

ELECTRIC-MOTOR REPAIRER

RAPIDS: 0149D

O*NET/SOC: 49-2092.00

REVISION DATE: 09/2019

TRADE DESCRIPTION: Repair, maintain, or install electric motors, wiring, or switches.

TASK PERFORMANCE: Demonstrate knowledge and skills for qualifying as Journeyman. Applicable Job Qualification Requirements will be used as a guide in performing tasks and demonstrating knowledge in the following skill areas. Actual work time must be recorded in the Work Experience Log; each skill area must be completed.

Applicable Ratings/MOS/NEC

USMC MOS: 1120, 1142, 1169

USCG: EM

USN: CE, CTM, EM, EMN, ET, ETN, ETR, ETV

USA MOS: 12P, 881A, 88L, 94A

Related Instruction:

Trade related On-The-Job-Training (OJT) or Any Trade related schools/courses totaling 288 or more hours.

Additional Requirement:

None

Total Hours: **4000**

Skill	Description	Hours
A	INSPECT AND TEST EQUIPMENT -- Inspect electrical connections, wiring, relays, charging resistance boxes, and storage batteries, following wiring diagrams.	600

	<ul style="list-style-type: none"> -- Inspect and test equipment to locate damage or worn parts and diagnose malfunctions, or read work orders or schematic drawings to determine required repairs. -- Inspect batteries for structural defects such as dented cans, damaged carbon rods and terminals, and defective seals. -- Test equipment for overheating, using speed gauges and thermometers. -- Test conditions, fluid levels, and specific gravities of electrolyte cells, using voltmeters, hydrometers, and thermometers. -- Test battery charges, and replace or recharge batteries as necessary. 	
B	<p>ASSEMBLE AND DISASSEMBLY OF EQUIPMENT</p> <ul style="list-style-type: none"> -- Assemble electrical parts such as alternators, generators, starting devices, and switches, following schematic drawings and using hand, machine, and power tools. -- Disassemble defective equipment so that repairs can be made, using hand tools. -- Reassemble repaired electrical motors to specified requirements and ratings, using hand tools and electrical meters. -- Remove and replace defective parts such as coil leads, carbon brushes, and wires, using soldering equipment. -- Bolt porcelain insulators to wood parts to assemble hot stools. 	900
C	<p>TROUBLESHOOT AND REPAIR EQUIPMENT</p> <ul style="list-style-type: none"> -- Repair and rebuild defective mechanical parts in electric motors, generators, and related equipment, using hand tools and power tools conduit to complete circuits between boxes. -- Measure velocity, horsepower, revolutions per minute (rpm), amperage, circuitry, and voltage of units or parts to diagnose problems, using ammeters, voltmeters, wattmeters, and other testing devices. -- Rewire electrical systems, and repair or replace electrical accessories. -- Lubricate moving parts. -- Reface, ream, and polish commutators and machine parts to specified tolerances, using machine tools. -- Adjust working parts, such as fan belts, contacts, and springs, using hand tools and gauges. -- Clean cells, cell assemblies, glassware, leads, electrical connections, and battery poles, using scrapers, steam, water, emery cloths, power grinders, or acid. -- Cut and form insulation, and insert insulation into armature, rotor, or stator slots. 	1500

	<ul style="list-style-type: none"> -- Repair and operate battery-charging equipment. -- Lift units or parts such as motors or generators, using cranes or chain hoists, or signal crane operators to lift heavy parts or subassemblies. 	
D	<p>MAINTAIN EQUIPMENT</p> <ul style="list-style-type: none"> -- Solder, wrap, and coat wires to ensure proper insulation. -- Weld, braze, or solder electrical connections. -- Scrape and clean units or parts, using cleaning solvents and equipment such as buffing wheels. -- Rewind coils on cores in slots, or make replacement coils, using coil-winding machines. -- Set machinery for proper performance, using computers. <p>Drain and filter transformer oil and refill transformers with oil until coils are submerged.</p> <ul style="list-style-type: none"> -- Position and level battery cells, anodes, or cathodes, using hoists or leveling jacks, or signal other workers to perform positioning and leveling. -- Verify and adjust alignments and dimensions of parts, using gauges and tracing lathes. -- Pour compounds into transformer-case terminal openings to seal out moisture. -- Clean, rinse, and dry transformer cases, using boiling water, scrapers, solvents, hoses, and cloths. -- Steam-clean polishing and buffing wheels to remove abrasives and bonding materials, and spray, brush, or recoat surfaces as necessary. 	900
E	<p>ADMINISTRATIVE</p> <ul style="list-style-type: none"> -- Record repairs required, parts used, and labor time. -- Maintain stocks of parts. -- read service guides to find information needed to perform repairs. 	100