **-5mm** (Zmax = 200mm)
- Nema 17 Pancake for less additional weight as possible
- Reduced Retract length / better suitability for flexible filament
- AutoLeveling with BLTouch possible
- Includes the advantages of the MK4 (Part Cooling, Belt Tensioners, Low Noise level etc.)

Instructions for the stl files, the print settings and the assembly process can be found in the project folders as a pdf file called '00_Instructions(..).pdf'.

Note: In my case, the conversion required a reduction of the printing temperature by 10°C.

To find the right length of the Bowden tube in the v6 hotend I have additionally designed a gauge, with which the Bowden can be cut to the right length:
[Bowdentube_Cutting_Gauge.stl](#)

Functionality: Place it on top of the heat sink and cut off the protruding Bowden in concise with the gauge surface



The project contains a firmware directory which contains Marlin 2.0.5.3 adapted for the MK4-Carriage Direct Drive as MBL and ABL versions. Special thanks to Christian H. for adapting and creating the firmware part of the MK4 project.

<https://www.thingiverse.com/thing:4358979/>

Changelog:

- 18.06.2020: Publishing
- 16.08.2020
 - Adaption of the extruder back part to support all length types of stepper motor shafts
 - Firmware Update to Marlin 2.0.6.

