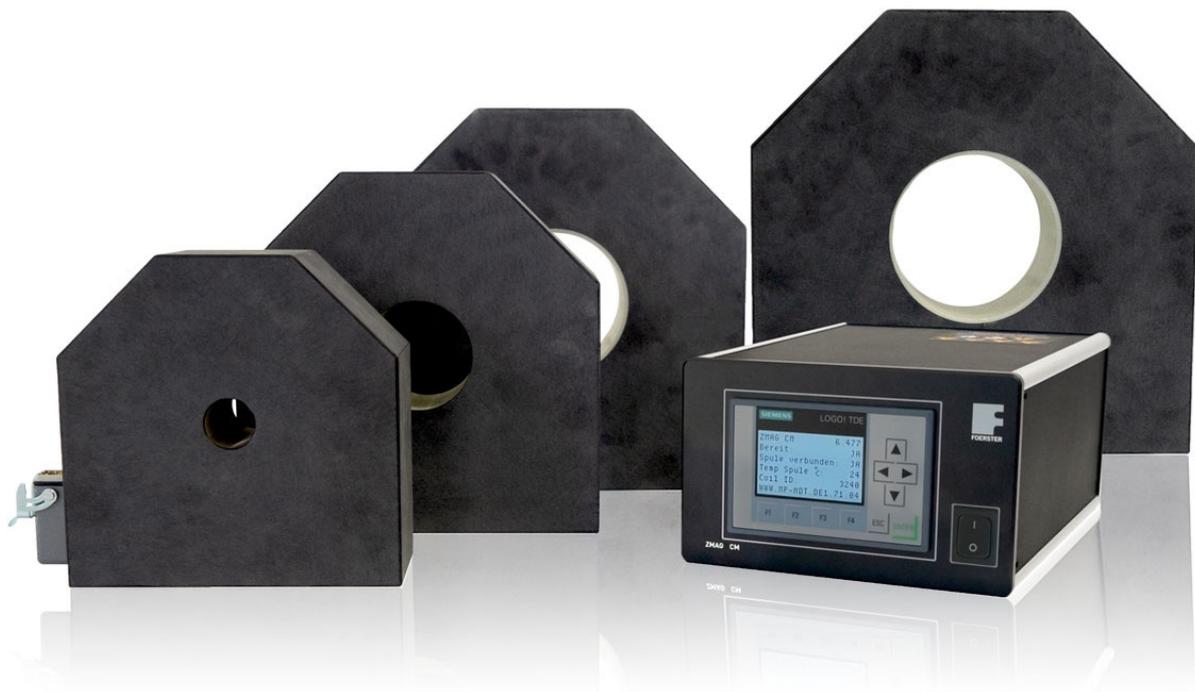


# ZMAG CM



Powerful demagnetization unit for components



## Increase your process quality and reliability now

Magnetized components can lead to all sorts of problems in the production process. For example, during grinding, punching or drilling, metal chips and debris may be present, which can lead to surface damage in subsequent processes. Or interfering signals arise due to remanence during the crack or structure test with eddy currents. This in turn leads to incorrect statements about the component condition and false results are given.

To avoid this from happening, FOERSTER offers you an appropriate solution: the powerful demagnetization unit ZMAG CM. Unlike other units, the ZMAG CM does not use a continuous signal but the so-called pulse method. This enables a higher penetration depth to demagnetize the components effectively and quickly. We deliver the ZMAG CM already preconfigured, so that you do not need to make any further adjustments. In addition, the control system allows easy integration into your production process. Increase your process quality and reliability now.

## Your advantages at a glance

- **Pulse method:** The pulse method allows a greater penetration of the component than at a constant frequency.
- **Flexible spool size:** Choose from the four standard sizes 30 / 75 / 110 / 220 mm. We manufacture individually on request.
- **It can be automated:** I/O interface for control available. The demagnetization can be triggered manually via remote control.
- **Plug & Play:** The demagnetization unit is preconfigured by us. This way, you can easily integrate the module into your process and start right away.
- **High demagnetization performance:** Powerful pulse shape for effective demagnetization.

## Technology

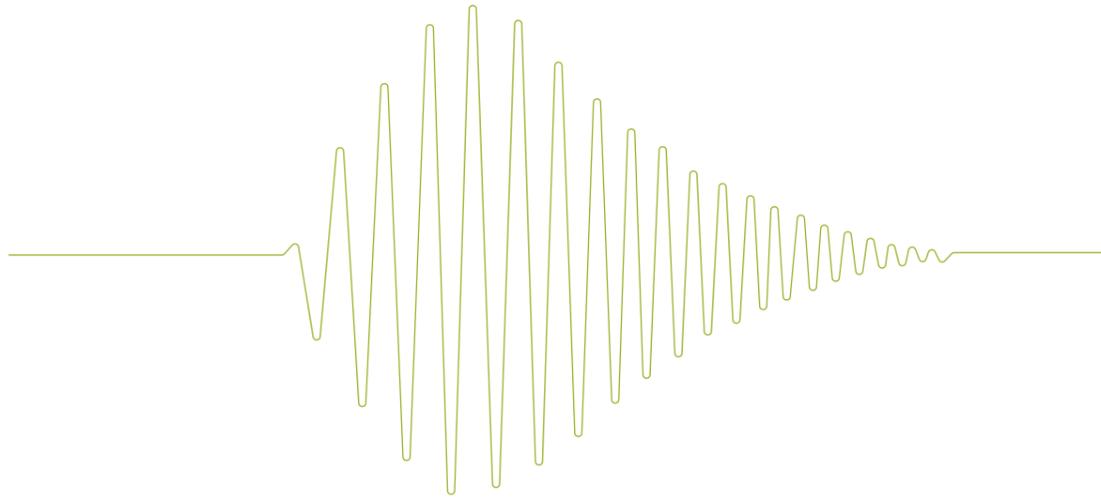


Fig. 1: Pulse shape by using the pulse method

### The pulse method

The ZMAG CM magnetization unit is operated with the pulse method. An approach that uses an alternating current pulse that flows through an appropriate coil. As a result, an alternating magnetic field that corresponds to the current is generated.

Components are positioned in the coil for subsequent demagnetization. The pulse can be triggered automatically via the connection to the PLC. This can also be done manually with a remote control. With complex geometries of the components it may be necessary to trigger the pulse several times while changing the components' position. This ensures the thorough demagnetization of the component.

The ZMAG CM degaussing unit is preconfigured according to the coil and the component. The current is fed based on a programmed demagnetization curve. The current pulse is reproducible and independent of the operator of the system.

The pulse method enables high field strengths with comparatively little heat generation. This allows for a greater penetration depth than with a constant frequency. As a result, the residual magnetization is significantly lower in contrast to a continuous signal.

## Applications

### 1. Elimination of misinterpretations

Due to inhomogeneously magnetized components, misinterpretation of the signal can occur during crack detection with eddy current. The result: good parts are incorrectly marked, resulting in pseudo rejects and a loss of profit. Demagnetization prior to the eddy current test can effectively eliminate this problem.

### 2. False signals during microstructure testing

In microstructure testing via eddy current, the magnetic properties of a component are primarily checked. Magnetizing the components influences these properties. A good part might be marked incorrectly and pseudo rejects can be produced if an inaccurate test result is generated. Therefore, we recommend a prior demagnetization of the components for a reproducible micro structure test.



### 3. Magnetic particle testing

For crack detection with magnetic powder, the components must first be magnetized. In order to avoid the powder from sticking and prevent subsequent processes from being negatively influenced by excessive magnetization, the components must undergo a powerful demagnetization process.



### 4. Magnetic adhesion of metal chips

Various machining processes (e.g. turning) produce metal chips that adhere to magnetized components or tools. In the further production process, these chips can damage the components. To prevent this, it is necessary to demagnetize the components so that the product quality is not endangered.



### 5. Coating processes

Fine particles on the material surface as well as residual magnetism can lead to a rough surface and chipping in certain coating processes. In addition, the residual magnetism can have an influence on the coating structure. To ensure a stable coating process, it is therefore necessary to demagnetize the components beforehand.



### 6. Compliance with manufacturing standards

Nowadays, components that are used in different sensors must comply with certain residual magnetism limits to prevent signal fluctuations. Therefore, there are often corresponding manufacturer standards that specify a certain limit value. By demagnetizing with the ZMAG CM you can comply with these standards and prove them.

# Integrated solutions



PROFI  
NET

## Product family STATOGRAPH

For reproducible crack detection on components, the product solutions of the STATOGRAPH family are available. Due to different production processes, remanence islands can appear in certain areas, frequently on the edges. To ensure that these local magnetizations do not generate interference signals during crack detection, we have the ZMAG CM demagnetization unit in our product portfolio for you.

The ZMAG CM demagnetization unit helps you ensure that these local magnetizations do not generate any interference signals during the crack test.



## Product family MAGNATEST

With the testing instruments and sensors from the MAGNATEST product family you can reliably test the microstructure and magnetic properties of your components.

In this test, it is equally important to counteract interference signals caused by magnetization by means of effective demagnetization.

With ZMAG CM you now receive all solutions at once.

## Headquarters

- Institut Dr. Foerster GmbH & Co. KG; Germany

## Subsidiaries

- FOERSTER France SAS, France
- FOERSTER U.K. Limited, United Kingdom
- FOERSTER Italia S.r.l., Italy
- FOERSTER Russland AO, Russia
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The FOERSTER Group is being represented by subsidiaries and representatives in over 60 countries – worldwide.

## Institut Dr. Foerster GmbH & Co. Business Unit Component Testing

In Laisen 70

72766 Reutlingen

Germany

+49 7121 140 0

info@foerstergroup.com

