

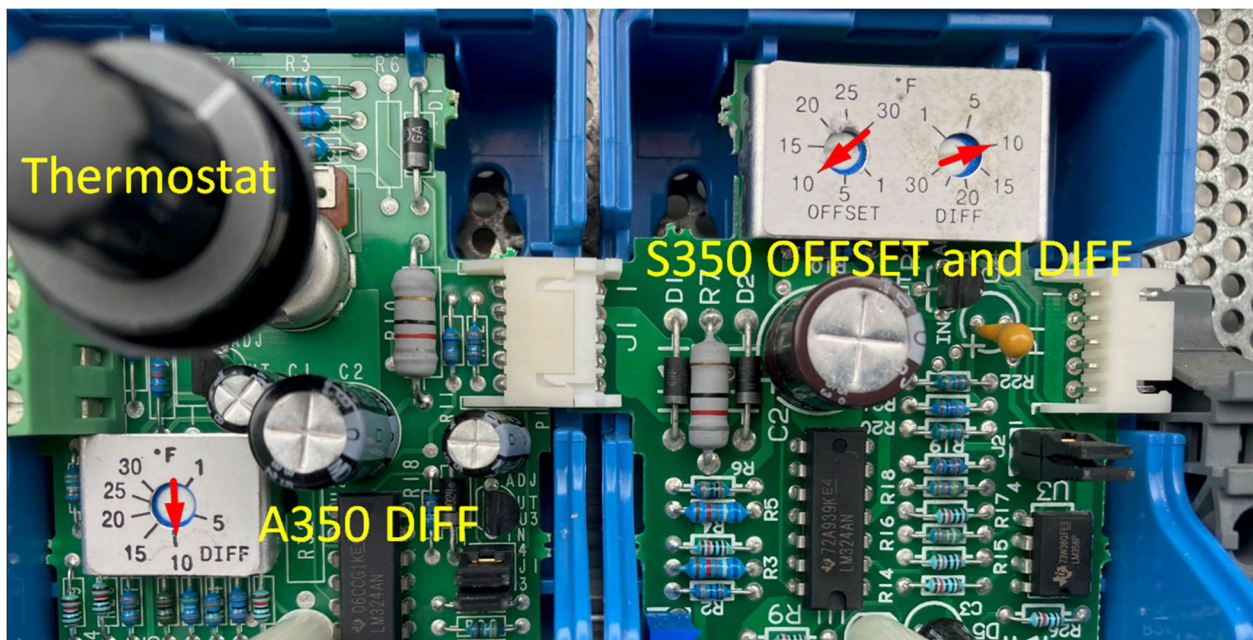
Parallax Heat Exchangers Maintenance (Drycoolers AVR-25)

The purpose of this Service Bulletin is to help customers ensure that the heat exchangers for their Parallax transmitters are set up in accordance with the manufacturer's recommendations and are also being routinely maintained to keep them functioning in an optimal manner.

Equipment located outdoors requires maintenance to remain in optimal operating condition. Heat exchangers are no exception. They are subject to seasonal changes and outdoor elements. Fan motors are cycled many times and cause vibrations through the entire unit. Coils can be blocked by dirt, debris, and insects. Electrical connections can loosen.

To prolong the life of the Heat Exchangers, and prevent premature failure of fan motors and motor mounts, Comark strongly recommends the following steps to address the issue:

1. With the unit properly locked out, access the control panel and adjust controller settings to reduce fan cycling start/stop frequency as follows:
 - a. Set thermostat to the highest local average ambient temperature.
 - b. Remove the covers from the A350 controller and S350 adder stage.
 - i. Adjust the internal setting on the A350 controller to Diff=10 position.
 - ii. Adjust the internal setting on the S350 adder stage to Offset=10, Diff=10.



2. Controller settings can be further adjusted to achieve desired cycle rates of <7 starts per hour for each fan. The fan closest to the front of the heat exchanger should be cycling On and Off first with the second fan only coming On when coolant temperature at the heat exchanger outlet is 12-15 degrees hotter than the thermostat set point inside the heat exchanger.
3. Consult with Comark for any performance issues generated by this change.
4. Review electrical terminations for loose connections. This should be completed on an annual basis.
5. The following is the recommended maintenance and cleaning procedure. Site conditions and location will dictate the frequency of this maintenance plan.
 - a. Shut off all power to the heat exchanger and pumping system at the closest disconnect switch and use a lock to prevent others from turning power back on to the unit.
 - b. Remove the fan guards.
 - c. Remove all large debris (leaves, paper, cardboard, plastic film, etc.) from both the top as well as beneath the unit. Keep the area clean around the cooler by removing loose debris around the heat exchanger.
 - d. Inspect the unit for damaged fins caused by the debris. Comb out any bent fins with a fin comb. Inspect the unit for signs of corrosion. Note the area and amount of corrosion in your maintenance reports.
 - e. Clean the heat transfer surface using a detergent type cleaning solution such as Cal-Clean 4135 (which can be diluted with up to 10 parts water). The cleaning solution must be compatible with the finned material and protective coating. Under no circumstances should the unit be cleaned with an acid based cleaner. Follow the cleaning instructions exactly as described by the manufacturer of the cleaning agent. It is extremely important that a proper rinse be applied to the core once the cleaning process is completed. Use a hose with a spray wand and rinse from the top of the unit

only. Do not rinse from the underside as this will not properly flush the cleaning agent from the core. Any residue of cleaner left for any extended period will begin to corrode the heat transfer surface.

f. Inspect all fan, motor, and shroud fasteners for tightness before reinstalling the fan guards.

g. Turn power back on to the system.

For inland installations (30 miles from any body of salt water): Visually inspect the heat transfer surface and unit once every 6 months. Clean the heat transfer surface should it show signs of significant dirt accumulation.

The recommended minimum cleaning cycle is once every 12 months.

For sea coast installations (up to 30 miles from any body of salt water): Schedule visual inspections of the heat transfer surface and unit once every 3 months. Clean the heat transfer surface thoroughly every 3 to 6 months with water to remove accumulated layers of salt.

Every 12 months clean the heat transfer surface with an approved cleaning solution.

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