



## WAGE DATA

Rate Type / Statistical Type	Entry level	Mean	Experienced
Annual wage or salary	\$31,097	\$34,159	\$44,900
Hourly wage	\$14.70	\$16.02	\$21.25

## JOB DESCRIPTION

Use hand-welding or flame-cutting equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

## DUTIES

- Weld components in flat, vertical, or overhead positions.
- Operate safety equipment and use safe work habits.
- Lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers.
- Examine work pieces for defects and measure work pieces with straightedges or templates to ensure conformance with specifications.
- Recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment.
- Weld separately or in combination, using aluminum, stainless steel, cast iron, and other alloys.
- Clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding.
- Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals.
- Ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits.
- Connect and turn regulator valves to activate and adjust gas flow and pressure so that desired flames are obtained.

## TOOLS and TECHNOLOGY

Tools used in this occupation:

**Drill press or radial drill** — Portable magnetic drill presses, Punch presses

**Electrode holder** — Underwater electrode holders, Welding electrode holders

**Gas welding or brazing or cutting apparatus** — Oxyacetylene welding equipment, Rod ovens, Storage ovens and hot boxes

**Tungsten inert gas welding machine** — Heliarc welding equipment, Tungsten inert gas TIG welding equipment

**Welder torch** — Brazing equipment, Welding torches

**Welding electrode** — Underwater electrodes, Welding electrodes

Technology used in this occupation:

**Analytical or scientific software** — Scientific Software Group Filter Drain FD

**Calendar and scheduling software** — OmniFleet Equipment Maintenance Management

**Computer aided design CAD software** — EZ Pipe software

**Data base user interface and query software** — Recordkeeping software

## KNOWLEDGE

**Production and Processing** — Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.

**Design** — Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.

**Administration and Management** — Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.

**Mechanical** — Knowledge of machines and tools, including their designs, uses, repair, and maintenance.

**Mathematics** — Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

**Customer and Personal Service** — Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.

**English Language** — Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.

**Engineering and Technology** — Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.

## SKILLS

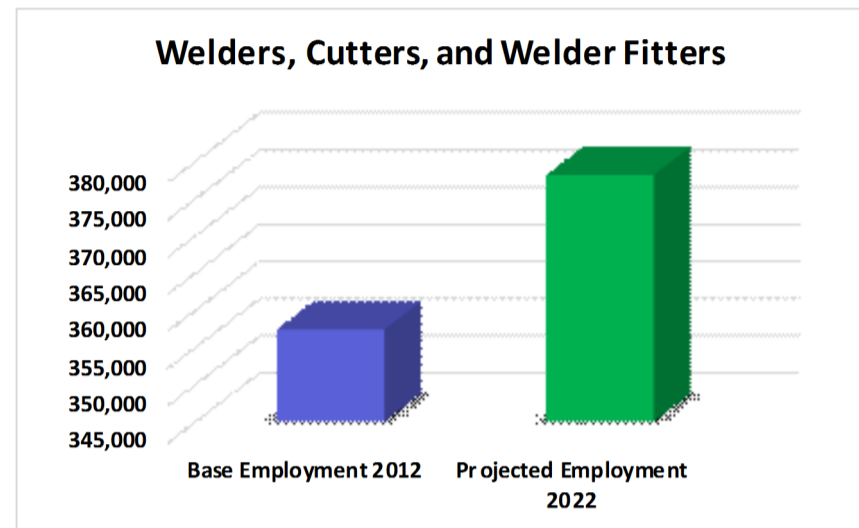
**Critical Thinking** — Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

**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.

**Reading Comprehension** — Understanding written sentences and paragraphs in work related documents.

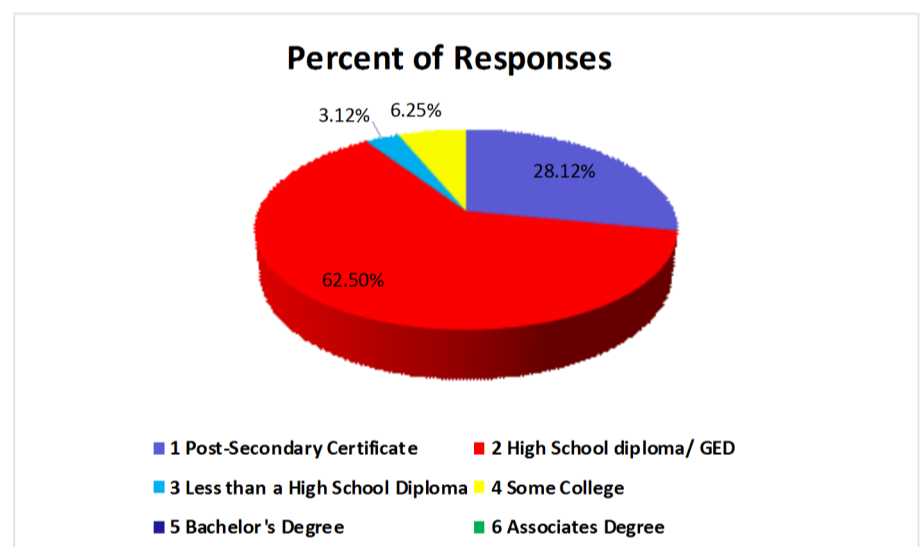
## EMPLOYMENT PROJECTION



This information is based on LMI Gateway Data

## EDUCATION

The graph below shows the results of a national survey listing the most common required level of education for Welders, Cutters, and Welder Fitters.



## EDUCATION FOR THIS JOB

- 2014 Catalogue of Colorado Advanced Manufacturing Program and Skill Resources  
<http://www.coloradomanufacturingcareers.com/>
- Approved Colorado Community College Manufacturing Cluster education programs  
<http://www.coloradocommunitycolleges.com/go/programs/skilled-trades-technical-sciences/>  
<http://www.coloradocommunitycolleges.com/go/>
- Colorado Four Year Colleges and Universities  
<http://higher.ed.colorado.gov/academics/colleges/public4year.asp>
- Locations to Get Manufacturing Certificates  
<http://www.coloradomanufacturingcareers.com/>

