TORQ Analysis of Electrical and Electronics Installers and Repairers, Transportation Equipment to Avionics Technicians

ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093.00	Abilities:	Importance LeveL: 50	Weight: 1
To Title:	Avionics Technicians	49-2091.00	Skills:	Importance LeveL: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS

Grand TORQ: 85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	91	Level	83	Level	81

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Written Expression	50	11	65
Visualization	53	11	59
Oral Comprehension	59	9	72
Inductive Reasoning	50	8	65
Oral Expression	55	7	68
Written Comprehension	53	7	65
Problem Sensitivity	53	5	75
Deductive Reasoning	51	5	65
Information Ordering	53	5	65
Control Precision	48	4	53
Finger Dexterity	51	3	65
Near Vision	53	2	62
Manual Dexterity	48	2	59

Upgrade These Skills

Skill	Level	Gap	Impt
Quality Control Analysis	59	15	70
Equipment Maintenance	67	11	71
Mathematics	57	9	71
Operation and Control	59	6	72

Knowledge to Add

Knowledge	Level	Gap	Impt
No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Avionics Technicians. GAP refers to level difference between Electrical and Electronics Installers and Repairers, Transportation Equipment and Avionics Technicians.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians	Importance
Problem Sensitivity	48	53	75
Oral Comprehension	50	59	72
Oral Expression	48	55	68
Written Comprehension	46	53	65
Written Expression	39	50	65
Deductive Reasoning	46	51	65
Inductive Reasoning	42	50	65
Information Ordering	48	53	65
Finger Dexterity	48	51	65
Near Vision	51	53	62
Visualization	42	53	59
Manual Dexterity	46	48	59
Speech Recognition	41	41	56
Arm-Hand Steadiness	48	42	53
Control Precision	44	48	53
Speech Clarity	39	39	53

Skill Level Comparison - Abilities with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians	Importance
Operation and Control	53	59	72
Mathematics	48	57	71
Equipment Maintenance	56	67	71
Quality Control Analysis	44	59	70

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians	Importance

Experience & Education Comparison

Related Work Experience Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians
10+ years	0%	0%
8-10 years	0%	0%
6-8 years	4%	33%
4-6 years	0%	1%
2-4 years	30%	0%
1-2 years	27%	39%
6-12	17%	17%

Required Education Level Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians
Doctoral	0%	0%
Professional Degree	0%	0%
Post-Masters Cert	0%	0%
Master's Degree	0%	1%
Post-Bachelor Cert	0%	0%

months	17%	17%
3-6 months	0%	5%
1-3 months	5%	0%
0-1 month	0%	0%
None	13%	1%

Bachelors	0%	0%
AA or Equiv	10%	64%
Some College	13%	6%
Post-Secondary Certificate	44%	11%
High Scool Diploma or GED	27%	16%
No HSD or GED	5%	0%

Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians
Most Common Educational/Training Requirement:	
Postsecondary vocational award	Postsecondary vocational award
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	3 - Job Zone Three: Medium Preparation Needed
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Tasks

Electrical and Electronics Installers and Repairers, Transportation Equipment

Core Tasks

Generalized Work Activities:

- 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.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Adjust, repair, or replace defective wiring and relays in ignition, lighting,

Avionics Technicians

Core Tasks

Generalized Work Activities:

- Repairing and Maintaining Electronic Equipment - Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.
- 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.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.

Specific Tasks

air-conditioning, and safety control systems, using electrician's tools.

- Confer with customers to determine the nature of malfunctions.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Estimate costs of repairs based on parts and labor requirements.
- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Install electrical equipment such as air-conditioning, heating, or ignition systems and components such as generator brushes and commutators, using hand tools.
- Install fixtures, outlets, terminal boards, switches, and wall boxes, using hand tools.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Maintain equipment service records.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.
- Reassemble and test equipment after repairs.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Repair or rebuild equipment such as starters, generators, distributors, or door controls, using electrician's tools.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- determine installation, service, or repair needed
- distinguish colors
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical conduit or tubing
- install electrical fixtures or components

Occupation Specific Tasks:

- Adjust, repair, or replace malfunctioning components or assemblies, using hand tools and/or soldering irons.
- Assemble components such as switches, electrical controls, and junction boxes, using hand tools and soldering irons.
- Assemble prototypes or models of circuits, instruments, and systems so that they can be used for testing.
- Connect components to assemblies such as radio systems, instruments, magnetos, inverters, and in-flight refueling systems, using hand tools and soldering irons.
- Coordinate work with that of engineers, technicians, and other aircraft maintenance personnel.
- Fabricate parts and test aids as required.
- Install electrical and electronic components, assemblies, and systems in aircraft, using hand tools, power tools, and/or soldering irons.
- Interpret flight test data in order to diagnose malfunctions and systemic performance problems.
- Keep records of maintenance and repair work.
- Lay out installation of aircraft assemblies and systems, following documentation such as blueprints, manuals, and wiring diagrams.
- Operate computer-aided drafting and design applications to design avionics system modifications.
- Set up and operate ground support and test equipment to perform functional flight tests of electrical and electronic systems.
- Test and troubleshoot instruments, components, and assemblies, using circuit testers, oscilloscopes, and voltmeters.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- analyze test data
- calibrate or adjust electronic equipment or instruments to specification
- conduct performance testing
- conduct sequential tests to locate electronic malfunction
- construct or fabricate electrical parts or fixtures
- distinguish colors
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems

- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- measure, weigh, or count products or materials
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use basic carpentry techniques
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- lay out machining, welding or precision assembly projects
- operate industrial or nondestructive testing equipment
- operate metal or plastic fabricating equipment/machinery
- perform safety inspections in industrial, manufacturing or repair setting
- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- set up electronic system test equipment
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use aviation electronics
- use electrical or electronic test devices or equipment
- use hand or power tools
- use knowledge of metric system
- use oscilloscopes in electronics repair
- use precision measuring tools or equipment
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

Tools - Examples

- Adjustable wrenches
- Alignment tools
- Laboratory binocular microscopes
- Resistance bridges
- Vernier calipers

- Circuit testers
- Cold chisels
- Combination wrenches
- Desktop computers
- Diagonal cut pliers
- Protective ear muffs
- End cut pliers
- Duck bill pliers
- Spectrum analyzers
- Signal simulators
- Frequency counters
- Inspection mirrors
- Safety goggles
- Grounding equipment
- Ball peen hammers
- Allen wrenches
- Component test sets
- Ladders
- Powered lifts
- Longnose pliers
- Magnifiers
- Meggers
- Digital multimeters
- Needlenose pliers
- Laptop computers
- Nut drivers
- Ohmmeters
- Digital oscilloscopes
- Personal computers
- Power drills
- Audio power meters
- Data bus readers

- Center punches
- Time delay reflectometers TDR
- Respirators
- Riveting equipment
- Hacksaws
- Phillips head screwdrivers
- Programmable function generators
- Slip joint pliers
- Socket sets
- Socket wrenches
- Soldering irons
- Steel rules
- Wirestrippers
- Tension meters
- Torque wrenches
- Tweezers
- Utility knives
- Current meters
- Radio frequency RF wattmeters
- Crimping tools

Labor Market Comparison

Maine Department of Labor.

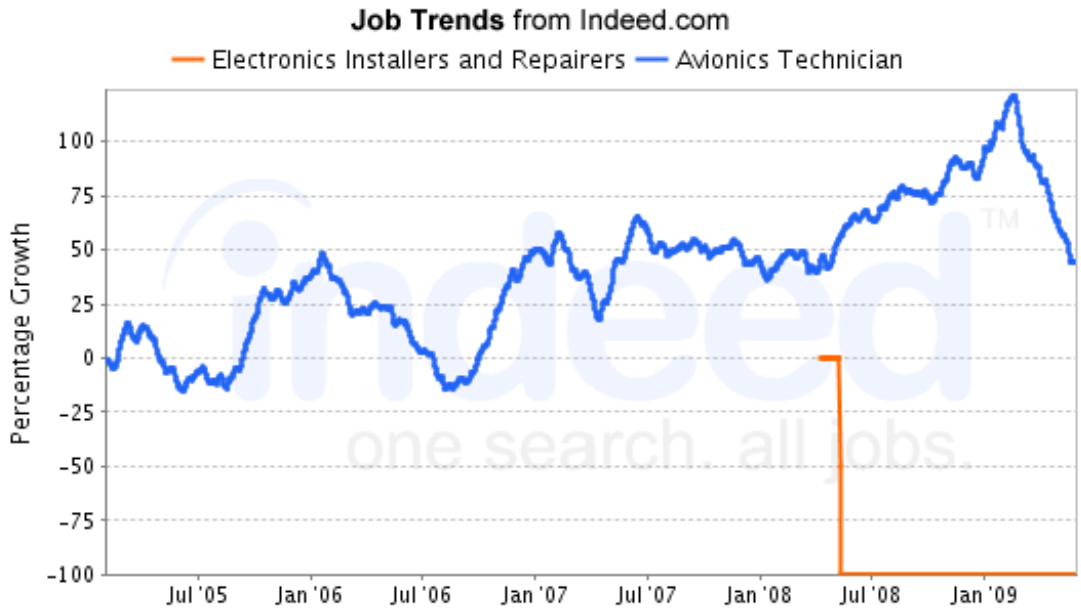
Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Avionics Technicians	Difference
Median Wage	$ 35,960	$ 34,970	$(990)
10th Percentile Wage	$ 26,990	$ 27,730	$ 740
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 44,780	$ 41,340	$(3,440)
90th Percentile Wage	$ 55,410	$ 47,110	$(8,300)
Mean Wage	$ 38,200	$ 35,880	$(2,320)
Total Employment - 2496	130	20	-110
Employment Base - 2006	154	17	-137

Projected Employment - 2505	160	18	-142
Projected Job Growth - 2006-2505	3.9 %	5.9 %	2.0 %
Projected Annual Openings - 2006-2505	4	0	-4
Special			

Special Occupations: Maine High Wage - In Demand

National Job Posting Trends

Trend for Electrical and Electronics Installers and Repairers, Transportation Equipment and Avionics Technicians



Data from Indeed

Programs

Related Programs

Airframe Mechanics and Aircraft Maintenance Technology/Technician

Airframe Mechanics and Aircraft Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain all aircraft components other than engines, propellers, avionics, and instruments. Includes instruction in layout and fabrication of sheet metal, fabric, wood, and other materials into structural members, parts, and fittings, and replacement of damaged or worn parts such as control cables and hydraulic units.

No information on schools for the program

Aviation Systems and Avionics Main. Technologist/T

Avionics Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of aircraft operating, control, and electronic systems. Includes instruction in flight instrumentation, aircraft communications and homing systems, radar and other sensory systems, navigation aids, and specialized systems for various types of civilian and military aircraft.

No information on schools for the program

Computer Installer and Repairer

Computer Installation and Repair Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to assemble, install, operate, maintain, and repair computers and related instruments. Includes instruction in power supplies, number systems, memory structure, buffers and registers, microprocessor design, peripheral equipment, programming, and networking.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Electrical and Electronics Equipment Installer and

Electrical/Electronics Equipment Installation and Repair, General. A program that generally prepares individuals to apply technical knowledge and skills to operate, maintain, and repair electrical and electronic equipment. Includes instruction in electrical circuitry, simple gearing, linkages and lubrication of machines and appliances, and the use of testing equipment.

No information on schools for the program

Electrician

Electrician. A program that prepares individuals to apply technical knowledge and skills to install, operate, maintain, and repair electric apparatus and systems such as residential, commercial, and industrial electric-power wiring; and DC and AC motors, controls, and electrical distribution panels. Includes instruction in the principles of electronics and electrical systems, wiring, power transmission, safety, industrial and household appliances, job estimation, electrical testing and inspection, and applicable codes and standards.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
Kennebec Valley Community College	92 Western Ave	Fairfield	www.kvcc.me.edu
Kennebec Valley Community College	92 Western Ave	Fairfield	www.kvcc.me.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu

Industrial Electronics Installer and Repairer

Industrial Electronics Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to assemble, install, operate, maintain, and repair electrical/electronic equipment used in industry and manufacturing. Includes instruction in installing, maintaining and testing various types of equipment.

No information on schools for the program

Maine Statewide Promotion Opportunities for Electrical and Electronics Installers and Repairers, Transportation Equipment

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-2093.00	Electrical and Electronics Installers and Repairers, Transportation Equipment	100	3	130	$35,960.00	$0.00	4%	4	
51-4121.06	Welders, Cutters, and Welder Fitters	85	2	1,610	$38,030.00	$2,070.00	7%	49	
17-3023.03	Electrical Engineering Technicians	85	3	430	$45,180.00	$9,220.00	-20%	9	
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	85	3	440	$49,450.00	$13,490.00	-19%	15	
49-2098.00	Security and Fire Alarm Systems Installers	84		290	$39,970.00	$4,010.00	20%	10	
17-3023.01	Electronics Engineering Technicians	84	3	430	$45,180.00	$9,220.00	-20%	9	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	83	3	170	$47,860.00	$11,900.00	-9%	3	
51-4192.00	Lay-Out Workers, Metal and Plastic	83	2	180	$43,870.00	$7,910.00	-24%	3	
51-4121.07	Solderers and Brazers	83	2	1,610	$38,030.00	$2,070.00	7%	49	
51-4111.00	Tool and Die Makers	82	3	160	$51,670.00	$15,710.00	-11%	2	
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	82	5	20	$60,790.00	$24,830.00	5%	1	
51-4041.00	Machinists	81	3	1,860	$41,560.00	$5,600.00	4%	35	

51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	$38,230.00	$2,270.00	-26%	23	
47-2011.00	Boilermakers	80	4	60	$39,260.00	$3,300.00	12%	3	
49-9044.00	Millwrights	80	3	830	$41,280.00	$5,320.00	-12%	11	

Special Occupations: Maine High Wage - In Demand

Top Industries for Avionics Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Aerospace product and parts manufacturing	336400	25.86%	4,062	4,551	12.03%
Support activities for air transportation	488100	23.57%	3,702	4,472	20.80%
Federal government, excluding postal service	919999	13.79%	2,167	1,844	-14.92%
Scheduled air transportation	481100	9.89%	1,554	1,544	-0.63%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	6.83%	1,073	1,027	-4.26%
Electronic and precision equipment repair and maintenance	811200	4.35%	684	621	-9.11%
Nonscheduled air transportation	481200	2.11%	332	376	13.22%
Technical and trade schools, public and private	611500	0.92%	145	157	8.65%
Other motor vehicle dealers	441200	0.56%	89	119	34.01%
Local government, excluding education and hospitals	939300	0.47%	74	83	12.34%
Employment services	561300	0.42%	65	83	26.55%

Top Industries for Electrical and Electronics Installers and Repairers, Transportation Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	27.78%	5,855	5,193	-11.30%
Electronics and appliance stores	443100	8.77%	1,849	1,991	7.69%
Aerospace product and parts manufacturing	336400	5.47%	1,152	1,210	4.96%
Electrical and electronic goods merchant wholesalers	423600	3.42%	720	875	21.51%
Motor vehicle parts manufacturing	336300	2.89%	610	500	-17.95%
Electrical contractors	238210	2.71%	572	618	8.06%
Federal government, excluding postal service	919999	2.65%	560	545	-2.58%
Electronic and precision equipment repair and maintenance	811200	2.08%	439	411	-6.33%

Automotive parts, accessories, and tire stores	441300	2.00%	421	424	0.55%
Support activities for air transportation	488100	1.86%	393	489	24.49%
Motor vehicle body and trailer manufacturing	336200	1.26%	266	268	0.84%
Engine, turbine, and power transmission equipment manufacturing	333600	1.20%	252	218	-13.50%
Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.17%	247	290	17.63%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.84%	176	192	9.06%
Security systems services	561620	0.75%	159	219	38.40%

TORQ Analysis of Electrical and Electronics Installers and Repairers, Transportation Equipment to Welders, Cutters, and Welder Fitters

ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093.00	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

TORQ RESULTS

Grand TORQ: 85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	85	Level	81	Level	90

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Visualization	51	9	50
Arm-Hand Steadiness	51	3	75
Multilimb Coordination	44	3	56
Selective Attention	44	3	50
Oral Expression	50	2	56

Upgrade These Skills

Skill	Level	Gap	Impt
No Skills Upgrade Required!			

Knowledge to Add

Knowledge	Level	Gap	Impt
No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Welders, Cutters, and Welder Fitters. GAP refers to level difference between Electrical and Electronics Installers and Repairers, Transportation Equipment and Welders, Cutters, and Welder Fitters.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters	Importance
Arm-Hand Steadiness	48	51	75
Near Vision	51	50	65
Manual Dexterity	46	46	62
Control Precision	44	44	62
Oral Expression	48	50	56
Problem Sensitivity	48	39	56
Finger Dexterity	48	42	56

Multilimb Coordination	41	44	56
Oral Comprehension	50	46	53
Visualization	42	51	50
Selective Attention	41	44	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters	Importance

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters	Importance

Experience & Education Comparison

Related Work Experience Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters
10+ years	0%	1%
8-10 years	0%	1%
6-8 years	4%	0%
4-6 years	0%	0%
2-4 years	30%	17%
1-2 years	27%	23%
6-12 months	17%	28%
3-6 months	0%	6%
1-3 months	5%	1%
0-1 month	0%	6%
None	13%	11%

Required Education Level Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters
Doctoral	0%	0%
Professional Degree	0%	0%
Post-Masters Cert	0%	0%
Master's Degree	0%	0%
Post-Bachelor Cert	0%	0%
Bachelors	0%	0%
AA or Equiv	10%	0%
Some College	13%	8%
Post-Secondary Certificate	44%	26%
High Scool Diploma or GED	27%	26%
No HSD or GED	5%	38%

Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters
Most Common Educational/Training Requirement:	
Postsecondary vocational award	Long-term on-the-job training
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	2 - Job Zone Two: Some Preparation Needed
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	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.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	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 usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Tasks

Electrical and Electronics Installers and Repairers, Transportation Equipment

Core Tasks

Generalized Work Activities:

- 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.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.
- Confer with customers to determine the nature of malfunctions.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Estimate costs of repairs based on parts and labor requirements.
- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Install electrical equipment such as air-conditioning, heating, or ignition systems and components such as generator brushes and commutators, using hand tools.
- Install fixtures, outlets, terminal boards, switches, and wall boxes, using hand tools.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Maintain equipment service records.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.
- Reassemble and test equipment after

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.
- Examine seams for defects, and rework defective joints or broken parts.
- Grind, cut, buff, or bend edges of

repairs.

- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Repair or rebuild equipment such as starters, generators, distributors, or door controls, using electrician's tools.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- determine installation, service, or repair needed
- distinguish colors
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical conduit or tubing
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- measure, weigh, or count products or materials
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components

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
- identify properties of metals for repair or fabrication activities
- load or unload material or workpiece into

- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use basic carpentry techniques
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

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
- Scribers
- 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

Maine Department of Labor.

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Welders, Cutters, and Welder Fitters	Difference
Median Wage	$ 35,960	$ 38,030	$ 2,070
10th Percentile Wage	$ 26,990	$ 22,680	$(4,310)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 44,780	$ 46,190	$ 1,410
90th Percentile Wage	$ 55,410	$ 50,780	$(4,630)
Mean Wage	$ 38,200	$ 38,260	$ 60
Total Employment - 2496	130	1,610	1,480
Employment Base - 2006	154	1,691	1,537
Projected Employment - 2505	160	1,816	1,656
Projected Job Growth - 2006-2505	3.9 %	7.4 %	3.5 %
Projected Annual Openings - 2006-2505	4	49	45
Special		☆	

Special Occupations: ☆ Maine High Wage - In Demand

National Job Posting Trends

Trend for Electrical and Electronics Installers and Repairers, Transportation Equipment and Welders, Cutters, and Welder Fitters

Data from Indeed

Programs

Related 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	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu

Maine Statewide Promotion Opportunities for Electrical and Electronics Installers and Repairers, Transportation Equipment

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-2093.00	Electrical and Electronics Installers and Repairers, Transportation Equipment	100	3	130	$35,960.00	$0.00	4%	4	

51-4121.06	Welders, Cutters, and Welder Fitters	85	2	1,610	$38,030.00	$2,070.00	7%	49	☆
17-3023.03	Electrical Engineering Technicians	85	3	430	$45,180.00	$9,220.00	-20%	9	
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	85	3	440	$49,450.00	$13,490.00	-19%	15	
49-2098.00	Security and Fire Alarm Systems Installers	84		290	$39,970.00	$4,010.00	20%	10	☆
17-3023.01	Electronics Engineering Technicians	84	3	430	$45,180.00	$9,220.00	-20%	9	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	83	3	170	$47,860.00	$11,900.00	-9%	3	
51-4192.00	Lay-Out Workers, Metal and Plastic	83	2	180	$43,870.00	$7,910.00	-24%	3	
51-4121.07	Solderers and Brazers	83	2	1,610	$38,030.00	$2,070.00	7%	49	☆
51-4111.00	Tool and Die Makers	82	3	160	$51,670.00	$15,710.00	-11%	2	
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	82	5	20	$60,790.00	$24,830.00	5%	1	
51-4041.00	Machinists	81	3	1,860	$41,560.00	$5,600.00	4%	35	☆
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	$38,230.00	$2,270.00	-26%	23	
47-2011.00	Boilermakers	80	4	60	$39,260.00	$3,300.00	12%	3	
49-9044.00	Millwrights	80	3	830	$41,280.00	$5,320.00	-12%	11	

Special Occupations: ☆ Maine High Wage - In Demand

Top Industries for Welders, Cutters, and Welder Fitters

Industry	NAICS	% of 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 Electrical and Electronics Installers and Repairers, Transportation Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	27.78%	5,855	5,193	-11.30%
Electronics and appliance stores	443100	8.77%	1,849	1,991	7.69%
Aerospace product and parts manufacturing	336400	5.47%	1,152	1,210	4.96%
Electrical and electronic goods merchant wholesalers	423600	3.42%	720	875	21.51%
Motor vehicle parts manufacturing	336300	2.89%	610	500	-17.95%
Electrical contractors	238210	2.71%	572	618	8.06%
Federal government, excluding postal service	919999	2.65%	560	545	-2.58%
Electronic and precision equipment repair and maintenance	811200	2.08%	439	411	-6.33%
Automotive parts, accessories, and tire stores	441300	2.00%	421	424	0.55%
Support activities for air transportation	488100	1.86%	393	489	24.49%
Motor vehicle body and trailer manufacturing	336200	1.26%	266	268	0.84%

Engine, turbine, and power transmission equipment manufacturing	333600	1.20%	252	218	-13.50%
Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.17%	247	290	17.63%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.84%	176	192	9.06%
Security systems services	561620	0.75%	159	219	38.40%

TORQ Analysis of Electrical and Electronics Installers and Repairers, Transportation Equipment to Electromechanical Equipment Assemblers

ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093.00	Abilities:	Importance LeveL: 50	Weight: 1
To Title:	Electromechanical Equipment Assemblers	51-2023.00	Skills:	Importance LeveL: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS

Grand TORQ: 85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	96	Level	82	Level	76

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Visualization	48	6	50
Manual Dexterity	50	4	65
Control Precision	48	4	53
Finger Dexterity	51	3	68
Information Ordering	50	2	59
Inductive Reasoning	44	2	53

Upgrade These Skills

Skill	Level	Gap	Impt
No Skills Upgrade Required!			

Knowledge to Add

Knowledge	Level	Gap	Impt
No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Electromechanical Equipment Assemblers. GAP refers to level difference between Electrical and Electronics Installers and Repairers, Transportation Equipment and Electromechanical Equipment Assemblers.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers	Importance
Finger Dexterity	48	51	68
Manual Dexterity	46	50	65
Arm-Hand Steadiness	48	44	62
Oral Comprehension	50	48	59
Information Ordering	48	50	59

Near Vision	51	50	59
Oral Expression	48	48	56
Problem Sensitivity	48	46	56
Deductive Reasoning	46	44	56
Inductive Reasoning	42	44	53
Control Precision	44	48	53
Speech Recognition	41	35	53
Written Comprehension	46	44	50
Visualization	42	48	50
Speech Clarity	39	34	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers	Importance

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers	Importance

Experience & Education Comparison

Related Work Experience Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers
10+ years	0%	0%
8-10 years	0%	0%
6-8 years	4%	0%
4-6 years	0%	0%
2-4 years	30%	2%
1-2 years	27%	42%
6-12 months	17%	15%
3-6 months	0%	0%
1-3 months	5%	3%
0-1 month	0%	15%
None	13%	20%

Required Education Level Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers
Doctoral	0%	0%
Professional Degree	0%	11%
Post-Masters Cert	0%	0%
Master's Degree	0%	0%
Post-Bachelor Cert	0%	0%
Bachelors	0%	0%
AA or Equiv	10%	0%
Some College	13%	0%
Post-Secondary Certificate	44%	23%
High Scool Diploma or GED	27%	53%
No HSD or GED	5%	10%

Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers
Most Common Educational/Training Requirement:	
Postsecondary vocational award	Short-term on-the-job training
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	3 - Job Zone Three: Medium Preparation Needed

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Tasks

Electrical and Electronics Installers and Repairers, Transportation Equipment

Core Tasks

Generalized Work Activities:

- 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.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.
- Confer with customers to determine the nature of malfunctions.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Estimate costs of repairs based on parts and labor requirements.
- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Install electrical equipment such as air-conditioning, heating, or ignition systems and components such as generator brushes and commutators, using hand tools.
- Install fixtures, outlets, terminal boards, switches, and wall boxes, using hand tools.

Electromechanical Equipment Assemblers

Core Tasks

Generalized Work Activities:

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Controlling Machines and Processes - Using either control mechanisms or direct physical activity to operate machines or processes (not including computers or vehicles).
- Inspecting Equipment, Structures, or Material - Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Repairing and Maintaining Electronic Equipment - Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.

Specific Tasks

Occupation Specific Tasks:

- Assemble parts or units, and position, align, and fasten units to assemblies, subassemblies, or frames, using hand tools and power tools.
- Attach name plates and mark identifying information on parts.
- Clean and lubricate parts and subassemblies, using grease paddles or oilcans.
- Connect cables, tubes, and wiring, according to specifications.
- Disassemble units to replace parts or to crate them for shipping.
- Drill, tap, ream, countersink, and spot-face bolt holes in parts, using drill presses and portable power drills.
- File, lap, and buff parts to fit, using hand and power tools.

- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Maintain equipment service records.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.
- Reassemble and test equipment after repairs.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Repair or rebuild equipment such as starters, generators, distributors, or door controls, using electrician's tools.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- determine installation, service, or repair needed
- distinguish colors
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical conduit or tubing
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- measure, weigh, or count products or materials
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- Inspect, test, and adjust completed units to ensure that units meet specifications, tolerances, and customer order requirements.
- Measure parts to determine tolerances, using precision measuring instruments such as micrometers, calipers, and verniers.
- Operate or tend automated assembling equipment, such as robotics and fixed automation equipment.
- Operate small cranes to transport or position large parts.
- Pack or fold insulation between panels.
- Position, align, and adjust parts for proper fit and assembly.
- Read blueprints and specifications to determine component parts and assembly sequences of electromechanical units.

Detailed Tasks

Detailed Work Activities:

- apply cleaning solvents
- attach or mark identification onto products or containers
- examine products or work to verify conformance to specifications
- fabricate, assemble, or disassemble manufactured products by hand
- make independent judgment in assembly procedures
- measure, weigh, or count products or materials
- modify electrical or electronic equipment or products
- package goods for shipment or storage
- perform safety inspections in manufacturing or industrial setting
- precision assemble electronic, electrical, or electromechanical equipment
- read blueprints
- read manufacturing outlines for electronic products
- read schematics
- read specifications
- read work order, instructions, formulas, or processing charts
- solder electrical or electronic connections or components
- test manufactured products or materials
- use electrical or electronic test devices or equipment
- use hand or power tools
- use precision measuring tools or equipment
- use soldering equipment

- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use basic carpentry techniques
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

Labor Market Comparison

Maine Department of Labor.

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electromechanical Equipment Assemblers	Difference
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25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 44,780	$ 32,700	$(12,080)
90th Percentile Wage	$ 55,410	$ 37,860	$(17,550)
Mean Wage	$ 38,200	$ 27,560	$(10,640)
Total Employment - 2496	130	90	-40

Employment Base - 2006	154	87	-67
Projected Employment - 2505	160	70	-90
Projected Job Growth - 2006-2505	3.9 %	-19.5 %	-23.4 %
Projected Annual Openings - 2006-2505	4	2	-2
Special			

Special Occupations: Maine High Wage - In Demand

National Job Posting Trends

Trend for Electrical and Electronics Installers and Repairers, Transportation Equipment and Electromechanical Equipment Assemblers

Data from Indeed

Programs

Related Programs

Electromechanical Instrumentation and Main. Techno

Electromechanical and Instrumentation and Maintenance Technologies/Technicians, Other. Any instructional program in electromechanical instrumentation and maintenance technologies not listed above.

No information on schools for the program

Electromechanical Tech./Technician

Electromechanical Technology/Electromechanical Engineering Technology. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers engaged in developing and testing automated, servomechanical, and other electromechanical systems. Includes instruction in prototype testing, manufacturing and operational testing, systems analysis and maintenance procedures, and report preparation.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu

Machine Shop Assistant

Machine Shop Technology/Assistant. A program that prepares individuals to apply technical knowledge and skills to fabricate and modify metal parts in support of other manufacturing, repair or design activities, or as an independent business.

No information on schools for the program

Robotics Tech./Technician

Robotics Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in developing and using robots. Includes instruction in the principles of robotics, design and operational testing, system maintenance and repair procedures, robot computer systems and control language, specific system types and applications to specific industrial tasks, and report preparation.

No information on schools for the program

Maine Statewide Promotion Opportunities for Electrical and Electronics Installers and Repairers, Transportation Equipment

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-2093.00	Electrical and Electronics Installers and Repairers, Transportation Equipment	100	3	130	$35,960.00	$0.00	4%	4	
51-4121.06	Welders, Cutters, and Welder Fitters	85	2	1,610	$38,030.00	$2,070.00	7%	49	☆
17-3023.03	Electrical Engineering Technicians	85	3	430	$45,180.00	$9,220.00	-20%	9	
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	85	3	440	$49,450.00	$13,490.00	-19%	15	
49-2098.00	Security and Fire Alarm Systems Installers	84		290	$39,970.00	$4,010.00	20%	10	☆
17-3023.01	Electronics Engineering Technicians	84	3	430	$45,180.00	$9,220.00	-20%	9	

49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	83	3	170	$47,860.00	$11,900.00	-9%	3	
51-4192.00	Lay-Out Workers, Metal and Plastic	83	2	180	$43,870.00	$7,910.00	-24%	3	
51-4121.07	Solderers and Brazers	83	2	1,610	$38,030.00	$2,070.00	7%	49	★
51-4111.00	Tool and Die Makers	82	3	160	$51,670.00	$15,710.00	-11%	2	
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	82	5	20	$60,790.00	$24,830.00	5%	1	
51-4041.00	Machinists	81	3	1,860	$41,560.00	$5,600.00	4%	35	★
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	$38,230.00	$2,270.00	-26%	23	
47-2011.00	Boilermakers	80	4	60	$39,260.00	$3,300.00	12%	3	
49-9044.00	Millwrights	80	3	830	$41,280.00	$5,320.00	-12%	11	

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Electromechanical Equipment Assemblers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Navigational, measuring, electromedical, and control instruments manufacturing	334500	26.38%	15,906	15,229	-4.26%
Semiconductor and other electronic component manufacturing	334400	13.22%	7,970	6,966	-12.59%
Motor vehicle parts manufacturing	336300	7.97%	4,807	3,827	-20.39%
Electrical equipment manufacturing	335300	6.95%	4,188	3,559	-15.03%
Other general purpose machinery manufacturing	333900	4.40%	2,651	2,393	-9.73%
Industrial machinery manufacturing	333200	3.56%	2,147	1,759	-18.08%
Communications equipment manufacturing	334200	3.55%	2,143	2,160	0.79%
Computer and peripheral equipment manufacturing	334100	2.98%	1,796	1,176	-34.54%
Commercial and service industry machinery manufacturing	333300	2.56%	1,545	1,356	-12.28%

Medical equipment and supplies manufacturing	339100	2.39%	1,443	1,476	2.29%
Other electrical equipment and component manufacturing	335900	2.30%	1,387	1,286	-7.34%
Aerospace product and parts manufacturing	336400	1.97%	1,185	1,207	1.84%
Agriculture, construction, and mining machinery manufacturing	333100	1.19%	716	669	-6.63%
Engine, turbine, and power transmission equipment manufacturing	333600	1.00%	604	507	-16.07%
Metalworking machinery manufacturing	333500	0.88%	528	432	-18.13%

Top Industries for Electrical and Electronics Installers and Repairers, Transportation Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	27.78%	5,855	5,193	-11.30%
Electronics and appliance stores	443100	8.77%	1,849	1,991	7.69%
Aerospace product and parts manufacturing	336400	5.47%	1,152	1,210	4.96%
Electrical and electronic goods merchant wholesalers	423600	3.42%	720	875	21.51%
Motor vehicle parts manufacturing	336300	2.89%	610	500	-17.95%
Electrical contractors	238210	2.71%	572	618	8.06%
Federal government, excluding postal service	919999	2.65%	560	545	-2.58%
Electronic and precision equipment repair and maintenance	811200	2.08%	439	411	-6.33%
Automotive parts, accessories, and tire stores	441300	2.00%	421	424	0.55%
Support activities for air transportation	488100	1.86%	393	489	24.49%
Motor vehicle body and trailer manufacturing	336200	1.26%	266	268	0.84%
Engine, turbine, and power transmission equipment manufacturing	333600	1.20%	252	218	-13.50%
Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.17%	247	290	17.63%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.84%	176	192	9.06%
Security systems services	561620	0.75%	159	219	38.40%

TORQ Analysis of Electrical and Electronics Installers and Repairers, Transportation Equipment to Electrical and Electronics Repairers, Commercial and Industrial Equipment

ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093.00	Abilities:	Importance LeveL: 50	Weight: 1
To Title:	Electrical and Electronics Repairers, Commercial and Industrial Equipment	49-2094.00	Skills:	Importance LeveL: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS

Grand TORQ: 85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	87	Level	83	Level	85

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Extent Flexibility	66	18	50
Information Ordering	57	9	53
Selective Attention	50	9	53
Inductive Reasoning	50	8	50
Written Comprehension	53	7	53
Control Precision	51	7	53
Oral Expression	53	5	56
Finger Dexterity	53	5	50
Deductive Reasoning	50	4	59
Visual Color Discrimination	51	3	50
Arm-Hand Steadiness	50	2	53
Oral Comprehension	51	1	56
Speech Recognition	42	1	50

Upgrade These Skills

Skill	Level	Gap	Impt
Coordination	63	24	69
Operation Monitoring	68	12	75
Active Listening	61	3	75

Knowledge to Add

Knowledge	Level	Gap	Impt
No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Electrical and Electronics Repairers, Commercial and Industrial Equipment. GAP refers to level difference between Electrical and Electronics Installers and Repairers, Transportation Equipment and Electrical and Electronics Repairers, Commercial and Industrial Equipment.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Importance
Problem Sensitivity	48	46	65
Near Vision	51	51	62
Deductive Reasoning	46	50	59
Oral Comprehension	50	51	56
Oral Expression	48	53	56
Written Comprehension	46	53	53
Information Ordering	48	57	53
Selective Attention	41	50	53
Arm-Hand Steadiness	48	50	53
Control Precision	44	51	53
Speech Clarity	39	39	53
Inductive Reasoning	42	50	50
Finger Dexterity	48	53	50
Extent Flexibility	48	66	50
Visual Color Discrimination	48	51	50
Speech Recognition	41	42	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Importance
Active Listening	58	61	75
Operation Monitoring	56	68	75
Coordination	39	63	69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Importance

Experience & Education Comparison

Related Work Experience Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment
10+ years	0%	0%

Required Education Level Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment
Doctoral	0%	0%
Professional Degree	0%	0%

8-10 years	0%	0%
6-8 years	4%	5%
4-6 years	0%	7%
2-4 years	30%	21%
1-2 years	27%	29%
6-12 months	17%	0%
3-6 months	0%	0%
1-3 months	5%	15%
0-1 month	0%	0%
None	13%	19%

Post-Masters Cert	0%	0%
Master's Degree	0%	0%
Post-Bachelor Cert	0%	0%
Bachelors	0%	0%
AA or Equiv	10%	11%
Some College	13%	19%
Post-Secondary Certificate	44%	32%
High Scool Diploma or GED	27%	36%
No HSD or GED	5%	0%

Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment
Most Common Educational/Training Requirement:	
Postsecondary vocational award	Postsecondary vocational award
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	3 - Job Zone Three: Medium Preparation Needed
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.
Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Tasks

Electrical and Electronics Installers and Repairers, Transportation Equipment

Core Tasks

Generalized Work Activities:

- 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.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Adjust, repair, or replace defective wiring

Electrical and Electronics Repairers, Commercial and Industrial Equipment

Core Tasks

Generalized Work Activities:

- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Repairing and Maintaining Electronic Equipment - Servicing, repairing, calibrating, regulating, fine-tuning, or testing machines, devices, and equipment that operate primarily on the basis of electrical or electronic (not mechanical) principles.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.

Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.

- Confer with customers to determine the nature of malfunctions.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Estimate costs of repairs based on parts and labor requirements.
- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Install electrical equipment such as air-conditioning, heating, or ignition systems and components such as generator brushes and commutators, using hand tools.
- Install fixtures, outlets, terminal boards, switches, and wall boxes, using hand tools.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Maintain equipment service records.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.
- Reassemble and test equipment after repairs.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Repair or rebuild equipment such as starters, generators, distributors, or door controls, using electrician's tools.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- determine installation, service, or repair needed
- distinguish colors
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical conduit or tubing

Specific Tasks

Occupation Specific Tasks:

- Advise management regarding customer satisfaction, product performance, and suggestions for product improvements.
- Calibrate testing instruments and installed or repaired equipment to prescribed specifications.
- Consult with customers, supervisors, and engineers to plan layout of equipment and to resolve problems in system operation and maintenance.
- Coordinate efforts with other workers involved in installing and maintaining equipment or components.
- Determine feasibility of using standardized equipment, and develop specifications for equipment required to perform additional functions.
- Develop or modify industrial electronic devices, circuits, and equipment according to available specifications.
- Enter information into computer to copy program or to draw, modify, or store schematics, applying knowledge of software package used.
- Examine work orders and converse with equipment operators to detect equipment problems and to ascertain whether mechanical or human errors contributed to the problems.
- Inspect components of industrial equipment for accurate assembly and installation and for defects such as loose connections and frayed wires.
- Install repaired equipment in various settings, such as industrial or military establishments.
- Maintain equipment logs that record performance problems, repairs, calibrations, and tests.
- Maintain inventory of spare parts.
- Operate equipment to demonstrate proper use and to analyze malfunctions.
- Perform scheduled preventive maintenance tasks, such as checking, cleaning, and repairing equipment, to detect and prevent problems.
- Repair and adjust equipment, machines, and defective components, replacing worn parts such as gaskets and seals in watertight electrical equipment.
- Send defective units to the manufacturer or to a specialized repair shop for repair.
- Set up and test industrial equipment to ensure that it functions properly.
- Sign overhaul documents for equipment replaced or repaired.
- Study blueprints, schematics, manuals, and other specifications to determine installation procedures.
- Test faulty equipment to diagnose

- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- measure, weigh, or count products or materials
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use basic carpentry techniques
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

malfunctions, using test equipment and software, and applying knowledge of the functional operation of electronic units and systems.

Detailed Tasks

Detailed Work Activities:

- analyze operation of malfunctioning electrical or electronic equipment
- analyze technical data, designs, or preliminary specifications
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- confer with engineering, technical or manufacturing personnel
- determine installation, service, or repair needed
- determine specifications
- distinguish colors
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- instruct customers in product installation, use, or repair
- maintain equipment service records
- maintain inventory of supplies
- maintain or repair industrial or related equipment/machinery
- modify electrical or electronic equipment or products
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- plan layout of electrical/electronic equipment installation
- plan or organize work
- read blueprints
- read schematics
- read technical drawings
- read work order, instructions, formulas, or processing charts

- repair computer controlled manufacturing systems
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals
- use computer aided drafting or design software for design, drafting, modeling, or other engineering tasks
- use computers to enter, access or retrieve data
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use electronic calibration devices
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter
- work as a team member

Tools - Examples

- Adjustable wrenches
- Compressors
- Ammeters
- Rubber insulating mats
- Static proof dust cleaners
- Lift trucks
- Load testers
- Block and tackle equipment
- Cutting torches
- Ground resistance testers

- Vernier calipers
- Chart recorders
- Growlers
- Wire tracers
- Digital clamp meters
- Chisels
- Conduit benders
- Desktop computers
- Side cross cutters
- Supervisory control and data acquisition SCADA equipment
- Drill bits
- Frequency meters
- Ground testers
- Feeler gauges
- Fault locaters
- Fish tapes
- Forklifts
- Signal analyzers
- Fuse pullers
- Generators
- Dial indicators
- Clamp sticks
- Hammers
- Infrared thermometers
- Hex keys
- Cable locating meters
- Hoists
- Hole saws
- Boom trucks
- Hydrometers
- Impact wrenches
- Insulation testers

- Jacks
- Wheatstone bridges
- Ladders
- Printers
- Bulb extractors
- Light meters
- Lineman's pliers
- Slide lock pliers
- Lumen meters
- Manlifts
- Meggers
- Metal inert gas MIG welders
- Programmable logic controllers PLC
- Micrometers
- Multimeters
- Needlenose pliers
- Laptop computers
- Nut drivers
- Ohmmeters
- Oscilloscopes
- Personal computers
- Phase rotation indicators
- Hydraulic pipe benders
- Pipe cutters
- Staging equipment
- Plotters
- Jackhammers
- Bead blasters
- Computer diagnostic devices
- Air blowers
- Drills
- Grinders

- Cement cutters
- Power screwdrivers
- Rubber insulating gloves
- Pullers
- Knockout punches
- Comealongs
- Rectifiers
- Safety belts
- Electric hacksaws
- Scaffolding
- Scanners
- Screwdrivers
- Function generators
- Socket sets
- Soldering irons
- Spline keys
- Wire strippers
- Tachometers
- Tape measures
- Termination tools
- Pipe threaders
- Taps
- Torque wrenches
- Touch screens
- Two way radios
- Utility knives
- High-voltage detectors
- Wattmeters
- Tack welding equipment
- Welding equipment
- Cable winches
- Crimping pliers

	• Overhead cranes
	• Drill presses

Labor Market Comparison

Maine Department of Labor.

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Electrical and Electronics Repairers, Commercial and Industrial Equipment	Difference
Median Wage	$ 35,960	$ 49,450	$ 13,490
10th Percentile Wage	$ 26,990	$ 35,420	$ 8,430
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 44,780	$ 56,600	$ 11,820
90th Percentile Wage	$ 55,410	$ 65,040	$ 9,630
Mean Wage	$ 38,200	$ 49,600	$ 11,400
Total Employment - 2496	130	440	310
Employment Base - 2006	154	449	295
Projected Employment - 2505	160	362	202
Projected Job Growth - 2006-2505	3.9 %	-19.4 %	-23.3 %
Projected Annual Openings - 2006-2505	4	15	11
Special			

Special Occupations: Maine High Wage - In Demand

National Job Posting Trends

Trend for Electrical and Electronics Installers and Repairers, Transportation Equipment and Electrical and Electronics Repairers, Commercial and Industrial Equipment

Data from Indeed

Programs

Related Programs

Aviation Systems and Avionics Main. Technologist/T

Avionics Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to repair, service, and maintain all types of aircraft operating, control, and electronic systems. Includes instruction in flight instrumentation, aircraft communications and homing systems, radar and other sensory systems, navigation aids, and specialized systems for various types of civilian and military aircraft.

No information on schools for the program

Business Machine Repairer

Business Machine Repair. A program that prepares individuals to apply technical knowledge and skills to maintain and repair a variety of office machines, such as typewriters, word processing and dictation machines, calculators, data processing equipment, duplicating machines, and mailing machines. Includes instruction in diagnostic techniques, the use of testing equipment, and the principles of mechanics, electricity, and electronics as they relate to the repair of business machines.

No information on schools for the program

Computer Installer and Repairer

Computer Installation and Repair Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to assemble, install, operate, maintain, and repair computers and related instruments. Includes instruction in power supplies, number systems, memory structure, buffers and registers, microprocessor design, peripheral equipment, programming, and networking.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

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Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Electrical and Electronics Equipment Installer and

Electrical/Electronics Equipment Installation and Repair, General. A program that generally prepares individuals to apply technical knowledge and skills to operate, maintain, and repair electrical and electronic equipment. Includes instruction in electrical circuitry, simple gearing, linkages and lubrication of machines and appliances, and the use of testing equipment.

No information on schools for the program

Industrial Electronics Installer and Repairer

Industrial Electronics Technology/Technician. A program that prepares individuals to apply technical knowledge and skills to assemble, install, operate, maintain, and repair electrical/electronic equipment used in industry and manufacturing. Includes instruction in installing, maintaining and testing various types of equipment.

No information on schools for the program

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49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	82	5	20	$60,790.00	$24,830.00	5%	1	
51-4041.00	Machinists	81	3	1,860	$41,560.00	$5,600.00	4%	35	★
51-9196.00	Paper Goods Machine Setters, Operators, and Tenders	81	2	910	$38,230.00	$2,270.00	-26%	23	
47-2011.00	Boilermakers	80	4	60	$39,260.00	$3,300.00	12%	3	
49-9044.00	Millwrights	80	3	830	$41,280.00	$5,320.00	-12%	11	

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Electrical and Electronics Repairers, Commercial and Industrial Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Federal government, excluding postal service	919999	14.77%	11,849	11,941	0.78%
Electrical contractors	238210	6.86%	5,504	6,153	11.78%
Electronic and precision equipment repair and maintenance	811200	5.38%	4,317	4,183	-3.11%
Electrical and electronic goods merchant wholesalers	423600	5.03%	4,036	5,073	25.69%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	4.78%	3,831	3,910	2.06%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	3.00%	2,407	2,715	12.81%
Aerospace product and parts manufacturing	336400	2.70%	2,165	2,350	8.57%
Basic chemical manufacturing	325100	2.27%	1,822	1,638	-10.10%

Semiconductor and other electronic component manufacturing	334400	2.18%	1,749	1,630	-6.82%
Communications equipment manufacturing	334200	2.04%	1,637	1,759	7.45%
Local government, excluding education and hospitals	939300	1.86%	1,489	1,783	19.76%
Other chemical product and preparation manufacturing	325900	1.81%	1,451	1,217	-16.14%
Resin, synthetic rubber, and artificial synthetic fibers and filaments manufacturing	325200	1.59%	1,275	1,091	-14.43%
Wireless telecommunications carriers (except satellite)	517200	1.52%	1,220	1,770	45.07%
Professional and commercial equipment and supplies merchant wholesalers	423400	1.52%	1,221	1,518	24.27%

Top Industries for Electrical and Electronics Installers and Repairers, Transportation Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	27.78%	5,855	5,193	-11.30%
Electronics and appliance stores	443100	8.77%	1,849	1,991	7.69%
Aerospace product and parts manufacturing	336400	5.47%	1,152	1,210	4.96%
Electrical and electronic goods merchant wholesalers	423600	3.42%	720	875	21.51%
Motor vehicle parts manufacturing	336300	2.89%	610	500	-17.95%
Electrical contractors	238210	2.71%	572	618	8.06%
Federal government, excluding postal service	919999	2.65%	560	545	-2.58%
Electronic and precision equipment repair and maintenance	811200	2.08%	439	411	-6.33%
Automotive parts, accessories, and tire stores	441300	2.00%	421	424	0.55%
Support activities for air transportation	488100	1.86%	393	489	24.49%
Motor vehicle body and trailer manufacturing	336200	1.26%	266	268	0.84%
Engine, turbine, and power transmission equipment manufacturing	333600	1.20%	252	218	-13.50%
Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.17%	247	290	17.63%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.84%	176	192	9.06%
Security systems services	561620	0.75%	159	219	38.40%

TORQ Analysis of Electrical and Electronics Installers and Repairers, Transportation Equipment to Recreational Vehicle Service Technicians

ANALYSIS INPUT

Transfer	Title	O*NET	Filters		
From Title:	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093.00	Abilities:	Importance LeveL: 50	Weight: 1
To Title:	Recreational Vehicle Service Technicians	49-3092.00	Skills:	Importance LeveL: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS

Grand TORQ: 85

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	85	Level	85	Level	85

Gaps To Narrow if Possible

Ability	Level	Gap	Impt
Static Strength	42	17	50
Hearing Sensitivity	46	14	50
Extent Flexibility	59	11	62
Control Precision	53	9	65
Manual Dexterity	53	7	68
Inductive Reasoning	50	8	59
Oral Comprehension	55	5	72
Oral Expression	53	5	68
Visualization	48	6	50
Multilimb Coordination	46	5	59
Deductive Reasoning	50	4	59
Speech Recognition	44	3	59
Information Ordering	51	3	56
Depth Perception	37	3	50
Near Vision	53	2	68
Problem Sensitivity	50	2	65

Upgrade These Skills

Skill	Level	Gap	Impt
Systems Analysis	47	16	72
Mathematics	50	2	69

Knowledge to Add

Knowledge	Level	Gap	Impt
Chemistry	35	2	73

Finger Dexterity	50	2	65
Speech Clarity	41	2	56

LEVEL and IMPT (IMPORTANCE) refer to the Target Recreational Vehicle Service Technicians. GAP refers to level difference between Electrical and Electronics Installers and Repairers, Transportation Equipment and Recreational Vehicle Service Technicians.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians	Importance
Oral Comprehension	50	55	72
Oral Expression	48	53	68
Manual Dexterity	46	53	68
Near Vision	51	53	68
Problem Sensitivity	48	50	65
Finger Dexterity	48	50	65
Control Precision	44	53	65
Extent Flexibility	48	59	62
Deductive Reasoning	46	50	59
Inductive Reasoning	42	50	59
Arm-Hand Steadiness	48	44	59
Multilimb Coordination	41	46	59
Speech Recognition	41	44	59
Written Comprehension	46	46	56
Information Ordering	48	51	56
Speech Clarity	39	41	56
Visualization	42	48	50
Static Strength	25	42	50
Visual Color Discrimination	48	48	50
Depth Perception	34	37	50
Hearing Sensitivity	32	46	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians	Importance
Systems Analysis	31	47	72
Mathematics	48	50	69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians	Importance
Chemistry	33	35	73

Experience & Education Comparison

Related Work Experience Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians
10+ years	0%	0%
8-10 years	0%	0%
6-8 years	4%	0%
4-6 years	0%	0%
2-4 years	30%	34%
1-2 years	27%	34%
6-12 months	17%	17%
3-6 months	0%	4%
1-3 months	5%	0%
0-1 month	0%	0%
None	13%	8%

Required Education Level Comparison

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians
Doctoral	0%	0%
Professional Degree	0%	0%
Post-Masters Cert	0%	0%
Master's Degree	0%	0%
Post-Bachelor Cert	0%	0%
Bachelors	0%	0%
AA or Equiv	10%	4%
Some College	13%	0%
Post-Secondary Certificate	44%	39%
High Scool Diploma or GED	27%	52%
No HSD or GED	5%	4%

Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians
Most Common Educational/Training Requirement:	
Postsecondary vocational award	Long-term on-the-job training
Job Zone Comparison	
3 - Job Zone Three: Medium Preparation Needed	2 - Job Zone Two: Some Preparation Needed
Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.	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.
Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.	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 usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Tasks

Electrical and Electronics Installers and Repairers, Transportation Equipment

Core Tasks

Generalized Work Activities:

- 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.
- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying

Recreational Vehicle Service Technicians

Core Tasks

Generalized Work Activities:

- Updating and Using Relevant Knowledge - Keeping up-to-date technically and applying new knowledge to your job.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Performing General Physical Activities - Performing physical activities that require considerable use of your arms and legs and moving your whole body, such as climbing,

new knowledge to your job.

- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.

Specific Tasks

Occupation Specific Tasks:

- Adjust, repair, or replace defective wiring and relays in ignition, lighting, air-conditioning, and safety control systems, using electrician's tools.
- Confer with customers to determine the nature of malfunctions.
- Cut openings and drill holes for fixtures, outlet boxes, and fuse holders, using electric drills and routers.
- Estimate costs of repairs based on parts and labor requirements.
- Inspect and test electrical systems and equipment to locate and diagnose malfunctions, using visual inspections, testing devices, and computer software.
- Install electrical equipment such as air-conditioning, heating, or ignition systems and components such as generator brushes and commutators, using hand tools.
- Install fixtures, outlets, terminal boards, switches, and wall boxes, using hand tools.
- Install new fuses, electrical cables, or power sources as required.
- Locate and remove or repair circuit defects such as blown fuses or malfunctioning transistors.
- Maintain equipment service records.
- Measure, cut, and install frameworks and conduit to support and connect wiring, control panels, and junction boxes, using hand tools.
- Reassemble and test equipment after repairs.
- Refer to schematics and manufacturers' specifications that show connections and provide instructions on how to locate problems.
- Repair or rebuild equipment such as starters, generators, distributors, or door controls, using electrician's tools.
- Splice wires with knives or cutting pliers, and solder connections to fixtures, outlets, and equipment.

Detailed Tasks

Detailed Work Activities:

lifting, balancing, walking, stooping, and handling of materials.

- Handling and Moving Objects - Using hands and arms in handling, installing, positioning, and moving materials, and manipulating things.
- Operating Vehicles, Mechanized Devices, or Equipment - Running, maneuvering, navigating, or driving vehicles or mechanized equipment, such as forklifts, passenger vehicles, aircraft, or water craft.

Specific Tasks

Occupation Specific Tasks:

- Confer with customers, read work orders, and examine vehicles needing repair in order to determine the nature and extent of damage.
- Connect electrical systems to outside power sources, and activate switches to test the operation of appliances and light fixtures.
- Connect water hoses to inlet pipes of plumbing systems, and test operation of toilets and sinks.
- Examine or test operation of parts or systems that have been repaired to ensure completeness of repairs.
- Inspect recreational vehicles to diagnose problems, then perform necessary adjustment, repair, or overhaul.
- List parts needed, estimate costs, and plan work procedures, using parts lists, technical manuals, and diagrams.
- Locate and repair frayed wiring, broken connections, or incorrect wiring, using ohmmeters, soldering irons, tape, and hand tools.
- Open and close doors, windows, and drawers to test their operation, trimming edges to fit as necessary.
- Refinish wood surfaces on cabinets, doors, moldings, and floors, using power sanders, putty, spray equipment, brushes, paints, or varnishes.
- Remove damaged exterior panels, and repair and replace structural frame members.
- Repair leaks with caulking compound, or replace pipes, using pipe wrenches.
- Repair plumbing and propane gas lines, using caulking compounds and plastic or copper pipe.
- Reset hardware, using chisels, mallets, and screwdrivers.
- Seal open sides of modular units to prepare them for shipment, using polyethylene sheets, nails, and hammers.

Detailed Tasks

- analyze operation of malfunctioning electrical or electronic equipment
- bend tubing or conduit
- calibrate or adjust electronic equipment or instruments to specification
- communicate technical information
- conduct sequential tests to locate electronic malfunction
- determine installation, service, or repair needed
- distinguish colors
- estimate cost for repair services
- fabricate, assemble, or disassemble manufactured products by hand
- install electrical conduit or tubing
- install electrical fixtures or components
- install electronic equipment, components, or systems
- install electronic power, communication, control, or security equipment or systems
- install lead-in wires to control boxes and other components
- install or replace meters, regulators, or related measuring or control devices
- install/connect electrical equipment to power circuit
- install/string electrical or electronic cable or wiring
- measure, weigh, or count products or materials
- obtain information from clients, customers, or patients
- perform safety inspections in industrial, manufacturing or repair setting
- read blueprints
- read schematics
- read tape measure
- read technical drawings
- repair electronic components, equipment, or systems
- repair or adjust measuring or control devices
- repair or replace electrical wiring, circuits, fixtures, or equipment
- replace electronic components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test electronic or electrical circuit connections
- understand detailed electronic design specifications
- understand service or repair manuals
- understand technical information for electronic repair work
- understand technical operating, service or repair manuals

Detailed Work Activities:

- adhere to safety procedures
- adjust or set mechanical controls or components
- align or adjust clearances of vehicle body parts or components
- apply adhesives, caulking, sealants, or coatings
- assemble and install pipe sections, fittings, or plumbing fixtures
- assemble, dismantle, or reassemble equipment or machinery
- build or repair structures in construction, repair, or manufacturing setting
- conduct tests to locate mechanical system malfunction
- construct, erect, or repair wooden frameworks or structures
- cut, shape, fit, or join wood or other construction materials
- determine installation, service, or repair needed
- diagnose malfunctioning vehicle systems
- diagnose mechanical problems in machinery or equipment
- estimate time or cost for installation, repair, or construction projects
- fabricate, assemble, or disassemble manufactured products by hand
- finish or refinish floor, furniture, or related wood surfaces
- identify properties of metals for repair or fabrication activities
- inspect machinery or equipment to determine adjustments or repairs needed
- install carpet, linoleum, tile, or related material onto floors or walls
- install household appliances
- install prefabricated building components
- install siding or sheeting
- maintain repair records
- move or fit heavy objects
- obtain information from clients, customers, or patients
- paint walls or other structural surfaces
- perform safety inspections in construction or resource extraction setting
- plan or organize work
- prepare building surfaces for paint, finishes, wallpaper, or adhesives
- prime or paint vehicle or transportation equipment surfaces
- read blueprints
- read schematics
- read specifications
- read tape measure
- read technical drawings

- use basic carpentry techniques
- use diagnostic software in electronics repair
- use electrical or electronic test devices or equipment
- use hand or power tools
- use interpersonal communication techniques
- use oscilloscopes in electronics repair
- use precision tools in electronics repair
- use soldering equipment
- use voltmeter, ammeter, or ohmmeter

- read vehicle manufacturer's specifications
- read work order, instructions, formulas, or processing charts
- repair or replace electrical wiring, circuits, fixtures, or equipment
- repair or replace gas, steam, sewer, or water piping or fixtures
- repair or replace malfunctioning or worn mechanical components
- repair prefabricated wooden building components
- solder electrical or electronic connections or components
- test electrical/electronic wiring, equipment, systems or fixtures
- test mechanical products or equipment
- understand service or repair manuals
- use acetylene welding/cutting torch
- use arc welding equipment
- use basic carpentry techniques
- use basic plumbing techniques
- use hand or power tools
- use hand or power woodworking tools
- use knowledge of metric system
- use knowledge of welding filler rod types
- use measuring devices in construction or extraction work
- use oral or written communication techniques
- use soldering equipment
- use spray paint equipment
- use voltmeter, ammeter, or ohmmeter
- weld together metal parts, components, or structures

Labor Market Comparison

Maine Department of Labor.

Description	Electrical and Electronics Installers and Repairers, Transportation Equipment	Recreational Vehicle Service Technicians	Difference
Median Wage	$ 35,960	$ 29,640	$(6,320)
10th Percentile Wage	$ 26,990	$ 22,130	$(4,860)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	$ 44,780	$ 34,510	$(10,270)
90th Percentile Wage	$ 55,410	$ 38,290	$(17,120)
Mean Wage	$ 38,200	$ 29,710	$(8,490)

Total Employment - 2496	130	70	-60
Employment Base - 2006	154	67	-87
Projected Employment - 2505	160	71	-89
Projected Job Growth - 2006-2505	3.9 %	6.0 %	2.1 %
Projected Annual Openings - 2006-2505	4	1	-3
Special			

Special Occupations: Maine High Wage - In Demand

National Job Posting Trends

Trend for Electrical and Electronics Installers and Repairers, Transportation Equipment and Recreational Vehicle Service Technicians

Data from Indeed

Programs

Related Programs

Building/Property Main. and Manager

Heavy Equipment Maintenance Technology/Technician. A program that prepares individuals to apply technical knowledge and skills in the field maintenance and repair of heavy equipment, and in the general maintenance and overhaul of such equipment. Includes instruction in inspection, maintenance, and repair of tracks, wheels, brakes, operating controls, pneumatic and hydraulic systems, electrical circuitry, engines and in techniques of welding and brazing.

Institution	Address	City	URL
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu

Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Wasington County Community College	One College Drive	Calais	www.wccc.me.edu

Vehicle Maintenance and Repair Technologies, Other.

Vehicle Maintenance and Repair Technologies, Other. Any instructional program in vehicle and mobile equipment mechanics and repairers not listed above.

Institution	Address	City	URL
Landing School of Boat Building and Design	286 River Rd	Arundel	www.landingschool.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Maine Statewide Promotion Opportunities for Electrical and Electronics Installers and Repairers, Transportation Equipment

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
49-2093.00	Electrical and Electronics Installers and Repairers, Transportation Equipment	100	3	130	$35,960.00	$0.00	4%	4	
51-4121.06	Welders, Cutters, and Welder Fitters	85	2	1,610	$38,030.00	$2,070.00	7%	49	☆
17-3023.03	Electrical Engineering Technicians	85	3	430	$45,180.00	$9,220.00	-20%	9	
49-2094.00	Electrical and Electronics Repairers, Commercial and Industrial Equipment	85	3	440	$49,450.00	$13,490.00	-19%	15	
49-2098.00	Security and Fire Alarm Systems Installers	84		290	$39,970.00	$4,010.00	20%	10	☆

17-3023.01	Electronics Engineering Technicians	84	3	430	$45,180.00	$9,220.00	-20%	9	
49-9012.00	Control and Valve Installers and Repairers, Except Mechanical Door	83	3	170	$47,860.00	$11,900.00	-9%	3	
51-4192.00	Lay-Out Workers, Metal and Plastic	83	2	180	$43,870.00	$7,910.00	-24%	3	
51-4121.07	Solderers and Brazers	83	2	1,610	$38,030.00	$2,070.00	7%	49	☆
51-4111.00	Tool and Die Makers	82	3	160	$51,670.00	$15,710.00	-11%	2	
49-2095.00	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	82	5	20	$60,790.00	$24,830.00	5%	1	
51-4041.00	Machinists	81	3	1,860	$41,560.00	$5,600.00	4%	35	☆
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Special Occupations: ☆ Maine High Wage - In Demand

Top Industries for Recreational Vehicle Service Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Other motor vehicle dealers	441200	69.59%	9,741	11,854	21.69%
Automotive mechanical and electrical repair and maintenance	811110	4.13%	578	686	18.73%
Automobile dealers	441100	3.93%	550	623	13.44%
Self-employed workers, primary job	000601	3.55%	497	529	6.54%
Automotive body, paint, interior, and glass repair	811120	3.37%	471	550	16.76%
Motor vehicle body and trailer manufacturing	336200	2.82%	395	387	-2.15%
Other miscellaneous store retailers	453900	1.85%	259	278	7.20%
Automotive parts, accessories, and tire stores	441300	1.81%	253	247	-2.44%

Motor vehicle and motor vehicle parts and supplies merchant wholesalers	423100	1.78%	249	284	14.14%
Automotive equipment rental and leasing	532100	1.20%	168	191	13.46%
Commercial and industrial machinery and equipment (except automotive and electronic) repair and maintenance	811300	0.92%	129	137	5.82%

Top Industries for Electrical and Electronics Installers and Repairers, Transportation Equipment

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Rail transportation	482100	27.78%	5,855	5,193	-11.30%
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Industry & Occupational Data Sources

TORQ Results: The TORQ Scores is based upon an proprietary algorithm applied against Knowledge, Skills and Ability levels and importance derived from O*NET 12.

ASK Analysis, Experience & Education Levels and Tasks: O*Net 12

Labor Market Comparisons Occupational Projections data from Maine Department of Labor

National Posting Trends Indeed.com

Labor Pool & Promotions Opportunities: Occupational Projections data from Maine Department of Labor

Top Industries: Occupational Employment Statistics program (U.S. Bureau of Labor Statistics)

