

**MAINTENANCE MECHANIC
RCF**

WORKING ON REFRIGERATION COMPRESSORS		
Activity	Hazard Identification	Required Precautions
1. Walking to and from work site.	1a. Back ache; overexertion from carrying heavy weight.	1a. Transport heavy equipment using hand trucks or in pickup truck with hydraulic lift. Know your weight limit and get help if needed. Lift using leg muscles. Keep back straight.
	1b. Slipping; tripping; getting knocked into by pedestrians.	1b. Stay alert. Wear boots with good treads. In wet or icy weather, walk on clear sidewalks.
2. Driving to and from work site.	2. Motor vehicle accident; striking pedestrians, bicyclists, or individuals using rollerblades.	2. Wear prescription lenses, if required, and seatbelt. Verify that all equipment on vehicle is secured properly. Stay alert for pedestrians, bicyclists, and individuals using rollerblades.
3. Using stepladder.	3. Ladder collapsing; slipping/falling from ladder.	3. Inspect ladder before use. Use ladder of proper height. Make sure ladder is properly assembled and locked and standing on level ground. Do not exceed weight limit for ladder. Do not stand on top of ladder or on top rung. Have coworker hold ladder.
4. Using extension ladder.	4. Ladder falling; slipping/falling from ladder.	4. Use bucket truck if possible. Inspect ladder before use. Verify that ladder is properly assembled and that it is securely positioned on level ground. Tie safety rope to hold ladder to roof. Use 1'-4' rule. Use OSHA decal to verify that ladder is in the proper position.
5. Using interior scaffolding.	5. Scaffolding collapsing; falling from scaffolding.	5. Verify that scaffolding is properly assembled and wheels locked. Use safety rails properly. Verify a safe means of climbing on/off scaffolding.

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6. Working in confined spaces.	6a. Serious illness due to lack of oxygen or exposure to methane gas.	6a. Before working in confined area, verify that it is safe by monitoring air (get confined space permit as required). While working, always ventilate area using fan. Always have at least one person outside confined area to monitor safety of those working inside.
	6b. Dark work area.	6b. Replace burned out bulbs. Use flashlights or droplights, plugged into GFCI-protected outlets, as auxiliary lighting.
	6c. Working for long periods of time in cramped position can lead to backache or neck ache.	6c. Leave confined area frequently to stretch out.
7. Working in poorly lighted areas.	7. Dark work area.	7. Replace burned out bulbs. Use drop lights, plugged into GFCI-protected outlets, as auxiliary lighting.
8. Working in mechanical room.	8a. Getting burned by steam, hot pipes, hot water, or hot oil.	8a. Wear safety glasses, and optionally, ear protection, long-sleeve shirt and/or coveralls. Be aware of your surroundings and of possible leaks.
	8b. Electric shock; electrocution.	8b. Always use GFCI protectors.
	8c. Explosion from leaking gas.	8c. Be aware of odors that could signify leaks. If you smell gas or oil (which could signify a refrigeration leak), evacuate the area and alert the dispatcher.
	8d. Slipping on water or oil on floor.	8d. Clean up any standing water or oil. Identify leak and repair it if possible.
	8e. Excessively hot temperatures; heat exhaustion.	8e. Take frequent breaks in cooler areas. Drink plenty of water.
	8f. Loss of hearing due to loud noise.	8f. Wear ear plugs or ear muffs.
	8g. Tripping; getting hurt on materials being stored in mechanical room.	8g. Keep tools together to avoid tripping over them. Survey work area for hazards. Walk carefully.
	8h. Inhalation of dust.	8h. Wear a dust mask.

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	8i. Working around moving equipment; losing balance and falling into moving equipment; getting caught in equipment.	8i. Shut off equipment around work area whenever possible. If you cannot shut off equipment, always have a coworker nearby in case help is needed. Do not wear loose clothing, jewelry, or keys. Be aware of your surroundings and maintain an adequate distance from moving equipment. Work in a stable position to avoid losing your balance.
9. Working around electricity.	9. Electric shock; electrocution.	9. Shut off power to work area. Use lock-out device to ensure power is not inadvertently switched on. Always test before beginning work to verify that power is off. Remove tools and other metals from body. If you must work with electricity on, wear safety glasses and leather gloves. Have coworker with you in case there is a problem. If work area is wet, clean up standing water before working with electricity; wear rubber boots and gloves.
10. Using power tools such as drills, saws and grinders.	10a. Electric shock; electrocution.	10a. Inspect cord before use. Keep power cord away from work area. Plug tools into GFCI-protected outlets. Do not use electric tools if work area is wet.
	10b. Tripping over or cutting power cord.	10b. Keep power cord away from work area.
	10c. Injury from flying bits of material.	10c. Wear safety glasses, and optionally a dust mask, gloves, long-sleeve shirt and/or coveralls.
	10d. Drill or saw catching; drill bit breaking; severe lacerations; dismemberment.	10d. Keep tools in good condition. Inspect tools before use. Verify that guards work properly. Do not put hands near blades. When using tools, make sure you have a good center of gravity and are properly balanced. Hold tools securely with two hands to maintain control.

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11. Using hand tools.	11. Cuts, pinches, smashes, punctures, severing of fingers.	11. Keep tools in good condition. Inspect tools before use. Ear safety glasses. Work away from yourself. Use normal caution required for all hand tools.
12. Lifting heavy weight.	12. Back strain; overexertion.	12. Know your weight-lifting capacity and get help if needed. Lift using leg muscles. Keep back straight. Use mechanical lifting equipment.
13. Working near steam and hot water pipes.	13a. Hitting head on pipes.	13a. Be aware of your surroundings. Always look before moving.
	13b. Getting burned by touching up against hot pipes.	13b. Whenever possible, shut off steam in work area several hours before beginning job. If pipes are not insulated, have them insulated before beginning job. Optionally, wear long-sleeve shirt and/or coveralls.
	13c. Getting burned by steam or hot water; worn out pipes can break easily.	13c. Whenever possible, shut off steam in work area several hours before beginning job. Look at gauges before beginning work to verify that they are working properly. Be aware of steam leaks. Drain systems and/or pump before working on them. Release pressure slowly by nicking pipe. Pull out pump slowly and put a barrier between you and the pump to protect against steam and hot water. Optionally, wear long-sleeve shirt and/or coveralls.
14. Storing or transporting compressed gas cylinders and oxygen/acetylene torch.	14a. Explosion of compressed gas.	14a. Do not allow cylinder valves or regulator assemblies to come into contact with grease, oil, or lubricants. Wear proper eye protection.
	14b. Rupture of cylinder if valve breaks off.	14b. Always install protective valve cover. Always secure cylinder to a stand or a wall.
15. Using oxygen/acetylene outfit.	15a. Regulator diaphragm rupturing when torch is turned on.	15a. Turn regulator adjusting screw counterclockwise to disengage plunger before turning on cylinder.

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	15b. Acetylene explosion.	15b. Stand acetylene tank vertically before using.
	15c. Torch explosion.	15c. Install spark arrestors on torch and regulators.
	15d. Burning self.	15d. Wear gloves, overalls, and leather chaps. Always burn away from yourself.
	15e. Starting a fire.	15e. Always keep fire extinguisher nearby and have a person stand by as a firewatch. Must have a burning permit.
	15f. Burns from metal dripping on self.	15f. Do not reach to burn; always work level with torch.
	15g. Inhalation of fumes.	15g. Work in a well-ventilated area. Use exhaust fans and tubes for ventilation.
	15h. Flash burn to eyes.	15h. Wear burning goggles to protect eyes.
	15i. Burning tar coating and/or galvanized coating creates a poisonous gas.	15i. Tar coating is usually wrapped in cardboard. Silver coating on pipes or plates indicates galvanized coating. If possible, use reciprocating saw to cut instead of burning with torch. If it is not possible to saw the pipe or plate, the area must be very well ventilated with incoming and outgoing air. Wear air pack to avoid breathing fumes.
	15j. Buildup of acetylene from leaks.	15j. Check hose and connections for leaks and damage before using.
16. Working on compressors.	16a. Getting burned with hot oil; slipping on oily floor.	16a. Lift compressor straight up so that oil does not spill out. Wear rubber gloves.
	16b. Hazards from disposal of oil.	16b. Dispose of oil properly.
17. Soldering.	17a. Burning self with torch.	17a. Wear safety goggles, gloves, coveralls, and leather chaps. Always burn away from yourself.
	17b. Starting a fire.	17b. Do not solder near flammable materials. Always keep fire extinguisher nearby and have a person stand by as firewatch.

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	17c. Burns from hot solder dripping on self; flux burn.	17c. Do not reach to solder; stay level with area being soldered. Wear gloves, safety glasses, and coveralls.
	17d. Inhalation of fumes.	17d. Work in well-ventilated area. Use exhaust fans and tubes for ventilation.
	17e. Using wrong solder can cause popping and splattering.	17e. Use correct solder for job.
	17f. Explosions.	17f. Turn off valves to relieve pressure in work area before beginning work.
	17g. Buildup of acetylene from leaks.	17g. Check hose and connections for leaks and damage before using.
	17h. If freon leaks during soldering, it will create poisonous phosgene gas.	17h. If you smell phosgene gas, stop burning immediately. Ventilate area and leave immediately. Make sure no one else is in the area.
18. Using high-pressure freon tanks.	18. If valve breaks or is punctured, the can could blow up, releasing freon gas.	18. Keep tanks away from heat. Secure tanks in vehicle and transport them properly. Do not drop tanks.
19. Using freon recovery unit to remove or insert freon.	19a. Chemical leaks; getting freon on self due to chemical leak or punctured tubes.	19a. Make sure hoses and connections are tight and hoses are in good condition. Keep recovery units in good condition. Wear safety glasses and gloves.
	19b. Explosions.	19b. Always label bottles with type of refrigerant and date. Do not overfill cylinders. Do not mix different kinds of refrigerants.
	19c. Electric shock; electrocution.	19c. Plug unit into GFCI-protected outlet. Keep cord away from work area. Do not use unit if work area is wet.
	19d. Inhalation of toxic fumes.	19d. Make sure refrigerant is evacuated before opening system for repairs with torch.