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A Comparison between Discrete and Continuous Scanning with Conoscopic Holography

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Abstract

Low density digitizing is a suitable approach for verification distances between pairs of machined flat surfaces. When defining a digitizing procedure of this type of features, two approaches could be applied: discrete or continuous scanning. Discrete Scanning (D) is performed with a static sensor, but the information for each single measurement comes from a constrained area. On the other hand, since Continuous Scanning (C) is carried out with a moving sensor, the information for each single measurement comes from a swept area. In this work, a comparison between these two approaches, when digitizing with a Conoscopic Holography sensor, is performed. The main objective is to establish their influence upon surface reconstruction quality and, thereafter, upon measurement reliability.

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1. Introduction

Tasks involving inspection and/or verification of manufactured parts are becoming increasingly important in modern highly-competitive markets, where product quality and cost reduction show up as key issues. Under these circumstances, non-contact measuring systems have become of great importance in the field of quality control,

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