



FASTENER APPLICATIONS

# OPTOFLASH

FASTENERS  
QUALITY  
CONTROL



**MARPOSS**





In the fasteners industry, quality controls of screws is a crucial activity for operators. While manufacturing operators generally control screws during work-in-progress execution and at end-of-process, those operators in the supply channel need to guarantee inbound and outbound compliance to the nominal screw specifications. The high volume production together with the high variety of screw models generally result in a demanding condition for any operator in this industry, due to complexity of controls and consumption of time to execute the measurements.

There is a wide measurement toolkit library that can easily solve any of the most typical measurement problems. These include dimensional, position and form measurements both in static and dynamic mode. The library also includes thread measurement functions.

Optoflash is based upon **state-of-the-art area image sensors** and it can perform many micrometric-precision checks on parts with an **unprecedented speed**. Optoflash uses multiple image sensors integrated in fixed positions across the product structure to cover the entire measurement range. This gives the advantage that neither the image sensors nor the part being measured must travel along the Z-axis

MARPOSS Optoflash is a breakthrough solution for screw quality controls in the production environment.

In fact the Optoflash is an optical measuring unit, capable to automatically control several different features on a screw in a bounce of seconds

ON THE OPTOFLASH,  
DOZENS OF MEASUREMENTS  
ARE EXECUTED IN LESS  
THAN 10 SECONDS!

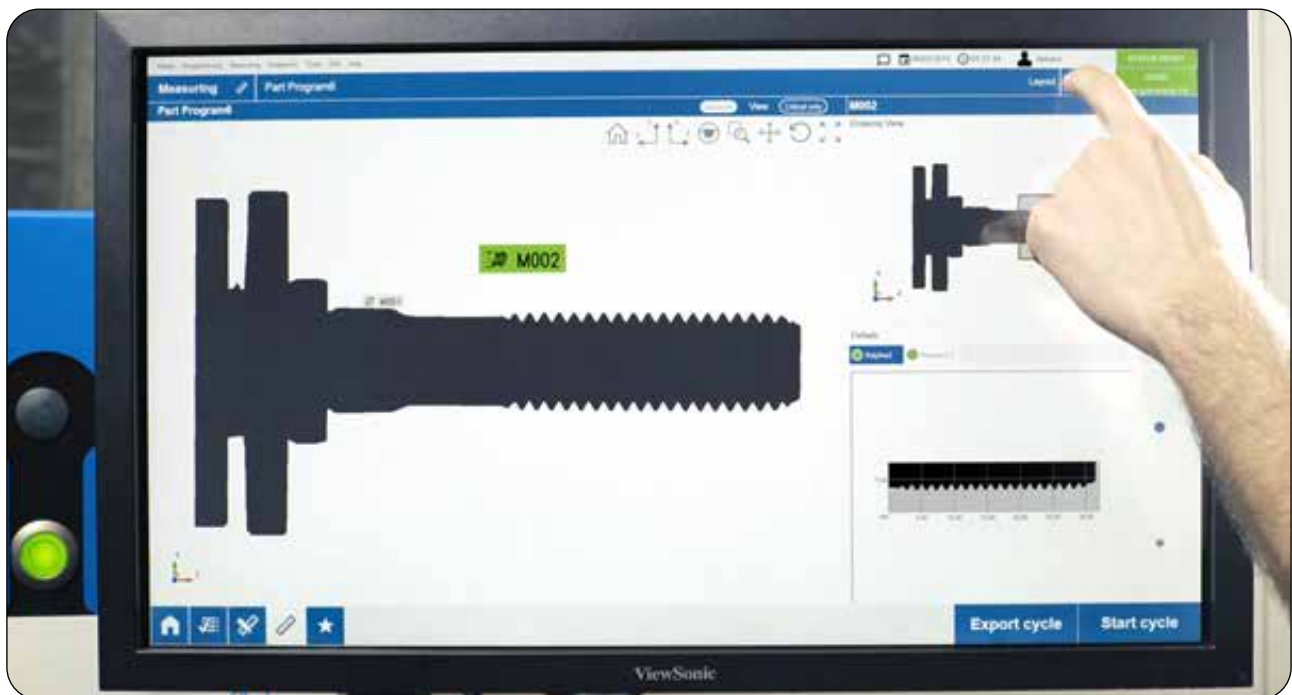




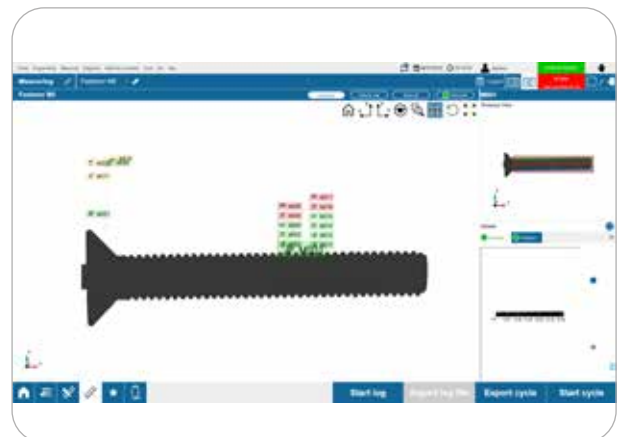
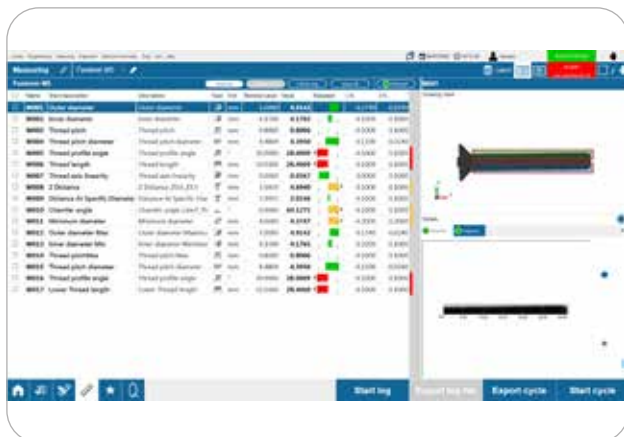
Operator places a screw in measuring position and activates the automatic measuring cycle through the Start button.

In 10 seconds, the Optoflash executes a 360° analysis of the screw and returns a graphical report of the measurements.

Through automatic processing and total screw analysis, the optoflash guarantees a strong level of measurements consistency, as high repeatability and reproducibility of the measurements, a performance level that is difficult to obtain through traditional manual measurements operations.



Measurements output are displayed as overlays and associated to the real screw image. Color codes help in determine critical conditions on the inspected part. As result, operators can experience an high level of ease of use and quickly validate the measurement results.





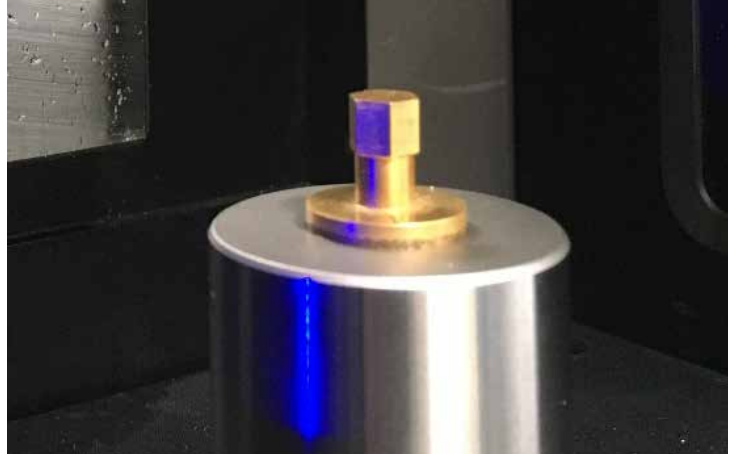


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OPTOFLASH  
S100



Screws are generally positioned into the Optoflash over a flat face plate or through a dedicated plug matching the head cavity dimensions and features.



In case of multiple screw models to be measured at the same time, there is a flexible system on the Optoflash to quickly switch among fixture types.



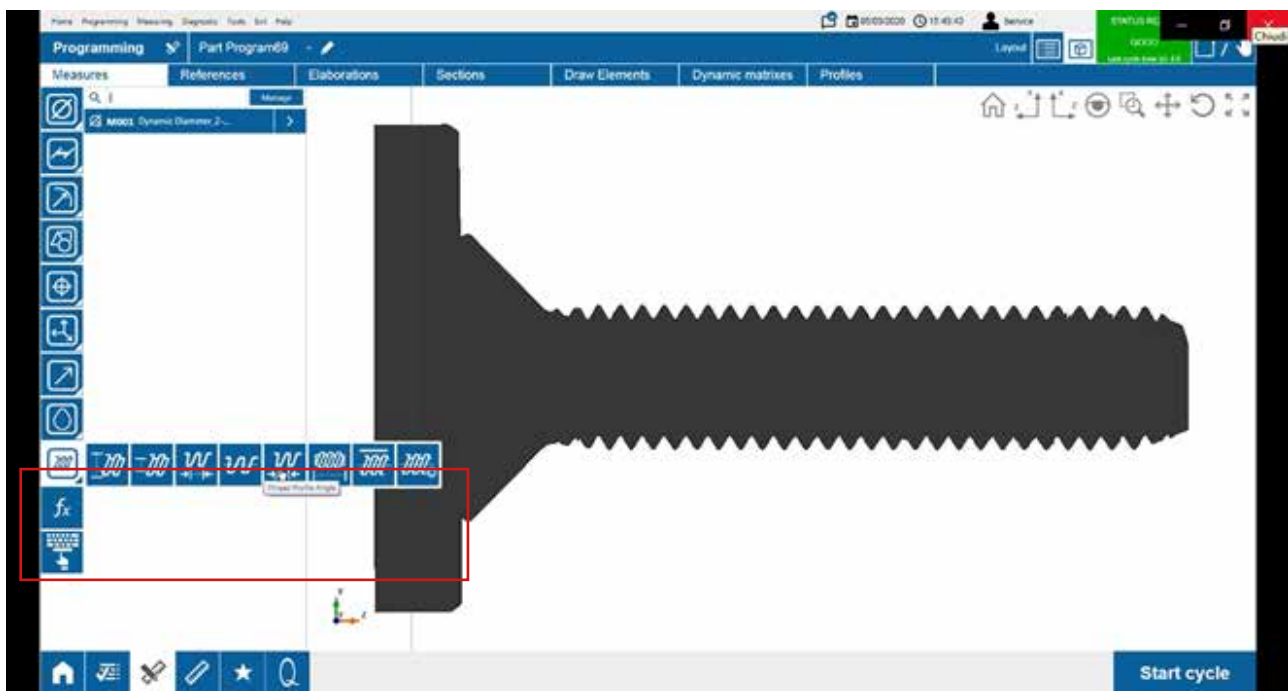




Measurement setup is easy as fast. With a drag and drop action, the user can place the measurement directly of the part drawing, and input the necessary data as the nominal value or the tolerance range.

On the Optoflash there is a measurement toolkit, dedicated to screws, that integrates the most common controls required on screws:

- Thread diameters: external, pitch, internal
- Pitch and angle
- Thread total length
- Thread linearity
- Thread axis



The measurement of screws is not generally an easy task, since the variability of the screw features and its profiles.

Nevertheless, on the Optoflash the measuring technical complexity is managed by the software and not visible to the users.

In fact, the Optoflash automatically compensates the variability of the part positioning on the holder and also the possible form errors of the screw.

The Optoflash analyzes screws over the 360° degrees and it automatically combines several images, in order to determine both part optical axis and measurements of the features.

# OPTOFLASH MODELS



MEASURING RANGE [MAX PART DIMENSION] LENGTH (mm) DIAMETER (mm)	33 [33] 20 [90]	66 [66] 20[90]
MAX PART WEIGHT (Kg)	1	
MEASURING UNCERTAINTY <sup>1</sup> LENGTH (mm) DIAMETER (mm)	U95 (2+L[mm]/100) μm U95 (1+D[mm]/100) μm	
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°C ± 1K with a maximum variation of 0.5K/h. Part temperature 20°C ± 1K. After standard product calibration procedure.



100 [100]  
60 [90]

200 [200]  
60 [90]

300 [300]  
60 [90]

6

U95 (2+L[mm]/100)  $\mu\text{m}$   
U95 (1+D[mm]/100)  $\mu\text{m}$

MANUAL AND AUTOMATIC (BY ROBOT)

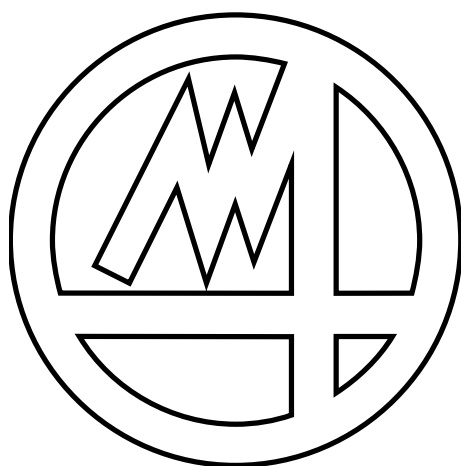
OPTION

STATIC AND DYNAMIC

854 x  
612 x  
626

854 x  
612 x  
740

854 x  
612 x  
842



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

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