

SIMAC[®] 63



Surface Quality Inspection System with
CCD Cameras & Image Processing

IN-LINE SURFACE-QUALITY INSPECTION

Quality, Quality, Quality

Top quality is today a precondition for success and profit. "Just in time", "Zero Fault Production" etc. require consequent and flawless quality control. The safest and most efficient way is "on-line", i.e. integrated into the production line and on a continuous basis.

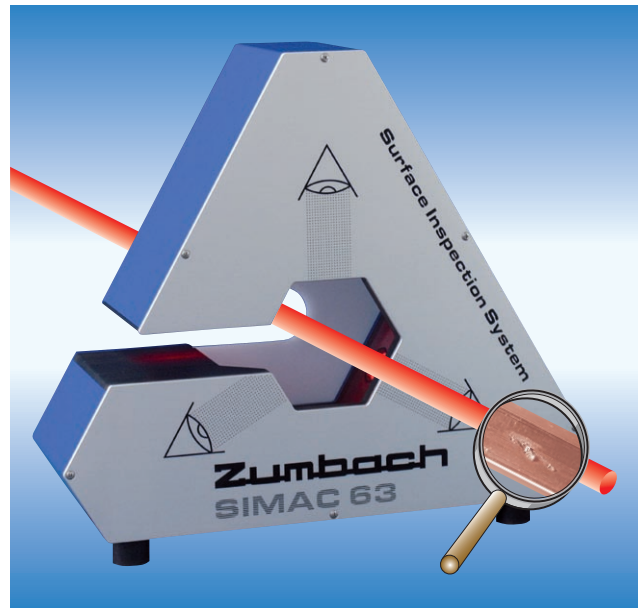
MACHINE VISION – The right answer

A flawless and flexible quality control is only possible by means of Machine Vision, i.e. state-of-the-art image processing. Machine Vision can be used for almost any inspection task. Each particular product, however, requires specialized sensors, hardware and software. The system software is highly sophisticated and is able to process the information received from varying surface structures and colours with the flexibility required for picture analysis.

The SIMAC® 63 is a modern surface inspection system for extruded products, like pipe, cable, and hose, where machine vision technology is used consistently. Its hardware and software reflect field experience with the SIMAC® 500 and continuous development over many years.

Advantages

- Easy to use, with a graphical user interface (GUI) of the latest generation
- Touch screen
- Very compact design
- Bright and focused image, sees faults down to 100 µm (.004 in.)
- Up to a line speed of 500m/min (1640 ft/min)
- LED lighting system
- Length related scanning and fault definition



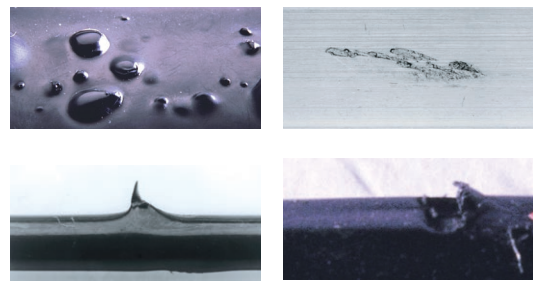
Products where SIMAC® 63 inspection has a rapid pay back

Rapid pay back can be expected on all high quality products and particularly on products with high safety requirements.

Typical examples are:

- Cables
- Hot water pipes
- Compound pipes
- Gas pipes
- Automotive tubing
- Rubber hoses
- Offshore products
- Glass fibre cables
- For all quality products

The optical system detects all kinds of surface variations, categorizing them as defects on the most diverse, continuously produced products.



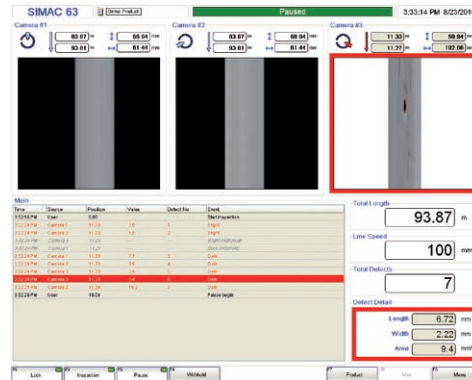
OPERATION, DISPLAY – LOGGING

Easy operation (HMI – Human Machine Interface)

Special emphasis was put on easy operation (HMI). The SIMAC® 63 can be operated completely via touch screen. All product specific settings defining the reference image are stored in a product recipe. The recipe can simply be called up with a respective product number code for a particular product.

Main screen

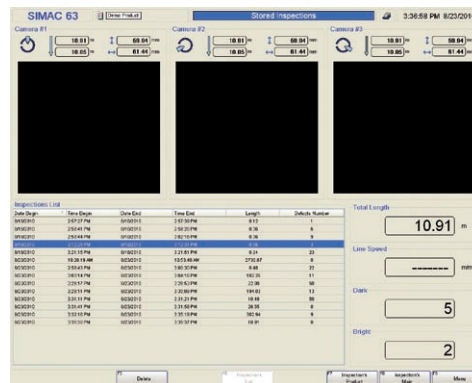
This screen shows the list of detected faults and the live image from each camera. Additional information such as the footage and the number of defects, are also displayed on the main screen.



During the inspection or when it is stopped, it is possible to view the images with product defects and to zoom in them.

Data storage

Upon request (option), the SIMAC® 63 can store in a local or remote disc all the performed inspections. This enables to browse through stored inspections, print their quality control reports or withhold/release their defects. A product recipe and the main screen is available for each inspection



SYSTEM COMPONENTS

Measuring unit



This unit consists of an aluminium cast housing (IP54), equipped with a lighting system for homogeneous illumination of the entire product surface. Three cameras guarantee a 100% inspection over 360 degrees. All settings such as focus and lighting are done automatically.

Control and processing unit LPU



An industrial PC (Quad Core), built in a protective housing (IP51), carries out the control and evaluation of the complete system, e.g. picture processing, data transfer, data storage, display, control of printer, picture storage of the faults and control of the inputs and outputs.

Display



17" Touch screen as table top model. Also available in industrial 19" housing.

TECHNICAL SPECIFICATIONS

Measuring field	63 mm (2.48 in.)
Product diameter range	Approx. 2 up to 50 mm (.08 up to 2 in.)
Product lighting	LED
Cameras	Line scan CCD
Scan rate	Up to 35'000 scans/s
Line speed	Up to 500 m/min (1640 ft/min)
Min. fault resolution ¹⁾	0.1 x 0.1 mm (.004 x .004 in.)
Operating system	Windows™ XP embedded
Dimensions w x l x h	Measuring unit: 210 x 600 x 550 mm (8.27 x 23.62 x 21.65 in.) Control and processing unit LPU: 500 x 315.5 x 600 mm (19.69 x 12.42 x 23.62 in.) Display unit: 17" Touch Screen, according to the model

¹⁾ Depending on the line speed and fault contrast
™ Windows is a trademark of Microsoft Corporation

Interfaces for Host communication	Ethernet
Printer output	USB and Centronics (parallel)
Inputs / Outputs	- 6 opto-coupled inputs (digital) - 3 relay outputs - 4 digital outputs - 2 Ethernet ports: - 1 for network connections for data transfer or remote control (Team Viewer). - 1 for Host communication via Zumbach Host protocol (e.g. connection to USYS) - 1 serial interface RS-232 for Host communication (on request) - 6 USB for software update, backup, Data transfer or other peripherals

• Specifications are subject to change without notice

ACCESSORIES – SYSTEM EXTENSIONS

Accessories

Thanks to wide range of accessories, each SIMAC system can be supplemented to fulfil any needs.



Other products and measurement technologies

Further sensors for the measurement of other parameters such as diameter with laser technology, capacitance as well as lump and neckdown detectors (fault signal), conductor preheaters and temperature measurement, spark testers, scanners based on x-ray technology, lengths and speed measuring systems, etc. complete the product range from Zumbach.



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