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The Importance of Using the Thermistor for Spindle Protection

Incorrect use of a spindle, including operation with an unsuitable drive type, inappropriate drive parameters, or improper cooling flow, can result in excessive heating of the spindle motor. To help reduce the risks of this causing permanent damage to the spindle, all air bearing spindles supplied to the PCB drilling market by Westwind are fitted with a thermistor.

The thermistor provides an electrical connection which will switch from a closed connection to an open circuit condition (resistance greater than 1,000 Ohms) when the internal motor temperature rises above 95°C -105°C. Monitoring of this connection as a gate to allow spindle operation only in the closed condition will protect the spindle from a number of potential problems, though there will be some circumstances where its effectiveness is limited. There is no substitute for ensuring that the spindle is set-up and used correctly, and the Westwind Technical Support team will provide assistance with this.

Many types of spindle drive have suitable thermistor monitoring connections, but otherwise it is recommended that the thermistor is directly monitored by the machine control system. Failure to monitor the thermistor exposes the spindle to an unnecessary risk of damage for which Westwind cannot take responsibility. Westwind and its authorised repair houses will therefore refuse claims for warranty where the failure is due to overheating of the motor (e.g. stator burn out), and where it cannot be proved that the thermistor has been correctly connected and utilised within the machine operation.

For further information, contact Westwind Technical Support: email support@westwind-airbearings.com.