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Product Claims

The Neo-Gravity Delta-T ECM Hydronic Heating Appliance™
U.S. Patent 10,690,356, Canada 2,964,131

A Modular, Designed-For-Manufacture, Application-Specific Hydronic Heating Appliance comprising over 95% installation content of a typical replacement/install.
Biomimicry inspired re-introduction of natural (gravity) hydronic convection to area heating, dramatically reducing hydronic distribution energy while providing extended heating under selective fail conditions.
Optional integrated, prioritized DHW Generation via a close-coupled Indirect Water Heater for optimal energy management while furthering extended heating attributes.
Process-optimized packaging using Premium American Components provide the Best Cost-Performance Package in the industry, bar none!
Very high-mass, lowered ΔT system temperature operation for superlative fuel economy.
Our Appliance installs in hours vs. days using lesser skilled personnel while providing optimal performance. "The Appliance Advantage."

Claims:

1. **America's first fully patented, process-optimized, free-standing Delta-T ECM Distribution based Hydronic Heating/Domestic Hot Water (DHW) Appliance.**
2. **Proprietary near-boiler piping configuration optimizes natural (gravity) hydronic convection while providing DHW prioritization and fail-safe mode operation.**
3. **Superlative performance by aggregating Boiler AFUE with Delta-T ECM Hydronic Distribution's effect upon radiation profiling efficiencies.**
4. **A very high-mass boiler under ΔT Distribution Management significantly lowers system operating temperatures per "The 3°F=1% Efficiency Rule", thereby further reducing "stand-by" losses and increasing system thermal efficiency.**
5. **High-mass cast-iron and steel pipe construction predefines extreme durability with a projected 40 year plus service life. NO COPPER COMPONENTS USED!**
6. **Necessarily compacted near-boiler piping and distribution components are fully contained above and within the boiler footprint plus 3" to the rear (6.15 Sq. Ft.).**

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7. **All service elements are accessed from the front only. The boiler manufacturer further allows near zero clearance on the adjacent sides.**
8. **Appliance services using our specified Standard American Trade Components by reasonably competent personnel using common equipment.**
9. **Appliance advanced design feature of "Zone Purge Free Service" of all boiler elements. Designed by a serviceman for servicemen.**
10. **Full Fuel Oil, Natural Gas and Propane Fuel interchangeability. Merely change the fuel burner and not the system!**
11. **Direct Venting Option available (no chimney) by utilizing Pressure-Fired Burners.**
12. **No Magnetite Alleviation Systems required with this commercial-rated cast-iron, natural scavenging, very high mass Weil-McLain UO Series Boilers.**
13. **Similarly, no Return Water Tempering required when operating under Taco VT2218 Delta-T ECM and Hydrolevel 3250-Plus Distribution management.**
14. **Our patented Compact Steel Hydronic Header negates the need for any Circulator or Zone Valve Relays. The integral Taco Zone Sentry Valve logic & lamp display is inherently more intelligent and visible as configured.**
15. **Appliance Performance and Economic Data:**
    a. **Appliance Cost: Typically $6,700 to $10,000, installed regionally (NH), subject to site location & conditions for a 100kbtuh application. This is typically 65 to 80% of a contemporary high-end and lesser performing application.**
    b. **Anticipated Appliance Economic Life: 40 years at minimum (per Weil-McLain). Twice or more that of any other low-mass or condensing heating "system".**
    c. **Fuel Consumption Performance: Usually a 20% minimum improvement and up to 50% when replacing an Immersion Coil DHW application.**
    d. **Distribution Power Consumption: 90% minimum reduction vs. a contemporary system. Typically uses 8 to 13 Watts, unless there is a severe zone imbalanced or deficient radiation condition. These can be readily identified for correction.**
    e. **Aggregate Efficiency Advantage: Our published W/M OU Boiler AFUE of 87% is augmented by a lowered average system operating temperature and circulation profiling provided by intelligent 3250-Plus Boiler Aquastat logic.**
    f. **Appliance Field Operation Data: Our multi-Beta Sites have accrued well over 60 installed years and 250,000 hours operation without a service incident.**
    g. **Recommended service intervals of three (3) years and a five (5) year maximum. Estimated pro-rated Annual Service Cost of $50 per year.**
16. **Utilizing our Appliance and Oil Fuel Co-Op Procurement Plan we are currently (April 2023) delivering heating energy at less than $23/MBTU to radiation. This is lower than ANY heating system or fuel, including distributed Natural Gas.**

Reference www.BoilersOnDemand.com

06/30/2023 P.D.M., Sr. (Edited 02/26/2024)