



Bronz-Glow®
Protective Coatings

The Owners Coated Coil, Cleaning and Maintenance Service Manual

IMPORTANCE OF PROPER AND TIMELY COIL CLEANING

Thorough coil cleaning at regular intervals is a significant contribution to the success of a good preventative maintenance program. The performance of a regularly scheduled coil cleaning to remove oxides, air borne pollutants, accumulated dirt and soils for the coil surface has a direct relationship to operating efficiency, energy savings and equipment life of a HVAC/R unit. Corrosion and energy experts recognize that clean and oxide free coils contribute to the extended life of equipment and it is also effective in reducing energy demand of the temperature control system. The cleaner the coil(s), the less energy required for operating the system because the exchange of BTU's of a clean coil is more efficient than of a dirty coil.

A preventative maintenance program should be structured to maintain the highest operating efficiency possible under the environmental conditions in which the temperature control system operates. Your coil preventative maintenance program should be instituted within 90 days of installation of the equipment. In cases where equipment may be stored at the site for several months during construction prior to installation, it's usually necessary to clean the coil(s) prior to or at the time of installation. During an extended outside storage period the coil(s) may be damaged by wind, sand or other air borne particulate matter, even if the equipment is not in operation. Equipment owners purchase Bronz-Glow's coatings and services for the added value of extending equipment life and preserving energy efficiencies. We are therefore concerned with the proper maintenance of equipment coated with one or more of our coating processes. The beginning of an effective maintenance program for Bronz-Glow coated equipment should begin with receipt of the coated equipment. All newly coated coils and/or casings should be thoroughly inspected upon receipt. Coating damage may occur during the handling and transportation of the equipment and any damaged area should be promptly repaired using the Bronz-Glow Coating Maintenance Kit that is available for every job. It is important that those responsible for service and maintenance of equipment understand what is expected in order for the coil and/or cabinet coating to be maintained properly. Should there be any questions; contact your Bronz-Glow Representative.

Bronz-Glow offers all its HVAC/R coil coatings in aerosol cans as well as the new Contractor Canister Coating System. These products are available through Bronz-Glow direct, or through your local / regional HVAC/R supply houses. However, when requesting Bronz-Glow's Husky Coil Coat in aerosol cans or the new canister packaging system, coil tag numbers for the equipment must be provided in advance. Bronz-Glow tags each and every coil we coat. Do not remove these tags.



Do not take the coil cleaning task lightly; it is one of the most singularly important preventative maintenance functions for a long lasting and energy efficient unit.

SELECTING THE PROPER COIL CLEANER

Selecting a proper coil cleaner may seem a bit confusing, but with a few basic considerations it's not. The first consideration should be in selecting a brand of coil cleaner that is user and environmentally friendly and one that will effectively clean coils without damaging the coils metallurgy or if coated, the coating. The first two questions to address are: Is the coil new or used and is the coil coated or uncoated? Next, determine the type of environment the coil is operating in. Is it a coastal environment containing salt air (alkaline) or an industrial environment that generally consists of a variety of acidic elements? Often an operating environment will consist of both alkaline and acidic conditions. Examples are a coastally located wastewater treatment plants or an offshore oil rig. The correct analysis of these questions will indicate the correct type of cleaner(s) to use.

TYPES OF COILS

New coil: The surface of a brand new uncoated coil is generally covered in a fine layer of oil from the stamping process used in coil manufacturing. Unless removed prior to putting the unit in operation this oily residue will attract and hold particulate throughout the coil face area including every fin/tube interface. These oils can also contribute to formicary corrosion on indoor evaporator coils. Oils on coils can negatively affect heat transfer at the very beginning of the units operation. **Use Husky Coil Guard, our neutral surfactant cleaning product** to remove petroleum base materials from a new coil. It also removes stubborn dirt and debris from normal everyday operations.

Used coils, coated coils, and un-coated coils: Cleaner selection for these types of coils is generally based on environmental operating conditions.

TYPES OF ENVIRONMENTS

Acidic Environments: Common corrosion causing elements are: Acid Rain, Nitric Acid, Sulfuric Acid, Citric Acid, Hydrogen Sulfide, Chlorine, Methane Gas, Hydrocarbons, Potassium Chloride, Hydrogen Chloride, Formic Acid, etc. **Use Husky Coil Guard** Bronz-Glow's neutral base surfactant cleaner to neutralizing elements found in an acidic environment.

Alkaline Environments: Common corrosion causing elements are: Salt Air, Salt Water, Uric Acid, Ammonia, etc. **Use Husky Coil Sheen our acidic cleaner** for neutralizing elements found in an alkaline environment.

Combined Acidic & Alkaline Environments: When an environment contains both acidic and alkaline elements we recommend cleaning the coil(s) first with **Husky Coil Guard** followed by an application of our **Husky Coil Sheen**. This process will neutralize both acidic and alkaline contaminants of the operating environment. In essence, an alkaline cleaning solution will neutralize the chemical properties of acids and an acidic cleaning solution will neutralize the chemical properties of alkali.



RECOMMENDED COIL CLEANING PROCEDURES

1. Turn off electrical power to the unit at the breaker box and lock off to ensure safety for personnel.
2. Where necessary, motors and sensitive electrical equipment or panels not normally open to the atmosphere are to be protected from water chemical spray by being wrapped in plastic prior to cleaning.
3. Remove fan guards and side panel openings to the condenser and/or evaporator sections to allow for cleaning the coil(s) from both sides of the coil
4. Use a pressure washer set at 35-50psi, a hand held 2-3 gallon pump-up pressurized sprayer, or a fertilizer type applicator placed on the end of a garden hose.
5. Water rinse the coil(s) from bottom to top on both sides to remove heavy deposits from the coil(s) surface prior to cleaning. Be sure to use fresh water.
 - a. Following the water rinse, spray both sides of the coil(s) from the bottom to the top with the selected **Husky Coil Cleaner**. You will notice its foaming action on the vertical sides of the coil. Let the cleaning solution soak 3-5 minutes depending on temperature and drying time. If the outside temperature is hot and the coil cleaner dries too quickly, apply a second time to assure saturation of the soils.
6. After soaking the coil(s) with coil cleaner, use fresh water to rinse the coil from the bottom to the top to flush any remaining loosened soils, dirt and deposits.
7. If the coil is a **Bronz-Glow coated coil**, inspect the coating for signs of damage, abrasion or any other type of deterioration. Check fin edges for abrasion from windblown salt and sand. Look at the fin sides for signs of loose coating from fin edge abrasion. Check the interior arch of "U" bends and braze joints for abrasion or deterioration of coating. Braze or solder joints have a high potential for corrosive attack due to dissimilar metals. If coating touch-up is needed, use **Bronz-Glow's Aerosol Maintenance Kit**, following all instructions for coating repair. Be sure to contact your Bronz-Glow Representative if you have any questions or need for assistance.
8. Prior to returning the unit back to service, be sure to remove any plastic wrap or covers used to protect sensitive parts from the moisture and chemicals of the coil cleaning process. Replace all coil guards, panels or other accessories removed for the cleaning process. Make one last check for any loose items or tools prior to restoring power. Earlier in this maintenance manual we compared a coil coating to the painted finish of an automobile. An air conditioner coil can be compared to the skin of our body. They're both heat exchangers. Thankfully, people bathe frequently which of course aids greatly in controlling body odor, but there are even greater personal benefits. The regular bathing process is effective in cleaning skin pores. When we become overheated, our clean pores allow perspiration to exit our body, which is a great assistance in keeping our body from overheating and damaging internal organs. An a/c coil works in the exact same manner. A scheduled maintenance program including coil cleaning is well worth its time and money.

Evap-Zap for Evaporator Coils.

Evap-Zap is a Bronz-Glow aerosol packaged evaporator coil cleaner. This product is available in a small aerosol can (6.5 oz), which makes it easy to use on standard residential evaporator coils as well as on hotel motel type units. Evap-Zap is self rinsing (with condensate) so it's easy for facility management personnel, homeowners and others to clean coils. Evap-Zap comes with a 6" spray line, which allows the person cleaning coils to get inside coil surfaces. By spraying inside the coil face, it helps push dirt out of the coil so it can flow freely into the drain pan. Evap-Zap in aerosol form is most desirable over other types of cleaning agents due to its foaming capacity and ability to self rinse.



Learn more about Bronz-Glow by visiting our website at <http://Bronz-Glow.com>

Ask about Bronz-Glow's

- Husky Green Fin Coil protector
- Sea Coast
- Component Coat
- SPC
- Evap-Zap
- Husky Coil Guard
- Husky Coil Sheen
- Contractor Canister Coating System

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Maintenance Kits

Bronz-Glow offers all its HVAC/R coil coatings in aerosol cans as well as the new Contractor Canister Coating System. These products are available through Bronz-Glow direct, or through your local / regional HVAC/R supply houses. When requesting Bronz-Glow's Husky Brand Coatings for maintenance in either aerosol cans or the new canister packaging system, coil tag numbers for the equipment must be provided in advance. Bronz-Glow tags each and every coil we coat. Please Do Not Remove these tags.



Safety First: Rules for safe application

- Read labels thoroughly before using.
- Contents under pressure and extremely flammable.
- Do not smoke while spraying. Do not spray near open flame or in enclosed areas.
 - Do not puncture or incinerate container.
 - Do not expose to high heat or store at temperatures over 120 degrees F.
 - Use in well ventilated areas.
- Avoid contact with eyes, mucous membranes and prolonged contact with skin.
 - Avoid breathing vapors.
 - Avoid spraying into eyes or directly onto skin.
 - Harmful or fatal if swallowed.
 - Industrial strength Product.
 - Keep out of the Reach of Children.

Cleaning Instructions

All surfaces that require coating should be clean and free of all dirt and oil residue. If needed, clean the equipment prior to coating or touch-up. We recommend Husky Coil Guard or other Husky Brand Coil Cleaners.

Repairing Damaged Coated Areas

Using a soft rag, dip it into a toluene based reducer or paint thinner. Rub the damaged area with the rag to smooth out tears or scratches. Then follow priming and coating instructions. New Coating will molecularly bond with the existing coating to form a tight seal.

Priming Instructions

Shake the can of Green Fin Primer for 2-3 minutes to thoroughly mix the contents prior to application. Begin spraying the coil from bottom to top in a vertical motion. Make sure you spray both sides of smaller pieces. Let dry to the touch. Next starting at the bottom of the equipment, spray from top to bottom in a right to left motion. Be sure to spray both sides if possible to assure complete coverage prior to going to next step. Let dry to the touch (about 5-10 minutes)

Coating Instructions

Shake the can of SPC for 2-3 minutes to thoroughly mix the contents prior to application. Hold the can 4-6 inches from the surface being coated. Begin coating the equipment by making vertical passes from top to bottom. Several light coats are better than one heavy coat. Let dry to touch between coats. Light coats dry more rapidly and have better adhesion. Be sure to coat all areas completely and equally. This product actually reseals the repaired area and will form a new and complete bond.

Maintenance in Industrial settings

It is highly recommended that industrial and commercial HVAC/R systems be cleaned a minimum of four (4) to six (6) times per year. Frequent cleaning will help preserve the operating efficiency of your system.

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