DESIGN AND CONSTRUCTION MECHANISM
MOVEMENT OF MEASUREMENT TOOL FOR PERPENDICULARITY

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Abstract
To complete the measurement tool of geometry in Labaratorium Design and Product Development Engineering of ITS, in 2004 developed measurement tool deviations for perpendicularity by students of Mechanical Engineering, Wiantandityo using sensors Linear Variable Differential Transformer (LVDT) based computer. However, the mechanism motion of sensor is still manually, so that the measurement process takes a long time.

To overcome the above problems are designed measurement tool for perpendicularity which the sensor carriages mechanism is automatically controlled by the control unit, this control is used to set the motion of sensors carriage move up and down. A control unit equipped with the software Visual Basic 6.0. Components are controlled is a DC motor which is connected with screw drivers, so the LVDT sensor can move up and down automatically according to distance and position are determined. The design component is realized to the production to be made. The components then assembled into the mechanism of motion measuring instrument, which then assembled with the control unit into a measurement tool for perpendicularity with automatic controls.

From the design and testing of measurement tool is done, get performance test gauge with standard gauge square spirit level, with a value of 175 µm deviation. And standard cylinder deviation obtained with a value of 210µm. Because with standard
cylinder deviation get value is relatively large, so as a compensation of measure determined from the measurement plane to the standard cylinder. This instrument can be used for measurement perpendiculirity linear cylinder axis and the field perpendicular to the plane.

**Keywords**: mechanism motion, perpendiculirity, accuracy, LVDT