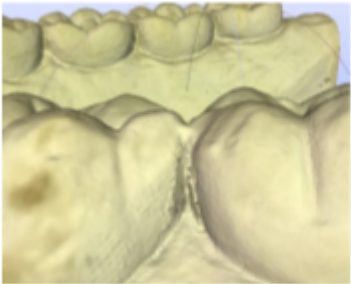
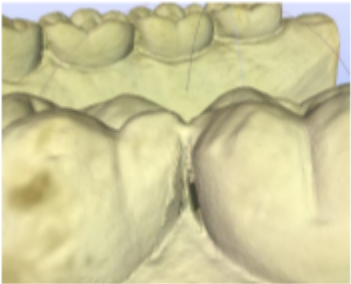
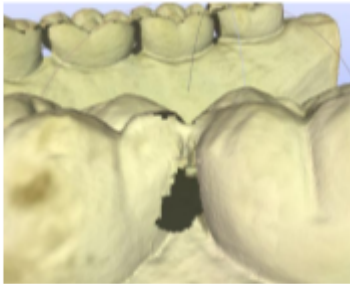





## What do all the settings do?


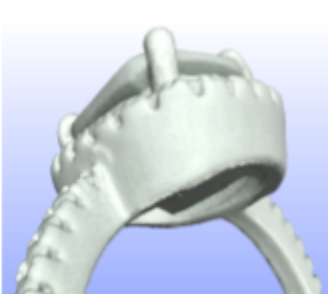
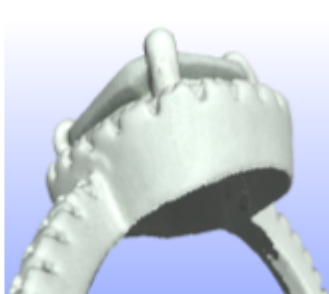
### Edge noise removal - Dental

Low	Default (Low-Medium)	High
		
Crevices captured	Crevices captured	Crevices not captured
		
Edge noise	No edge noise	Missing data

If you are having trouble with “edge noise” - turn this setting up, if parts of the scan are missing - turn it down, if there are no problems - leave it on default.

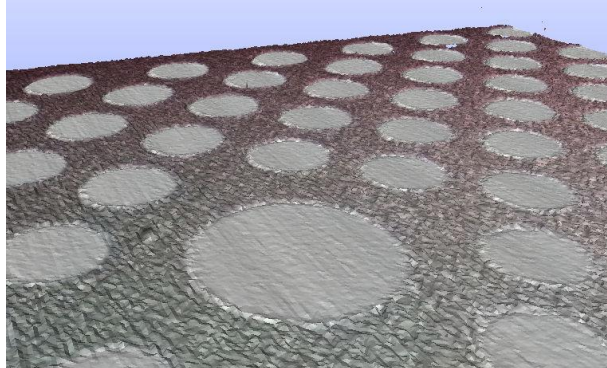
Scanners are most inaccurate at the edges of objects, edge noise removal helps, but parts of an object can go missing if it is set too high.

### Edge noise removal - jewellery example

Low	Default (Low-Medium)	High
		
Noise around edges (too low)	Noise removed (perfect)	Noise removed but some crevice data is missing (too high)

## Sensitivity and Noise Reduction

These help to detect dark objects. For the most accurate scan use a scan spray to make them white, but if you need to capture dark colours then using high sensitivity, and noise reduction can help. Note that noise reduction triples capture time, and provides no advantage on light colour objects, so generally leave it off.



This black and white calibration plate was captured using high sensitivity and noise reduction. Even so, the black parts of the calibration plate look rougher, they are so dark that the scanner can not measure them as precisely. Noise reduction helped by averaging more images of the object together to reduce this noise. Using more scan angles will help also.

## Post Processing settings

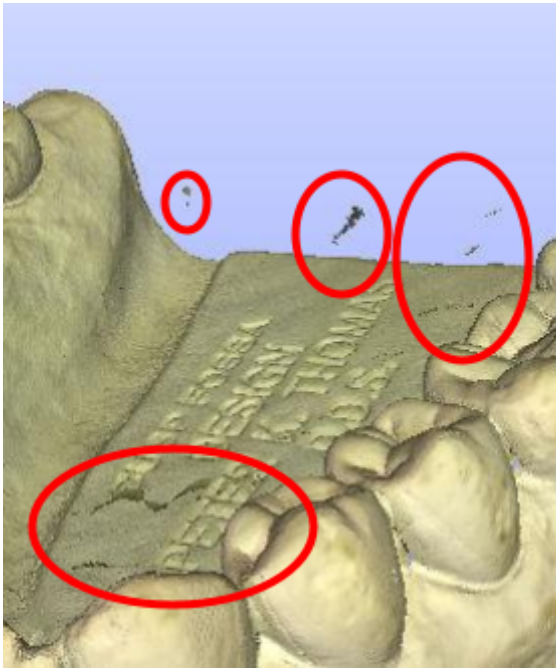
### Hole Filling



Without hole filling

With hole filling

Hole filling will fill in missing parts of the scan automatically. Notice the gaps in the Ork's shirt and chin - these have been auto-filled in the right image. The setting can be tuned to fill in only small holes, or larger holes.



### Floating Noise removal

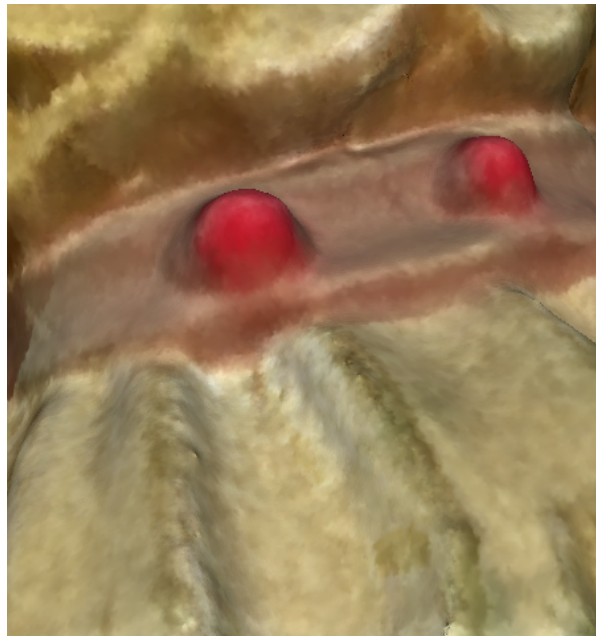
Sometimes the scanner detects "floating noise" around the object which does not actually exist (highlighted in red). These are automatically removed by Floating noise removal.

It removes any object in the scan that is small (usually the floating noise), and so leaves only the main object.

### Smoothing



No smoothing

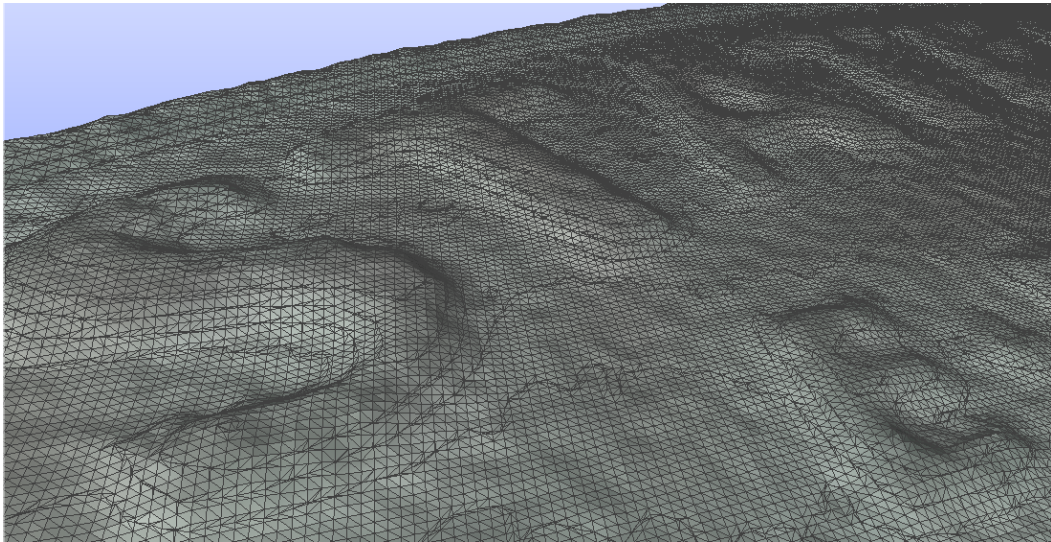


With Smoothing

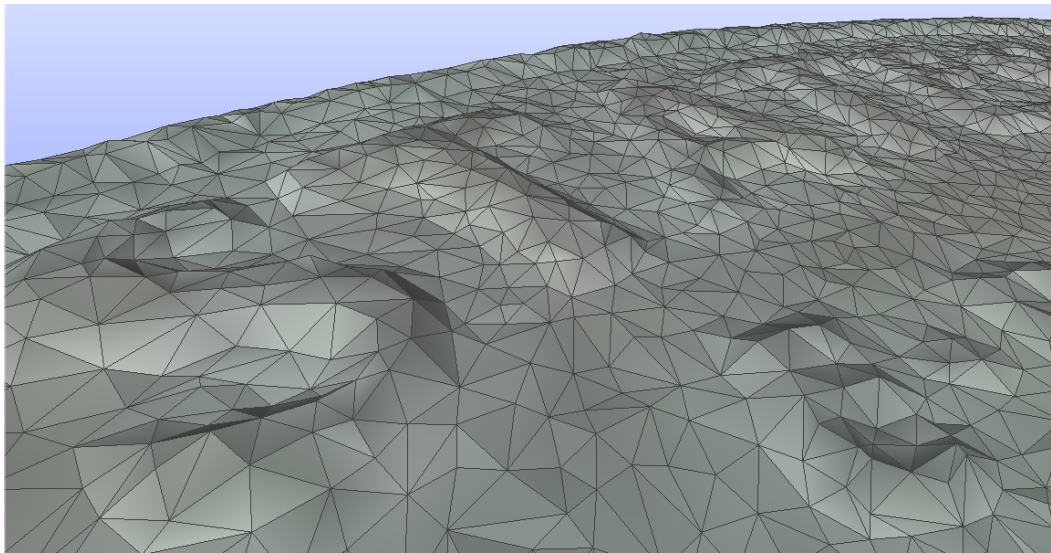
The roughness ("measurement noise") on the Ork's shirt is caused by its glossy finish, but smoothing can remove it.



## File Size



A coin scan with maximum file size



A coin scan with minimum file size

The file size setting is like a JPG compression but for a 3D scan. You can ask for high compression and small file size, or vice versa. The algorithm is intelligent enough to add more data points on curved surfaces and less on flat surfaces to maintain the best quality.

# Time saving Tips

- If you set file size to maximum it actually skips compression and takes 40 seconds or so off the processing time. You end up with huge files but you can compress them in MeshLab later if you need to.
- If you scan without any post processing settings on, you can apply them later using equivalent MeshLab functions. This makes experimentation faster.
  - The equivalent MeshLab functions are:
    - Hole Filling
      - Filters -> Remeshing... -> Close Holes.
    - Floating Noise Removal
      - Filters -> Cleaning... -> Remove isolated pieces.
    - Smoothing
      - Filters -> Smoothing... -> Laplacian smooth
    - File Size
      - Filter-> Remeshing... -> Simplification: Quadratic Edge Collapse Decimation.

## Scan spray recommendations



We recommend Aesub Orange scan spray (left) for the highest accuracy scans. It gives the object a temporary matt white coating which is the ideal scanning surface. It's thin (about 10 micrometres), and it evaporates after 24 hours so it's mess free.

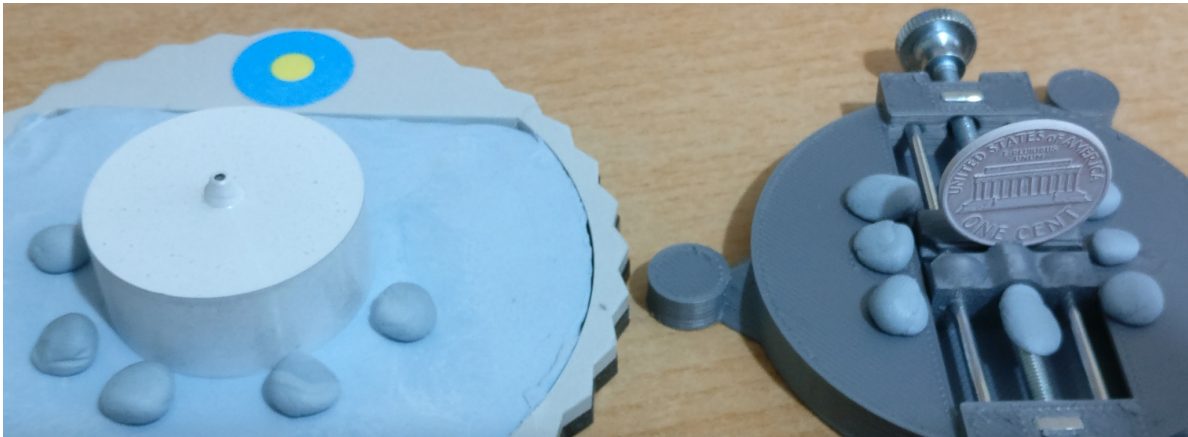
The “Frosted Glass” can be useful for colour scanning. If you wish to keep the colour, but knock the gloss off the surface for more accurate scanning, it works well. If necessary, it comes off with isopropyl alcohol.

If you'd like a permanent matt white finish, acrylic spray paint works well. It's thin too.

## Calibration

For most people a calibration can last for weeks, or until the unit is moved/ shaken. If the unit goes out of calibration “edge noise” can increase, especially in Super Resolution modes. So for the best possible scan quality, calibrate daily, after allowing the unit to warm up.

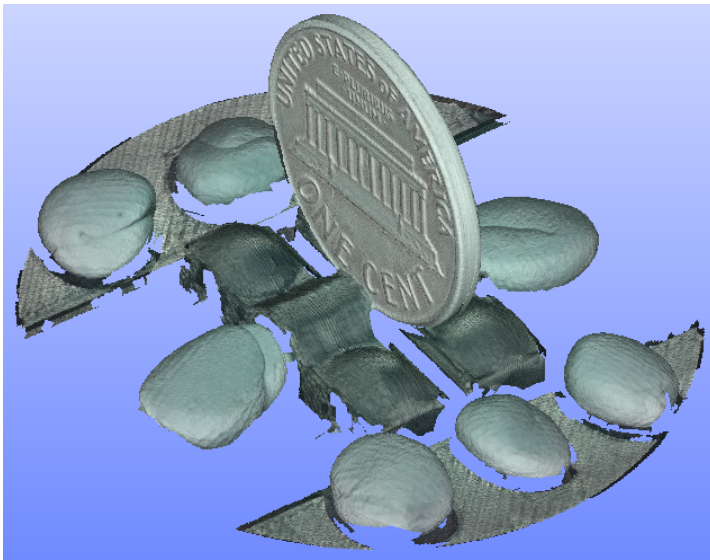
# Tips for scanning symmetrical objects.



This cylinder is perfectly symmetrical, which can cause trouble when the software tries to align the different scan angles (because a view from the side is almost identical to a view from the front and so on). A slightly odd, but outstandingly robust solution to this problem is to add small Blu Tack balls around the object which then act as 3D alignment markers.



Alignment error



Blu Tack markers allowing perfect alignment.

These Blu Tack balls can also help coin scans because otherwise it is hard for the software to align the front and rear coin surfaces (since they are never seen by the scanner at the same time).

## Further information

If you are having trouble scanning please contact us, we can provide advice or, if we do not have a solution we may be able to create one.

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