

3D Creator and Geomagic® provide powerful functions for quality control and reverse engineering

The quality control becomes increasingly widely and deeply applied in the production. This requires a flexible system solution with automatic functions, just as 3D Creator and Geomagic® can provide. With this conception a big and complex object can be quickly measured by touch probe or efficiently digitalized by scanner and the data generated for further applications such as rapid prototyping, simulation or finite element analysis. The direct interfaces with the leading CAD systems enable an easy data transfer. Of course the CAD data can also be used for inspection of the prototype or production parts.



Digitization of a pipe flange



3D Creator FreeScan

System concept

The 3D Creator is an optical measuring and tracking system which transfers the position values of the free movable probe and the free movable laser scanner to the sensor unit via an infrared transfer. Therefore probe and laser scanner are furnished with active infrared emitters which are able to reach a distance of up to 5 meters. The exact position of these emitters are recorded with the highly sensitive cameras and are getting transferred via modern image calculation algorithms into X,Y,Z coordinates and the movement vectors U,V,W. So the coordinates and the vectors of the touch probe and the laser scanner are known in real time. Depending on tasks, single points or geometrical sizes can be measured with the touch probe or there can be touch less digitised free form surfaces with the laser scanner for model comparisons. The modular and compact built system can be used with different sensor units (300/500/800 mm) or as dual sensors in order to extend the measuring volume. The selection and combination of the sensor units destine the reachable size of the measuring volume as well as the accuracy, which allows a high degree of freedom in defining dedicated customer solutions.

System modules

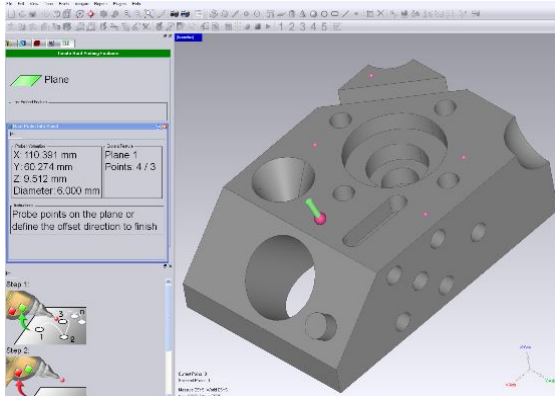
The 3D Creator consists on a sensor unit, control unit which is connected via USB with a PC or Notebook, the free movable probe with load station. The complete system can be packed in a portable case and therefore it is very mobile usable. The 3D Creator DUAL requires an additional sensor with control unit. The both sensor units are synchronized by master slave concept of the control units and can be used in opposite or parallel positions.

Software

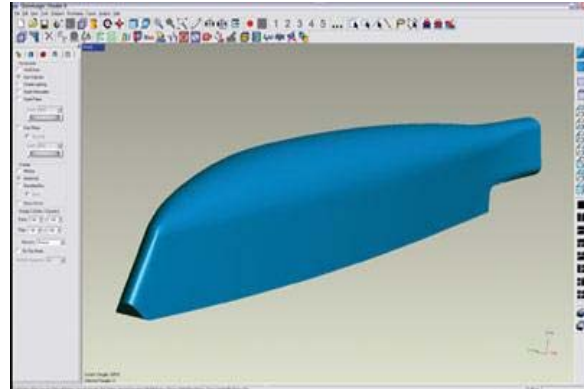
Geomagic has two modules for different applications:

Geomagic Quality - Computer-aided quality controlling software, which allows to accelerate the control process and provides extensive analysis and reports capabilities.

Geomagic Studio - Surface reconstruction software, which offers comprehensive features for building digital models from real parts.



Geomagic Quality



Geomagic Studio

Product features

Geomagic Quality

- Point Cloud and Polygon Processing
- Alignment
- Datum Creation
- 3D Comparison
- Dimensioning and Analysis
- Feature Evaluation
- Annotations and Locations
- GD&T
- Blade Analysis
- Gap & Flush
- Report Generation
- User Interface
- Developer Tools

Geomagic Studio

- Scan Registration Tools
- Point Processing
- Polygon Creation and Repair
- Polygon Editing
- Design Intent Extraction
- NURBS Surface Creation
- Analysis
- Color Support
- Tools
- Automation and Large Data Handling
- User Interface
- Developer Tools



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