PREVENTATIVE MAINTENANCE

All chiller systems require periodic preventative maintenance to maintain proper functionality and prevent premature parts wear and breakdown. As with your car or truck this maintenance should be completed on a regular schedule. Preventative maintenance is required regardless of the warranty status of the unit. Failure to complete the preventative maintenance can void or limit the warranty coverage of the chiller system. Always de energize equipment and follow all Lock-out Tag-out procedures prior to performing any electrical or mechanical maintenance. All preventative maintenance should be logged and recorded on the Preventative Maintenance Checklist.

PREVENTATIVE MAINTENANCE SCHEDULE

The preventative maintenance schedule below is a general guide to scheduling and performing your periodic maintenance. However, the end user should use their best judgement in setting up their unique maintenance schedule. Factors to consider include operational environment, air quality (I.E dust debris pollen and or fibers that can become trapped in the condenser coils.) In some instances, the monthly maintenance should be performed on a weekly basis.

DAILY

Daily maintenance should be performed at the beginning of each day. Generally, daily maintenance is incorporated into daily inspection rounds of the facility.

- Listen for vibration, rattling, and other abnormal sounds.
- Check unit controller(s) for alarms.
- Check hydronic pressure gauges for adequate pressure.
- Visually inspect around chiller for fluid, or oil indications of leakage.

MONTHLY

Monthly maintenance is a crucial step to maintain proper functionality of the chiller. This maintenance can be completed by semi-skilled on-site personal. Condenser coil cleaning during the monthly maintenance is critical to the proper operation of the refrigeration system. In dirty climates or seasons the cleaning of the condensers should be completed weekly.

- Listen for vibration, rattling, and other abnormal sounds.
- Check hydronic pressure gauges for adequate pressure.
- Visually inspect around chiller for fluid, indications of leakage.
- Check unit controller(s) for alarms.
- Visually inspect for signs of oil leakage on or around the refrigeration components. (May indicate a leak).
- Inspect hydronic plumbing for leaks.
- On open hydronic systems visually check hydronic tank levels.
- On closed hydronic systems ensure a static hydronic pressure above 12psig.

- Check that all condenser fans are operating correctly.
- Clean condenser coils with compressed air.
- Inspect condenser coil for areas of oil saturation which may indicate a leak.
- Verify the chiller is meeting temperature setpoints and maintaining thermal loads.

Quarterly

Quarterly maintenance is vital to operation. Quarterly maintenance includes both daily and monthly maintenance in addition to a few extras that are required for optimal functionality. Quarterly maintenance may be performed by skilled onsite personal, however we highly recommend quarterly, and annual maintenance be performed by qualified HVAC/Refrigeration technicians.

- Listen for vibration, rattling, and other abnormal sounds.
- Check hydronic pressure gauges for adequate pressure.
- Visually inspect around chiller for fluid, indications of leakage.
- Check unit controller(s) for alarms.
- Visually inspect for signs of oil leakage on or around the refrigeration components. (May indicate a leak).
- Inspect hydronic plumbing for leaks.
- On open systems visually check hydronic tank levels.
- On closed systems ensure a static hydronic pressure above 12psig.
- Check that all condenser fans are operating correctly.
- Clean condenser coils with aluminum microchannel safe condenser cleaner.
- Inspect condenser coil for areas of oil saturation which may indicate a leak.
- Inspect unit for losses or missing hardware (I.e., door hinges, screws, fasteners and hose clamps.)
- Record the voltage of each compressor.
- Record the amp draw of each compressor.
- Record the voltage for each hydronic pump.
- Record the amp draw of each hydronic pump.
- Record the voltage for each condenser fan.
- Record the amp draw for each condenser fan.
- Clean out control and power panels.
- Check and record the water/glycol mixture percentage.
- Clean out all debris from in and around the chiller unit.
- Visually inspect the oil level of each compressor.
- Verify the chiller is meeting temperature setpoints and maintaining thermal loads.

Annually

Annual maintenance will help identify developing problems in the refrigeration circuits. By measuring certain aspects and taking oil and refrigerant samples the technician will be able to determine the general health of the chiller refrigeration circuits. Annual maintenance also gives everyone a good chance to evaluate the operating conditions of the entire process and should be treated as a pseudo startup. Annual maintenance must be performed by a qualified refrigeration technician, due to the material handling and technical evaluations that need to be performed. Summer typically sees the harshest operating conditions of a refrigeration system; therefore, we recommend that the annual maintenance be performed either late winter, or during spring.

- Listen for vibration, rattling, and other abnormal sounds.
- Check hydronic pressure gauges for adequate pressure.
- Visually inspect around chiller for fluid, indications of leakage.
- Check unit controller(s) for alarms.
- Visually inspect for signs of oil leakage on or around the refrigeration components. (May indicate a leak).
- Inspect hydronic plumbing for leaks.
- On open systems visually check hydronic tank levels.
- On closed systems ensure a static hydronic pressure above 12psig.
- Check that all condenser fans are operating correctly.
- Clean condenser coils with aluminum microchannel safe condenser cleaner.
- Inspect condenser coil for areas of oil saturation which may indicate a leak.
- Inspect unit for losses or missing hardware (I.e., door hinges, screws, fasteners and hose clamps).
- Inspect all electrical contactors for signs of wear (I.E pitting, chattering, arcing).
- Re torque all high voltage wiring connections to component specifications.
- Re torque all low voltage wiring connections to component specifications.
- Inspect unit wiring for breaks, loose connections, and frayed wiring.
- Record the voltage of each compressor.
- Record the amp draw of each compressor.
- Record the voltage for each hydronic pump.
- Record the amp draw of each hydronic pump.
- Record the voltage for each condenser fan.
- Record the amp draw for each condenser fan.
- Clean out control and power panels.
- Check and record the water/glycol mixture percentage.
- Clean out all debris from in and around the chiller unit.
- Visually inspect the oil level of each compressor.
- Measure and record suction and discharge pressures.
- Measure and record suction superheat and liquid subcooling.
- Record EEV position for each circuit while under full load.
- Analyze oil and refrigerant for acid and other contaminates. Record results.

- Make any refrigerant charge changes and record, and mark change on UL label.
- Verify the chiller is meeting temperature setpoints and maintaining thermal loads.

Triennial

Triennial maintenance is not required; however, it is recommended that it is completed as scheduled to mitigate down time. This becomes especially important on process critical chillers with no backup chilling options. Triennial maintenance should be completed by a qualified technician, or on-site personal. Triennial maintenance should be incorporated with every third annual maintenance schedule.

- Replace all compressor contactors.
- Inspect pump contactors, replace, as necessary.
- Replace all hydronic pump seals.