SanCO₂ Heat Pump Water Heater

SANDEN. Hot water, naturally.
Superior Features

The Sanden Heat Pump Water Heater is a highly energy efficient alternative to the traditional electric or gas water heater. It absorbs heat from the air to heat water, saving energy and money and reducing greenhouse gas emissions. This system requires much less energy to heat water compared to conventional hot water heaters. No cold showers and plenty of hot water for the washing machine and dishwasher too!

Heat Pump Unit

- **Energy efficient**: 4x more efficient than traditional electric water heater.
- **Cost efficient**: uses over 70% less electricity to make hot water vs. traditional electric water heater.
- **Faster hot water**: up to 50% faster heat recovery than typical heat pumps.
- **Hot water when you need it**: with a first hour rating of over 97 gallons, you can easily fill that large soaking tub.
- **Environmentally friendly**: - Significantly reduced energy use and greenhouse gas emissions. - Uses unique ozone-friendly CO\textsubscript{2} refrigerant. - Heating cycle allows use of off-peak power rather than peak demand power.
- **Low temperature performance**: unlike a typical heat pump, the CO\textsubscript{2} refrigerant operates at temperatures below freezing (32ºF), allowing the unit to run without a backup heater.
- **Flexible & simple installation**: unlike other Heat Pump Water Heater systems, the Sanden CO\textsubscript{2} heat pump allows flexibility of the storage tank location (typically installed indoors), which can be up to 25 feet away from the heat pump unit (outdoors).
- **Suitable for most climates**: includes built-in freeze protection (-15 ºF to +110 ºF operating range).
- **Long lasting**: high quality, weather resistant construction for outdoor location.

Stainless Steel Tank

- High quality, extra-long life stainless steel tank.
- Fully insulated for minimal heat loss.
- Safety pressure and temperature relief valve supplied.
How the Sanden SanCO\textsubscript{2} System Works

A heat pump is a device that uses a small amount of energy to move heat from one location to another. The heat in the air is absorbed by a natural refrigerant, CO\textsubscript{2}, which is ozone friendly and does not contribute to global warming. The warm gaseous refrigerant is circulated in the system via a compressor. As it passes through the compressor, its pressure rises, as does its temperature. This hot refrigerant then passes through a heat exchanger to heat the water, which is then pumped to the storage tank.

Energy Bill Comparison

<table>
<thead>
<tr>
<th>Energy Bill / 100 Gallons Hot Water</th>
<th>Electric Water Heater (Indoor installation)</th>
<th>Conventional HP Water Heater (Garage installation)</th>
<th>Sanden HP Water Heater (Outdoor installation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1</td>
<td>$3</td>
<td>$1</td>
<td></td>
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</table>

Energy Consumption Comparison

<table>
<thead>
<tr>
<th>Kwh / 100 Gallons Hot Water</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
<td>1</td>
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**Whisper Quiet Hot Water**

When purchasing a Heat Pump Water Heater system, noise levels are an important consideration. Sanden’s extensive research has delivered a “whisper quiet” operating noise level (38dB) that ensures both you and your neighbors won’t be disturbed by operating noise.

**Minimal Impact on Global Warming**

Our Carbon Dioxide refrigerant poses far less of an environmental impact (i.e. no ozone layer depletion and minimal global warming) than other commonly used refrigerants.

<table>
<thead>
<tr>
<th>TYPE OF REFRIGERANT</th>
<th>R134a</th>
<th>R410a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global Warming Potential* by refrigerant type per 100 years.</td>
<td>1,430</td>
<td>2,100</td>
</tr>
</tbody>
</table>

**Ultra High Efficiency**

The closed-loop system uses less energy and allows for faster heat recovery, resulting in significantly lower operating costs than traditional electric tank heaters or typical heat pumps.

Enjoy the Benefits

*Global Warming Potential (GWP) is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming. It is a relative scale which compares the gas in question to that of the same mass of carbon dioxide (whose GWP is equal to 1).
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