

Iowa Department of Administrative Services – Human Resources Enterprise  
Job Classification Description

# Machinist

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## Definition

Performs skilled work setting up and operating machine tools in the fabrication of a variety of metal components for machinery and equipment; performs related work as required.

*The work examples and competencies listed below are for illustrative purposes only and not intended to be the primary basis for position classification decisions.*

## Work Examples

Shapes and sizes metal items using lathes, shapers, power saws, milling machines, drill presses, and other metal-working power equipment by using taps, dies, files, and similar hand tools; checks completed work using micrometers, dial gauges, calipers, and other precision measuring instruments.

Rebuilds electric and manual clutches, pumps, central valves, rams, hydraulic and mechanical jacks, transmission and power takeoffs by disassembling and inspecting parts for wear/malfunction and repairing/ replacing same.

Bores cylinders, rebushes and resizes connecting rods, grinds crankshafts, and resurfaces cylinder heads and block tops; installs valve seats and guides; regrinds flywheels and clutch pressure plates; rebuilds clutch pressure assemblies; line-bores main bearings and crankshaft bearings; checks and aligns connecting rod and piston assemblies; and turns and grinds semi-finished pistons through the use of machine tools.

Machines bushings; turns steel, bronze and other shaftings to close tolerances and cuts keyways in shafting.

Builds, maintains, and repairs laboratory equipment and other special materials testing research apparatus used in Department of Transportation operations.

Measures crankshafts, engine blocks, cylinder heads, and component parts with micrometers to determine extent of repairs needed.

Fabricates new tools and adaptors for unusual job situations.

Orders parts and materials necessary for completion of jobs.

## Competencies Required

Knowledge:

- Mechanical – Machines and tools, including their designs, uses, repair, and maintenance.
- Production and Processing – Raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Design – Design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

- English Language – The structure and content of the English language, including the meaning and spelling of words, rules of composition, and grammar.
- Basic Arithmetic – Addition, subtraction, multiplication, and division.

**Abilities:**

- Arm-Hand Steadiness – Keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- Control Precision – Quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
- Oral Comprehension – Listen to and understand information and ideas presented through spoken words and sentences.
- Oral Expression – Communicate information and ideas in speaking so others will understand.
- Problem Sensitivity – Tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- Deductive Reasoning – Apply general rules to specific problems to produce answers that make sense.

**Skills:**

- Operation and Control – Controlling operations of equipment or systems.
- Operation Monitoring – Watching gauges, dials, or other indicators to make sure a machine is working properly.
- Active Listening – Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

## Minimum Qualification Requirements

Applicants must meet at least one of the following minimum requirements to qualify for positions in this job classification:

- 1) One year of full-time work experience as a machinist.
- 2) A total of one year of education and/or full-time experience as a machinist, where nine months of coursework in a recognized trade school curriculum in machinist or tool and die making equals one year of full-time experience.

## Notes

All of the following apply to Department of Transportation positions only:

Designated positions in this class require possession of a valid Commercial Learner's Permit upon hire. Within a timeframe determined by the appointing authority, a valid Commercial Driver's License with the required endorsements and applicable restrictions must be obtained and subsequently maintained to continue employment.

In conjunction with Title 49 of the Code of Federal Regulations (parts 40 and 382), this job requires a pre-employment drug screen and will require ongoing participation in the employer's random drug and alcohol testing program and will be subject to the regulations regarding the Federal drug and alcohol testing program.

*Effective date: 05/21 KMJ*