ABSTRACT

To measuring the level of the metal surface flatness, there are many different ways as well as the measuring device. One way is by using surface flatness measuring device as developed at the Planning and Product Development Laboratory Mechanical Engineering Department FTI-ITS. Surface flatness measuring device which has been designed, its operation is difficult, the cessation of LVDT or Dial Indicators at each measurement point is not stable, if there is a change direction movement of LVDT or Dial indicator will shift the position of measurement points.

Than 3 times the test surface flatness measurement using the Union Jack there is a maximum flatness deviation of 117 μm, while the result of 3 times the test surface flatness measurement with Kisi methods have maximum flatness deviation of 107 μm. To overcome this problem, the surface flatness measuring device developed by the Programmable Logic controller (PLC), the PLC control unit is easy to do when there are problems with tracking, monitoring can be done visually with the computer, if there is input or output that does not work.

From designing and testing has been done both methods, The Kisi and Union Jack was found that surface flatness measuring device can measure with a maximum deviation of 3 μm for the method The Union Jack, while the maximum deviation for Kisi method is 5 mm. From both deviation assumed that surface flatness measuring device have deviation of 5 μm.

Keywords: flatness measuring device, PLC