

Abstract

1. Apparatus and method for detecting the position of components and/or for checking the position of connections of components and component-mounting head having an apparatus for detecting the position of components and/or for checking the position of connections of components.

2.1. In the context of flip-chip mounting with an automatic component-mounting machine, the incidence of perpendicularly incident light and obliquely incident light on all sides does not, in some instances, illuminate the connections (14) of components (2) well enough to determine the position thereof, after the components (2) have been imaged onto a camera (11) in an image evaluation unit connected downstream of the camera (11).

2.2. By illuminating the components (2) with perpendicularly incident light, with obliquely incident light on all sides, and with horizontally incident light, the side areas of the components (2) and thus protruding connections (14) as well are illuminated to a sufficient extent. For full horizontal illumination, a light-deflecting body (18) is constructed in such a way that the light from a third light source (15) is radiated into the light-deflecting body (18), reflected from a first outer wall (21) of the light-deflecting body (18) and radiated into an opening (20) in the light-deflecting body (18).

2.3. Component-mounting head for flip-chip mounting.

3. FIG. 1