

COUNTY OF SONOMA - JOB DEMANDS ANALYSIS

**JOB CLASSIFICATION:** Lead Heavy Equipment Technician  
**DEPARTMENT:** General Services  
**DOT OCCUPATION CODE:** 620.261-022

**DATE COMPLETED:** April 2018  
**DIVISION:** Fleet  
**PHYSICAL DEMAND STRENGTH RATING:** Heavy per job analysis

**INSTRUCTIONS TO MEDICAL PROVIDERS COMPLETING THIS FORM:**

Please use the "Medical Provider Use Only" columns to the right of each section and the "Medical Provider's Comments & Signature" Section on the signature page to provide work restrictions by indicating whether there is some portion of each function that the employee can perform; designating whether each restriction is temporary or permanent; and, if restriction is temporary, stipulating the expected duration of work restriction(s). To finalize the form, please provide the name of the employee evaluated and additional comments, as appropriate, then sign and date where indicated.

**FREQUENCY RATING:**

Frequency	Percentage of time per shift	Repetition (# times per shift)	8 Hr Shift	9 Hr Shift	10 Hr Shift	12 Hr Shift
Never (N)	n/a	n/a	n/a	n/a	n/a	n/a
Occasionally (O)	1 - 33%	1 – 100	0 - 2.5	0 - 3	0 - 3.5	0 – 4
Frequently (F)	34 - 66%	100 – 500	2.5 - 5.5	3 - 6	3.5 - 7	4 – 8
Continuously (C)	67 - 100%	500+	5.5 – 8	6 - 9	7 - 10	8 - 12

**PART 1 - JOB DUTIES/FUNCTIONS:**

A. Job Duty/Function	B. Job Duty #	C. Freq Rating	D. Equipment or tools used to perform (Describe)	E. Specialized Expertise, License, Certification Required? (Describe)	F. Reason position exists? (Y/N)	G. Essential or Non-Essential	Medical Provider Use Only: For each job duty/function, indicate in this column "Can Perform", is "Temporarily Restricted" from performing, or is "Permanently Restricted" from performing.
While performing the following duties, employees in this position work in a busy, noisy maintenance facility, with vehicles and equipment moving in and out continuously, and in the field under varying conditions, including in all weather conditions, with prolonged exposure to direct sun, rain, fog, or other severe weather conditions; works on wet, muddy, and uneven surfaces, and in both daylight and dark/dim conditions.							
Leads a team of Heavy Technicians and Mechanics: trains staff; assigns work; provides advice and technical guidance as a subject matter expert; resolves the most complex issues.	1	F			Y	E	
Assists the Supervisor in evaluating subordinate staff; records work performed or work to be performed by subordinates on standard and computerized garage forms; completes time cards on work completed.	2	O	Computer		Y	E	

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Ensures Heavy Equipment Mechanics and Technicians are trained on and follow appropriate safety protocols; reports any safety issues to Supervisor; develops and maintains related documentation.	3	O			Y	E	
Using good judgment, diagnoses routine and complex electronic and mechanical problems or failures, either visually or using automotive diagnostic equipment; determines service or repairs required; works at designated work areas and in the field; stands on concrete floor with arms overhead; crawls under vehicles; bends over vehicle fenders and engines in confined spaces; works in a busy, noisy shop environment with vehicles and equipment moving in and out continuously.	4	F	Diagnostic testing equipment, small and large hand tools; power tools.	ASE Master Medium/Heavy Truck Technician certificate; California Council on Diesel Education and Technology I and II certificates.	Y	E	
Performs the most difficult servicing of heavy equipment: checks and changes oil and filters; adjusts brakes, steering, clutches, winches, tracks, and related operational and moving parts; applies lubes and greases; services emission control devices; checks fluids; performs alignments; performs oil analysis testing; replaces parts according to maintenance schedule; stands on concrete floor with arms overhead; crawls under vehicles; bends over vehicle fenders and engines in confined spaces; awkward reaching, bending, kneeling and lifting as required by service; works in a busy, noisy shop environment with vehicles and equipment moving in and out continuously.	5	F	Small and large hand tools; power tools	ASE Master Medium/Heavy Truck Technician certificate, California Council on Diesel Education and Technology I and II certificates.	Y	E	
Inspects and services emissions control devices; performs related testing and certification; maintains related records for compliance.	6	O	Small and large hand tools; power tools	License for Emission Control Testing and Certification	Y	E	

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Performs difficult repairs and re-builds of heavy equipment, including engines, transmissions, and various systems: disassembles and reassembles equipment; installs replacements parts and components; repairs engines, transmissions, clutch and brake systems, alternator and starter systems, pump, steering systems, and other major automobile components; repacks wheel bearings; checks and adjust component parts; uses tools of various size and weights; moves parts weighing 75+ pounds, using carts, hand trucks, or other lifting devices; stands on concrete floor with arms overhead; crawls under vehicles; bends over vehicle fenders and engines in confined spaces; awkward reaching, bending, kneeling and lifting as required by repair; works in a busy, noisy shop environment with vehicles and equipment moving in and out continuously.	7	F	Small and large hand tools; power tools	ASE Master Medium/Heavy Truck Technician certificate, California Council on Diesel Education and Technology I and II certificates	Y	E	
Performs acetylene, arc, and electric welding to fit, fabricate, or repair parts.	8	O	Welding equipment and tools		Y	E	
Communicates by phone, email, or in person with co-workers and supervisors to coordinate repairs; communicates with customers on status of equipment installation and repair projects; communicates with vendors regarding replacement and defective parts, and parts returns.	9	F	Computer, Phone		Y	E	
Responds to emergency requests in the field; drives to off-site locations; determines feasibility of performing repairs on site; drives vehicles and equipment in a busy, noisy shop environment; test drives vehicles and equipment to ensure repairs are completed	10	O	Vehicles, small and large hand tools; power tools	California Drivers' License, California Class A Commercial Drivers' License	Y	E	
Researches and recommends upgrades to equipment and supporting technology; determines parts needed for repairs; enters data into Fleet computer databases; maintains accurate electronic and paper records and files; orders parts; generates reports, charts and graphs related to work flow and vehicle statistics.	11	O	Computer		Y	E	

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Participates in continuous training, research, study, and reading, both on and off-site, to keep current on vehicle repair standards, and best practices, and to maintain applicable working knowledge.	12	O	Computer		N	Y	
Monitors and performs routine maintenance on shop equipment; reports issues requiring maintenance by outside vendor to management.	13	O	Computer, phone		N	N	

**PART 2: PHYSICAL DEMANDS**

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY: Permanently Restricted
<b>Sitting</b> (i.e., Reading technical information, entering in parts information in computer system)	2,9,10,11,12,13	O			
<b>Walking</b> (i.e., Walking to and from parked vehicles and the service/repair area of the facility; accessing vehicles/equipment in the field that requires servicing)	1,3,4,5,6,7,8,9,10	F			
<b>Running</b>	N/A	N			
<b>Standing</b> (i.e., Working on vehicles that are up in the air on a lift, entering parts information in computer system, performing smog check program testing)	1,2,3,4,5,6,7,8,9,11,13	F			
<b>Bending-Neck</b> (i.e., Working on vehicles on level ground or are up in the air on a lift; working under dashboard or closed in spaces on vehicles and equipment)	1,2,3,4,5,6,7,8,9,10,11,12,13	F			
<b>Bending-Waist</b> (i.e., Loading and unloading parts carts; installing parts on vehicles; dismounting and mounting tires; working under dashboard or closed in spaces on vehicles and equipment)	4,5,6,7,8,10	F			
<b>Squatting</b> (i.e., Picking up parts, tools and equipment; accessing areas of vehicles/equipment being serviced or repaired)	4,5,6,7,8,10	F			
<b>Climbing</b> (i.e., Climbing on ladders to view the top of tall vehicles)	4,5,7,8	O			
<b>Kneeling</b> (i.e., Installing equipment inside the dash and floor areas of vehicles; checking tire air pressure readings; inspecting vehicles for collision repair damage; accessing areas of vehicles/equipment being serviced or repaired)	4,5,6,7,8,10	F			
<b>Crawling</b> (i.e., Inspecting underneath a vehicle that cannot be installed on a vehicle lift or limits the range height while on a lift)	4,5,6,7,8,10	O			
<b>Twisting- Neck</b> (i.e., Working underneath the hood of a vehicle and instrument panel)	1,2,3,4,5,6,7,8,9,10,11,12,13	F			
<b>Twisting-Waist</b> (i.e., Removing and installing wheels, suspension components on a vehicle and working under an instrument panel)	4,5,6,7,8,10	F			
<b>Repetitive Hand Use</b> (i.e., Replacing vehicle fluids and filters, holding and using tools, checking tire air pressure readings)	4,5,6,7,8,10	F			
<b>Simple Grasping-Right Hand</b> (i.e., Holding tools such as screwdrivers, wrenches, impact drivers, and pliers)	4,5,6,7,8,10	F			
<b>Simple Grasping-Left Hand</b> (i.e., Holding tools such as screwdrivers, wrenches, impact drivers, and pliers)	4,5,6,7,8,10	F			
<b>Power Grasping-Right Hand</b> (i.e., Using tools such as screwdrivers, wrenches, impact drivers, and pliers)	4,5,7	F			
<b>Power Grasping-Left Hand</b> (i.e., Using tools such as screwdrivers, wrenches, impact drivers, pliers)	4,5,7	F			
<b>Fine Manipulation-Right Hand</b> (i.e., Installing of small screws and bolts, soldering wiring connections, replacing light bulbs)	4,5,6,7,8	F			

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY: Permanently Restricted
<b>Fine Manipulation-Left Hand</b> (i.e., Installing of small screws and bolts, soldering wiring connections, replacing light bulbs)	4,5,6,7,8	F			
<b>Pushing and Pulling-Right hand</b> (i.e., Removing/installing tires, wheels, suspension components)	4,5,7,8	F			
<b>Pushing and Pulling-Left hand</b> (i.e., Removing and installing of tires, wheels, suspension components)	4,5,7,8	F			
<b>Reaching -above shoulder level</b> (i.e., Installing vehicle antennas, light bars, headliners, ladder racks)	4,5,6,7,8,10	F			
<b>Reaching- below shoulder level</b> (i.e., Dismounting and mount tires, operating tire, brake lathe, parts cleaner equipment)	2,3,4,5,6,7,8,9,10	F			
<b>Lifting-up to 10 lbs.</b> (i.e., Picking up new and used parts, tools, and equipment)	3,4,5,6,7,8,10	F			
<b>Lifting-11-25 lbs.</b> (i.e., Picking up new and used parts, and equipment)	4,5,6,7,8	F			
<b>Lifting-26-50 lbs.</b> (i.e., Picking up brake rotors, and mounted wheels and tires)	4,5,7	F			
<b>Lifting 51-75 lbs.</b> (i.e., Lifting wheel and tire assemblies, differential components, winches)	5,7	F			
<b>Lifting 76-100 lbs.</b> (i.e., Lifting truck wheel and tire assemblies, ladder racks, and tool boxes)	5,7	O			
<b>Lifting 100 + lbs.</b> (i.e., Lifting Winch bumpers, barrels of grease, transfer cases, and transmissions)	5,7	O			
<b>Carrying 0-10 lbs.</b> (i.e., Carrying Parts, tools, and small equipment)	3,4,5,6,7,8,10	F			
<b>Carrying 11-25 lbs.</b> (i.e., Carrying Parts, tires, tools, and small equipment)	4,5,6,7,8	F			
<b>Carrying 26-50 lbs.</b> (i.e., Carrying Wheel and tire assemblies, brake rotors, suspension components, and light bars)	4,5,7	F			
<b>Carrying 51-75 lbs.</b> (i.e., Carrying Truck wheel and tire assemblies)	5,7	O			
<b>Carrying 76-100 lbs.</b> (i.e., Carrying Winches and bumpers)	5,7	O			

**PART 3: SENSORY REQUIREMENTS**

Activity	Examples of Duties/Functions Requiring Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
<b>Functional vision, normal or corrected</b> (i.e., Driving vehicles/equipment, reading technical data (books/computer), operating scan tools)	1,2,3,4,5,6,7,8,9,10,11,12,13	C			
<b>Functional color vision, normal or corrected</b> (i.e., Reading wiring diagrams (books/computers)	1,4	O			
<b>Functional night vision, normal or corrected</b> (i.e., Driving vehicles and equipment, early/late hours, working underneath instrument panels)	4,10	O			
<b>Functional hearing, normal or corrected</b> (i.e., Operating a forklift, driving vehicles and equipment, testing audible parts, tools, and equipment)	1,2,3,4,5,6,7,8,9,10	C			
<b>A sense of smell or taste</b> (i.e., Diagnosis of odors inside and outside vehicles and equipment)	4,5,6,7,8,10	O			

**PART 4: COMPREHENSION LEVEL**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Follow Oral Instructions	F			
Follow Written Instructions	F			
Required to sustain concentration	F			

**PART 5: NATURE OF TASKS**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Follow set procedures	C			
Organize own work	F			
Able to ask questions or request assistance when needed	F			
Required to make decisions independently	F			
Required to train and/or lead others	O			
Required to direct others (e.g. planning, goal setting, performance) <i>(Assists the Supervisor in evaluating subordinate staff)</i>	O			

**PART 6: WORK PACE**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Tightly scheduled and rapid pace of work activities at high volume	O			
Meet time sensitive deadlines	F			
Long and/or irregular hours	O			
Limited/unpredictable opportunity for breaks	N			
Required to perform on-call or emergency work	O			

**PART 7: COMPLEXITY/VARIABILITY**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Variable and unpredictable workflow	O			
Attention divided by issues requiring multi-tasking	F			
Work requires precise attention to detail	F			
Use of judgment in routine matters	F			
Requires use of judgment in adapting procedures from one task to another	O			
Possible legal ramifications associated with work activities or work product	C			

**PART 8: INTERACTIONS WITH OTHERS**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Works with others (e.g., co-workers, other departments/agencies, public)	F			
Interactions limited to giving/receiving information	F			
Interactions exceed giving/receiving information (e.g., advises, persuades, justifies)	F			
Interactions occur under circumstances of emotional stress	O			
Risk of confrontation with violent or assaultive clients or customers	N			

**PART 9: ENVIRONMENTAL FACTORS/WORKING CONDITIONS:**

Activity	FREQUENCY RATING Never, Occasional; Frequent, or Constant	MEDICAL Can Perform	PROVIDER Temporarily Restricted	USE ONLY Permanently Restricted
Work Inside (i.e., working in shop/garage or office)	C			
Work Outside (i.e., responding to an emergency repair call)	O			
Extreme Heat (above 100 degrees)	O			
Extreme Cold (below 32 degrees)	N			
Excessive Noise (must raise voice to be heard) (i.e., using impact wrench to remove lug nuts on wheels)	F			
Vibration (e.g., jack hammer, hammer drill, chainsaw, etc.)	O			
Dust, Vapors, Fumes, Smoke	O			
Silica, asbestos, etc.	N			
Solvents (e.g., gas, turpentine, etc.)	O			
Grease, oils	C			
Acidic, Caustic Solutions (i.e., truck and heavy equipment batteries)	O			
Pesticides	O			
Explosives (e.g., dynamite, bomb, etc.)	N			
Cleaning supplies, abrasives	O			
Other Chemicals (e.g. drugs and other contraband)	N			
Human Blood, Body Tissues, or Fluids	N			
Human Wastes	N			
Animal Blood, Body Tissues, or Fluids	N			
Animal Wastes	N			
Biological Toxins (e.g., poison ivy, poison oak, anthrax, etc.)	O			
Insect Bites (e.g., ticks, mosquitos, spiders, etc.)	O			
Biomedical Waste	N			
Ionizing Radiation	N			
Non-Ionizing Radiation	N			
Electrical Energy (i.e., Lock out/Tag Out required; making repairs to hybrid or electric vehicles/equipment)	O			
Walking on uneven, slippery, or rough terrain (e.g., gravel, rocks, hills, etc.)	O			
Proximity to moving mechanical parts (e.g., equipment, machinery)	F			
Proximity to moving vehicles or objects	F			
Heights (e.g., rooftop, ladders, scaffolding, etc.)	O			
Contact with water, other liquids, humid conditions - not weather related	O			
Work Below Ground: (e.g., excavation, trench, etc.)	N			
Potential exposure to airborne infectious diseases (e.g. clinics, labs, corrections)	N			
Operates non-commercial motor vehicles (cars, trucks) (i.e., drives off-site for emergency repairs; test driving vehicles)	O			
Operates commercial vehicles – CDL Class <u>  A  </u> Endorsements <u>  N/A  </u>	O			
Operates passenger van to transport clients, inmates, etc.				
Pulls non-commercial trailers or equipment	N			
Operates heavy equipment (i.e., test driving equipment after repairs made)	O			
Other: Forklift (propane, electric, gas, diesel) Certification Required	O			



**PART 10: MEDICAL SCREENING, SURVEILLANCE AND VACCINATION REQUIREMENTS:**

Please check each of the medical screening, surveillance, and vaccination requirements that apply to the position, and indicate if the requirement applies pre-employment/pre-placement only, or whether there are additional requirements after hire.

Medical Screening, Surveillance or Vaccination	Pre-Hire	Post-Hire	Frequency (one time, annual, etc.)
Audiometric Testing	X	X	Annual
DOT Drug and Alcohol Screening	X	X	Random
DOT Physical Exam	X*	X	Bi-annual
Respirator Physical Exam			
Respirator Questionnaire – Short			
Respirator Questionnaire – Standard			
Blood lead level			
Hazardous Waste/Emergency Worker physical			
Heavy metal screen (mercury, lead, arsenic)			
HINT Hearing Noise Sensitivity Testing			
Tuberculosis skin test			
Vaccine: MMR			
Vaccine: Hepatitis B			
Vaccine: Influenza			
Vaccine: Meningococcal			
Vaccine: Pneumococcal			
Vaccine: Rabies			
Vaccine: Tdap			
Vaccine: Chickenpox			

\*Prior to obtaining commercial license.

**PART 11: ADDITIONAL INFORMATION, PICTURES, ETC.**



Fleet Operations Service Vehicle



Fleet Operations Vehicle- Steps at 17"/31"/38"/41"



Heavy Duty Jack- 31 lbs. Pull Force  
20 lbs. Push Force



Small Jack Stand- 8 lbs.



Medium Jack Stand- 14 Lbs.



Med/Large Jack Stand- 17lbs.



Large Jack Stand- 34 lbs.



Dump Bed Safety Support- 39 lbs.  
Lifted 48" up & 36" out away from body



Brake Rotor Hub Assembly- 53 lbs.



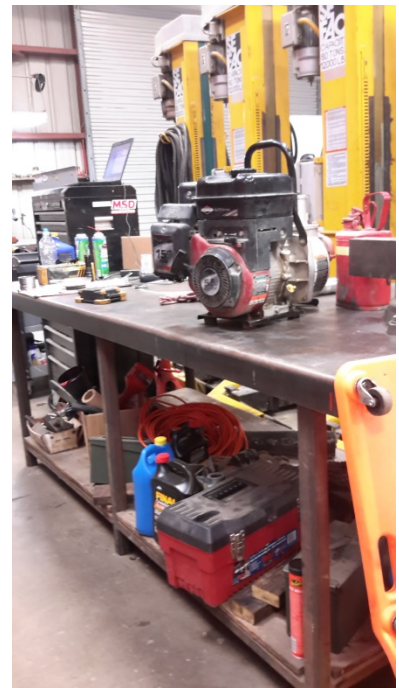
Truck/Heavy Equipment Battery - 93 lbs.  
Stored on 3 inch shelf (can be difficult to manage in field)



Battery Storage - 44 lbs. to 93 lbs.  
3"/17"/34" Shelves



Portable A-Frame Hoist  
37.5 lbs. push force



Auxiliary Pump - 65lbs.  
Lifted 20" to 36" high surface





Auxiliary Pump Housing- 20" high



SEFAC- Mobile Column Lifts  
Pull Force – 66.5 lbs.



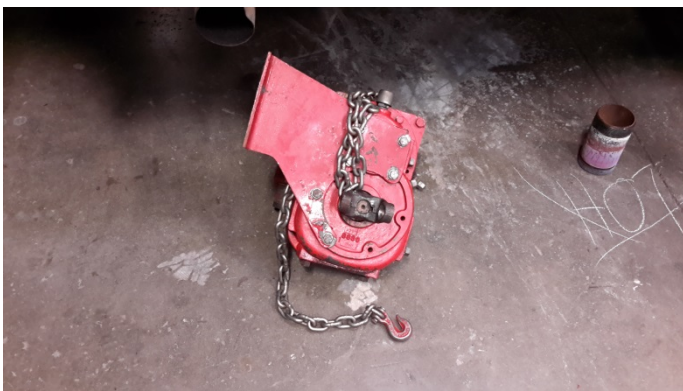
SEFAC- Mobile Column Lift  
Push Force – 61.5 lbs.



1" Drive Truck Tire Impact Wrench (blue)-27 lbs., as shown  
3/4" Drive Truck Tire Impact Wrench (silver)-12 lbs., as shown



Truck Tire and Rim- 260 lbs.



Water Pump from Fire Truck- 131 lbs.  
Lifted up 36" to mount under truck



Under carriage of Fire Truck- Water Pump Mount Circled





Fire Truck- Tire Lug Nuts  
Water Pump and Pipes



Fire Truck- Water Pressure Guages



Fire Truck- Water Pipes and Drive Shaft



Propane Tanks- 22" at handle  
68 lbs. recently filled  
37lbs. empty



Propane powered Forklift  
Tanks lifted to 45" high to change



Caterpillar 315B Hydraulic Excavator- requiring repair of Hydraulic Bucket Mechanism



Caterpillar 315B Hydraulic Excavator- Bucket



Example of Large Fleet Operations Service Vehicle