

## COMPETENCY MODEL FOR MECHANICAL REPAIRER (3773)

2021

The following competencies have been identified as those that best separate superior from satisfactory job performance in the class of **MECHANICAL REPAIRER**. (Numbers refers to the order of competencies in the Competency Bank.)

1. Reading Comprehension
7. Self Management
8. Safety Focus
20. Job Knowledge
24. Mechanical Aptitude
26. Electrical Understanding
43. Follow Oral Directions
47. Written Communications

On the following pages are descriptions of each competency, including a definition, the level of the competency required for the class (*italicized*, **bolded**, and underlined), examples of behavioral indicators, and satisfactory and superior performance levels.

**1. READING COMPREHENSION** – Comprehends and correctly applies information presented in written form. Makes correct inferences; draws accurate conclusions.

Level of Competency Required by Job:

Level 1: Concrete, specific job-related information (work orders; instructions; material/equipment labels)

**Level 2: General information related to field of work and assignments; (articles in trade publications; technical/instructional manuals; memos; letters; e-mails; reports)**

Level 3: Abstract/complex information (highly technical articles/ reports in specialized area; legal or other regulatory material)

Examples of Behavioral Indicators:

- Follows written instructions correctly.
- Learns information presented in writing.
- Identifies relevant written information.
- Interprets written legal regulatory material accurately.

Performance Levels:

Satisfactory

Reads instructions correctly. Learns from manual and other printed material.

Superior

Learns from manual and may answer others' questions. Explains information presented in written form to others.

**7. SELF MANAGEMENT** – Organizes and plans for task accomplishment; manages time and works diligently to complete assigned work/fulfill responsibilities.

Level of Competency Required by Job:

Level 1: Order tasks for efficient performance; maintain awareness of time allotted and deadlines in order to ensure they are met.

Level 2: Plan and perform work in a way that maximizes efficient performance; establish and adjust priorities to ensure timely completion of most critical assignments.

**Level 3: Allot time to responsibilities proportional to their prominence, priority, and impact.**

Examples of Behavioral Indicators:

- Performs only work activities during work hours.
- Alters means of performing work when original approach proves to waste time.
- Keeps a “to do” list (with indication of priority and deadlines, if necessary).
- Requests assistance as necessary when it becomes clear that work will not be completed on time.
- Demonstrates a record of progress with respect to all assignments/responsibilities.
- Uses optimal means of communication for efficiency and effectiveness.

Performance Levels:

Satisfactory

Conducts self while at work in a manner that ensures work will be completed as scheduled, or provides explanation or secures assistance or adjustment of schedule if it will not be.

Superior

Seeks efficiencies in doing work to maximize productivity. Plans work carefully and follows the plan or makes adjustments if it is disrupted. Maintains personal responsibility for all work accomplishment. of setting a precedent.

**8. SAFETY FOCUS** – Performs work in a way that minimizes risk of injury to self or others.

Level of Competency Required by Job:

Level 1: Maintain awareness of unsafe conditions and actions to avoid injury.

Level 2: Follow safety rules/procedures; avoid known hazards in the work environment.

**Level 3: Carefully follow safety rules and procedures and consistently use all necessary safety equipment.**

Examples of Behavioral Indicators:

- Wears seat belt.
- Ensures safe physical work environment by taking actions such as eliminating unstable stacks of materials, closing drawers so filing cabinets will not tip over, and keeping pathways clear of tripping hazards.
- Reviews safety procedures before beginning each job with known hazards.
- Follows safety procedures while performing work even when it takes more time.
- Uses safety equipment such as goggles, gloves, and earplugs as required or warranted.
- Frequently checks safety equipment for proper condition and operation.

Performance Levels:

Satisfactory

Maintains awareness of personal safety to avoid injury or property damage during all work activities.

Superior

“Safety first.” Places avoidance of injury or property damage above all other job requirements. Mentions the need to follow safe work practices to co-workers. Actively seeks ways to avoid injury.

## **Safety Focus Areas**

1. Knowledge of safety precautions when working with hand/power tools and shop equipment, such as proper personal protective equipment (PPE) when using the tools and using the proper tool for application, sufficient to ensure safety of oneself and others around them.
2. Knowledge of safety precautions used when mixing, storing, and working with caustic chemicals, such as gasoline, diesel fuel, solvents, oils, acids, and chlorine, sufficient to avoid potential injuries or death to self or others.
3. Knowledge of safety procedures used to prevent or extinguish electrical, chemical, gasoline, and other types of shop and equipment fires, such as using the proper fire extinguisher for the fire and aiming at the base of the flame, sufficient to prevent and respond to fires safely and effectively. (Training course)

**20. JOB KNOWLEDGE** – Knows information required to perform a specific job. Includes both widely available courses of study (for example, chemistry, human resources management, graphic arts) and City-specific information (parking regulation and ticketing practices; purchasing procedures; provisions of the City Charter).

Level of Competency Required by Job:

Level 1: Knowledge is concrete, factual, and/or procedural and may be defined by the organization. Situations in which it is applied are quite consistent.

**Level 2: Knowledge is substantive and may be defined by an external trade, field, or profession. Situations in which it is applied vary and, as such, require breadth and depth of understanding.**

Level 3: Knowledge is abstract, conceptual, and/or complex and may be supported by a well-defined academic discipline or authoritative sources (e.g., laws, ordinances, government guidelines/regulations/codes). Situations in which it is applied may vary greatly or be novel.

Examples of Behavioral Indicators:

- Performs work correctly/avoids technical (job content related) errors.
- Answers technical questions about work accurately.
- Asks few technical questions about the performance of routine work activities.
- Offers advice (“coaching”) to new employees regarding their work.
- Develops training programs for other employees.
- Sought out as a source of information by others.

Performance Levels:

	<u>Superior</u>
<u>Satisfactory</u>	
Sufficient job knowledge to perform work correctly independently. Answers technical questions about work correctly.	Expertise in technical job information sufficient to serve as a resource to others. May develop training manuals/ programs and/or give internal and/or external presentations related to work.

## **Job Knowledge Areas**

1. Knowledge of equipment and tools used in mechanical repair work, such as pneumatic and electric impact guns, wrenches, hammers, ratchets and sockets, reciprocating saws, electrical testers, meters, and lifting and rigging equipment, sufficient to perform the repairs on various mechanical equipment.
2. Knowledge of methods and terminology used in mechanical repair work such as dismantle, repair and reassemble of tools or equipment, terms such as cross threading, measuring for tolerances, and male and female fittings, sufficient to perform rebuilding or repair of equipment and/or tools and communicate to others about procedures of repair.
3. Knowledge of welding, brazing, and soldering equipment, materials, practices, and procedures, such as oxygen and acetylene torch, propane torch, brazing rods, welding rods, solder, flux, prepare the fittings and solder them, sufficient to make repairs to brackets, metal frames, and other equipment, remove seized nuts, bolts, and fittings from equipment and tools.
4. Knowledge of methods and procedures for grinding and sharpening tools, bits, and other types of equipment, such as dressing bits and chisels, sufficient to ensure repair tools are in safe working condition.
5. Knowledge of rigging and hoisting practices for the purpose of moving heavy machinery and equipment such using proper slings, shackles, and cranes/hoist for movement of equipment, sufficient to move the equipment safely and avoid injuries to self and others.
6. Knowledge of standard hand signals used to direct hoisting and moving of heavy machinery and equipment, such as stop, boom in, boom out, swing right, and swing left, sufficient to communicate to the equipment operator for load placement.
7. Knowledge of plumbing materials, practices, and procedures, such as types of pipe materials, fitting, cleaning, gluing, soldering, and brazing fittings or pipes, sufficient to make repairs to various pumps, valves, pipes, pools, or other related equipment and to order and maintain plumbing supplies and materials.

**24. MECHANICAL APTITUDE** – Accurately predicts the impact of forces on objects and assesses the behavior of other physical phenomena (e.g., volume, weight, velocity). Readily learns work involving the application of mechanical principles.

Level of Competency Required by Job:

Level 1: Maintain a safe work environment by ensuring objects in it are stable, tools and equipment are properly used.

**Level 2: Know the physical properties of objects in the work environment and correctly anticipate the action of forces upon them; performs work accordingly (correctly and safely).**

Level 3: In-depth understanding of mechanical and physical phenomena sufficient to design and/or oversee the construction of systems.

Examples of Behavioral Indicators:

- Recognizes the impact of an earthquake on objects in the work environment and re-arranges them as possible to avoid possible damage or destruction and potential to cause injury.
- Uses tools properly to accomplish work correctly and safely.
- Recognizes the effects of various actions on objects and performs only those actions that will accomplish intended result and will not cause property damage or injury.
- Systems designed and/or for which construction is overseen operate as intended upon completion.

Performance Levels:

Satisfactory

Recognizes the operation of mechanical/physical phenomena sufficient to readily learn and perform work of a mechanical nature.

Superior

Displays exceptional insight into the operation of mechanical phenomena, and makes correct inferences regarding it. Promptly and accurately troubleshoots problems.

**26. ELECTRICAL UNDERSTANDING** – Comprehends the concept and the operation of flow of electrical current.

Level of Competency Required by Job:

Level 1: Know the properties of electricity relevant to the work environment and work to be performed in order to correctly perform work and recognize hazards that will be created by the failure to do so.

**Level 2: Sufficient understanding of electricity to recognize problems and determine repair needed to prevent disaster/restore operation.**

Level 3: In-depth understanding of electrical principles and phenomena sufficient to design and/or oversee the installation of complex electrical systems.

Examples of Behavioral Indicators:

- Ensures safe physical work environment by taking actions such as eliminating exposed electrical wire, faulty connections, empty sockets, and overloaded circuits.
- Recognizes the danger of fire from faulty electrical installations.
- Uses tools, equipment, and instruments properly to accomplish electrical work correctly and safely.
- Systems designed and/or for which installation is overseen perform as intended upon completion.

Performance Levels:

Satisfactory

Understands the operation of electricity sufficient to readily learn and perform electrical work.

Superior

Displays exceptional insight into the operation of electrical systems, and makes correct inferences regarding them. Promptly and accurately troubleshoots problem.

**43. FOLLOW ORAL DIRECTIONS** – Performs work accurately as directed orally.

Level of Competency Required by Job:

Level 1: Receive specific, complete oral directions daily or by individual task assignment throughout the day.

Level 2: Receive general instructions orally that span across days or for entire assignments.

**Level 3: Receive general instructions/assignments orally regarding long-term objectives/responsibilities.**

Examples of Behavioral Indicators:

- Does work assigned orally properly and on time.
- Asks pertinent questions for clarification of assignments.
- Performs work correctly when instructions were given orally.
- Explains assignments to others who received the same instructions.
- Performs work in accordance with general outline provided orally.
- Correctly infers details of assignments given only in general terms.

Performance Levels:

Superior

Satisfactory

Properly performs work when concrete, specific instructions are given orally. Asks pertinent questions when parts of the instructions are unclear or omitted.

Properly performs work assigned orally. Answers questions or explains work to others. Correctly infers details or portions of instructions that were omitted.

## 47. WRITTEN COMMUNICATION – Communicates effectively in writing.

### Level of Competency Required by Job:

**Level 1: Write notes/e-mails. Completes forms with some open-ended responses (sentences).**

Level 2: Write letters, articles/reports, and/or detailed descriptions of activities/occurrences.

Level 3: Write lengthy reports, instruction manuals, in-depth analyses/reviews of complex issues and/or articles for publication. Reviews the written work of others.

### Examples of Behavioral Indicators:

- Writing includes the necessary information to convey the intended message.
- Sufficiently few errors in spelling, punctuation, grammar to not interfere with the intended message or distract the reader.
- Little editing or re-writing needed to produce a final product.
- Composes materials efficiently.
- Information is presented in a well organized manner.
- Tone and degree of formality are appropriate to the purpose and audience.

### Performance Levels:

#### Satisfactory

Writes material that clearly communicates the necessary information; needs little editing.

#### Superior

Precisely uses words and organizes information in a way that enhances presentation of the message. Virtually no editing needed.