Since I haven't finished the big report, here are a few basic tips that you should really take to heart.

Send the following commands to the printer via USB using a terminal program (Pronterface, CoolTerm, for example):

M502

M92 E435

M206 X-5

M500

Meaning in order: Load firmware presets. X offset is wrong, 0 is 5 mm too far to the left. Original 400 E-steps / mm, at 100 mm feed only 92 mm come out, so 435 are correct. Save changes.

All of this only has to be done once, or until you have loaded the basic settings again (e.g. via M502).

Incidentally, there is a bug in the fan control:

M106 S64 gives 36% instead of 25%, M106 S177 already gives 100%.

For example, if you want to have 50% fan, enter 35!

And here are my start and end scripts, I intentionally only turn the temperatures down a little so that you can continue printing ...

Start script:

G21; set units to millimeters

G90; absolute positioning

G1 F3600; set standard speed

M107; turn all fans off

M140 S [bed0\_temperature]; set bed temperature

M104 S [extruder0\_temperature]; set hotend temperature

G28 XY; home X and Y axis

G28 Z; home Z axis

M190 S [bed0\_temperature]; wait for bed temperature

M109 S [extruder0\_temperature]; wait for hot end temperature

G92 E0.0; reset extruder distance position

G1 Y40.0; wipe nozzle on brass brush

G1 Y5.0; wipe nozzle on brass brush

G1 Y40.0; wipe nozzle on brass brush

G1 Y5.0; wipe nozzle on brass brush

G1 X0.0 Z0.25; set starting point

G1 Y60.0 E4.5 F1000.0; print intro line

G1 Y100.0 E21.5 F1000.0; print intro line

G92 E0.0; reset extruder distance position

end script:

G1 F3600; set standard speed

G28 X; position X for easy part removal

G90; absolute positioning

G1 Y205; position Y for easy part removal

G91; relative positioning

G1 Z50; position Z for easy part removal

M300 S0 P250; pause for 0.25 seconds

M300 S880 P750; beep at 880 Hz (A5) for 0.75 seconds

M300 S0 P250; pause for 0.25 seconds

M300 S880 P750; beep at 880 Hz (A5) for 0.75 seconds

M300 S0 P250; pause for 0.25 seconds

M300 S880 P750; beep at 880 Hz (A5) for 0.75 seconds

M300 S0 P250; pause for 0.25 seconds

M106 S0; fan off

M104 S200; reduce extruder heat

M140 S60; reduce bed heat

M84; disable motors

PETG

Here are my basics:

Line width = nozzle diameter

Layer height = half the nozzle diameter or less if it should be nicer

Fan: only from layer 5, 20-25%, increase performance when overhangs sag (benchy's bug, slant left behind in Oooze retraction test)

Temperatures for PETG: 230-240 ° C nozzle, 70-75 ° C bed with ultrabase

Basic speed 60 mm / s, first layer: 50%, outer walls: 50%, other: 80%, driving speed 120 mm / s

Retraction: Direct extruder: 1-2 mm at 60 mm / s, Bowden extruder: 5-6 mm at 60 mm / s

S3D: only retract when crossing open spaces: aus, force retraction between layers: aus, minimum travel for retraction: an, 3 mm, coast at end: aus, wipe nozzle: aus

The wall thickness is 1 mm, with a 0.4 mm nozzle there are funny solutions from the slicers:

2 lines of 0.4 mm with a distance of 0.2 mm between them - very bad

2 lines of 0.4 mm each with a line of 0.2 mm in between - better, but about 1/3 slower

2 lines of 0.5 mm - better, because faster, possibly a little less precise

maxpd: To prevent objects with a small footprint from falling over, a brim (hat brim) with around 10 panels helps, as can be seen in my picture.

I find the retraction speed a bit high. Now the 4Max Pro is my second printer with DirectExtruder next to the Prusa and otherwise I only have Bowden. But always different in length. The Predator has the shortest Bowden, which is almost a DirectExtruder 😉

But apart from the length of the retreat, which is between 4.2 and 5.00mm for the Bowden, depending on the hot end, I also use the Prusa and the 4Max Pro with the much shorter retreat of less than 1mm (I think I set 0.8mm) a retraction speed of max. 35mm / s. Rather less depending on the filament. With PLA I sometimes go back to 25mm / s and actually have the best results.

With the Ender 5 and the Ender 5 Plus, both with Micro Swiss Hotend and Makeasy PLA +, I am 4.7mm and 30mm / s. Since I print the well-known deer on the antlers completely without stringing. The Ender 5 has a BMG and the Ender 5 Plus the MK8 stick. Only to complete the data.

With the Prusa I have 0.8mm and 25mm / s with ABS and now with the 4Max Pro I have taken over the 0.8mm and with the supplied PLA roll I am currently at 30mm / s.