

Abstract

1. A method and device for measuring the height at which object edges of components are positioned in automatic component mounting machines

2.1. Known devices use triangulation methods to investigate the coplanarity of terminals (2) on components (1) in automatic component mounting machines. The use of laser light in this case results in an intense, undesired surface sensitivity. In the case of shadow-casting methods, terminals (2) are imaged sharply on a sensor (7) only when the terminals (2) are accurately positioned.

2.2. Object edges (terminals) (2) are illuminated with parallel light and imaged with the aid of a lens (6) on a sensor (7). By means of the telecentric imaging, a sharp image of the shadow of objects edges (2) is obtained on a sensor (7) even when the object edges are located in a region between a collimator (5) and the lens (6).

2.3. Testing of coplanarity in the case of automatic component mounting machines

3. FIGURE 4

