Constantly reliable and precise

VMT™ PickFinder 3D

VMT
PEPPERL+FUCHS

Object recognition in random sequences

The VMT™ PickFinder 3D system recognizes objects in sorted and unsorted sequences and reliably determines grip coordinates for subsequent processing by handling machines or robot.

Intelligent multi-point web-guidance ensures that the grip is smoothly inserted in and removed from the container, which can be controlled both in terms of position and in terms of its shape by the VMT™ PickFinder System.

Secondary handle strategies allow recognition, correction or avoidance possibilities when components may not be correctly prepared, in order to avoid empty runs in the process and to guarantee optimum process time.

Image acquisition

At the start of a grip process, the sensor acquires an image of the component setting. In the normal case, the robot is in the handling process at this time in order to process or drop the previously gripped part.

Raw data processing

The recorded raw data are transferred to the PickFinder software and routed through pre-processing, which filters for compression information. The optimized data are finally processed by an intelligent search algorithm that looks for a component in the data that has previously been programed in by the installation wizard. This way, a component can either be scanned in by the system itself or be represented by a CAD file that corresponds to it.

Pick strategy

The search results in the form of position coordinates of the part that has been found are sorted in a list according to grip attractiveness by the PickFinder 3D. In this list, decisive parameters are for example the attainability and absence of collision of a component in order to be able to discover it as easily as possible in the container.

The corresponding grip-point list can be made available to the robot in order to be able to use a secondary handle strategy.

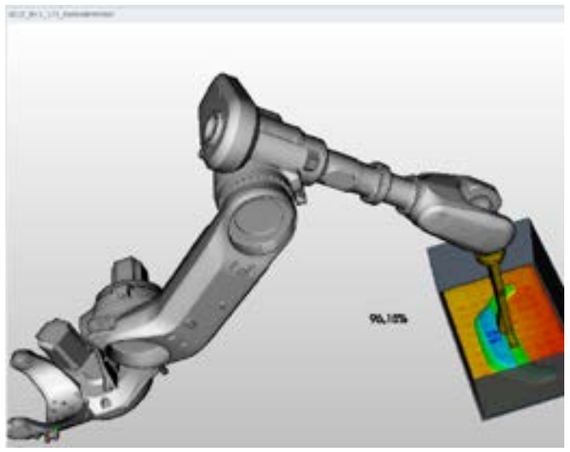
Multi-point path guidance

If a grip-point is reached by the robot, this is carried out by multi-point web guidance that the robot guides collision-free over support point through the container and the setting both in start-up procedure and in retraction procedure. Gripper information that either signals the presence of a component in the gripper or even display its correct position in the gripper can be processed during gripping.

Highlights

- Reliable recognition using 3D Point Cloud
- Box recognition in distortion and position
- Secondary handle strategies with intelligent gripping
- Simple auto-calibration
- Installation wizard

Features



- **Reliable**
  Negative effects caused by reflections or interfering light can be nearly totally compensated based on efficient raw data pre-processing.

- **Simple installation**
  An intuitive installation wizard supports the user in the learning process for components to be found and grip points

- **Intelligent**
  The parts do not have to be homogeneous; recognition of several models is possible in a setting

- **Completely configurable**
  PickFinder 3D makes a broadly diversified parameter field available to the user in order to adapt the system perfectly to his task definition.

- **Different user levels**
  The software can be deployed exactly at a user 's application knowledge by means of several user levels. Nearly every menu function can be activated or deactivated for each user from only basic functions to a complete range of settings.
- **Grip recognition**
  Information from intelligent grips can be processed by the system and deployed for use in a possible secondary handle strategy.

- **Secondary handle strategies**
  PickFinder 3D searches by measuring several possible grip points and sorts them according to processing attractiveness. If a part was not gripped , further grip points are available that can be used directly without further measurement.

- **Container recognition**
  The container position will be encompassed by the system and adapts its working area to the immediate setting. In this way , fluctuations in container positioning can be compensated and expensive fastenings saved. Not only is the position but also possible distortion of the container dynamically detected again for each container by PickFinder 3D. If the container has been damaged, no danger of collision will occur through container distortion and the application keeps on running.

- **Sensor independence**
  PickFinder 3D functions with user-defined 3D sensors.

Solution Excellence for Your Vision

VMT Vision Machine Technic Bildverarbeitungssysteme GmbH is your leading automation partner for machine vision turnkey solutions worldwide. VMT® develops and supplies customized machine vision, robot vision, and laser sensor systems for all industrial sectors using our self-developed state-of-the-art hardware and software products. As a professional consultant, VMT® provides objective solutions tailored to individual applications.
Our technical services cover the complete life cycle of your machine vision solution, including planning, commissioning, installation, and system integration as well as training, maintenance, and upgrade services. With more than 30 years of experience in industrial machine vision applications, you can be confident that VMT® will provide proven solutions for your operation that nobody else can match.

VMT
PEPPERL+FUCHS

www.vmt-systems.com