

## Industrial Machinist

FLSA Status: Covered  
Bargaining Unit: Portland City Laborers 483 (PCL)

### General Summary

Positions in this class design, manufacture, and fabricate a variety of parts, equipment and apparatus using machine shop tools and/or computerized machine tools and applications along with precision fabrication techniques to repair or modify machinery and mechanical equipment. This classification is considered a full journey level skilled trade classification proficient in all phases of machine work.

### Industrial Machinist - 30000126

#### Distinguishing Characteristics

This is a single level class, which typically designs, fabricates, and repairs parts, equipment and apparatus from watch sized components up to large industrial pieces. It is distinguished from other classes by its requirement to perform a wide range of custom machining requiring precision tolerances, and by the requirement to design and build modifications to equipment. It is distinguished from mechanic classifications by its focus on fabrication using machine tools. It is similarly distinguished from Industrial Maintenance Millwright, which repairs, installs and operates wastewater treatment facilities, equipment and structures.

#### Typical Duties/Examples of Work

1. Sets up and operates both manual engine and Computer Numerical Control (CNC) lathes, both manual milling machines and CNC vertical machining center, grinders, torches, welders, hand tools and sensitive gear head and radial arm drill presses to cut and shape parts to high precision tolerances. Computerized machine tools and applications require use of CAD (Computer-Aided Design) and CAM (Computer-Aided Manufacturing) in documenting designs and changes with 3D models that can be used to generate tool paths for CNC machine tools and posted as G-Code programs.
2. Fabricates and repairs a wide variety of parts and apparatus using detailed drawings, verbal descriptions, sample parts and plans; designs and fabricates tools and fixtures as necessary to facilitate work.
3. Create equipment and machine parts design; determine dimensions, tolerances and materials needed; reverse-engineer from extensively worn or broken parts to create complete replacements.

4. Dismantles, inspects to determine needed repairs, reassembles and aligns machinery, devices, apparatus and mechanical equipment. Performs condition assessment as well as root-cause failure analysis of failed machine components; suggests alternative components.
5. Evaluates and determines best and most effective method for fabricating or repairing parts, equipment and apparatus.
6. Performs a variety of preventative maintenance and testing of equipment; monitors equipment function, inspects devices, and maintains documentation.
7. May train personnel in proper use and functioning of equipment.
8. Determines best method and cost effectiveness to repair replace or manufacture replacement component parts for various pieces of industrial equipment. Evaluates the latest technologies to maintain efficiency where feasible for implementation. Works with specialty fabrication vendors to determine best cost/quality of service, including developing CAD/CAM drawings for quotes.
9. Plans all aspects of work; orders tools, supplies, raw materials, parts, or equipment needed to complete the required task.
10. Coordinates with work groups to design and/or build modifications to improve existing equipment for greater reliability; serves as technical advisor and provides machinist expertise.
11. Performs related duties as assigned.

### **Required Knowledge, Skills and Abilities**

Knowledge of: machine shop equipment, tools, apparatus and terminology; methods of appropriately selecting and machining metals, alloys, plastics and composite materials; use of and calibration of precision measuring devices; safety hazards and safe operations of machine shop equipment, including use of personal protective equipment; fabrication, repair and maintenance of specialized apparatus and devices; design techniques and principles associated with the manufacture and fabrication of parts and equipment; both CAD and CAM for use of CNC machining tools.

Ability to: communicate effectively; establish and maintain effective interpersonal relationships with a diversity of others; write and edit G-Code in computerized machinery programs.

Skill in: reading, interpreting and applying blueprints and drawings; working from verbal descriptions; troubleshooting, diagnosis and repair; machining mathematics; planning, laying out and performing the full range of manually

and/or computerized manufactured parts with fine precision tolerances; cost/benefit analysis; design and modification of equipment.

### **Special Requirements**

Journey Machinist Classification or demonstrated equivalent skills and experience; valid state driver's license; some positions may require additional endorsements, certifications, and/or licenses.

### **Classification History:**

Adopted: 2-03-99:

Class created as a result of DCTU Classification and Compensation Study 1998-99. This class is composed of the following classes:

1520 Maintenance Mechanic Adopted: 04-20-76

Revised: 09-20-94 (updated class specification)

Revised: 03-02-06 (Updated class spec to reflect change in certifications and use of computerized machine applications.)

June 2009 - Change Job Class number from 1520 to 30000126, due to system change.

7-1-17 - Union changed from DCTU to PCL

Revised: 8-31-22 (Updated class spec to reflect design and condition assessment work; specify computerized machine applications.)

### **Working Conditions**

Work in this class is typically performed in a shop environment; performed in a field environment. Incumbent is typically required to lift up to 50 pounds; is exposed to hazardous equipment, chemicals and fumes; is exposed to high noise levels from shop equipment.