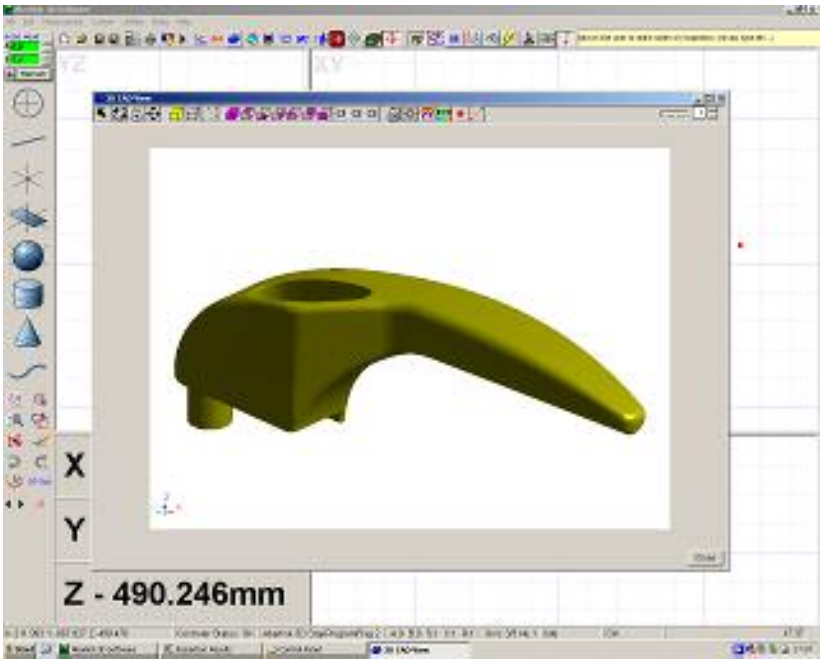
ABERLINK CAD COMPARISON MODULE

……sometimes measuring against a CAD model is the only solution

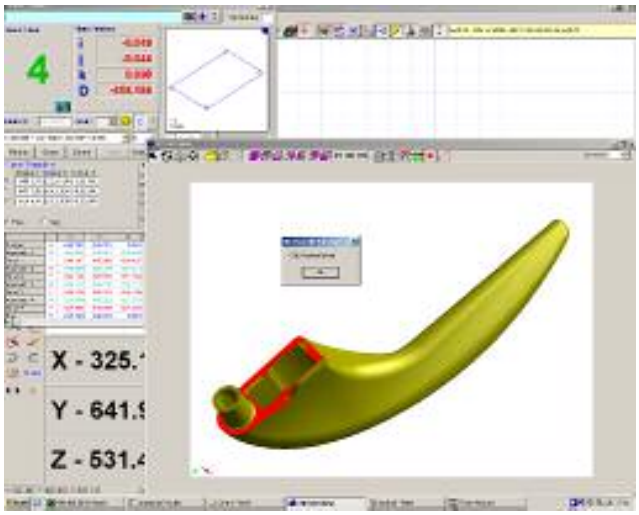
Aberlink 3D geometric measurement software has become the industry standard, easy-to-use software when geometric features need to be measured against a drawing. However, sometimes components also contain complex surfaces, or maybe conventional drawings for a component simply don't exist. In this situation the only way to inspect a part maybe against its CAD model.

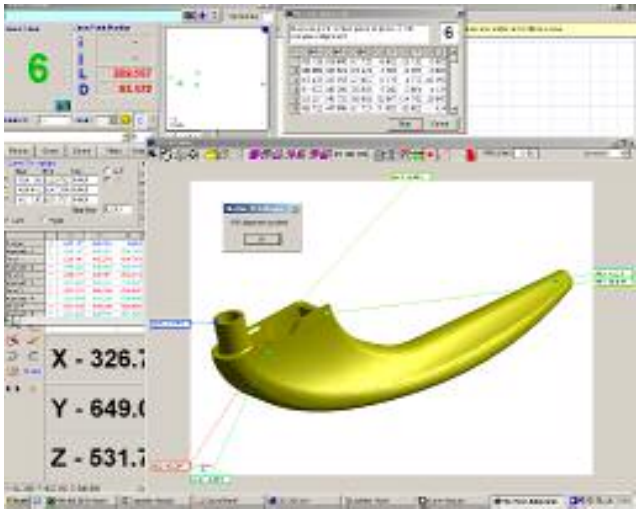


Aberlink's CAD comparison module allows users of the Aberlink 3D software to import a solid model from CAD in either a STEP or an IGES format, and then take measurements using the CAD model as master data. This can be done on either a manual CMM or in full CNC mode.

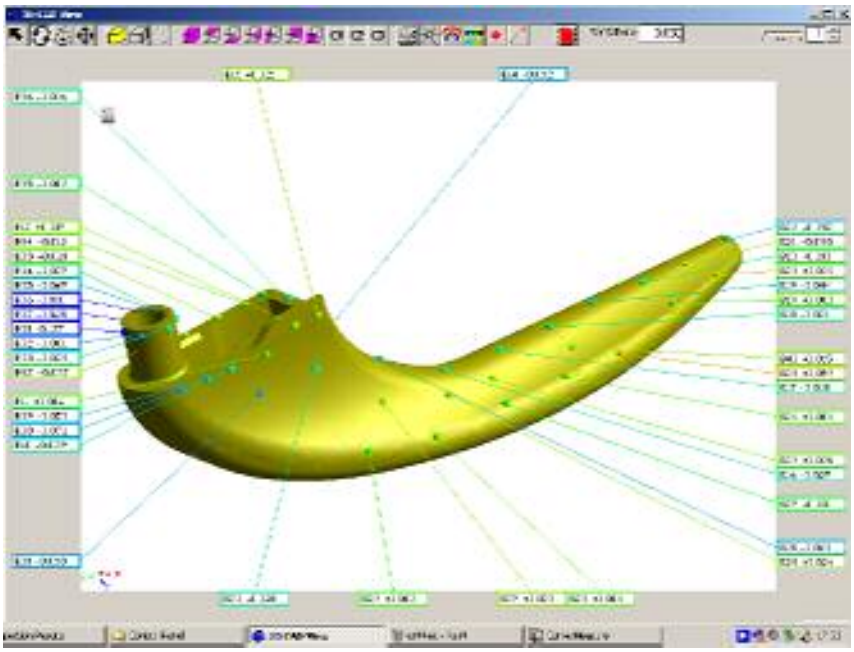
The solid model appears in an additional floating window on top of the main Aberlink 3D screen. The user can manipulate the view of the model by rotating, zooming, panning or simply use the buttons provided to produce a standard isometric view, one of six 2D views, or alternatively up to three custom views that can be saved as required.

Alignment of the part to the CAD model can be done in a number of ways using either geometric features, or by best-fitting through measured points on the component's surface, or by a combination of both methods.

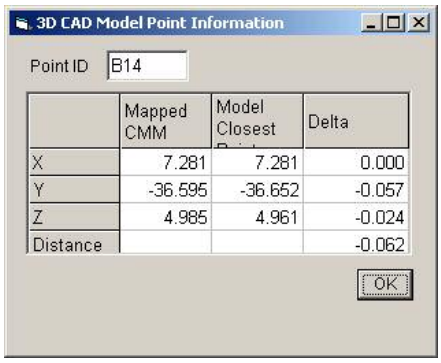


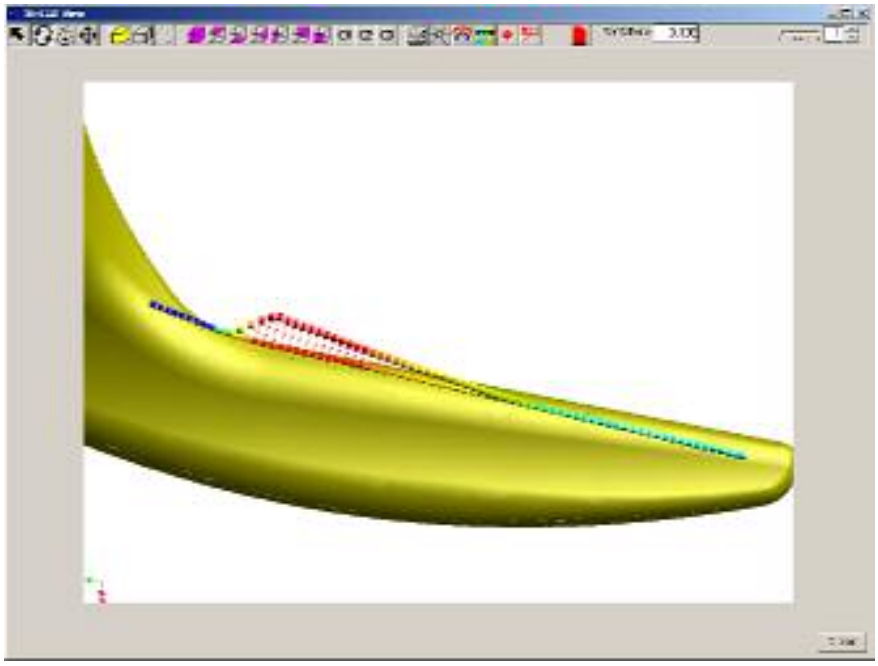


Having aligned to the CAD model, any points taken in any measured feature will now appear in the CAD window. These points will be displayed as a colour-coded dot on the model, and can either have a line leading to a box showing the error of the measured point, or alternatively the length of the attached line can be proportional to the error. In this way it is easy to visualise the distortion of a surface relative to the theoretical model:



Detailed information about each point can be viewed simply by clicking on the error box:

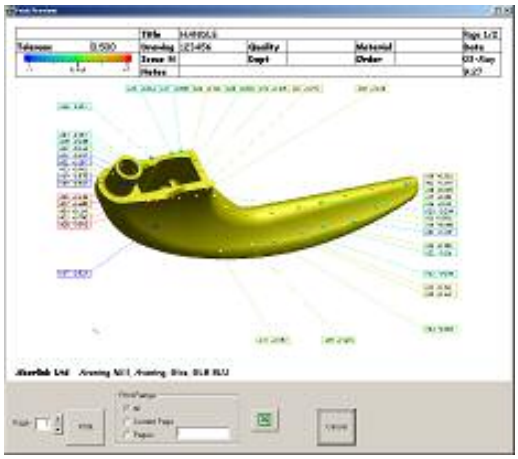




The colours used to represent the error can be displayed either as a colour spectrum (green = zero error, blue = out of tolerance below limit and red = out of tolerance above limit, with different shades of colours in between) or as distinct colour bands. The colour spectrum or bands are fully configurable by the user, together with other variables such as tolerance and scale.

The best-fit function allows full 3D re-alignment of the model in order to minimise the RMS errors of any set of measured points within a curve unit.

Reports can be prepared at the click of a mouse button and can be either graphical or in a tabulated format, or printed as a combination of both. Reports can be built up from multiple features or multiple inspections, which can be printed from within the Aberlink software or alternatively exported as an Excel file.



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