

# 3D-GeoCAM

## Advanced 3D CAM Package

- SIMPLE WIZARD
- ADVANCED MACHINING STRATEGIES
- OPTIMISED 3D CUTTER PATHS
- REDUCED CYCLE TIMES
- IMPROVED COMPONENT QUALITY
- MULTIPLE ROUGHING AND FINISHING STRATEGIES



## 3D-GeoCAM

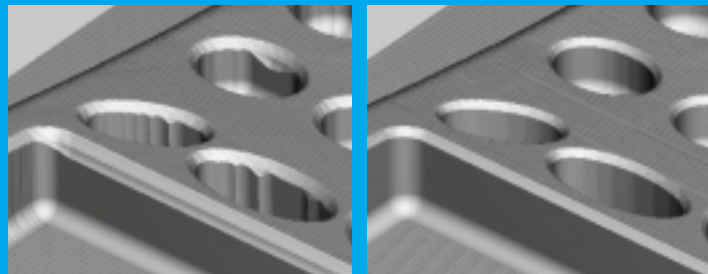
3D-GeoCAM imports a solid model from any CAD system, capable of saving files in .STL format and, using advanced machining strategies, automatically creates a cutter path suitable for CNC manufacture.

### Why do you need advanced strategies?

Very basic 3D CAM packages only use simple Raster based strategies in either the X or Y axis.

**Roughing** - simple raster strategies do not know what material has previously been removed and therefore waste time by machining areas that have already been machined. 3D-GeoCAM is intelligent, optimising the cutter path to remove the material very efficiently by avoiding areas already machined.

**Finishing** - simple raster strategies produce reduced component quality compared with those achievable through 3D-GeoCAM. See examples below.

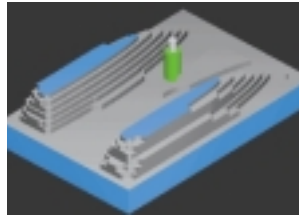


SIMPLE RASTER

3D-GeoCAM

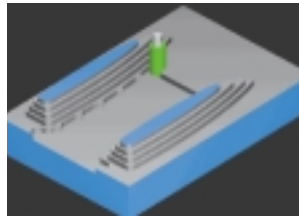
## Machining Strategies Available

### Offset Waterline Roughing



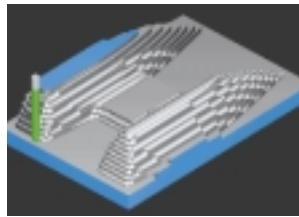
The tool path is obtained by successive offsets of the part geometry in the current horizontal plane as shown in the example opposite.

### Raster Profile Roughing



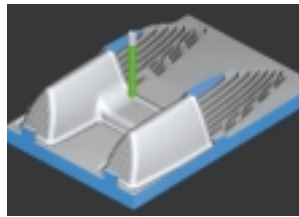
The tool moves in bi-directional straight lines (zigzag), parallel to the 'stroke angle' in the current horizontal plane as shown in the example opposite.

### Rest Roughing



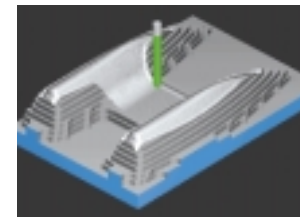
An intermediate roughing toolpath which uses the Finishing tool to remove material left by the larger Roughing Tool ensuring a consistent depth of material is left on the job prior to the finishing machining cycle. An example is shown opposite.

### Raster Profile Finishing



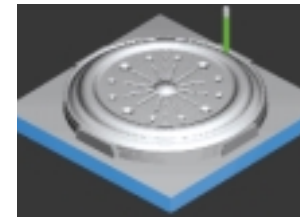
The tool moves in bi-directional straight lines (zigzag) parallel to the 'stroke angle', moving up and down in the Z axis to follow the profile of the model, as shown in the example opposite.

### Offset Finishing



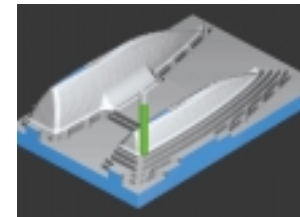
The boundary of the model defines the motion of the tool. The tool moves in repeated offsets of the boundary, moving up and down in the Z axis to follow the profile of the model, until the entire model is machined as shown in the example opposite.

### True Spiral Finishing



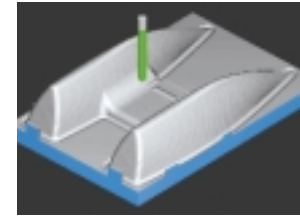
The tool moves out from the centre of the model following the path of a mathematical spiral, moving up and down in the Z axis to follow the profile of the model, as shown in the example opposite. This strategy is ideally suited to machining circular shapes.

### Z Level Finishing



The tool cuts around the profile of the model at a series of constant Z levels parallel to the X Y plane, moving in the X and Y axes to follow the profile of the model, until the lowest Z depth of the model is reached as shown in the example opposite.

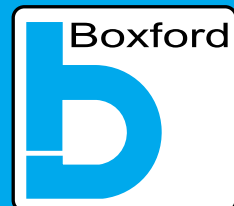
### Combination Finishing



A tool path which first uses 'Z Level Milling' for the steep areas of the model and then 'Raster Profile Milling' for the shallow areas of the model as shown in the example opposite. This will create the best possible surface finish on complex surfaces.

## Rest Finishing

An additional finishing pass which, using the current finishing tool, will remove machining marks (cusps), left by previous machining at intersects of model geometry (e.g. corners), as shown in the examples opposite.



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