

GRIPPLANNING®

Automated calculation of grip points for complex shaped components

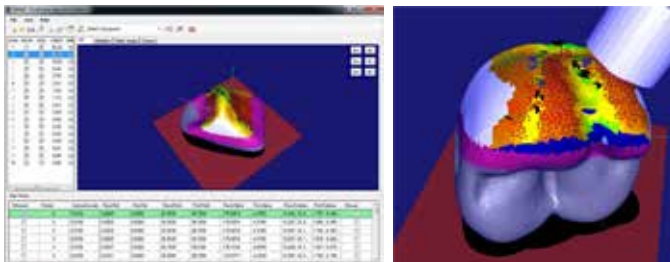
GRIPPLANNING® is a software package for automated position calculation and calculation of handle points for manipulation tasks using robots.

Tasks & Application:

Detection of freely positioned complex / organically shaped components with a large variety of objects for automated pick & place applications. Can also be used for simple parts with high diversity.

Process

- Detection of the orientation and alignment of the components from the loose position.
- Pre-calculation of the possible and impossible stable positions based on the CAD geometry.
- Determination of the position and calculation of the handle positions on the model surface.
- Control of a robot gripper in three-dimensional space for picking up and placing at a defined position.



Automatic determination of the best handle point for each stable position considering surface curvature, center of gravity, surface normal-, attack vector orientation and the desired storage position.

Advantage & Benefit

- ✓ No manually pre-orientation and alignment of the components necessary.
- ✓ Setup time and teaching errors highly reduced by automatic learning process.
- ✓ Usable with any 3D data sets for a wide variety of applications.
- ✓ Robot-calibration gripper tool for small components (cranked suction cup).
- ✓ Can be flexible adapted to customer-specific gripper geometries.

Reference project

TMM® Tooth Mounting Machine by WESTCAM Technologies GmbH

Manipulation of Denture teeth

2,000 differently shaped teeth with up to 20 stable layers, each with 10 handle points, are placed in the correct position in a counter mold with a cycle time of less than 2 seconds.



YOUR project

Let us know which complex applications and requirements we can implement for you and/or your customers with our licensed software package for GRIPPLANNING®.

Contact us

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