



# TORO Analysis of Sawing Machine Setters, Operators, and Tenders, Wood to Welders, Cutters, and Welder Fitters

## INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Sawing Machine Setters, Operators, and Tenders, Wood	51-7041.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Welders, Cutters, and Welder Fitters	51-4121.06	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

## OUTPUT SECTION:

Grand TORQ:

91

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	95	Level	88	Level	91

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Visualization	51	9	50	No Skills Upgrade Required!				No Knowledge Upgrades Required!			
Near Vision	50	4	65								
Manual Dexterity	46	4	62								
Arm-Hand Steadiness	51	3	75								
Selective Attention	44	3	50								
Oral Expression	50	2	56								

LEVEL and IMPT (IMPORTANCE) refer to the Target Welders, Cutters, and Welder Fitters. GAP refers to level difference between Sawing Machine Setters, Operators, and Tenders, Wood and Welders, Cutters, and Welder Fitters.

## ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters	Importance
Arm-Hand Steadiness	48	51	75
Near Vision	46	50	65
Manual Dexterity	42	46	62
Control Precision	50	44	62
Oral Expression	48	50	56
Problem Sensitivity	42	39	56



Finger Dexterity	42	42	56
Multilimb Coordination	46	44	56
Oral Comprehension	48	46	53
Visualization	42	51	50
Selective Attention	41	44	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters	Importance

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters	Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters
10+ years	1%	1%	Doctoral	0%	0%
8-10 years	0%	1%	Professional Degree	0%	0%
6-8 years	0%	0%	Post-Masters Cert	0%	0%
4-6 years	0%	0%	Master's Degree	0%	0%
2-4 years	8%	17%	Post-Bachelor Cert	0%	0%
1-2 years	11%	23%	Bachelors	0%	0%
6-12 months	13%	28%	AA or Equiv	0%	0%
3-6 months	12%	6%	Some College	1%	8%
1-3 months	12%	1%	Post-Secondary Certificate	10%	26%
0-1 month	11%	6%	High School Diploma or GED	40%	26%
None	29%	11%	No HSD or GED	48%	38%
Sawing Machine Setters, Operators, and Tenders, Wood			Welders, Cutters, and Welder Fitters		
Most Common Educational/Training Requirement:					
Moderate-term on-the-job training			Long-term on-the-job training		
Job Zone Comparison					
2 - Job Zone Two: Some Preparation Needed Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty. These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed. Employees in these occupations need anywhere from a few months to one year of working with experienced employees.			2 - Job Zone Two: Some Preparation Needed Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty. These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed. Employees in these occupations need anywhere from a few months to one year of working with experienced employees.		



## Tasks

### Sawing Machine Setters, Operators, and Tenders, Wood

#### Core Tasks

##### Generalized Work Activities:

- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing, lifting, balancing, walking, stooping, and handling of materials.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

#### Specific Tasks

##### Occupation Specific Tasks:

- Adjust bolts, clamps, stops, guides, and table angles and heights, using hand tools.
- Adjust saw blades, using wrenches and rulers, or by turning handwheels or pressing pedals, levers, or panel buttons.
- Clear machine jams, using hand tools.
- Count, sort, and stack finished workpieces.
- Cut grooves, bevels, and miters, saw curved or irregular designs, and sever or shape metals, according to specifications or work orders.
- Dispose of waste material after completing work assignments.
- Examine blueprints, drawings, work orders, or patterns to determine equipment set-up and selection details, procedures to be used, and dimensions of final products.
- Examine logs or lumber in order to plan the best cuts.
- Guide workpieces against saws, saw over workpieces by hand, or operate automatic feeding devices to guide cuts.
- Inspect and measure workpieces to mark for cuts and to verify the accuracy of cuts, using rulers, squares, or caliper rules.

### Welders, Cutters, and Welder Fitters

#### Core Tasks

##### Generalized Work Activities:

- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.

#### Specific Tasks

##### Occupation Specific Tasks:

- Adjust electric current and timing cycles of resistance welding machines to heat metals to bonding temperature.
- Align and clamp workpieces together, using rules, squares, or hand tools, or position items in fixtures, jigs, or vises.
- Brush flux onto joints of workpieces or dip braze rods into flux, to prevent oxidation of metal.
- Clean equipment parts, such as tips of soldering irons, using chemical solutions or cleaning compounds.
- Clean joints of workpieces with wire brushes or by dipping them into cleaning solutions.
- Clean workpieces to remove dirt and excess acid, using chemical solutions, files, wire brushes, or grinders.
- Connect hoses from torches to regulator valves and cylinders of oxygen and specified gas fuels.
- Cut carbon electrodes to specified sizes and shapes, using cutoff saws.
- Dip workpieces into molten solder, or place solder strips between seams and heat seams with irons, to bond items together.



- Inspect stock for imperfections and to estimate grades or qualities of stock or workpieces.
- Lubricate and clean machines, using wrenches, grease guns, and solvents.
- Measure and mark stock for cuts.
- Monitor sawing machines, adjusting speed and tension and clearing jams to ensure proper operation.
- Mount and bolt sawing blades or attachments to machine shafts.
- Operate panelboards of saw and conveyor systems to move stock through processes, and to cut stock to specified dimensions.
- Position and clamp stock on tables, conveyors, or carriages, using hoists, guides, stops, dogs, wedges, and wrenches.
- Pull tables back against stops, and depress pedals to advance cutterheads that shape stock ends.
- Select saw blades, types and grades of stock, and cutting procedures to be used, according to work orders or supervisors' instructions.
- Set up, operate, or tend saws and machines that cut or trim wood to specified dimensions, such as circular saws, band saws, multiple-blade sawing machines, scroll saws, rip saws, and crozer machines.
- Sharpen blades or replace defective or worn blades and bands, using hand tools.
- Trim lumber to straighten rough edges and remove defects, using circular saws.
- Unclamp and remove finished workpieces from tables.
- Unload and roll logs from trucks to sawmill decks or to carriages, or move logs in ponds, using pike poles.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust production equipment/machinery setup
- clean equipment or machinery
- examine products or work to verify conformance to specifications
- fell or buck trees
- grade, classify, or sort products according to specifications
- inspect machinery or equipment to determine adjustments or repairs needed
- install equipment or attachments on machinery or related structures
- load or unload material or workpiece into machinery
- load, unload, or stack containers, materials, or products
- maintain consistent production quality

- Examine seams for defects, and rework defective joints or broken parts.
- Grind, cut, buff, or bend edges of workpieces to be joined to ensure snug fit, using power grinders and hand tools.
- Guide torches and rods along joints of workpieces to heat them to brazing temperature, melt braze alloys, and bond workpieces together.
- Heat soldering irons or workpieces to specified temperatures for soldering, using gas flames or electric current.
- Melt and apply solder along adjoining edges of workpieces to solder joints, using soldering irons, gas torches, or electric-ultrasonic equipment.
- Melt and apply solder to fill holes, indentations, and seams of fabricated metal products, using soldering equipment.
- Melt and separate brazed or soldered joints to remove and straighten damaged or misaligned components, using hand torches, irons or furnaces.
- Place solder bars into containers, and turn knobs to specified positions to melt solder and regulate its temperature.
- Remove workpieces from fixtures, using tongs, and cool workpieces, using air or water.
- Remove workpieces from molten solder and hold parts together until color indicates that solder has set.
- Select torch tips, flux, and brazing alloys from data charts or work orders.
- Smooth soldered areas with alternate strokes of paddles and torches, leaving soldered sections slightly higher than surrounding areas for later filing.
- Sweat together workpieces coated with solder.
- Turn dials to set intensity and duration of ultrasonic impulses, according to work order specifications.
- Turn valves to start flow of gases, and light flames and adjust valves to obtain desired colors and sizes of flames.

#### Detailed Tasks

##### Detailed Work Activities:

- adjust welding equipment
- apply cleaning solvents
- apply flux to workpiece before soldering or brazing
- braze metal parts or components together
- clean or degrease weld, or parts to be welded or soldered
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- file, sand, grind, or polish metal or plastic objects



- measure, weigh, or count products or materials
- move or fit heavy objects
- operate hoist, winch, or hydraulic boom
- operate woodworking equipment/machinery
- read blueprints
- read specifications
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recognize wood species characteristics
- set up production equipment or machinery
- sort manufacturing materials or products
- understand technical operating, service or repair manuals
- use chain saws
- use fire suppression equipment
- use hand or power tools
- use precision measuring tools or equipment

#### Objects

- identify properties of metals for repair or fabrication activities
- load or unload material or workpiece into machinery
- monitor the quantity of assembly output
- move or fit heavy objects
- perform safety inspections in industrial, manufacturing or repair setting
- position, clamp or assemble workpiece prior to welding
- preheat metal before welding, brazing, or soldering
- read blueprints
- read production layouts
- read technical drawings
- read work order, instructions, formulas, or processing charts
- sharpen metal objects
- solder metal parts or components together
- understand technical operating, service or repair manuals
- use acetylene welding/cutting torch
- use braze-welding equipment
- use hand or power tools
- use soldering equipment

#### Tools - Examples

- Wrenches
- Anvils
- Bandsaws
- Slitters
- Motorized cutting torches
- Calipers
- Desktop computers
- Underwater electrode holders
- Files
- Gas flow measurement instruments
- Forklifts
- Current converters
- Brazing equipment
- Goggles
- Grinding machinery
- Hand chipping hammers



- Clamps
- Temperature measurement instruments
- Electric overhead hoists
- Hydraulic presses
- Impact wrenches
- Hydraulic jacks
- Ladders
- Laser printers
- Laser welders
- Lathes
- Levels
- Light trucks
- Hydraulic truck lifts
- Metal inert gas MIG welders
- Metal markers
- Punches
- Computerized numerical control CNC programmable welding robot controllers
- Micrometers
- Milling machines
- Nibblers
- Personal computers
- Pipe cutters
- Plasma welders
- Air drills
- Air chisels
- Air scalers
- Buffers
- Power chippers
- Power drills
- Power grinders
- Cutoff saws
- Steamers



- Waterproof gloves
- Angle finders
- Pinchbars
- Comealongs
- Ratchets
- Self-contained breathing equipment
- Respirator hose masks
- Welding lenses
- Scaffolding
- Scribes
- Shears
- Socket sets
- Soldering irons
- Wire feed rate measurement instruments
- Squares
- Straightedges
- Metal benders
- Dies
- Fillet weld gauges
- Electric pipe threaders
- Hand pipe threaders
- Tungsten inert gas TIG welding equipment
- Two way radios
- Ultrasonic welding equipment
- Arc voltage measurement instruments
- Arc welders
- Underwater electrodes
- Direct current DC sources
- Face shields
- Welding tips
- Welding robots
- Rod ovens



- Electrode wires
- Dive suits
- Winches
- Power wire brushes
- Wire cutters
- Overhead cranes
- Brakes

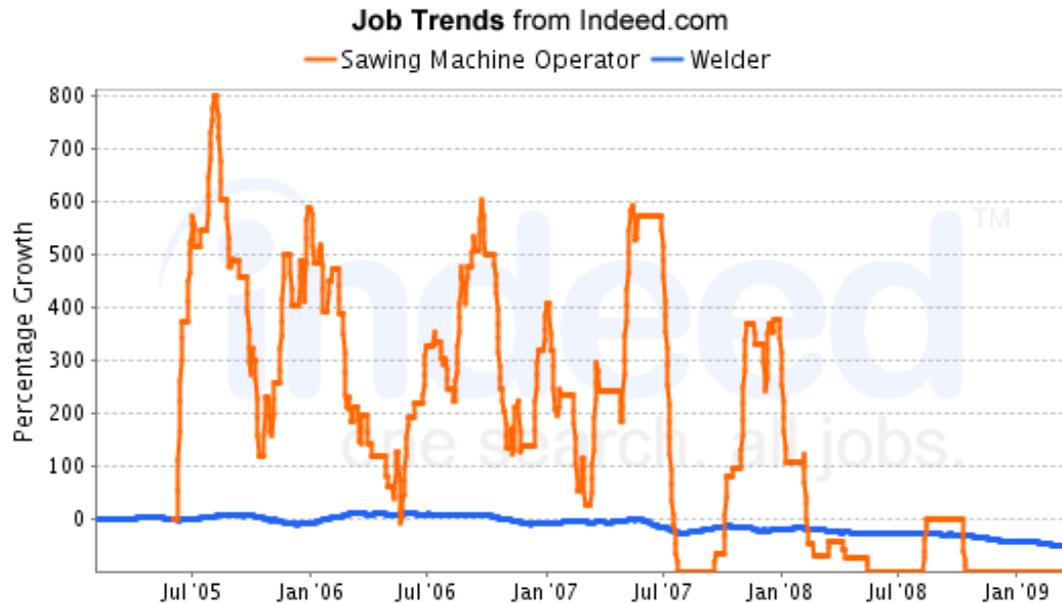
### Labor Market Comparison

Description	Sawing Machine Setters, Operators, and Tenders, Wood	Welders, Cutters, and Welder Fitters	Difference
Median Wage	\$ 24,790	\$ 38,030	\$ 13,240
10th Percentile Wage	\$ 18,890	\$ 22,680	\$ 3,790
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 29,970	\$ 46,190	\$ 16,220
90th Percentile Wage	\$ 35,380	\$ 50,780	\$ 15,400
Mean Wage	\$ 25,920	\$ 38,260	\$ 12,340
Total Employment - 2007	700	1,610	910
Employment Base - 2006	765	1,691	926
Projected Employment - 2016	706	1,816	1,110
Projected Job Growth - 2006-2016	-7.7 %	7.4 %	15.1 %
Projected Annual Openings - 2006-2016	15	49	34

### National Job Posting Trends

Trend for Sawing Machine Setters, Operators, and Tenders, Wood

Trend for Welders, Cutters, and Welder Fitters

Data from [Indeed](http://Indeed.com)

### Recommended Programs

Welder/Welding Technologist

Welding Technology/Welder. A program that prepares individuals to apply technical knowledge and skills to join or cut metal surfaces. Includes instruction in arc welding, resistance welding, brazing and soldering, cutting, high-energy beam welding and cutting, solid state welding, ferrous and non-ferrous materials, oxidation-reduction reactions, welding metallurgy, welding processes and heat treating, structural design, safety, and applicable codes and standards.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Eastern Maine Community College	354 Hogan Rd	Bangor	<a href="http://www.emcc.edu">www.emcc.edu</a>
Wasington County Community College	One College Drive	Calais	<a href="http://www.wccc.me.edu">www.wccc.me.edu</a>

### Maine Statewide Promotion Opportunities for Sawing Machine Setters, Operators, and Tenders, Wood

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
51-7041.00	Sawing Machine Setters, Operators, and Tenders, Wood	100	2	700	\$24,790.00	\$0.00	-8%	15
51-4121.06	Welders, Cutters, and Welder Fitters	91	2	1,610	\$38,030.00	\$13,240.00	7%	49



51-4034.00	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	91	3	110	\$34,350.00	\$9,560.00	-9%	2
51-9041.00	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	90	2	260	\$28,330.00	\$3,540.00	-7%	5
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	90	2	910	\$38,230.00	\$13,440.00	-26%	23
53-7063.00	Machine Feeders and Offbearers	88	1	480	\$26,820.00	\$2,030.00	-22%	9
51-2031.00	Engine and Other Machine Assemblers	88	3	20	\$29,010.00	\$4,220.00	-45%	1
51-9032.00	Cutting and Slicing Machine Setters, Operators, and Tenders	88	2	710	\$31,350.00	\$6,560.00	-23%	12
51-5011.00	Bindery Workers	87	2	350	\$26,130.00	\$1,340.00	-20%	5
51-9191.00	Cementing and Gluing Machine Operators and Tenders	87	1	80	\$27,620.00	\$2,830.00	-15%	2
51-2021.00	Coil Winders, Tapers, and Finishers	87	2	90	\$31,910.00	\$7,120.00	-53%	1
51-4022.00	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	87	2	20	\$28,330.00	\$3,540.00	-18%	1
51-4071.00	Foundry Mold and Coremakers	87	2	20	\$25,420.00	\$630.00	0%	1
51-5021.00	Job Printers	86	3	140	\$31,890.00	\$7,100.00	-10%	2
51-5023.00	Printing Machine Operators	86	2	790	\$29,710.00	\$4,920.00	-3%	18

### Top Industries for Welders, Cutters, and Welder Fitters

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Architectural and structural metals manufacturing	332300	11.33%	46,347	52,658	13.62%
Agriculture, construction, and mining machinery manufacturing	333100	6.36%	26,009	25,834	-0.67%



Self-employed workers, primary job	000601	5.26%	21,505	24,372	13.33%
Motor vehicle body and trailer manufacturing	336200	5.12%	20,924	21,779	4.09%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	4.38%	17,916	20,168	12.57%
Other general purpose machinery manufacturing	333900	3.83%	15,672	15,050	-3.97%
Boiler, tank, and shipping container manufacturing	332400	3.10%	12,686	12,161	-4.14%
Motor vehicle parts manufacturing	336300	3.03%	12,410	10,511	-15.31%
Machine shops	332710	3.03%	12,381	10,895	-12.00%
Other fabricated metal product manufacturing	332900	2.73%	11,163	10,522	-5.74%
Employment services	561300	2.58%	10,544	14,196	34.64%
Ship and boat building	336600	2.51%	10,285	12,246	19.07%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	2.39%	9,762	9,553	-2.14%
Nonresidential building construction	236200	2.03%	8,323	9,921	19.20%
Industrial machinery manufacturing	333200	1.31%	5,341	4,655	-12.85%

### Top Industries for Sawing Machine Setters, Operators, and Tenders, Wood

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Other wood product manufacturing	321900	26.55%	17,269	17,901	3.66%
Sawmills and wood preservation	321100	25.90%	16,845	14,856	-11.81%
Veneer, plywood, and engineered wood product manufacturing	321200	12.25%	7,969	9,546	19.78%
Self-employed workers, primary job	000601	7.11%	4,624	5,419	17.19%
Wood kitchen cabinet and countertop manufacturing	337110	5.97%	3,881	4,726	21.79%
Household and institutional furniture manufacturing	337120	5.22%	3,395	2,842	-16.30%
Office furniture (including fixtures) manufacturing	337200	3.32%	2,159	2,233	3.43%
Lumber and other construction materials merchant wholesalers	423300	2.03%	1,317	1,664	26.35%
Building material and supplies dealers	444100	1.42%	922	1,296	40.57%
Employment services	561300	1.09%	708	985	39.22%
Self-employed workers, secondary job	000602	0.90%	584	640	9.51%
Motor vehicle parts manufacturing	336300	0.25%	163	143	-12.42%
Motor vehicle body and trailer manufacturing	336200	0.24%	157	169	7.63%

Management of companies and enterprises	551100	0.12%	80	102	26.80%
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