ElectroFin® heat transfer coatings

Insitu® coil and cabinet protection

MODINE®

MODINE®

CLEANING INSTRUCTIONS

GENERAL DESCRIPTION
– SUBJECT TO CHANGES OR DEVIATIONS

Cleaning Procedures for Modine Coated Coils and/or Cabinets

⚠ WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury or death. Before performing service or maintenance operations on unit, always turn off main power switch to unit and install lock(s) and lockout tag(s). Unit may have more than one power switch. Ensure electrical service to rooftop unit agrees with voltage and amperage listed on the unit rating plate.

⚠ CAUTION

CUT HAZARD

Failure to follow this caution may result in personal injury. Sheet metal parts may have sharp edges or burrs. Use care and wear appropriate protective clothing, safety glasses and gloves when handling parts and servicing air conditioning equipment.

NOTE:
Please follow proper safety policies, procedures and practices when working on HVAC equipment.

A scheduled and documented BIANNUAL cleaning procedure is REQUIRED for all HVAC/R equipment coated with Modine coil and/or cabinet protection.

GENERAL INSTRUCTIONS

Remove surface loaded fibers – Coils Only

Surface loaded fibers or dirt should be removed prior to cleaning and/or water rinse to prevent further restriction of airflow. If unable to back wash the side of the coil opposite that of the coils entering air side, then surface loaded fibers or dirt should be removed with a vacuum cleaner. If a vacuum cleaner is not available, a soft non-metallic bristle brush may be used while brushing with the fins, typically vertically for RTPF coils. Coil surfaces can be easily damaged (fin edges bent over) if the brush is applied across the fins.

NOTE: Use of a water stream, such as a garden hose, against a surface loaded coil will drive the fibers, dirt and salts into the coil. This will make cleaning efforts more difficult. Surface loaded fibers must be completely removed prior to completing low velocity cleaning and water rinses.

REQUIRED BIANNUAL (2/YEAR) CLEANING AND CHLORIDE REMOVAL OF MODINE COATED EQUIPMENT (COIL AND CABINET SURFACES)

Biannual cleaning is required to maintain warranty coverage and is essential to maintain the life of a Modine coated coil and cabinet. Coil and cabinet cleaning shall be part of the unit's regularly scheduled maintenance procedures. Failure to clean a Modine coated coil or cabinet on the prescribed biannual cycle will void the warranty and may result in reduced efficiency and durability in the environment.

A routine two-step biannual coil cleaning is required to maintain warranty. Step one is to clean the coil with the below approved coil cleaner (see approved products list under the "Recommended Coil Cleaners" section. Step two is to use the approved salt/chloride remover under the "Recommended Chloride Remover" section to dissolve soluble salts and revitalize the unit. It is very important when cleaning and/or rinsing not to exceed 130ºF and potable water pressure is less than 100 psig to avoid damaging the unit and coil fin edges.

For routine biannual cabinet cleaning, first clean the cabinet using a rag or sponge with a mild dish soap such as Dawn to remove dirt and/or contaminants. Once the cabinet surfaces have been cleaned, a thorough rinse should be completed. After the cabinet has been cleaned, use the approved chloride remover under the "Recommended Chloride Remover" section to remove soluble salts and revitalize the units cabinetry. This is then followed by a thorough water rinse. It is very important when cleaning and/or rinsing not to exceed 130ºF and potable water pressure is less than 100 psig to avoid damaging the unit.

RECOMMENDED COIL CLEANERS - STEP #1

The following coil cleaner, assuming it is used in accordance with the manufacturer's directions on the container for proper mixing and cleaning, has been approved for use on Modine coated coils to remove mold, mildew, dust, soot, greasy residue, lint and other particulate. Never use any cleaners that are not approved.

COIL CLEANER:	RESELLER:
GulfClean® Coil Cleaner	ModineCoatings.com Tel: 502-634-9458 Purchase where HVAC commercial supply products are sold

RECOMMENDED CHLORIDE REDUCER - STEP #2

The following chloride reducer, assuming it is used in accordance with the manufacturer's directions on the container for proper mixing, has been approved for use on Modine coated coils and cabinets to remove chlorides/salts & sulfates. Never use any chloride removers or reducers that are not approved.

CHLORIDE REMOVER:	RESELLER:
GulfClean® Salt Reducer	ModineCoatings.com Tel: 502-634-9458 Purchase where HVAC commercial supply products are sold

HARSH CHEMICAL AND ACID CLEANERS

Harsh chemicals, household bleach or acid cleaners should not be used to clean outdoor or indoor Modine coated coils and/or cabinets. These cleaners can be very difficult to rinse out of the coil and can accelerate the corrosion attack of the coil.

HIGH VELOCITY WATER OR COMPRESSED AIR

High velocity water from a pressure washer or compressed air should only be used at a very low pressure, (< 100 psi), to prevent fin and/or coil damages. The force of the water or air jet may bend the fin edges and increase airside pressure drop. Reduced unit performance or nuisance unit shutdowns may occur.

DETAILED INSTRUCTIONS

SCOPE:
The Warranty Protection plan consists of a two-step process. Step 1 is to clean the coils and step 2 is to remove the salts/chlorides. The coils are to be thoroughly cleaned GulfClean® Coil Cleaner as listed above. Once cleaned, they will then need to have the chlorides/salts removed by using GulfClean® Salt Reducer as listed above.

WARRANTY PROTECTION STEP 1 OF 2

Complete the coil cleaning following these steps.

1. Ensure that the power to the unit is off and locked out.
2. Clean the area around the unit if needed to ensure leaves, grass or loose debris will not be blown into the coil.
3. Remove panels or tops as required gaining access to the coil(s) to be cleaned.
4. Using a pump up sprayer, fill to the appropriate level with potable water and add the correct amount of approved cleaner as per manufacture instructions leaving room for the pump plunger to be reinserted.

   NOTE: Coils should always be cleaned / back flushed, opposite of airflow to prevent impacting the dirt into the coil.
5. If the coils have heavy dirt, fibers, grass, leaves etc. on the interior or exterior face areas, a vacuum and brush should be used to remove those surface contaminants prior to applying cleaner. The interior floor, drain tray or pan areas should also be vacuumed.
6. Apply the mixed cleaner to coil surfaces using a pressurized pump up sprayer maintaining a good rate of pressure and at a medium size nozzle spray, (not a solid stream and not a wide fan but somewhere in the middle). Work in sections/panels ensuring that all areas are covered and kept wetted.
7. Apply the cleaner to unit interior air exiting side coil surfaces first. Work in sections/panels moving side to side and from top to bottom.
8. Generously soak coils by spraying cleaner directly on and into the fin pack section to be cleaned and allow the cleaning solution to soak for 5 to 10 minutes.
9. Using pressurized potable water, (< 100 psi), rinse the coils and continue to always work in sections/panels.
10. Start at the top of the coil and slowly move vertically downward to the bottom. Then, staying in the same vertical area, slowly move back up to the top where you started. Now move over slightly overlapping the area just completed and repeat above. Continue until all coil areas on the inside of the unit have been rinsed.
11. Complete steps 6-10 for the exterior air entering side of the coils.
12. Final rinse – Now complete a quick rinse of both sides of the coil including the headers, piping, u-bends and hairpins.
13. If the coil has a drain pan or unit floor that is holding rinse water or cleaner, extra time and attention will need to be taken in those areas to ensure a proper rinse has been completed.

WARRANTY PROTECTION STEP 2 OF 2

Complete the coil chloride (salt) removal following these steps.

1. GulfClean® Salt Reducer is a concentrate to be used for both normal inland applications at a 100:1 mix ratio OR for severe coastal applications 50:1 mix ratio with potable water, (2.56 ounces of GulfClean® Salt Reducer to 1 gal of water). Using a pump up sprayer, fill to the appropriate level with potable water and add the correct amount of GulfClean® Salt Reducer salt remover leaving room for the pump plunger to be reinserted.

2. Apply GulfClean® Salt Reducer to all external coil surfaces using a pressurized pump up sprayer maintaining a good rate of pressure and at a medium size nozzle spray, (not a solid stream and not a wide fan but somewhere in the middle). Work in sections/panels ensuring that all areas are covered and kept wetted.

3. Generously soak coils by spraying GulfClean® Salt Reducer directly on and into the fin pack section. Let stand for 5 to 10 minutes keeping the area wetted. Do not allow to dry before rinsing.

4. Using pressurized potable water, (< 100 psi), rinse the GulfClean® Salt Reducer and dissolved chlorides/salts off of the coils continuing to always work in sections/panels.

5. Starting at the top of the coil, begin rinsing the coil from side to side until you reach the bottom. Repeat as many times as is necessary to ensure all coil sections/panels have been completed and are thoroughly rinsed.

6. Reinstall all panels and tops that were removed.

Complete the cabinet cleaning and chloride removal following these steps.

1. Ensure that the power to the unit is off and locked out.

2. Clean the cabinet using a rag or sponge with a mild dish soap such as Dawn to remove dirt and/or contaminants.

3. Once the cabinet surfaces have been cleaned, a thorough rinse should be completed.

4. After the cabinet has been cleaned, use the approved chloride reducer under the “Recommended Chloride Reducer” section to remove soluble salts and revitalize the unit’s cabinetry.

   NOTE: It is very important when cleaning and/or rinsing not to exceed 130°F and potable water pressure is less than 100 psig to avoid damaging the unit.

5. Final rinse – Now complete a quick rinse of all cabinetry and coils to ensure a proper final rinse.

6. Notify the proper personnel that the equipment may now be turned backed on.