First layer and print parameters

The values indicated in the scheme are just there <u>as an example</u> but not too far from optimum :

- The PINDA sensitivity, here, is such that it triggers for a distance (Zp) = 1,3mm (for a supply voltage of 5,02 v)
- The first layer(FL) is choosen to be 0,2mm(although it may varies a little bit depending of the the Life Z value)
- The distance nozzle tip/Pinda (Dpn) is choosen to be 0,7 mm (mean value considered safe)
- Based on these values, The Life Z value can only be -0,4 mm because the simple (theoretical*) relation between these parameters is
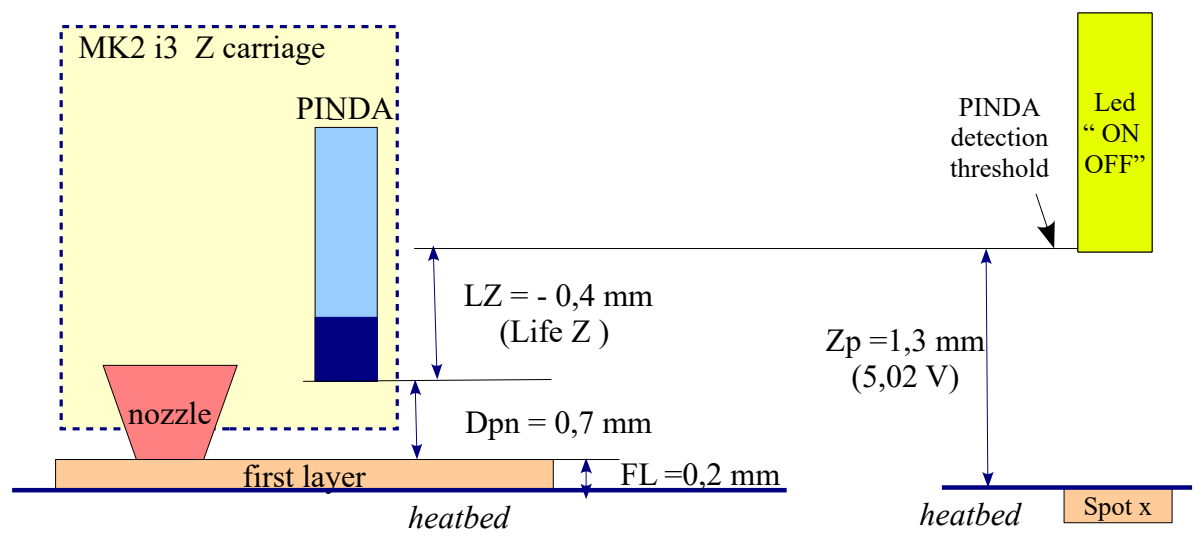
$$LZ = -(ZP - Dpn - FL)$$

* Dpn is known with an accuracy of may be 0,1 mm and Zp to some similar accuracy depending on the measurement set up, temperature, voltage supply etc. then it's better saying:
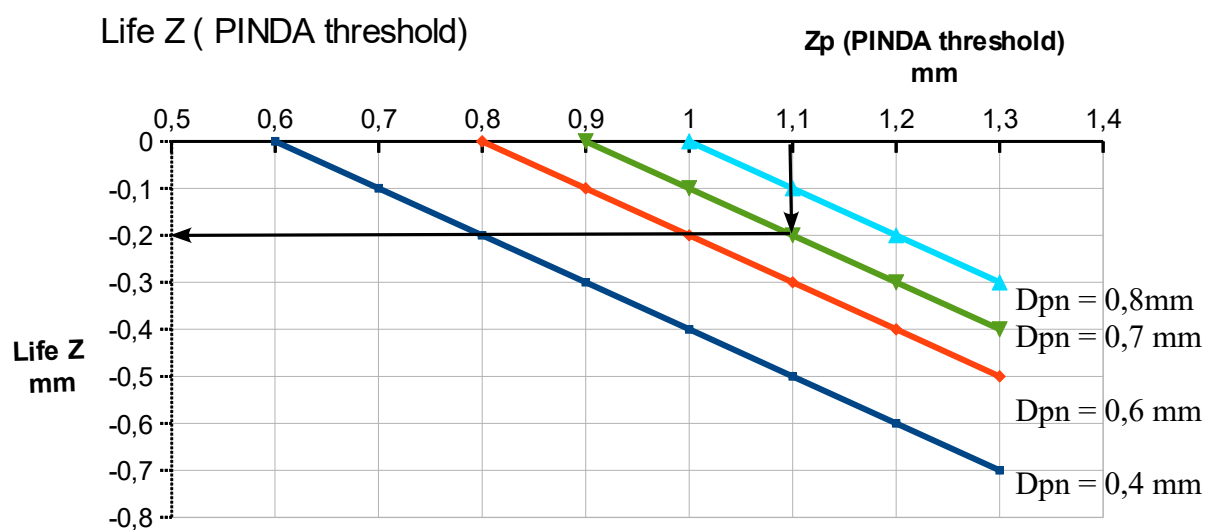
$$LZ \; \# - (ZP - Dpn - FL)$$

remark 1 : if one chooses a Dpn = 0,4 mm, LZ will have to be adjusted to # -0,7mm

remark 2 : in this example, Zp =1,3 mm correspond to a very sensitive PINDA probe, a poor or very poor probe could be such that Zp = 0,6 mm leaving much less room for the choice of Dpn (with LZ = 0, Dpn # 0,4mm !)

One can presents these results this way , with in mind that the Life Z values are indicative :
if I have a PINDA probe with a sensitivity such that it triggers around 1,1 mm and I want to
have a distance between nozzle tip and Pinda lowest face of 0,7 mm (credit card), the Life
Z value will be close to   LZ # -0,2 mm
Now the optimum will be defined by the aspect of first layer test and may be in final
 LZ = - 0,208 mm

Life Z (PINDA threshold)

Zp (PINDA threshold)
mm

| | 0,5 | 0,6 | 0,7 | 0,8 | 0,9 | 1 | 1,1 | 1,2 | 1,3 | 1,4 |

Life Z
mm

Dpn = 0,8mm
Dpn = 0,7 mm

Dpn = 0,6 mm

Dpn = 0,4 mm

 Once having a better understanding of what happens playing with these parameters at
least in one location of the heatbed, it has to be true too in the whole field.

The "mesh bed leveling" is used to get Z references in 9 points. These 9 references are
extrapolated,I suppose to cover the total area of the heat bed. But that depends , as far I
understood, of the flatness of the heatbed. Above certain values it is necessary to use the
"bed level correction" but I don't see on which basis to correct left side of 35 microns for
example, by iterations ?
The four corrections should only improve the situation in a limited number of cases. My
plane seems a bit bended and in a non symmetrical way. I read what JeffJordan said : the
release of constraints during the mounting of the heatbed is the first thing to do and expect
that will be sufficient...