

**HEAVY REFRIGERATION MECHANIC//
SR. HEAVY REFRIGERATION MECHANIC**

MAINTAINING CHILLERS		
Activity	Hazard Identification	Required Precautions
1. Driving to and from work site.	1. Motor vehicle accident; striking pedestrians, bicyclists, or individuals using rollerblades.	1. 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.
2. Working in mechanical room.	2a. Slipping on water or oil on floor.	2a. Clean up any standing water or oil. Identify leak and repair it if possible.
	2b. Getting burned by steam, hot pipes, hot water, or hot oil.	2b. Wear safety glasses, and optionally, ear protection, long-sleeve shirt and/or coveralls. Be aware of your surroundings and of possible leaks.
	2c. Lack of oxygen due to large refrigeration leak.	2c. Oil vapors indicate a possible refrigeration leak. Ventilate the area immediately. Test the air to verify safety before returning to the mechanical room to work. Follow OSHA recommendations and regulations for safe handling of Refrigerant 123.
	2d. Explosion from leaking gas.	2d. Be aware of odors that could signify leaks. If you smell gas or oil, evacuate the area and alert the dispatcher.
	2e. Excessively hot temperatures; heat exhaustion.	2e. Take frequent breaks in cooler areas. Drink plenty of water.
	2f. Loss of hearing due to loud noise.	2f. Wear ear plugs or ear muffs.
	2g. Tripping.	2g. Survey work area for hazards. Walk carefully.
	2h. Inhalation of dust.	2h. Wear a dust mask.
	2i. Electric shock; electrocution.	2i. Always use GFCI protectors.

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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.
6. Using hydraulic scaffolding.	6. Falling from scaffolding; scaffolding tipping over; hitting head.	6. Put out outriggers and lock wheels. Watch where you are going to avoid hitting head.
7. Using power tools, including drills, saws, pipe threader, and pipe cutter.	7a. Electric shock; electrocution.	7a. 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.
	7b. Tripping over or cutting power cord.	7b. Keep power cord away from work area.
	7c. Injury from flying bits of material.	7c. Wear safety glasses, and optionally a dust mask, gloves, long-sleeve shirt and/or coveralls.

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	7d. Drill or saw catching; drill bit breaking; severe lacerations; dismemberment.	7d. 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.
	7e. Getting caught in pipe threading machine.	7e. Do not wear loose clothing, jewelry, or keys. Stay alert while working with pipe threader.
	7f. Back strain from using manual pipe threader.	7f. Position yourself properly when pushing the die handle.
	7g. Getting cut by metal chips.	7g. Properly dispose of rags used to clean pipe in order to prevent injury to yourself or others from oil and metal chips.
8. Using hand tools.	8. Cuts, pinches, smashes, punctures, severing of fingers.	8. Keep tools in good condition. Inspect tools before use. Ear safety glasses. Work away from yourself. Use normal caution required for all hand tools.
9. Soldering on water and refrigeration pipes.	9a. Burning self with torch.	9a. Wear safety goggles, gloves, coveralls, and leather chaps. Always burn away from yourself.
	9b. Starting a fire.	9b. Do not solder near flammable materials. Always keep fire extinguisher nearby and have a person stand by as firewatch.
	9c. Burns from hot solder dripping on self; flux burn.	9c. Do not reach to solder; stay level with area being soldered. Wear gloves, safety glasses, and coveralls.
	9d. Inhalation of fumes.	9d. Work in well-ventilated area. Use exhaust fans and tubes for ventilation.
	9e. Using wrong solder can cause popping and splattering.	9e. Use correct solder for job.
	9f. Explosions.	9f. Turn off valves to relieve pressure in work area before beginning work.

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	9g. Buildup of acetylene from leaks.	9g. Check hose and connections for leaks and damage before using.
	9h. If freon leaks during soldering, it will create poisonous phosgene gas.	9h. If you smell phosgene gas, stop burning immediately. Ventilate area and leave immediately. Make sure no one else is in the area.
10. Using high-pressure freon tanks.	10. If valve breaks or is punctured, the can could blow up, releasing freon gas.	10. Keep tanks away from heat. Secure tanks in vehicle and transport them properly. Do not drop tanks.
11. Using freon recovery unit to remove or insert freon.	11a. Chemical leaks; getting freon on self due to chemical leak or punctured tubes.	11a. Make sure hoses and connections are tight and hoses are in good condition. Keep recovery units in good condition. Wear safety glasses and gloves.
	11b. Explosions.	11b. Always label bottles with type of refrigerant and date. Do not overfill cylinders. Do not mix different kinds of refrigerants.
	11c. Electric shock; electrocution.	11c. Plug unit into GFCI-protected outlet. Keep cord away from work area. Do not use unit if work area is wet.
	11d. Inhalation of toxic fumes.	11d. Make sure refrigerant is evacuated before opening system for repairs with torch.
12. Testing fuses and control circuits.	12. Electric shock.	12. Wear rubber gloves. Avoid touching metal cabinet parts. Before making repairs, turn off power. Use lock-out device to ensure that power is not inadvertently switched on. Always test before beginning to work to verify that power is off. Remove tools and other metals from your body.
13. Cleaning tower spray nozzles.	13. Inhalation of or skin contact with chemically treated water.	13. Wear coveralls, eye protection, rubber gloves, and mask.
14. Using cleaning solvents (Virginia 10, WD40, Rid-rust, Teflon products).	14a. Inhalation of solvents.	14a. Use solvents in a well-ventilated area. Use sparingly and reseal bottle. Dispose of rags properly.

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	14b. Skin irritation.	14b. Wear rubber gloves. Do not allow solvents to come into contact with skin. If solvent does get on skin, wash affected area thoroughly.
	14c. Solvent in eyes.	14c. Wear safety glasses.
15. Working around rotating equipment.	15. Getting caught in equipment.	15. Make sure guards are in place. Do not wear loose clothing, jewelry, or keys.