Q.VITEC

Erkennen, was möglich ist

Vision Q.400 | Q.400 *[plus]*

Image processing
Manufacturer & integrator

Unique – only at Q.VITEC

Airbag testing

Industry	Automobile industry
Application	Seam inspection for safety-relevant components
Assignment	Inspection of silicone-coated double seams
Level of difficulty	Extremely high

A special, very easy-to-use algorithm checks the continuous presence of the seams and their correct run within the bonding compound. The required tolerance field between the pressure side and external side can be set. Even very complex test areas can be verified quickly and easily.

Philosophy

Having emerged from one of the largest electronics companies in the world, Q.VITEC is a solution provider in all aspects of industrial image processing.
In this field, we offer intelligent software, reliable hardware and customised system integration. The more complex one's daily challenges, the higher one's own expectations, and the greater the demands on the work performed – and the more experience and the right know-how become indispensable. Not only do we understand the complexity of industrial image processing, we are also aware of the almost limitless potential of this technology.

Application

The following pages show a small number of our applications and uses in successful case studies from Q.VITEC practical experience.

All these are the results of highly efficient image processing.

Carbon brake disc inspection

Industry	Automobile industry
Application	Production monitoring
Assignment	Identification of production errors

Weld seam detection

Industry	Automobile industry
Application	Detection & measurement
Assignment	Identification of the seam between rotor & shaft

Position recognition

Industry	Automobile industry
Application	Inline production control
Assignment	The camera checks the position and quality
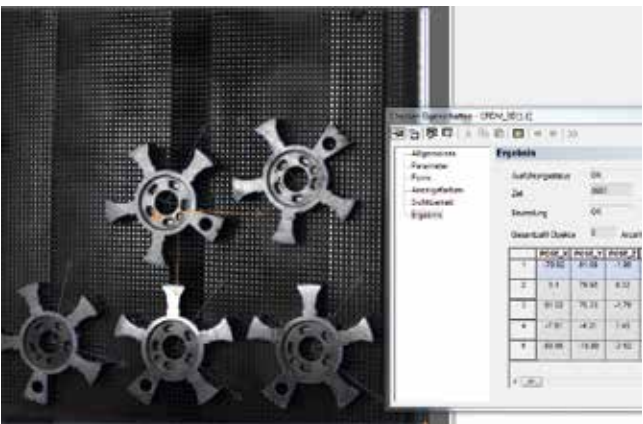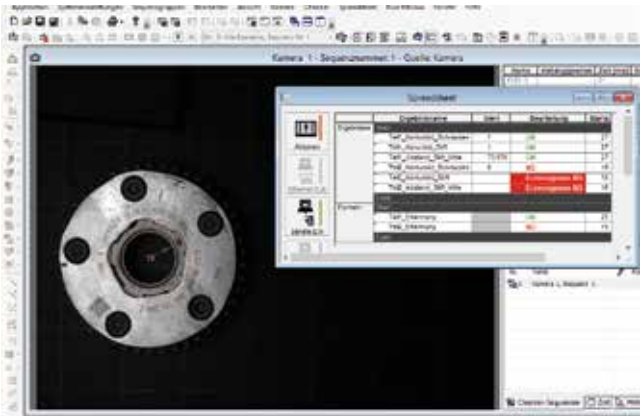
Depalletisation

Industry	Universal
Application	Position recognition
Assignment	3D gripping position for robots
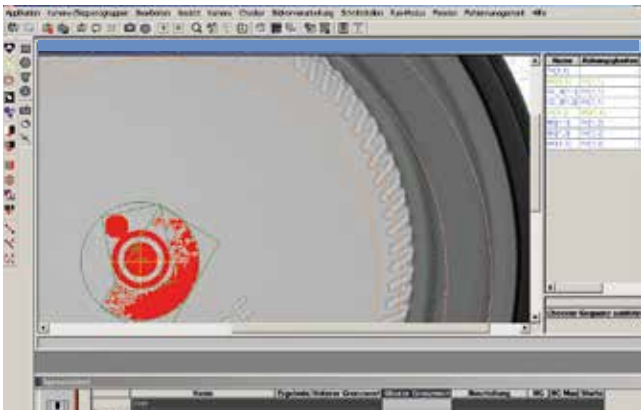
Inspection of seals

Industry	Medical & plastics industry
Application	Fault detection
Assignment	Inspection of the sealing surface for damage

Wood wool panel testing

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Industry	Building materials industry
Application	Inline testing
Assignment	Detection of defective parts
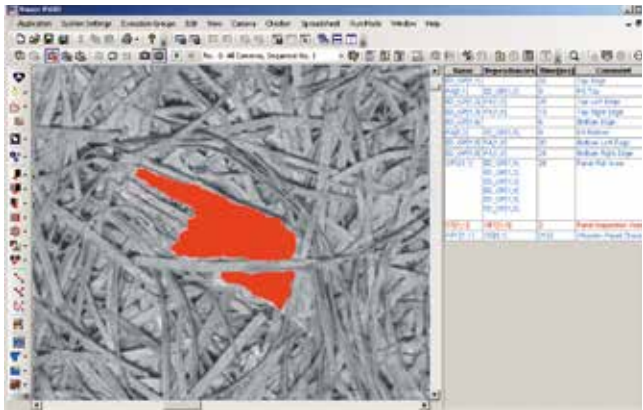
Contact field test

Industry	Electrical & metal industry
Application	Inline inspection of electronic components
Assignment	Inspection of contact fields, etc.

Tool inspection

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Industry	Tool & metal industry
Application	Quality control
Assignment	Detection of various errors
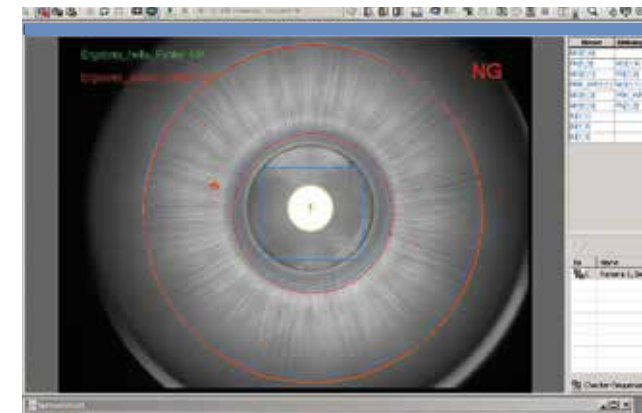
Inspection of packaging

Industry	Packaging & foodstuffs industry
Application	Fault detection
Assignment	Check for missing and NOK parts

Contact location check

Industry	Electrical industry
Application	Measurement & position control
Assignment	Checking of tolerances
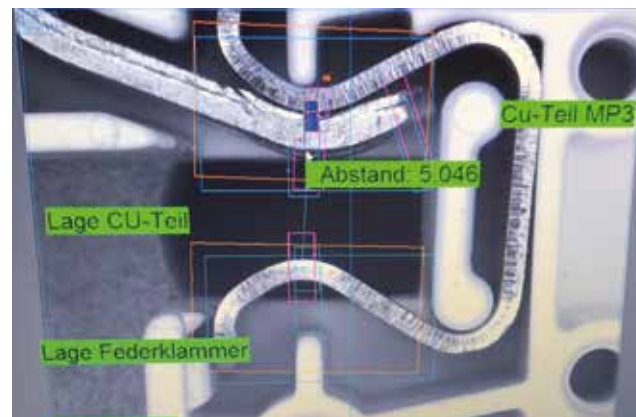
Diaphragm borehole inspection

Industry	Pharmaceutical industry
Application	Quality control
Assignment	Monitoring of the micro drillings
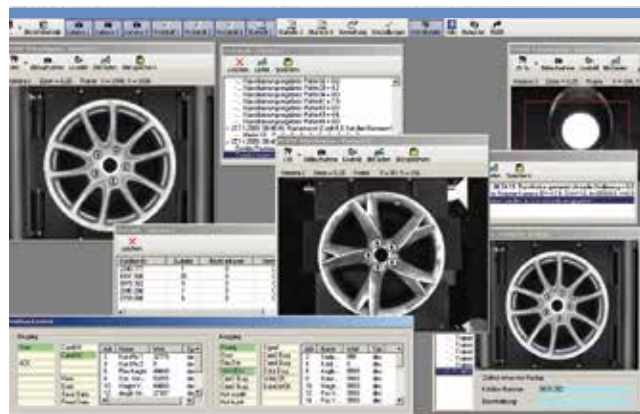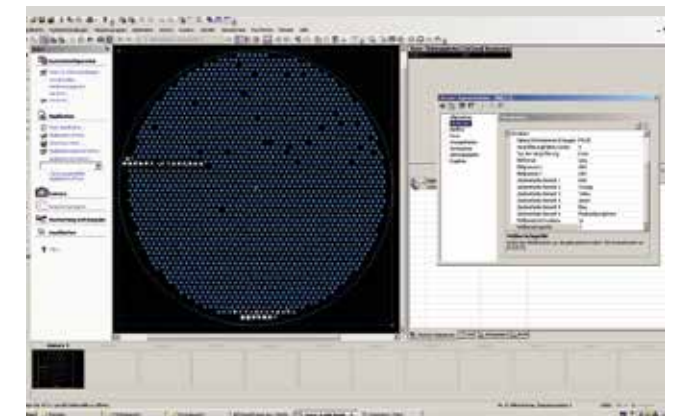
Rim type identification

|	
Industry	Automobile industry
Application	Detection & classification
Assignment	Height, width, design, valve hole

Instrument panel testing

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Industry	Automobile & electronics Industry
Application	Printed image control
Assignment	Comparison with DXF files

Solder joint inspection

Industry	Electronics industry
Application	Quality control
Assignment	Solder joint monitoring
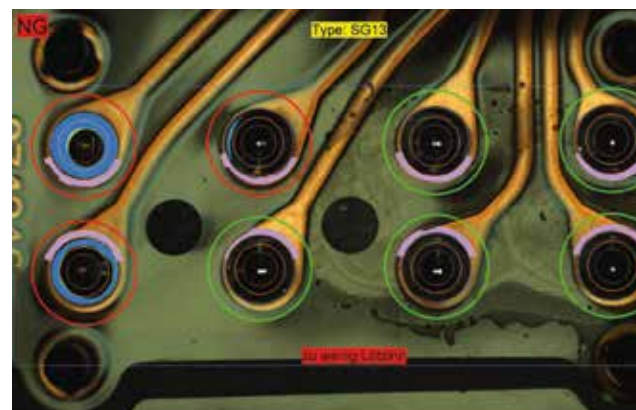
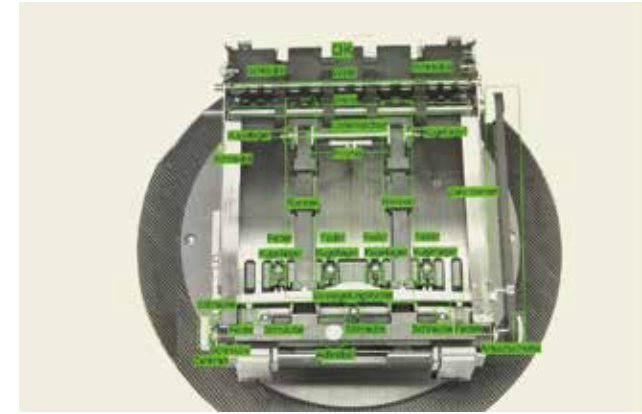

Breakout control

Industry	Automobile & metal industry
Application	Inspection & measurement
Assignment	Detection of flaws
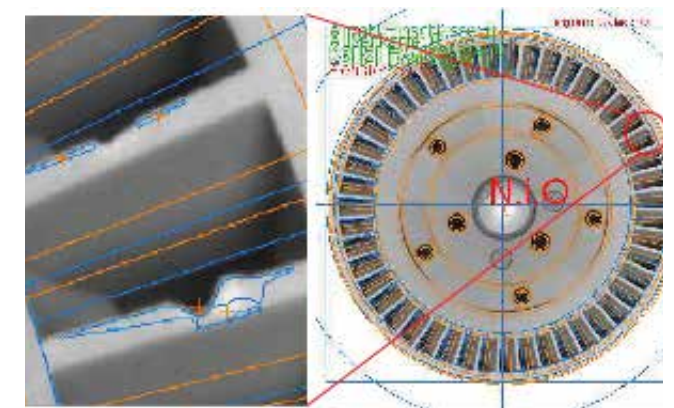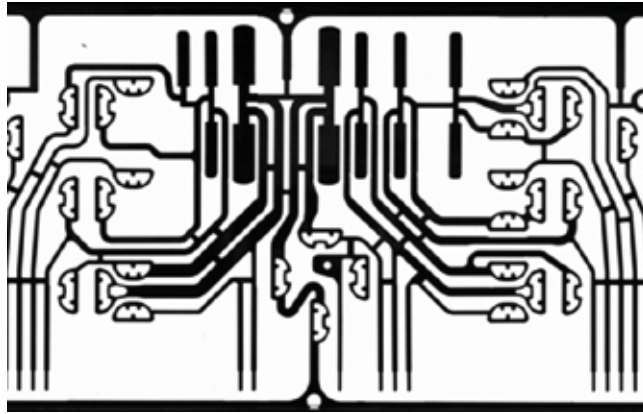
Punching pattern control

Industry	Metal & automobile industry
Application	Precision measurement
Assignment	Precision measurement of critical dimensions

Assembly supervision

Industry	Universal
Application	Manual assembly of components
Assignment	Check for completeness

Camshaft inspection

Industry	Automobile industry
Application	Type identification & measurement
Assignment	Cam disk measurement < 100 ms

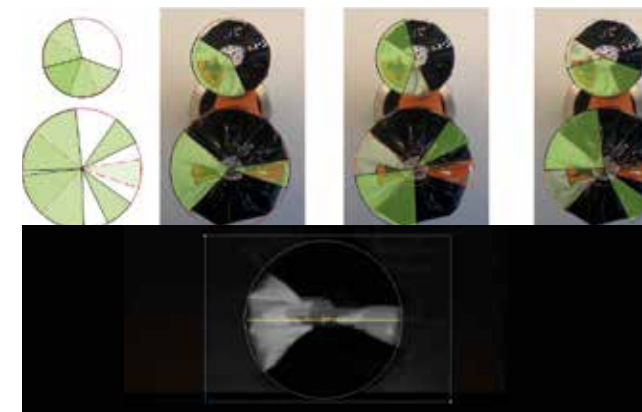## Plug-in contact testing

Industry	Electronics industry
Application	Monitoring of electroplating processes
Assignment	Coating inspection
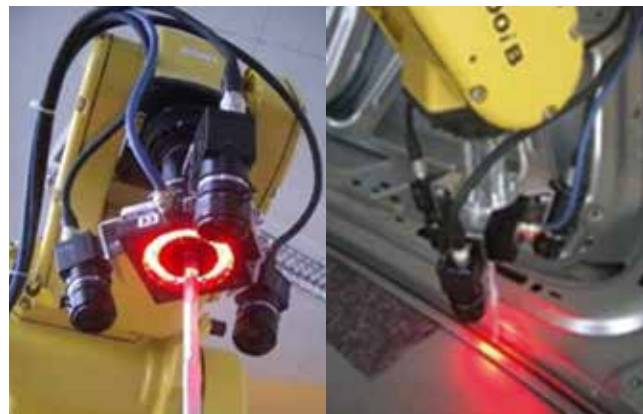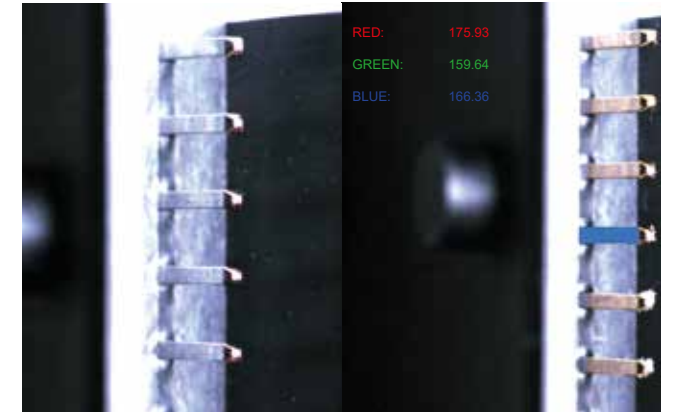
Glue bead inspection

Industry	Automobile industry
Application	Adhesive & weld seam testing
Assignment	Quality control

Angle of rotation detection

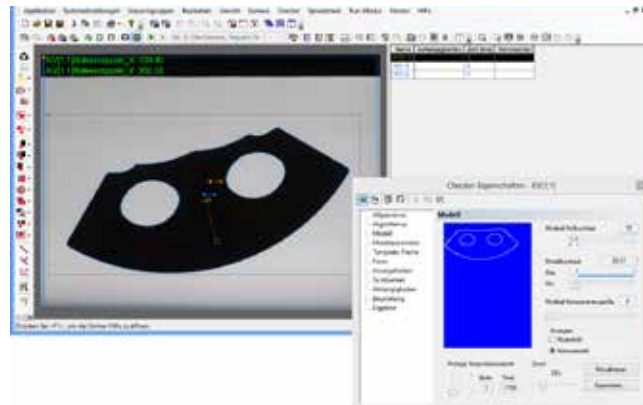|	
Industry	Logistics industry
Application	Position detection of sacks
Assignment	Warehouse optimisation

Fish canning inspection

Industry	Foodstuffs industry
Application	Presence check
Assignment	Detection of type and position

Fill level control

Industry	Medical industry
Application	Fluid testing
Assignment	Detection of fill levels
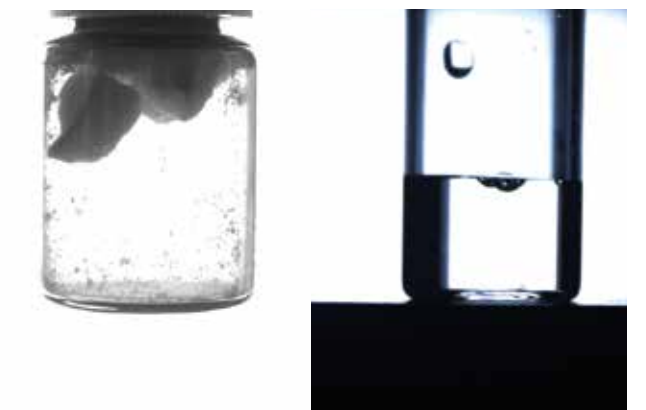
Position detection

Industry	Universal
Application	Detection of test parts
Assignment	Position & rotation position
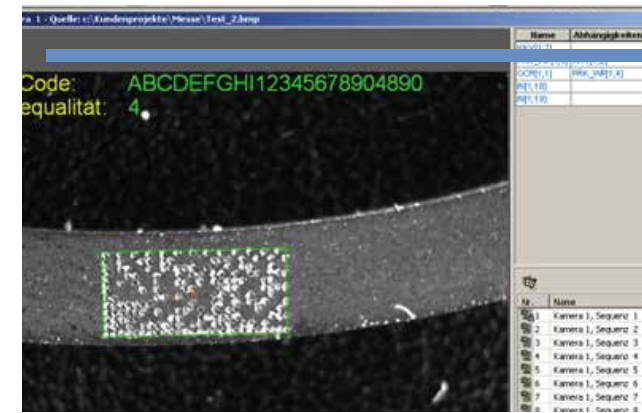
Piston ring code evaluation

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Industry	Universal
Application	Code reading
Assignment	Checking of code size 2 mm x 5 mm

Pick and Place

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Industry	Automotive, metal & logistics industry
Application	Contour comparison/Feature extraction
Assignment	Gripping range detection
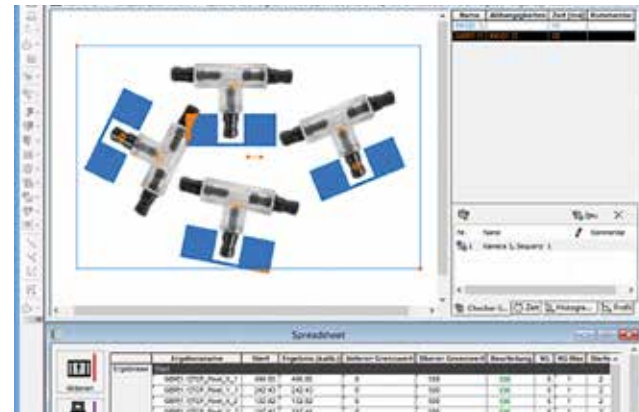
Structural examination

Industry	Foodstuffs industry
Application	Contour comparison & error detection
Assignment	Reading of plain text & form check
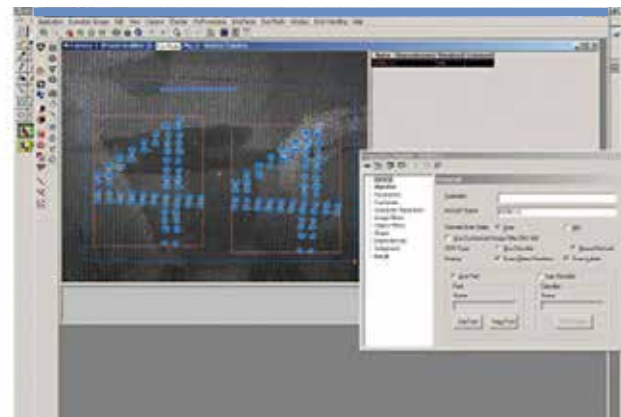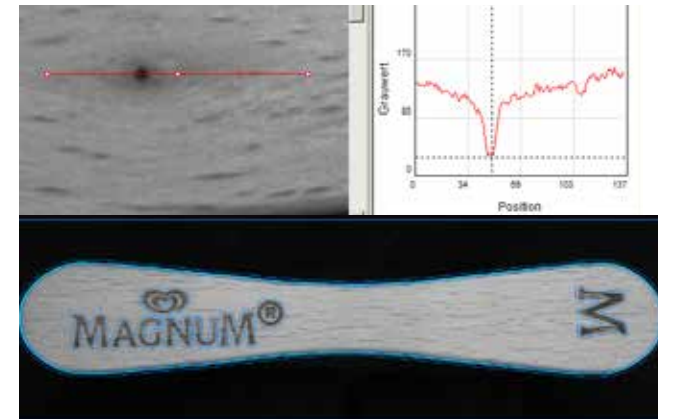
Tyre code detection

Industry	Automobile & tyre industry
Application	Readout & error detection
Assignment	Verification of the DOT
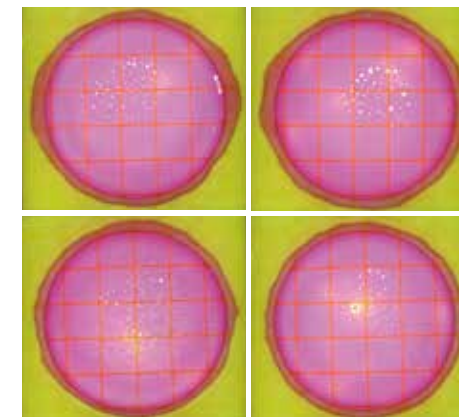
Bacteria testing

Industry	Medical technology
Application	Monitoring of bacteria cultures
Assignment	Counting of bacteria

Runtime monitoring

Industry	Universal
Application	Fill level detection
Assignment	Dosage testing
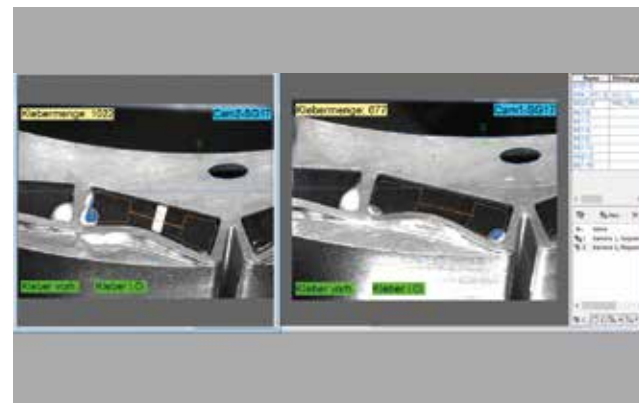
Spring washer inspection
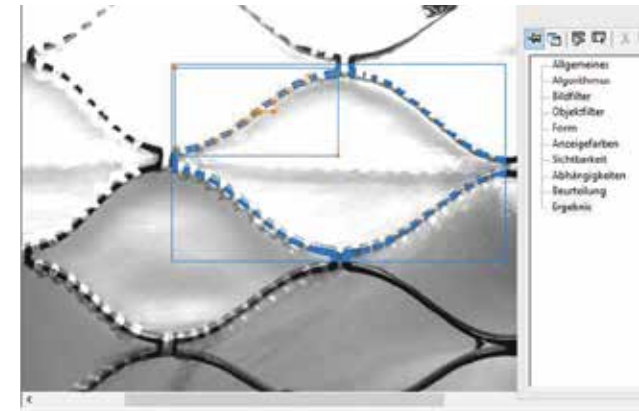
Industry	Automobile & metal industry
Application	Contour inspection & measurement
Assignment	Detection of flaws
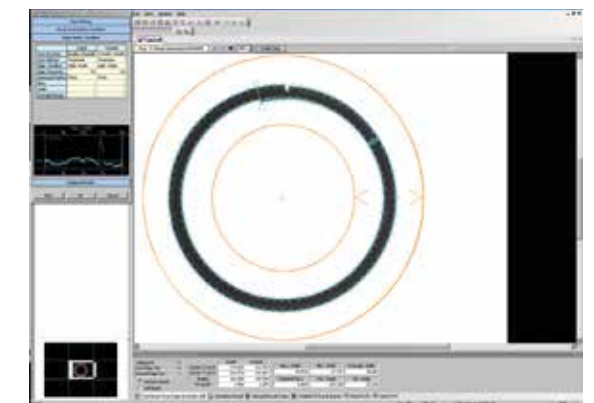
Gearwheel measurement

Industry   Universal

Application Dimensional accuracy & contour
             inspection
Assignment   Measurement & geometry analysis
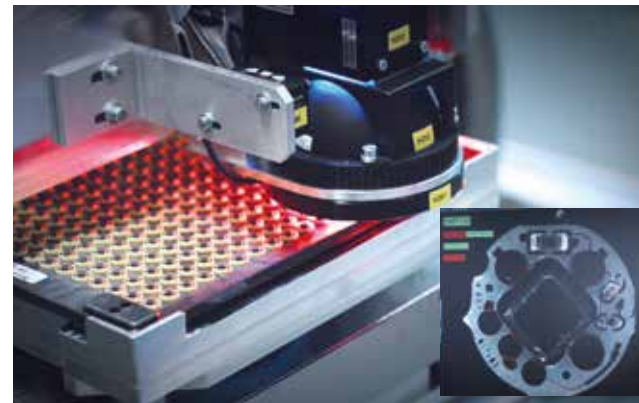

Aortic valve testing

Industry   Pharmaceutical industry

Application Seam inspection

Assignment   Inspection of manually created
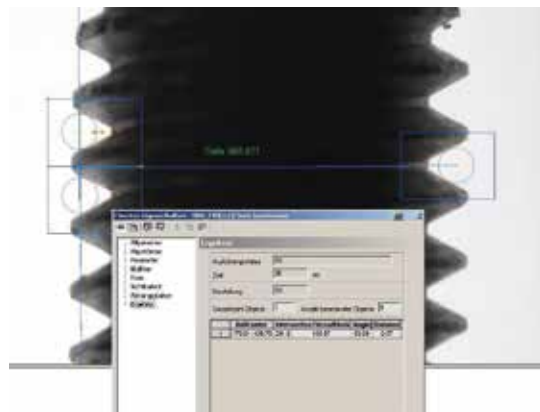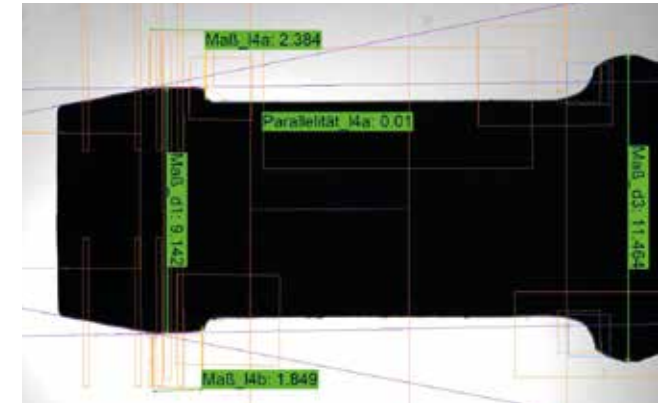   seams

Complete PCB inspection

Industry   Electronics industry

Application Surface analysis

Assignment   Component inspection

Contour measurement

Industry   Universal

Application Dimensional inspection

Assignment   Measurement of components

Screw inspection

Industry   Metal & plastics industry

Application Thread testing

Assignment   Thread pitch measurement

Terminal testing

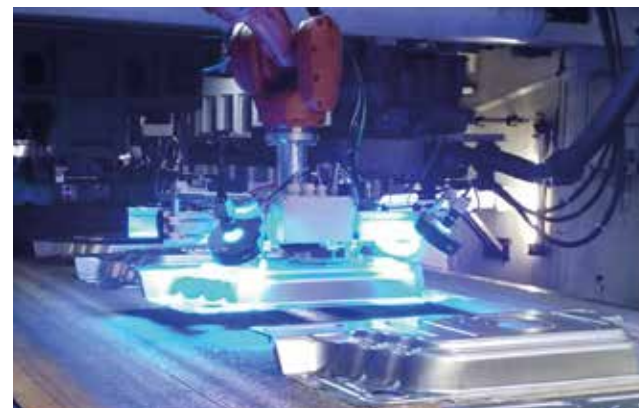Industry   Electrical industry

Application Completeness detection
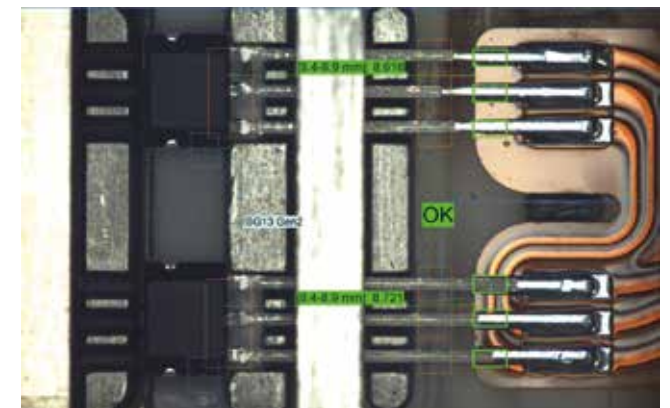
Assignment   Reading of plain text

Optical inline inspection

Industry   Metal industry / Forming centre

Application Checking on the transfer press

Assignment   Checking for cracks & constrictions

Contact check

Industry   Electronics industry

Application Measurement & analysis
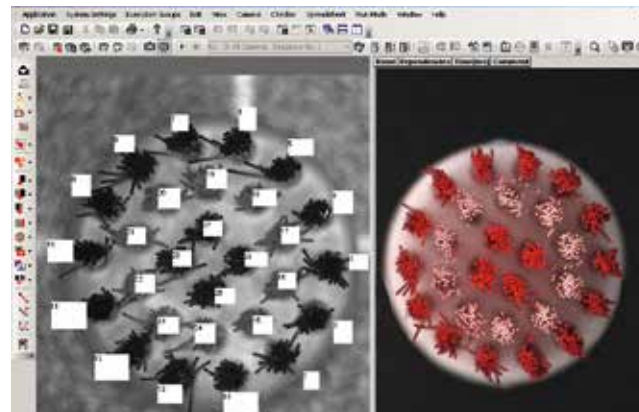
Assignment   Detection of flaws

Production control

Industry	Automobile industry
Application	Detection & evaluation
Assignment	Presence & rivet control

Brush head inspection

Industry	consumer goods industry
Application	Presence monitoring
Assignment	Colour, quantity & arrangement

Universal seam inspection

Industry	Universal
Application	Number & characteristics of seams
Assignment	Dark seam on dark fabric

Robot measurement system

Industry	Aviation & aerospace industry
Application	Measurement according to CAD template
Assignment	Creation of a measurement report

Vision Q.400

Unique in many respects.
Vision Q.400 is an optical quality control program that is as easy to use as it is powerful. It is aimed at both end users and system integrators within industrial image processing who wish to implement rapid, straightforward inspection solutions at the highest level, without programming knowledge. Vision Q.400 is available as a software package, or pre-installed on Q.VITEC's Q.400 series image processing systems.

Vision Q.400 — 3 packages — 5 modules

BASIC — ADVANCED — PROFESSIONAL

- Code reader
- OCR/including CR
- Identification
- Flexi
- Q.HI

Vision Q.400 [plus] — 3 packages — 6 modules

BASIC — ADVANCED — PROFESSIONAL

- Number of simultaneous tests
- Code reader
- OCR/including CR
- Identification
- Flexi
- Q.HI
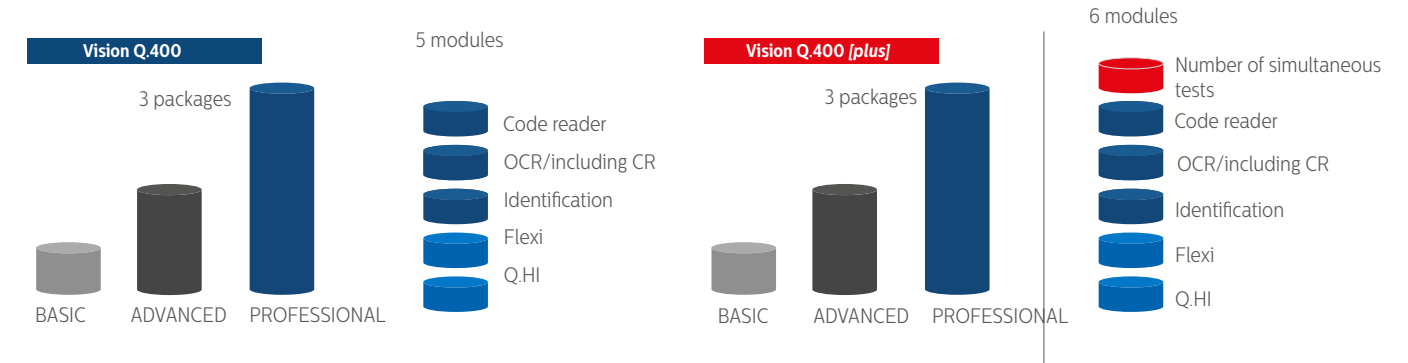
Established and proven

Vision Q.400 is the product of a constant development and improvement process that has lasted over 21 years.

Results display

When developing the Vision Q.400 we placed special importance on the ease of handling results.

Multifunctional

Vision Q.400 provides first-class testing algorithms for (almost) any optical testing or measurement task.

Configuration instead of programming

With Vision Q.400 you don't have to reinvent the wheel. Combine with a click of the mouse.

Quick and robust algorithms

From one of the world's largest electronics groups, we know what matters when it comes to production: speed, stability and reproducibility.
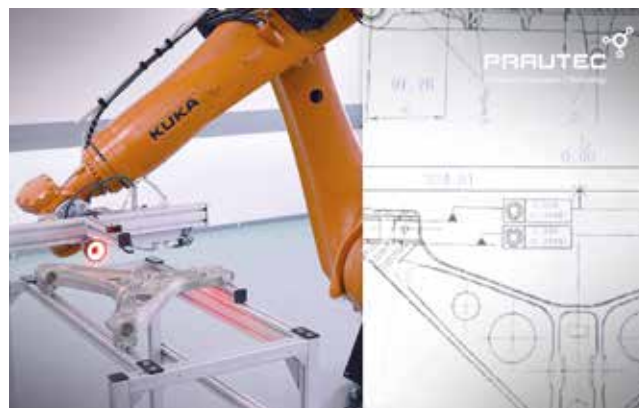
Variable

Vision Q.400 is available as a stand-alone product or ready to use, pre-installed on different hardware platforms.

Product variants

Vision Q.400 software

The stand-alone software package Vision Q.400 is the right solution for you if you wish to use existing industrial PCs.

Imagechecker Q.400SD K01 – Low cost system

The Q.400SD K01 provides industrial image processing with great performance in the smallest format. The system impresses with its power density, functionality and flexibility.

Imagechecker Q.400XD – High end system

In addition to excellent computing power, our premium product Q400XD also offers countless expansion options.

NEW

Imagechecker Q.400XD – High end system

In addition to excellent computing power, our premium product Q400XD also offers countless expansion options.
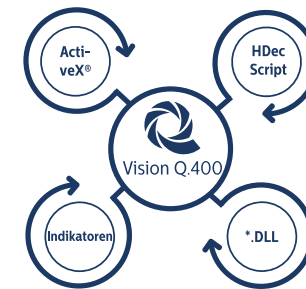
(Currently without Profinet)

Expansion options

Open to the future

Vision Q.400 offers a variety of options to customise and expand functionality. From the customer-specific result display up to the completely new test algorithm.

Q.HI HALCON

Use the interactive programming environment HDevelop to develop your own customised test sequences and embed them as new "Checkers" into Vision Q.400 with just a few clicks of a mouse.
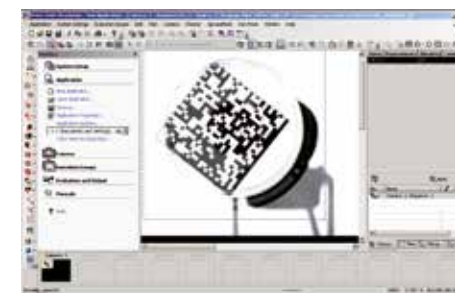

NEW

Vision Q.400 V9.2

· Version number in Mircosoft Standard
· New frame grabbers - mE5
· New CameraLink cameras
· VCXG, VCXG.I and VEXG series are supported
· no restart necessary during installation

Free DEMO version

See for yourself! Test Vision Q.400 with the DEMO version. The Vision Q.400 DEMO version is a completely functional simulation of Vision Q.400 and can be used for an unlimited period of time. Cameras cannot be operated with the DEMO version.

https://bit.ly/3lPfrvV

Vision Q.400 as UR+ product

V.Qnect+

The connector between the Universal Robots Interface and the Vision Q.400 software. With this program you have the possibility to control and configure your known Vision Q.400 with the Universal Robot Teach Pendant and to optimize your workflow.

UR Produkte (UR3 – UR16e)

Load capacity	3 – 16 kg
Range	500-1300 mm
Degree of freedom	6 joints
Max Speed	± 180˚ – ± 360˚/sec..
IP classification	IP54 / IP64
Noise pollution	> 60 dB – 72 dB
Footprint	Ø 128mm – Ø 190 mm
Weight incl. cable	11 – 33,1 kg

For more information, please visit: "https://www.universal-robots.com"

UR Robot & Q.VITEC Camera

· Onboard oder extern
· 1,3 – 12 MP
· IP 67
· Up to 94 fps (148 fps at Burst Mode)
· Operating temperature range -40 ˚C – 70 ˚C

Vision Q.400 & more

V.Qnect+ is aimed at both end users and system houses for industrial image processing who want to implement inspection solutions quickly and easily at the highest level and without programming knowledge. Regardless of whether completeness checks, measuring tasks, object recognition, contour checks, positioning or surface inspection are involved, Vision Q.400 covers all industrial inspection tasks. Whether stationary or on a robot makes no difference. In addition, the extensive range of functions can be expanded with individual algorithms.

V.Qnect+ Electrical Kit

The V.Qnect+ kit, which came with the V.Qnect+ URCap, includes a 24V DC power supply and the Q .400SD-R02 PC.

Connections
· LAN
· Camera
· Ringlight
· USB
· HDMI
· Powercable

V.Qnect+ Videos on Youtube

Discover our YouTube videos. On YouTube you can see V.Qnect+ in operation, the easy installation of the Electrical Kit and the installation of the software on the Universal Robot.

Vision Q.400 x Universal Robots

Connect your robot using your IP and port address.

Configure your camera directly on the teach panel and see direct feedback in the toolbar live image.

If you have defined the variable and row in the upper part of the selection menu, you can select a column in the advanced options.

Easy integration of sequence groups into the robot program.

Complex and extensive robot programming.

Live image for perfect alignment of the camera
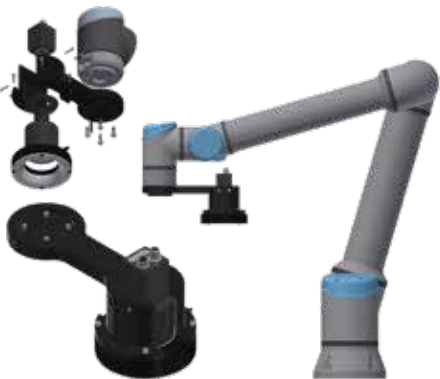
Camera Mounter

A camera adapter is supplied with every V.Qnect+ kit. Due to the many possible applications of V.Qnect+ we have to make sure that we offer the right mounting option for each application. If you have questions about the individual camera adapters or you are not sure which adapter is best suited for your application, we are here for you.

Direct camera adapter

Direct connection between camera and robot.

External camera adapter

Connection with possibility on gripper mounting.

Stationary camera adapter

External camera mount

Our solutions...

...as a result of our in-house mechanical engineering.

SLC sorting and packaging

Industry	Universal
Assignment	Autom. sorting and packaging
Advantage	Faster delivery of empty containers

Automatic inspection and packaging line

Industry	Electronics industry
Assignment	Testing & packaging of chips
Advantage	Increase in production/quality

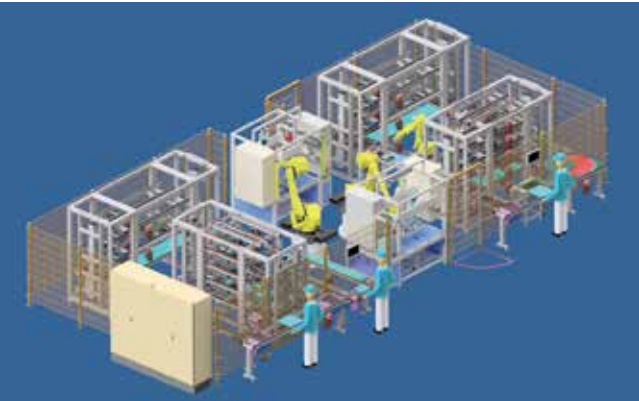## I-panel mounting

Industry	Automobile industry
Assignment	Assembly, inspection & handling
Advantage	Time & cost savings

Optical inline inspection incl. handling

|	
Industry	Metal industry/forming centre
Assignment	Inspection of moving components
Advantage	Cost savings

Oil sensor installation

Industry	Automobile industry
Assignment	Autom. installation of oil sensors
Advantage	Increase in production

Manual workstation with assembly inspection

Industry	Automobile industry
Assignment	Ergonomic assembly station
Advantage	Simple handling for employees
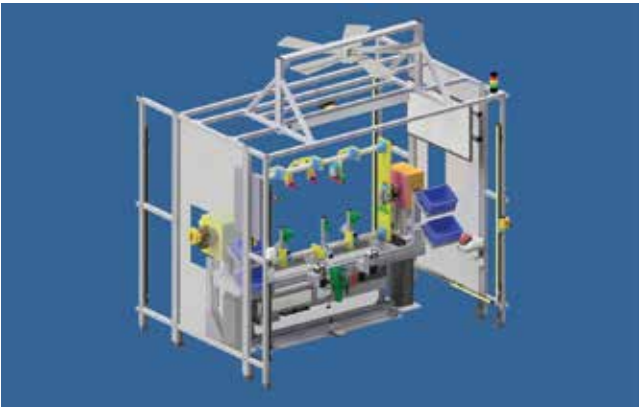
Turbocharger machining & assembly cell

Industry	Automobile & metal industry
Assignment	Deburring, laser welding, leakage testing and much more.
Advantage	Time & cost savings

Q.VITEC distribution network
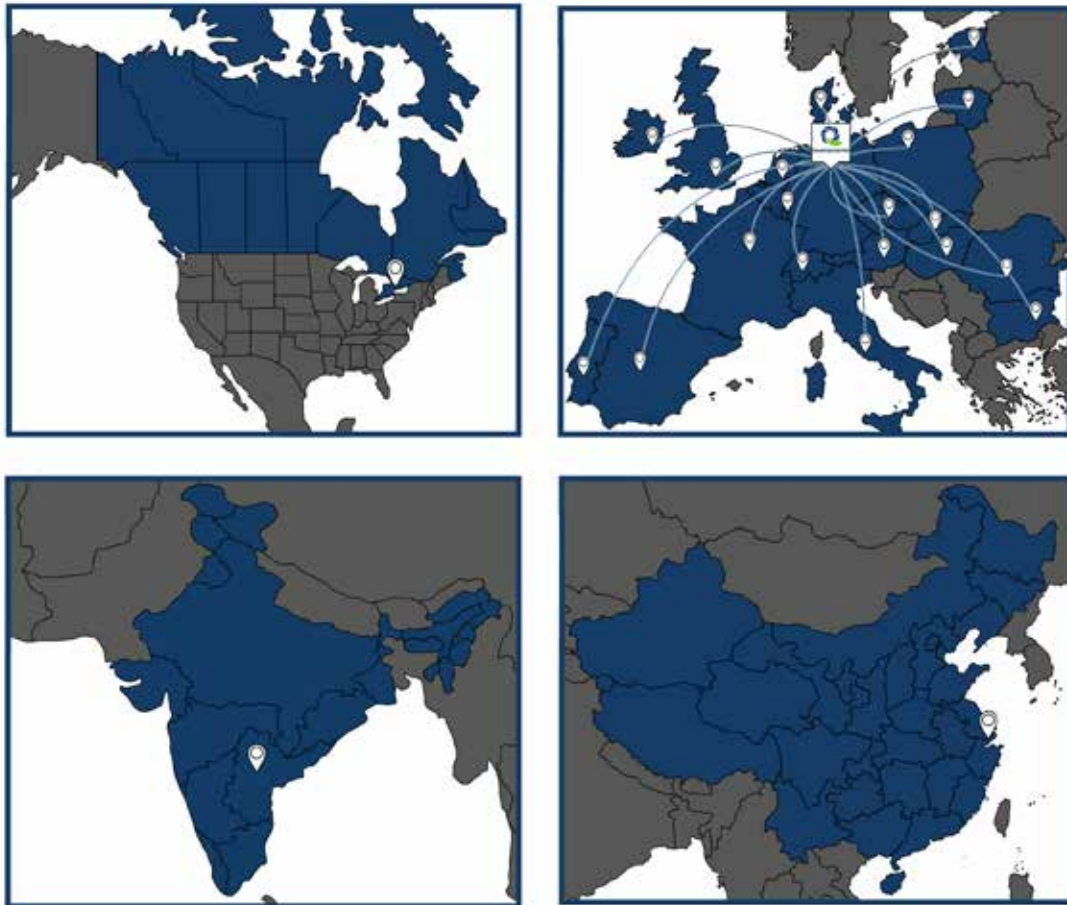
All from the one source

TEC-GROUP

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