

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

Welder

Definition

Performs skilled precision welding work in the fabrication, modification, or repair of metal parts, fixtures, 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

Prepares working plans and materials for constructive or repair welding. Works from blueprints and other written specifications by selecting appropriate metal materials and welding rods, and laying out, measuring, and drawing guidelines on metal materials such as pipe, tubing, or sheets of nickel, brass, aluminum, stainless steel, and various irons.

Cuts, grinds, bends, or drills metals into various shapes by selecting appropriate torch tips, and adjusting and directing a metal lathe, punch press, metal bender, or the flame of a hand-held or stationary oxygen/gas or arc cutting torch.

Fabricates unique or prototype equipment or component parts and modifies existing equipment such as hinges, underbody ice blades, vehicle storage racks, J and eye bolts, therapeutic steel braces, and brackets by selecting the appropriate welding machine or torch, rods and torch tips, adjusting valves, electrical currents, and other variable factors according to the type of metal used, and soldering, brazing, or welding prepared metal materials using standard or precision arc-air, arc, or gas methods.

Repairs or reconstructs defective, damaged, fatigued, or worn metal equipment, fixtures, or component parts of machinery/vehicles such as stainless steel pans, wheel chairs, serving carts, steel doors and hinges, steps from vans or trucks, end loader buckets, snow removal equipment, tractors, and farm machinery by replacing, straightening, or reinforcing parts using appropriate welding or soldering techniques and equipment.

Purchases supplies and equipment as needed either from the warehouse or from private vendors.

Adjusts, cleans, and makes minor repairs to assigned precision cutting and welding tools/equipment as necessary to maintain tools/equipment in operating condition.

Competencies Required

Knowledge:

- Mechanical – Machines and tools, including their designs, uses, repair, and maintenance.
- Design – Design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Mathematics – Arithmetic, algebra, geometry, calculus, statistics, and their applications.

- Production and Processing – Raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Customer Service – Principles and processes for providing customer services, including customer needs assessment, meeting quality standards for services, and evaluating customer satisfaction.

Abilities:

- Arm-Hand Steadiness – Keep your hand and arm steady while moving your arm or while holding your arm and hand in one position.
- Near Vision – See details at close range (within a few feet of the observer).
- Control Precision – Quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
- Multilimb Coordination – Coordinate two or more limbs (for example, two arms, two legs, or one leg and one arm) while sitting, standing, or lying down. It does not involve performing the activities while the whole body is in motion.
- Manual Dexterity – Quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
- Visualization – Imagine how something will look after it is moved around or when its parts are moved or rearranged.
- 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.

Skills:

- Critical Thinking – Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions, or approaches to problems.
- Operation and Control – Controlling operations of equipment or systems.
- Monitoring – Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

Minimum Qualification Requirements

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

- 1) Two years of full-time work experience in welding.
- 2) A total of two years of education and/or full-time experience, where one month of approved trade school coursework in welding is equivalent to one month of full-time experience in welding.
- 3) Successful completion of an approved two-year welder apprenticeship program.

Notes

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

- 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), positions in this job class require 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: 06/19 SA