optoSCAN THE AUTOMATIC 3D-DIGITIZATION SYSTEM

The fast way from the model to the 3D-data set:

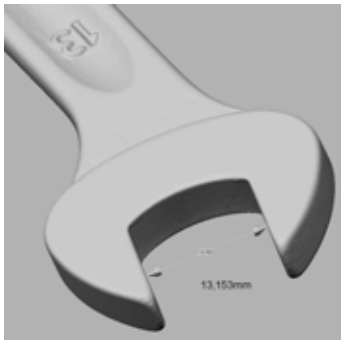
The topometric 3D-digitization system opto*SCAN* was specially developed for the rapid and automatic scanning of small components.

Here are the key features of the opto*SCAN* system in brief:

- ❏ opto*SCAN* is based upon our proven opto *TOP* system
- ❏ An additional rotation / tilt unit allows the automatic scanning even of complex components
- ❏ By means of adaptable intensity control, components with variable reflection characteristics are captured without problems
- ❏ The measurement positioning is pre-defined but can be modified by the user according to the measuring object
- ❏ The images resulting from the individual scans are optimally aligned to each other by using a best fit (alignment) approximation
- ❏ The measured images are automatically merged and stored in a STL file
- ❏ The sensor of the opto*SCAN* system is equipped with a high resolution digital camera (1.380 x 1.036 Pixel)
- ❏ Two standard measurement field sizes are available: HE 100 with 80 x 60 mm or 200 with 160 x 120 mm FOV
- ❏ The change between this two measuring ranges is realised by changing the objectives and/or the sensor base in a matter of minutes

Motor cover of Ducati


Coin ∅ 45mm


Spanner


opto*SCAN* system

Low system weight, short measurement and analysis time:

- ❏ The opto*SCAN* system weights less than 15 kg (incl. sensors, controller, rotation / tilt unit, baseplate, cover and laptop)
- ❏ For a typical sequence with 3 tilt and for each of these 6 rotation positions, less than 3 minutes are required
- ❏ The analysis of the data, including alignment, merging and calculation of STL files needs between 5 and 10 minutes, depending on the complexity of the component and resolution
- ❏ Optionally, the calculated STL-data can be filtered and thinned out according to the curvature of the surface

breuckmann

optoSCAN

THE AUTOMATIC 3D-DIGITIZATION SYSTEM

Technical Data

Image processing

Host computer	Core™2 Duo, ≥ 2 GHz, ≥ 2 GB RAM, ≥ 60 GB
Image data interface	analogue or IEEE 1394-Interface (FireWire®)
Operating system	Windows XP
Measurement software	OPTOCAT *for Windows*
Data interface	ASCII, BRE, STL*, PLY*, VRML*

* detailed specification on inquiry

Sensors

Projection unit	Miniaturized projection technique
Light source	100 W halogen
Imaging	High resolution digital camera, IEEE 1394-Interface (FireWire®)
Digitizing	1.380 x 1.036 pixel
Operating distance	approx. 40 cm
Acquisition time	approx. 1 sec

Rotation / Tilt unit

Control unit	integrated in opto*SCAN*-controller
Angle area of rotation	360 degrees
Angle area of tilt	+/- 40 degrees, adjustable in 3 steps
Resolution, rotation	approx.1.25 degrees
Load capacity	to 2 kg (at apt fixation of object)

Options

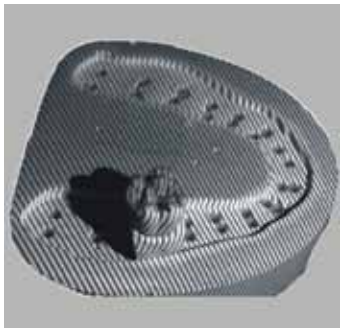
Host computer ..... Notebook or Laptop
High resolution camera with 6 MegaPixel

Versions of opto*SCAN*- system

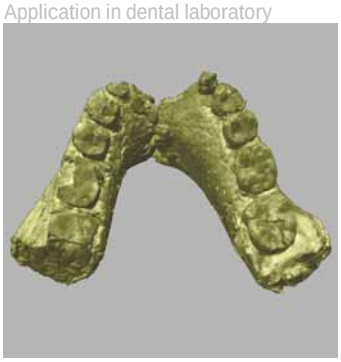
opto*SCAN*-HE has been designed as a HighEnd-system and is based on the same sensors as the opto *TOP*-HE-system . The system will be delivered with two sets of objectives for the measuring ranges 100 and 200.

Measurement fields of opto*SCAN*- system

Sensor	HE-100	HE-200
Measurement field [mm]	80 x 60	160 x 120
Digitizing [pixel]	1.380 x 1.036	1.380 x 1.036
Distance from object [mm]	360	360
Triangulation angle [degree]	30	30
Measuring point distance [mm]	0,06	430
X,Y-resolution [µm]	30	60
Z-resolution [µm]	± 7	± 10
Feature accuracy [µm]	± 10	± 15



Application in dental laboratory



Denture UR501 (Senckenberg-Institute)

Camsharft

Handy cover

Breuckmann GmbH
Industrial 3D Image Processing and Automation
Torenstr.14 · D-88709 Meersburg
phone: +49 (0) 75 32 – 43 46 0
fax: +49 (0) 75 32 – 43 46 50
info@breuckmann.com
www.breuckmann.com