



SAFELY REOPENING BREWING OPERATIONS CHECKLIST

As you start to re-open your brewery, remember that many or all employees may have been away from work for a considerable time. This will likely have the same effect as summer vacation does on students; there's a good chance they forgot some basics. You could also equate this to the feeling of starting a new job. Many maybe coming back in a new role, or to a job with so many altered tasks that it now feels new. Be patient and understanding, but also thorough in your training and retraining. To help ensure smooth operations moving forward, have all employees take part in refresher training and as

always, document attendance. Conduct refresher trainings on: Emergency Action Plans, Hazard Communication, Forklift Safety, LOTO, Confined Space Entry and other relevant trainings for your facility.

The following document touches on many different aspects of re-starting a brewery. It may seem daunting, but we urge you to take the time to read this guide thoroughly! Even if you have already begun the re-starting process, you can use this as a good list to double check your steps.

STEP 1: INSPECT YOUR FACILITY

Do not resume regular operations until fire suppression systems are confirmed in good working order.

- ☐ Verify fire suppression systems are working. Check fire extinguishers, fire sprinkler systems and any other fire suppression systems.
- ☐ Inspect life safety devices. Check and replenish first aid materials, chemical showers and eye-wash bottles or permanent stations.
- ☐ Provide the individuals inspecting the facility with proper PPE. This includes respiratory protection and gas detection equipment.
- ☐ Avoid lone worker situations. Employ a buddy system. Make sure all employees' contact information is up to date.
- ☐ Ensure the main electrical disconnect is operational.
- ☐ Determine if gas leaks are present. The facility should be free of accumulations of natural gas, carbon dioxide, propane, or other gases. Take note of any situations that need maintenance or repair.
- ☐ Inspect the entire facility for fluid leaks. These include water, lubricants, and others. Take note of any situations that need maintenance or repair.
- ☐ Look for signs of rodent or pest infestation.
- ☐ Examine HVAC systems prior to re-opening or expanding operations of your business. Buildings that have been sitting empty pose a potential danger if there is water sitting in pipes or if air quality or temperature has not been monitored and maintained.
- ☐ Discard any sitting water. Sitting water can harbor waterborne pathogens responsible for Legionnaires' disease.
- ☐ Carefully check for mold growth, especially if humidity has not been controlled.
- ☐ Ensure all drain traps in facility remain filled with water. This will prevent back flow of sewer gases into the facility.

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STEP 2: CLEAN AND SANITIZE

Evaluate the degree of cleaning and sanitation that is required.

- ☐ Clean and sanitize the facility. This includes, but is not limited to, floors, walls, cooler walls (interior and exterior), duct work, and tank exteriors.
- ☐ Follow chemical safety guidelines. Read and follow the directions from the manufacturer. Consult the safety data sheet for personal protective equipment recommendations and hazard communication to end users.
- ☐ Verify correct concentration of cleaning and sanitizing chemicals.
- ☐ Clean/Sanitize all equipment per standard operating procedures:
 - Brewhouse vessels
 - Heat exchangers
 - Pipes, hoses, and fittings
 - Liquor tanks & Fermenters
 - Bright Tanks
 - Filters
 - Packaging Equipment
 - Kegs
- ☐ Verify water treatment equipment and clean water supply:
 - Flush the system completely.
 - Consult water filtration manufacturer for recommendations after a prolonged shutdown.
 - Replace your filter medium.
 - Conduct a basic microbiological test before use (ie. ATP testing).
- ☐ Do not use any water that has been standing for a long period of time.

STEP 3: RESTART EQUIPMENT

Restart equipment one piece at a time and monitor it carefully to ensure it is working correctly.

Be prepared to quickly turn off the power to the equipment if it does not start properly.

- ☐ Inspect all pressure relief valves and vacuum breakers for proper function. Consult manufacturer spec sheet for target pressures for opening/ closing. Use benchtop calibration method if available.
- ☐ Check all refrigeration systems for leaks.
- ☐ Slowly ramp equipment with variable speed control to normal running speed. Turn the equipment speed to the slowest or the zero speed/ off position then slowly increase the speed from zero to your normal full running speed.
- ☐ Check to see if fuel ignitors are working before supplying fuel to any gas fired equipment. This includes water heaters, boilers and gas fired brew kettles. If your gas supply has been turned off, ask for help from your utility to turn it back on.
- ☐ Restart Chillers: It is important to check with your manufacturer for specific items and procedures.
 - Check glycol reservoir levels and concentration; if needed, add USP grade propylene glycol to desired concentration.
 - Inspect for glycol leaks.
 - Verify glycol inlet and outlet temperatures.
 - Allow chiller to cool system fluid to setpoint before trying to cool any tanks.
 - Ensure any air-cooled condensers are free of obstruction.
 - Inspect refrigerant sight glass. Oil droplets inside the chiller or refrigeration lines covered in oil could indicate a possible leak.
 - Check compressor suction and discharge pressure.
 - Check compressor, condenser, and system amps.
 - Check system fuses, pump seals, and temperature sensor on thermostat.
 - If necessary, schedule time for a refrigeration mechanic to service your chiller.

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- ❑ Restart Boilers: Restarting a boiler after shutdown can be more difficult and riskier than the original startup.
 - Contact a reputable boiler mechanical company well in advance of your anticipated restart date to schedule a major maintenance service call.
 - Contact your boiler water treatment company for service and for a recommendation of a restart chemical blend. Internal boiler and system oxidation is common during prolonged shutdowns and can cause significant damage. Proper water treatment can help mitigate these impacts when restarting your boiler.
 - Relieve all pressure. Drain and inspect the tank, lines, and traps.
 - Check condensate pump(s) and all condensate traps and blowoffs for proper function.
 - Check all steam jackets for leaks, and restart at no or low pressure to avoid condensate knocks that can damage jacket integrity.
 - Ensure system holds pressure (i.e. that no leaks have been developed).
 - Schedule an inspection if local codes require such prior to restarting after shutdown.
 - Lower the pressure gauge to a point below the normal operating pressure, turn on the compressor making sure the regulator shuts off the compressor at the set point. Reset the regulator at normal operating pressure and repeat the procedure.
- ❑ Check Gas Systems (CO₂, Nitrogen, Compressed Air, Oxygen): When entering storage areas, make sure portable gas monitors are used, fixed detection systems are operational, and employ the buddy system.
 - Check bulk tank levels and call suppliers immediately in case a delivery is needed. Dewars may have emptied during shutdown as they lose up to 4 % volume/day when not in-use.
 - Verify gas line header pressures are correct and adjust accordingly.
 - Check entire system for leaks; pressure will remain constant if working properly.
 - Ensure primary and secondary regulators for proper function; rebuild/replace as necessary.
 - Check proper function of shut-off valves.
 - Fuel gas systems should be checked by your local utility and/or qualified technician.
- ❑ Lock out powered conveyors so they cannot start. Only after lock out, check conveyor rollers one at a time. Roll each roller to make sure it turns true. Lube rollers that do not spin freely. Do the same with manual conveyors.

STEP 4: INSPECT RAW MATERIALS

Evaluate the degree of cleaning and sanitation that is required.

- ❑ Inspect Hops:
 - Ensure hops remain refrigerated and meet sensory and physical specifications.
 - Make sure no coolant or other liquids or any vapors have fouled hops.
- ❑ Inspect Malt and Other Grains:
 - Check grain storage rooms, silos and mill rooms for dust buildup, rodent waste, insects or microbiological growth.
- ❑ Inspect Water:
 - Evaluate brewing liquor and de-aerated water for off aroma, discoloration, or turbidity.
 - Check filtration systems (refer to “Inspect Your Facility”)
 - Contact your local municipality with concerns about incoming water quality.
- ❑ Inspect Packaging Materials:
 - Inspect pallets of packaging materials and shelves.
 - Make sure nothing has shifted or collapsed; these may have been hastily or poorly stacked during shutdown.
 - Re-sanitize empty kegs that have been sitting for a long time.