



SPINDLE REBUILD SPECIALISTS

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START UP AND RUN IN PROCEDURES

Although each spindle is ran-off at MZI Precision prior to shipment, it must further be ran-off by the customer prior to being placed in operation. This will ensure proper channeling of the bearing lubrication to prevent excessive bearing temperatures which could result in immediate bearing failure.

Prior to spindle start-up and run-in, a check of any auxiliary systems for proper flows, pressures, and temperatures must occur.

The run-in procedures are broken down into four sections. The first section should be followed when the spindle is being operated for the first time. The second section should be followed when the spindle is being operated after it has sat idle for a week or more. The third section should be followed when the spindle is being operated after it has sat idle for 24 hours. The fourth section should be followed when the spindle is being operated after it has sat for a short period of time (1/2 - 2 hours).

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 spindle failure.

FEDERAL LAW PROHIBITS SHIPMENT OF AN OIL LUBRICATED SPINDLE WITH OIL IN THE RESERVOIR. THEREFORE, ALL SPINDLES MUST BE PROPERLY FILLED BY THE SPINDLE USER PRIOR TO INSTALLATION.

START UP AND RUN IN PROCEDURES (Continued)

Initial Start up and Break-in Procedure

Start the heat exchanger, when required, and run coolant throughout the motor coolant passages (and bearing passages, if required) until the temperature stabilizes.

1. Verify that all required auxiliary systems are operating properly.

AIR/OIL LUBRICATION MUST BE STARTED A MINIMUM OF 15 MINUTES PRIOR TO STARTING THE SPINDLE ASSEMBLY AND MUST REMAIN ON FOR A MINIMUM OF 5 MINUTES AFTER THE SPINDLE HAS STOPPED AND THE COOLANT HAS STOPPED FLOWING.

2. Run the spindle at 25% of the rated speed (as shown on the nameplate) for approximately 1/2 hour.
3. Monitor the temperature of the front and rear bearings. This can be done by taking temperature readings with a pyrometer at various locations around the front and rear housing. If the temperature does not reach 140 degrees Fahrenheit move to the next step.

IF THE BEARING TEMPERATURE REACHES 140 DEGREES FAHRENHEIT, OR HIGHER AT ANY TIME DURING THE RUN-IN PROCEDURE, OR THE TEMPERATURE INCREASES MORE THAN 5 DEGREES FAHRENHEIT IN (1) MINUTE, IMMEDIATELY SHUT THE SPINDLE OFF AND ALLOW IT TO COOL TO ROOM TEMPERATURE. ONCE AT ROOM TEMPERATURE, RE-START THE RUN-IN PROCEDURE AT THE STEP AT WHICH IT WAS SHUT DOWN.

4. Increase the operating speed of the spindle to 50% of the rated speed for approximately 1/2 hour and repeat the temperature check.
5. Increase the operating speed of the spindle to 75% of the rated speed for approximately 1/2 hour and repeat the temperature check.
6. Increase the operating speed of the spindle to the full rated speed for approximately 1/2 hour and repeat the temperature check.

START UP AND RUN IN PROCEDURES (Continued)

Start Up Procedure for an Idle Spindle I-Week or More

1. Follow the initial start-up procedure.

Daily Run-In Procedure

1. Start the heat exchanger, when required, and run coolant throughout the motor coolant passages (and bearing passages, if required) until the temperature stabilizes.
2. Verify that all required auxiliary systems are operating properly.
3. Run the spindle at 50% of the rated speed (as shown on the nameplate) for ten (10) minutes and check the front and rear bearing temperatures.
4. Start the machine for operation.

IF THE BEARING TEMPERATURE REACHES 140 DEGREES FAHRENHEIT, OR HIGHER AT ANY TIME DURING THE RUN-IN PROCEDURE, OR THE TEMPERATURE INCREASES MORE THAN 5 DEGREES FAHRENHEIT IN (1) MINUTE, IMMEDIATELY SHUT THE SPINDLE OFF AND ALLOW IT TO COOL TO ROOM TEMPERATURE. ONCE AT ROOM TEMPERATURE, RE-START THE RUN-IN PROCEDURE AT THE STEP AT WHICH IT WAS SHUT DOWN.

Abbreviated Run-in Procedure for a Spindle with 1/2 - 2 hours of Idle Time

1. Start the heat exchanger, when required, and run coolant throughout the motor coolant passages (and bearing passages, if required) until the temperature stabilizes.
2. Verify that all required auxiliary systems are operating properly.
3. Run the spindle at 50% of the rated speed for approximately 3-5 minutes and monitor the front and rear bearing temperatures.
4. Start the machine for operation.