

## Application example for the use of **Cool/BLUE®** tape wound cores from **MAGNETEC GmbH, Germany**

### Damaged bearing of a break roller test stand due to circular currents

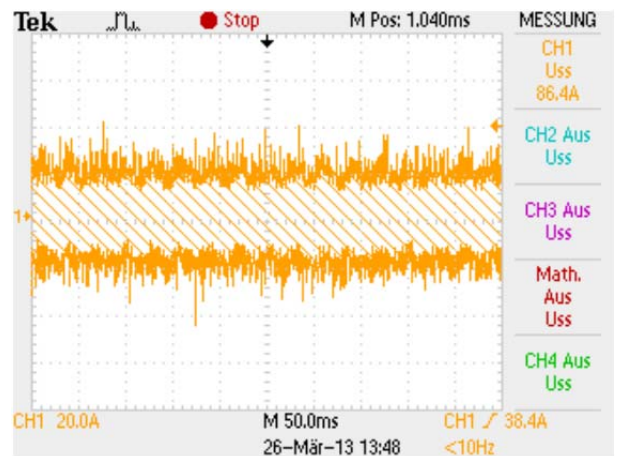


Picture 1: Inner ring tread with axial current marks (corrugation)

The measurements were done before and after applying of some **Cool/BLUE®** tape wound cores from **MAGNETEC GmbH** with constant speed of 1.000 rpm and without load.



Picture 2,1: Original condition



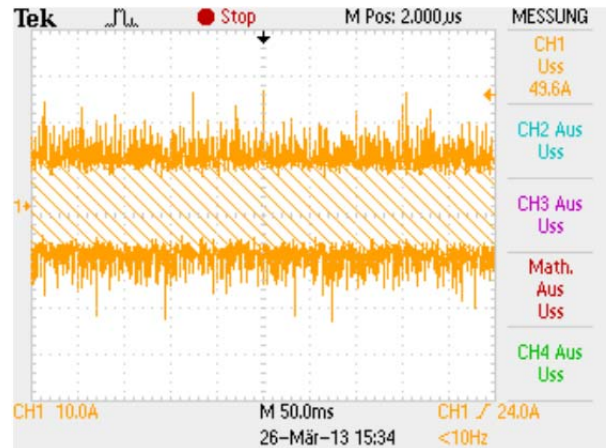
Picture 2,2: CM current at drive output  
20A/Div, 50ms/Div > I<sub>ss</sub> ca. **86 Amps**

**Action: Applying of 2 resp. 3 nanocrystalline Cool/BLUE® tape wound cores M-111**

**Measurement 1: CM current at drive output**



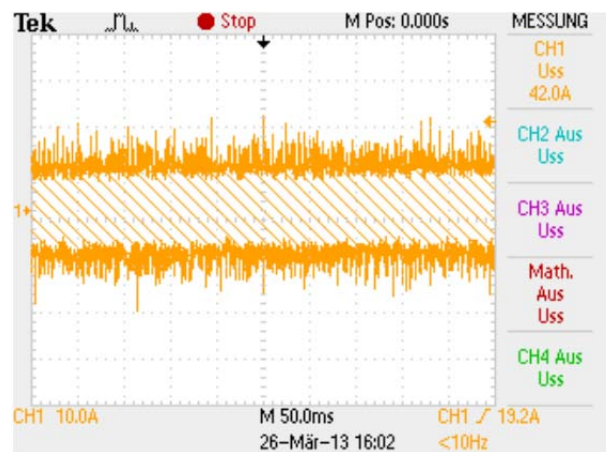
Picture 3,1: Use of 2 cores M-111



Picture 3,2: 10A/Div, 50ms/Div > Iss ca. 49 Amps

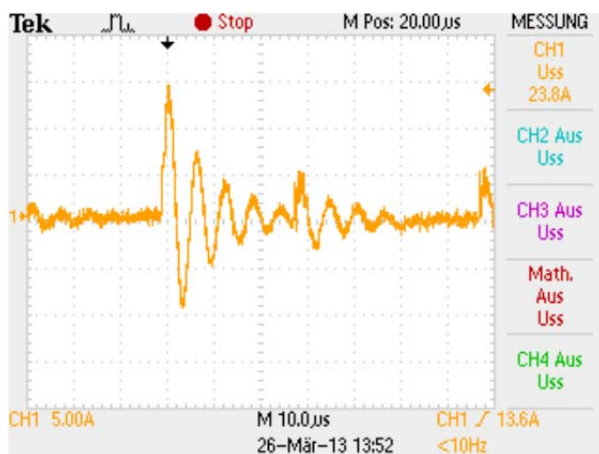


Picture 4,1: Use of 3 cores M-111

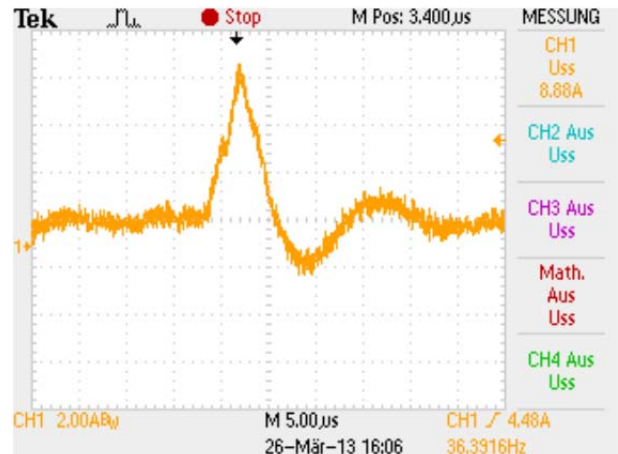


Picture 4,2: 10A/Div, 50ms/Div > Iss ca. 42 Amps

**Measurement 2: Earth current what is flowing back to the drive**



Picture 5: Original condition  
5A/Div, 10µs/Div > Iss ca. 24 Amps

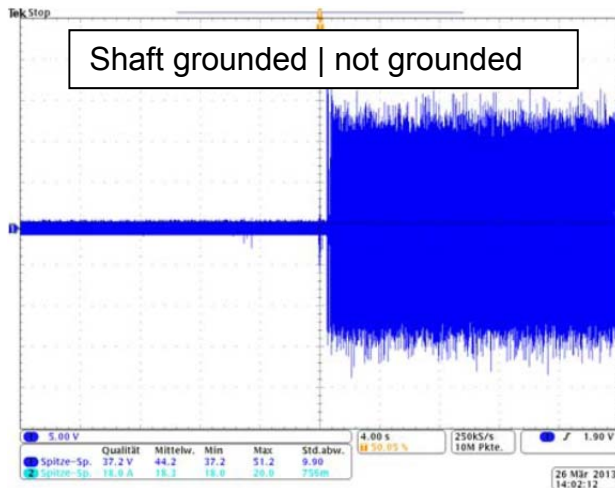


Picture 6: Use of 3 cores M-111  
2A/Div, 5µs/Div > Iss ca. 9 Amps

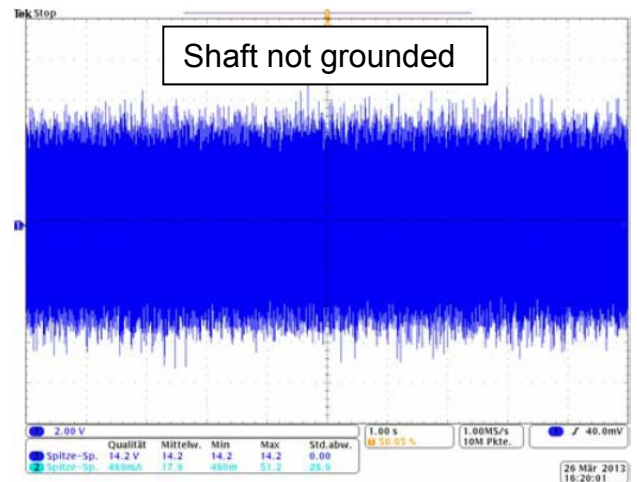
### Measurement 3: Shaft voltage



Picture 7: Measurement position at BS shaft end



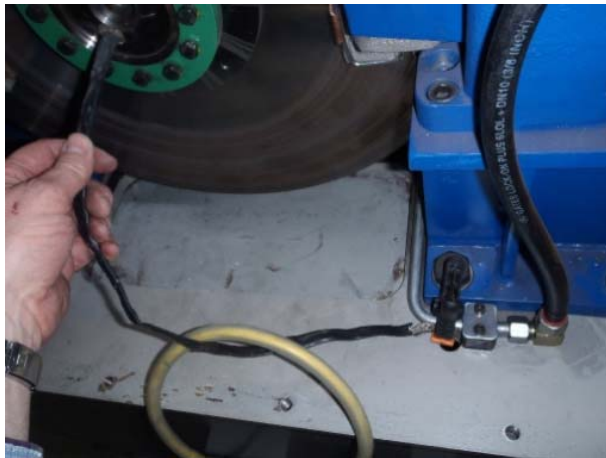
Picture 8: Original condition  
5V/Div > U<sub>ss</sub> max ca. 37 V



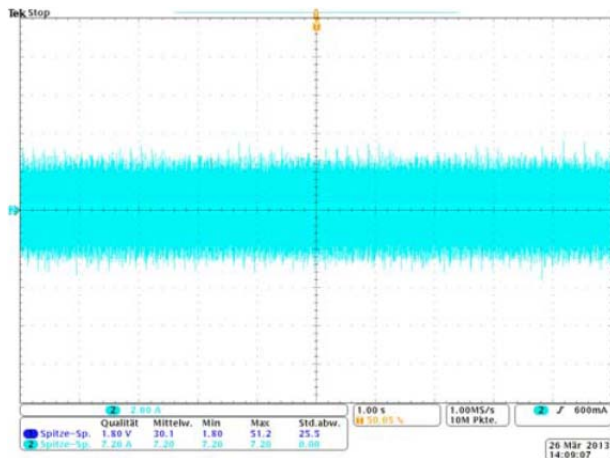
Picture 9: Use of 3 cores M-111  
2V/Div > U<sub>ss</sub> ca. 14 V



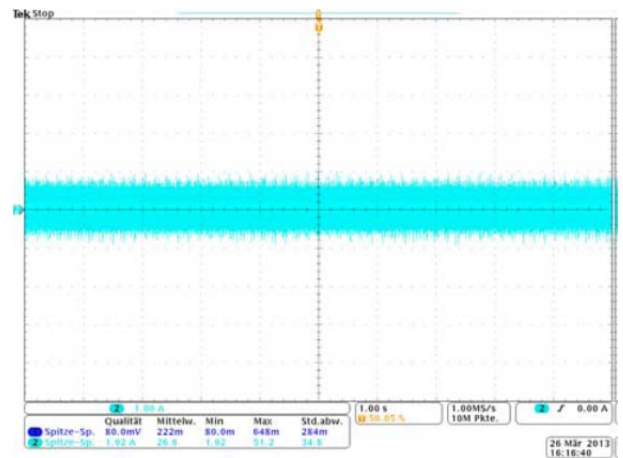
### Measurement 4: Shaft current



Picture 10: Measurement position between BS shaft end and plinth



Picture 11: Original condition  
2A/Div > I<sub>ss</sub> max ca. **7 A**



Picture 12: Use of 3 cores M-111  
1A/Div > I<sub>ss</sub> ca. **2 A**

### Authors:

IBB Electric Drives  
Bernhard Britting  
Humboldtstraße 64  
90459 Nürnberg  
Germany  
Fon: +49 911 / 4 39 76 36  
Fax: +49 911 / 4 39 76 43  
Mobil: +49 171 / 1 41 63 39  
e-mail: [ibbbaer@aol.com](mailto:ibbbaer@aol.com)

IBB Electric Drives  
Christian Bär  
Humboldtstraße 64  
90459 Nürnberg  
Germany  
Fon: +49 911 / 4 39 76 22  
Fax: +49 911 / 4 39 76 43  
Mobil: +49 171 / 3 10 30 49  
e-mail: [ibbbaer@aol.com](mailto:ibbbaer@aol.com)

For further information concerning Cool/BLUE® tape wound cores pls. contact MAGNETEC GmbH via e-mail under [magnetec@magnetec.de](mailto:magnetec@magnetec.de) or call +49 6184 / 9202-0.