air turbine spindles™

Spindle Selection Quick Guide

Choose the tool first, then the spindle. The 625 is not used with tools above 4mm capacity and the 602 not above 3mm. The 650 and the 660 have high power and speed for any tool up to 6mm.

602 – 'The Sprinter'

Highest speed up to 90,000 rpm, smallest cutting tools.

625 – 'The All-Rounder'

Versatile & reliable up to 65,000 rpm

650 – 'The Work Horse'

For reliable heavier duty applications and milling hard materials in corners up to 40,000 rpm with up to 0.8 HP (0.6Kw) standard and 1Kw/1.4HP in X Version (check CFM capacity.)

660- 'The Titan'

Allows you to mill fast in up to 50,000 rpm with larger tools.

Air Turbine Spindle Variants

CAT, DIN, BT, HSK, and JS Straight shank spindles available. The following variations from the standard spindles are available upon request (variations only available on certain spindles).

"X" – Double turbines for extra power (Rarely needed as single turbines have ample power).

"L" – 100mm and 50mm extended barrels for deep pockets and concave molds

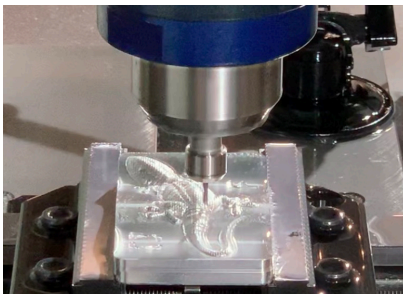
"90" – 90-degree spindle

"DT" – Dtill tap series (For Robodrill, Brother, ect)

"CT" – Coolant Through Tool – evacuate chips fast

"VS" – Variable Speed Turbine

If a 625 is needed but with more power, then a 650 should be selected – it has more power and bigger double front bearings. **The 650 is the only spindle with double front bearings** – it can be used with a double turbine for hard materials or larger tools.



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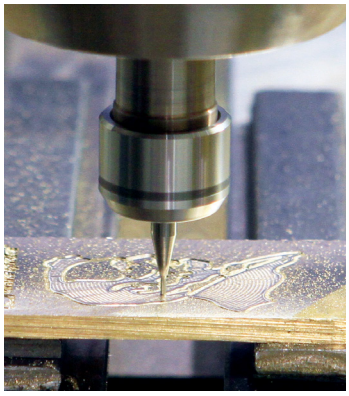
Technology & Operation FAQ's

Full ATC from magazine in any CNC?

Yes. Autoload connecting air through spindle rear inlet or Tool Changer Mounting Assembly



What air pressure is needed to operate the Spindle?

90PSI/ 6.2 Bar is required at the rated CFM / Liter per Second flow rate

Does lower/higher flow or pressure than specified change the speed?

Lower pressure than 90 PSI, 6.2 Bar of insufficient CFM or L/S flor (due to an in-line restriction or insufficient compressor capacity) will result in reduced power. Lower pressure will not change the rated speed. Pressures in excess of 100PSI/ 7 Bar will damage the turbine's components. Changing the rate of advance of depth of cut has the same effect as changing speed.

Does the machine spindle rotate?

No, the main spindle does not rotate when using Air Turbine's Spindles®. Reduction of wear and repair frequency of the machine spindle is a secondary benefit.

Is oil in the air supply needed?

No, Air Turbine Spindles ® are oil-free. A 0.3 micron-filter- extractor is included with each spindle. Contamination with oil will damage the turbine components and necessitate a repair. It is the responsibility of the operator to monitor and change the element as necessary. External Coolant is no problem, your spindle has a coolant guard. Coolant should be turned off before air flow.

Is the spindle a "Speeder"?

No. Air Turbine Spindles® are powerful governed direct drive spindles with two moving parts. Speed does not drop on tool engagement like "speeders". These turbined are not geared and do not have High Frequency brushes like speeders. Air Turbine Spindles® do not get hot, burn out or thermally expand like speeders.

How long will my spindle last?

The life of a spindle varies with use – DOC, ROA and hardness of materials, tool size and absence of programming and operation mishaps (crashes, ect), which all impact expected lifespan. We have many customers who get 4,000-5,000 hours before a rebuild is necessary, and many who last even longer.

**Following user notes, providing adequate air supply and creating an appropriate programing strategy contribute to a longer lifespan. User Notes may be viewed at airturbinetools.com/*

What comes with the Standard Spindle package?

All spindle purchases include a carrying case and standard equipment, as below:

-Ultra -precession ER8 or ER11 Rego-Fix collet system
-Filter Extractor
-12' hose
-Coolant guard

How much does a rebuild cost?

Florida and Munich repair facilities provide diagnostic reports and repairs.
A rebuild is typically $850 ~ £685, €800

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The Air Turbine Difference

Direct Drive Motor

- Low friction and heat
- No gears, high frequency brushes or vanes to heat up or burn out
- Long Service Life

Reliable

- Only two moving parts (Turbine and Bearings)
- No gears, high frequency brushes or vanes to heat up or burn out
- Long Service Life

Low Vibration, Quiet

- <0.4 mm/s^2<67 dBA

High Precision

- 2 Micron Ultra Precision ER8 or ER 11 Collet Standard
- No thermal expansion

Customize Your Spindles

- Avaliable in all popular tool holder designs
- Retrofit any CNC

Flexibility

- Center rear air feed, patented stop block + collar (TMA) or manual side connection.

Powerful Constant High Speed and Power

- Patented governed turbine maintains constant high speed under load.
- Accelerate cycle times and optmize cutting tool performance and life.
- Eliminate secondary finishing.

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