

25,000 – 40,000 rpm – power to 0.88 hp (0.66 kW)
Constant Governed High Speed and Torque

Now your Doosan CNC delivers faster production 24/7



650CAT40
0.76 - 0.88 hp
0.57 - 0.66 kW

With patented governed high speed and torque Air Turbine Spindles®, your Doosan Machine is a high speed machine!

No Duty Cycle

Call for a Demonstration

*Fully automated loading:
With our patent pending
Toolchanger Mounting
Assembly (TMA)*

Manual Connection also Possible

Manual or Automatic Loading to Save Time and Money



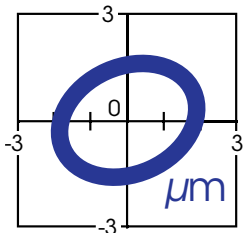
Dramatically reduce your cycle times, optimize cutting tool performance and life.

Keep continuous tool path engagement on your existing CNC at high speed even in angles and hard material. Ideal for micro machining. 25,000 - 40,000 rpm < 0.88 hp (0.66 kW)

Accuracy

Most of the problems that occur in micro machining come from a lack of RPM and poor dynamic runout. **Air Turbine Spindles®** use the highest quality runout and balancing systems on the market today. This creates the best dynamic runout accuracy and governed high speed precision.

Runout measured at the nose of spindle. (reference value)



600 SERIES

Improved Machining Cycle Times

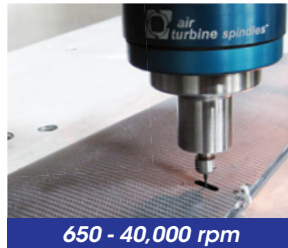
Longer Tool Life

Better Surface Finish

Automatic Loading

Super Low Vibration Design

Powerful, totally oil-free low friction motor produces extremely low vibration and heat in continuous 24/7 operation. No thermal expansion, great reliability.



650 - 40,000 rpm

Ultra Precision ER 11 collets standard.

Environmentally Clean

No oil required, and maintenance free.

Air Pressure: Dry, Clean Air @ 90 psi / 6.2 bar

Air Consumption (Working):

650(X): 14 - 35 cfm (6.60 - 16.50 L/s)

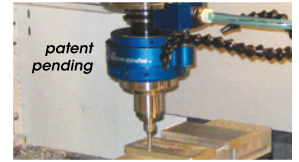
Low Noise Design: Under 67 dBA (cutting noise of endmills can be heard).

Standard Equipment: 0.3µm High Flow Filter/Extractor

Automatic Toolchanger

No need for operator downtime.

Automatically load **Air Turbine Spindles®** with our wrap around Toolchanger Mounting Assembly.



Superior Technology

- Unique patented direct drive with no vanes, gears or brushes to wear, burn or break.
- Cooled by turbine air for 24/7 operation. No oil or control system required. No Duty Cycle.
- Governor keeps Constant High Speed + Torque on tool path in angles and corners.

Spindle Selection

√ = Optimum

∞ = Acceptable

! = Dependent upon cutting conditions

x = Not recommended for use

		650
Drill	Ø 0.1 - 0.3mm	√
	Ø 0.3 - 0.5mm	√
	Ø 0.5 - 1.0mm	√
	Ø 1.0 - 1.5mm	√
	Ø 1.5 - 2.0mm	√
Endmill	Ø 0.1 - 1.0mm	√
	Ø 1.0 - 2.0mm	√
	Ø 2.0 - 3.5mm	√
	Ø 3.5 - 5.0mm	√
	Ø 5.0 - 6.0mm	∞
Jig Grinding		√
Specifications	650	
Speed (rpm)	25,000 30,000 40,000	
Power (hp)	0.76 - 0.88	
T.I.R. at Nose	Less than 2µm	
Collet Range	0.5mm - 7.5mm	
Air Pressure	Less than 6.2 Bar (0.62 MPa)	
Air Flow	14 - 35 cfm (6.60 - 16.50 L/s) [ANR]	