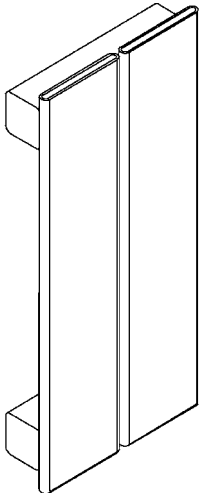


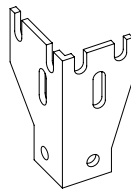
Installation Instructions:

1. Radiators are boxed together in as few crates as possible. A box of brackets is included as a separate piece, and it is marked to denote brackets. Inside the crates, each panel is wrapped in foam sheeting. Saving this foam to re-wrap the panel once it is wall mounted will protect it from construction site damage.
2. Each radiator is tagged with a label that indicates the project name, model type, color, connection code, bracket type & quantity and tag number. Locate each radiator as required.

3. **Vertically Mounted PRV Radiators:** Carefully place each radiator face down on a smooth level surface (i.e. floor or table). Distribute the ANG BKT wall brackets for each radiator. The tag on the radiator indicates the quantity of brackets. Mount the brackets securely on wall studs or solid backing, spacing them to match the horizontal wall mounting bars on the back side of the PRV panel. There will be two ANG BKT brackets per horizontal mounting bar. Allow a minimum of 3" below each panel radiator to facilitate cleaning and to assure proper output.



Model PRV

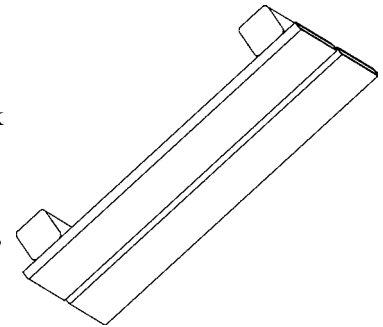


ANG BKT

4. **Ceiling Mounted PRC Radiators:** PRC model ceiling radiators do not come with any mounting brackets. Typically, installers use threaded rod with locking nuts to secure the panel to the ceiling structure. There are two mounting holes per cross-member stiffener on the back side of the radiator. Each of these mounting points should be used to suspend the radiator, to avoid sagging. It is typically easier to attach the threaded rods to the radiator before raising the assembly to the ceiling for final mounting. Once the radiator is securely fastened to the ceiling structure, adjust the nuts on the threaded rod to straighten and level the radiator. It is recommended to have at least 3" minimum from the face

of the radiator to the finished ceiling above it. In cases where upward radiation from the back side of the radiator is undesirable, foil faced insulation can be used.

5. For both styles, remove the radiator from the wall and thread the supply and return fittings into the connections on the radiator. The sealing tape or pipe dope used is the installer's choice – make sure the connections are leak tight. One quarter of a turn past hand tight is usually sufficient. Each radiator needs to be fitted with a 1/8" air vent prior to startup.



Model PRC

6. Once the radiators are installed, the system can be tested to 50 psi. **DO NOT OVER-PRESSURIZE THE RADIATORS** as permanent damage may be done.

Standard Pressure Panels – Maximum 56 psi
Medium Pressure Panels – Maximum 85 psi
High Pressure Panels – Maximum 128 psi

7. 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.
8. When the system has been shown to hold 50 psi maximum air, the piping and radiators can be filled with water. As water fills the system and radiators, air is forced to the vent fittings. Vent as much air as possible before turning on the circulating pump(s).
9. When the system is filled, operate the circulating pump(s) to force the remaining air to the high points of the system. Turn off the circulating pump(s) to vent the panels. Each radiator should be individually bled of air. Once cold venting has been completed, heat the system to design temperature and repeat the venting procedure as many times as necessary to remove all air from the system.

Operation & Maintenance:

Radiator Operation

1. Radiators are manufactured in the USA of cold rolled low carbon steel and should be used only in 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. Flexible piping and elbowed piping are two simple ways to provide the 1/8" to 1/2" (typical) of flexibility required in expansion situations (usually series piping).
5. Rittling Radiators require less flow rate than other hydronic heating products. If flow noise is apparent, balance the system until the noise is reduced.
6. 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).
7. Many levels of control are available today for hydronic systems. Rittling 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 two-pipe distribution.

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 Rittling 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 repainted 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.

WARRANTY

Hydro-Air Components, Inc., manufacturer of the Rittling product line, guarantees their products to be free from defects in material and workmanship for a period of one year from date of shipment from our Buffalo, New York factory.

Should there be any defects in the good(s), the purchaser should promptly notify Hydro-Air Components, Inc. and upon receipt of written consent from Hydro-Air Components, Inc., the purchaser shall return the defective good(s) to the factory for inspection with freight prepaid. If inspection shows the goods to be defective, Hydro-Air Components, Inc. will at its discretion repair or replace the said item(s).

Defects arising from damage due to shipment, improper installation, negligence or misuse by others are not covered by this warranty.

This warranty is extended only to the original purchaser from Hydro-Air Components, Inc.



100 Rittling Blvd. • Buffalo, NY 14220
Phone: 716-827-6510 • Fax: 716-827-6523
Toll-Free: 800-FIN-TUBE (800-346-8823)
E-mail: sales@rittling.com • www.Rittling.com