

New York State Department of Civil Service
Division of Classification & Compensation

Occ. Code 7347140

Service & Repair Mechanic (HVAC-R), Grade 12

Brief Description of Class

Service & Repair Mechanics (HVAC-R) are responsible for the operation, maintenance, repair and installation of heating, refrigeration and air-conditioning equipment in a State facility. Incumbents, as specialists, are responsible for supervising and training other members of the operation and maintenance staff including skilled, semiskilled and unskilled workers, in servicing and repairing heating, refrigeration and air-conditioning equipment.

The types of equipment Service & Repair Mechanics (HVAC-R) work with include ammonia brine, freon, carbon dioxide, sulphur dioxide, methyl chloride and lithium bromide units, absorption cold generators, all types of coolers, refrigerators and freezers, air-conditioning units and systems, humidifiers, compressors, ventilators, cooling towers, and other related equipment.

Distinguishing Characteristics

Service & Repair Mechanics (HVAC-R) are responsible for journey level work in the operation, maintenance, repair, and installation of heating, refrigeration and air-conditioning equipment. This includes overhauling compressors, pumps and electric motors, replacing parts and controls, and installing new equipment. A facility should have 150 tons of refrigeration equipment counting units of three tons or more, walk-in coolers and similar commercial type installations before a Service & Repair Mechanic (HVAC-R) is classified for that facility. All positions are in the non-competitive jurisdictional class.

Related Classes

Service & Repair Assistants (HVAC-R) under the supervision of a Service & Repair Mechanic (HVAC-R) operate and make running repairs to refrigeration and air-conditioning equipment. This includes inspecting equipment for leaks and electrical or mechanical failures, adjusting controls, cleaning condensers and other parts, lubricating moving parts, preparing brine mixtures and assisting Service & Repair Mechanics (HVAC-R) in major repair and installation work.

In some facilities Plant Utilities Assistants are responsible for the operation and repair of refrigeration and air-conditioning equipment on a shift basis as well as their normal duties of operating and maintaining the facility's heating plant.

Trades Specialists (Electrician) may be responsible for repairing electrical motors and wiring involved with refrigeration and air-conditioning equipment or inspecting such work performed by a Service & Repair Mechanic (HVAC-R).

Illustrative Tasks

Performs required periodic maintenance and emergency repairs on heating, refrigeration and air-conditioning equipment.

- Inspects, tests, diagnoses trouble and dismantles malfunctioning systems and components.
- Overhauls compressors, pumps and electric motors, replacing parts as necessary.
- Overhauls and replaces control devices, calibrating and recalibrating them as necessary.
- Rewires electrical systems of components as necessary.
- Performs seasonal start-up and shut-down operations on air-conditioning units and systems to ensure efficient operation and to prevent freeze-ups.
- Locates and seals leaks in both gas and brine units, removes air from lines and replaces with proper refrigerant.

Installs new equipment both as replacement units and new installations.

- Studies blueprints and schematic drawings to identify the location, size and type of components.
- Lays out reference points for the installation of components using structural measuring tools.
- As necessary assembles components of system for installation following written and schematic instructions.
- Mounts compressors, condensers and other components in specified locations.
- Cuts, threads and connects or welds tubing to inlets and outlets of components.

- Installs control mechanisms with wrenches and acetylene torches.
- Tests lines, connections and components for leaks with leak detector which indicates the presence of refrigerant.
- May install electric wiring to connect components to power source.
- Records temperature and pressure readings from gauges and temperature potentiometer and compares readings with manufacturer's specifications.
- Adjusts controls to bring readings within specifications as required.

As assigned, supervises and trains Service & Repair Assistants (HVAC-R), Plant Utilities Assistants, and other trades positions in the repair and maintenance of refrigeration and air-conditioning equipment.

- Assigns work to staff providing oral and written instructions and diagrams as necessary.
- Demonstrates proper methods and procedures for performing work.
- Observes and inspects work in progress and at its completion to insure work is properly done.
- Performs journey level work as required.

As required, operates a motor vehicle to transport material, equipment and personnel to job sites around a State facility.

Independence of Operation

Service & Repair Mechanics (HVAC-R) report to such positions as Plant Utilities Engineers, Trades Supervisors (Electrician), or Maintenance Supervisors. The supervisors may prescribe work priorities, furnish materials, give the nature and extent of work and provide plans, diagrams and specifications. In some cases these activities are performed by the Service & Repair Mechanic (HVAC-R). Service & Repair Mechanics' (HVAC-R) work is periodically inspected by the supervisor but a Service & Repair Mechanic (HVAC-R) works with the considerable independence that is typical of journey level trades positions.

Communication

The nature of Service & Repair Mechanics (HVAC-R) activities generally restricts relationships to employees working within the same organizational unit. Service & Repair Mechanics (HVAC-R) may supervise a small maintenance staff orally assigning work and providing written and oral instructions. On occasion incumbents may orally communicate with administrators and others in a facility to explain why work is being performed in the manner selected. Communication with the general public is not typical of the class.

Supervision Exercised

As the specialist in the field Service & Repair Mechanics (HVAC-R) supervise Trades Specialists (Electrician), Plant Utilities Assistants, and Maintenance Assistants on special large projects involving refrigeration and air-conditioning equipment, making work assignments, giving instructions, providing diagrams and drawings, and observing and inspecting work in progress and at its completion to insure directions are followed. They regularly supervise Service & Repair Assistants (HVAC-R) assigning work, providing directions, observing work, and inspecting work after its completion.

Minimum Qualifications

Non-Competitive: Successful completion of a NYS two-year Service & Repair Mechanic (HVAC-R) Traineeship or NYS two-year refrigeration repair and maintenance training program; OR successful completion of any equivalent refrigeration two-year training or apprenticeship program;* OR four (4) years of full-time experience in the mechanical or electrical trades under a skilled journey-level mechanic or electrician which would provide training equivalent to that given in an apprenticeship program, one (1) year of which must include both training and work in the operation and maintenance of commercial type refrigeration or air-conditioning equipment. Apprenticeship training in the mechanical or electrical trades or training gained by completion of technical courses in the mechanical or electrical trades at a school, institute, or branch of the Armed Services may be substituted on a year-for-year basis.

* Successful completion of the traineeship and the training program includes a total of 288 hours of trade-specific class room instruction, 45 hours of technical math course work, 45 hours of technical communications course work, and 15 hours of blueprint/schematic reading course work. Course work must be completed with an average of "C" or better. Additionally, successful completion of the traineeship also includes 4,000 hours of on-the-job training.

When required to operate motor vehicles, candidates must possess a valid New York State driver's license appropriate for the type of vehicle to be operated.

Note: Classification Standards illustrate the nature, extent and scope of duties and responsibilities of the classes they describe. Standards cannot and do not include all of the work that might be appropriately performed by a class. The minimum qualifications above are those which were required for appointment at the time the Classification Standard was written. Please contact the Division of Staffing Services for current information on minimum qualification requirements for appointment or examination.

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