



3DSYSTEMS®

3D Systems Troubleshooting Guidelines

If you observe voids in the castings, the underlying cause is usually improper burn-out. These voids are generally created in areas where there may be dislodged pieces of the ceramic shell. If you find areas of the casting where there is excess metal formed, the cause may be due to peeling or cracking of the interior plaster surface of the shell. This happens when the resin expands prior to the burnout temperature resulting in a slight breakdown of the investment.

Depending on the source of the trouble you can try one of the following options:

If the porosity comes from remaining carbon (imperfect combustion of the material) then we have most likely improper oxygen access at higher temperature. Ventilations on the burnout equipment should be opened in this case. Thicker (wax-) gatings improve oxygen access to the model. A higher water/powder ratio for the investment increases the air permeability of the mold during the burnout and can help with that.

If the bad casting comes really from broken investment one of the following things may help:

1. Better surface finish of the models. (friction between the expanding model and the mold will not break of small investment particles, which penetrated the surface roughness of poorly finished models)
2. Lower water/powder ratio increases the strength of the mold (but reduces the airflow through the mold)
3. Longer dwell time at room temperature before the burnout gives a better green strength of the mold, especially during the initial heat up and especially at the lower temperature range, when the VisiJet FTX Green is still quite stiff.
4. Avoid sharp angles, whenever possible (gatings, sprues auxillary geometries)
5. Lay the ring on it's side



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