

Usernotes - High Speed Spindles

Air Turbine Spindles™ User Notes:

1. A dedicated clean airline is installed to supply air to the spindle with the internal diameter on page 26. Ensure Air Supply is turned off before installing your spindle and the Machine door is shut before switching on Air Supply. Clean, unrestricted air flow is essential at the required 90PSI (6.2Bar) pressure and flow rate is required for full power performance. A filter extractor is supplied as Standard Equipment with 600 Series spindles. Avoid using lubricant contaminated hoses which can result in oil in the motor.
2. Ensure you have a concentric speed rated end mill by consulting manufacturer's speed and feeds / depth of cut recommendations. Securely tighten the end mill in the Spindle collet. High Speed milling results in optimal coating performance and extended life. Tool must evacuate chips at high speed.
3. Program to turn off lubrication to main spindle, if recommended by your machine manufacturer. Remember to program for resumption of flow when main spindle resumes rotation. The main spindle will advance while holding your Air Turbine Spindle but without rotating.
4. To automate the loading of your Air Turbine Spindles™ use the patent pending Toolchanger Mounting Assembly (automatic toolchanger collar with mounting block for your brand of machine, or the universal mounting block). The block must be screwed in to the holes in the main spindle. Screw holes are pre-drilled for your machine's screw configuration or by the VMC user for the required positions in the universal mounting block. Check clearance of auto-loading cycle in to the umbrella or carousel holding spindles. The connector air plug from the TMA Spindle collar is adjustable for height so as to fit the dimension to the block.
5. Follow normal procedures to zero the offset for your spindle when mounted in your machine. Air Turbine Spindles™ has an offsetting procedure available upon request. Certificate of conformity states offset.
6. At governed high speed fast light passes achieve faster production and a finer finished surface. Frequent high speed passes result in precision and economical air usage.
7. On integrated Tool Holder Models each machine manufacturer specifies the pull plug for CAT, BT or DIN (SK) configurations. Air Turbine Spindles™ are available with metric and inch size screw threads compatible with most pull plug types. 625+650 units can autochange using TMA accessory on page #3.
8. Center air feed through the shank or tool holder can be used on the 601/602JS if the coolant channel is totally cleaned by a purge. The channel must be a diameter for its full length greater than ¼"/ 6mm. The 602 units can auto-change without the TMA using the coolant channel if sufficient air will pass at the required pressure. Some pull plugs do allow sufficient airflow to pass to permit 602 and 625 units to use coolant channel airfeed on integrated CAT, BT and DIN units without using TMA.
9. HSK Spindles can receive center air feed from clean coolant channels if of sufficient internal diameter, and can be programmed and set up to auto change using a solenoid and the coolant channel connector tube. Again it is essential to purge so clean airflow passes. Ensure no small couplings constrict airflow.
10. Coolant or air may be directed at the cutting tip of your end mill but coolant should not flood or ride up to the body of your spindle. Program to switch off coolant jets.