

WESTWIND AIR BEARINGS  
TECHNICAL STATEMENT – 5 OCTOBER 2004

**ADVICE ON THE USE OF PULSE WIDTH MODULATED FREQUENCY  
CONVERTERS TO POWER WESTWIND SPINDLES**

**As a result of extensive testing Westwind Air Bearings has concluded that, under certain operating conditions, a small number of high speed spindles can be subjected to an electrical heating effect, causing an increase of the shaft rotor temperature to an unacceptable degree.**

This phenomenon only affects spindles used in conjunction with Pulse Width Modulated (PWM) frequency converters fitted on multi-head drilling machines.

The electrical heating effect is a result of increased current losses within the shaft rotor. Test results indicate the cause is due to the presence of electromagnetic harmonics (normally due to the high frequency switching of the PWM converter).

Westwind Air Bearings advise the use of high frequency filter units in conjunction with PWM converters as normal operational policy. These units can be obtained from the drive supplier or via the machine manufacturer.

If further assistance is required, please contact Westwind Technical Support:  
[wwinfo@westwind-airbearings.com](mailto:wwinfo@westwind-airbearings.com)