

Capaciflector-Guided Mechanisms

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DESCRIPTION

The system includes a number of capaciflector proximity sensors, one or more of which may be overlaid on each other, and at least one shield which is mounted on a device guided by a robot so as to "see" a designated surface, hole or raised portion of an object, for example, in three dimensions. Individual current-measuring voltage follower circuits interface the sensors and shield to a common AC signal source. As the device approaches the object, the sensors respond by a change in the currents through them. The currents are detected by the respective current-measuring voltage follower circuits with the outputs thereof being fed to a robot controller. The device is caused to move under robot control in a predetermined pattern over the object while directly referencing each other without any offsets, whereupon by a process of minimization of the sensed currents, the device is dithered or "wiggled" into position for a soft touchdown or contact without any prior contact with the object.

FEATURES AND BENEFITS

- The technology allows for a robot to guide a piece of object into contact with another without misalignments and undesired collisions, and achieve precise pre-contact final alignment and soft touch-down on or in opposing surface.

APPLICATIONS

- Aerospace
- Aviation
- Robotics

FOR MORE INFORMATION

If you are interested in more information or want to pursue transfer of this technology, GSC-13614-1, please contact:

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