

# Mid Valley Industries, LLC

## Machinist – Level A, B, and C

### Summary – All Machinists

The basic function of all Machinists is to ensure company profits by maintaining company and/or customer defined Quality Practices, efficiently performing JOB set-ups on Assigned Equipment, properly selecting tooling or fixtures for maximum efficiency, following Shop Floor Routings or work instructions, and completing JOBS in the “Planned Time.” These positions are also responsible for following company SAFETY POLICIES and cross training and knowledge sharing throughout the Organization.

The following description of the “Requirements” and “Primary Responsibilities” for the Machinist position is an accurate, but general, description of the job duties of MVI’s machinists and by no means all-inclusive of possible duties that could be assigned.

### **Class C Machinist**

#### Primary Responsibilities

1. The Class C Machinists is the entry level in MVI’s Machinist classifications.
2. Setting up and operating a variety of machine tools such as drill presses, lathes, mills, saws, grinders, or other machining equipment.
3. Can analyze print specifications and routings effectively.
4. Create and fill out inspection reports accurately.
5. Locate, set-up, touch off tooling, and enter offsets.
6. May assist in specifying fixtures or jigs.
7. Responsible for achieving a quality level of 0 non-conformance occurrences per year.
8. Selection of appropriate tooling for production, including general knowledge of inserts. Must also be able to select and identify tools and their appropriate use.

#### Competencies

- ✪ Must have 1 – 3 years of experience machining and /or a 1 – 2 year technical degree.
- ✪ Must be able to use trigonometry concepts.
- ✪ Must be able to read G-code proficiently and be able to identify all used G and M codes, X, Y, and Z movements per machine.
- ✪ Must have FAPT writing ability (lathes), including the ability to draw out the part and create a full program, recognize sub-programs (mills), and create a Mazak compatible program in full.
- ✪ Must have general knowledge of inserts, surface footage with materials, speeds, and feeds, including the ability to calculate speeds and feeds using specified parameters per tooling and material. Must also have basic knowledge of grades, geometry, uses, and identification numbers of tooling being used.
- ✪ Have general knowledge of the machinist handbook and other machining references.
- ✪ Must have general knowledge of tooling and machine equipment and should be able to distinguish between all tools by their general name and uses.
- ✪ Must be able to read and interpret blueprints correctly: 1) Identify third angle from first angle projection, 2) Identify machining from fabricating, and 3) Identify all tolerances, datum’s, surface finishes, metric and standard, section views call outs, details, and notes.

## **Class B Machinist**

### **Primary Responsibilities**

1. The Class B Machinist is the next level in MVI's Machinist classifications. To reach this position, the Machinist must have already completed the entry level and Class C requirements.
2. Responsible for achieving a quality level of 0 non-conformance occurrences per year.
3. Write accurate, detailed set-up sheets and notes in programs.
4. Fabrication of tooling as needed for production and creation of prints that specify what types of tooling are needed including size, shape, and material.
5. Multi-task while your machine is running. Must be able to start machine and work on deburring, cleaning, programming, helping others, etc.
6. Run like machines – lathe operators will be able to run all similar style lathes, and mill operators will be able to run all similar style mills.
7. Train Level C operators efficiently.
8. Communicate with machine partner effectively.

### **Competencies**

- ✪ Must have 2 – 5 years of experience machining and /or a 1 – 2 year technical degree.
- ✪ Must be highly proficient with trigonometry and geometry and should be able to do all trigonometry calculations using a calculator and/or book.
- ✪ Mastered reading and editing all G-code programs and be able to identify and change all program aspects according to dimensional changes as needed.
- ✪ Must be able to write, edit, and read complex programs with a variety of features, specifications, including sub-programs, taper adjustments, cutter comp, and circle interpolate. Must also be able to create all programs efficiently when given a print and specifications. Lathe operators must also be highly proficient in FAPT or Mazak programming.
- ✪ Must have proficient knowledge of surface footage of material, speeds and feeds including the ability to apply speeds and feeds knowledge to specialty material. Must also be able to make changes needed to help efficiently produce quality parts.
- ✪ Must have proficient knowledge of insert identification and appropriate application and know grades, geometry, uses, identification numbers, etc.
- ✪ Have proficient knowledge of the machinist handbook and other machining references.
- ✪ Must be able to problem-solve and troubleshoot and create alternative solutions to accomplish varied machining specifications.
- ✪ Must be able to work unsupervised.

## **Class A Machinist**

### **Primary Responsibilities**

1. The Class A Machinist is the next level in MVI's Machinist classifications. To reach this position, the Machinist must have already completed the entry level, Class C, and Class B requirements.
2. Responsible for achieving a quality level of 0 non-conformance occurrences per year.
3. Must have complete knowledge of tooling and insert specifications and be able to identify tooling by looking at it.
4. Create complicated set-ups. And be a master of machining practices.
5. Look several jobs in advance, ensuring that programs, tooling, materials, and set-ups are ready.

6. Assist other operators and show the qualities of a department leader/supervisor.
7. Must have cross-machine experience and knowledge – mill operators are able to run all vertical, horizontal, and manual mills, and lathe operators are able to run all slant bed, horizontal, and vertical lathes.
8. Run manual machines for general applications.
9. Use all inspection equipment and, if needed, step in as an inspector.

### **Competencies**

- ✧ Must have 5 years of previous experience machining.
- ✧ Must have mastered trigonometry and geometry and must be able to use trigonometry with a calculator and be able to teach it to others.
- ✧ Mastered reading, writing, and editing all G-code – simple to complex - programs and be able to identify and change all program aspects according to dimensional changes as needed.
- ✧ Must be able to utilize and teach software for writing all programs (lathes).
- ✧ Mastered and can teach speeds, feeds, and surface footage of material calculations.
- ✧ Mastered blueprint reading and geometric tolerancing and know all geometric and print symbols and their definitions.
- ✧ Mastered FAPT or Mazak programming (lathe operators).
- ✧ Must have general knowledge of metallurgy and knowledge of material specifications including hardness, composition, machinability, stress concepts, work hardening, welding ability, classifications, and other material characteristics.
- ✧ Must have a general knowledge of welding practices and be able to read a fabrication/weld print and possess simple welding skills.