ryf ag

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Vision Hawk non contact measuring system

Hawk System with QC200 (manual)

- High accuracy, 3-axis (X, Y, Z) measurements

- High precision measuring stage options

- Data processing through 3-axis fully geometric PC software or digital readout multifunction microprocessor

- Digital and video camera capability

- 10x, 50x, 100x, 200x and 400x magnification options

- Modular and flexible system for future upgrade

For accurate measurement, it is critical to attain clear, high definition images. The Hawk 3-axis non-contact measuring system provides high accuracy, repeatable measurement of complex manufactured components of all materials, offering a modular and flexible solution to meet a wide range of measuring requirements.

Accurate measurement of complex components is achieved using the high contrast, high resolution optical image, enabling enhanced surface definition for fast and simple measurement. Critical parts can be measured with confidence.

Measuring stage options include 150mm x 150mm (6" x 6") and 200mm x 150mm (8" x 6") stages, with factory completed non-linear error correction calibration to ensure optimum accuracy and traceability to NPL/NAMAS/NIST standards for the purposes of ISO9000.

QC5000 fully geometric PC software provides a powerful and straightforward user interface with advanced data handling capabilities, including CAD import/export, custom reporting and CNC control.

For more basic data processing, the multifunction QC200 microprocessor provides easy representation of X, Y and Z measurements, both numerically and in graphic form. Results can also be printed via a parallel printer port.

Systems are also available in motorized and fully automated, edge detecting configurations.

Hawk can also be linked to external accessories such as digital camera form Nikon, Kappa or Motic or video/CCTV.

The Hawk family of non-contact measuring systems are available in configurations varying from 2-axis manual systems through to fully automated, edge detecting 3-axis measuring platforms.

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Additional Lightening and camera Options:
The Hawk family of non-contact measurement solutions is modular and flexible. A range of system configuration options are available to exactly suit your application requirements.

6-Point Fibre Optic Ring Light (Standard)
General purpose surface illumination, used where surface features on the subject may cause shadows. The six points of light ensure uniform illumination across the subject. The fibre optic light source is remote, providing cold illumination.

Spot Light
Simple, low cost illumination using two halogen spot lamps mounted next to the objective lens. Used for flat, non-reflective subjects that do not require cold illumination.

Episcopic Illumination (Epi)
Episcopic illumination projects the light through the objective lens, following the same path as the image. This is used particularly where light needs to be projected into a blind hole or for higher magnifications where the subject is flat and reflective.

Sub-Stage Illumination (Standard)
Sub-stage illumination (transmitted light) is used where an edge profile is required, for transparent subjects, or where through holes in a component need to be seen. A fibre optic, cold light source is projected through the measuring stage.
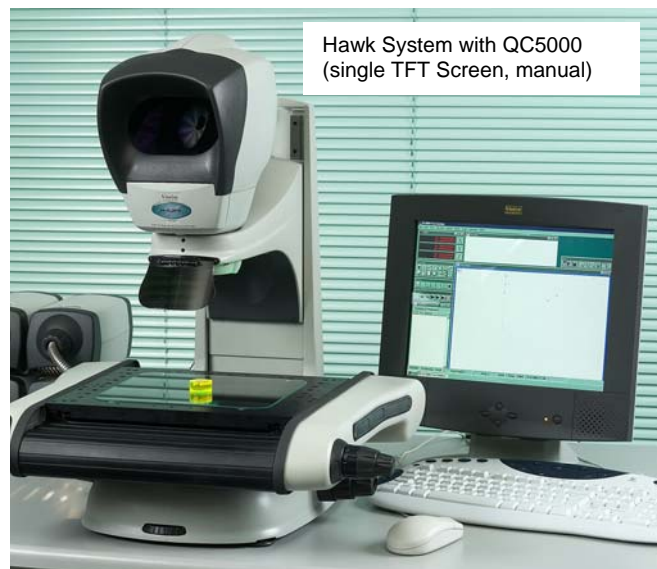

cameras:
All Hawk models can be fitted with a camera arm allowing image capture using a wide range of camera types. A high-resolution digital camera is recommended.
Additionally, a 'C' mount adaptor for video capture can be fitted. This feature is used on the fully automated Hawk system for Video Edge Detection (VED).

Hawk System with QC5000 CNC
(two TFT screens, automated with joy-stick)

Hawk System with QC5000
(single TFT Screen, manual)

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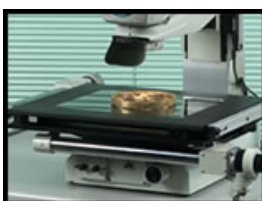
Measuring Stage Options:

Hawk is available with a number of measuring stage options:

- **150mm x 150mm (6" x 6")**
  Precision Stage
  Resolution: 1µm
  Accuracy: 5µm
  Repeatability: 3µm
  Reproducibility: 6µm
  Z-axis travel: 250mm

- **200mm x 150mm (8" x 6") ***
  High Precision Stage
  Resolution: 0.5µm
  Accuracy: 2µm
  Repeatability: 2µm
  Reproducibility: 3µm
  Z-axis travel: 250mm

- **300mm x 225mm (12x9") or 400mm x 300mm (16x12") ****
  Large Capacity Stage
  Resolution: 2µm
  Accuracy: 30µm
  Repeatability: 10µm
  Reproducibility: 10µm
  Z-axis travel: 90mm std. (extendable up to 390mm)

Motorized Stage Option
Semi-automatic operation is possible with X, Y and Z motorized movement. QC5000 metrology software can automate positioning of the stage with operator input for detail positioning and focus.

Fully Automated option
The motorized stage options combined with video-based edge detection (VED) allows for fully-automated measurement in the X, Y and Z planes.

* available as motorized stage (x, y and z axis)
** available as motorized stage (x and y axis only)
X and Y displacement measurements are performed by using a crossline reticle mounted in the optics, incorporated in the Hawk viewing head. Manual or motorized options are available for all measurement requirements.

Total Magnification	10X	20X	50X	100X	200X	400X
Numerical Aperture	0.05	0.09	0.22	0.30	0.46	0.75
Working Distance (mm)	81	84	61	35	3.1	0.63
Field of View (mm ø)	14.20	7.10	2.84	1.42	0.71	0.36
Depth of Field (µm)	270	67	10	6	5	2
Z-Axis Repeatability (µm)	220	70	4	3	2	2

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The Hawk family of non-contact measurement solutions is modular and flexible. A range of system configuration options are available to exactly suit your application requirements.

QC200 Series Microprocessor

QC200 provides a compact microprocessor unit with an intuitive user interface and simple, meaningful digital readout display, capable of 2- and 3-axis measurement. Straightforward configuration and the easy-to-use interface makes the system ideal for factory floor use.

- Stand-alone and easy-to-use
  Non-Linear Error Correction (NLEC) pre-installed
  2D Measurement Functions include:
  Point | **Circle** | **Angle** | **Line** | **Arc** | **Distance**
  Parallel printer / RS-232 port
  Language Formats: English | Spanish | Italian | German | French

QC5000 Metrology Software

QC5000 PC-based Software offers extra flexibility with a straightforward interface and advanced data handling capabilities. The complete system includes PC and flatscreen TFT monitor.

- 32-bit Windows application
  Non-Linear Error Correction (NLEC) pre-installed
  2D Measurement Functions include:
  Point | **Circle** | **Angle** | **Line** | **Arc** | **Distance**
  3D Measurement Functions include:
  Plane | **Cone** | **Sphere** | **Cylinder**
  Video Edge Detection (VED) and Auto-focus
  capability
  Extensive reporting, data transfer, CAD and SPC
  capability
  Language Formats: English | Spanish | Italian | German | French

The Hawk family of non-contact measurement solutions is modular and flexible. A range of system configuration options are available to exactly suit your application requirements.

To discuss the system configuration that best suits your application, please contact at us Ryf Ltd. to arrange a visit at one of our facility either in Grenchen or Commugny/Geneva with the biggest choice of microscopes and cameras/software in Switzerland.