

## Operation & Maintenance

For R, RF, R2F, R3F, RV, RC, UFLT and ThermoTouch

### Hydronic Radiator Operation

1. Radiators are manufactured in the USA of cold rolled low carbon steel and should be used only in closed closed hydronic systems to assure no corrosion of any system components.
2. Proper radiator operation depends on adequate flow of water to the panel, which can only be accomplished when all the system air has been fully vented from the panels.
3. Radiators should each be vented, with the system pressurized but in a static state (pumps off). Venting may need to be done periodically to assure a closed system.
4. **DO NOT OVER-PRESSURIZE RADIATORS:**  
Most radiators are standard pressure construction. Standard pressure radiators should be tested with **NO MORE THAN 50 PSI.**
5. Radiator Operating Pressure Ratings:  
**Standard Pressure - 56 psi max (Tested at 74 psi)**  
Medium Pressure - 85 psi max (Tested at 110 psi)  
High Pressure - 128 psi max (Tested at 184 psi)
6. Radiators expand a maximum of 0.016 inch per linear foot of length if heated to 215°F. Piping attached to the radiator must provide the necessary expansion compensation.
7. Flexible piping and elbowed piping are two simple ways to provide the 1/8 inch to 1/2 inch (typical) of flexibility required in expansion situations (usually series piping).
8. Runtal Radiators require less flow rate than other hydronic heating products. If flow noise is apparent, balance the system until the noise is reduced.
9. For a delta T of 20°F. (T supply minus T return), divide the total Btu/hr capacity of the loop by 10,000. This gives the Flow Rate in gallons per minute (GPM)
10. Many levels of control are available today for hydronic systems. Runtal Radiators will provide nice, even heating whether operated by a simple thermostat to baseboard loop system, or an advanced boiler reset controller with motorized mixing valves, constant circulation and 2-pipe distribution.

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### Radiator Maintenance

1. Hydronic system maintenance should include routine checks for piping leaks (usually indicated by frequent makeup water), and a yearly diagnosis of the system water pH to evaluate its corrosive potential.
2. Internal radiator maintenance depends entirely on the system water makeup and proper venting. Hydronic system additives are available to passivate and protect against freezing. These additives will not significantly reduce the output of Runtal Radiators.
3. External radiator maintenance consists of keeping the surfaces clean, and any paint nicks or deep scratches painted with touch-up to prevent any surface rust.
4. Radiators can be painted after sanding with fine grit paper to dull the high gloss and by wiping with solvent or a tack rag. Use only oil-based enamel paint (alkyd, acrylic, urethane, epoxy) – do not use latex or lacquer paint. Use urethane or epoxy enamel for

radiators located in harsh environments. Spray the paint to achieve an even coating, and let dry completely before heating the radiator.