

WAGE GRADE CAREER PATH

WG 2854

Electrical Equipment Repairing

This occupation covers nonsupervisory jobs involved in troubleshooting, testing, installing, repairing, overhauling, modifying, and maintaining electrical devices, equipment, and components such as automatic alternator synchronizing equipment, amplidyne control units, voltage regulating equipment, generators, actuators, switching and control panels, junction boxes, AC and DC motors, electrical harnesses, transformers, and power amplifiers. Typically, the equipment and components serviced have been removed from aircraft, ships, ground support or industrial equipment, tracked or wheeled heavy duty vehicles, missiles, etc. The work requires knowledge of electrical circuitry, formulas, and principles and their application to the devices, equipment, components, and systems repaired. In addition, some work may require knowledge of electronic circuitry and theory and general mechanical skills and knowledge.

Journeyman

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| 1 | Continue required on-the-job and formal classroom training required in Civilian Training Plan |
| 2 | Complete task qualifications for current position |
| 3 | Complete task certifications for current position |
| 4 | Master common to complex work tasks. At Grade 9, electrical equipment repairers apply a thorough knowledge of electrical theory such as alternating and direct current flow, conductance, resistance, capacitance, inductance, ohms law, and phasing. They apply a practical understanding of electronics to identify and replace components with obvious visual defects, e.g., a burnt resistor or damaged board, or through basic testing procedures. They apply a knowledge of mechanical theory in the maintenance of bearings, shafts, commutator and slip ring surfaces, fitting and assembly of components, and measurement of travel, torque, and revolutions per minute. They have a working knowledge of pneumatic and hydraulic principles. Electrical equipment repairers at this level are skilled at disassembling, repairing, reassembling, and testing electrical equipment. They have skill in performing specific checks and tests of coils, resistors, capacitors, potentiometers, relays, solenoids, switches, and related items using electrical and electronic test equipment to measure resistance, voltage, capacitance, and similar characteristics and response of the mechanism to an actuating signal following established test procedures. Grade 9 repairers have skill in setting up and operating computer-controlled automatic test equipment (ATE) and other specialized test equipment to perform pretest and final checkout of electrical equipment. They have skill in various soldering techniques and in winding and rebuilding armatures, stators, rotors, and coils for electrical motors, generators, alternators, invertors, and transformers. Repairers at this level have skill in making mechanical repairs and adjustments such as replacing springs, bearings, brushes, gears, cams, clutches, and adjusting belts, gears, brakes, clutches or related parts. |
| 5 | Master common to complex work tasks. At Grade 10, electrical equipment repairers apply a thorough knowledge of electrical theory and a knowledge of electronic theory to complete repairs on a variety of complex electrical systems and equipment containing diodes, transistors, and electronic devices in the circuitry. They apply a knowledge of mechanical theory and of pneumatic and hydraulic principles to isolate, repair, or replace faulty components such as hydraulic/pneumatic pressure regulators and hydraulic volume controls on many different types of equipment. Electrical equipment repairers at this level have skill in troubleshooting entire electrical systems and related equipment, determining cause of malfunction, and making required repairs. They have skill in using test equipment such as oscilloscopes, frequency meters, phase rotation meters, and capacity and impedance bridges to troubleshoot, test, and repair equipment such as AC-DC convertors, DC-AC inverters, and power control panels. They have skill in interpreting technical specifications, schematics, blueprints, and engineering drawings in planning and laying out, and completing the installation, modification, and repair of various electrical systems, circuits, equipment, and controls. They are able to replace diodes, transistors, capacitors, resistors, and printed circuit boards. |
| 6 | Provide production support services |
| 7 | Maintain successful to above average performance ratings |

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