

THERMAL HEAT PUMP

Energy Concepts Company has scheduled the rollout of a new “standard design” Thermal Heat Pump. The initial production model will have a heating capacity of 175 kW (600,000 BTU/hour), and 70 kW chilling capacity (20 tons). It will be powered by 105 kW (360,000 BTU/hour) input heat and 2 kW electricity.

Thermal Heat Pumps (THP) are powered almost entirely by heat rather than by electricity. The THP is increasingly recognized as the environmentally preferred method of heat pumping. In comparison to electric heat pumps (EHP), the THP:

- Is not a “fuel-switching” technology like the EHP, i.e. consumes more electricity to conserve gas. Instead, the THP conserves both gas and electricity.
- Does not exacerbate peak electric demand in summer and winter. The THP reduces demand peaks.
- Waste heat, exhaust, or solar thermal heat can power the THP, thus further magnifying the savings.
- With paybacks averaging two or three years, the THP is one of the most promising routes to reduced energy bills and carbon footprints.

The new standard design is based upon seven prototypes and four field demonstrations in a variety of applications. It also incorporates the experience of ten additional field demonstrations of closely related products (Thermochiller and Thermocharger) over a wide range of capacities. All together, 22 years of field operating experience has shaped and proven the current design.



Pictured above is a field demonstration THP with 300 kW (one million BTU/hour) of useful heating plus 120 kW chilling (35 tons) from 180 kW (610,000 BTU/hour) heat input.

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