

GSI

WESTWIND®

TM

COLLET
5x
LIFE!

Tornado

Tornado Benefits

- Greater reliability
- Minimal maintenance
- Improved drilling accuracy
- Increased productivity

The revolutionary D1769 Tornado 160K rpm PCB drilling spindle, the next generation in the leading D1722 series, combines advances in technology and operation to create Westwind's most reliable and resilient spindle ever.

Tornado... for Reliable Performance

The Tornado has a 25% higher axial load capacity than its predecessor which, together with a 20% increase in collet torque, results in superior large hole drilling. The high axial load and lower spindle mass also provides the capability for higher Z-axis accelerations during the drilling cycle for increased productivity. The front thrust bearing and internal cooling design offer better thermal stability of the drilling process. Westwind's proven bonded collet system guarantees low dynamic runout for excellent small hole drilling and improved drill hole position accuracy.

Tornado... for Reliable Operation

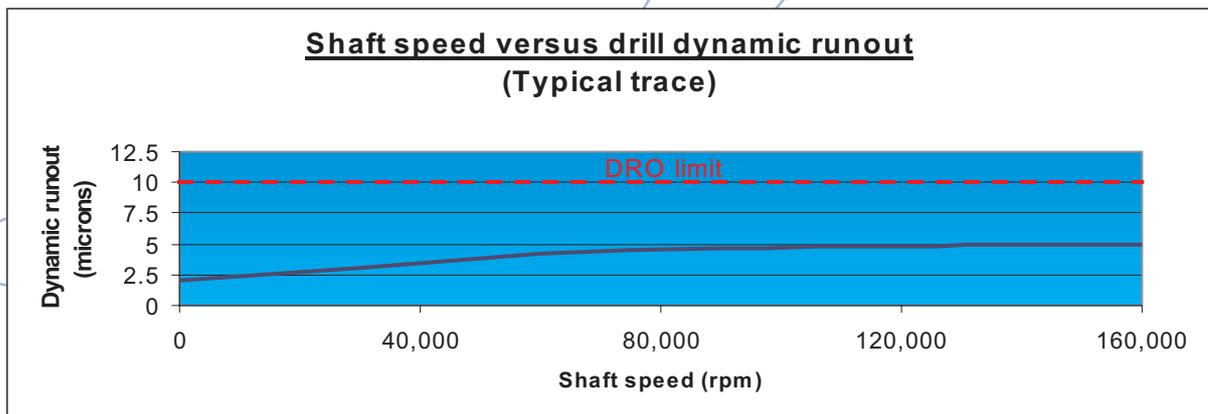
Advanced materials have been used in the spindle to give a higher sustained tool grip. Fitted with Westwind's proven high reliability ATC system, the Tornado is still good as new after testing to **half a million tool changes**. The special internal design of the spindle establishes the Tornado as Westwind's strongest high speed spindle yet.

Westwind...for Reliable Support

Westwind's unique aftersales programme ensures minimal machine down time and spindle maintenance. Westwind's extensive network of worldwide support, close to the user, provides the most comprehensive level of service in the PCB industry, unequalled by any other spindle manufacturer. For Tornado installations, express service exchange spindles can be provided, available off-the-shelf worldwide.

Specification: Tornado D1769 spindle	
Speed range	15,000* - 160,000 rpm
Drill range	0.075mm to 6.35mm Ø
Bearing air supply pressure	5.6 Kg/cm ²
Air flow rate	74 NI/min
Collet torque (new)	2.1Nm
Cooling water flowrate	2 l/min
Max. axial load	225 N
Max. radial load (static at shaft nose)	66 N
Weight	3.3 Kg

* Dependent on tool geometry, application and drive type



About Westwind:

Westwind Air Bearings is universally recognised as a world leader in the design, manufacture and installation of air bearing spindle systems. In today's PCB drilling industry, there are more Westwind spindles in use than any other. Westwind's head office is based in the UK, with additional office and manufacturing facilities in People's Republic of China, Taiwan and Japan. Furthermore, service and sales support is available worldwide through our extensive network of approved service centres. Westwind is a division of GSI Group.

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