

# Maintenance Guidelines

## Maintenance - General

Regular maintenance of refrigeration equipment is a 'MUST'. Equipment should have a minimum of two maintenance checks in each 12 month period to maintain the efficient and continuing operation of plant. The checks should cover the following points:

1. Examine and clean external surfaces of all motors, compressors, evaporators, condensers, leaving the system in a clean and tidy condition.  
*Note: Only environmentally safe products may be used for the cleaning of components.*
2. Oil or grease all reasonably accessible moving parts and bearings.
3. Check and adjust all driving belts for tension and alignment. Inspect direct drive couplings where fitted.
4. Examine and check for refrigerant leaks. Check water and waste pipelines for leaks.
5. Check refrigerant and oil levels where possible. Also check oil acidity/moisture content (if appropriate).
6. Where fitted, check expansion valve superheat settings.
7. Check evaporator(s), drip tray(s) and waste pipe(s) for cleanliness observing the HSE regulations on legionella bacterium prevention (HSE Guidance Note EH48).
8. Check temperature controls and temperature with appropriate instruments.
9. Examine electrical circuits, test for continuity, insulation and correct earthing continuity. Check tightness of all electrical connections. Check correct size/type of fuses.
10. Test defrost system and check controls and heaters.
11. Check motor overload settings.
12. Check unit/motor start and run amps.
13. Check all system protection and safety devices.
14. Clean and adjust all electrical contacts where possible.
15. Check general operation of plant.
16. Report findings and results to client, listing any defects requiring immediate or early attention.

## Maintenance - Specific

### 1. Walk In Chiller and Freezer Coldrooms

- Check and record room temperature using independent test thermometer.
- Check operation of evaporator fan motors, fan blades and security of protective fan guard.
- Check cleanliness of evaporator coil block, manually clean as necessary and report on any visual damage.
- Check operation of defrost heating elements.
- Test integrity of condensate drain line, fittings and drain line heater if fitted.
- Check and report on general age/condition of evaporator unit and fittings.
- Check the operation of door switches (manual and automatic) for lights and evaporator fans and report any defects.
- Check condition of internal light fittings and bulbs.
- Check condition of door strip curtain, report any defects.
- Check condensing fan motor and compressor operation and general condition of unit. Also visual check of liquid receiver fusible plug for signs of defect (where fitted).
- Test all system controls and safety switches for correct settings and operation, report any defect.
- Check refrigerant charge.
- Check condition of liquid line filter drier and sight glass moisture indicator (where fitted).
- Clean condenser coil with chemical or nitrogen.
- Check condition of control panel and fittings to include fuses/fuse carriers, relays, time clocks and mains on/off switch.
- Check condition and integrity of door gasket and door frame heater if fitted.
- Check general condition of coldroom structure and fittings (shelving, pallets etc.)
- Monitor system on test.

### 2. Cabinets

- Check condition and integrity of electrical isolation switch and mains cable to cabinet.
- Check and record cabinet temperature using independent test thermometer.
- Check operation of evaporator fan motors, fan blades and security of protective fan guard.
- Check cleanliness of evaporator coil block, manually clean as necessary and report on any visual damage.

- Test integrity of condensate drain line, fittings and condensate tray and heater element.
- Check and report on general age/condition of evaporator unit and fittings.
- Check operation and integrity of door gasket, door hinges and locks/handles, lubricate as necessary.
- Check condensing fan motor and compressor operation and general condition of unit. Also visual check of liquid receiver fusible plug for signs of defect (where fitted)
- Test all system controls and safety switches for correct settings and operation, report any defect.
- Check refrigerant charge.
- Check condition of liquid line filter drier.
- Clean condenser coil with chemical or nitrogen.
- Check condition of control panel and fittings to include fuses/fuse carriers, relays, time clocks and mains on/off switch.
- Check general condition of cabinet structure and fittings (shelving, pallets etc.)

### 3. Ice Machines

- Check water and electricity isolation switches for correct operation.
- Check condition of supply cable.
- Check condition of all water connecting hoses to machine.
- Check drainage from machine.
- Check and clean storage bin.
- Check operation and condition of condensing unit.
- Check refrigerant charge.
- Clean condenser coil as necessary.
- Check condition of water pump.
- Check condition of evaporator water deflector curtain.
- Check that all thermostats (harvest and storage bin) operate and are set correctly.
- Check operation of hot gas defrost valve.
- Check operation and setting of harvest timer (where fitted).
- Check operation and cleanliness of water spray arm and jets, clean as necessary.
- Carry out wash cycle on machine using Ice Machine Sanitise Fluid and Ice Machine Cleaner as recommended by the manufacturer.
- Carry out timed cycle for ice production and compare to manufacturers specification.
- Check shape, size and integrity of ice cubes.

### 4. Air Conditioning Heat Pump Systems (Cassettes & Ducted)

- Remove and clean all washable filters from within Air Handling Unit, replace with new if required.
- Check operation of all motorised valves (where fitted).
- Check operation of Air Handling evaporator fan motors, fan blades and security of protective fan guard.
- Check operation of auxiliary heating elements (where fitted).
- Check cleanliness of evaporator coil block, manually clean as necessary and report on any visual damage. Report if chemical clean is required.
- Test integrity of condensate drain line and automatic pump (where fitted).
- Check and report on general age/condition of evaporator unit and fittings.
- Check condensing fan motor and compressor operation and general condition of unit.
- Test all system controls and safety switches for correct settings and operation, report any defect. Check Self-Diagnostic System on MicroProcessor Controller, investigate any faults shown.
- Check refrigerant charge.
- Check condition of liquid line filter drier.
- Clean condenser coil with chemical or nitrogen.
- Check and calibrate thermostat settings and operate system on Fan Only, Heating, Cooling and Automatic.
- Check and re-calibrate Timer settings in accordance with Client's requirements.
- Monitor system on test.

SPECIMEN