



Powerful Constant High Speed and Power:

- Patented governed turbine maintains constant high speed in cut.
- Accelerate cycle times and optimize cutting tool performance and life.
- Eliminate secondary finishing.

Low Vibration, Quiet:

- $< 0.4 \text{ mm/s}^2 < 78 \text{ dBA}$.

High Precision:

- 2 micron ultra precision ER8 or ER11 collet standard.
- No thermal expansion.

Why are Air Turbine Spindles® different?



Constant high cutting speed reduces cycle times.



Longer tool life. Faster production.



No heat. No thermal expansion.



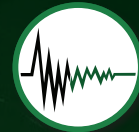
Mill 24/7. No duty cycle.



Direct drive reliability. Only 2 moving parts. No maintenance.



Governor control for constant high torque. Maintains high speed + power under load.



Low vibration. Quiet - under 78 dBA.



Environmentally friendly. No oil or lubrication. Just supply 90 psi/6.2 bar air.



Improved surface quality. No secondary finishing.



End maintenance and frequent repairs.



Exponentially increase production from your lathes.

Revolutionary High Speed Spindles

Power, Precision and Reliability



30+ YEARS OF PROVEN PATENTED INNOVATION. AIR TURBINE TOOLS® ARE BUILT TO LAST.



Flexibility:

- Available in all popular tool holder designs.
- Full automatic tool change on any CNC using either rear air feed or our patented stop block + collar (TMA).
- Manual side connection.



Patented Direct Drive Motor:

- Low friction and no 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).
- Air cooled ceramic bearings.
- No duty cycle.



Cut Cycle Times By 6-10x With High Speeds



Retrofit 25,000 – 90,000 RPM With Power To 1.4 HP (1.04 kW)

www.airturbinetools.com

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601 - "The Mighty Mini Spindle"

Governed 40,000 RPM - 90,000 RPM
< 0.2 HP (0.15 kW)

The compact 601 series has a 50 mm extended barrel, allowing for close workpiece operations or for work on machines with a short z-axis travel. Achieve the SFM you need for small tools with governed constant 90,000 RPM.



General Specifications		601 Series			
Speed		40,000 RPM	50,000 RPM	65,000 RPM	90,000 RPM
Power Rating		0.15 HP (0.11 kW)		0.2 HP (0.15 kW)	
Inlet Air Pressure		90 psi (6.2 bar)			
Air Consumption Idle		4.5 CFM (2.1 L/s)		5 CFM (2.36 L/s)	
Air Consumption Working Flow		5 CFM - 6 CFM (2.36 L/s - 2.83 L/s)			
Sound Level		Less Than 78 dBA			
Max Shank Capacity		ER8 UP - 1/8" (3 mm)			



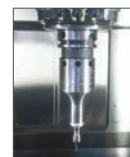
Extended Barrel Series

50 mm or 100 mm

Available in 625, 650 and 650X formats

Governed 30,000 RPM - 65,000 RPM, < 1.4 HP (1.04 kW)

Ideal for 5 Axis milling in pockets, concave molds and MEP, reaching close to the workpiece, and for machines with short z-axis travel.



625 - "The All-Rounder"

Governed 30,000 RPM - 65,000 RPM

< 0.55 HP (0.41 kW)

In 1,000s of applications with small tools the super precise 625 Series has proven that governed constant high speed accelerates rates of advance 6 - 10x.



General Specifications		625 Series			
Speed		30,000 RPM	40,000 RPM	50,000 RPM	65,000 RPM
Power Rating		0.4 HP (0.3 kW)	0.45 HP (0.34 kW)	0.5 HP (0.37 kW)	0.55 HP (0.41 kW)
Inlet Air Pressure		90 psi (6.2 bar)			
Air Consumption Idle		12 CFM (5.66 L/s)	14 CFM (6.61 L/s)		16 CFM (7.55 L/s)
Air Consumption Working Flow		15 CFM - 20 CFM (5.19 L/s - 9.44 L/s)			
Sound Level		Less Than 78 dBA			
Max Shank Capacity		ER11 UP - 1/4" (6 mm)			

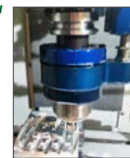


625X - "Extra Power for Harder Materials"

Governed 30,000 RPM - 50,000 RPM

Double Turbine Power, < 0.76 HP (0.57 kW)

When extra power is needed this patented double turbine delivers constant high speeds under load for contouring, milling, finishing and drilling with small tools.



General Specifications		625X Series		
Speed		30,000 RPM	40,000 RPM	50,000 RPM
Power Rating		0.72 HP (0.54 kW)	0.74 HP (0.55 kW)	0.76 HP (0.57 kW)
Inlet Air Pressure		90 psi (6.2 bar)		
Air Consumption Idle		16 CFM (7.55 L/s)	20 CFM (9.44 L/s)	
Air Consumption Working Flow		22 CFM - 30 CFM (10.38 L/s - 14.16 L/s)		
Sound Level		Less Than 78 dBA		
Max Shank Capacity		ER11 UP - 1/4" (6 mm)		



602 - "The Sprinter"

Governed 40,000 RPM - 90,000 RPM

< 0.2 HP (0.15 kW)

Air flow increases on demand to match cutting load: Constant high speed optimizes tool performance and life accelerating micro-machining. Ideal for engraving, milling, drilling and finishing with small tools with 2µ micron accuracy.



650 - "The Workhorse"

Governed 25,000 RPM - 40,000 RPM

< 0.88 HP (0.66 kW)

The robust and reliable 650 series with double air-cooled bearings and no thermal effects maintains rated speed on the toolpath in materials including HSS, titanium and ceramics. Available at 50,000 RPM as 660 series.



General Specifications		650 Series		
Speed		25,000 RPM	30,000 RPM	40,000 RPM
Power Rating		0.8 HP (0.6 kW)	0.83 HP (0.62 kW)	0.88 HP (0.66 kW)
Inlet Air Pressure		90 psi (6.2 bar)		
Air Consumption Idle		13 CFM (6.14 L/s)	18 CFM (8.49 L/s)	
Air Consumption Working Flow		14 CFM - 35 CFM (6.61 L/s - 16.52 L/s)		
Sound Level		Less Than 78 dBA		
Max Shank Capacity		ER11 UP - 1/4" (6 mm)		



650X - "The Workhorse with Extra Power"

Governed 25,000 RPM - 40,000 RPM

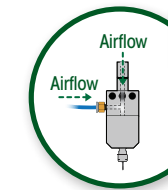
Double Turbine Power, < 1.4 HP (1.04 kW)

When power and precision are needed the double turbine 650X Series is rigid in cut staying at constant high speed for trochoidal milling in harder materials.



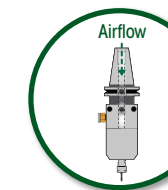
General Specifications		650X Series		
Speed		25,000 RPM	30,000 RPM	40,000 RPM
Power Rating		1.2 HP (0.9 kW)	1.3 HP (0.98 kW)	1.4 HP (1.04 kW)
Inlet Air Pressure		90 psi (6.2 bar)		
Air Consumption Idle		14 CFM (6.61 L/s)	20 CFM (9.44 L/s)	23 CFM (10.85 L/s)
Air Consumption Working Flow		19 CFM - 40 CFM (8.97 L/s - 18.89 L/s)		
Sound Level		Less Than 78 dBA		
Max Shank Capacity		ER11 UP - 1/4" (6 mm)		

Flexible Mounting Options



1. Side or Rear Air Inlet

Selectable rear or side inlet options. JS units combine with ER32 or other toolholders for infinite compatibility.



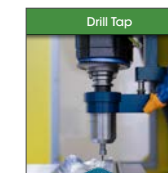
2. Thru-Toolholder Air Supply

CAT, DIN/SK, BT, HSK options provide rigidity and precision. Connect the air supply on compatible CNC machines with air blast in the spindle to the rear air inlet on Air Turbine Spindles® for full automatic tool change functionality.



3. Tool Changer Mounting Assembly (ATC)

The TMA option allows CNC machines to automatically load Air Turbine Spindles® in seconds using a proprietary collar or ring system & mounting block. Rear air inlet option connects to air supply.



Mounting assemblies for most CNC's are available, including Haas, Hurco, Doosan, Robodril, DMG, Brother and Okuma. We are accustomed to developing solutions for any CNC. A Universal Block can be provided for drilling to fit your CNC. Installation kits and support are also available. The TMA block will not interfere when using the main spindle and remains on the CNC spindle for normal tool changes.

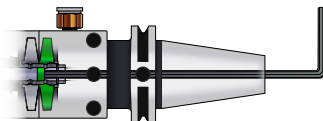


Switchable Speed and Power

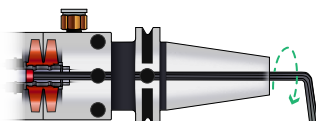
Variable Speed Series:

625XVS (30K / 50K) and 650XVS (25K / 40K)

Simply turn a hex key to switch between single turbine high speed mode to double turbine power mode. These patented turbines give you two spindles in one for flexibility in different applications.



Single Turbine Mode



Twin Turbine Mode

General Specifications		625XVS		650XVS	
Mode		Single Turbine	Twin Turbine	Single Turbine	Twin Turbine
Speed		30,000 RPM	50,000 RPM	25,000 RPM	40,000 RPM
Power Rating		0.4 HP (0.3 kW)	0.76 HP (0.57 kW)	0.8 HP (0.6 kW)	1.4 HP (1.04 kW)
Inlet Air Pressure		90 psi (6.2 bar)			
Air Consumption Idle		12 CFM - 20 CFM (5.66 L/s - 9.44 L/s)		13 CFM - 23 CFM (6.14 L/s - 10.85 L/s)	
Air Consumption Working Flow		11 CFM - 30 CFM (5.19 L/s - 14.16 L/s)		14 CFM - 40 CFM (6.61 L/s - 18.89 L/s)	
Sound Level		Less Than 78 dBA			
Max Shank Capacity		ER11 UP - 1/4" (6 mm)			

