



BIN PICKING –

**3D POSITION RECOGNITION WITH
LASER MEASUREMENT TECHNOLOGY**

Bin picking is one of the systems with highest interest of the industry, in order to automate the production process, to increase the capacities and to lower the costs.

The VMT D/P system enables different sensors (triangulation or light runtime) and cameras to be combined and to extract the necessary information by means of proven evaluation procedures, so that reliable systems can be offered, which ensure the highest possible availability.

The system is based on 3D evaluation by means of camera technology and/or a height image for the controlling the robot grippers generated by measuring the runtime of the light.

However a minimum organization of parts to be recognized and detailed, individual case studies remain absolutely necessary, if the high requirements for the installations availability and profitability are to be ensured.

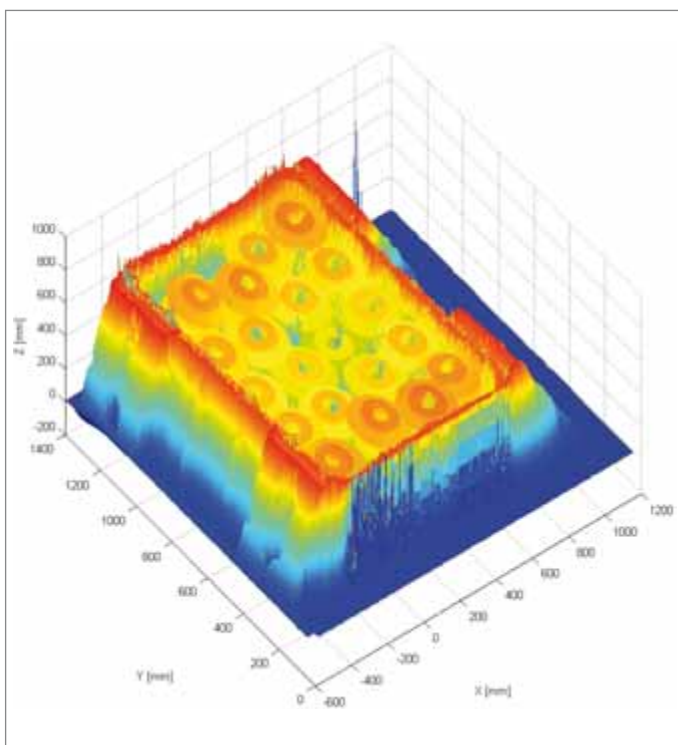
The requirements for palletizing and depalletizing items from containers or pallets and the handling of parts and various bundles are very complex.

The substantial challenges of these tasks are:

- Item complexity and variability
- The very different surfaces of the objects to be processed
- Recognition of containers, intermediate layers, where applicable, and also foreign objects and disruptive contours
- Exclusion of external light interference

This kind of sensor technology provides not only significant freedom from external light interference for the testing process but also the requisite speed, and fulfills the requirements for accuracy.

Additional information is also available for determining, for example, the stack height and recognizing foreign objects; this is often not available when using traditional image processing.



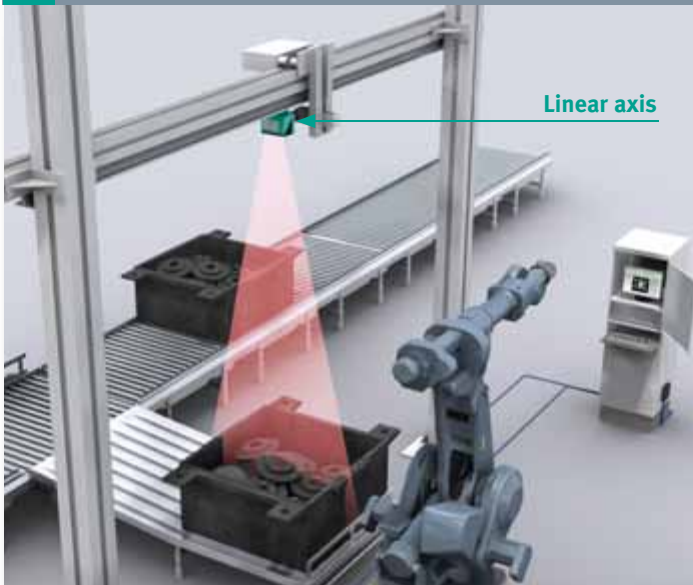
APPLICATION EXAMPLES

- Robot-supported unloading of untreated brake disks
- Depalletizing of unsorted types of rims
- Container, barrel and bag unstacking, pallets
- Tire depalletizing
- Gripping unfinished castings, such as cylinder heads and engine casings

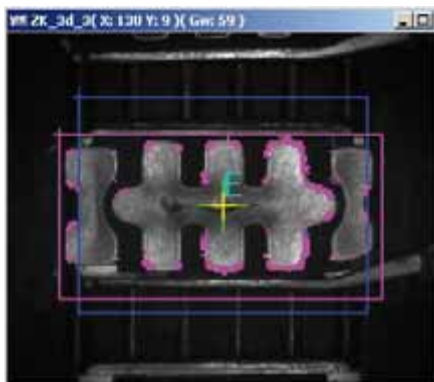
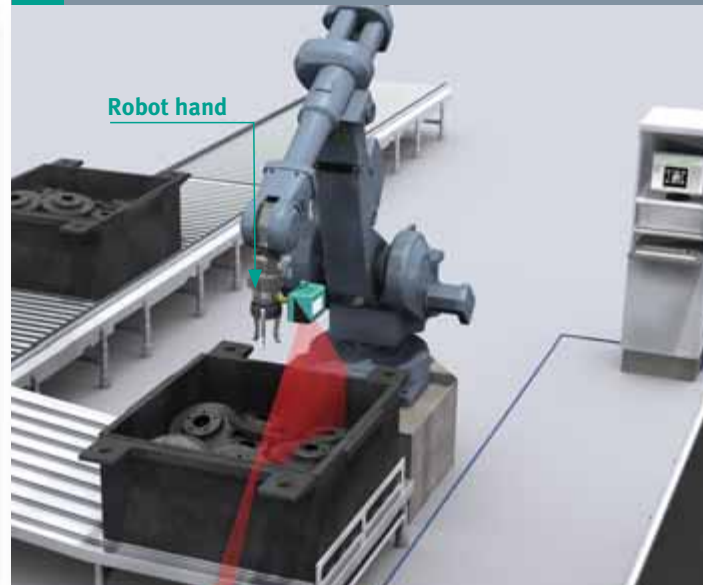
Height image of a container with brake disks

3D POSITION RECOGNITION WITH VMT®- D/P

LASER SENSOR



LASER SENSOR



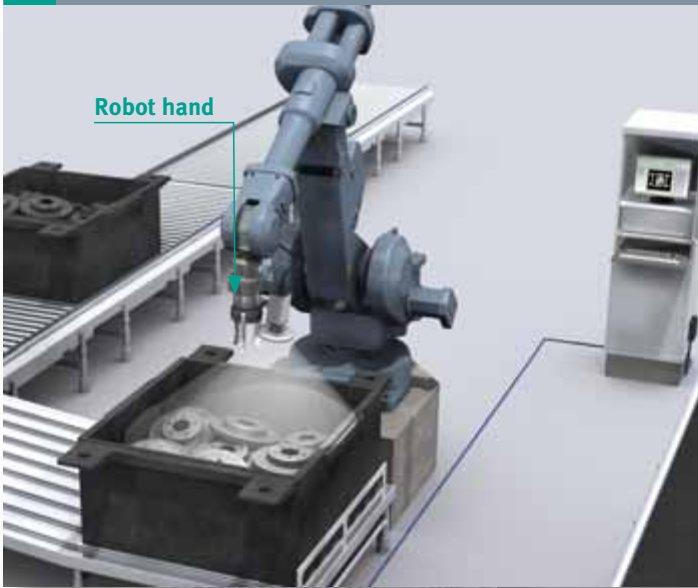
3D position recognition of unfinished cylinder heads

User interface VMT Software

3D position recognition of batteries

Recognized brake disks in the container

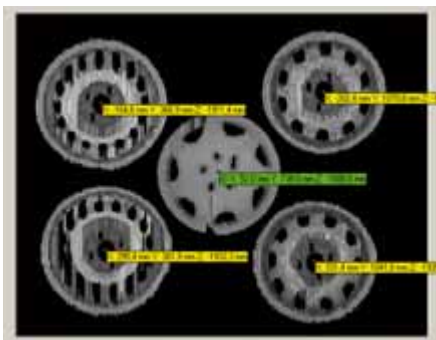
CAMERA



VMT delivers a multi-functional program package with the most varied image processing algorithms for the execution of a wide range of tasks.

The system provides a complete documentation of all evaluations, an online log for fast checking of all the results of the previous measurements and a visualization and archiving of the error images that possibly occur.

Operation and setting up of the system is achieved entirely without programming via the graphical interface, which is completely uniform for all applications. The user languages can be switched online at any time and are open for expansion.



Recognition of types of rims



3D position recognition of hinges

FOLLOW-ON APPLICATIONS

- 2D/3D POSITION
- INSPECTION
- OPTICAL CHARACTER RECOGNITION
- GEOMETRY DATA

INDUSTRIAL SECTORS

- Entire automotive industry, all suppliers for the automotive industry
- Suppliers of automation systems, manufacturers of robots and systems vendors
- Mechanical engineering and suppliers of handling systems
- Pharmaceutical industry, medical technics
- Food industry
- Pressing plants
- Foundries

VMT® IMAGE PROCESSING

The image processing computer is based on a high-performance industrial PC with the Windows XP operating system.

Since it can be coupled to robotic control and SPS, the VMT system offers all the usual interfaces employed in the industry.

The complete system including visualization on a TFT screen is built into a PC cabinet, in accordance with the customer requirements.

TECHNICAL CONSTRAINTS

- **Machine interfaces**
Profibus, Interbus, seriell, I/O, other interfaces on request
- **Implementation with robots**
KUKA, ABB, other manufacturers possible through standardized interface

THE COMPANY

VMT provides individual turnkey systems and complete solutions for industrial image processing applications and automation.

In order to control processes and guaranty perfect quality our systems are integrated in almost all industry branches.

The highly qualified VMT engineer team has more than 200 man years of experience in industrial image processing.

We maintain long lasting and successful relations to market and technology partners and their clients. More than 500 proven system installations speak for themselves.

VMT system solutions are based on self developed software products adaptable to the clients' specific needs, added with the appropriate machinery if desired. The systems responsibility stays with VMT.

Due to own developments, cooperations with research centres and technology partners the guaranty of constant development of the systems and the used technologies is always given.



Title and photo above: new Robotersysteme GmbH

FACTORY AUTOMATION – SENSING YOUR NEEDS



VMT Vision Machine Technic Bildverarbeitungssysteme GmbH as your competent partner. VMT® supplies customised, turnkey image processing and laser sensor systems and solutions for all industrial sectors. VMT solutions are based on our own, self-developed product lines, which cover the entire applications spectrum. VMT is consultant and partner to its customers and provides them with an objective and solid basis for decision-making for their investments. The highly qualified VMT team of engineers has 20 years of experience in industrial image processing. Experienced engineers and technicians commission your plant and train your employees as well as those of your customers.

Contact

VMT Bildverarbeitungssysteme GmbH
Mallastraße 50 - 56
68219 Mannheim · Germany
Tel: +49 621 84250-0 · Fax: +49 621 84250-290
E-mail: info@vmt-gmbh.com
Internet: www.vmt-gmbh.com

Worldwide Headquarters

VMT Bildverarbeitungssysteme GmbH · Mannheim · Germany
E-mail: info@vmt-gmbh.com

USA Headquarters

Pepperl+Fuchs Inc. · Ann Arbor · MI · USA
E-mail: vmt-info@us.pepperl-fuchs.com

Asia Pacific Headquarters

Pepperl+Fuchs Automation Trading Co., Ltd · Shanghai · China
E-mail: vmt-info@cn.pepperl-fuchs.com

www.pepperl-fuchs.com

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