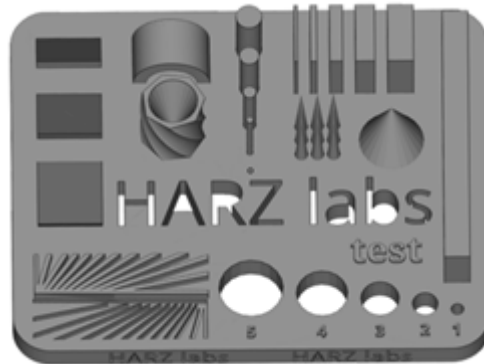Selection of optimal gaps for photopolymer 3D printing for models with analogues.

1. Selection of printing parameters based on the calibration test.

The first step is to print a standard calibration test to select print modes.

Using it, you can individually adjust the operating modes of the material and evaluate the detailing. Print results depend not only on the parameters and settings, but also on the capabilities of the printer. Not all printers are able to qualitatively polymerize material while maintaining acceptable detail. Good polymerization, in turn, avoids shrinkage and deformation over time.

2. Selection of optimal gaps according to the test

The second stage is printing a type test with seats for analogues. Each hole has its own gap, tests are located at 2 angles. In the first case, the holes are coaxial with the Z axis, in the second case they deviate 20 degrees from it. This allows you to select a suitable gap at which the analogue will be securely fixed in its place.
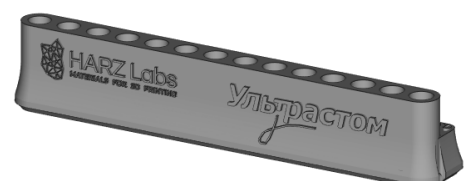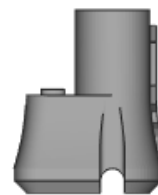
After printing the test, complete post-processing must be carried out according to the recommendations of the material manufacturer. Next, install the analogues one by one in their seats. When the fit of the analogue is satisfactory, it will be installed with little force, but

without cutting off part of the material or dangling. Carry out a similar procedure with inclined mounting holes.

This way you can select the optimal gap for your printer and material and use it when modeling your work. Please note that a significant deviation of the mounting hole from the Z axis can lead to ovalization of the hole and the impossibility of installing an analogue. In such cases, it is worth returning to setting up the printer using a calibration test and adjusting the operating modes. In some cases, you can use compensation along the Z axis, which levels out the ovalization of the hole.