Engineering & Manufacturing Pain Relief by ShaPix®

Flatness:

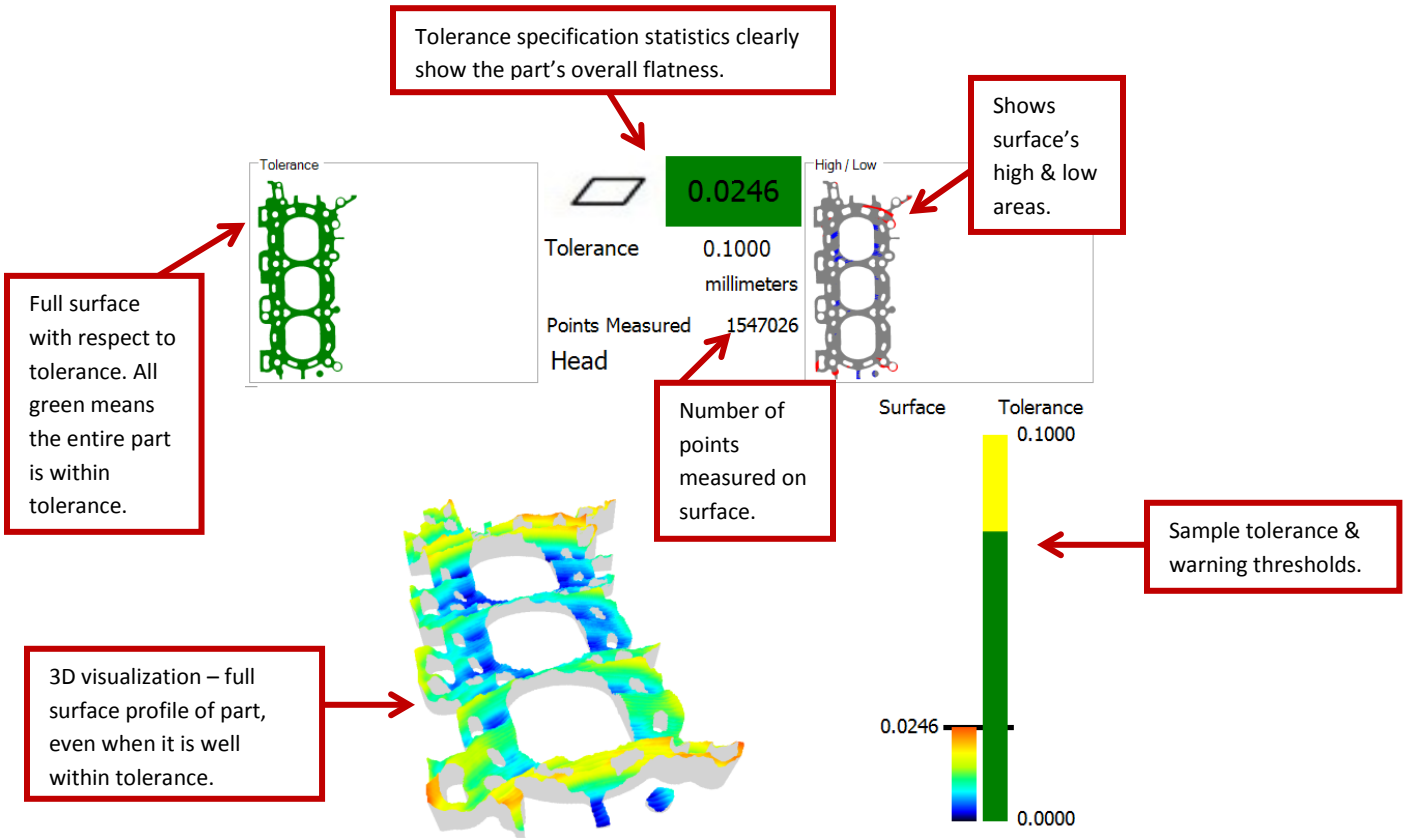
Flatness is a key specification that designers use to control surface variation on manufactured planar surfaces. A surface's flatness is specified to give production confidence in the part's functionality. Traditionally, flatness can be measured with as few as four points and can be measured with a variety of gauges.

Through Coherix's experience with manufacturers and suppliers who are having trouble with part functionality due to flatness, it has been found that without full surface measurements, it is hard to isolate the variables and pinpoint the problem. Customers that have had stable processes for a long time still experience unexpected variables that cause the part to stop functioning properly as a result of flatness. With manufacturers using a variety of suppliers who use different processes of machining and metrology for the same parts, problems with consistency and surface shape arise.

The ShaPix Flatness Solution:

The ShaPix® family of solutions is based on a state-of-the-art, non-contact sensor which is used to capture full 3D data on planar surfaces. This combination of the ShaPix sensor technology and Coherix's powerful surface analysis software provides a complete flatness solution delivering a powerful understanding of the surface and the process that produced it. The ShaPix flatness solution involves full surface metrology and visualization:

- In minutes
- With sub-micron uncertainty in Z
- Using non-contact metrology
-



Assembly Verification & Error Proofing | High-Speed 3D Vision Inspection | High-Speed 2D Inspection | Full 3D Surface Metrology
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How ShaPix Does the Job:

ShaPix employs unique multi-wavelength optical interferometry to simultaneously capture, in full 3D, hundreds of points per square millimeter and millions of points across a typical surface. With sub-micron accuracy, this non-contact, large field of view interferometer images surfaces with high lateral resolution enabling surface waviness analysis over the entire surface. The unique optical design captures measurements of the surface without the effect of shadowing. This enables the capability see down into pockets, grooves, around bolts and other surface structures. Due to its advanced optical design, ShaPix can measure surfaces as bright as mirrors and surfaces as dark as brake pads. Surfaces of any size can be measured using accurate 3D stitching algorithms.

The high-definition surface measurements are displayed in easy to understand, 3D images and reports that provide information about deviations from the required shape and/or design intent. The 3D visualization and the quantitative comparisons to tolerances and design specifications provide for an in-depth understanding of the part and the production process. This leads to a clear identification of the source of potential flatness issues in minutes. This fast and flexible solution can be found in a ShaPix 1500 Series or 3000 Series system that sits next to the production line or in a metrology lab.

With this technology, any pain-causing issue on the production line, machine tool dial-in challenges during launch, or even design factors that need to be corrected during new product engineering, are made obvious as soon as they arise. The engineering design and launch processes are sped up and plant production efficiency is continuously optimized.

Coherix's goal is to provide solutions that enable manufacturers to produce parts faster, with higher quality and at a lower cost. ShaPix is the full 3D metrology solution for when microns matter.

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