

## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

### Maintenance Plan for Furnaces with Central Air Cooling

Service to be performed four times a year: October, January, April, and July.

#### **October:**

1. Replace filters MERV-8 or higher 20"x25"x4"
2. Inspect and clean burner compartment for rust, corrosion, soot or excessive dust.
3. Check igniter.
4. Inspect and clean blower wheel housing.
5. Inspect and clean motor.
6. Check all electrical wiring and connections.
7. Inspect airflow systems for leaks.
8. Check sequence of heating system operation.
9. Lubricate as needed.
10. Provide detailed report; provide quotes for any work needed.

#### **January:**

1. Check sequence of heating system operation.
2. Inspect burner compartment.
3. Check igniter.
4. Inspect blower wheel housing.
5. Inspect motor.
6. Check all electrical wiring and connections.
7. Inspect airflow systems for leaks.
8. Provide detailed report; provide quotes for any work needed.

#### **April:**

1. Replace filters MERV-8 or higher 20"x25"x4"
2. Inspect condenser coils and evaporator coils.
3. Inspect condenser fan.
4. Inspect and clean blower wheel housing.
5. Inspect and clean motor.
6. Check all electrical wiring and connections.
7. Inspect drain pan and drain lines.
8. Check A/C system sequence of operation.
9. Check refrigerant levels and check for leaks.
10. Inspect airflow systems for leaks.
11. Lubricate as needed
12. Provide detailed report; provide quotes for any work needed.

**July:**

1. Inspect airflow systems for leaks.
2. Wash condenser coils and evaporator coils.
3. Inspect condenser fan.
4. Inspect blower wheel housing.
5. Inspect motor.
6. Check all electrical wiring and connections.
7. Inspect drain pan and drain lines.
8. Check A/C system sequence of operation.
9. Check refrigerant levels and check for leaks.
10. Provide detailed report; provide quotes for any work needed.



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

### Maintenance Plan for Packaged Industrial Roof Top Units

Service to be performed four times per year: January, April, July, October.

#### **October:**

1. Replace filters with MERV-8 or higher (to be performed by Aero Filter)
2. Replace all belts (include parts price in PM)
3. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
4. Check blower and exhaust motor amperage.
5. Check voltage.
6. Check electrical connections.
7. Check blower rotation.
8. Check all fuses, contactors, relays and capacitors for operation.
9. Check and lubricate all motors.
10. Check economizer operation.
11. Check hot water coils and pumps.
12. Check proper operation of 3-way valve.
13. Check and adjust static pressure.
14. Check exhaust for proper operation.
15. Check outdoor temp and humidity sensors for proper operation.
16. Provide detailed report; provide quotes for any work needed.

#### **January:**

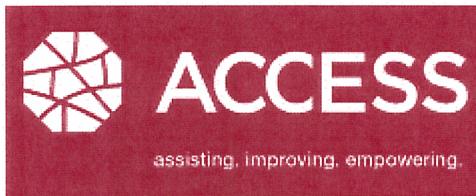
1. Replace filters with MERV-8 or higher (to be performed by Aero Filter)
2. Check belt tension and wear. Adjust or replace as needed.
3. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
4. Check blower and exhaust motor amperage.
5. Check voltage.
6. Check electrical connections.
7. Check blower rotation.
8. Check all fuses, contactors, relays and capacitors for operation.
9. Check and lubricate all motors.
10. Check economizer operation.
11. Check hot water coils and pumps.
12. Provide detailed report; provide quotes for any work needed.

**April:**

1. Blow down or rinse condenser coils as needed.
2. Replace filters MERV-8 or higher (to be performed by Aero Filter)
3. Clean out p-trap, check for damage.
4. Apply chemical condensate pan treatment.
5. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
6. Check blower and exhaust motor amperage.
7. Check voltage.
8. Check belt tension and wear. Adjust or replace as needed.
9. Check blower rotation.
10. Check all fuses, contactors, relay and capacitors for operation.
11. Check and lubricate all motors.
12. Check economizer operation.
13. Check electrical connections.
14. Check for refrigerant for leaks and proper levels.
15. Check panel and door gaskets.
16. Check condenser fan: motor, blades, bracket, rain cap, and guard.
17. Check compressor operation.
18. Check condenser coils and evaporator coils.
19. Check and adjust static pressure.
20. Check exhaust for proper operation.
21. Check outdoor temp and humidity sensors for proper operation.
22. Provide detailed report; provide quotes for any work needed.

**July:**

1. Replace filters MERV-8 or higher (to be performed by Aero Filter)
2. Chemically wash condenser coils, evaporator coils, and o/a pre-filter.
3. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
4. Check blower and exhaust motor amperage.
5. Check voltage.
6. Check belt tension and wear. Adjust or replace as needed.
7. Check blower rotation.
8. Check all fuses, contactor, relay and capacitors for operation.
9. Check and lubricate all motors and pumps.
10. Check economizer operation.
11. Check electrical connections.
12. Check for refrigerant leaks and proper levels.
13. Clean out p-trap, check for damage.
14. Check condenser fan: motor, blades, bracket, rain cap, and guard.
15. Clean and apply chemical treatment to condensate pan.
16. Provide detailed report; provide quotes for any work needed.



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

### Maintenance Plan for Nortec NH Electrode Steam Humidifier

Service to be performed four times a year: October, January, April, July

#### **October:**

1. Steam Generators- Inspect cylinder, check drain valve, and fill valve.
2. Lines - Clean sump and drain lines and make sure drains and drain lines are free of restrictions. Check for leaks and proper water level.
3. Steam Distribution - Check steam line sloping, no leaks, no condensate around blower pack or distribution nozzle.
4. Controls - Humidistat, check for proper operation. Check all electrical terminals for tightness. Disconnect switch, check operation.
5. Put unit into operation, set for 35% humidity.
6. Replace Cylinders (6) (include cost in the price of PM)

#### **January:**

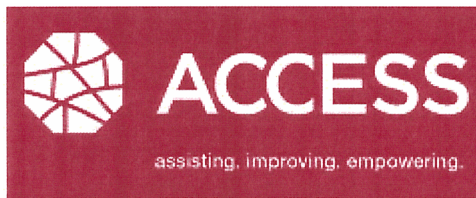
1. Verify Operation.
2. Check for leaks.
3. Verify setpoints.

#### **April:**

1. Steam Generators- Inspect cylinder, check drain valve, and fill valve.
2. Lines - Clean sump and drain lines and make sure drains and drain lines are free of restrictions. Check for leaks and proper water level.
3. Steam Distribution - Check steam line sloping, no leaks, no condensate around blower pack or distribution nozzle.
4. Controls - Humidistat, check for proper operation. Check all electrical terminals for tightness. Disconnect switch, check operation.
5. Put unit into operation, set for 50% humidity.

#### **July:**

1. Verify Operation.
2. Check for leaks.
3. Verify setpoints.



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

Maintenance Plan for Unit Heaters (Directions are for Gas, Water, and Electric as applicable)

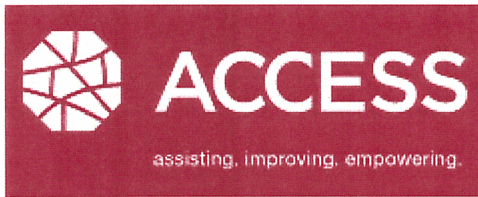
Service to be performed two times a year: October, January.

### **October:**

1. Check start-up operation for winter.
2. Check for unusual noise or vibration.
3. Replace Belts.
4. Replace filters with MERV-8 or higher (to be performed by Aero Filter)
5. Check operational and safety controls.
6. Clean pilot and burner.
7. Check fan blades.
8. Check boiler pressure vessel and gaskets.
9. Lubricate motor.
10. Check and clean combustion chamber.
11. Inspect pilot light, thermal couple, or electric ignition.
12. Inspect and clean flue fan.
13. Check and exercise gas valve and water valves.
14. Check heating coils, brush or blow down if needed.
15. Check thermostat for winter setting.
16. Inspect all electrical connections and contactors.
17. Give detailed report; provide quotes for any work needed.

### **January:**

1. Replace filters with MERV-8 or higher (to be performed by Aero Filter)



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

### Maintenance Plan for Exhaust fans

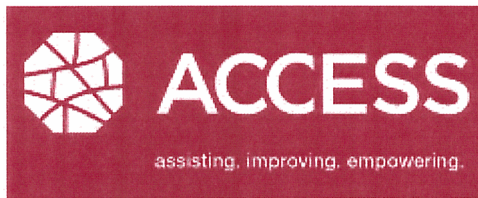
Service to be performed two times a year: October, April

#### **October:**

1. Lubricate bearings, motors.
2. Replace belts.
3. Check pulley and sheaves for excessive wear.
4. Check all electrical connections for signs of wear, arcing, or overheating.
5. Check unit for vibration or unusual noise.
6. Check operating amperage.
7. Clean motor vent.
8. Provide detailed report; provide quotes for any work needed.

#### **April:**

1. Lubricate bearings, motors.
2. Check belt, adjust tension, replace belts if needed.
3. Check pulley and sheaves for excessive wear.
4. Check all electrical connections for signs of wear, arcing, or overheating.
5. Check unit for vibration or unusual noise.
6. Check operating amperage.
7. Clean motor vent.
8. Provide detailed report; provide quotes for any work needed.



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

Maintenance Plan for Roof Top Units with heating and cooling operation.

Service to be performed four times a year: October, January, April, July.

### **October:**

1. Replace filters MERV-8 or higher (to be performed by Aero Filter)
2. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
3. Check blower motor amperage.
4. Check voltage.
5. Replace all belts (include parts price in PM)
6. Check blower rotation.
7. Check all fuses, contactor, relays and capacitors for proper operation.
8. Check and lubricate all motors.
9. Check economizer operation.
10. Check electrical connections.
11. Check heat exchanger for cracks and holes.
12. Check ignition system lockout.
13. Check burners, adjust as needed.
14. Check for gas leaks.
15. Check induced draft fan operation.
16. Check burner cycle and check for proper flame pattern.
17. Check exhaust for proper operation.
18. Check outdoor temp and humidity sensors for proper operation.
19. Provide detailed report; provide quotes for any work needed.

### **January:**

1. Replace filters with MERV-8 or higher (to be performed by Aero Filter)
2. Check belt tension and wear. Adjust or replace as needed.
3. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
4. Check blower motor amperage.
5. Check voltage.
6. Check electrical connections.
7. Check blower rotation.
8. Check all fuses, contactors, relays and capacitors for operation.
9. Check and lubricate all motors.
10. Check economizer operation.
11. Check burner cycle and check for proper flame pattern.
12. Provide detailed report; provide quotes for any work needed.

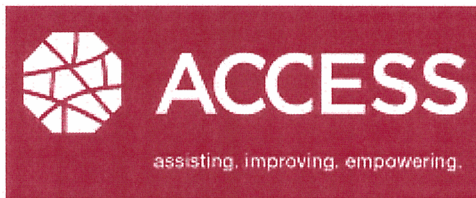


**April:**

1. Blow down or rinse condenser coils and o/a pre-filter as needed.
2. Replace filters MERV-8 or higher (to be performed by Aero Filter)
3. Clean out p-trap, check for damage.
4. Apply chemical condensate pan treatment.
5. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
6. Check blower motor amperage.
7. Check voltage.
8. Check belt tension and wear. Adjust or replace as needed
9. Check blower rotation.
10. Check all fuses, contactors, relay and capacitors for operation.
11. Check and lubricate all motors.
12. Check economizer operation.
13. Check electrical connections.
14. Check for refrigerant for leaks and proper levels.
15. Check panel and door gaskets.
16. Check condenser fan: motor, blades, bracket, rain cap, and guard.
17. Check compressor operation.
18. Check evaporator coils and outside air filters.
19. Check exhaust for proper operation.
20. Check outdoor temp and humidity sensors for proper operation.
21. Provide detailed report; provide quotes for any work needed.

**July:**

1. Replace filters MERV-8 or higher (to be performed by Aero Filter)
2. Chemically wash condenser coils, evaporator coils, and o/a pre-filter.
3. Check bearing, shafts, pulleys and sheaves. Adjust for correct deflection.
4. Check blower motor amperage.
5. Check voltage.
6. Check belt tension and wear. Adjust or replace as needed.
7. Check blower rotation.
8. Check all fuses, contactor, relay and capacitors for operation.
9. Check and lubricate all motors and pumps.
10. Check economizer operation.
11. Check electrical connections.
12. Check for refrigerant leaks and proper levels.
13. Clean out p-trap, check for damage.
14. Check condenser fan: motor, blades, bracket, rain cap, and guard.
15. Clean and apply chemical treatment to condensate pan.
16. Provide detailed report; provide quotes for any work needed.



## **SCOPE OF WORK FOR PREVENTATIVE MAINTENANCE PROGRAM**

### Maintenance Plan for Boilers

Service to be performed four times a year: October, January, April, and July.

#### **October:**

1. Inspect expansion tanks for water level, corrosion, and gauge operation.
2. Check sight glass.
3. Check boiler exhaust vents for holes, rust, operation.
4. Check system for leaks, water and gas.
5. Check operational and safety controls. Check heat timer if present.
6. Clean pilot assembly.
7. Check relief valves.
8. Check boiler pressure vessel and gaskets.
9. Check and exercise valves.
10. Check gas pipes.
11. Perform CSD-1 with all documentation required by State of Michigan.
12. Lube motor/check burner fans if applicable.
13. Clean boiler
14. Lubricate pump and motor bearings.
15. Check all pumps for leaks, proper operation.
16. Inspect all electrical connections and contactors.
17. Verify operation of all gauges.
18. Inspect and clean low water cut-off.
19. Clean pilot assembly.
20. Perform combustion analysis and adjust burner for maximum efficiency.
21. Check main burner diffuser ring for fatigue.
22. Check for flue leakage around burner gaskets.
23. Inspect wires to flame and spark rod.
24. Check and clean flame detector.
25. Check and adjust set points.
26. Check inducer operation.
27. Give detailed report; provide quotes for any work needed. Submit results of combustion analysis.

#### **January, April, & July:**

1. Check water pressures, set points, and relief valves.
2. Check operational and safety controls. Check heat timer if present.
3. Check boiler exhaust vents.
4. Check for leaks, water and gas.
5. Check and exercise valves.
6. Check temperature set point.

7. Inspect boiler flue for corrosion or holes.
8. Check system for leaks, water and gas.
9. Check all pumps for leaks, proper operation.
10. Check electrical connections and contactors.
11. Check vessel and gaskets for signs of leakage.
12. Give detailed report; provide quotes for any work needed.