Boilermakers

SOC: 47-2011 • Career Profile Report

■ Key Facts

$73,340	10,400	-2.0%
Median Salary	Employment	Growth Rate

■ Requirements & Salary Range

Education: High school diploma

■ Automation Risk Assessment

Medium Risk - 35.0% probability of being automated in the next 10-20 years.

This job has some routine elements but still requires human judgment and interaction.

■■ Work-Life Balance

5.8/10 - Fair work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	9.4/10	**Investigative**	5.8/10
Artistic	4.0/10	**Social**	5.0/10
Enterprising	5.0/10	**Conventional**	6.0/10

■ Top Skills Required

Mechanical skills, Physical stamina, Physical strength, Unafraid of confined spaces, Unafraid of heights

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Boilermakers typically perform the following tasks: • Conduct pressure tests on vessels, such as boilers. • Study blueprints to determine locations, relationships, or dimensions of parts. • Examine boilers, pressure vessels, tanks, or vats to locate defects, such as leaks, weak spots, or defective sections, so that they can be repaired. • Inspect assembled vessels or individual components, such as tubes, fittings, valves, controls, or auxiliary mechanisms, to locate any defects. • Lay out plate, sheet steel, or other heavy metal and locate and mark bending and cutting lines, using protractors, compasses, and drawing instruments or templates. • Bell, bead with power hammers, or weld pressure vessel tube ends to ensure leakproof joints. • Locate and mark reference points for columns or plates on boiler foundations, following blueprints and using straightedges, squares, transits, or measuring instruments. • Shape or fabricate parts, such as stacks, uptakes, or chutes, to adapt pressure vessels, heat exchangers, or piping to premises, using heavy-metalworking machines such as brakes, rolls, or drill presses. • Position, align, and secure structural parts or related assemblies to boiler frames, tanks, or vats of pressure vessels, following blueprints. • Clean pressure vessel equipment, using scrapers, wire brushes, and cleaning solvents. • Repair or replace defective pressure vessel parts, such as safety valves or regulators, using torches, jacks, caulking hammers, power saws, threading dies, welding equipment, or metalworking machinery. • Attach rigging and signal crane or hoist operators to lift heavy frame and plate sections or other parts into place. • Straighten or reshape bent pressure vessel plates or structure parts, using hammers, jacks, or torches. • Shape seams, joints, or irregular edges of pressure vessel sections or structural parts to attain specified fit of parts, using cutting torches, hammers, files, or metalworking machines. • Bolt or arc weld pressure vessel structures and parts together, using wrenches or welding equipment. • Install manholes, handholes, taps, tubes, valves, gauges, or feedwater connections in drums of water tube boilers, using hand tools. • Assemble large vessels in an on-site fabrication shop prior to installation to ensure proper fit. • Install refractory bricks or other heat-resistant materials in fireboxes of pressure vessels.