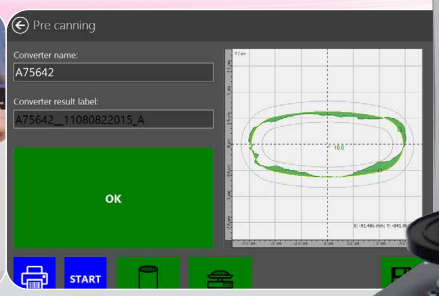
OMCAT.

Catalytic converter measurement



KOCOS OPTICAL MEASUREMENT GMBH

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CONTENT

OMCAT

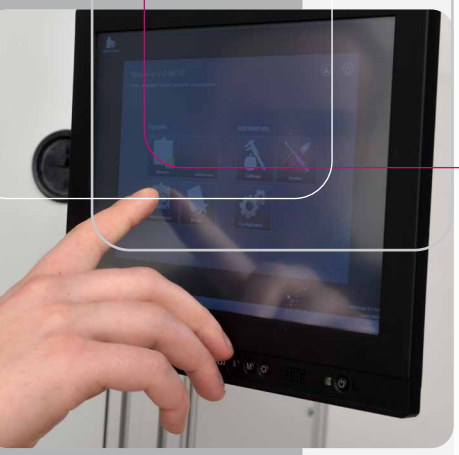
Catalytic converter measurement with OMCAT

The exact position of the ceramic substrate within the catalytic converter sleeve is of decisive importance for the durabilit importance for the durability of exhaust catalytic converters. Premature damage may result if thesubstrate is fixed too loosely or too tightly.

OMCAT catalytic converter measuring systems provide a fast and efficient means of carrying out complex geometrical measurements on exhaust catalytic converters and of determining the gap bulkdensity (GBD).

OMCAT measuring systems feature innovative measurement functions combined with reliable technology. High measurement speed and accuracy and high availability due to their rugged construction are the major strengths of these systems which come to the fore in the harsh conditions which prevail in production environments.

All OMCAT systems are tried and tested standard solutions. Their components and modules have undergone a lengthy test phase and rigorous quality inspections. The standardized construction of these measuring systems guarantees long-term, global availability of spare parts.



OMCAT 550 | 600

Quality control and process control in production

OMCAT 550 and OMCAT 600 measuring systems are designed to withstand the harsh conditions in manufacturing environments. Their robust construction guarantees longevity, while the use of maintenance-free components ensures high availability.

Smooth and robust sheet steel panelling without nooks and crannies makes for easy cleaning. Maintenance access points with several access levels for connections, electronics and the rotary stage allow easy access for maintenance and servicing.

The measurement functions are controlled using ergonomically designed robust push buttons. These large, metal push buttons are specially arranged for intuitive operation. They are guaranteed for 10 million switching cycles and meet all the requirements of harsh manufacturing environments and 24/7 production.

The measuring system is controlled with the OMCAT-Vision software which is optimised for operation using the function buttons and 10" touch screen.

OMCAT L55

Flexible quality control and process control

OMCAT L55 is a flexible standard measuring system and is suitable for use in a manufacturing environment as well as in laboratory or measuring rooms. It features a height-adjustable operating touch screen, as well as an integrated evaluation unit.

Thanks to its small footprint, this standard module is extremely space-saving. The integrated evaluation unit ensures fast and fully automatic measurement evaluations. Inside, the OMCAT L55 has various connection options to expand it with peripherals, such as code readers.

OMCAT XA5 | XA6

The solution for laboratory applications

OMCAT XA5 and XA6 are featuring analytical, statistical and graphical tools which make itsuitable for use in development, process optimisation, quality assurance and the technological preparation of the manufacturing process.

The system is equipped with a 22" swivel monitor, mouse and keyboard. The parameters and measurement results are graphically displayed in detail on the large monitor, allowing comprehensive, detailed analyses.

The OMCAT-Expert software, included in the scope of delivery, can be used to display measurement results in detail and to carry out all the measurement tasks required in a laboratory, e.g. the inspection of details during the development of new products.

In order to guarantee optimum protection from dirt and unauthorized access, the system is integrated in a cabinet with a lockable shutter. The cabinet is fitted with castors and also provides enough space for optional peripherals, such as a label printer and weighing scales, as well as for SPC and calibration pieces. The screen can be swivelled into the cabinet so that it too can be stored behind the closed shutter.

OMCAT

Measuring catalytic converters quickly and precisely

OMCAT can measure any component with a convex cross-section. The measurement object is rotated on a rotary stage while the measurement sensor is moved to defined measurement levels by means of a linear stage. The measured data is automatically compared with nominal contours which are saved in measurement recipes.

Three measurement levels in seven seconds

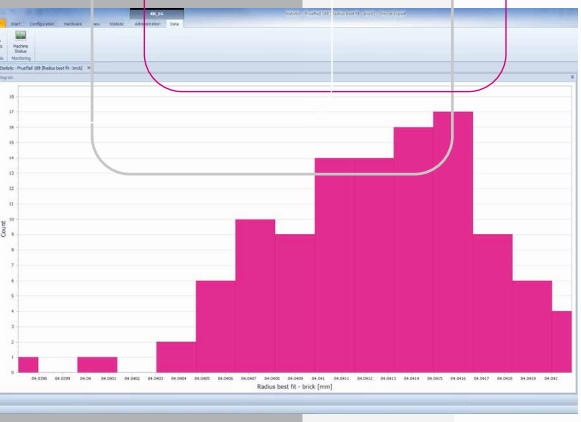
Fast stages for positioning measurement object and sensor, a powerful internal evaluation and control processor and an additional real-time processor allow fast, fluent processing because processes run in parallel. A measurement with three measurement levels and a speed of rotation of 360°/s takes less than 7 seconds from the start of the measurement until the results have been saved.

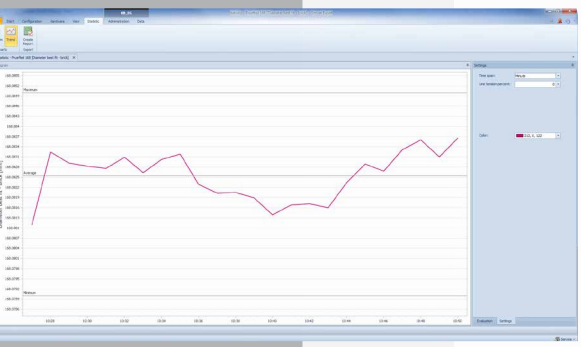
Measuring multiple catalyst bricks in a stack

If several bricks are installed in a converter, they can be measured in a stack in order to increase throughput. The measurement for the sleeve can also be carried out in one step without rotating theconverter. Up to four bricks can be measured with one recipe so there is no need to keep changing the recipe. It is easy to prevent measurements being mixed up by mistake by using a recipe in combination with optional code scanners to check the part number.

Acquisition of codes for tracking

Measurement objects can be identified and tracked by reading in a wide range of different codes. To guarantee maximum flexibility within the production process, the functions of the code scanners can be freely assigned using the measurement recipe, making it possible, for example, to process codes on catalyst bricks, lot codes, etc. OMCAT therefore compliesfully with the requirementsstipulatedin the 008-06-17 OEM standard.





Software

Depending on the system model and the field of application, a number of different software versions are available for OMCAT measuring systems.

OMCAT-Vision: Operation via touch screen

OMCAT-Vision is optimised for operating and controlling the measuring systems via touch screen and is specially designed for use in serial production. It is installed on all measuring systems as standard operating software. The ergonomically designed user interface is clearly structured and easy to understand, enabling operators and setters alike to work intuitively.

OMCAT-Expert: Detailed analyses and evaluations

The Expert software features comprehensive analytical, statistical and graphical tools and is recommended for use in development, process optimization, quality assurance and the technological preparation of the manufacturing process.

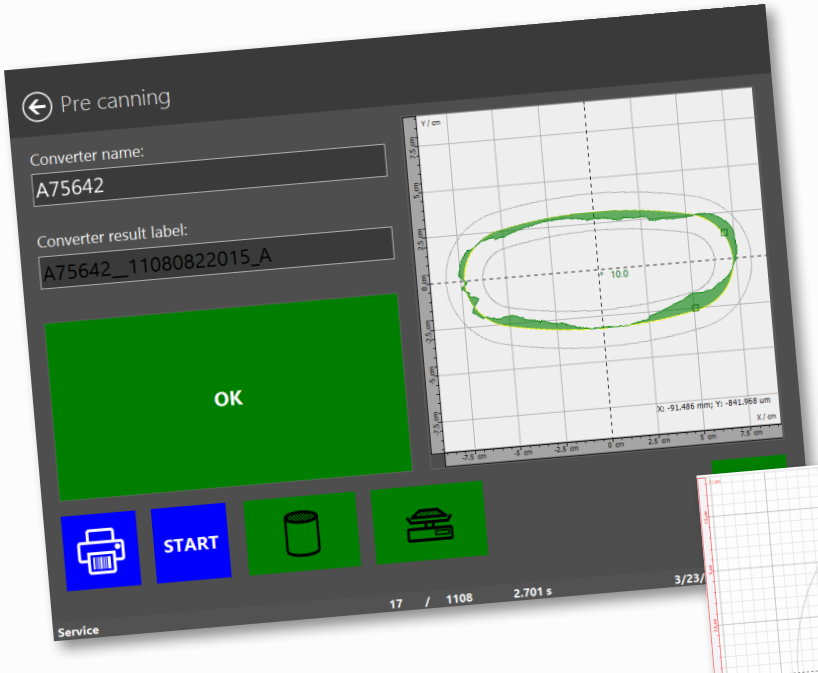
The applications listed below are given as examples of the comprehensive possibilities afforded by the software:

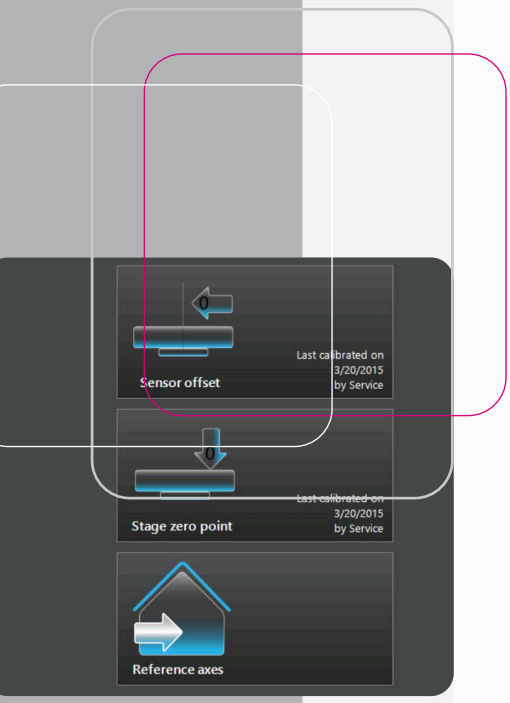
- Flexible measurements thanks to execution of individual measurement steps and examination of individual contours
- Automated multiple measurements and recording of changes
- Superimposition of contours from various measurements
- Reverse measurements
- Determination of local measurement values or curvature in specific areas
- Statistical functions such as trend analysis and histograms
- Use of measurement data from external sensors, such as temperature and humidity
- Horizontal and vertical measurements for the fast determination of contour and height

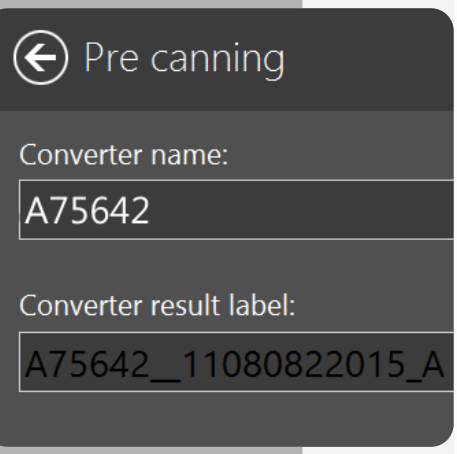
Admin module for OMCAT-Expert

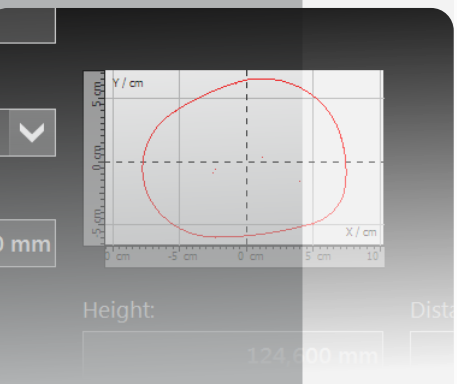
The Admin module allows complete central management of all OMCAT measuring systems using a network. This makes it ideal for operators with several measuring systems which may even located at different sites.

With OMCAT Admin systems can be configured for scheduled measurement tasks, serviced and monitored in various ways via remote access in background, without interrupting any measurement processes. This also includes the upload of updates and recipes. Monitoring plant and production parameters provides effective support for the preparation of production reports and statistics.









Simple and intuitive operation

The intuitive and easy-to-understand user interface guarantees easy operation and minimizes the time it takes to become familiar with the measuring system.
Guided data entry in the recipe generator and data plausibility testing ensure reliable configuration and automatic fault detection. Nominal contours can be created directly or read in via DXF files.
The measurement procedure is fault-tolerant: individual measurement steps can be corrected at any time without the entire measurement process having to be carried out all over again.
The results are tailored to suit the specific application and are displayed clearly on the monitor.

Reliable and comprehensive storage of results

The data is securely stored in a database which is insusceptible to manipulation. A highly efficient database system allows the storage of at least 2 million data sets in the measuring system with consistent access times. The data sets contain the complete measurement results, including the plant and recipe parameters, enabling repeat measurements and further analyses to be carried out. Remote access for analysis and statistics is protected by a password and certificates.

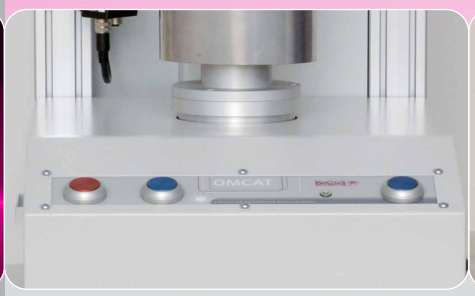
In-process data interface

All the measurement, adjustment and SPC data can be exported to ASCII files in CSV format regularly and automatically and can be saved on a network drive. This makes is possible to import files into databases and spreadsheet programmes for the purposes of quality management and mandatory documentation where they can be subjected to customer-specific further processing.

Technical data

Name	OMCAT L55	OMCAT 550	OMCAT 600	OMCAT XA5	OMCAT XA6
Operation	10" TFT monitor with touch screen and function buttons, PLC	10" TFT monitor with touch screen and function buttons	10" TFT monitor with touch screen and function buttons	22" TFT monitor with mouse and keyboard, swivel-mounted	22" TFT monitor with mouse and keyboard, swivel-mounted
Diameter measuring range (mm)	45-205 infinitely variable up to 290-450	45–205	50–450	45–205	50–450
Repeat accuracy, diameter	0.01 mm				
Standard deviation, diameter	< 0.003 mm				
Repeat accuracy, gap	0.015 mm				
Standard deviation, gap	< 0.003 mm				
Repeat accuracy, GBD	0.002 g/cm³				
Standard deviation, GBD	< 0.0005 g/cm³				
Repeat accuracy, weights	0.2 g				
Standard deviation, weights	< 0.05 g				
Dimensions (mm)	W: 380 H: 880 D: 790	W: 430 H: 1100 D: 929	W: 430 H: 1100 D: 1254	W: 1400 H: 1980 D: 1330	W: 1400 H: 1980 D: 1330
Version	Table-top device and integration device	Table-top device and integration device	Table-top device and integration device	Cabinet system on castors, lockable	Cabinet system on castors, lockable

OMCAT.



KoCoS
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KoCoS Optical Measurement GmbH
Döbereinerstr. 22
99427 Weimar, Germany
Tel +49 3643 906 38-0
info@optics.kocos.com
www.kocos.com

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