



## WELDER 1

4020

### GENERAL DESCRIPTION OF CLASS

The WELDER 1 does journey level work in the trade area of welding. Welders join metal components together; cut and braze metals, and fabricate parts using TIG (Tungsten Inert Gas), MIG (Metallic Inert Gas), acetylene, and shielded electric arc (stick) equipment.

### DISTINGUISHING FEATURES

This class is the first level in a two-level classification series. It is the full proficiency level. Employees work independently and rely on their knowledge of metallurgy and welding techniques to solve work problems.

The Welder 1 level is distinguished from the Welder 2 by the absence of complex welding requiring skill in specialized welding techniques.

### DUTIES AND RESPONSIBILITIES

The duties listed are characteristic of the type and level of work associated with this class. Individual positions may do all or some combination of the duties listed as well as other related duties.

#### 1. Welding

Working from blueprints or examination of the components and intended use of the object, decide the proper type of material. Develop a sketch if piece must be fabricated; design, layout, cut and fit material for welding. Select proper welding process. Using a torch, preheat work pieces preparatory to welding or bending. Braze various nonferrous metals. Weld machinery and equipment using TIG, MIG, acetylene, and shielded electric arc (stick) equipment. Fuse parts together, seal tension points, and add metal to build up parts. Connect hoses from torch to tanks of oxygen and fuel gas, and turn valves to release mixture. Ignite torch and regulate flow of gas and air to obtain desired temperature, size, and color of flame. Select, position, and secure torch, cutting tips, or welding rod, according to type, thickness, area, and desired temperature of metal. Position and secure work piece, using hoist, crane, wire and banding machine, or hand tools. Fill cavities or correct malformation in lead parts and hammer out bulges and bends in metal work pieces. Dismantle metal assemblies or cut scrap metal, using thermal-cutting equipment such as flame-cutting torch or plasma-arc equipment. Examine work piece for defects and measure work piece with straightedge or template to make sure it conforms to specifications.

#### 2. Equipment Fabrication and Modification

Use brazing and cutting equipment, grinders, drill presses, gas and electric welders. Fabricate and install new parts or components for equipment or modify existing parts or components to restore or improve operation by following blueprints, sketches or verbal instruction. Test parts or equipment for effective operation.

#### 3. Miscellaneous

Maintain work records by recording nature of repair, labor hours, and parts and materials used. Maintain inventory by charging out parts and supplies, placing orders and filling out paperwork. Do general repair work requiring the use of blades, drill presses or similar equipment. Maintain and make minor repairs to welding and other shop equipment.

*The duties listed below are for positions that work with adult or youth inmate workers:*

Some employees coordinate work flow and assign work to adult or youth inmate workers. Employees direct inmates to follow rules, policies, procedures and security guidelines; instruct and train inmates on work techniques and procedures, and in safe and efficient operations of tools and equipment. Employees evaluate inmate work performance; search inmates and area for contraband; verify and sign inmate time cards; monitor work area for cleanliness and order; and direct inmates in cleaning methods.

**RELATIONSHIPS WITH OTHERS**

Employees in this class are in daily contact with agency staff and other trades workers to complete assigned tasks, obtain information, solve problems, share information and coordinate activities. Employees are in regular contact with the public, patients in an institution or facility, building officials, vendors and contractors during the course of welding work.

**SUPERVISION RECEIVED**

Employees in this class receive general instructions or work orders from a Welder 2, supervisor or manager who reviews work upon completion for quality, timeliness, and adherence to cost estimates. Work is guided by work orders, industry standards, state and local building codes; and fire, safety, environmental and health codes.

**KNOWLEDGE AND SKILLS (KS)****General knowledge of:**

Standard practices, methods, tools and materials of the welding trade and the qualities and uses of various materials.
Metallurgy to understand how welding and heat affect metals.
Mathematics as it applies to the trade of welding.

**Basic knowledge of:**

State and local building codes, fire, environmental and safety codes related to the welding trade.
Design techniques, tools and principles in the production of precision technical plans, blueprints, drawings and models.
Materials, methods and tools in the construction of materials and structures.
Machines and tools including their designs, uses, repair and maintenance.
Metals and the machining characteristic of metals.

**Skill to:**

Determine the kind of tools and equipment needed to do a job.
Do routine maintenance on equipment and determine when and what kind of maintenance is needed.
Conduct tests and inspections of products, services, or processes to evaluate quality or performance.
Build, maintain, repair and rebuild metal equipment, machines and parts.
Operate, maintain and apply the tools, materials and equipment used in the welding trade.
Evaluate information against a set of standards such as blueprints and sketches and verify that it is correct.
Talk to others to effectively convey information.
Read and interpret blueprints, plans and drawings.
Understand written sentences and paragraphs in work related documents.

**NOTE:** The KNOWLEDGE and SKILLS are required for initial consideration. Some duties performed by positions in this class may require different KS's. No attempt is made to describe every KS required for **all** positions in this class. Additional KS requirements will be explained on the recruiting announcement.

Adopted 4/90

Revised 6/95; 10/05 (was 4223)

STATE OF OREGON  
 Dept. of Administrative Services  
 Human Resource Services Division