

3D Creator and PowerINSPECT offers an efficient Solution for complex 3D Inspection Tasks

Modern quality control requires innovative and powerful measuring systems, which allows fast and precise comparison of most complex parts with the original CAD model. The 3D Creator system and PowerINSPECT provides the functionalities and performance to fulfill all these requirements.



3D Creator measuring a car body



3D Creator for aircraft inspection

System concept

The 3D Creator is an optical measuring and tracking system which transfers the position values of the freely movable probe to the sensor unit via infrared transfer. Therefore the handheld probe is incorporated with active infrared emitters which are visible to the sensor even at a distance up to five meters. The exact positions of these emitters are recorded with the highly sensitive cameras and are transferred with modern image calculation algorithms into XYZ coordinates and the orientation vectors. This modular and compact system can be used with different individual or connected sensor units in order to increase the measuring volume. The positioning of the sensor units decides the measuring volume as well as the accuracy. This allows a high degree of freedom in defining dedicated customised solutions.

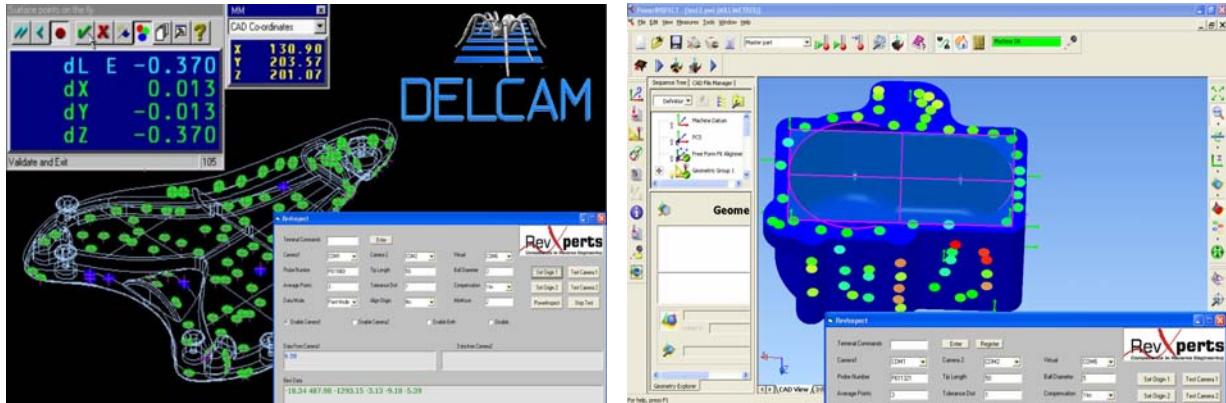
System modules

The 3D Creator consists on a sensor unit, control unit which is connected via USB with a PC or Notebook, the freely movable probe with charging unit and the stand. 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 and stand. Then both sensor units are synchronised by the software interface .

PowerINSPECT

Especially for all complex 3D inspections- and measurement tasks, PowerINSPECT from DELCAM a leading and widely used solution integrated with the 3D Creator is available. The interface between the PowerINSECT and the 3D Creator systems is provided by RevXperts which allows the users to check all the status messages and to input all the parameters. The typical application areas of PowerINSPECT are the 3D inspection of prototypes, production parts, mould, tools, electrodes, master pieces etc. The measurement values can be taken interactively either in point mode or scan mode by the freely movable probe of the 3D Creator. Various types of file formats like STL, IGES, VDA , file formats from almost all the leading CAD systems like CATIA, PRO/E/ SolidWorks, Unigraphics and so on are supported. In all cases PowerINSPECT offers a high degree of functionalities combined with user friendly interface. This solution allows comparison of the parts after the production process with the original 3D CAD model and analyse the deviations. The results can be easily printed as

tables, diagrams or as graphical format either in HTML or Excel file. This kind of inspection procedure is becoming an important part of quality control as now-a-days the most construction data is available in 3D CAD models rather than in 2D drawings. PowerINSPECT and the 3DCreatorDUAL provide an easy way to inspect even very large parts in an user friendly manner. This provides an opportunity to detect failures in an early phase of the manufacturing process and can be corrected immediately with in turn helps to reduce the cost and time.



PowerINSPECT user interfaces with parameter settings for the 3D Creator

Product features

- Fast alignment even for complex free form surfaces
- Alignment can be done in different ways depending on the object
- Automatic extraction of nominal values from the CAD models, can be compared with the measured once
- The deviations are displayed either in confetti, labels or in place values
- CAD manipulation – allows to inspect different layers of sheet metals with varying thickness
- Provide comprehensive graphical reports which helps to recognising deviations at a glance.
- Design and print customised reports
- The following file formats can be accessed: CATIA Import / Export
SolidWorks Import, Unigraphics Import, Pro/E Import, Rhino Import / Export, etc.
- The following standard file formats support: IGES, VDA, STEP, Autocad

PowerINSPECT in combination with the 3D Creator provides an extraordinary powerful, flexible and very efficient solution for 3D inspection and measuring tasks. It also can handle very big components effectively and can be controlled by a real time comparison with the original 3D CAD model.



Innovative Products for Efficient Solutions