

Abstract

THREE-DIMENSIONAL SURFACE ROUGHNESS EVALUATING DEVICE, THREE-DIMENSIONAL SURFACE ROUGHNESS EVALUATING METHOD, THREE-DIMENSIONAL SURFACE ROUGHNESS DATA ACQUIRING DEVICE, AND THREE-DIMENSIONAL SURFACE ROUGHNESS DATA ACQUIRING METHOD

A three-dimensional surface roughness evaluating device includes: a two-dimensional laser displacement meter; a movement mechanism which moves the two-dimensional laser displacement meter in an X-axis direction; a movement distance measuring device which measures a movement distance of the two-dimensional laser displacement meter in the X-axis direction; and a calculating device which generates three-dimensional surface roughness data of a measurement target on the basis of displacement data acquired by the two-dimensional laser displacement meter and movement distance data acquired by the movement distance measuring device, wherein the two-dimensional laser displacement meter is disposed so that the width direction of the two-dimensional laser displacement meter coincides with a Y-axis direction, to be able to measure displacement data of coordinates in the Y-axis direction at fixed intervals, the measuring width of the two-dimensional laser displacement meter is at least two or more times mean width of the roughness profile elements R_{Sm} of elements of the measurement target, and the calculating device is configured to generate reference surface data of each coordinate by averaging in the Y-axis direction the displacement data acquired at fixed intervals in the X-axis direction by the two-dimensional laser displacement meter, and generate three-dimensional surface roughness data of the measurement target by subtracting the reference surface data of each coordinate from the displacement data of each X-Y plane coordinate.

Fig. 1