info
No. 11

ibg-Talk

This issue informs on new applications of eddy current crack and structure test.

The focus is mainly on testing huge components - a field where we have been observing a steady demand for some years. Think of the wind power industry which has an enormous requirement for high-quality and thus 100 % tested large roller bearings but also big gear wheels.

The new generation of instruments **eddyvisor®** by ibg is best suited to detect surface defects on the one hand and on the other hand to verify material parameters. Both instruments may also be used for testing grinder burn in different peculiarities.

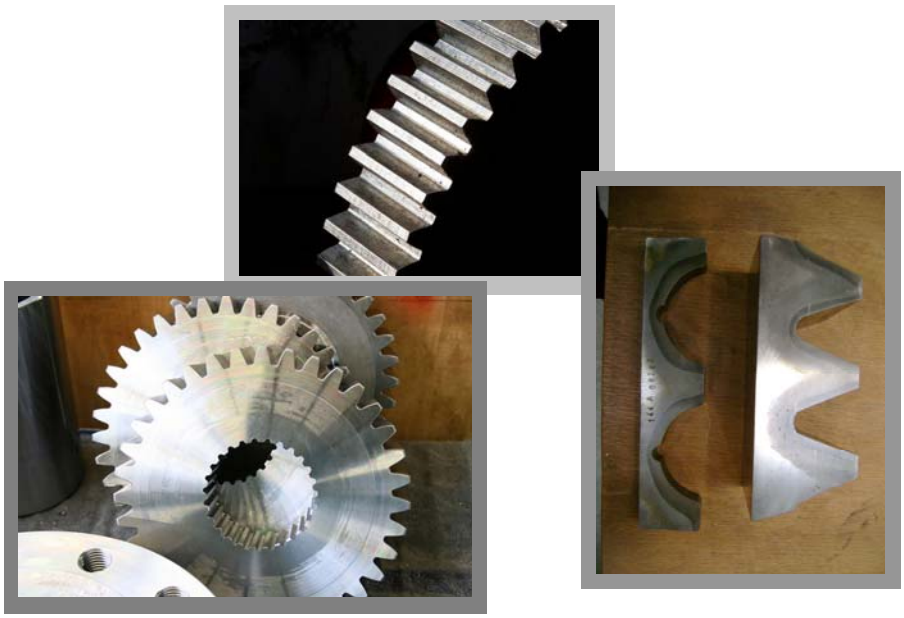
As usual, applications of other areas are presented in this issue as well.

Please do not hesitate to contact us, our sales team and our representatives world-wide are at your disposal.

Yours
Herbert Baumgartner

Detection of surface defects and structure test on huge components

Wind power stations, vessel diesels, lorry drives, construction vehicles, generators etc. require components which must sustain highest load. During the production process it must be paid attention to the fact that faultless components only are manufactured. The ibg instruments **eddyvisor®S** for structure test and **eddyvisor®C** for crack detection are best suited for monitoring the process quality. These instruments may also detect grinder burn in a certain configuration. Even for small and medium series (batches from approx. 20 upwards), the investment in this technology is economical. In some special cases, the use of ibg's eddy current technology can be sensible also for smallest series.



Typical applications are big bearing rings resp. roller bearings which must be examined for correct heat treatment and material mix or large drive shafts, gear wheels and other gear components. In any case, testing of such great components is a customised application which requires a close joint work with the customer in the project stage yet. Our project resp. sales team will be glad to assist you with your application.

Testing the surfaces of cylinder liners

Crack detection on cylinder liners in the meantime belongs to the standard program of ibg.

No wonder, each combustion engine includes at least one cylinder liner so that the world-wide production of this component is correspondingly sizeable.

The liner is very susceptible for pore but also crack forming during the production process so that the demand for a technology for detection of such defects is existent.

Testing for such surface defects using eddy current technology has prevailed in the past years and is superior to competitive methods like e.g. visual test and acoustic test due to their unreliability and fault susceptibility.

ibg provides test solutions for all sizes of cylinder liners: for liners for small motors up to liners for big lorries, construction machines and stationary motors.

Furthermore, customised solutions for handling and automation are supplied.

From a simple manual machine for spot-checks up to automatic chained up test systems with several additional functions - a lot of different customer requirements have already been realised.

The photo shows an example of a test system for cylinder liners for big vehicles, the inside surface of the liners is tested automatically for pores, cracks and hardness profile.

Crack detection on roller bearing components for wind power applications

Roller bearings in wind power stations are extremely subjected to changing requirements. Each installed bearing must therefore be extensively tested for cracks and perhaps also for correct heat treatment.

The **eddyvisor®C** and the newly developed Preventive Multi-Filter Technology enable scanning of such components for surface defects efficiently and with a high test sensitivity. The test instrument is set with "good" surfaces. The signal behaviour of the good surface is recorded, 30 tolerance zones are generated and during the test itself, the surface to be tested is compared with the 30 tolerance zones. If even one tolerance zone does not correspond to the calibrated surface, a failure signal is displayed.

Defects like e.g. longitudinal or transversal cracks, pores, overlapping but also defects which may occur during the production process like e.g. grinder burn can reliably be detected. Not only a state-of-the-art test instrument is essential for testing such huge components (bearing diameter often > 1,000 mm) but also the sensors and the handling mechanism are focused attention on.

ibg's special machine manufacturing is prepared and equipped for such tasks. Just as the department for sensor and coil manufacturing where suitable sensors for each application are developed, fabricated and tested. The photos show examples of typical test parts and applications as well as a handling system for the automatic crack detection on huge components.

ibg - extra info

At the end of 2008, ibg invited to the traditional Sales Meeting that took place in Bamberg. More than 40 ibg sales partners used these three days to inform on new developments and technologies but also to refresh the knowledge and qualification which are essential for sales and service of our high-grade products.

New sales partners were welcomed as well: from Taiwan, Hungary and Poland.

The International Sales Meeting takes place every two years at different places.

Structure and crack test on non-ferromagnetic materials

It is remarkable that in business conversations the ample opinion exists, eddy current testing is applicable for ferromagnetic materials only. But, that is not the case by far.

Each electro-conductive material is suited for eddy current testing for correct material parameters and for surface defects as well. An aluminium pipe, for example, can also be tested for material mix or surface defects like copper fittings, brass sleeves or other non-ferrous heavy metal.

The photos show some example components out of different materials.

IMPRINT
Publisher: ibg Prüfcomputer GmbH
Pretzfelder Straße 27
D-91320 Ebermannstadt
Editor: Jochen Iwan

ibg Zerstörungsfreie Werkstoffprüfung

ibg Prüfcomputer GmbH
Pretzfelder Straße 27
D-91320 Ebermannstadt
Tel: +49 - 9194 - 7384 - 0
Fax: +49 - 9194 - 7384 - 10
e-mail: info@ibgndt.de

ibg NDT Systems Corp

ibg NDT Systems Corp.
20793 Farmington Road
Farmington Hills, MI 48336
Tel: +1 - 248 - 478 9490
Fax: +1 - 248 - 478 9491
e-mail: sales@ibgndt.com

ibg SWISS AG

ibg Swiss AG
Galgenried 6
CH-6370 Stans
Tel: +41 - 41 - 612 2650
Fax: +41 - 41 - 612 2651
e-mail: info@ibgndt.ch

ibg UK Limited

ibg UK Ltd.
33 Park View Road
Sutton Coldfield
GB-West Midlands B74 4PR
Tel/Fax: +44 - 121 - 352 1188
e-mail: info@ibgndt.co.uk