



ibg goes the way of a clear test philosophy with regard to crack detection and structure test.

Only good parts are needed for calibration of the instrument for both methods. During testing, all parts which do not comply with the good parts are rejected. This is an invaluable advantage for the customer as unexpected defects are also detected.

Nearly two decades ago, ibg developed the PMFT - Preventive Multi-Frequency Test - for structure verification, which has been established worldwide as a trademark for reliable eddy current structure testing.

And now, PMFT is also available for crack detection - Preventive Multi-Filter Test: with the newly developed **eddyvisor<sup>®</sup>C** crack detection instrument.

Thus ibg again sets new standards in innovation and technology.

Our sales representatives and agencies worldwide are pleased to be at your disposal for further information or a demonstration.

*Yours*  
*Herbert Baumgartner*

## The eddyvisor<sup>®</sup>C

### New standard for production and laboratory

The new crack detection instrument **eddyvisor<sup>®</sup>C** (C = crack) completes the product range of **eddyvisor<sup>®</sup>** and is based on the Preventive Multi-Filter Technology which requires only good parts for calibration.

The basic instrument contains two crack channels and can be equipped with up to 16 channels for the highest version.

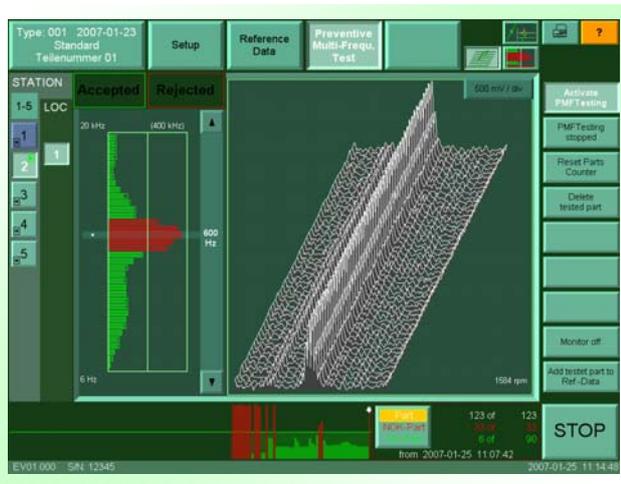
The **eddyvisor<sup>®</sup>C** may also be supplied together with the structure test device **eddyvisor<sup>®</sup>S** (S = structure) as a combined instrument **eddyvisor<sup>®</sup>SC**. This enables testing of the same test part resp. testing in different lines for correct structure and cracks simultaneously.



Photo: **eddyvisor<sup>®</sup>C** - 4 crack detection probes at test

Different signal display options are available for the user e.g. bargraph, y-t, x-t, x-y, general overview and single display of the tolerance zones as well as a three-dimensional C-scan display. The 15" touch screen provides an excellent overview at anytime and easy, comfortable operation.

Photos: screenshots of bargraph display, x-y-display and C-scan



C-Scan



x-y-display



bargraph display

The project-based data management organises the documentation as well as the administration of up to 100 part types. Data can be transferred via network or by USB-stick.

## Preventive Multi-Filter Test with eddyvisor® C

### New technology revolutionises crack detection

As a user of the traditional eddy current crack detection method You know the procedure: You need either a natural or artificial crack with known specification to calibrate your crack test instrument. The instrument must also be set so that during the test, it rejects all parts which correspond to the signal behaviour of the calibration part.

An example: small sinter tubes which have to be tested for surface defects:

You calibrate the instrument with a longitudinal crack:

That means, the setup of your instrument, which usually consists of carrier frequency, filter settings, amplification and phase angle, has been adjusted so that the defects which are similar to the master defect (longitudinal crack) are well detected. Other resp. unexpected flaws such as circumferential defects or pores will most likely not be found with this setup.



Photo 1: Test part with longitudinal crack



Photo 2:

Test part with pore will not be rejected

So as to find these kind of flaws, further crack channels with sensitive settings for the respective type of defect were required which made the test more complex and more expensive.

ibg with the newly developed crack detection instrument **eddyvisor® C** now provides a new and more efficient way. The method of Preventive Multi-Filter Test (PMFT) allows the use of only good parts for calibration, i.e., the instrument is shown the surface of several OK-parts and 30 tolerance zones are formed under variation of filter settings, phase angle and amplification. During testing, each deviation from the "good" surface is recognised and the "bad" parts rejected.

This method enables us to find up to six (our example of the sinter tube) different defect types with only one setting and one crack channel.

The defects include longitudinal through wall cracks and circumferential cracks, air bubbles at the surface, oxidation pores, material chips and selective chemical mutation (refer to the photos).



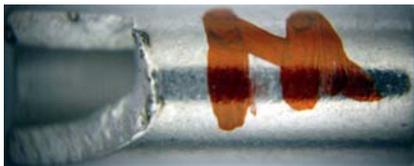
*pore (air bubble)*



*crack, partly through wall*



*crack, through wall*



*broken edge*



*pore (oxidation)*



*black spot*

The traditional crack detection method which needs artificial resp. natural flaws for calibration would have required at least four crack channels.

The main advantages of PMFT are very obvious:

- Calibration with only good parts, i.e., unexpected defects are also detected
- Reduction of channels and thus reduction of costs
- Easy and simple automation and integration
- Simple operation - semi-skilled staff are also able to operate this instrument



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