

CeramDetect 3.0

3RD GENERATION SYSTEM FOR TYPE AND POSITION RECOGNITION OF WORKPIECES

GLAZING OF SANITARY CERAMICS

Glazing of unfired sanitary ceramics is nowadays done by automated robot lines in which a conveyor transports the workpieces to the glazing cell.

The workpieces are usually placed manually on the transport system. For the glazing process a **high positioning accuracy** is required because any deviations from the desired position (the nominal position stored in the glazing program of the robot) degrades the glazing result.

A further problem is the **high variety** and **mixture** of workpieces that are produced in one shift. In fact it is not known which model is going to be glazed next. For selecting the corresponding glazing program for the robot, in the past, the model number had been entered when placing a workpiece on the conveyor.

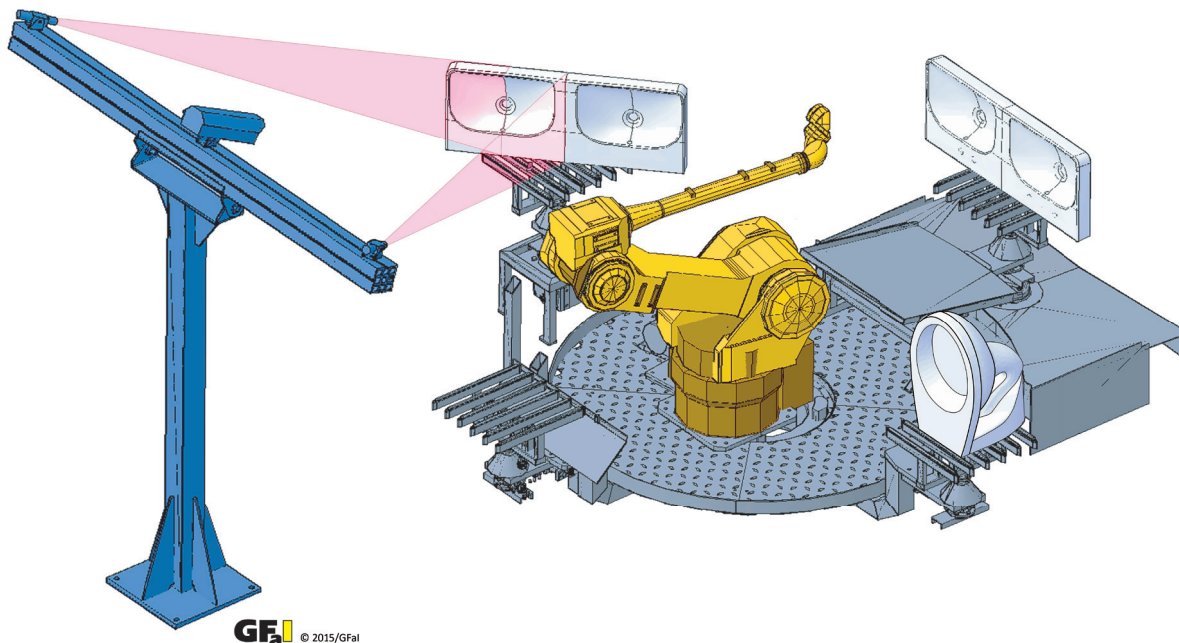
SOLUTION

CeramDetect 3.0 automates this process by identifying the workpieces with a **3D scanning system** (laser light sheet system) and determines both the **type** and the **absolute position** as well as **orientation** of the workpieces.

For this purpose, the workpiece is scanned on a turntable in only one complete turn. Based on the acquired data the model is determined by using a database followed by the calculation of the deviation from the nominal position. These parameters are sent to the PLC, which selects the corresponding robot program and calculates its adjustment according to the measured position and orientation of the workpiece.

In the newly developed **version 3.0** of the **CeramDetect** system, the identification process has been improved. Thus, the capability for the **identification of holes** has been added, allowing a safe separation of workpieces which only differ in the presence of holes.

Furthermore, the detection process was accelerated by the use of new hardware components. CeramDetect 3.0 also has a **teach-in mode** that allows the worker to easily insert new models into the database. No CAD data of the models are required.



GF_aI © 2015/GFai

CONTACT

FRANK PÜSCHEL

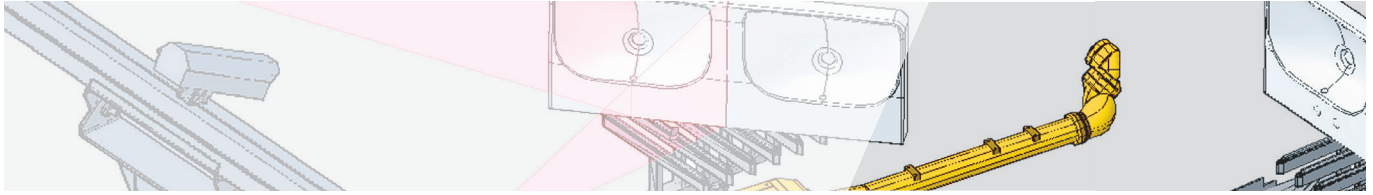
Phone: +49 30 814563-400

eMail: pueschel@gfai.de

STEPHAN BRODKORB

Phone: +49 30 814563-438

eMail: brodkorb@gfai.de



CeramDetect 3.0

3RD GENERATION SYSTEM FOR TYPE AND POSITION RECOGNITION OF WORKPIECES

TOOLS

CeramDetect contains furthermore **extensive tools** to ensure a continuous production process, a not recognized workpiece or a workpiece which shows a too large deviation to nominal position gets discharged unglazed from the gazing cell. In addition, **CeramDetect** supports the import of the detection data (type, position deviation, etc.) into enterprise software systems.

INDUSTRIAL APPLICATION

In combination with the offline programming and process simulation system **3D-ProSim** a robust framework for continuous production planning and optimisation is available.

CeramDetect 3.0 has proven itself in several industrial use cases and can be customized to specific customer requirements on request.

TECHNICAL SPECIFICATIONS

Detection volume	scalable up to 1200 mm x 1200 mm x 800 mm
Recognition rate	> 99 %
Recognition accuracy	± 5 mm, ± 2°
Maximum allowable position tolerance	± 100 mm, ± 5°
Duration of recognition process	< 15 seconds
Duration of teach-in process for new model	< 60 seconds
Minimum diameter of the hole detection	10 mm
Communication with line control	TCP/IP (other protocols on request)
Temperature	+10 °C to +50 °C (+50° F to +122° F)
Relative humidity	10 - 90 % (non-condensing)

RECOMMENDED COMPUTER SPECIFICATIONS

Processor	CPU Intel Core i7-Quad Core, 3.20 GHz
Memory	8 GB
Hard drive	1 TB
Network cards	2 network cards Gigabit
Monitor	Monitor resolution 1280 x 1024 or higher
Operating system	Windows Professional (64Bit) GER or EN

CONTACT

FRANK PÜSCHEL

Phone: +49 30 814563-400
eMail: pueschel@gfai.de

STEPHAN BRODKORB

Phone: +49 30 814563-438
eMail: brodkorb@gfai.de