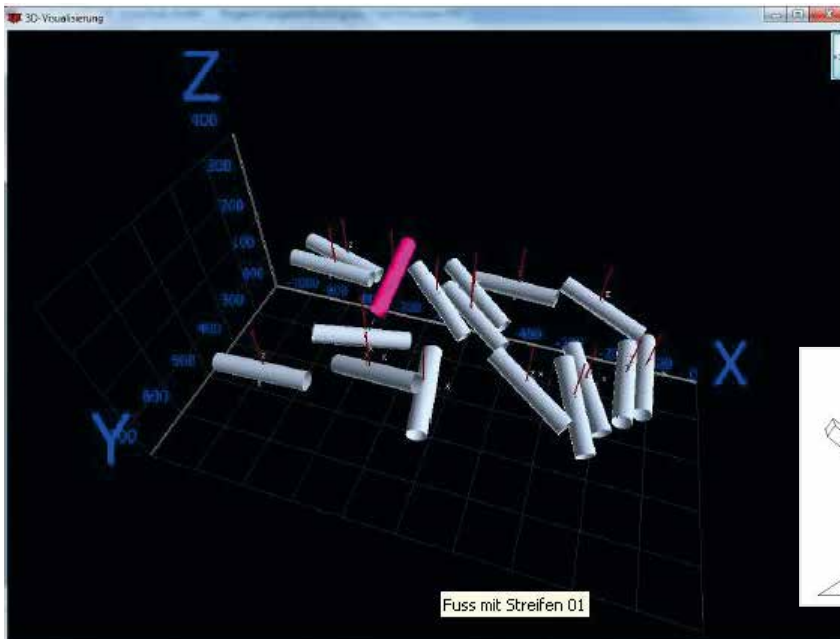


HANDLING OF BULK GOODS BY ROBOTS WITH IMAGE RECOGNITION

SAMPAS

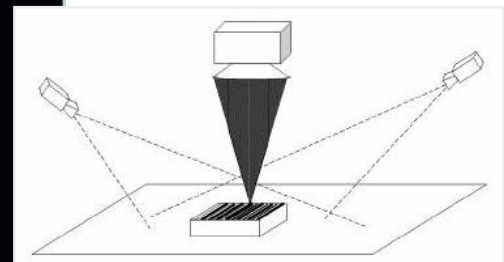
efficient robot solutions

ROBOTIC SYSTEMS
AND AUTOMATION SOLUTIONS



Task:

For the automated unloading of forged parts containers and subsequent component separation with the aid of robots, it is necessary to record the location of the unfinished parts and to define a removal sequence.



QBS Process with 3-D Visualisation

Our solution:

The QBS (Quotient Image Stereo) process works with [calibrated] stereo cameras and a random strip-light projection with an uncalibrated projector. At least two differently illuminated images are recorded by each camera, then, pixel by pixel, a quotient of both images is formed.

Finding the correspondences [the main problem in stereo analysis] is made substantially easier by the use of epipolar geometry,

the linear projection and brightness normalisation of the grey scales resulting from the quotient images. The system achieves an outstanding insensitivity to different surface characteristics such as local slope, roughness, printing, colour, soiling, local gloss and processing traces. Series of images, such as with coded light, are omitted. No mechanical movement is required.

The QBS process delivers reliable height images and recognises the parts to be gripped. Our standardised removal concept is adapted to the following typical forged parts:

- Drive and output shafts
- Gear shafts
- Drive shaft joints and flanges

The parts are then placed on a conveyor belt.

Your benefit:

➕ Cost savings thanks to complete automation

➕ Using robots reduces the error rate and hence ensures quality

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Technical details:

Robot	Kuka
Camera	VisionTools
Work pieces	
Surface	any colouring
Geometry	cylindrical and rotationally symmetrical
Length	at least 80 mm [depending on the size of the material container]
Diameter	at least 20 mm
Length/Diameter Ratio	at least 3

Our services:

- Project planning and managementg
- Robot PLC and visualisation
- Programming
- Electronic and mechanical design
- Commissioning
- Manufacture and assembly

EVERYTHING FROM A SINGLE SOURCE

Thanks to our integration into the **PÜTZ GROUP** and the resulting **synergy effects** we are able to offer you not only Robotic systems and automation solutions but also the appropriate testing technology to test surfaces and dimensional accuracy and completeness.

**SAMPAS GmbH takes care
of everything:**

... project planning
and programming,
project management,
production interfaces, activation,
operational approval, production
oversight and much more!

**We look forward
to hearing from you!**

Sampas GmbH

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