



9182 Independence Ave. Chatsworth Ca. 91311  
PH: (818) 727-1500 - [www.itscnc.com](http://www.itscnc.com)

**WARNING: WARRANTY WILL BE VOID IF THE SPINDLE IS OVER HEATED, FLOODED WITH COOLANT OR DOES NOT HAVE THE AIR HOOKED UP! THESE ARE THE THREE MOST COMMON REASONS FOR PRE-MATURE BEARING FAILURE. FOLLOW THE RECOMMENDED PROCEDURES BELOW.**

### **Spindle Break-in Procedure:**

IMPORTANT! - SPINDLE START UP AND RUN-IN PROCEDURES: Although each spindle is broke-in prior to shipment, you must do the Initial Run-In prior to being placing in operation. This will ensure proper channeling of the bearing lubrication which could have been affected by shipping or storage and prevents excessive bearing temperatures which could result in immediate bearing failure. Prior to spindle start-up, check the spindle cooling system for proper flows, pressures, and temperatures. It's very important that the spindle coolant flow into the bottom of the cartridge and out the top. It's easy to get it backwards and significantly reduce the cartridge cooling potential.

It's a fact that the spindle life of all grease pack lubricated spindles can be greatly improved by a simple warm up procedure prior to running the spindle at full rpm. The following guidelines must be adhered to in order to ensure proper channeling of the bearing grease lubrication. Improper spindle start-up could result in reduced spindle life or failure.

### **First Time Startup and Run-in Procedure.**

1. Run the spindle at 25% of the rated speed for approximately 1/2 hour.
2. Monitor the temperature of the bottom bearings. This can be done by taking temperature readings with a pyrometer at various locations around bottom of the spindle and inside the spindle taper. See Note Below If the temperature does not reach 140 degrees Fahrenheit move to the next step.
3. Increase the operating speed of the spindle to 50% of the rated speed for about ½ hour and repeat the temperature check.
4. Increase the operating speed of the spindle to 75% of the rated speed for about ½ hour and repeat the temperature check.
5. Increase the operating speed of the spindle to the full rated speed for about ½ hour and repeat the temperature check.
6. Start the machine for normal operation.

**See page 8 of "ITS Spindle Installation Instructions" for START UP PROCEDURE FOR AN IDLE SPINDLE 1-WEEK OR MORE.**

Go to "Tech Documents" at <https://itscnc.com/tech-documents>

### **Spindle Duty Cycle:**

It is the recommendation of the Engineering department in conjunction with our bearing manufacturer (NSK) that the following procedures be followed to increase spindle life under extreme operating conditions.

Spindles operating under 8,000 RPM's need no cool down period regardless of on time or load to the tool.

Spindles operating at over 8,000 RPMs for extended periods of time should be shut down for a period of at least **20 minutes after every 5 hours of continuous operation**. This will allow cooling of the races and re-lubrication of the grease lubricated bearings. The actual load to the spindle is not a factor at these higher RPM's. The time period should be monitored as closely as possible to increase spindle life.