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Abstract
In these days, the hardware of measurement has gotten lots of improvement. The demand on high precision is also gradually on the rise. Therefore, the test of measurement is highly emphasized. Now it is not easy to move the massive size of a Coordinate Measuring Machines(CMM). With the increasing of high precision, the price of the machine is getting higher. Therefore, the main purpose of the study is to develop a portable CMM with low cost and micro/nano precision to be used in the industry and research units.

The CMM software is written for Borland C++ Builder computer language.The program in the research is developed by using the technique of the object-oriented and the three dimensional graphics. With measurement theories applied, CMM software is to establish an easy-operated measurement environment and contains some basic measurement functions such as basic elements ( including point, line, circle, width, sphere, cylinder/hole, plane and central line, etc.) Besides, by using basic elements, the software constructs geometric relativity (distance, degree, and geometric tolerance) and the results are visualized by using the computer graphics library.
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