STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

# POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

| CLASSIFICATION TITLE | OFFICE/BRANCH/SECTION | |
|---|---|---|
| Caltrans Heavy Equipment Mechanic | Division of Equipment/Maintenance & Repair/Shop 8/ 3232 | |
| WORKING TITLE | POSITION NUMBER | EFFECTIVE DATE |
| Heavy Equipment Mechanic | 932-028-3713-____ | |

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

## GENERAL STATEMENT:

Under the supervision of a Highway Mechanic Supervisor and/or direction of a Caltrans Heavy Equipment Mechanic Leadworker, the incumbent will be working in a shop and/or field environment, constructing, inspecting, diagnosing, repairing and servicing various equipment used in the Department's fleet. Completes various records and reports, uses computer equipment for various tasks. May assist in instructing or giving direction to helpers, apprentices or other employees.

Incumbent must possess a valid class C driver license and will assume responsibility for reasonable safeguards, proper use and handling of materials and tools, equipment and facilities. At all times using personal protective equipment (PPE), it may be necessary to work outside and or travel to assist at a field mechanic's location, or a highway maintenance station. The incumbent must be able to work in these areas in inclement weather, which may include severe cold or heat. At times it may be necessary to assist with the daily operation of the shop. Job assignments may be subject to travel, rotation, changes of shift, work hours and work days.

## TYPICAL DUTIES:

| Percentage | Essential (E)/Marginal (M)[1] | Job Description |
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| 45% | E | Disassembles units, repairs or replaces parts, and reassembles units in the following systems:<br><br>Power units: Overhauls or replaces engine, cylinder head, crankshaft, camshaft, timing gears, pistons, rods, rings, seals, valves, push-rods, bearings, fuel pump, injectors.<br><br>Brakes: Repairs or replaces shoes, pads, drums, rotors, hoses, calipers, cylinders, S cams, S cam bushings, slack adjusters, brake springs, brake chambers, brake valves and fittings and lines.<br><br>Cooling: Flushes radiator replaces hoses and thermostat, repairs or replaces radiator and water pump, fan drives, coolant treatment filters, air intercoolers and engine and hydraulic oil coolers.<br><br>Drive train: Repairs and replaces drive shaft, differential, axle, manual, automatic and sophisticated computer-controlled transmissions, clutches, transfer cases, power take-off systems, transmission reversers, all wheel drive steering axles and final drives.<br><br>Electrical: Repairs or replaces fuses, batteries, lights, instruments, warning devices, controls and switches, computer controls, modules, alternators, starters, and defective cables and wiring. Multiplex wiring. This will include 12 and 24-volt systems found on equipment.<br><br>Exhaust and Emissions Control: Replaces mufflers, manifolds, catalytic converters, diesel particulate filters (DPF) for cleaning and replacement, turbochargers, blowers, exhaust injection systems, exhaust recirculation valves, and pipes.<br><br>Heating and Air Conditioning: Repairs or replaces heater cores, condensers, compressors, hoses, fans and controls; recharges air conditioning systems.<br><br>Hydraulic: Repairs or replaces pumps, hoses, valves, winches and cylinders. |

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Pneumatics: Repairs or replaces compressors, air dryers, air governors, brake valves, air tanks and hoses and lines.

Steering and Suspension System: Repairs or replaces tie rods, ball joints, gear boxes, shock absorbers, springs, spring pin bushings, steering linkage, kingpins, power steering, hoses, pumps, walking beam, torsion suspensions and air suspensions.

Coupling Devices: Adjusts repairs, inspects and replaces fifth wheel hitches and Pintle hitches, tow receivers.

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| 20% | E | Performs preventative maintenance inspections and repair activities on various pieces of heavy equipment used in the Department's fleet. The fleet includes equipment such as heavy-duty trucks , semi-tractors, material spreaders, two, four and six wheel drive type vehicles, and graders, cranes, personnel hoists, dump bodies, cargo bodies, digger derrick, snowplows, mower tractors and various types of trailers, backhoes, loaders, electronic message boards and signs, street sweepers, man lifts, paint stripers, barrier transport machines, and passenger cars and pickups. Performs inspections and repairs and/or adjustments on various areas of the equipment to ensure the equipment runs efficiently and safely. This includes things such as inspecting fluid levels, hoses, belts, brakes, tires, and clutches are up to industry standards; changes filters and oil, and lubricates vehicles and motor driven equipment per Department and manufacturer standards. Services, repairs and maintains tandem drive axles with air or electric shift, hydrostatic driven, heavy duty multi-axle suspensions, both conventional steel or air springs. Tunes gas and diesel engines, services valves, and adjust injectors, fuel racks, governors, exhaust brake, etc. |
| 10% | E | Diagnoses appropriate services and repairs for equipment using various systems found on the Department's heavy equipment and automotive fleet. Utilizes diagnostic software and hardware such as Caterpillar ET, Cummins Insite, Allison Software, Service Maxx Pro, ECS Trap Software, Donaldson Trap Software, Navistar, Snap-On NEXIQ Pro-Link iQ, laptop and scanner to recover diagnostic trouble codes and communicate with the vehicles on board computers. The data received is analyzed and aids in the repair of systems such as electronic controls, fuel delivery, emission control system, air brake systems, hydraulic brake systems, and computer controlled automatic and manual transmissions, high voltage generators, propane powered equipment, and Compressed Natural Gas (CNG) powered equipment and Electric powered equipment, hybrid powered systems, pneumatic systems, hydrostatic drive systems, chemical spray systems and paint systems. |
| 10% | E | Using the Department's Fleet Maintenance Management software, enters via key data the labor and repair tasks for repairs and services completed on all vehicles and motorized equipment. Records/writes all preventative maintenance and repairs in Permanent Equipment Maintenance Record book (PEMR) on all the Department's fleet. May assist in training Apprentices in mechanical repair techniques. Provides instruction and training in the proper methods and processes necessary to perform equipment repair, inspection and preventive maintenance. Road tests vehicles to ensure repairs are satisfactory and meet safety standards. Performs related work as assigned. |
| 5% | M | Fabricates, modifies, assembles, and installs special equipment using mills, lathes, welders, metal brakes, torch sets, plasma cutter and metal cutting saws. This work is interpreted from blueprints and/or verbal direction from Department requests or needs and is completed on new or replacement parts such as utility bodies, dump bodies, cone bodies, hydraulic systems, rock/ snowplows, wing plows, power take off (PTO), wear plates, attenuators, lights and light racks, decals, spray equipment, cone racks, tool boxes and baskets, mower flails, loader buckets. |
| 5% | M | To ensure safety standards, keeps tools and work area clean. May pressure wash equipment. Prepares selected equipment for sale by removing Department identifications such as Department decals, identification numbers, State of California documentation (registration, insurance). Responsible for the proper disposal of hazardous waste such as used oil, used antifreeze, and |

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| | | used batteries. |
| 5% | M | May be assigned to other State of California repair department locations such as CalFire or other Department Districts to perform preventative maintenance and repairs on various equipment throughout the state. These specific duties are listed above. |

[1]ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.
MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

## SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

Does not supervise. May be asked to be a mentor mechanic to an apprentice or give direction to a Mechanic Helper.

## KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of:
Methods, materials, tools and equipment used in construction, assembly, overhaul, repair and adjustment of gasoline and diesel powered automobiles, trucks, heavy construction and maintenance equipment; operating characteristics of the equipment listed above; proper handling and disposal of hazardous materials; basic occupational safety work practices to protect their own health and safety and the health and safety of others.

Skill in:
Diagnosing malfunctioning equipment and determining corrective action to be taken performing adjustments, repair, overhaul and fabrication of the Department's equipment.

Ability to:
Inspect, estimate repair work, diagnose, repair, assemble and fabricate automotive and heavy equipment.

Advise in the selection of parts, estimate repair costs, work safely in an equipment repair/assembly environment, (inside or outside in a variety of weather conditions).

Perform welding and repair work from sketches, drawings and schematics.

To be able to work in the field environment without direct supervision.

Operate various types of Department equipment for test purposes and drive moderate distances.

Operate a personal computer doing simple data input and retrieval.

Be able to read, write and verbally communicate clearly in English as required for successful job performance.

Be able to exercise patience when dealing with people.

Ability to write letters, prepare written reports and conducts meetings within your department.

Ability to handle multiple priorities.

Subject to working overtime and variable work shifts in inclement weather.

Must be able to work during emergency or declared emergency situations.

## RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Inaccurate estimation of repairs or poor judgment in making repairs or assembly of equipment could result in damage, costly re-work, or loss of equipment, and could create a safety hazard causing injury to state employees or the general public.

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Incumbent is responsible for his/her actions, decisions, quality of completed work, and proper use of state time, equipment and materials. Improper performance of duties and/or failure to adhere to established policies, procedures and guidelines could lead to adverse action and possible termination.

This position has been designated as safety sensitive in accordance with Department of Personnel Administration Rules 599.960 and 599.961. Use of alcohol and/or drugs that impede the employee's ability to perform his or her duties safely and effectively could clearly endanger the health and safety of others, resulting in injury and or death.

### PUBLIC AND INTERNAL CONTACTS

Extensive contact with other Division of Equipment shop personnel and field mechanics, Department district employees and various vendors.

### PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Ability to stand and walk on concrete flooring all day, frequently stooping, bending, keeling, crouching, pushing, pulling, reaching, twisting, being able to lift, carry, and climb.

Ability to lift and move 20 lbs. repeatedly, 20-50 lbs. frequently to occasionally and over 50 lbs. Rarely. Also lift up to 40 lbs. overhead occasionally.

Ability to climb stairs carrying objects weighing up to 50 pounds occasionally.

Possession of a class "C" drivers license and be able to travel to distant locations in inclement weather.

Ability to operate forklifts and hand operated material-handling devices.

Will be required to wear safety equipment including eye protection (safety glasses), ear protection, safety vest, and hard hat or bump cap etc. Must be able to wear protective clothing as required and furnished by the Division of Equipment.

### WORK ENVIRONMENT

Incumbent will work in a shop environment with the possibility of short time in the field. Incumbent may / will be exposed to dirt, noise, uneven surfaces, hazardous materials and temperature changes. Incumbent may work with others or by him / herself.

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I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

EMPLOYEE (Print)

| EMPLOYEE (Signature) | DATE |
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I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

| SUPERVISOR (Signature) | DATE |
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