



Air Conditioner Owner's Manual

INSTRUCTIONS FOR MODELS 1.5 to 10 ton

Your **Freus™** refrigerated air conditioner is the product of many years of experience and research. The effort invested in developing your new cooling equipment was the result of a genuine concern for our environment and a commitment to reducing energy consumption. Your added bonus is a unit requiring a minimum in service and maintenance while saving energy dollars at the same time.

WHAT THIS MANUAL COVERS

This manual explains the scheduled maintenance of a **Freus™** refrigeration

unit only. This unit is typically installed as part of a complete system that includes the following: indoor evaporator coil, furnace/air handling assembly, refrigeration lines, and thermostat controls.

YOU WILL ALSO NEED

The instructions from the manufacturer of your air handling unit (furnace), your evaporator coil, and thermostat controls.

READ AND SAVE THIS MANUAL

It has important safety and maintenance instructions. Record your model and serial numbers for future reference.

TO BE FILLED OUT AT TIME OF INSTALLATION BY INSTALLER

Freus™ Cabinet

Mod.# _____

Ser.# _____

Indoor Evaporator Coil

Mod.# _____

Ser.# _____

Manufacturer: _____

Indoor furnace on air handler

Mod.# _____

Ser.# _____

Manufacturer: _____

SAFETY CONSIDERATIONS

Signal Words: **WARNING** or **DANGER** denote safety alerts regarding hazards that *will* result in severe injury or death, **CAUTION** denotes alerts to unsafe practices that *can* result in minor personal injury or equipment damage or required procedures for proper equipment performance, **NOTE** denotes *possible* injury, equipment damaging practices, or tips for better and more efficient installation.

Installation and servicing of cooling equipment can be hazardous due to electrical components, moving fan blades, presence of water, etc. Only trained and qualified personnel should install, repair or service refrigeration sections. Use only factory authorized replacement parts and accessories when servicing this equipment.

Owners may perform basic maintenance including: cleaning, rinsing the intake screen, pump intake and sump area, float adjustments, winter closed down, draining, and spring startup. Other operations should be performed by trained service personnel. When working on cooling equipment, observe warnings in the literature, tags and labels attached to the equipment, and any other safety precautions that apply. Follow all safety codes. Wear safety glasses and work gloves when servicing the equipment.

REFRIGERANT HANDLING

The United States Environmental Protection Agency (EPA) has issued various regulations regarding the introduction and disposal of refrigerant including that used in this unit. Failure to follow these regulations can result in harm to our environment and the imposition of substantial fines and other penalties. Because these regulations may be updated periodically, we strongly recommend that only certified refrigeration mechanics service the refrigeration components of this unit. You may contact your local EPA office directly for more information.

WATER TREATMENT

Chemical water treatment may not be needed. The chlorine and other treatments added to city water are frequently adequate biocide treatments for residential applications. The flush pump is provided to control mineral deposits. The increased city water intake caused by the flush pump brings in additional biocides from the city water. The water pan is shaded by the intake assembly to restrict the growth of algae.

If chemical water treatment is used, the **Freus™** warranty will not be affected by any chemicals approved by the Cooling Tower Institute for use on evaporative condensers with copper tubes. Check local codes and water authorities for permissible disposal of chemical water treatments. Note: the flush line may have to be appropriately rerouted.



Standard Freus Cleaning

Mineral deposits are automatically controlled by Freus' self-cleaning systems and routine annual maintenance. If the flush system fails excessive minerals can build up and a more stringent cleaning may be required, if so please see cleaning "Excessive Mineral Deposits". Please note that some scale on the copper coils is desirable because it increases the surface "wetting" and improves performance. Following is a step by step procedure for normal sump cleaning.



Disconnect All Electricity Before Servicing Remove the screened intake louver
To avoid Electricity DANGER Of Serious Injury or Death



Disconnect Pump Bracket

No need to remove pump's wiring connection; only move pump to one side.



Remove pump & clean screen.



Remove water drain cap.



If desired, use a standard water hose to drain water to another location.



clean sump with a rag wearing gloves & eye guards.



Rinse sump with Hose Reinstall Pump.



set water to 4 "deep then close unit up.

Flush Pump will automatically change out water after approximately 8 hours run time.

Regular maintenance and/or service is the key to long trouble-free performance from your *Freus*TM unit. The following schedule will help you maintain an efficient unit with good appearance. Adhering to the suggested scheduled replacement of components at the start of the season will reduce in-season maintenance requirements.

SEASONAL CLOSE-UP

1. Turn off and/ or disconnect electricity.
Warning: There may be multiple disconnects and all disconnects must be turned off!
2. Remove the drain cap & check anode.
3. Turn off and drain the water supply line.
4. Thoroughly rinse off the interior with a water hose to remove loose minerals that may be in the cabinet.

SEASONAL START-UP INSPECTION

Check the following and adjust, clean or replace as needed.

1. Rinse out the base to remove debris and minerals.
2. Check that drain cap is firmly seated and not leaking. Check Anode & replace if needed. Add Polyphosphate treatment.
3. Check water level (should be 3 1/2" -4" deep) and make sure the *Freus*TM unit is mounted level.
4. Turn on and/or connect electricity.
5. Check that the flush pump works and shuts off, if not install a replacement flush pump (also check anti siphon).
6. Turn thermostat lower to turn on unit and note that the fan, pump, and compressor all come on within a few minutes, if not call for professional service.

EXCESSIVE SCALE BUILD UP (MAY INDICATE FLUSH PUMP FAILURE) - See step by Step procedures.

! WARNING!

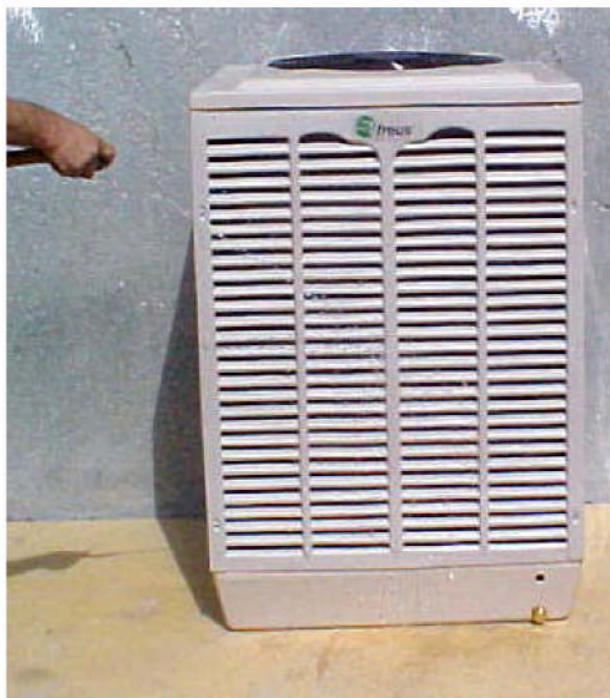
*Turn off all power before working on *Freus*TM condenser, or electrical outlets. There may be more than one disconnect. When you put your hands in the unit you run the risk of injury if the unit is accidentally turned on from inside the house.*

Never wear slick soled shoes when working on a roof. You may slip when you least expect it.

Gloves and safety glasses are required when working on this equipment.

| Periodic service or maintenance | | |
|---|--|---|
| Service needs | Semi Annual "Startup" | Semi Annual "Close-up" |
| Rinse off face of <i>Freus</i> TM louver screen | X | X |
| Clean pumps/ intake screens | X | X |
| Rinse out base | X (Add Polyphosphate Bag) | X |
| Check/ Replace Anode | X | X |
| Indoor Furnace / Air Handler; Filter | X | X |
| Standard Maintenance Replacement Schedule for Parts* | | |
| Every 5 years | Every 10 years | Every 20 years |
| Supply Pump & Hose Flush Pump & Hose Float Valve** Drain Gasket** Anodes** ** Maintenance/NonWarranty | Timers/Contactors/Capacitors Condenser Fan Motors/ Grilles/Blades Inlet Louver Nozzle System | Compressor / Filter Dryer Pressure Switches Copper Condenser Coil Drift Eliminator/ Fill |
| Check major components every 3 years. Check refrigerant charge every 3 years. | | |
| *NOTE: Failure to replace parts on schedule will result in component failure during the cooling season. Failure to replace parts in accordance with the standard maintenance schedule will not create a warrantable repair, and warranty coverage will be denied. Replace parts within the time frame shown above for Warranty coverage. EXPECTED CABINET LIFE IS OVER 30 YEARS | | |
| Fiberglass components have demonstrated a service life well beyond 30 years in Coast Guard patrol boats. Accelerated weatherometer tests on fiberglass samples in excess have indicated a service life of 30 years. Fiberglass evaporative cooler nearly 30 cabinets have been in service years with no apparent loss of strength. | | |
| <i>Freus</i> TM Fiberglass components carry a 15 year limited warranty. See complete <i>Freus</i> TM limited warranty. | | |

Disconnect All Power then RINSE LOUVER & SCREEN



| TROUBLE SHOOTING CHART | | |
|---|---|--|
| SYMPTOM | POSSIBLE CAUSES | POSSIBLE REMEDY |
| Unit fails to start or perform. | <ol style="list-style-type: none"> 1. Thermostat setting 2. No electrical power to unit. 3. Fuse blown. 4. Circuit breaker tripped. 5. Faulty wiring or shorts. 6. High Limit Switch 7. Condenser fan cord disconnected or damaged. | <ol style="list-style-type: none"> 1. Check thermostat. 2. Check power. 3. Replace fuse. 4. Reset breaker. 5. Call electrician 6. Call Air Conditioning service technician. 7. Call Air Conditioning service technician |
| Inadequate cooling.* Caused by Insufficient water flow | <ol style="list-style-type: none"> 1. Water pump intake screen is clogged. 2. Water level too low (operating below 3-1/2"). 3. Pump impeller clogged 4. Loose connection in water system. 5. Wrong Replacement Pump (too small). 6. Distribution nozzles clogged. | <ol style="list-style-type: none"> 1. Clean/ Replace pump intake screen & Clean Sump. 2. Adjust/ Replace float. 3. Clean debris from impeller & Replace pump screen 4. Check for leaks, tighten as needed. 5. Install new Freus pump (must be thermal protected) 6. Clean Nozzles |
| Inadequate cooling.* - Insufficient air | <ol style="list-style-type: none"> 1. Intake Louver Screen clogged 2. Inadequate condenser exhaust 3. Condenser Fan Motor underperforming. | <ol style="list-style-type: none"> 1. Clean Intake Screen 2. Clear debris from condenser's exhaust fan. 3. Check required motor rpm and replace motor. |
| Water draining from Freus™ cabinet. | <ol style="list-style-type: none"> 1. Water level too high 2. Drain Cap loose or worn 3. Flush system siphoning 4. Cabinet not level. | <ol style="list-style-type: none"> 1. Adjust Float setting/ Replace Float. 2. Tighten or replace drain cap. 3. Check anti syphon plug/ tap line outlet above water 4. Level unit with shims or adjust / replace mounting pad. (Note: shims must be minimum 2" W x 3" L) |
| Excessive Scale Build Up (see Freus Bulletin on Cleaning Excessive Mineral Build Up) | <ol style="list-style-type: none"> 1. Flush Intake Screen clogged 2. Low flush-off water volume. 3. Flush pump failure. 4. Excessive Minerals in make up water. 5. Make Up water from Water Softener 6. Anode is used up 7. Chemical Treatment Needed | <ol style="list-style-type: none"> 1. Clean/ Replace flush intake screen & clean sump 2. Clean/ Replace flush pump and Clean/Replace hose 3. Test/ Replace flush pump as needed. 4. Add magnetic Water Treatment. 5. Move Make Up Connection to non-softened water. 6. Replace Anode (be sure cabinet is well grounded). 7. Install or replace Polyphosphate treatment. |
| Musty or unpleasant odor. | <ol style="list-style-type: none"> 1. Stale or stagnant water in reservoir. | <ol style="list-style-type: none"> 1. Drain, flush and clean reservoir. Check flush pump flow. Install or replace Polyphosphate treatment. |
| Water spray out top of unit | <ol style="list-style-type: none"> 1. Soap in water basin | <ol style="list-style-type: none"> 1. Flush or rinse out base until soap residue is removed. |
| <p>NOTES:</p> <p>*Inadequate cooling listed above refers only to the <i>Freus</i>™ portion of the complete system. If cooling does not improve after checking the above listed items, consult the literature provided for your evaporator coil system and furnace/ air handler.</p> | | |

LIMITED WARRANTY

Commercial and all seacoast Freus applications are limited to five (5) years on all parts. All warranties are from proof of installation date or one year after manufacture date if installation date is unavailable. Repair or replacement under this warranty does not extend any warranty time from the original date.

All components carry a five (5) year warranty. Proof of purchase is required on all warranties. Any additional service or installation is between dealer and purchaser and not the responsibility of the manufacturer. No labor is paid by Freus after 31 days from installation. *Freus*™ does not pay freight from the nearest distributor, the cost of a service call at the site of installation to diagnose cause of trouble, the cost of labor to install or remove a part (after 31 days), or mileage to or from the site. For nonseacoast residential applications,

© March 2007 if the warranty is registered within 10 days of installation there is a 5 year bonus warranty on the copper condenser coil and compressor for a total of up to ten (10) years on those parts, provided the

annual service/ maintenance is performed and logged into the Freus Maintenance Website. Cleaning sump is required twice annually & anode replacement is required before anode is 80% consumed. Anode must be turned in with any claim for a coil warranty. If within fifteen (15) years from installation any fiberglass part of the *Freus*™ cabinet should prove defective and non-serviceable in materials or workmanship, the part will be replaced or repaired at factory option.

Maintenance such as float replacement or adjustment, filter/ screen cleaning or replacement, anode replacement, polyphosphate treatment and standard part replacement, are never warrantable. **Failure to replace maintenance parts in accordance with the standard maintenance schedule will not create a warrantable repair under a 10 year parts and labor or any other warranty, and coverage will be denied on parts past the scheduled replacement date.**

This warranty is in lieu of any other expressed or implied warranty and all other obligations on the part of *Freus*™. *Freus*™ does not authorize any other Person or entity to extend or alter any portion of this warranty

in connection with the products. Third party 10 year all parts & labor warranty may be separately purchased (make claim with that third party warranty provider, if any).

This Freus warranty gives you specific legal rights and you may have other rights which vary from state to state.

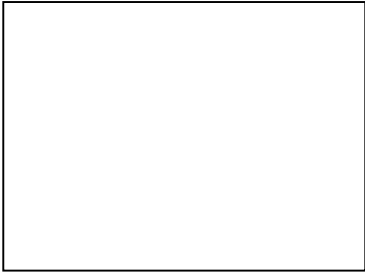
Manufacturer's Mailing Address:

RR & P, LLC

1305 Gardner

Anthony, NM 88021

www.Freus.com Fax (575)993-5394



Place staple or tape here



Warranty Registration Department Fax (575) 993 5394
1305 Gardner, Anthony, NM 88021

Fold Here Second

Fold Here First

Install Date ____/____/

Homeowner's Name _____

Homeowner's Address _____

Homeowner's Telephone # (____) _____ - **Freus Model #** _____

Freus Serial # _____ **Furnace/Air Handler Model #** _____

Coil Manufacturer _____ **Coil Model #** _____

Install Contractor Name _____

Address _____

Contractor Telephone # (____) _____ -