

OPTOFLASH

NEXT GENERATION
PRECISION
MEASUREMENT
SOLUTION



MARPOSS

OPTOFLASH is a flexible optical measuring system well suited for the production floor as it is super-fast and precise at the same time.

Using a combination of 2D optical sensors and a precision motor for part rotation, the Optoflash can acquire high-resolution images of the workpiece to automatically validate the compliance of the part across its external surface. The workpiece validation is executed through dimensional, positional and form measurement.



automotive

electronics

aerospace

fasteners

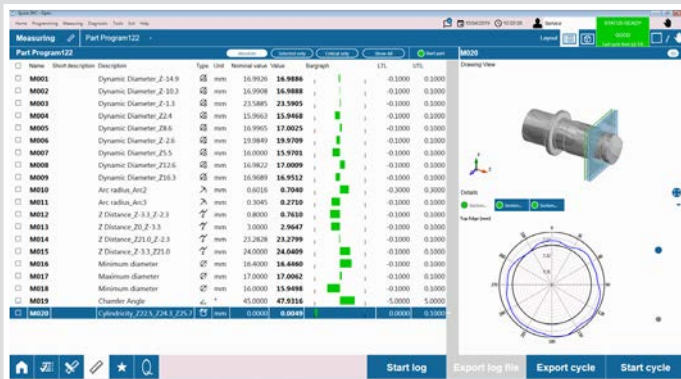
medical

Optoflash is the world's-first optical measuring unit based on side-by-side 2D image architecture. In order to cover a large measurement field up to 300 mm, images are simultaneously acquired by multiple sensors, which are then precisely stitched together into one image of the part devoid of any gaps.

FAST

With the absence of Z-axis motion, the optical acquisition of the complete part - which consumes time on other systems - is performed almost instantaneously on the Optoflash. Therefore its cycle time is impressively fast.

APPLICATION EXAMPLE



- 9x Dynamic Diameters
- 2x Arc Radii
- 4x Axial Distances
- 3x Groove Diameters
- 1x Cylindricity
- 1x Chamfer Angle

MEASURING CYCLE TIME:
5.6 seconds!

NO MEASUREMENT TRADE-OFF

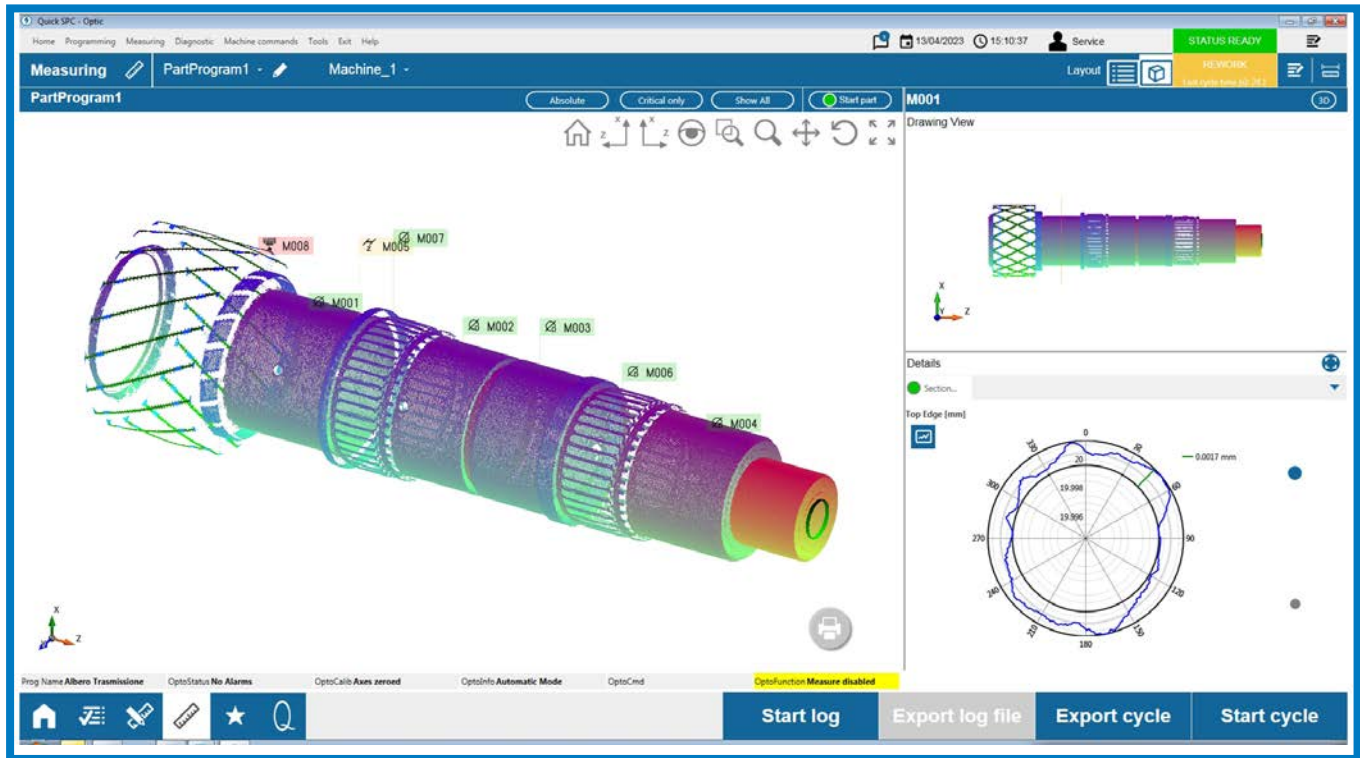
The 2D sensors acquire the full image of the workpiece in a single moment as compared to line-by-line as in traditional solutions. As a result, Optoflash executes both radial and axial measurements with the part in rotation. This means that the Optoflash is the only product able to perform perfect axial TIR through optical acquisition.

DURABLE

Fixed position sensors means there is no mechanical wearing. Metrological performance of the Optoflash is consistent and stable over millions of cycles. There are also minimal maintenance requirements.

3D ENGINE TO ELEVATE THE MEASUREMENT ACCURACY

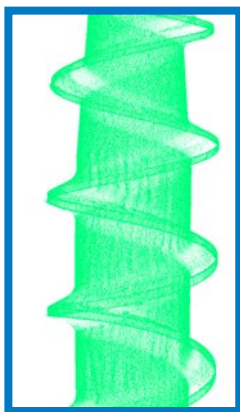
The ability of the Optoflash to capture full frame 2D images while the part is rotating enables unique performance. With the Optoflash, the component being measured is first reconstructed in 3D style and measurements are then executed in a 3D approach. The Marposs software running the Optoflash includes a patent-pending algorithm that generates a detailed 3D reconstruction by integrating the traditional 2D images.



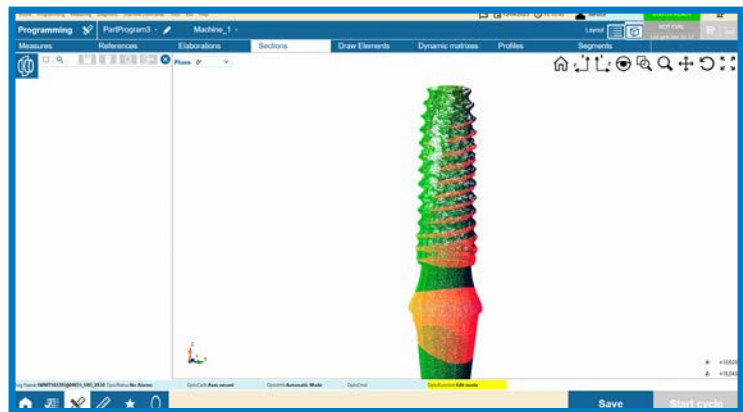
The 3D engine of the Optoflash digitizes the part with superior consistency as compared to traditional shadow-casting acquisition. In fact, traditional 2D images cannot be reproduced to detail out irregular part profiles or interrupted or even threaded surfaces while this is standard performance for the Optoflash.



TRADITIONAL
RECONSTRUCTION



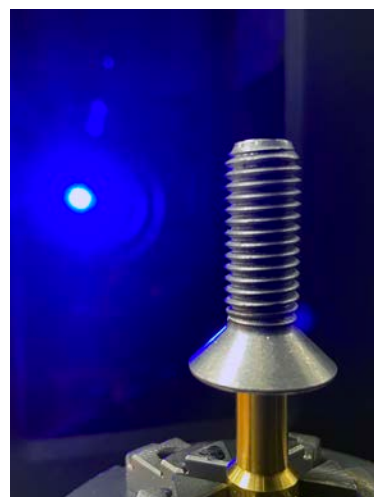
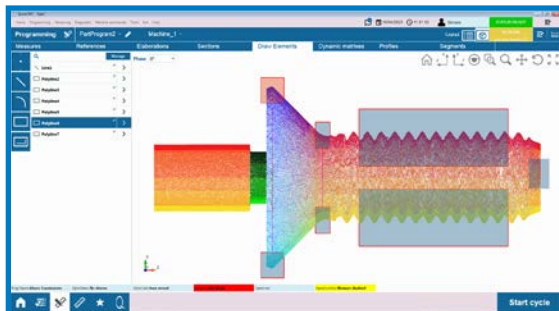
OPTOFASH
RECONSTRUCTION



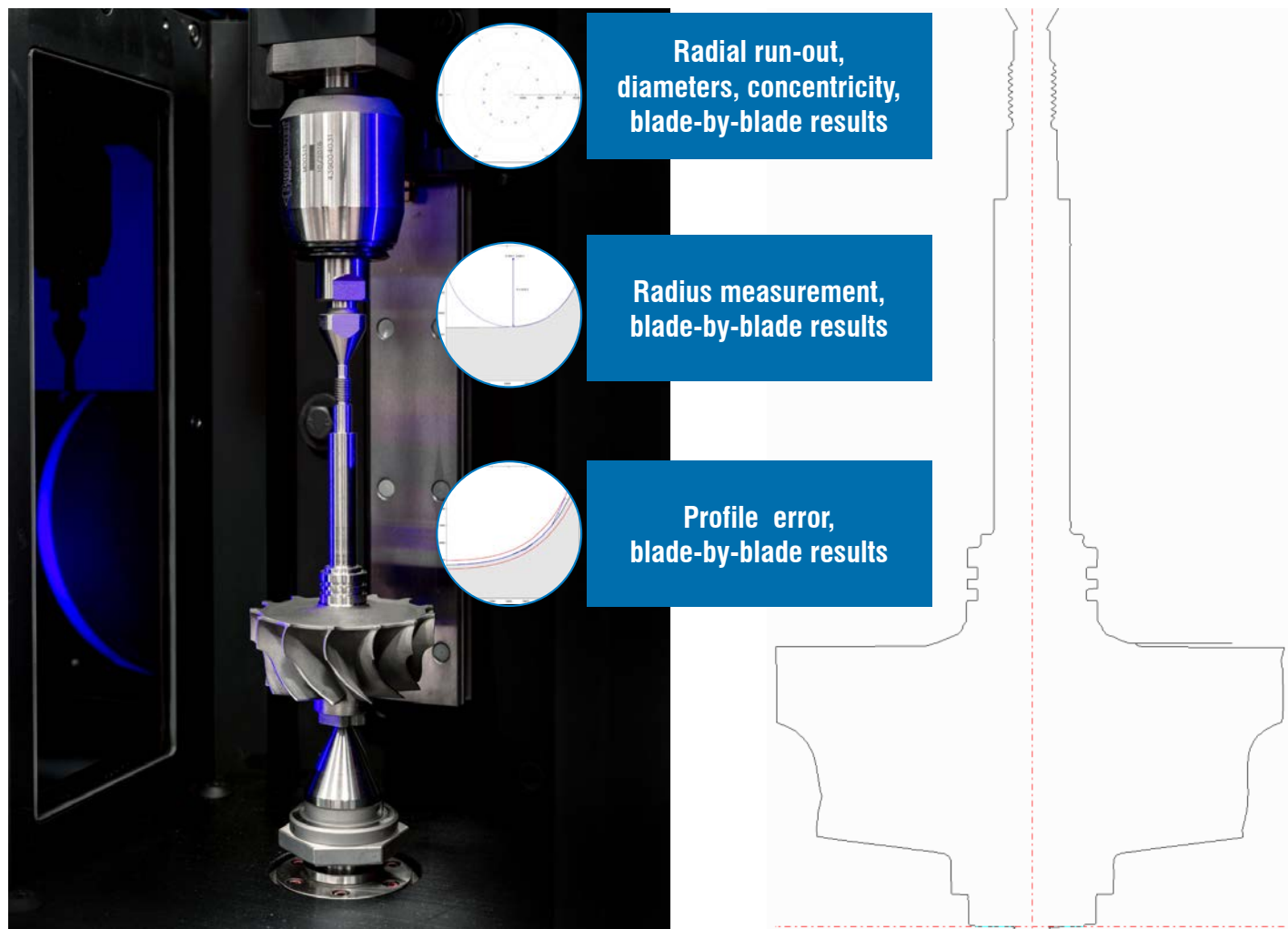
FASTENER QUALITY CONTROL

Screws, pins or rivets can be easily and quickly measured with the Optoflash.

The standard measurement toolkit includes threads analysis: maximum and minimum diameter, pitch diameter, pitch value, thread angle, thread linearity, total thread length.



TURBOCHARGERS



Thanks to the 2D image acquisition, Optoflash is a superior solution for measurements on the turbocharger shaft. In fact, Optoflash acquires the entire part profile into a single 2D image, which enables it to achieve the maximum acquisition accuracy of the blade profile and a superior measuring speed at the same time. Optoflash is normally 2 times faster than traditional linear scanning solutions.

THE ULTRA-HIGH RESOLUTION MODEL FOR ULTRA-SMALL SIZE PARTS

Optoflash XS is Marposs' latest addition to the 2D optical measuring solutions, designed to meet the requirements of the precision mechanical devices industry, as well as the medical implants industry.

ULTRA-HIGH IMAGE RESOLUTION

Optoflash XS offers a superior level of image pixel density. It is the solution for measuring small parts and tight tolerances

COMPACT SIZE SOLUTION

Designed to be integrated into the production environment as well as in the lab, Optoflash XS is an all-in-one product, integrating the optics processing unit and user interface

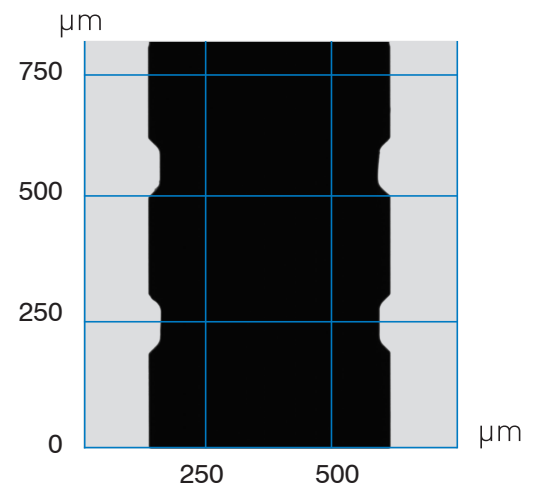
SUPERFAST

Operator simply places the part into position on the measuring holder and presses the "Start" button. Within two seconds, the part is completely measured.



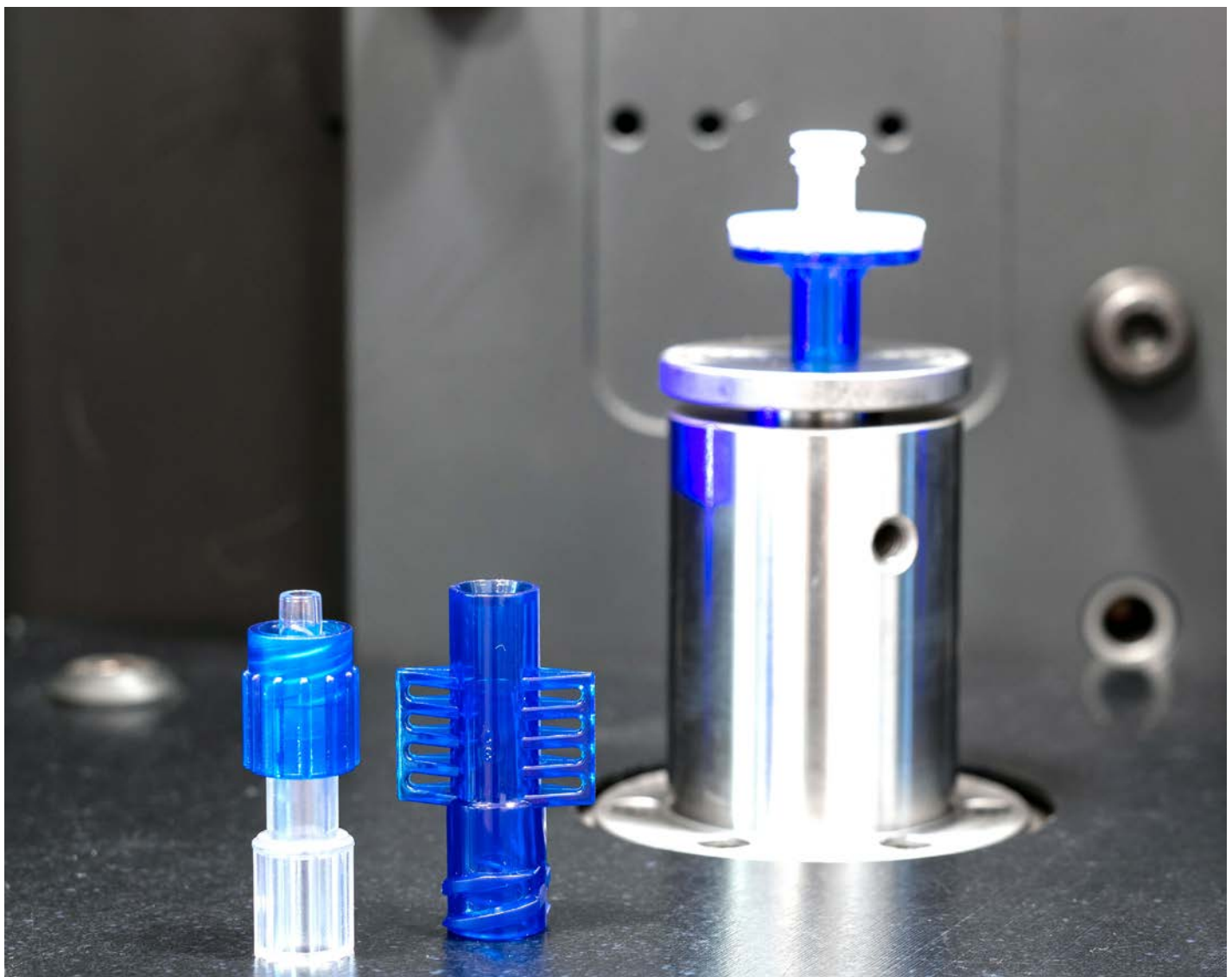
PRECISION MECHANICAL DEVICE INDUSTRY

Optoflash XS meets the requirements of the precision mechanical device industry. For instance, Optoflash XS can easily measure small chamfers or grooves, even below 100 μm extension, or very small changes of diameter along the part axis.



MEDICAL INDUSTRY

Flexibility makes the Optoflash XS a cost-effective solution for quality control in the manufacturing of tools or implants for the medical industry. Whether your producing plastic molded parts or high precision dental implants, the Optoflash XS delivers performance in speed and measuring precision. It is able to switch from one part type to a completely different one with a **simple click**.



Optoflash is designed for ease of use: there is an obstruction-free open loading area and an ergonomic tailstock system for easy part clamping.
The graphical user interface - via a touchscreen monitor - provides excellent ease of use.

One-click

measuring cycle activation

Connectivity

integrated USB hub with 7 available ports
for easy connection of printers, code
readers or external devices memory

Monitor

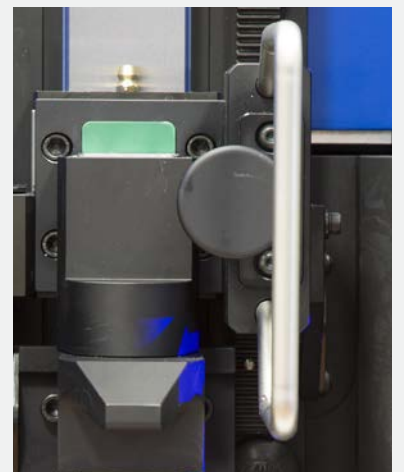
- on a flexible arm -
can be installed on either side of the unit



Part loading

Part type change

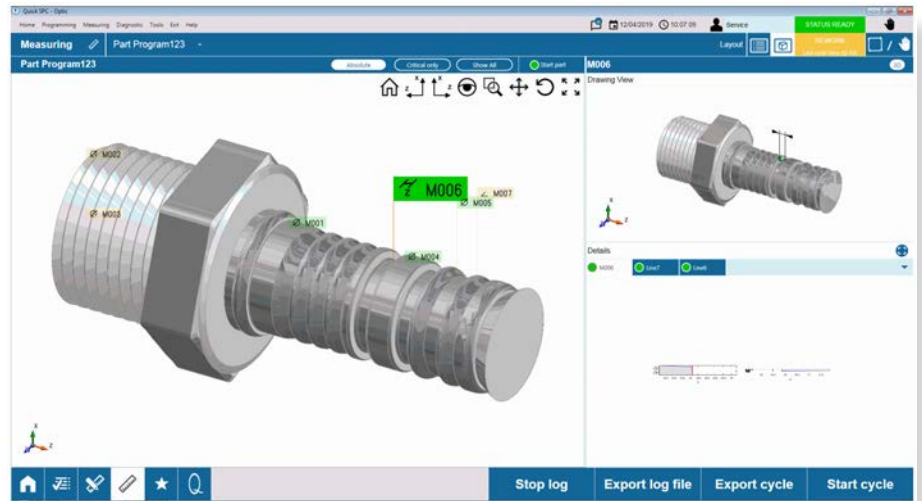
Correct part loading indicator



Optoflash is equipped with a state-of-the-art graphical user interface.

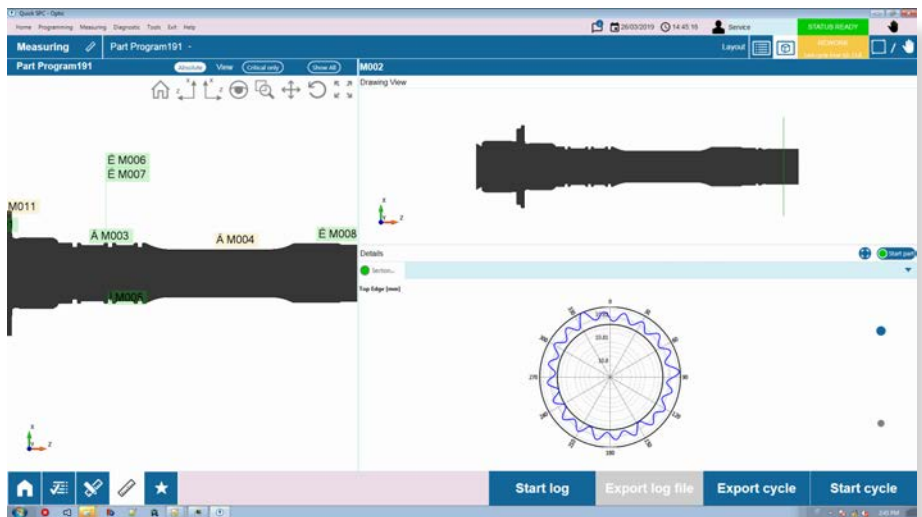
EASY TO USE

Eliminate training costs with an intuitive user interface. Featuring easy interpretation of the measurement results, part detail images and graphical setup, anyone can use and configure new measurement on the Optoflash.



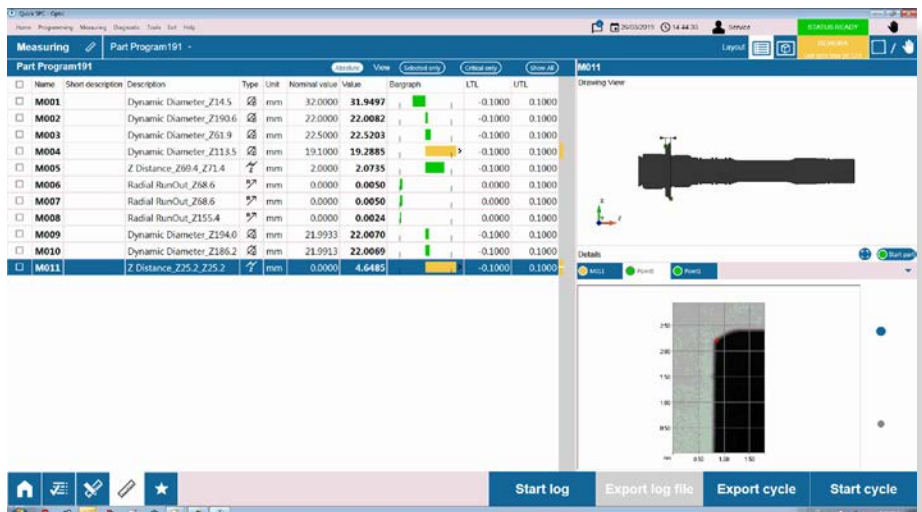
NEW FEATURES

As measurements are archived, a smart search function provides part detail review by images and trend visualization.



SUPERIOR SETUP FLEXIBILITY

Allows the Optoflash to fit a large variety of application requirements with easy actions.



OPTOFLASH MODELS



XS30

XS60

MEASURING RANGE [MAX PART DIMENSION]
LENGTH (mm)
DIAMETER (mm)

30 [30]
20 [20]

60 [60]
20 [20]

MAX PART WEIGHT (Kg)

1

MEASURING UNCERTAINTY 1
LENGTH (mm)
DIAMETER (mm)

U95 (2+L[mm]/100) μ m
U95 (1+D[mm]/100) μ m

PART LOADING MODE

MANUAL AND AUTOMATIC (BY ROBOT)

PART ROTATION

OPTION

MEASUREMENTS MODE

STATIC AND DYNAMIC

**DIMENSIONS
OF THE MEASURING SYSTEM**
W x D x H (mm)

610 x
545 x
400

1) Calculated following DIN 1319 part 3 / ISO norms on a reference master.

Ambient temperature at $20^{\circ}\text{C} \pm 1\text{K}$ with a maximum variation of 0.5K/h . Part temperature $20^{\circ}\text{C} \pm 1\text{K}$. After standard product calibration procedure.

PART CLAMPING OPTIONS

PLATE



CHUCK



CENTER TIPS





S100



S200



S300

100 [100]
60 [60]

200 [200]
60 [60]

300 [300]
60 [60]

6

U95 (2+L[mm]/100) μm
U95 (1+D[mm]/100) μm

MANUAL AND AUTOMATIC (BY ROBOT)

OPTION

STATIC AND DYNAMIC

854 x
612 x
626

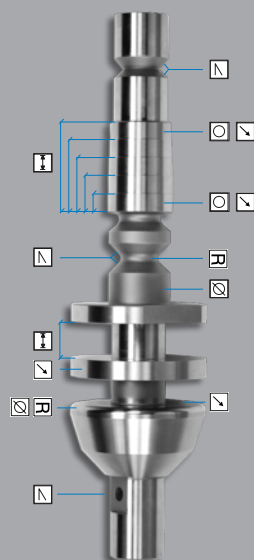
854 x
612 x
740

854 x
612 x
842

TYPICAL MEASURING TASKS

Dimensional, position, form measurements

- ✓ Cylindricity
- ✓ Coaxiality
- ✓ Straightness
- ✓ Roundness
- ✓ Flatness
- ✓ Symmetry
- ✓ Parallelism
- ✓ Perpendicularity
- ✓ Cam profile



- ✓ Thread inspection
- ✓ Diameter
- ✓ Length
- ✓ Radius
- ✓ Chamfer
- ✓ Angle
- ✓ Radial run-out
- ✓ Axial run-out
- ✓ Concentricity



MARPOSS

For a full list of address locations, please consult the Marposs official website

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