

# MAINTENANCE MECHANIC AUTOMOTIVE/VARIOUS

## DEFINITION

Under direction performs varied mechanical work involved in the repair, maintenance, and servicing of motor vehicles and/or construction equipment working with various machines and hand tools common to the trade; does related work as required.

**NOTE:** The examples of work for this title are for illustrative purposes only. A particular position using this title may not perform all duties listed in this job specification. Conversely, all duties performed on the job may not be listed.

## EXAMPLES OF WORK

Repairs engines and components, power trains, suspension systems, and other mechanical units of such motor vehicles as automobiles, vans, and/or such construction equipment as trucks, bulldozers, tractors, cranes, road graders, power shovels, or similar equipment.

Obtains description of mechanical problems from driver of vehicle and/or test drives the vehicle or uses testing equipment such as motor analyzers, spark plug testers, or compression gauges to locate and identify the problem.

Locates worn, dirty, or poorly adjusted parts through visual check of vehicle or through the use of testing devices such as timing lights or other diagnostic equipment.

Removes, cleans, or replaces defective parts such as spark plugs, wheel cylinders, mufflers, tail pipes, or brake shoes.

Makes settings and adjustments such as setting distributors and voltage regulators, points, gapping spark plugs, setting engine idle and timing, and adjusting brakes.

Overhauls or replaces carburetors, blowers, generators, starters, and pumps.

Rewires ignition system, lights, and instrument panel.

Relines and adjusts brakes, aligns front end, repairs or replaces shock absorbers.

Mends damaged body and fenders by hammering out or filling in dents and welding broken parts.

Replaces and adjusts headlights and installs and repairs accessories such as radios, heaters, mirrors, and windshield wipers.

Adjusts or replaces spark plugs and other parts to ensure efficient engine performance.

Installs air conditioners and service components such as compressors and condensers.

Aligns and balances wheels and repairs steering and suspension systems.

Adjusts brakes, replaces brake linings and pads, repairs hydraulic cylinders, and makes other repairs to the brake system.

Cleans radiators, locates and fixes leaks and installs new radiator cores in vehicles.

Replaces defective wiring and electrical units in vehicles such as starters and generators.

Repairs and replaces gear trains, couplings, hydraulic pumps, and other components of automatic transmission systems.

In making repairs uses a variety of tools, equipment, and testing devices such as pneumatic wrenches to remove bolts; lathes and grinding machines to rebuild brakes and other parts; welding and flame cutting equipment to repair exhaust systems; ammeters, ohmmeters, and voltmeters to locate electrical system malfunction; motor analyzers, spark plug testers, or compression gauges to locate mechanical problems; wheel balancing equipment to balance wheels; scientific testing equipment to help adjust and locate malfunctions in fuel, ignition, and emission control systems; and common handtools such as screwdrivers, pliers, and wrenches to work on small parts and get to hard to reach places.

Consults manufacturer or other manuals or charts to identify replacement parts or ascertain specified dimensions and tolerances of components.

Welds broken parts and structural members.

May direct workers engaged in cleaning parts and assisting with assembly and disassembly of equipment.

Traces and locates defects and causes of mechanical problems to determine type and extent of repairs.

Selects and makes repairs in accord with appropriate repair specifications, manuals, and procedures.

Fits and installs parts such as pistons, valves, bearings, gears, and cylinders to appropriate tolerances and makes appropriate adjustments in accord with specifications and guidelines.

Connects, aligns, and adjusts mechanical components to assure proper operation of the vehicle.

Drives a vehicle such as a pick-up truck and so forth to various locations to service disabled motor vehicles.

## **REQUIREMENTS**

### **TRAINING**

Successful completion of one (1) year of training in automotive technology at an accredited community college or vocational school.

### **EXPERIENCE**

Two (2) years of experience in the maintenance and repair of various types of motor vehicles and/or construction equipment such as bulldozers, tractors, cranes, road graders, power shovels, or similar equipment.

**NOTE:** Applicants who do not possess the required year of formal training may substitute one (1) additional year of experience as outlined above

**NOTE:** Possession of a certificate as an automotive mechanic issued by the National Institute for Automotive Service Excellence may be substituted for one (1) year of formal training as indicated above.

### **LICENSE**

Appointees will be required to possess a valid New Jersey driver's license.

Appointees will be required to possess a valid Commercial Driver's License (CDL) and applicable endorsements for the class and type of vehicle being operated.

### **KNOWLEDGE AND ABILITIES**

Knowledge of where and how a variety of automotive systems, components, accessories, and parts of systems such as wheel cylinders, fuel lines, condensers, and mufflers are installed.

Knowledge of varied types of motors and equipment and their operation.

Knowledge of procedures for diagnosing the reasons for motor failure and the steps necessary to correct the condition.

Knowledge of makeup, operation, and installation procedures for all components and systems of vehicles such as engines, transmissions, front and rear-end assemblies, electrical, and hydraulic systems.

Knowledge of the mechanical makeup, operation, and working relationships of a variety of heavy duty systems, assemblies, and parts such as diesel, multifuel, and gasoline engines including supercharged and turbocharged engines, automatic and nonautomatic transmissions, and gear reductions systems including those with torque converters, planetary gears, and more than one gear range, and driveline assemblies including differentials, power dividers, and dual speed axles, hydraulic lifting, loading, turning, and positioning systems including their mechanical, hydraulic, and pneumatic controls.

Ability to determine the mechanical defects which cause engines, transmissions, hydraulic systems, and other major systems and their components to fail to operate properly.

Ability to use a wide range of diagnostic and testing equipment including electrical, electronic, light, and pressure types to determine cause of mechanical problems such as engine analyzers dynamometers, exhaust analyzers, vacuum and fuel pump testers, injector testers, ignition timers, tachometers, ammeters, and ohmmeters.

Ability to use technical manuals, specifications, diagrams, schematics, and similar guides to make repairs and modifications to equipment.

Ability to improvise, substitute, and alter parts to fit and mesh in systems for which the parts were not designed or when technical manuals, diagrams, schematics, or similar guides do not apply.

Ability to disassemble, rebuild, adjust, reassemble, reinstall, and align various automotive components and assemblies.

Ability to manipulate small objects with the fingers such as bolts, ignition wiring, plugs, and measuring instruments.

Ability to determine when parts should be cleaned and reinstalled or removed and replaced with standard parts and the types and extent of adjustment and alignment required.

Ability to obtain, store, record, safeguard, and properly use equipment, materials, and supplies.

Ability to read diagrams, blue prints, and schematics.

Ability to use mechanic hand tools and small power tools such as pliers, screw drivers, pneumatic wrenches, and drills.

Ability to use a variety of test equipment such as feeler gauges, circuit testing, dial gauges, oscilloscopes, exhaust analyzers, and engine and chassis dynamometers.

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#### **EXAMPLES OF WORK Beach/Streets**

Loads, lifts and moves supplies, furniture and equipment.

- Digs trenches and does manual grading.
- Collects rubbish and other refuse.
- Cuts grass.
- Loads and unloads trucks.
- Shovels snow.
- Shovels gravel and sand.
- Performs cold patching.
- Learns to operate construction and/or maintenance equipment.
- May learn to operate and make minor repairs to street, road and related public works equipment.
- May rake asphalt mixtures used in paving to proper thickness and grade.
- May distribute asphalt mixtures to eliminate hollows and high spots in the surface under construction or repair.
- May perform the routine work involved in painting.
- Sweeps streets and sidewalks.
- Cleans sewers.
- Loads debris into truck for removal.
- Sorts, piles and cleans salvageable brick, stone, lumber and metal work.
- Occasionally drives trucks.
- Performs loading and unloading.
- Engages in installing, maintaining, and repairing of related facilities or equipment.
- Operates, checks, and makes minor repairs to vehicles.
- Engages in installation, painting and repair of related items.
- Ensures that proper safety precautions are taken while operating vehicles to protect the public and other employees from injury during repair activities.
- Checks the work completed. Performs special assignments and recommendations as appropriate.