

Beebe River Ranch Renovation Utilizes Lodronic™ Unit Heaters

Dennis Healy, Project Manager | Feeney Brothers Utility Services
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The Beebe River Ranch, a private social club in Campton, New Hampshire, was undergoing an extensive renovation. The club consists of residential and entertainment facilities, including a snowmobile storage area that presented a significant challenge to heat as the bay doors were frequently opened on a daily basis during the winter. The space, a repurposed commercial storage building, offered additional challenges because of the need for insulation and requiring a reverse return piping arrangement for the unit heaters.

Jim Simas and Tim Eaton of Emerson Swan, Modine's representative for New England, designed a system to heat the club's residential accommodations as well as the storage center for the club's snowmobiles.

The system comprised two HTP ELX400 (400K BTU/hr) propane boilers, two 119-gallon storage tanks, under-floor radiant heat and panel radiators for the residence area and three Modine Lodronic™ Low-Temperature Hydronic Heaters (HCH) for the service and repair shop.

"The doors to the repair shop open and close quite a bit," Tim Eaton said. "We thought that if we went with standard hot water unit heaters, they would cycle longer in attempts to keep up with the thermostat's demands. Oversized units will have a lower temp rise due to higher CFMs."

"With the Lodronic™ units, we're running at 140-degree water, and it's more efficient because it provides more consistent, constant heat all the time."

The condensing boilers typically supply water to the heat exchangers at 140 °F, but the system includes an outdoor air temperature reset to supply water at 190°F for non-condensing operation when outdoor air temperatures are extremely low.

The system installation was carried out by Project Manager Dennis Healey of Feeney Brothers Utility Services, and the project became operational in January 2021. After a successful renovation project, the Lodronic™ HCH67 unit heaters are performing as intended, heating a busy space that is often open to frigid outside air, without short cycling and while providing consistent, constant heating. "They are doing great," Healey said. "They are excellent units. I am happy with them and would use them again."



Product Implemented

Lodronic™ HCH67

Results



Efficient Heating



High Temperature Output



Quiet Operation



Easy Installation

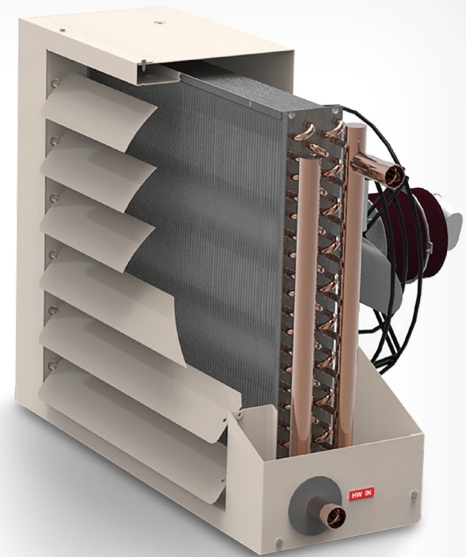


About Lodronic™ HCH67

Unlike other hydronic unit heaters on the market, the Lodronic™ low-temperature hot water unit heater was designed and engineered specifically for use with high-efficiency boilers. The typical, oversized, hydronic unit heater overworks the high-efficiency boiler system resulting in poor system performance and lower temperature output

Standard Features

- 50% less electric use
- 35% higher discharge temperature
- 30% smaller footprint
- 2.5 x quieter operation
- High-efficiency 4-row coil with low water pressure drop
- Smaller fan and motor for a lower system amp draw
- Lower entering hot water temperature



HORIZONTAL VS LODRONIC UNITS

| Previous Horizontal Unit Options | HC 63 | HC 108 | HC 165 | HC 290 | PT 500 | PT 610 |
|----------------------------------|--------------------|-------------------|-------------------|--------------------|--------------------|--------------------|
| Casting Size (H"xW"xD") | 20.4 x 21.5 x 8.75 | 24.4 x 25.5 x 9.5 | 30.5 x 30.5 x 9.3 | 38.5 x 38.5 x 12.5 | Ø43.3 x 29 | Ø51.5 x 29.6 |
| Weight (lbs) | 48 | 74 | 92 | 168 | 376 | 472 |
| Sound (dbA @ 10' from front) | 58.4 | 58.1 | 62.3 | 64 | - | 74.5 |
| Motor HP | 1/12 | 1/8 | 1/3 | 1/2 | 1-1/2 | 1-1/2 |
| Amp Draw @ 115V | 1.7 | 2.2 | 4.2 | 7 | 18 | 18 |
| GPM | 2.4 | 4.3 | 7 | 11.9 | 17.8 | 22.7 |
| WPD | 0.2 | 0.8 | 2.6 | 2 | 0.1 | 0.3 |
| Final Air Temp (°F) | 78 | 79 | 79 | 83 | 75 | 77 |
| Lodronic Options | HCH 22 | HCH 39 | HCH 67 | HCH 104 | HCH 170 | HCH 195 |
| Casing Size (H"xW"xD") | 14.5 x 20.2 x 8.4 | 18.5 x 24.5 x 8.4 | 22.5 x 29 x 9.7 | 26.5 x 33 x 9.7 | 34.5 x 39.5 x 11.2 | 34.5 x 45.5 x 11.2 |
| % Smaller | 36% | 36% | 27% | 54% | 64% | 71% |
| Weight (lbs) | 32 | 46 | 80 | 93 | 145 | 160 |
| % Lighter | 33% | 38% | 13% | 45% | 61% | 66% |
| Sound (dbA @ 10' from front) | 53.3 | 49.8 | 53.9 | 57.1 | 64.6 | 66.2 |
| Sound % compared to above unit | 180% | 260% | 260% | 221% | - | - |
| Motor HP | 1/15 | 1/15 | 1/6 | 1/6 | 1/3 | 1/3 |
| Amp Draw @ 115V | 0.6 | 0.6 | 2.5 | 2.5 | 4.2 | 4.2 |
| Watt Savings / Year | 126.5 | 184 | 195.5 | 517.5 | 1,587 | 1,587 |
| % Less Energy | 65% | 73% | 40% | 64% | 77% | 77% |
| Electrical Savings/Year* | \$32.89 | \$47.84 | \$50.83 | \$134.55 | \$412.62 | \$412.62 |
| GPM | 2.2 | 3.9 | 6.7 | 10.4 | 17 | 19.5 |
| GPM reduction | 0.2 | 0.4 | 0.3 | 1.5 | 0.8 | 3.2 |
| WPD | 4.9 | 1.5 | 2.6 | 4.8 | 7.4 | 10.4 |
| WPD Difference | -4.7 | -0.7 | 0 | -2.8 | -7.3 | -10.1 |
| Final Air Temp (°F) | 113 | 113 | 113 | 112 | 115 | 115 |
| Increase in Final Air Temp (°F) | 35 | 34 | 34 | 29 | 40 | 38 |

*Based on national average \$0.13 \$/kW/h and 2000 hours of heating runtime.
Sound comparison at 10' from unit front calculated using: <https://rechneronline.de/log-scale/decibel.php>



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